APPENDIX A - GROUNDWATER LEVELS 2001 AND 2009

Summary of Observed and Simulated Water Levels

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
NWFWMD1208	30.353332	-84.185280	3	10.8	31.6	-21	13.7	35.3	-22
NWFWMD2137	30.422866	-84.377426	3	14.6	26.1	-11	19.7	31.3	-12
NWFWMD2171	30.424923	-84.303787	3	24.8	28.9	-4	18.3	33.7	-15
NWFWMD2196	30.426902	-84.224602	3	22.3	31.9	-10	18.5	36.1	-18
NWFWMD2692	30.452999	-84.276100	3	19.8	30.6	-11	25.3	35.5	-10
NWFWMD3181	30.503000	-84.231796	3	26.8	33.8	-7	31.5	38.5	-7
NWFWMD3413	30.530125	-83.919833	3	43.8	44.0	0	48.0	48.4	0
NWFWMD3635	30.553636	-84.709585	1	240.0	237.3	3	240.2	241.9	-2
NWFWMD372	30.115445	-84.376808	3	3.4	7.1	-4	4.5	8.8	-4
NWFWMD3785	30.571399	-84.746635	3	79.9	78.0	2	84.9	84.2	1
NWFWMD3940	30.588800	-84.259300	3	34.7	41.9	-7	41.3	47.2	-6
NWFWMD4425	30.656589	-83.772665	3	60.0	56.9	3	62.7	61.0	2
NWFWMD7498	30.343855	-84.140922	3	18.4	32.0	-14	20.6	35.6	-15
NWFWMD968	30.308622	-84.615478	1	102.7	99.4	3	103.1	100.5	3
NWFWMD977	30.311617	-84.293831	3	7.0	17.7	-11	6.7	21.4	-15
SJRWMD00260031	29.684650	-82.286926	1	154.3	154.9	-1	156.3	154.8	1
SJRWMD00264257	29.685243	-82.287324	5	38.9	39.9	-1	42.6	44.2	-2
SJRWMD01051575	29.180767	-81.242030	3	30.6	33.3	-3	31.4	31.6	0
SJRWMD01051576	29.171109	-81.242030	3	25.2	33.9	-9	31.4	31.6	0
SJRWMD01871278	29.168387	-81.186580	1	34.8	33.8	1	33.4	31.8	2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SJRWMD02101110	29.664156	-81.694273	1	20.1	24.3	-4	20.2	25.1	-5
SJRWMD02171136	29.460267	-81.367055	3	9.7	11.2	-2	2.3	9.9	-8
SJRWMD02231160	30.272482	-82.186466	1	114.7	116.8	-2	117.7	118.1	0
SJRWMD02241173	29.791680	-82.018596	2	89.7	90.5	-1	91.6	96.5	-5
SJRWMD02251181	29.769872	-82.013398	3	75.1	75.9	-1	78.5	79.8	-1
SJRWMD02251182	29.769872	-82.013398	2	78.5	83.4	-5	81.8	84.8	-3
SJRWMD02251183	29.769872	-82.013398	1	94.0	91.0	3	95.4	89.8	6
SJRWMD02291213	29.981028	-81.931084	1	139.2	130.7	9	142.9	139.7	3
SJRWMD02301222	29.820042	-81.956679	2	75.8	92.2	-16	79.2	94.7	-15
SJRWMD02305032	29.820240	-81.956486	5	73.3	70.8	2	76.6	75.5	1
SJRWMD02311232	29.249736	-81.494787	1	18.6	20.2	-2	18.0	19.5	-1
SJRWMD02321241	29.378617	-81.526009	2	25.7	27.5	-2	27.4	29.3	-2
SJRWMD02321242	29.378617	-81.526009	1	34.7	34.1	1	33.7	33.3	0
SJRWMD02331250	29.247045	-81.463489	5	22.5	26.3	-4	25.6	25.8	0
SJRWMD02331252	29.247045	-81.463489	2	31.6	36.3	-5	34.2	35.0	-1
SJRWMD02331253	29.247045	-81.463489	1	58.4	48.3	10	58.0	45.9	12
SJRWMD02341265	29.405209	-81.552428	3	25.8	22.0	4	27.9	24.8	3
SJRWMD02341266	29.405209	-81.552428	1	31.8	32.5	-1	31.8	33.3	-1
SJRWMD02341267	29.405209	-81.552428	2	26.4	27.2	-1	28.4	29.0	-1
SJRWMD02351274	29.355731	-81.580581	1	0.1	0.2	0	0.0	0.2	0
SJRWMD02361280	29.413518	-81.618291	2	22.7	27.2	-5	23.8	28.5	-5
SJRWMD02361281	29.413518	-81.618291	3	21.7	23.0	-1	23.1	25.7	-3

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SJRWMD02361282	29.413518	-81.618291	1	24.1	31.5	-7	25.0	31.3	-6
SJRWMD02371290	29.224973	-81.320486	1	33.6	35.5	-2	36.2	33.0	3
SJRWMD02371291	29.224973	-81.320486	3	23.6	24.6	-1	25.9	23.3	3
SJRWMD02371292	29.224973	-81.320486	2	23.7	30.1	-6	25.7	28.1	-2
SJRWMD02381301	29.142045	-81.365364	2	15.1	12.4	3	14.4	11.5	3
SJRWMD02381302	29.142045	-81.365364	1	14.6	14.4	0	13.8	12.8	1
SJRWMD02391310	29.104456	-81.309008	2	55.6	54.0	2	56.5	51.9	5
SJRWMD02391311	29.104456	-81.309008	1	75.0	75.3	0	74.6	72.5	2
SJRWMD02461377	29.249461	-81.452014	3	23.9	24.9	-1	29.0	24.3	5
SJRWMD02471380	29.327906	-81.494856	3	22.6	22.6	0	25.3	25.2	0
SJRWMD02471635	29.327906	-81.494856	2	23.6	29.9	-6	25.8	31.1	-5
SJRWMD02471637	29.327906	-81.494856	1	33.2	37.0	-4	35.7	36.9	-1
SJRWMD02541429	29.472898	-81.734034	1	11.7	9.8	2	11.5	10.1	1
SJRWMD02551432	29.410687	-81.736678	1	15.1	19.6	-5	18.2	20.2	-2
SJRWMD02721488	29.097334	-81.273830	2	38.9	35.5	3	41.4	37.7	4
SJRWMD02721489	29.097334	-81.273873	3	36.9	33.5	3	38.8	33.2	6
SJRWMD02721523	29.097333	-81.273906	1	38.2	37.3	1	41.9	41.7	0
SJRWMD02822126	29.892846	-81.320097	3	17.0	17.2	0	19.7	20.4	-1
SJRWMD02920270	30.783165	-81.952989	1	78.0	70.5	7	81.1	74.3	7
SJRWMD02923058	30.783165	-81.952989	5	29.7	32.4	-3	32.2	37.6	-5
SJRWMD03190341	28.862551	-81.796845	1	59.4	66.8	-7	62.9	68.9	-6
SJRWMD03264226	28.899708	-81.790632	5	51.6	58.3	-7	55.5	57.5	-2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SJRWMD05000704	29.499164	-81.958331	1	54.4	60.5	-6	57.8	61.8	-4
SJRWMD05264252	29.517497	-81.965276	1	66.9	72.4	-5	68.9	72.7	-4
SJRWMD05881112	29.072853	-81.351290	1	55.7	57.8	-2	55.4	52.2	3
SJRWMD05901114	29.082145	-81.884137	3	46.2	48.0	-2	50.7	48.0	3
SJRWMD05921116	29.086162	-81.334769	1	77.9	77.7	0	81.8	75.7	6
SJRWMD05931141	29.087017	-81.359511	3	12.4	16.2	-4	15.0	15.5	0
SJRWMD05941144	29.092834	-81.297289	1	59.4	63.0	-4	59.5	61.9	-2
SJRWMD05971765	29.882603	-82.081981	3	77.6	72.3	5	79.7	76.8	3
SJRWMD06001170	29.106545	-81.370351	1	1.3	5.9	-5	1.0	5.6	-5
SJRWMD06021764	29.848918	-82.218581	3	57.4	57.9	0	60.2	61.3	-1
SJRWMD06061197	29.133064	-81.352850	1	14.2	31.9	-18	16.9	28.0	-11
SJRWMD06132763	29.435283	-81.514138	1	36.6	36.3	0	37.6	37.4	0
SJRWMD06132765	29.435253	-81.514119	2	21.9	25.7	-4	23.9	29.2	-5
SJRWMD06161239	29.164056	-81.391534	1	12.6	10.3	2	13.4	10.0	3
SJRWMD06161248	29.164045	-81.391517	3	13.3	12.1	1	14.7	11.8	3
SJRWMD06181260	29.165253	-82.053492	3	38.7	41.4	-3	40.8	41.8	-1
SJRWMD06191261	29.167339	-81.552081	3	9.3	15.7	-6	12.7	15.4	-3
SJRWMD06191263	29.167339	-81.552081	1	16.0	15.6	0	17.3	15.4	2
SJRWMD06224942	29.169164	-81.641942	3	32.7	36.8	-4	37.3	36.7	1
SJRWMD06225052	29.169164	-81.641942	2	31.4	38.4	-7	36.8	38.4	-2
SJRWMD06225054	29.169164	-81.641942	1	31.4	40.1	-9	36.8	40.2	-3
SJRWMD06231309	29.173287	-81.083961	3	4.8	13.1	-8	4.8	11.6	-7

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SJRWMD06251331	29.175848	-81.303247	1	37.8	40.1	-2	39.3	38.4	1
SJRWMD06251332	29.175848	-81.303247	2	29.6	34.3	-5	31.7	32.8	-1
SJRWMD06361663	29.382103	-81.590484	3	15.8	17.0	-1	17.3	17.7	0
SJRWMD06401407	29.216350	-81.526687	1	3.8	2.8	1	3.3	2.8	1
SJRWMD06421409	29.222872	-82.082637	3	38.4	41.1	-3	40.4	41.5	-1
SJRWMD06431416	29.231336	-81.491926	2	20.2	20.6	0	22.9	20.7	2
SJRWMD06431417	29.231336	-81.491926	3	20.4	19.0	1	22.9	19.2	4
SJRWMD06431418	29.231336	-81.491926	1	23.8	22.2	2	23.6	22.3	1
SJRWMD06541627	29.286909	-81.055947	3	-2.2	5.3	-7	-0.2	4.7	-5
SJRWMD06591629	29.306578	-81.468775	3	20.7	23.7	-3	22.6	22.7	0
SJRWMD06641638	29.329854	-81.115691	3	6.3	8.7	-2	2.9	8.2	-5
SJRWMD06651642	29.349305	-81.134050	1	26.8	29.0	-2	27.4	28.0	-1
SJRWMD06691640	29.338925	-82.111678	3	40.9	42.8	-2	44.4	43.4	1
SJRWMD06791657	29.375771	-82.093518	3	44.1	44.1	0	47.5	44.8	3
SJRWMD06821661	29.380434	-81.130225	3	5.8	8.7	-3	6.3	7.8	-2
SJRWMD06851666	29.389250	-81.584359	2	18.1	19.9	-2	18.8	20.6	-2
SJRWMD06851668	29.389250	-81.584359	3	18.5	20.2	-2	19.1	21.5	-2
SJRWMD06861665	29.384886	-81.121862	1	-3.0	4.3	-7	0.2	3.4	-3
SJRWMD06971690	29.450231	-82.214379	3	45.6	44.7	1	50.4	46.0	4
SJRWMD07022767	29.284720	-81.126386	1	19.0	18.3	1	17.2	17.8	-1
SJRWMD07042363	29.486079	-82.163983	3	49.5	52.6	-3	53.3	54.9	-2
SJRWMD07052498	29.489987	-81.380244	3	8.1	12.7	-5	11.2	12.0	-1

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SJRWMD07061696	29.496975	-81.841517	2	19.3	25.3	-6	20.9	26.4	-5
SJRWMD07122354	29.530244	-82.419825	3	41.3	43.7	-2	43.8	44.6	-1
SJRWMD07151700	29.535248	-81.587856	1	34.4	34.5	0	34.9	33.7	1
SJRWMD07171980	29.543023	-81.711191	3	18.7	18.5	0	20.2	18.6	2
SJRWMD07211702	29.549747	-81.877508	3	58.1	57.1	1	59.7	58.8	1
SJRWMD07261704	29.557937	-82.410798	3	38.5	43.8	-5	41.0	44.7	-4
SJRWMD07271707	29.562223	-81.390442	1	20.8	20.8	0	20.0	19.1	1
SJRWMD07311709	29.593400	-82.430993	3	37.1	43.9	-7	39.8	44.9	-5
SJRWMD07441717	29.625577	-81.796968	1	65.7	65.0	1	68.2	65.9	2
SJRWMD07452357	29.627188	-82.356770	3	55.8	44.4	11	57.6	45.6	12
SJRWMD07481720	29.634919	-81.913401	3	70.1	70.1	0	72.8	73.0	0
SJRWMD07491721	29.649197	-82.344034	3	40.0	44.2	-4	44.2	46.1	-2
SJRWMD07531723	29.667398	-81.512147	3	12.2	14.2	-2	13.3	16.0	-3
SJRWMD07541726	29.669922	-81.882934	3	70.9	71.5	-1	73.5	75.0	-1
SJRWMD07541727	29.669922	-81.882934	2	76.9	75.8	1	78.9	78.2	1
SJRWMD07541728	29.669922	-81.882934	1	77.1	79.8	-3	79.0	81.3	-2
SJRWMD07572120	29.683053	-81.596386	3	17.8	13.8	4	6.4	15.5	-9
SJRWMD07712369	29.716631	-82.142599	3	73.0	71.8	1	75.6	74.8	1
SJRWMD07732133	29.725862	-81.452203	3	11.5	15.0	-3	14.3	17.1	-3
SJRWMD07801738	29.755543	-81.312022	1	24.9	25.5	-1	25.3	28.0	-3
SJRWMD07841209	29.797128	-82.026226	1	90.8	91.1	0	90.5	98.3	-8
SJRWMD07841748	29.797399	-82.026299	2	86.9	84.8	2	86.5	90.8	-4

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SJRWMD07851742	29.776519	-81.984904	3	74.6	74.9	0	78.1	79.0	-1
SJRWMD07871744	29.790850	-82.027182	2	86.3	90.8	-5	88.2	97.9	-10
SJRWMD07881745	29.794122	-82.043810	1	107.7	107.4	0	109.9	111.8	-2
SJRWMD07881746	29.794097	-82.043829	2	100.8	93.1	8	102.7	97.8	5
SJRWMD07891752	29.803569	-82.015537	2	82.7	92.7	-10	83.7	99.3	-16
SJRWMD07912370	29.811081	-82.385235	3	39.4	40.7	-1	40.8	43.3	-2
SJRWMD07931755	29.813356	-81.921259	3	72.1	70.2	2	75.5	74.9	1
SJRWMD07931756	29.813356	-81.921259	2	87.0	84.9	2	90.2	87.4	3
SJRWMD07981759	29.826404	-82.028415	3	74.3	73.8	0	78.0	78.3	0
SJRWMD07991762	29.837834	-81.725974	1	104.0	99.3	5	104.1	102.2	2
SJRWMD08190973	30.304876	-81.629950	5	29.8	24.8	5	32.5	29.7	3
SJRWMD08274211	30.084128	-81.722870	1	13.3	10.0	3	14.8	14.5	0
SJRWMD09002045	29.791230	-82.063421	1	117.1	116.1	1	118.5	125.8	-7
SJRWMD09052051	29.809739	-82.024893	1	91.6	98.2	-7	91.2	104.5	-13
SJRWMD09172077	29.817707	-82.014207	1	110.5	116.5	-6	116.1	123.1	-7
SJRWMD09770971	30.291148	-81.979970	3	46.8	37.9	9	49.5	42.3	7
SJRWMD09820994	30.348001	-81.541278	7	18.3	26.5	-8	18.2	31.5	-13
SJRWMD09891009	30.561345	-81.833160	3	34.3	30.6	4	36.5	35.6	1
SJRWMD09932742	30.671901	-81.640931	3	25.1	28.4	-3	32.7	34.4	-2
SJRWMD10101064	30.401100	-81.923320	1	74.8	71.5	3	75.8	76.9	-1
SJRWMD10111065	29.687281	-81.653659	3	23.3	19.8	4	26.3	22.3	4
SJRWMD10261228	30.743165	-81.988250	3	36.5	38.7	-2	39.3	43.3	-4

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SJRWMD10282580	29.128609	-81.243330	5	24.7	31.2	-7	25.5	30.3	-5
SJRWMD10321395	29.599097	-82.075648	1	125.1	133.7	-9	121.4	135.0	-14
SJRWMD10331410	29.187000	-81.901237	1	49.9	52.9	-3	52.6	53.4	-1
SJRWMD10491411	28.807723	-81.873121	1	62.9	65.7	-3	65.2	66.8	-2
SJRWMD10812784	29.059941	-81.939271	3	43.9	48.5	-5	47.6	48.7	-1
SJRWMD11093692	28.949984	-81.785632	1	52.8	63.2	-10	56.2	62.8	-7
SJRWMD11103693	28.863319	-81.952582	1	50.4	65.9	-15	51.6	67.1	-16
SJRWMD11133676	29.092201	-81.708409	1	38.8	45.5	-7	44.9	45.2	0
SJRWMD11143695	29.032204	-81.556459	1	28.9	36.4	-8	33.0	34.8	-2
SJRWMD11311651	29.273595	-82.149795	3	38.6	42.3	-4	41.0	42.9	-2
SJRWMD11371682	29.631848	-81.691386	1	54.9	56.8	-2	56.0	57.0	-1
SJRWMD11372222	29.631848	-81.691386	2	50.0	41.9	8	52.8	43.1	10
SJRWMD11461578	29.245339	-81.431609	2	28.6	48.3	-20	31.9	40.3	-8
SJRWMD11461596	29.245339	-81.431609	1	58.6	72.4	-14	58.2	57.2	1
SJRWMD11471579	29.232931	-81.461606	1	46.3	54.4	-8	49.2	51.1	-2
SJRWMD11472225	29.232931	-81.461606	2	24.3	39.8	-15	27.9	38.1	-10
SJRWMD11532194	30.157837	-81.575608	1	20.8	15.4	5	21.9	16.6	5
SJRWMD11542213	30.536069	-81.621205	1	16.4	16.3	0	17.8	18.3	-1
SJRWMD11600022	30.157206	-81.937745	1	73.6	62.9	11	75.3	70.0	5
SJRWMD11612223	29.300367	-81.477381	2	21.0	28.5	-7	22.5	26.9	-4
SJRWMD11612224	29.300367	-81.477381	1	34.6	34.1	1	36.8	31.9	5
SJRWMD11782241	29.466651	-81.373961	1	20.5	26.0	-5	18.7	21.2	-2

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SJRWMD11782241	29.466651	-81.373961	1	20.5	26.0	-5	19.9	21.5	-2
SJRWMD11782242	29.465831	-81.374442	1	19.2	25.6	-6	19.9	21.5	-2
SJRWMD11782242	29.465831	-81.374442	1	19.2	25.6	-6	18.7	21.2	-2
SJRWMD11792711	29.959170	-81.615614	3	25.1	17.1	8	28.4	20.6	8
SJRWMD12132454	29.820518	-81.957319	2	74.1	93.1	-19	76.5	95.5	-19
SJRWMD13242545	29.196900	-82.123880	3	39.8	41.8	-2	40.6	42.2	-2
SJRWMD13672002	29.411195	-81.573825	2	27.1	25.6	2	28.8	27.0	2
SJRWMD13701694	29.473612	-81.742237	1	2.3	8.8	-6	3.0	9.0	-6
SJRWMD13712025	29.468859	-81.552017	3	25.1	23.3	2	27.6	24.4	3
SJRWMD14933047	29.877220	-81.926943	2	148.6	108.7	40	153.3	114.6	39
SJRWMD14933048	29.877220	-81.926943	1	166.0	152.9	13	168.0	160.0	8
SJRWMD14943006	29.113120	-81.527976	3	15.5	11.9	4	17.3	11.7	6
SJRWMD14973009	29.669964	-82.434273	3	39.7	45.0	-5	43.8	46.2	-2
SJRWMD14983012	29.674687	-82.414550	3	39.9	45.2	-5	43.8	46.5	-3
SJRWMD15103044	29.983053	-82.010832	1	205.3	200.7	5	209.3	205.3	4
SJRWMD15133132	30.054998	-82.031665	1	210.3	208.8	2	211.1	213.2	-2
SJRWMD15843781	29.167807	-81.170755	5	21.3	28.1	-7	24.3	27.2	-3
SJRWMD15860304	29.833332	-81.357497	1	24.0	19.4	5	23.0	20.8	2
SJRWMD15902733	29.051665	-82.055831	3	40.8	43.6	-3	44.2	44.0	0
SJRWMD15912734	28.998053	-81.983609	3	42.9	50.2	-7	46.5	50.5	-4
SJRWMD15993195	29.489998	-81.721109	1	-0.4	9.3	-10	-0.4	9.9	-10
SJRWMD16043199	29.993610	-81.358331	1	6.6	5.1	2	3.3	5.6	-2

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SJRWMD16043199	29.993610	-81.358331	1	6.6	5.1	2	4.7	5.8	-1
SJRWMD16043200	29.993610	-81.358053	1	3.0	4.9	-2	4.7	5.8	-1
SJRWMD16043200	29.993610	-81.358053	1	3.0	4.9	-2	3.3	5.6	-2
SJRWMD16063201	29.996405	-81.360013	1	4.2	4.3	0	3.0	4.9	-2
SJRWMD16153210	30.798887	-81.951944	1	31.7	24.9	7	44.4	32.5	12
SJRWMD16153211	30.798332	-81.951111	1	41.7	28.6	13	44.4	32.5	12
SJRWMD16223219	30.820832	-81.936111	1	11.7	6.6	5	13.4	9.9	4
SJRWMD16253221	29.490275	-81.705275	1	1.0	9.9	-9	1.2	10.8	-10
SJRWMD16273222	29.500553	-81.742775	1	10.0	12.2	-2	9.6	12.5	-3
SJRWMD16493740	29.965831	-81.630831	1	7.6	5.0	3	8.8	5.8	3
SJRWMD16533248	29.960831	-81.614997	1	0.0	0.1	0	0.9	1.1	0
SJRWMD16533248	29.960831	-81.614997	1	0.0	0.1	0	1.0	0.2	1
SJRWMD16533255	29.956109	-81.620553	1	-0.2	1.0	-1	0.9	1.1	0
SJRWMD16533255	29.956109	-81.620553	1	-0.2	1.0	-1	1.0	0.2	1
SJRWMD16573253	29.956943	-81.609997	1	-0.1	0.0	0	0.3	0.0	0
SJRWMD16733278	30.002832	-81.357367	1	3.0	2.3	1	1.8	2.7	-1
SJRWMD16763282	29.916942	-81.672775	1	41.8	36.9	5	42.5	38.6	4
SJRWMD16773281	29.941665	-81.618331	1	0.4	0.7	0	0.8	0.8	0
SJRWMD16953356	30.045242	-81.449245	5	37.5	23.1	14	39.7	27.9	12
SJRWMD16953359	30.045242	-81.449245	1	34.8	31.1	4	33.6	31.9	2
SJRWMD16953360	30.044998	-81.449442	3	33.8	23.1	11	36.2	27.9	8
SJRWMD16963361	30.229165	-81.704442	7	30.5	28.7	2	32.5	33.6	-1

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SJRWMD17003372	29.568642	-81.652053	3	23.6	28.6	-5	25.8	28.9	-3
SJRWMD17483571	28.998837	-81.606134	1	42.5	41.4	1	41.8	42.4	-1
SJRWMD17563578	29.016203	-81.635029	1	42.3	41.3	1	42.1	42.4	0
SJRWMD17563579	29.016248	-81.635512	1	41.8	41.3	0	42.1	42.4	0
SJRWMD17831789	29.801861	-81.807830	2	67.1	73.2	-6	70.8	76.8	-6
SJRWMD17843613	29.722778	-81.822361	1	131.7	130.1	2	136.9	135.3	2
SJRWMD17843615	29.722800	-81.822388	2	112.1	97.7	14	113.6	103.1	10
SJRWMD17943644	29.934688	-81.376184	1	32.0	32.3	0	30.8	33.7	-3
SJRWMD17943646	29.934688	-81.376184	3	26.6	21.6	5	28.9	25.9	3
SJRWMD17953647	29.715526	-81.235619	3	11.7	10.3	1	14.0	10.6	3
SJRWMD17993657	30.022743	-81.327295	3	28.8	22.6	6	30.9	27.1	4
SJRWMD18053667	30.165831	-81.627775	3	24.1	21.6	2	27.4	26.8	1
SJRWMD18113680	29.297685	-81.710327	3	15.0	22.0	-7	18.5	22.4	-4
SJRWMD18403749	28.992775	-81.835832	3	47.6	53.0	-5	52.1	53.6	-1
SJRWMD18573798	30.080794	-81.807596	3	38.9	38.2	1	42.5	43.0	-1
SJRWMD18583780	29.150831	-81.873019	1	49.2	46.4	3	49.5	46.8	3
SJRWMD18683617	30.473014	-81.486754	3	30.5	24.6	6	32.9	29.6	3
SJRWMD18684212	30.472776	-81.486942	1	9.6	7.4	2	11.5	8.3	3
SJRWMD18743963	30.127217	-81.544164	3	31.5	22.2	9	35.0	27.3	8
SJRWMD18954295	29.589968	-81.575909	3	13.0	17.7	-5	15.7	18.5	-3
SJRWMD18964231	29.824132	-81.553135	3	20.5	17.4	3	26.9	22.6	4
SJRWMD18974237	29.984408	-81.560916	1	9.5	3.2	6	10.2	3.3	7

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SJRWMD18974262	29.984408	-81.560916	3	25.6	18.7	7	28.1	22.7	5
SJRWMD19404416	30.191629	-81.520085	3	23.3	21.8	1	28.6	26.6	2
SJRWMD19414940	28.922983	-81.569719	2	41.1	46.3	-5	45.8	46.0	0
SJRWMD19414941	28.922717	-81.569925	3	41.1	45.9	-5	45.8	45.3	0
SJRWMD19574476	30.094682	-81.977326	2	71.1	65.8	5	73.5	69.9	4
SJRWMD19574477	30.096904	-81.966214	3	53.4	51.4	2	56.3	55.9	0
SJRWMD19754567	29.570696	-82.189539	3	62.2	58.9	3	65.4	61.3	4
SJRWMD19764568	29.537472	-81.205337	2	15.1	14.1	1	15.4	13.4	2
SJRWMD19764569	29.537472	-81.205337	1	13.6	16.4	-3	13.6	15.7	-2
SJRWMD19784574	28.744157	-81.872856	3	66.1	69.9	-4	68.9	70.8	-2
SJRWMD19794579	29.535523	-82.101760	3	63.0	62.6	0	65.6	64.0	2
SJRWMD19984725	30.418887	-81.433053	5	35.2	24.8	10	37.7	29.7	8
SJRWMD19984726	30.419720	-81.433331	3	32.0	24.2	8	35.2	29.2	6
SJRWMD27225030	30.481068	-81.824270	3	35.4	30.4	5	37.6	35.4	2
SJRWMD27234872	30.703291	-81.453701	3	-11.8	12.7	-24	-8.8	19.2	-28
SJRWMD27354792	28.856109	-81.899165	3	54.5	60.3	-6	58.1	61.1	-3
SJRWMD27374794	29.637225	-82.469714	3	37.4	44.1	-7	39.6	45.1	-6
SJRWMD27794862	29.565553	-82.262220	3	53.2	48.1	5	56.0	49.9	6
SJRWMD28354972	30.667498	-81.638331	3	26.3	28.3	-2	32.6	34.3	-2
SJRWMD28364975	30.164888	-81.392220	3	24.3	22.2	2	25.5	27.0	-2
SJRWMD28374978	29.438217	-81.111577	2	5.2	2.9	2	5.8	2.6	3
SJRWMD28895107	30.698266	-81.437574	5	15.4	13.8	2	30.8	19.9	11

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SJRWMD30272814	29.139476	-82.061994	3	39.1	41.7	-3	41.5	42.1	-1
SJRWMD30292824	29.348301	-81.453005	1	11.9	16.3	-4	13.6	13.6	0
SJRWMD30292825	29.348331	-81.453102	3	12.8	16.2	-3	14.7	14.5	0
SJRWMD30292826	29.348318	-81.453049	2	12.9	16.2	-3	14.8	14.1	1
SJRWMD32604054	29.087474	-82.451764	3	29.3	34.5	-5	29.9	34.8	-5
SJRWMD70011113	29.080873	-81.579159	3	13.7	12.5	1	15.9	12.4	3
SJRWMD70021766	29.907418	-81.490261	3	26.9	21.5	5	28.9	26.3	3
SJRWMD70021767	29.907418	-81.490261	1	9.1	8.6	1	9.9	8.7	1
SJRWMD70031384	29.204442	-81.365553	3	21.9	20.3	2	23.5	19.5	4
SJRWMD70031401	29.204442	-81.365553	1	19.4	20.4	-1	18.3	19.5	-1
SJRWMD70061680	29.433883	-81.137497	3	5.0	7.3	-2	6.7	6.3	0
SJRWMD70061684	29.433883	-81.137497	1	0.1	0.8	-1	2.4	0.6	2
SJRWMD70071749	29.802239	-82.035673	2	80.1	83.2	-3	82.7	89.0	-6
SJRWMD70071750	29.802239	-82.035673	1	90.4	91.1	-1	90.1	98.3	-8
SJRWMD70078104	29.802239	-82.035673	3	75.6	75.4	0	78.7	79.7	-1
SJRWMD70101719	29.632311	-81.988707	3	74.1	74.2	0	77.1	77.2	0
SJRWMD70181773	30.085793	-81.457300	3	34.3	23.2	11	37.0	28.0	9
SJRWMD70181774	30.085793	-81.457300	2	42.5	30.2	12	43.4	33.7	10
SJRWMD70181775	30.085793	-81.457300	1	47.8	37.3	11	49.1	39.6	10
SJRWMD70191703	29.553595	-81.232025	2	20.6	18.3	2	20.8	18.0	3
SJRWMD70231656	29.367947	-82.041084	3	44.6	45.7	-1	47.5	46.6	1
SJRWMD70331469	29.228973	-81.429289	3	26.9	24.7	2	30.4	23.9	7

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SJRWMD70341521	29.483105	-81.632592	3	16.3	24.0	-8	18.4	24.6	-6
SJRWMD70341524	29.483116	-81.632591	1	66.9	54.9	12	68.3	53.6	15
SJRWMD70351175	29.113006	-81.572304	3	33.3	29.5	4	37.5	29.2	8
SJRWMD70351176	29.113017	-81.572348	1	36.2	34.3	2	40.2	33.9	6
SJRWMD70521564	29.439625	-81.628773	3	19.6	18.7	1	21.7	19.1	3
SJRWMD70571577	29.458759	-81.526042	3	21.4	18.4	3	23.5	22.7	1
SJRWMD70651583	29.306295	-81.317080	3	13.9	17.9	-4	15.7	16.6	-1
SJRWMD70651628	29.306295	-81.317080	1	22.0	18.0	4	21.2	16.7	5
SJRWMD70771210	29.143104	-81.126683	3	12.0	10.7	1	16.1	10.7	5
SJRWMD70771217	29.143106	-81.126769	2	25.6	19.8	6	30.2	19.4	11
SJRWMD70771219	29.143106	-81.126769	1	28.7	28.5	0	32.7	27.4	5
SJRWMD70871587	29.631718	-81.205336	1	1.1	2.7	-2	1.6	2.0	0
SJRWMD70871718	29.631718	-81.205336	3	11.5	10.9	1	13.8	10.9	3
SJRWMD70951592	29.719144	-82.006832	3	78.3	76.5	2	81.3	80.1	1
SJRWMD70971594	29.360962	-82.104294	3	41.0	43.4	-2	44.7	44.1	1
SJRWMD71061595	29.449084	-81.629684	3	18.6	19.1	-1	20.7	19.5	1
SJRWMD71091597	29.296411	-81.940791	3	40.9	41.7	-1	43.7	42.2	2
SJRWMD71141347	29.193315	-82.032242	3	38.3	40.8	-2	40.5	41.1	-1
SJRWMD71241599	29.229331	-81.265939	3	24.7	25.9	-1	26.0	24.4	2
SJRWMD71341600	30.594792	-81.830140	3	36.0	30.9	5	37.9	36.0	2
SJRWMD71341603	30.594792	-81.830140	2	18.8	20.9	-2	21.6	24.2	-3
SJRWMD71341606	30.594792	-81.830140	1	11.5	10.8	1	12.7	12.2	0

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SJRWMD71343049	30.594792	-81.830140	5	35.8	30.9	5	38.6	36.0	3
SJRWMD71401609	29.465831	-81.651664	1	28.6	28.4	0	28.6	28.6	0
SJRWMD71421613	29.448345	-81.652572	1	8.5	12.8	-4	8.7	13.0	-4
SRWMD.101336025	29.574011	-82.969421	3	5.1	9.5	-4	8.8	11.7	-3
SRWMD.101429016	29.587049	-82.935019	3	2.3	3.3	-1	3.1	5.0	-2
SRWMD.101506003	29.642297	-82.854717	3	4.4	10.8	-6	7.0	13.3	-6
SRWMD.101527001	29.583167	-82.790111	3	13.8	18.3	-5	17.2	20.6	-3
SRWMD.101722001	29.605434	-82.606400	3	36.1	43.1	-7	38.0	44.7	-7
SRWMD.10920002	30.385038	-83.443858	3	78.5	80.2	-2	82.1	86.9	-5
SRWMD.11011002	30.413806	-83.297699	3	42.1	48.7	-7	45.1	50.0	-5
SRWMD.111117007	29.526951	-83.241260	3	12.2	12.5	0	12.2	14.4	-2
SRWMD.111325017	29.488686	-82.964075	3	2.7	7.0	-4	3.2	7.9	-5
SRWMD.111326004	29.488661	-82.975238	3	1.2	2.5	-1	1.9	2.9	-1
SRWMD.111405001	29.561639	-82.925611	3	3.5	9.6	-6	5.0	11.6	-7
SRWMD.111631002	29.475151	-82.747063	3	23.8	28.1	-4	24.6	29.4	-5
SRWMD.111811001	29.547306	-82.489961	3	38.7	43.7	-5	41.1	44.5	-3
SRWMD.11420006	30.389776	-82.939187	3	40.6	40.9	0	41.4	43.8	-2
SRWMD.11535004	30.352245	-82.781320	3	46.6	45.4	1	48.7	48.9	0
SRWMD.121330002	29.413266	-83.043990	3	5.7	4.9	1	6.7	5.4	1
SRWMD.121429005	29.415993	-82.927631	3	7.3	10.8	-3	8.4	12.0	-4
SRWMD.131203001	29.383052	-83.094595	3	6.7	5.2	1	6.0	5.6	0
SRWMD.141305001	29.296556	-83.032472	3	2.8	3.0	0	2.7	3.2	-1

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SRWMD.151719004	29.160197	-82.630875	3	27.2	26.8	0	26.5	26.8	0
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	85.6	91.1	-5
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	84.5	83.6	1
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	65.6	68.1	-3
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	26.6	27.9	-1
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	81.8	82.6	-1
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	67.0	69.0	-2
SRWMD.20433001	30.271425	-83.927195	3	25.6	27.3	-2	86.1	92.9	-7
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	84.5	83.6	1
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	67.0	69.0	-2
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	85.6	91.1	-5
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	86.1	92.9	-7
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	65.6	68.1	-3
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	81.8	82.6	-1
SRWMD.20603001	30.337069	-83.705503	3	71.2	66.6	5	26.6	27.9	-1
SRWMD.20603003	30.337144	-83.705432	1	75.2	67.8	7	67.3	69.2	-2
SRWMD.20603003	30.337144	-83.705432	1	75.2	67.8	7	97.7	93.2	4
SRWMD.20603003	30.337144	-83.705432	1	75.2	67.8	7	86.9	83.8	3
SRWMD.20603003	30.337144	-83.705432	1	75.2	67.8	7	82.5	83.2	-1
SRWMD.20603003	30.337144	-83.705432	1	75.2	67.8	7	88.9	91.1	-2
SRWMD.20603003	30.337144	-83.705432	1	75.2	67.8	7	65.8	68.4	-3
SRWMD.20731002	30.263412	-83.661040	3	59.7	60.5	-1	61.6	64.0	-2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.20731003	30.263404	-83.661044	1	61.9	60.5	1	62.4	64.1	-2
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	26.6	27.9	-1
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	86.1	92.9	-7
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	85.6	91.1	-5
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	84.5	83.6	1
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	67.0	69.0	-2
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	81.8	82.6	-1
SRWMD.20802001	30.346938	-83.493137	3	82.8	86.6	-4	65.6	68.1	-3
SRWMD.20802002	30.346909	-83.493129	1	95.9	86.9	9	86.9	83.8	3
SRWMD.20802002	30.346909	-83.493129	1	95.9	86.9	9	65.8	68.4	-3
SRWMD.20802002	30.346909	-83.493129	1	95.9	86.9	9	88.9	91.1	-2
SRWMD.20802002	30.346909	-83.493129	1	95.9	86.9	9	67.3	69.2	-2
SRWMD.20802002	30.346909	-83.493129	1	95.9	86.9	9	97.7	93.2	4
SRWMD.20802002	30.346909	-83.493129	1	95.9	86.9	9	82.5	83.2	-1
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	86.1	92.9	-7
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	85.6	91.1	-5
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	65.6	68.1	-3
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	84.5	83.6	1
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	26.6	27.9	-1
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	81.8	82.6	-1
SRWMD.20828001	30.289213	-83.536204	3	83.1	86.5	-3	67.0	69.0	-2
SRWMD.20828002	30.289190	-83.536209	1	86.8	86.5	0	97.7	93.2	4

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.20828002	30.289190	-83.536209	1	86.8	86.5	0	67.3	69.2	-2
SRWMD.20828002	30.289190	-83.536209	1	86.8	86.5	0	82.5	83.2	-1
SRWMD.20828002	30.289190	-83.536209	1	86.8	86.5	0	88.9	91.1	-2
SRWMD.20828002	30.289190	-83.536209	1	86.8	86.5	0	65.8	68.4	-3
SRWMD.20828002	30.289190	-83.536209	1	86.8	86.5	0	86.9	83.8	3
SRWMD.21231001	30.275037	-83.153466	3	31.8	31.8	0	33.1	35.7	-3
SRWMD.21322008	30.290759	-83.007203	3	34.7	37.2	-3	36.3	41.4	-5
SRWMD.21711003	30.326389	-82.585750	3	47.7	45.8	2	50.1	49.5	1
SRWMD.30419001	30.201153	-83.969433	3	8.2	16.6	-8	9.2	29.9	-21
SRWMD.30424003	30.211111	-83.876389	3	15.0	24.1	-9	17.6	29.4	-12
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	85.6	91.1	-5
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	67.0	69.0	-2
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	65.6	68.1	-3
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	26.6	27.9	-1
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	86.1	92.9	-7
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	81.8	82.6	-1
SRWMD.30629002	30.189445	-83.755129	3	29.9	29.0	1	84.5	83.6	1
SRWMD.30730001	30.195926	-83.669929	3	37.8	38.0	0	39.6	41.3	-2
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	26.6	27.9	-1
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	86.1	92.9	-7
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	85.6	91.1	-5
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	81.8	82.6	-1

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	65.6	68.1	-3
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	84.5	83.6	1
SRWMD.30833001	30.186986	-83.527793	3	83.3	80.0	3	67.0	69.0	-2
SRWMD.30833002	30.186913	-83.527793	1	86.1	80.1	6	67.3	69.2	-2
SRWMD.30833002	30.186913	-83.527793	1	86.1	80.1	6	65.8	68.4	-3
SRWMD.30833002	30.186913	-83.527793	1	86.1	80.1	6	97.7	93.2	4
SRWMD.30833002	30.186913	-83.527793	1	86.1	80.1	6	82.5	83.2	-1
SRWMD.30833002	30.186913	-83.527793	1	86.1	80.1	6	86.9	83.8	3
SRWMD.30833002	30.186913	-83.527793	1	86.1	80.1	6	88.9	91.1	-2
SRWMD.31035001	30.173911	-83.291527	3	45.1	41.1	4	46.0	47.5	-1
SRWMD.31335002	30.187697	-82.987919	3	28.7	27.7	1	29.5	32.3	-3
SRWMD.31734011	30.184417	-82.593528	3	47.1	41.4	6	49.4	45.2	4
SRWMD.31734023	30.184389	-82.593528	1	189.5	179.0	11	190.5	182.0	9
SRWMD.31923004	30.212833	-82.391306	3	48.5	46.7	2	51.1	50.4	1
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	67.0	69.0	-2
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	26.6	27.9	-1
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	65.6	68.1	-3
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	84.5	83.6	1
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	85.6	91.1	-5
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	81.8	82.6	-1
SRWMD.40633001	30.090129	-83.734393	3	14.3	14.3	0	86.1	92.9	-7
SRWMD.40723011	30.127565	-83.596338	3	29.1	34.0	-5	30.4	34.7	-4

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SRWMD.40736005	30.094161	-83.571848	3	30.9	33.3	-2	32.1	35.9	-4
SRWMD.40736006	30.094152	-83.571947	1	30.9	33.3	-2	32.1	36.0	-4
SRWMD.41231002	30.090380	-83.154358	3	19.3	20.4	-1	20.1	23.7	-4
SRWMD.41329001	30.108139	-83.044056	3	19.8	17.8	2	21.5	21.4	0
SRWMD.41402002	30.164984	-82.888541	3	28.3	29.1	-1	30.0	33.3	-3
SRWMD.41501001	30.168611	-82.771805	3	28.4	32.3	-4	29.4	35.7	-6
SRWMD.41625001	30.118278	-82.671917	3	31.1	33.1	-2	31.4	36.4	-5
SRWMD.41734002	30.103250	-82.608500	3	30.5	34.9	-4	31.4	38.0	-7
SRWMD.41827002	30.109817	-82.496586	3	45.5	41.7	4	47.1	44.8	2
SRWMD.42236001	30.106994	-82.049967	3	51.2	50.3	1	53.9	54.6	-1
SRWMD.50615002	30.040958	-83.717447	3	7.8	9.9	-2	9.2	14.2	-5
SRWMD.50928003	30.025041	-83.434475	1	66.1	59.7	6	65.8	68.4	-3
SRWMD.50928003	30.025041	-83.434475	1	66.1	59.7	6	67.3	69.2	-2
SRWMD.50928003	30.025041	-83.434475	1	66.1	59.7	6	82.5	83.2	-1
SRWMD.50928003	30.025041	-83.434475	1	66.1	59.7	6	97.7	93.2	4
SRWMD.50928003	30.025041	-83.434475	1	66.1	59.7	6	86.9	83.8	3
SRWMD.50928003	30.025041	-83.434475	1	66.1	59.7	6	88.9	91.1	-2
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	84.5	83.6	1
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	81.8	82.6	-1
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	86.1	92.9	-7
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	65.6	68.1	-3
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	26.6	27.9	-1

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	67.0	69.0	-2
SRWMD.50928004	30.025055	-83.434454	3	66.1	59.7	6	85.6	91.1	-5
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	86.1	92.9	-7
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	85.6	91.1	-5
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	67.0	69.0	-2
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	65.6	68.1	-3
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	26.6	27.9	-1
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	81.8	82.6	-1
SRWMD.51004001	30.072822	-83.318943	3	81.3	78.3	3	84.5	83.6	1
SRWMD.51004002	30.072861	-83.319034	1	82.0	79.2	3	65.8	68.4	-3
SRWMD.51004002	30.072861	-83.319034	1	82.0	79.2	3	97.7	93.2	4
SRWMD.51004002	30.072861	-83.319034	1	82.0	79.2	3	86.9	83.8	3
SRWMD.51004002	30.072861	-83.319034	1	82.0	79.2	3	88.9	91.1	-2
SRWMD.51004002	30.072861	-83.319034	1	82.0	79.2	3	67.3	69.2	-2
SRWMD.51004002	30.072861	-83.319034	1	82.0	79.2	3	82.5	83.2	-1
SRWMD.51214008	30.047130	-83.081607	3	21.0	20.8	0	20.7	26.1	-5
SRWMD.51328002	30.024925	-83.024007	3	11.6	12.7	-1	13.9	15.9	-2
SRWMD.51331003	29.999253	-83.057599	3	37.2	34.3	3	36.5	42.9	-6
SRWMD.51334013	30.002776	-82.995146	3	10.8	11.6	-1	13.3	14.6	-1
SRWMD.51405002	30.076444	-82.944806	3	19.5	18.6	1	21.0	22.4	-1
SRWMD.51621002	30.045121	-82.721395	3	26.9	30.9	-4	27.1	33.6	-6
SRWMD.51630002	30.015558	-82.748119	3	25.2	30.3	-5	25.6	32.8	-7

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.51922001	30.045194	-82.391694	3	51.0	50.9	0	53.5	54.4	-1
SRWMD.51922002	30.045222	-82.391667	1	134.8	129.5	5	136.9	133.7	3
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	86.1	92.9	-7
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	65.6	68.1	-3
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	26.6	27.9	-1
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	67.0	69.0	-2
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	85.6	91.1	-5
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	81.8	82.6	-1
SRWMD.61005001	29.984080	-83.344469	3	65.1	63.8	1	84.5	83.6	1
SRWMD.61005002	29.984064	-83.344487	1	65.3	64.0	1	67.3	69.2	-2
SRWMD.61005002	29.984064	-83.344487	1	65.3	64.0	1	86.9	83.8	3
SRWMD.61005002	29.984064	-83.344487	1	65.3	64.0	1	82.5	83.2	-1
SRWMD.61005002	29.984064	-83.344487	1	65.3	64.0	1	65.8	68.4	-3
SRWMD.61005002	29.984064	-83.344487	1	65.3	64.0	1	88.9	91.1	-2
SRWMD.61005002	29.984064	-83.344487	1	65.3	64.0	1	97.7	93.2	4
SRWMD.61025003	29.927697	-83.279105	3	47.1	48.0	-1	48.2	50.1	-2
SRWMD.61025004	29.927693	-83.279154	1	46.4	48.0	-2	48.1	49.7	-2
SRWMD.61301007	29.996454	-82.966234	3	10.3	10.8	0	11.3	13.7	-2
SRWMD.61327001	29.925648	-83.015715	1	61.8	60.9	1	61.3	62.9	-2
SRWMD.61327002	29.925627	-83.015677	3	61.6	60.7	1	60.9	62.8	-2
SRWMD.61401003	29.997131	-82.862383	3	24.1	23.0	1	24.4	26.3	-2
SRWMD.61512010	29.985542	-82.768530	3	22.3	28.3	-6	22.4	30.1	-8

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.61607012	29.982674	-82.755148	3	22.4	25.4	-3	22.8	26.4	-4
SRWMD.61618003	29.969981	-82.751771	3	21.8	24.6	-3	22.1	25.7	-4
SRWMD.71203001	29.906114	-83.116357	3	61.3	61.3	0	60.9	64.3	-3
SRWMD.71213003	29.882263	-83.072847	3	61.4	62.1	-1	61.2	64.1	-3
SRWMD.71216001	29.868176	-83.121904	3	60.6	58.5	2	60.4	60.6	0
SRWMD.71234001	29.836009	-83.105330	3	60.1	58.7	1	60.2	61.3	-1
SRWMD.71310002	29.889872	-83.012984	3	61.5	62.0	-1	61.3	63.5	-2
SRWMD.71321001	29.855839	-83.022157	3	61.2	57.3	4	61.1	61.0	0
SRWMD.71331001	29.838517	-83.060487	3	60.7	59.8	1	60.7	62.5	-2
SRWMD.71333002	29.827502	-83.022621	3	59.9	51.4	8	60.0	57.5	3
SRWMD.71528001	29.849067	-82.808427	3	64.0	61.8	2	64.8	64.9	0
SRWMD.71528001	29.849067	-82.808427	3	64.0	61.8	2	61.3	58.4	3
SRWMD.71528002	29.849003	-82.808432	1	64.2	65.2	-1	61.7	58.6	3
SRWMD.71528002	29.849003	-82.808432	1	64.2	65.2	-1	64.9	67.6	-3
SRWMD.71710008	29.901294	-82.609192	3	31.0	32.8	-2	31.8	34.7	-3
SRWMD.72002001	29.915467	-82.284823	3	53.6	52.7	1	55.3	56.1	-1
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	81.8	82.6	-1
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	84.5	83.6	1
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	26.6	27.9	-1
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	86.1	92.9	-7
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	85.6	91.1	-5
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	67.0	69.0	-2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
SRWMD.81016006	29.779444	-83.335552	3	10.6	17.2	-7	65.6	68.1	-3
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	85.6	91.1	-5
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	81.8	82.6	-1
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	65.6	68.1	-3
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	86.1	92.9	-7
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	67.0	69.0	-2
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	84.5	83.6	1
SRWMD.81104001	29.818907	-83.219720	3	38.2	38.1	0	26.6	27.9	-1
SRWMD.81313005	29.782128	-82.968971	3	17.8	17.0	1	18.5	21.8	-3
SRWMD.81517003	29.793029	-82.828611	1	71.4	63.7	8	72.6	70.9	2
SRWMD.81806005	29.828141	-82.544613	3	31.2	35.8	-5	32.1	37.8	-6
SRWMD.81926001	29.758334	-82.388819	3	37.8	40.7	-3	38.2	43.4	-5
SRWMD.82202001	29.821837	-82.079707	3	72.7	74.6	-2	75.3	78.9	-4
SRWMD.90914003	29.694639	-83.388167	3	15.5	10.6	5	18.9	11.7	7
SRWMD.91011004	29.708645	-83.294888	3	26.6	19.1	7	28.0	22.2	6
SRWMD.91212003	29.719857	-83.070412	3	44.1	42.1	2	40.9	48.0	-7
SRWMD.91323001	29.684268	-83.000954	3	12.1	14.1	-2	12.6	18.1	-6
SRWMD.91504002	29.732917	-82.819361	1	79.6	78.0	2	79.2	81.6	-2
SRWMD.91938002	29.735167	-82.441028	3	54.2	45.4	9	52.2	48.4	4
SRWMD10733003	30.437894	-83.620783	3	71.3	69.8	2	73.1	74.9	-2
SRWMD10834001	30.436848	-83.513828	3	95.0	82.5	12	36.8	46.4	-10
SRWMD11510003	30.499993	-82.802178	3	45.7	45.5	0	47.2	48.9	-2

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SRWMD11714002	30.492083	-82.591111	3	45.9	45.9	0	47.9	49.4	-2
SRWMD20611002	30.595861	-83.699056	3	67.6	61.7	6	69.2	65.9	3
SRWMD20822002	30.566724	-83.514618	3	70.6	68.8	2	72.7	72.6	0
SRWMD21332004	30.531194	-83.041694	3	38.2	42.7	-4	37.6	45.4	-8
SRWMD21713001	30.576583	-82.568826	3	45.6	45.8	0	47.7	49.4	-2
SRWMD30524001	30.645194	-83.779750	3	58.3	56.0	2	61.4	60.2	1
SWFWMD20084	28.876492	-82.571431	1	2.9	1.8	1	3.2	1.7	2
SWFWMD20971	28.792517	-82.450892	3	5.9	4.7	1	6.4	4.7	2
SWFWMD22930	29.437906	-82.457127	3	41.3	43.4	-2	43.7	44.2	-1
SWFWMD22940	29.334449	-82.557033	3	44.9	43.1	2	45.1	43.9	1
SWFWMD23021	28.880506	-82.228158	1	39.5	36.9	3	41.4	37.2	4
SWFWMD23024	28.934508	-82.012400	3	48.4	52.9	-5	52.2	53.0	-1
SWFWMD23025	28.934522	-82.012397	1	52.2	53.1	-1	52.6	53.2	-1
SWFWMD23244	29.032805	-82.314918	3	42.4	38.1	4	44.1	38.6	6
SWFWMD23335	29.151590	-82.194166	3	40.4	42.0	-2	42.7	42.5	0
SWFWMD23491	28.800700	-82.384319	3	9.1	11.3	-2	10.3	11.4	-1
SWFWMD670761	29.108910	-82.243539	3	40.5	41.1	-1	42.9	41.6	1
SWFWMD819763	30.439612	-84.218490	3	22.0	32.2	-10	23.8	36.5	-13
SWFWMD819766	30.169083	-84.210772	3	6.1	9.0	-3	6.3	11.3	-5
SWFWMD819787	30.555835	-84.598526	3	48.0	55.3	-7	57.1	63.6	-6
USGS283952082022001	28.664985	-82.038498	3	71.7	76.8	-5	74.6	75.6	-1
USGS284115082062601	28.688038	-82.106837	3	57.4	62.6	-5	56.4	62.7	-6

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USGS284119082034501	28.689150	-82.062112	3	70.6	71.6	-1	73.2	71.6	2
USGS284126082034501	28.691094	-82.062112	3	70.7	71.3	-1	75.7	71.4	4
USGS284146082061401	28.696649	-82.103503	3	56.7	61.8	-5	56.1	61.8	-6
USGS284147082052801	28.696927	-82.090725	3	65.6	65.0	1	64.2	65.1	-1
USGS284212082071701	28.703870	-82.121004	3	52.8	55.5	-3	53.2	55.5	-2
USGS284232081533001	28.709429	-81.891269	3	73.7	77.0	-3	76.8	76.7	0
USGS284317082142601	28.721923	-82.240179	3	38.2	40.3	-2	38.4	40.2	-2
USGS284435082011701	28.743591	-82.020999	2	55.4	64.9	-9	52.0	65.5	-14
USGS284439082131401	28.744700	-82.220178	2	36.5	39.1	-3	38.4	39.0	-1
USGS284456082053101	28.749119	-82.091814	3	41.4	49.1	-8	43.8	49.2	-5
USGS284456082053102	28.749122	-82.091797	1	41.5	49.2	-8	43.8	49.4	-6
USGS284508082174601	28.752336	-82.296050	3	26.4	25.9	1	30.3	25.8	4
USGS284513082131201	28.753747	-82.219511	3	37.6	39.4	-2	39.4	39.3	0
USGS284513082131202	28.753508	-82.219447	1	37.8	39.5	-2	39.5	39.4	0
USGS284519082150701	28.755810	-82.251569	3	36.6	35.6	1	38.4	35.6	3
USGS284528081530201	28.758315	-81.883492	2	62.7	66.1	-3	64.8	67.4	-3
USGS284609082163001	28.769697	-82.274626	3	35.2	30.5	5	37.4	30.5	7
USGS284619082035101	28.772183	-82.064257	3	48.5	48.3	0	49.3	48.7	1
USGS284628082073801	28.774847	-82.127192	3	39.5	42.0	-2	41.4	41.8	0
USGS284628082073803	28.774825	-82.127200	1	39.5	42.1	-3	41.4	41.9	-1
USGS284705082270101	28.785246	-82.449914	3	5.3	4.8	1	5.8	4.8	1
USGS284752082202501	28.798304	-82.339908	3	13.8	18.9	-5	15.5	19.1	-4

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USGS284759082054101	28.800111	-82.094633	3	45.8	43.2	3	46.9	43.3	4
USGS284759082054102	28.800114	-82.094606	1	45.6	43.1	3	45.7	43.3	2
USGS284759082344101	28.799642	-82.577586	3	1.8	1.7	0	2.5	1.8	1
USGS284809082080701	28.803030	-82.134896	3	37.0	40.1	-3	38.5	40.0	-2
USGS284811082091301	28.803258	-82.153392	3	37.4	39.1	-2	39.2	39.0	0
USGS284842081533001	28.811932	-81.891468	3	59.7	63.6	-4	64.3	63.9	0
USGS284844082282801	28.812743	-82.474082	3	5.0	3.8	1	5.1	3.8	1
USGS284924082105501	28.823194	-82.182194	3	37.6	37.9	0	39.6	37.8	2
USGS284924082105502	28.823222	-82.182194	1	35.8	37.6	-2	38.5	37.6	1
USGS284955081595801	28.832474	-81.999055	3	66.5	56.7	10	63.6	56.7	7
USGS285037082213801	28.844133	-82.360188	3	15.1	18.0	-3	16.8	18.2	-1
USGS285102082204001	28.854217	-82.345408	3	22.2	22.2	0	24.1	22.5	2
USGS285105082135802	28.850803	-82.232403	3	33.2	36.6	-3	35.6	36.7	-1
USGS285112082354401	28.853306	-82.596806	3	1.8	1.4	0	2.1	1.4	1
USGS285119082120601	28.855403	-82.201539	3	38.0	37.2	1	40.4	37.4	3
USGS285121082112201	28.855172	-82.201303	3	38.5	37.9	1	41.0	38.1	3
USGS285121082245401	28.856539	-82.413858	3	5.4	8.0	-3	6.2	8.0	-2
USGS285144081475002	28.862551	-81.796845	3	57.4	59.7	-2	61.1	60.9	0
USGS285150082044001	28.864415	-82.077394	3	43.2	47.1	-4	45.4	47.1	-2
USGS285234082341901	28.876475	-82.571428	3	3.1	1.8	1	3.5	1.7	2
USGS285248082183201	28.880521	-82.308519	3	34.2	30.8	3	34.5	31.1	3
USGS285254082323001	28.882233	-82.541494	1	3.6	3.4	0	3.6	3.2	0

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USGS285257081434201	28.883031	-81.727929	2	51.9	69.6	-18	56.0	68.8	-13
USGS285357081472801	28.899673	-81.790693	3	51.4	57.3	-6	55.5	58.2	-3
USGS285359081472702	28.899673	-81.790693	1	52.9	56.1	-3	56.0	56.2	0
USGS285414082284201	28.903681	-82.478617	3	2.8	6.6	-4	3.6	6.5	-3
USGS285504081405901	28.918306	-81.682649	3	47.1	52.6	-6	51.5	52.9	-1
USGS285536082044001	28.927188	-82.077395	3	41.8	47.6	-6	45.1	47.9	-3
USGS285608082233401	28.935764	-82.392983	3	14.4	16.2	-2	16.7	16.3	0
USGS285612082294201	28.937179	-82.494641	3	3.0	7.3	-4	3.3	7.3	-4
USGS285720082201301	28.955550	-82.337067	3	31.4	31.3	0	32.0	31.6	0
USGS285720082201302	28.955556	-82.337056	1	32.7	31.2	1	33.3	31.6	2
USGS285812082360901	28.970507	-82.602147	3	8.9	7.6	1	7.2	6.9	0
USGS285827081331401	28.974692	-81.553474	3	37.2	44.0	-7	41.0	43.3	-2
USGS285833082233301	28.968012	-82.391581	3	9.0	19.7	-11	13.1	19.8	-7
USGS285900082072001	28.985559	-82.119990	3	41.0	42.5	-2	44.3	43.0	1
USGS285920081490501	28.991282	-81.834628	2	47.1	55.0	-8	51.6	56.1	-4
USGS285930081430901	28.992189	-81.718763	3	48.6	51.7	-3	49.8	51.4	-2
USGS285930082283702	28.991919	-82.476761	3	5.3	10.3	-5	4.9	10.2	-5
USGS285933082192501	28.992753	-82.323425	3	35.8	35.6	0	34.9	36.1	-1
USGS285940081522001	28.994964	-81.874051	3	48.7	52.7	-4	53.6	53.2	0
USGS285951082350901	28.998005	-82.585480	3	16.8	13.0	4	13.7	12.2	1
USGS290000081380001	29.000523	-81.632924	3	39.8	42.9	-3	45.4	42.3	3
USGS290023082393601	29.006892	-82.659651	3	9.3	12.6	-3	9.9	11.2	-1

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USGS290052081271201	29.014967	-81.452911	3	41.9	41.3	1	42.6	40.6	2
USGS290107082400501	29.018919	-82.667944	3	1.7	12.2	-11	2.2	11.3	-9
USGS290118082364101	29.022125	-82.611813	3	20.9	21.9	-1	20.5	21.0	0
USGS290130082082001	29.025721	-82.137479	3	40.8	42.1	-1	44.0	42.5	1
USGS290132082133001	29.026037	-82.224783	3	42.9	40.2	3	45.0	40.8	4
USGS290133082140901	29.026067	-82.235763	3	40.4	39.9	0	43.1	40.5	3
USGS290200082432301	29.033632	-82.723115	3	2.2	4.0	-2	2.8	3.4	-1
USGS290202082403901	29.033742	-82.676528	3	3.1	11.8	-9	3.4	11.1	-8
USGS290215082152401	29.036628	-82.256870	3	39.2	39.6	0	41.9	40.1	2
USGS290216082292001	29.038261	-82.488733	3	10.6	22.2	-12	10.3	21.9	-12
USGS290220081485001	29.040518	-81.819048	2	48.1	51.6	-3	50.9	51.8	-1
USGS290227082250801	29.041086	-82.418706	3	51.3	31.4	20	49.3	31.7	18
USGS290230082412501	29.041402	-82.689358	3	1.8	9.6	-8	1.3	9.1	-8
USGS290244081302601	29.046076	-81.506805	3	12.8	21.4	-9	15.1	21.1	-6
USGS290244082232601	29.045546	-82.390615	3	53.3	36.0	17	54.1	36.4	18
USGS290306082232802	29.053287	-82.390789	1	47.9	36.7	11	51.0	37.1	14
USGS290312082190601	29.053649	-82.318205	3	42.5	38.6	4	44.2	39.0	5
USGS290312082250801	29.053435	-82.419099	3	34.4	34.6	0	36.5	34.9	2
USGS290400082091001	29.066295	-82.153998	3	39.9	42.0	-2	42.8	42.5	0
USGS290420081311701	29.072741	-81.520973	3	24.7	19.9	5	25.6	19.6	6
USGS290447082250901	29.080082	-82.418847	3	31.7	36.1	-4	32.2	36.6	-4
USGS290503082323101	29.084417	-82.541767	3	69.1	66.4	3	68.2	63.5	5

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USGS290526081493701	29.091070	-81.826550	3	43.0	46.6	-4	49.6	46.5	3
USGS290614081183301	29.104456	-81.309008	3	28.9	32.4	-4	32.2	30.9	1
USGS290708081233101	29.119406	-81.391519	3	6.7	8.5	-2	10.4	8.2	2
USGS290739082245701	29.127800	-82.415719	3	33.5	37.8	-4	34.1	38.3	-4
USGS290743082341501	29.128883	-82.570630	3	50.7	52.0	-1	51.7	51.2	1
USGS290752082271101	29.131614	-82.452699	3	32.4	37.8	-5	33.2	38.3	-5
USGS290815082025701	29.138010	-82.048786	3	39.4	41.7	-2	42.0	42.1	0
USGS290820082032001	29.141145	-82.059287	3	39.1	41.7	-3	41.6	42.1	-1
USGS290828081215103	29.142045	-81.365364	3	15.4	10.9	4	17.6	10.5	7
USGS290900081342002	29.150513	-81.571811	3	31.5	32.1	-1	32.7	32.0	1
USGS290910081360001	29.153568	-81.600146	3	42.0	39.8	2	44.5	39.8	5
USGS290913082245601	29.153861	-82.415375	3	34.0	38.9	-5	34.5	39.5	-5
USGS290950081315501	29.162886	-81.534286	3	9.9	11.8	-2	13.3	11.4	2
USGS291004082382901	29.168273	-82.641045	3	23.8	22.7	1	19.7	22.8	-3
USGS291006081101004	29.168566	-81.169577	3	22.8	23.3	-1	24.6	22.7	2
USGS291040081143701	29.180234	-81.245069	3	29.9	33.5	-4	31.3	31.8	0
USGS291056082263201	29.182469	-82.442042	3	35.3	40.4	-5	35.9	41.0	-5
USGS291059082190801	29.183523	-82.318322	3	39.2	41.5	-2	41.9	42.1	0
USGS291100082010003	29.184984	-82.015434	3	38.7	41.1	-2	41.1	41.5	0
USGS291110082060001	29.187817	-82.101591	3	38.4	41.5	-3	40.6	41.9	-1
USGS291115081592501	29.188008	-81.989894	2	41.7	39.2	2	44.7	39.5	5
USGS291115082102901	29.188006	-82.174351	3	39.1	42.1	-3	41.6	42.7	-1

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS291117081540501	29.186981	-81.901233	3	43.3	45.7	-2	47.7	45.9	2
USGS291130082015001	29.192174	-82.030174	4	38.2	42.8	-5	40.3	43.1	-3
USGS291140082052701	29.194678	-82.090573	3	38.5	41.2	-3	40.5	41.6	-1
USGS291150081282501	29.197734	-81.473193	3	23.6	19.1	5	26.1	27.3	-1
USGS291258081313701	29.216621	-81.526530	3	5.0	3.3	2	6.9	3.3	4
USGS291353081160401	29.232126	-81.269314	1	30.8	31.5	-1	29.0	28.6	0
USGS291414082560901	29.237583	-82.936028	3	8.8	8.7	0	9.1	9.2	0
USGS291448081274905	29.247045	-81.463489	3	21.2	24.8	-4	24.0	24.4	0
USGS291458081294201	29.249736	-81.494787	3	14.8	18.0	-3	17.6	17.6	0
USGS291513081515601	29.254393	-81.865166	3	34.9	37.0	-2	35.9	37.3	-1
USGS291600081550001	29.268861	-81.916798	3	40.3	41.5	-1	42.8	41.8	1
USGS291625081092001	29.273867	-81.155334	3	10.0	12.3	-2	5.8	13.1	-7
USGS291625082085901	29.274113	-82.149351	3	39.0	42.3	-3	41.4	42.9	-2
USGS291705081073502	29.284720	-81.126386	3	5.9	9.6	-4	6.5	9.3	-3
USGS291712082351801	29.287158	-82.587990	3	46.3	42.3	4	46.1	43.1	3
USGS291740081562001	29.294947	-81.938504	4	41.3	42.9	-2	43.5	43.3	0
USGS291748081290301	29.296786	-81.483686	3	20.2	21.4	-1	22.2	20.5	2
USGS291751081414301	29.298002	-81.694878	1	14.4	18.5	-4	18.0	18.9	-1
USGS291806082545601	29.302408	-82.915624	3	16.4	15.9	1	17.5	16.8	1
USGS291835081324201	29.310227	-81.544589	3	4.8	0.4	4	5.6	0.4	5
USGS291849081411401	29.311831	-81.685723	3	12.8	9.9	3	15.3	10.1	5
USGS291905081251001	29.321276	-81.419710	3	17.0	18.0	-1	18.2	16.3	2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS291910082341101	29.319481	-82.569557	3	39.1	42.9	-4	42.0	43.7	-2
USGS291913081224201	29.320786	-81.377909	3	11.4	13.4	-2	15.6	11.9	4
USGS291955081200901	29.332237	-81.335564	3	10.1	12.7	-3	9.0	11.4	-2
USGS292015082065001	29.337747	-82.113700	3	42.0	42.8	-1	45.5	43.4	2
USGS292038081315302	29.344393	-81.530977	3	27.8	24.5	3	29.4	25.9	4
USGS292101082233601	29.350773	-82.392979	3	41.2	43.2	-2	43.4	44.0	-1
USGS292124081345202	29.355731	-81.580581	3	6.0	6.2	0	7.4	6.4	1
USGS292143082282201	29.362438	-82.472428	3	40.1	43.3	-3	42.5	44.1	-2
USGS292146082182501	29.363275	-82.306586	3	43.6	43.2	0	45.7	44.0	2
USGS292200081510001	29.368695	-81.849115	3	22.2	23.5	-1	24.4	24.0	0
USGS292218081333101	29.372036	-81.558886	3	21.1	21.8	-1	25.1	22.8	2
USGS292239081313702	29.378617	-81.526009	3	24.0	21.2	3	26.1	25.5	1
USGS292254081382101	29.381915	-81.638964	3	9.9	4.4	5	10.4	4.5	6
USGS292302081155901	29.383987	-81.266414	3	10.6	14.1	-3	12.3	12.7	0
USGS292310081582201	29.386108	-81.972776	3	44.0	47.3	-3	46.4	48.6	-2
USGS292310082373701	29.386353	-82.626772	3	50.8	42.7	8	50.4	43.5	7
USGS292430082283001	29.407619	-82.476407	3	41.2	43.3	-2	43.8	44.2	0
USGS292435081441301	29.410673	-81.736680	3	8.2	14.7	-7	10.2	15.1	-5
USGS292528081383501	29.426962	-81.643157	3	16.7	11.1	6	17.2	10.5	7
USGS292554082034501	29.431664	-82.062498	3	49.3	50.2	-1	51.8	51.6	0
USGS292555081305003	29.435225	-81.514095	3	20.2	15.2	5	22.3	21.7	1
USGS292604081062401	29.435428	-81.107015	3	3.8	5.6	-2	4.7	5.0	0

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS292622082131801	29.439594	-82.221663	3	44.7	43.9	1	50.2	44.9	5
USGS292647081182001	29.446893	-81.305128	3	6.0	11.1	-5	8.2	9.9	-2
USGS292718082202601	29.455493	-82.340201	3	48.0	43.4	5	49.8	44.2	6
USGS292750081152001	29.464393	-81.255124	3	10.9	13.1	-2	15.8	11.4	4
USGS292757081222801	29.466651	-81.373961	3	7.8	11.6	-4	9.8	10.2	0
USGS292816082234501	29.471603	-82.395482	3	48.4	43.5	5	50.5	44.3	6
USGS292817081483602	29.471883	-81.809611	1	19.1	21.6	-3	19.4	22.4	-3
USGS292824081341501	29.474459	-81.569525	3	28.2	23.9	4	30.7	24.6	6
USGS292824081443301	29.473612	-81.742237	3	5.9	11.2	-5	7.1	11.5	-4
USGS292838082073701	29.477553	-82.126645	3	51.0	53.5	-3	53.9	54.9	-1
USGS292948081503001	29.496975	-81.841517	3	18.1	23.2	-5	19.3	23.9	-5
USGS292951082174001	29.497993	-82.294089	3	50.2	43.9	6	55.1	44.8	10
USGS292957081573002	29.499164	-81.958331	3	50.1	50.5	0	52.1	51.2	1
USGS292957082593901	29.499178	-82.994237	3	8.6	6.2	2	13.0	7.2	6
USGS293103081575501	29.517993	-81.964899	3	57.0	57.3	0	59.1	58.7	0
USGS293113081370301	29.520524	-81.617298	3	26.0	29.6	-4	24.4	29.9	-6
USGS293206081351701	29.535248	-81.587856	3	22.6	25.6	-3	24.8	25.6	-1
USGS293228081495301	29.540774	-81.830820	3	28.6	30.7	-2	29.4	31.4	-2
USGS293252082292301	29.547584	-82.489756	3	38.7	43.7	-5	41.1	44.5	-3
USGS293253082055701	29.548300	-82.098982	3	65.8	66.2	0	67.4	67.9	0
USGS293313081132402	29.553979	-81.222911	3	10.5	12.6	-2	12.6	12.0	1
USGS293344081232401	29.562226	-81.390505	3	12.1	15.3	-3	14.6	15.3	-1

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USGS293414082415285	29.570177	-82.697039	1	58.8	57.3	1	61.7	58.6	3
USGS293414082415285	29.570177	-82.697039	1	58.8	57.3	1	64.9	67.6	-3
USGS293415082415285	29.570233	-82.697062	3	58.2	57.1	1	64.8	64.9	0
USGS293415082415285	29.570233	-82.697062	3	58.2	57.1	1	61.3	58.4	3
USGS293529081191701	29.593587	-81.319911	3	11.8	14.6	-3	14.0	14.6	-1
USGS293539082112601	29.599193	-82.189049	3	66.0	62.5	4	69.1	65.2	4
USGS293554081342601	29.598517	-81.573361	3	13.4	17.4	-4	15.9	18.4	-3
USGS293556082043401	29.599097	-82.075648	3	73.0	74.0	-1	75.3	76.4	-1
USGS293633081594601	29.609410	-81.995925	3	74.7	73.1	2	77.6	75.8	2
USGS293634082144901	29.609286	-82.247204	3	55.0	55.8	-1	59.7	58.9	1
USGS293639082490001	29.610944	-82.816611	3	6.4	13.9	-8	9.5	16.4	-7
USGS293644082244201	29.612465	-82.411493	3	40.7	44.1	-3	43.7	45.1	-1
USGS293728082282401	29.624834	-82.473818	3	36.6	44.0	-7	38.9	45.0	-6
USGS293729081221201	29.625162	-81.369624	3	12.4	15.4	-3	15.1	15.7	-1
USGS293731083061801	29.624949	-83.104748	3	31.4	30.7	1	33.0	33.8	-1
USGS293733081474801	29.625507	-81.796967	3	46.8	49.9	-3	48.6	52.2	-4
USGS293755081412903	29.631848	-81.691386	3	25.1	26.9	-2	27.6	29.1	-1
USGS293827082395401	29.641146	-82.663831	3	35.9	35.5	0	37.4	37.2	0
USGS293933081342801	29.661603	-81.574601	3	13.7	14.4	-1	17.8	16.2	2
USGS293943082085901	29.661025	-82.149110	3	72.3	73.2	-1	76.7	75.8	1
USGS293951081413901	29.664156	-81.694273	3	25.1	27.3	-2	28.1	30.6	-2
USGS294043082512501	29.679272	-82.857266	3	5.5	12.8	-7	8.0	16.2	-8

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USGS294105082171501	29.684650	-82.286926	3	39.5	39.8	0	43.6	44.1	-1
USGS294128081291301	29.690904	-81.486622	3	10.4	13.8	-3	13.7	15.8	-2
USGS294213081194401	29.704123	-81.328316	3	13.2	15.1	-2	15.4	15.7	0
USGS294243081555901	29.712186	-81.932871	3	76.9	75.0	2	80.6	79.0	2
USGS294255081323501	29.715522	-81.542855	3	15.2	12.9	2	16.2	15.2	1
USGS294307082020903	29.719098	-82.035473	3	78.4	77.2	1	81.4	80.6	1
USGS294313082024601	29.720231	-82.045693	3	79.1	77.2	2	81.7	80.6	1
USGS294321081492103	29.723041	-81.822456	3	68.4	65.5	3	72.2	71.1	1
USGS294330082445001	29.724639	-82.746667	3	40.7	42.2	-2	40.9	44.5	-4
USGS294339082184501	29.728883	-82.313886	3	39.1	35.8	3	37.2	35.3	2
USGS294519081184502	29.755543	-81.312022	3	12.9	14.3	-1	15.0	15.1	0
USGS294629082181301	29.775207	-82.303265	3	53.3	50.6	3	57.0	53.5	4
USGS294701081263301	29.784093	-81.442439	3	17.0	15.0	2	19.1	18.0	1
USGS294726082101001	29.791040	-82.169093	3	64.2	63.0	1	67.3	66.5	1
USGS294728082010901	29.791680	-82.018596	3	74.7	75.6	-1	78.0	79.9	-2
USGS294742083275985	29.794777	-83.466804	3	26.0	21.0	5	27.7	24.2	3
USGS294816081482201	29.801814	-81.807844	3	66.9	64.8	2	70.6	70.6	0
USGS294911081572601	29.820042	-81.956679	3	73.3	70.8	3	76.7	75.5	1
USGS294928082355301	29.824243	-82.598090	3	30.7	31.7	-1	31.6	33.2	-2
USGS295000081212702	29.833826	-81.357088	3	20.2	16.6	4	23.5	19.0	5
USGS295016081433501	29.837843	-81.725939	3	63.3	59.9	3	67.7	65.4	2
USGS295105082443301	29.850394	-82.742197	3	21.6	24.4	-3	22.6	25.3	-3

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USGS295130082243001	29.858815	-82.407999	2	39.2	73.7	-35	40.6	78.6	-38
USGS295132081164801	29.859382	-81.279582	3	18.4	12.3	6	15.7	14.3	1
USGS295222081393501	29.872776	-81.659720	3	40.6	37.2	3	44.3	41.5	3
USGS295238081553701	29.877220	-81.926943	3	70.4	64.5	6	73.7	69.4	4
USGS295513082363085	29.920791	-82.607895	3	30.9	33.4	-2	31.6	35.4	-4
USGS295625081410901	29.940276	-81.685831	3	43.0	35.6	7	46.1	39.3	7
USGS295733081365505	29.959170	-81.615614	5	31.8	22.8	9	35.2	27.5	8
USGS295835081515001	29.976567	-81.863511	3	65.0	57.9	7	68.6	62.8	6
USGS295841081514701	29.978294	-81.862874	3	65.1	57.9	7	68.7	62.7	6
USGS295851081555301	29.981028	-81.931084	3	64.6	57.8	7	68.2	62.6	6
USGS295859082003903	29.983053	-82.010832	3	59.7	57.7	2	62.8	62.5	0
USGS295907082423501	29.984278	-82.710000	3	24.1	29.9	-6	24.7	32.2	-7
USGS300020082103001	30.003910	-82.171674	3	53.7	54.2	0	56.3	58.0	-2
USGS300101082245201	30.017156	-82.414068	3	50.0	48.3	2	51.9	51.2	1
USGS300114083025901	30.020602	-83.050135	3	19.1	18.0	1	20.9	23.1	-2
USGS300318082015401	30.054998	-82.031665	3	54.5	52.8	2	57.6	57.3	0
USGS300338081500301	30.061034	-81.833806	3	50.7	48.7	2	54.2	53.3	1
USGS300340081383901	30.060979	-81.644075	3	30.3	20.6	10	30.9	24.9	6
USGS300351083074801	30.064312	-83.129798	3	26.5	25.1	1	28.6	30.8	-2
USGS300436083191685	30.077103	-83.320834	1	81.6	79.4	2	82.2	83.1	-1
USGS300436083191785	30.077103	-83.321112	3	81.8	78.2	4	82.3	82.4	0
USGS300450081482801	30.081034	-81.807416	3	38.9	38.1	1	44.5	42.9	2

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USGS300502081432301	30.084128	-81.722870	3	25.9	21.0	5	29.4	25.7	4
USGS300507081272701	30.085762	-81.457107	4	33.9	23.2	11	36.5	28.0	9
USGS300530083342085	30.092091	-83.571960	3	30.8	33.0	-2	32.0	35.7	-4
USGS300531083342185	30.092369	-83.572238	1	30.9	33.0	-2	32.2	35.7	-3
USGS300615082130501	30.104640	-82.217721	3	51.7	51.1	1	54.5	54.9	0
USGS300622081284701	30.106595	-81.479332	3	36.1	23.2	13	36.6	28.0	9
USGS300629082030185	30.106979	-82.049952	1	197.8	191.0	7	201.0	194.7	6
USGS300649081485901	30.113852	-81.816379	2	35.0	22.0	13	35.4	25.6	10
USGS300656081463401	30.115584	-81.775986	5	29.2	25.1	4	31.4	30.4	1
USGS300717081381001	30.121628	-81.635922	3	24.8	19.7	5	25.8	24.7	1
USGS300735083050885	30.126834	-83.085265	3	21.1	19.8	1	22.0	23.3	-1
USGS300740084293001	30.127978	-84.491573	3	31.6	23.0	9	31.5	26.4	5
USGS300747082225801	30.129778	-82.383055	3	50.2	48.8	1	52.7	52.5	0
USGS300758081230501	30.133305	-81.385002	3	28.6	23.0	6	29.3	27.7	2
USGS300926081343002	30.157837	-81.575608	3	28.6	21.2	7	30.6	26.4	4
USGS300926081561603	30.157206	-81.937745	3	48.9	46.7	2	51.1	51.2	0
USGS301022082103301	30.172798	-82.175823	3	50.5	47.9	3	53.0	51.9	1
USGS301031082381001	30.175156	-82.636161	3	41.9	39.0	3	43.4	43.5	0
USGS301034083084885	30.176553	-83.146381	3	24.8	25.2	0	26.2	28.6	-2
USGS301035084403701	30.177000	-84.676995	3	32.0	28.5	3	31.6	32.9	-1
USGS301115084241201	30.187495	-84.403259	3	26.1	11.8	14	25.7	14.5	11
USGS301132081225801	30.192463	-81.382579	7	-5.5	25.6	-31	-3.1	30.5	-34

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USGS301156084103501	30.199137	-84.176483	3	4.4	24.9	-20	5.0	28.8	-24
USGS301157081465201	30.199404	-81.780930	3	33.5	25.6	8	36.7	30.6	6
USGS301246082233085	30.212889	-82.391306	1	168.1	163.6	4	172.9	165.8	7
USGS301347081421801	30.229442	-81.704997	3	26.4	23.2	3	29.0	28.3	1
USGS301408081253101	30.236037	-81.424888	3	17.1	21.3	-4	18.3	25.7	-7
USGS301434082021401	30.243252	-82.036885	4	49.3	41.5	8	51.4	45.9	6
USGS301437082324801	30.242752	-82.544630	3	49.2	45.1	4	51.9	48.8	3
USGS301522081331303	30.256591	-81.553233	5	30.7	24.0	7	31.9	28.9	3
USGS301535082162001	30.259972	-82.270417	3	47.7	45.7	2	50.4	49.7	1
USGS301535082162085	30.260188	-82.271897	3	47.6	45.7	2	49.9	49.7	0
USGS301537081441901	30.260515	-81.738429	5	32.9	25.3	8	36.1	30.4	6
USGS301551081415701	30.264404	-81.698983	3	24.8	24.0	1	25.8	29.0	-3
USGS301604081361501	30.269127	-81.607590	5	30.4	24.2	6	33.2	29.1	4
USGS301617081421601	30.271866	-81.704080	3	26.7	24.3	2	28.9	29.3	0
USGS301618082110901	30.272482	-82.186466	3	48.0	43.7	4	50.5	47.9	3
USGS301635082234001	30.276444	-82.394556	3	47.7	45.6	2	50.2	49.5	1
USGS301639081330802	30.277738	-81.552032	5	31.2	24.2	7	33.3	29.1	4
USGS301652081265001	30.281166	-81.446908	3	15.9	19.2	-3	17.9	24.0	-6
USGS301702082271501	30.284639	-82.454778	3	48.9	45.6	3	51.3	49.3	2
USGS301710081323601	30.286167	-81.543111	1	41.1	40.4	1	41.5	42.4	-1
USGS301710081323603	30.286167	-81.543111	3	21.4	18.0	3	17.7	21.3	-4
USGS301822082393901	30.305876	-82.660661	3	48.0	46.7	1	50.4	50.7	0

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS301822082393985	30.306564	-82.660527	2	48.2	62.7	-14	50.6	74.3	-24
USGS301846081350901	30.312848	-81.585775	3	24.6	21.4	3	25.6	22.9	3
USGS301852081234201	30.314684	-81.394804	3	24.9	23.1	2	26.4	28.0	-2
USGS302032082314301	30.342448	-82.528455	3	46.5	45.6	1	48.6	49.3	-1
USGS302052082312401	30.343538	-82.526396	3	46.5	45.6	1	48.6	49.3	-1
USGS302100083171085	30.350430	-83.285839	3	43.5	50.4	-7	44.5	53.1	-9
USGS302115082232201	30.353306	-82.393056	3	46.6	44.5	2	49.1	48.4	1
USGS302127082475801	30.357945	-82.799145	3	46.7	45.2	2	48.6	48.6	0
USGS302159081235601	30.366628	-81.398694	7	36.7	25.6	11	26.9	30.7	-4
USGS302227081435001	30.374403	-81.730375	5	33.6	27.8	6	35.9	32.7	3
USGS302243082360201	30.380526	-82.606213	3	46.7	45.8	1	48.5	49.5	-1
USGS302249084184101	30.380677	-84.311188	3	14.6	25.5	-11	20.6	29.8	-9
USGS302251082194901	30.381000	-82.330778	3	45.7	42.5	3	48.0	46.6	1
USGS302301081295001	30.383815	-81.496994	1	7.8	10.5	-3	8.2	12.3	-4
USGS302301081295002	30.383788	-81.497011	2	5.4	17.0	-12	6.3	20.5	-14
USGS302304081383202	30.384698	-81.642106	3	32.0	25.1	7	35.2	30.1	5
USGS302307081293801	30.385515	-81.493697	3	25.6	23.5	2	30.1	28.7	1
USGS302319084220601	30.388811	-84.368234	3	13.5	23.5	-10	18.1	28.4	-10
USGS302334082560201	30.392778	-82.933889	3	38.4	40.7	-2	39.2	43.6	-4
USGS302339081254702	30.394645	-81.429338	3	29.5	23.7	6	30.1	28.9	1
USGS302409081551603	30.401100	-81.923320	3	36.1	33.7	2	38.3	38.5	0
USGS302416081522601	30.405266	-81.872114	3	37.0	32.2	5	38.7	37.0	2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS302502081330701	30.416865	-81.550459	4	30.5	24.9	6	32.5	29.9	3
USGS302521081455601	30.425366	-81.765476	3	30.9	29.0	2	37.2	33.9	3
USGS302538081253101	30.427460	-81.425084	3	33.9	24.3	10	37.0	29.4	8
USGS302608081354901	30.437974	-81.596027	5	32.3	26.2	6	34.9	31.2	4
USGS302608081354902	30.436031	-81.596575	4	33.3	25.5	8	35.5	30.5	5
USGS302608081354903	30.436586	-81.596575	3	31.9	24.8	7	34.6	29.8	5
USGS302620082173501	30.441000	-82.291194	3	45.3	40.2	5	47.5	44.5	3
USGS302620082173585	30.439347	-82.292735	4	45.2	40.2	5	47.4	44.5	3
USGS302640084170001	30.445803	-84.298805	3	17.0	30.1	-13	21.7	35.0	-13
USGS302709081311601	30.452736	-81.620926	3	31.9	24.2	8	34.9	29.3	6
USGS302724081244801	30.457144	-81.412949	3	30.0	24.7	5	33.2	29.7	4
USGS302801081375101	30.467181	-81.630649	3	32.9	26.2	7	35.5	31.1	4
USGS302822083255585	30.473195	-83.431684	3	67.6	66.1	1	69.9	72.5	-3
USGS302914083300985	30.487637	-83.502244	3	71.6	71.8	0	73.6	76.5	-3
USGS303001084134701	30.500599	-84.229788	3	25.8	33.8	-8	31.5	38.5	-7
USGS303109084275404	30.518521	-84.463623	1	176.6	166.2	10	180.3	181.9	-2
USGS303109084275405	30.518665	-84.463691	3	38.3	37.0	1	44.2	42.2	2
USGS303142084214601	30.528391	-84.362633	3	26.7	33.8	-7	31.5	39.0	-7
USGS303142084214602	30.528465	-84.362602	2	74.6	67.1	8	82.5	81.9	1
USGS303209081371801	30.536069	-81.621483	3	30.2	27.3	3	33.2	32.4	1
USGS303216081433301	30.538250	-81.725479	3	33.6	29.3	4	35.7	34.3	1
USGS303235082203501	30.543181	-82.343673	3	40.5	41.1	-1	42.7	45.3	-3

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USGS303357081295601	30.566307	-81.498514	3	26.9	24.5	2	24.5	29.8	-5
USGS303518081275002	30.588808	-81.463512	3	19.0	22.8	-4	20.1	28.1	-8
USGS303812083362401	30.636871	-83.606545	3	68.2	65.8	2	70.3	69.6	1
USGS303845084250001	30.645974	-84.416619	3	47.6	57.5	-10	53.7	62.0	-8
USGS304005081380201	30.668276	-81.634950	3	25.5	28.1	-3	32.4	34.2	-2
USGS304256082092101	30.715787	-82.155675	3	39.4	40.4	-1	41.3	44.9	-4
USGS304313081330001	30.720570	-81.549763	3	5.9	3.4	3	26.3	30.4	-4
USGS304406081330502	30.735236	-81.551208	2	-1.8	-12.4	11	17.2	19.3	-2
USGS304406081330503	30.735236	-81.551208	1	2.7	5.9	-3	6.2	7.2	-1
USGS304406081330504	30.735000	-81.551389	5	7.5	-1.3	9	32.3	32.3	0
USGS304450081333401	30.747458	-81.559264	3	5.5	4.7	1	33.3	31.7	2
USGS304512081343601	30.753458	-81.576709	3	14.3	17.5	-3	29.4	33.1	-4
USGS304514081365801	30.754124	-81.615933	3	27.5	26.5	1	34.0	34.6	-1
USGS304522081281301	30.756348	-81.470093	3	16.5	19.7	-3	27.8	28.5	-1
USGS304551081342901	30.764402	-81.574542	3	14.8	19.8	-5	31.3	32.8	-1
USGS304610081280901	30.769681	-81.468982	3	21.3	21.6	0	29.2	29.7	-1
USGS304640081423301	30.778290	-81.708994	3	27.5	30.0	-2	29.6	35.6	-6
USGS304658081571201	30.783165	-81.952989	3	36.0	38.8	-3	38.8	43.4	-5
USGS304712084395801	30.786774	-84.666014	3	74.3	78.4	-4	76.4	79.0	-3
USGS304740081343001	30.794680	-81.574821	3	28.4	25.5	3	31.8	33.5	-2
USGS304741081334101	30.795513	-81.561487	3	38.6	25.4	13	41.8	33.7	8
USGS304742081334501	30.795235	-81.562320	3	26.5	25.3	1	32.9	33.6	-1

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USGS304748081331401	30.798569	-81.548431	3	24.6	25.4	-1	33.6	33.6	0
USGS304756081311101	30.799125	-81.519540	3	26.5	24.9	2	32.8	32.9	0
USGS304806084404101	30.801861	-84.678111	3	74.0	78.6	-5	76.8	79.1	-2
USGS304809081404601	30.802179	-81.679270	3	33.4	29.7	4	35.7	35.2	1
USGS304830081481201	30.808567	-81.803164	3	33.8	32.4	1	36.7	37.7	-1
USGS304850081342001	30.814429	-81.571543	3	34.9	27.9	7	36.6	34.6	2
USGS304909081324001	30.819402	-81.544264	3	32.3	27.7	5	34.9	34.4	1
USGS304922081435501	30.823011	-81.731773	3	33.8	30.7	3	37.0	36.2	1
USGS304942082213801	30.828834	-82.360406	3	42.1	43.4	-1	44.1	47.6	-3
USGS304949083165301	30.831035	-83.282652	3	85.5	87.0	-2	88.4	89.9	-1
USGS305029081265101	30.841347	-81.447316	3	29.0	26.7	2	34.6	32.7	2
USGS305032081280101	30.842458	-81.466761	3	30.0	27.3	3	32.5	33.3	-1
USGS305149083172801	30.863812	-83.290986	3	91.7	94.1	-2	94.6	96.5	-2
USGS305209084400201	30.869911	-84.667973	3	72.3	79.7	-7	74.2	80.3	-6
USGS305235084125101	30.876580	-84.214346	3	59.9	63.6	-4	63.8	67.4	-4
USGS305351083175901	30.896589	-83.304598	3	103.5	91.7	12	106.3	93.7	13
USGS305452081252301	30.914680	-81.422872	3	36.3	26.7	10	40.3	32.6	8
USGS305736084355801	30.961854	-84.596026	3	78.3	85.3	-7	81.7	85.3	-4
USGS305854081502201	30.983286	-81.835944	3	30.9	32.5	-2	32.0	37.7	-6
USGS310136084411701	31.026852	-84.687974	3	93.0	98.1	-5	96.4	98.5	-2
USGS310221083212201	31.039362	-83.355991	3	67.0	65.9	1	66.0	68.9	-3
USGS310407083574101	31.068798	-83.961284	3	86.6	85.3	1	85.4	87.4	-2

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USGS310418081244701	31.073111	-81.414194	3	28.1	20.3	8	29.4	26.5	3
USGS310428084310501	31.074629	-84.517968	3	90.1	86.3	4	93.6	86.3	7
USGS310428084310503	31.074629	-84.517968	1	108.0	105.0	3	107.4	110.1	-3
USGS310507084262201	31.085463	-84.439355	3	87.3	92.9	-6	93.4	92.6	1
USGS310610081292701	31.102509	-81.490516	3	9.7	17.6	-8	21.2	24.0	-3
USGS310620082342201	31.105491	-82.572361	3	47.1	45.8	1	46.5	49.8	-3
USGS310629081323301	31.107786	-81.541296	2	18.3	11.6	7	20.4	15.1	5
USGS310646081292001	31.112592	-81.488739	5	21.2	15.1	6	20.7	21.6	-1
USGS310646081322401	31.113147	-81.540018	3	23.1	17.2	6	24.4	23.5	1
USGS310651084404501	31.114350	-84.678807	3	111.7	116.2	-4	121.5	118.0	4
USGS310706082155101	31.118556	-82.265403	3	43.6	42.1	1	44.9	46.6	-2
USGS310707081320001	31.118786	-81.532629	3	20.3	15.7	5	22.5	22.1	0
USGS310711081324001	31.119842	-81.544491	3	20.4	16.2	4	22.2	22.6	0
USGS310711081363701	31.120008	-81.610132	5	15.3	19.6	-4	20.6	25.7	-5
USGS310711081363801	31.120424	-81.609854	3	15.2	21.7	-6	28.9	27.6	1
USGS310727081285301	31.124287	-81.481239	3	13.1	12.8	0	21.8	19.5	2
USGS310734081291901	31.126814	-81.488461	3	8.5	12.0	-4	17.7	18.9	-1
USGS310736081332601	31.127453	-81.557325	3	8.0	15.7	-8	20.0	22.2	-2
USGS310740081361301	31.127674	-81.603521	3	26.2	20.5	6	28.7	26.6	2
USGS310750081292001	31.130648	-81.488795	5	3.5	11.1	-8	8.1	17.9	-10
USGS310810081292801	31.136342	-81.490934	3	8.0	9.4	-1	16.7	16.4	0
USGS310810081323501	31.136175	-81.542908	5	12.9	12.3	1	13.4	18.9	-6

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USGS310813083260301	31.137135	-83.434050	3	61.9	61.6	0	60.8	65.2	-4
USGS310817081333001	31.138286	-81.558158	3	17.9	13.6	4	19.4	20.1	-1
USGS310818081293701	31.138592	-81.493378	3	13.1	8.8	4	14.6	15.8	-1
USGS310818081294201	31.139592	-81.494767	5	11.3	9.0	2	13.1	15.9	-3
USGS310830084215501	31.141850	-84.365186	3	101.5	102.2	-1	108.1	101.9	6
USGS310835081294501	31.143056	-81.495833	5	16.7	8.2	8	28.4	15.2	13
USGS310841081294101	31.145286	-81.494434	3	10.2	6.4	4	12.1	13.6	-1
USGS310849081343101	31.147341	-81.575159	3	18.8	14.2	5	20.6	20.6	0
USGS310852081295401	31.148119	-81.497934	3	6.2	5.3	1	9.3	12.6	-3
USGS310857084332701	31.149350	-84.557414	3	93.8	100.9	-7	101.0	101.9	-1
USGS310900081341401	31.150230	-81.570659	2	0.0	9.2	-9	1.8	12.7	-11
USGS310901081284401	31.150536	-81.478517	5	14.0	6.5	8	15.6	13.6	2
USGS310901081284402	31.150508	-81.478711	2	6.9	3.3	4	5.3	7.2	-2
USGS310906081284601	31.151897	-81.479267	3	9.4	4.3	5	8.4	11.7	-3
USGS310906081293201	31.151786	-81.491656	3	7.7	3.9	4	6.7	11.3	-5
USGS310911081294101	31.153230	-81.494490	3	5.1	3.2	2	8.8	10.7	-2
USGS310913084195301	31.154806	-84.332528	1	102.9	112.9	-10	110.5	112.7	-2
USGS310924081295202	31.156980	-81.497768	3	6.1	2.1	4	4.7	9.6	-5
USGS310925081312201	31.157175	-81.522602	5	10.7	6.4	4	12.7	13.4	-1
USGS310925081312202	31.157175	-81.522602	3	8.6	2.4	6	8.7	9.8	-1
USGS310925081312203	31.157175	-81.522602	1	2.4	0.7	2	3.7	0.7	3
USGS310931081291002	31.158611	-81.486111	3	5.5	0.9	5	7.8	8.7	-1

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USGS310938081285302	31.160703	-81.480739	3	4.7	-0.3	5	7.3	7.6	0
USGS310940081293201	31.161341	-81.492323	3	1.1	0.2	1	-0.3	8.0	-8
USGS310953081295901	31.164952	-81.499545	3	3.0	0.0	3	1.7	7.6	-6
USGS311005081305703	31.169119	-81.515935	3	-7.6	-4.2	-3	-2.6	3.6	-6
USGS311007081301702	31.168791	-81.504407	3	1.0	-1.1	2	3.5	6.6	-3
USGS311011081293101	31.169952	-81.491768	3	4.1	-0.7	5	2.6	7.1	-4
USGS311020081295203	31.172452	-81.497601	4	17.1	1.0	16	16.1	8.5	8
USGS311020081295205	31.172452	-81.497601	3	3.1	-0.8	4	7.3	6.9	0
USGS311021081302801	31.173008	-81.507879	3	-18.0	-2.3	-16	-9.9	5.4	-15
USGS311022081304601	31.172778	-81.512778	3	-6.9	-3.8	-3	-0.4	4.0	-4
USGS311028081285902	31.174528	-81.483278	3	3.5	-0.3	4	6.0	7.4	-1
USGS311028081311402	31.174397	-81.520102	3	-6.4	-8.6	2	-0.9	-0.5	0
USGS311034081285801	31.176619	-81.482601	3	-4.7	0.1	-5	-1.1	7.7	-9
USGS311036081302601	31.176897	-81.507046	3	0.5	-2.1	3	4.3	5.5	-1
USGS311045081323301	31.179118	-81.541769	3	8.7	1.2	8	12.2	8.5	4
USGS311051084342901	31.181016	-84.574359	3	112.1	116.6	-4	123.7	118.1	6
USGS311059081285702	31.183158	-81.482711	1	8.3	8.7	0	9.7	10.1	0
USGS311059081391301	31.183284	-81.653440	3	23.7	19.8	4	26.2	25.7	1
USGS311107081300001	31.185508	-81.499824	3	2.6	-0.2	3	6.0	7.3	-1
USGS311211081274601	31.202174	-81.463850	3	9.8	3.1	7	12.3	10.1	2
USGS311239081340501	31.211062	-81.567882	3	5.7	7.2	-1	16.8	13.9	3
USGS311243084292601	31.211848	-84.490190	3	109.4	110.7	-1	116.7	111.4	5

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS311255081312501	31.215396	-81.523380	3	10.5	4.1	6	12.9	11.1	2
USGS311255083275801	31.215466	-83.465996	3	60.3	64.7	-4	59.6	67.7	-8
USGS311305081321401	31.234951	-81.537048	3	-2.0	6.1	-8	10.9	12.9	-2
USGS311328084130701	31.224349	-84.215183	3	123.9	126.7	-3	131.7	126.2	5
USGS311335084311901	31.226570	-84.521858	3	117.1	128.6	-12	124.5	129.9	-5
USGS311400084295502	31.233515	-84.498523	3	124.7	121.7	3	129.5	122.8	7
USGS311530081363901	31.258561	-81.610662	2	18.7	7.9	11	20.9	11.2	10
USGS311530081363904	31.258561	-81.610662	2	9.9	7.9	2	10.4	11.2	-1
USGS311633081324001	31.276061	-81.544271	5	15.4	8.9	7	19.6	15.3	4
USGS311633081324101	31.276061	-81.544549	3	16.1	8.2	8	20.4	14.7	6
USGS311711081283003	31.286617	-81.474824	2	2.9	9.4	-7	3.3	15.3	-12
USGS311721084240201	31.289347	-84.400466	3	126.6	130.1	-3	132.7	130.8	2
USGS311725084255501	31.290458	-84.431855	3	137.8	137.4	0	143.9	139.0	5
USGS311800081341401	31.294949	-81.568994	3	7.0	9.7	-3	8.4	16.0	-8
USGS311802084192302	31.300736	-84.322964	3	116.4	119.8	-3	118.8	119.9	-1
USGS311802084192303	31.300736	-84.322964	1	128.1	119.9	8	129.6	120.0	10
USGS311820082145701	31.311884	-82.249011	3	43.0	38.9	4	45.3	44.2	1
USGS311904082452701	31.316870	-82.762087	3	45.7	51.1	-5	47.5	55.6	-8
USGS311909081281101	31.319393	-81.469547	2	6.5	5.8	1	8.3	10.3	-2
USGS311909081281103	31.319393	-81.469547	1	0.9	6.2	-5	7.7	8.9	-1
USGS312001084330701	31.333512	-84.551858	3	157.0	152.3	5	165.1	153.4	12
USGS312006084345501	31.334901	-84.581859	3	159.4	162.6	-3	167.5	163.7	4

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS312045084201901	31.346012	-84.338520	3	134.6	133.9	1	141.0	136.4	5
USGS312111084402101	31.353234	-84.672417	3	214.2	215.7	-2	221.4	218.4	3
USGS312119084215601	31.355583	-84.365806	1	142.3	149.8	-7	152.2	155.6	-3
USGS312127084065801	31.358235	-84.115738	3	139.0	141.0	-2	142.6	141.5	1
USGS312149083511801	31.365182	-83.855177	3	191.0	190.0	1	189.6	195.0	-5
USGS312232084391701	31.377400	-84.654639	3	219.1	216.9	2	226.5	221.9	5
USGS312249083503501	31.380460	-83.842954	3	198.7	191.4	7	197.2	196.8	0
USGS312254083573901	31.381847	-83.960735	3	176.0	173.7	2	175.2	177.5	-2
USGS312401083545401	31.400458	-83.914901	3	194.3	188.7	6	193.0	194.1	-1
USGS312418084210001	31.405177	-84.349910	3	143.4	160.2	-17	147.6	162.7	-15
USGS312521081360801	31.422723	-81.602330	3	4.2	7.9	-4	5.7	13.3	-8
USGS312529083423501	31.424072	-83.709617	3	182.5	184.0	-1	179.2	190.0	-11
USGS312538084110301	31.427399	-84.184074	3	135.9	141.9	-6	138.4	142.6	-4
USGS312552084100801	31.431288	-84.168796	3	141.5	142.7	-1	143.7	143.3	0
USGS312617084110701	31.438250	-84.185028	3	134.2	144.1	-10	137.1	145.0	-8
USGS312621084123901	31.439343	-84.210741	3	145.1	145.4	0	154.2	147.0	7
USGS312634084131301	31.444861	-84.219111	3	142.1	147.2	-5	149.7	149.2	1
USGS312641084102401	31.444722	-84.173611	3	139.2	145.3	-6	144.0	146.1	-2
USGS312644084123701	31.446000	-84.210444	3	143.4	146.7	-3	150.1	148.4	2
USGS312650084092301	31.448333	-84.156389	3	147.7	146.2	1	152.8	146.7	6
USGS312650084102101	31.449722	-84.171944	3	140.0	146.1	-6	146.5	146.9	0
USGS312659081312001	31.449945	-81.521217	3	4.0	4.6	-1	5.7	9.9	-4

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS312704084071601	31.451288	-84.121017	3	146.6	148.7	-2	149.2	150.0	-1
USGS312709084161601	31.452676	-84.271020	2	155.6	157.2	-2	164.6	160.5	4
USGS312709084161701	31.449056	-84.267611	3	154.2	154.8	-1	162.9	158.0	5
USGS312712082593301	31.453519	-83.492386	3	200.3	189.0	11	195.5	194.1	1
USGS312714084114001	31.454167	-84.194722	3	143.3	147.3	-4	146.7	148.7	-2
USGS312716083304801	31.454074	-83.513220	3	191.0	187.8	3	186.3	192.9	-7
USGS312719084123101	31.455000	-84.206111	3	143.3	148.1	-5	149.7	149.8	0
USGS312720084123601	31.455944	-84.209694	3	145.3	148.5	-3	151.2	150.4	1
USGS312745084114701	31.462778	-84.195000	3	143.3	148.6	-5	146.7	150.3	-4
USGS312747084102901	31.465278	-84.174722	3	141.2	148.1	-7	143.5	149.2	-6
USGS312751084124901	31.464667	-84.213361	3	153.8	150.4	3	153.3	152.7	1
USGS312802083370201	31.467406	-83.617113	3	195.2	191.1	4	193.4	196.8	-3
USGS312805081291001	31.468278	-81.485938	3	4.9	3.2	2	6.5	8.4	-2
USGS312817081271501	31.471611	-81.453993	3	4.9	2.2	3	6.0	7.5	-1
USGS312839084121601	31.477222	-84.205000	3	145.8	151.6	-6	153.3	154.0	-1
USGS312846084071901	31.479621	-84.121851	3	144.6	150.6	-6	150.9	152.4	-1
USGS312848084094101	31.480278	-84.161111	3	143.3	148.7	-5	145.4	149.7	-4
USGS312904084130501	31.484750	-84.215611	3	153.9	154.2	0	162.7	157.1	6
USGS312904084135001	31.484167	-84.230500	3	163.6	156.3	7	164.0	159.7	4
USGS312905084153101	31.484897	-84.258520	2	164.4	163.4	1	168.6	168.1	1
USGS312919084153801	31.487306	-84.258333	3	157.9	160.7	-3	170.2	164.6	6
USGS312929084115801	31.491286	-84.199444	3	152.3	152.8	-1	160.6	155.4	5

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS312940084131801	31.494583	-84.221722	3	158.6	156.3	2	168.6	159.7	9
USGS312941084140301	31.494722	-84.234167	3	155.2	158.3	-3	165.2	162.0	3
USGS312944084144001	31.495694	-84.244750	3	157.1	159.9	-3	166.8	163.8	3
USGS312947084092201	31.496361	-84.156111	3	144.5	149.3	-5	147.7	150.4	-3
USGS312948084142001	31.497083	-84.239083	3	154.7	159.3	-5	166.1	163.1	3
USGS312950084131801	31.497583	-84.221528	3	154.9	156.7	-2	164.0	160.2	4
USGS312950084131802	31.497397	-84.221575	3	154.8	156.7	-2	164.0	160.1	4
USGS312953084104401	31.498056	-84.178889	3	145.7	151.2	-6	150.8	153.3	-2
USGS312957084104901	31.499722	-84.180000	3	147.8	151.5	-4	151.1	153.6	-3
USGS313000084100301	31.500139	-84.167417	3	144.1	150.3	-6	148.3	151.9	-4
USGS313001084140101	31.499939	-84.233411	3	154.9	158.8	-4	164.5	162.6	2
USGS313004083371801	31.501294	-83.621557	3	197.7	194.3	3	195.9	200.0	-4
USGS313005084121401	31.501111	-84.202500	3	155.0	154.3	1	162.7	157.3	5
USGS313012084131601	31.503508	-84.221020	1	154.8	157.5	-3	165.0	161.1	4
USGS313016081412101	31.505220	-81.688445	3	11.8	8.2	4	12.7	13.2	-1
USGS313019084104601	31.505389	-84.179528	3	147.9	151.9	-4	149.4	154.1	-5
USGS313019084133101	31.505750	-84.224861	3	159.0	158.4	1	164.0	162.1	2
USGS313020084142501	31.505889	-84.239639	3	157.6	160.5	-3	167.4	164.6	3
USGS313023084113201	31.505694	-84.194417	3	148.7	153.7	-5	160.8	156.6	4
USGS313026084121901	31.507194	-84.205194	3	152.4	155.4	-3	161.4	158.7	3
USGS313028081354201	31.505776	-81.595386	3	8.4	5.2	3	9.6	10.3	-1
USGS313031084005901	31.508788	-84.016294	3	169.1	168.0	1	177.7	173.4	4

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS313040084125901	31.511611	-84.209194	3	154.8	156.7	-2	163.2	160.3	3
USGS313043084131401	31.511614	-84.233122	3	156.3	160.5	-4	166.0	164.6	1
USGS313043084134301	31.512417	-84.228750	3	162.1	160.0	2	164.8	164.0	1
USGS313047084104201	31.513306	-84.178472	3	149.2	152.5	-3	154.6	154.9	0
USGS313048084120101	31.513333	-84.200194	3	149.4	155.5	-6	155.1	158.9	-4
USGS313054081245501	31.515221	-81.415103	3	8.0	-0.1	8	11.0	4.9	6
USGS313055081521901	31.517439	-81.872058	3	16.9	17.4	-1	18.7	22.5	-4
USGS313104084111001	31.517528	-84.186111	3	156.3	154.1	2	155.5	157.0	-1
USGS313105084064302	31.518231	-84.111851	3	149.6	153.3	-4	151.7	155.9	-4
USGS313106084124901	31.518306	-84.213611	3	157.6	158.6	-1	163.2	162.4	1
USGS313115084122701	31.521083	-84.207036	3	163.0	158.0	5	161.6	161.7	0
USGS313117084114201	31.520861	-84.194944	3	152.7	156.0	-3	165.3	159.3	6
USGS313130084101001	31.526083	-84.169556	3	150.2	152.8	-3	155.4	154.9	1
USGS313132083175901	31.525746	-83.300157	3	192.4	189.6	3	190.6	194.4	-4
USGS313135084132201	31.526300	-84.222797	3	158.9	161.4	-3	167.8	165.7	2
USGS313140084130101	31.527900	-84.216978	3	158.1	160.8	-3	167.4	165.0	2
USGS313146083491601	31.529624	-83.821009	3	207.9	201.0	7	204.4	207.5	-3
USGS313155081264801	31.532165	-81.446493	3	4.8	0.3	5	6.7	5.3	1
USGS313158084124801	31.532778	-84.213333	3	154.9	161.2	-6	160.3	165.4	-5
USGS313202084143701	31.533889	-84.243889	3	165.0	165.8	-1	172.3	170.4	2
USGS313212084135701	31.536928	-84.232564	3	160.4	164.8	-4	174.0	169.5	5
USGS313247084005001	31.546565	-84.013794	3	172.2	175.6	-3	177.8	181.9	-4

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS313251084152901	31.547139	-84.257778	3	172.1	170.7	1	177.8	175.7	2
USGS313253081433502	31.547997	-81.726501	3	9.8	6.5	3	11.7	11.4	0
USGS313253081433503	31.547997	-81.726501	2	15.0	19.1	-4	15.3	22.2	-7
USGS313253081433504	31.547997	-81.726501	1	27.8	31.5	-4	29.8	32.8	-3
USGS313300084124302	31.549806	-84.211306	3	158.2	164.7	-6	168.3	169.6	-1
USGS313302084120301	31.550556	-84.199722	3	156.6	163.1	-6	165.7	167.6	-2
USGS313325081214901	31.557165	-81.363435	3	-5.6	-4.1	-1	-3.8	0.7	-5
USGS313333083103801	31.562970	-83.180153	3	183.9	182.0	2	182.1	186.5	-4
USGS313419081192601	31.572165	-81.323711	3	-2.3	-6.4	4	-0.3	-1.6	1
USGS313450084091801	31.580730	-84.154908	3	150.4	154.8	-4	155.1	156.2	-1
USGS313521084051001	31.589341	-84.086017	3	164.3	172.7	-8	170.2	175.3	-5
USGS313531081244901	31.592164	-81.415937	3	-2.4	-4.6	2	-0.6	0.2	-1
USGS313536083144701	31.595190	-83.247377	3	195.5	191.5	4	193.9	196.1	-2
USGS313549084044001	31.597119	-84.077128	3	177.3	178.0	-1	183.2	179.9	3
USGS313608081182701	31.602147	-81.307494	5	-13.8	-8.6	-5	-12.1	-3.9	-8
USGS313622084153601	31.597673	-84.260466	3	195.9	195.2	1	197.4	201.3	-4
USGS313701081543501	31.617158	-81.909282	3	15.6	15.0	1	16.7	20.0	-3
USGS313748084002901	31.553787	-84.005738	3	184.6	184.5	0	191.4	191.7	0
USGS313749081251201	31.630496	-81.419827	3	-4.5	-7.8	3	-2.7	-3.0	0
USGS313803082295001	31.634364	-82.497079	3	37.9	37.8	0	41.0	44.1	-3
USGS313808084093601	31.635729	-84.159908	3	192.5	189.6	3	194.9	190.3	5
USGS313820081290301	31.639106	-81.483996	3	-5.0	-5.4	0	-3.4	-0.6	-3

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS313823081154201	31.639942	-81.261488	3	-11.3	-11.4	0	-9.4	-6.6	-3
USGS313845081361701	31.648550	-81.600944	3	1.7	-0.7	2	3.1	4.3	-1
USGS313850081510401	31.647436	-81.852059	3	-15.6	-15.9	0	-13.5	-11.6	-2
USGS313958081520701	31.666324	-81.868448	3	-0.9	-3.8	3	0.7	0.9	0
USGS314123083495801	31.689900	-83.832675	3	256.1	257.2	-1	262.3	259.5	3
USGS314239081445001	31.711325	-81.744558	3	3.5	1.1	2	5.1	6.4	-1
USGS314254083342001	31.714625	-83.571277	3	209.4	208.8	1	205.5	213.3	-8
USGS314306083532001	31.718509	-83.888789	3	248.5	249.3	-1	251.4	251.0	0
USGS314325081301201	31.723271	-81.501220	3	-8.3	-8.9	1	-6.6	-4.0	-3
USGS314330084005402	31.725173	-84.014071	3	228.2	212.3	16	229.7	214.0	16
USGS314330084005403	31.725173	-84.014071	1	228.1	212.4	16	229.3	214.1	15
USGS314403081141501	31.733830	-81.235935	3	-15.7	-18.0	2	-14.4	-12.7	-2
USGS314430082002301	31.747709	-82.006229	3	29.8	24.1	6	30.9	29.6	1
USGS314451081275701	31.747715	-81.465664	3	-7.9	-12.7	5	-6.2	-8.0	2
USGS314514081580101	31.753543	-81.967061	3	23.1	19.7	3	24.5	25.1	-1
USGS314552081372101	31.764658	-81.622334	3	-3.1	-1.9	-1	-1.6	3.3	-5
USGS314745083261401	31.796848	-83.434883	3	203.5	201.3	2	201.5	204.8	-3
USGS314813082025201	31.806872	-82.050952	3	33.7	26.1	8	34.6	31.7	3
USGS314829081291701	31.808268	-81.487888	3	-8.7	-9.6	1	-7.1	-4.0	-3
USGS314846081302601	31.812990	-81.507055	3	-2.8	-8.3	6	-1.4	-2.6	1
USGS314858081385101	31.816044	-81.648168	3	6.5	-0.3	7	8.4	5.3	3
USGS314858082573901	31.815461	-82.961813	3	153.3	153.0	0	152.7	153.4	-1

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS314943081412001	31.829655	-81.688724	3	0.3	2.3	-2	2.0	8.0	-6
USGS315003081363201	31.834377	-81.608723	3	-2.0	-3.2	1	-3.0	2.6	-6
USGS315056081345501	31.849099	-81.581778	3	-3.1	-4.9	2	-1.3	1.0	-2
USGS315113081121401	31.853611	-81.203889	2	-24.6	-7.8	-17	-21.8	-2.9	-19
USGS315214081235301	31.870767	-81.397887	3	-12.9	-15.1	2	-11.2	-8.3	-3
USGS315228084100601	31.874614	-84.167963	3	267.2	258.6	9	270.0	261.7	8
USGS315314081121901	31.887436	-81.205107	3	-30.4	-28.9	-2	-27.9	-21.4	-7
USGS315356081214301	31.899099	-81.361776	3	-15.4	-19.1	4	-13.7	-11.4	-2
USGS315443081185902	31.911944	-81.316389	3	-21.9	-24.1	2	-19.9	-15.5	-4
USGS315443081185903	31.912000	-81.316278	5	-20.1	-23.7	4	-17.9	-15.3	-3
USGS315620081190401	31.938543	-81.318721	3	-21.5	-24.6	3	-19.7	-15.5	-4
USGS315724081185801	31.956875	-81.315944	3	-20.6	-25.1	4	-17.8	-15.3	-3
USGS315728081301101	31.941319	-81.502890	3	-4.0	-5.8	2	-2.1	1.4	-3
USGS315906081011202	31.985215	-81.019834	3	-42.2	-41.3	-1	-37.4	-34.6	-3
USGS315906081011204	31.985215	-81.019834	1	0.7	2.5	-2	0.7	3.0	-2
USGS315921081533601	31.989368	-81.893172	3	9.6	12.9	-3	13.1	19.5	-6
USGS315950081161201	31.997430	-81.269834	1	11.3	11.6	0	13.0	11.8	1
USGS320002081091001	32.000766	-81.152612	3	-57.7	-57.8	0	-52.8	-48.9	-4
USGS320021081124801	32.006042	-81.213167	3	-39.2	-42.8	4	-35.2	-31.2	-4
USGS320122080510204	32.022992	-80.850388	3	-24.7	-25.7	1	-22.5	-21.4	-1
USGS320127080511201	32.024381	-80.853166	5	-30.1	-24.6	-5	-27.6	-20.4	-7
USGS320127080511203	32.024381	-80.853166	2	-3.0	-12.1	9	-2.5	-9.4	7

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS320127080511205	32.024381	-80.853166	1	-1.0	0.7	-2	-6.0	1.9	-8
USGS320137081132301	32.027152	-81.222890	3	-36.8	-43.0	6	-33.0	-30.6	-2
USGS320202080541201	32.034102	-80.903167	3	-27.4	-27.9	0	-23.6	-23.3	0
USGS320202080541201	32.034102	-80.903167	3	-27.4	-27.9	0	-23.6	-23.3	0
USGS320202080541201	32.034102	-80.903167	3	-27.4	-27.9	0	-23.6	-23.3	0
USGS320202080541201	32.034102	-80.903167	3	-27.4	-27.9	0	-23.6	-23.3	0
USGS320202080541202	32.034102	-80.903167	1	-3.1	0.2	-3	-2.8	0.2	-3
USGS320202080541202	32.034102	-80.903167	1	-3.1	0.2	-3	-2.8	0.2	-3
USGS320202080541202	32.034102	-80.903167	1	-3.1	0.2	-3	-2.8	0.2	-3
USGS320202080541202	32.034102	-80.903167	1	-3.1	0.2	-3	-2.8	0.2	-3
USGS320202080541203	32.034102	-80.903167	2	-6.1	-13.8	8	-5.5	-11.5	6
USGS320202080541203	32.034102	-80.903167	2	-6.1	-13.8	8	-5.5	-11.5	6
USGS320202080541203	32.034102	-80.903167	2	-6.1	-13.8	8	-5.5	-11.5	6
USGS320202080541203	32.034102	-80.903167	2	-6.1	-13.8	8	-5.5	-11.5	6
USGS320226082301101	32.040465	-82.501242	3	99.8	97.5	2	99.7	98.5	1
USGS320436082185801	32.076859	-82.315958	3	48.4	45.0	3	47.2	50.2	-3
USGS320452082071001	32.084361	-82.119287	3	31.9	28.9	3	30.5	35.5	-5
USGS320530081085001	32.091873	-81.147057	3	-79.9	-81.5	2	-74.9	-70.8	-4
USGS320530081085001	32.091873	-81.147057	3	-79.9	-81.5	2	-74.9	-70.8	-4
USGS320530081085001	32.091873	-81.147057	3	-79.9	-81.5	2	-74.9	-70.8	-4
USGS320530081085001	32.091873	-81.147057	3	-79.9	-81.5	2	-74.9	-70.8	-4
USGS320622081063701	32.106317	-81.110112	3	-88.6	-88.9	0	-82.4	-80.4	-2

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS320622081063701	32.106317	-81.110112	3	-88.6	-88.9	0	-82.4	-80.4	-2
USGS320622081063701	32.106317	-81.110112	3	-88.6	-88.9	0	-82.4	-80.4	-2
USGS320622081063701	32.106317	-81.110112	3	-88.6	-88.9	0	-82.4	-80.4	-2
USGS320738081175501	32.127425	-81.298168	3	-25.5	-29.8	4	-21.4	-18.1	-3
USGS320754081364301	32.131867	-81.611779	5	17.1	7.9	9	18.4	17.0	1
USGS320846080502203	32.146319	-80.839276	5	-15.3	-17.6	2	-12.5	-15.6	3
USGS321032081535001	32.176359	-81.896810	3	27.1	20.0	7	26.0	27.9	-2
USGS321100081492701	32.183526	-81.824003	3	25.1	19.1	6	23.7	27.6	-4
USGS321110082131501	32.184912	-82.220399	3	63.2	59.3	4	61.3	64.6	-3
USGS321219082050301	32.205467	-82.084008	3	37.3	35.9	1	35.7	43.2	-8
USGS321240081411501	32.211306	-81.687334	3	18.7	15.4	3	20.2	25.3	-5
USGS321302082243601	32.217408	-82.409850	3	106.6	104.2	2	107.2	105.5	2
USGS321551080491003	32.264368	-80.819275	3	-6.9	-7.3	0	-5.5	-6.3	1
USGS321603080432202	32.267702	-80.722608	4	-0.3	-2.6	2	-0.2	-1.8	2
USGS321710082102601	32.286295	-82.173732	3	90.6	89.8	1	88.0	95.6	-8
USGS321711082353501	32.289067	-82.591800	3	114.7	114.3	0	113.3	114.6	-1
USGS321742081234901	32.295196	-81.396778	2	43.3	33.3	10	46.2	66.4	-20
USGS321742081234901	32.295196	-81.396778	2	43.3	33.3	10	46.2	66.4	-20
USGS321742081234901	32.295196	-81.396778	2	43.3	33.3	10	46.2	66.4	-20
USGS321742081234901	32.295196	-81.396778	2	43.3	33.3	10	46.2	66.4	-20
USGS321742081234904	32.295196	-81.396778	5	2.9	-2.0	5	4.5	7.6	-3
USGS321742081234904	32.295196	-81.396778	5	2.9	-2.0	5	4.5	7.6	-3

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS321742081234904	32.295196	-81.396778	5	2.9	-2.0	5	4.5	7.6	-3
USGS321742081234904	32.295196	-81.396778	5	2.9	-2.0	5	4.5	7.6	-3
USGS321807082182801	32.300183	-82.306791	3	100.6	101.2	-1	101.2	104.2	-3
USGS321943081151401	32.328611	-81.253889	2	10.4	18.5	-8	13.2	25.3	-12
USGS321943081151401	32.328611	-81.253889	2	10.4	18.5	-8	13.2	25.3	-12
USGS321943081151401	32.328611	-81.253889	2	10.4	18.5	-8	13.2	25.3	-12
USGS321943081151401	32.328611	-81.253889	2	10.4	18.5	-8	13.2	25.3	-12
USGS321946082154301	32.326292	-82.263178	3	105.3	101.3	4	106.0	105.5	1
USGS321956082091001	32.332402	-82.152621	3	107.6	99.9	8	105.6	106.3	-1
USGS322234081190003	32.376111	-81.316667	2	9.1	19.1	-10	10.4	21.1	-11
USGS322234081190003	32.376111	-81.316667	2	9.1	19.1	-10	10.4	21.1	-11
USGS322234081190003	32.376111	-81.316667	2	9.1	19.1	-10	10.4	21.1	-11
USGS322234081190003	32.376111	-81.316667	2	9.1	19.1	-10	10.4	21.1	-11
USGS322236081191001	32.376857	-81.319276	3	-4.1	-3.9	0	-0.5	-1.4	1
USGS322236081191001	32.376857	-81.319276	3	-4.1	-3.9	0	-0.5	-1.4	1
USGS322236081191001	32.376857	-81.319276	3	-4.1	-3.9	0	-0.5	-1.4	1
USGS322236081191001	32.376857	-81.319276	3	-4.1	-3.9	0	-0.5	-1.4	1
USGS322316082035701	32.387952	-82.065675	3	111.8	101.5	10	112.4	109.5	3
USGS322630082125101	32.441837	-82.212346	3	106.5	107.3	-1	102.7	112.7	-10
USGS322652083033001	32.451835	-83.057649	3	224.6	225.0	0	225.5	226.3	-1
USGS322700081464401	32.450177	-81.779278	3	55.0	48.3	7	50.9	58.8	-8
USGS322958082023801	32.496553	-82.039286	3	112.9	112.1	1	113.6	119.4	-6

Well Name	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Model Layer	2001 Observed WL (Feet NAVD88)	2001 Simulated WL (Feet NAVD88)	2001 Residual WL (Feet NAVD88)	2009 Observed WL (Feet NAVD88)	2009 Simulated WL (Feet NAVD88)	2009 Residual WL (Feet NAVD88)
USGS323123081511601	32.523225	-81.854281	3	113.8	110.3	4	115.0	119.4	-4
USGS324143080505900	32.697956	-80.850941	3	3.9	7.5	-4	4.6	7.1	-3

APPENDIX B – VERTICAL HEAD DIFFERENCES 2001 AND 2009

Observed and Simulated Vertical Head Differences

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00044	w00043	vd13010002	29.242731	-81.477934	6.35	23.25	-16.90	2001	1 to 3
w00048	w00935	vd13010122	29.216350	-81.526687	-1.19	-0.47	-0.72	2001	1 to 3
w00050	w00046	vd13010003	29.228989	-81.429303	17.06	24.40	-7.34	2001	1 to 3
w00069	w00139	vd13010005	29.164056	-81.391534	-0.72	-1.81	1.09	2001	1 to 3
w00127	w00059	vd13010004	29.389250	-81.584359	-0.18	-0.72	0.54	2001	1 to 3
w00159	w00894	vd13010117	29.410687	-81.736678	6.92	4.94	1.98	2001	1 to 3
w00163	w00162	vd13010007	29.483116	-81.632591	50.64	30.90	19.74	2001	1 to 3
w00170	w00342	vd13010035	29.413518	-81.618291	2.43	8.54	-6.11	2001	1 to 3
w00172	w00834	vd13010104	29.722778	-81.822361	63.24	64.70	-1.46	2001	1 to 3
w00177	w00176	vd13010008	29.433883	-81.137497	-4.98	-6.57	1.59	2001	1 to 3
w00183	w00288	vd13010024	29.348301	-81.453005	-0.94	0.12	-1.06	2001	1 to 3
w00196	w01013	vd13010127	28.862551	-81.796845	2.02	7.05	-5.03	2001	1 to 3
w00198	w00381	vd13010043	29.907418	-81.490261	-17.75	-12.97	-4.78	2001	1 to 3
w00204	w00202	vd13010011	29.769872	-82.013398	18.83	15.08	3.75	2001	1 to 3
w00205	w00258	vd13010019	29.802239	-82.035673	14.88	15.72	-0.84	2001	1 to 3
w00209	w00207	vd13010012	30.594792	-81.830140	-24.49	-20.08	-4.41	2001	1 to 3
w00212	w00371	vd13010041	29.204442	-81.365553	-2.51	0.04	-2.55	2001	1 to 3
w00214	w00848	vd13010107	29.631848	-81.691386	29.84	29.93	-0.09	2001	1 to 3

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00220	w00868	vd13010111	29.535248	-81.587856	11.73	8.90	2.83	2001	1 to 3
w00223	w00901	vd13010118	29.378617	-81.526009	10.65	12.97	-2.32	2001	1 to 3
w00230	w00963	vd13010125	29.104456	-81.309008	46.06	42.93	3.13	2001	1 to 3
w00232	w00231	vd13010015	29.224973	-81.320486	9.95	10.90	-0.95	2001	1 to 3
w00233	w00271	vd13010020	29.327906	-81.494856	10.65	14.41	-3.76	2001	1 to 3
w00235	w00873	vd13010113	29.499164	-81.958331	4.30	10.01	-5.71	2001	1 to 3
w00240	w00356	vd13010039	29.167339	-81.552081	6.67	-0.03	6.70	2001	1 to 3
w00241	w00820	vd13010102	29.833332	-81.357497	3.80	2.78	1.02	2001	1 to 3
w00243	w00222	vd13010014	29.405209	-81.552428	6.02	10.47	-4.45	2001	1 to 3
w00244	w00805	vd13010098	29.983053	-82.010832	145.63	142.97	2.66	2001	1 to 3
w00247	w00842	vd13010105	29.684650	-82.286926	114.80	115.12	-0.32	2001	1 to 3
w00248	w00249	vd13010017	29.631718	-81.205336	-10.38	-8.20	-2.18	2001	1 to 3
w00251	w00250	vd13010018	29.306295	-81.317080	8.08	0.19	7.89	2001	1 to 3
w00252	w00881	vd13010115	29.465831	-81.374442	11.33	14.05	-2.72	2001	1 to 3
w00253	w00881	vd13010116	29.466651	-81.373961	12.63	14.40	-1.77	2001	1 to 3
w00254	w00812	vd13010100	29.877220	-81.926943	95.61	88.47	7.14	2001	1 to 3
w00262	w00777	vd13010094	30.157837	-81.575608	-7.77	-5.76	-2.01	2001	1 to 3
w00265	w00844	vd13010106	29.664156	-81.694273	-5.05	-3.05	-2.00	2001	1 to 3
w00268	w00931	vd13010120	29.249736	-81.494787	3.84	2.16	1.68	2001	1 to 3
w00276	w00274	vd13010021	29.143106	-81.126769	16.71	17.79	-1.08	2001	1 to 3

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00278	w00700	vd13010090	30.536069	-81.621205	-13.80	-11.02	-2.78	2001	1 to 3
w00292	w00305	vd13010028	30.472776	-81.486942	-20.83	-17.20	-3.63	2001	1 to 3
w00293	w00871	vd13010112	29.517497	-81.965276	9.93	15.06	-5.13	2001	1 to 3
w00295	w00392	vd13010046	29.113017	-81.572348	2.86	4.82	-1.96	2001	1 to 3
w00299	w00298	vd13010027	29.169164	-81.641942	-1.23	3.22	-4.45	2001	1 to 3
w00302	w00281	vd13010022	30.045242	-81.449245	1.08	7.98	-6.90	2001	1 to 3
w00308	w00634	vd13010079	30.084128	-81.722870	-12.57	-11.03	-1.54	2001	1 to 3
w00321	w00403	vd13010048	29.934688	-81.376184	5.48	10.63	-5.15	2001	1 to 3
w00328	w00404	vd13010049	29.984408	-81.560916	-16.06	-15.50	-0.56	2001	1 to 3
w00338	w00161	vd13010006	29.097333	-81.273906	1.31	3.88	-2.57	2001	1 to 3
w00348	w00818	vd13010101	29.837834	-81.725974	40.79	39.40	1.39	2001	1 to 3
w00357	w00199	vd13010010	30.085793	-81.457300	13.43	14.08	-0.65	2001	1 to 3
w00358	w00877	vd13010114	29.473612	-81.742237	-3.56	-2.46	-1.10	2001	1 to 3
w00359	w00776	vd13010093	30.157206	-81.937745	24.71	16.15	8.56	2001	1 to 3
w00361	w00932	vd13010121	29.247045	-81.463489	37.15	23.55	13.60	2001	1 to 3
w00362	w00806	vd13010099	29.981028	-81.931084	74.65	72.89	1.76	2001	1 to 3
w00364	w00690	vd13010089	30.783165	-81.952989	42.02	31.73	10.29	2001	1 to 3
w00376	w00218	vd13010013	29.669922	-81.882934	6.23	8.31	-2.08	2001	1 to 3
w00380	w00234	vd13010016	29.231336	-81.491925	3.41	3.18	0.23	2001	1 to 3
w00383	w00922	vd13010119	29.284720	-81.126386	13.12	8.68	4.44	2001	1 to 3

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00384	w00831	vd13010103	29.755543	-81.312022	11.99	11.24	0.75	2001	1 to 3
w00388	w00799	vd13010097	30.054998	-82.031665	155.85	155.98	-0.13	2001	1 to 3
w00391	w00857	vd13010108	29.599097	-82.075648	52.17	59.75	-7.58	2001	1 to 3
w00393	w00863	vd13010110	29.562223	-81.390442	8.68	5.47	3.21	2001	1 to 3
w00445	w00444	vd13010051	30.184389	-82.593528	142.44	137.51	4.93	2001	1 to 3
w00473	w_01577	vd13010139	29.732917	-82.819361	0.36	2.89	-2.53	2001	1 to 3
w00491	w00490	vd13010055	29.849531	-82.781094	-0.34	1.12	-1.46	2001	1 to 3
w00493	w00492	vd13010056	29.849003	-82.808432	0.13	3.37	-3.24	2001	1 to 3
w00496	w00495	vd13010057	29.984064	-83.344487	0.16	0.19	-0.03	2001	1 to 3
w00498	w00497	vd13010058	29.927693	-83.279154	-0.73	0.02	-0.75	2001	1 to 3
w00509	w00508	vd13010059	30.045222	-82.391667	83.82	78.56	5.26	2001	1 to 3
w00512	w00513	vd13010060	29.925648	-83.015715	0.24	0.21	0.03	2001	1 to 3
w00524	w00523	vd13010062	30.072861	-83.319034	0.64	0.90	-0.26	2001	1 to 3
w00548	w00547	vd13010064	30.263404	-83.661044	2.26	0.06	2.20	2001	1 to 3
w00550	w00549	vd13010065	30.346909	-83.493129	13.14	0.23	12.91	2001	1 to 3
w00553	w00554	vd13010067	30.347048	-83.924910	6.04	-0.04	6.08	2001	1 to 3
w00558	w00556	vd13010068	30.337144	-83.705432	4.07	1.23	2.84	2001	1 to 3
w00565	w00576	vd13010071	30.186913	-83.527793	2.80	0.10	2.70	2001	1 to 3
w00569	w00568	vd13010069	30.094152	-83.571947	-0.02	0.01	-0.03	2001	1 to 3
w00575	w00551	vd13010066	30.289190	-83.536209	3.65	0.01	3.64	2001	1 to 3

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00578	w00522	vd13010061	30.025041	-83.434475	0.05	0.05	0.00	2001	1 to 3
w00593	w00599	vd13010073	28.934522	-82.012397	3.79	0.17	3.62	2001	1 to 3
w00596	w00666	vd13010082	28.876492	-82.571431	-0.18	0.09	-0.27	2001	1 to 3
w00622	w00621	vd13010075	32.034102	-80.903167	24.25	28.11	-3.86	2001	1 to 3
w00661	w01002	vd13010126	28.955583	-82.337167	1.27	-0.01	1.28	2001	1 to 3
w00663	w00664	vd13010081	28.899697	-81.790747	1.46	-1.20	2.66	2001	1 to 3
w00676	w00677	vd13010085	28.800000	-82.094722	-0.19	-0.10	-0.09	2001	1 to 3
w00678	w00679	vd13010086	28.774445	-82.127222	0.04	0.12	-0.08	2001	1 to 3
w00681	w00682	vd13010087	28.753611	-82.220000	0.25	0.09	0.16	2001	1 to 3
w00683	w00684	vd13010088	28.749167	-82.091667	0.05	0.13	-0.08	2001	1 to 3
w00704	w00703	vd13010091	30.518691	-84.463533	138.28	129.28	9.00	2001	1 to 3
w00748	w00630	vd13010077	30.286590	-81.542955	19.76	22.39	-2.63	2001	1 to 3
w00766	w00571	vd13010070	30.213243	-82.391346	119.62	116.95	2.67	2001	1 to 3
w00790	w00791	vd13010095	30.092369	-83.572238	0.09	0.02	0.07	2001	1 to 3
w00795	w00794	vd13010096	30.077103	-83.320834	-0.18	1.13	-1.31	2001	1 to 3
w00862	w00861	vd13010109	29.571037	-82.697451	0.58	0.27	0.31	2001	1 to 3
w01026	w01027	vd13010128	28.823861	-82.181566	-1.78	-0.29	-1.49	2001	1 to 3
w01306	w01284	vd13010129	31.985214	-81.019834	42.87	43.83	-0.96	2001	1 to 3
w01308	w01328	vd13010131	31.157175	-81.522602	-6.11	-1.70	-4.41	2001	1 to 3
w01378	w01340	vd13010133	31.547997	-81.726501	17.95	24.95	-7.00	2001	1 to 3

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w01425	w01420	vd13010135	31.074629	-84.517968	17.88	18.68	-0.80	2001	1 to 3
w01427	w01365	vd13010134	32.211306	-81.687334	87.97	91.94	-3.97	2001	1 to 3
w01434	w01430	vd13010136	31.300736	-84.322964	11.78	0.11	11.67	2001	1 to 3
w01474	w01472	vd13010138	31.725173	-84.014071	-0.12	0.05	-0.17	2001	1 to 3
w00003	w00002	vd35010002	29.621152	-82.414270	-1.67	0.00	-1.67	2001	3 to 5
w00005	w00004	vd35010003	29.619152	-82.419874	-0.91	0.00	-0.91	2001	3 to 5
w00207	w00210	vd35010004	30.594792	-81.830140	0.17	-0.04	0.22	2001	3 to 5
w00245	w00808	vd35010013	29.959170	-81.615614	-6.78	-5.70	-1.08	2001	3 to 5
w00281	w00279	vd35010006	30.044998	-81.449442	-3.78	0.00	-3.78	2001	3 to 5
w00297	w00373	vd35010011	30.419720	-81.433331	-3.21	-0.62	-2.59	2001	3 to 5
w00664	w00322	vd35010008	28.899722	-81.790834	-0.21	-0.93	0.72	2001	3 to 5
w00690	w00363	vd35010010	30.783243	-81.953004	6.28	6.33	-0.05	2001	3 to 5
w00715	w00717	vd35010012	30.436586	-81.596575	-0.35	-1.44	1.09	2001	3 to 5
w00822	w00318	vd35010007	29.820206	-81.956862	-0.05	-0.06	0.02	2001	3 to 5
w00842	w00324	vd35010009	29.685210	-82.287149	0.61	-0.06	0.67	2001	3 to 5
w00854	w00001	vd35010001	29.612711	-82.411322	-0.70	0.00	-0.70	2001	3 to 5
w00932	w00270	vd35010005	29.247176	-81.463192	-1.32	-1.51	0.19	2001	3 to 5
w01125	w01348	vd35010018	31.276061	-81.544549	0.65	-0.62	1.27	2001	3 to 5
w01291	w01290	vd35010016	31.911944	-81.316389	-1.83	-0.42	-1.40	2001	3 to 5
w01328	w01334	vd35010017	31.157175	-81.522602	-2.14	-3.98	1.83	2001	3 to 5

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w01373	w01374	vd35010020	31.120424	-81.609854	-0.08	2.01	-2.09	2001	3 to 5
w00007	w00009	vd13090001	29.724000	-82.258000	90.70	103.29	-12.59	2009	1 to 3
w00008	w00643	vd13090080	29.748000	-82.315000	127.75	125.69	2.06	2009	1 to 3
w00048	w00935	vd13090122	29.216350	-81.526687	-3.57	-0.47	-3.10	2009	1 to 3
w00069	w00139	vd13090005	29.164056	-81.391534	-1.34	-1.78	0.44	2009	1 to 3
w00159	w00894	vd13090117	29.410687	-81.736678	7.98	5.18	2.80	2009	1 to 3
w00163	w00162	vd13090007	29.483116	-81.632591	49.89	28.97	20.92	2009	1 to 3
w00170	w00342	vd13090035	29.413518	-81.618291	1.95	5.64	-3.69	2009	1 to 3
w00172	w00834	vd13090104	29.722778	-81.822361	64.72	64.26	0.46	2009	1 to 3
w00177	w00176	vd13090008	29.433883	-81.137497	-4.31	-5.75	1.44	2009	1 to 3
w00179	w00387	vd13090045	29.325884	-81.079817	-1.22	-3.50	2.28	2009	1 to 3
w00183	w00288	vd13090024	29.348301	-81.453005	-1.09	-0.92	-0.17	2009	1 to 3
w00190	w00351	vd13090038	28.988569	-81.724233	1.54	1.89	-0.35	2009	1 to 3
w00191	w00350	vd13090037	29.456374	-81.257733	0.26	2.65	-2.39	2009	1 to 3
w00192	w00189	vd13090009	28.810930	-81.688627	20.59	25.95	-5.36	2009	1 to 3
w00196	w01013	vd13090127	28.862551	-81.796845	1.82	7.95	-6.13	2009	1 to 3
w00198	w00381	vd13090043	29.907418	-81.490261	-19.07	-17.64	-1.43	2009	1 to 3
w00204	w00202	vd13090011	29.769872	-82.013398	16.89	9.97	6.92	2009	1 to 3
w00205	w00258	vd13090019	29.802239	-82.035673	11.43	18.58	-7.15	2009	1 to 3
w00209	w00207	vd13090012	30.594792	-81.830140	-25.20	-23.73	-1.47	2009	1 to 3

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w00212	w00371	vd13090041	29.204442	-81.365553	-5.24	0.00	-5.24	2009	1 to 3
w00214	w00848	vd13090107	29.631848	-81.691386	28.38	27.93	0.45	2009	1 to 3
w00220	w00868	vd13090111	29.535248	-81.587856	10.09	8.09	2.00	2009	1 to 3
w00223	w00901	vd13090118	29.378617	-81.526009	7.64	7.75	-0.11	2009	1 to 3
w00230	w00963	vd13090125	29.104456	-81.309008	42.37	41.57	0.80	2009	1 to 3
w00232	w00231	vd13090015	29.224973	-81.320486	10.33	9.77	0.56	2009	1 to 3
w00233	w00271	vd13090020	29.327906	-81.494856	10.38	11.66	-1.28	2009	1 to 3
w00235	w00873	vd13090113	29.499164	-81.958331	5.71	10.56	-4.85	2009	1 to 3
w00240	w00356	vd13090039	29.167339	-81.552081	4.55	-0.03	4.58	2009	1 to 3
w00241	w00820	vd13090102	29.833332	-81.357497	-0.44	1.81	-2.25	2009	1 to 3
w00243	w00222	vd13090014	29.405209	-81.552428	3.87	8.53	-4.66	2009	1 to 3
w00244	w00805	vd13090098	29.983053	-82.010832	146.44	142.81	3.63	2009	1 to 3
w00247	w00842	vd13090105	29.684650	-82.286926	112.66	110.69	1.97	2009	1 to 3
w00248	w00249	vd13090017	29.631718	-81.205336	-12.24	-8.91	-3.33	2009	1 to 3
w00251	w00250	vd13090018	29.306295	-81.317080	5.53	0.14	5.39	2009	1 to 3
w00252	w00881	vd13090115	29.465831	-81.374442	8.91	10.94	-2.03	2009	1 to 3
w00253	w00881	vd13090116	29.466651	-81.373961	10.13	11.26	-1.13	2009	1 to 3
w00254	w00812	vd13090100	29.877220	-81.926943	94.25	90.67	3.58	2009	1 to 3
w00262	w00777	vd13090094	30.157837	-81.575608	-8.67	-9.77	1.10	2009	1 to 3
w00265	w00844	vd13090106	29.664156	-81.694273	-7.94	-5.51	-2.43	2009	1 to 3

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w00268	w00931	vd13090120	29.249736	-81.494787	0.36	1.91	-1.55	2009	1 to 3
w00276	w00274	vd13090021	29.143106	-81.126769	16.58	16.69	-0.11	2009	1 to 3
w00278	w00700	vd13090090	30.536069	-81.621205	-15.31	-14.07	-1.24	2009	1 to 3
w00280	w00336	vd13090034	29.438217	-81.111577	-5.65	-5.07	-0.58	2009	1 to 3
w00282	w00283	vd13090023	30.668054	-81.638331	-19.40	-23.66	4.26	2009	1 to 3
w00285	w00306	vd13090029	30.191109	-81.520275	3.14	5.59	-2.45	2009	1 to 3
w00287	w00372	vd13090042	28.992775	-81.835832	3.84	5.18	-1.34	2009	1 to 3
w00292	w00305	vd13090028	30.472776	-81.486942	-21.41	-21.28	-0.13	2009	1 to 3
w00293	w00871	vd13090112	29.517497	-81.965276	9.74	13.99	-4.25	2009	1 to 3
w00295	w00392	vd13090046	29.113017	-81.572348	2.70	4.63	-1.93	2009	1 to 3
w00299	w00298	vd13090027	29.169164	-81.641942	-0.47	3.52	-3.99	2009	1 to 3
w00302	w00281	vd13090022	30.045242	-81.449245	-2.55	4.07	-6.62	2009	1 to 3
w00308	w00634	vd13090079	30.084128	-81.722870	-14.56	-11.16	-3.40	2009	1 to 3
w00313	w00633	vd13090078	30.094682	-81.977326	27.75	27.25	0.50	2009	1 to 3
w00316	w00949	vd13090124	29.168591	-81.168945	11.34	9.73	1.61	2009	1 to 3
w00321	w00403	vd13090048	29.934688	-81.376184	1.89	7.80	-5.91	2009	1 to 3
w00323	w00349	vd13090036	30.127462	-81.543973	-25.22	-19.23	-5.99	2009	1 to 3
w00325	w00395	vd13090047	28.744157	-81.872856	-2.23	0.90	-3.13	2009	1 to 3
w00328	w00404	vd13090049	29.984408	-81.560916	-17.89	-19.35	1.46	2009	1 to 3
w00329	w00330	vd13090033	30.703291	-81.453701	10.07	-15.69	25.76	2009	1 to 3

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w00334	w00406	vd13090050	30.481068	-81.824270	-25.36	-24.20	-1.16	2009	1 to 3
w00337	w00307	vd13090030	29.824132	-81.553135	-23.98	-22.64	-1.34	2009	1 to 3
w00338	w00161	vd13090006	29.097333	-81.273906	3.11	8.56	-5.45	2009	1 to 3
w00343	w00319	vd13090032	29.590246	-81.575631	1.38	-0.05	1.43	2009	1 to 3
w00345	w00360	vd13090040	28.922983	-81.569719	-6.87	1.45	-8.32	2009	1 to 3
w00348	w00818	vd13090101	29.837834	-81.725974	36.42	36.72	-0.30	2009	1 to 3
w00357	w00199	vd13090010	30.085793	-81.457300	12.17	11.63	0.54	2009	1 to 3
w00358	w00877	vd13090114	29.473612	-81.742237	-4.12	-2.52	-1.60	2009	1 to 3
w00359	w00776	vd13090093	30.157206	-81.937745	24.18	18.85	5.33	2009	1 to 3
w00361	w00932	vd13090121	29.247045	-81.463489	33.92	21.51	12.41	2009	1 to 3
w00362	w00806	vd13090099	29.981028	-81.931084	74.75	77.08	-2.33	2009	1 to 3
w00364	w00690	vd13090089	30.783165	-81.952989	42.33	30.89	11.44	2009	1 to 3
w00376	w00218	vd13090013	29.669922	-81.882934	5.49	6.32	-0.83	2009	1 to 3
w00377	w00291	vd13090026	28.856109	-81.899165	-0.85	4.68	-5.53	2009	1 to 3
w00380	w00234	vd13090016	29.231336	-81.491925	0.65	3.07	-2.42	2009	1 to 3
w00383	w00922	vd13090119	29.284720	-81.126386	10.69	8.52	2.17	2009	1 to 3
w00384	w00831	vd13090103	29.755543	-81.312022	10.30	12.85	-2.55	2009	1 to 3
w00385	w00382	vd13090044	30.164888	-81.392220	-23.21	-20.97	-2.24	2009	1 to 3
w00388	w00799	vd13090097	30.054998	-82.031665	153.51	155.93	-2.42	2009	1 to 3
w00390	w00765	vd13090092	30.229165	-81.704442	-23.93	-26.85	2.92	2009	1 to 3

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w00391	w00857	vd13090108	29.599097	-82.075648	46.09	58.59	-12.50	2009	1 to 3
w00393	w00863	vd13090110	29.562223	-81.390442	5.47	3.83	1.64	2009	1 to 3
w00394	w00290	vd13090025	28.750546	-81.928413	0.54	0.88	-0.34	2009	1 to 3
w00396	w00311	vd13090031	30.118293	-81.848431	14.89	15.66	-0.77	2009	1 to 3
w00443	w00535	vd13090063	30.576565	-82.568855	65.29	61.97	3.32	2009	1 to 3
w00445	w00444	vd13090051	30.184389	-82.593528	141.15	136.76	4.39	2009	1 to 3
w00478	w00479	vd13090052	29.889924	-83.012962	0.33	0.05	0.28	2009	1 to 3
w00482	w00483	vd13090053	29.827540	-83.022724	0.20	0.22	-0.02	2009	1 to 3
w00493	w00492	vd13090056	29.849003	-82.808432	0.11	2.75	-2.64	2009	1 to 3
w00496	w00495	vd13090057	29.984064	-83.344487	0.23	0.25	-0.02	2009	1 to 3
w00498	w00497	vd13090058	29.927693	-83.279154	-0.06	-0.45	0.39	2009	1 to 3
w00509	w00508	vd13090059	30.045222	-82.391667	83.46	79.32	4.14	2009	1 to 3
w00512	w00513	vd13090060	29.925648	-83.015715	0.39	0.16	0.23	2009	1 to 3
w00524	w00523	vd13090062	30.072861	-83.319034	0.71	0.64	0.07	2009	1 to 3
w00548	w00547	vd13090064	30.263404	-83.661044	0.79	0.12	0.67	2009	1 to 3
w00550	w00549	vd13090065	30.346909	-83.493129	11.61	0.35	11.26	2009	1 to 3
w00565	w00576	vd13090071	30.186913	-83.527793	2.44	0.17	2.27	2009	1 to 3
w00569	w00568	vd13090069	30.094152	-83.571947	-0.04	0.03	-0.07	2009	1 to 3
w00575	w00551	vd13090066	30.289190	-83.536209	3.28	0.02	3.26	2009	1 to 3
w00578	w00522	vd13090061	30.025041	-83.434475	0.31	0.13	0.18	2009	1 to 3

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w00592	w00945	vd13090123	29.183465	-82.318254	19.82	0.03	19.79	2009	1 to 3
w00593	w00599	vd13090073	28.934522	-82.012397	0.40	0.20	0.20	2009	1 to 3
w00595	w00594	vd13090072	28.825611	-82.183200	1.09	-0.50	1.59	2009	1 to 3
w00596	w00666	vd13090082	28.876492	-82.571431	-0.24	0.00	-0.24	2009	1 to 3
w00603	w00602	vd13090074	29.334449	-82.557046	-0.04	0.09	-0.13	2009	1 to 3
w00622	w00621	vd13090075	32.034102	-80.903167	20.79	23.53	-2.74	2009	1 to 3
w00627	w00628	vd13090076	29.138583	-82.094361	23.56	0.08	23.48	2009	1 to 3
w00661	w01002	vd13090126	28.955583	-82.337167	1.28	-0.01	1.29	2009	1 to 3
w00663	w00664	vd13090081	28.899697	-81.790747	0.48	-1.96	2.44	2009	1 to 3
w00667	w00668	vd13090083	28.856945	-82.148056	-0.09	0.07	-0.16	2009	1 to 3
w00671	w00672	vd13090084	28.843056	-82.131667	-0.40	-0.04	-0.36	2009	1 to 3
w00676	w00677	vd13090085	28.800000	-82.094722	-1.21	-0.07	-1.14	2009	1 to 3
w00678	w00679	vd13090086	28.774445	-82.127222	-0.02	0.15	-0.17	2009	1 to 3
w00681	w00682	vd13090087	28.753611	-82.220000	0.08	0.09	-0.01	2009	1 to 3
w00683	w00684	vd13090088	28.749167	-82.091667	0.04	0.16	-0.12	2009	1 to 3
w00704	w00703	vd13090091	30.518691	-84.463533	136.11	139.74	-3.63	2009	1 to 3
w00748	w00630	vd13090077	30.286590	-81.542955	23.84	21.10	2.74	2009	1 to 3
w00766	w00571	vd13090070	30.213243	-82.391346	121.88	115.36	6.52	2009	1 to 3
w00790	w00791	vd13090095	30.092369	-83.572238	0.15	0.03	0.12	2009	1 to 3
w00795	w00794	vd13090096	30.077103	-83.320834	-0.10	0.68	-0.78	2009	1 to 3

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00819	w00489	vd13090054	29.836285	-83.104706	-0.82	0.28	-1.10	2009	1 to 3
w00862	w00861	vd13090109	29.571037	-82.697451	0.34	0.19	0.15	2009	1 to 3
w01026	w01027	vd13090128	28.823861	-82.181566	-1.08	-0.25	-0.83	2009	1 to 3
w01302	w01287	vd13090130	32.024381	-80.853166	24.40	22.57	1.83	2009	1 to 3
w01303	w01330	vd13090132	31.248306	-81.351500	-9.61	-4.85	-4.76	2009	1 to 3
w01306	w01284	vd13090129	31.985214	-81.019834	38.15	37.58	0.57	2009	1 to 3
w01308	w01328	vd13090131	31.157175	-81.522602	-4.93	-9.06	4.13	2009	1 to 3
w01378	w01340	vd13090133	31.547997	-81.726501	18.14	21.38	-3.24	2009	1 to 3
w01425	w01420	vd13090135	31.074629	-84.517968	13.83	23.80	-9.97	2009	1 to 3
w01434	w01430	vd13090136	31.300736	-84.322964	10.77	0.13	10.64	2009	1 to 3
w01446	w01443	vd13090137	31.505453	-84.179352	3.49	0.03	3.46	2009	1 to 3
w01474	w01472	vd13090138	31.725173	-84.014071	-0.39	0.09	-0.48	2009	1 to 3
w00003	w00002	vd35090002	29.621152	-82.414270	3.89	0.00	3.89	2009	3 to 5
w00005	w00004	vd35090003	29.619152	-82.419874	4.27	0.00	4.27	2009	3 to 5
w00207	w00210	vd35090004	30.594792	-81.830140	-0.70	-0.03	-0.66	2009	3 to 5
w00245	w00808	vd35090013	29.959170	-81.615614	-6.88	-6.90	0.02	2009	3 to 5
w00281	w00279	vd35090006	30.044998	-81.449442	-3.59	-0.01	-3.58	2009	3 to 5
w00297	w00373	vd35090011	30.419720	-81.433331	-2.44	-0.49	-1.95	2009	3 to 5
w00664	w00322	vd35090008	28.899722	-81.790834	0.02	0.68	-0.66	2009	3 to 5
w00690	w00363	vd35090010	30.783243	-81.953004	6.57	5.76	0.81	2009	3 to 5

Well Name From	Well Name To	PEST ID	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	WL Difference (Feet)	Simulated VHD (Feet)	Residual VHD (Feet)	Year Observation	Model Layers
w00715	w00717	vd35090012	30.436586	-81.596575	-0.30	-1.40	1.10	2009	3 to 5
w00822	w00318	vd35090007	29.820206	-81.956862	0.11	-0.03	0.15	2009	3 to 5
w00842	w00324	vd35090009	29.685210	-82.287149	1.01	-0.04	1.05	2009	3 to 5
w00932	w00270	vd35090005	29.247176	-81.463192	-1.61	-1.42	-0.19	2009	3 to 5
w01125	w01348	vd35090018	31.276061	-81.544549	0.76	-0.58	1.35	2009	3 to 5
w01287	w01286	vd35090015	32.024381	-80.853166	3.15	-0.20	3.35	2009	3 to 5
w01291	w01290	vd35090016	31.911944	-81.316389	-1.92	-0.17	-1.76	2009	3 to 5
w01328	w01334	vd35090017	31.157175	-81.522602	-4.03	-3.65	-0.39	2009	3 to 5
w01330	w01122	vd35090014	31.248389	-81.351472	-4.04	0.00	-4.04	2009	3 to 5
w01344	w01370	vd35090019	31.229394	-81.617606	-4.42	-2.07	-2.34	2009	3 to 5
w01373	w01374	vd35090020	31.120424	-81.609854	8.27	1.91	6.36	2009	3 to 5

APPENDIX C – COMPILATION OF THE PRIMARY GROUNDWATER LEVEL DATA SET

APPENDIX C

Compilation of the Primary Groundwater-Level Data Set with Emphasis on Data-Filling Techniques

by Nathan Johnson, P.E.

INTRODUCTION:

The following is a description of methods employed for compiling and then expanding the available set of groundwater-level observations for use in the calibration of the NFSEG groundwater model. First, water level data was gathered from data sources, i.e., various governmental agencies. Second, quality assurance methods were developed to ensure data integrity. Third, since data collection takes a large amount of resources, statistical methods were developed to leverage current knowledge to impute additional statistically derived groundwater level data. With more comprehensive groundwater data, groundwater models may increase in accuracy and robustness to inform decision makers about water resources in the state of Florida.

METHODS:

DATA CLEANING AND AQUIFER CLASSIFICATION:

Groundwater level data were gathered from agency sources including United States Geological Survey (USGS), St Johns River Water Management District (SRJWMD), Southwest Florida Water Management District (SFWMD), Suwannee River Water Management District (SRWMD), South Florida Water Management District (SFWMD), and Northwest Florida Water Management District (NWFWMD). Margit Crowell provided the groundwater data for SWFWMD using the Microsoft Access format. Megan Weatherington from SRWMD provided the data in Microsoft Access format. Nathan Johnson compiled the SJRWMD data from the internal Hydrstra database. USGS data was gathered from the NWIS database internet retrieval system. The vertical datum was standardized to NAVD88 using Corpscon6. Median monthly value were developed using all existing daily values.

A database of monitoring well metadata was developed. Wells were assigned an aquifer classification in the aquiferFinal field in the database based on a hierarchical classification system. The methods used to determine the aquifer classification were reported in the field “aquiferSource”. There were two general methods to describe the source including 1) agency classification and 2) hydrostratigraphic aquifer classification. Agency classification was found in the metadata from the source agency. The hydrostratigraphic aquifer classification method was developed by SJRWMD to determine which aquifer respective wells were open to. Where casing depth and total depth were reported by the agency, the hydrostratigraphic unit was discerned. If greater than 70% of the well open hole was available to a single aquifer, the hydrostratigraphic aquifer classification would identify the respective aquifer otherwise would be classified as “Multiaquifer” or “check”. If only total depth was available, then the aquifer classification at this depth was recorded as “Bottom”.

Several discrete aquifers were identified and combined based on literature, geophysical data, and modeling layer assignments. The discrete aquifer categories were defined in Table C-1.

Table C-1. Aquifer final and corresponding aquifer full name used in aquifer classification.

aquiferFinal	Aquifer Full Name
APPZ	Avon Park Permeable Zone (UFA)
AVPK	Avon Park (UFA)
Biscayne Aquifer	Biscayne aquifer
Bottom Aquf	Below the FAS
Brunswick Aquifer	Brunswick aquifer
check	undefined aquifer
FAS	Floridan aquifer system
UFA	Upper Floridan aquifer
FPZ	Fernandina permeable zone
ICU	Intermediate confining unit
LFA	Lower Floridan Aquifer
LSCU	Lower semi-confining unit
MCU	Middle confining unit
MultiAquifer	Multiple aquifers
noClass	no aquifer information
OLPZ	Ocala low permeable zone (UFA)
OPZ	Ocala permeable zone (UFA)
Other	Other aquifer
Sandstone aquifer	Sandstone aquifer
SAS	Surficial aquifer system
SECPA	Southeastern coastal plain aquifer
ULFA	Upper/Lower Floridan aquifer
UZLFA	Upper zone of lower Floridan aquifer
Valley and Ridge Aquifer	Valley and ridge aquifer

The two sources of information underwent a hierarchical classification to determine the most defensible aquifer classification. The first part of the aquiferSource identifies the final aquifer classification source (aquiferFinal) while the posterior part displays more information about the alternative method. If the two sources disagree, this will be stated in the second field as a prefix "dis". The aquiferSource classification was described in Table C-2. Wells that were not classified or contained a non-specific classification such as Floridan Aquifer System (FAS) were assigned aquifer classification based on hydrostratigraphy. This will be refined further in future iterations.

Table C-2. Description of the well aquifer source in the field aquifer source

aquiferSource	Derivation
Agency/Strat	aquiferFinal = Agency, Stratigraphy agree
Strat/Agency	aquiferFinal = Stratigraphy, Agency general
Agency/disStrat	aquiferFinal = Agency, Stratigraphy disagree
Strat	aquiferFinal = Stratigraphy, No Agency
Bottom	aquiferFinal = Bottom, No Agency
Agency/disBottom	aquiferFinal = Agency, Bottom disagree
Agency/Bottom	aquiferFinal = Agency, Bottom agree
noClass	aquiferFinal = noClass, No Agency, No Casing Depth, No total Depth
Agency	aquiferFinal = agency, No Casing Depth, No total Dpeth
Bottom/Agency	aquiferFinal = Bottom, Agency general

Well data was combined if various agencies reported data for the same physical well. Many agencies have assimilated well data from the USGS and have distinct naming conventions. Agencies sometimes reported USGS IDs in addition to the agency unique name. There were many cases where agencies annexed USGS wells and did not incorporate the previously recorded USGS data. Data from the same well was combined and given a common Name based on the following hierarchical order: USGS, SJRWMD, SWFWMD, SFWMD, SRWMD, NWFWMD. Occasionally, reported USGS IDs from agencies did not exist within the NWIS database and the USGS ID was skipped for common Name assignment.

QUALITY ASSURANCE:

The statistical software R was used to screen data using normalized agglomerative cluster analysis to identify wells that exhibited irregular patterns. Since wells have varying periods of record, cluster analysis was performed on five-year periods allowing for 20% missing within the period. When individual wells were identified as a single cluster, they were examined and culled for outliers, shifts, below threshold values, etc. This process is proficient at selecting outliers where relatively continuous data is present over several years however other data may not meet these criteria and were left unaltered.

REGRESSION IMPUTATION/FILL:

Since monitoring wells contain varying periods of record and continuity, data gaps were examined and partially imputed using robust and scientifically defensible methods. Initially, linear regression models were built between selected original wells and wells within +/- 0.5 degrees latitude and longitude. In this case, the original independent well would be the explanatory variable and the adjacent wells were the response variables. Non-linear regression

methods using transformations of variables were initially examined, however linear methods were most parsimonious. The best linearly correlated well within the adjacent area was used to create a simple linear regression model and fill gaps where data exists for the original well. Since autocorrelation exists within the well time series, several thresholds were set to reduce spurious correlation. The regression relationship must have ten matching pairs on corresponding dates and extend over three years so that the effects of autocorrelation are reduced when building statistical models. The regression must have a coefficient of determination (R^2) greater than 0.90 to ensure that the independent well explains 90% of the variability of the fill well. The fill well must contain at least three non-corresponding dates and must have at least one level after the year 1999.

Summary of the well selection thresholds is as follows:

Regression metric $R^2 > 0.90$

1. Original and fill well must overlap by three years
2. Original and fill well must have ten matched pairs on corresponding dates
3. Fill well must contain three non-corresponding data points
4. Fill well must contain data post 2000-01-01

When the thresholds were met, the statistical model was used to impute/fill data for the original wells. This methodology vastly expanded the amount of data available for the models by leveraging the relationship between highly correlated wells. This process was repeated twice so that the maximum number of wells could be filled using the simple linear regression method. The first iteration was labeled “first filled” and the second iteration using the results from the first iteration were called “second filled”

PRINCIPLE COMPONENT IMPUTATION/FILL:

When well data was insufficient to meet the thresholds for the linear regression imputation method, another method was developed that leveraged the time series signal of spatial regions to inform and fill well time series. First, agglomerative cluster analysis was selected to group wells into clusters based on their normalized Euclidean distance. The method starts with all wells in their own cluster and merges wells using the Euclidean distances based on the Wards linkage. The number of clusters was optimized by merging clusters until a unique spatial grouping pattern was formed in addition to bootstrapped clustering distance convergence.

Once clusters were identified, principle component analysis (PCA) was performed to calculate the orthogonal eigenvectors that explained the variance within the group. The first principle component was required to describe greater than 85% of the variance of the wells within the cluster. If the first principle component explained less than 85% of the variance, then more clusters were added and the process repeated. Next, linear regression was executed with the first principle component as the explanatory variable and wells with little data as the response variables. The PCA regressions were given thresholds to ensure non-spurious models, however with small degrees of freedom, this imputation method should only be used in areas where other imputation methods do not produce sufficient data, data is very limited, clusters are spatially grouped, and PCA explains > 85% of the variance within a cluster.

RESULTS:

The original dataset for the total domain contained 18,977 well points and 1,061,673 median monthly values and spatially shown in Figures C-1 and C-2 over the period 1950-2012 and 2000-2012 respectively. The use of the three different methods augmented the total monthly median values to 1,507,917. This increased the amount of data by nearly 50%. The filled data categorized by imputation method produced 357,622 first filled, 115,141 second filled, and 11,810 PCA filled monthly values. The summary of quantity of stations and monthly values by fill type is given in Table C-3 and quantity of stations separated by aquifer in Table C-4.

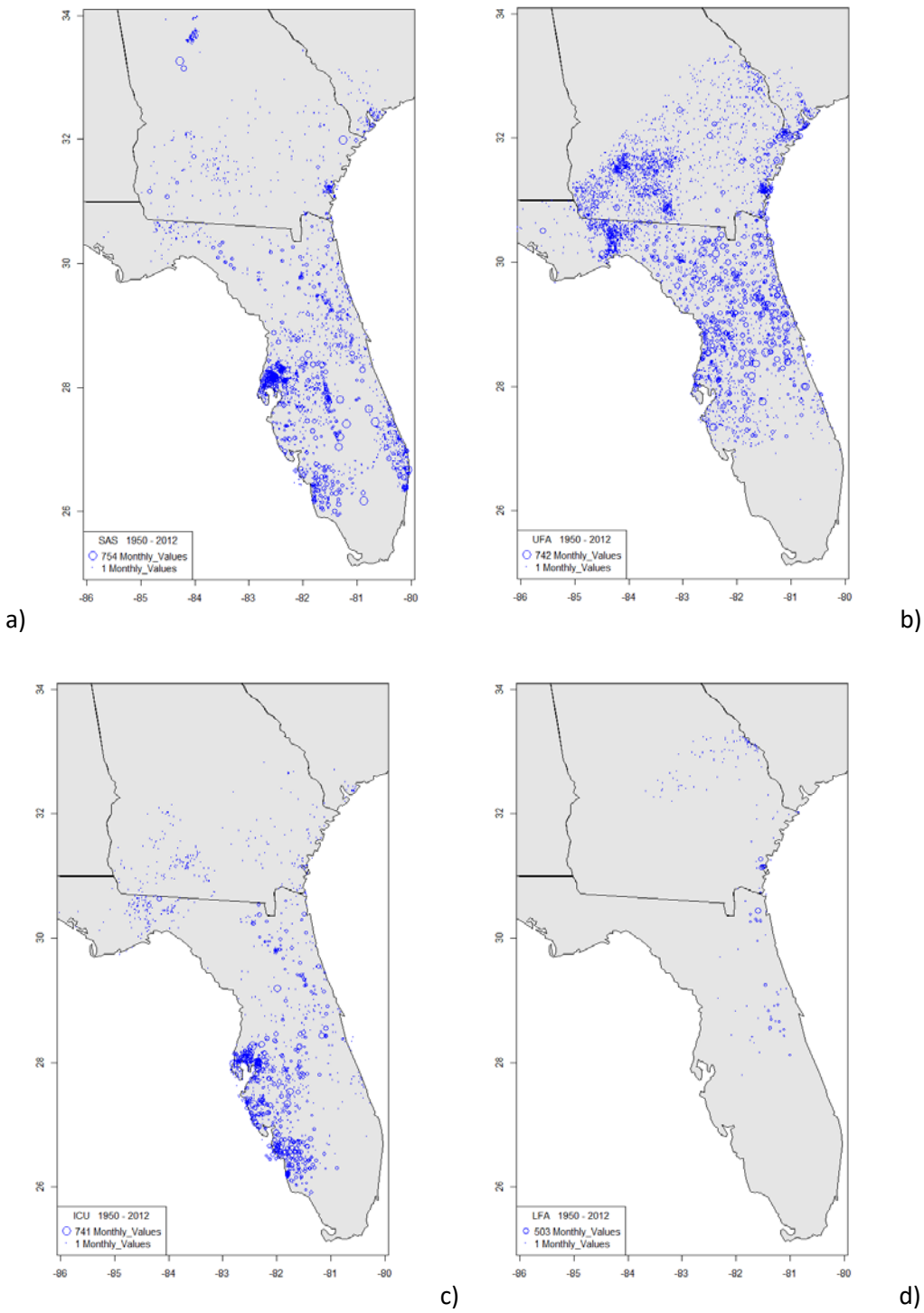


Figure C-1. Monthly groundwater-level data available (1-756) using original data (1950-2012) in a) SAS b) UFA c) ICU d) LFA

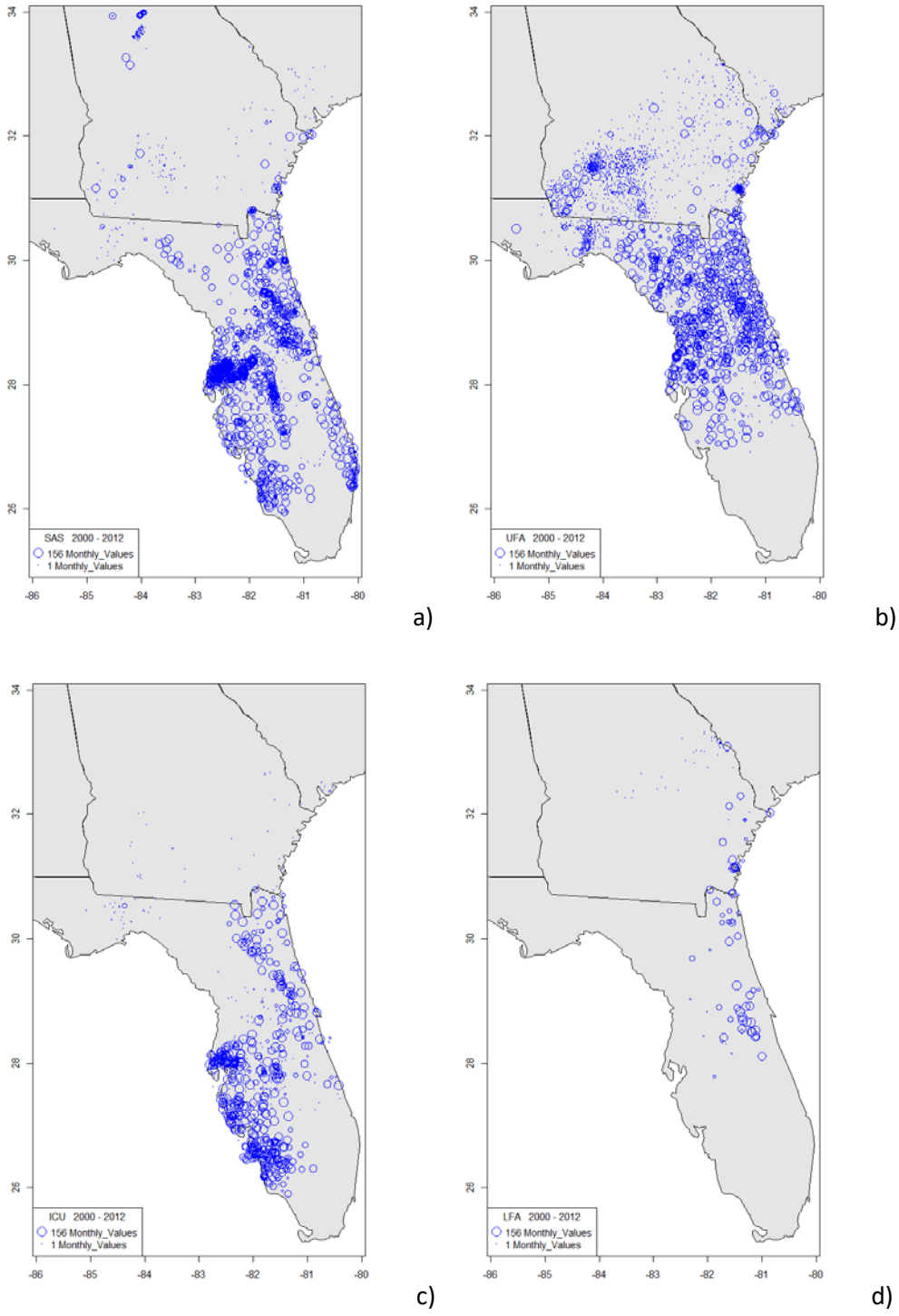


Figure C-2. Monthly groundwater-level data available (1-156) using original data (2000-2012) in a) SAS b) UFA c) ICU d) LFA

Table C-3. Summary of data available separated by data fill type.

Fill Method	Stations	Monthly Values
Original	18977	1061673
First Filled	2891	357622
Second Filled	1725	115141
PCA Filled	67	11810
Total	18977	1546246

Table C-4. Summary of quantity of stations separated by aquifer and data fill type.

AquiferFinal	Data Fill Type			
	Original	First Filled	Second Filled	PCA Filled
Undefined	34	0	0	0
APPZ	113	60	39	0
AVPK	32	21	19	0
Biscayne aquifer	740	132	47	0
Bottom Aquf	299	6	0	0
Brunswick Aquifer	44	10	5	0
check	13	0	0	0
Crystalline Ridge Aquifer	1013	7	0	0
Crystalline Rock Aquifer	1	0	0	0
FAS	1033	199	149	0
FPZ	4	2	1	0
ICU	1845	445	279	0
LFA	199	59	46	0
LSCU	0	0	0	0
MCU	110	20	17	0
MultiAquifer	204	11	6	0
noClass	442	16	12	0
OLPZ	21	15	7	0
OPZ	257	127	71	0
Other	5	1	1	0
Sandstone aquifer	0	0	0	0
SAS	4560	485	191	0
SECPA	988	38	6	0
UFA	6285	1212	816	67
ULFA	8	3	0	0
UZLFA	570	22	13	0
Valley and Ridge Aquifer	157	0	0	0
Total	18977	2891	1725	67

The data was first quality controlled by using cluster analysis of wells over a period of five and ten years. An example of cluster analysis on data that has had no quality analysis is illustrated for the period of 2000-2010 (Figure C-3). This cluster identified Clusters 4, 6, 7, 8 and 9 to be examined and data removed if necessary. Wells could exhibit shifts, outlier, below detection limit, and other anomalous behavior (Figure C-4). After anomalous data was adjusted, the final cluster analyses contained wells that behaved similarly to one another (Figure C-5). This result quality controlled data was used in the remainder of the analysis.

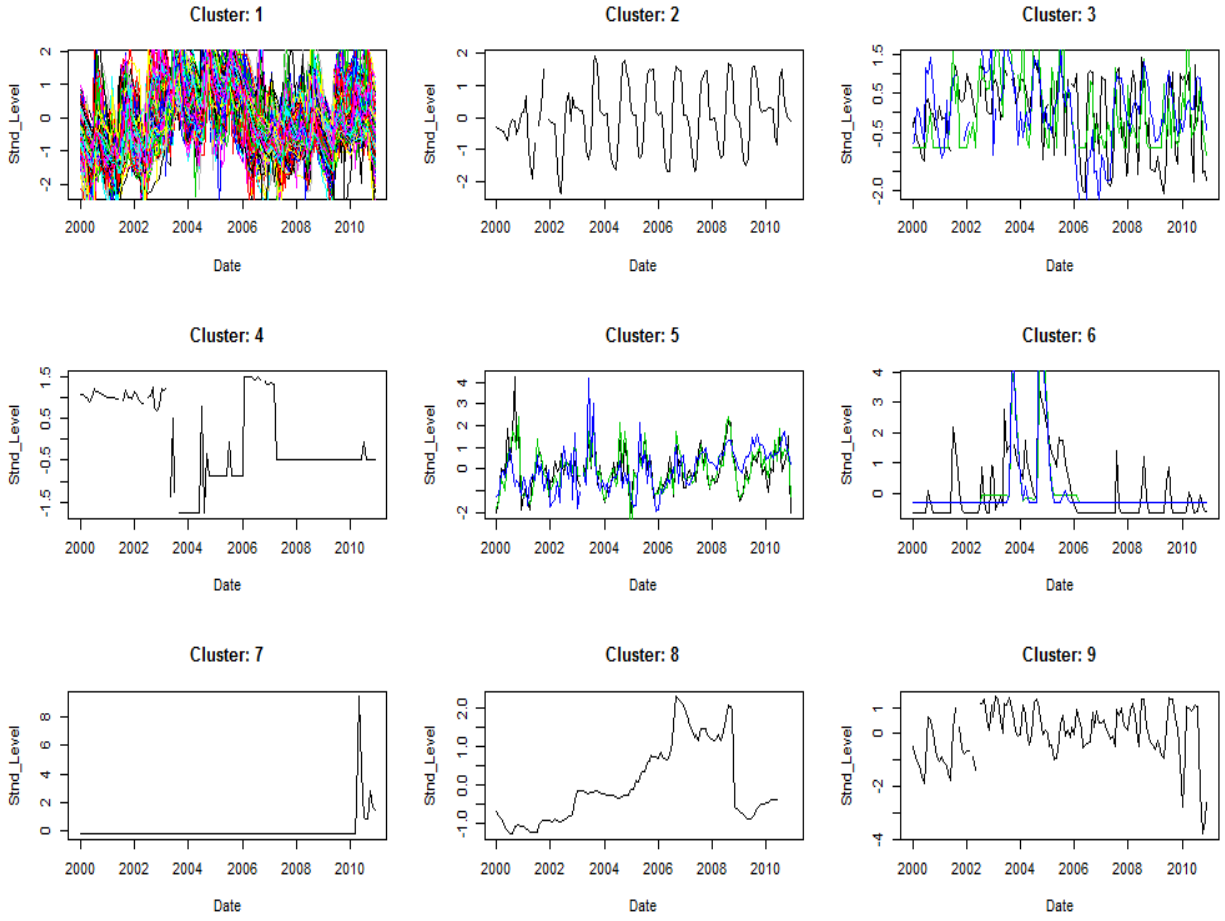
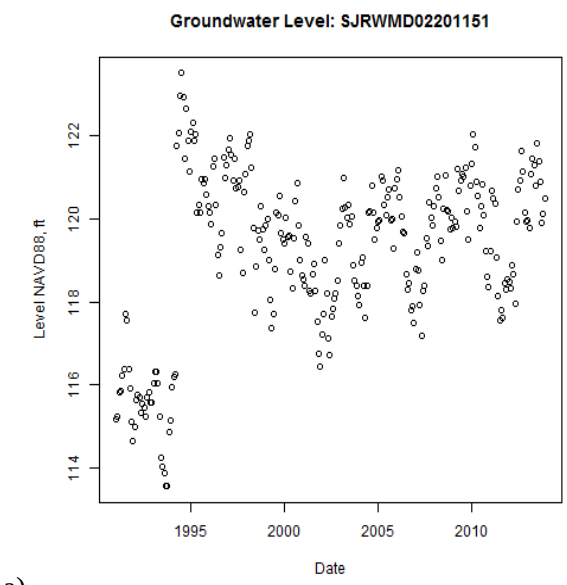
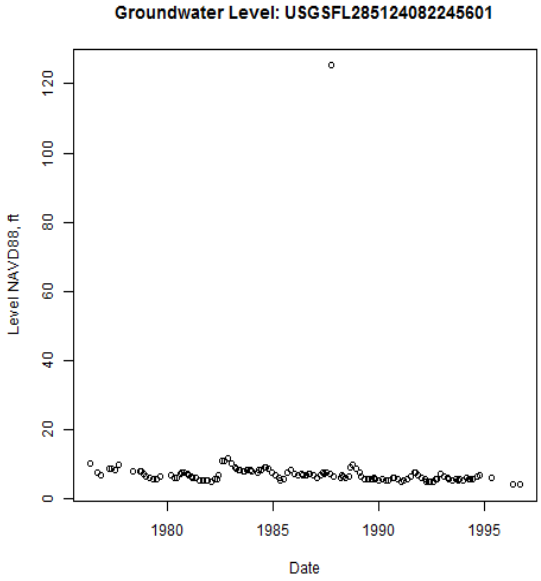


Figure C-3. Cluster analysis with non-quality assured data (2000-2010)

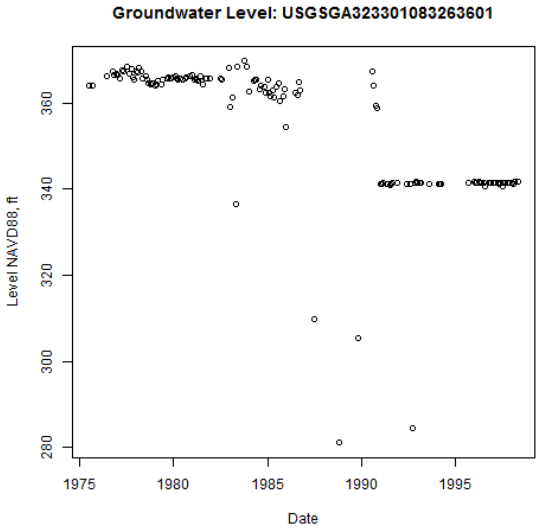


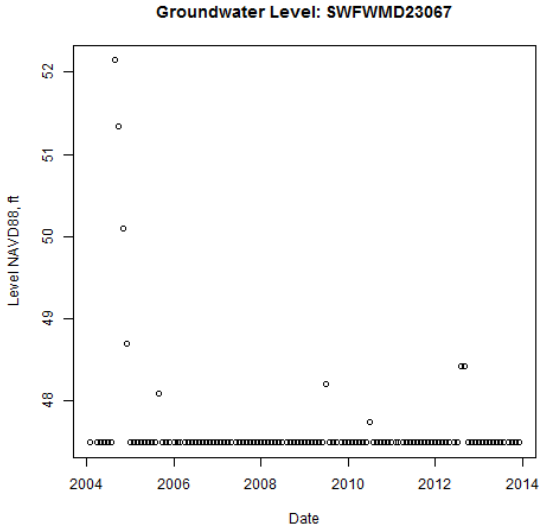
a)



b)

c)





d)

Figure C-4. Well demonstrating a) shift b) outlier c) undetermined error d) below detection limit

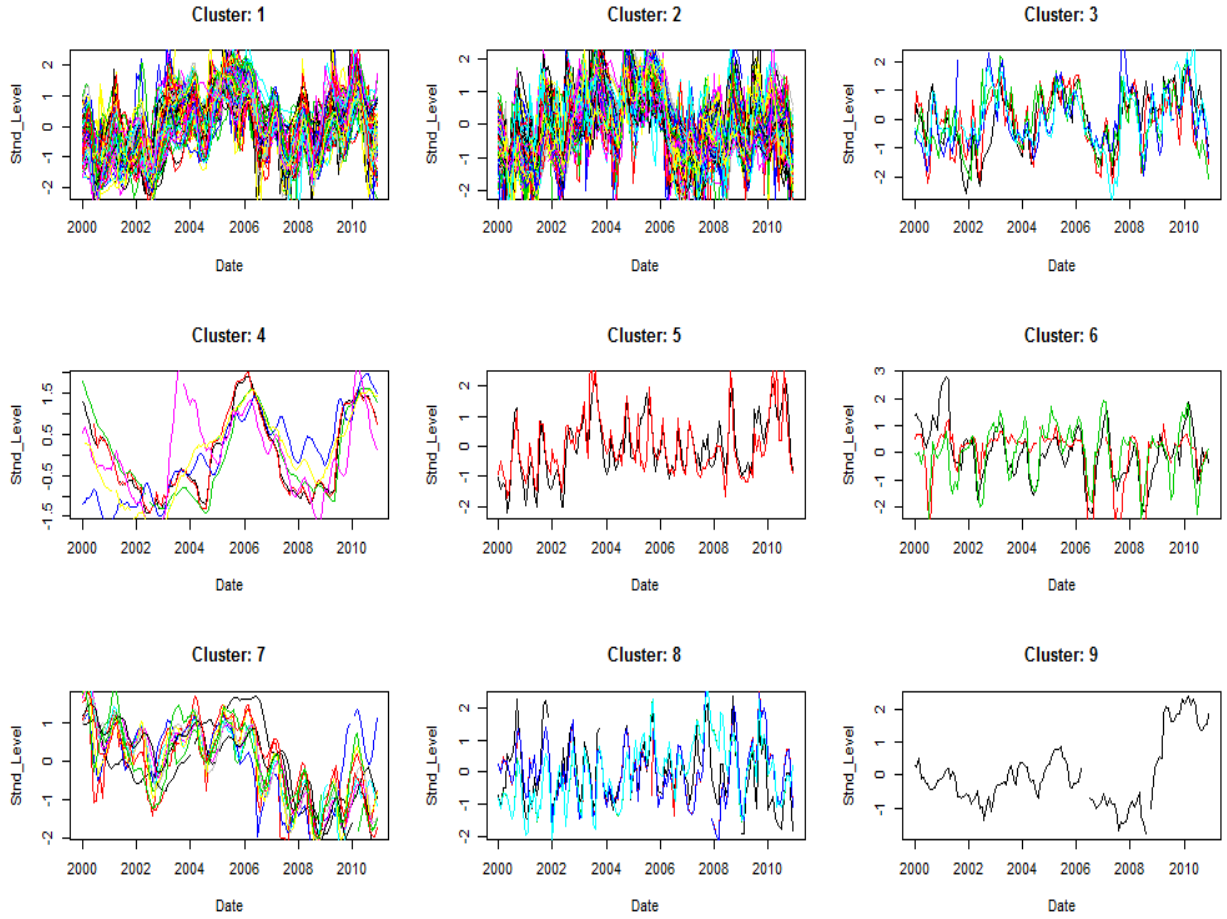


Figure C-5. Cluster analysis with quality assured data (2000-2010).

Once the quality controlled dataset was developed, the data was filled using linear regression according to the thresholds set for the data gap imputation. For example, the explanatory well SWFWMD25162 (UFA) was filled for data prior to 2005 using the adjacent response well SWFWMD24802 (ICU). The linear regression summary statistics included $R^2 = 0.989$, degrees of freedom (DF) of 61, and root mean square error (RMSE) of 0.558 ft (Figure C-6). The same well was second filled using response well SWFWMD17974 (OLPZ) to add an addition four months of data. The linear regression summary statistics were R2= 0.988, DF = 219, and RMSE = 0.756 (Figure C-7). The locations of both the independent wells and dependent wells are shown in the figures as well to illustrate a spatial context for the filling wells and used for visual examination (Figures C-6 and C-7).

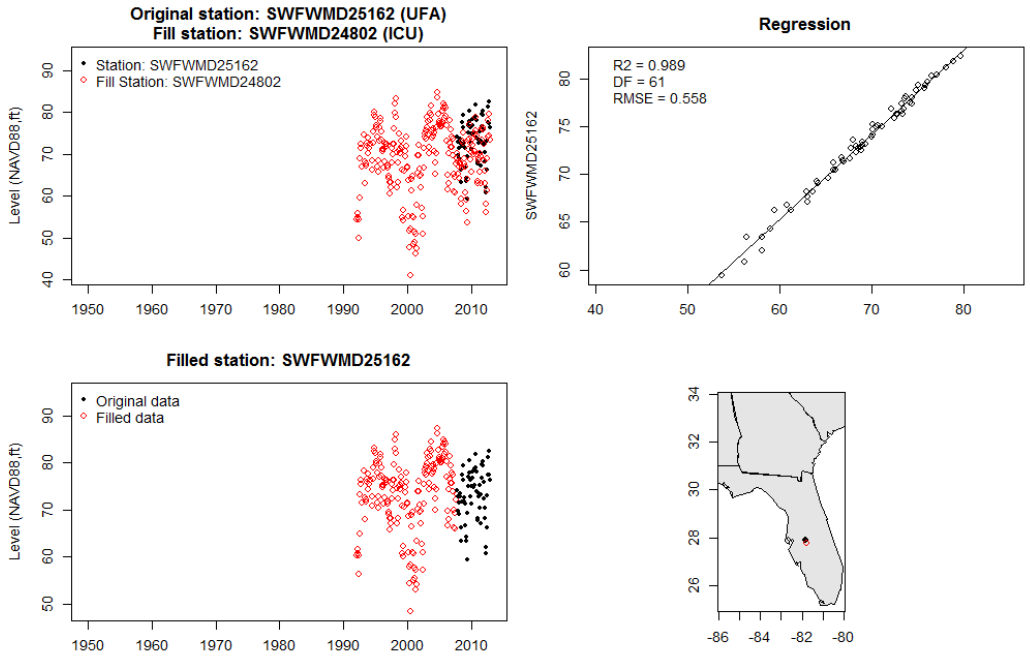


Figure C-6. Linear regression analysis showing the original and fill wells (top left), linear regression (top right), resulting dataset (bottom left), and locations of both wells (bottom right).

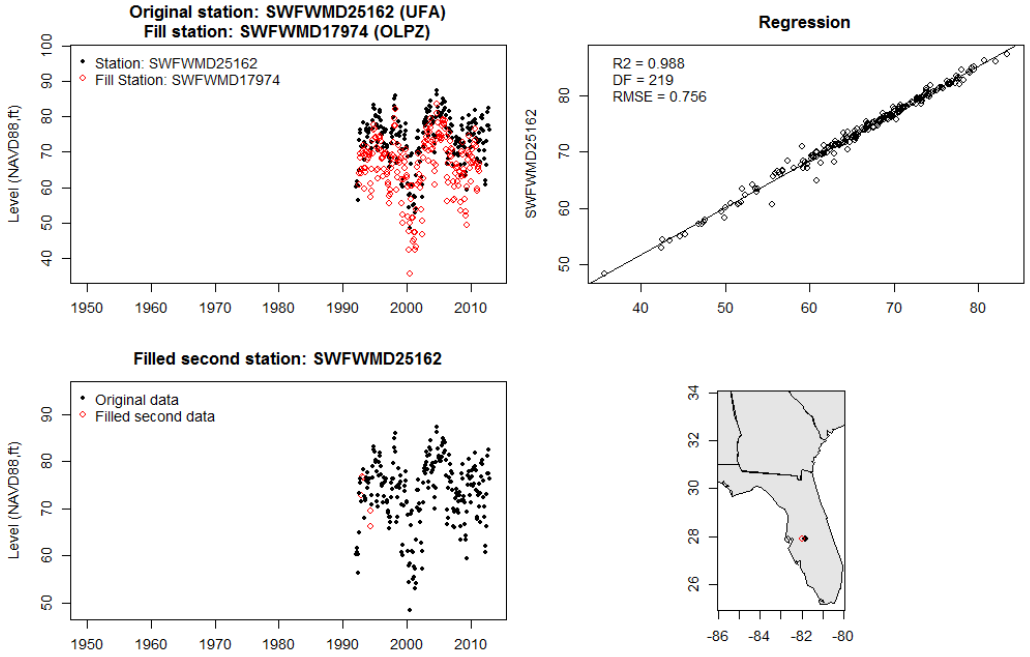


Figure C-7. Second linear regression analysis showing the original and fill wells (top left), linear regression (top right), resulting dataset (bottom left), and locations of both wells (bottom right).

After filling in data using the R script, the final data and linear regression models were presented in spreadsheet files. The original data was designated “original” and the filled data is designated “first filled” and “second filled”. Overall, 2,892 wells and 357,622 monthly groundwater levels were filled using the first filling method and 1,725 wells and 115,141 monthly groundwater levels were filled using the second filled method. Figure C-8 spatially illustrates the quantity of first filled data that is available in the SAS, UFA, ICU and LFA over the period 2000-2012. Figure C-9 spatially illustrates the quantity of second filled data that is available in the SAS, UFA, ICU and LFA over the period 2000-2012. A majority of the stations that were filled were UFA stations. Nearly 33% of first filled stations were UFA and nearly 50% of second filled stations were UFA (Table C-4). Additionally, a summary of model metrics (RMSE, R2, degrees of freedom) was provided in Figure C-10 for each filling method. All models provide a summary statistic R2 of greater than 0.90 since it is a threshold with the model. Most models have an RMSE of less than 2 feet however there are several linear models in both the first and second fill that have a greater than 2 feet RMSE indicating a poorer model fit. In additional iterations, this may be included as a model threshold to remove some of the uncertainty. The degrees of freedom in the models were generally skewed left as was expected since many wells have not been monitored over extensive periods.

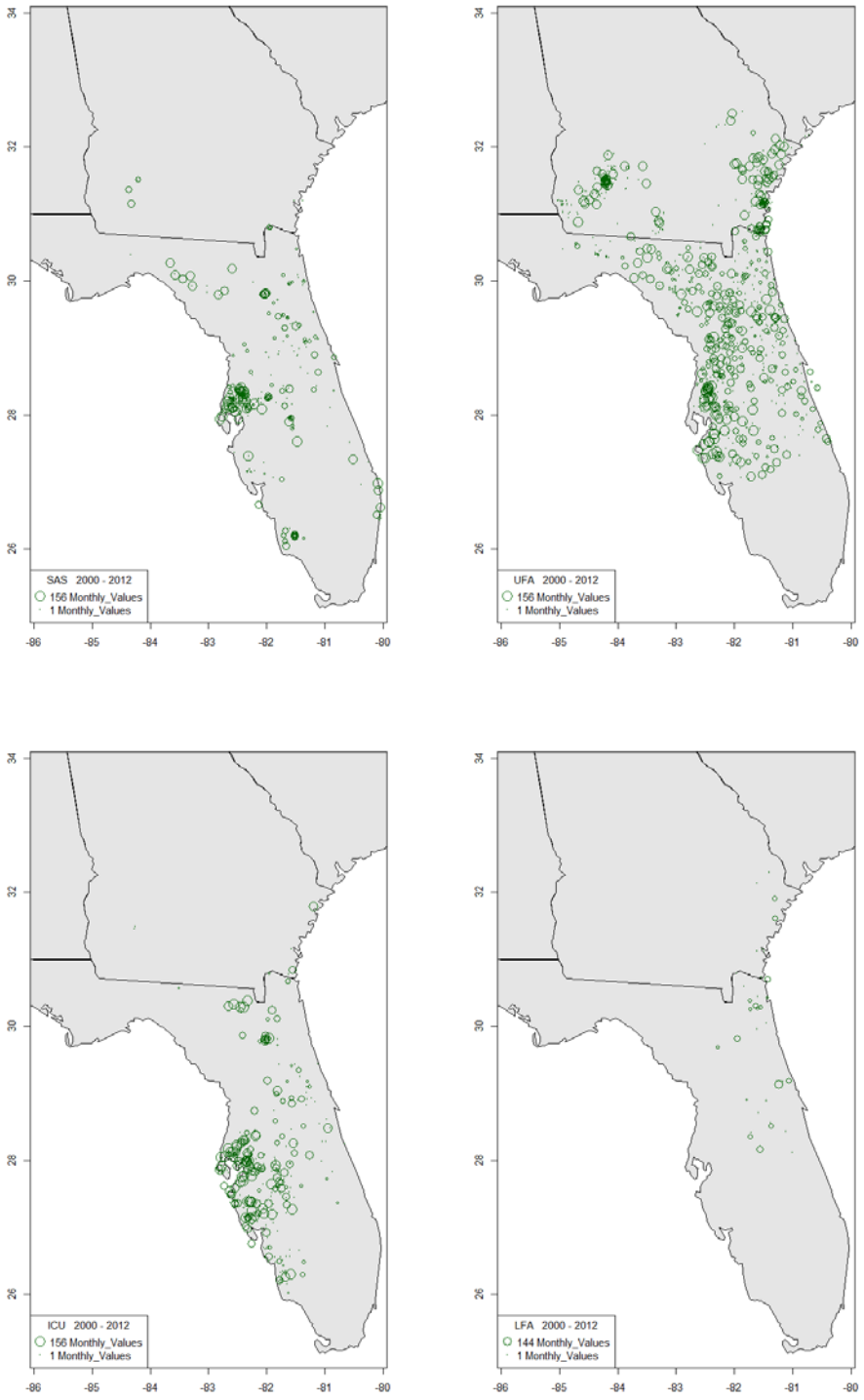


Figure C-8. First-filled quantity of median monthly groundwater level data available (1-156) using only first-filled data (2000-2012) in the a) SAS b) UFA c) ICU d) LFA

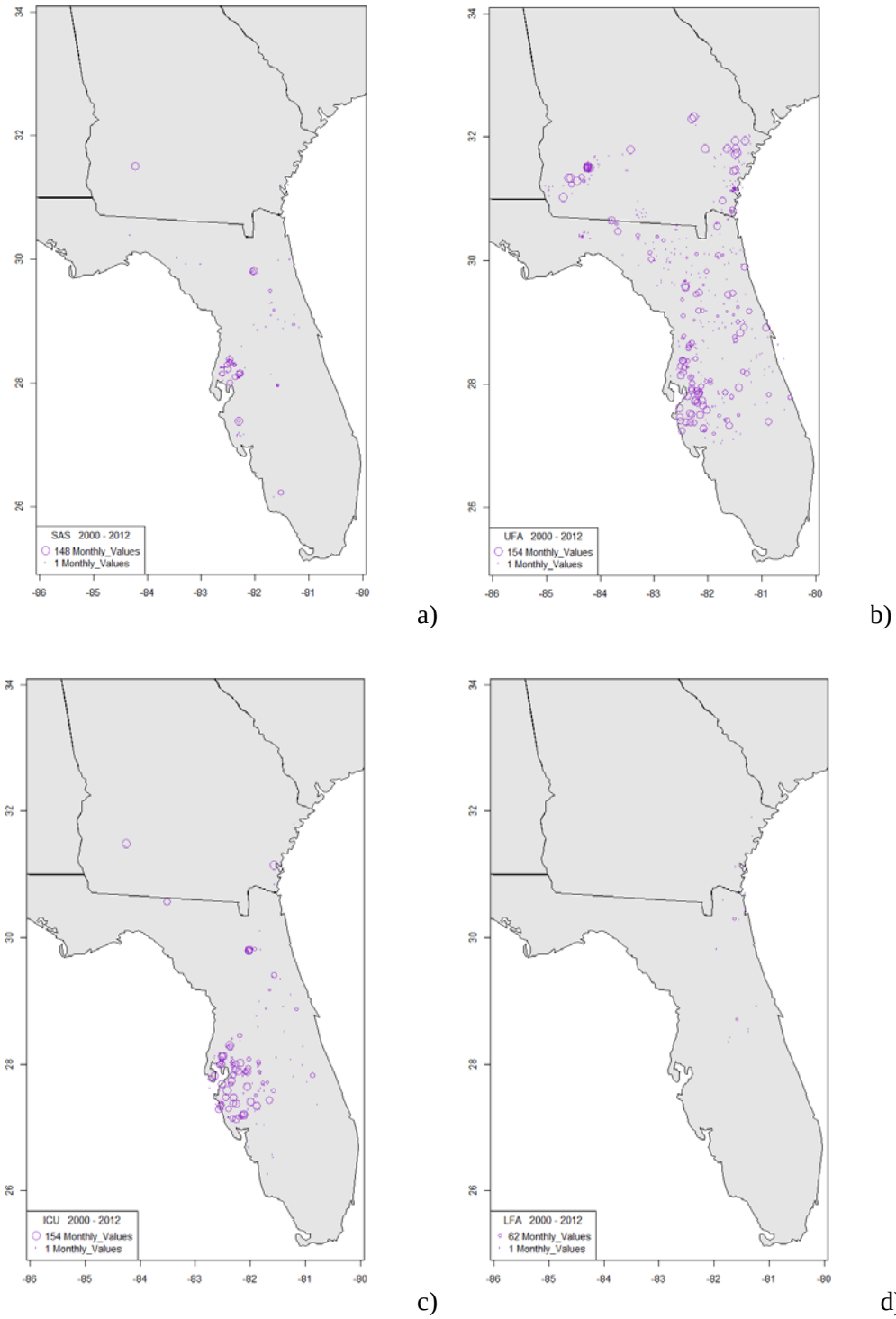


Figure C-9. Second-filled quantity of median monthly groundwater level data available (1-156) using only second filled data (2000-2012) in the a) SAS b) UFA c) ICU d) LFA

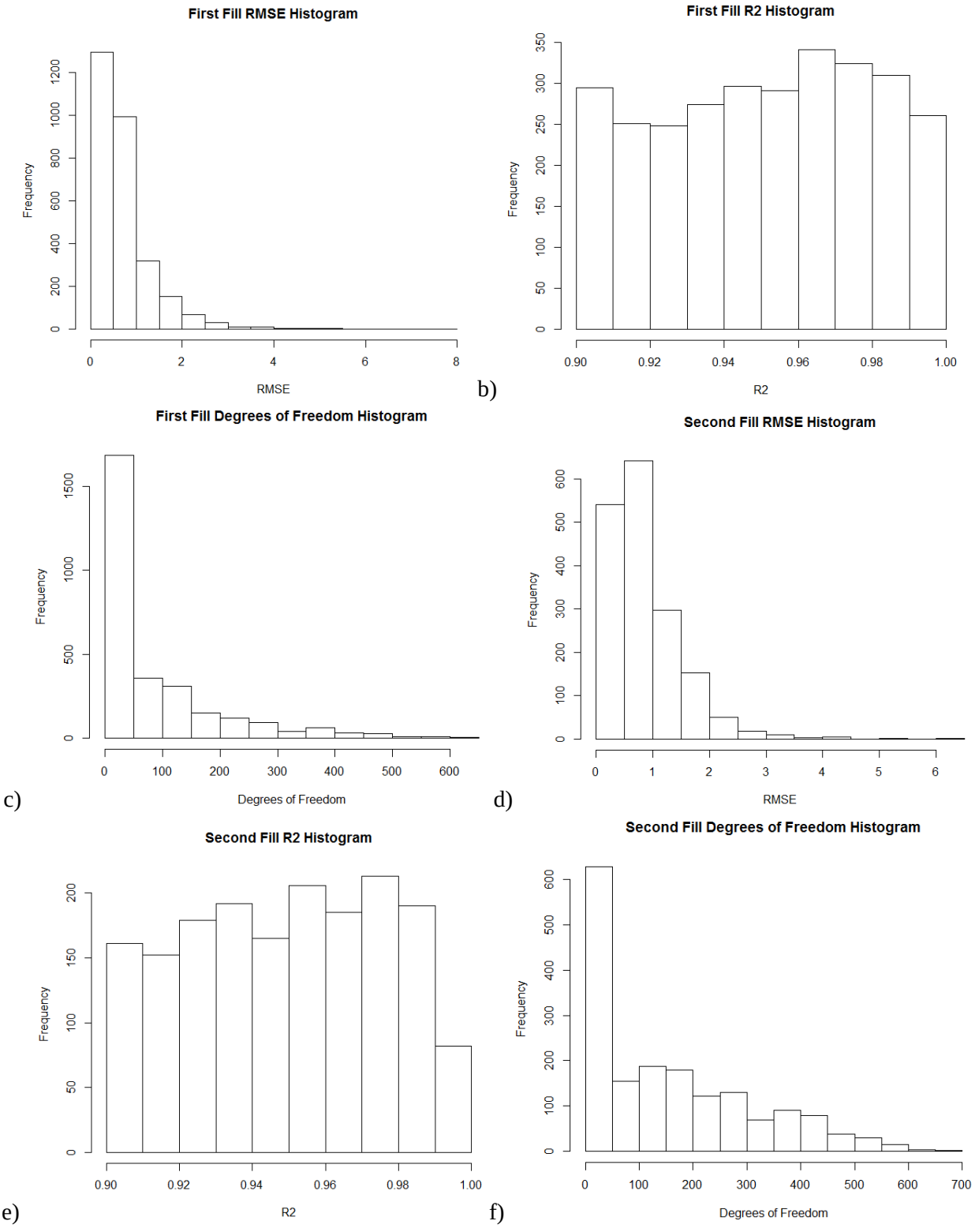


Figure C-10. Summary statistics for first fill a) RMSE b) R2 c) degrees of freedom and second fill d) RMSE e) R2 f) degrees of freedom linear regression models.

Once data was filled using both linear regression filling methods, several large spatial gaps existed within Georgia and the northern part of Florida in the UFA. The UFA for 2001, 2009 and 2010 all illustrate a large spatial gaps in Georgia (Figure C-11). This area was filled using cluster analysis combined with principle component analysis. Cluster analysis over the period 1982-2010 binned the UFA wells in the region into twenty-four groups to optimize the spatial grouping (Figure C-12). The period 1982-2010 was selected since many wells have level data in the UFA in 1982. Each well was normalized and plotted in its respective cluster (Figure C-13) to illustrate the respective cluster signal.

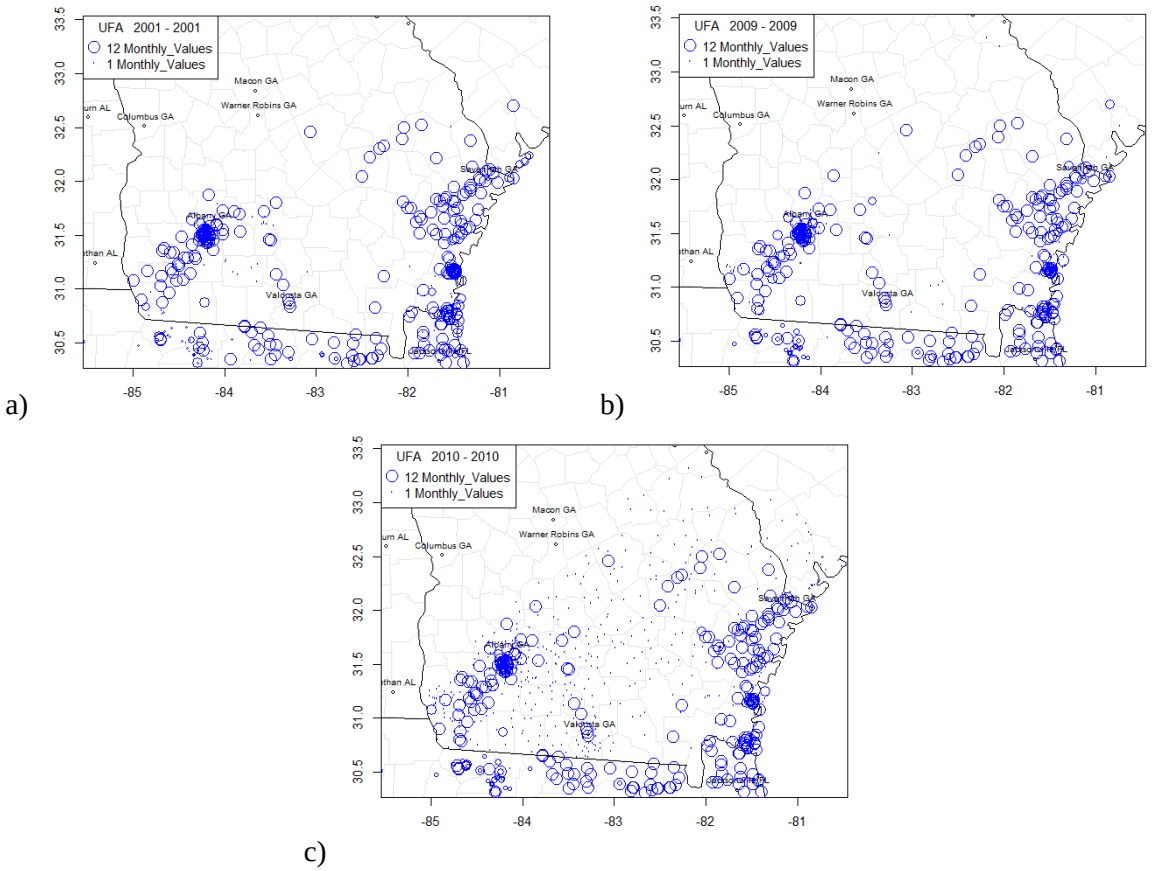


Figure C-11. Quantity of median monthly groundwater levels after first and second filling for years a) 2001 b) 2009 c) 2010.

Several clusters contained only one well including: Cluster 3 (SJRWMD27234872), Cluster 5 (USGS301852081234201), Cluster 6 (USGS302416081522601), Cluster 10 (USGS305235084125101), Cluster 13 (USGS311009084495502), Cluster 14 (USGS31633081324101), Cluster 18 (USGS312853084275101), Cluster 20 (USGS313808084093601), Cluster 21 (USGS314330084005402), Cluster 22 (USGS315228084100601), Cluster 24 (USGS322652083033001). These clusters identified wells that represented outliers for general signals of a region. Most likely these outlier clusters are due to pumping centers, aquifer misclassification, representation of a unique region, etc. Other clusters including Cluster 1, Cluster 12 and Cluster 15 contain many wells that span over larger regions. Cluster 1 contains a region that surrounds Jacksonville and extends north. Cluster 12

contains the northern part of the UFA below the fall line and the middle of the part of the state north of Valdosta GA. Cluster 15 contained areas south of Savannah GA and extends westward.

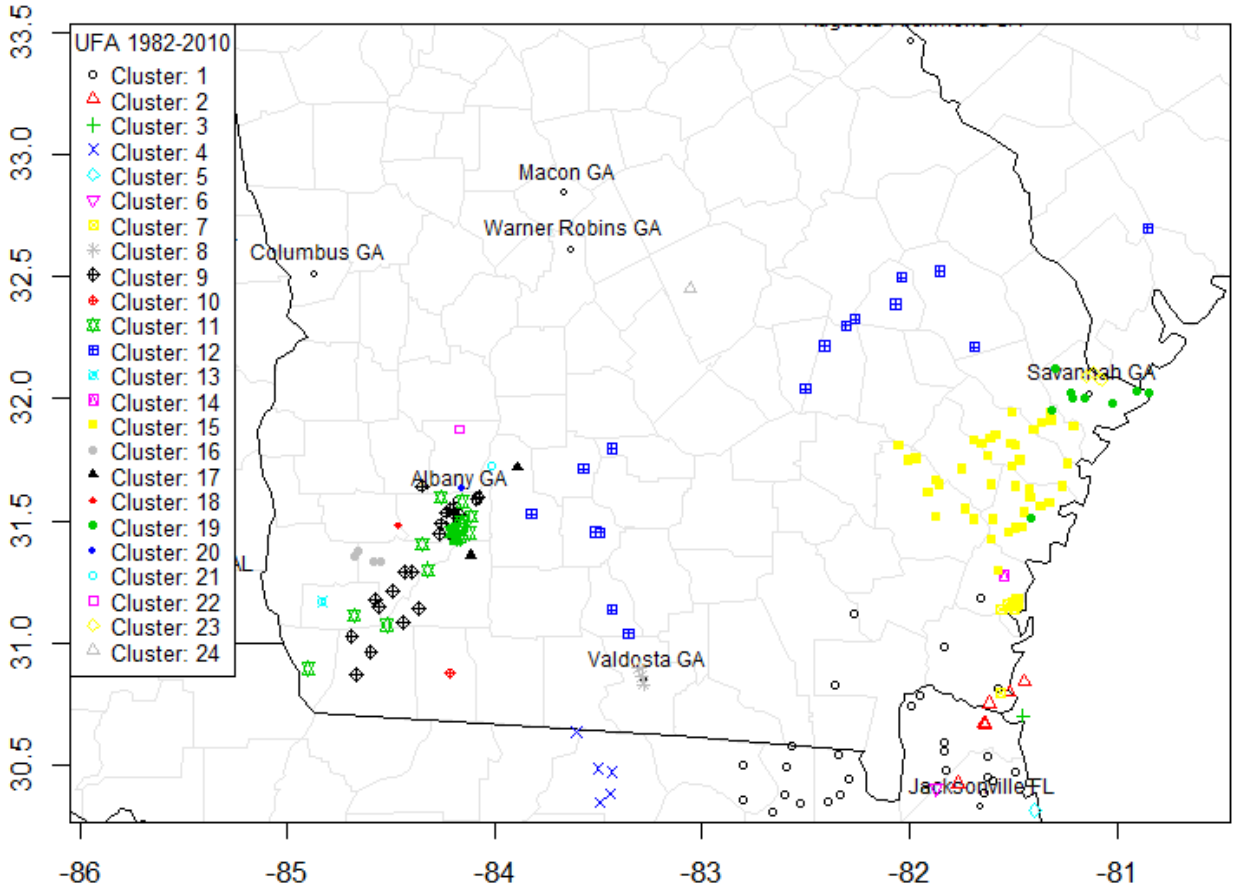


Figure C-12. Map of UFA clusters in Georgia, South Carolina and North Florida (1982-2010)

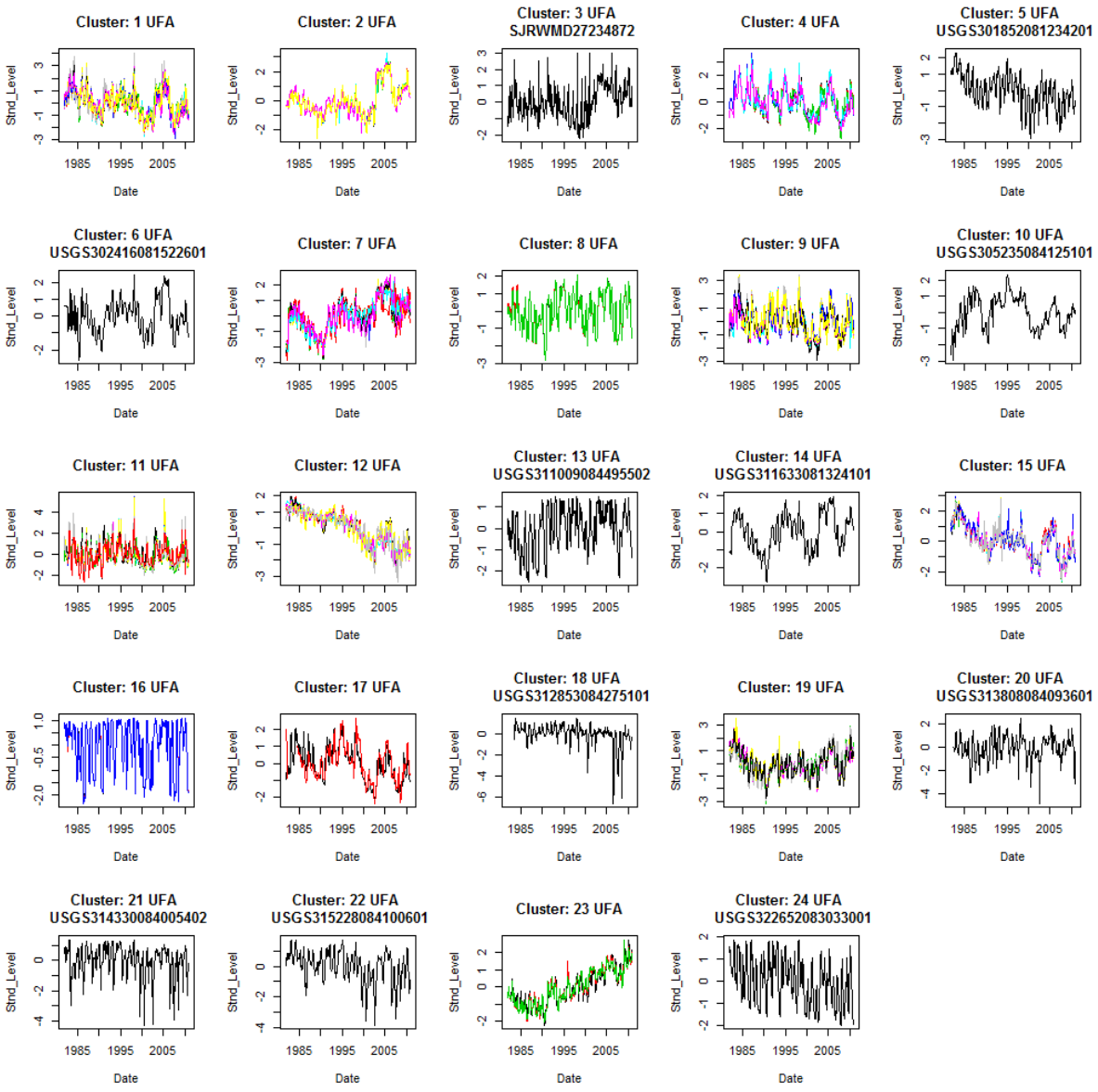


Figure C-13. Normalized UFA well time series grouped by cluster.

Once areas of distinct temporal patterns formed spatial clusters, principle component analysis was applied to each cluster. The first principle component was generated for each cluster and used to fill wells with limited data. PCA analysis can only be performed if there were no gaps in the data. In order to accommodate for this, wells with missing data were removed. PCA was not performed on clusters that had less than two wells. The first principle component for each cluster was illustrated in Figure C-14. The proportion of variance explained by the first principle component had to exceed 0.85 as illustrated below each figure in Figure C-14. Wells with greater than two data points were filled using linear regression against the first principle component. This process was illustrated in Figures C-15 and C-16. The location of the of the well and the various adjacent principle components clusters are shown in the top left. A spatial summary of the total wells filled using PCA is illustrated in Figure C-17 over the period 2000-2010.

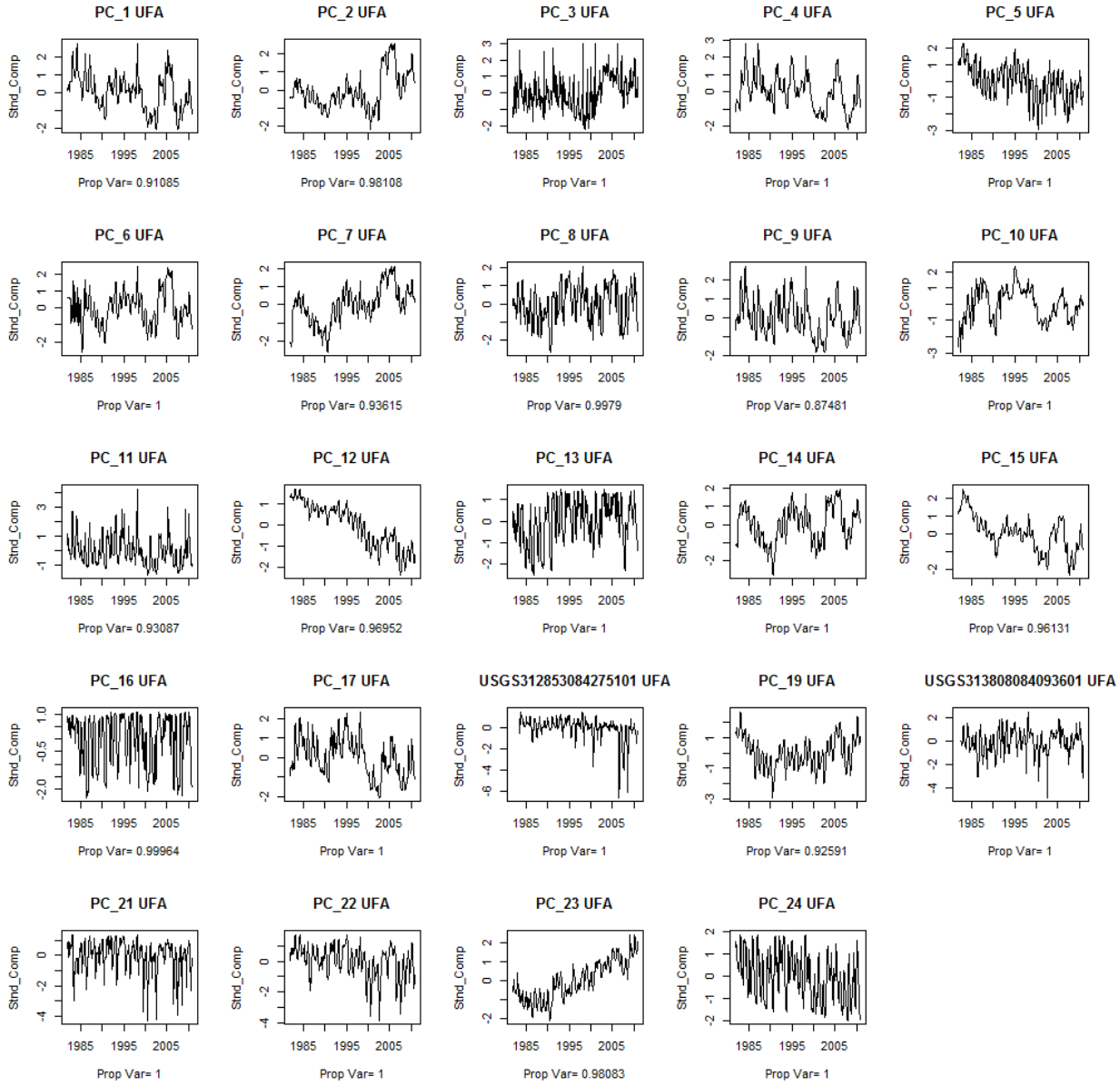


Figure C-14. First principle component for respective UFA cluster wells. Below each graphic reports the proportion of variance described by the first principle component.

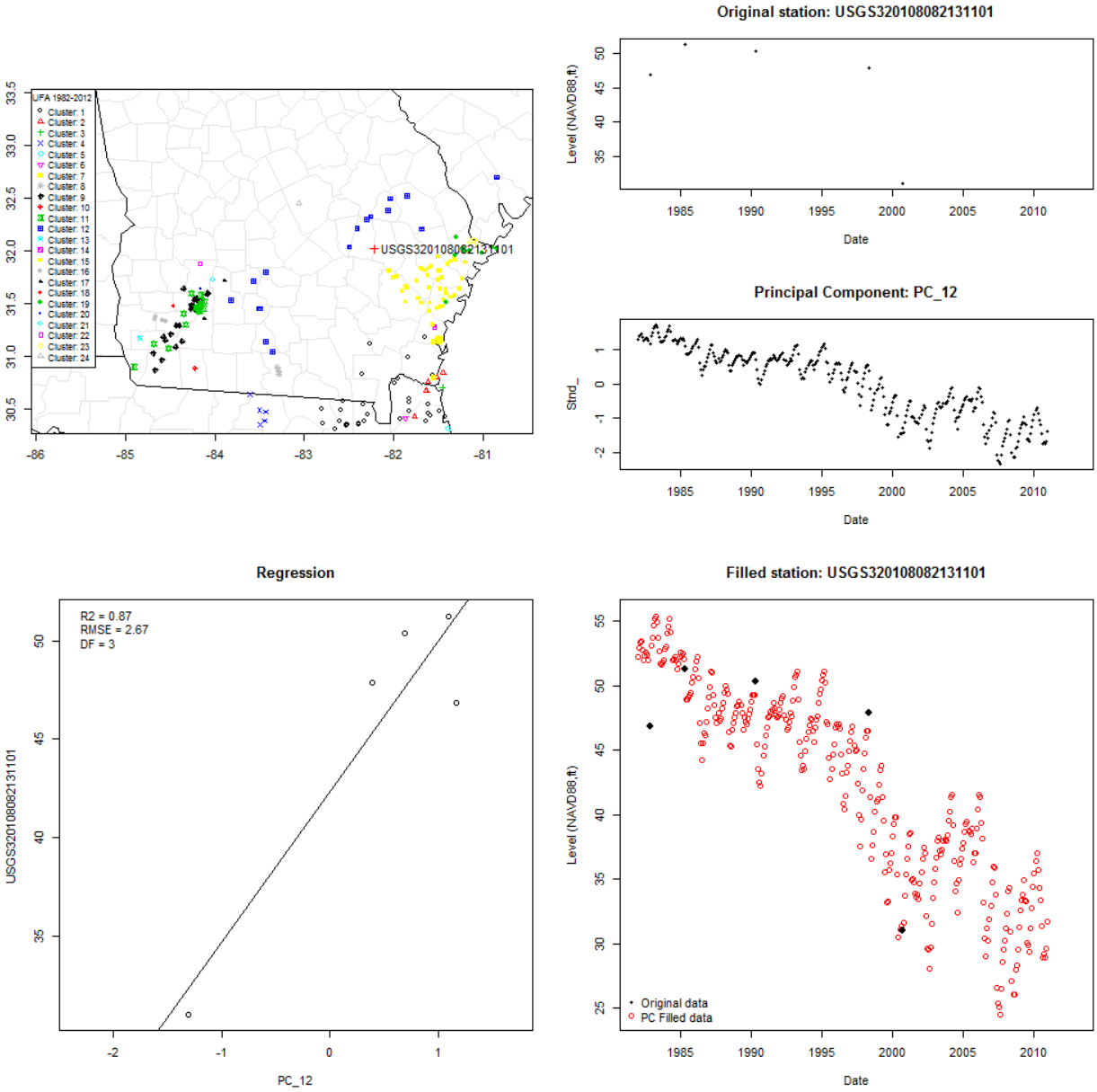


Figure C-15. Locations of dependent well and clusters (top left) dependent well and the selected cluster first principal component (top right), linear regression (bottom left), resulting dataset (bottom right).

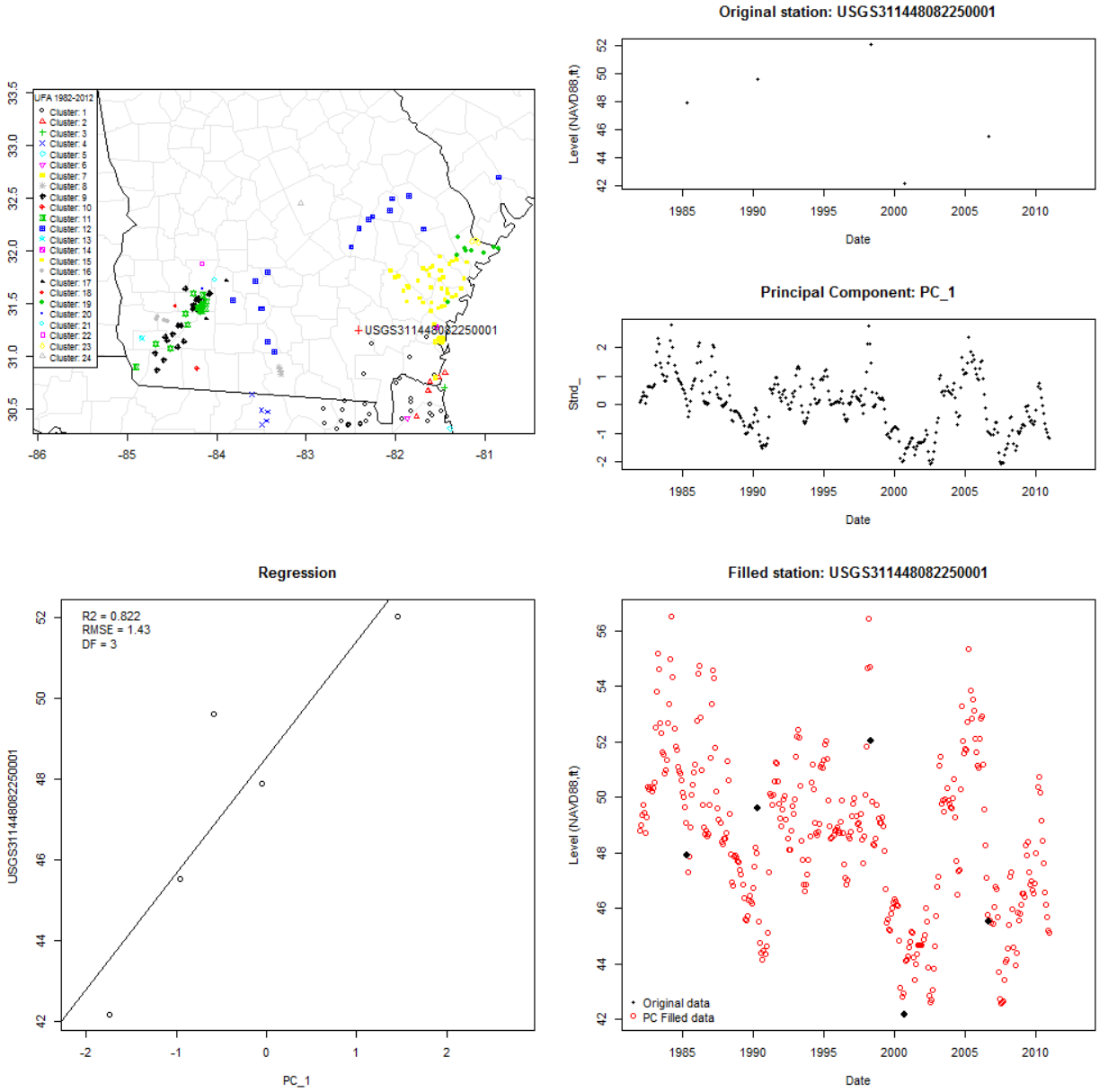


Figure C-16. Locations of dependent well and clusters (top left) dependent well and the selected cluster first principal component (top right), linear regression (bottom left), resulting dataset (bottom right).

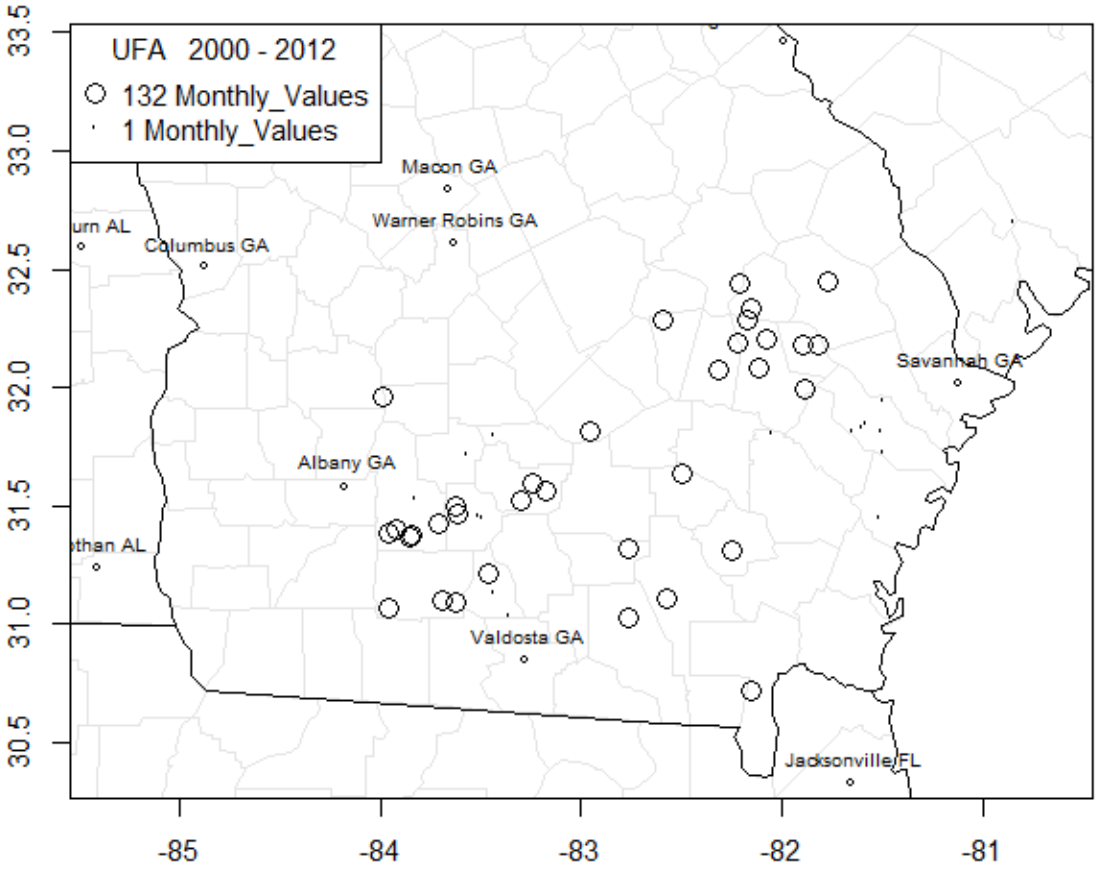


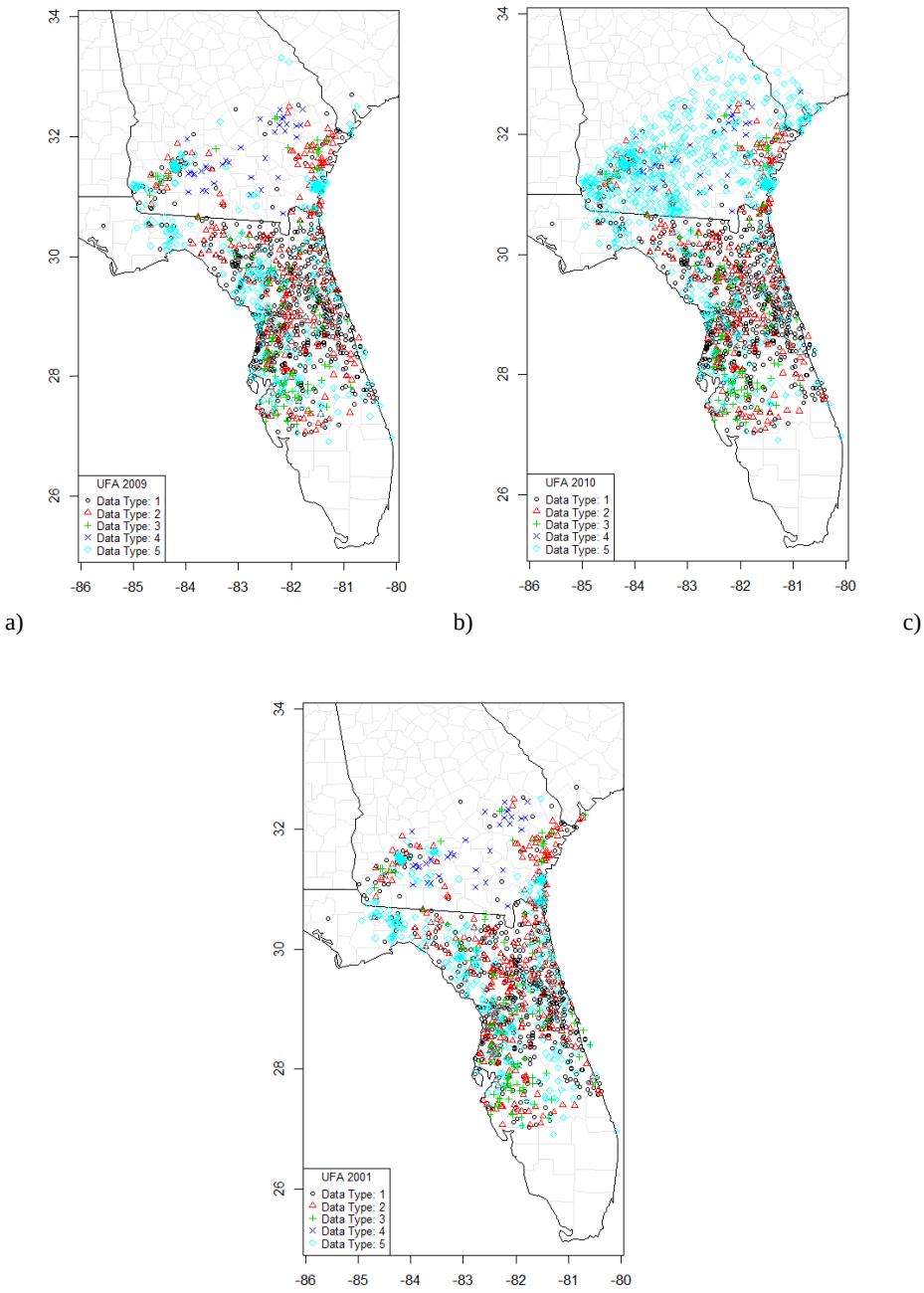
Figure C-17. PCA filled median monthly groundwater level data available (1-132) using only PCA method (2000-2010)

The resulting product included a database of well information with aquifer classification and other metadata. The resulting time series well data was given in five data fill types including 1) original 2) first filled 3) second filled and 4) PCA filled. The data was aggregated into annual median values and assigned a data filling type for steady state groundwater models calibration. Individual wells were given a data fill type for each year based on data available from various filling methods according to the hierarchical list:

Table C-5. Data fill type and description

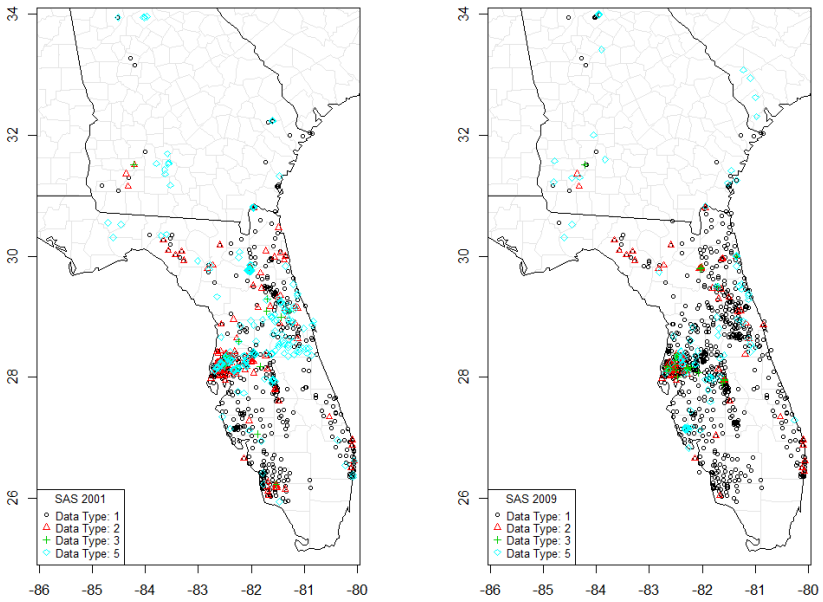
Data Fill Type	Description
1	Original data > 6 months
2	Filled data > 6 months
3	Filled second data > 6 months
4	PCA data > 6 months
5	Any data < 6 months

Figures C-18-20 illustrated the spatial distribution of the different data types in the UFA, SAS, and LFA for the years 2001, 2009, 2010. The median annual value will be used for model calibration targets and weighted during calibration based on the data fill type.



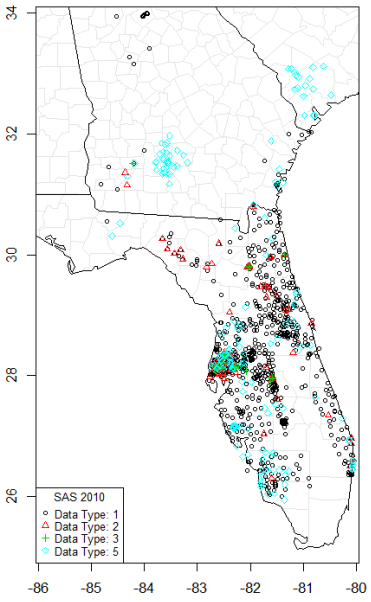
a) b) c)

Figure C-18. Data fill type based on filling method from Table C-5 for aquifer UFA in years a) 2001 b) 2009 c) 2010



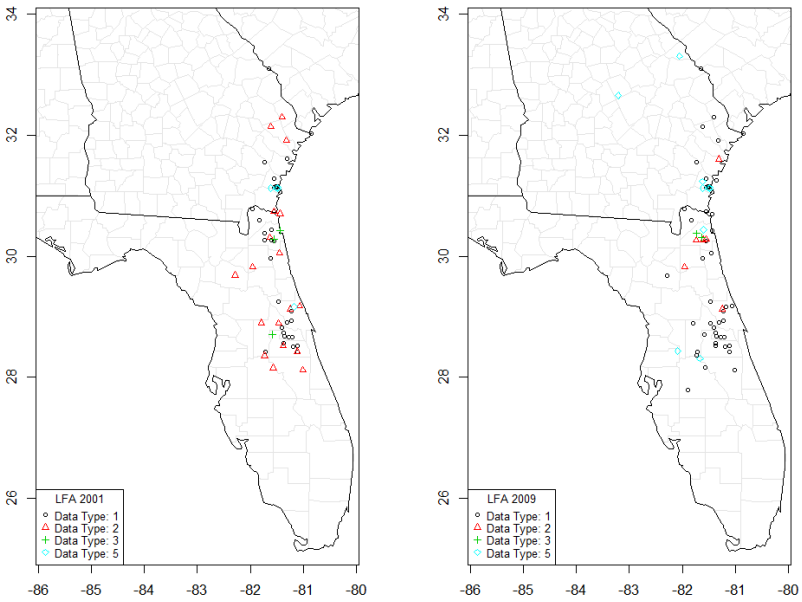
a)

b)

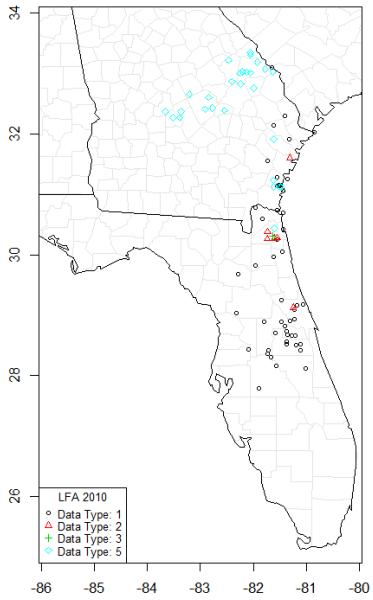


c)

Figure C-19. Data fill type based on filling method from Table C-5 for SAS in years a) 2001 b) 2009 c) 2010.



a) b)



c)

Figure C-20. Data fill type based on filling method from Table C-5 for LFA in years a) 2001 b) 2009 c) 2010

APPENDIX D – EXTINCTION DEPTH DETERMINATION

APPENDIX D
Extinction-Depth Determination
by Robert Freese

Shah et al. (2007) define extinction depth as the depth to water table at which groundwater evapotranspiration reaches zero. Their paper provides a table of extinction depths (shown below in Table D-1) for various soil textures under three land covers. The estimates for bare soil appear based on soil moisture release characteristics for various soil textures (Hillel, 1998). The extinction depth represents the vertical extent over which soil moisture content declines from saturation at the water table to "wilting point", a moisture content at which plants roots cannot extract moisture. Examples of release curves for some soil textures are shown in Figure D-1.

Extinction depth estimates for grass and forest covers, also shown in Table D-1, appear based on the extinction depth for bare soil plus the estimated rooting depth for each land cover. The assumption is that forests have a rooting depth of 200 cm while grass has a rooting depth of 100 cm. However, a compilation of data from numerous sources shows that these assumptions may significantly underestimate rooting depths (Canadell et al., 1996). Appendix 1 of this paper shows that maximum rooting depths for longleaf pine (*Pinus palustris*), a tree that formerly dominated the uplands of Florida is 4.8 m. Various upland oak species have maximum rooting depths ranging from 3.0 to 4.4 meters. Herbaceous species are more shallowly rooted than trees. For example, corn (*Zea mays*) root depths may range from 1.3 to 2.4 m. Maximum root depths for native grass genera commonly occurring in Florida also vary widely: 2 m for fescue (*Festuca* spp.), 1.3 m for muhly grass (*Muhlenbergia* spp.), 1.5 m for dropseed (*Sporobolus* spp.), 1.5 to 3.0 m for bluestems (*Andropogon* spp.). These native and cultivated species occur widely throughout the uplands of Florida on well-drained or excessively well-drained soils. These areas are identified on SSURGO coverage as "non-hydric."

Flatwood environments in Florida have seasonally impeded drainage and alternate between abundant moisture and droughty conditions. Slash pine, a characteristic tree of flatwoods, is more shallowly rooted (3.3 m) than longleaf pine and this would appear due to the seasonally wet nature of these areas. These broad, flat landscapes are generally non-hydric but have occasional small depression wetlands. These areas are identified on SSURGO coverage as "partially hydric."

Plant root depths in wetlands are more shallow than in either uplands or flatwoods. Abundant water means that plants do not need to extend roots deep into the soil profile (Mitsch and Gosselink, 1993). Shallowly rooted wetland plants will tend to occur within one meter of the surface. Wetlands are identified on SSURGO coverage as "hydric."

Based on these data, separate rooting depths are proposed for non-hydric, partially hydric, and hydric soils. Non-hydric: 400 cm (forest) and 200 cm (grass), partially hydric: 250 cm (forest) and 150 cm (grass), hydric: 100 cm (both forest and grass covers). The proposed modifications to extinction depth estimates for forest and grass are shown in Tables D-2 and D-3, respectively.

This approach is refinement over NEF model v.3 in which extinction depths were based on coarse scale physiographic regions: 4 m for Trail Ridge, 3 m for "Meandering Plains", and 1.8 m for River Valleys.

Table D-1. Extinction Depths for Different Soil Land Covers (from Shah et al., 2007)

	Land Cover Type (cm)		
Soil Type	**Bare Soil**	**Grass**	**Forest**
sand	50	145	250
loamy sand	70	170	270
sandy loam	130	230	330
sandy clay loam	200	300	400
sandy clay	210	310	410
loam	265	370	470
silty clay	335	430	530
clay loam	405	505	610
silt loam	420	515	615
silt	430	530	630
silty clay loam	450	550	655
clay	620	715	820

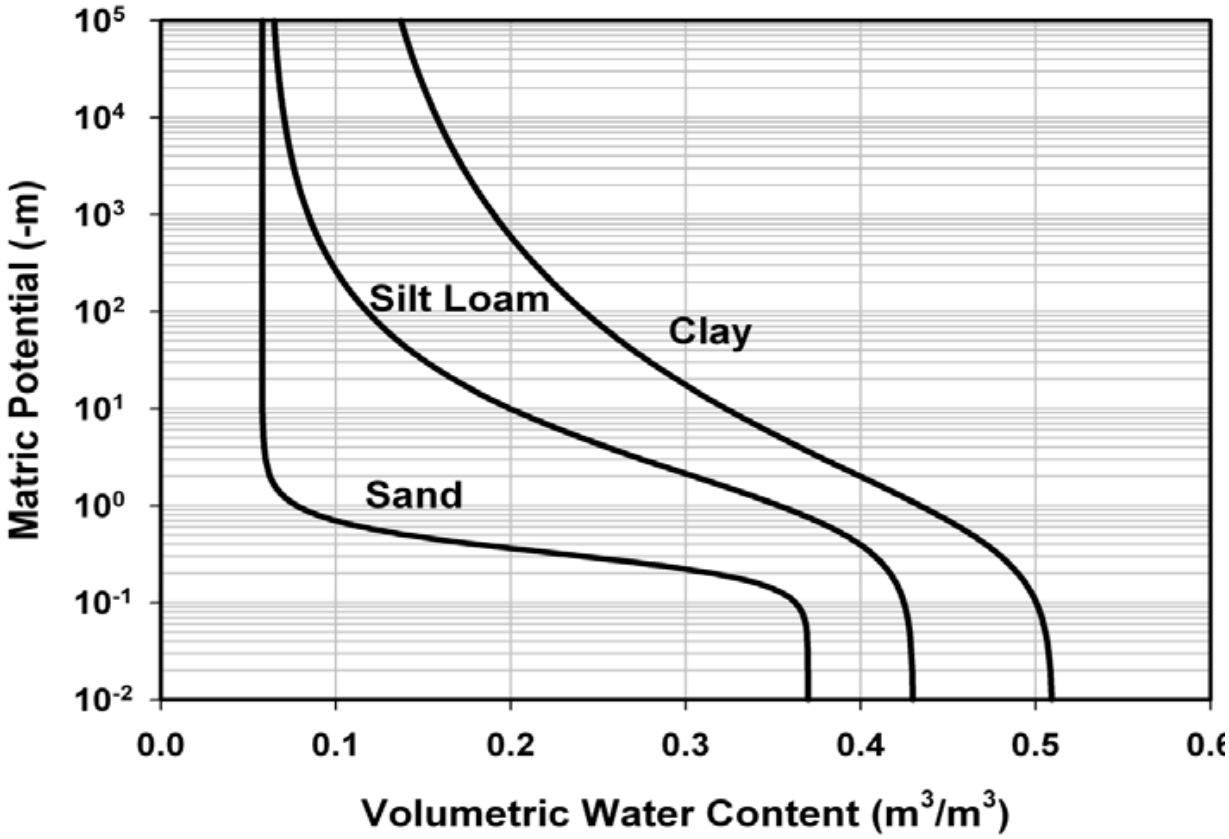


Figure D-1. Examples of Soil Moisture Release Curves.

Table D-2. Proposed Extinction Depths (cm) under Forest Land Cover

Soil Type	**Hydric**	**Partly hydric**	**Non-hydric**
sand	150	300	450
loamy sand	170	320	470
sandy loam	230	380	530
sandy clay loam	300	450	600
sandy clay	310	460	610
loam	365	515	665
silty clay	435	585	735
clay loam	505	655	805
silt loam	515	665	820
silt	530	680	830
silty clay loam	550	700	850
clay	720	870	1020

Table D-3. Proposed Extinction Depths (cm) under Grass Land Cover

Soil Type	Hydric	Partly hydric	Non-hydric
sand	150	200	250
loamy sand	170	220	270
sandy loam	230	280	330
sandy clay loam	300	350	400
sandy clay	310	360	410
loam	365	415	465
silty clay	435	485	535
clay loam	505	555	605
silt loam	515	565	620
silt	530	580	630
silty clay loam	550	600	650
clay	720	770	820

Citations

Canadell, J., R.B. Jackson, J.R. Ehleringer, H.A. Mooney, O.E. Dala, E.D. Schulze, 1996. Maximum rooting depth of vegetation types at the global scale. Oecologia 108: 583-595.

Hillel, D. 1998. Environmental Soil Physics. Academic Press. Amsterdam.

Mitsch, W.J. and J.G. Gosselink. 1993. Wetlands. 2nd edition. Van Nostrand Reinhold. New York.

Shah N., M. Nachabe, and M. Ross. 2007. Extinction Depth and Evapotranspiration from Ground Water under Selected Land Covers. Ground Water Volume 45, No. 3.

APPENDIX E – SPRINGS DATA 2001 AND 2009

Estimated and Simulated Springs Discharge Data

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
ALAPAHA_RISE_NR_FT_UNION	SR	qspring09_n011235002	199	3	30.44010	-83.08910	34.3	242.9	232.3	36.77	243.9	240.4
Alexander_Spg	SJR	qspring09_291896	166	3	29.08131	-81.57589	8.96	92.8	104.7	8.96	102.0	102.3
ALLEN_MILL_POND	SR	qspring09_s041105002	260	3	30.16280	-83.24293	23.62	13.2	3.6	25.87	5.0	5.4
Alligator_Hole	SJR	qspring09_28144884	1006	3	29.21511	-82.05092	37.7	0.5	0.6	38	0.7	0.7
AMERICAN_LEGION_SPRING_G3	SWF	qspring09_20158	5003	3	28.89859	-82.59149	0	21.5	22.5	-0.15	24.6	23.1
ANDERSON_SPRING	SR	qspring09_s011135001	214	3	30.35333	-83.18965	28.23	8.6	10.1	30.53	10.5	10.5
AUCILLA_SPRING_ON_THE_WACISSA_RIVER	SR	qspring09_s020301003	2005	3	30.34038	-83.99053	28.7	6.8	4.2	27.1	8.4	7.9
BATH_TUB_SPRINGS	SR	qspring09_s041234004	288	3	30.09184	-83.09825	13.52	5.0	5.4	16.11	6.7	6.4
Beecher_Spg	SJR	qspring09_390046	156	3	29.44866	-81.64686	8.44	7.3	5.2	8.44	9.0	5.4

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
BELL_SPRING_NEAR_OLDTOWN_FL	SR	qspring09_s101419006	344	3	29.59726	-82.94151	2.02	6.9	7.7	3.64	8.5	8.3
BELL_SPRINGS_NEAR_WHITE_SPRINGS	SR	qspring09_s021611006	266	2	30.32910	-82.68830	56	0.8	-0.1	58	1.0	-0.1
BETTY_SPRINGS	SR	qspring09_s061532013	4007	3	29.91484	-82.83997	7.75	1.0	1.3	10.09	1.7	1.5
BIG_BLUE_SPRING_NR_WACISSA_FL	SR	qspring09_s020312002	2014	3	30.32773	-83.98478	28	36.4	31.9	26	54.3	52.1
BIG_SPRINGS	SR	qspring09_s060609001	257	3	29.97432	-83.73891	2.1	18.4	13.1	2.1	18.4	14.0
BLUE_CREEK_SPRING_NR_KEATON_BEACH	SR	qspring09_s070830002	297	3	29.84470	-83.55776	14	10.0	6.3	14	10.0	11.9
Blue_Grotto	SJR	qspring09_28034873	1009	3	29.21522	-82.04981	37.8	4.3	5.8	38.1	5.5	6.5
BLUE_HOLE_SPRING_NR_HILDRETH_FL	SR	qspring09_s061607002	3001	3	29.98052	-82.75843	22.3	66.8	60.9	23.35	76.1	78.3
BLUE_SINK_NEAR_WHITE_SPRINGS	SR	qspring09_s021510003	259	3	30.33577	-82.80850	45.2	0.0	-0.6	48.52	24.8	-0.1
Blue_Spg_Marion	SJR	qspring09_28495015	146	3	29.51439	-81.85702	17.61	2.2	0.8	17.94	3.3	0.8
Blue_Spg_Yalaha	SJR	qspring09_10241178	172	3	28.74872	-81.82775	61.73	2.8	1.8	61.72	2.8	1.6

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
BLUE_SPRING_IN_GILCHRIST_COUNTY	SR	qspring09_s071635003	4042	3	29.82996	-82.68286	22.95	26.8	30.0	23.43	32.1	34.4
BLUE_SPRING_NEAR_BRONSON	SR	qspring09_s121610002	348	3	29.45066	-82.69896	37.8	2.7	3.5	38.4	4.6	5.0
BLUE_SPRINGS_ON_THE_WACISSA_RIVER	SR	qspring09_s020312003	2009	3	30.33083	-83.98905	28	6.7	3.7	26.1	8.2	5.8
BONNETT_SPRINGS	SR	qspring09_s041220001	271	3	30.12426	-83.13819	16	24.7	24.9	18	30.5	29.8
Boulware_Spg	SJR	qspring09_14792772	140	2	29.62089	-82.30720	33.92	0.3	0.3	35.37	0.3	0.4
BRADLEY_SPRINGS	SR	qspring09_s090915002	318	3	29.70027	-83.41108	11	5.5	2.9	11	5.5	5.7
BRANFORD_SPRINGS_AT_BRANFORD_FL	SR	qspring09_s061420002	311	3	29.95477	-82.92848	9.39	8.1	10.9	12.25	11.1	10.7
Bridal_Chamber	SJR	qspring09_28044874	1001	3	29.21478	-82.05153	37.7	3.2	3.9	38	4.0	4.5
Bright_Angel_Spg	SJR	qspring09_28545102	145	3	29.51657	-81.86209	17.61	0.8	0.7	17.94	0.9	0.7
Bugg_Spg	SJR	qspring09_10840068	170	3	28.75289	-81.90119	60.98	13.3	13.3	64	10.7	10.7

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
BUZZARD_LOG_SPRINGS_ON_THE_WACISSA_RIVER	SR	qspring09_s020312004	2008	3	30.33033	-83.98565	28	11.0	9.0	26.1	13.6	14.2
CASSIDA_SPRINGS_ON_THE_WACISSA_RIVER	SR	qspring09_s020301002	2011	3	30.33271	-83.98899	28	6.8	7.1	26.1	12.1	11.2
Catfish_Hall	SJR	qspring09_28154885	1017	3	29.21544	-82.04386	37.1	0.3	0.3	37.4	0.4	0.4
Catfish_Reception	SJR	qspring09_28164886	1003	3	29.21494	-82.05178	37.7	27.9	32.1	38	35.4	36.6
CEDAR_COVE_SPRING_G1	SWF	qspring09_20150	5000	3	28.90220	-82.59899	0	21.5	22.6	-0.15	24.6	23.2
CEDAR_HEAD_SPRING_NR_HILDRETH_FL	SR	qspring09_s061607017	3002	3	29.98356	-82.75879	22.3	4.9	4.2	23.35	5.0	5.5
CEDAR_ISLAND_SPRING	SR	qspring09_s080701011	300	3	29.81634	-83.58391	0.3	15.0	13.7	0.3	15.0	14.3
CHARLES_SPRING_NEAR_DELL_FL	SR	qspring09_s041104001	261	3	30.16729	-83.23054	23	2.6	2.3	26	4.4	5.1
CHICKEN_BRANCH_SPRING	NWF	qspring09_9073	102	3	30.33586	-84.14847	14.5	23.1	19.7	14.5	23.1	23.8
Chimney_Spg	SJR	qspring09_10863094	160	3	29.24417	-81.64389	-0.44	33.1	34.3	0.2	33.1	32.8

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
CHIMNEY_SPRING	NWF	qspring09_9342	118	3	30.22736	-84.28094	7.35	0.1	0.0	7.35	0.1	0.1
Christmas_Tree	SJR	qspring09_28174887	1014	3	29.21619	-82.04925	37.5	2.9	3.7	37.8	3.6	4.2
COFFEE_SPRING_NR_HILDRETH_FL	SR	qspring09_s061513008	3005	3	29.95949	-82.77528	15.19	2.5	1.8	15.85	1.5	2.0
COLUMBIA_SPRINGS_NEAR_HIGH_SPRINGS_FLA	SR	qspring09_s071728014	4049	3	29.85410	-82.61194	30.19	0.0	0.0	30.95	0.0	0.0
CONVICT_SPRING_NEAR_MAYO_FL	SR	qspring09_s041235005	286	3	30.08844	-83.09588	13.52	5.0	4.6	16.11	4.7	5.4
COPPER_SPRINGS	SR	qspring09_s101313001	343	3	29.61396	-82.97377	7.4	16.0	10.1	7.4	19.7	22.3
CRESCENT_DRIVE_SPRING_G7	SWF	qspring09_20107	5018	3	28.87776	-82.59843	0	21.5	22.3	-0.15	24.6	23.8
Croaker_Hole_Spg	SJR	qspring09_11562199	155	3	29.43833	-81.68917	-0.1	70.0	70.4	-0.3	72.3	71.9
CRYSTAL_RIVER_WC1	SWF	qspring09_20152	5001	3	28.89667	-82.59750	0	21.5	22.3	-0.15	24.6	23.4
CRYSTAL_RIVER_WC2	SWF	qspring09_20159	5005	3	28.89444	-82.59194	0	21.5	22.0	-0.15	24.6	23.2

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
CRYSTAL_RIVER_WC3	SWF	qspring09_20111	5010	3	28.88528	-82.59778	0	21.5	22.3	-0.15	24.6	23.8
CRYSTAL_RIVER_WC4	SWF	qspring09_20110	5017	3	28.88056	-82.59472	0	21.5	22.3	-0.15	24.6	23.8
CRYSTAL_RIVER_WC5	SWF	qspring09_20092	5008	3	28.88222	-82.60111	0	21.5	22.2	-0.15	24.6	24.0
CRYSTAL_RIVER_WC6	SWF	qspring09_20093	5009	3	28.88222	-82.60583	0	21.5	22.1	-0.15	24.6	24.0
CRYSTAL_SPRING_G2	SWF	qspring09_20161	5004	3	28.89359	-82.59288	0	21.5	22.0	-0.15	24.6	23.2
DARBY_SPRINGS	SR	qspring09_s071727014	4054	3	29.85247	-82.60576	30.5	0.0	0.0	31.2	0.0	0.0
DARREL_SPRING	NWF	qspring09_7944	120	3	30.28153	-84.15065	9.33	5.6	4.2	9.33	5.6	5.0
DEER_SPRINGS	SR	qspring09_s071634011	4032	3	29.84109	-82.70741	22.08	3.8	5.4	22.2	4.7	6.3
DEVIL_EYE_SANTA_FE_RIVER	SR	qspring09_s071634014	4039	3	29.83511	-82.69666	22.7	29.2	33.4	23.17	36.0	38.4
DEVILS_EAR_SANTA_FE_RIVER	SR	qspring09_s071634012	4040	3	29.83533	-82.69666	22.7	90.6	99.9	23.17	111.8	114.9
DEVIL'S_EYE_SPRING_NR_HILDRETH_FL	SR	qspring09_s061512003	3003	3	29.97370	-82.76010	20.93	29.2	28.4	21.12	32.2	35.1

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Devils_Kitchen_A	SJR	qspring09_28184888	1002	3	29.21489	-82.05133	37.8	1.0	1.2	38.1	1.3	1.4
Devils_Kitchen_B	SJR	qspring09_28054875	1004	3	29.21500	-82.05144	37.7	0.2	0.2	38	0.2	0.2
DOGWOOD_SPRINGS	SR	qspring09_s071634013	4036	3	29.83811	-82.70179	22.31	9.9	11.3	22.5	12.2	13.1
ELLAVILLE_SPRINGS_AT_ELLAVILLE	SR	qspring09_s011124005	205	3	30.38447	-83.17251	30.1	11.6	14.0	32.43	24.4	13.9
ENRY_GREEN_SP_(HD_OF_LIT_JONES_CR)_NR_WILDWOOD_F	SWF	qr09_285207082054100	357	3	28.86861	-82.09472	41.12	6.7	7.4	41.12	6.7	7.4
EVA_SPRING_ON_THE_STEINHATCHEE_RIVER	SR	qspring09_s090923005	321	3	29.67769	-83.39935	0.9	1.7	1.9	0.9	1.7	2.1
FANNING_SPRINGS_NR_WILCOX_FL	SR	qspring09_s101429001	346	3	29.58773	-82.93540	1.92	50.0	63.4	2.5	68.5	67.6
FARA_SPRINGS	SR	qspring09_s021129004	231	3	30.27638	-83.23585	26.93	8.0	6.2	29.22	9.9	7.4
FENNEY_SPRINGS_NR_COLEMAN	SWF	qspring09_2312664	360	3	28.79500	-82.03861	49.53	8.9	7.8	52.34	8.9	2.9
Fern_Hammock_Spg	SJR	qspring09_311899	164	3	29.18361	-81.70814	21.99	10.0	13.3	21.95	12.0	11.9

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Fish_Hook_#_1_Spg	SJR	qspring09_28555023	143	3	29.50935	-81.90179	17.61	0.4	0.4	17.94	0.4	0.5
Fish_Hook_#_2_Spg	SJR	qspring09_28595028	142	3	29.50904	-81.90228	17.61	0.4	0.4	17.94	0.4	0.5
FLETCHER_SPRING_NR_HATCHBEND_FL	SR	qspring09_s071426001	327	3	29.84696	-82.89232	6.19	8.0	3.6	8.69	9.9	4.3
FOLSON_PARK_SPRING_IN_PERRY_FL	SR	qspring09_s040724029	241	3	30.11381	-83.57836	33.33	2.0	0.1	33.33	2.0	1.3
Forest_Spg	SJR	qspring09_400047	154	3	29.45880	-81.65850	7.9	0.2	0.2	7.9	0.3	0.2
Garden_of_Eden	SJR	qspring09_28194889	1013	3	29.21614	-82.04856	37.5	1.8	2.1	37.8	2.2	2.4
GARNER_SPRINGS_ON_THE_WACISSA_RIVER	SR	qspring09_s020312005	2007	3	30.33028	-83.98329	28	5.4	3.1	26.1	6.6	5.0
GERRELL_SPRING	NWF	qspring09_7945	121	3	30.28119	-84.14746	10.96	33.1	29.5	11.33	33.1	34.2
Geyser	SJR	qspring09_28204890	1010	3	29.21539	-82.05008	37.6	3.7	5.0	37.9	4.7	5.6
GINNIE_SPRING_NR_HIGH_SPRINGS_FL	SR	qspring09_s071634006	4034	3	29.83621	-82.70019	22.31	38.1	33.3	22.5	30.5	38.7
Glen_Spg	SJR	qspring09_14782771	139	2	29.67501	-82.34790	35.65	0.1	0.1	37.17	0.1	0.1

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GRASSY_HOLE_NR_HILDRETH_FL	SR	qspring09_s061618006	3007	3	29.96809	-82.76012	19.05	1.7	1.7	19.39	1.9	2.0
Green_Cove_Spg	SJR	qspring09_8242749	138	3	29.99340	-81.67791	6.87	2.5	2.2	6.9	3.1	2.6
GUARANTO_SPRINGS	SR	qspring09_s081420001	332	3	29.77965	-82.93997	11.4	9.2	0.3	11.4	11.4	8.3
GUM_SPRINGS_NEAR_HOLDER_FL	SWF	qspring09_2312764	354	3	28.95111	-82.25000	33.17	80.0	85.1	34.68	68.0	64.1
HALLS_RIVER_1_SPRING	SWF	qspring09_20054	6000	3	28.82248	-82.59426	0.43	5.0	4.7	0.43	5.0	4.8
HALLS_RIVER_HEAD_SPRING	SWF	qr09_284935082345000	6001	3	28.82639	-82.58056	1.6	0.0	0.0	1.65	0.0	0.0
HAMPTON_SPRING	SR	qspring09_s050706005	240	3	30.08148	-83.66310	15.97	0.2	0.2	15.97	0.2	0.2
HARDEE_ROSSITER_SPRING	SR	qspring09_n021130001	177	3	30.54466	-83.25006	48	15.0	13.7	48.5	20.1	20.9
HART_SPRING_NR_WILCOX_FLA	SR	qspring09_s091430001	339	3	29.67500	-82.95142	3.32	44.4	40.6	4.9	44.1	48.4
HENRY_GREEN_SPRING_(HEAD_OF_L._JONES_CREEK)	SWF	qr09_285207082054101	358	3	28.86861	-82.09472	41.12	6.7	7.4	41.12	6.7	7.4

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HOLTON_SPRINGS_NEAR_FT_UNION_FL	SR	qspring09_n011331001	204	3	30.43772	-83.05736	35.3	70.7	64.0	37.8	62.9	66.5
HOMESTEAD_SPRING	NWF	qspring09_9338	111	3	30.23437	-84.28120	7.35	1.8	1.4	7.35	1.8	2.2
HOMOSASSA_SPRING_COMPLEX	SWF	qspring09_20041	355	3	28.79916	-82.58846	0.3	137.0	137.0	0.46	124.5	123.5
HORN_SPRING_S445	NWF	qspring09_7938	105	3	30.31926	-84.12881	14.51	13.3	11.6	14.51	13.3	14.0
HORNSBY_SPRINGS_NEAR_HIGH_SPRINGS_FL	SR	qspring09_s071727010	4060	3	29.85031	-82.59318	31.37	6.9	10.7	32.25	23.2	16.8
HORSEHEAD_SPRINGS_ON_THE_WACISSA_RIVER	SR	qspring09_s020302005	2001	3	30.34488	-83.99460	28.5	11.6	5.7	27.6	14.3	15.2
HUNTERS_BAY_NE_2nd_SPRING	SWF	qspring09_20165	5002	3	28.89970	-82.59010	0	21.5	22.5	-0.15	24.6	23.1
ICHETUCKNEE_HEAD_SPRING_NR_HILDRETH_FL	SR	qspring09_s061512002	3000	3	29.98412	-82.76172	22.3	33.1	24.0	23.35	48.0	51.9
IDIOTS_DELIGHT_SPRING_G5	SWF	qspring09_20100	5013	3	28.88970	-82.59065	0	21.5	22.3	-0.15	24.6	23.5
Indian_Cave	SJR	qspring09_28214891	1018	3	29.21558	-82.04800	37.9	2.9	3.8	38.2	3.7	4.3

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INDIAN_SPRING_S443	NWF	qspring09_7935	103	3	30.25080	-84.32210	7.35	0.2	0.2	7.35	0.2	0.3
IRON_SPRING_ON_THE_STEINHATCHEE_RIVER	SR	qspring09_s071034004	308	3	29.82675	-83.30790	18.5	0.8	0.7	18.5	1.0	1.0
IRON_SPRINGS	SR	qspring09_s091325024	338	3	29.67386	-82.95744	3.21	5.5	6.5	5.15	6.8	7.0
JABO_CAMP_SPRING	SR	qspring09_s070716004	285	3	29.88244	-83.62245	2.5	10.5	9.8	2.5	10.5	11.6
Jacobs_Well	SJR	qspring09_28064876	1005	3	29.21506	-82.05189	37.7	1.8	2.1	38	2.2	2.4
JAMISON_SPRINGS	SR	qspring09_s061536030	4016	3	29.92582	-82.77012	10.27	3.3	4.2	12.22	4.0	4.2
JULY_SPRING	SR	qspring09_s071634005	4035	3	29.83623	-82.69644	22.31	44.7	53.4	22.5	55.1	62.0
Juniper_Spg	SJR	qspring09_321898	163	3	29.18371	-81.71241	23.43	7.9	10.6	20.03	15.0	14.7
La_Noche_Spg	SJR	qspring09_14812774	169	3	28.95242	-81.54219	33.56	0.9	1.0	33.56	0.9	0.9
Ladies_Parlor	SJR	qspring09_28074877	1000	3	29.21464	-82.05144	37.8	6.5	9.7	38.1	8.3	11.1
LAFAYETTE_BLUE_SPRINGS	SR	qspring09_s041121001	265	3	30.12590	-83.22619	22	48.5	37.0	24.2	49.0	56.8

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LILLY_SPRINGS	SR	qspring09_s071636002	4050	3	29.82970	-82.66119	23.48	27.4	31.2	24.01	33.8	35.8
LIME_RUN_SINK	SR	qspring09_s011219004	207	3	30.38786	-83.16109	31.43	21.8	18.7	32.93	26.9	28.5
LIME_SPRINGS	SR	qspring09_s011219003	202	3	30.39121	-83.16874	30.59	9.7	14.6	32.93	14.0	13.7
LITTLE_COPPER_SPRING	SR	qspring09_s101312010	340	3	29.63270	-82.96702	2.62	4.9	5.2	4.41	6.0	5.6
LITTLE_DEVILS	SR	qspring09_s071634015	4037	3	29.83457	-82.69697	22.7	3.4	4.7	23.17	4.2	5.4
LITTLE_FANNING_SPRINGS_NR_FANNING_SPRINGS_FL	SR	qspring09_s101429027	345	3	29.58619	-82.93456	1.92	7.6	1.7	4.52	1.6	1.8
LITTLE_HORN_SPRING_#1	NWF	qspring09_9328	104	3	30.31839	-84.12902	14.51	6.5	4.6	14.51	6.5	5.6
LITTLE_RIVER_SPRINGS_NR_BRANFORD_FL	SR	qspring09_s061301001	307	3	29.99677	-82.96636	10.24	48.4	41.8	13.06	46.9	47.2
LOG_SPRING_ON_THE_WACISSA_RIVER	SR	qspring09_s020302006	2000	3	30.34058	-83.99302	28.5	38.5	18.4	27.6	47.5	49.1
Lost_R	SJR	qspring09_28475010	1015	3	29.21628	-82.04819	38.5	0.2	0.2	38.8	0.2	0.2

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LOUISE_SPRINGS	SR	qspring09_s021505011	249	3	30.34802	-82.83257	43.98	0.2	0.2	46.79	0.3	0.3
Lumber_Camp_Spring_nr_Wannee	SR	qspring09_s091408006	335	3	29.70750	-82.93556	4.12	3.5	4.2	6.3	4.4	4.7
LURAVILLE_SPRINGS	SR	qspring09_s041229001	269	3	30.11949	-83.16716	18.48	0.0	1.4	20.73	6.4	1.6
MADISON_BLUE_SPRING_NR_BLUE_SPRINGS_FL	SR	qspring09_n011117008	179	3	30.48049	-83.24431	44.1	60.9	58.5	44.2	104.0	104.2
MAINTENANCE_SPRING_NR_SUMTERVILLE_FL	SWF	qr09_284525082040600	361	3	28.75694	-82.06833	3.99	0.8	0.8	91.44	0.8	0.8
Mammoth	SJR	qspring09_28224892	1007	3	29.21624	-82.05269	37.8	180.2	185.4	38.1	199.8	211.3
MANATEE_SANCTUARY_SPRING	SWF	qspring09_20154	5006	3	28.89000	-82.59274	0	21.5	22.0	-0.15	24.6	23.2
MANATEE_SPRING_NR_CHIEFLAND_FL	SR	qspring09_s111326002	347	3	29.48963	-82.97677	0.98	121.0	116.6	1.3	124.0	128.5
Mastodon_Bone	SJR	qspring09_28084878	1012	3	29.21572	-82.05042	37.6	1.0	1.2	37.9	1.3	1.3
MATTAIR_SPRINGS	SR	qspring09_s011426005	244	3	30.37839	-82.89097	40.21	11.7	11.9	42.88	14.4	13.9

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MCBRIDE_SPRING	NWF	qspring09_9362	113	3	30.23996	-84.26949	7.35	4.7	3.8	7.35	4.7	5.5
MCBRIDE_SPRING_#4	NWF	qspring09_9354	107	3	30.25234	-84.27170	9	0.4	0.3	9	0.4	0.5
McCRABB_SPRINGS	SR	qspring09_s091324024	337	3	29.68549	-82.96028	3.36	9.3	10.5	5.35	11.5	11.5
MEARSON_SPRING_NEAR_MAYO_FLORIDA	SR	qspring09_s051321001	301	3	30.04132	-83.02511	11.36	44.4	41.1	14.1	47.7	49.3
MILL_POND_SPRING_NR_HILDRETH_FL	SR	qspring09_s061513001	3006	3	29.96650	-82.76021	18.36	11.4	13.2	19.39	18.1	15.0
MINNOW_SPRINGS_ON_THE_WACISSA_RIVER	SR	qspring09_s020312006	2010	3	30.33144	-83.98690	28	8.4	6.2	26.1	10.3	9.8
MISSION_SPRINGS_COMPLEX_NR_HILDRETH_FL	SR	qspring09_s061607003	3004	3	29.97622	-82.75785	20.93	56.3	61.0	21.12	77.2	73.8
Mooring_Cove_Spg	SJR	qspring09_90059005	171	3	28.75012	-81.83368	61.73	0.7	0.7	61.73	0.7	0.7
MORGAN_SPRING	SR	qspring09_s011110009	188	3	30.42020	-83.20715	37.7	0.0	0.3	39.43	16.7	0.4
Morman_Brch_Spg	SJR	qspring09_31893549	165	3	29.19157	-81.65605	13.96	4.4	4.3	13.96	4.4	4.3

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Mosquito_Spg_Run	SJR	qspring09_90089008	168	3	29.03648	-81.43472	14.69	1.2	1.3	14.69	1.2	1.1
Mud_Spg	SJR	qspring09_432657	153	3	29.46100	-81.66150	6.52	0.9	0.7	6.52	0.8	0.8
MYSTERIOUS_WATERS_SPRING	NWF	qspring09_9369	127	3	30.19610	-84.26373	4.35	0.3	0.3	4.35	0.3	0.4
Nashua_Spg	SJR	qspring09_11291648	150	3	29.50910	-81.67700	2.7	0.0	0.0	2.7	0.0	0.0
NEWPORT_SPRING_S444	NWF	qspring09_7936	130	3	30.21270	-84.17849	5.33	3.9	3.3	5.33	3.9	3.9
NICHOLS_SPRING_OF_SUMTER_COUNTY	SWF	qr09_285022082121000	356	3	28.83944	-82.20278	33.65	13.5	13.4	34.35	13.5	14.0
No_Name_Cove	SJR	qspring09_28094879	1019	3	29.21561	-82.04631	37.8	0.2	0.2	38.1	0.2	0.2
NO-NAME_SPRING	NWF	qspring09_9344	125	3	30.21481	-84.26651	1.56	6.2	5.5	7.35	6.2	7.0
NORTHSIDE_SPRING_#1	NWF	qspring09_9336	112	3	30.23759	-84.28106	8	2.0	1.6	8	2.0	2.6
NUTALL_RISE	SR	qspring09_s040407013	185	3	30.15047	-83.96337	1	0.0	0.0	1	0.0	0.0

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OASIS_SPRINGS	SR	qspring09_s061535012	4013	3	29.92571	-82.78027	9.9	0.8	0.9	11.91	1.0	1.0
Orange_Spg	SJR	qspring09_10362775	141	3	29.51065	-81.94407	23.1	2.3	4.0	22.1	3.3	4.2
Oscar	SJR	qspring09_28104880	1011	3	29.21553	-82.05078	37.6	0.3	0.3	37.9	0.4	0.4
OTTER_SPRINGS_NEAR_WILCOX_FL	SR	qspring09_s101406002	342	3	29.64474	-82.94279	3	7.4	6.4	3	7.8	9.1
OWENS_SPRING	SR	qspring09_s051317002	298	3	30.04602	-83.04121	11.5	25.0	15.6	14.23	6.7	18.9
PALMETTO_SPRING	NWF	qspring09_9339	119	3	30.22907	-84.27161	7.35	0.4	0.3	7.35	0.4	0.5
PEACOCK_SPRING	SR	qspring09_s041220005	276	3	30.12324	-83.13318	16	11.8	11.9	18	14.6	14.5
PERRY_SPRINGS	SR	qspring09_s041135009	274	3	30.09654	-83.18825	20.3	3.9	2.9	22.52	4.8	4.0
PICKARD_SPRINGS	SR	qspring09_s071636005	4051	3	29.83039	-82.66185	23.48	8.9	10.1	24.01	10.9	11.7
POE_SPRINGS_NEAR_HIGH_SPRINGS_FL	SR	qspring09_s081706005	4057	3	29.82564	-82.64897	24.62	31.3	36.9	25.22	40.7	42.7
Ponce_De_Leon_Spg	SJR	qspring09_301897	167	3	29.13432	-81.36298	3.27	19.4	22.4	1	25.9	21.4

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
POT_SPRING	SR	qspring09_n011120012	182	3	30.47077	-83.23441	42	26.1	21.9	42.75	32.2	35.9
POTHOLE_SPRING_NEAR_LAKE_CITY	SR	qspring09_s081405004	329	3	29.81072	-82.93587	5.62	24.4	22.8	8.13	30.1	26.3
Racoon_Is	SJR	qspring09_28234893	1022	3	29.21575	-82.04417	37.1	0.4	0.4	37.4	0.5	0.4
RAINBOW_SPRINGS_NEAR_DUNNELLON_FL	SWF	qr09_2313100	352	3	29.10222	-82.43778	29.5	543.6	544.4	29.7	561.0	569.5
RAVINE_SPRING_(SUW718971)	SR	qspring09_s051307007	294	3	30.06418	-83.06198	12.23	3.3	3.6	14.91	4.6	4.4
RIVER_PLANTATION_SPRING_#1	NWF	qspring09_9367	126	3	30.21238	-84.25697	6.35	1.5	1.3	6.35	1.5	1.8
RIVER_PLANTATION_SPRING_#2	NWF	qspring09_9368	128	3	30.19588	-84.25948	6.35	0.7	0.6	6.35	0.7	0.9
Riversites_Spg	SJR	qspring09_28464991	147	3	29.43941	-81.92437	19.9	0.9	1.1	19.9	1.1	1.1
ROCK_BLUFF_SPRINGS_NR_BELL_FL	SR	qspring09_s081409002	331	3	29.79907	-82.91855	5.53	14.5	15.6	7.07	24.0	17.2
ROCK_SPRING	NWF	qspring09_9343	123	3	30.22530	-84.27678	0.06	0.1	0.1	7.35	0.1	0.0

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ROCK_SPRING	SWF	qspring09_2234610	353	3	29.11886	-82.38260	26.52	0.0	0.0	27.34	0.0	0.0
ROYAL_SPRING_NEAR_ALTON_FL	SR	qspring09_s051201001	291	3	30.08399	-83.07489	12.89	1.2	1.4	15.52	4.2	1.7
RUM_ISLAND_SPRING	SR	qspring09_s071635004	4044	3	29.83330	-82.67985	22.95	19.8	21.9	23.43	24.4	25.3
RUNNING_SPRINGS_(EAST)	SR	qspring09_s041228014	281	3	30.10448	-83.11584	14.98	19.0	19.0	17.47	23.4	22.0
RUNNING_SPRINGS_(WEST)	SR	qspring09_s041228002	282	3	30.10496	-83.11636	14.98	50.0	12.3	17.47	14.7	14.2
RUTH_SPRING_NEAR_BRANFORD_FL	SR	qspring09_s061301006	306	3	29.99574	-82.97671	10.29	4.5	4.6	13.11	6.7	5.3
SALLY_WARD_SPRING	NWF	qspring09_774	106	3	30.24140	-84.31080	4.35	4.8	9.0	4.35	12.7	11.8
Salt_Spg	SJR	qspring09_341901	157	3	29.35014	-81.73257	-0.33	74.6	89.5	-1.5	94.6	91.8
Sandys_Spg	SJR	qspring09_90069006	174	3	28.74503	-81.80999	61.73	0.1	0.1	61.73	0.1	0.1
SANTA_FE_SPRING	SR	qspring09_s061829003	4030	3	29.93477	-82.53028	36.53	34.4	12.7	37.55	49.6	65.8
Satsuma_Spg	SJR	qspring09_460053	151	3	29.51260	-81.67550	1.83	0.9	1.0	1.83	1.1	1.0

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SAWDUST_SPRING	SR	qspring09_s071634016	4033	3	29.84011	-82.70356	22.31	5.3	8.0	22.5	6.5	9.3
Second_Fishermans	SJR	qspring09_28114881	1020	3	29.21567	-82.04533	37.2	0.4	0.4	37.5	0.5	0.5
SHEPHERD_SPRING	NWF	qspring09_8338	134	3	30.12533	-84.28536	1.34	5.0	4.4	1.34	5.0	5.6
SHINGLE_SPRINGS	SR	qspring09_s061428010	313	3	29.93438	-82.92056	9.06	9.3	11.1	11.79	11.5	11.4
Shipwreck	SJR	qspring09_28244894	1016	3	29.21544	-82.04400	37.1	0.6	0.7	37.4	0.8	0.8
SHIRLEY_SPRINGS	SR	qspring09_s031120004	246	3	30.21072	-83.24480	25	1.3	1.4	27	1.6	1.8
Silver_Glen_Spg	SJR	qspring09_351900	161	3	29.24584	-81.64347	-0.44	103.4	105.9	0.2	103.0	101.2
Silver_R_Distrib_OF1	SJR	qspring09_31883551	159	3	29.20164	-81.99554	35.6	0.0	0.0	36.4	0.0	0.0
Silver_R_Distribut_1	SJR	qspring09_31873552	158	3	29.20203	-82.00736	35.5	0.0	0.0	36.3	0.0	0.0
Sims_Spg_Marion	SJR	qspring09_28565024	144	3	29.50805	-81.89202	17.61	0.4	0.4	17.94	0.4	0.4
SPRING_CREEK_SPRINGS_GROUP	NWF	qspring09_12341	135	3	30.08056	-84.32972	0.5	3.7	342.8	-0.5	451.0	448.2

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SPRING_WARRIOR_SPRING	SR	qspring09_s060727001	270	3	29.93501	-83.60977	22.91	23.2	-0.6	22.91	23.2	2.5
SSG-Mammoth	SJR	qspring09_31843538	1008	3	29.21624	-82.05269	37.8	180.2	185.4	38.1	199.8	211.3
ST._MARKS_SULFUR_SPRING_#3	NWF	qspring09_9400	133	3	30.21113	-84.17770	5.33	1.1	0.9	5.33	1.1	1.1
Sun_Eden_Spg	SJR	qspring09_90079007	173	3	28.74444	-81.81989	61.73	0.3	0.4	61.73	0.3	0.3
SUN_SPRINGS_NEAR_WANNEE_FL	SR	qspring09_s091417003	336	3	29.70457	-82.93347	3.98	22.6	24.3	6.13	27.9	26.8
SUNBEAM_SPRINGS	SR	qspring09_s061536031	4014	3	29.92808	-82.76978	10.07	10.5	12.1	12.05	14.0	12.2
SUWANACOOCHEE_SPRINGS	SR	qspring09_s011124004	206	3	30.38685	-83.17168	30.7	27.3	30.3	33.05	33.7	29.1
SUWANNEE_BLUE_SPRING	SR	qspring09_s051201006	292	3	30.08148	-83.06903	12.65	10.9	11.1	15.3	13.5	13.1
SUWANNEE_SPRINGS_NEAR_LIVE_OAK_FL	SR	qspring09_s011417001	232	3	30.39438	-82.93436	38.65	1.4	3.8	39.27	17.1	4.2
SWEET_BAY_SPRING	NWF	qspring09_9335	109	3	30.23920	-84.28502	8	0.1	0.1	8	0.1	0.1
Sweetwater_Spg	SJR	qspring09_361904	162	3	29.21878	-81.65987	6.26	12.0	12.3	3.58	13.8	13.5

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TANNER_SPRING	SR	qspring09_n011121006	183	3	30.46466	-83.21762	41	71.2	55.4	42.35	87.9	98.6
TARPON_HOLE_2_SPRING	SWF	qspring09_20097	5011	3	28.88189	-82.59425	0	21.5	22.3	-0.15	24.6	23.8
TARPON_SPRING_G4	SWF	qspring09_20101	5012	3	28.88331	-82.59538	0	21.5	22.3	-0.15	24.6	23.8
TELFORD_SPRING_NEAR_LURAVILLE_FL	SR	qspring09_s041125001	275	3	30.10696	-83.16570	18.64	23.3	23.8	20.8	29.7	29.1
THOMAS_SPRING_ON_THE_WACISSA_RIVER	SR	qspring09_s020302007	2003	3	30.33969	-83.99238	28.7	23.1	16.7	27.1	28.5	31.6
THREE_SISTERS_SPRINGS_RUN	SWF	qspring09_20147	5014	3	28.88809	-82.58953	0	21.5	22.3	-0.15	24.6	23.5
THREE_SISTERS_SPRINGS_RUN_2	SWF	qspring09_20166	5015	3	28.88811	-82.58975	0	21.5	22.3	-0.15	24.6	23.5
TIGER_HAMMOCK_SPRING	NWF	qspring09_9324	129	3	30.18367	-84.27412	6.35	0.8	0.7	6.35	0.8	1.1
Timber	SJR	qspring09_28254895	1024	3	29.21564	-82.04161	37	0.9	1.0	37.3	1.1	1.1
Tobacco_Patch	SJR	qspring09_10943293	148	3	29.42854	-81.92391	18.42	1.6	1.8	18.42	1.8	2.0

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TRAIL_SPRING_GROUP	SR	qspring09_s071401009	4003	3	29.89840	-82.86674	7.39	7.3	10.2	8	9.0	12.4
TREEHOUSE_SPRING	SR	qspring09_s071727012	4056	3	29.85489	-82.60290	30.5	6.4	1.1	31.2	18.6	3.1
TROY_SPRING_NEAR_BRANFORD_FLA	SR	qspring09_s051334002	304	3	30.00606	-82.99735	10.63	87.6	80.0	13.2	92.5	93.2
TURN_AROUND_SPRING	NWF	qspring09_9341	110	3	30.23248	-84.28845	0.1	0.6	0.7	6.35	0.6	0.4
Turtle_Nook	SJR	qspring09_28124882	1023	3	29.21583	-82.04500	37.4	0.4	0.5	37.7	0.5	0.5
Turtle_Nook_Run	SJR	qspring09_28134883	1021	3	29.21569	-82.04536	37.2	0.4	0.5	37.5	0.6	0.5
TURTLE_SPRING_NEAR_HATCHBEND_FL	SR	qspring09_s071426002	328	3	29.84738	-82.89038	6.38	15.1	14.1	8.69	17.6	16.9
TWIN_SPRINGS	SR	qspring09_s071634017	4031	3	29.84050	-82.70579	22.08	15.1	16.3	22.2	18.6	19.1
UN_NAMED_SPRING	SR	qspring09_s071729003	4053	3	29.84462	-82.63091	27.17	37.9	0.0	27.95	46.7	0.0
UN_NAMED_SPRING	SR	qspring09_s051317006	299	3	30.04532	-83.03372	11.5	0.8	0.8	14.23	1.0	0.9
UN_NAMED_SPRING	SR	qspring09_s091005004	319	3	29.72708	-83.34458	3.44	6.7	7.3	3.44	6.7	8.2

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UN_NAMED_SPRING	SR	qspring09_s091008005	320	3	29.71927	-83.34607	2.5	1.0	1.0	2.5	1.0	1.1
UN_NAMED_SPRING	SR	qspring09_s071635006	4048	3	29.83377	-82.67540	23.13	4.7	6.8	23.62	5.8	7.9
UN_NAMED_SPRING	SR	qspring09_s011417011	229	3	30.40058	-82.94328	38.42	0.2	0.3	41.03	0.3	0.3
UN_NAMED_SPRING	SR	qspring09_s061418003	309	3	29.96153	-82.95440	9.81	1.6	1.6	12.66	2.0	1.9
UN_NAMED_SPRING	SR	qspring09_s071727013	4055	3	29.85361	-82.60546	30.5	1.9	0.6	31.2	2.3	1.8
UN_NAMED_SPRING	SR	qspring09_s091019018	323	3	29.67656	-83.36387	0.8	6.7	4.1	2.76	6.7	4.8
UN_NAMED_SPRING	SR	qspring09_s091019017	324	3	29.67700	-83.36091	0.8	35.4	32.2	0.8	35.4	37.4
UN_NAMED_SPRING	SR	qspring09_s051307008	296	3	30.06078	-83.05314	12	5.0	4.6	14.7	5.3	5.7
UN_NAMED_SPRING	SR	qspring09_s051307006	295	3	30.06123	-83.05695	12.11	2.0	0.1	14.8	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s090924007	322	3	29.67653	-83.38534	3	4.0	3.4	3	4.0	4.1
UN_NAMED_SPRING	SR	qspring09_s051321004	302	3	30.03290	-83.01336	11.12	0.3	0.3	13.88	0.4	0.4

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UN_NAMED_SPRING	SR	qspring09_s021120002	226	3	30.29392	-83.23232	27.23	0.2	0.3	29.52	0.3	0.3
UN_NAMED_SPRING	SR	qspring09_s051334019	303	3	30.01162	-83.00426	10.77	9.9	10.1	13.56	12.2	12.2
UN_NAMED_SPRING	SR	qspring09_s021121001	224	3	30.30364	-83.22230	27	0.1	0.1	29	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s091005006	317	3	29.73447	-83.34736	0	0.2	0.2	0	0.2	0.2
UN_NAMED_SPRING	SR	qspring09_s051335009	305	3	30.00750	-82.98225	10.43	0.4	0.4	13.23	0.5	0.5
UN_NAMED_SPRING	SR	qspring09_s091005005	316	3	29.73089	-83.34704	-0.35	15.0	14.2	2.87	15.0	15.7
UN_NAMED_SPRING	SR	qspring09_s021129003	227	3	30.28269	-83.23251	27	0.2	0.3	29.29	0.3	0.3
UN_NAMED_SPRING	SR	qspring09_s081032002	315	3	29.74424	-83.34522	4.36	1.3	1.3	4.36	1.3	1.4
UN_NAMED_SPRING	SR	qspring09_s081028004	314	3	29.76207	-83.33430	10	27.8	28.2	10	34.3	33.0
UN_NAMED_SPRING	SR	qspring09_s021115005	225	3	30.30693	-83.21475	27.52	0.2	0.2	29.82	0.2	0.2
UN_NAMED_SPRING	SR	qspring09_s061418002	310	3	29.95948	-82.95336	9.72	7.6	7.2	12.57	9.4	8.3

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UN_NAMED_SPRING	SR	qspring09_s041125010	277	3	30.10199	-83.16624	18.88	8.1	6.2	21.1	10.0	8.8
UN_NAMED_SPRING	SR	qspring09_s071731004	4052	3	29.83045	-82.65749	23.48	10.3	11.1	24.01	12.7	12.7
UN_NAMED_SPRING	SR	qspring09_s021128003	228	3	30.28767	-83.23122	27.08	0.8	0.9	29.38	1.0	1.0
UN_NAMED_SPRING	SR	qspring09_s031130005	248	3	30.19007	-83.25039	24.5	1.3	1.4	27	1.6	1.9
UN_NAMED_SPRING	SR	qspring09_s021618003	263	3	30.32090	-82.75609	48	1.7	-0.2	50.28	2.0	-0.2
UN_NAMED_SPRING	SR	qspring09_s060608002	258	3	29.96991	-83.74541	0.1	5.0	1.3	0.1	5.0	1.3
UN_NAMED_SPRING	SR	qspring09_s060608005	256	3	29.97259	-83.74445	2.56	8.0	-14.8	2.56	8.0	-14.5
UN_NAMED_SPRING	SR	qspring09_s060608004	254	3	29.97218	-83.74595	1.28	0.5	0.4	1.28	0.5	0.4
UN_NAMED_SPRING	SR	qspring09_s060608006	253	3	29.97139	-83.74527	1.38	0.1	0.1	2.1	0.1	0.0
UN_NAMED_SPRING	SR	qspring09_s060608003	252	3	29.97074	-83.74661	0.1	3.6	2.8	0.1	3.6	2.9
UN_NAMED_SPRING	SR	qspring09_s041228016	279	3	30.10559	-83.12117	15.56	0.7	0.7	18.01	0.9	0.9

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UN_NAMED_SPRING	SR	qspring09_s031132002	250	3	30.17983	-83.24772	24	7.7	3.4	26	9.5	4.7
UN_NAMED_SPRING	SR	qspring09_s041127003	268	3	30.10527	-83.20251	20.85	0.1	0.1	23.08	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s031120003	245	3	30.21064	-83.24589	25	4.5	4.7	27	5.5	5.6
UN_NAMED_SPRING	SR	qspring09_s011422001	243	3	30.38631	-82.90623	40.02	11.6	11.8	42.69	14.3	13.5
UN_NAMED_SPRING	SR	qspring09_s011421003	242	3	30.38297	-82.91504	39.76	0.2	0.0	42.42	0.3	0.0
UN_NAMED_SPRING	SR	qspring09_s040728007	239	3	30.10855	-83.62774	22.73	3.0	2.7	0	3.0	3.5
UN_NAMED_SPRING	SR	qspring09_s040728006	238	3	30.10828	-83.62723	22.73	1.0	0.9	22.73	1.0	1.2
UN_NAMED_SPRING	SR	qspring09_s011421002	237	3	30.39039	-82.92669	39.42	0.4	0.4	42.07	0.5	0.5
UN_NAMED_SPRING	SR	qspring09_s021505010	251	3	30.34374	-82.84056	43.92	1.2	0.8	46.72	1.4	1.4
UN_NAMED_SPRING	SR	qspring09_s041228015	280	3	30.10288	-83.11407	14.98	1.4	1.3	17.47	1.7	1.5
UN_NAMED_SPRING	SR	qspring09_s051202012	290	3	30.08371	-83.08712	13.15	1.0	1.3	15.77	2.4	1.5

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s070716006	289	3	29.87371	-83.62565	1	50.0	0.0	1	50.0	0.0
UN_NAMED_SPRING	SR	qspring09_s041234007	287	3	30.09111	-83.09720	13.52	0.5	0.6	16.11	0.7	0.6
UN_NAMED_SPRING	SR	qspring09_s081706008	4058	3	29.82756	-82.64586	26.15	19.4	20.7	26.85	23.9	25.9
UN_NAMED_SPRING	SR	qspring09_s041234006	284	3	30.09219	-83.11335	13.84	1.0	0.9	16.41	1.0	1.1
UN_NAMED_SPRING	SR	qspring09_s041234005	283	3	30.09069	-83.10863	13.84	3.0	3.1	16.41	3.6	3.5
UN_NAMED_SPRING	SR	qspring09_s021607011	264	3	30.32273	-82.75866	48	2.3	-0.3	50.28	2.9	-0.3
UN_NAMED_SPRING	SR	qspring09_s031106004	234	3	30.25990	-83.25136	26.61	0.4	0.4	28.89	0.5	0.4
UN_NAMED_SPRING	SR	qspring09_s060636001	267	3	29.91951	-83.68213	0.01	15.0	14.5	0.01	15.0	15.6
UN_NAMED_SPRING	SR	qspring09_s071423005	325	3	29.85908	-82.88070	6.76	0.8	0.7	8.96	1.0	1.0
UN_NAMED_SPRING	SR	qspring09_s041230002	278	3	30.10343	-83.14768	17.85	0.1	0.1	20.14	0.2	0.2
UN_NAMED_SPRING	SR	qspring09_s021132005	235	3	30.26082	-83.24941	26.61	0.8	0.9	28.89	1.0	0.9

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s020302003	2002	3	30.34523	-83.99572	28.5	3.6	1.3	27.6	4.4	3.4
UN_NAMED_SPRING	SR	qspring09_s060732001	273	3	29.91253	-83.65082	3.9	33.4	27.6	3.9	33.4	34.5
UN_NAMED_SPRING	SR	qspring09_s081705010	4059	3	29.82792	-82.64102	26.15	15.4	16.3	26.85	19.0	20.3
UN_NAMED_SPRING	SR	qspring09_s070727001	293	3	29.84659	-83.60917	0.37	29.0	26.6	0.37	29.0	29.4
UN_NAMED_SPRING	SR	qspring09_s011417012	233	3	30.39669	-82.93706	38.65	0.1	0.1	41.27	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_n011235012	198	3	30.43712	-83.08821	34.3	0.1	0.1	36.77	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s071412010	4011	3	29.88967	-82.87480	7.36	3.0	4.3	8	7.8	5.6
UN_NAMED_SPRING	SR	qspring09_s011110007	191	3	30.41491	-83.20141	36.64	4.5	3.5	38.63	5.6	4.1
UN_NAMED_SPRING	SR	qspring09_s071412009	4012	3	29.89125	-82.87396	7.36	23.1	23.4	8	28.5	30.6
UN_NAMED_SPRING	SR	qspring09_s011110008	192	3	30.41528	-83.20182	36.64	30.8	29.7	38.63	38.0	35.0

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s011111006	193	3	30.41589	-83.19923	36.64	30.8	29.7	38.63	38.0	35.0
UN_NAMED_SPRING	SR	qspring09_s011207007	194	3	30.41768	-83.15525	31.86	7.4	8.2	34.24	9.1	7.7
UN_NAMED_SPRING	SR	qspring09_s011207009	195	3	30.41698	-83.15289	32.13	83.1	90.6	34.52	102.5	90.7
UN_NAMED_SPRING	SR	qspring09_s011113002	203	3	30.39216	-83.16682	30.83	18.3	20.0	33.17	22.5	19.3
UN_NAMED_SPRING	SR	qspring09_s011208002	197	3	30.41917	-83.14501	32.68	0.1	0.1	35.09	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s071505004	4008	3	29.91299	-82.83663	7.94	0.2	0.2	10.26	0.2	0.2
UN_NAMED_SPRING	SR	qspring09_s061536028	4015	3	29.92462	-82.77167	10.27	7.4	11.2	12.22	9.2	11.3
UN_NAMED_SPRING	SR	qspring09_s061536029	4017	3	29.91883	-82.77158	10.39	6.1	7.4	12.32	7.6	7.8
UN_NAMED_SPRING	SR	qspring09_s091418005	334	3	29.70428	-82.95280	3.81	3.9	4.5	5.91	4.8	5.1
UN_NAMED_SPRING	SR	qspring09_s020313001	2012	3	30.32341	-83.98647	28	7.7	4.1	26	9.5	6.7
UN_NAMED_SPRING	SR	qspring09_s071423004	326	3	29.86045	-82.87919	6.85	3.9	3.1	9.02	4.8	3.9

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_n011236003	201	3	30.43692	-83.07869	34.63	1.0	1.0	37.11	1.2	1.0
UN_NAMED_SPRING	SR	qspring09_s071607003	4019	3	29.88616	-82.75155	13.29	3.8	5.4	14.76	4.7	5.5
UN_NAMED_SPRING	SR	qspring09_s011207008	196	3	30.41897	-83.14900	32.13	7.1	6.5	34.52	8.7	6.5
UN_NAMED_SPRING	SR	qspring09_s061527026	4001	3	29.93241	-82.80079	9.04	2.3	3.0	11.18	2.9	3.3
UN_NAMED_SPRING	SR	qspring09_s020312001	2013	3	30.32497	-83.98568	28	7.7	4.1	26	9.5	6.7
UN_NAMED_SPRING	SR	qspring09_n021113002	176	3	30.55268	-83.26013	48.5	5.0	3.8	48.5	4.8	3.6
UN_NAMED_SPRING	SR	qspring09_s020324004	2015	3	30.30233	-83.97943	28	19.3	15.5	26.1	23.8	24.3
UN_NAMED_SPRING	SR	qspring09_n011120010	180	3	30.47475	-83.24336	42.32	4.6	3.8	42.91	5.7	6.6
UN_NAMED_SPRING	SR	qspring09_n011120011	181	3	30.47270	-83.24311	42.11	11.6	0.7	42.75	1.2	1.3

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s021132004	236	3	30.26120	-83.24646	26.61	2.8	3.1	28.89	3.4	3.2
UN_NAMED_SPRING	SR	qspring09_n011128006	184	3	30.45103	-83.22315	40.38	11.6	10.2	41.8	14.3	15.6
UN_NAMED_SPRING	SR	qspring09_s061533007	4010	3	29.92156	-82.82395	8.38	0.8	0.9	10.63	1.0	1.0
UN_NAMED_SPRING	SR	qspring09_n011133004	186	3	30.44038	-83.21962	39.85	15.4	14.4	41.06	19.0	19.9
UN_NAMED_SPRING	SR	qspring09_s061532014	4009	3	29.91363	-82.83654	7.94	0.4	0.4	10.26	0.5	0.5
UN_NAMED_SPRING	SR	qspring09_s071412011	4002	3	29.89691	-82.87265	7.39	15.4	16.0	8	19.0	19.4
UN_NAMED_SPRING	SR	qspring09_s071401011	4004	3	29.89935	-82.86611	7.39	23.1	24.3	8	28.5	29.5
UN_NAMED_SPRING	SR	qspring09_s071505005	4005	3	29.91104	-82.84204	7.75	0.5	0.5	10.09	0.5	0.6
UN_NAMED_SPRING	SR	qspring09_s061531010	4006	3	29.91283	-82.84418	7.75	0.1	0.1	10.09	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s011110006	187	3	30.42041	-83.21427	37.7	23.1	4.2	39.43	5.0	5.0

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s040508001	189	3	30.15373	-83.85561	15	6.0	0.0	15	6.0	2.7
UN_NAMED_SPRING	SR	qspring09_s011110005	190	3	30.41743	-83.20741	36.64	23.1	24.2	38.63	28.5	25.5
UN_NAMED_SPRING	SR	qspring09_s011278003	200	3	30.40464	-83.15757	31.32	0.1	0.1	33.68	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s061527025	4000	3	29.93087	-82.80239	9.04	5.5	8.3	11.18	6.8	9.1
UN_NAMED_SPRING	SR	qspring09_s020301001	2006	3	30.34434	-83.98030	28.47	30.8	18.3	27.47	38.0	40.5
UN_NAMED_SPRING	SR	qspring09_s011303002	216	3	30.42347	-83.01047	36.36	0.2	0.3	38.9	0.3	0.3
UN_NAMED_SPRING	SR	qspring09_s011304004	211	3	30.42824	-83.02999	35.88	3.1	3.2	38.41	3.8	3.2
UN_NAMED_SPRING	SR	qspring09_s011304002	212	3	30.42628	-83.02227	36.09	1.6	-0.2	38.62	2.0	-0.1
UN_NAMED_SPRING	SR	qspring09_s021115008	221	3	30.31360	-83.20972	27.62	0.4	0.4	29.92	0.5	0.4
UN_NAMED_SPRING	SR	qspring09_s151310003	350	3	29.19078	-82.98813	2.88	5.0	4.9	2.88	5.0	4.9
UN_NAMED_SPRING	SR	qspring09_s021121003	222	3	30.30249	-83.22481	27.35	0.2	0.2	29.64	0.3	0.2

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s021115007	220	3	30.31345	-83.20965	27.62	0.9	1.0	29.92	1.1	1.0
UN_NAMED_SPRING	SR	qspring09_s071435020	330	3	29.82987	-82.89147	5.99	10.8	10.6	8.39	13.3	12.6
UN_NAMED_SPRING	SR	qspring09_s071635008	4045	3	29.83406	-82.67802	22.95	0.4	0.5	23.43	0.5	0.5
UN_NAMED_SPRING	SR	qspring09_s021115006	219	3	30.31311	-83.20961	27.62	0.4	0.4	29.92	0.5	0.4
UN_NAMED_SPRING	SR	qspring09_s011304005	215	3	30.42287	-83.01468	36.36	27.4	29.4	38.9	33.8	30.7
UN_NAMED_SPRING	SR	qspring09_s011312003	218	3	30.41759	-82.97090	37.48	3.9	4.4	40.06	4.8	4.8
UN_NAMED_SPRING	SR	qspring09_s071635009	4043	3	29.83264	-82.67827	22.95	6.4	10.4	23.43	7.8	12.0
UN_NAMED_SPRING	SR	qspring09_s101406010	341	3	29.63643	-82.95855	2.71	15.6	16.6	4.52	19.3	17.8
UN_NAMED_SPRING	SR	qspring09_s121610003	349	3	29.45102	-82.69545	37.8	0.0	0.0	38.4	0.0	0.0
UN_NAMED_SPRING	SR	qspring09_s071636004	4047	3	29.83166	-82.66915	23.13	2.0	2.4	23.62	2.4	2.8
UN_NAMED_SPRING	SR	qspring09_s071618018	4020	3	29.87791	-82.75064	14.39	0.9	1.1	15.69	1.1	1.1

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s071618019	4021	3	29.88069	-82.75315	14.39	0.6	0.7	15.69	0.7	0.7
UN_NAMED_SPRING	SR	qspring09_s071620010	4022	3	29.86471	-82.73989	16.49	70.0	0.0	17	70.0	0.0
UN_NAMED_SPRING	SR	qspring09_s061829004	4023	3	29.93854	-82.53021	36.53	0.8	-0.2	37.94	1.0	0.1
UN_NAMED_SPRING	SR	qspring09_s071629003	4024	3	29.85568	-82.73212	19.4	3.9	2.6	19.91	4.8	2.8
UN_NAMED_SPRING	SR	qspring09_s071635007	4046	3	29.83406	-82.67664	22.95	6.9	11.4	23.43	8.5	13.2
UN_NAMED_SPRING	SR	qspring09_s011306003	209	3	30.42795	-83.05916	35.3	7.7	7.6	37.8	9.5	8.1
UN_NAMED_SPRING	SR	qspring09_s011304003	213	3	30.42815	-83.02784	36.09	0.2	0.0	38.62	0.3	0.0
UN_NAMED_SPRING	SR	qspring09_s071620008	4025	3	29.85610	-82.73270	19.4	1.6	1.3	19.91	1.9	1.5
UN_NAMED_SPRING	SR	qspring09_s021121002	223	3	30.30259	-83.22468	27.35	0.1	0.1	29.64	0.1	0.1
UN_NAMED_SPRING	SR	qspring09_s071620006	4027	3	29.85653	-82.73178	19.4	2.0	1.7	19.91	2.4	1.9
UN_NAMED_SPRING	SR	qspring09_s071620007	4028	3	29.85831	-82.73364	19.4	3.4	2.2	19.91	4.1	2.5

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
UN_NAMED_SPRING	SR	qspring09_s011306002	210	3	30.42786	-83.05082	35.51	20.1	21.2	38.02	24.8	22.2
UN_NAMED_SPRING	SR	qspring09_s071620005	4029	3	29.85707	-82.73002	19.77	2.9	3.4	20.22	3.6	3.9
UN_NAMED_SPRING	SR	qspring09_s011201004	208	3	30.42443	-83.06887	34.98	4.1	4.2	37.47	5.1	4.4
UNNAMED_SPRING	SR	qspring09_s9999	255	3	29.97225	-83.74476	0.89	0.5	0.4	0.89	0.5	0.4
UNNAMED_SPRING_G6	SWF	qspring09_20146	5007	3	28.89583	-82.59000	0	21.5	22.3	-0.15	24.6	23.1
UNNAMED_SPRING_G7	SWF	qspring09_20106	5016	3	28.87778	-82.59917	0	21.5	22.1	-0.15	24.6	23.9
WACISSA_HEADSPRING	SR	qspring09_s020302004	2004	3	30.33989	-83.99147	28.7	94.4	86.8	27.1	170.0	164.0
Wadesboro_Spg	SJR	qspring09_14802773	137	2	30.15392	-81.72854	5.64	0.9	0.1	5.72	1.0	0.1
WAKULLA_SPRING_MAIN_VENT_S749_S587	NWF	qspring09_587	108	3	30.23479	-84.30147	4.9	169.9	531.5	4.9	712.0	716.9
WAKULLA_SULFUR_SPRING_#1	NWF	qspring09_9325	131	3	30.18163	-84.24865	1.35	3.2	2.9	1.35	3.2	3.6
WAKULLA_SULFUR_SPRING_#2	NWF	qspring09_9326	132	3	30.18288	-84.24910	1.35	3.2	2.9	1.35	3.2	3.6

Spring Name	Water Mgnt District (WMD)	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Pool Elevation 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	Pool Elevation 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)
WALDO_SPRING	SR	qspring09_s050716001	247	3	30.04925	-83.62962	19.28	2.4	1.9	19.28	3.0	3.9
WALKER_SPRING	SR	qspring09_s020529001	178	3	30.28088	-83.85357	29.64	1.0	1.0	29.64	1.3	1.8
WAYNE_LEE_SPRING_RUN_AT_I-75_NR_WILDWOOD_FL	SWF	qr09_285133082053100	359	3	28.85906	-82.09181	0.41	6.6	8.1	88.63	12.0	8.1
WEKIVA_SPRINGS_NEAR_GULF_HAMMOCK	SR	qspring09_s141707001	351	3	29.28037	-82.65625	7.63	47.5	47.2	8.5	49.6	48.0
Welaka_Spg	SJR	qspring09_15881697	152	3	29.49455	-81.67325	-0.15	7.9	7.6	-0.15	7.9	7.8
Wells_Landing	SJR	qspring09_16843294	149	3	29.42099	-81.91997	18.71	4.6	3.3	18.71	4.8	3.6
WHITE_SULPHUR_SPRINGS_AT_WHITE_SPRINGS	SR	qspring09_s021607004	262	3	30.32990	-82.76091	48	-5.2	-6.4	52.2	-18.4	-5.5
WILSON_SPRINGS	SR	qspring09_s071606004	4018	3	29.89991	-82.75849	13.06	5.0	14.7	14	20.0	15.2
WOODS_CK_RISE	SR	qspring09_s040721002	230	3	30.12429	-83.62411	26	16.6	16.0	26.5	16.6	16.8
WORTHINGTON_SPRINGS_AT_WORTHINGTON_SPRINGS	SR	qspring09_s061932013	333	2	29.92658	-82.42602	50.12	0.0	0.0	52.46	0.0	0.0

APPENDIX F – BASEFLOW PICK-UP ESTIMATES 2001 AND 2009

USGS ID	Downstream Sequential Gage ID	Upstream Sequential Gage ID(s)	2001						2009					
			Estimated	Simulated	Residual	Weight	Weighted Residual	Residual/ Estimated	Estimated	Simulated	Residual	Weight	Weighted Residual	Residual/ Estimated
2198690	1		-4.2	-8.98	4.78	2.38	11.38	-1.14	-17.4	-27.19	9.79	0.57	11.38	-0.56
2198100	2		-5.7	-7.45	1.75	1.75	3.07	-0.31	-6.4	-7.3	0.9	1.56	3.07	-0.14
2176500	4		-16.6	-17.13	0.53	0.6	0.32	-0.03	-14.2	-22.35	8.15	0.7	0.32	-0.57
2231280	5		-6	-8.4	2.4	1.67	3.99	-0.4	1.23E-25	-13.73	N/A	0	N/A	N/A
2231268	6		-1	-1.27	0.27	10	2.66	-0.27	1.23E-25	-3.22	N/A	0	N/A	N/A
2198500	8	11,7,2	-126.9	-121.41	-5.49	0.08	-0.43	0.04	-452.5	-177.11	-275.39	0.02	-0.43	0.61
2203000	9		-64	-215.27	151.27	0.16	23.63	-2.36	-118	-293.47	175.47	0.08	23.63	-1.49
2202600	10		-8.3	-3.24	-5.06	1.2	-6.09	0.61	-28.6	-68.15	39.55	0.35	-6.09	-1.38
2244040	12	45,50,53	1.23E-25	-752.22	N/A	0	N/A	N/A	1.23E-25	-768.51	N/A	0	N/A	N/A
2244320	13		-27.4	-23.99	-3.41	0.37	-1.24	0.12	1.23E-25	-16.73	N/A	0	N/A	N/A
2244420	14		-41.3	-2.83	-38.47	0.24	-9.31	0.93	1.23E-25	-1.72	N/A	0	N/A	N/A
2244440	15	13,14	1.23E-25	-90.33	N/A	0	N/A	N/A	1.23E-25	-63.68	N/A	0	N/A	N/A
2244473	16		-7.8	-6.69	-1.11	1.28	-1.42	0.14	1.23E-25	-8.3	N/A	0	N/A	N/A
2247258	17		1.23E-25	0	N/A	0	N/A	N/A	1.23E-25	0	N/A	0	N/A	N/A
2247222	18		1.23E-25	-30.74	N/A	0	N/A	N/A	1.23E-25	-34.87	N/A	0	N/A	N/A
2246895	19		1.23E-25	-8.6	N/A	0	N/A	N/A	1.23E-25	-15.79	N/A	0	N/A	N/A
2246828	20		-11.9	-4.67	-7.23	0.84	-6.08	0.61	1.23E-25	-6.34	N/A	0	N/A	N/A
2245050	21		-23.9	-14.35	-9.55	0.42	-4	0.4	1.23E-25	-18.04	N/A	0	N/A	N/A
2245140	22		-10.8	-13.93	3.13	0.93	2.9	-0.29	1.23E-25	-19.88	N/A	0	N/A	N/A
2247027	23		-0.9	-1.35	0.45	11.11	4.95	-0.49	1.23E-25	-2.35	N/A	0	N/A	N/A
2247015	24		1.23E-25	-14.01	N/A	0	N/A	N/A	1.23E-25	-18.67	N/A	0	N/A	N/A
2245255	25		-1.6	-2.61	1.01	6.25	6.34	-0.63	1.23E-25	-2.97	N/A	0	N/A	N/A
2245260	26	25	1.23E-25	-20.95	N/A	0	N/A	N/A	1.23E-25	-22.34	N/A	0	N/A	N/A
2245500	27		-22.4	-40.71	18.31	0.45	8.17	-0.82	-49.8	-63.57	13.77	0.2	8.17	-0.28
2216180	30		-4.8	-10.83	6.03	2.08	12.55	-1.26	-14.3	-19.18	4.88	0.7	12.55	-0.34
2226000	34	32,33	118.4	-470.63	589.03	0	0	4.97	-661.1	-773.63	112.53	0.02	0	-0.17
2226100	35		1.23E-25	-30.77	N/A	0	N/A	N/A	1.23E-25	-38.17	N/A	0	N/A	N/A
2227500	36		-12.8	-43.24	30.44	0.78	23.78	-2.38	-106.8	-48.06	-58.74	0.09	23.78	0.55
2228000	37	36	-187.5	-640.44	452.94	0.05	24.14	-2.42	-552.9	-999.73	446.83	0.02	24.14	-0.81
2228500	38		-3.8	1.11	-4.91	2.63	-12.91	1.29	-16.1	-14.68	-1.42	0.62	-12.91	0.09
2229000	39		1.23E-25	-2.31	N/A	0	N/A	N/A	1.23E-25	-4.66	N/A	0	N/A	N/A
2229250	40	39	-1.57	-6.1	-4.53	0	N/A	2.89	1.23E-25	-9.37	N/A	0	N/A	N/A
2231000	41	38,40	-34.3	-42.51	8.21	0.29	2.39	-0.24	-90	-60.76	29.24	0	0	-0.32
2246300	42		-10	-10.22	0.22	1	0.22	-0.02	1.23E-25	-16.67	N/A	0	N/A	N/A
2246150	43		-3.5	-1.13	-2.37	2.86	-6.77	0.68	1.23E-25	-1.7	N/A	0	N/A	N/A
2238500	47	46	1.23E-25	-10.09	10.09	0	0	N/A	1.23E-25	-8.3	N/A	0	N/A	N/A

USGS ID	Downstream Sequential Gage ID	Upstream Sequential Gage ID(s)	2001						2009					
			Estimated	Simulated	Residual	Weight	Weighted Residual	Residual/ Estimated	Estimated	Simulated	Residual	Weight	Weighted Residual	Residual/ Estimated
2239501	48		-445.1	-446.86	1.76	0.02	0.04	0	-500.8	-508.91	8.11	0.02	0.04	-0.02
2240000	49	47,48	1.23E-25	-16.97	16.97	0	0	N/A	1.23E-25	-24.26	N/A	0	N/A	N/A
2240500	50	49	-42.2	-35.38	-6.82	0.24	-1.62	0.16	-62.4	-43.07	-19.33	0.16	-1.62	0.31
2240902	51		0	-0.3	0.3	20	5.92	N/A	1.23E-25	-0.33	N/A	0	N/A	N/A
2246000	52		-37	-35.03	-1.97	0.27	-0.53	0.05	-51.6	-68.59	16.99	0.19	-0.53	-0.33
2243000	53	51	-5.7	-10.08	4.38	1.75	7.68	-0.77	1.23E-25	10.52	N/A	0	N/A	N/A
2246025	54	27,52	1.23E-25	-54.38	54.38	0	0	N/A	1.23E-25	-79.86	N/A	0	N/A	N/A
2246500	55	12,15,16,21,22,2 6,54,43,42	1.23E-25	-250.98	250.98	0	0	N/A	1.23E-25	-348.36	N/A	0	N/A	N/A
2247510	56		1.23E-25	-2.86	2.86	0	0	N/A	1.23E-25	-2.45	N/A	0	N/A	N/A
2322500	57	95	-581.1	-497.49	-83.61	0.02	-1.44	0.14	-745.7	-578.66	-167.04	0.01	-1.44	0.22
2322500a	57	93	-581.1	-497.49	-83.61	0.02	-1.44	0.14	-745.7	-578.66	-167.04	0.01	-1.44	0.22
2322700	58		-202	-201.74	-0.26	0.05	-0.01	0	-253.6	-272.61	19.01	0.04	-0.01	-0.07
2322800	59	57,58	-188	-137.24	-50.76	0.05	-2.7	0.27	-222.1	-147.61	-74.49	0.05	-2.7	0.34
2323500	60	90,59	-248.7	-353.42	104.72	0.04	4.21	-0.42	169.3	-429.44	598.74	0	4.21	3.54
2327500	61		-126.5	-349.84	223.34	0.08	17.67	-1.77	-166.3	-399.23	232.93	0.06	17.67	-1.4
2323592	62	60	-152.1	-410.86	258.76	0.07	17	-1.7	-1038.6	-466.51	-572.09	0	17	0.55
2324000	63		-92.2	-5.16	-87.04	0.11	-9.44	0.94	-29.6	-62.24	32.64	0.34	-9.44	-1.1
2324400	64		-3.1	-0.52	-2.58	3.23	-8.33	0.83	-2.3	-2.88	0.58	4.35	-8.33	-0.25
2324500	65	64	-62.1	15.63	-77.73	0.16	-12.51	1.25	1.23E-25	-6.72	N/A	0	N/A	N/A
2325000	66	65	-12.3	-6.62	-5.68	0.81	-4.62	0.46	1.23E-25	-59.73	N/A	0	N/A	N/A
2326000	67		-25.4	-16.63	-8.77	0.39	-3.45	0.35	-44.6	-49.58	4.98	0.22	-3.45	-0.11
2326372	68		0	0	0	0	0	1	1.23E-25	0	N/A	0	N/A	N/A
2326500	69	68	-38.2	-23.16	-15.04	0.26	-3.94	0.39	-158.7	-93.7	-65	0.06	-3.94	0.41
2326550	70	69	1.23E-25	-658.87	658.87	0	0	N/A	-603.5	-926.62	323.12	0.02	0	-0.54
2330000	71	94,103	1.23E-25	-162.21	162.21	0	0	N/A	1.23E-25	-257.3	N/A	0	N/A	N/A
2326900	72		-380.2	-278.57	-101.63	0.03	-2.67	0.27	-688	-381.52	-306.48	0.01	-2.67	0.45
2315000	73	110	-54.8	-59.46	4.66	0.18	0.85	-0.09	1.23E-25	-76.17	N/A	0	N/A	N/A
2315500	74	73	-37.3	-20.99	-16.31	0.27	-4.37	0.44	1.23E-25	-37.21	N/A	0	N/A	N/A
2330150	75	71	1.23E-25	-186.31	186.31	0	0	N/A	1.23E-25	-325.23	N/A	0	N/A	N/A
2317500	76		-164.4	-402.47	238.07	0.06	14.47	-1.45	-246.8	-772.97	526.17	0.04	14.47	-2.13
2317620	77	76	-59.4	-61.92	2.52	0.17	0.42	-0.04	-94.8	-37.45	-57.35	0.11	0.42	0.6
2329342	79		-4	-5.9	1.9	2.5	4.75	-0.47	-8.8	-8.82	0.02	1.14	4.75	0
2318500	80		-241.2	-392.79	151.59	0.04	6.29	-0.63	-298.9	-621.46	322.56	0.03	6.29	-1.08
2318700	81		-31.1	-88.11	57.01	0.32	18.33	-1.83	-50.1	-71.67	21.57	0.2	18.33	-0.43

USGS ID	Downstream Sequential Gage ID	Upstream Sequential Gage ID(s)	2001						2009					
			Estimated	Simulated	Residual	Weight	Weighted Residual	Residual/ Estimated	Estimated	Simulated	Residual	Weight	Weighted Residual	Residual/ Estimated
2319000	82	80,81	-172.3	-146.37	-25.93	0.06	-1.5	0.15	-133.3	-147.68	14.38	0.08	-1.5	-0.11
2319394	84	82	-250.7	-290.75	40.05	0.04	1.6	-0.16	-343.9	-434.69	90.79	0.03	1.6	-0.26
2319500	85	74,77,84	-439.5	-728.04	288.54	0.02	6.58	-0.66	-245.9	-764.23	518.33	0	6.58	-2.11
2319800	86	85	-45.3	-86.85	41.55	0.22	9.17	-0.92	52.3	-116.59	168.89	0	9.17	3.23
2320000	87	86	-88.8	-124.55	35.75	0.11	4.03	-0.4	-453.9	-178.18	-275.72	0	4.03	0.61
2320500a	87	85	-88.8	-124.55	35.75	0.11	4.03	-0.4	-453.9	-178.18	-275.72	0	4.03	0.61
2327100	89		-36.6	-12.21	-24.39	0.27	-6.66	0.67	-37	-46.87	9.87	0.27	-6.66	-0.27
2320500	90	87	-498.8	-514.99	16.19	0.02	0.32	-0.03	-170.3	-613.26	442.96	0.06	0.32	-2.6
2320700	91		-0.2	-0.19	-0.01	50	-0.3	0.03	-21.6	-3.31	-18.29	0.46	-0.3	0.85
2321000	92		-4.2	-3.15	-1.05	2.38	-2.51	0.25	-20.2	-16.65	-3.55	0.5	-2.51	0.18
2321500	93	91,92	-8.1	-6.89	-1.21	1.23	-1.49	0.15	-34.4	-23.56	-10.84	0.29	-1.49	0.31
2329000	94	97	-19.3	-43.1	23.8	0.52	12.33	-1.23	-53.5	-65.06	11.56	0.19	12.33	-0.22
2321975	95	93	-7	-26.76	19.76	1.43	28.22	-2.82	-31.9	-104.6	72.7	0.31	28.22	-2.28
2322049	96		0	0	0	0	0	1	1.23E-25	0	N/A	0	N/A	N/A
2328522	97	61	-90.8	-282.32	191.52	0.11	21.09	-2.11	-210.2	-360.27	150.07	0.05	21.09	-0.71
2312700	99	102	-28.7	-50.72	22.02	0.35	7.67	-0.77	1.23E-25	-51.66	N/A	0	N/A	N/A
2313230	100	105,101,98	1.23E-25	-565.62	565.62	0	0	N/A	1.23E-25	-588.82	N/A	0	N/A	N/A
2313100	101		-543.6	-544.41	0.81	1	0.81	0	-561	-569.53	8.53	1	0.81	-0.02
2312667	102		-11.6	-8.98	-2.62	0.86	-2.26	0.23	-14.4	-4.74	-9.66	0.69	-2.26	0.67
2329600	103	79,104	-34.1	-141.22	107.12	0.29	31.42	-3.14	1.23E-25	-200.25	N/A	0	N/A	N/A
2329558	104		-2.3	-0.21	-2.09	4.35	-9.09	0.91	1.23E-25	-0.25	N/A	0	N/A	N/A
2313000	105	106	1.23E-25	-108.23	108.23	0	0	N/A	1.23E-25	-93.09	N/A	0	N/A	N/A
2312720	106	111,107,99	1.23E-25	15.11	-15.11	0	0	N/A	1.23E-25	18.76	N/A	0	N/A	N/A
2313700	108		1.23E-25	-117.93	117.93	0	0	N/A	1.23E-25	-123.89	N/A	0	N/A	N/A
2327033	109		0	3.5	-3.5	0	0	N/A	-24.2	-34.32	10.12	0.41	0	-0.42
2314500	110		-61.6	-4.64	-56.96	0.16	-9.24	0.92	-359.9	-49.35	-310.55	0.03	-9.24	0.86
2353000	112	119	1.23E-25	-404.58	404.58	0	0	N/A	1.23E-25	-538.23	N/A	0	N/A	N/A
2355350	116	115	-40	-33.86	-6.14	0.25	-1.53	0.15	1.23E-25	-39.46	N/A	0	N/A	N/A
2356000	117	112,116	1.23E-25	-747.67	747.67	0	N/A	N/A	1.23E-25	-776.21	N/A	0	N/A	N/A
2326526	122		1.23E-25	-236.21	N/A	0	N/A	N/A	-510	-447.58	-62.42	1.96E-02	-1.22	0.12
lower_olustee	Mouth of Olustee Creek	121	0.2	0.2	0	50	50	10	1.23E-25	-8.569354	N/A	0	N/A	N/A

APPENDIX G – UPDATES TO RIVERS AND SPRING STAGES

MEMORANDUM

Date: August 22, 2016

To: Fatih Gordu
Doug Durden
Doug Hearn

From: Tim Desmarais

Subject: NFSEG – Updates to RIV and DRN Input (Abridged version)

Note: The following is an abridged version of the technical memorandum prepared yesterday August 21. Please refer to the complete version for processing details, files, and filepaths.

Introduction

The purpose of this memorandum is to document the procedure used to update the River (RIV) and Drain (DRN) MODFLOW input files for the North Florida Southeast Georgia (NFSEG) groundwater flow model. The updates consist of the following:

- Update the water surface elevation and bottom elevation calculations to incorporate the 'new' USGS 3DEP topographic Digital Elevation Model (DEM).
- Adjust the water surface elevations as necessary to ensure a positive gradient in the downstream direction, incorporating the lake stage data (NHD-derived or from the SJR hydrodynamic model) along the way. This was done for all of the streamline segments (USGS's NHD+2 dataset), which incorporates the input to both the RIV and DRN packages:
    - RIV: Stream order 2 or greater
    - DRN: Stream order 1 or null (excludes 0 – coastlines)
- Bring the revised elevations into the appropriate pre-processing input files (RIV) or MODFLOW input files (DRN).

The updates to the RIV and DRN input consisted of two major changes:

- Update the water surface elevation and bottom elevation calculations to incorporate the 'new' USGS 3DEP topographic Digital Elevation Model (DEM).

- Revise previous methodology to ensure a positive gradient of water levels in the downstream direction, incorporating the lake stage data (NHD-derived or from the SJR hydrodynamic model) along the way. This was done for all of the streamline segments (USGS's NHD+2 dataset), which incorporates the input to both the RIV and DRN packages:

In the first step, the NHD+2 flowlines were intersected by the model grid and the lakes and a new unique identifier "SEG_ID" is created. Then, the polylines are converted to 3D polylines by assigning the land surface elvation from USGS 3DEP DEM (10m resolution). This creates additional vertices (in 3D space) at every change in DEM elevation (See **Figure G-1**). Lastly, statistics for each polyline are computed (e.g., Mean/Min/Max elevation & slope, vertex count) and added as new columns in the flowlines

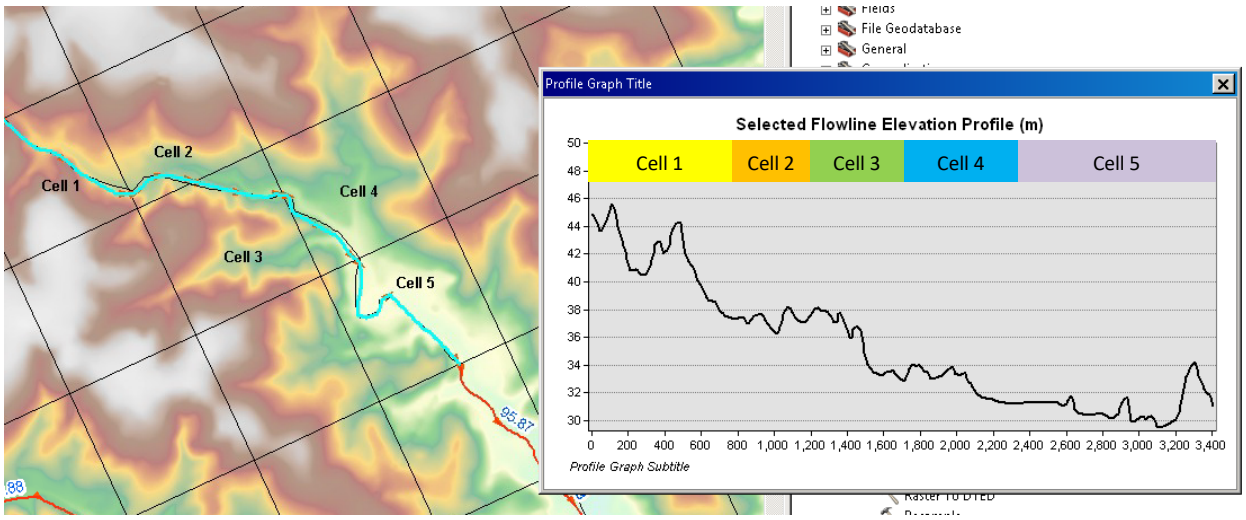
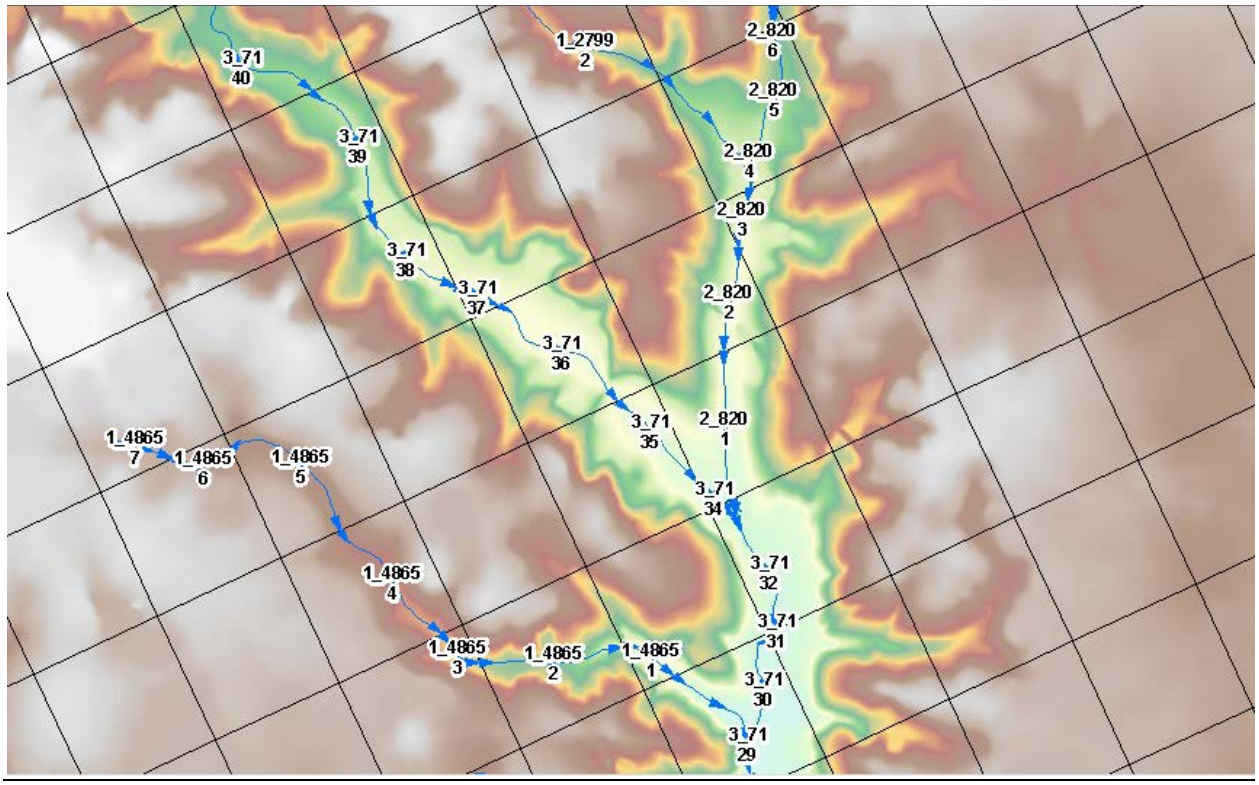


Figure G-1: Plan and Profile Example for NHD 3D Flowlines

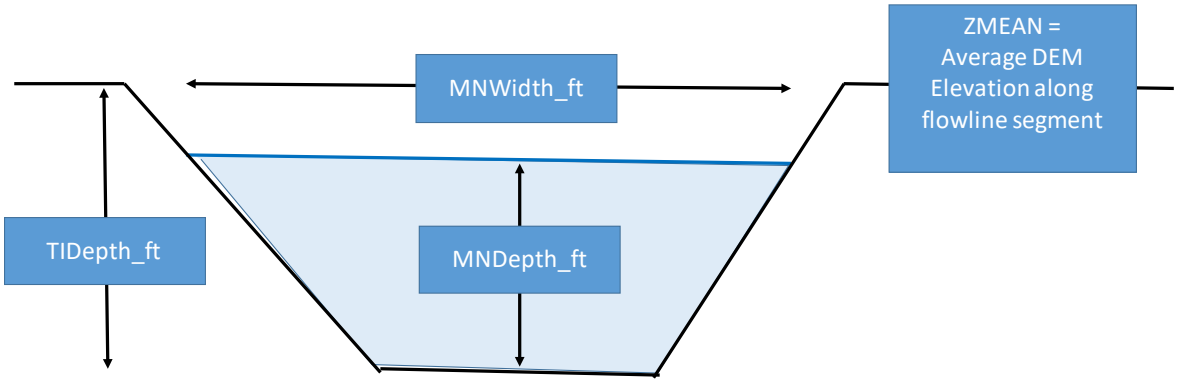
Next, a stream ordering system is applied based on an analysis of the starting and ending vertexes of the 3D flowlines (**Figure G-2**). The resultant naming convention creates a group of 'strings', or groups of connected polylines, with a new group identifier (STRING_ID) . The position of each 3D flowline segment within it's string is defined by the STRING_NUM column.



Note: the value on top is STRING_ID and the value on the bottom is STRING_NUM

Figure G-2: Example showing Flowline Upstream/Downstream Naming Convention

After this, the DEM-derived elevations associated with the 3D flowlines are converted into an average stage and depth using data provided in the NHD dataset (EROM tables) and the empirical equations (with the Piedmont coefficients) from Appendix A of the EPA BASINS Technical Note 2 (EPA, 2007). The parameters and equations from this method, as well as how the depth term was converted to an elevation, are depicted in **Figure G-3.**



$$MNWidth_ft = 11.95 * Q_{cms}^{0.47} * 3.28083 \left(\frac{ft}{m}\right)$$

$$MNDepth_ft = 0.28 * (Q_{cms}^{0.22}) * 3.28083 \left(\frac{ft}{m}\right)$$

TIDep_ft = 1.25*MNDepth_ft
Stream Bottom (RBotEl) = ZMEAN – TIDep_ft
Avg Stage (RStg) = RBotEl + MNDepth_ft

Figure G-3: Calculation of River Stage and Bottom from Average Flow Estimates and DEM

Lastly, the lake stages were combined with the NHD-derived flowline stages and adjusted to produce water level profiles that both honor the lake stage data, the stages from higher-order connected streams, and comply with the upstream-to-downstream rules within the string itself. In the process, the NHD-derived strings (stages and bottom elevations) are thus 'straightened' by themselves first (see **Figure G-4**) and the lake stages (and bottom elevations) are incorporated in a later process (see **Figure G-5**).

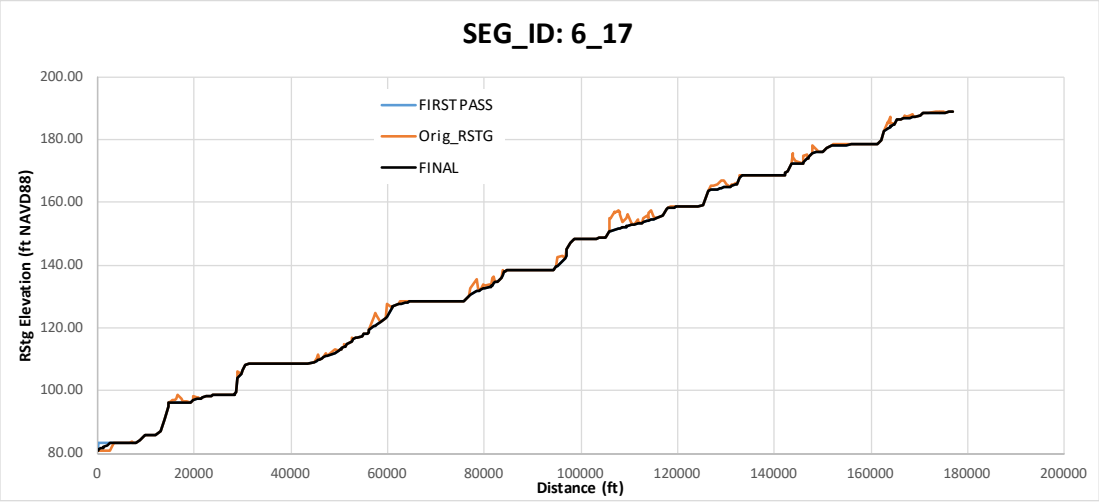


Figure G-4: Examples of Typical NHD-only Adjustments

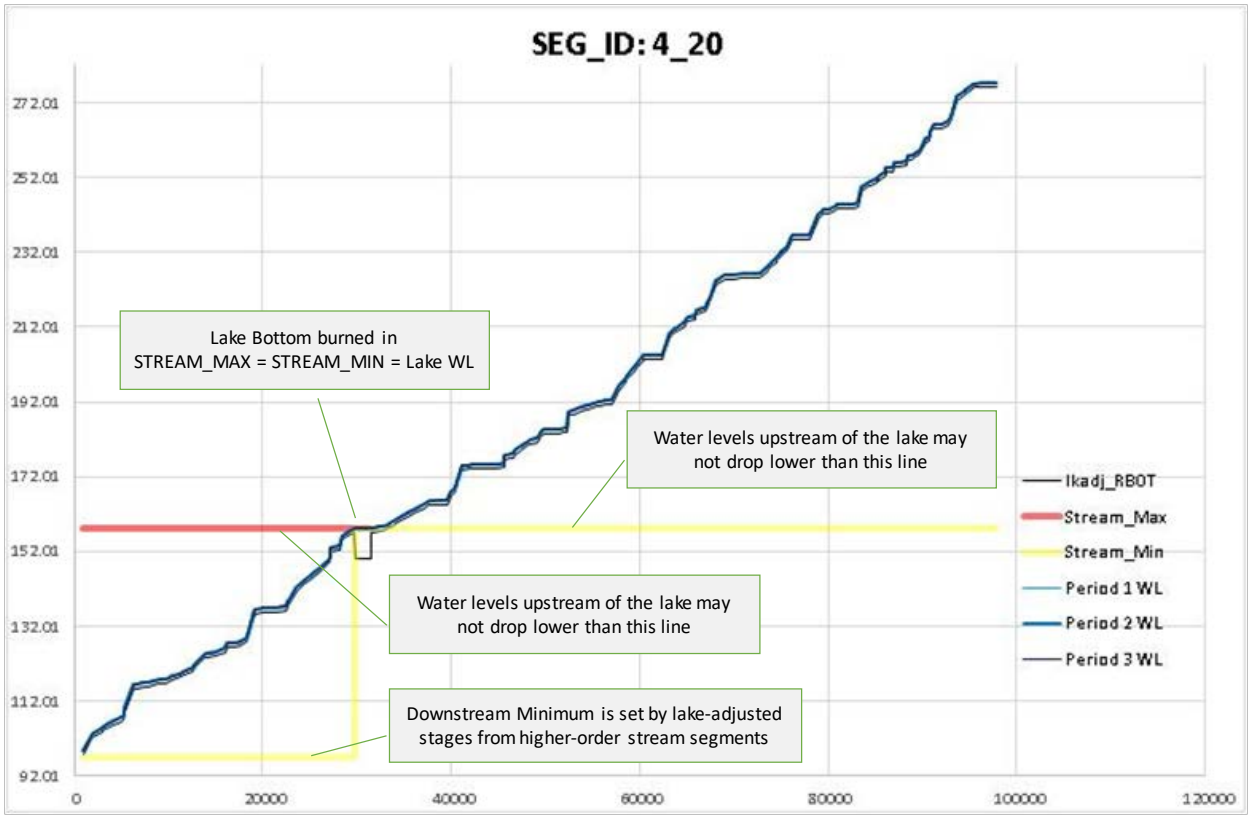


Figure G-5: Example of Lake Water Levels Adjustment Step

APPENDIX H – HORIZONTAL HEAD DIFFERENCES 2001 AND 2009

Summary of Observed and Simulated Horizontal Head Differences

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w_01530	w_riv03	hd00342_09	9.4	7.5	1.9	8.3	10.4	-2.1
w_01530	w_01531	hd00341_09	-18.4	-16.5	-1.9	-17.7	-20.6	2.9
w_01531	w_01544	hd00366_09	-17.5	-24.8	7.3	-19.7	-18.3	-1.5
w_01567	w_01569	hd00368_09	-8.1	-13.7	5.6	0.0	-16.5	16.5
w00012	w00076	hd00109_09	-12.0	-13.0	1.0	-13.1	-14.2	1.1
w00012	w00875	hd00110_09	40.0	33.9	6.1	40.4	34.9	5.5
w00030	w00222	hd00335_09	-10.0	-5.1	-4.9	-10.6	-7.1	-3.5
w00054	w00698	hd00257_09	-4.0	-2.3	-1.6	-3.4	-2.0	-1.4
w00054	w01405	hd00074_09	-5.6	-4.7	-0.9	-4.8	-4.3	-0.5
w00054	w00691	hd00075_09	11.0	10.6	0.4	6.9	9.1	-2.3
w00076	w00367	hd00108_09	-8.2	-6.4	-1.7	-8.5	-7.1	-1.4
w00083	w00167	hd00119_09	5.8	3.0	2.8	7.1	3.4	3.7
w00083	w00876	hd00118_09	-6.9	-9.4	2.5	-6.4	-10.1	3.7
w00112	w00835	hd00136_09	-6.0	-5.4	-0.6	-6.1	-5.9	-0.2
w00120	w00165	hd00170_09	-3.3	1.5	-4.8	-1.7	1.4	-3.1

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00158	w00966	hd00220_09	-2.4	-1.7	-0.7	-2.4	-1.7	-0.6
w00164	w00903	hd00198_09	18.7	18.2	0.5	19.3	18.1	1.1
w00165	w00470	hd00171_09	24.0	19.6	4.4	24.3	20.8	3.6
w00166	w_01574	hd00126_09	18.0	16.4	1.6	20.2	17.1	3.1
w00167	w00339	hd00221_09	-1.5	-0.7	-0.8	-0.1	-0.8	0.6
w00167	w00927	hd00120_09	-2.0	-0.4	-1.5	-2.3	-0.4	-2.0
w00184	w00340	hd00214_09	5.6	7.7	-2.1	7.1	7.6	-0.5
w00184	w00236	hd00213_09	3.1	4.9	-1.9	3.4	4.7	-1.3
w00184	w00372	hd00212_09	-3.7	-4.5	0.9	-4.5	-4.8	0.4
w00199	w00349	hd00091_09	2.8	1.0	1.8	2.0	0.6	1.4
w00199	w00301	hd00107_09	5.5	0.6	4.9	6.1	0.8	5.3
w00207	w00698	hd00256_09	-4.5	-10.2	5.7	-4.8	-9.4	4.6
w00211	w00922	hd00239_09	-8.1	-4.4	-3.7	-6.7	-4.6	-2.1
w00213	w00914	hd00332_09	3.7	5.7	-2.0	4.5	6.4	-1.9
w00216	w00231	hd00236_09	1.1	1.3	-0.2	0.1	1.1	-1.0
w00217	w00271	hd00337_09	1.3	2.3	-1.0	3.7	-0.9	4.7
w00218	w00838	hd00240_09	-6.1	-3.4	-2.6	-7.1	-4.0	-3.1

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00222	w00878	hd00334_09	-2.4	-1.8	-0.6	-2.8	0.2	-2.9
w00222	w00888	hd00333_09	5.6	6.9	-1.3	5.6	3.0	2.6
w00231	w00371	hd00233_09	1.7	4.3	-2.6	2.4	3.8	-1.4
w00236	w00968	hd00215_09	0.9	1.6	-0.7	1.5	1.6	-0.1
w00245	w00404	hd00248_09	-0.5	-1.6	1.0	0.3	-2.1	2.4
w00249	w00851	hd00099_09	-0.9	-4.5	3.6	-1.3	-4.9	3.5
w00256	w00258	hd00094_09	-1.0	-0.5	-0.5	-0.6	-0.7	0.1
w00258	w00805	hd00155_09	15.9	17.6	-1.8	15.8	17.2	-1.4
w00258	w00367	hd00113_09	-2.7	-1.2	-1.6	-2.6	-0.4	-2.2
w00258	w00826	hd00141_09	11.4	12.4	-1.0	11.4	13.2	-1.8
w00258	w00835	hd00114_09	-3.5	-1.9	-1.6	-3.0	-0.9	-2.1
w00258	w00580	hd00124_09	2.9	0.7	2.1	3.3	0.8	2.5
w00260	w00754	hd00182_09	-1.3	-5.9	4.6	-1.0	-5.6	4.6
w00271	w00901	hd00336_09	-1.5	1.4	-2.9	-0.8	-0.3	-0.5
w00281	w00404	hd00249_09	8.2	4.4	3.8	8.1	5.2	2.9
w00286	w00874	hd00151_09	3.0	4.3	-1.3	0.9	5.1	-4.2
w00286	w00859	hd00152_09	-12.8	-14.3	1.5	-13.1	-15.3	2.2

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00291	w00599	hd00228_09	6.1	7.4	-1.3	6.0	8.1	-2.2
w00291	w01029	hd00206_09	-5.2	-3.3	-1.8	-6.2	-2.8	-3.3
w00298	w00356	hd00210_09	23.4	21.2	2.2	24.6	21.3	3.3
w00320	w00831	hd00106_09	-1.3	-4.0	2.7	-1.0	-4.5	3.5
w00347	w00915	hd00123_09	2.2	12.1	-10.0	3.2	12.3	-9.1
w00347	w00928	hd00122_09	-19.9	-15.0	-5.0	-17.4	-14.9	-2.5
w00349	w00783	hd00092_09	6.7	2.5	4.2	9.2	2.6	6.6
w00371	w00954	hd00234_09	6.6	9.4	-2.8	5.9	9.0	-3.2
w00372	w00995	hd00208_09	-1.0	1.4	-2.4	2.3	2.2	0.1
w00381	w00820	hd00104_09	6.7	4.9	1.8	5.4	7.3	-1.9
w00395	w01029	hd00227_09	6.4	6.3	0.1	4.6	7.0	-2.4
w00400	w00876	hd00117_09	11.9	9.0	2.9	11.7	9.0	2.7
w00413	w00439	hd00380_09	7.6	8.4	-0.8	13.0	9.9	3.2
w00416	w01411	hd00280_09	-25.2	-21.7	-3.5	-22.5	-20.2	-2.4
w00416	w00422	hd00271_09	14.9	11.3	3.6	16.0	11.8	4.2
w00420	w00768	hd00270_09	13.9	7.1	6.9	15.6	6.8	8.8
w00422	w00439	hd00272_09	12.9	12.9	0.0	18.6	14.1	4.6

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00437	w00544	hd00267_09	-14.5	-12.1	-2.5	-13.3	-11.8	-1.5
w00439	w00768	hd00273_09	2.5	-7.2	9.7	1.7	-7.4	9.1
w00444	w00749	hd00183_09	-1.8	-4.1	2.3	-2.0	-4.1	2.2
w00444	w00525	hd00176_09	16.0	8.4	7.6	18.0	8.8	9.1
w00449	w00453	hd00024_09	-21.2	-21.1	0.0	-21.5	-21.5	0.0
w00450	w00467	hd00023_09	-10.3	-8.7	-1.6	-12.1	-9.1	-3.1
w00456	w00468	hd00026_09	-31.8	-25.1	-6.6	0.0	-29.0	29.0
w00458	w00850	hd00195_09	-26.4	-21.2	-5.1	-24.2	-22.1	-2.1
w00460	w_riv12	hd00345_09	8.7	9.3	-0.6	7.3	11.1	-3.9
w00460	w00581	hd00004_09	-32.1	-28.0	-4.1	-28.3	-29.9	1.6
w00466	w00843	hd00016_09	-1.1	-2.0	0.9	-1.0	-2.9	1.9
w00469	w00483	hd00003_09	-42.1	-34.4	-7.7	-41.5	-35.7	-5.8
w00469	w_riv11	hd00344_09	12.4	4.4	8.0	10.7	6.2	4.5
w00471	w00821	hd00146_09	7.2	9.0	-1.8	6.6	10.1	-3.5
w00479	w00487	hd00006_09	0.1	-0.1	0.1	0.0	-0.5	0.6
w00479	w_riv04	hd00343_09	52.9	52.6	0.3	50.1	51.3	-1.2
w00480	w00487	hd00005_09	-0.3	-4.8	4.5	-0.1	-3.1	2.9

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00480	w_riv09	hd00376_09	55.3	47.7	7.6	52.8	48.3	4.6
w00481	w00487	hd00009_09	-0.7	-2.3	1.6	-0.6	-1.5	1.0
w00481	w00483	hd00362_09	0.9	8.4	-7.6	0.7	5.1	-4.4
w00486	w00513	hd00378_09	-0.2	0.6	-0.8	-3.0	1.6	-4.6
w00486	w00487	hd00377_09	-0.1	-0.8	0.7	-0.3	0.3	-0.6
w00486	w_01544	hd00367_09	-0.6	-5.1	4.5	-3.8	-5.2	1.3
w00487	w00488	hd00007_09	0.9	3.6	-2.7	0.9	3.4	-2.5
w00487	w00489	hd00008_09	1.3	3.4	-2.1	1.0	2.7	-1.7
w00492	w_riv07	hd00346_09	55.7	52.0	3.6	54.2	52.6	1.5
w00492	w_riv08	hd00347_09	57.5	53.1	4.3	56.0	53.4	2.5
w00495	w00523	hd00035_09	-16.2	-14.5	-1.6	-16.2	-14.5	-1.8
w00497	w00523	hd00318_09	-34.2	-30.3	-3.9	-33.6	-32.5	-1.1
w00499	w00513	hd00002_09	-51.3	-49.9	-1.4	-49.7	-49.1	-0.6
w00499	w00574	hd00259_09	-18.0	-18.3	0.3	-18.7	-19.6	0.9
w00500	w00507	hd00179_09	-3.0	-2.0	-0.9	-3.2	-2.7	-0.5
w00506	w00507	hd00178_09	1.6	0.6	1.0	1.5	0.8	0.7
w00506	w00525	hd00177_09	-4.3	-2.2	-2.1	-4.3	-2.8	-1.5

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00508	w00802	hd00160_09	1.0	2.7	-1.6	1.6	3.2	-1.6
w00508	w00788	hd00159_09	-0.7	-0.1	-0.5	-1.0	-0.5	-0.5
w00514	w00528	hd00252_09	-4.3	-9.3	5.0	-5.0	-9.3	4.3
w00517	w00775	hd00158_09	0.7	2.4	-1.7	0.9	2.8	-1.8
w00519	w00520	hd00001_09	-25.6	-21.6	-4.0	-22.6	-27.1	4.5
w00520	w_01544	hd00370_09	-24.8	-32.1	7.3	-28.3	-26.6	-1.7
w00522	w00824	hd00314_09	40.0	38.7	1.4	39.3	44.8	-5.5
w00522	w00523	hd00313_09	-15.3	-18.7	3.4	-14.9	-13.6	-1.3
w00523	w_01544	hd00305_09	19.4	11.9	7.4	17.1	13.1	4.0
w00523	w00576	hd00304_09	-2.0	-1.7	-0.2	-2.7	-1.0	-1.6
w00523	w_riv02	hd00360_09	58.9	54.4	4.5	57.2	55.8	1.4
w00527	w00564	hd00261_09	-8.9	-9.9	1.0	-8.1	-10.9	2.8
w00528	w00745	hd00251_09	-19.6	-14.4	-5.2	-21.0	-15.1	-5.9
w00530	w00959	hd00031_09	-23.6	-25.2	1.6	-25.2	-24.3	-0.9
w00531	w00706	hd00263_09	-0.3	-2.1	1.8	-0.5	-1.6	1.0
w00535	w00583	hd00302_09	-0.3	-0.1	-0.2	-0.2	0.0	-0.1
w00536	w00543	hd00193_09	0.0	-7.6	7.6	-7.7	-9.6	1.9

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00538	w00708	hd00265_09	-25.5	-17.4	-8.1	-24.8	-22.4	-2.4
w00538	w00545	hd00037_09	-36.4	-31.4	-4.9	-37.0	-36.9	-0.1
w00539	w00546	hd00260_09	6.4	10.8	-4.4	4.5	9.7	-5.2
w00544	w00693	hd00266_09	-9.9	-9.8	-0.1	-8.9	-9.4	0.4
w00545	w00549	hd00364_09	-4.3	-6.5	2.2	-4.0	-5.9	2.0
w00545	w00738	hd00038_09	35.0	29.7	5.3	37.6	33.9	3.8
w00547	w00560	hd00036_09	44.6	36.3	8.3	44.1	34.7	9.4
w00547	w00562	hd00310_09	21.9	22.5	-0.6	22.1	22.7	-0.6
w00549	w00551	hd00363_09	-0.4	0.2	-0.5	0.5	1.8	-1.3
w00554	w00707	hd00279_09	-38.5	-30.3	-8.3	0.0	-33.2	33.2
w00560	w_01522	hd00379_09	14.2	19.1	-4.9	16.7	23.4	-6.7
w00562	w00577	hd00311_09	30.0	28.0	2.0	30.3	27.2	3.2
w00566	w00745	hd00253_09	-0.2	-1.0	0.7	-0.2	-1.2	1.0
w00566	w00740	hd00254_09	1.2	0.2	1.0	1.5	0.2	1.3
w00570	w_riv01	hd00365_09	20.8	15.9	4.8	19.4	19.7	-0.3
w00570	w00576	hd00361_09	-38.2	-39.0	0.8	-38.5	-36.1	-2.4
w00573	w00917	hd00323_09	-13.6	-12.8	-0.7	-14.7	-13.5	-1.2

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00576	w00791	hd00039_09	52.5	47.0	5.4	52.5	47.9	4.5
w00583	w00733	hd00303_09	-0.8	0.1	-0.8	-0.6	0.0	-0.6
w00597	w00604	hd00328_09	3.2	6.6	-3.4	3.9	6.6	-2.7
w00598	w00880	hd00149_09	-7.1	-0.1	-7.0	-6.7	-0.1	-6.6
w00599	w00998	hd00229_09	7.4	10.4	-3.0	7.9	10.0	-2.1
w00618	w01282	hd00062_09	92.5	96.4	-3.9	87.0	87.5	-0.5
w00621	w01282	hd00065_09	61.2	61.1	0.1	58.8	57.1	1.7
w00621	w01288	hd00064_09	-2.7	-2.2	-0.4	-1.2	-1.9	0.8
w00630	w00750	hd00085_09	5.4	-1.1	6.6	-0.2	-2.8	2.6
w00653	w_e0001	hd00350_09	-63.6	-68.1	4.4	-60.5	-65.7	5.2
w00659	w00966	hd00219_09	21.7	-0.1	21.8	21.9	-0.1	22.0
w00666	w01009	hd00331_09	0.2	-4.8	5.1	-0.1	-4.8	4.7
w00706	w00708	hd00264_09	4.0	5.7	-1.7	3.7	4.0	-0.4
w00714	w00731	hd00186_09	-0.5	-2.3	1.9	-0.5	-2.1	1.6
w00731	w00737	hd00185_09	-0.9	-2.0	1.1	-1.1	-1.7	0.7
w00733	w00745	hd00250_09	-1.3	-0.9	-0.4	-1.9	-1.3	-0.6
w00737	w00749	hd00184_09	-2.3	-1.1	-1.2	-2.2	-0.9	-1.3

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00754	w00760	hd00181_09	0.3	-2.0	2.2	0.1	-1.8	1.9
w00775	w00788	hd00371_09	-1.2	-3.2	2.0	-1.5	-3.0	1.5
w00799	w00805	hd00156_09	-5.2	-4.9	-0.3	-5.3	-5.2	0.0
w00802	w00811	hd00161_09	19.1	14.9	4.2	20.3	15.8	4.5
w00807	w00812	hd00087_09	-5.4	-6.5	1.2	-5.2	-6.5	1.4
w00811	w_riv06	hd00162_09	10.8	8.6	2.2	11.1	9.6	1.5
w00813	w00818	hd00101_09	-22.7	-22.6	0.0	-23.4	-23.9	0.5
w00816	w_riv06	hd00163_09	1.5	-0.4	1.9	2.1	-0.5	2.7
w00821	w_01574	hd00127_09	-8.7	-9.7	1.0	-8.4	-10.9	2.6
w00828	w_01577	hd00130_09	-18.3	-20.5	2.2	0.0	-24.3	24.3
w00830	w00832	hd00140_09	14.2	14.8	-0.6	19.9	18.2	1.7
w00835	w00845	hd00154_09	6.8	4.0	2.8	5.0	4.9	0.1
w00843	w_riv12	hd00353_09	2.2	8.0	-5.8	2.7	9.2	-6.5
w00845	w00859	hd00153_09	6.3	10.8	-4.5	7.7	10.6	-3.0
w00847	w00861	hd00019_09	-22.3	-21.5	-0.7	-24.0	-21.2	-2.8
w00849	w00877	hd00242_09	40.9	38.7	2.3	41.5	40.7	0.8
w00851	w00858	hd00098_09	-1.1	-2.0	0.9	-0.8	-2.7	1.9

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00868	w00877	hd00243_09	16.8	14.3	2.5	17.7	14.0	3.7
w00874	w00880	hd00150_09	1.9	0.4	1.4	4.6	0.5	4.1
w00881	w00901	hd00232_09	-16.2	-9.6	-6.6	-16.3	-15.3	-1.0
w00885	w00912	hd00247_09	-5.4	-2.2	-3.2	-7.3	-2.0	-5.3
w00895	w00896	hd00029_09	-9.6	0.7	-10.3	-6.6	0.7	-7.3
w00896	w_01592	hd00321_09	30.5	21.7	8.9	30.3	22.4	7.9
w00896	w00905	hd00028_09	10.6	-0.6	11.2	7.8	-0.6	8.4
w00901	w00906	hd00231_09	18.1	15.0	3.1	18.7	19.1	-0.4
w00912	w00914	hd00246_09	-5.6	-4.6	-0.9	-2.6	-4.3	1.7
w00913	w_01599	hd00359_09	15.8	20.4	-4.7	18.5	20.3	-1.8
w00917	w00933	hd00027_09	7.6	7.2	0.5	8.3	7.5	0.8
w00917	w_01592	hd00322_09	-3.8	-5.1	1.3	-2.7	-4.3	1.7
w00927	w00928	hd00121_09	5.4	4.6	0.8	6.9	4.6	2.3
w00940	w00945	hd00223_09	-0.1	0.6	-0.7	-0.3	0.6	-0.9
w00945	w00958	hd00224_09	6.8	3.7	3.1	8.7	3.8	4.9
w00959	w00965	hd00030_09	-18.4	-14.5	-3.9	-16.5	-12.3	-4.2
w00965	w00985	hd00034_09	48.2	44.5	3.7	47.7	42.5	5.2

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w00965	w00977	hd00372_09	58.6	44.3	14.3	57.9	41.6	16.3
w00968	w00978	hd00216_09	0.7	2.4	-1.7	0.8	2.3	-1.5
w00970	w00978	hd00217_09	3.2	-1.0	4.3	2.3	-1.1	3.3
w00977	w00994	hd00373_09	5.3	11.9	-6.6	5.4	11.7	-6.3
w00978	w01002	hd00226_09	7.8	8.3	-0.5	9.9	8.5	1.4
w00985	w00987	hd00374_09	19.2	9.7	9.5	18.3	9.7	8.6
w00998	w01002	hd00230_09	9.6	11.3	-1.6	12.3	11.4	0.9
w01002	w01004	hd00225_09	17.0	15.0	1.9	15.3	15.3	0.1
w01004	w01009	hd00330_09	11.6	9.6	2.0	13.1	9.8	3.3
w01020	w01023	hd00326_09	4.8	8.4	-3.6	0.0	8.3	-8.3
w01054	w01396	hd00077_09	22.0	25.3	-3.3	-3.7	3.9	-7.6
w01060	w01416	hd00191_09	18.0	4.7	13.3	17.9	3.9	14.1
w01060	w01412	hd00189_09	36.5	25.8	10.7	40.3	24.8	15.5
w01084	w01101	hd00288_09	-18.3	-15.7	-2.6	-22.8	-16.3	-6.5
w01099	w01103	hd00068_09	6.1	1.3	4.8	6.2	1.2	5.1
w01099	w01102	hd00067_09	-15.0	-18.6	3.6	-14.0	-17.2	3.2
w01101	w01139	hd00287_09	-102.1	-99.2	-2.9	-97.7	-100.3	2.6

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w01102	w01406	hd00066_09	-19.9	-22.4	2.5	-18.8	-20.9	2.2
w01103	w01331	hd00073_09	-1.5	0.6	-2.1	3.4	0.3	3.1
w01137	w01470	hd00044_09	-59.7	-54.3	-5.4	-59.1	-58.3	-0.8
w01137	w01433	hd00284_09	34.7	40.9	-6.2	38.0	40.8	-2.8
w01145	w01439	hd00293_09	-3.0	-6.6	3.6	-3.9	-7.1	3.2
w01215	w01447	hd00291_09	6.3	10.3	-4.0	10.4	12.7	-2.4
w01215	w01223	hd00290_09	-39.3	-32.1	-7.2	-31.7	-33.7	2.0
w01227	w01346	hd00356_09	22.3	22.8	-0.5	24.3	24.1	0.2
w01227	w01248	hd00355_09	-115.4	-115.2	-0.2	-111.7	-109.3	-2.4
w01229	w01346	hd00057_09	-31.1	-30.9	-0.2	-30.2	-31.6	1.5
w01229	w01318	hd00058_09	-17.2	-15.2	-2.0	-16.6	-15.9	-0.6
w01238	w01259	hd00060_09	49.4	48.9	0.6	46.2	44.9	1.3
w01238	w01318	hd00059_09	-9.9	-8.2	-1.7	-9.7	-8.3	-1.3
w01252	w01472	hd00309_09	39.0	46.3	-7.3	40.3	47.6	-7.3
w01256	w01257	hd00052_09	-16.6	-19.3	2.7	-15.6	-16.6	1.0
w01256	w01285	hd00053_09	18.7	17.7	1.0	17.5	15.9	1.5
w01257	w01258	hd00051_09	-13.5	-18.7	5.2	-15.2	-18.1	2.9

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w01258	w01262	hd00050_09	-22.3	-15.9	-6.4	-17.4	-16.0	-1.4
w01259	w01282	hd00061_09	30.9	31.2	-0.3	29.6	31.5	-1.8
w01261	w01262	hd00049_09	16.5	16.1	0.4	16.7	14.7	2.0
w01261	w01423	hd00045_09	-58.2	-59.2	1.0	-59.9	-55.3	-4.7
w01266	w01274	hd00048_09	-37.4	-41.9	4.6	-39.9	-39.6	-0.3
w01273	w01471	hd00046_09	-109.9	-110.7	0.9	-112.2	-111.7	-0.5
w01273	w01423	hd00047_09	8.1	10.1	-2.0	6.2	9.1	-3.0
w01279	w01431	hd00056_09	-58.9	-61.9	3.1	-64.1	-60.6	-3.5
w01282	w01283	hd00055_09	-8.7	-7.5	-1.2	-7.6	-9.6	2.1
w01283	w01285	hd00054_09	-40.6	-38.7	-1.9	-39.6	-39.6	-0.1
w01321	w01331	hd00072_09	2.0	2.8	-0.8	2.1	2.6	-0.5
w01321	w01329	hd00071_09	-1.6	-1.8	0.2	-2.0	-1.7	-0.3
w01329	w01339	hd00070_09	-5.4	-4.9	-0.5	-7.9	-4.5	-3.4
w01339	w01376	hd00069_09	-15.0	-11.6	-3.5	-14.8	-10.7	-4.1
w01364	w01396	hd00078_09	0.5	-1.3	1.7	-7.0	-1.3	-5.7
w01372	w01383	hd00081_09	-5.2	-3.3	-1.8	-3.5	-3.2	-0.3
w01383	w01392	hd00080_09	-5.9	-2.8	-3.1	-2.2	-1.4	-0.7

Well Name From	Well Name To	PEST ID	2001 Observed HHD(Feet NAVD88)	2001 Simulated HHD(Feet NAVD88)	2001 Residual HHD(Feet NAVD88)	2009 Observed HHD(Feet NAVD88)	2009 Simulated HHD(Feet NAVD88)	2009 Residual HHD(Feet NAVD88)
w01410	w01412	hd00190_09	-5.1	-4.3	-0.8	-5.2	-3.7	-1.5
w01439	w01445	hd00299_09	-5.9	-5.5	-0.4	-7.5	-5.8	-1.6
w01439	w01447	hd00292_09	-5.7	-3.5	-2.2	-7.7	-4.5	-3.2
w01439	w01444	hd00295_09	-5.1	-4.0	-1.0	-4.0	-5.5	1.5
w01444	w01454	hd00294_09	-22.6	-22.3	-0.3	-26.2	-26.0	-0.2
w01445	w01462	hd00298_09	-42.0	-34.8	-7.2	-39.8	-34.1	-5.7
w01467	w01477	hd00283_09	-48.2	-56.2	8.0	-58.0	-52.0	-6.0

APPENDIX I – OBSERVED GROUNDWATER LEVELS 2010

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
GRU-MW-2D	29.62115	-82.4143	5	44.51	49.07	-4.56
GRU-MW-2S	29.62115	-82.4143	3	46.42	49.07	-2.65
GRU-MW-3D	29.61915	-82.4199	5	47.81	49.04	-1.23
GRU-MW-3S	29.61915	-82.4199	3	47.17	49.05	-1.88
GRU-MW-4-S	29.711	-82.306	1	156	160.26	-4.26
GRU-MW-S-13	29.724	-82.258	1	149.8	154.59	-4.79
GRU-MW-2-S	29.748	-82.315	1	172.8	170.7	2.1
GRU-MF-FL-13	29.724	-82.258	3	58.6	53.22	5.38
GRU-MW-F-6F	29.73	-82.339	3	42.4	45.79	-3.39
SJRWMD06001170	29.10654	-81.3704	1	1.23	5.78	-4.55
SJRWMD07211702	29.54975	-81.8775	3	59.42	56.85	2.57
SJRWMD11153678	29.10678	-81.8106	1	49.41	61.61	-12.21
SJRWMD18513772	29.11601	-81.4838	1	0.05	0.75	-0.69
SJRWMD18533774	29.09668	-81.4426	1	0.11	0.42	-0.31
SJRWMD18583780	29.15083	-81.873	1	49.64	46.85	2.79
SJRWMD18623810	29.23401	-81.9108	1	38.37	39	-0.64
SJRWMD18633809	29.15002	-81.8245	1	46.62	46.59	0.03
SJRWMD17563579	29.01625	-81.6355	1	42.03	42.01	0.02
SJRWMD71401609	29.46583	-81.6517	1	28.84	24.52	4.32
SJRWMD06181260	29.16525	-82.0535	3	42.18	44.56	-2.38
SJRWMD07732133	29.72586	-81.4522	3	12.51	13.8	-1.29
SJRWMD06361663	29.3821	-81.5905	3	16.84	15.99	0.85
SJRWMD07841209	29.79713	-82.0262	1	100.4	102.45	-2.05
SJRWMD07871744	29.79085	-82.0272	2	91.52	101.81	-10.29
SJRWMD07881746	29.7941	-82.0438	2	103.85	95.02	8.83
SJRWMD02241173	29.79168	-82.0186	2	97.32	97.23	0.09
SJRWMD07931755	29.81336	-81.9213	3	75.58	71	4.58
SJRWMD07931756	29.81336	-81.9213	2	90.13	84.27	5.87
SJRWMD16493740	29.96583	-81.6308	1	8.68	3.9	4.78
SJRWMD06641638	29.32985	-81.1157	3	4.9	7.05	-2.16
SJRWMD70331469	29.22897	-81.4293	3	29.56	23.87	5.69
SJRWMD06401407	29.21635	-81.5267	1	2.22	2.67	-0.45
SJRWMD70571577	29.45876	-81.526	3	23.09	20.4	2.69
SJRWMD11471579	29.23293	-81.4616	1	47.7	50.85	-3.15
SJRWMD11472225	29.23293	-81.4616	2	26.53	37.75	-11.22
SJRWMD02822126	29.89285	-81.3201	3	19.25	18.06	1.19
SJRWMD10261228	30.74317	-81.9883	3	39.99	41.41	-1.41

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SJRWMD06971690	29.45023	-82.2144	3	50.84	49.19	1.65
SJRWMD07311709	29.5934	-82.431	3	40.22	48.84	-8.63
SJRWMD10473679	28.9615	-81.6509	1	59.92	79.35	-19.43
SJRWMD10491411	28.80772	-81.8731	1	64.86	67.88	-3.02
SJRWMD07261704	29.55794	-82.4108	3	41.34	48.63	-7.28
SJRWMD07052498	29.48999	-81.3802	3	10.36	8.83	1.53
SJRWMD70971594	29.36096	-82.1043	3	45.14	47.22	-2.07
SJRWMD09002045	29.79123	-82.0634	1	118.75	112.36	6.39
SJRWMD13672002	29.41119	-81.5738	2	28.25	25	3.25
SJRWMD05921116	29.08616	-81.3348	1	79.88	75.44	4.44
SJRWMD05941144	29.09283	-81.2973	1	59.3	62.34	-3.04
SJRWMD06061197	29.13306	-81.3528	1	16.3	28.02	-11.72
SJRWMD06161239	29.16406	-81.3915	1	13.55	10.14	3.42
SJRWMD70521564	29.43963	-81.6288	3	20.91	17.85	3.07
SJRWMD71061595	29.44908	-81.6297	3	19.87	18.27	1.61
SJRWMD11461596	29.24534	-81.4316	1	58.69	61.37	-2.69
SJRWMD01051575	29.18077	-81.242	3	31.23	31.63	-0.4
SJRWMD07481720	29.63492	-81.9134	3	72.38	69.75	2.63
SJRWMD07122354	29.53024	-82.4198	3	44.25	48.47	-4.22
SJRWMD14973009	29.66996	-82.4343	3	44.52	50.13	-5.61
SJRWMD13712025	29.46886	-81.552	3	26.68	23	3.68
SJRWMD07171980	29.54302	-81.7112	3	19.94	17.75	2.18
SJRWMD06791657	29.37577	-82.0935	3	48.21	47.88	0.34
SJRWMD16043200	29.99361	-81.3581	1	2.93	3.04	-0.12
SJRWMD16533248	29.96083	-81.615	1	0.68	0.06	0.61
SJRWMD16533255	29.95611	-81.6206	1	0.61	0.48	0.13
SJRWMD16763282	29.91694	-81.6728	1	41.97	35.15	6.82
SJRWMD16273222	29.50055	-81.7428	1	9.28	11.85	-2.57
SJRWMD16153211	30.79833	-81.9511	1	42.26	25.97	16.29
SJRWMD07891752	29.80357	-82.0155	2	86.82	102.18	-15.37
SJRWMD18624171	29.23028	-81.9128	1	38.41	42.04	-3.63
SJRWMD08190973	30.30488	-81.63	5	31.39	27.29	4.1
SJRWMD09052051	29.80974	-82.0249	1	101.69	105.69	-4
SJRWMD11103693	28.86332	-81.9526	1	51.83	73.94	-22.11
SJRWMD12132454	29.82052	-81.9573	2	76.34	91.98	-15.64
SJRWMD09891009	30.56135	-81.8332	3	36.93	33.36	3.57
SJRWMD07712369	29.71663	-82.1426	3	76.08	73.14	2.94

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SJRWMD07042363	29.48608	-82.164	3	53.69	55.45	-1.76
SJRWMD18573798	30.08079	-81.8076	3	42.85	40.46	2.39
SJRWMD18123681	29.47136	-81.8601	1	82.55	35.85	46.7
SJRWMD71421613	29.44834	-81.6526	1	8.51	11.08	-2.58
SJRWMD05881112	29.07285	-81.3513	1	54.62	49.76	4.86
SJRWMD02541429	29.4729	-81.734	1	12.71	9.63	3.08
SJRWMD06651642	29.3493	-81.134	1	27.31	24.59	2.72
SJRWMD07981759	29.8264	-82.0284	3	78.06	75.38	2.68
SJRWMD09172077	29.81771	-82.0142	1	116.65	122.67	-6.02
SJRWMD18513773	29.11768	-81.4854	1	0.04	1.6	-1.56
SJRWMD16063201	29.9964	-81.36	1	1.01	2.93	-1.92
SJRWMD10282580	29.12861	-81.2433	5	25.5	31.18	-5.67
SJRWMD15993195	29.49	-81.7211	1	0.22	9.47	-9.25
SJRWMD14983012	29.67469	-82.4146	3	44.63	50.35	-5.72
SJRWMD07881745	29.79412	-82.0438	1	110.39	107.31	3.08
SJRWMD11461578	29.24534	-81.4316	2	30.8	42.24	-11.45
SJRWMD16253221	29.49028	-81.7053	1	1.2	9.77	-8.58
SJRWMD06161248	29.16404	-81.3915	3	14.87	11.95	2.92
SJRWMD16043199	29.99361	-81.3583	1	2.1	3.18	-1.08
SJRWMD16733278	30.00283	-81.3574	1	0.96	1.31	-0.36
SJRWMD16223219	30.82083	-81.9361	1	13.46	4.69	8.77
SJRWMD07912370	29.81108	-82.3852	3	41.09	43.81	-2.72
SJRWMD16573253	29.95694	-81.61	1	0.02	-0.05	0.06
SJRWMD16773281	29.94166	-81.6183	1	0.3	-0.3	0.6
SJRWMD17483571	28.99884	-81.6061	1	41.98	42.05	-0.08
SJRWMD07452357	29.62719	-82.3568	3	57.89	49.46	8.44
SJRWMD09932742	30.6719	-81.6409	3	32.76	32.16	0.6
SJRWMD07841748	29.7974	-82.0263	2	96.81	92.21	4.6
SJRWMD11143695	29.0322	-81.5565	1	31.74	36.21	-4.47
SJRWMD32604054	29.08747	-82.4518	3	30.31	36.84	-6.53
SJRWMD02551432	29.41069	-81.7367	1	17.26	19.72	-2.46
SJRWMD10111065	29.68728	-81.6537	3	25.73	19.62	6.11
SJRWMD02721489	29.09733	-81.2739	3	38.75	32.88	5.87
SJRWMD70341521	29.48311	-81.6326	3	17.54	22.99	-5.45
SJRWMD70341524	29.48312	-81.6326	1	66.82	46.63	20.19
SJRWMD71091597	29.29641	-81.9408	3	44.18	43.43	0.75
SJRWMD05971765	29.8826	-82.082	3	80.38	74.11	6.27

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SJRWMD06021764	29.84892	-82.2186	3	60.9	60.65	0.25
SJRWMD06421409	29.22287	-82.0826	3	41.51	44.12	-2.61
SJRWMD06231309	29.17329	-81.084	3	3.21	10.35	-7.13
SJRWMD02361280	29.41352	-81.6183	2	23.33	26.57	-3.24
SJRWMD02361282	29.41352	-81.6183	1	24.41	29.56	-5.15
SJRWMD07441717	29.62558	-81.797	1	67.97	61.26	6.71
SJRWMD17843613	29.72278	-81.8224	1	133.91	124.39	9.52
SJRWMD17831789	29.80186	-81.8078	2	70.74	73.12	-2.38
SJRWMD06861665	29.38489	-81.1219	1	-0.05	-0.35	0.3
SJRWMD18594501	30.05999	-81.8344	1	77.68	66.57	11.1
SJRWMD70061680	29.43388	-81.1375	3	6.36	5.19	1.17
SJRWMD70061684	29.43388	-81.1375	1	1.38	0.03	1.35
SJRWMD02231160	30.27248	-82.1865	1	117.61	116.48	1.13
SJRWMD27254760	29.32588	-81.0798	1	0	0.98	-0.98
SJRWMD19754567	29.5707	-82.1895	3	65.16	62.39	2.77
SJRWMD17831788	29.80185	-81.8078	1	85.61	79.8	5.81
SJRWMD28895107	30.69827	-81.4376	5	29.88	17.92	11.96
SJRWMD30292824	29.3483	-81.453	1	13.35	11.08	2.27
SJRWMD10812784	29.05994	-81.9393	3	48.34	51.16	-2.82
SJRWMD27374794	29.63722	-82.4697	3	40.17	49.2	-9.02
SJRWMD30292826	29.34832	-81.453	2	13.9	11.47	2.44
SJRWMD30512922	29.36873	-82.179	3	46.75	47.4	-0.65
SJRWMD30272814	29.13948	-82.062	3	43.03	45.08	-2.05
SJRWMD31043397	28.81099	-81.6886	3	59.23	55.48	3.75
SJRWMD30472920	28.98857	-81.7242	1	52.52	54.49	-1.96
SJRWMD30382874	29.45637	-81.2577	1	11.56	10.65	0.9
SJRWMD31043396	28.81093	-81.6886	1	80.48	80.87	-0.39
SJRWMD06292889	29.18489	-81.0627	3	2.06	8.41	-6.36
SJRWMD30372868	29.50365	-81.3097	1	18.6	20.18	-1.58
SJRWMD70011113	29.08087	-81.5792	3	15.47	12.79	2.68
SJRWMD03190341	28.86255	-81.7968	1	63.27	70.32	-7.04
SJRWMD14943006	29.11312	-81.528	3	17.53	12.1	5.43
SJRWMD70021767	29.90742	-81.4903	1	9.4	8.31	1.09
SJRWMD70181773	30.08579	-81.4573	3	35.78	25.5	10.28
SJRWMD70181774	30.08579	-81.4573	2	41.8	28.92	12.89
SJRWMD08181787	30.28617	-81.5431	2	36	28.64	7.36
SJRWMD02251181	29.76987	-82.0134	3	78.64	76.64	2

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SJRWMD02251182	29.76987	-82.0134	2	81.72	82.61	-0.89
SJRWMD02251183	29.76987	-82.0134	1	95.27	88.6	6.67
SJRWMD70071750	29.80224	-82.0357	1	99.97	102.44	-2.48
SJRWMD02301222	29.82004	-81.9567	2	79.19	91.42	-12.23
SJRWMD71341600	30.59479	-81.8301	3	38.42	33.71	4.72
SJRWMD71341603	30.59479	-81.8301	2	21.39	21.18	0.21
SJRWMD71341606	30.59479	-81.8301	1	12.73	8.7	4.03
SJRWMD71343049	30.59479	-81.8301	5	39.37	33.75	5.62
SJRWMD06541627	29.28691	-81.0559	3	-1.18	4.16	-5.34
SJRWMD70031401	29.20444	-81.3656	1	18.68	19.52	-0.83
SJRWMD06591629	29.30658	-81.4688	3	21.82	21.19	0.63
SJRWMD11371682	29.63185	-81.6914	1	55.65	53.9	1.74
SJRWMD11372222	29.63185	-81.6914	2	51.72	40.6	11.11
SJRWMD71241599	29.22933	-81.2659	3	25.8	24.1	1.7
SJRWMD02461377	29.24946	-81.452	3	27.87	23.69	4.18
SJRWMD07541726	29.66992	-81.8829	3	73.08	71.25	1.83
SJRWMD07541727	29.66992	-81.8829	2	78.84	76.23	2.61
SJRWMD07151700	29.53525	-81.5879	1	34.53	28.89	5.64
SJRWMD06251332	29.17585	-81.3032	2	31.41	33.15	-1.74
SJRWMD02341265	29.40521	-81.5524	3	27.54	22.67	4.87
SJRWMD02321242	29.37862	-81.526	1	33.41	30.89	2.52
SJRWMD02351274	29.35573	-81.5806	1	-0.68	0.12	-0.81
SJRWMD01871278	29.16839	-81.1866	1	33.56	31.07	2.49
SJRWMD06132763	29.43528	-81.5141	1	37.3	37.21	0.08
SJRWMD06132765	29.43525	-81.5141	2	23.36	27.94	-4.57
SJRWMD11612223	29.30037	-81.4774	2	21.82	25.38	-3.56
SJRWMD02391310	29.10446	-81.309	2	56.12	53.11	3.01
SJRWMD02391311	29.10446	-81.309	1	74.36	73.21	1.15
SJRWMD02371291	29.22497	-81.3205	3	25.54	23.25	2.3
SJRWMD02371290	29.22497	-81.3205	1	36.08	33.44	2.63
SJRWMD02471637	29.32791	-81.4949	1	35.14	34.07	1.07
SJRWMD06431417	29.23134	-81.4919	3	22.23	18.6	3.64
SJRWMD05000704	29.49916	-81.9583	1	56.92	60.57	-3.65
SJRWMD15902733	29.05166	-82.0558	3	45.38	47.69	-2.31
SJRWMD15912734	28.99805	-81.9836	3	47.41	52.73	-5.32
SJRWMD06691640	29.33893	-82.1117	3	44.79	46.58	-1.79
SJRWMD07491721	29.6492	-82.344	3	45.17	49.84	-4.67

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SJRWMD06191263	29.16734	-81.5521	1	17.16	14.85	2.31
SJRWMD15860304	29.83333	-81.3575	1	21.84	16.66	5.19
SJRWMD07061696	29.49698	-81.8415	2	20.23	25.45	-5.22
SJRWMD02341266	29.40521	-81.5524	1	31.66	32.24	-0.59
SJRWMD15103044	29.98305	-82.0108	1	208.91	200.97	7.94
SJRWMD11792711	29.95917	-81.6156	3	26.98	18.61	8.38
SJRWMD16963361	30.22916	-81.7044	7	31.17	31.13	0.04
SJRWMD00260031	29.68465	-82.2869	1	157.05	153.68	3.37
SJRWMD70871587	29.63172	-81.2053	1	0.66	0.18	0.48
SJRWMD70871718	29.63172	-81.2053	3	13.7	8.72	4.98
SJRWMD70651583	29.3063	-81.3171	3	15.2	15.72	-0.52
SJRWMD70651628	29.3063	-81.3171	1	21.36	15.81	5.56
SJRWMD11782242	29.46583	-81.3744	1	18.74	17.32	1.42
SJRWMD11782241	29.46665	-81.374	1	20.31	17.58	2.74
SJRWMD14933048	29.87722	-81.9269	1	167.24	150.41	16.82
SJRWMD14933047	29.87722	-81.9269	2	152.47	108.06	44.4
SJRWMD07851742	29.77652	-81.9849	3	78.1	75.5	2.6
SJRWMD70071749	29.80224	-82.0357	2	85.89	89.69	-3.79
SJRWMD70078104	29.80224	-82.0357	3	79.39	77.06	2.33
SJRWMD11311651	29.27359	-82.1498	3	42.22	46.09	-3.87
SJRWMD09770971	30.29115	-81.98	3	47.53	39.76	7.78
SJRWMD70191703	29.5536	-81.232	2	20.79	16.61	4.17
SJRWMD11532194	30.15784	-81.5756	1	21.07	12.16	8.91
SJRWMD02341267	29.40521	-81.5524	2	28	27.42	0.59
SJRWMD02321241	29.37862	-81.526	2	27.29	26.49	0.8
SJRWMD02101110	29.66416	-81.6943	1	19.77	18.97	0.8
SJRWMD02721488	29.09733	-81.2738	2	41.44	37.54	3.9
SJRWMD15843781	29.16781	-81.1708	5	24.27	27.58	-3.3
SJRWMD02311232	29.24974	-81.4948	1	17.37	17.65	-0.28
SJRWMD06431416	29.23134	-81.4919	2	22.09	19.33	2.76
SJRWMD02331250	29.24704	-81.4635	5	25.22	26	-0.78
SJRWMD02471380	29.32791	-81.4949	3	24.48	21.89	2.59
SJRWMD02471635	29.32791	-81.4949	2	25.05	28.07	-3.02
SJRWMD02381301	29.14204	-81.3654	2	14.74	11.61	3.14
SJRWMD70771210	29.1431	-81.1267	3	15.2	11.48	3.72
SJRWMD70771217	29.14311	-81.1268	2	30.55	18.05	12.5
SJRWMD70771219	29.14311	-81.1268	1	32.97	24.2	8.77

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SJRWMD11093692	28.94998	-81.7856	1	56.55	65.5	-8.95
SJRWMD11542213	30.53607	-81.6212	1	15.92	10.29	5.63
SJRWMD16953356	30.04524	-81.4492	5	39.51	25.4	14.11
SJRWMD28374977	29.43822	-81.1116	1	0.6	0.07	0.53
SJRWMD16953360	30.045	-81.4494	3	35.24	25.39	9.86
SJRWMD28354970	30.66805	-81.6383	1	12.71	7.11	5.6
SJRWMD28354972	30.6675	-81.6383	3	32.6	32.05	0.55
SJRWMD18053667	30.16583	-81.6278	3	26.05	24.78	1.27
SJRWMD19404415	30.19111	-81.5203	1	29.47	28.68	0.79
SJRWMD27794862	29.56555	-82.2622	3	56.05	53.1	2.95
SJRWMD18403750	28.99278	-81.8358	1	55.42	59.04	-3.62
SJRWMD30292825	29.34833	-81.4531	3	13.92	11.88	2.04
SJRWMD30302831	29.53541	-81.2626	1	22.37	25.17	-2.8
SJRWMD27364793	28.75028	-81.9286	3	82.66	73.59	9.07
SJRWMD27354792	28.85611	-81.8992	3	58.5	63.79	-5.29
SJRWMD18684212	30.47278	-81.4869	1	9.29	5.73	3.56
SJRWMD05264252	29.5175	-81.9653	1	68.8	72.21	-3.41
SJRWMD10101064	30.4011	-81.9233	1	74.73	67.99	6.74
SJRWMD70351176	29.11302	-81.5723	1	39.78	34.78	5
SJRWMD05931141	29.08702	-81.3595	3	13.79	15.74	-1.95
SJRWMD19984726	30.41972	-81.4333	3	33.92	26.93	6.99
SJRWMD06224942	29.16916	-81.6419	3	36.48	37.36	-0.87
SJRWMD06225054	29.16916	-81.6419	1	35.65	38.96	-3.31
SJRWMD06225052	29.16916	-81.6419	2	35.61	38.14	-2.52
SJRWMD17993657	30.02274	-81.3273	3	29.82	24.74	5.08
SJRWMD16953359	30.04524	-81.4492	1	32.16	28.67	3.49
SJRWMD11133676	29.0922	-81.7084	1	44	47.04	-3.04
SJRWMD30372870	29.50367	-81.3097	2	14.36	15.15	-0.79
SJRWMD18683617	30.47301	-81.4868	3	31.14	27.31	3.82
SJRWMD19404416	30.19163	-81.5201	3	26.86	24.66	2.2
SJRWMD18964231	29.82413	-81.5531	3	26.25	19.56	6.7
SJRWMD08274211	30.08413	-81.7229	1	14.67	7.04	7.62
SJRWMD05474239	29.87386	-81.2826	1	3.5	2.68	0.82
SJRWMD19784573	28.74416	-81.8729	2	67.6	71.56	-3.96
SJRWMD19334463	30.11829	-81.8484	3	46.25	43.52	2.72
SJRWMD19574477	30.0969	-81.9662	3	56.73	53.12	3.62
SJRWMD19574478	30.09468	-81.9773	1	83.33	79.01	4.32

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SJRWMD19334462	30.11829	-81.8484	2	58.64	48.32	10.32
SJRWMD19764568	29.53747	-81.2053	2	14.97	11.21	3.76
SJRWMD19724563	29.16859	-81.1689	1	36.07	32.91	3.16
SJRWMD19764569	29.53747	-81.2053	1	13.42	13.86	-0.44
SJRWMD02305032	29.82024	-81.9565	5	76.73	71.93	4.8
SJRWMD18954295	29.58997	-81.5759	3	15.59	15.68	-0.1
SJRWMD17953647	29.71553	-81.2356	3	13.85	8.68	5.17
SJRWMD17943644	29.93469	-81.3762	1	30.16	30.69	-0.53
SJRWMD03264226	28.89971	-81.7906	5	55.92	59.61	-3.69
SJRWMD18743962	30.12746	-81.544	1	7.9	4	3.9
SJRWMD00264257	29.68524	-82.2873	5	43.66	46.42	-2.76
SJRWMD19784572	28.74416	-81.8729	1	66.74	71.91	-5.17
SJRWMD19704561	29.1672	-81.1584	1	29.88	30.69	-0.81
SJRWMD17943643	29.93469	-81.3762	2	27.95	26.86	1.09
SJRWMD18974237	29.98441	-81.5609	1	9.8	2.6	7.19
SJRWMD27234753	30.70329	-81.4537	1	0.63	0.27	0.36
SJRWMD27234872	30.70329	-81.4537	3	-7.12	17.4	-24.52
SJRWMD19854636	29.17748	-81.1734	1	33.75	33.29	0.46
SJRWMD27234754	30.70329	-81.4537	2	1.32	8.88	-7.56
SJRWMD27224752	30.48107	-81.8243	2	22.38	21.72	0.65
SJRWMD27224751	30.48107	-81.8243	1	11.3	10.43	0.87
SJRWMD19864637	29.17165	-81.1673	1	33.73	32.91	0.83
SJRWMD28375104	29.43859	-81.1114	3	5.85	4.32	1.53
SJRWMD18964232	29.82413	-81.5531	1	2.4	-0.04	2.44
SJRWMD02721523	29.09733	-81.2739	1	41.98	41.78	0.21
SJRWMD13242545	29.1969	-82.1239	3	41.36	45.22	-3.86
SJRWMD71141347	29.19332	-82.0322	3	41.6	43.61	-2
SJRWMD17843615	29.7228	-81.8224	2	114.17	95.58	18.59
SJRWMD02361281	29.41352	-81.6183	3	22.54	23.6	-1.07
SJRWMD18954938	29.59025	-81.5756	1	16.45	15.09	1.37
SJRWMD19324384	30.69168	-81.933	1	79.96	76.74	3.22
SJRWMD19414939	28.92298	-81.5697	1	39.49	46.76	-7.27
SJRWMD27254761	29.32588	-81.0798	2	0.02	2.91	-2.89
SJRWMD18113680	29.29768	-81.7103	3	17.55	22.47	-4.93
SJRWMD07991762	29.83783	-81.726	1	103.06	96.28	6.77
SJRWMD18743963	30.12722	-81.5442	3	33.59	24.88	8.72
SJRWMD30382876	29.45636	-81.2577	3	11.37	8.63	2.73

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SJRWMD30472918	28.98852	-81.7242	3	50.13	54.11	-3.98
SJRWMD05901114	29.08214	-81.8841	3	51.06	50	1.06
SJRWMD10331410	29.187	-81.9012	1	53.84	53.38	0.46
SJRWMD70231656	29.36795	-82.0411	3	48.09	49.29	-1.2
SJRWMD06191261	29.16734	-81.5521	3	12.44	14.95	-2.51
SJRWMD70181775	30.08579	-81.4573	1	47.1	32.39	14.71
SJRWMD13701694	29.47361	-81.7422	1	2.7	8.72	-6.02
SJRWMD11600022	30.15721	-81.9377	1	75.13	62.31	12.82
SJRWMD19414941	28.92272	-81.5699	3	45.73	46.85	-1.11
SJRWMD02331253	29.24704	-81.4635	1	57.87	42.03	15.84
SJRWMD02291213	29.98103	-81.9311	1	141.99	128.22	13.77
SJRWMD02923058	30.78317	-81.953	5	32.74	35.49	-2.75
SJRWMD02920270	30.78317	-81.953	1	78.4	66.81	11.59
SJRWMD17003372	29.56864	-81.6521	3	25.41	26.3	-0.89
SJRWMD02381302	29.14204	-81.3654	1	14.12	12.86	1.26
SJRWMD70951592	29.71914	-82.0068	3	81.25	76.65	4.6
SJRWMD70101719	29.63231	-81.9887	3	76.65	74.11	2.54
SJRWMD06821661	29.38043	-81.1302	3	5.34	6.75	-1.41
SJRWMD02371292	29.22497	-81.3205	2	25.39	28.33	-2.95
SJRWMD70031384	29.20444	-81.3656	3	23.18	19.52	3.66
SJRWMD18403749	28.99278	-81.8358	3	52.42	55.58	-3.16
SJRWMD19984725	30.41889	-81.4331	5	37.47	27.37	10.1
SJRWMD30302830	29.53539	-81.2626	2	18.49	17.69	0.8
SJRWMD06251331	29.17585	-81.3032	1	38.91	38.78	0.12
SJRWMD07541728	29.66992	-81.8829	1	79.01	81.14	-2.13
SJRWMD27354791	28.85611	-81.8992	1	57.68	66.97	-9.29
SJRWMD11612224	29.30037	-81.4774	1	36.46	30.09	6.37
SJRWMD02331252	29.24704	-81.4635	2	33.37	32.66	0.72
SJRWMD06431418	29.23134	-81.4919	1	23.04	20.06	2.98
SJRWMD70021766	29.90742	-81.4903	3	27.64	23.76	3.88
SJRWMD28364975	30.16489	-81.3922	3	23.05	24.53	-1.48
SJRWMD07022767	29.28472	-81.1264	1	16.06	15.58	0.48
SJRWMD07801738	29.75554	-81.312	1	24.68	21.08	3.6
SJRWMD28364974	30.16489	-81.3922	1	1.4	0.05	1.36
SJRWMD28374978	29.43822	-81.1116	2	5.91	2.2	3.71
SJRWMD27252806	29.32583	-81.0797	3	-0.12	4.83	-4.96
SJRWMD15133132	30.055	-82.0317	1	210.75	207.87	2.88

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SJRWMD16963363	30.22916	-81.7044	2	6.83	13.34	-6.51
SJRWMD16963365	30.22916	-81.7044	1	4.47	0.5	3.97
SJRWMD10321395	29.5991	-82.0756	1	122.09	134.1	-12.01
SJRWMD70351175	29.11301	-81.5723	3	37.09	30.04	7.04
SJRWMD07271707	29.56222	-81.3904	1	19.37	17.21	2.16
SJRWMD27364896	28.75055	-81.9284	1	83.33	74.41	8.92
SJRWMD19784574	28.74416	-81.8729	3	69.77	71.2	-1.44
SJRWMD19334385	30.11829	-81.8484	1	60.26	54.17	6.09
SJRWMD19774570	29.44414	-81.182	1	19.64	16.07	3.57
SJRWMD19414940	28.92298	-81.5697	2	45.72	46.78	-1.06
SJRWMD19574476	30.09468	-81.9773	2	74.01	66.39	7.62
SJRWMD19794579	29.53552	-82.1018	3	65.44	63.43	2
SJRWMD27214750	30.52246	-81.4434	2	17.27	13.67	3.6
SJRWMD27214749	30.52246	-81.4434	1	1.07	0.22	0.85
SJRWMD17943646	29.93469	-81.3762	3	26.75	23.04	3.71
SJRWMD18974262	29.98441	-81.5609	3	26.57	20.03	6.53
SJRWMD19714562	29.16665	-81.1609	1	35.07	31.65	3.42
SJRWMD27225030	30.48107	-81.8243	3	37.72	33.09	4.63
NWFWMD1208	30.35333	-84.1853	3	14.72	34.84	-20.13
NWFWMD2138	30.42288	-84.3774	2	36.84	37.87	-1.03
NWFWMD2137	30.42287	-84.3774	3	20.96	30.7	-9.74
NWFWMD3181	30.503	-84.2318	3	31.33	37.78	-6.45
NWFWMD3940	30.5888	-84.2593	3	43.07	46.09	-3.02
NWFWMD9662	30.57035	-84.6076	3	58.45	66.17	-7.72
NWFWMD7498	30.34386	-84.1409	3	20.55	35.06	-14.52
NWFWMD968	30.30862	-84.6155	1	101.44	100.42	1.02
NWFWMD2692	30.453	-84.2761	3	21.93	34.79	-12.86
NWFWMD3785	30.5714	-84.7466	3	84.61	81.42	3.18
NWFWMD2171	30.42492	-84.3038	3	22.2	33.12	-10.92
NWFWMD4425	30.65659	-83.7727	3	65.66	59.58	6.07
NWFWMD372	30.11544	-84.3768	3	4.96	8.95	-3.99
NWFWMD2196	30.4269	-84.2246	3	21.18	35.55	-14.37
NWFWMD7966	30.5679	-84.6123	3	48.46	66.04	-17.58
NWFWMD3413	30.53013	-83.9198	3	47.24	47.43	-0.19
NWFWMD3635	30.55364	-84.7096	1	243.21	239.92	3.29
NWFWMD977	30.31162	-84.2938	3	6.42	21.29	-14.87
SRWMD21713002	30.57657	-82.5689	1	113.28	110.95	2.32

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SRWMD.31734011	30.18442	-82.5935	3	50.8	44.6	6.19
SRWMD.31734023	30.18439	-82.5935	1	191.03	183.16	7.88
SRWMD.111811001	29.54731	-82.49	3	41.48	48.48	-7
SRWMD.111325017	29.48869	-82.9641	3	3.13	9.53	-6.4
SRWMD.111405001	29.56164	-82.9256	3	5.02	13.79	-8.77
SRWMD.101722001	29.60543	-82.6064	3	38.36	48.8	-10.44
SRWMD.111117007	29.52695	-83.2413	3	12.69	15.53	-2.84
SRWMD.111631002	29.47515	-82.7471	3	25.61	33.08	-7.47
SRWMD.111326004	29.48866	-82.9752	3	2.31	3.76	-1.46
SRWMD.91938002	29.73517	-82.441	3	58.67	50.27	8.39
SRWMD.101336025	29.57401	-82.9694	3	9.46	13.69	-4.23
SRWMD.91011004	29.70865	-83.2949	3	28.67	22.69	5.99
SRWMD.91323001	29.68427	-83.001	3	12.6	20.81	-8.21
SRWMD.81806005	29.82814	-82.5446	3	32.39	38.25	-5.86
SRWMD.101429016	29.58705	-82.935	3	2.97	4.71	-1.75
SRWMD.101429020	29.58711	-82.9282	3	4.13	8.78	-4.65
SRWMD.101506003	29.6423	-82.8547	3	7.61	15.94	-8.33
SRWMD.101527001	29.58317	-82.7901	3	17.47	26.13	-8.66
SRWMD.81313005	29.78213	-82.969	3	18.36	25.26	-6.89
SRWMD.72002001	29.91547	-82.2848	3	57.34	55.43	1.91
SRWMD.81926001	29.75833	-82.3888	3	39.26	44.41	-5.15
SRWMD.90914003	29.69464	-83.3882	3	19.7	11.98	7.72
SRWMD.91504002	29.73292	-82.8194	1	80.55	98.26	-17.72
SRWMD.81517003	29.79303	-82.8286	1	72.79	79.02	-6.24
SRWMD.71310001	29.88992	-83.013	1	62.36	85.65	-23.29
SRWMD.71310002	29.88987	-83.013	3	62.11	85.52	-23.41
SRWMD.71321001	29.85584	-83.0222	3	61.62	90.34	-28.72
SRWMD.71331001	29.83852	-83.0605	3	61.24	88.77	-27.54
SRWMD.71333001	29.82754	-83.0227	1	60.45	84.25	-23.81
SRWMD.71333002	29.8275	-83.0226	3	60.23	83.73	-23.5
SRWMD.61618003	29.96998	-82.7518	3	22.6	25.52	-2.91
SRWMD.71203001	29.90611	-83.1164	3	62.31	75.62	-13.31
SRWMD.71213003	29.88226	-83.0728	3	62.04	82.95	-20.9
SRWMD.71216001	29.86818	-83.1219	3	61.27	61.39	-0.13
SRWMD.71234001	29.83601	-83.1053	3	60.58	64.8	-4.22
SRWMD.71528001	29.84907	-82.8084	3	65.94	68.59	-2.65
SRWMD.71528002	29.849	-82.8084	1	66.07	70.83	-4.76

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SRWMD.61005001	29.98408	-83.3445	3	67.53	68.54	-1.01
SRWMD.61005002	29.98406	-83.3445	1	68.54	68.81	-0.27
SRWMD.61025003	29.9277	-83.2791	3	49.87	50.65	-0.79
SRWMD.61025004	29.92769	-83.2792	1	49.88	50.02	-0.14
SRWMD.61301007	29.99645	-82.9662	3	11.9	13.79	-1.89
SRWMD.61512010	29.98554	-82.7685	3	22.86	29.93	-7.07
SRWMD.51201007	30.08519	-83.0753	3	16.81	16.91	-0.09
SRWMD.51214008	30.04713	-83.0816	3	22.23	26.11	-3.88
SRWMD.51334013	30.00278	-82.9951	3	14.95	14.68	0.27
SRWMD.51334016	30.00649	-83.0099	3	16.57	15.31	1.25
SRWMD.61607012	29.98267	-82.7551	3	23.26	26.27	-3.01
SRWMD.51621002	30.04512	-82.7214	3	28.07	33.43	-5.36
SRWMD.51630002	30.01556	-82.7481	3	26.22	32.66	-6.43
SRWMD.51922001	30.04519	-82.3917	3	54.13	53.39	0.74
SRWMD.51922002	30.04522	-82.3917	1	137.81	134.8	3.02
SRWMD.61225004	29.92724	-83.0732	3	63.29	84.75	-21.47
SRWMD.61327001	29.92565	-83.0157	1	62.58	76.27	-13.69
SRWMD.61327002	29.92563	-83.0157	3	62.37	76.03	-13.66
SRWMD.61401003	29.99713	-82.8624	3	28.24	26.34	1.9
SRWMD.51335005	30.0134	-82.9834	3	16.68	15.33	1.35
SRWMD.41827002	30.10982	-82.4966	3	48.24	44.21	4.03
SRWMD.42236001	30.10699	-82.05	3	54.45	52.18	2.27
SRWMD.51328002	30.02493	-83.024	3	16.57	15.95	0.62
SRWMD.51331003	29.99925	-83.0576	3	41.04	44.28	-3.24
SRWMD.51405002	30.07644	-82.9448	3	23.43	22.17	1.26
SRWMD.50928004	30.02505	-83.4345	3	70.07	69	1.07
SRWMD.51004001	30.07282	-83.3189	3	83.68	82.95	0.73
SRWMD.51004002	30.07286	-83.319	1	84.12	83.54	0.58
SRWMD.41625001	30.11828	-82.6719	3	33.06	36.25	-3.19
SRWMD.41734002	30.10325	-82.6085	3	32.67	37.75	-5.08
SRWMD.41329001	30.10814	-83.0441	3	22.07	21.11	0.97
SRWMD.41501001	30.16861	-82.7718	3	30.83	35.37	-4.54
SRWMD.41231002	30.09038	-83.1544	3	21.79	23.51	-1.72
SRWMD.151719004	29.1602	-82.6309	3	27.89	28.19	-0.3
SRWMD10733003	30.43789	-83.6208	3	74.95	73.13	1.82
SRWMD20822002	30.56672	-83.5146	3	74.79	70.43	4.36
SRWMD21713001	30.57658	-82.5688	3	49.09	48.02	1.07

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SRWMD11117015	30.47969	-83.2484	3	41.94	45.62	-3.68
SRWMD.11129001	30.37155	-83.2332	3	37.61	44.95	-7.34
SRWMD.11011002	30.41381	-83.2977	3	46.73	48.58	-1.86
SRWMD21332004	30.53119	-83.0417	3	39.09	44.51	-5.43
SRWMD11510003	30.49999	-82.8022	3	49.63	47.75	1.88
SRWMD20611002	30.59586	-83.6991	3	72.18	64.24	7.94
SRWMD.11420006	30.38978	-82.9392	3	42.94	42.93	0.02
SRWMD21035003	30.53667	-83.2947	3	50.9	55.28	-4.38
SRWMD30524001	30.64519	-83.7797	3	64.69	58.83	5.87
SRWMD.10920002	30.38504	-83.4439	3	84.68	84.91	-0.22
SRWMD.21231001	30.27504	-83.1535	3	34.83	34.29	0.54
SRWMD.20731002	30.26341	-83.661	3	61.9	63.99	-2.09
SRWMD.20731003	30.2634	-83.661	1	62.7	64.11	-1.41
SRWMD.20802001	30.34694	-83.4931	3	88.45	91.67	-3.21
SRWMD.20802002	30.34691	-83.4931	1	100.48	92.01	8.47
SRWMD.20828001	30.28921	-83.5362	3	86.99	90.5	-3.5
SRWMD.11535004	30.35225	-82.7813	3	51.03	47.78	3.25
SRWMD.20433001	30.27142	-83.9272	3	26.91	27.83	-0.92
SRWMD.30424003	30.21111	-83.8764	3	24.89	29.22	-4.33
SRWMD.30730001	30.19593	-83.6699	3	41.66	41.15	0.52
SRWMD.21322008	30.29076	-83.0072	3	37.04	39.81	-2.77
SRWMD.31335002	30.1877	-82.9879	3	31.18	31.15	0.03
SRWMD.30833002	30.18691	-83.5278	1	87.59	83.43	4.16
SRWMD.21711003	30.32639	-82.5857	3	51.25	48.32	2.93
SRWMD.40723011	30.12757	-83.5963	3	31.52	34.85	-3.32
SRWMD.40736005	30.09416	-83.5718	3	34.27	35.79	-1.52
SRWMD.40736006	30.09415	-83.5719	1	34.3	35.82	-1.52
SRWMD.31035001	30.17391	-83.2915	3	47.29	45.95	1.34
SRWMD.31923004	30.21283	-82.3913	3	52	49.11	2.89
SRWMD.141305001	29.29656	-83.0325	3	3.26	3.57	-0.31
SRWMD.41402002	30.16498	-82.8885	3	30.98	32.58	-1.6
SRWMD.20828002	30.28919	-83.5362	1	89.63	90.52	-0.89
SRWMD.30833001	30.18699	-83.5278	3	85.73	83.27	2.46
SRWMD.50615002	30.04096	-83.7174	3	11.26	13.98	-2.72
SRWMD.50928003	30.02504	-83.4345	1	70.14	69.14	1.01
SRWMD.71710008	29.90129	-82.6092	3	32.34	34.68	-2.34
SRWMD.82202001	29.82184	-82.0797	3	75.87	76.09	-0.22

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
SRWMD.91212003	29.71986	-83.0704	3	44.1	53.61	-9.51
SRWMD.121330002	29.41327	-83.044	3	7.31	5.86	1.45
SRWMD11714002	30.49208	-82.5911	3	49.3	48.14	1.16
SRWMD.121429005	29.41599	-82.9276	3	9.68	14.51	-4.83
SRWMD.131203001	29.38305	-83.0946	3	7.68	5.88	1.8
SWFWMD670761	29.10891	-82.2435	3	45.03	45.01	0.03
SWFWMD23244	29.03281	-82.3149	3	47.05	41.67	5.39
SWFWMD23335	29.15159	-82.1942	3	44.64	45.86	-1.22
SWFWMD23025	28.93452	-82.0124	1	53.8	56.75	-2.95
SWFWMD23129	28.82559	-82.1832	3	39.15	38.43	0.72
SWFWMD23130	28.82561	-82.1832	1	39.94	37.52	2.41
SWFWMD20084	28.87649	-82.5714	1	3.26	2.04	1.22
SWFWMD23491	28.8007	-82.3843	3	10.85	13.36	-2.52
SWFWMD22930	29.43791	-82.4571	3	44.41	48.08	-3.66
SWFWMD23024	28.93451	-82.0124	3	53.24	56.49	-3.25
SWFWMD23021	28.88051	-82.2282	1	42.25	39.24	3.01
SWFWMD709163	29.3269	-82.3097	3	46.11	47.51	-1.4
SWFWMD22940	29.33445	-82.557	3	46.74	47.83	-1.08
SWFWMD22941	29.33445	-82.557	1	46.46	47.95	-1.49
SWFWMD20971	28.79252	-82.4509	3	7	5.47	1.53
SWFWMD20986	28.79752	-82.6068	3	1.34	1.47	-0.13
USGS320518080522008	32.08854	-80.8721	3	-23.07	-23.07	0
USGS320846080501709	32.14632	-80.8379	3	-14.46	-16.84	2.38
USGS320846080502203	32.14632	-80.8393	5	-12.35	-16.98	4.64
USGS321211080524909	32.20326	-80.8801	3	-14.44	-17.9	3.46
USGS321551080491003	32.26437	-80.8193	3	-3.3	-7.28	3.99
USGS321603080432202	32.2677	-80.7226	4	-0.41	-2.59	2.18
USGS321805080581400	32.30159	-80.9704	1	-14.81	-16.49	1.68
USGS322228080325000	32.37464	-80.5471	4	2.08	-0.89	2.97
USGS322940080443000	32.49463	-80.7415	3	19.33	0.51	18.82
USGS323704080594503	32.61778	-80.9958	1	47.1	50.96	-3.86
USGS324143080505900	32.69796	-80.8509	3	4.16	7.37	-3.21
USGS325618081054101	32.93771	-81.0947	1	97.11	97.36	-0.25
USGS330422081130601	33.07291	-81.2185	1	156.62	149.58	7.04
USGS320202080541201	32.0341	-80.9032	3	-23.39	-24.78	1.39
USGS320202080541202	32.0341	-80.9032	1	-3.1	0.24	-3.34
USGS320202080541203	32.0341	-80.9032	2	-5.75	-12.27	6.52

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS290818082053904	29.13833	-82.0942	2	64.25	45.42	18.83
USGS290818082053905	29.13858	-82.0944	1	67.72	45.51	22.21
USGS290819082054201	29.13861	-82.095	3	41.16	45.39	-4.23
USGS291149082035101	29.19704	-82.0642	1	42	43.86	-1.86
USGS301710081323603	30.28611	-81.5431	3	15.29	20.13	-4.84
USGS300705081505401	30.11806	-81.8483	3	46.99	43.5	3.5
USGS300540081583801	30.09444	-81.9772	3	56.98	53.23	3.75
USGS300502081432301	30.08389	-81.7231	3	28	22.46	5.54
USGS295841081514701	29.97806	-81.8631	3	68.85	59.27	9.59
USGS293639082490001	29.61083	-82.8167	3	9.83	20.9	-11.07
USGS292445081181801	29.4125	-81.305	3	8.19	6.15	2.04
USGS290950081315501	29.16289	-81.5343	3	13.12	11.33	1.79
USGS290244082232601	29.04561	-82.3906	3	56.59	39.26	17.34
USGS285738082400601	28.96056	-82.6683	3	3.68	7.1	-3.42
USGS285720082201302	28.95558	-82.3372	1	34.66	33.92	0.74
USGS285421082361602	28.90619	-82.6038	3	0.25	0.4	-0.15
USGS285359081472702	28.8997	-81.7907	1	56.62	57.23	-0.61
USGS285357081472801	28.89972	-81.7908	3	55.96	59.9	-3.94
USGS285254082323001	28.88222	-82.5416	1	4.06	3.77	0.29
USGS285234082341901	28.87642	-82.5715	3	3.5	1.87	1.63
USGS285125082085302	28.85694	-82.1481	1	40.92	42.64	-1.71
USGS285125082085301	28.85694	-82.1481	3	41.11	42.54	-1.43
USGS285112082354401	28.85322	-82.5968	3	2.16	1.44	0.72
USGS285102082361001	28.85081	-82.6032	3	1.78	1.38	0.4
USGS285035082075402	28.84306	-82.1317	1	42.83	42.39	0.44
USGS285035082075401	28.84306	-82.1317	3	43.29	42.37	0.91
USGS285020082365301	28.83906	-82.615	3	0.67	1.32	-0.64
USGS284811082091301	28.80306	-82.1536	3	38.73	39.63	-0.91
USGS284803082351701	28.80131	-82.5881	3	1.19	1.55	-0.37
USGS284759082054102	28.8	-82.0947	1	45.6	44.16	1.44
USGS284759082054101	28.8	-82.0947	3	46.31	44.15	2.16
USGS284628082073803	28.77444	-82.1272	1	41.36	43.46	-2.1
USGS284628082073801	28.77444	-82.1272	3	41.38	43.24	-1.86
USGS284551082345301	28.76403	-82.5816	3	2.7	2.04	0.66
USGS284513082131202	28.75361	-82.22	1	39.96	40.87	-0.91
USGS284513082131201	28.75361	-82.22	3	39.91	40.71	-0.8
USGS284456082053102	28.74917	-82.0917	1	43.66	51.32	-7.66

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USGS284456082053101	28.74917	-82.0917	3	43.55	51.1	-7.56
USGS284057081593601	28.6825	-81.9933	3	79.79	83.1	-3.31
USGS301337084204001	30.22666	-84.3442	3	5.18	13.48	-8.3
SWFWMD819763	30.43962	-84.2185	3	25.22	35.86	-10.64
SWFWMD819766	30.16908	-84.2108	3	5.08	11.3	-6.22
SWFWMD819787	30.55583	-84.5985	3	58.57	62.38	-3.81
USGS304658081571201	30.78324	-81.953	3	39.47	41.49	-2.02
USGS304005081380201	30.66853	-81.6335	3	32.51	31.95	0.56
USGS303845084250001	30.64622	-84.4165	3	54.74	60.71	-5.97
USGS303812083362401	30.63707	-83.6064	3	73.42	67.77	5.66
USGS303518081275002	30.58881	-81.4635	3	19.34	25.6	-6.26
USGS303357081295601	30.56631	-81.4985	3	24.3	27.4	-3.1
USGS303235082203501	30.54351	-82.3427	3	44.09	43.47	0.62
USGS303216081433301	30.53825	-81.7255	3	35.29	32.06	3.22
USGS303209081371801	30.53631	-81.6213	3	32.53	30.09	2.44
USGS303142084214602	30.52873	-84.3626	2	86.17	76.3	9.87
USGS303142084214601	30.52873	-84.3626	3	34.02	38.13	-4.11
USGS303109084275405	30.51886	-84.4636	3	45.41	41.4	4.01
USGS303109084275404	30.51869	-84.4635	1	181.54	177.77	3.77
USGS303001084134701	30.50068	-84.2295	3	34.11	37.76	-3.65
USGS302914083300985	30.48764	-83.5022	3	75.58	74.13	1.45
USGS302824083400985	30.47374	-83.6689	3	73.73	69.28	4.45
USGS302822083255585	30.4732	-83.4317	3	72.26	71.93	0.33
USGS302801081375101	30.46742	-81.6305	3	36.84	29.26	7.58
USGS302724081244801	30.45714	-81.4129	3	32.07	27.31	4.76
USGS302709081311601	30.45298	-81.5207	3	34.26	26.98	7.28
USGS302640084170001	30.44484	-84.2831	3	23.29	34.34	-11.05
USGS302620082173585	30.43935	-82.2927	4	48.51	42.59	5.92
USGS302620082173501	30.43935	-82.2927	3	48.43	42.59	5.85
USGS302608081354903	30.43659	-81.5966	3	36.17	27.71	8.47
USGS302608081354902	30.43603	-81.5966	4	36.71	28.24	8.46
USGS302608081354901	30.43659	-81.5963	5	36.32	28.8	7.52
USGS302538081253101	30.4277	-81.4249	3	36.36	27.03	9.33
USGS302521081455601	30.42575	-81.7658	3	37.22	31.61	5.61
USGS302502081330701	30.41686	-81.5505	4	31.43	27.59	3.83
USGS302416081522601	30.40492	-81.8735	3	37.98	34.64	3.33
USGS302409081551603	30.40297	-81.9208	3	38.58	36.09	2.49

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS302339081254702	30.39464	-81.4293	3	28.35	26.57	1.78
USGS302334082560201	30.39322	-82.9336	3	40.18	42.77	-2.59
USGS302319084220601	30.38901	-84.3681	3	19.72	27.95	-8.23
USGS302307081293801	30.38576	-81.4935	3	28.09	26.65	1.43
USGS302304081383202	30.38492	-81.6419	3	34.59	28.09	6.5
USGS302301081295002	30.38409	-81.4968	2	5.11	16.58	-11.47
USGS302301081295001	30.38409	-81.4968	1	6.51	6.44	0.07
USGS302251082194901	30.38129	-82.33	3	48.95	44.9	4.04
USGS302249084184101	30.38068	-84.3112	3	22.67	29.33	-6.66
USGS302243082360201	30.37906	-82.6002	3	49.6	48.23	1.37
USGS302227081435001	30.37464	-81.7302	5	36.23	30.39	5.83
USGS302159081235601	30.36687	-81.3985	7	31.36	28.26	3.1
USGS302127082475801	30.35795	-82.7991	3	49.88	47.51	2.37
USGS302115082232201	30.35462	-82.3891	3	50.13	46.88	3.25
USGS302100083171085	30.35043	-83.2858	3	46.43	51.2	-4.76
USGS302052082312401	30.34823	-82.523	3	49.93	48.02	1.91
USGS302032082314301	30.34379	-82.5261	3	49.93	48.04	1.89
USGS301909082490985	30.31961	-82.8189	3	50.6	47.47	3.14
USGS301852081234201	30.31493	-81.3946	3	24.73	26	-1.28
USGS301846081350901	30.31326	-81.5855	3	24.12	21.3	2.82
USGS301822082393985	30.30656	-82.6605	2	52.08	71.04	-18.96
USGS301822082393901	30.30656	-82.6605	3	51.85	49.62	2.23
USGS301758081462901	30.29992	-81.7744	5	36.38	30.32	6.07
USGS301710081323601	30.28659	-81.543	1	40.06	37.14	2.92
USGS301702082271501	30.28435	-82.4539	3	52.42	48.04	4.37
USGS301652081265001	30.28159	-81.4468	3	15.66	23.58	-7.92
USGS301647083532301	30.28013	-83.8895	2	30.79	29.1	1.69
USGS301639081330802	30.27798	-81.5518	5	31.57	26.72	4.86
USGS301635082234001	30.27685	-82.3941	3	51.09	48.09	3
USGS301618082110901	30.27213	-82.1855	3	51.17	45.99	5.19
USGS301617081421601	30.27187	-81.7041	3	29.83	26.93	2.9
USGS301604081361501	30.26937	-81.6074	5	32.09	26.71	5.38
USGS301551081415701	30.26464	-81.6988	3	28.48	26.63	1.85
USGS301537081441901	30.26075	-81.7382	5	35.93	27.9	8.03
USGS301535082162085	30.26019	-82.2719	3	50.71	48.07	2.64
USGS301535082162001	30.26158	-82.2719	3	51.08	48.03	3.05
USGS301522081331303	30.25659	-81.5532	5	30.35	26.5	3.85

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS301437082324801	30.24407	-82.5464	3	53.01	47.75	5.27
USGS301434082021401	30.24325	-82.0369	4	51.95	43.52	8.42
USGS301408081253101	30.23604	-81.4249	3	16.67	24.19	-7.52
USGS301347081421801	30.22992	-81.7046	3	27.83	25.93	1.9
USGS301246082233085	30.21324	-82.3913	1	173.45	164.34	9.11
USGS301157081465201	30.19964	-81.7808	3	36.47	27.89	8.59
USGS301156084103501	30.1993	-84.1762	3	4.97	28.46	-23.48
USGS301118084014001	30.18874	-84.0275	3	7.89	29.49	-21.6
USGS301115084241201	30.1879	-84.4031	3	24.76	14.71	10.05
USGS301035084403701	30.17679	-84.6768	3	31.3	32.59	-1.29
USGS301034083084885	30.17655	-83.1464	3	26.75	28.04	-1.29
USGS301031082381001	30.17574	-82.6358	3	44.55	43.19	1.36
USGS301022082103301	30.17325	-82.1755	3	53.65	50.15	3.5
USGS300926081561603	30.1577	-81.9374	3	51.67	48.47	3.2
USGS300926081343002	30.1577	-81.5746	3	30.57	24.12	6.45
USGS300758081230501	30.13326	-81.3843	3	27.09	25.3	1.79
USGS300747082225801	30.13019	-82.3825	3	53.49	51.25	2.24
USGS300740084293001	30.12818	-84.4915	3	31	26.02	4.98
USGS300735083050885	30.12683	-83.0853	3	23.59	22.95	0.65
USGS300717081381001	30.12187	-81.6357	3	25.78	22.75	3.03
USGS300656081463401	30.11603	-81.7757	5	29.97	27.67	2.31
USGS300649081485901	30.11409	-81.816	2	34.68	22.3	12.38
USGS300629082030185	30.10853	-82.0499	1	201.17	189.85	11.32
USGS300622081284701	30.10659	-81.4793	3	36.37	25.57	10.8
USGS300615082130501	30.10464	-82.2177	3	55	53.43	1.57
USGS300540084174001	30.09485	-84.2942	3	5.09	5.01	0.09
USGS300531083342185	30.09237	-83.5722	1	34.36	35.55	-1.19
USGS300530083342085	30.09209	-83.572	3	34.19	35.52	-1.33
USGS300507081272701	30.08576	-81.4571	4	35.69	25.52	10.17
USGS300450081482801	30.08103	-81.8074	3	44.15	40.36	3.79
USGS300436083191785	30.0771	-83.3211	3	84.02	82.49	1.53
USGS300436083191685	30.0771	-83.3208	1	83.68	83.11	0.57
USGS300351083074801	30.06461	-83.1297	3	29.77	30.75	-0.98
USGS300340081383901	30.06159	-81.6438	3	29.62	22.22	7.4
USGS300338081500301	30.06103	-81.8338	3	53.66	50.18	3.48
USGS300318082015401	30.05548	-82.0313	3	58.02	54.57	3.44
USGS300114083025901	30.021	-83.0494	3	22.57	23.4	-0.83

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS300101082245201	30.01742	-82.4141	3	52.95	50.64	2.31
USGS300020082103001	30.00603	-82.1747	3	56.93	56.54	0.39
USGS295907082423501	29.98574	-82.7094	3	25.61	32.06	-6.45
USGS295859082003903	29.98353	-82.0105	3	63.2	59.45	3.76
USGS295851081555301	29.98131	-81.931	3	68.32	59.32	9.01
USGS295835081515001	29.97687	-81.8635	3	68.74	59.33	9.4
USGS295733081365505	29.95965	-81.6149	5	34.34	24.96	9.39
USGS295625081410901	29.94076	-81.6855	3	46.03	35.52	10.51
USGS295513082363085	29.92075	-82.608	3	32.13	35.34	-3.21
USGS295238081553701	29.8777	-81.9266	3	73.79	65.73	8.06
USGS295222081393501	29.87326	-81.6593	3	42.59	37.65	4.94
USGS295132081164801	29.85938	-81.2796	3	15.35	12.48	2.87
USGS295130082243001	29.85881	-82.408	2	40.98	79.51	-38.52
USGS295105082443301	29.85186	-82.7422	3	23.05	25.51	-2.46
USGS295016081433501	29.83826	-81.726	3	67.95	60.89	7.06
USGS295009083061801	29.83628	-83.1047	1	59.61	65.13	-5.52
USGS295000081212702	29.83383	-81.3571	3	23.29	16.23	7.06
USGS294928082355301	29.82492	-82.5977	3	32.01	33.77	-1.76
USGS294911081572601	29.82021	-81.9569	3	76.75	71.87	4.87
USGS294816081482201	29.80493	-81.8057	3	70.61	66.18	4.43
USGS294742083275985	29.79544	-83.4661	3	28.19	24.43	3.76
USGS294728082010901	29.7916	-82.0188	3	78.2	77.16	1.05
USGS294726082101001	29.79104	-82.1691	3	67.33	65.39	1.94
USGS294721082443001	29.78964	-82.7414	3	32.09	35.75	-3.66
USGS294701081263301	29.7841	-81.4421	3	19.06	14.71	4.35
USGS294629082181301	29.77521	-82.3033	3	57.24	54.06	3.18
USGS294519081184502	29.75577	-81.3121	3	14.86	12.39	2.46
USGS294339082184501	29.72799	-82.3122	3	38.02	37.72	0.31
USGS294330082445001	29.72547	-82.7469	3	42.96	49.93	-6.97
USGS294321081492103	29.72299	-81.8221	3	71.96	66.93	5.03
USGS294313082024601	29.72076	-82.0458	3	81.68	77.67	4.01
USGS294307082020903	29.7191	-82.0355	3	81.44	77.53	3.91
USGS294255081323501	29.71577	-81.5427	3	18.77	12.29	6.48
USGS294243081555901	29.71243	-81.9327	3	79.75	74.8	4.96
USGS294213081194401	29.70411	-81.3285	3	15.3	12.82	2.48
USGS294128081291301	29.6916	-81.4865	3	13.77	12.4	1.37
USGS294105082171501	29.68521	-82.2871	3	44.83	46.36	-1.53

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS294043082512501	29.67908	-82.8566	3	8.52	19.36	-10.84
USGS293951081413901	29.66466	-81.6938	3	27.82	28.3	-0.48
USGS293943082085901	29.66243	-82.1494	3	76.75	74.58	2.16
USGS293933081342801	29.6616	-81.5746	3	17.46	13.34	4.11
USGS293827082395401	29.64131	-82.6647	3	37.76	39.67	-1.91
USGS293755081412903	29.63244	-81.691	3	27.21	27.25	-0.04
USGS293733081474801	29.62632	-81.7963	3	48.33	50.11	-1.78
USGS293731083061801	29.62574	-83.1047	3	33.41	35.13	-1.72
USGS293729081221201	29.62522	-81.3696	3	14.9	12.69	2.21
USGS293728082282401	29.62493	-82.473	3	39.26	49.06	-9.8
USGS293723082120102	29.62355	-82.1999	3	75.33	67.13	8.2
USGS293644082244201	29.61271	-82.4113	3	44.17	49.02	-4.84
USGS293634082144901	29.60993	-82.2466	3	59.93	60.55	-0.62
USGS293633081594601	29.60966	-81.9957	3	77.23	73.05	4.18
USGS293556082043401	29.59938	-82.0757	3	75.09	74.5	0.59
USGS293554081342601	29.59883	-81.5735	3	15.69	15.48	0.21
USGS293539082112601	29.59466	-82.1902	3	68.84	65.84	3
USGS293529081191701	29.59189	-81.321	3	13.9	11.77	2.13
USGS293415082415285	29.57132	-82.6975	3	60.96	64.71	-3.75
USGS293414082415285	29.57104	-82.6975	1	61.65	64.95	-3.3
USGS293344081232401	29.56272	-81.3896	3	14.39	12.21	2.18
USGS293313081132402	29.55411	-81.2229	3	12.28	9.37	2.92
USGS293253082055701	29.54855	-82.0988	3	68.26	67.09	1.17
USGS293252082292301	29.54827	-82.4894	3	41.48	48.48	-7
USGS293228081495301	29.5416	-81.831	3	29.36	30.63	-1.28
USGS293206081351701	29.5355	-81.5877	3	24.4	23.25	1.14
USGS293128081090501	29.52495	-81.151	3	5.16	5.53	-0.37
USGS293113081370301	29.52077	-81.6171	3	25.79	27.44	-1.65
USGS293103081575501	29.51799	-81.9649	3	59.24	57.52	1.72
USGS292957082593901	29.49964	-82.9939	3	13.2	8.34	4.86
USGS292957081573002	29.49966	-81.958	3	52.17	50.79	1.38
USGS292951082174001	29.49799	-82.2941	3	54.01	48.58	5.43
USGS292948081503001	29.49716	-81.8413	3	19.2	23.29	-4.09
USGS292838082073701	29.47772	-82.1266	3	54.13	55.36	-1.23
USGS292824081443301	29.47383	-81.7421	3	6.63	11.22	-4.58
USGS292824081341501	29.47383	-81.5704	3	30.11	23.45	6.66
USGS292817081483602	29.47188	-81.8096	1	19.42	21.76	-2.34

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USGS292816082234501	29.4716	-82.3955	3	50.95	48.17	2.78
USGS292757081222801	29.46634	-81.374	3	9.7	7.39	2.32
USGS292750081152001	29.46439	-81.2551	3	10.59	8.79	1.8
USGS292718082202601	29.45549	-82.3402	3	50.17	48.02	2.15
USGS292647081182001	29.44689	-81.3051	3	7.63	7.41	0.23
USGS292622082131801	29.43994	-82.2213	3	50.76	48.34	2.42
USGS292604081062401	29.43495	-81.1062	3	4.55	4.25	0.3
USGS292555081305003	29.43244	-81.5135	3	21.7	19.32	2.39
USGS292554082034501	29.43216	-82.0621	3	52.16	52.95	-0.79
USGS292528081383501	29.42494	-81.6427	3	16.64	10.35	6.3
USGS292435081441301	29.41022	-81.7365	3	9.56	14.77	-5.21
USGS292430082283001	29.40771	-82.4763	3	44.47	48.01	-3.54
USGS292310082373701	29.3866	-82.6266	3	52.54	47.28	5.25
USGS292310081582201	29.38661	-81.9724	3	47.08	49.73	-2.65
USGS292254081382101	29.38217	-81.6388	3	9.95	4.24	5.71
USGS292239081313702	29.378	-81.5265	3	25.7	22.29	3.42
USGS292218081333101	29.37217	-81.5582	3	25.73	21.03	4.7
USGS292200081510001	29.36717	-81.8496	3	24.14	23.96	0.18
USGS292146082182501	29.36327	-82.3066	3	45.93	47.68	-1.75
USGS292143082282201	29.36244	-82.4724	3	43.2	47.93	-4.73
USGS292124081345202	29.35717	-81.5807	3	6.9	5.74	1.16
USGS292101082233601	29.35077	-82.393	3	43.99	47.8	-3.81
USGS292038081315302	29.34439	-81.531	3	29.23	23.01	6.22
USGS292015082065001	29.338	-82.1135	3	45.89	46.56	-0.67
USGS291955081200901	29.33245	-81.3354	3	10.54	10.35	0.19
USGS291913081224201	29.32079	-81.3779	3	14.96	11.19	3.77
USGS291910082341101	29.31994	-82.5694	3	42.68	47.63	-4.95
USGS291905081251001	29.32162	-81.419	3	18.12	15.14	2.98
USGS291849081411401	29.31411	-81.6868	3	14.71	9.8	4.91
USGS291835081324201	29.31023	-81.5446	3	4.82	0.36	4.46
USGS291806082545601	29.30215	-82.9152	3	18.62	26.82	-8.2
USGS291751081414301	29.298	-81.6949	1	16.99	18.76	-1.77
USGS291748081290301	29.29717	-81.4838	3	21.38	19.22	2.16
USGS291740081562001	29.29495	-81.9385	4	44.07	45.12	-1.05
USGS291712082351801	29.28716	-82.588	3	45.51	46.98	-1.47
USGS291705081073502	29.28523	-81.1259	3	4.2	7.87	-3.67
USGS291625082085901	29.27411	-82.1494	3	42.59	46.09	-3.5

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USGS291625081092001	29.27412	-81.1551	3	8.87	10.88	-2.01
USGS291600081550001	29.26717	-81.9163	3	43.27	43.44	-0.18
USGS291513081515601	29.25439	-81.8652	3	36.5	38.42	-1.91
USGS291508082432901	29.25271	-82.7244	3	10.25	9.35	0.9
USGS291458081294201	29.24995	-81.4946	3	16.28	16.96	-0.68
USGS291448081274905	29.24718	-81.4632	3	22.95	23.6	-0.65
USGS291414082560901	29.23771	-82.9355	3	10.25	13.29	-3.04
USGS291353081160401	29.2319	-81.2673	1	29.2	26.72	2.48
USGS291258081313701	29.21662	-81.5265	3	6.32	3.12	3.19
USGS291150081282501	29.19773	-81.4732	3	26.78	27	-0.22
USGS291140082052701	29.19495	-82.0905	3	41.64	44.32	-2.67
USGS291130082015001	29.19217	-82.0302	4	41.29	45.7	-4.4
USGS291117081540501	29.18856	-81.901	3	47.89	47.78	0.11
USGS291115082102901	29.18801	-82.1744	3	43.17	45.95	-2.78
USGS291115081592501	29.18801	-81.9899	2	45.3	41.01	4.29
USGS291110082060001	29.18662	-82.0996	3	41.74	44.72	-2.99
USGS291100082010003	29.18384	-82.0163	3	42.14	44.05	-1.91
USGS291059082190801	29.18356	-82.3185	3	44.02	45.52	-1.49
USGS291056082263201	29.18272	-82.4419	3	38.81	44.27	-5.47
USGS291040081143701	29.17829	-81.2432	3	31.05	31.9	-0.85
USGS291006081101004	29.16885	-81.169	3	24.26	22.54	1.72
USGS291004082382901	29.16827	-82.641	3	24.23	24.49	-0.27
USGS290913082245601	29.15411	-82.4152	3	37.05	42.39	-5.34
USGS290910081360001	29.15357	-81.6001	3	44.84	40.04	4.8
USGS290900081342002	29.15051	-81.5718	3	31.86	31.79	0.07
USGS290828081215103	29.14163	-81.3637	3	17.39	10.69	6.7
USGS290820082032001	29.1394	-82.0552	3	42.85	45.05	-2.2
USGS290815082025701	29.13801	-82.0488	3	43.22	45.05	-1.84
USGS290752082271101	29.13161	-82.4527	3	34.04	40.91	-6.87
USGS290743082341501	29.12911	-82.5705	3	52.68	61.67	-8.99
USGS290739082245701	29.128	-82.4155	3	35.03	40.95	-5.92
USGS290708081233101	29.11941	-81.3915	3	9.78	8.5	1.28
USGS290614081183301	29.10441	-81.3087	3	31.34	32.69	-1.35
USGS290526081493701	29.09107	-81.8265	3	48.46	48.5	-0.04
USGS290503082323101	29.08467	-82.5416	3	70.96	78.33	-7.37
USGS290447082250901	29.08023	-82.4188	3	32.97	38.98	-6.01
USGS290420081311701	29.07274	-81.521	3	25.61	20.25	5.36

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS290400082091001	29.06718	-82.1524	3	44.35	45.97	-1.62
USGS290312082250801	29.05384	-82.4185	3	39.75	37.44	2.31
USGS290312082190601	29.05384	-82.318	3	47.28	42.18	5.11
USGS290306082232802	29.05217	-82.3907	1	53.56	39.97	13.6
USGS290244081302601	29.04608	-81.5068	3	14.54	21.71	-7.17
USGS290230082412501	29.04217	-82.6899	3	3.24	34.96	-31.72
USGS290227082250801	29.04134	-82.4185	3	53.71	34.25	19.46
USGS290220081485001	29.04052	-81.819	2	51.5	53.94	-2.45
USGS290216082292001	29.03828	-82.4885	3	12.44	24	-11.56
USGS290215082152401	29.03801	-82.2563	3	43.72	43.41	0.31
USGS290202082403901	29.03439	-82.6772	3	5.55	41.67	-36.13
USGS290200082432301	29.03383	-82.7227	3	3.51	17.46	-13.95
USGS290133082140901	29.02635	-82.2355	3	45.03	43.79	1.24
USGS290132082133001	29.02607	-82.2246	3	47.05	44.13	2.91
USGS290130082082001	29.02551	-82.1385	3	45.09	46.17	-1.07
USGS290118082364101	29.02217	-82.611	3	21.39	27.54	-6.15
USGS290107082400501	29.01911	-82.6677	3	3.66	37.54	-33.88
USGS290052081271201	29.01497	-81.4529	3	42.61	41.7	0.91
USGS290023082393601	29.00689	-82.6597	3	13.69	28.15	-14.46
USGS290000081380001	29.00052	-81.6329	3	44.66	43.78	0.89
USGS285951082350901	28.99801	-82.5855	3	17.75	15.11	2.64
USGS285940081522001	28.99496	-81.8741	3	53.99	55.25	-1.26
USGS285933082192501	28.99301	-82.3232	3	37.51	38.81	-1.3
USGS285930082283702	28.99218	-82.4766	3	6.58	11.67	-5.09
USGS285930081430901	28.99219	-81.7188	3	50.06	53.53	-3.47
USGS285920081490501	28.99163	-81.8343	2	51.89	57.31	-5.42
USGS285900082072001	28.98385	-82.1218	3	45.46	46.73	-1.27
USGS285833082233301	28.96801	-82.3916	3	15.15	21.93	-6.79
USGS285827081331401	28.97469	-81.5535	3	41	44.78	-3.78
USGS285812082360901	28.97051	-82.6021	3	11.17	8.97	2.2
USGS285720082201301	28.95607	-82.3366	3	33.05	33.86	-0.81
USGS285612082294201	28.93718	-82.4946	3	3.63	8.32	-4.68
USGS285608082233401	28.93607	-82.3924	3	18.38	18.18	0.2
USGS285536082044001	28.92719	-82.0774	3	46.09	52.02	-5.94
USGS285504081405901	28.91831	-81.6826	3	51.95	54.28	-2.32
USGS285414082284201	28.9044	-82.478	3	4.06	7.47	-3.41
USGS285257081434201	28.88303	-81.7279	2	56.47	71.98	-15.51

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS285248082183201	28.88052	-82.3085	3	37.32	33.39	3.93
USGS285150082044001	28.86441	-82.0774	3	46.2	48.62	-2.42
USGS285144081475002	28.86275	-81.7968	3	61.51	62.46	-0.96
USGS285121082245401	28.85635	-82.4146	3	6.9	9.25	-2.35
USGS285121082112201	28.85636	-82.1891	3	41.77	39.89	1.88
USGS285119082120601	28.8558	-82.2013	3	41.22	39.04	2.17
USGS285105082135802	28.8508	-82.2324	3	36.35	38.49	-2.14
USGS285102082204001	28.85108	-82.3441	3	26.07	24.96	1.11
USGS285037082213801	28.84413	-82.3602	3	17.67	20.55	-2.88
USGS284955081595801	28.83247	-81.9991	3	64	59.01	4.99
USGS284947082311801	28.83024	-82.5213	3	3.72	3.18	0.55
USGS284924082105502	28.82386	-82.1816	1	38.17	38.01	0.16
USGS284924082105501	28.82386	-82.1816	3	39.98	38.66	1.32
USGS284844082282801	28.81274	-82.4741	3	5.62	4.33	1.29
USGS284842081533001	28.8122	-81.8913	3	64.45	65.62	-1.17
USGS284809082080701	28.80303	-82.1349	3	37.93	40.43	-2.49
USGS284759082344101	28.80024	-82.5777	3	3.02	1.87	1.14
USGS284752082202501	28.7983	-82.3399	3	16.34	22.04	-5.7
USGS284705082270101	28.78525	-82.4499	3	6.33	5.56	0.77
USGS284619082035101	28.77248	-82.0638	3	48.98	50.08	-1.1
USGS284609082163001	28.7697	-82.2746	3	38.51	34.01	4.5
USGS284528081530201	28.75831	-81.8835	2	66.29	67.48	-1.19
USGS284519082150701	28.75581	-82.2516	3	38.93	39.06	-0.13
USGS284508082174601	28.75275	-82.2957	3	31.66	30.01	1.65
USGS284439082131401	28.7447	-82.2202	2	38.9	39.82	-0.93
USGS284435082011701	28.74359	-82.021	2	53	69.83	-16.83
USGS284317082142601	28.72192	-82.2402	3	39.31	41.61	-2.3
USGS284232081533001	28.70943	-81.8913	3	78.09	79.08	-0.99
USGS284212082071701	28.70387	-82.121	3	53.91	56.34	-2.44
USGS284147082052801	28.69693	-82.0907	3	64.26	67.59	-3.33
USGS284146082061401	28.69665	-82.1035	3	57.66	63.17	-5.5
USGS284126082034501	28.69109	-82.0621	3	77.21	75.73	1.48
USGS284119082034501	28.68915	-82.0621	3	76.73	75.93	0.8
USGS284115082062601	28.68804	-82.1068	3	58.59	64.69	-6.1
USGS283952082022001	28.66499	-82.0385	3	78.04	80.48	-2.44
USGS304627081371201	30.7744	-81.6198	2	28.33	21.33	7
USGS304640081423301	30.77829	-81.709	3	30.11	33.39	-3.29

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS304741081334101	30.79551	-81.5615	3	39.72	31.42	8.29
USGS304850081342001	30.81443	-81.5715	3	37.04	32.38	4.66
USGS305015082395701	30.8375	-82.6658	3	47.85	48.78	-0.93
USGS305149083172801	30.86381	-83.291	3	93.1	94.15	-1.05
USGS305209084400201	30.86991	-84.668	3	73.93	79.48	-5.55
USGS305351083175901	30.89659	-83.3046	3	104.84	91.61	13.23
USGS305713081530801	30.95384	-81.8854	3	41.28	37.99	3.29
USGS305854081502201	30.98329	-81.8359	3	33.15	35.66	-2.51
USGS310054082475601	31.015	-82.7989	3	50.06	50.89	-0.83
USGS310058082423601	31.01611	-82.71	3	49.23	49.37	-0.14
USGS310103081254001	31.01773	-81.4276	3	39.03	27.62	11.41
USGS310136084411701	31.02685	-84.688	3	97.78	96.61	1.16
USGS310147081440401	31.0294	-81.7357	3	37.07	32.32	4.76
USGS310254082394201	31.04833	-82.6617	3	51.21	48.93	2.28
USGS310342081243801	31.06167	-81.4106	2	16.67	13.72	2.95
USGS310353081250601	31.06472	-81.4183	2	18.06	13.09	4.97
USGS310510081251601	31.08634	-81.4209	3	30.89	22.75	8.13
USGS310607081241501	31.10218	-81.404	3	25.63	20	5.62
USGS310614081293001	31.10378	-81.4916	2	26.16	10.64	15.52
USGS310643081395401	31.11356	-81.6973	3	35.94	29.16	6.79
USGS310658081250101	31.11634	-81.4168	3	25.42	17.94	7.47
USGS310736081332601	31.12745	-81.5573	3	20.63	19.67	0.96
USGS310810081292801	31.13634	-81.4909	3	15.57	13.52	2.05
USGS310817081333001	31.13829	-81.5582	3	19.16	17.58	1.58
USGS310830084215501	31.14185	-84.3652	3	108.96	100.44	8.52
USGS310849081343101	31.14734	-81.5752	3	19.62	18.14	1.48
USGS310852081295401	31.14812	-81.4979	3	10.45	9.49	0.96
USGS310857084332701	31.14935	-84.5574	3	104.01	99.38	4.63
USGS310900081341401	31.15023	-81.5707	2	3.42	11.07	-7.65
USGS310906081284601	31.1519	-81.4793	3	11.55	8.3	3.25
USGS310912081325301	31.15356	-81.5479	3	10.58	12.27	-1.69
USGS310931081291002	31.15861	-81.4861	3	6.75	4.77	1.97
USGS310947081265201	31.16329	-81.4476	2	1.98	4.91	-2.93
USGS311005081282701	31.16829	-81.474	3	7.05	4.55	2.49
USGS311007081245802	31.16884	-81.4159	3	12.98	9.8	3.18
USGS311020081295203	31.17245	-81.4976	4	19.31	5.29	14.02
USGS311022081304601	31.17278	-81.5128	3	0.67	1.04	-0.37

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS311028081285902	31.17453	-81.4833	3	4.4	3.84	0.56
USGS311034081285801	31.17662	-81.4826	3	-1.13	4.26	-5.39
USGS311045081323301	31.17912	-81.5418	3	11.31	5.75	5.56
USGS311049081212801	31.18051	-81.3576	3	12.3	8.26	4.03
USGS311051084342901	31.18102	-84.5744	3	122.09	114.24	7.85
USGS311059081391301	31.18328	-81.6534	3	26.8	23.37	3.43
USGS311107081300001	31.18551	-81.4998	3	1.63	4.31	-2.69
USGS311200081294501	31.20023	-81.4957	3	10.09	6.34	3.75
USGS311205081311101	31.20162	-81.5195	1	3.41	2.61	0.8
USGS311211081274601	31.20217	-81.4639	3	12.24	7.26	4.98
USGS311217081580501	31.20495	-81.9712	3	35.23	35.61	-0.38
USGS311222081192701	31.20579	-81.324	3	6.53	7.64	-1.11
USGS311239081340501	31.21106	-81.5679	3	17.42	11.32	6.09
USGS311243084292601	31.21185	-84.4902	3	117.6	109.83	7.77
USGS311255081312501	31.2154	-81.5234	3	11.56	8.37	3.19
USGS311305081321401	31.23495	-81.537	3	11.67	10.26	1.41
USGS311319081232901	31.22217	-81.3912	3	12.54	7.72	4.81
USGS311328084130701	31.22435	-84.2152	3	125.46	124.18	1.29
USGS311335084311901	31.22657	-84.5219	3	127.08	126.6	0.48
USGS311456081210501	31.24883	-81.3514	5	13.02	7.3	5.72
USGS311633081324101	31.27606	-81.5445	3	20.91	12.16	8.75
USGS311701081291801	31.27995	-81.4901	3	14.43	9.81	4.62
USGS311721084240201	31.28935	-84.4005	3	135.26	128.44	6.83
USGS311725084255501	31.29046	-84.4319	3	145.19	135.53	9.66
USGS311728081413301	31.29134	-81.6923	3	28.34	20.17	8.17
USGS311800081341401	31.29495	-81.569	3	10.39	13.54	-3.15
USGS311810081265101	31.30328	-81.4473	3	13.74	8.5	5.24
USGS311820082145701	31.31188	-82.249	3	46.31	42.83	3.47
USGS311904082452701	31.31687	-82.7621	3	48.33	54.29	-5.96
USGS312001084330701	31.33351	-84.5519	3	154.9	150.85	4.05
USGS312006084345501	31.3349	-84.5819	3	157.34	160.53	-3.19
USGS312045084201901	31.34601	-84.3385	3	143.17	134	9.17
USGS312111084402101	31.35323	-84.6724	3	212.37	214.01	-1.64
USGS312418084210001	31.40518	-84.3499	3	146.91	159.76	-12.85
USGS312439081273701	31.41106	-81.4601	3	12.81	7.08	5.73
USGS312503081234801	31.41772	-81.3965	3	6.87	5.19	1.69
USGS312521081360801	31.42272	-81.6023	3	7.87	11.09	-3.21

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS312538084110301	31.4274	-84.1841	3	137.21	142.02	-4.81
USGS312552084100801	31.43129	-84.1688	3	142.7	142.8	-0.1
USGS312621084123901	31.43934	-84.2107	3	154.39	145.69	8.7
USGS312634084131301	31.44486	-84.2191	3	153.38	147.56	5.82
USGS312644084123701	31.446	-84.2104	3	150.88	147.01	3.86
USGS312650084092301	31.44833	-84.1564	3	150.31	146.32	3.99
USGS312650084102101	31.44972	-84.1719	3	141.25	146.28	-5.02
USGS312659081312001	31.44994	-81.5212	3	6.96	7.77	-0.81
USGS312709084161601	31.45268	-84.271	2	162.05	157.64	4.4
USGS312709084161701	31.44906	-84.2676	3	158.44	155.26	3.17
USGS312711083293102	31.4531	-83.4918	2	291.16	257.57	33.59
USGS312714084114001	31.45417	-84.1947	3	148.43	147.53	0.91
USGS312716083304801	31.45407	-83.5132	3	186.18	191.64	-5.46
USGS312719084123101	31.455	-84.2061	3	144.79	148.38	-3.59
USGS312720084123601	31.45594	-84.2097	3	151.33	148.85	2.48
USGS312745084114701	31.46278	-84.195	3	148.45	148.95	-0.5
USGS312747084102901	31.46528	-84.1747	3	144.68	148.29	-3.61
USGS312751084124901	31.46467	-84.2134	3	154.01	150.84	3.17
USGS312805081291001	31.46828	-81.4859	3	7.85	6.28	1.57
USGS312817081271501	31.47161	-81.454	3	7.57	5.35	2.22
USGS312821084142701	31.47194	-84.2419	3	162.04	156.26	5.78
USGS312839084121601	31.47722	-84.205	3	148.99	152.12	-3.13
USGS312846084071901	31.47962	-84.1219	3	147.04	151.05	-4.01
USGS312848084094101	31.48028	-84.1611	3	146.46	148.98	-2.52
USGS312904084130501	31.48475	-84.2156	3	163.99	154.74	9.24
USGS312904084135001	31.48417	-84.2305	3	159.96	156.88	3.08
USGS312905084153101	31.4849	-84.2585	2	167.86	164.13	3.73
USGS312909083143701	31.48575	-83.2436	3	179.38	183.68	-4.3
USGS312929084115801	31.49129	-84.1994	3	156.72	153.38	3.35
USGS312940084131801	31.49458	-84.2217	3	171.35	156.99	14.37
USGS312941084140301	31.49472	-84.2342	3	161.61	158.91	2.71
USGS312944084144001	31.49569	-84.2447	3	169.36	160.51	8.85
USGS312948084142001	31.49708	-84.2391	3	161.49	159.91	1.58
USGS312950084131802	31.4974	-84.2216	3	166.62	157.33	9.29
USGS312953084104401	31.49806	-84.1789	3	146.44	151.77	-5.33
USGS312957084104901	31.49972	-84.18	3	149.68	152.03	-2.35
USGS313001084140101	31.49994	-84.2334	3	159.79	159.48	0.32

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USGS313005084121401	31.50111	-84.2025	3	157.99	154.94	3.05
USGS313012084131601	31.50351	-84.221	1	167.74	158.14	9.6
USGS313016081412101	31.50522	-81.6884	3	13.89	11.46	2.44
USGS313019084133101	31.50575	-84.2249	3	159.44	159.03	0.4
USGS313020084142501	31.50589	-84.2396	3	169.9	161.21	8.69
USGS313023084113201	31.50569	-84.1944	3	161.66	154.41	7.25
USGS313026084121901	31.50719	-84.2052	3	155.27	156.15	-0.88
USGS313028081354201	31.50578	-81.5954	3	11.3	8.31	2.98
USGS313031084005901	31.50879	-84.0163	3	173.71	169.31	4.4
USGS313043084131401	31.51161	-84.2331	3	167.95	161.18	6.77
USGS313043084134301	31.51242	-84.2288	3	160.29	160.67	-0.38
USGS313047084104201	31.51331	-84.1785	3	157.48	153.16	4.33
USGS313048084120101	31.51333	-84.2002	3	152.17	156.31	-4.14
USGS313054081245501	31.51522	-81.4151	3	11.85	2.89	8.97
USGS313055081521901	31.51744	-81.8721	3	20.28	21.06	-0.78
USGS313104084111001	31.51753	-84.1861	3	151.66	154.8	-3.14
USGS313106084124901	31.51831	-84.2136	3	159.18	159.29	-0.11
USGS313115084122701	31.52108	-84.207	3	158.75	158.69	0.06
USGS313132084133201	31.52547	-84.2261	3	163.34	162.51	0.83
USGS313135084132201	31.5263	-84.2228	3	170.21	162.17	8.05
USGS313140084130101	31.5279	-84.217	3	169.77	161.54	8.22
USGS313155081264801	31.53216	-81.4465	3	8.17	3.28	4.89
USGS313158084124801	31.53278	-84.2133	3	157.64	161.89	-4.25
USGS313202084143701	31.53389	-84.2439	3	157.96	166.43	-8.47
USGS313212084135701	31.53693	-84.2326	3	172.88	165.56	7.32
USGS313251084152901	31.54714	-84.2578	3	172.3	171.35	0.96
USGS313255084135201	31.54842	-84.231	3	171.29	168.12	3.18
USGS313300084124302	31.54981	-84.2113	3	168.57	165.57	3
USGS313302084120301	31.55056	-84.1997	3	165.93	163.79	2.14
USGS313325081214901	31.55716	-81.3634	3	-2.42	-1.24	-1.18
USGS313419081192601	31.57216	-81.3237	3	1.35	-3.49	4.84
USGS313504084165701	31.58444	-84.2822	3	189.1	192.64	-3.54
USGS313531081244901	31.59216	-81.4159	3	0.95	-1.74	2.69
USGS313549084044001	31.59712	-84.0771	3	185.95	178.21	7.75
USGS313622084153601	31.59767	-84.2605	3	196.98	196.15	0.83
USGS313748084002901	31.55379	-84.0057	3	189.11	186.1	3.01
USGS313749081251201	31.6305	-81.4198	3	-1.26	-4.93	3.67

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS313803082295001	31.63436	-82.4971	3	44.29	43.63	0.66
USGS313820081290301	31.63911	-81.484	3	-1.58	-2.45	0.88
USGS313850081510401	31.64744	-81.8521	3	-10.6	-11.91	1.31
USGS313918084053101	31.65517	-84.0919	3	220.67	194.75	25.92
USGS313958081520701	31.66632	-81.8684	3	2.89	0.22	2.67
USGS314109084055501	31.68601	-84.0985	3	226.15	202.67	23.47
USGS314239081445001	31.71133	-81.7446	3	7.38	5.28	2.1
USGS314252084060102	31.71462	-84.1002	3	215.71	213.13	2.58
USGS314306083532001	31.71851	-83.8888	3	252.67	250.11	2.55
USGS314325081301201	31.72327	-81.5012	3	-4.71	-5.74	1.02
USGS314403081141501	31.73383	-81.2359	3	-12.89	-14.56	1.67
USGS314430082002301	31.74771	-82.0062	3	32.38	28.49	3.88
USGS314451081275701	31.74771	-81.4657	3	-4.29	-9.78	5.48
USGS314514081580101	31.75354	-81.9671	3	26.18	24.02	2.16
USGS314552081372101	31.76466	-81.6223	3	0.61	1.94	-1.33
USGS314813082025201	31.80687	-82.051	3	35.87	30.72	5.14
USGS314829081291701	31.80827	-81.4879	3	-5.33	-5.81	0.49
USGS314846081302601	31.81299	-81.5071	3	0.23	-4.37	4.6
USGS314858081385101	31.81604	-81.6482	3	10.48	3.97	6.51
USGS314858082573901	31.81546	-82.9618	3	152.56	154.84	-2.28
USGS314943081412001	31.82965	-81.6887	3	4.16	6.73	-2.57
USGS315003081363201	31.83438	-81.6087	3	2.16	1.28	0.88
USGS315056081345501	31.8491	-81.5818	3	0.78	-0.4	1.18
USGS315228084100601	31.87461	-84.168	3	269.26	259	10.26
USGS315314081121901	31.88744	-81.2051	3	-25.89	-23.6	-2.29
USGS315356081214301	31.8991	-81.3618	3	-11.73	-13.87	2.14
USGS315620081190401	31.93854	-81.3187	3	-17.68	-18.08	0.39
USGS315724081185801	31.95688	-81.3159	3	-16.45	-17.91	1.46
USGS315728081301101	31.94132	-81.5029	3	-0.04	-0.66	0.61
USGS315921081533601	31.98937	-81.8932	3	16.86	18.25	-1.39
USGS320002081091001	32.00077	-81.1526	3	-50.53	-51.4	0.87
USGS320137081132301	32.02715	-81.2229	3	-31.51	-33.38	1.87
USGS320436082185801	32.07686	-82.316	3	46.91	50.55	-3.65
USGS320452082071001	32.08436	-82.1193	3	30.16	35.08	-4.91
USGS320738081175501	32.12743	-81.2982	3	-19.54	-21.85	2.31
USGS321032081535001	32.17636	-81.8968	3	25.62	26.88	-1.26
USGS321100081492701	32.18353	-81.824	3	23.34	26.22	-2.88

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS321110082131501	32.18491	-82.2204	3	60.74	64.61	-3.87
USGS321219082050301	32.20547	-82.084	3	35.3	42.71	-7.4
USGS321445083211501	32.24593	-83.3543	3	236.99	224.66	12.33
USGS321710082102601	32.2863	-82.1737	3	85.8	95.9	-10.1
USGS321711082353501	32.28907	-82.5918	3	112.93	116.47	-3.54
USGS321807082182801	32.30018	-82.3068	3	100.27	105.02	-4.75
USGS321946082154301	32.32629	-82.2632	3	105.15	105.99	-0.83
USGS321956082091001	32.3324	-82.1526	3	105.09	106.42	-1.33
USGS322316082035701	32.38795	-82.0657	3	111.89	109.24	2.65
USGS322630082125101	32.44184	-82.2123	3	99.78	112.78	-13
USGS322700081464401	32.45018	-81.7793	3	49	56.39	-7.39
USGS322958082023801	32.49655	-82.0393	3	112.23	119.24	-7.01
USGS320622081063701	32.10632	-81.1101	3	-81	-83.31	2.31
USGS320530081085001	32.09187	-81.1471	3	-72.59	-74.33	1.74
USGS315906081011202	31.98521	-81.0198	3	-36.47	-36.64	0.17
USGS320021081124801	32.00604	-81.2132	3	-33.27	-33.85	0.58
USGS320127080511201	32.02438	-80.8532	5	-26.5	-21.9	-4.6
USGS320127080511202	32.02438	-80.8532	3	-23.09	-22.11	-0.98
USGS320122080510204	32.02299	-80.8504	3	-21.42	-22.89	1.46
USGS315113081121401	31.85361	-81.2039	2	-20.38	-5.17	-15.2
USGS315443081185903	31.912	-81.3163	5	-16.33	-17.87	1.55
USGS315443081185902	31.91194	-81.3164	3	-17.77	-18.03	0.26
USGS313608081182701	31.60215	-81.3075	5	-10.52	-5.75	-4.77
USGS315214081235301	31.87077	-81.3979	3	-9.26	-10.53	1.27
USGS311021081302801	31.17301	-81.5079	3	-7.51	2.35	-9.86
USGS313823081154201	31.63994	-81.2615	3	-7.85	-8.44	0.6
USGS311028081311402	31.1744	-81.5201	3	-0.65	-3.43	2.78
USGS312446081271203	31.413	-81.4532	2	-5.24	6.54	-11.79
USGS310621081293201	31.10606	-81.492	3	26.22	20.87	5.35
USGS311005081305703	31.16912	-81.5159	3	-3.44	0.67	-4.11
USGS312446081271202	31.413	-81.4532	1	-2.95	6.34	-9.29
USGS320127080511203	32.02438	-80.8532	2	-2.56	-10.62	8.06
USGS320127080511205	32.02438	-80.8532	1	0.41	0.87	-0.47
USGS311454081210503	31.24831	-81.3515	1	-0.79	2.75	-3.54
USGS311456081210504	31.24889	-81.3514	2	3.52	5	-1.49
USGS322236081191001	32.37686	-81.3193	3	1.42	-5.32	6.74
USGS315906081011204	31.98521	-81.0198	1	0.36	2.67	-2.31

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS311036081302601	31.1769	-81.507	3	1.73	2.5	-0.77
USGS310925081312203	31.15717	-81.5226	1	3.3	0.71	2.59
USGS311020081295205	31.17245	-81.4976	3	8.31	3.57	4.74
USGS310940081293201	31.16134	-81.4923	3	3.84	4.24	-0.39
USGS310953081295901	31.16495	-81.4995	3	6.92	4.28	2.63
USGS310902081284201	31.15061	-81.4784	1	4.84	1.22	3.62
USGS311007081301702	31.16879	-81.5044	3	1.88	3.43	-1.54
USGS304406081330503	30.73524	-81.5512	1	5.14	3.75	1.39
USGS311711081283003	31.28662	-81.4748	2	1.15	9.97	-8.82
USGS313845081361701	31.64855	-81.6009	3	5.04	2.71	2.34
USGS310911081294101	31.15323	-81.4945	3	6.19	7.43	-1.24
USGS310901081284402	31.15051	-81.4787	2	4.8	5.12	-0.33
USGS310924081295202	31.15698	-81.4978	3	8.22	6.29	1.92
USGS311909081281103	31.31939	-81.4695	1	7.84	4.1	3.74
USGS310750081292001	31.13065	-81.4888	5	6.73	15.09	-8.36
USGS311059081285702	31.18316	-81.4827	1	8.51	6.93	1.58
USGS311909081281101	31.31939	-81.4695	2	8.36	6.65	1.71
USGS310938081285302	31.1607	-81.4807	3	9.16	3.36	5.79
USGS321742081234904	32.2952	-81.3968	5	6.84	2.92	3.93
USGS310925081312202	31.15717	-81.5226	3	8.37	6.92	1.45
USGS310906081293201	31.15179	-81.4917	3	10.04	7.99	2.06
USGS311456081210503	31.24839	-81.3515	3	8.56	7.3	1.27
USGS311011081293101	31.16995	-81.4918	3	7.16	3.44	3.72
USGS315950081161201	31.99743	-81.2698	1	11.09	8.38	2.7
USGS310841081294101	31.14529	-81.4944	3	10.48	10.51	-0.03
USGS310925081312201	31.15717	-81.5226	5	11.99	10.61	1.38
USGS310818081294201	31.13959	-81.4948	5	12.87	13.07	-0.21
USGS311530081363904	31.25856	-81.6107	2	10.95	9.68	1.27
USGS322234081190003	32.37611	-81.3167	2	12.53	18.91	-6.38
USGS310810081323501	31.13617	-81.5429	5	11.79	16.32	-4.53
USGS310818081293701	31.13859	-81.4934	3	14.12	12.85	1.27
USGS313253081433502	31.548	-81.7265	3	13.33	9.91	3.43
USGS310901081284401	31.15054	-81.4785	5	14.98	10.51	4.47
USGS321943081151401	32.32861	-81.2539	2	15.1	20.54	-5.44
USGS310727081285301	31.12429	-81.4812	3	22.25	16.81	5.45
USGS311345081370402	31.22939	-81.6176	3	22.89	16.41	6.47
USGS310734081291901	31.12681	-81.4885	3	17.71	16.13	1.58

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS313701081543501	31.61716	-81.9093	3	18.21	18.93	-0.71
USGS310414081245501	31.07056	-81.4153	2	13.05	13.25	-0.2
USGS311633081324001	31.27606	-81.5443	5	20.13	12.76	7.37
USGS313253081433503	31.548	-81.7265	2	16.24	19.59	-3.35
USGS310629081323301	31.10779	-81.5413	2	19.8	12.98	6.82
USGS304406081330502	30.73524	-81.5512	2	17.63	16.59	1.04
USGS310646081292001	31.11259	-81.4887	5	21.34	18.99	2.35
USGS310431081244101	31.07528	-81.4114	2	19.04	13.27	5.77
USGS310711081324001	31.11984	-81.5445	3	22.77	20.07	2.7
USGS310707081320001	31.11879	-81.5326	3	23.12	19.57	3.55
USGS320754081364301	32.13187	-81.6118	5	20.43	14.98	5.45
USGS311445081423801	31.24606	-81.7104	2	25.32	14.56	10.75
USGS311530081363901	31.25856	-81.6107	2	21.79	9.68	12.11
USGS310610081292701	31.10251	-81.4905	3	21.79	21.47	0.32
USGS310602081423601	31.10081	-81.71	2	24.92	16.31	8.61
USGS310835081294501	31.14306	-81.4958	5	28.77	12.29	16.48
USGS304313081330001	30.72057	-81.5498	3	25.57	28.19	-2.62
USGS321240081411501	32.21131	-81.6873	3	22.33	23.38	-1.05
USGS310740081361301	31.12767	-81.6035	3	28.78	24.21	4.56
USGS304522081281301	30.75635	-81.4701	3	27.73	26.38	1.35
USGS311345081370401	31.22939	-81.6176	5	26.67	18.55	8.12
USGS304512081343601	30.75346	-81.5767	3	28.84	30.94	-2.1
USGS304610081280901	30.76968	-81.469	3	28.95	27.61	1.34
USGS310711081363701	31.12001	-81.6101	5	32.74	23.34	9.4
USGS304551081342901	30.7644	-81.5745	3	31.29	30.57	0.71
USGS310418081244701	31.07311	-81.4142	3	31.44	24.1	7.34
USGS313253081433504	31.548	-81.7265	1	30.38	29.11	1.26
USGS310509081243901	31.08607	-81.4107	3	29.67	22.54	7.13
USGS304406081330504	30.735	-81.5514	5	32.2	30.11	2.09
USGS304756081311101	30.79912	-81.5195	3	33.3	30.72	2.59
USGS304514081365801	30.75412	-81.6159	3	34.06	32.45	1.62
USGS305029081265101	30.84135	-81.4473	3	34.59	30.5	4.08
USGS304952081541201	30.83134	-81.9032	2	37.11	21.46	15.65
USGS305032081280101	30.84246	-81.4668	3	33.44	31.11	2.33
USGS304740081343001	30.79468	-81.5748	3	32.36	31.2	1.16
USGS304909081324001	30.8194	-81.5443	3	35.52	32.18	3.34
USGS305627081473101	30.93995	-81.8096	3	39.93	35.37	4.56

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS304450081333401	30.74746	-81.5593	3	33.23	29.51	3.72
USGS304830081481201	30.80857	-81.8032	3	38.88	35.54	3.34
USGS304809081404601	30.80218	-81.6793	3	38.06	33.03	5.03
USGS304256082092101	30.71579	-82.1557	3	42.1	43.03	-0.92
USGS304922081435501	30.82301	-81.7318	3	39.18	34.01	5.17
USGS305452081252301	30.91468	-81.4229	3	41	30.39	10.61
USGS304942082213801	30.82883	-82.3604	3	45.41	45.93	-0.51
USGS310706082155101	31.11856	-82.2654	3	46.42	44.97	1.44
USGS321742081234901	32.2952	-81.3968	2	48.93	38.57	10.36
USGS310620082342201	31.10549	-82.5724	3	46.33	48.31	-1.97
USGS311255083275801	31.21547	-83.466	3	59.33	66.41	-7.07
USGS310813083260301	31.13714	-83.434	3	60.89	63.76	-2.86
USGS305235084125101	30.87658	-84.2143	3	65.08	66.06	-0.98
USGS310221083212201	31.03936	-83.356	3	66.15	67.5	-1.35
USGS304712084395801	30.78677	-84.666	3	76.13	78.31	-2.18
USGS304806084404101	30.80186	-84.6781	3	76.69	78.41	-1.72
USGS304949083165301	30.83104	-83.2827	3	86.89	86.53	0.36
USGS305736084355801	30.96185	-84.596	3	81.24	84.48	-3.24
USGS310407083574101	31.0688	-83.9613	3	85.07	86.35	-1.28
USGS310507084262201	31.08546	-84.4394	3	94.19	91.55	2.64
USGS310428084310501	31.07463	-84.518	3	92.98	85.68	7.3
USGS320226082301101	32.04047	-82.5012	3	101.19	100.46	0.73
USGS321302082243601	32.21741	-82.4099	3	106.66	106.99	-0.32
USGS310428084310503	31.07463	-84.518	1	108.53	104.76	3.76
USGS310913084195301	31.15481	-84.3325	1	113.69	109.77	3.92
USGS310651084404501	31.11435	-84.6788	3	117.05	114.16	2.89
USGS311802084192302	31.30074	-84.323	3	117.63	119.33	-1.7
USGS323123081511601	32.52323	-81.8543	3	116.19	118.71	-2.52
USGS311400084295502	31.23351	-84.4985	3	131.17	120.4	10.78
USGS311802084192303	31.30074	-84.323	1	135.36	119.43	15.93
USGS312617084110701	31.43825	-84.185	3	136.87	144.24	-7.37
USGS312641084102401	31.44472	-84.1736	3	140.24	145.47	-5.23
USGS312127084065801	31.35824	-84.1157	3	145.33	140.56	4.77
USGS312947084092201	31.49636	-84.1561	3	147.3	149.59	-2.29
USGS313000084100301	31.50014	-84.1674	3	149.81	150.72	-0.91
USGS312704084071601	31.45129	-84.121	3	147.75	148.92	-1.17
USGS312119084215601	31.35558	-84.3658	1	152.89	150.2	2.68

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS313019084104601	31.50539	-84.1795	3	152.61	152.48	0.13
USGS313105084064302	31.51823	-84.1119	3	151.31	154.01	-2.7
USGS313450084091801	31.58073	-84.1549	3	153.84	155.22	-1.38
USGS313019084104602	31.50545	-84.1794	1	157.13	152.5	4.63
USGS313130084101001	31.52608	-84.1696	3	158.1	153.2	4.9
USGS313040084125901	31.51161	-84.2092	3	163.95	157.48	6.47
USGS312950084131801	31.49758	-84.2215	3	166.59	157.35	9.24
USGS312919084153801	31.48731	-84.2583	3	169.17	161.27	7.89
USGS312529083423501	31.42407	-83.7096	3	178.28	188.97	-10.69
USGS313521084051001	31.58934	-84.086	3	172.95	173.05	-0.1
USGS312254083573901	31.38185	-83.9607	3	174.9	175.08	-0.18
USGS313247084005001	31.54656	-84.0138	3	180.76	177	3.76
USGS313333083103801	31.56297	-83.1802	3	180.78	186.09	-5.31
USGS312149083511801	31.36518	-83.8552	3	189.21	192.4	-3.18
USGS313536083144701	31.59519	-83.2474	3	193.46	195.49	-2.03
USGS312249083503501	31.38046	-83.843	3	196.77	194.21	2.57
USGS313132083175901	31.52575	-83.3002	3	190.14	193.67	-3.53
USGS312401083545401	31.40046	-83.9149	3	192.63	191.25	1.38
USGS312802083370201	31.46741	-83.6171	3	192.86	196.12	-3.26
USGS313808084093601	31.63573	-84.1599	3	194.44	189.5	4.94
USGS313004083371801	31.50129	-83.6216	3	195.34	199.31	-3.96
USGS312712082593301	31.45352	-83.4924	3	195.33	193.1	2.24
USGS311015083321401	31.17092	-83.5371	1	199.82	199.73	0.09
USGS314745083261401	31.79685	-83.4349	3	200.93	204.18	-3.25
USGS313146083491601	31.52962	-83.821	3	203.69	204.85	-1.16
USGS314254083342001	31.71463	-83.5713	3	205.38	212.81	-7.43
USGS314030084060001	31.67517	-84.0999	3	223.78	198.99	24.79
USGS312232084391701	31.3774	-84.6546	3	217.15	216.18	0.97
USGS322652083033001	32.45184	-83.0576	3	224.98	225.44	-0.46
USGS314330084005402	31.72517	-84.0141	3	228.14	212.43	15.72
USGS314330084005403	31.72517	-84.0141	1	230.6	212.48	18.12
USGS320139083511602	32.03	-83.8522	3	268.78	279.51	-10.73
USGS314123083495801	31.6899	-83.8327	3	259.31	258.83	0.48
USGS312127083374701	31.35742	-83.6296	1	296.98	277.66	19.31
USGS312505083382001	31.41817	-83.6389	1	300.05	294.93	5.12
USGS313116083342601	31.52097	-83.5738	1	314.58	324.72	-10.14
USGS313144083335501	31.529	-83.5652	1	315.27	319.41	-4.14

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
USGS313238083331901	31.54375	-83.5553	1	339.79	343.54	-3.76
USGS314115083351301	31.68758	-83.5871	1	386.81	386.15	0.66
USGS313144083472401	31.52875	-83.7901	1	402.02	368.94	33.09
N010719001	30.47415	-83.6715	3	74.41	69.1	5.3
N011316001	30.48361	-83.03	3	37.7	42.91	-5.2
N011422007	30.47613	-82.9079	3	43.73	46.39	-2.65
N011608001	30.49953	-82.7367	3	58.65	48.04	10.61
N021002001	30.60704	-83.2875	3	59.33	57.61	1.72
N021125001	30.54016	-83.1712	3	44.18	52.4	-8.22
N021211001	30.58691	-83.096	3	39.58	50.86	-11.28
N021432001	30.53366	-82.942	3	42.06	46.51	-4.45
N030727001	30.63692	-83.6066	3	73.42	67.76	5.67
S011035001	30.35	-83.2864	3	51.84	51.3	0.54
S011232006	30.35816	-83.1322	3	34.21	37.85	-3.64
S011511001	30.41189	-82.7832	3	50.29	47.31	2.98
S011534001	30.35711	-82.7992	3	49.58	47.51	2.07
S012029003	30.38123	-82.3306	2	116.74	81.38	35.36
S021335001	30.27053	-82.9859	3	37.78	39.59	-1.81
S021516001	30.31969	-82.8192	3	49.64	47.47	2.18
S031012001	30.23513	-83.2769	3	62.31	48.45	13.86
S031105006	30.24891	-83.2382	3	25.47	30.27	-4.8
S031232001	30.17629	-83.1459	3	27.58	28.03	-0.45
S031601003	30.25981	-82.6655	3	52.59	49.33	3.26
S040407001	30.14705	-83.9689	3	1.81	5.92	-4.11
S041014001	30.14025	-83.2988	3	46.47	47.18	-0.71
S041112005	30.15167	-83.1693	3	25.59	26.71	-1.12
S050701001	30.07992	-83.5718	3	33.75	33.97	-0.22
S051208001	30.06844	-83.1378	3	29.07	30.48	-1.41
S051218002	30.05246	-83.1583	3	47.25	51.17	-3.91
S051311001	30.06534	-82.9782	3	18.27	18.9	-0.63
S051331002	29.99947	-83.0574	3	40.98	43.92	-2.95
S051428004	30.02142	-82.9282	3	20.79	18.24	2.55
S051819001	30.03939	-82.5564	3	38.95	37.96	0.99
S052136003	30.0201	-82.1521	2	128.45	93.28	35.16
S052218005	30.05885	-82.1357	2	128.51	92.22	36.28
S052225007	30.02918	-82.0617	2	157.75	112.3	45.46
S052234002	30.01499	-82.0957	2	139.44	101.78	37.67

Well Name	Latitude (DD)	Longitude (DD)	Model Layer	2010 Observed WL (Feet NAVD88)	2010 Simulated WL (Feet NAVD88)	2010 Residual WL (Feet NAVD88)
S061114001	29.96473	-83.2026	3	68.03	74.11	-6.09
S061313006	29.9632	-82.9735	3	24.83	19.1	5.73
S061434006	29.92562	-82.9044	3	14.74	12.33	2.41
S061521005	29.94986	-82.8261	3	13.5	16.07	-2.57
S061629001	29.9391	-82.736	3	19.8	30.34	-10.54
S061734001	29.92068	-82.6079	3	32.21	35.35	-3.14
S061932026	29.92825	-82.4247	3	49.46	41.14	8.31
S062014001	29.9796	-82.2705	2	123.16	90.03	33.13
S062129007	29.93863	-82.2168	2	133.84	100.35	33.49
S062229005	29.94902	-82.1245	2	136.24	103.44	32.8
S072013001	29.87668	-82.2638	2	137.07	98.76	38.31
S072114003	29.88436	-82.1679	2	137.52	103.91	33.61
S072132001	29.84919	-82.2185	3	60.89	60.65	0.24
S072215001	29.88264	-82.082	3	79.82	74.11	5.71
S081132001	29.74922	-83.2411	3	37.46	34.97	2.49
S081535002	29.7425	-82.7901	3	75.15	103.61	-28.46
S081706009	29.8258	-82.6532	3	25.84	28.1	-2.26
S091231001	29.64986	-83.1597	3	37.18	39.15	-1.97
S091420001	29.69318	-82.9252	3	4.41	10.09	-5.68
S091504001	29.73313	-82.8192	3	79.92	96.32	-16.4
S091628005	29.67236	-82.7197	3	70.16	82.13	-11.96
S092307001	29.7203	-82.0457	3	81.67	77.67	4.01
S101303003	29.64086	-83.0126	3	11.59	19.92	-8.33
S101429011	29.58556	-82.9397	3	2.7	7.21	-4.51
S101430002	29.58708	-82.9467	3	3.26	9.3	-6.03
S101812013	29.63718	-82.4696	3	40.07	49.2	-9.13
S102006001	29.64973	-82.3442	3	44.83	49.83	-5
S121508005	29.44911	-82.8322	3	18.46	21.9	-3.45
S131526001	29.32413	-82.7747	3	22.27	22.09	0.17
S131617001	29.3519	-82.7386	3	27.37	28.79	-1.42
S131732001	29.30804	-82.6238	3	46.04	45.49	0.54
S131736001	29.31947	-82.5695	3	42.44	47.63	-5.19
S141620001	29.25207	-82.7244	3	10.04	9.21	0.83
S141707004	29.28126	-82.6554	3	23.64	25.01	-1.37

APPENDIX J – SPRINGS DATA 2010

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
SPRING CREEK SPRINGS GROUP	NWF	qspring10_12341	135	3	30.08056	-84.3297	1.04	-307	-452.7	145.7
WAKULLA SPRING MAIN VENT S749/S587	NWF	qspring10_587	108	3	30.23479	-84.3015	4.9	-728.21	-717.44	-10.77
SALLY WARD SPRING	NWF	qspring10_774	106	3	30.2414	-84.3108	4.35	-18.44	-11.86	-6.58
INDIAN SPRING/S443	NWF	qspring10_7935	103	3	30.2508	-84.3221	7.35	-0.21	-0.26	0.05
NEWPORT SPRING/S444	NWF	qspring10_7936	130	3	30.2127	-84.1785	5.33	-3.88	-3.8	-0.08
HORN SPRING/S445	NWF	qspring10_7938	105	3	30.31926	-84.1288	14.93	-13.31	-13.7	0.39
ST MARKS RIVER RISE	NWF	qspring10_7943	124	3	30.27604	-84.1489	8.7	-452	-225.56	-226.44
DARREL SPRING	NWF	qspring10_7944	120	3	30.28153	-84.1507	10.38	-5.6	-4.86	-0.74
GERRELL SPRING	NWF	qspring10_7945	121	3	30.28119	-84.1475	11.33	-33.1	-33.51	0.41
SHEPHERD SPRING	NWF	qspring10_8338	134	3	30.12533	-84.2854	1.34	-4.99	-5.62	0.63
CHICKEN BRANCH SPRING	NWF	qspring10_9073	102	3	30.33586	-84.1485	14.5	-23.1	-23.25	0.15
TIGER HAMMOCK SPRING	NWF	qspring10_9324	129	3	30.18367	-84.2741	6.35	-0.84	-1.12	0.28
WAKULLA SULFUR SPRING #1	NWF	qspring10_9325	131	3	30.18163	-84.2487	1.87	-3.15	-3.62	0.47
WAKULLA SULFUR SPRING #2	NWF	qspring10_9326	132	3	30.18288	-84.2491	1.87	-3.15	-3.62	0.47
LITTLE HORN SPRING #1	NWF	qspring10_9328	104	3	30.31839	-84.129	14.93	-6.5	-5.46	-1.04
SWEET BAY SPRING	NWF	qspring10_9335	109	3	30.2392	-84.285	8	-0.07	-0.09	0.02
NORTHSIDE SPRING #1	NWF	qspring10_9336	112	3	30.23759	-84.2811	8	-2.04	-2.61	0.57
HOMESTEAD SPRING	NWF	qspring10_9338	111	3	30.23437	-84.2812	7.35	-1.8	-2.23	0.43

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
PALMETTO SPRING	NWF	qspring10_9339	119	3	30.22907	-84.2716	7.35	-0.39	-0.47	0.08
TURN AROUND SPRING	NWF	qspring10_9341	110	3	30.23248	-84.2885	6.35	-0.56	-0.36	-0.2
CHIMNEY SPRING	NWF	qspring10_9342	118	3	30.22736	-84.2809	7.35	-0.06	-0.08	0.02
ROCK SPRING	NWF	qspring10_9343	123	3	30.2253	-84.2768	7.35	-0.06	-0.04	-0.02
NO-NAME SPRING	NWF	qspring10_9344	125	3	30.21481	-84.2665	3.51	-6.19	-6.96	0.77
MCBRIDE SPRING #4	NWF	qspring10_9354	107	3	30.25234	-84.2717	9	-0.38	-0.47	0.09
MCBRIDE SPRING	NWF	qspring10_9362	113	3	30.23996	-84.2695	7.35	-4.66	-5.43	0.77
RIVER PLANTATION SPRING #1	NWF	qspring10_9367	126	3	30.21238	-84.257	6.35	-1.49	-1.8	0.31
RIVER PLANTATION SPRING #2	NWF	qspring10_9368	128	3	30.19588	-84.2595	6.35	-0.68	-0.86	0.18
MYSTERIOUS WATERS SPRING	NWF	qspring10_9369	127	3	30.1961	-84.2637	2.13	-0.32	-0.37	0.05
ST. MARKS SULFUR SPRING #3	NWF	qspring10_9400	133	3	30.21113	-84.1777	0.92	-1.08	-1.07	-0.01
Alexander Spg	SJR	qspring10_291896	166	3	29.08131	-81.5759	9.34	-102.5	-104.32	1.82
Ponce De Leon Spg	SJR	qspring10_301897	167	3	29.13432	-81.363	0.01	-24.8	-21.97	-2.83
Fern Hammock Spg	SJR	qspring10_311899	164	3	29.18361	-81.7081	22.81	-11.53	-14.54	3.01
Juniper Spg	SJR	qspring10_321898	163	3	29.18371	-81.7124	23.79	-11.92	-10.98	-0.94
Salt Spg	SJR	qspring10_341901	157	3	29.35014	-81.7326	0.06	-73.38	-102.73	29.35
Silver Glen Spg	SJR	qspring10_351900	161	3	29.24584	-81.6435	0	-100	-101.04	1.04
Sweetwater Spg	SJR	qspring10_361904	162	3	29.21878	-81.6599	4.53	-13.14	-21.27	8.13
Beecher Spg	SJR	qspring10_390046	156	3	29.44866	-81.6469	8.44	-9.04	-4.46	-4.58
Forest Spg	SJR	qspring10_400047	154	3	29.4588	-81.6585	7.9	-0.27	-0.19	-0.08
Mud Spg	SJR	qspring10_432657	153	3	29.461	-81.6615	-0.55	-0.75	-0.72	-0.03
Satsuma Spg	SJR	qspring10_460053	151	3	29.5126	-81.6755	-0.02	-1.1	-0.93	-0.17

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
Green Cove Spg	SJR	qspring10_8242749	138	3	29.9934	-81.6779	-0.05	-3.07	-2.4	-0.67
Blue Spg Yalaha	SJR	qspring10_10241178	172	3	28.74872	-81.8278	61.91	-3.48	-1.69	-1.79
Orange Spg	SJR	qspring10_10362775	141	3	29.51065	-81.9441	22.79	-3.4	-4.1	0.7
Bugg Spg	SJR	qspring10_10840068	170	3	28.75289	-81.9012	61.44	-10.1	-16.26	6.16
Chimney Spg	SJR	qspring10_10863094	160	3	29.24417	-81.6439	0	-33.1	-32.75	-0.35
Tobacco Patch	SJR	qspring10_10943293	148	3	29.42854	-81.9239	18.42	-3.79	-2.05	-1.74
Nashua Spg	SJR	qspring10_11291648	150	3	29.5091	-81.677	-0.02	-0.04	-0.04	0
Croaker Hole Spg	SJR	qspring10_11562199	155	3	29.43833	-81.6892	0	-73.75	-69.77	-3.98
Glen Spg	SJR	qspring10_14782771	139	2	29.67501	-82.3479	36.73	-0.12	-0.08	-0.04
Boulware Spg	SJR	qspring10_14792772	140	2	29.62089	-82.3072	35.03	-0.3	-0.42	0.12
Wadesboro Spg	SJR	qspring10_14802773	137	2	30.15392	-81.7285	-0.05	-0.95	-0.06	-0.89
La Noche Spg	SJR	qspring10_14812774	169	3	28.95242	-81.5422	28.12	-0.88	-0.96	0.08
Welaka Spg	SJR	qspring10_15881697	152	3	29.49455	-81.6733	-0.15	-7.91	-7.31	-0.6
Wells Landing	SJR	qspring10_16843294	149	3	29.42099	-81.92	20.5	-7.78	-2.64	-5.14
Blue Grotto	SJR	qspring10_28034873	1009	3	29.21522	-82.0498	39.8	-5.64	-8.02	2.38
Bridal Chamber	SJR	qspring10_28044874	1001	3	29.21478	-82.0515	39.8	-4.14	-6.16	2.02
Devils Kitchen B	SJR	qspring10_28054875	1004	3	29.215	-82.0514	39.8	-0.22	-0.27	0.05
Jacobs Well	SJR	qspring10_28064876	1005	3	29.21506	-82.0519	39.8	-2.31	-3.29	0.98
Ladies Parlor	SJR	qspring10_28074877	1000	3	29.21464	-82.0514	39.8	-8.59	-15.19	6.6
Mastodon Bone	SJR	qspring10_28084878	1012	3	29.21572	-82.0504	39.8	-1.3	-1.6	0.3
No Name Cove	SJR	qspring10_28094879	1019	3	29.21561	-82.0463	39.8	-0.22	-0.24	0.02
Oscar	SJR	qspring10_28104880	1011	3	29.21553	-82.0508	39.8	-0.41	-0.47	0.06
Second Fishermans	SJR	qspring10_28114881	1020	3	29.21567	-82.0453	39.8	-0.5	-0.57	0.07
Turtle Nook	SJR	qspring10_28124882	1023	3	29.21583	-82.045	39.8	-0.57	-0.65	0.08
Turtle Nook Run	SJR	qspring10_28134883	1021	3	29.21569	-82.0454	39.8	-0.57	-0.67	0.1

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
Alligator Hole	SJR	qspring10_28144884	1006	3	29.21511	-82.0509	39.8	-0.69	-0.9	0.21
Catfish Hall	SJR	qspring10_28154885	1017	3	29.21544	-82.0439	39.8	-0.4	-0.46	0.06
Catfish Reception	SJR	qspring10_28164886	1003	3	29.21494	-82.0518	39.8	-36.57	-50.18	13.61
Christmas Tree	SJR	qspring10_28174887	1014	3	29.21619	-82.0493	39.8	-3.75	-5.12	1.37
Devils Kitchen A	SJR	qspring10_28184888	1002	3	29.21489	-82.0513	39.8	-1.36	-1.88	0.52
Garden of Eden	SJR	qspring10_28194889	1013	3	29.21614	-82.0486	39.8	-2.3	-2.9	0.6
Geyser	SJR	qspring10_28204890	1010	3	29.21539	-82.0501	39.8	-4.81	-6.9	2.09
Indian Cave	SJR	qspring10_28214891	1018	3	29.21558	-82.048	39.8	-3.87	-5.21	1.34
Mammoth	SJR	qspring10_28224892	1007	3	29.21624	-82.0527	39.8	-253.32	-290.04	36.72
Racoon Is	SJR	qspring10_28234893	1022	3	29.21575	-82.0442	39.8	-0.47	-0.54	0.07
Shipwreck	SJR	qspring10_28244894	1016	3	29.21544	-82.044	39.8	-0.81	-0.96	0.15
Timber	SJR	qspring10_28254895	1024	3	29.21564	-82.0416	39.8	-1.64	-1.08	-0.56
Riversites Spg	SJR	qspring10_28464991	147	3	29.43941	-81.9244	18.08	-2.77	-1.11	-1.66
Lost R	SJR	qspring10_28475010	1015	3	29.21628	-82.0482	39.8	-0.22	-0.25	0.03
Blue Spg Marion	SJR	qspring10_28495015	146	3	29.51439	-81.857	17.12	-0.78	-0.91	0.13
Bright Angel Spg	SJR	qspring10_28545102	145	3	29.51657	-81.8621	17.22	-1.06	-0.79	-0.27
Fish Hook # 1 Spg	SJR	qspring10_28555023	143	3	29.50935	-81.9018	18.08	-1.38	-0.43	-0.95
Sims Spg Marion	SJR	qspring10_28565024	144	3	29.50805	-81.892	18.08	-0.68	-0.38	-0.3
Fish Hook # 2 Spg	SJR	qspring10_28595028	142	3	29.50904	-81.9023	18.08	-1.15	-0.43	-0.72
SSG-Mammoth	SJR	qspring10_31843538	1008	3	29.21624	-82.0527	39.8	-253.32	-290.03	36.71
Morman Brch Spg	SJR	qspring10_31893549	165	3	29.19157	-81.6561	11.38	-3.26	-4.36	1.1
Mooring Cove Spg	SJR	qspring10_90059005	171	3	28.75012	-81.8337	61.73	-0.7	-0.74	0.04
Sandys Spg	SJR	qspring10_90069006	174	3	28.74503	-81.81	61.73	-0.13	-0.14	0.01
Sun Eden Spg	SJR	qspring10_90079007	173	3	28.74444	-81.8199	61.73	-0.32	-0.35	0.03
Mosquito Spg Run	SJR	qspring10_90089008	168	3	29.03648	-81.4347	14.69	-1.18	-1.28	0.1

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
Crescent Beach Springs	SJR	qspring10_rocksink	7002	3	29.76944	-82.2111	0	-10	-13.75	3.75
UN NAMED SPRING	SR	qspring10_s011110005	190	3	30.41743	-83.2074	37.61	-30	-25.05	-4.95
UN NAMED SPRING	SR	qspring10_s011110006	187	3	30.42041	-83.2143	38.62	-30	-4.68	-25.32
UN NAMED SPRING	SR	qspring10_s011110007	191	3	30.41491	-83.2014	37.93	-5.84	-3.98	-1.86
UN NAMED SPRING	SR	qspring10_s011110008	192	3	30.41528	-83.2018	37.93	-40	-34.07	-5.93
UN NAMED SPRING	SR	qspring10_s011111006	193	3	30.41589	-83.1992	37.93	-40	-34.07	-5.93
UN NAMED SPRING	SR	qspring10_s011113002	203	3	30.39216	-83.1668	32.92	-23.73	-15.74	-7.99
SUWANACOOCHEE SPRINGS	SR	qspring10_s011124004	206	3	30.38685	-83.1717	32.66	-38.13	-23.12	-15.01
ELLAVILLE SPRINGS AT ELLAVILLE	SR	qspring10_s011124005	205	3	30.38447	-83.1725	32.2	-32.17	-12.05	-20.12
ANDERSON SPRING	SR	qspring10_s011135001	214	3	30.35333	-83.1897	30.3	-11.1	-9.41	-1.69
UN NAMED SPRING	SR	qspring10_s011201004	208	3	30.42443	-83.0689	37.07	-5.35	-3.87	-1.48
UN NAMED SPRING	SR	qspring10_s011207007	194	3	30.41768	-83.1553	34.04	-9.61	-6.9	-2.71
UN NAMED SPRING	SR	qspring10_s011207008	196	3	30.41897	-83.149	34.22	-9.16	-5.77	-3.39
UN NAMED SPRING	SR	qspring10_s011207009	195	3	30.41698	-83.1529	34.22	-107.88	-80.93	-26.95
UN NAMED SPRING	SR	qspring10_s011208002	197	3	30.41917	-83.145	34.79	-0.1	-0.08	-0.02
LIME SPRINGS	SR	qspring10_s011219003	202	3	30.39121	-83.1687	32.75	-18.76	-11.92	-6.84
LIME RUN SINK	SR	qspring10_s011219004	207	3	30.38786	-83.1611	31.89	-14.9	-33.51	18.61
UN NAMED SPRING	SR	qspring10_s011278003	200	3	30.40464	-83.1576	33.35	-0.1	-0.07	-0.03
UN NAMED SPRING	SR	qspring10_s011303002	216	3	30.42347	-83.0105	38.44	-0.3	-0.24	-0.06
UN NAMED SPRING	SR	qspring10_s011304002	212	3	30.42628	-83.0223	42.36	-2.11	0.12	-2.23
UN NAMED SPRING	SR	qspring10_s011304003	213	3	30.42815	-83.0278	42.36	-0.3	0.01	-0.31
UN NAMED SPRING	SR	qspring10_s011304004	211	3	30.42824	-83.03	37.98	-4	-2.87	-1.13
UN NAMED SPRING	SR	qspring10_s011304005	215	3	30.42287	-83.0147	38.44	-22.6	-27.38	4.78

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
UN NAMED SPRING	SR	qspring10_s011306002	210	3	30.42786	-83.0508	37.6	-26.14	-19.54	-6.6
UN NAMED SPRING	SR	qspring10_s011306003	209	3	30.42795	-83.0592	37.38	-10	-7.1	-2.9
UN NAMED SPRING	SR	qspring10_s011312003	218	3	30.41759	-82.9709	39.57	-5	-4.21	-0.79
SUWANNEE SPRINGS NEAR LIVE OAK, FL	SR	qspring10_s011417001	232	3	30.39438	-82.9344	40.94	-8.32	-3.67	-4.65
UN NAMED SPRING	SR	qspring10_s011417011	229	3	30.40058	-82.9433	40.89	-0.3	-0.25	-0.05
UN NAMED SPRING	SR	qspring10_s011417012	233	3	30.39669	-82.9371	40.94	-0.1	-0.08	-0.02
UN NAMED SPRING	SR	qspring10_s011421002	237	3	30.39039	-82.9267	41.52	-0.5	-0.4	-0.1
UN NAMED SPRING	SR	qspring10_s011421003	242	3	30.38297	-82.915	43.97	-0.3	0.02	-0.32
UN NAMED SPRING	SR	qspring10_s011422001	243	3	30.38631	-82.9062	42.1	-15	-11.77	-3.23
MATTAIR SPRINGS	SR	qspring10_s011426005	244	3	30.37839	-82.891	42.29	-15.19	-12.01	-3.18
UN NAMED SPRING	SR	qspring10_s020301001	2006	3	30.34434	-83.9803	29.27	-40	-26.62	-13.38
CASSIDA SPRINGS ON THE WACISSA RIVER	SR	qspring10_s020301002	2011	3	30.33271	-83.989	27.16	-2.64	-10.75	8.11
AUCILLA SPRING ON THE WACISSA RIVER	SR	qspring10_s020301003	2005	3	30.34038	-83.9905	28.37	-8.81	-7.42	-1.39
UN NAMED SPRING	SR	qspring10_s020302003	2002	3	30.34523	-83.9957	29.59	-4.65	-3.15	-1.5
WACISSA HEADSPRING	SR	qspring10_s020302004	2004	3	30.33989	-83.9915	28.37	-159.22	-154.99	-4.23
HORSEHEAD SPRINGS ON THE WACISSA RIVER	SR	qspring10_s020302005	2001	3	30.34488	-83.9946	29.59	-15	-14	-1
LOG SPRING ON THE WACISSA RIVER	SR	qspring10_s020302006	2000	3	30.34058	-83.993	29.59	-50	-45.15	-4.85
THOMAS SPRING ON THE WACISSA RIVER	SR	qspring10_s020302007	2003	3	30.33969	-83.9924	28.37	-30	-29.83	-0.17
UN NAMED SPRING	SR	qspring10_s020312001	2013	3	30.32497	-83.9857	27.04	-10	-6.37	-3.63

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
BIG BLUE SPRING NR WACISSA FL	SR	qspring10_s020312002	2014	3	30.32773	-83.9848	27.04	-50.4	-49.62	-0.78
BLUE SPRINGS ON THE WACISSA RIVER	SR	qspring10_s020312003	2009	3	30.33083	-83.989	27.16	-7.31	-5.58	-1.73
BUZZARD LOG SPRINGS ON THE WACISSA RIVER	SR	qspring10_s020312004	2008	3	30.33033	-83.9857	27.16	-10.65	-13.62	2.97
GARNER SPRINGS ON THE WACISSA RIVER	SR	qspring10_s020312005	2007	3	30.33028	-83.9833	27.16	-11.65	-4.74	-6.92
MINNOW SPRINGS ON THE WACISSA RIVER	SR	qspring10_s020312006	2010	3	30.33144	-83.9869	27.16	-5.07	-9.36	4.29
UN NAMED SPRING	SR	qspring10_s020313001	2012	3	30.32341	-83.9865	27.04	-10	-6.37	-3.63
UN NAMED SPRING	SR	qspring10_s020324004	2015	3	30.30233	-83.9794	25.92	-25	-23.16	-1.84
WALKER SPRING	SR	qspring10_s020529001	178	3	30.28088	-83.8536	26.78	-1.35	-1.77	0.42
UN NAMED SPRING	SR	qspring10_s021115005	225	3	30.30693	-83.2148	29.58	-0.19	-0.14	-0.05
UN NAMED SPRING	SR	qspring10_s021115006	219	3	30.31311	-83.2096	29.68	-0.5	-0.39	-0.11
UN NAMED SPRING	SR	qspring10_s021115007	220	3	30.31345	-83.2097	29.68	-1.19	-0.91	-0.28
UN NAMED SPRING	SR	qspring10_s021115008	221	3	30.3136	-83.2097	29.68	-0.5	-0.39	-0.11
UN NAMED SPRING	SR	qspring10_s021120002	226	3	30.29392	-83.2323	29.28	-0.3	-0.27	-0.03
UN NAMED SPRING	SR	qspring10_s021121001	224	3	30.30364	-83.2223	24.84	-0.1	-0.11	0.01
UN NAMED SPRING	SR	qspring10_s021121002	223	3	30.30259	-83.2247	29.41	-0.12	-0.09	-0.03
UN NAMED SPRING	SR	qspring10_s021121003	222	3	30.30249	-83.2248	29.41	-0.26	-0.21	-0.05
UN NAMED SPRING	SR	qspring10_s021128003	228	3	30.28767	-83.2312	29.14	-1	-0.87	-0.13
UN NAMED SPRING	SR	qspring10_s021129003	227	3	30.28269	-83.2325	29.05	-0.3	-0.26	-0.04
FARA SPRINGS	SR	qspring10_s021129004	231	3	30.27638	-83.2358	28.98	-10.43	-6.2	-4.23
UN NAMED SPRING	SR	qspring10_s021132004	236	3	30.2612	-83.2465	28.65	-3.58	-2.95	-0.63

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
UN NAMED SPRING	SR	qspring10_s021132005	235	3	30.26082	-83.2494	28.65	-1.09	-0.87	-0.22
UN NAMED SPRING	SR	qspring10_s021505010	251	3	30.34374	-82.8406	45.99	-1.51	-0.94	-0.57
LOUISE SPRINGS	SR	qspring10_s021505011	249	3	30.34802	-82.8326	46.06	-0.29	-0.2	-0.09
UN NAMED SPRING	SR	qspring10_s021607011	264	3	30.32273	-82.7587	52.32	-3	0.28	-3.28
BELL SPRINGS NEAR WHITE SPRINGS	SR	qspring10_s021611006	266	2	30.3291	-82.6883	61.6	-1	0.06	-1.06
UN NAMED SPRING	SR	qspring10_s021618003	263	3	30.3209	-82.7561	52.32	-2.15	0.16	-2.31
UN NAMED SPRING	SR	qspring10_s031106004	234	3	30.2599	-83.2514	28.65	-0.5	-0.41	-0.09
UN NAMED SPRING	SR	qspring10_s031120003	245	3	30.21064	-83.2459	27.3	-5.8	-5.13	-0.67
SHIRLEY SPRINGS	SR	qspring10_s031120004	246	3	30.21072	-83.2448	27.44	-1.67	-1.55	-0.12
UN NAMED SPRING	SR	qspring10_s031130005	248	3	30.19007	-83.2504	26.78	-1.7	-1.67	-0.03
UN NAMED SPRING	SR	qspring10_s031132002	250	3	30.17983	-83.2477	26.56	-10	-4.26	-5.74
UN NAMED SPRING	SR	qspring10_s040508001	189	3	30.15373	-83.8556	15	-6	-2.54	-3.46
WOODS CK RISE	SR	qspring10_s040721002	230	3	30.12429	-83.6241	28.48	-16.55	-8.49	-8.06
FOLSON PARK SPRING IN PERRY FL	SR	qspring10_s040724029	241	3	30.11381	-83.5784	34.42	-2	-1.29	-0.71
UN NAMED SPRING	SR	qspring10_s040728006	238	3	30.10828	-83.6272	23.41	-1	-1.23	0.23
UN NAMED SPRING	SR	qspring10_s040728007	239	3	30.10855	-83.6277	23.41	-3	-3.75	0.75
CHARLES SPRING NEAR DELL FL	SR	qspring10_s041104001	261	3	30.16729	-83.2305	25.93	-14.29	-4.3	-10
ALLEN MILL POND	SR	qspring10_s041105002	260	3	30.1628	-83.2429	25.63	-22.07	-4.88	-17.19
LAFAYETTE BLUE SPRINGS	SR	qspring10_s041121001	265	3	30.1259	-83.2262	24.77	-74.89	-53.32	-21.56
TELFORD SPRING NEAR LURAVILLE, FL	SR	qspring10_s041125001	275	3	30.10696	-83.1657	20.64	-34.27	-29.19	-5.08
UN NAMED SPRING	SR	qspring10_s041125010	277	3	30.10199	-83.1662	20.85	-10.49	-9.02	-1.47
UN NAMED SPRING	SR	qspring10_s041127003	268	3	30.10527	-83.2025	22.83	-0.1	-0.1	0

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
PERRY SPRINGS	SR	qspring10_s041135009	274	3	30.09654	-83.1882	22.27	-5	-3.99	-1.01
BONNETT SPRINGS	SR	qspring10_s041220001	271	3	30.12426	-83.1382	22.08	-12.23	-11.28	-0.95
PEACOCK SPRING	SR	qspring10_s041220005	276	3	30.12324	-83.1332	21.74	-14.8	-5.02	-9.78
RUNNING SPRINGS (WEST)	SR	qspring10_s041228002	282	3	30.10496	-83.1164	17.39	-15.5	-14.36	-1.14
RUNNING SPRINGS (EAST)	SR	qspring10_s041228014	281	3	30.10448	-83.1158	17.39	-24.64	-22.2	-2.44
UN NAMED SPRING	SR	qspring10_s041228015	280	3	30.10288	-83.1141	17.39	-1.81	-1.53	-0.28
UN NAMED SPRING	SR	qspring10_s041228016	279	3	30.10559	-83.1212	17.9	-0.93	-0.92	-0.01
LURAVILLE SPRINGS	SR	qspring10_s041229001	269	3	30.11949	-83.1672	20.49	-6.74	-1.64	-5.1
UN NAMED SPRING	SR	qspring10_s041230002	278	3	30.10343	-83.1477	19.94	-0.17	-0.17	0
BATH TUB SPRINGS	SR	qspring10_s041234004	288	3	30.09184	-83.0982	16.09	-7.09	-6.18	-0.91
UN NAMED SPRING	SR	qspring10_s041234005	283	3	30.09069	-83.1086	16.38	-3.83	-3.45	-0.38
UN NAMED SPRING	SR	qspring10_s041234006	284	3	30.09219	-83.1133	16.38	-1	-1.03	0.03
UN NAMED SPRING	SR	qspring10_s041234007	287	3	30.09111	-83.0972	16.09	-0.69	-0.63	-0.06
CONVICT SPRING NEAR MAYO,FL	SR	qspring10_s041235005	286	3	30.08844	-83.0959	16.08	-0.79	-5.26	4.47
HAMPTON SPRING	SR	qspring10_s050706005	240	3	30.08148	-83.6631	15.77	-0.2	-0.24	0.05
WALDO SPRING	SR	qspring10_s050716001	247	3	30.04925	-83.6296	21.88	-3.17	-3.82	0.65
ROYAL SPRING NEAR ALTON,FL	SR	qspring10_s051201001	291	3	30.08399	-83.0749	15.53	-7.12	-1.6	-5.51
SUWANNEE BLUE SPRING	SR	qspring10_s051201006	292	3	30.08148	-83.069	15.4	-18.39	-12.58	-5.81
UN NAMED SPRING	SR	qspring10_s051202012	290	3	30.08371	-83.0871	15.76	-2.5	-1.43	-1.07
UN NAMED SPRING	SR	qspring10_s051307006	295	3	30.06123	-83.0569	14.84	-2.56	-0.12	-2.44
RAVINE SPRING (SUW718971)	SR	qspring10_s051307007	294	3	30.06418	-83.062	14.94	-5.45	-4.27	-1.18
UN NAMED SPRING	SR	qspring10_s051307008	296	3	30.06078	-83.0531	14.74	-5.58	-5.48	-0.1

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
OWENS SPRING	SR	qspring10_s051317002	298	3	30.04602	-83.0412	14.3	-29.5	-18.31	-11.19
UN NAMED SPRING	SR	qspring10_s051317006	299	3	30.04532	-83.0337	14.3	-1	-0.9	-0.1
MEARSON SPRING NEAR MAYO FLORIDA	SR	qspring10_s051321001	301	3	30.04132	-83.0251	14.18	-58.51	-47.48	-11.03
UN NAMED SPRING	SR	qspring10_s051321004	302	3	30.0329	-83.0134	13.96	-0.43	-0.41	-0.02
TROY SPRING NEAR BRANFORD FLA	SR	qspring10_s051334002	304	3	30.00606	-82.9974	13.52	-114	-91.28	-22.72
UN NAMED SPRING	SR	qspring10_s051334019	303	3	30.01162	-83.0043	13.65	-12.8	-12.11	-0.69
UN NAMED SPRING	SR	qspring10_s051335009	305	3	30.0075	-82.9823	13.35	-0.5	-0.46	-0.04
UN NAMED SPRING	SR	qspring10_s060608002	258	3	29.96991	-83.7454	0.1	-5	-1.34	-3.66
UN NAMED SPRING	SR	qspring10_s060608003	252	3	29.97074	-83.7466	0.1	-3.64	-2.91	-0.73
UN NAMED SPRING	SR	qspring10_s060608004	254	3	29.97218	-83.7459	1.28	-0.5	-0.42	-0.08
UN NAMED SPRING	SR	qspring10_s060608005	256	3	29.97259	-83.7444	2.56	-8	14.59	-22.59
UN NAMED SPRING	SR	qspring10_s060608006	253	3	29.97139	-83.7453	-0.74	-0.1	-0.39	0.29
BIG SPRINGS	SR	qspring10_s060609001	257	3	29.97432	-83.7389	2.1	-6.44	-13.69	7.25
UN NAMED SPRING	SR	qspring10_s060636001	267	3	29.91951	-83.6821	0.01	-15	-15.53	0.53
SPRING WARRIOR SPRING	SR	qspring10_s060727001	270	3	29.93501	-83.6098	23.75	-23.16	-2.32	-20.84
UN NAMED SPRING	SR	qspring10_s060732001	273	3	29.91253	-83.6508	3.9	-33.36	-34.13	0.77
LITTLE RIVER SPRINGS NR BRANFORD, FL	SR	qspring10_s061301001	307	3	29.99677	-82.9664	13.18	-54.09	-46.32	-7.77
RUTH SPRING NEAR BRANFORD,FL	SR	qspring10_s061301006	306	3	29.99574	-82.9767	13.23	-9.51	-5.26	-4.25
UN NAMED SPRING	SR	qspring10_s061418002	310	3	29.95948	-82.9534	12.71	-9.92	-8.6	-1.32
UN NAMED SPRING	SR	qspring10_s061418003	309	3	29.96153	-82.9544	12.8	-2.13	-1.93	-0.21

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
BRANFORD SPRINGS AT BRANFORD FL	SR	qspring10_s061420002	311	3	29.95477	-82.9285	12.3	-20.48	-10.24	-10.24
SHINGLE SPRINGS	SR	qspring10_s061428010	313	3	29.93438	-82.9206	11.9	-12.13	-11.23	-0.9
ICHETUCKNEE HEAD SPRING NR HILDRETH, FL	SR	qspring10_s061512002	3000	3	29.98412	-82.7617	26.71	-51.44	-49.85	-1.59
DEVIL'S EYE SPRING NR HILDRETH, FL	SR	qspring10_s061512003	3003	3	29.9737	-82.7601	20.2	-36.25	-41.52	5.27
MILL POND SPRING NR HILDRETH, FL	SR	qspring10_s061513001	3006	3	29.9665	-82.7602	19.17	-19	-14.81	-4.19
COFFEE SPRING NR HILDRETH, FL	SR	qspring10_s061513008	3005	3	29.95949	-82.7753	15.94	-1.1	-1.98	0.88
UN NAMED SPRING	SR	qspring10_s061527025	4000	3	29.93087	-82.8024	11.13	-7.15	-9.47	2.32
UN NAMED SPRING	SR	qspring10_s061527026	4001	3	29.93241	-82.8008	11.13	-3	-3.4	0.4
UN NAMED SPRING	SR	qspring10_s061531010	4006	3	29.91283	-82.8442	9.97	-0.1	-0.11	0.01
BETTY SPRINGS	SR	qspring10_s061532013	4007	3	29.91484	-82.84	9.97	-1.75	-1.66	-0.09
UN NAMED SPRING	SR	qspring10_s061532014	4009	3	29.91363	-82.8365	10.14	-0.47	-0.52	0.05
UN NAMED SPRING	SR	qspring10_s061533007	4010	3	29.92156	-82.8239	10.4	-1	-1.08	0.08
OASIS SPRINGS	SR	qspring10_s061535012	4013	3	29.92571	-82.7803	11.8	-1.02	-0.98	-0.04
UN NAMED SPRING	SR	qspring10_s061536028	4015	3	29.92462	-82.7717	12.12	-9.66	-11.34	1.68
UN NAMED SPRING	SR	qspring10_s061536029	4017	3	29.91883	-82.7716	12.57	-7.95	-7.81	-0.14
JAMISON SPRINGS	SR	qspring10_s061536030	4016	3	29.92582	-82.7701	12.12	-4.24	-4.21	-0.03
SUNBEAM SPRINGS	SR	qspring10_s061536031	4014	3	29.92808	-82.7698	11.95	-14	-12.29	-1.71
BLUE HOLE SPRING NR HILDRETH FL	SR	qspring10_s061607002	3001	3	29.98052	-82.7584	22.38	-80.9	-76.01	-4.89
MISSION SPRINGS COMPLEX NR HILDRETH, FL	SR	qspring10_s061607003	3004	3	29.97622	-82.7579	21.01	-86.5	-72.23	-14.27

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
CEDAR HEAD SPRING NR HILDRETH, FL	SR	qspring10_s061607017	3002	3	29.98356	-82.7588	22.25	-7.7	-5.53	-2.17
GRASSY HOLE NR HILDRETH FL	SR	qspring10_s061618006	3007	3	29.96809	-82.7601	19.44	-4.14	-1.81	-2.34
SANTA FE SPRING	SR	qspring10_s061829003	4030	3	29.93477	-82.5303	37.54	-70.86	-89.16	18.3
UN NAMED SPRING	SR	qspring10_s061829004	4023	3	29.93854	-82.5302	38.05	-1	-0.1	-0.9
WORTHINGTON SPRINGS AT WORTHINGTON SPRINGS	SR	qspring10_s061932013	333	2	29.92658	-82.426	51.72	-0.36	-0.02	-0.34
JABO CAMP SPRING	SR	qspring10_s070716004	285	3	29.88244	-83.6225	2.5	-10.5	-11.48	0.98
UN NAMED SPRING	SR	qspring10_s070727001	293	3	29.84659	-83.6092	0.37	-28.95	-29.33	0.38
BLUE CREEK SPRING NR KEATON BEACH	SR	qspring10_s070830002	297	3	29.8447	-83.5578	15.31	-10	-11.77	1.77
IRON SPRING ON THE STEINHATCHEE RIVER	SR	qspring10_s071034004	308	3	29.82675	-83.3079	18.72	-1	-1.14	0.14
TRAIL SPRING GROUP	SR	qspring10_s071401009	4003	3	29.8984	-82.8667	9.48	-9.48	-13.41	3.93
UN NAMED SPRING	SR	qspring10_s071401011	4004	3	29.89935	-82.8661	9.48	-30	-31.99	1.99
UN NAMED SPRING	SR	qspring10_s071412009	4012	3	29.89125	-82.874	9.3	-30	-33.03	3.03
UN NAMED SPRING	SR	qspring10_s071412010	4011	3	29.88967	-82.8748	9.3	-8.24	-6.02	-2.22
UN NAMED SPRING	SR	qspring10_s071412011	4002	3	29.89691	-82.8726	9.48	-20	-21.04	1.04
UN NAMED SPRING	SR	qspring10_s071423004	326	3	29.86045	-82.8792	8.97	-5	-4.31	-0.69
UN NAMED SPRING	SR	qspring10_s071423005	325	3	29.85908	-82.8807	8.93	-1	-1.05	0.05
FLETCHER SPRING NR HATCHBEND, FL	SR	qspring10_s071426001	327	3	29.84696	-82.8923	8.6	-10.4	-4.81	-5.59

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
TURTLE SPRING NEAR HATCHBEND,FL	SR	qspring10_s071426002	328	3	29.84738	-82.8904	8.6	-17.45	-18.91	1.46
UN NAMED SPRING	SR	qspring10_s071435020	330	3	29.82987	-82.8915	8.48	-13.96	-14.23	0.27
UN NAMED SPRING	SR	qspring10_s071505004	4008	3	29.91299	-82.8366	10.14	-0.21	-0.22	0.01
UN NAMED SPRING	SR	qspring10_s071505005	4005	3	29.91104	-82.842	9.97	-0.5	-0.63	0.13
WILSON SPRINGS	SR	qspring10_s071606004	4018	3	29.89991	-82.7585	14.5	-20	-15.28	-4.72
UN NAMED SPRING	SR	qspring10_s071607003	4019	3	29.88616	-82.7516	14.69	-4.91	-5.55	0.64
UN NAMED SPRING	SR	qspring10_s071618018	4020	3	29.87791	-82.7506	15.63	-1.1	-1.13	0.03
UN NAMED SPRING	SR	qspring10_s071618019	4021	3	29.88069	-82.7532	15.63	-0.75	-0.74	-0.01
UN NAMED SPRING	SR	qspring10_s071620005	4029	3	29.85707	-82.73	20.21	-3.75	-3.93	0.18
UN NAMED SPRING	SR	qspring10_s071620006	4027	3	29.85653	-82.7318	19.9	-2.57	-1.92	-0.65
UN NAMED SPRING	SR	qspring10_s071620007	4028	3	29.85831	-82.7336	19.9	-4.36	-2.54	-1.82
UN NAMED SPRING	SR	qspring10_s071620008	4025	3	29.8561	-82.7327	19.9	-2.02	-1.51	-0.51
UN NAMED SPRING	SR	qspring10_s071629003	4024	3	29.85568	-82.7321	19.9	-5	-2.92	-2.08
JULY SPRING	SR	qspring10_s071634005	4035	3	29.83623	-82.6964	22.71	-38.42	-65.1	26.68
GINNIE SPRING NR HIGH SPRINGS FL	SR	qspring10_s071634006	4034	3	29.83621	-82.7002	22.71	-34.73	-40.68	5.95
DEER SPRINGS	SR	qspring10_s071634011	4032	3	29.84109	-82.7074	22.46	-4.99	-6.6	1.61
DEVILS EAR SANTA FE RIVER	SR	qspring10_s071634012	4040	3	29.83533	-82.6967	23.12	-120	-125.29	5.29
DOGWOOD SPRINGS	SR	qspring10_s071634013	4036	3	29.83811	-82.7018	22.71	-12.86	-13.74	0.89
DEVIL EYE SANTA FE RIVER	SR	qspring10_s071634014	4039	3	29.83511	-82.6967	23.12	-41.48	-41.85	0.37
LITTLE DEVILS	SR	qspring10_s071634015	4037	3	29.83457	-82.697	23.12	-2.06	-5.87	3.81
SAWDUST SPRING	SR	qspring10_s071634016	4033	3	29.84011	-82.7036	22.71	-6.83	-9.79	2.96
TWIN SPRINGS	SR	qspring10_s071634017	4031	3	29.8405	-82.7058	22.46	-19.55	-20.02	0.47

Spring Name	WMD	PEST ID	NFSEG Reach ID	NFSEG Layer	Latitude (DD)	Longitude (DD)	Pool Elevation 2010 (Feet NAVD88)	2010 Estimated Discharge (cfs)	2010 Simulated Discharge (cfs)	2010 Residual Discharge (cfs)
BLUE SPRING IN GILCHRIST COUNTY	SR	qspring10_s071635003	4042	3	29.82996	-82.6829	23.3	-38.68	-37.78	-0.9
RUM ISLAND SPRING	SR	qspring10_s071635004	4044	3	29.8333	-82.6798	23.37	-7.94	-27.53	19.59
UN NAMED SPRING	SR	qspring10_s071635006	4048	3	29.83377	-82.6754	23.56	-6.07	-8.58	2.51
UN NAMED SPRING	SR	qspring10_s071635007	4046	3	29.83406	-82.6766	23.37	-7.88	-14.38	6.5
UN NAMED SPRING	SR	qspring10_s071635008	4045	3	29.83406	-82.678	23.37	-0.55	-0.58	0.03
UN NAMED SPRING	SR	qspring10_s071635009	4043	3	29.83264	-82.6783	23.37	-8.25	-13.09	4.84
LILLY SPRINGS	SR	qspring10_s071636002	4050	3	29.8297	-82.6612	23.94	-35.59	-39.46	3.87
UN NAMED SPRING	SR	qspring10_s071636004	4047	3	29.83166	-82.6692	23.56	-2.56	-3	0.44
PICKARD SPRINGS	SR	qspring10_s071636005	4051	3	29.83039	-82.6618	23.94	-11.52	-12.83	1.31
HORNSBY SPRINGS NEAR HIGH SPRINGS,FL	SR	qspring10_s071727010	4060	3	29.85031	-82.5932	31.88	-41.45	-21.91	-19.55
TREEHOUSE SPRING	SR	qspring10_s071727012	4056	3	29.85489	-82.6029	32.18	-51.33	-5.33	-46
UN NAMED SPRING	SR	qspring10_s071727013	4055	3	29.85361	-82.6055	32.18	-2.41	-3.1	0.69
DARBY SPRINGS	SR	qspring10_s071727014	4054	3	29.85247	-82.6058	32.18	-15	0	-15
UN NAMED SPRING	SR	qspring10_s071731004	4052	3	29.83045	-82.6575	23.94	-13.34	-13.99	0.65
CEDAR ISLAND SPRING	SR	qspring10_s080701011	300	3	29.81634	-83.5839	0.3	-15	-14.34	-0.66
UN NAMED SPRING	SR	qspring10_s081028004	314	3	29.76207	-83.3343	5.6	-53.15	-34.37	-18.78
UN NAMED SPRING	SR	qspring10_s081032002	315	3	29.74424	-83.3452	1.87	-1.33	-1.41	0.08
POTHOLE SPRING NEAR LAKE CITY	SR	qspring10_s081405004	329	3	29.81072	-82.9359	8.28	-31.64	-30.3	-1.34
ROCK BLUFF SPRINGS NR BELL, FL	SR	qspring10_s081409002	331	3	29.79907	-82.9185	8.23	-26.86	-19.45	-7.41
GUARANTO SPRINGS	SR	qspring10_s081420001	332	3	29.77965	-82.94	11.4	-11.97	-12.03	0.06
UN NAMED SPRING	SR	qspring10_s081705010	4059	3	29.82792	-82.641	26.71	-20	-26.03	6.03

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POE SPRINGS NEAR HIGH SPRINGS, FL	SR	qspring10_s081706005	4057	3	29.82564	-82.649	25.52	-47.83	-42.76	-5.06
UN NAMED SPRING	SR	qspring10_s081706008	4058	3	29.82756	-82.6459	26.71	-25.16	-33.1	7.95
BRADLEY SPRINGS	SR	qspring10_s090915002	318	3	29.70027	-83.4111	11	-5.47	-6.26	0.79
EVA SPRING ON THE STEINHATCHEE RIVER	SR	qspring10_s090923005	321	3	29.67769	-83.3994	0.9	-1.72	-2.13	0.41
UN NAMED SPRING	SR	qspring10_s090924007	322	3	29.67653	-83.3853	3	-4	-4.31	0.31
UN NAMED SPRING	SR	qspring10_s091005004	319	3	29.72708	-83.3446	0.17	-6.74	-8.34	1.6
UN NAMED SPRING	SR	qspring10_s091005005	316	3	29.73089	-83.347	0.31	-15	-15.9	0.9
UN NAMED SPRING	SR	qspring10_s091005006	317	3	29.73447	-83.3474	0.31	-0.2	-0.21	0.01
UN NAMED SPRING	SR	qspring10_s091008005	320	3	29.71927	-83.3461	0	-1	-1.12	0.12
UN NAMED SPRING	SR	qspring10_s091019017	324	3	29.677	-83.3609	2.94	-35.35	-38.46	3.11
UN NAMED SPRING	SR	qspring10_s091019018	323	3	29.67656	-83.3639	2.94	-6.69	-4.9	-1.79
McCRABB SPRINGS	SR	qspring10_s091324024	337	3	29.68549	-82.9603	5.44	-12.05	-15.14	3.08
IRON SPRINGS	SR	qspring10_s091325024	338	3	29.67386	-82.9574	5.3	-7.18	-9.24	2.06
Lumber Camp Spring nr Wannee	SR	qspring10_s091408006	335	3	29.7075	-82.9356	6.42	-4.58	-6.3	1.72
SUN SPRINGS NEAR WANNEE, FL	SR	qspring10_s091417003	336	3	29.70457	-82.9335	6.24	-29.38	-35.75	6.38
UN NAMED SPRING	SR	qspring10_s091418005	334	3	29.70428	-82.9528	6.02	-5	-6.68	1.68
HART SPRING NR WILCOX FLA	SR	qspring10_s091430001	339	3	29.675	-82.9514	5.64	-56.07	-53.64	-2.43
LITTLE COPPER SPRING	SR	qspring10_s101312010	340	3	29.6327	-82.967	4.48	-6.35	-6.94	0.59
COPPER SPRINGS	SR	qspring10_s101313001	343	3	29.61396	-82.9738	7.4	-20.73	-31.39	10.66
OTTER SPRINGS NEAR WILCOX, FL	SR	qspring10_s101406002	342	3	29.64474	-82.9428	3	-6.38	-11.11	4.73

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UN NAMED SPRING	SR	qspring10_s101406010	341	3	29.63643	-82.9585	4.59	-20.3	-22.35	2.05
BELL SPRING NEAR OLDTOWN FL	SR	qspring10_s101419006	344	3	29.59726	-82.9415	3.69	-8.89	-10.2	1.31
FANNING SPRINGS NR WILCOX FL	SR	qspring10_s101429001	346	3	29.58773	-82.9354	2.62	-91.05	-99.54	8.49
LITTLE FANNING SPRINGS NR FANNING SPRINGS, FL	SR	qspring10_s101429027	345	3	29.58619	-82.9346	3.6	-13.37	2.92	-16.28
MANATEE SPRING NR CHIEFLAND FL	SR	qspring10_s111326002	347	3	29.48963	-82.9768	1.88	-151.5	-146.06	-5.44
BLUE SPRING NEAR BRONSON	SR	qspring10_s121610002	348	3	29.45066	-82.699	39.09	-7.93	-23.12	15.19
WEKIVA SPRINGS NEAR GULF HAMMOCK	SR	qspring10_s141707001	351	3	29.28037	-82.6562	8.14	-45.9	-54.34	8.44
UN NAMED SPRING	SR	qspring10_s151310003	350	3	29.19078	-82.9881	2.88	-5	-4.97	-0.03
UNNAMED SPRING	SR	qspring10_s9999	255	3	29.97225	-83.7448	0.89	-0.5	-0.42	-0.08
MADISON BLUE SPRING NR BLUE SPRINGS, FL	SR	qspring10_n011117008	179	3	30.48049	-83.2443	41.35	-129	-122.26	-6.74
UN NAMED SPRING	SR	qspring10_n011120010	180	3	30.47475	-83.2434	42.88	-6.01	-4.49	-1.52
UN NAMED SPRING	SR	qspring10_n011120011	181	3	30.4727	-83.2431	42.69	-15	-0.95	-14.05
POT SPRING	SR	qspring10_n011120012	182	3	30.47077	-83.2344	42.59	-23.34	-27.32	3.98
TANNER SPRING	SR	qspring10_n011121006	183	3	30.46466	-83.2176	42.2	-92.5	-78.35	-14.15
UN NAMED SPRING	SR	qspring10_n011128006	184	3	30.45103	-83.2232	41.52	-15	-13.15	-1.85
UN NAMED SPRING	SR	qspring10_n011133004	186	3	30.44038	-83.2196	40.6	-20	-17.52	-2.48
ALAPAHA RISE NR FT UNION	SR	qspring10_n011235002	199	3	30.4401	-83.0891	36.39	-265.31	-217.79	-47.52

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UN NAMED SPRING	SR	qspring10_n011235012	198	3	30.43712	-83.0882	36.39	-0.1	-0.08	-0.02
UN NAMED SPRING	SR	qspring10_n011236003	201	3	30.43692	-83.0787	36.72	-1.27	-0.92	-0.35
HOLTON SPRINGS NEAR FT. UNION,FL	SR	qspring10_n011331001	204	3	30.43772	-83.0574	37.38	-69.66	-60.59	-9.07
UN NAMED SPRING	SR	qspring10_n021113002	176	3	30.55268	-83.2601	54.65	-5	1.04	-6.04
HARDEE/ ROSSITER SPRING	SR	qspring10_n021130001	177	3	30.54466	-83.2501	53.06	-21.1	-11.34	-9.76
Rock Sink Springs	SR	qspring10_crescent	7001	3	29.72778	-82.9492	7.19	-10	-6.31	-3.69
ROCK SPRING	SWF	qspring10_2234610	353	3	29.11886	-82.3826	41.83	0	0	0
FENNEY SPRINGS NR COLEMAN	SWF	qspring10_2312664	360	3	28.795	-82.0386	53.63	-8.9	-5.38	-3.52
GUM SPRINGS NEAR HOLDER, FL	SWF	qspring10_2312764	354	3	28.95111	-82.25	35.3	-102	-103.87	1.87
HOMOSASSA SPRING COMPLEX	SWF	qspring10_20041	355	3	28.79916	-82.5885	0.3	-123.35	-148.46	25.11
HALLS RIVER 1 SPRING	SWF	qspring10_20054	6000	3	28.82248	-82.5943	0.43	-5	-4.88	-0.12
CRYSTAL RIVER WC5	SWF	qspring10_20092	5008	3	28.88222	-82.6011	-0.15	-24.89	-25.61	0.72
CRYSTAL RIVER WC6	SWF	qspring10_20093	5009	3	28.88222	-82.6058	-0.15	-24.89	-25.61	0.72
TARPON HOLE 2 SPRING	SWF	qspring10_20097	5011	3	28.88189	-82.5942	-0.15	-24.89	-25.68	0.79
IDIOTS DELIGHT SPRING G5	SWF	qspring10_20100	5013	3	28.8897	-82.5907	-0.15	-24.89	-25.69	0.8
TARPON SPRING G4	SWF	qspring10_20101	5012	3	28.88331	-82.5954	-0.15	-24.89	-25.68	0.79
UNNAMED SPRING G7	SWF	qspring10_20106	5016	3	28.87778	-82.5992	-0.15	-24.89	-25.4	0.51
CRESCENT DRIVE SPRING G7	SWF	qspring10_20107	5018	3	28.87776	-82.5984	-0.15	-24.89	-25.51	0.62
CRYSTAL RIVER WC4	SWF	qspring10_20110	5017	3	28.88056	-82.5947	-0.15	-24.89	-25.51	0.62

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CRYSTAL RIVER WC3	SWF	qspring10_20111	5010	3	28.88528	-82.5978	-0.15	-24.89	-25.68	0.79
UNNAMED SPRING G6	SWF	qspring10_20146	5007	3	28.89583	-82.59	-0.15	-24.89	-25.84	0.95
THREE SISTERS SPRINGS RUN	SWF	qspring10_20147	5014	3	28.88809	-82.5895	-0.15	-24.89	-25.69	0.8
CEDAR COVE SPRING G1	SWF	qspring10_20150	5000	3	28.9022	-82.599	-0.15	-24.89	-27.13	2.24
CRYSTAL RIVER WC1	SWF	qspring10_20152	5001	3	28.89667	-82.5975	-0.15	-24.89	-26.4	1.51
MANATEE SANCTUARY SPRING	SWF	qspring10_20154	5006	3	28.89	-82.5927	-0.15	-24.89	-25.57	0.68
AMERICAN LEGION SPRING G3	SWF	qspring10_20158	5003	3	28.89859	-82.5915	-0.15	-24.89	-26.3	1.41
CRYSTAL RIVER WC2	SWF	qspring10_20159	5005	3	28.89444	-82.5919	-0.15	-24.89	-25.57	0.68
CRYSTAL SPRING G2	SWF	qspring10_20161	5004	3	28.89359	-82.5929	-0.15	-24.89	-25.57	0.68
HUNTERS BAY NE 2nd SPRING	SWF	qspring10_20165	5002	3	28.8997	-82.5901	-0.15	-24.89	-26.3	1.41
THREE SISTERS SPRINGS RUN 2	SWF	qspring10_20166	5015	3	28.88811	-82.5898	-0.15	-24.89	-25.7	0.81
MAINTENANCE SPRING NR SUMTERVILLE, FL	SWF	qr10_284525082040600	361	3	28.75694	-82.0683	41.92	-0.76	-0.97	0.21
HALLS RIVER HEAD SPRING	SWF	qspring10_6001	6001	3	28.82639	-82.5806	1.5	-77.81	-172	94.19
NICHOLS SPRING OF SUMTER COUNTY	SWF	qr10_285022082121000	356	3	28.83944	-82.2028	35.08	-13.5	-23.91	10.41
WAYNE LEE SPRING RUN AT I-75 NR WILDWOOD, FL	SWF	qr10_285133082053100	359	3	28.85906	-82.0918	43.67	-12	-13.85	1.85
ENRY GREEN SP (HD OF LIT JONES CR) NR WILDWOOD, F	SWF	qr10_285207082054100	357	3	28.86861	-82.0947	41.12	-6.7	-10.34	3.64

APPENDIX K – BASEFLOW PICK-UP ESTIMATES 2010

Gage	PEST ID	2010 Estimated Baseflow (cfs)	2010 Simulated Baseflow (cfs)	2010 Baseflow Residual (cfs)	2010 Minimum Estimated Baseflow (cfs)	2010 Maximum Estimated Baseflow (cfs)
02176500	qr10_2176500	-28.5	-21.93	-6.57	-2.1	-55.3
02198100	qr10_2198100	-6.9	-4.94	-1.96	-3	-11.2
02198500	qr10_2198500	-314.6	-159.22	-155.38	116.8	-535.2
02198690	qr10_2198690	-30.6	-22.04	-8.56	-2.9	-59.4
02202600	qr10_2202600	-47	-40.2	-6.8	-3.6	-91.3
02203000	qr10_2203000	-149.2	-215.65	66.45	-4.1	-268.4
02216180	qr10_2216180	-13.8	-11.36	-2.44	0	-25.3
02226000	qr10_2226000	-426.3	-436.66	10.36	-117.2	-818.7
02227500	qr10_2227500	-96.5	-19.14	-77.36	-3.7	-171.8
02228000	qr10_2228000	-557	-636.67	79.67	-216.7	-802.4
02228500	qr10_2228500	-23.4	4.42	-27.82	-1.3	-39.7
02239501*	qr10_2239501	-579.6	-694.42	114.82	-579.6	-579.6
02240500	qr10_2240500	-61.7	-47.57	-14.13	-43.6	-74.9
02245500	qr10_2245500	-37	-33.63	-3.37	-20.9	-50
02246000	qr10_2246000	-34.4	-27.18	-7.22	-14	-51.7
02312667	qr10_2312667	-20.1	-8.79	-11.31	-11.6	-26.2
02314500	qr10_2314500	-284.6	71.2	-355.8	-24.6	-450.7
02317500	qr10_2317500	-421.6	-421.81	0.21	-86.4	-632.2
02317620	qr10_2317620	-185.5	-25.01	-160.49	-58.5	-283.3
02318500	qr10_2318500	-305.2	-210.28	-94.92	-23.6	-477.6
02318700	qr10_2318700	-50.4	-51.32	0.92	-0.1	-90
02319000	qr10_2319000	-251.7	-103.82	-147.88	-127.5	-324.3
02320500*	qr10_2320500	-597.6	-576.9	-20.7	-597.6	-597.6
02320500a*	qr10_2320500a	-1080	-830.88	-249.22	-1080	-1080
02320700	qr10_2320700	-13.6	-0.9	-12.7	-4.4	-22.1
02321000	qr10_2321000	-13.5	-9.55	-3.95	-1.4	-23.5
02321500	qr10_2321500	-47.2	-22.07	-25.13	-11	-77.6
02322500a*	qr10_2322500a	-668	-771.53	103.33	-668	-668
02322700*	qr10_2322700	-292.5	-272.67	-19.83	-292.5	-292.5
02322800*	qr10_2322800	-207.4	-155.4	-52	-207.4	-207.4
02323500*	qr10_2323500	-221	-511.54	290.54	-221	-221
02324000	qr10_2324000	-116.2	-102.68	-13.52	-23.7	-179.1
02324400	qr10_2324400	-23.1	-2.46	-20.64	-7	-34.3
02326000	qr10_2326000	-82.6	-47.48	-35.12	-33	-114.2
02326526	qr10_2326526	-428.88	-410.73	-18.15	-390	-441.74
02326900	qr10_2326900	-705.5	-363.69	-341.81	-632	-759.4
02327100	qr10_2327100	-34.8	-42.61	7.81	-5.7	-69.8
02327500	qr10_2327500	-153.7	-298.13	144.43	-23.8	-258.1

Gage	PEST ID	2010 Estimated Baseflow (cfs)	2010 Simulated Baseflow (cfs)	2010 Baseflow Residual (cfs)	2010 Minimum Estimated Baseflow (cfs)	2010 Maximum Estimated Baseflow (cfs)
02328522	qr10_2328522	-201.9	-318.26	116.36	-69.5	-268.9
02329000	qr10_2329000	-47.8	-54.55	6.75	-17.2	-61.3
02329342	qr10_2329342	-7.9	-6.33	-1.57	-4.9	-10.8
02228000	qs10_2228000	-653.48	-655.81	2.33	-220.4	-974.21
02231000	qs10_2231000	-106.43	-40.93	-65.5	-35.2	-151.6
02243000	qs10_2243000	-7.19	-9.58	2.39	-3.05	-10.16
02315500	qs10_2315500	-542.32	26.43	-568.75	-105.92	-862.71
02317620	qs10_2317620	-607.13	-446.82	-160.31	-144.83	-915.46
02319000	qs10_2319000	-607.29	-365.42	-241.87	-151.26	-891.96
02319500	qs10_2319500	-3253.39	-1864.27	-1389.12	-1655.73	-4331.7
02320500	qs10_2320500	-4376.14	-2694.49	-1681.65	-2872.7	-5707.9
02321500	qs10_2321500	-74.27	-32.52	-41.75	-16.7	-123.22
02322500	qs10_2322500	-790.03	-802.82	12.79	-696.7	-851.03
***Baseflow estimates based on total flow instead of baseflow separation techniques.**						

APPENDIX L – UNCERTAINTY ANALYSIS

Linear and Nonlinear Uncertainty Analysis for the NFSEG Groundwater Model

Watermark Numerical Computing

May, 2018

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1. Introduction

During March and April 2018, linear and nonlinear parameter uncertainty analyses were undertaken for the NFSEG groundwater model constructed by St Johns River and Suwannee River Water Management Districts. Linear analysis comprised calculation of parameter identifiabilities and uncertainty reductions accrued through the calibration process. Nonlinear analysis culminated in the generation of 522 parameter fields, all of which can be considered as reasonable, and all of which provide a fit with the calibration dataset which is almost as good as that provided by the parameter field which is deemed to calibrate the model. The uncertainty of any prediction made by the NFSEG model can be assessed by making the prediction with all of these parameter fields.

2. Theory

2.1 General

Nonlinear model predictive uncertainty analysis is generally implemented using Monte Carlo methods. It requires implementation of a procedure through which the posterior parameter probability distribution is sampled in order to generate a suite of parameter fields. While all of these parameter fields must satisfy calibration constraints (i.e. they must fit the calibration dataset to a level that is commensurate with the amount of measurement noise which accompanies that dataset), the process of sampling the posterior parameter probability distribution is much more difficult than that of obtaining a single parameter field that is deemed to "calibrate" a model. The latter process seeks a unique solution to an ill-posed inverse problem by pursuing a parameter field of minimized error variance. Generally, this is a parameter field that suppresses any heterogeneity that is not supported by the calibration dataset. Model predictions that are made using this parameter field can then also be considered as of minimum error variance. As such, they lie somewhere near the centre of the posterior probability distribution of that prediction.

In contrast to the process required for obtaining a minimum error variance parameter field, nonlinear parameter/predictive uncertainty analysis requires that the posterior parameter probability distribution be sampled in order to seek parameter fields which express heterogeneity rather than suppress it, while still promulgating a good fit with the calibration dataset. However any heterogeneity that is thereby expressed must be realistic from an expert knowledge point of view.

Notionally, the posterior parameter probability distribution can be derived through application of Bayes equation. Let the vector $\mathbf{k}$ denote parameters employed by a model. Let the operator $Z()$ represent the action of the model on its parameters. Let elements of the vector $\mathbf{h}$ represent members of the calibration dataset, and let the vector $\boldsymbol{\varepsilon}$ represent noise associated with measurements that comprise this dataset. Then

$$\mathbf{h} = Z(\mathbf{k}) + \boldsymbol{\varepsilon} \tag{2.1}$$

We use the symbol $P()$ to represent probability. Let $P(\mathbf{k})$ represent the prior probability (i.e. pre-calibration probability) associated with a parameter vector $\mathbf{k}$. Bayes equation is used to characterize the posterior (i.e. post-calibration) probability associated with that same parameter vector. This is denoted as $P(\mathbf{k}|\mathbf{h})$, i.e. the probability of $\mathbf{k}$ conditioned by the calibration dataset $\mathbf{h}$. Bayes equation states that:

$$P(\mathbf{k}|\mathbf{h}) \propto P(\mathbf{h}|\mathbf{k})\, P(\mathbf{k}) \tag{2.2}$$

The term $P(\mathbf{h}|\mathbf{k})$ is referred to as the likelihood function. It rises to the extent that a parameter field promulgates a good fit with the calibration dataset.

Direct use of Bayes equation to characterize the posterior parameter probability distribution, or even just to sample it, is extremely difficult (if not impossible) where parameter numbers

are high. Hence approximate methods must be sought. The PEST suite provides a number of means to do this. All of them start with a linear approximation to Bayes equation; they then modify parameter fields that are sampled from the thus-approximated posterior parameter probability distribution so that they fit the calibration dataset to an acceptable degree. It is important to note, however, that despite their quasi linear origin, use of these parameter fields in making a model prediction involves no linearity assumption.

2.2 Approximate Implementation of Bayes Equation

Suppose that the following conditions are met:

- The prior probability distribution of parameters is multi Gaussian;
- The probability density function of measurement noise is multi Gaussian;
- The action of the model on its parameters is linear, and hence can be expressed as a matrix.

Then the posterior expected values of parameters (i.e. the mean values of parameters according to their posterior probability distribution) can be obtained through the model calibration process, provided that this process employs regularisation that is in accordance with the prior parameter probability distribution. The covariance matrix that characterizes the posterior parameter probability distribution (we will refer to this as $C'(\mathbf{k})$) can be calculated using either of the following (mathematically equivalent) formulas:

$$C'(\mathbf{k}) = C(\mathbf{k}) - C(\mathbf{k})\mathbf{Z}^t[\mathbf{Z}C(\mathbf{k})\mathbf{Z}^t + C(\boldsymbol{\varepsilon})]^{-1}\mathbf{Z}C(\mathbf{k}) \quad (2.3a)$$

$$C'(\mathbf{k}) = [\mathbf{Z}^tC^{-1}(\boldsymbol{\varepsilon})\mathbf{Z} + C^{-1}(\mathbf{k})]^{-1} \quad (2.3b)$$

In these equations $C(\mathbf{k})$ is the covariance matrix associated with the prior parameter probability distribution while $C(\boldsymbol{\varepsilon})$ is the covariance matrix associated with measurement noise.

$C'(\mathbf{k})$ of equations 2.3a and 2.3b can be calculated using the PREDUNC7 program supplied with the PEST suite. This employs the weighted Jacobian matrix calculated using the calibration parameter set in place of $\mathbf{Z}$. Samples of the approximate posterior parameter probability distribution can then be generated using the RANDPAR1 utility; these samples are centred on the calibrated parameter field.

Because of model nonlinearity, it is unlikely that random parameter fields which are obtained in this way will promulgate an acceptable fit between model outputs and the calibration dataset. Predictive uncertainties that are calculated using these parameter fields may therefore be too broad. Hence these fields must be adjusted to better respect calibration constraints. Two adjustment options are as follows.

1. Adjust these parameter fields using PEST; the first iteration of the adjustment process can be implemented with very little numerical cost through use of the same Jacobian matrix that was employed by PREDUNC7 to calculate $C'(\mathbf{k})$. Thus it does not need to be re-calculated for each random parameter field.

2. Subject these parameter fields to null space projection (see below) to remove those aspects of them that compromise goodness of fit. Then, if model-to-measurement fit is still not good enough, undertake PEST-based parameter adjustment as above. Null space projection can be implemented using the PNULPAR utility. The first iteration of parameter adjustment can employ a pre-calculated Jacobian matrix.

If only one iteration of parameter adjustment is required, both of these options are numerically efficient. However a second iteration of parameter adjustment incurs a high numerical cost, for it requires calculation of a new Jacobian matrix. This requires that one model run be undertaken for each adjustable parameter (8949 for the NFSEG model). The numerical burden can be somewhat reduced if only "super parameters" are adjusted. These are coefficients applied to the right singular vectors of the weighted Jacobian matrix; only enough of these need be adjusted to span the dimensionality of the calibration solution space – about 1500 for the NFSEG model.

A second iteration of parameter adjustment is unacceptable for the NFSEG model as the numerical burden is too high to countenance. In general, the first of the above two options is preferred. However the second must be chosen if it eliminates the need for a second iteration of parameter adjustment. The second of these options was indeed adopted for sampling the posterior parameter probability distribution of the NFSEG model. The null space projection methodology that it entails is now described.

Let **J** represent the Jacobian matrix and let **Q** represent the weight matrix used in model calibration (normally diagonal). If subjected to singular value decomposition, the weighted Jacobian matrix $\mathbf{Q}^{½}\mathbf{J}$ can be decomposed as:

$$\mathbf{Q}^{½}\mathbf{J} = \mathbf{U}\mathbf{S}\mathbf{V}^{t} \qquad (2.4)$$

where **U** is an orthonormal matrix whose columns span the range space of $\mathbf{Q}^{½}\mathbf{J}$, **V** is an orthonormal matrix whose columns span parameter space, and **S** is a diagonal matrix of singular values. Using the SUPCALC utility provided with the PEST suite, **V** can be partitioned as:

$$\mathbf{V} = [\mathbf{V}_1\ \mathbf{V}_2] \qquad (2.5)$$

where the columns of $\mathbf{V}_1$ span the calibration solution space and those of $\mathbf{V}_2$ span the calibration null space (i.e. the space wherein combinations of parameters have minimal effects on model outputs and hence are non-inferable through the calibration process). See Doherty (2015) for further details.

The PNULPAR utility modifies a random parameter vector **k** in the following manner:

1. First it subtracts the parameter vector $\underline{\mathbf{k}}$ obtained through calibration of the model to obtain $\mathbf{k} - \underline{\mathbf{k}}$;
2. It then projects this difference onto the calibration null space through pre-multiplication by $\mathbf{V}_2\mathbf{V}_2^{t}$.
3. It adds $\underline{\mathbf{k}}$ to this projected difference.

If the model is run using a PNULPAR-calculated set of parameters, minimal parameter adjustment is normally required for fitting the calibration dataset to an arbitrary level of acceptability. A disadvantage of this method of achieving a good fit with the calibration dataset, however, is that the component of parameter uncertainty that is inherited from measurement noise can be diminished through this process. This is of little consequence if predictions of interest have a high degree of null space dependency. The uncertainties of other predictions may be somewhat under-valued, however. This is rectified to some extent through post-projection parameter adjustment (as was done for the NFSEG model), for it is the solution space component of random parameter fields that must adapt to the requirement for a suitably good level of fit with the calibration dataset; the uncertainty associated with this component is directly inherited from measurement noise associated with that data. Another strategy is to add random noise to members of the calibration dataset prior to adjustment of each parameter field. However this is problematical in many modelling contexts (including the present one) as the assumption of measurement-to-measurement statistical independence is not in accordance with the predominately structural origin of model-to-measurement misfit that is typically encountered when calibrating an environmental model. Nor is it possible to provide a suitable stochastic description for this inherently heteroscedastic phenomenon.

2.3 Parameter Estimability

Application of the linear theory presented above enables relatively easy calculation of two statistics which provide a measure of the information content of the calibration dataset with respect to parameters employed by the model. Each of these statistics has a value of between 0.0 and 1.0, with the former indicating zero information content, and the latter indicative of sufficient information content to afford unique estimation of its value. Both of these statistics are discussed by Doherty and Hunt (2009).

The first statistic discussed herein is the relative parameter uncertainty variance reduction. The variances of posterior parameter uncertainty comprise the diagonal elements of the $\mathbf{C}'(\mathbf{k})$ matrix that is calculated using equation 2.3a or 2.3b. Prior parameter uncertainty variances are available as the corresponding elements of $\mathbf{C}(\mathbf{k})$. Let $\sigma_i^{2\prime}$ denote the posterior variance of the *i*'th parameter; let σ_i^2 denote its prior variance. The relative uncertainty variance reduction of parameter *i* (which we denote as R_i) is calculated using the following formula.

$$R_i = \frac{\sigma_i^2 - \sigma_i^{2'}}{\sigma_i^2} \qquad (2.6)$$

The second statistic is the so-called "identifiability" of a parameter. It is defined as the square of the cosine between a vector pointing in the direction of the parameter and the projection of this vector onto the calibration solution space. This is the space defined by the vectors comprising the columns of the $\mathbf{V}_1$ matrix of equation 2.5. This measure of parameter estimability is a little more arbitrary than relative parameter uncertainty variance reduction because it is sensitive to the estimated dimensionality of the solution space. In calibration of an environmental model, the boundary between the solution and null spaces is not sharp. Theoretically, this boundary marks the point at which the potential for error associated with calibration-based estimation of the value of a parameter combination defined by the pertinent

column of $\mathbf{V}_1$ is greater than the potential for error based on expert knowledge alone. This is the point at which "over-fitting" begins. Moore and Doherty (2005) show that attempts to estimate values associated with an increasing number of columns of $\mathbf{V}_1$ are accompanied by a growing amplification of measurement noise as singular values associated with these columns diminish in magnitude. The fact that prior uncertainties are themselves uncertain, and that "measurement noise" is dominated by structural noise of unknown statistical properties, makes separation of solution and null spaces based on this premise a somewhat vague undertaking. This vagueness is inherited by the values assigned to the identifiabilities of those parameters that are only mildly informed by the calibration dataset.

3. Calculating Calibration-Constrained Parameter Fields

3.1 Observations and Parameters

Details of parameters employed by the NFSEG model, and of observations comprising the NFSEG model calibration dataset, are described in chapter 4 of the companion report. In undertaking calibration-constrained random parameter field generation for the NFSEG model, parameters remained unchanged from those employed in the calibration process, with the following exceptions.

- Recharge multiplier parameters which were fixed at a value of 1.0 during the calibration process were decreed as adjustable.
- EVT rate multiplier parameters which were fixed at a value of 1.0 during the calibration process were decreed as adjustable.

Table L-3.1 lists parameter groups employed in the random parameter field generation process. With the exception of 8 parameters belonging to the *sc* group (7 of which were fixed and one of which was tied to another parameter), all parameters within all of these groups were log-transformed for the purpose of assigning prior uncertainties, and for the purpose of generating samples from the posterior parameter probability distribution.

Table L-3.1 Parameter groups used in random parameter field generation. A total of 8957 parameters collectively comprise these groups, 8949 of which are adjustable.

Parameter group name	Parameterization device	Number of adjustable parameters	Description
k1x	pilot points	518	horizontal hydraulic conductivity – layer 1
k3x	pilot points	1767	horizontal hydraulic conductivity – layer 3
k5xk3x	pilot points	201	horizontal hydraulic conductivity multiplier outside MCU – layer 5
k5x	pilot points	364	horizontal hydraulic conductivity – layer 5
k7x	pilot points	55	horizontal hydraulic conductivity – layer 7
k2z	pilot points	556	vertical hydraulic conductivity – layer 2
k2zk3z	pilot points	333	vertical hydraulic conductivity multiplier outside ICU – layer 2
k4zk3z	pilot points	230	vertical hydraulic conductivity multiplier outside MCU – layer 4
k4z	pilot points	139	vertical hydraulic conductivity – layer 4
k6z	pilot points	68	vertical hydraulic conductivity – layer 6
vanis1	entire layer	1	vertical anisotropy – layer 1
vanis2	zoned according to ICU/non-ICU	2	vertical anisotropy – layer 2
vanis3	pilot points	154	vertical anisotropy – layer 3
vanis4	zoned according to MCU/non-MCU	2	vertical anisotropy – layer 4
vanis5	zoned according to MCU/non-MCU	2	vertical anisotropy – layer 5
vanis6	entire layer	1	vertical anisotropy – layer 6
vanis7	entire layer	1	vertical anisotropy – layer 7
lcm	zoned according to lakes	258	multiplier applied to lakebed conductance
rcm	zoned according to river reaches	1872	multiplier applied to river reach conductance

sc	zoned according to springs	371	GHB conductance at springs
rechmul	zones (see fig 3.1)	904	multiplier applied to recharge rates
evtrmul	zones (see fig 3.1)	904	multiplier applied to maximum EVT rates
lkzmul	zoned according to lakes	246	vertical conductivity multiplier under lakes

Table L-3.2 lists observation groups comprising the calibration dataset.

Table L-3.2 Observation groups used in constraining random parameter fields. A total of 5713 non-zero-weighted observations collectively comprise these groups.

Observation group name	**Number of observations with non-zero weight**	**Description**
h2001_lay1	228	Heads in layer 1: 2001
h2001_lay2	96	Heads in layer 2: 2001
h2001_lay3	977	Heads in layer 3: 2001
h2001_lay4	13	Heads in layer 4: 2001
h2001_lay5	39	Heads in layer 5: 2001
h2001_lay7	2	Heads in layer 7: 2001
h2009_lay1	581	Heads in layer 1: 2009
h2009_lay2	111	Heads in layer 2: 2009
h2009_lay3	993	Heads in layer 3: 2009
h2009_lay4	10	Heads in layer 4: 2009
h2009_lay5	41	Heads in layer 5: 2009
h2009_lay7	2	Heads in layer 7: 2009
hd2001_lay3	288	Lateral head gradients in layer 3: 2001
hd2009_lay3	274	Lateral head gradients in layer 3: 2009
td_lay1	0	Temporal head differences: layer 1
td_lay2	0	Temporal head differences: layer 2
td_lay3	0	Temporal head differences: layer 3
td_lay4	0	Temporal head differences: layer 4
td_lay5	0	Temporal head differences: layer 5
td_lay7	0	Temporal head differences: layer 7
wp_dry_2001	6	Minimizes occurrence of dry cells in wetland areas in 2001
wp_wet_2001	6	Minimizes occurrence of flooded cells
wp_dry_2009	6	Minimizes occurrence of dry cells in wetland areas in 2009
wp_wet_2009	6	Minimizes occurrence of flooded cells
vd_1to3_01	114	Vertical head differences: layer 1 to 3 in 2001
vd_1to3_09	141	Vertical head differences: layer 1 to 3 in 2009
vd_3to5_01	17	Vertical head differences: layer 3 to 5 in 2001
vd_3to5_09	19	Vertical head differences: layer 3 to 5 in 2009
qr01	76	Inflow to river segments between one or more gages: 2001
qr09	44	Inflow to river segments between one or more gages: 2009
qspring01	365	Inflow to springs: 2001
qspring09	368	Inflow to springs: 2009
qs_spring01	6	Inflow to spring groups: 2001
qs_spring09	7	Inflow to spring groups: 2009
qs01	11	Cumulative inflow to river upstream of a gage: 2001
qs09	10	Cumulative inflow to river upstream of a gage: 2009
qlake01	255	Flow to/from lakes: 2001
qlake09	258	Flow to/from lakes: 2009

3.2 Some Considerations Pertinent to the NFSEG Model

The domain of the NFSEG model is large. The calibration dataset for the NFSEG model is large. It includes both heads and outflows (at rivers and springs). The model is judged by

stakeholders on how well all of these elements of the calibration dataset are reproduced by the model. Considerable attention has been given to ensuring that the model is able to match observed heads and outflows during the 2001 and 2009 calibration periods. In the future, the model will be used to support management which aims to maintain future heads and outflows at desired levels.

This manner in which the NFSEG model was calibrated, and the manner in which it will be deployed has a number of repercussions, some of which are now briefly discussed.

Because of the requirement that the parameter field which is deemed to calibrate the NFSEG model yields a good fit with the calibration dataset, particularly at locations that are pertinent to decision-relevant predictions of future system behaviour, it is equally important that calibration-constrained random parameter fields that are used to explore predictive uncertainty do the same. If not, their characterization of the uncertainties of decision-critical model predictions will be deemed as being too conservative to be useful.

Ideally the fit that is achieved between model outputs and field measurements of head and flow should be commensurate with the noise associated with measurement of these quantities. However, model-to-measurement misfit often exceeds measurement error because of its structural origins, born of model imperfections. For a regional model with a large cell size, calibrated under an assumption of steady state conditions, the magnitude of this structural term is occasionally significant. Furthermore, it differs from location to location in unknown ways. It cannot therefore be characterized as a sequence of random numbers whose magnitude at a given location is a matter of chance, both under calibration and predictive conditions.

Naturally, a prediction of future system behaviour made by the NFSEG model will also be affected by structural error. Ideally, predictive uncertainty that arises from parametric uncertainty (as calculated using calibration constrained random parameter fields) should be supplemented by realisations of structural noise that are added to model predictions. Unfortunately, this is not possible for a number of reasons. These include:

- The location-specific nature of structural error;
- The fact that, for predictions which resemble members of the calibration dataset, some model structural defects will have been “calibrated out” (see Welter and Doherty, 2010; White et al, 2014);
- The likelihood that structural noise as it pertains to a prediction will be different from that which applies during calibration.

The latter is important. While lack of exact adherence to the steady state assumption may incur structural noise under calibration conditions, it will not do so under predictive conditions. Similarly, future predictions of system behaviour (by definition) can be made under the assumption that all system stresses are known, or can be represented with a user-specified stochastic distribution whose properties are known; the same does not apply under historical conditions. Furthermore, in fulfilling its decision-support role, the NFSEG model will often be used to compute differences in heads or flows arising from differences in stresses rather than the actual values of these quantities. It can be assumed that considerable cancellation of

structural noise accompanies the making of such differential predictions. (This is further discussed below.)

Because of the presence of structural noise (a feature of all groundwater models), predictive uncertainties that are assessed through use of calibration-constrained stochastic parameter fields whose calculation is described herein should be viewed as representing lower bounds on the uncertainties of predictions of management interest rather than their true uncertainties. Little can be done about this without recourse to a model from which structural deficiencies are absent.

3.3 Prior Parameter Covariance Matrix

As for previous linear analyses conducted on the NFSEG model, the C(**k**) matrix featured in equations 2.3a and 2.3b is considered to be block-diagonal. Submatrices pertaining to many of these blocks are in fact diagonal, this denoting statistical independence of parameters represented by these blocks.

For most parameter types, prior parameter variability assumed for random parameter field generation is somewhat smaller than that employed in previous investigations into parameter and predictive uncertainty using linear analysis. Prior uncertainties employed in previous analyses were used in the initial stages of the present nonlinear investigation (and in linear analysis discussed in the next section of this document). However, difficulties were encountered in attaining a good fit between model outputs and field measurements when deploying the methodologies discussed in chapter 2 of this appendix; a second, numerically expensive, iteration of parameter adjustment was found to be necessary to attain the level of model-to-measurements required for the NFSEG model. This problem was overcome by reducing the prior uncertainties of some parameters.

Parameter groups comprising pilot point parameters were assigned a full covariance matrix based on spatially variable variograms. All variograms are exponential, and hence specified by the equation:

$$\Upsilon(h)=C(0)[1 - \exp(h/a)] \qquad (3.1)$$

In equation 3.1 h is distance and C(0) is the overall variance of the hydraulic property in question, this being equal to the sill of the variogram. The range of an exponential variogram is often characterized as $3a$.

For all pilot point parameters, the variogram "a" value was decreed to be pilot-point-specific. This reflects the fact that pilot points are not capable of representing the natural heterogeneity of a complex carbonate aquifer. Instead, their use implies a degree of upscaling, with the extent of upscaling decreasing with increasing spatial density of pilot points. Where spatial density of pilot point emplacement is high, they are capable of representing short range hydraulic property heterogeneity. Alternatively, where it is low, they can only represent long range hydraulic property heterogeneity. To reflect this, the variogram range associated with each pilot point was calculated in the following manner:

1. The average separation between the pilot point to which an "*a*" value must be assigned and its 20 closest neighbours was calculated;
2. The "*a*" value ascribed to the variogram associated with that pilot point was designated as twice this average separation.

This strategy is similar to that applied in previous linear uncertainty analysis.

For all pilot point parameter groups, the variogram sill (applied to the logarithm of hydraulic properties associated with pilot points) was denoted as uniformly 0.16, this implying a standard deviation of parameter variability of 0.4. Variograms assigned to all pilot points are isotropic, except for a number of pilot points in the k3x and k3xk5x parameter groups to which a horizontal anisotropy of 2.0 with a bearing of 354 degrees was ascribed.

Covariance matrix construction was undertaken using the MKPPSTAT and PPCOV_SVA utilities supplied with the PEST Groundwater Data Utility suite; see Doherty (2014).

For all other parameter types except recharge and EVT multipliers, within-group statistical independence was assumed in filling the pertinent blocks of the C(**k**) matrix. A uniform standard deviation was applied to each member of the group. Details are provided in Table L-3.3.

Table L-3.3 Standard deviation assigned to each parameter within each respective parameter group. Note that these are actually applied to the log (to base 10) of each parameter. Note also that none of the parameters in this table pertain to pilot points.

Parameter group name	Standard deviation ascribed to each parameter within group
vanis1	0.2
vanis2	0.2
vanis4	0.2
vanis5	0.2
vanis6	0.2
vanis7	0.2
lcm	0.5
rcm	0.4
sc	0.5
lkzmul	0.4

As has already been discussed, a recharge rate multiplier parameter and an EVT rate multiplier parameter were assigned to each of the 904 watershed-based polygons within the model domain that define zonation of these quantities. These parameters were assumed to be statistically independent of each other between polygons. However a high degree of negative correlation (-0.94) is assumed to exist between the recharge rate multiplier and the maximum EVT rate multiplier within each polygon. This reflects the fact that they are both calculated by the same HSPF model which is calibrated to reproduce baseflow. Use of this correlation coefficient is equivalent to assuming that the recharge rate multiplier is equal to a random number plus a second random number whose standard deviation is about 25% of that of the first, while the EVT rate multiplier is equal to the same first random number minus a third random number which also has a standard deviation of 25% of that of this first random number. For the present study, the standard deviation of the first random number was chosen such that four standard

deviations span a range in log space that is equivalent to multiplying and dividing the "calibrated" value of 1.0 for these recharge and EVT multiplier parameters by a factor of 1.25. A joint covariance matrix for recharge and EVT rate multipliers was constructed accordingly.

3.4 Measurement Noise Covariance Matrix

The C(**ε**) matrix which characterizes measurement noise (see equations 2.3a and 2.3b) is calculated slightly differently in nonlinear uncertainty analysis from the way that it is calculated in order to support linear uncertainty analysis. For calculation of C′(**k**), C(**ε**) was assumed to be diagonal, with elements proportional to the inverse of the squared reciprocals of weights used during the calibration process. The proportionality constant applied to all weights was such that the measurement objective function is approximately equal to the number of observations comprising the calibration dataset minus the dimensionality of the calibration solution space; see Doherty (2015) for details.

Implied in the level of fit that calibration-constrained stochastic parameter fields are required to attain with the calibration dataset is a stochastic characterization of "noise" that is responsible for model-to-measurement misfit. As has already been discussed, much of this "noise" is structural. As such, it is not amenable to statistical characterisation. If it were, indeed, stochastically-characterizable noise, the level of misfit used to constrain random parameter fields could be calculated using standard statistical theory; see, for example, Vecchia and Cooley (1987). For the NFSEG model, however, an objective function 5% greater than that attained by the calibrated parameter field was set as the constraint. The necessity for all random parameter fields used in conjunction with the NFSEG model to achieve a good fit with the model's calibration dataset has already been discussed.

3.5 Some Implementation Details

Sampling the posterior probability distribution of NFSEG model parameter fields required that a suite of parameter fields be obtained for which corresponding objective functions are less than 1.05 times that attained by the calibrated model. It was required that the number of these parameter fields be sufficient to provide a reasonable characterization of posterior predictive uncertainties. This, in turn, required that the procedure be numerically efficient. Attainment of a workable level of numerical efficiency required avoidance of a second iteration of random parameter field adjustment. Workflow settings used in this process (including variables used for characterization of prior parameter uncertainties) reflected this necessity. These were the outcome of some trial and error workflow implementations that are not discussed herein.

3.6 Sampling a Linear Approximation to the Posterior

The PEST PREDUNC7 utility was employed to calculate a linear approximation to the posterior covariance matrix C′(**k**) using equation 2.3b.

The RANDPAR1 utility was then employed to generate 1000 stochastic parameter field realizations based on the thus-calculated C′(**k**) matrix. Each of these parameter fields was then subjected to null space projection using the PNULPAR utility; the dimensionality of the solution space was assumed to be 1500.

Each of the PNULPAR-generated random parameter fields was then subjected to one iteration of parameter adjustment. As has already been discussed, this was a relatively cheap numerical undertaking as it employed the same Jacobian matrix for adjustment of all parameter fields, namely that which was calculated using the calibrated parameter field. For 522 of these parameter fields the final objective function was less than 1.05 times that associated with the calibration parameter field. These can be considered to comprise samples of the posterior parameter probability distribution. As such, they can be used for predictive uncertainty analysis.

4. Outcomes of Nonlinear Analysis

4.1 Results

As described previously, a set of 522 calibrated parameter fields were generated using the null-space Monte Carlo approach described in the previous section. An example of one of these fields is shown in Figure L-4.1. Collectively, these fields can be used to characterize the statistical properties of any model parameter. See, for example, the histograms pertaining to selected parameters depicted in Figures L-4.2 through L-4.4, and the estimated cumulative parameter probability distribution provided in Figure L-4.5.

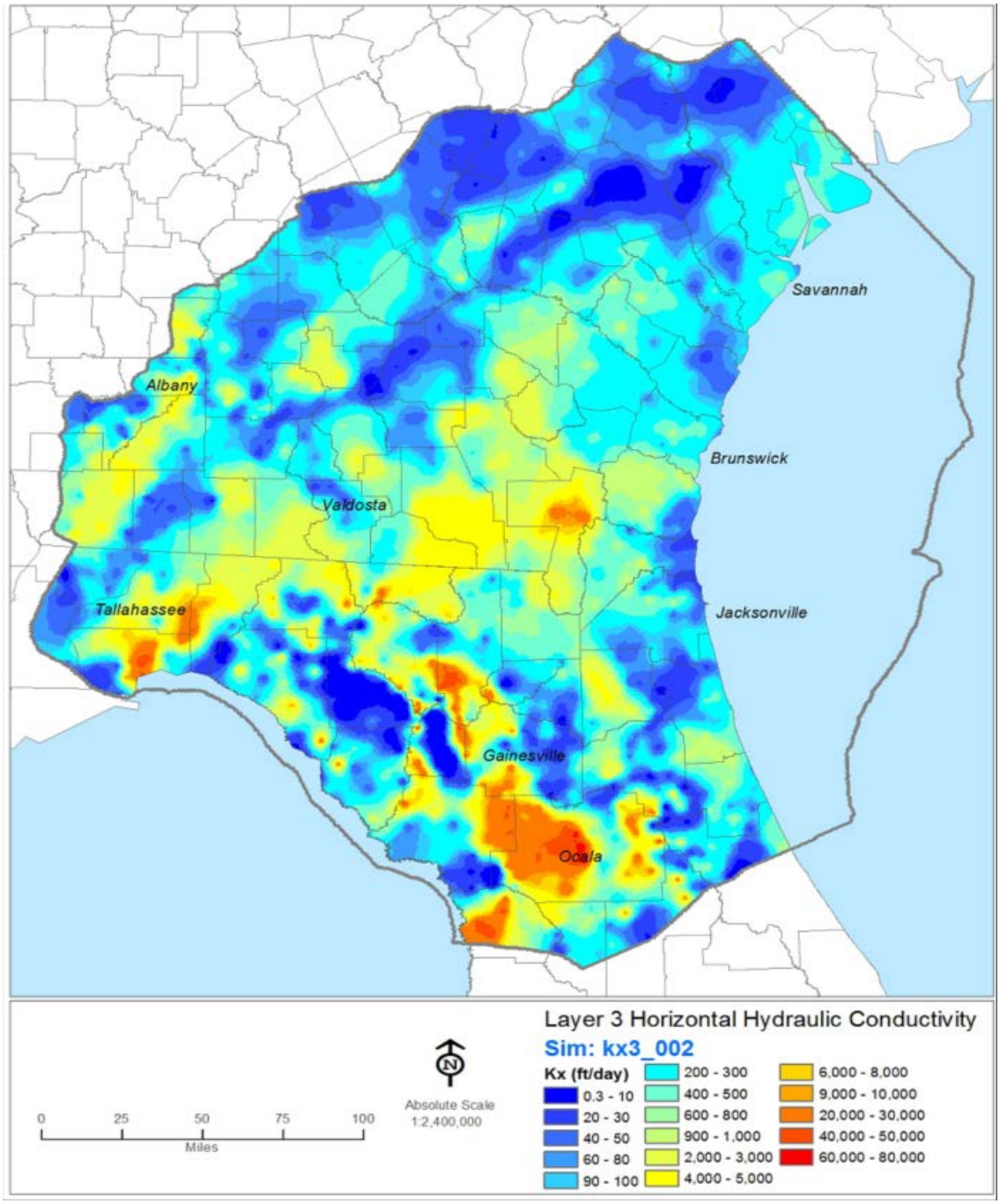


Figure L-4.1. A single post-calibration random parameter field realization of horizontal hydraulic conductivity in layer 3.

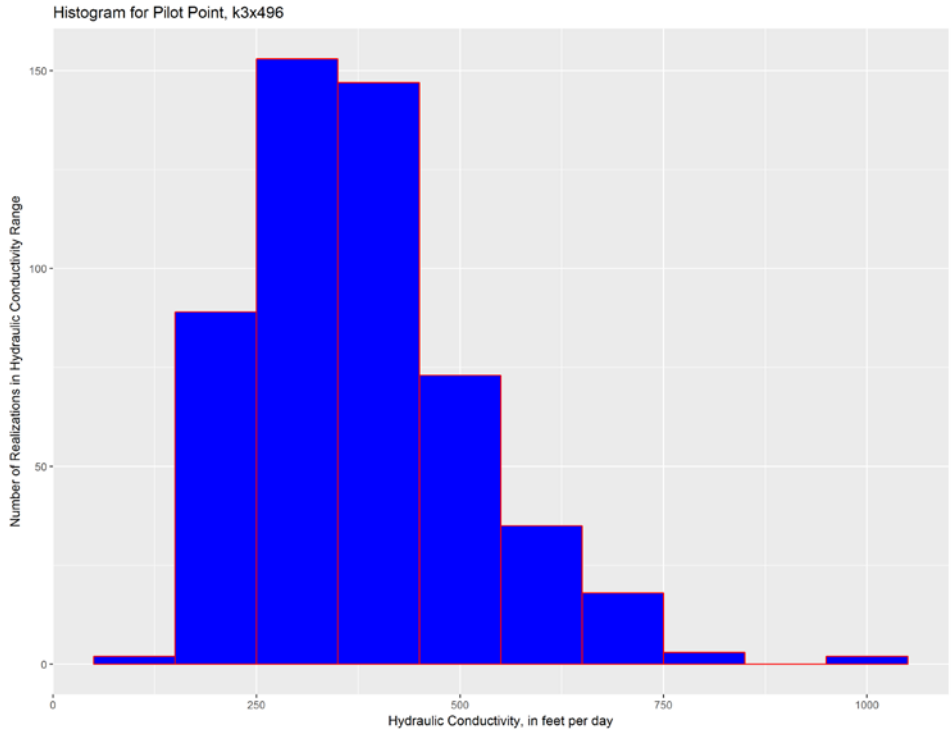


Figure L-4.2. Histogram for model parameter k3x496. This is a horizontal hydraulic conductivity pilot point parameter for layer 3. The histogram was developed from 522 calibration-constrained random parameter values.

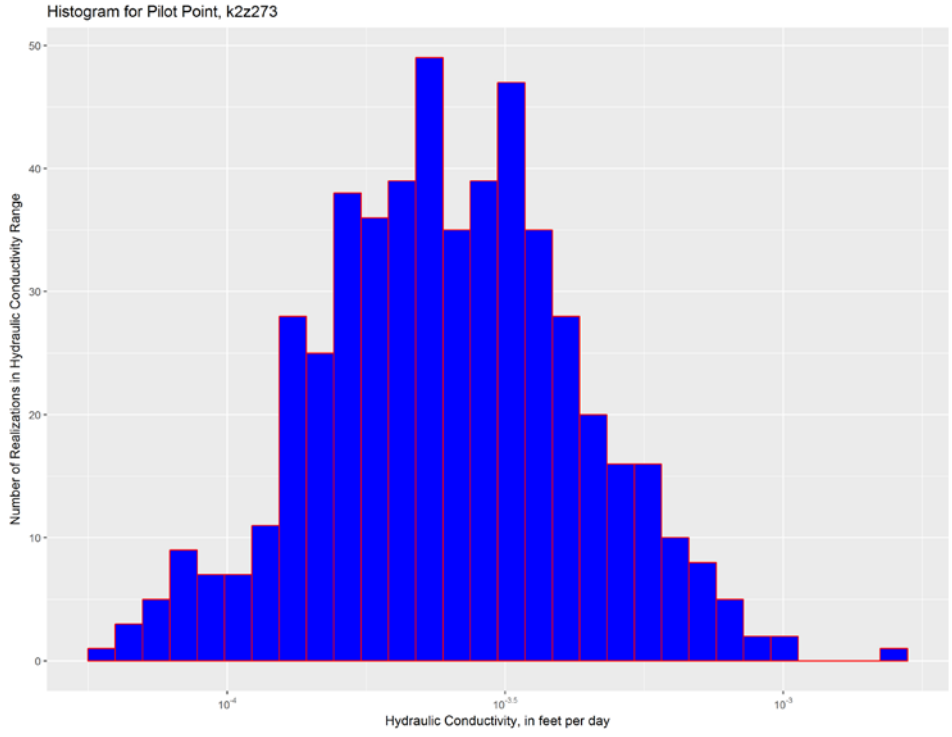


Figure L-4.3. Histogram for model parameter k2z273. This is a vertical hydraulic conductivity pilot point parameter for layer 2. The histogram was developed from 522 calibration-constrained random parameter values.

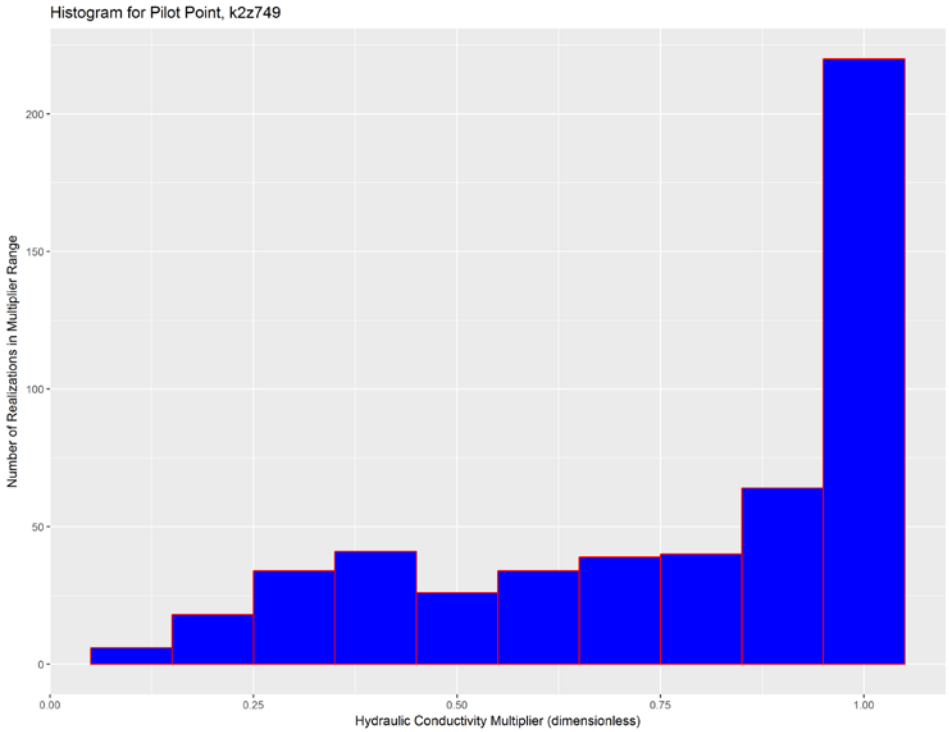


Figure L-4.4. Histogram for model parameter k2z749. This is a vertical hydraulic conductivity multiplier pilot point parameter for layer 2. The histogram was developed from 522 calibration-constrained random parameter values.

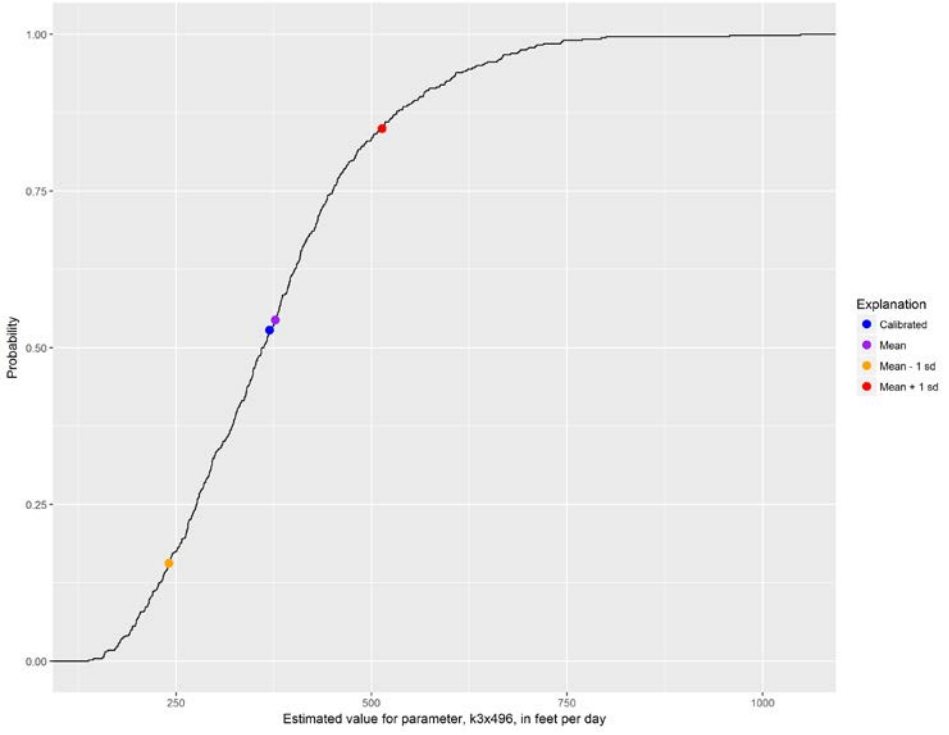


Figure L-4.5 Estimated cumulative probability distribution for model parameter k3496. This is a horizontal hydraulic conductivity pilot point parameter in layer 3. The probability distribution was developed from 522 calibration-constrained random parameter values. Also shown are the mean and calibrated values for this parameter, along with values corresponding to the mean plus and minus one standard deviation.

Spatial variability of the statistical properties associated with a particular parameter type can be represented by mapping a given statistic to the location of its corresponding model parameter. Examples of these maps are provided in Figures L-4.6 and L-4.7. Part a of these figures shows the geographical distribution of the standard deviation of log (to base 10) layer 3 hydraulic conductivities (Figure L-4.6), and layer 2 vertical hydraulic conductivities and vertical hydraulic conductivity multipliers (Figure L-4.7); all of these are pilot point parameters. Part b of these figures shows the spatial distribution of 10 raised to the power of log standard deviation. This is equivalent to the factor by which the mean parameter value at any point must be multiplied and divided to define a range which is roughly equal to its 67% confidence interval.

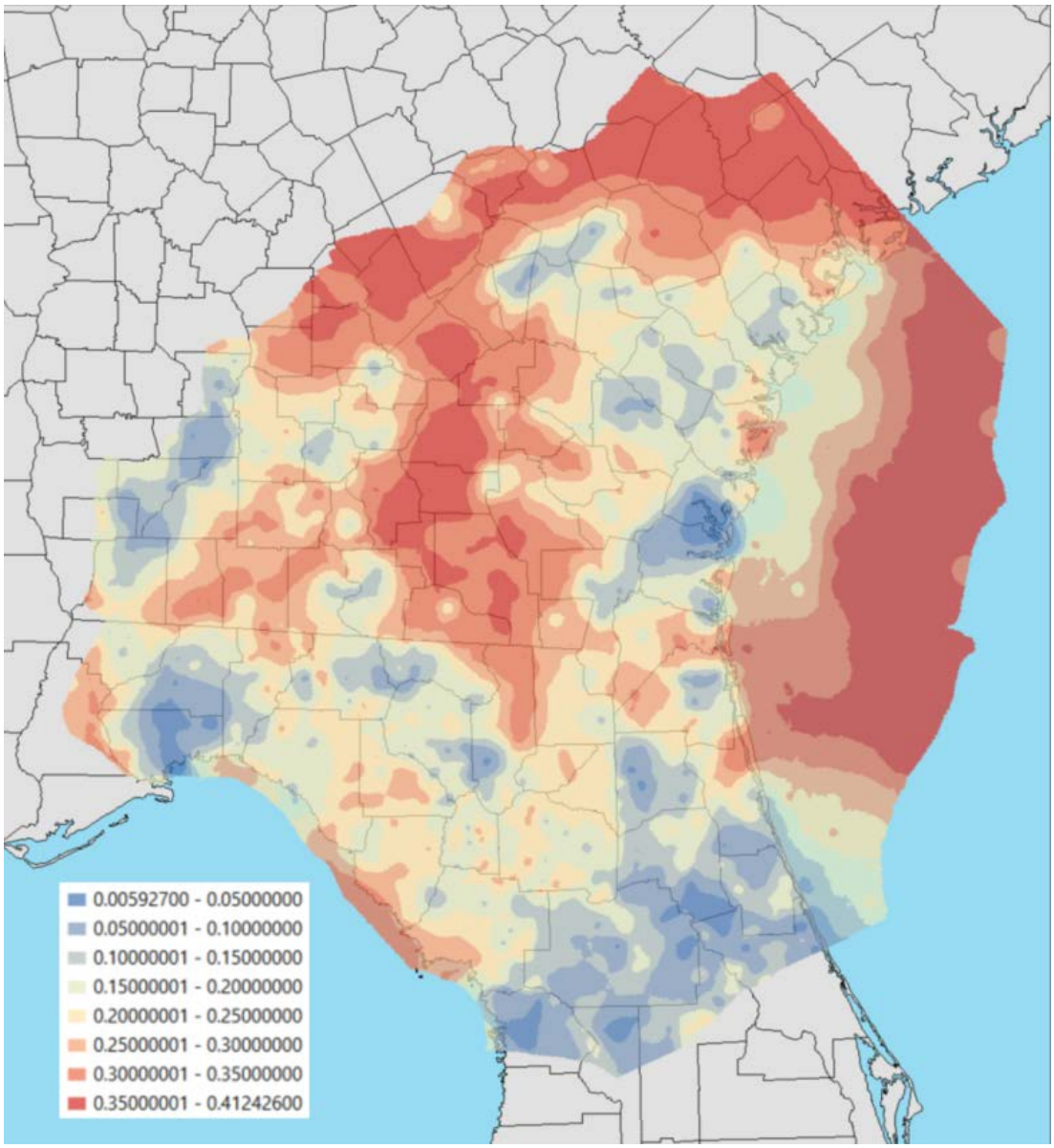


Figure L-4.6a. Standard deviation (in log space) of layer 3 horizontal hydraulic conductivity.

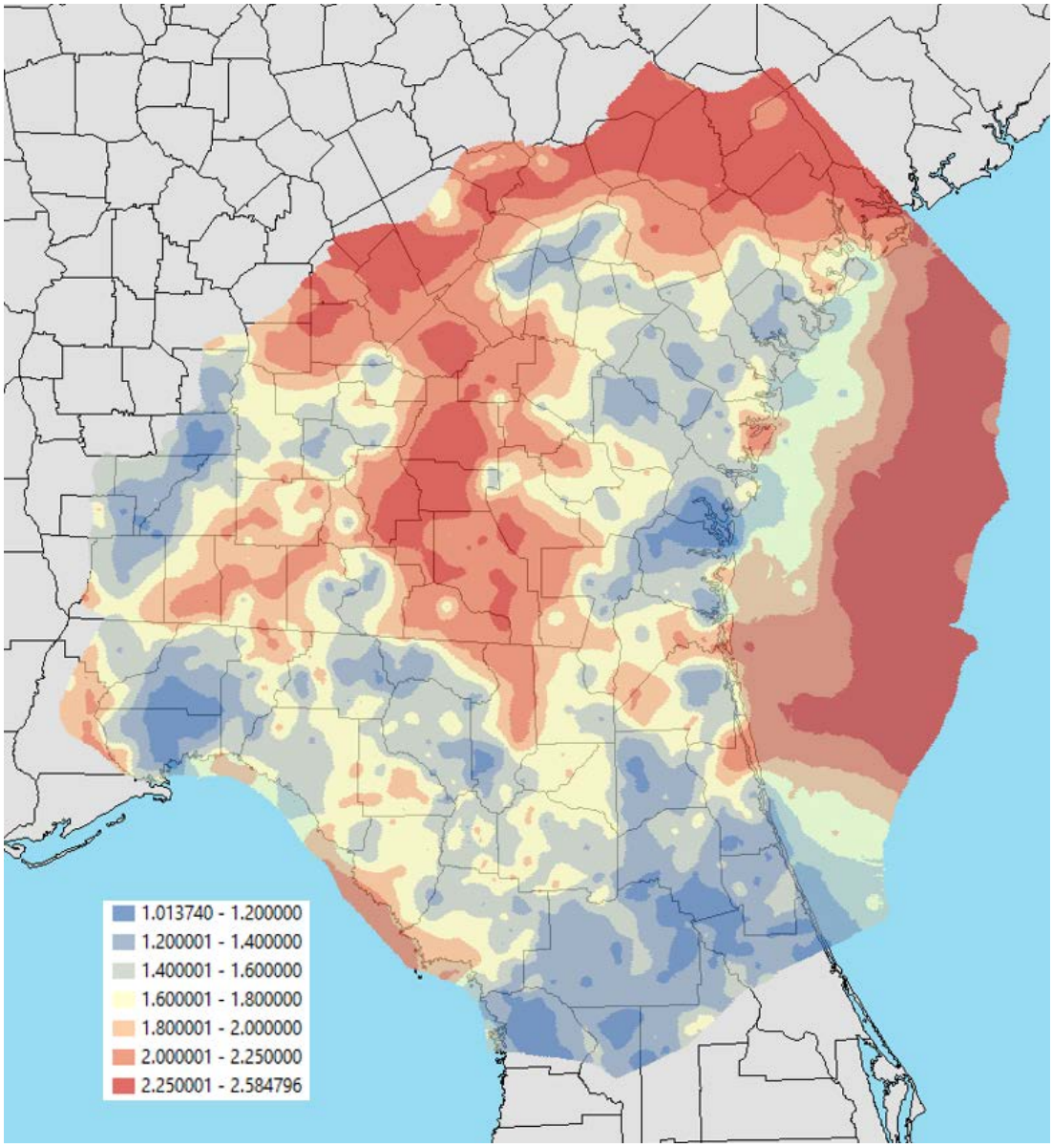


Figure L-4.6b. Factor by which the horizontal hydraulic conductivity in layer 3 must be multiplied and divided to span a range that is roughly equivalent to its 67% confidence interval.

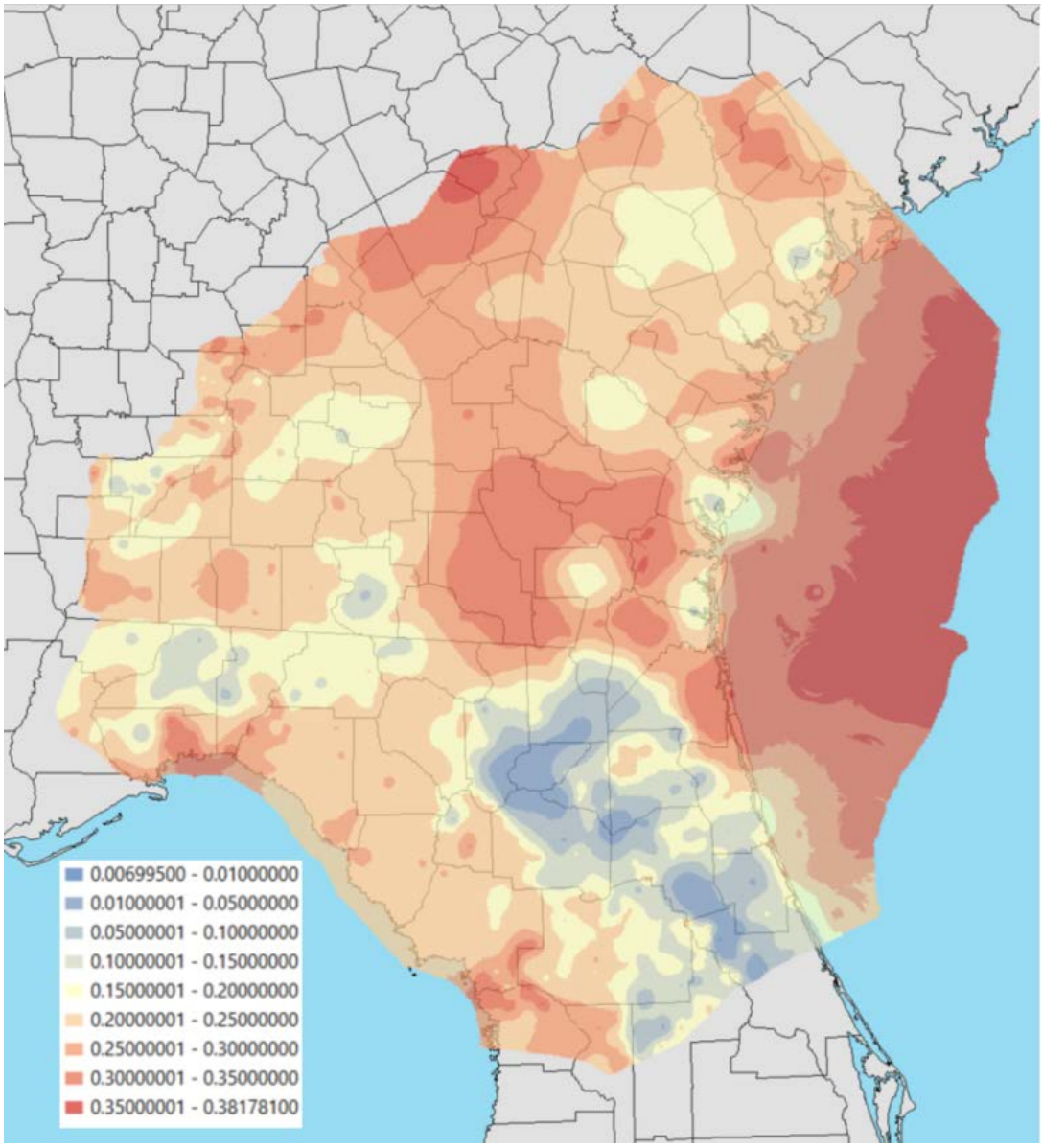


Figure L-4.7a. Standard deviation (in log space) of layer 2 vertical hydraulic conductivity (confined areas) and layer 2 vertical hydraulic conductivity multipliers (unconfined areas).

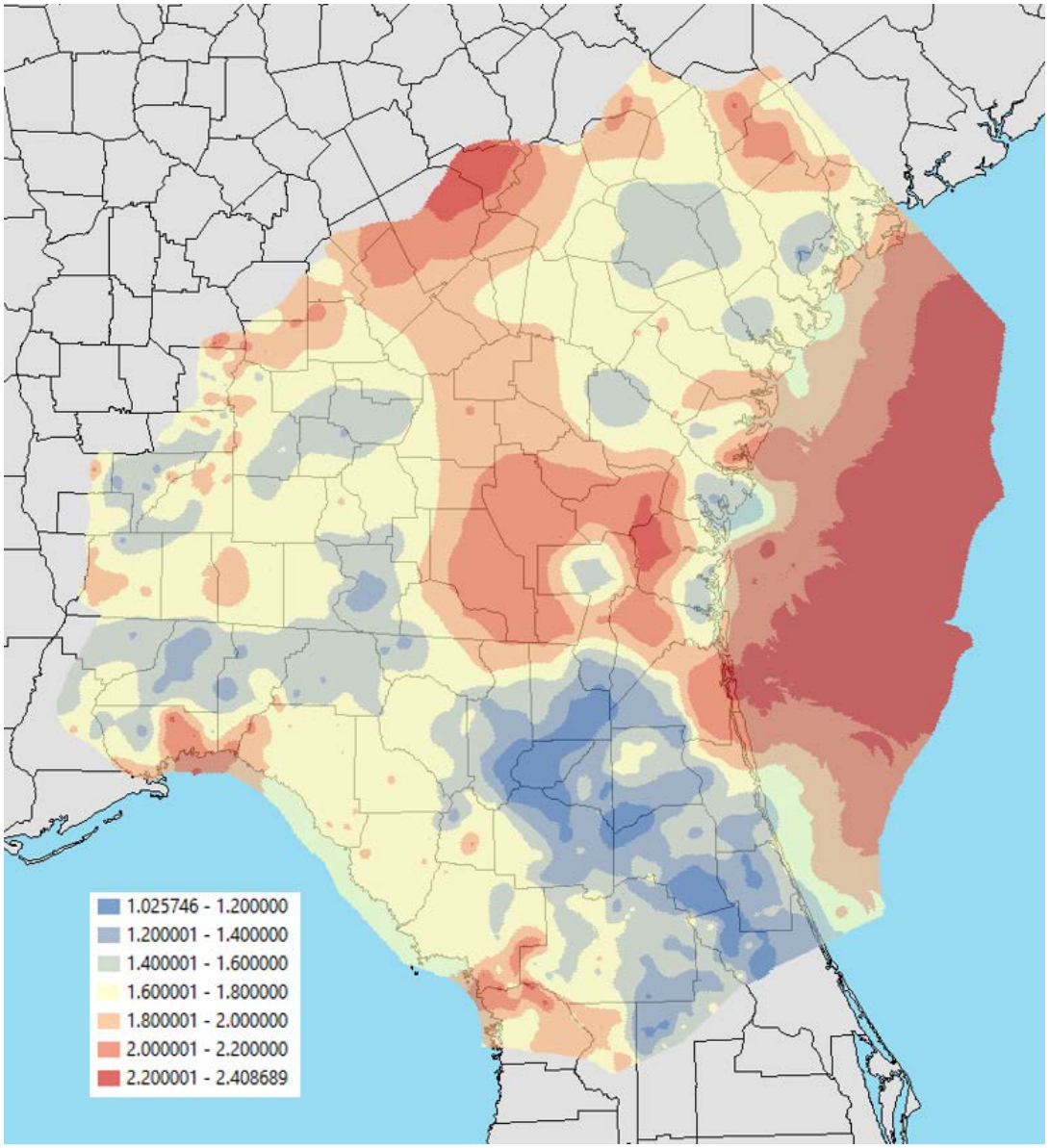


Figure L-4.7b. Factor by which vertical hydraulic conductivity (confined areas) and vertical hydraulic conductivity multipliers (unconfined areas) in layer 2 must be multiplied and divided to span a range that is roughly equivalent to its 67% confidence interval.

Posterior probability distributions for selected predictions were estimated using the 522 calibration-constrained parameter fields. The locations of these predictions are provided in Table L-4.1 and Figure L-4.8. These predictions pertain to a hypothetical year 2035 pumping condition.

Table L-4.1 Names of locations at which predictive uncertainties are evaluated.

Prediction location name	Description
w00400	UFA observation well near Lake Lochloosa
w00202	UFA observation well near Lake Brooklyn
w00258	UFA observation well near Lake Geneva
w00878	UFA observation well near Putnam County MFL lakes
qs_2315500	Baseflow to the Suwannee River near White Springs

Prediction location name	Description
qs_2317620	Baseflow to the Alapaha River near Jennings
qs_2319000	Baseflow to the Withlacoochee River near Pinetta
qr_2319394	Baseflow pickup in the reach upstream of the Withlacoochee River near Lee
qr_2319500	Baseflow pickup in reach upstream of the Suwannee River near Ellaville
qs_2319500	Baseflow to the Suwannee River at Ellaville
qr_2320500a	Baseflow to the reach upstream of the Suwannee River near Branford
qs_2320500	Baseflow to the Suwannee River near Branford
qr_2320700	Baseflow to the Santa Fe River near Graham
qr_2321000	Baseflow to the New River near Lake Butler
qs_2321500	Baseflow to the Santa Fe River near Worthington Springs
qs_2322500	Baseflow to the Santa Fe River near Fort White
qr_2322700	Baseflow to the Ichetucknee River at US Highway 27 near Hildreth
qr_2323500	Baseflow pickup in reach upstream of the Suwannee River near Wilcox
qs_2323500	Baseflow to the Suwannee River near Wilcox
qr_2324000	Baseflow to the Steinhatchee River near Cross City
qr_2326000	Baseflow to the Econfina River near Perry
qs_2313700	Baseflow to the Waccasassa River near Gulf Hammock
qr_2326550	Baseflow pickup in the reach upstream of the Aucilla River near Nutall Rise
qspring_s121610002	Blue Spring near Bronson
qspring_s101429027	Little Fanning Springs near Fanning Spring
qspring_s101429001	Fanning Springs near Wilcox
qspring_n011117008	Madison Blue Spring near Blue Springs
qr_lsf_sprgrp	Lower Santa Fe Springs Group
qr_iche_sprgrp	Ichetucknee Springs Group
qr_wacissa_sprgrp	Wacissa Springs Group
qr_silver_sprgrp	Silver Springs Group
w3_lakebut	UFA head near Lake Butler
w3_hampton	UFA head near Hampton Lake
w3_sfelake	UFA head near Santa Fe Lake
w3_lkalto	UFA head near Lake Alto
w3_paleslk	UFA head near Palestine Lake
w3_oceanpo	UFA head near Ocean Pond
w3_cherryl	UFA head near Cherry Lake
w3_falmout	UFA head near Falmouth
w3_whitespr	UFA head near White Springs
qspring_s071634012	Devil's Ear Spring
qspring_s081706005	Poe Spring
qspring_s071727012	Treehouse Spring
qspring_s071727010	Hornsby Spring
qspring_s111326002	Manatee Springs
qspring_s041121001	Lafayette Blue Spring
qr_peackock_sprgrp	Peacock Springs Group
qspring_s051334002	Troy Spring

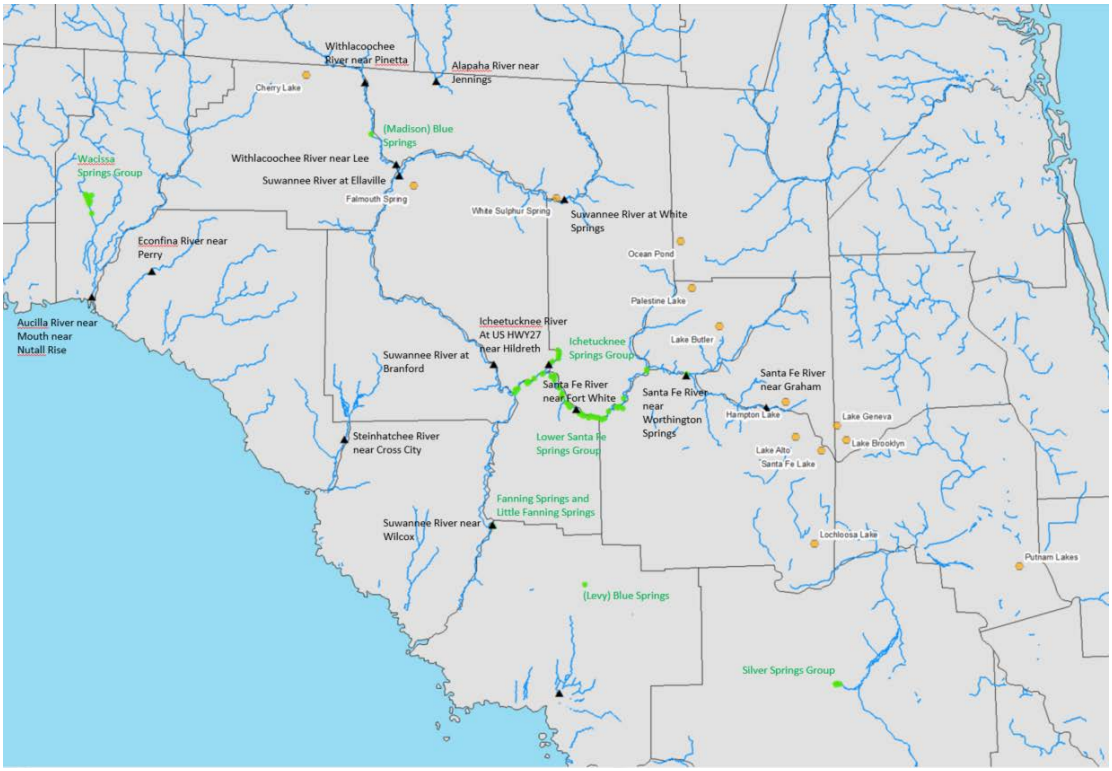


Figure L-4.8. Map of locations at which predictive uncertainty is evaluated. Points shown as orange hexagons are locations of simulated Upper Floridan aquifer groundwater levels. Points shown as green circles are springs. Black triangles represent the downstream limits of simulated river reaches.

For each prediction, uncertainty statistics (Tables L-4.2 and L-4.3) were calculated for the prediction itself, and for the difference between the prediction value calculated for 2035 and that calculated for 2009 (one of the years used in model calibration). For each of these two types of prediction, uncertainties can be displayed graphically as histograms, and as estimated cumulative probability distributions. Examples of these plots are provided in Figures L-4.9 though L-4.19. The data on which these distribution are based were amassed by running the model 522 times – once for each of the calibration constrained parameter fields whose calculation was discussed in section 3 of this document. Similar plots can be made for any other prediction of interest.

Table L-4.2 Statistical summaries of 2035 predicted values.

Prediction location identifier	Prediction location description	Prediction mean	Standard deviation	Coeff. of variation
qr_2319394	Baseflow pickup in the reach upstream of the Withlacoochee River near Lee	-432	6.0	0.01
qr_2319500	Baseflow pickup in reach upstream of the Suwannee River near Ellaville	-735	10	0.01
qr_2320500a	Baseflow to the reach upstream of the Suwannee River near Branford and downstream from Ellaville	-912	8.4	0.01
qr_2320700	Baseflow to the Santa Fe River near Graham	-3.5	0.39	0.11
qr_2321000	Baseflow to the New River near Lake Butler	-19.4	0.79	0.04
qr_2322700	Baseflow to the Ichetucknee River at US Highway 27 near Hildreth	-269	4.82	0.02

qr_2323500	Baseflow pickup in reach upstream of the Suwannee River near Wilcox (downstream of Branford and Santa Fe River near Hildreth)	-432	6.73	0.02
qr_2324000	Baseflow to the Steinhatchee River near Cross City	-54	2.29	0.04
qr_2326000	Baseflow to the Econfina River near Perry	-49	1.11	0.02
qr_2326550	Baseflow pickup in the reach upstream of the Aucilla River near Nutall Rise (downstream of Wacissa River near Wacissa and the Aucilla River at Lamont)	-967	61.48	0.06
qr_iche_sprgrp	Ichetucknee Springs Group	-259	3.02	0.01
qr_lsf_sprgrp	Lower Santa Fe Springs Group	-794	6.55	0.01
qr_silver_sprgrp	Silver Springs Group	-466	7.88	0.02
qr_wacissa_sprgrp	Wacissa Springs Group	-452	11.21	0.02
qs_2315500	Baseflow to the Suwannee River near White Springs	-212	21.25	0.10
qs_2317620	Baseflow to the Alapaha River near Jennings	-825	28.06	0.03
qs_2319000	Baseflow to the Withlacoochee River near Pinetta	-866	35.90	0.04
qs_2319500	Baseflow to the Suwannee River at Ellaville	-3070	52.84	0.02
qs_2320500	Baseflow to the Suwannee River near Branford	-3981	53.75	0.01
qs_2321500	Baseflow to the Santa Fe River near Worthington Springs	-47	1.37	0.03
qs_2322500	Baseflow to the Santa Fe River near Fort White	-707	6.56	0.01
qs_2323500	Baseflow to the Suwannee River near Wilcox	-5541	54.29	0.01
qspring_n011117008	Madison Blue Spring near Blue Springs	-102	0.77	0.01
qspring_s101429001	Fanning Springs near Wilcox	-66	0.77	0.01
qspring_s101429027	Little Fanning Springs near Fanning Spring	-1.8	0.04	0.02
qspring_s121610002	Blue Spring near Bronson	-2.7	0.82	0.30
w00202	UFA observation well near Lake Lochloosa	77.9	0.30	0.00
w00258	UFA observation well near Lake Brooklyn	77.7	0.33	0.00
w00400	UFA observation well near Lake Geneva	63.4	0.23	0.00
w00878	UFA observation well near Putnam County MFL lakes	26.4	0.13	0.00
W3_CHERRYL	UFA groundwater level near Cherry Lake	65.5	0.66	0.01
W3_FALMOUT	UFA groundwater level near Faltmouth Spring	38.6	0.10	0.00
W3_HAMPTON	UFA groundwater level near Hampton Lake	65.4	0.55	0.01
W3_LAKEBUT	UFA groundwater level near Lake Butler	53.1	0.37	0.01
W3_LKALTO	UFA groundwater level near Lake Altho	70.4	0.39	0.01
W3_OCEANPO	UFA groundwater level near Ocean Pond	47.8	0.25	0.01
W3_PALESLK	UFA groundwater level near Palestine Lake	49.8	0.30	0.01
W3_SFELAKE	UFA groundwater level near Santa Fe Lake	77.8	0.41	0.01
W3_WHITSPR	UFA groundwater level near White Sulphur Springs	50.6	0.22	0.00

Table L-4.3 Statistical summaries of predicted changes from 2009 to 2035.

Prediction location identifier	Prediction location description	Mean of predicted change	Standard Deviation	Coeff. of Variation
qr_2319394	Baseflow pickup in the reach upstream of the Withlacoochee River near Lee	16.0	1.27	0.08
qr_2319500	Baseflow pickup in reach upstream of the Suwannee River near Ellaville	42.4	2.65	0.06
qr_2320500a	Baseflow to the reach upstream of the Suwannee River near Branford and downstream from Ellaville	17.8	0.37	0.02
qr_2320700	Baseflow to the Santa Fe River near Graham	0.15	0.02	0.10
qr_2321000	Baseflow to the New River near Lake Butler	0.26	0.02	0.09
qr_2322700	Baseflow to the Ichetucknee River at US Highway 27 near Hildreth	7.54	0.26	0.03
qr_2323500	Baseflow pickup in reach upstream of the Suwannee River near Wilcox (downstream of Branford and Santa Fe River near Hildreth)	9.21	0.12	0.01
qr_2324000	Baseflow to the Steinhatchee River near Cross City	0.04	0.00	0.11
qr_2326000	Baseflow to the Econfina River near Perry	0.32	0.05	0.14
qr_2326550	Baseflow pickup in the reach upstream of the Aucilla River near Nutall Rise (downstream of Wacissa River near Wacissa and the Aucilla River at Lamont)	7.94	3.13	0.39
qr_iche_sprgrp	Ichetucknee Springs Group	7.42	0.25	0.03
qr_lsf_sprgrp	Lower Santa Fe Springs Group	16.6	0.73	0.04
qr_silver_sprgrp	Silver Springs Group	21.9	1.33	0.06
qr_wacissa_sprgrp	Wacissa Springs Group	2.49	2.89	1.16
qs_2315500	Baseflow to the Suwannee River near White Springs	0.55	0.13	0.23
qs_2317620	Baseflow to the Alapaha River near Jennings	-0.34	0.15	0.44
qs_2319000	Baseflow to the Withlacoochee River near Pinetta	8.84	1.20	0.14
qs_2319500	Baseflow to the Suwannee River at Ellaville	67.4	4.42	0.07
qs_2320500	Baseflow to the Suwannee River near Branford	85.2	4.56	0.05
qs_2321500	Baseflow to the Santa Fe River near Worthington Springs	0.75	0.05	0.06
qs_2322500	Baseflow to the Santa Fe River near Fort White	15.4	0.77	0.05
qs_2323500	Baseflow to the Suwannee River near Wilcox	118.97	4.66	0.04
qspring_n011117008	Madison Blue Spring near Blue Springs	2.43	0.19	0.08
qspring_s101429001	Fanning Springs near Wilcox	0.88	0.03	0.04
qspring_s101429027	Little Fanning Springs near Fanning Spring	0.02	0.00	0.04
qspring_s121610002	Blue Spring near Bronson	0.91	0.23	0.25
w00202	UFA observation well near Lake Lochloosa	-1.83	0.05	0.03
w00258	UFA observation well near Lake Brooklyn	-1.88	0.06	0.03
w00400	UFA observation well near Lake Geneva	-0.33	0.02	0.06

w00878	UFA observation well near Putnam County MFL lakes	1.96	0.04	0.02
W3_CHERRYL	UFA groundwater level near Cherry Lake	-0.41	0.05	0.11
W3_FALMOUT	UFA groundwater level near Faltmouth Spring	-0.13	0.01	0.07
W3_HAMPTON	UFA groundwater level near Hampton Lake	-1.25	0.05	0.04
W3_LAKEBUT	UFA groundwater level near Lake Butler	-1.58	0.10	0.06
W3_LKALTO	UFA groundwater level near Lake Altho	-1.23	0.05	0.04
W3_OCEANPO	UFA groundwater level near Ocean Pond	-1.82	0.11	0.06
W3_PALESLK	UFA groundwater level near Palestine Lake	-1.69	0.09	0.05
W3_SFELAKE	UFA groundwater level near Santa Fe Lake	-1.60	0.06	0.03
W3_WHITSPR	UFA groundwater level near White Sulphur Springs	-0.53	0.06	0.11

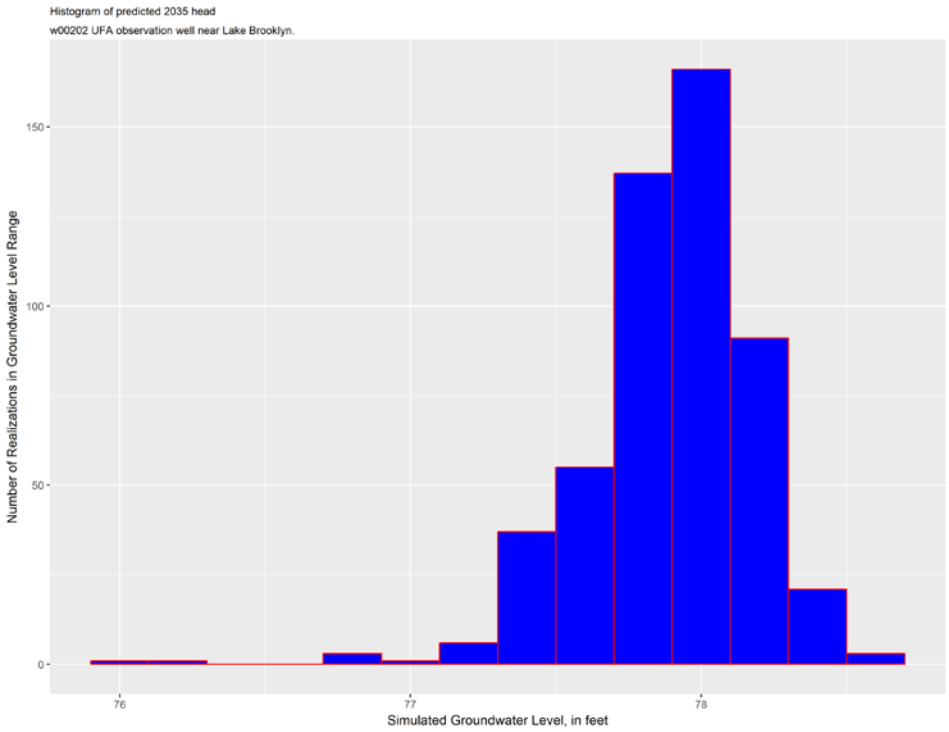


Figure L-4.9. Histogram for the predicted Upper Floridan aquifer groundwater level near Lake Brooklyn for the 2035 hypothetical withdrawal scenario. The histogram was developed from 522 randomly-generated predictions.

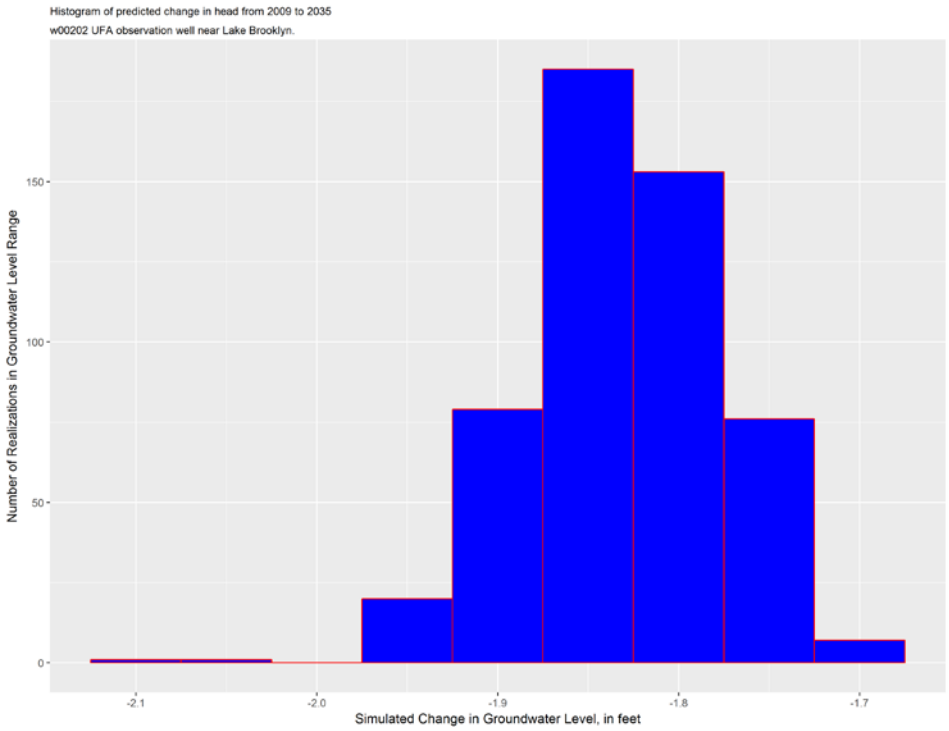


Figure L-4.10 Histogram for the predicted change in the Upper Floridan aquifer groundwater level near Lake Brooklyn from 2009 to the 2035 hypothetical withdrawal scenario. The histogram was developed from 522 randomly-generated predictions.

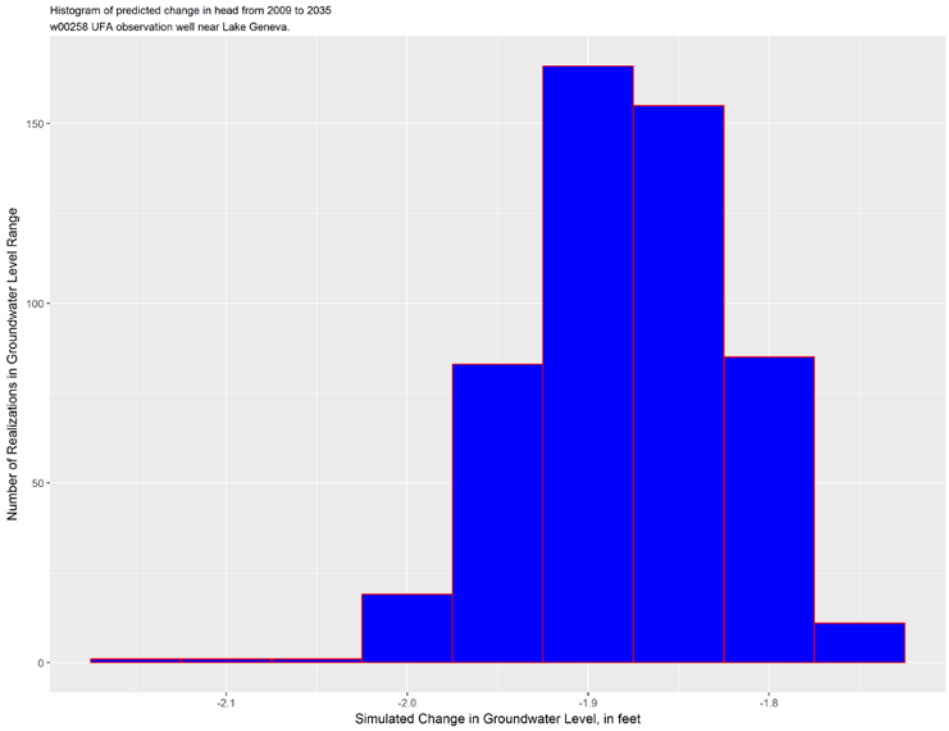


Figure L-4.11. Histogram for the predicted change in the Upper Floridan aquifer groundwater level near Lake Geneva from 2009 to the 2035 hypothetical withdrawal scenario. The histogram was developed from 522 randomly-generated predictions.

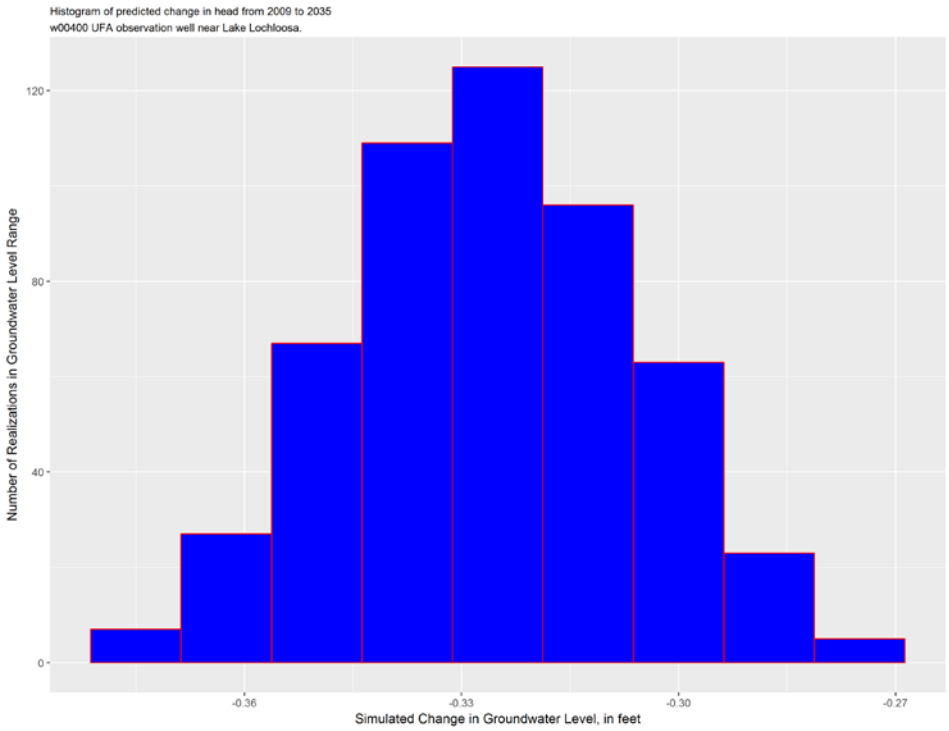


Figure L-4.12. Histogram for the predicted change in the Upper Floridan aquifer groundwater level near Lake Lochloosa from 2009 to the 2035 hypothetical withdrawal scenario. The histogram was developed from 522 randomly-generated predictions.

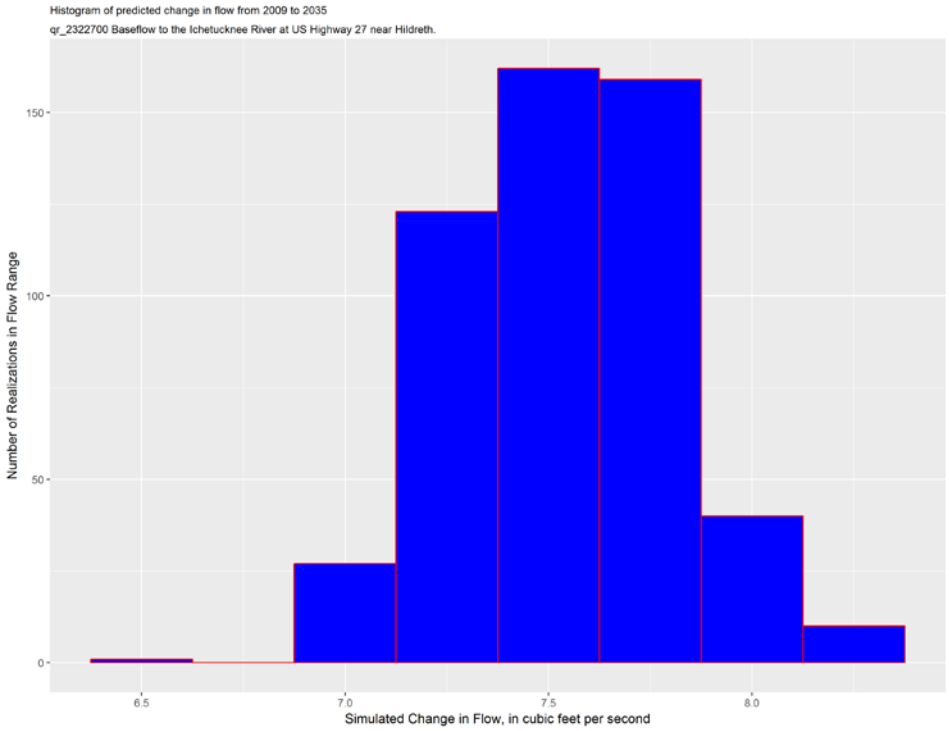


Figure L-4.13. Histogram for the predicted change in flow in the Ichetucknee River near US Highway 27 near Hildreth from 2009 to the 2035 hypothetical withdrawal scenario. The histogram was developed from 522 randomly-generated predictions.

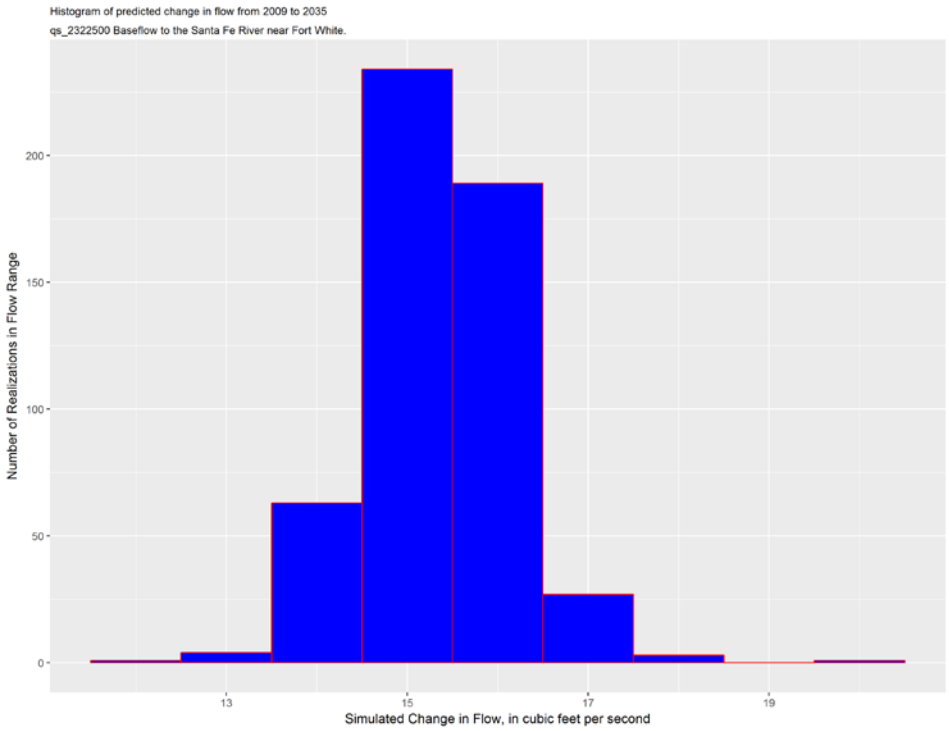


Figure L-4.14. Histogram for the predicted change in flow in the Ichetucknee River near US Highway 27 near Hildreth from 2009 to the 2035 hypothetical withdrawal scenario. The histogram was developed from 522 randomly-generated predictions.

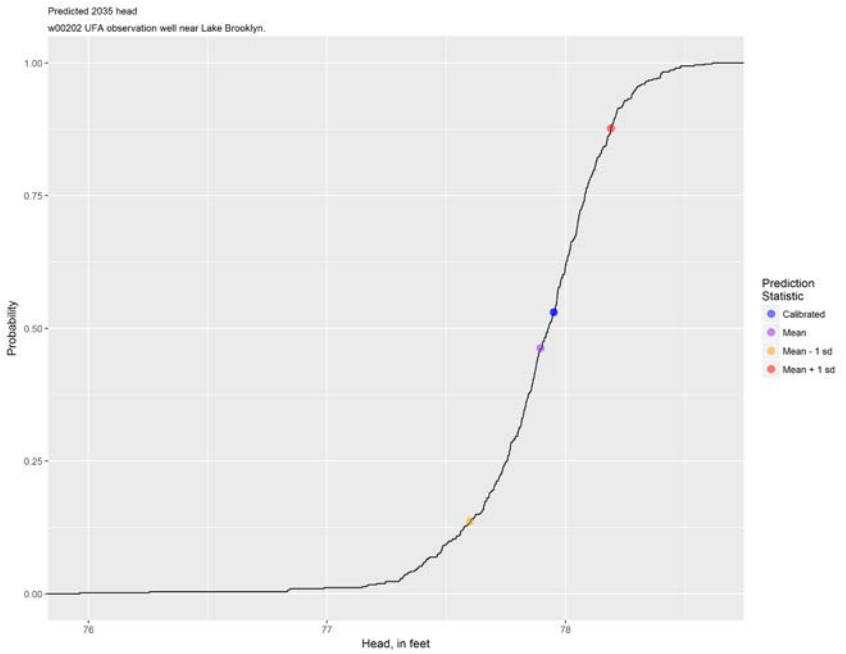


Figure L-4.15. Estimated cumulative probability distribution for the predicted Upper Floridan aquifer groundwater level near Lake Brooklyn for the 2035 hypothetical withdrawal scenario. The probability distribution was developed from 522 randomly-generated predictions. Also shown are the mean predicted value and the prediction based on the calibrated parameter field, along with values corresponding to the mean plus and minus one standard deviation.

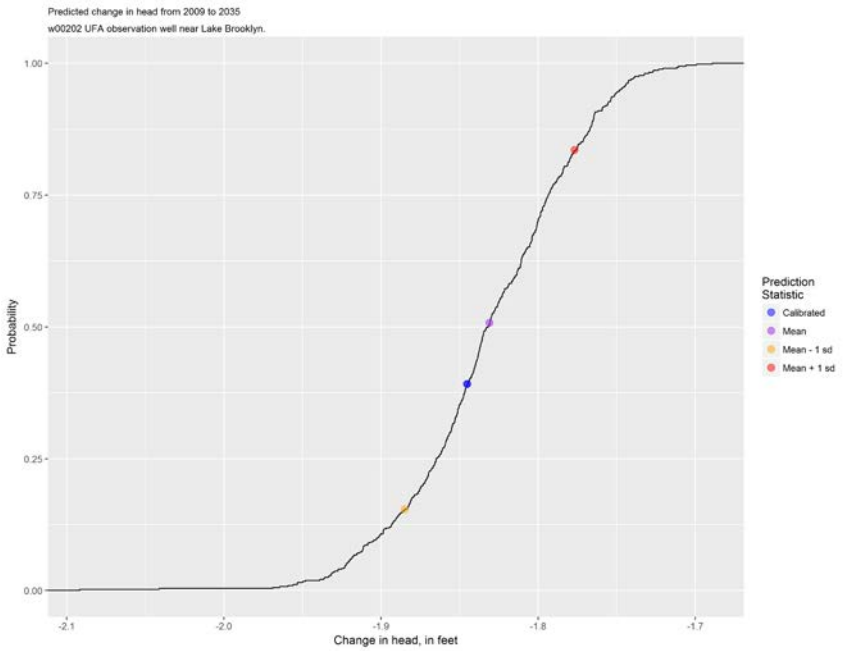


Figure L-4.16. Estimated cumulative probability distribution for the predicted change in the Upper Floridan aquifer groundwater level near Lake Brooklyn from 2009 to the 2035 hypothetical withdrawal scenario. The probability distribution was developed from 522 randomly-generated predictions. Also shown are the mean predicted value and the prediction based on the calibrated parameter field, along with values corresponding to the mean plus and minus one standard deviation.

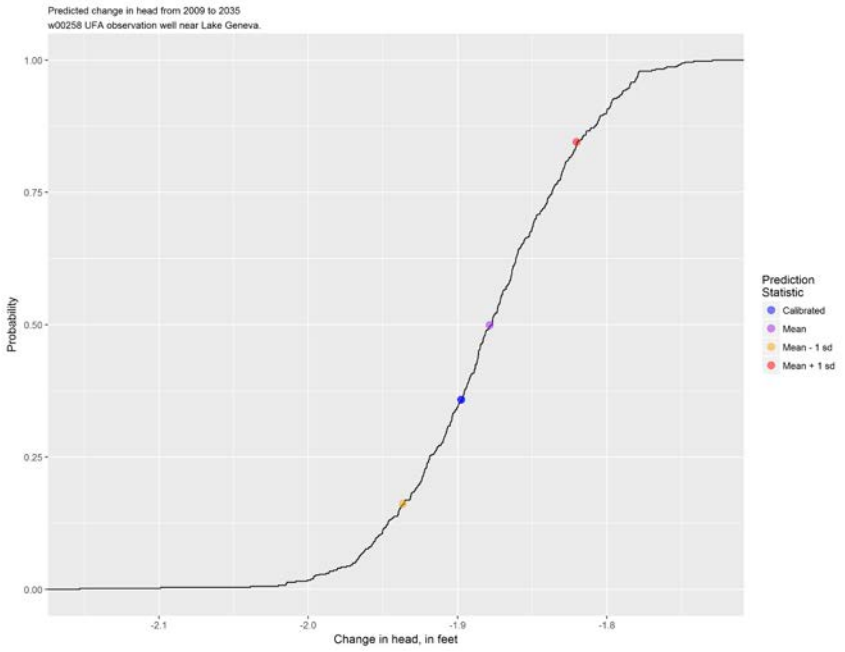


Figure L-4.17. Estimated cumulative probability distribution for the predicted change in the Upper Floridan aquifer groundwater level near Lake Geneva from 2009 to the 2035 hypothetical withdrawal scenario. The probability distribution was developed from 522 randomly-generated predictions. Also shown are the mean predicted value and the prediction based on the calibrated parameter field, along with values corresponding to the mean plus and minus one standard deviation.

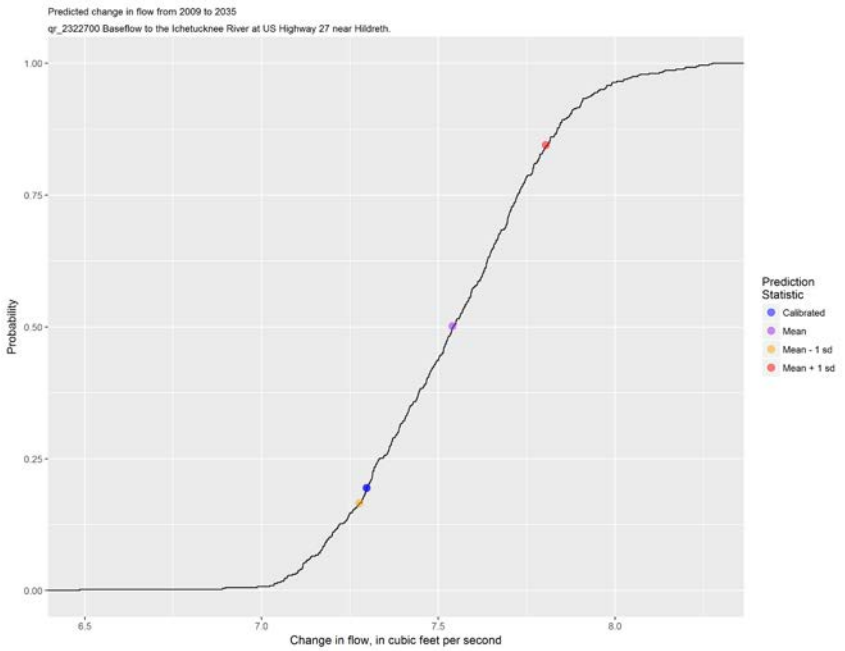


Figure L-4.18. Estimated cumulative probability distribution for the predicted change in the flow of the Ichetucknee River at US Highway 27 near Hildreth from 2009 to the 2035 hypothetical withdrawal scenario. The probability distribution was developed from 522 randomly-generated predictions. Also shown are the mean predicted value and the prediction based on the calibrated parameter field, along with values corresponding to the mean plus and minus one standard deviation.

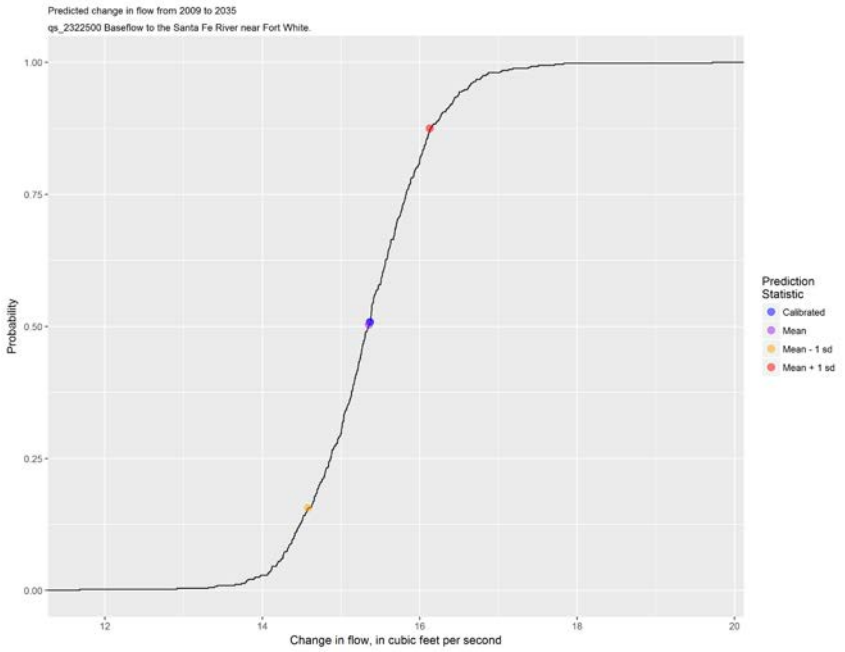


Figure L-4.19. Estimated cumulative probability distribution for the predicted change in the flow of the Santa Fe River near Fort White from 2009 to the 2035 hypothetical withdrawal scenario. The probability distribution was developed from 522 randomly-generated predictions. Also shown are the mean predicted value and the prediction based on the calibrated parameter field, along with values corresponding to the mean plus and minus one standard deviation.

Intuitively, uncertainties associated with temporal predictive differences are likely to be much smaller than those associated with the individual predictions. This is an outcome of the high degree of temporal correlation that is likely to exist between predictions made at the same location but at different times under system stress regimes that are not too different. To see why this is so, let the uncertainty variance of a prediction made at time t_1 be specified as σ^2_1 and the uncertainty variance of a prediction made at the same location but at time t_2 be specified as σ^2_2. Let us designate the covariance between these predictions as σ^2_{12}. Using standard relationships for propagation of variance, the variance of uncertainty of the difference between these predictions is calculated as:

$$\sigma^2_{1-2} = \sigma^2_1 + \sigma^2_2 - 2\sigma_{12} \qquad (4.2)$$

If the two predictions have about the same uncertainty and experience a correlation coefficient close to 1, it can be easily shown that σ^2_{1-2} approaches zero.

While equation 4.2 can partially explain the small uncertainties associated with predictive differences displayed in the above figures, intuition also suggests that the smallness of these uncertainties may nevertheless overstate the accuracy of model-predicted differences in system state arising from differences in system stress. It is suggested that this is probably the case, for the uncertainties computed in the manner discussed in section 3 of this document do not account for model errors. These arise from numerous sources that afflict both the calibration and predictive processes. To the extent that errors can be endowed with a stochastic description, their temporal correlation is likely to be high. Hence equation 4.2 applies to them as well. This, it is hoped, will indeed raise the integrity of predictive differences to a higher level than that of predictive absolutes. However quantification of the effect of model errors (also referred to herein as “structural noise”) is not possible without recourse to a model from which these errors are absent. Obviously, no such model is available. This matter is further discussed in section 6.

5. Outcomes of Linear Analysis

5.1 Statistics used in Calculations

As for nonlinear analysis, linear analysis requires a C(**k**) matrix and a C(**ε**) matrix. These are used in equations 2.3a and 2.3b to calculate C′(**k**). They are also used by the PEST SUPCALC utility in estimating the dimensionality of the calibration solution space.

The C(**k**) matrix used for linear analysis is slightly different from that which was employed for nonlinear analysis, in that many parameters are considered to have slightly greater prior uncertainties. These are the same uncertainties as those employed in previous linear analysis conducted on the NFSEG model. (The reasons for use of diminished prior uncertainties in nonlinear analysis were explained in section 3.) However variograms and correlations used in linear and nonlinear analysis were the same for all parameters. Prior parameter variances used in linear analysis are tabulated by group in Table L-5.1; this is the counterpart to Table L-3.3 provided in the previous section.

Table L-5.1 Standard deviations assigned independently to each parameter within each respective parameter group for use in linear analysis. Note that these are actually applied to the log (to base 10) of each parameter. Note also that none of the parameters appearing in the above table are represented by pilot points in the NFSEG model.

Parameter group name	Standard deviation ascribed to each parameter within group
vanis1	0.25
vanis2	0.25
vanis4	0.25
vanis5	0.25
vanis6	0.25
vanis7	0.25
Lcm	1.0
Rcm	0.6
Sc	1.0
Lkzmul	0.6

C(**ε**) is, once again, assumed to be diagonal. For each observation group the PEST PWTADJ2 utility was used to apply a factor to measurement weights used in the calibration process such that the objective function achieved for each observation group is equal to the number of non-zero weighted observations comprising the group. The diagonal elements of C(**ε**) were estimated as the inverse squared reciprocal of thus-calculated weights.

5.2 Results

Maps of identifiability and relative uncertainty variance reduction for selected parameter fields are shown in Figures L-5.1 through L-5.7. These maps are broadly similar for each parameter type. However identifiabilities tend to be more "polarised" than relative uncertainty variance reduction, with parameters tending to adopt values that are either close to one or close to zero. This is an outcome of the somewhat artificial nature of this parameter, and its dependence on the number of dimensions that are assigned to the calibration solution space. It also reflects the "in or out" nature of each vector comprising the columns of the $\mathbf{V}_1$ matrix of equation 2.5 as the dimensionality of the solution space is varied.

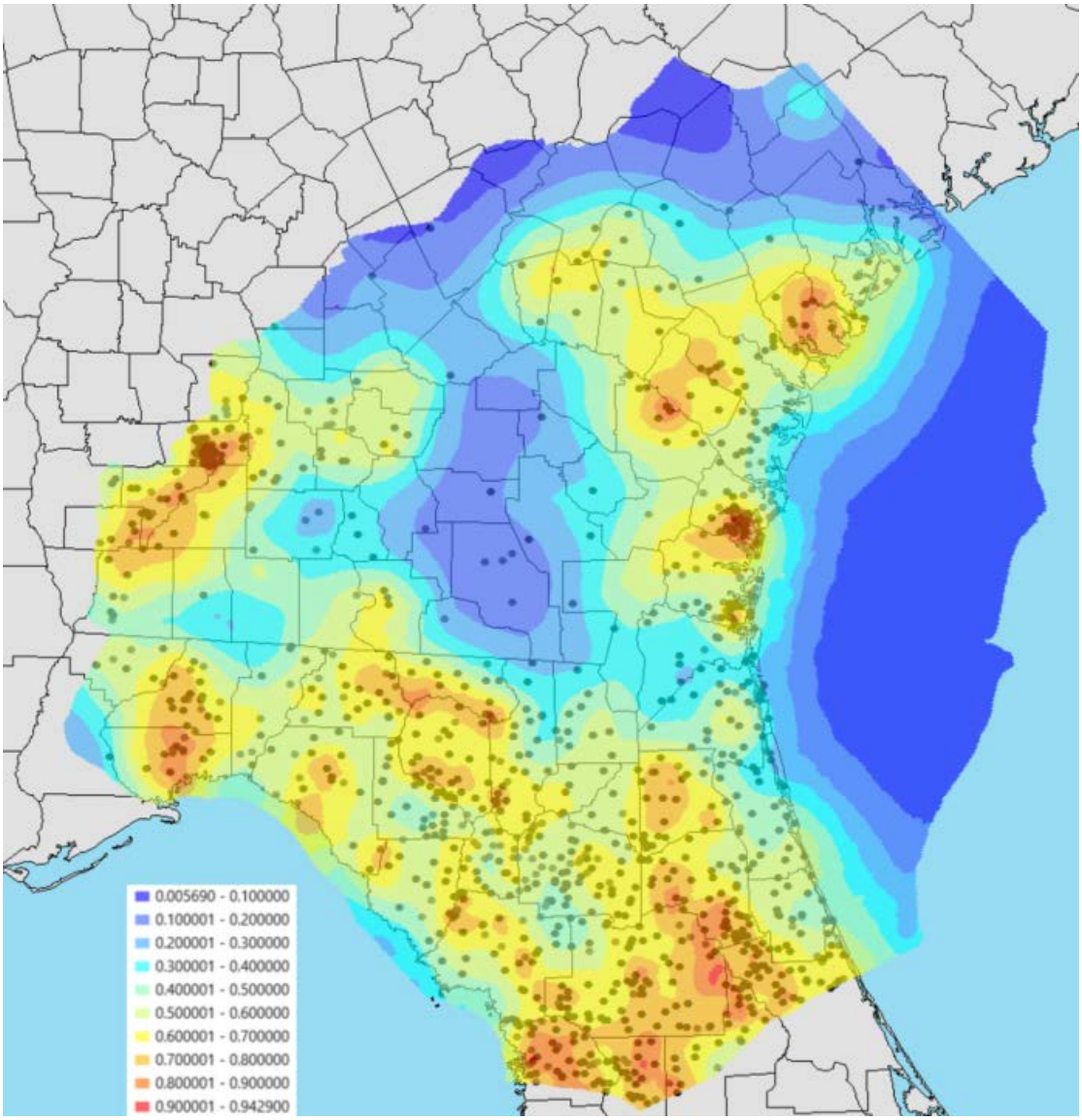


Figure L-5.1. Relative parameter uncertainty variance reduction of layer 3 horizontal hydraulic conductivity pilot points. Locations of layer 3, non-zero weighted, groundwater-level observations in 2001 and/or 2009 are superimposed on this map.

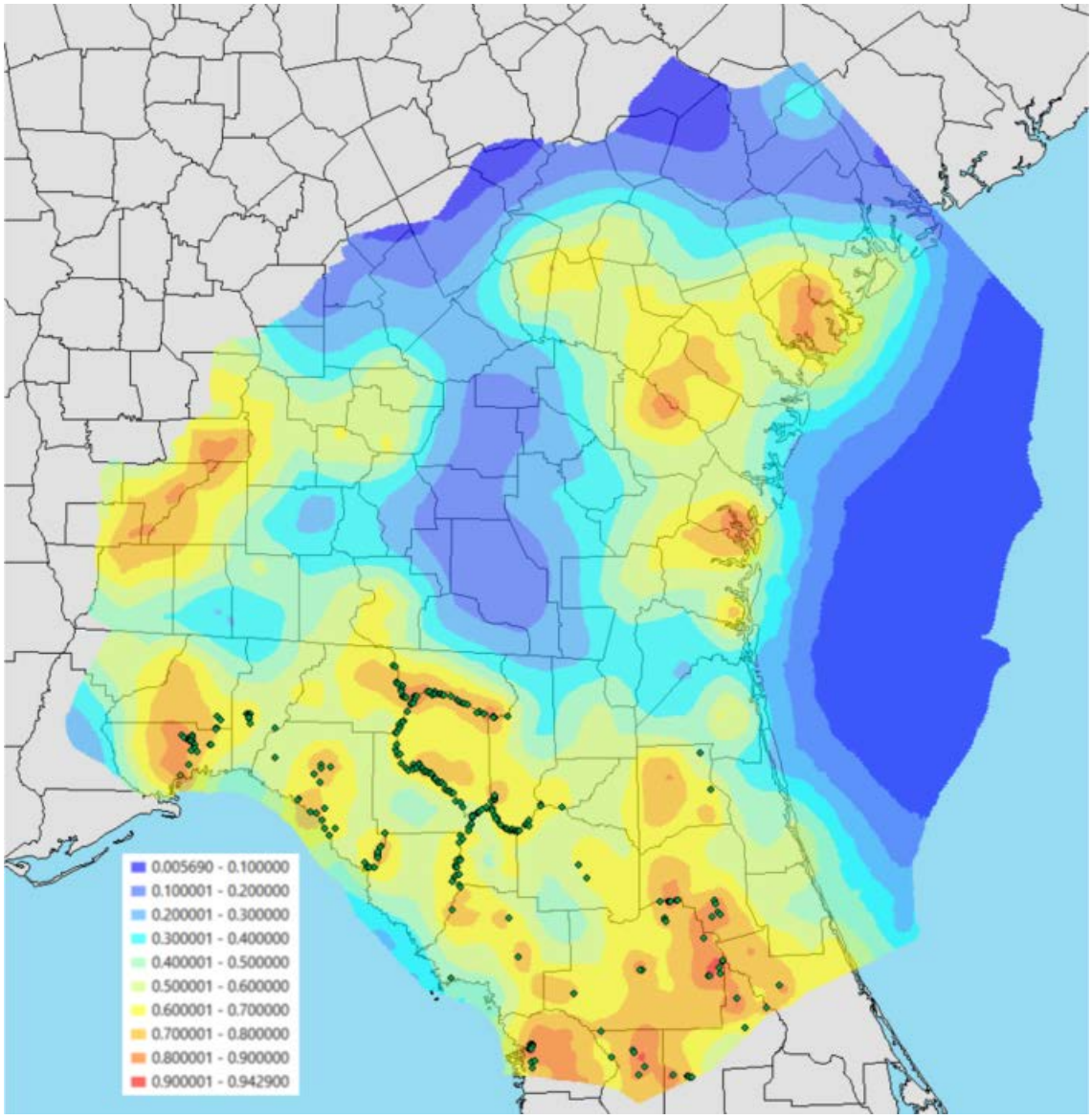


Figure L-5.2. Relative parameter uncertainty variance reduction of layer 3 horizontal hydraulic conductivity pilot points. Locations of non-zero weighted spring flow observations in 2001 and/or 2009 are superimposed on this map.

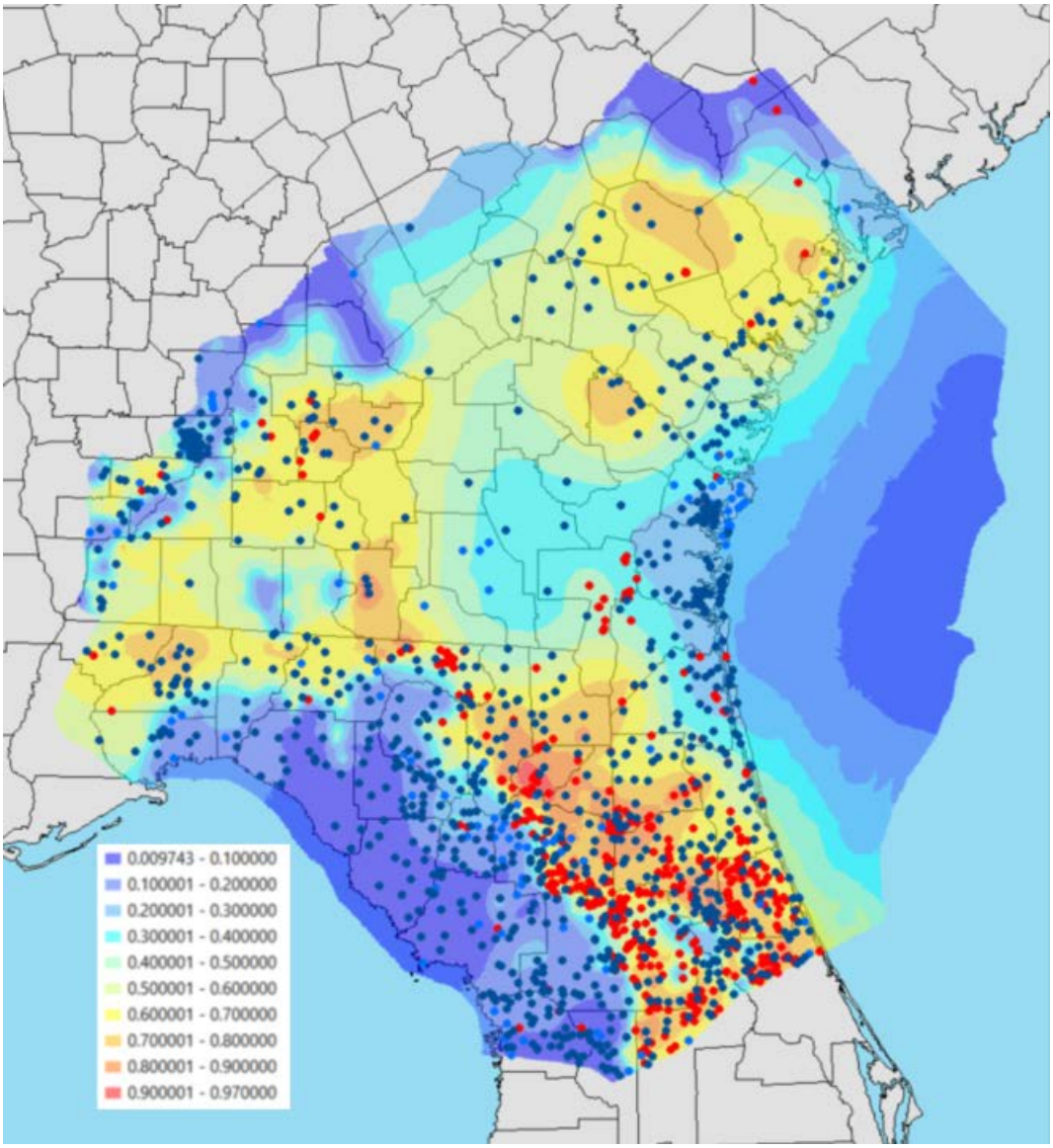


Figure L-5.3. Relative parameter uncertainty variance reduction of layer 2 vertical hydraulic conductivity pilot points. Locations of non-zero weighted, layer 1 (red points) and layer 3 (blue points) observations in 2001 and/or 2009 are superimposed on this map.

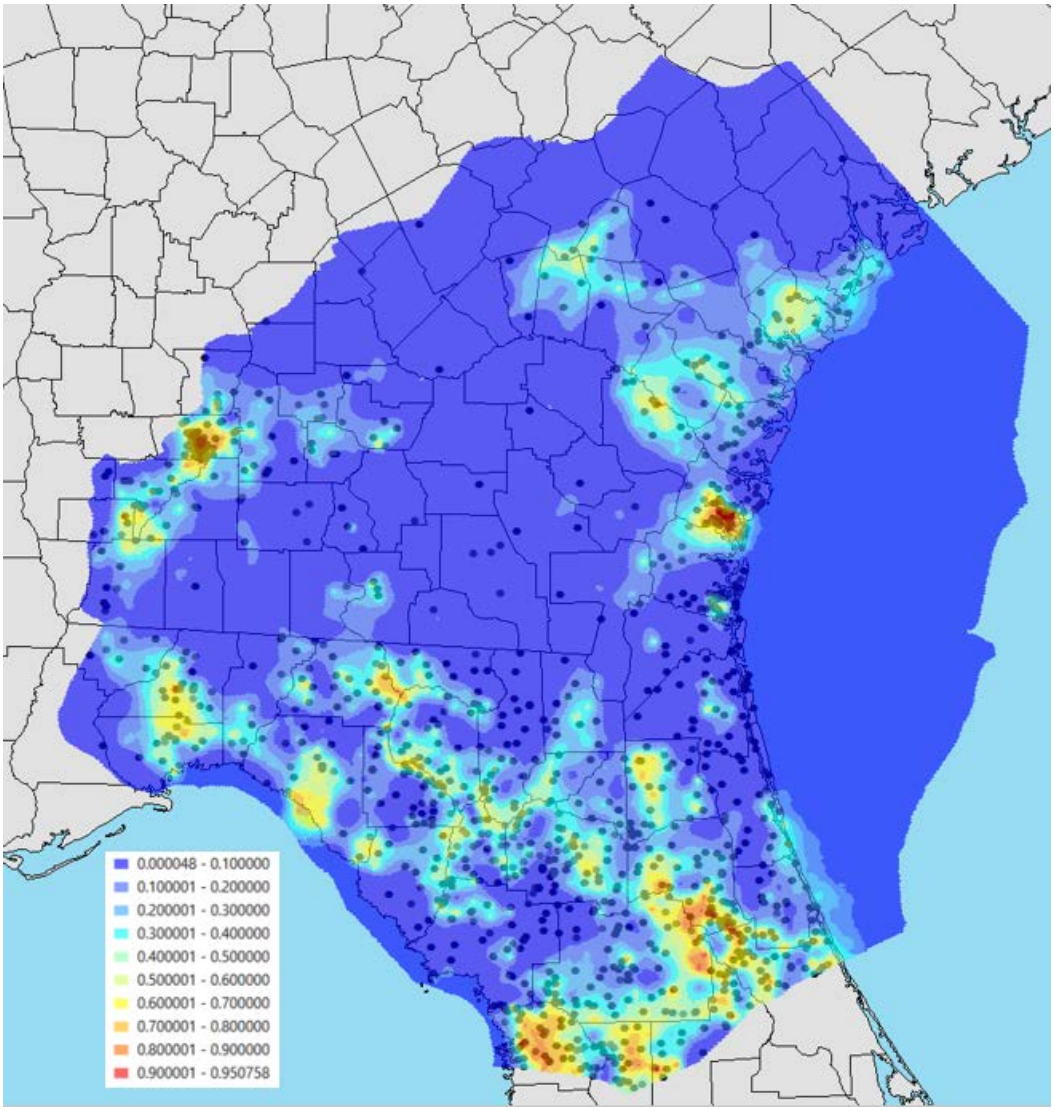


Figure L-5.4. Identifiability of layer 3 horizontal-hydraulic conductivity pilot points. Locations of layer 3, non-zero weighted, groundwater-level observations in 2001 and/or 2009 are superimposed on this map.

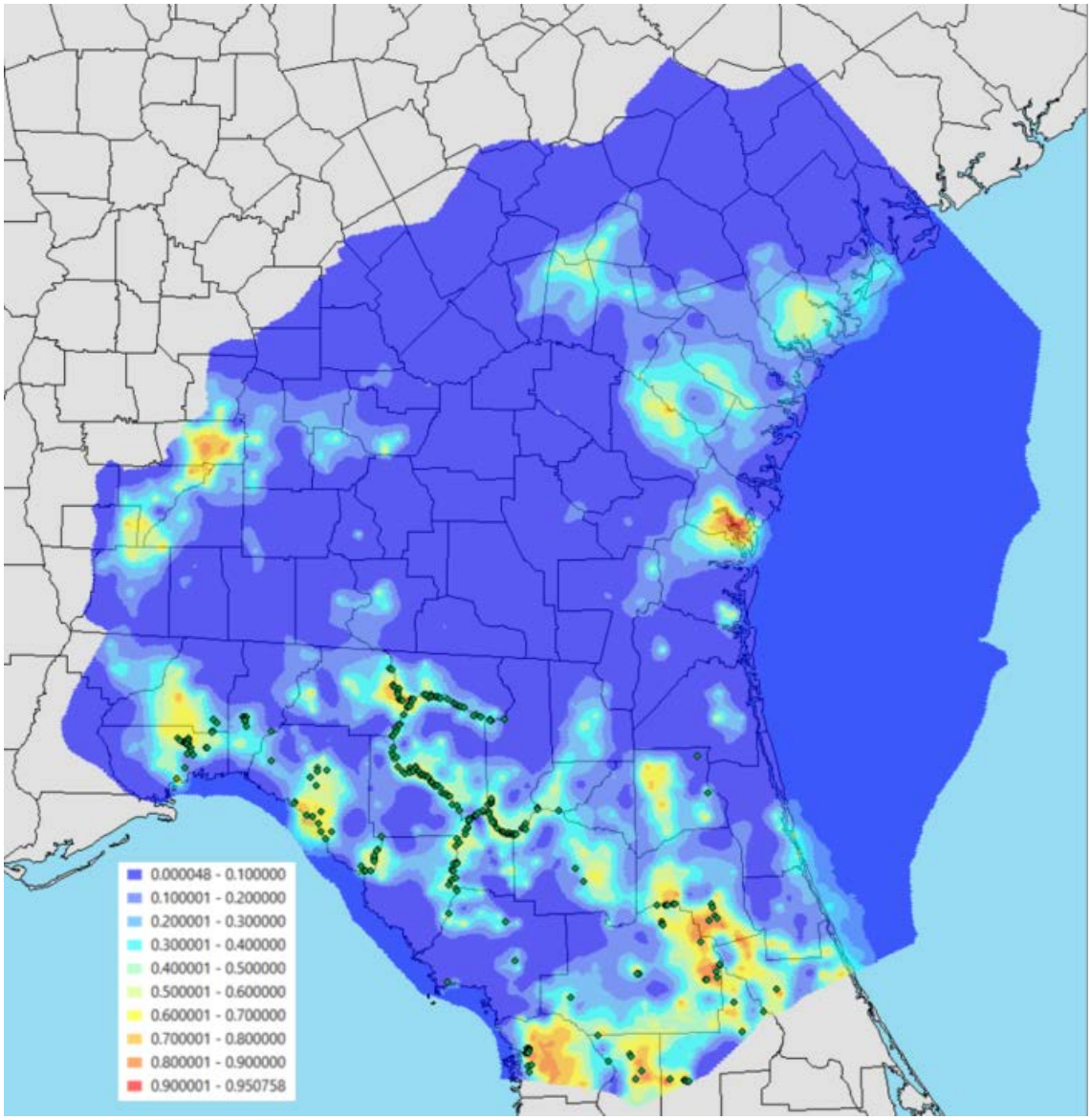


Figure L-5.5. Identifiability of layer 3 horizontal-hydraulic conductivity pilot points. Locations of non-zero weighted spring flow observations in 2001 and/or 2009 are superimposed on this map.

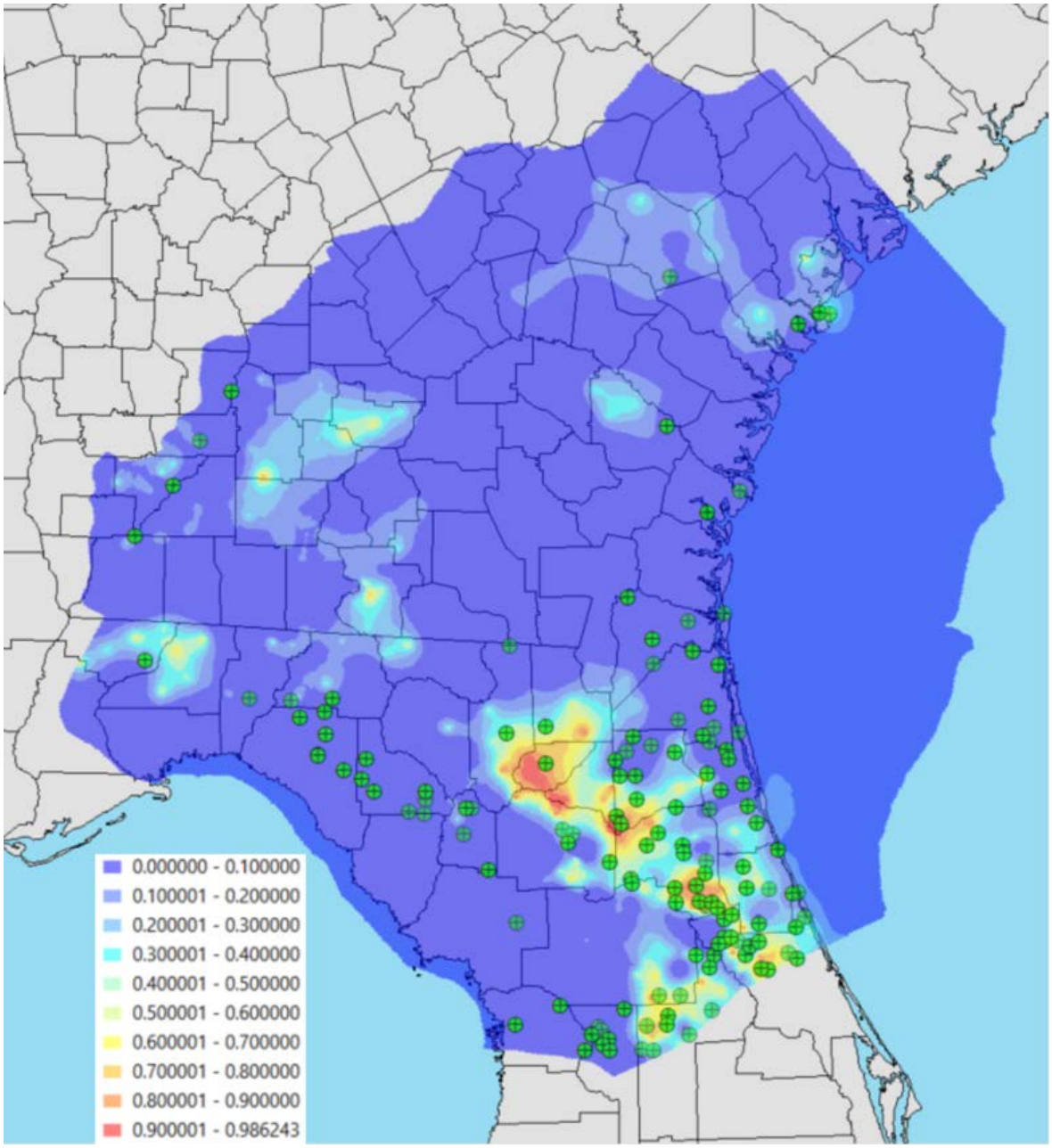


Figure L-5.6. Identifiability of layer 2 vertical-hydraulic conductivity pilot points. Locations of non-zero weighted vertical head difference observations across layer 2 in 2001 and/or 2009 are superimposed on this map.

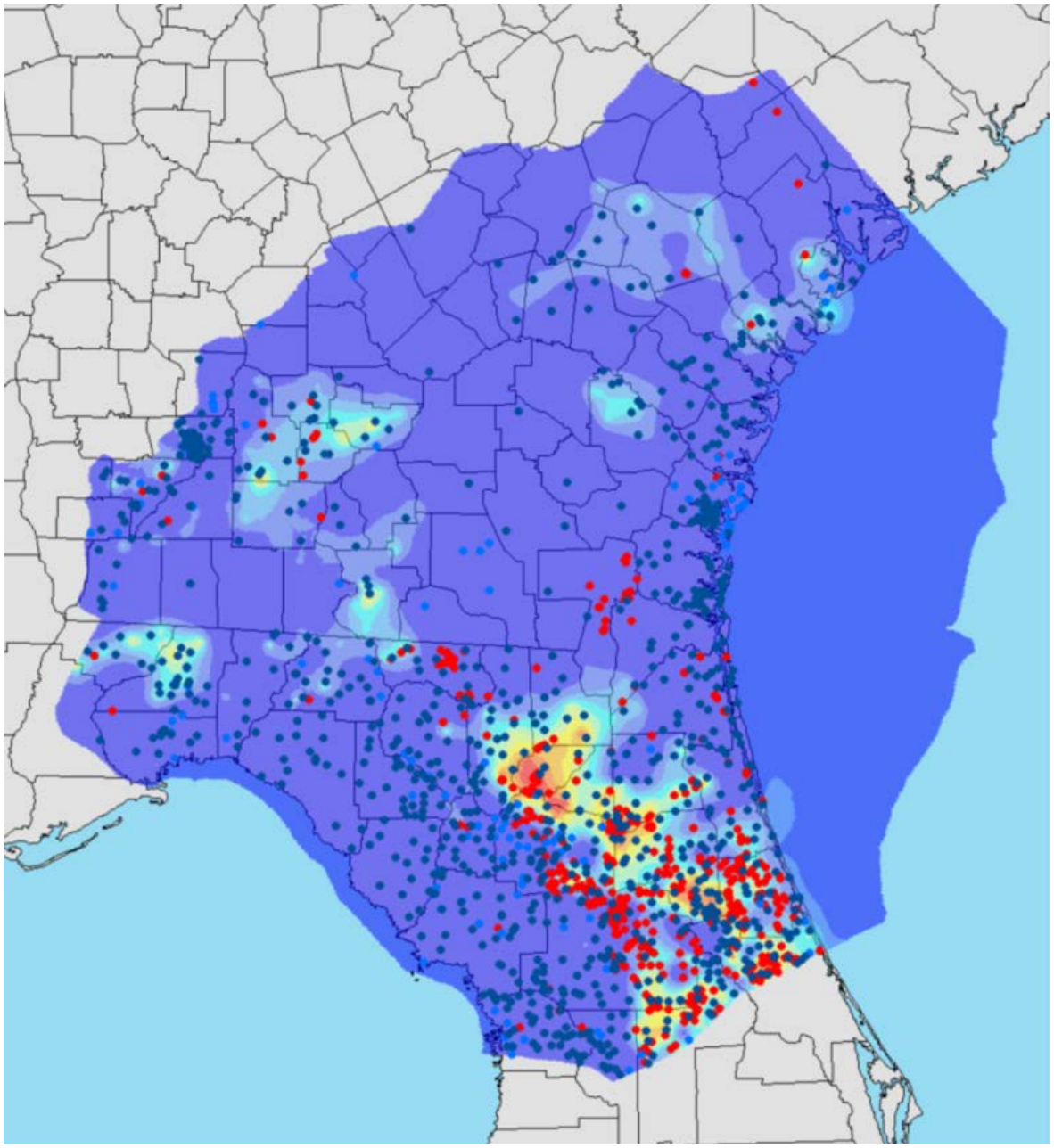


Figure L-5.7. Identifiability of layer 2 vertical-hydraulic conductivity pilot points. Locations of non-zero weighted, 2001 or 2009 groundwater-level observations in layer 1 (red points) and/or and layer 3 (blue points) are superimposed on this map.

For pilot point parameters, the spatially diffuse nature of relative parameter uncertainty variance reduction compared to corresponding identifiabilities also arises from the fact that prior parameter uncertainties are reflected in posterior parameter uncertainties. Use of a variogram to characterize prior uncertainties results in posterior spatial correlation of these parameters. Hence if a parameter is informed by a local head, spring or baseflow measurement, that information is then passed to neighbouring (spatially correlated) parameters. This two-step passage of information is not reflected in identifiabilities; the latter statistic describes only the first of these two steps.

Notwithstanding differences in detail, the broad scale patterns exhibited by maps of identifiability and relative parameter uncertainty variance reduction can be explained in large part by variations in spatial density of observations comprising the calibration dataset, and the sensitivities of model-calculated counterparts to these observations to pertinent model parameters. Taking k2z parameters as an example (i.e. vertical hydraulic conductivities in layer 2), the highest values for both identifiability and relative parameter uncertainty variance reduction occur in areas where the Upper Floridan aquifer is confined by the intermediate confining unit, and where high densities of observations of both groundwater level and vertical groundwater-level differences are available. Conversely, both of these statistics have lower values where groundwater level observations are sparse, and in unconfined areas where flow is primarily horizontal and (accordingly) where hydraulic property heterogeneity is reflected in the values assigned to horizontal hydraulic conductivity. Similarly, identifiabilities and relative uncertainty variance reductions are highest for k3x parameters (i.e. horizontal hydraulic conductivities in layer 3) in confined areas, and in unconfined areas where the spatial density of groundwater level observations is highest.

6. Discussion and Conclusions

The suite of calibration-constrained, random parameter fields that was calculated using the methodology described in chapter 2 of this appendix can be used to place a lower bound on uncertainties associated with predictions of management interest made by the NFSEG model.

As has been discussed, many predictions required by the NFSEG model are similar in nature to members of the dataset against which the NFSEG model was calibrated. Hence they are solution space dominated. This has two effects which work in opposite directions. Unfortunately, both of these effects are difficult to quantify.

For a prediction that is solution space dominated, model structural defects can be "calibrated out" to some extent. As Welter and Doherty (2010) and White et al (2014) explain, where a model is defective (as all models are), the link between parameter uncertainty and predictive uncertainty is broken to some extent, as parameters can adopt surrogate roles to compensate for model defects without any deleterious effects being felt by solution space dependent predictions. Moreover, the structural deficiencies which give rise to this type of parameter behaviour are rendered invisible through the very act of parameters adopting these compensatory roles (unless adoption of those roles yields parameter values that are obviously erroneous). For these types of prediction, it is the visible expression of model structural defects that present the most serious imposition to characterization of their uncertainties. As was discussed herein, these visible expressions of model structural defects cannot be subjected to stochastic characterization as they are location-, time- and process-specific. Furthermore, their expression during predictive model deployment is likely to be different from their expression during model calibration.

The situation is different for model predictions that possess a high degree of null space dependence. These predictions pertain to locations that are different from those at which measurements comprising the calibration dataset were made, and/or pertain to a very different regional or local stress regime from that which prevailed during model calibration. For these types of predictions, nonuniqueness of parameter combinations that comprise the calibration null space dominates predictive uncertainty. The methodology described in chapter 2 of this appendix is able to characterize this component of predictive uncertainty reasonably well.

It must not be forgotten, however, that separation of solution and null spaces is somewhat artificial when the upscaled nature of parameters employed by a regional model is taken into account. Local process and hydraulic property details can be represented only in an approximate fashion by such a model. For example, where springs occur within the domain of the NFSEG model, a small number of parameters is used to represent a possibly high level of local heterogeneity which governs flow from the spring. In many cases, these upscaled parameters can be adjusted to provide a good fit with historical spring flow. Where this occurs, the roles that these upscaled parameters play in the future are likely to reflect their roles in the past; hence predictions of future spring flow can be made with relative certainty. However if upscaled parameters cannot be adjusted in order to allow the model to reproduce measurements of historical spring flow, this may indicate a deficit of representation or salient local

parameterization and/or structural details in the model. With the addition of more parameters, a better fit may indeed be achieved with the calibration dataset. At the same time the dimensionality of the null space is likely to be increased. Both of these may lead to better predictions of spring flows at the same location, and to a more reliable characterisation of its uncertainty, even if some of the added parameters adopt surrogate roles to fit historical spring flow. If this is the case, it suggests that more parameters may need to be added to the NFSEG model on an as-needed basis in accordance with specific predictions that are required of it. (Note that the same considerations apply to baseflows and heads as those that apply to springs.)

These considerations should not impugn the performance of the NFSEG model in achieving its ambitious aims. Though course-gridded in relation to some of the features which may impact local groundwater behaviour, its grid is no coarser than that employed by other District models. At the same time, there can be little doubt that its regional nature has promulgated a reduction in sources of uncertainty that emerge from use of boundary conditions that are not actually groundwater flow boundaries. Numerical models of groundwater flow are always be imperfect, and are always compromised.

7. References

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APPENDIX M – PEST OBJECTIVE FUNCTION COMPONENTS FOR NFSEG V1.1 2001 AND 2009 CALIBRATIONS

Observation Group Name	Description	Contribution to Measurement Component of Objective Function	Percent Contribution
h2001_lay1	Heads in layer 1: 2001	5,141.2	5.36
h2001_lay2	Heads in layer 2: 2001	258.1	0.27
h2001_lay3	Heads in layer 3: 2001	23,691.0	24.72
h2001_lay4	Heads in layer 4: 2001	717.6	0.75
h2001_lay5	Heads in layer 5: 2001	1,470.7	1.53
h2001_lay7	Heads in layer 7: 2001	125.3	0.13
hd2001_lay3	Lateral head differences in layer 3: 2001	6,122.8	6.39
wp_dry_2001	penalty function' for minimizing the occurrence of dry cells areas in wetland areas: 2001	13.4	0.01
wp_wet_2001	penalty function' for minimizing the occurrence of 'flooded cells': 2001	9.7	0.01
vd_1to3_01	Vertical head differences: layer 1 to 3 in 2001	6,091.6	6.36
vd_3to5_01	Vertical head differences: layer 3 to 5 in 2001	3,979.0	4.15
qr01	Inflow to river reaches bounded by one or more gages: 2001	7,139.1	7.45
qspring01	Inflow to springs: 2001	24,670.0	25.74
qs_spring01	Inflow to spring groups: 2001	1,261.1	1.32
qs01	Cumulative inflow to collections of river reaches: 2001	811.9	0.85
qlake01	Flow to/from lakes: 2001	14,344.0	10.22
h2009_lay1	Heads in layer 1: 2009	10,792.0	7.69
h2009_lay2	Heads in layer 2: 2009	256.0	0.18
h2009_lay3	Heads in layer 3: 2009	22,198.0	15.81
h2009_lay4	Heads in layer 4: 2009	216.5	0.15
h2009_lay5	Heads in layer 5: 2009	1,141.6	0.81
h2009_lay7	Heads in layer 7: 2009	15.3	0.01
hd2009_lay3	Lateral head differences in layer 3: 2009	4,787.3	3.41
wp_wet_2009	penalty function' for minimizing the occurrence of 'flooded cells': 2009	85.3	0.06

vd_1to3_09	Vertical head differences: layer 1 to 3 in 2009	5,519.5	3.93
vd_3to5_09	Vertical head differences: layer 3 to 5 in 2009	13,241.0	9.43
qr09	Inflow to river reaches bounded by one or more gages: 2009	3,212.6	2.29
qspring09	Inflow to springs: 2009	57,058.0	40.64
qs_spring09	Inflow to spring groups: 2009	1,384.2	0.99
qs09	Cumulative inflow to collections of river reaches: 2009	826.2	0.59
qlake09	Flow to/from lakes: 2009	19,665.0	14.01

APPENDIX N – PERCENT-DIFFERENCES OF SIMULATED SPRING FLOWS VERSUS ESTIMATED SPRING FLOWS OF 10 CFS OR MORE

Spring Name	NFSEG Reach ID	WMD	NFSEG Layer	Pool Elev 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	2001 Percent Difference (%)	Pool Elev 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)	2009 Percent Difference (%)
ALAPAHA_RISE_NR_FT_UNION	199	SR	3	34.3	242.9	232.3	-4.3	36.77	243.9	240.4	-1.4
Alexander_Spg	166	SJR	3	8.96	92.8	104.7	12.9	8.96	102.0	102.3	0.3
AMERICAN_LEGION_SPRING_G3	5003	SWF	3	0	21.5	22.5	4.4	-0.15	24.6	23.1	-6.1
ANDERSON_SPRING	214	SR	3	28.23	8.6	10.1	17.7	30.53	10.5	10.5	-0.3
BIG_BLUE_SPRING_NR_WACISSA_FL	2014	SR	3	28	36.4	31.9	-12.3	26	54.3	52.1	-4.0
BIG_SPRINGS	257	SR	3	2.1	18.4	13.1	-28.7	2.1	18.4	14.0	-24.2
BLUE_CREEK_SPRING_NR_KEATON_BEACH	297	SR	3	14	10.0	6.3	-37.2	14	10.0	11.9	19.1
BLUE_HOLE_SPRING_NR_HILDRETH_FL	3001	SR	3	22.3	66.8	60.9	-8.9	23.35	76.1	78.3	2.9
BLUE_SINK_NEAR_WHITE_SPRINGS	259	SR	3	45.2	0.0	-0.6	N/A	48.52	24.8	-0.1	-100.3
BLUE_SPRING_IN_GILCHRIST_COUNTY	4042	SR	3	22.95	26.8	30.0	12.0	23.43	32.1	34.4	7.3
BONNETT_SPRINGS	271	SR	3	16	24.7	24.9	0.7	18	30.5	29.8	-2.4
BRANFORD_SPRINGS_AT_BRANFORD_FL	311	SR	3	9.39	8.1	10.9	33.8	12.25	11.1	10.7	-3.5
Bugg_Spg	170	SJR	3	60.98	13.3	13.3	0.2	64	10.7	10.7	-0.3
BUZZARD_LOG_SPRINGS_ON_THE_WACISSA_RIVER	2008	SR	3	28	11.0	9.0	-18.0	26.1	13.6	14.2	4.7
CASSIDA_SPRINGS_ON_THE_WACISSA_RIVER	2011	SR	3	28	6.8	7.1	5.2	26.1	12.1	11.2	-7.5
Catfish_Reception	1003	SJR	3	37.7	27.9	32.1	15.2	38	35.4	36.6	3.2
CEDAR_COVE_SPRING_G1	5000	SWF	3	0	21.5	22.6	5.0	-0.15	24.6	23.2	-5.6
CEDAR_ISLAND_SPRING	300	SR	3	0.3	15.0	13.7	-8.8	0.3	15.0	14.3	-4.4
CHICKEN_BRANCH_SPRING	102	NWF	3	14.5	23.1	19.7	-14.7	14.5	23.1	23.8	3.1
Chimney_Spg	160	SJR	3	-0.44	33.1	34.3	3.7	0.2	33.1	32.8	-0.9
COPPER_SPRINGS	343	SR	3	7.4	16.0	10.1	-36.8	7.4	19.7	22.3	13.2
CRESCENT_DRIVE_SPRING_G7	5018	SWF	3	0	21.5	22.3	3.4	-0.15	24.6	23.8	-3.2
Croaker_Hole_Spg	155	SJR	3	-0.1	70.0	70.4	0.6	-0.3	72.3	71.9	-0.6
CRYSTAL_RIVER_WC1	5001	SWF	3	0	21.5	22.3	3.6	-0.15	24.6	23.4	-4.9
CRYSTAL_RIVER_WC2	5005	SWF	3	0	21.5	22.0	2.2	-0.15	24.6	23.2	-5.6
CRYSTAL_RIVER_WC3	5010	SWF	3	0	21.5	22.3	3.5	-0.15	24.6	23.8	-3.0
CRYSTAL_RIVER_WC4	5017	SWF	3	0	21.5	22.3	3.4	-0.15	24.6	23.8	-3.2
CRYSTAL_RIVER_WC5	5008	SWF	3	0	21.5	22.2	2.9	-0.15	24.6	24.0	-2.4
CRYSTAL_RIVER_WC6	5009	SWF	3	0	21.5	22.1	2.9	-0.15	24.6	24.0	-2.4
CRYSTAL_SPRING_G2	5004	SWF	3	0	21.5	22.0	2.3	-0.15	24.6	23.2	-5.6
DEVIL_EYE_SANTA_FE_RIVER	4039	SR	3	22.7	29.2	33.4	14.3	23.17	36.0	38.4	6.6
DEVILS_EAR_SANTA_FE_RIVER	4040	SR	3	22.7	90.6	99.9	10.2	23.17	111.8	114.9	2.7
DEVIL'S_EYE_SPRING_NR_HILDRETH_FL	3003	SR	3	20.93	29.2	28.4	-2.7	21.12	32.2	35.1	9.2
DOGWOOD_SPRINGS	4036	SR	3	22.31	9.9	11.3	13.7	22.5	12.2	13.1	7.2
ELLAVILLE_SPRINGS_AT_ELLAVILLE	205	SR	3	30.1	11.6	14.0	20.2	32.43	24.4	13.9	-43.2
FANNING_SPRINGS_NR_WILCOX_FL	346	SR	3	1.92	50.0	63.4	26.8	2.5	68.5	67.6	-1.3
Fern_Hammock_Spg	164	SJR	3	21.99	10.0	13.3	33.1	21.95	12.0	11.9	-1.0
GERRELL_SPRING	121	NWF	3	10.96	33.1	29.5	-10.7	11.33	33.1	34.2	3.4
GINNIE_SPRING_NR_HIGH_SPRINGS_FL	4034	SR	3	22.31	38.1	33.3	-12.5	22.5	30.5	38.7	27.2
GUARANTO_SPRINGS	332	SR	3	11.4	9.2	0.3	-96.7	11.4	11.4	8.3	-26.7
GUM_SPRINGS_NEAR_HOLDER_FL	354	SWF	3	33.17	80.0	85.1	6.4	34.68	68.0	64.1	-5.8

Spring Name	NFSEG Reach ID	WMD	NFSEG Layer	Pool Elev 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	2001 Percent Difference (%)	Pool Elev 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)	2009 Percent Difference (%)
HARDEE_ROSSITER_SPRING	177	SR	3	48	15.0	13.7	-8.4	48.5	20.1	20.9	4.0
HART_SPRING_NR_WILCOX_FLA	339	SR	3	3.32	44.4	40.6	-8.6	4.9	44.1	48.4	9.9
HOLTON_SPRINGS_NEAR_FT_UNION_FL	204	SR	3	35.3	70.7	64.0	-9.4	37.8	62.9	66.5	5.8
HOMOSASSA_SPRING_COMPLEX	355	SWF	3	0.3	137.0	137.0	0.1	0.46	124.5	123.5	-0.8
HORN_SPRING_S445	105	NWF	3	14.51	13.3	11.6	-12.9	14.51	13.3	14.0	5.5
HORNSBY_SPRINGS_NEAR_HIGH_SPRINGS_FL	4060	SR	3	31.37	6.9	10.7	55.9	32.25	23.2	16.8	-27.4
HORSEHEAD_SPRINGS_ON_THE_WACISSA_RIVER	2001	SR	3	28.5	11.6	5.7	-50.5	27.6	14.3	15.2	6.9
HUNTERS_BAY_NE_2nd_SPRING	5002	SWF	3	0	21.5	22.5	4.4	-0.15	24.6	23.1	-6.1
ICHETUCKNEE_HEAD_SPRING_NR_HILDRETH_FL	3000	SR	3	22.3	33.1	24.0	-27.4	23.35	48.0	51.9	8.1
IDIOTS_DELIGHT_SPRING_G5	5013	SWF	3	0	21.5	22.3	3.6	-0.15	24.6	23.5	-4.2
JABO_CAMP_SPRING	285	SR	3	2.5	10.5	9.8	-6.9	2.5	10.5	11.6	10.1
JULY_SPRING	4035	SR	3	22.31	44.7	53.4	19.5	22.5	55.1	62.0	12.5
Juniper_Spg	163	SJR	3	23.43	7.9	10.6	33.2	20.03	15.0	14.7	-1.8
LAFAYETTE_BLUE_SPRINGS	265	SR	3	22	48.5	37.0	-23.8	24.2	49.0	56.8	15.8
LILLY_SPRINGS	4050	SR	3	23.48	27.4	31.2	13.8	24.01	33.8	35.8	6.0
LIME_RUN_SINK	207	SR	3	31.43	21.8	18.7	-14.3	32.93	26.9	28.5	6.0
LIME_SPRINGS	202	SR	3	30.59	9.7	14.6	50.8	32.93	14.0	13.7	-2.5
LITTLE_RIVER_SPRINGS_NR_BRANFORD_FL	307	SR	3	10.24	48.4	41.8	-13.5	13.06	46.9	47.2	0.6
LOG_SPRING_ON_THE_WACISSA_RIVER	2000	SR	3	28.5	38.5	18.4	-52.1	27.6	47.5	49.1	3.4
MADISON_BLUE_SPRING_NR_BLUE_SPRINGS_FL	179	SR	3	44.1	60.9	58.5	-3.9	44.2	104.0	104.2	0.2
Mammoth	1007	SJR	3	37.8	180.2	185.4	2.9	38.1	199.8	211.3	5.8
MANATEE_SANCTUARY_SPRING	5006	SWF	3	0	21.5	22.0	2.2	-0.15	24.6	23.2	-5.6
MANATEE_SPRING_NR_CHIEFLAND_FL	347	SR	3	0.98	121.0	116.6	-3.6	1.3	124.0	128.5	3.6
MATTAIR_SPRINGS	244	SR	3	40.21	11.7	11.9	1.4	42.88	14.4	13.9	-4.0
McCRABB_SPRINGS	337	SR	3	3.36	9.3	10.5	13.5	5.35	11.5	11.5	0.6
MEARSON_SPRING_NEAR_MAYO_FLORIDA	301	SR	3	11.36	44.4	41.1	-7.2	14.1	47.7	49.3	3.2
MILL_POND_SPRING_NR_HILDRETH_FL	3006	SR	3	18.36	11.4	13.2	16.2	19.39	18.1	15.0	-16.8
MINNOW_SPRINGS_ON_THE_WACISSA_RIVER	2010	SR	3	28	8.4	6.2	-25.9	26.1	10.3	9.8	-5.4
MISSION_SPRINGS_COMPLEX_NR_HILDRETH_FL	3004	SR	3	20.93	56.3	61.0	8.5	21.12	77.2	73.8	-4.4
MORGAN_SPRING	188	SR	3	37.7	0.0	0.3	N/A	39.43	16.7	0.4	-97.8
NICHOLS_SPRING_OF_SUMTER_COUNTY	356	SWF	3	33.65	13.5	13.4	-0.8	34.35	13.5	14.0	3.4
PEACOCK_SPRING	276	SR	3	16	11.8	11.9	0.4	18	14.6	14.5	-0.8
PICKARD_SPRINGS	4051	SR	3	23.48	8.9	10.1	14.3	24.01	10.9	11.7	6.5
POE_SPRINGS_NEAR_HIGH_SPRINGS_FL	4057	SR	3	24.62	31.3	36.9	18.0	25.22	40.7	42.7	4.9
Ponce_De_Leon_Spg	167	SJR	3	3.27	19.4	22.4	15.5	1	25.9	21.4	-17.4
POT_SPRING	182	SR	3	42	26.1	21.9	-16.2	42.75	32.2	35.9	11.4
POTHOLE_SPRING_NEAR_LAKE_CITY	329	SR	3	5.62	24.4	22.8	-6.4	8.13	30.1	26.3	-12.4
RAINBOW_SPRINGS_NEAR_DUNNELLON_FL	352	SWF	3	29.5	543.6	544.4	0.1	29.7	561.0	569.5	1.5
ROCK_BLUFF_SPRINGS_NR_BELL_FL	331	SR	3	5.53	14.5	15.6	7.9	7.07	24.0	17.2	-28.1
RUM_ISLAND_SPRING	4044	SR	3	22.95	19.8	21.9	10.9	23.43	24.4	25.3	3.8

Spring Name	NFSEG Reach ID	WMD	NFSEG Layer	Pool Elev 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	2001 Percent Difference (%)	Pool Elev 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)	2009 Percent Difference (%)
RUNNING_SPRINGS_(EAST)	281	SR	3	14.98	19.0	19.0	0.0	17.47	23.4	22.0	-6.0
RUNNING_SPRINGS_(WEST)	282	SR	3	14.98	50.0	12.3	-75.5	17.47	14.7	14.2	-3.4
SALLY_WARD_SPRING	106	NWF	3	4.35	4.8	9.0	87.8	4.35	12.7	11.8	-6.9
Salt_Spg	157	SJR	3	-0.33	74.6	89.5	20.0	-1.5	94.6	91.8	-3.0
SANTA_FE_SPRING	4030	SR	3	36.53	34.4	12.7	-63.2	37.55	49.6	65.8	32.6
SHINGLE_SPRINGS	313	SR	3	9.06	9.3	11.1	19.1	11.79	11.5	11.4	-0.7
Silver_Glen_Spg	161	SJR	3	-0.44	103.4	105.9	2.5	0.2	103.0	101.2	-1.7
SPRING_CREEK_SPRINGS_GROUP	135	NWF	3	0.5	3.7	342.8	9,163.5	-0.5	451.0	448.2	-0.6
SPRING_WARRIOR_SPRING	270	SR	3	22.91	23.2	-0.6	-102.4	22.91	23.2	2.5	-89.3
SSG-Mammoth	1008	SJR	3	37.8	180.2	185.4	2.9	38.1	199.8	211.3	5.8
SUN_SPRINGS_NEAR_WANNEE_FL	336	SR	3	3.98	22.6	24.3	7.2	6.13	27.9	26.8	-3.9
SUNBEAM_SPRINGS	4014	SR	3	10.07	10.5	12.1	15.7	12.05	14.0	12.2	-12.6
SUWANACOOCHEE_SPRINGS	206	SR	3	30.7	27.3	30.3	10.8	33.05	33.7	29.1	-13.6
SUWANNEE_BLUE_SPRING	292	SR	3	12.65	10.9	11.1	2.1	15.3	13.5	13.1	-2.8
SUWANNEE_SPRINGS_NEAR_LIVE_OAK_FL	232	SR	3	38.65	1.4	3.8	177.4	39.27	17.1	4.2	-75.2
Sweetwater_Spg	162	SJR	3	6.26	12.0	12.3	3.2	3.58	13.8	13.5	-2.6
TANNER_SPRING	183	SR	3	41	71.2	55.4	-22.2	42.35	87.9	98.6	12.2
TARPON_HOLE_2_SPRING	5011	SWF	3	0	21.5	22.3	3.5	-0.15	24.6	23.8	-3.0
TARPON_SPRING_G4	5012	SWF	3	0	21.5	22.3	3.5	-0.15	24.6	23.8	-3.0
TELFORD_SPRING_NEAR_LURAVILLE_FL	275	SR	3	18.64	23.3	23.8	1.9	20.8	29.7	29.1	-2.2
THOMAS_SPRING_ON_THE_WACISSA_RIVER	2003	SR	3	28.7	23.1	16.7	-27.7	27.1	28.5	31.6	10.7
THREE_SISTERS_SPRINGS_RUN	5014	SWF	3	0	21.5	22.3	3.6	-0.15	24.6	23.5	-4.2
THREE_SISTERS_SPRINGS_RUN_2	5015	SWF	3	0	21.5	22.3	3.7	-0.15	24.6	23.5	-4.2
TREEHOUSE_SPRING	4056	SR	3	30.5	6.4	1.1	-83.5	31.2	18.6	3.1	-83.5
TROY_SPRING_NEAR_BRANFORD_FLA	304	SR	3	10.63	87.6	80.0	-8.6	13.2	92.5	93.2	0.8
TURTLE_SPRING_NEAR_HATCHBEND_FL	328	SR	3	6.38	15.1	14.1	-6.6	8.69	17.6	16.9	-3.8
TWIN_SPRINGS	4031	SR	3	22.08	15.1	16.3	8.6	22.2	18.6	19.1	2.8
UN_NAMED_SPRING	4053	SR	3	27.17	37.9	0.0	-100.0	27.95	46.7	0.0	-100.0
UN_NAMED_SPRING	324	SR	3	0.8	35.4	32.2	-8.8	0.8	35.4	37.4	5.9
UN_NAMED_SPRING	303	SR	3	10.77	9.9	10.1	2.6	13.56	12.2	12.2	0.3
UN_NAMED_SPRING	316	SR	3	-0.35	15.0	14.2	-5.3	2.87	15.0	15.7	4.5
UN_NAMED_SPRING	314	SR	3	10	27.8	28.2	1.3	10	34.3	33.0	-3.9
UN_NAMED_SPRING	4052	SR	3	23.48	10.3	11.1	7.7	24.01	12.7	12.7	0.3
UN_NAMED_SPRING	243	SR	3	40.02	11.6	11.8	2.3	42.69	14.3	13.5	-5.0
UN_NAMED_SPRING	289	SR	3	1	50.0	0.0	-100.0	1	50.0	0.0	-100.0
UN_NAMED_SPRING	4058	SR	3	26.15	19.4	20.7	7.0	26.85	23.9	25.9	8.2
UN_NAMED_SPRING	267	SR	3	0.01	15.0	14.5	-3.2	0.01	15.0	15.6	3.9
UN_NAMED_SPRING	273	SR	3	3.9	33.4	27.6	-17.2	3.9	33.4	34.5	3.3
UN_NAMED_SPRING	4059	SR	3	26.15	15.4	16.3	5.8	26.85	19.0	20.3	7.0
UN_NAMED_SPRING	293	SR	3	0.37	29.0	26.6	-8.2	0.37	29.0	29.4	1.7
UN_NAMED_SPRING	4012	SR	3	7.36	23.1	23.4	1.2	8	28.5	30.6	7.3

Spring Name	NFSEG Reach ID	WMD	NFSEG Layer	Pool Elev 2001 (Feet NAVD88)	2001 Estimated Discharge (cfs)	2001 Simulated Discharge (cfs)	2001 Percent Difference (%)	Pool Elev 2009 (Feet NAVD88)	2009 Estimated Discharge (cfs)	2009 Simulated Discharge (cfs)	2009 Percent Difference (%)
UN_NAMED_SPRING	192	SR	3	36.64	30.8	29.7	-3.6	38.63	38.0	35.0	-7.8
UN_NAMED_SPRING	193	SR	3	36.64	30.8	29.7	-3.6	38.63	38.0	35.0	-7.8
UN_NAMED_SPRING	195	SR	3	32.13	83.1	90.6	9.1	34.52	102.5	90.7	-11.5
UN_NAMED_SPRING	203	SR	3	30.83	18.3	20.0	9.6	33.17	22.5	19.3	-14.3
UN_NAMED_SPRING	2015	SR	3	28	19.3	15.5	-19.2	26.1	23.8	24.3	2.5
UN_NAMED_SPRING	184	SR	3	40.38	11.6	10.2	-12.0	41.8	14.3	15.6	9.2
UN_NAMED_SPRING	186	SR	3	39.85	15.4	14.4	-6.6	41.06	19.0	19.9	4.9
UN_NAMED_SPRING	4002	SR	3	7.39	15.4	16.0	3.9	8	19.0	19.4	2.2
UN_NAMED_SPRING	4004	SR	3	7.39	23.1	24.3	5.3	8	28.5	29.5	3.6
UN_NAMED_SPRING	190	SR	3	36.64	23.1	24.2	4.9	38.63	28.5	25.5	-10.5
UN_NAMED_SPRING	2006	SR	3	28.47	30.8	18.3	-40.6	27.47	38.0	40.5	6.7
UN_NAMED_SPRING	330	SR	3	5.99	10.8	10.6	-1.6	8.39	13.3	12.6	-4.9
UN_NAMED_SPRING	215	SR	3	36.36	27.4	29.4	7.4	38.9	33.8	30.7	-9.1
UN_NAMED_SPRING	341	SR	3	2.71	15.6	16.6	6.3	4.52	19.3	17.8	-7.9
UN_NAMED_SPRING	4022	SR	3	16.49	70.0	0.0	-100.0	17	70.0	0.0	-100.0
UN_NAMED_SPRING	210	SR	3	35.51	20.1	21.2	5.2	38.02	24.8	22.2	-10.4
UNNAMED_SPRING_G6	5007	SWF	3	0	21.5	22.3	3.5	-0.15	24.6	23.1	-6.0
UNNAMED_SPRING_G7	5016	SWF	3	0	21.5	22.1	2.9	-0.15	24.6	23.9	-2.9
WACISSA_HEADSPRING	2004	SR	3	28.7	94.4	86.8	-8.1	27.1	170.0	164.0	-3.5
WAKULLA_SPRING_MAIN_VENT_S749_S587	108	NWF	3	4.9	169.9	531.5	212.8	4.9	712.0	716.9	0.7
WAYNE_LEE_SPRING_RUN_AT_I-75_NR_WILDWOOD_FL	359	SWF	3	0.41	6.6	8.1	24.2	88.63	12.0	8.1	-32.9
WEKIVA_SPRINGS_NEAR_GULF_HAMMOCK	351	SR	3	7.63	47.5	47.2	-0.6	8.5	49.6	48.0	-3.3
WHITE_SULPHUR_SPRINGS_AT_WHITE_SPRINGS	262	SR	3	48	-5.2	-6.4	21.6	52.2	-18.4	-5.5	-69.9
WILSON_SPRINGS	4018	SR	3	13.06	5.0	14.7	193.8	14	20.0	15.2	-23.9
WOODS_CK_RISE	230	SR	3	26	16.6	16.0	-3.6	26.5	16.6	16.8	1.7

APPENDIX O – RESULTS OF EVALUATION OF BASEFLOW TARGETS AND CORRESPONDING SIMULATED VALUES FROM THE NFSEG VERSION 1.1 CALIBRATION

Table 1. Minimum, maximum, and range of baseflow target values from the set of five baseflow-separation methods (BFI Standard, BFI Modified, Exceedance, Hysep Local Minimum, and USF) compared to the target values and results of the NFSEG Version 1.1 calibration for calibration-year 2001.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2176500	COOSAWHATCHIE RIVER NEAR HAMPTON, SC	16.6	17.1	-0.5	1.4	16.6	30.9	Yes	
qr01_2198100	BEAVERDAM CREEK NEAR SARDIS, GA	5.7	7.5	-1.8	3.2	5.7	8.1	Yes	
qr01_2198500	SAVANNAH RIVER NEAR CLYO, GA	126.9	121.4	5.5	-47.6	126.9	229.2	Yes	
qr01_2198690	EBENEZER CREEK AT SPRINGFIELD, GA	4.2	9.0	-4.8	0.3	4.2	8.1	No	
qr01_2202600	BLACK CREEK NEAR BLITCHTON, GA	8.3	3.2	5.1	0.5	8.3	19.2	Yes	
qr01_2203000	CANOOCHEE RIVER NEAR CLAXTON, GA	64.0	215.3	-151.3	3.0	63.9	108.1	No	
qr01_2227500	LITTLE SATILLA RIVER NEAR OFFERMAN, GA	12.8	43.2	-30.4	0.7	12.8	24.6	No	
qr01_2228000	SATILLA RIVER AT ATKINSON, GA	187.5	640.4	-452.9	88.0	187.5	245.2	No	

[1] Minimum, maximum, or range values were obtained from set of five baseflow-separation methods (BFI Standard, BFI Modified, Exceedance, Hysep Local Minimum, and USF). Note that in some cases the target value was not based on one of the mean of these five methods. This occurred for selected river reaches that were incised into the Upper Floridan aquifer or where there were uncertainties associated with the underlying data. In these cases, the minimum, maximum, and range values should be adjusted, where necessary to include the target value. In other words, the minimum should be adjusted downward in cases if the calibration target is less than the minimum value shown in the table, or upward if the calibration target is greater than the maximum value shown in the table.

[2] The range determined from the minimum and maximum values that were calculated using the method described in the previous paragraph are not intended to define the full range of plausible baseflow or baseflow-pickup estimates.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2228500	NORTH PRONG ST. MARYS RIVER AT MONIAC, GA	3.8	-1.1	4.9	0.8	3.8	7.8	No	
qr01_2231000	ST. MARYS RIVER NEAR MACCLENNY, FL	34.3	42.5	-8.2	18.2	34.3	46.2	Yes	
qr01_2231268	ALLIGATOR CREEK AT CALLAHAN, FL	1.0	1.3	-0.3	0.2	1.0	1.8	Yes	
qr01_2231280	THOMAS CREEK NEAR CRAWFORD, FL	6.0	8.4	-2.4	2.7	6.0	8.9	Yes	
qr01_2239501	SILVER RIVER NEAR OCALA, FL	445.1	446.9	-1.8	NA	NA	NA	NA	Flow at gage represents combined contribution of discharge from springs along river. Target was computed as being equal to average annual (total) flow.
qr01_2240500	OCKLAWAHA RIVER AT EUREKA, FL	42.2	35.4	6.8	4.7	42.2	62.1	Yes	
qr01_2240902	PRAIRIE CREEK NEAR GAINESVILLE, FL	0.0	0.3	-0.3	0.0	0.0	0.0	No	
qr01_2243000	ORANGE CREEK AT ORANGE SPRINGS, FL	5.7	10.1	-4.4	3.0	5.7	6.9	No	
qr01_2244320	MIDDLE HAW CREEK NR KORONA, FLA.	27.4	24.0	3.4	0.0	27.4	47.4	Yes	
qr01_2244473	RICE CREEK NEAR SPRINGSIDE	7.8	6.7	1.1	3.3	7.8	10.3	Yes	
qr01_2245050	ETONIA CREEK AT BARDIN, FL	23.9	14.3	9.6	19.5	23.9	26.0	No	
qr01_2245140	SIMMS CREEK NEAR BARDIN, FL	10.8	13.9	-3.1	8.4	10.9	14.0	Yes	
qr01_2245255	DEEP CREEK NEAR HASTINGS, FL	1.6	2.6	-1.0	0.3	1.6	3.8	Yes	

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2245500	SOUTH FORK BLACK CREEK NEAR PENNEY FARMS, FL	22.4	40.7	-18.3	13.7	22.4	28.2	No	
qr01_2246000	NORTH FORK BLACK CREEK NEAR MIDDLEBURG, FL	37.0	35.0	2.0	17.6	37.0	50.6	Yes	
qr01_2246150	BIG DAVIS CREEK AT BAYARD, FL	3.5	1.1	2.4	2.3	3.5	5.3	No	
qr01_2246300	ORTEGA RIVER AT JACKSONVILLE, FL	10.0	10.2	-0.2	3.5	10.0	14.7	Yes	
qr01_2246828	PABLO CREEK AT JACKSONVILLE, FL	11.9	4.7	7.2	7.3	11.9	16.5	No	
qr01_2247027	MOSES CREEK NEAR MOULTRIE, FL	0.9	1.3	-0.4	0.3	0.9	2.5	Yes	
qr01_2312667	SHADY BROOK NEAR SUMTERVILLE, FL	11.6	9.0	2.6	6.2	11.6	17.0	Yes	
qr01_2314500	SUWANNEE RIVER AT US 441, AT FARGO, GA	61.6	4.6	57.0	16.7	61.6	89.2	No	Low flow at times affected by manipulation of water level at Mixons Ferry Dam.
qr01_2315000	SUWANNEE R NR BENTON FLA	54.8	59.5	-4.7	7.1	54.8	91.1	Yes	
qr01_2315500	SUWANNEE RIVER AT WHITE SPRINGS, FLA.	37.3	21.0	16.3	3.7	37.3	79.8	Yes	
qr01_2317500	ALAPAHA RIVER AT STATENVILLE, GA	164.4	402.5	-238.1	83.5	164.4	204.7	No	
qr01_2317620	ALAPAHA RIVER NEAR JENNINGS FLA	59.4	61.9	-2.5	-20.4	59.4	85.3	Yes	
qr01_2318500	WITHLACOOCHEE RIVER AT US 84, NEAR QUITMAN, GA	241.2	392.8	-151.6	27.8	241.2	408.3	Yes	

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2318700	OKAPILCO CREEK AT GA 333, NEAR QUITMAN, GA	31.1	88.1	-57.0	3.0	31.1	63.5	No	
qr01_2319000	WITHLACOOCHEE RIVER NEAR PINETTA, FLA.	172.3	146.4	25.9	114.0	172.3	237.9	Yes	
qr01_2319394	WITHLACOOCHEE RIVER NR LEE, FLA	250.7	290.7	-40.0	245.0	370.7	421.8	Yes	Unconfined reach. Calibration target computed as change in total flow along reach.
qr01_2319500	SUWANNEE RIVER AT ELLAVILLE, FLA	439.5	728.0	-288.5	189.1	725.1	1081.7	Yes	Unconfined reach. Calibration target computed as change in total flow along reach. Simulated flow corresponds very closely to alternative target value (725.1 cfs) computed as change in baseflow along reach.
qr01_2319800	SUWANNEE RIVER AT DOWLING PARK, FLORIDA	45.3	86.9	-41.6	-63.0	58.4	189.9	Yes	Unconfined reach. Negative-valued (decreasing) change in flow along reach may indicate that rated flows were not precise enough to estimate change in flow. Target value used in calibration based on aggregate springflow in reach and estimated diffuse (non-spring) pickup along reach between Ellaville and Branford gages.
qr01_2320000	SUWANNEE RIVER AT LURAVILLE, FLA.	88.8	124.5	-35.7	276.8	314.0	399.5	Yes	Unconfined reach. Negative-valued (decreasing) change in flow along upstream reach may indicate that rated flows at gage at upstream end of reach were not precise enough to estimate change in flow. Target value used in calibration based on aggregate springflow in reach and estimated diffuse (non-spring) pickup along reach between Ellaville and Branford gages.
qr01_2320500	SUWANNEE RIVER AT BRANFORD, FLA.	498.8	515.0	-16.2	409.2	675.6	1275.9	Yes	
qr01_2320700	SANTA FE RIVER NEAR GRAHAM, FLA.	0.2	0.2	0.0	0.1	0.2	0.5	Yes	

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2321000	NEW RIVER NR LAKE BUTLER FLA	4.2	3.1	1.1	1.3	4.2	8.2	Yes	
qr01_2321500	SANTA FE RIVER AT WORTHINGTON SPRINGS, FLA.	8.1	6.9	1.2	3.0	8.2	13.9	Yes	
qr01_2321975	SANTA FE RIVER AT US HWY 441 NEAR HIGH SPRINGS, FL.	7.0	26.8	-19.8	1.2	7.0	13.9	No	The flow estimates at station, 02321975 Santa Fe River at US Highway 441 near High Springs, Florida, were likely underestimated because measurements were probably made downstream of two swallets that capture large quantities of river water. Increasing the minimum and maximum baseflow-separated values at station, 02321975, based on a plausible correction results in a closer correspondence between target and model-simulated values (see text for details).
qr01_2322500	SANTA FE RIVER NEAR FORT WHITE, FLA.	581.1	497.5	83.6	513.3	543.1	570.8	No	The flow estimates at station, 02321975 Santa Fe River at US Highway 441 near High Springs, Florida, were likely underestimated because measurements were probably made downstream of two swallets that capture large quantities of river water. Increasing the minimum and maximum baseflow-separated values at station, 02321975, based on a plausible correction results in a closer correspondence between target and model-simulated values (see text for details).
qr01_2322700	ICHETUCKNEE R @ HWY27 NR HILDRETH, FL	202.0	201.7	0.3	NA	NA	NA	NA	Flow at gage represents combined contribution of discharge from springs along river. Target was computed as being equal to average annual (total) flow.
qr01_2322800	SANTA FE RIVER NR HILDRETH FLA	188.0	137.2	50.8	-63.2	147.3	204.0	Yes	

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2323500	SUWANNEE RIVER NEAR WILCOX, FLA.	248.7	353.4	-104.7	-719.5	-60.2	341.7	NA	Flows affected by large tidal variations and therefore should not be estimated through baseflow-separation. Target would have been negative if calculated as differences in baseflow (rather than total flow)
qr01_2323592	SUWANNEE RIVER AB GOPHER RIVER NR SUWANNEE FL	152.1	410.9	-258.8	-1250.0	-595.2	-98.4	NA	Flows affected by large tidal variations. Flow should have been zero weighted.
qr01_2324000	STEINHATCHEE RIVER NEAR CROSS CITY, FLA.	92.2	5.2	87.0	5.8	92.2	151.5	NA	This observation should have been zero weighted: over 5 months of estimated record occur in 2001 and estimated record in fall has odd-looking, inverted recession (suggesting baseflow target may be too high). The USGS characterized the estimated record as being of poor accuracy.
qr01_2324400	FENHOLLOWAY RIVER NEAR FOLEY, FLA.	3.1	0.5	2.6	0.5	3.1	5.8	Yes	
qr01_2324500	FENHOLLOWAY RIVER AT FOLEY, FLA.	62.1	-15.6	77.7	53.4	62.2	68.7	No	
qr01_2325000	FENHOLLOWAY RIVER NEAR PERRY, FLA	12.3	6.6	5.7	1.4	12.3	17.5	Yes	
qr01_2326000	ECONFINA RIVER NEAR PERRY, FLA.	25.4	16.6	8.8	15.4	25.4	37.2	Yes	
qr01_2326500	AUCILLA RIVER AT LAMONT, FLA.	38.2	23.2	15.0	3.8	38.2	49.2	Yes	
qr01_2326900	ST. MARKS RIVER NEAR NEWPORT, FLA.	380.2	278.6	101.6	327.0	380.2	415.4	No	
qr01_2327100	SOPCHOPPY RIVER NR SOPCHOPPY, FLA.	36.6	12.2	24.4	3.8	36.6	88.5	Yes	
qr01_2327500	OCHLOCKONEE RIVER NEAR THOMASVILLE, GA	126.5	349.8	-223.3	20.9	126.5	261.7	No	

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qr01_2328522	OCHLOCKONEE RIVER NR CONCORD, FLA.	90.8	282.3	-191.5	46.6	90.8	143.6	No	
qr01_2329000	OCHLOCKONEE RIVER NR HAVANA, FLA.	19.3	43.1	-23.8	-6.0	19.3	36.1	No	
qr01_2329342	LITTLE ATTAPULGUS CREEK AT ATTAPULGUS, GA	4.0	5.9	-1.9	1.9	4.0	6.4	Yes	
qr01_2329558	ST. MATTHEWS CHURCH BRANCH NEAR QUINCY, FL.	2.3	0.2	2.1	1.3	2.3	2.9	No	
qr01_2329600	LITTLE RIVER NR MIDWAY, FLA.	34.1	141.2	-107.1	9.4	34.1	68.9	No	
qr01_2355350	ICHAWAYNOCHAWAY CREEK BELOW NEWTON, GA	40.0	33.9	6.1	19.3	40.0	58.7	Yes	
qr01_2244420	LITTLE HAW CREEK NEAR SEVILLE, FL	41.3	2.8	38.5	3.5	41.3	71.5	No	
qr01_2312700	OUTLET RIVER AT PANACOOCHEE RETREATS, FL	28.7	50.7	-22.0	17.1	28.7	46.5	No	
qr01_2216180	TURNPIKE CREEK NEAR MCRAE, GA	4.8	10.8	-6.0	0.0	4.8	11.0	Yes	
qr01_2313100	RAINBOW RIVER AT DUNNELLON, FL	543.6	544.4	-0.8	NA	NA	NA	NA	Flow at gage represents combined contribution of discharge from springs along river. Target was computed as being equal to average annual (total) flow.
qr01_2320500a	SUWANNEE RIVER AT BRANFORD, FLA.	595.3	726.9	131.6	807.5	1048.0	1668.8	Yes	Reach is bounded by gages, 02319500 Suwannee River at Ellaville, FL and 02320500 Suwannee River at Branford, FL.
qr01_2322500a	SANTA FE RIVER NEAR FORT WHITE, FLA.	554.3	524.5	29.8	514.5	550.1	581.8	Yes	Reach is bounded by gages, 02321500 Santa Fe River at Worthington Springs, FL and 02322500 Santa Fe River near Fort White, FL.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[1] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[2]	Comment
qs01_2228000	SATILLA RIVER AT ATKINSON, GA	200.3	683.7	-483.4	89.7	200.3	263.8	Yes	
qs01_2231000	ST. MARYS RIVER NEAR MACCLENNY, FL	39.7	49.8	-10.1	19.7	39.7	57.4	Yes	
qs01_2243000	ORANGE CREEK AT ORANGE SPRINGS, FL	5.7	10.4	-4.6	3	5.7	6.9	No	
qs01_2315500	SUWANNEE RIVER AT WHITE SPRINGS, FLA.	153.7	85.1	68.6	27.5	153.7	239.8	Yes	
qs01_2317620	ALAPAHA RIVER NEAR JENNINGS FLA	223.9	464.4	-240.5	63.1	223.9	290.0	No	
qs01_2319000	WITHLACOOCHEE RIVER NEAR PINETTA, FLA.	444.7	627.3	-182.6	151.1	444.7	646.6	Yes	
qs01_2319500	SUWANNEE RIVER AT ELLAVILLE, FLA	1918.0	2195.5	-277.5	1108.4	1918.0	2644.1	Yes	
qs01_2320500	SUWANNEE RIVER AT BRANFORD, FLA.	2966.1	2921.9	44.1	2029.4	2966.0	3456.7	Yes	
qs01_2321500	SANTA FE RIVER AT WORTHINGTON SPRINGS, FLA.	12.6	10.2	2.4	4.4	12.6	22.6	Yes	
qs01_2322500	SANTA FE RIVER NEAR FORT WHITE, FLA.	562.7	534.5	28.2	518.9	562.7	594.3	Yes	
qs01_2323500	SUWANNEE RIVER NEAR WILCOX, FLA.	4167.0	4148.8	18.2	2624.0	3817.8	4528.5	Yes	Flows affected by large tidal variations. Difference between baseflow estimate at this gage and two upstream gages (02320500 and 02322800) was negative indicating that baseflow estimate from five methods could be too low. Therefore, baseflow estimated as sum of baseflows at the two upstream gages plus the increase in total flow from the two upstream gages to the gage at Wilcox.

Table 2. Minimum, maximum, and range of baseflow target values from the set of five baseflow-separation methods (BFI Standard, BFI Modified, Exceedance, Hysep Local Minimum, and USF) compared to the target values and results of the NFSEG Version 1.1 calibration for calibration-year 2009.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[3] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[4]	Comment
qr09_2176500	COOSAWHATCHIE RIVER NEAR HAMPTON, SC	14.2	22.4	-8.2	0.0	14.2	29.0	Yes	
qr09_2198100	BEAVERDAM CREEK NEAR SARDIS, GA	6.4	7.3	-0.9	4.2	6.4	9.2	Yes	
qr09_2198500	SAVANNAH RIVER NEAR CLYO, GA	452.5	177.1	275.4	230.8	452.5	729.1	No	
qr09_2198690	EBENEZER CREEK AT SPRINGFIELD, GA	17.4	27.2	-9.8	2.4	17.4	37.1	Yes	
qr09_2202600	BLACK CREEK NEAR BLITCHTON, GA	28.6	68.1	-39.5	4.3	28.6	66.3	No	
qr09_2203000	CANOOCHEE RIVER NEAR CLAXTON, GA	118	293.5	-175.5	39.3	118.0	219.7	No	
qr09_2216180	TURNPIKE CREEK NEAR MCRAE, GA	14.3	19.2	-4.9	2.5	14.3	28.3	Yes	

[3] Minimum, maximum, or range values were obtained from set of five baseflow-separation methods (BFI Standard, BFI Modified, Exceedance, Hysep Local Minimum, and USF). Note that in some cases the target value was not based on one of the mean of these five methods. This occurred for selected river reaches that were incised into the Upper Floridan aquifer or where there were uncertainties associated with the underlying data. In these cases, the minimum, maximum, and range values should be adjusted, where necessary to include the target value. In other words, the minimum should be adjusted downward in cases if the calibration target is less than the minimum value shown in the table, or upward if the calibration target is greater than the maximum value shown in the table.

[4] The range determined from the minimum and maximum values that were calculated using the method described in the previous paragraph are not intended to define the full range of plausible baseflow or baseflow-pickup estimates.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[3] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[4]	Comment
qr09_2226000	ALTAMAHA RIVER AT DOCTORTOWN, GA	661.1	773.6	-112.5	-60.4	661.1	1270.7	Yes	
qr09_2227500	LITTLE SATILLA RIVER NEAR OFFERMAN, GA	106.8	48.1	58.7	22.1	106.8	178.9	Yes	
qr09_2228000	SATILLA RIVER AT ATKINSON, GA	552.9	999.7	-446.8	176.8	552.9	817.4	No	
qr09_2228500	NORTH PRONG ST. MARYS RIVER AT MONIAC, GA	16.1	14.7	1.4	4.8	16.1	33.8	Yes	
qr09_2239501	SILVER RIVER NEAR OCALA, FL	500.8	508.9	-8.1	NA	NA	NA	NA	Flow at gage represents combined contribution of discharge from springs along river. Target was computed as being equal to average annual (total) flow.
qr09_2240500	OCKLAWAHA RIVER AT EUREKA, FL	62.4	43.1	19.3	28.7	62.4	80.2	Yes	
qr09_2245500	SOUTH FORK BLACK CREEK NEAR PENNEY FARMS, FL	49.8	63.6	-13.8	27.3	49.8	70.7	Yes	
qr09_2246000	NORTH FORK BLACK CREEK NEAR MIDDLEBURG, FL	51.6	68.6	-17.0	23.8	51.6	75.2	Yes	
qr09_2312667	SHADY BROOK NEAR SUMTERVILLE, FL	14.4	4.7	9.7	8.0	14.4	19.9	No	
qr09_2314500	SUWANNEE RIVER AT US 441, AT FARGO, GA	359.9	49.4	310.5	148.7	359.9	531.4	No	Low flow at times affected by manipulation of water level at Mixons Ferry Dam. Baseflow target may be too high and affected by high flow periods.
qr09_2317500	ALAPAHA RIVER AT STATENVILLE, GA	246.8	773.0	-526.2	127.1	246.9	328.7	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.
qr09_2317620	ALAPAHA RIVER NEAR JENNINGS FLA	94.8	37.5	57.3	56.3	94.8	156.6	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.
qr09_2318500	WITHLACOOCHEE RIVER AT US 84, NEAR QUITMAN, GA	298.9	621.5	-322.6	75.9	298.9	472.0	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[3] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[4]	Comment
qr09_2318700	OKAPILCO CREEK AT GA 333, NEAR QUITMAN, GA	50.1	71.7	-21.6	9.5	50.1	77.2	Yes	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.
qr09_2319000	WITHLACOOCHEE RIVER NEAR PINETTA, FLA.	133.3	147.7	-14.4	50.2	133.3	209.3	Yes	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.
qr09_2319394	WITHLACOOCHEE RIVER NR LEE, FLA	343.9	434.7	-90.8	228.4	290.6	378.7	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.
qr09_2320500	SUWANNEE RIVER AT BRANFORD, FLA.	170.3	613.3	-443.0	299.5	410.3	489.0	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009, contributing to extreme flooding on Suwannee River and uncertainty in computing a representative baseflow target.
qr09_2320700	SANTA FE RIVER NEAR GRAHAM, FLA.	21.6	3.3	18.3	9.3	21.6	30.3	No	
qr09_2321000	NEW RIVER NR LAKE BUTLER FLA	20.2	16.6	3.6	4.4	20.2	43.6	Yes	
qr09_2321500	SANTA FE RIVER AT WORTHINGTON SPRINGS, FLA.	34.4	23.6	10.8	16.7	34.4	52.9	Yes	
qr09_2321975	SANTA FE RIVER AT US HWY 441 NEAR HIGH SPRINGS,FL.	31.9	104.6	-72.7	15.9	31.9	39.5	No	The flow estimates at station, 02321975 Santa Fe River at US Highway 441 near High Springs, Florida, were likely underestimated because measurements were made downstream of two swallets that capture large quantities of river water. Increasing the minimum and maximum baseflow-separated values at station, 02321975, based on a plausible correction results in a closer correspondence between target and model-simulated values (see text for details).
qr09_2322500	SANTA FE RIVER NEAR FORT WHITE, FLA.	745.7	578.7	167.0	526.5	622.3	658.0	Yes	The flow estimates at station, 02321975 Santa Fe River at US Highway 441 near High Springs, Florida, were likely underestimated because measurements were made downstream of two swallets

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[3] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[4]	Comment
									that capture large quantities of river water. Increasing the minimum and maximum baseflow-separated values at station, 02321975, based on a plausible correction results in a closer correspondence between target and model-simulated values (see text for details).
qr09_2322700	ICHETUCKNEE R @ HWY27 NR HILDRETH, FL	253.6	272.6	-19.0	NA	NA	NA	NA	Flow at gage represents combined contribution of discharge from springs along river. Target was computed as being equal to average annual (total) flow.
qr09_2322800	SANTA FE RIVER NR HILDRETH FLA	222.1	147.6	74.5	NA	NA	NA	NA	
qr09_2324000	STEINHATCHEE RIVER NEAR CROSS CITY, FLA.	29.6	62.2	-32.6	11.8	29.6	47.9	No	
qr09_2324400	FENHOLLOWAY RIVER NEAR FOLEY, FLA.	2.3	2.9	-0.6	1.0	2.3	3.9	Yes	
qr09_2326000	ECONFINA RIVER NEAR PERRY, FLA.	44.6	49.6	-5.0	19.2	44.6	60.1	Yes	
qr09_2326500	AUCILLA RIVER AT LAMONT, FLA.	158.7	93.7	65.0	29.5	158.7	242.6	Yes	
qr09_2326550	AUCILLA RIVER NR MOUTH NEAR NUTALL RISE, FL	603.5	926.6	-323.1	505.3	603.5	746.4	No	Flows at site affected by tidal fluctuations.
qr09_2326900	ST. MARKS RIVER NEAR NEWPORT, FLA.	688	381.5	306.5	610.6	688.0	730.3	No	
qr09_2327033	LOST CREEK AT ARRAN FLA	24.2	34.3	-10.1	4.8	24.2	43.3	Yes	
qr09_2327100	SOPCHOPPY RIVER NR SOPCHOPPY, FLA.	37	46.9	-9.9	7.8	37.1	59.6	Yes	
qr09_2327500	OCHLOCKONEE RIVER NEAR THOMASVILLE, GA	166.3	399.2	-232.9	48.4	166.4	249.5	No	

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[3] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[4]	Comment
qr09_2328522	OCHLOCKONEE RIVER NR CONCORD, FLA.	210.2	360.3	-150.1	115.0	210.2	264.4	No	
qr09_2329000	OCHLOCKONEE RIVER NR HAVANA, FLA.	53.5	65.1	-11.6	-36.2	53.5	124.7	Yes	
qr09_2329342	LITTLE ATTAPULGUS CREEK AT ATTAPULGUS, GA	8.8	8.8	0.0	5.7	8.8	11.4	Yes	
qr09_2313100	RAINBOW RIVER AT DUNNELLON, FL	561	569.5	-8.5	NA	NA	NA	NA	Flow at gage represents combined contribution of discharge from springs along river. Target was computed as being equal to average annual (total) flow.
qr09_2320500a	SUWANNEE RIVER AT BRANFORD, FLA.	571.9	908.8	-336.9	621.2	768.9	962.1	Yes	Reach is bounded by gages, 02319500 Suwannee River at Ellaville, FL and 02320500 Suwannee River at Branford, FL
qr09_2322500a	SANTA FE RIVER NEAR FORT WHITE, FLA.	682.7	684.5	1.8	560.1	654.2	696.5	Yes	Reach is bounded by gages, 02321500 Santa Fe River at Worthington Springs, FL and 02322500 Santa Fe River near Fort White, FL
qs09_2228000	SATILLA RIVER AT ATKINSON, GA	659.7	1047.8	-388.1	198.9	659.7	947.6	No	
qs09_2231000	ST. MARYS RIVER NEAR MACCLENNY, FL	89.7	89.5	0.2	51.1	89.7	127.8	Yes	
qs09_2243000	ORANGE CREEK AT ORANGE SPRINGS, FL	8.4	-10.2	18.6	3.8	8.4	10.6	No	
qs09_2315500	SUWANNEE RIVER AT WHITE SPRINGS, FLA.	383.6	162.7	220.8	198.8	383.5	517.5	No	
qs09_2317620	ALAPAHA RIVER NEAR JENNINGS FLA	341.7	810.4	-468.8	183.4	341.7	478.5	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.
qs09_2319000	WITHLACOOCHEE RIVER NEAR PINETTA, FLA.	482.3	840.8	-358.5	289.5	482.3	596.1	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009.

Observation Name	Downstream Gage Name	Calibration Target, in ft^3/s	Simulated Value, in ft^3/s	Residual Value, in ft^3/s	Minimum[3] Target Value, in ft^3/s	Mean Target Value, in ft^3/s	Maximum[1] Target Value, in ft^3/s	Simulated Value Within Range Defined by Five Baseflow-Separation Methods and the Calibration Target?[4]	Comment
qs09_2319500	SUWANNEE RIVER AT ELLAVILLE, FLA	2551.5	3012.9	-461.3	1841.9	2551.5	3001.2	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009, contributing to extreme flooding on Suwannee River and uncertainty in computing a representative baseflow target
qs09_2320500	SUWANNEE RIVER AT BRANFORD, FLA.	3320.4	3920.9	-600.5	2463.2	3320.4	3814.0	No	Record floods occurred on Alapaha and Withlacoochee River Basins during the spring of 2009, contributing to extreme flooding on Suwannee River and uncertainty in computing a representative baseflow target
qs09_2321500	SANTA FE RIVER AT WORTHINGTON SPRINGS, FLA.	76.2	43.5	32.7	30.4	76.2	100.7	No	
qs09_2322500	SANTA FE RIVER NEAR FORT WHITE, FLA.	730.4	726.8	3.6	590.5	730.4	794.7	Yes	

APPENDIX P – SJRWMD HSPF COMMON LOGIC

Parameter	Description	Units	District	USEPA (2000)	Notes
			Min/Max	Min/Max	
AGWRC	Base groundwater recession	none	0.9/0.999	0.85/0.999	
BASETP	Fraction of remaining ET from baseflow	none	0.0/0.1 a little higher is OK	0.0/0.2	
CEPSC	Interception storage capacity	inches	0.03/0.20	0.01/0.40	
DEEPFR	Fraction of groundwater inflow to deep recharge	none	0.0/0.6 1.0 is OK if ephemeral stream	0.0/0.5	DEEPFR is the fraction of infiltrating water, which is lost to deep aquifers (i.e. inactive groundwater), with the remaining fraction (i.e. 1-DEEPFR) assigned to active groundwater storage that contributes base flow to the stream. It is also used to represent any other losses that may not be measured at the flow gage used for calibration. The District has planning level recharge values that should be used as initial values. DEEPFR > 0 (rare exceptions) Adjust DEEPFR so that IGWI approximately matches recharge numbers from Boniol
FOREST	Fraction forest cover	none	0/0	0/0.95	Fraction of land that can transpire when there is snow pack
INFEXP	Exponent in infiltration equation	none	2.0/2.0	1.0/3.0	
INFILD	Ration of max/mean infiltration capacities	none	2.0/2.0	1.0/3.0	
INFILT	Index to infiltration capacity	inches/hr	0.01/1.0 See table in notes	0.001/0.5	INFILT is the parameter that effectively controls the overall division of the available moisture from precipitation (after interception) into surface and subsurface flow and storage components. Thus, high values of INFILT will produce more water in

Parameter	Description	Units	District	USEPA (2000)	Notes
			Min/Max	Min/Max	
					the lower zone and groundwater, and result in higher base flow to the stream; low values of INFILT will produce more upper zone and interflow storage water, and thus result in greater direct overland flow and interflow. INFILT is primarily a function of soil characteristics (soil type and land treatment); therefore land use should be used to adjust this parameter providing a range of values, i.e. forest, open, pasture and ag should have a greater values than urban, and wetland. A soils: 0.40-1.00 in/hr: low runoff potential B soils: 0.10-0.40 in/hr: moderate runoff potential C soils: 0.05-0.10 in/hr: moderate to high runoff potential D soils: 0.01-0.05 in/hr: high runoff potential
INTFW	Interflow inflow parameter	none	0.0/3.0	1.0/10.0	INTFW determines the amount of water, which enters the ground from surface detention storage and becomes interflow, as opposed to direct overland flow and upper zone storage. Interflow can have an important influence on storm hydrographs; particularly when vertical a shallow, less permeable soil layer has retarded percolation. For most watersheds in the District interflow should be zero due to flat land slopes and shallow depth to water do not allow much lateral flow in the vadose zone. Determined from A,B soils plus slope. Higher slope -> higher INTFW, more A,B soils -> higher INTFW
IRC	Inerflow recession parameter	none	0.50/0.70	0.30/0.85	
KVARY	Variable groundwater recession	1/inches	0.0/3.0	0.0/5.0	
LSUR	Length of overland flow	ft	200/500	100/700	WinHSPF has a table of values for LSUR based on slope. That

Parameter	Description	Units	District	USEPA (2000)	Notes
			Min/Max	Min/Max	
					table is the preferred set of values.
LZETP	Lower zone ET parameter	none	0.20/0.70	0.10/0.90	LZETP is a coefficient to define the ET opportunity; it affects evapotranspiration from the lower zone, which represents the primary soil moisture storage and root zone of the soil profile. LZETP behaves much like a 'crop coefficient' with values mostly in the range of 0.2 to 0.7; as such it is primarily a function of vegetation. The following ranges for different vegetation are expected for the 'maximum' value during the year: Forest: 0.6-0.85 Grassland: 0.4-0.6 Row crops: 0.5-0.7 Barren: 0.1-0.4 Wetlands: 0.8-0.95
LZSN	Lower zone nominal soil moisture storage	inches	2.0/10.0	2.0/15.0	LZSN is related to both precipitation patterns and soil characteristics in the region. Initial estimates for LZSN in the Stanford Watershed Model (SWM-IV, predecessor model to HSPF) can determined by using one-eighth annual mean rainfall plus 4 inches for coastal, humid, or sub humid climates. Deep-rooted plants extract water from this zone; therefore land use should be used to modify this parameter providing a range of values for various PERLNDs, i.e. wetlands, forest and ag. should have a greater value than urban, open and pasture. Could base on (field capacity - wilting point) * minimum (depth to water table, root zone depth).
NSUR	Manning's 'n' for overland flow	none	0.15/0.35	0.05/0.50	
PETMAX	Temperature below which ET is reduced	deg. F.	35.0/45.0	32.0/48.0	

Parameter	Description	Units	District	USEPA (2000)	Notes
			Min/Max	Min/Max	
PETMIN	Temperature below which ET is zero	deg. F.	30.0/35.0	30.0/40.0	
SLSUR	Slope of overland flow plane	ft/ft/	0.001/0.15	0.001/0.30	
UZSN	Upper zone nominal soil moisture	inches	0.10/1.0 4.0 for wetlands	0.05/2.0	UZSN is related to land surface characteristics, topography, and LZSN. For agricultural conditions, tillage and other practices, UZSN may change over the course of the growing season. Increasing UZSN value increases the amount of water retained in the upper zone and available for ET, and thereby decreases the dynamic behavior of the surface and reduces direct overland flow; decreasing UZSN has the opposite effect. The model generally maintains a convention of using 10% of the value for LZSN. However, for wetlands this value does not need to follow this convention, and indeed a high value for UZSN is a key way to represent standing water, as the overland flow plane does not allow for this. The upper zone is defined as surface depression storage plus shallow soil moisture –essentially the water that is available for direct evaporation as opposed to transpiration by plants. It is acceptable for wetlands to have values of UZSN up to 1 to 4 inches.

APPENDIX Q – DEVELOPMENT OF RECHARGE AND MAXIMUM SATURATED EVAPOTRANSPIRATION EQUATIONS

DEVELOPMENT OF RECHARGE EQUATION

HSPF Pervious Land Elements (PERLND)

Using the control volume in Figure Q- 1 establish a mass balance on PERLND land elements:

$$In = Out + (Change\ in\ storage) \tag{1}$$

Take that:

$$In = Precipitation \tag{2}$$

$$Out = SURO + IFWO + LZET + UZET + CEPE + AGWI + IGWI + SURET \tag{3}$$

$$(Change\ in\ storage) = 0 \tag{4}$$

$$SURET = 0\ except\ for\ Water\ and\ Wetland\ land\ covers \tag{5}$$

Then:

$$Precipitation = SURO + IFWO + LZET + LZET + UZET + CEPE + AGWI + IGWI + SURET \tag{6}$$

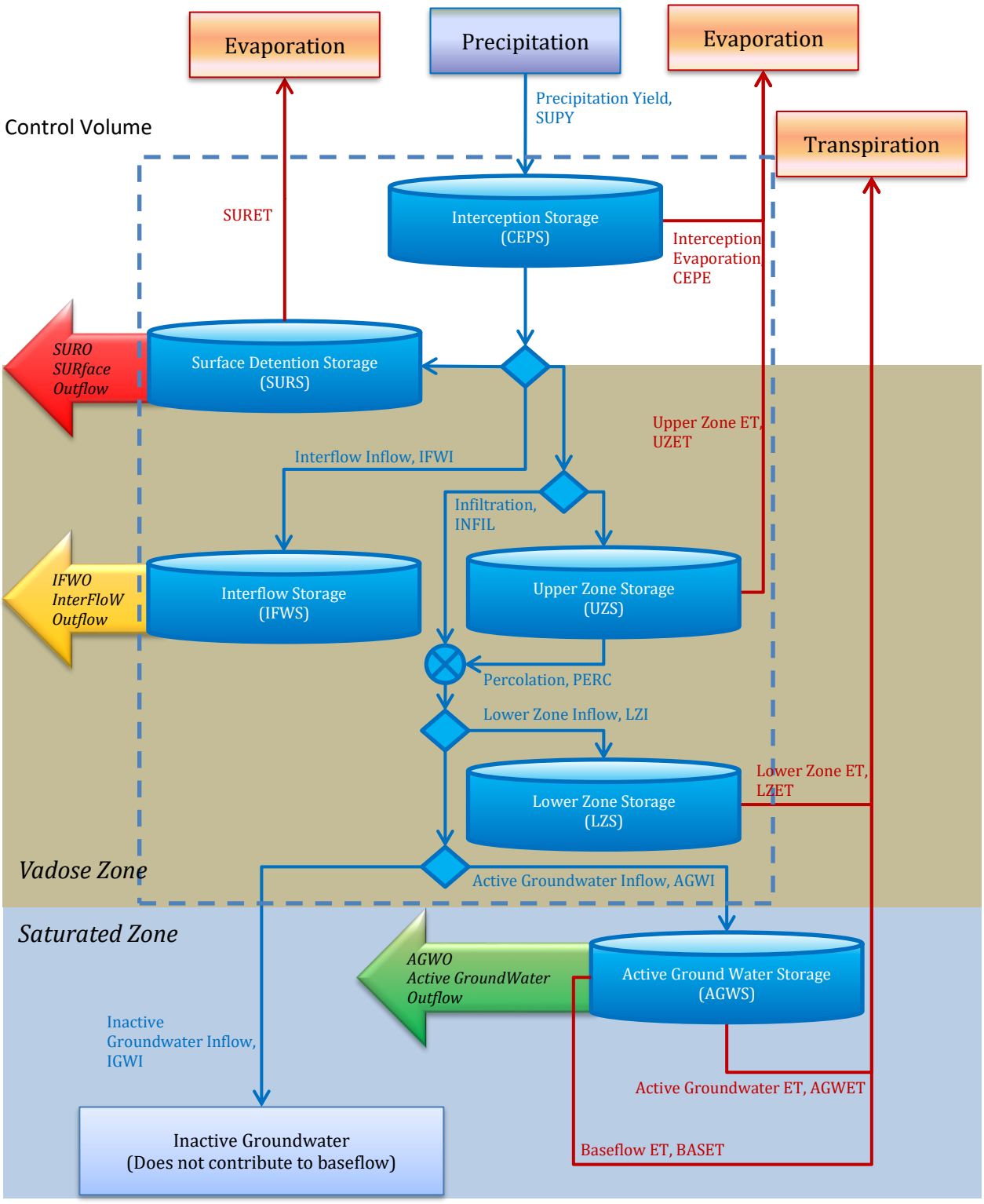


Figure Q- 1. Vadose zone control volume identified inside the blue, dashed line.

MODFLOW Recharge

What MODFLOW expects as recharge:

$$MODFLOW\ Recharge = Precipitation - interceptionET - directrunoff - unsaturatedET \quad (7)$$

Replace using HPSF water balance terms:

$$interceptionET = CEPE \quad (8)$$

$$directrunoff = SURO + IFWO \quad (9)$$

$$unsaturateET = LZET + UZET \quad (10)$$

MODFLOW recharge equation in HSPF terms:

$$MODFLOW\ Recharge = Precipitation - CEPE - SURO - IFWO - LZET - UZET \quad (11)$$

Rearrange Equation 5:

$$Precipitation - CEPE - SURO - IFWO - LZET - UZET = AGWI + IGWI + SURET \quad (12)$$

Combine Equation 5 and Equation 11:

$$MODFLOW\ recharge = AGWI + IGWI + SURET \quad (13)$$

Development of Maximum Saturated Evapotranspiration Equation

In the steady-state version of the NFSEG groundwater flow model, the rate of evapotranspiration (ET) from the saturated zone was estimated through use of the MODFLOW ET package. In the MODFLOW ET package, the rate of saturated ET varies linearly with the depth to the water table between a maximum saturate ET value input into the model that occurs at the "ET surface" typically assumed to be land surface, and 0 feet/day (ft/day), which occurs at the "extinction depth." If the estimated water table is above the extinction depth then evaporation occurs. If the water table is above the "ET surface" then evaporation occurs at the maximum saturated ET rate. The maximum saturated ET is potential ET subtracting away the unsaturated ET terms. In HSPF terms shown in Figure Q-1 the equation used is:

$$Maximum\ Saturated\ ET = Potential\ ET - CEPE - UZET - LZET \quad (14)$$

APPENDIX R – PARAMETER MAPS

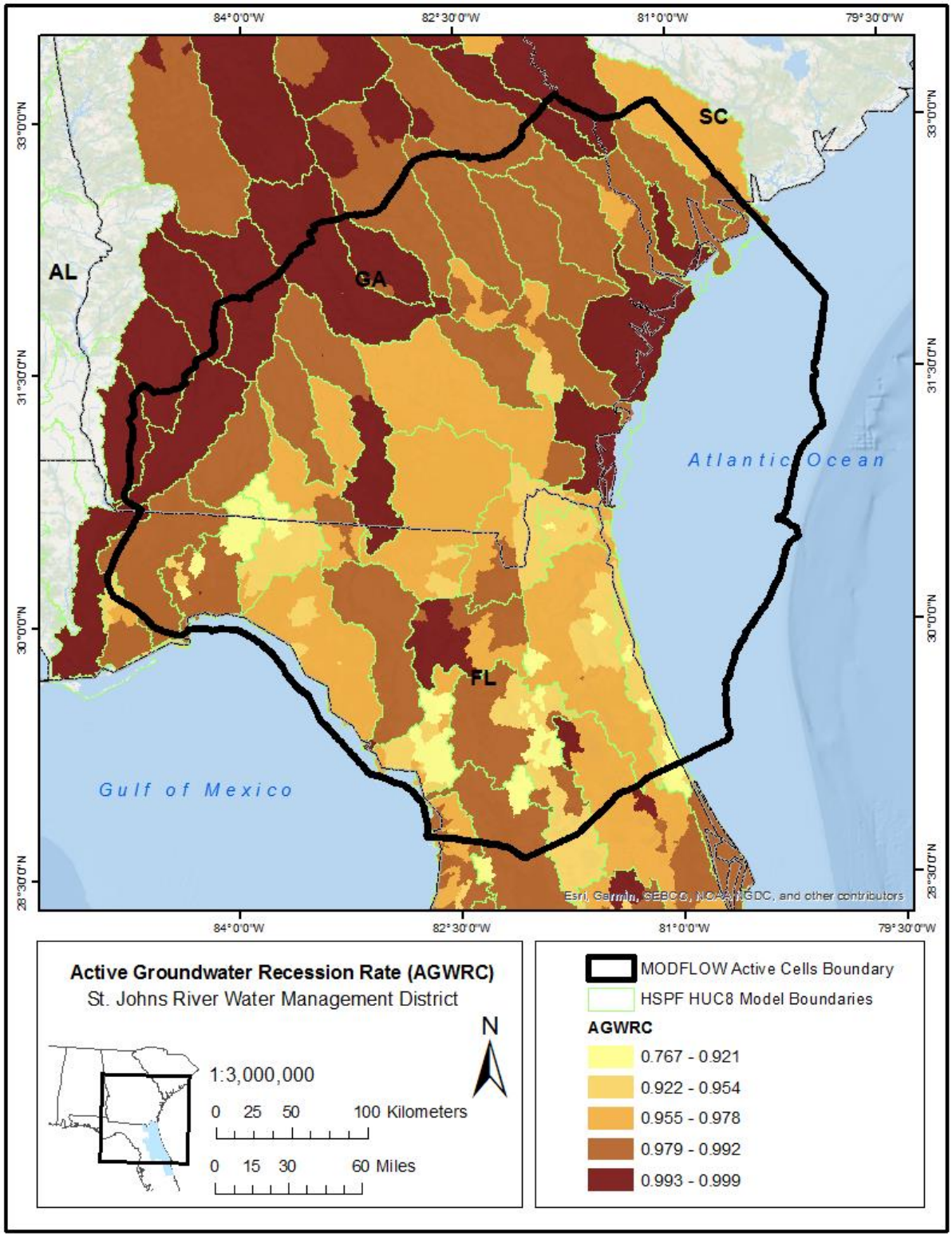


Figure R- 1. Active Groundwater Recession Constant.

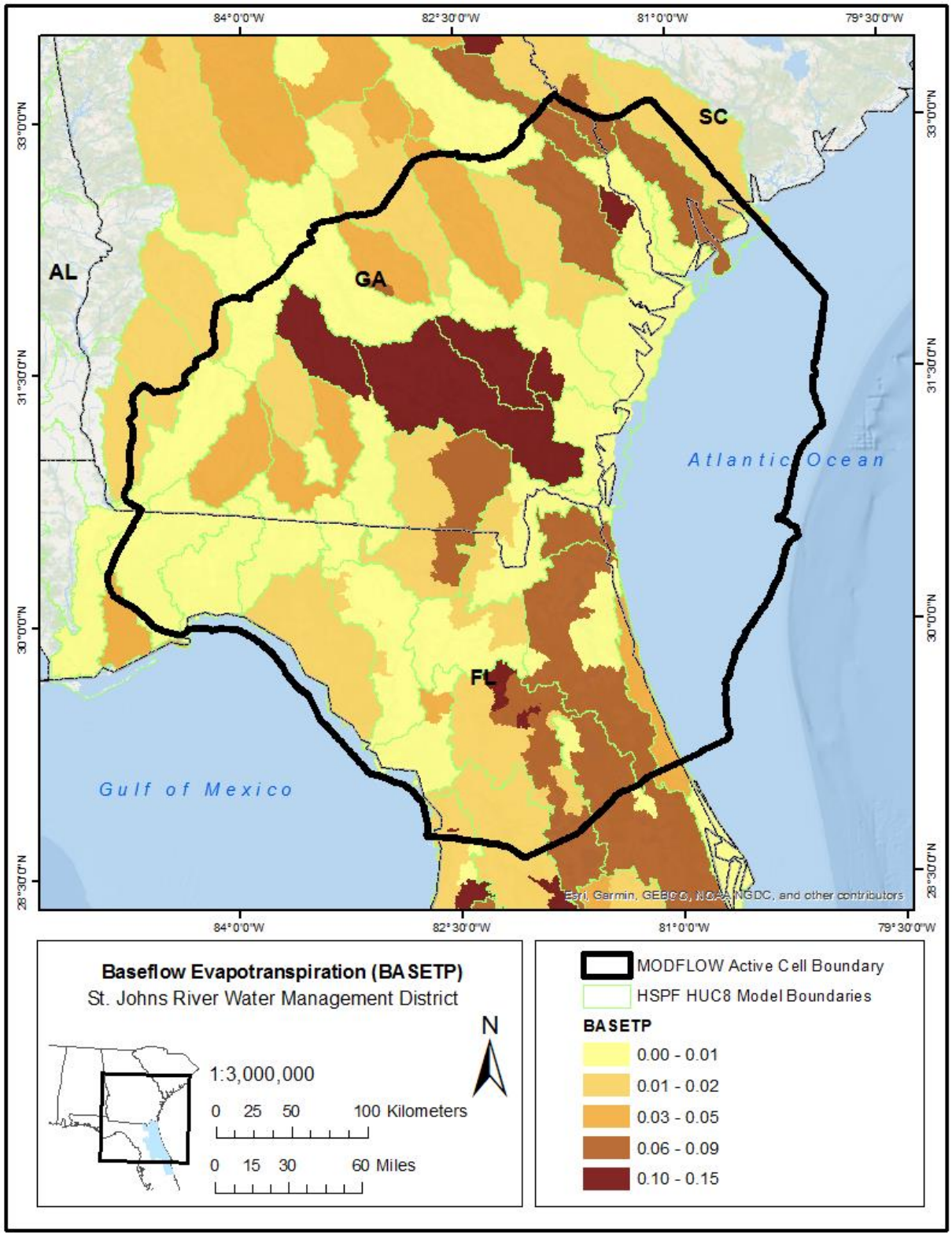


Figure R- 2: Baseflow Evapotranspiration Parameter

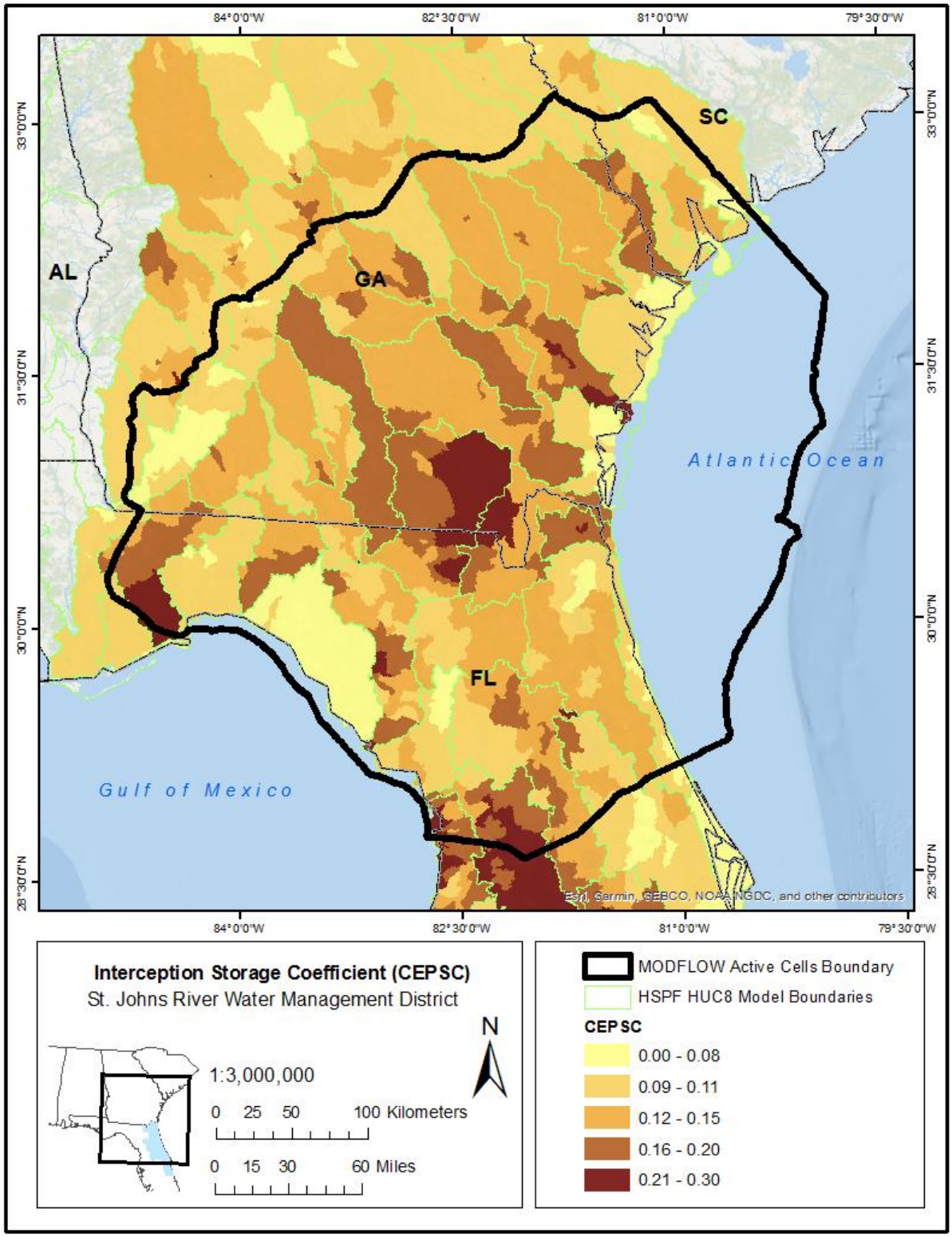


Figure R- 3: Interception storage

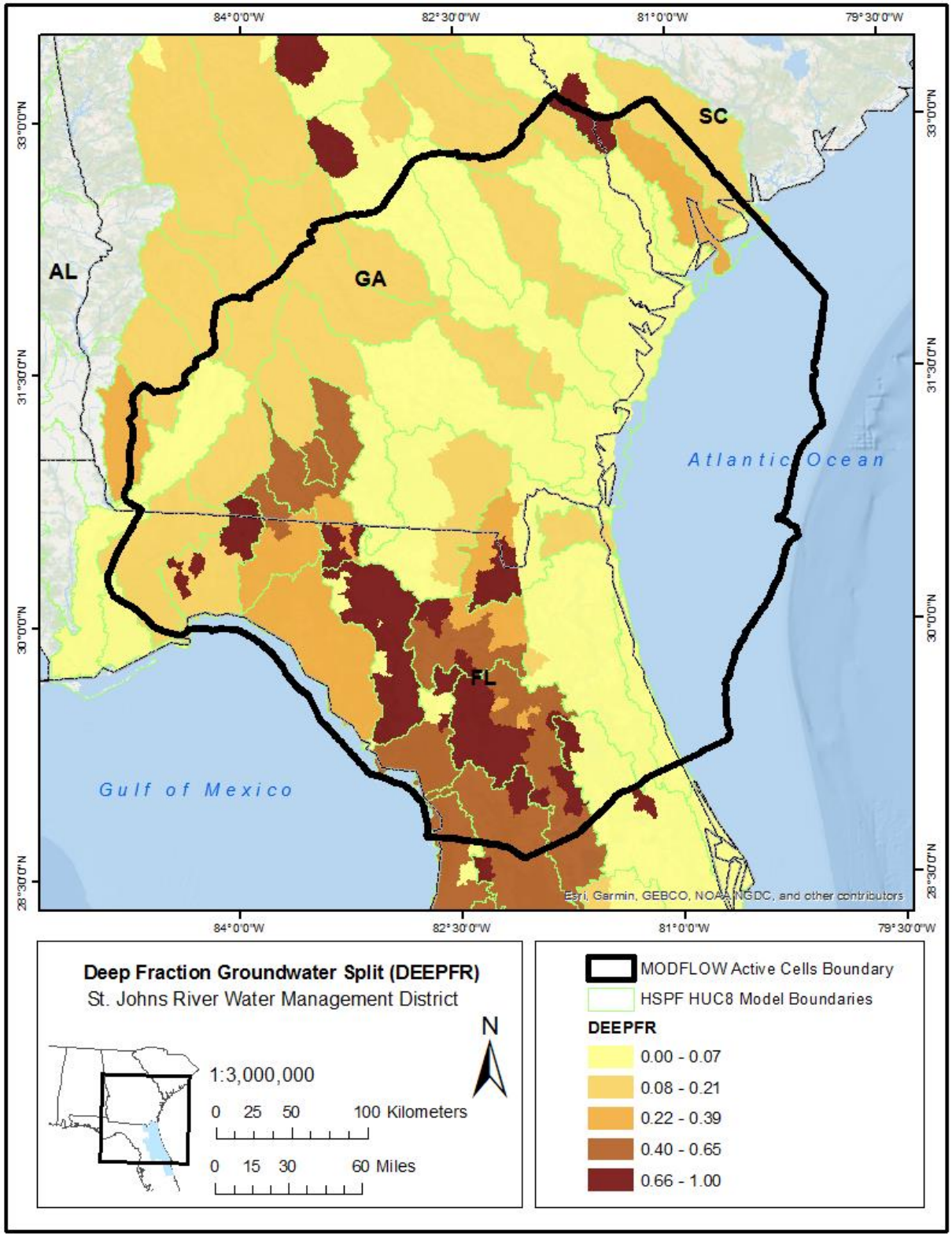


Figure R- 4: Fraction of groundwater to go to inactive groundwater

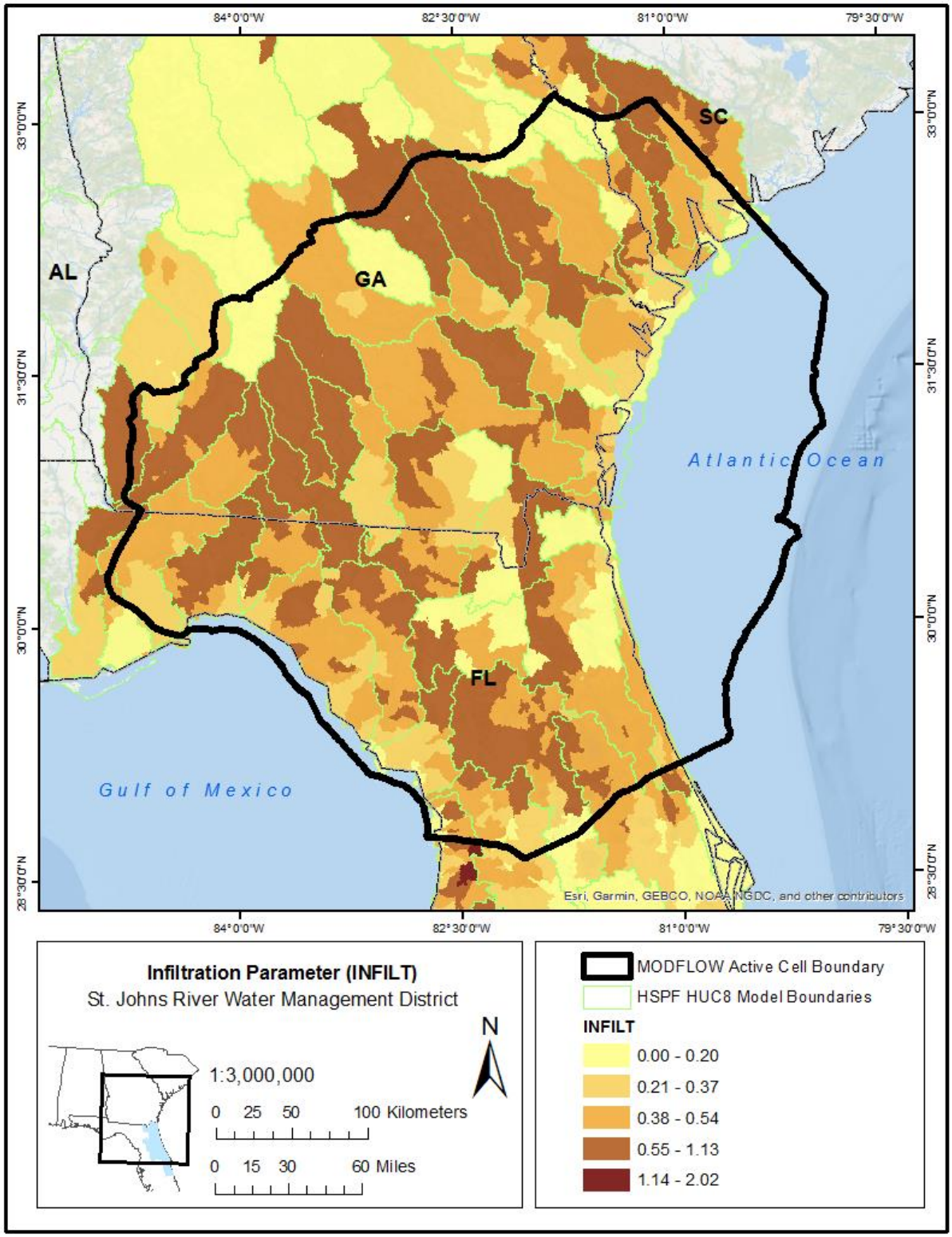


Figure R- 5: Infiltration parameter

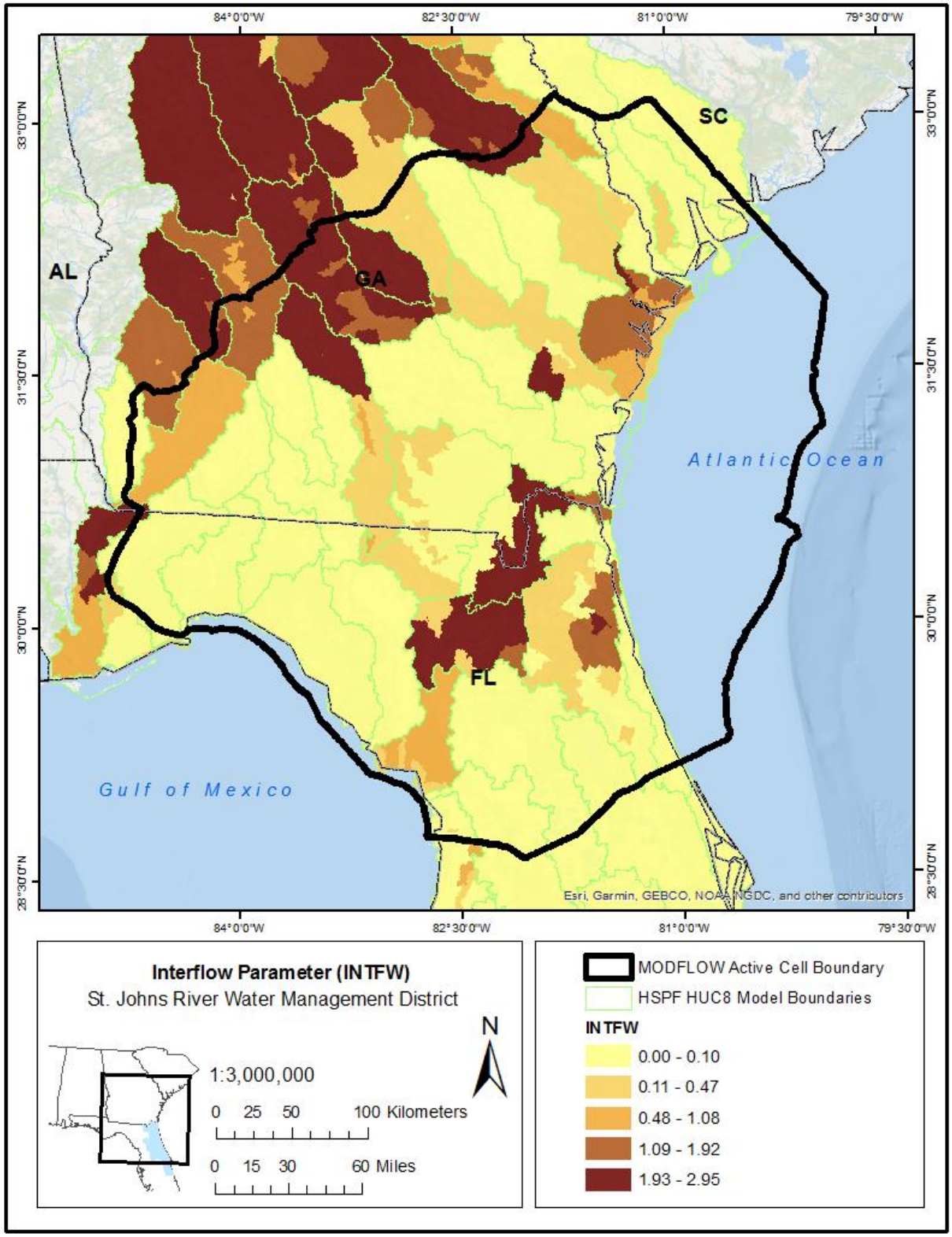


Figure R- 6: Interflow parameter.

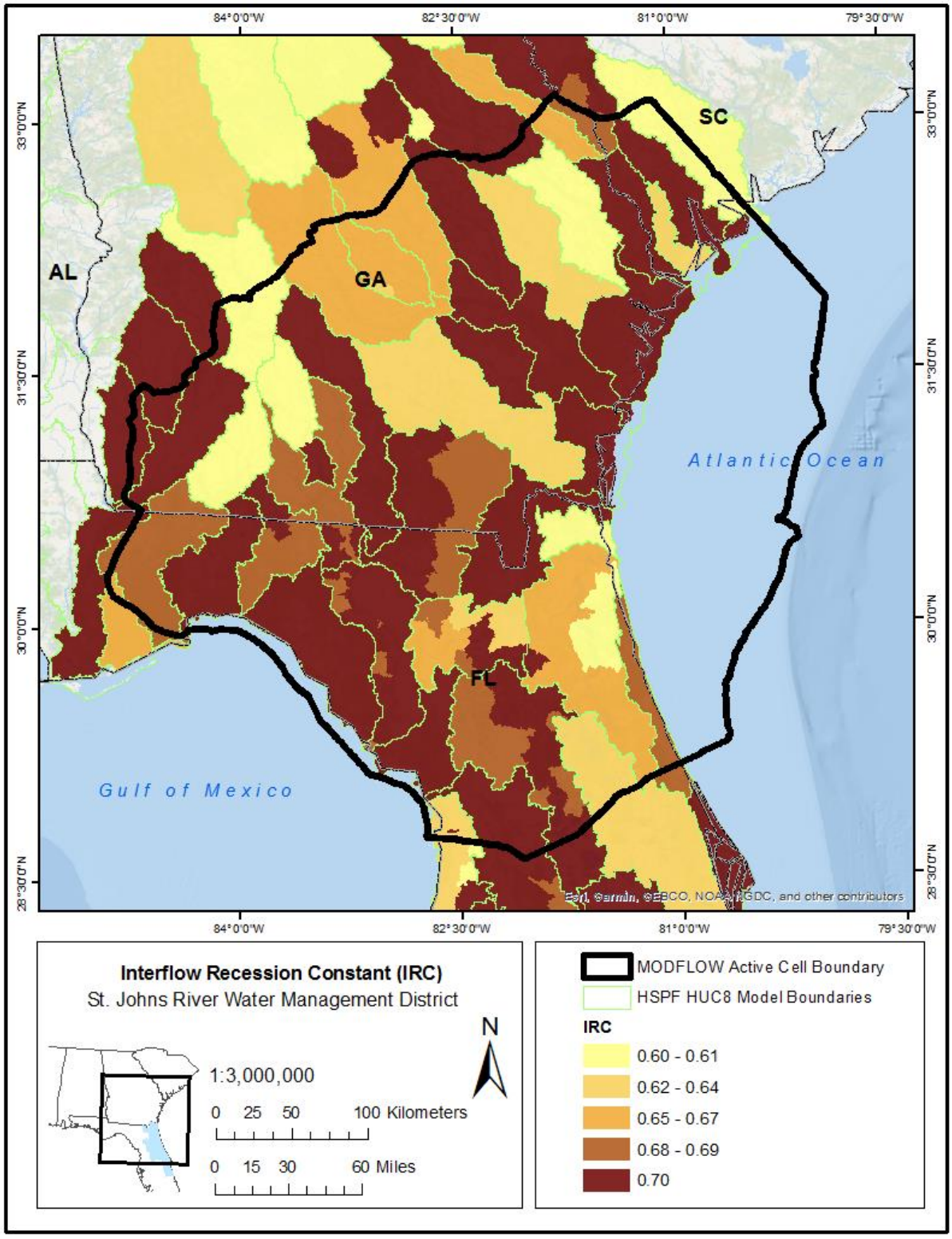


Figure R- 7: Interflow recession constant.

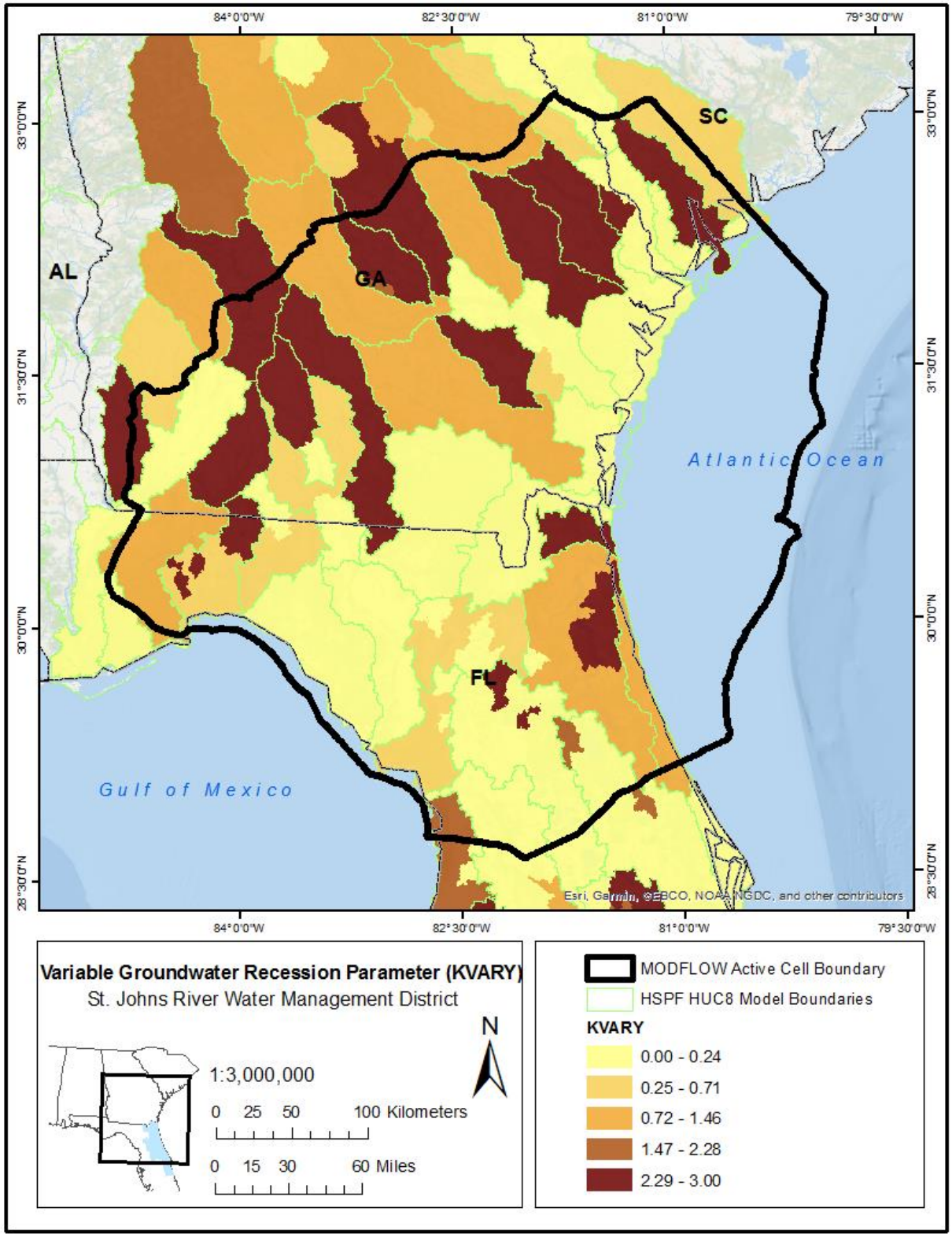


Figure R- 8: Variable groundwater recession parameter.

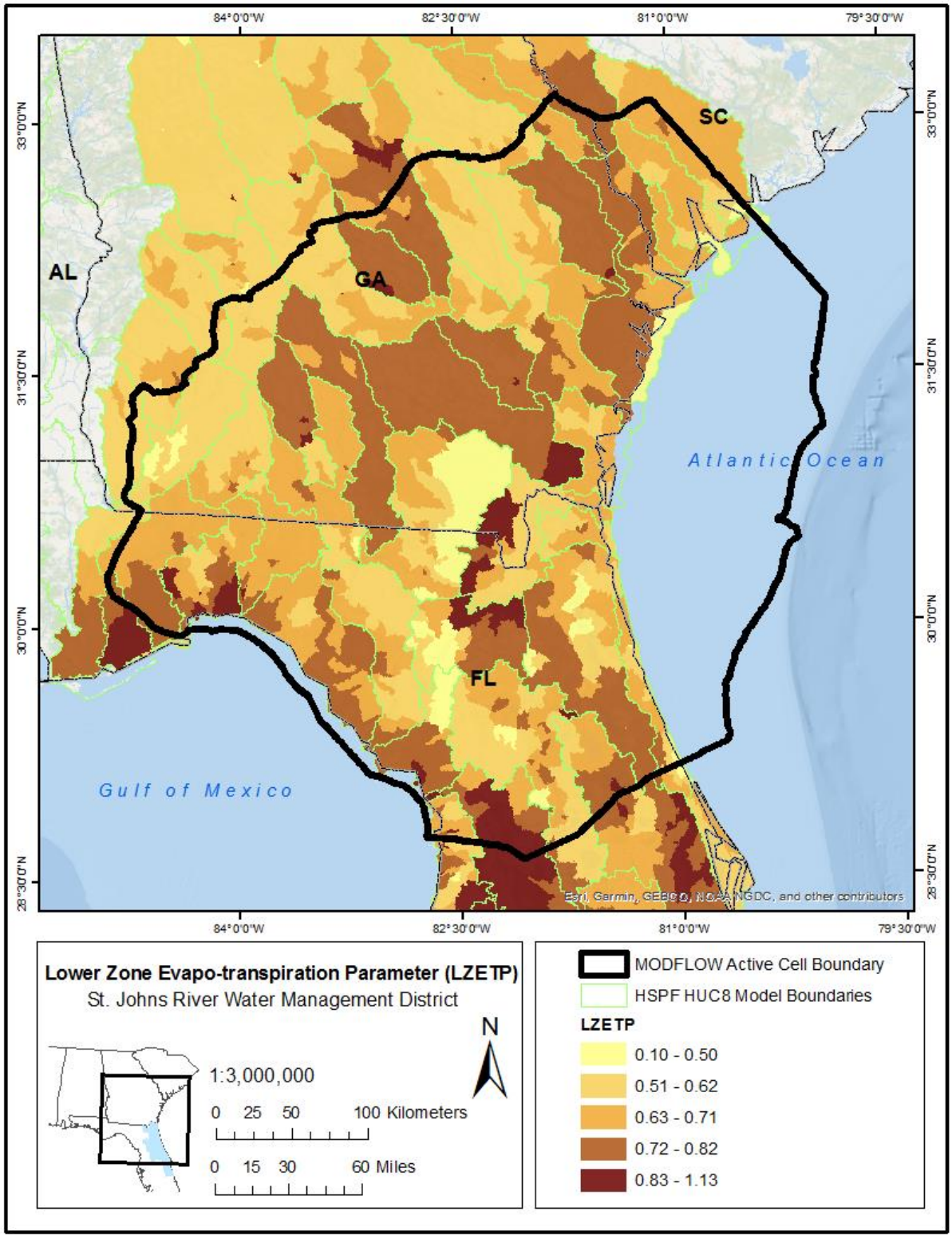


Figure R- 9: Lower zone evapo-transpiration parameter.

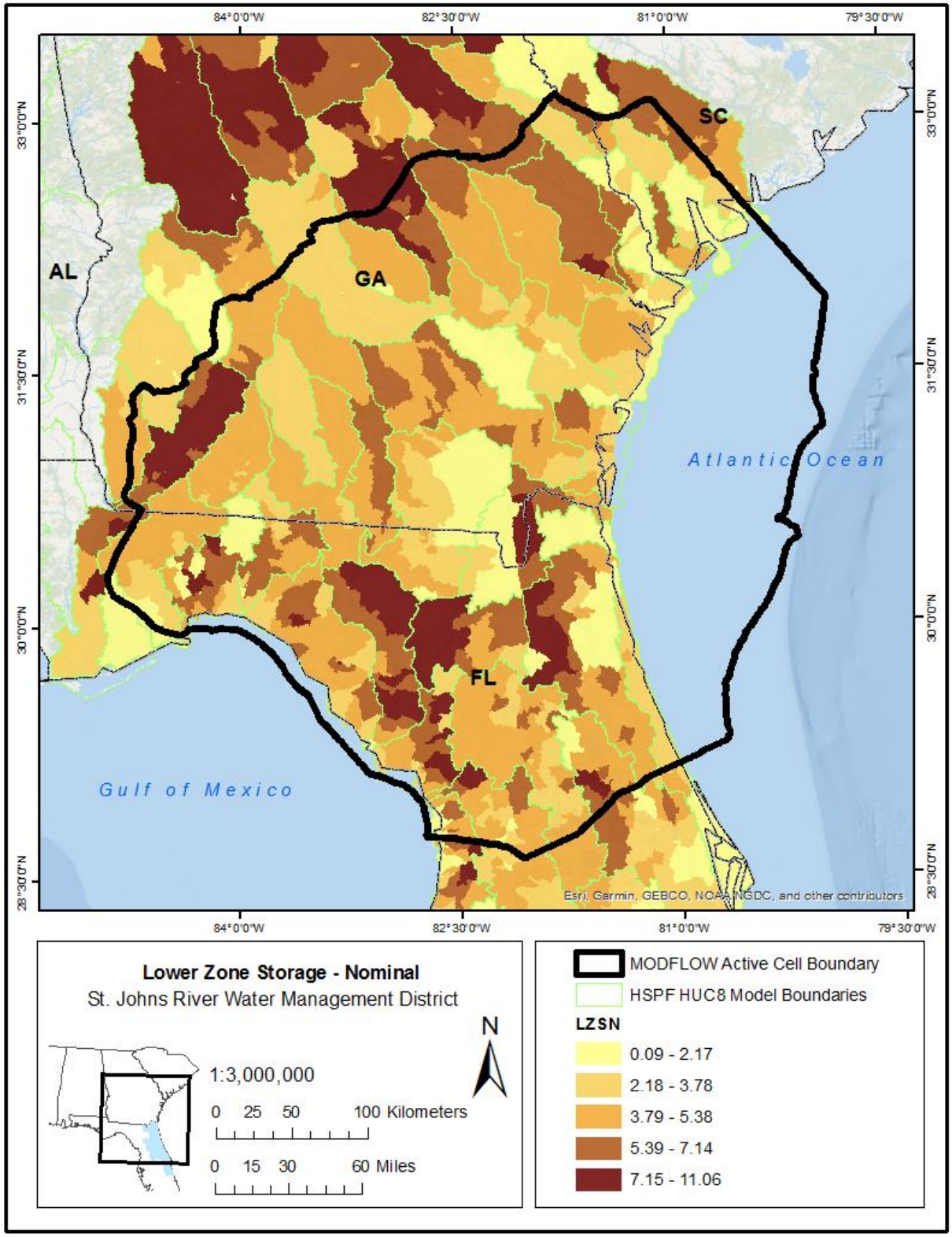


Figure R- 10: Lower zone storage nominal.

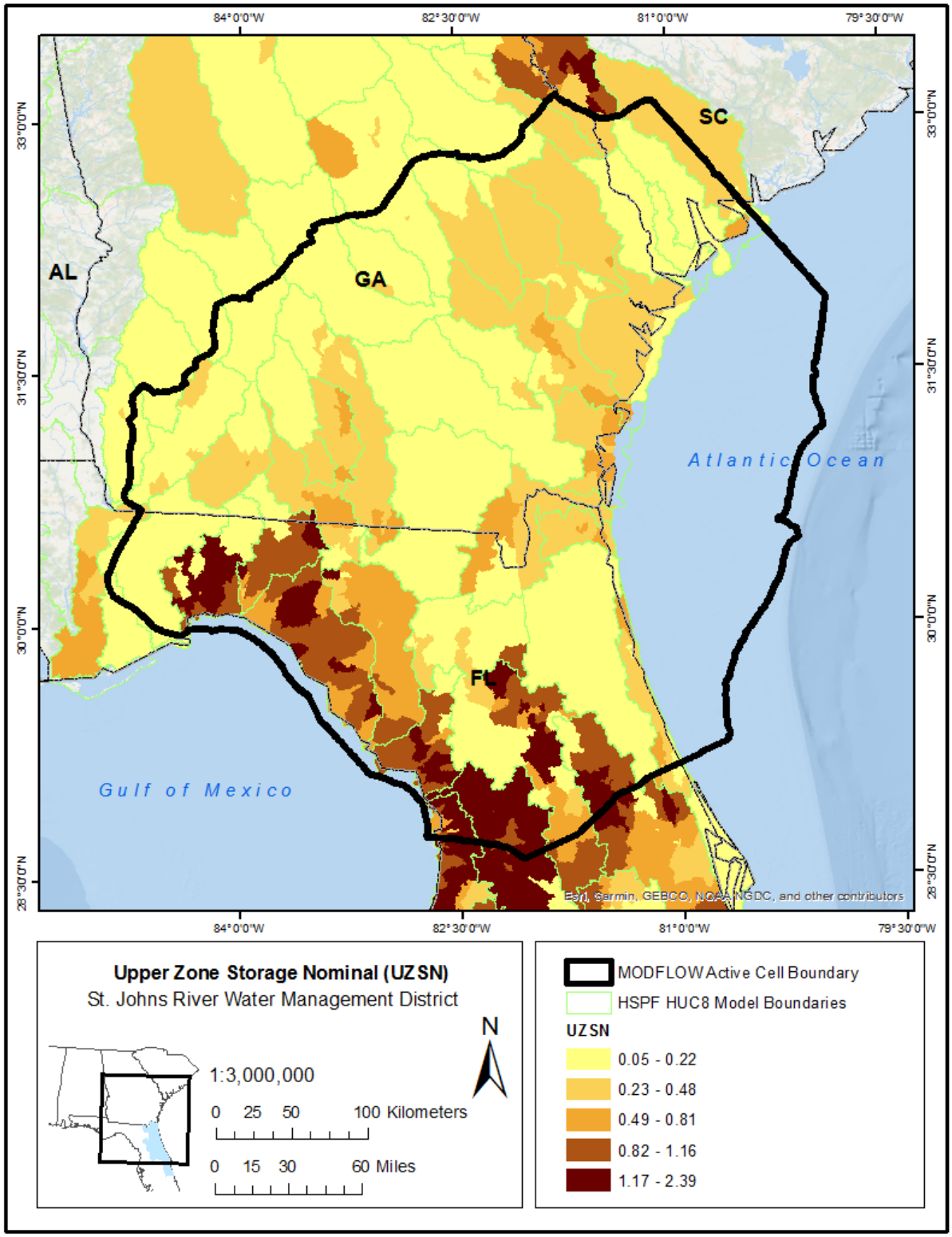


Figure R- 11: Upper zone storage nominal

APPENDIX S – DEFINITIONS TO HELP UNDERSTAND APPENDICES T-*

Table S- 1: HSPF land cover code assignment to National Land Cover Database (NLCD) land covers.

HSPF CODE	LABEL	ABBREV.	DESCRIPTION
1	Water	WATER	Areas of open water, generally with less than 25% cover of vegetation or soil.
2	Developed Open Space	OPEN	Areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
3	Developed Low Intensity	LOW	Areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.
4	Developed Medium Intensity	MED	Areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.
5	Developed High Intensity	HIGH	highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.
6	Barren or Mining	BARE	Areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.
7	Forest	FOREST	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.
8	Shrub	SHRUB	Areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young

			trees in an early successional stage or trees stunted from environmental conditions.
9	Grass Land	GRASS	Areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.
10	Agriculture – Pasture	PASTURE	Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.
11	Agriculture – Crop	CROP	Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.
12	Wetlands	WETLAND	Areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.
15	Golf courses	GOLF	Same as “Developed Open Space” plus irrigation.
17	Ag Irrig – Pasture	PASTURE-IRR	Same as “Agriculture-Pasture” plus irrigation.
18	Ag Irrig – Crop	CROP-IRR	Same as “Agriculture-Crop” plus irrigation

Table S- 2: Description of HSPF water balance terms.

NAME	**DESCRIPTION**
Supply	
SUPY	Water supply to soil surface (If CSNOFG is 0, same as precipitation.)
LZLI	Lower Zone Lateral Inflow – used for some irrigation types
SURLI	Surface Lateral Inflow – used for some irrigation types
Surface Water	
SURO	Surface Outflow
IFWO	Interflow Outflow
AGWO	Active Groundwater Outflow
PERO	Sum of SURO, IFWO, and AGWO
Groundwater	
AGWI	Active Groundwater Inflow

IGWI	Inactive Groundwater Inflow
GWI	Sum of AGWI and IGWI
Evapotranspiration	
PET	Potential Evapotranspiration
CEPE	Interception Evaporation
UZET	Upper Zone Evapotranspiration
LZET	Lower Zone Evapotranspiration
AGWET	Active Groundwater Evapotranspiration
BASET	Baseflow Evapotranspiration
SURET	Surface Evapotranspiration
TAET	Total Actual Evapotranspiration, sum of CEPE, UZET, LZET, AGWET, BASET, and SURET

Table S- 3: Description of some of the most important HSPF parameters.

PARAMETER	DESCRIPTION
AGWRC	Basic groundwater recession rate if KVARY is zero and there is no inflow to groundwater; AGWRC is defined as the rate of flow today divided by the rate of flow yesterday.
BASETP	Fraction of remaining potential E-T which can be satisfied from baseflow (groundwater outflow), if enough is available.
CEPSC	Interception storage capacity.
DEEPFR	Fraction of groundwater inflow which will enter deep (inactive) groundwater, and, thus, be lost from the system as it is defined in HSPF.
INFILT	Index to the infiltration capacity of the soil.
INTFW	Interflow input parameter.
IRC	Interflow recession constant.
KVARY	Parameter which affects the behavior of groundwater recession flow, enabling it to be non-exponential in its decay with time.
LZETP	Lower zone E-T parameter. It is an index to the density of deep-rooted vegetation.
LZSN	Lower zone storage nominal. Estimation of how much water can be stored in the root zone.
UZSN	Upper zone storage nominal. Estimation of how much water can be stored in the upper zone.

APPENDIX T-03050207

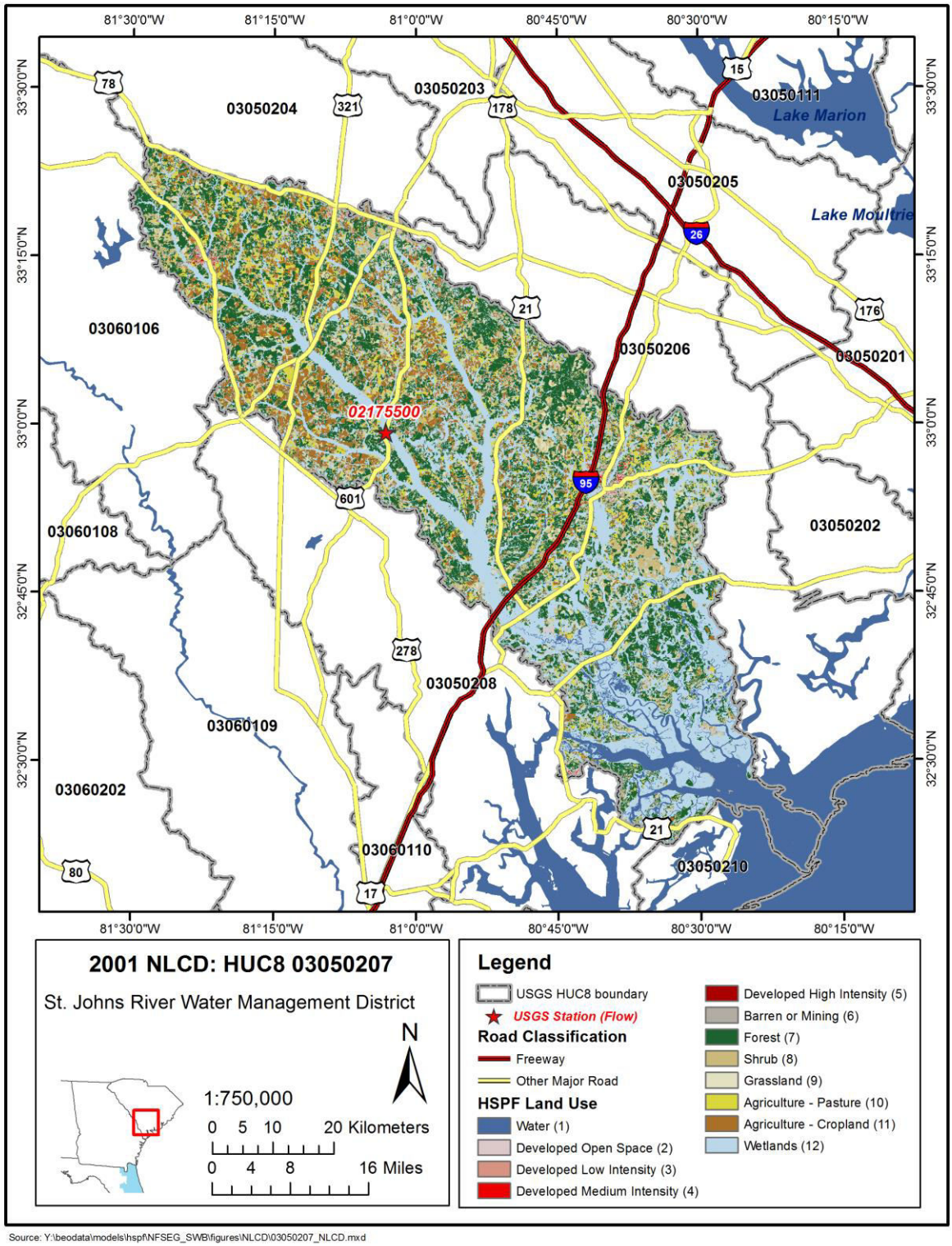
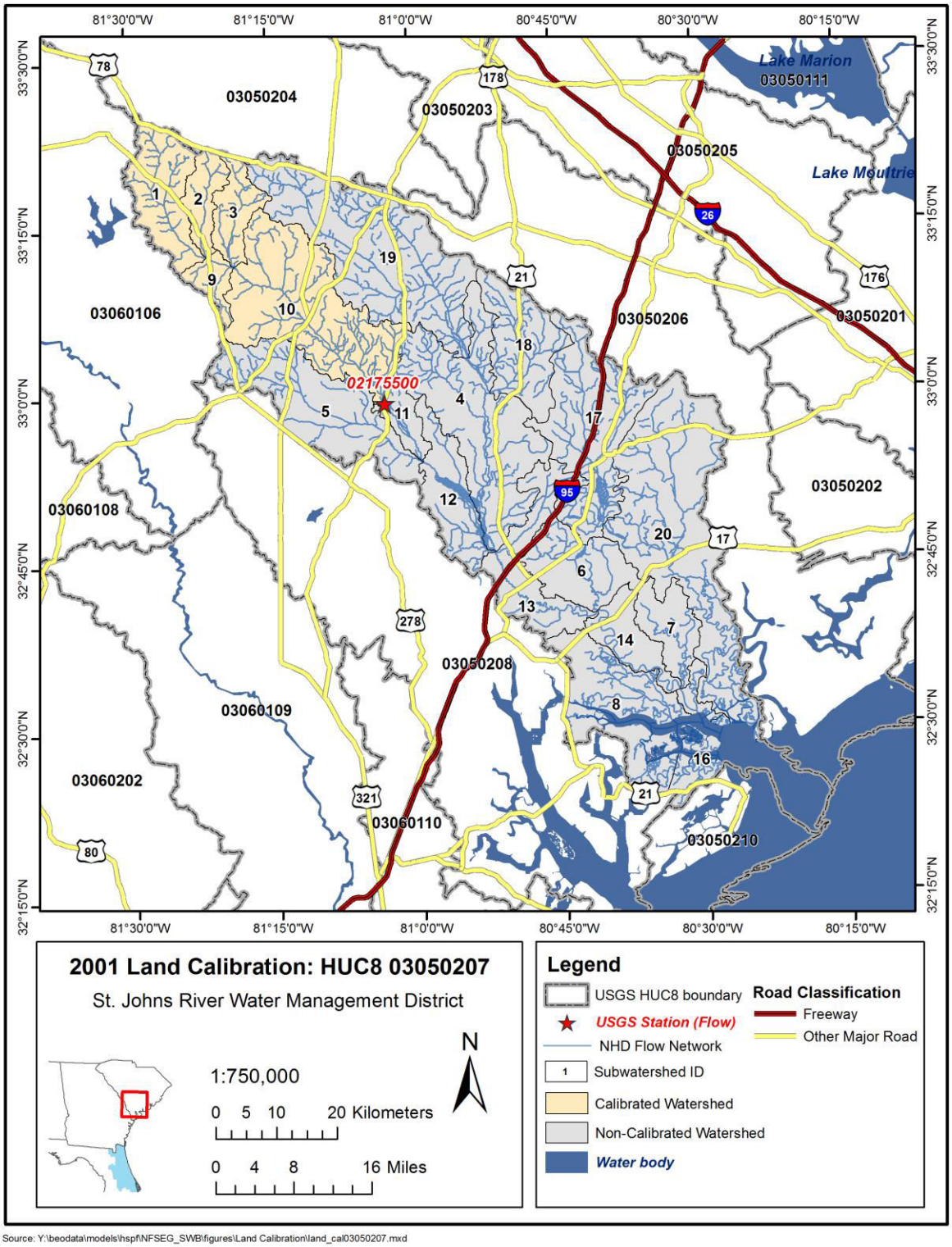


Figure T-03050207-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03050207.mxd

Figure T-03050207-2: Calibrated sub-watersheds.

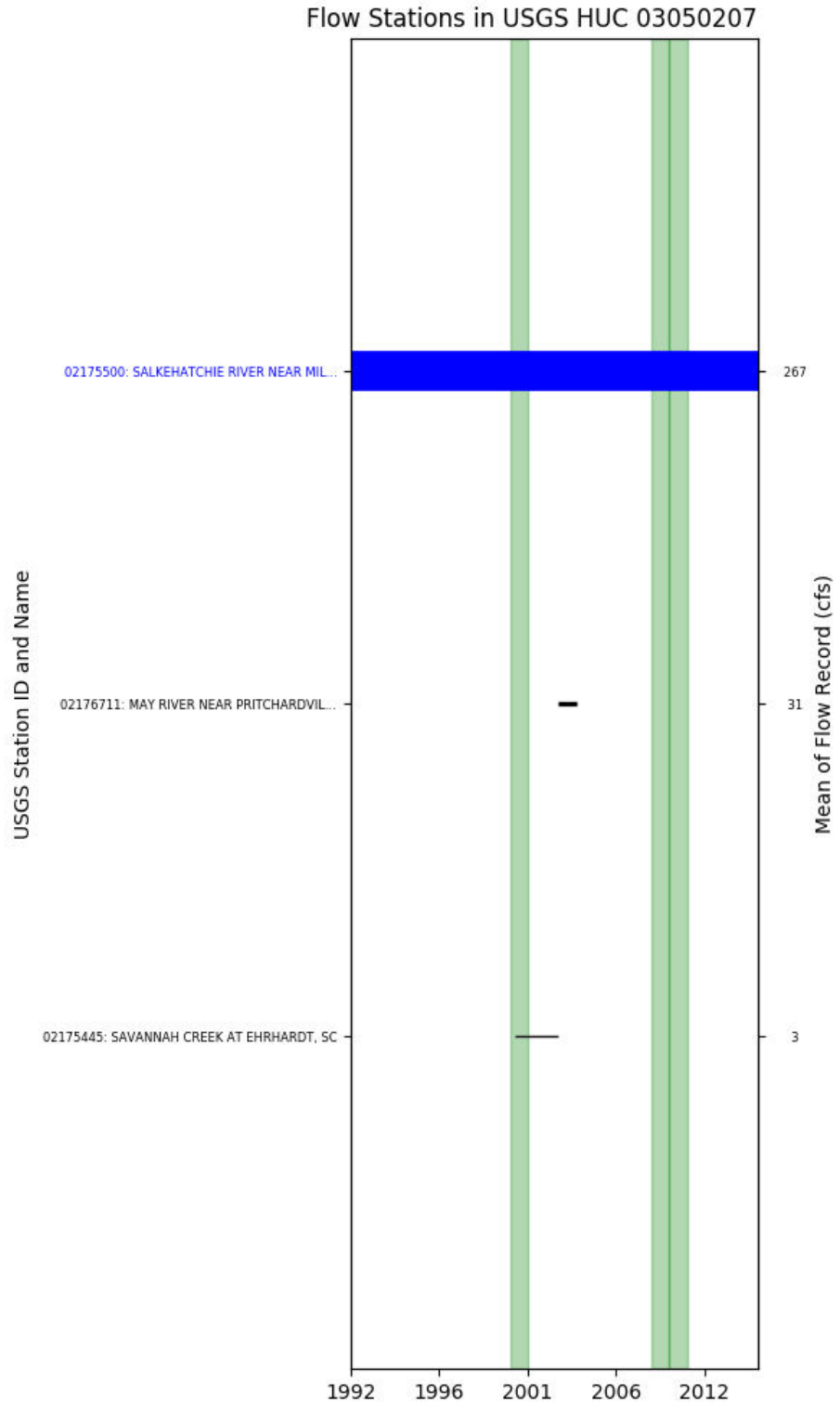


Figure T-03050207-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 10, USGS GAUGE 02175500

Water-Data Report 2009
02175500 SALKEHATCHIE RIVER NEAR MILEY, SC
Edisto-South Carolina Coastal Basin Salkehatchie Subbasin

LOCATION.--Lat 325920, long 810310 referenced to North American Datum of 1927, Hampton County, SC, Hydrologic Unit 03050207, on downstream side of bridge on U.S. Highway 601, 2.4 mi downstream from Savannah Creek, 3.1 mi upstream from Hampton and Branchville Railroad bridge, 3.1 mi northwest of Miley, and at mile 68.0.

DRAINAGE AREA.--341 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1951 to current year.

GAGE.--Data collection platform. Datum of gage is 64.35 ft above NGVD of 1929. Dec. 6, 1957 to Jan. 22, 1971, nonrecording gage 90 ft downstream at same datum. Prior to Dec. 6, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair except for daily discharges below 10 cfs, which are poor.

Table T-03050207-1: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02175500.

Statistic	Value
Bias	2.15
Standard error	113.39
Relative bias	0.01
Relative standard error	0.51
Nash-Sutcliffe coefficient	0.74
Kling-Gupta coefficient	0.87
Coefficient of efficiency	0.45
Index of agreement	0.73

Table T-03050207-2: Hydrologic Indices Between USGS Gauge 02175500 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02175500	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	279.32	281.52	0.79
MA2: Median, all daily flows	204.00	201.97	-1.00
MA3: CV, all daily flows	71.91	72.70	1.10
MA4: CV, log of all daily flows	77.18	78.82	2.12
MA5: Mean daily flow / median daily flow	1.37	1.39	1.80
MA9: (Q10 - Q90) / median daily flow	2.52	2.68	6.08

MA10: (Q20 - Q80) / median daily flow	1.45	1.63	12.66
MA11: (Q25 - Q75) / median daily flow	1.13	1.24	9.74
MA12: Mean monthly flow, January	402.60	370.54	-7.96
MA13: Mean monthly flow, February	419.68	407.99	-2.79
MA14: Mean monthly flow, March	423.84	432.52	2.05
MA15: Mean monthly flow, April	306.17	300.89	-1.72
MA16: Mean monthly flow, May	182.05	188.54	3.56
MA17: Mean monthly flow, June	194.51	237.71	22.21
MA18: Mean monthly flow, July	171.01	233.42	36.49
MA19: Mean monthly flow, August	238.54	264.88	11.04
MA20: Mean monthly flow, September	170.61	194.96	14.27
MA21: Mean monthly flow, October	188.12	191.01	1.54
MA22: Mean monthly flow, November	226.56	174.63	-22.92
MA23: Mean monthly flow, December	304.57	255.95	-15.96
ML1: Mean minimum monthly flow, January	255.39	208.05	-18.54
ML2: Mean minimum monthly flow, February	280.82	236.48	-15.79
ML3: Mean minimum monthly flow, March	264.95	235.17	-11.24
ML4: Mean minimum monthly flow, April	165.59	147.81	-10.74
ML5: Mean minimum monthly flow, May	90.91	97.49	7.24
ML6: Mean minimum monthly flow, June	73.39	103.61	41.18
ML7: Mean minimum monthly flow, July	67.80	142.71	110.48
ML8: Mean minimum monthly flow, August	95.09	150.28	58.05
ML9: Mean minimum monthly flow, September	84.77	89.81	5.94
ML10: Mean minimum monthly flow, October	99.05	85.30	-13.88
ML11: Mean minimum monthly flow, November	148.32	97.47	-34.29
ML12: Mean minimum monthly flow, December	214.55	141.43	-34.08
ML13: CV of minimum monthly flows	80.86	85.02	5.14
ML14: Mean minimum daily flow / mean median annual flow	0.18	0.15	-14.35
ML15: Mean minimum annual flow / mean annual flow	0.15	0.12	-20.70
ML16: Median minimum annual flow / median annual flow	0.16	0.12	-28.31
ML20: Ratio of baseflow volume to total flow volume	0.66	0.65	-1.55
ML22: Mean annual minimum flow divided by catchment area	0.44	0.35	-19.73
RA1: Mean of positive changes from one day to next (rise rate)	42.68	41.38	
RA2: CV, mean of positive changes from one day to next (rise rate)	243.57	256.87	
RA3: Mean of negative changes from one day to next (fall rate)	29.27	20.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	194.73	192.16	
RA5: Ratio of days that are higher than previous day	0.39	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.05	
RA8: Number of flow reversals from one day to the next	75.43	60.83	
RA9: CV, number of flow reversals from one day to the next	19.11	24.35	

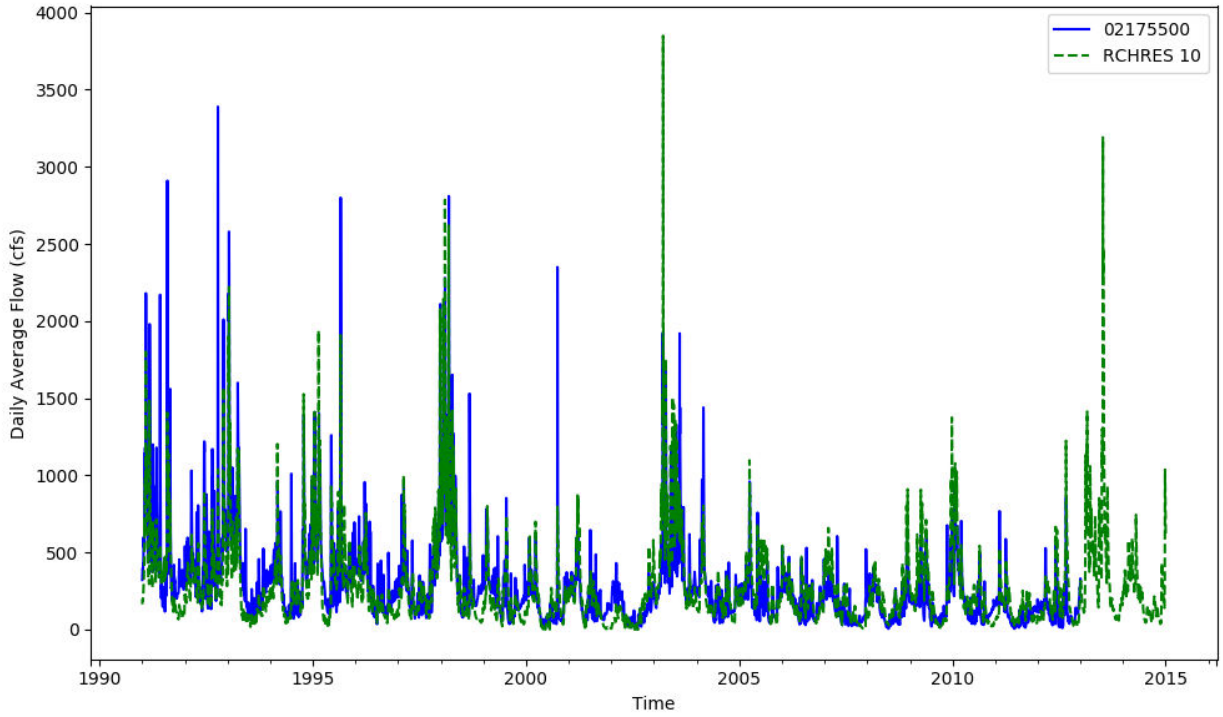


Figure T-03050207-4: Daily flow for HSFP reach 10 and USGS station 02175500.

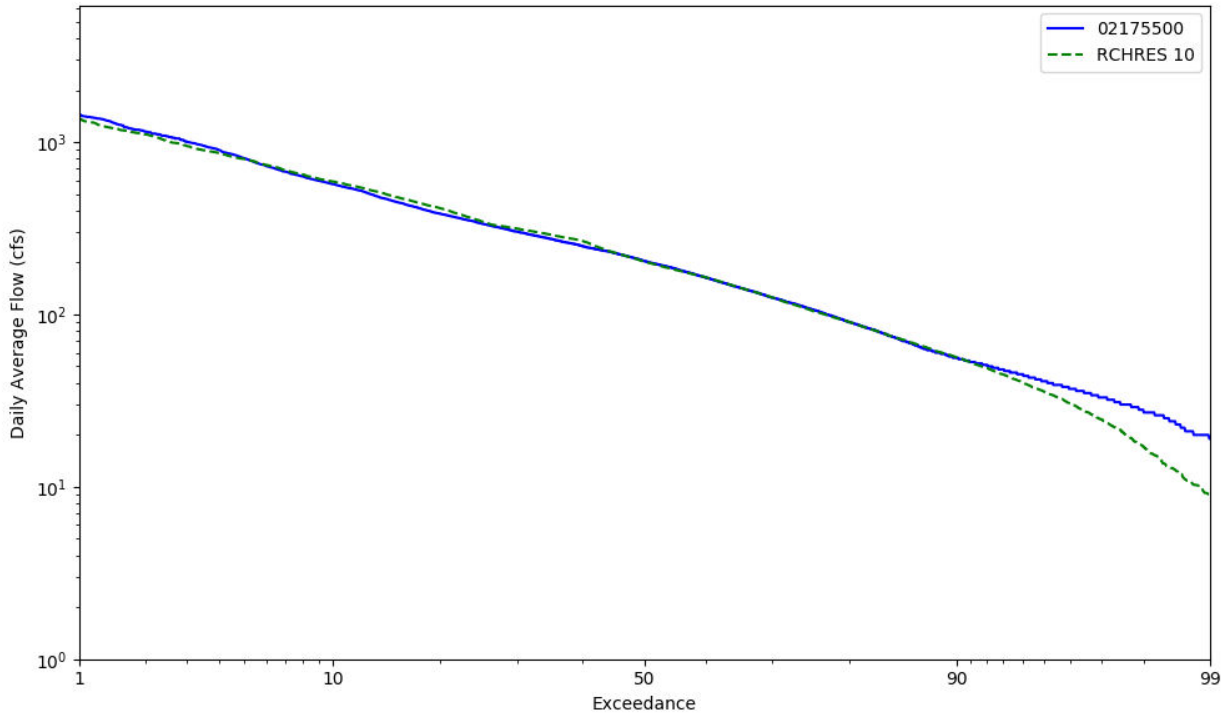


Figure T-03050207-5: Daily exceedance for HSFP reach 10 and USGS station 02175500.

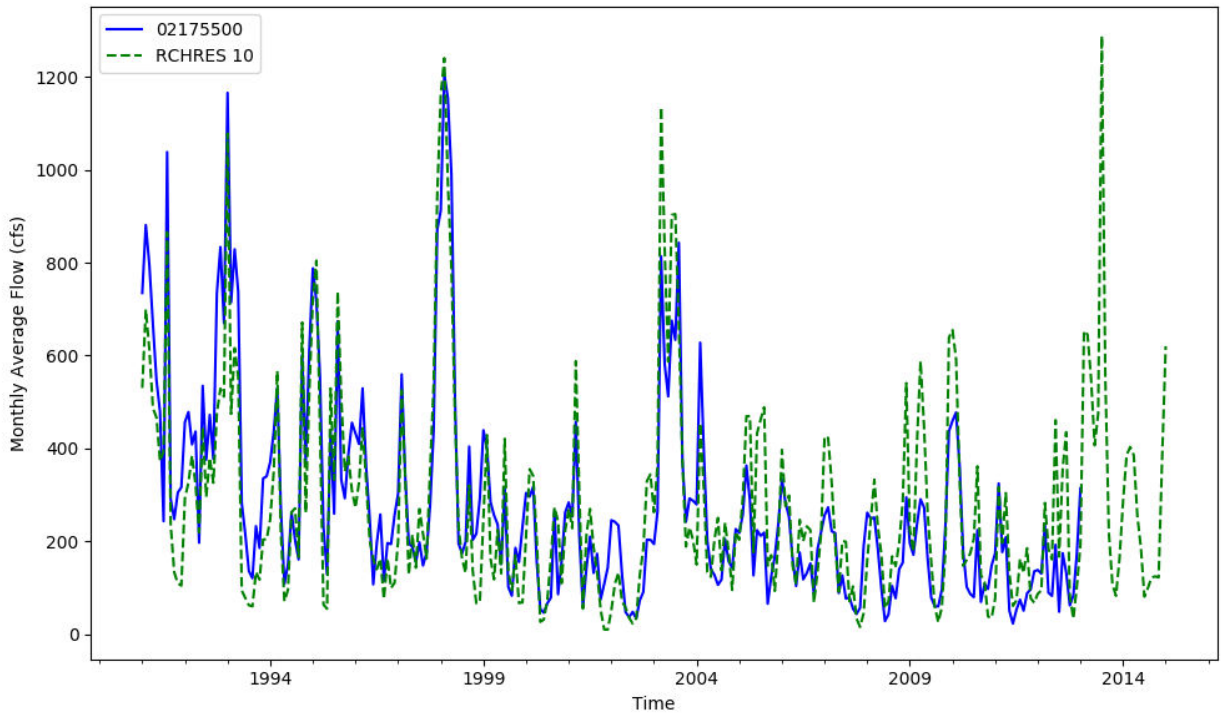


Figure T-03050207-6: Monthly flow for HSFP reach 10 and USGS station 02175500.

Table T-03050207-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	65508	37003	9191	1291	213	747	335038	132899	35066	58721	65479	396841	730	1404	59487	1199617
AREA(%)	5.4	3.1	0.8	0.1	0.0	0.1	27.8	11.0	2.9	4.9	5.4	33.0	0.1	0.1	4.9	99.7
IMPERVIOUS																
AREA(ACRES)		2059	1041	324	213											3637
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	34.9	35.9	36.1	36.0	36.0	34.3	36.0	36.0	36.0	36.1	35.9	35.9	46.7	64.2	38.0	35.9
SURLI		0.0	5.6	6.2	6.8											0.1
UZLI																0.0
LZLI		0.0	1.3	1.1	1.0											0.0
SURO: PERVIOUS		0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0		0.2	2.7	0.0	0.0
SURO: IMPERVIOUS		19.4	19.4	19.5	19.5											0.1
SURO: COMBINED		1.0	2.0	4.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0		0.2	2.7	0.0	0.1
IFWO			0.0										0.0	0.0		0.0
AGWO	5.4	8.6	13.2	13.4	12.7	10.8	5.5	11.1	8.4	9.0	8.3	3.9	12.3	23.1	9.1	6.4
AGWI	6.1	8.8	13.3	13.5	12.8	11.0	5.8	11.2	8.6	9.1	8.5	6.1	12.3	23.5	9.4	7.3
IGWI	1.1	1.6	2.4	2.5	2.4	2.0	1.1	2.1	1.6	1.7	1.6	1.1	2.3	4.3	1.7	1.3
CEPE		8.1	8.0	7.9	11.4	7.3	12.1	11.7	10.0	8.8	6.2	11.8	17.2	15.9	7.8	10.4
UZET	0.1	3.1	3.6	3.7	3.5	2.7	1.0	3.0	2.2	2.2	1.6	7.9	4.1	4.5	1.7	3.7
LZET	0.0	18.3	19.1	19.1	17.2	12.2	21.2	11.1	17.7	18.5	22.8	2.5	14.1	15.4	22.2	12.5
AGWET	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	1.1
BASET	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.5	0.7	0.7	0.7	0.6
SURET	39.3											9.4				5.3
PERO	5.4	8.6	13.2	13.5	12.7	10.8	5.5	11.1	8.4	9.0	8.3	3.9	12.4	25.8	9.2	6.4
IGWI	1.1	1.6	2.4	2.5	2.4	2.0	1.1	2.1	1.6	1.7	1.6	1.1	2.3	4.3	1.7	1.3
TAET: PERVIOUS	40.2	30.2	31.5	31.5	32.9	22.9	35.0	26.5	30.7	30.2	31.4	35.3	36.1	36.7	32.5	33.5
IMPEV: IMPERVIOUS		16.6	16.8	16.7	16.6											0.1
ET: COMBINED	40.2	29.5	30.0	28.5	24.8	22.9	35.0	26.5	30.7	30.2	31.4	35.3	36.1	36.7	32.5	33.5
PET	40.5	45.6	45.6	45.5	45.4	38.5	45.6	45.6	45.6	45.7	45.7	45.4	45.2	45.7	45.8	45.1

Table T-03050207-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	65508	37003	9191	1291	213	747	335038	132899	35066	58721	65479	396841	730	1404	59487	1199617
AREA(%)	5.4	3.1	0.8	0.1	0.0	0.1	27.8	11.0	2.9	4.9	5.4	33.0	0.1	0.1	4.9	99.7
IMPERVIOUS																
AREA(ACRES)		2059	1041	324	213											3637
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	51.3	49.8	49.5	49.9	50.4	50.7	49.6	49.7	49.6	49.4	48.7	50.1	69.0	68.4	50.4	49.8
SURLI		0.0	6.2	6.6	7.1											0.1
UZLI																0.0
LZLI		0.0	1.9	1.6	1.5											0.0
SURO: PERVIOUS		0.1	0.2	0.4	0.2	0.0	0.0	0.1	0.0	0.0	0.0		1.1	1.4	0.0	0.0
SURO: IMPERVIOUS		31.1	30.8	31.3	31.9											0.1
SURO: COMBINED		1.7	3.3	6.6	16.1	0.0	0.0	0.1	0.0	0.0	0.0		1.1	1.4	0.0	0.1
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0		0.0
AGWO	5.6	12.8	18.7	18.9	18.6	18.7	8.8	16.4	12.4	12.9	11.4	5.7	22.3	23.5	11.8	9.3
AGWI	8.3	14.4	20.3	20.5	20.1	20.1	10.3	18.0	14.1	14.5	13.0	9.1	23.8	25.0	13.4	11.5
IGWI	1.5	2.6	3.7	3.8	3.7	3.7	1.9	3.3	2.6	2.7	2.4	1.7	4.4	4.6	2.5	2.1
CEPE		9.8	9.6	9.6	13.1	8.7	13.7	13.3	11.7	10.4	7.8	13.5	21.4	15.8	9.4	11.9
UZET	3.0	3.3	3.8	3.9	3.6	4.4	1.1	3.1	2.3	2.3	1.7	9.2	4.5	4.2	1.7	4.4
LZET	0.3	18.3	18.9	18.9	17.1	12.8	21.5	11.1	17.8	18.4	22.6	2.7	13.2	16.6	22.1	12.6
AGWET	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1.1
BASET	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.5	0.8	0.9	0.8	0.7
SURET	33.8											9.2				4.9
PERO	5.6	12.9	18.9	19.3	18.8	18.8	8.8	16.4	12.5	12.9	11.4	5.7	23.4	24.9	11.8	9.3
IGWI	1.5	2.6	3.7	3.8	3.7	3.7	1.9	3.3	2.6	2.7	2.4	1.7	4.4	4.6	2.5	2.1
TAET: PERVIOUS	40.0	32.3	33.2	33.3	34.8	26.6	37.2	28.4	32.6	32.0	33.0	38.3	39.8	37.4	34.2	35.7
IMPEV: IMPERVIOUS		18.5	18.5	18.4	18.3											0.1
ET: COMBINED	40.0	31.5	31.7	30.3	26.5	26.6	37.2	28.4	32.6	32.0	33.0	38.3	39.8	37.4	34.2	35.7
PET	45.6	51.8	52.2	52.0	51.8	43.5	51.9	51.9	51.9	52.1	52.4	51.4	51.2	52.6	52.6	51.3

Table T-03050207-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	65508	37003	9191	1291	213	747	335038	132899	35066	58721	65479	396841	730	1404	59487	1199617
AREA(%)	5.4	3.1	0.8	0.1	0.0	0.1	27.8	11.0	2.9	4.9	5.4	33.0	0.1	0.1	4.9	99.7
IMPERVIOUS																
AREA(ACRES)		2059	1041	324	213											3637
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	42.4	42.9	42.0	42.0	42.1	42.5	42.7	42.8	42.7	42.4	41.9	43.2	66.7	65.0	43.3	42.8
SURLI		0.0	6.1	6.5	7.0											0.1
UZLI																0.0
LZLI		0.0	1.9	1.6	1.5											0.0
SURO: PERVIOUS		0.3	0.3	0.6	0.4	0.1	0.0	0.1	0.1	0.1	0.0		1.8	1.8	0.0	0.0
SURO: IMPERVIOUS		26.3	25.3	25.4	25.6											0.1
SURO: COMBINED		1.6	2.9	5.6	13.0	0.1	0.0	0.1	0.1	0.1	0.0		1.8	1.8	0.0	0.1
IFWO		0.0				0.0		0.0	0.0	0.0				0.0		0.0
AGWO	6.2	12.7	17.5	17.3	16.8	16.7	9.3	15.5	12.6	12.8	11.8	6.9	23.7	24.4	12.2	9.7
AGWI	8.3	12.8	17.7	17.5	17.1	17.0	9.3	15.8	12.6	12.8	11.8	9.5	24.1	24.6	12.2	10.8
IGWI	1.5	2.4	3.3	3.2	3.1	3.1	1.7	2.9	2.3	2.4	2.2	1.8	4.4	4.5	2.2	2.0
CEPE		8.3	8.3	8.3	11.7	7.1	12.2	11.7	10.2	9.0	6.6	11.8	22.1	15.4	7.9	10.4
UZET	2.0	3.9	4.2	4.3	3.9	4.1	1.8	3.7	3.0	3.0	2.5	6.7	4.1	4.7	2.5	3.9
LZET	0.3	19.1	19.7	19.6	17.9	14.1	22.6	11.5	18.6	19.1	23.4	2.2	12.3	16.2	22.9	13.0
AGWET	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	1.2
BASET	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.7
SURET	36.8											17.4				7.8
PERO	6.2	13.0	17.9	17.9	17.2	16.8	9.3	15.6	12.6	12.9	11.8	6.9	25.5	26.2	12.2	9.8
IGWI	1.5	2.4	3.3	3.2	3.1	3.1	1.7	2.9	2.3	2.4	2.2	1.8	4.4	4.5	2.2	2.0
TAET: PERVIOUS	41.5	32.2	33.0	33.0	34.3	26.0	37.3	27.8	32.5	32.0	33.3	42.1	39.3	37.2	34.2	37.0
IMPEV: IMPERVIOUS		16.7	16.9	16.8	16.7											0.1
ET: COMBINED	41.5	31.4	31.4	29.8	25.5	26.0	37.3	27.8	32.5	32.0	33.3	42.1	39.3	37.2	34.2	37.0
PET	45.0	48.9	49.1	48.9	48.7	43.7	49.0	49.0	49.0	49.1	49.3	48.7	48.3	49.4	49.5	48.6

Table T-03050207-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	65508	37003	9191	1291	213	747	335038	132899	35066	58721	65479	396841	730	1404	59487	1199617
AREA(%)	5.4	3.1	0.8	0.1	0.0	0.1	27.8	11.0	2.9	4.9	5.4	33.0	0.1	0.1	4.9	99.7
IMPERVIOUS																
AREA(ACRES)		2059	1041	324	213											3637
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	46.7	47.8	47.6	47.7	47.8	46.3	47.8	47.8	47.8	47.7	47.5	47.8	59.1	65.9	49.1	47.7
SURLI		0.0	4.9	5.5	5.9											0.0
UZLI																0.0
LZLI		0.0	1.5	1.2	1.2											0.0
SURO: PERVIOUS	1.1	0.2	0.3	0.5	0.3	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.8	1.7	0.0	0.1
SURO: IMPERVIOUS		30.3	30.1	30.2	30.4											0.1
SURO: COMBINED	1.1	1.8	3.3	6.5	15.4	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.8	1.7	0.0	0.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	6.0	13.7	18.2	18.3	17.9	17.6	10.1	17.0	13.5	13.9	12.8	7.0	19.4	24.1	13.4	10.4
AGWI	7.5	14.5	19.0	19.1	18.6	18.3	10.9	17.8	14.3	14.6	13.6	9.2	20.1	24.9	14.2	11.7
IGWI	1.4	2.7	3.5	3.5	3.4	3.4	2.0	3.3	2.6	2.7	2.5	1.7	3.7	4.6	2.6	2.1
CEPE		9.4	9.2	9.2	12.6	8.8	13.2	12.8	11.3	10.0	7.5	13.0	16.1	14.9	8.7	11.4
UZET	1.0	3.5	3.9	3.9	3.6	3.5	1.4	3.3	2.6	2.6	2.1	4.1	3.8	4.1	2.2	2.7
LZET	0.1	17.5	18.1	18.0	16.2	12.3	20.3	10.5	16.9	17.6	21.8	1.2	14.5	15.8	21.3	11.5
AGWET	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.6
BASET	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.7	0.7
SURET	37.1											20.3				8.7
PERO	7.1	13.9	18.5	18.8	18.2	17.7	10.1	17.1	13.6	14.0	12.9	7.1	20.1	25.8	13.4	10.5
IGWI	1.4	2.7	3.5	3.5	3.4	3.4	2.0	3.3	2.6	2.7	2.5	1.7	3.7	4.6	2.6	2.1
TAET: PERVIOUS	39.8	31.2	31.9	31.9	33.2	25.2	35.6	27.3	31.5	31.0	32.1	40.8	35.2	35.5	33.0	35.7
IMPEV: IMPERVIOUS		17.5	17.5	17.4	17.4											0.1
ET: COMBINED	39.8	30.5	30.5	29.0	25.3	25.2	35.6	27.3	31.5	31.0	32.1	40.8	35.2	35.5	33.0	35.7
PET	42.2	46.1	46.2	46.1	45.9	40.6	46.1	46.2	46.1	46.2	46.3	46.0	45.9	46.3	46.4	45.8

Table T-03050207-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
2	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
3	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
4	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
5	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
6	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
7	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
8	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
9	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
10	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
11	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
12	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
13	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
14	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
15	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
16	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
17	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
18	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
19	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
20	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990

Table T-03050207-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
2	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
3	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
4	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
5	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
6	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
7	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
8	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
9	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
10	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
11	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
12	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
13	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
14	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
15	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
16	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
17	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
18	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
19	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
20	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016

Table T-03050207-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
2	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
3	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
4	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
5	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
6	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
7	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
8	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
9	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
10	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
11	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
12	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
13	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
14	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
15	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
16	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
17	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
18	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
19	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105
20	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.102	0.077	0.060	0.030	0.105

Table T-03050207-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
2	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
3	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
4	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
5	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
6	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
7	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
8	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
9	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
10	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
11	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
12	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
13	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
14	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
15	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
16	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
17	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
18	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
19	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
20	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155

Table T-03050207-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
2	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
3	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
4	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
5	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
6	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
7	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
8	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
9	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
10	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
11	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
12	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
13	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
14	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
15	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
16	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
17	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
18	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
19	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
20	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010

Table T-03050207-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03050207-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03050207-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
2	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
3	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
4	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
5	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
6	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
7	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
8	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
9	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
10	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
11	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
12	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
13	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
14	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
15	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
16	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
17	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
18	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
19	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632
20	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632	0.632

Table T-03050207-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
10	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
11	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
12	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
16	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.049	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03050207-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
2	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
3	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
4	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
5	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
6	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
7	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
8	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
9	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
10	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
11	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
12	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
13	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
14	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
15	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
16	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
17	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
18	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
19	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103
20	0.060	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.103

Table T-03050207-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
2	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
3	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
4	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
5	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
6	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
7	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
8	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
9	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
10	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
11	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
12	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
13	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
14	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
15	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
16	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
17	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
18	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
19	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207
20	0.050	0.279	0.279	0.279	0.279	0.279	0.398	0.319	0.319	0.279	0.398	0.207

APPENDIX T-03050208

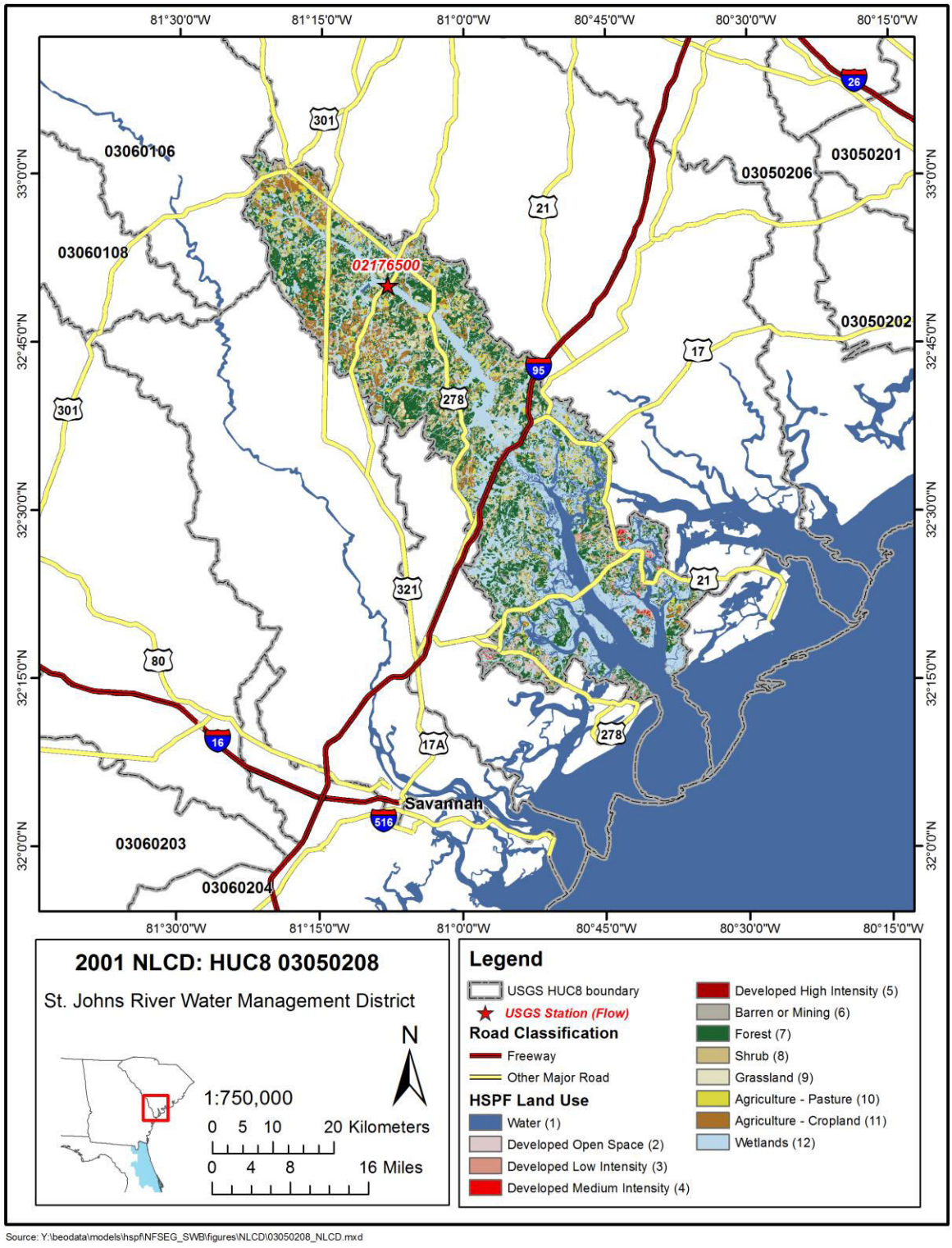


Figure T-03050208-1: Land Cover from the National Land Cover Database.

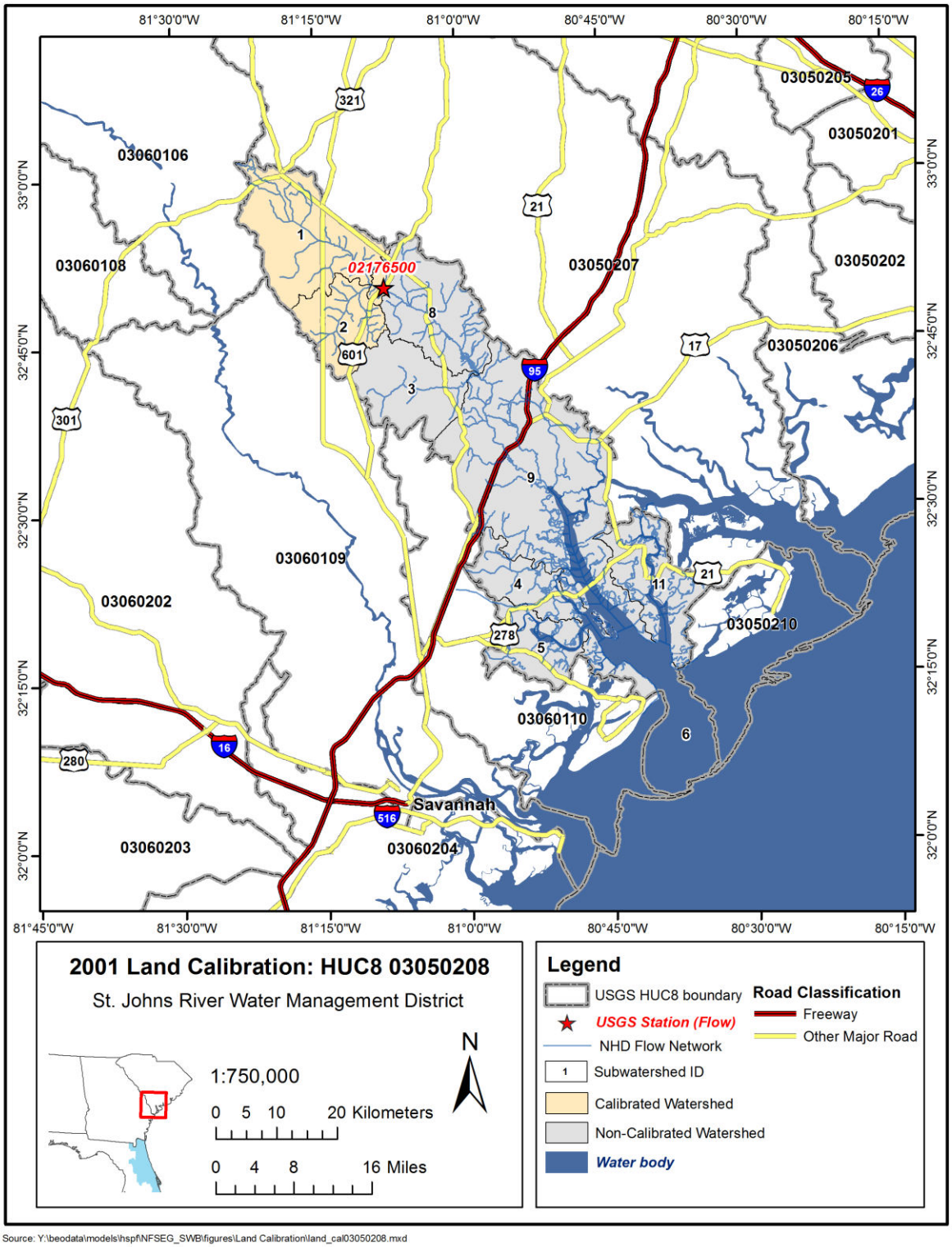


Figure T-03050208-2: Calibrated sub-watersheds.

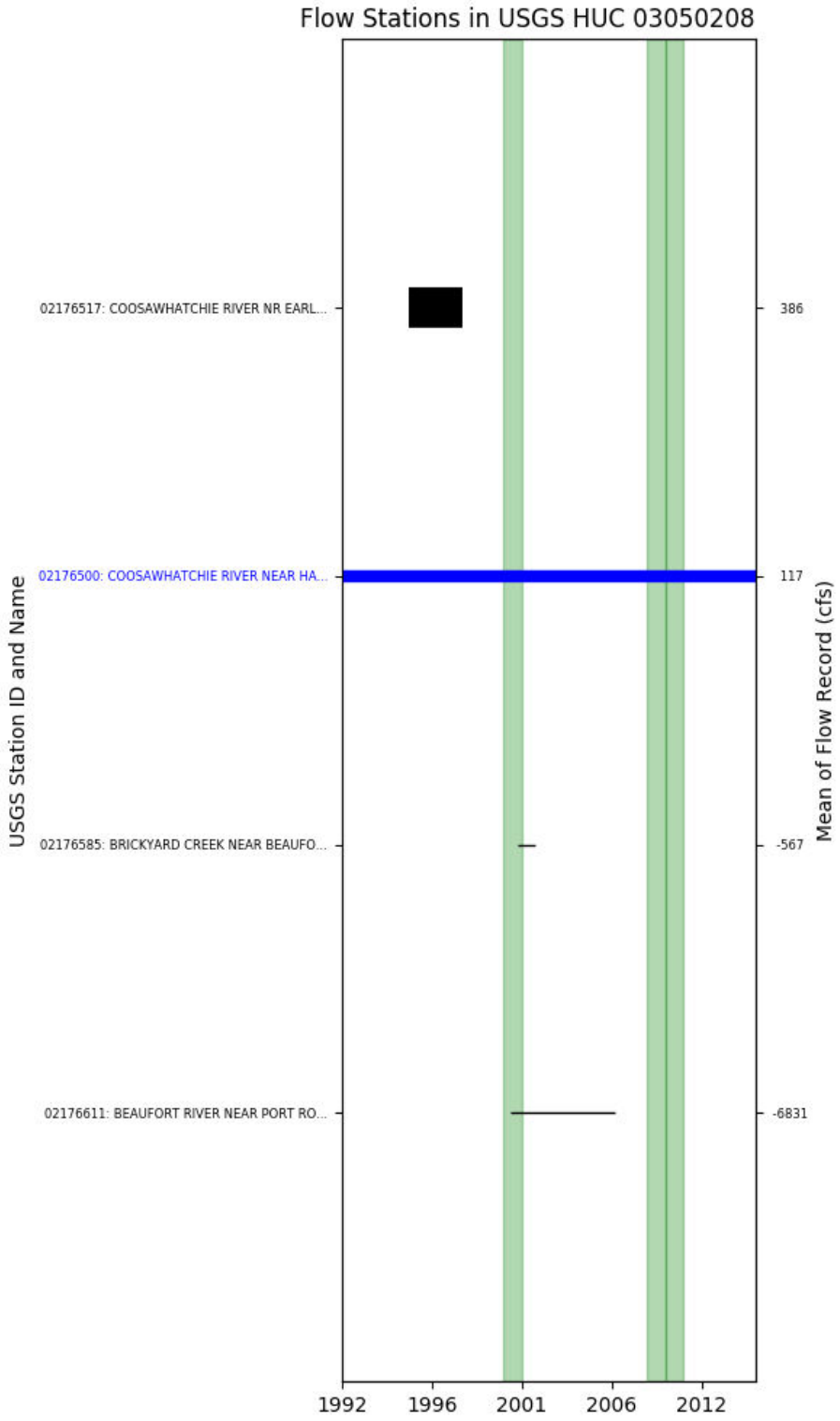


Figure T-03050208-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 07, USGS GAUGE 02176500

Water-Data Report 2009
02176500 COOSAWHATCHIE RIVER NEAR HAMPTON, SC
Edisto-South Carolina Coastal Basin Broad-St. Helena Subbasin

LOCATION.--Lat 325010, long 810755 referenced to North American Datum of 1927, Hampton County, SC, Hydrologic Unit 03050208, near left bank on downstream side of bridge on U.S. Highway 601, 1.6 mi downstream from Black Creek, 2.5 mi southwest of Hampton, and at mile 33.6.

DRAINAGE AREA.--203 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1951 to current year.

GAGE.--Data collection platform. Datum of gage is 47.3 ft above NGVD of 1929. Prior to Oct. 26, 1954, nonrecording gage at present site and datum. Prior to Oct. 1, 2007, at present site at datum 50.3 ft above NGVD of 1929.

REMARKS.--Records poor.

Table T-03050208-1: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02176500.

Statistic	Value
Bias	-13.86
Standard error	87.11
Relative bias	-0.11
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Coefficient of efficiency	0.58
Index of agreement	0.77

Table T-03050208-2: Hydrologic Indices Between USGS Gauge 02176500 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02176500	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	122.50	108.56	-11.38
MA2: Median, all daily flows	35.00	38.27	9.35
MA3: CV, all daily flows	143.58	115.83	-19.33
MA4: CV, log of all daily flows	151.82	130.40	-14.10
MA5: Mean daily flow / median daily flow	3.50	2.84	-18.96
MA9: (Q10 - Q90) / median daily flow	9.58	7.66	-20.01
MA10: (Q20 - Q80) / median daily flow	4.84	4.64	-4.20

MA11: (Q25 - Q75) / median daily flow	3.53	3.58	1.43
MA12: Mean monthly flow, January	202.54	189.25	-6.56
MA13: Mean monthly flow, February	263.79	217.72	-17.46
MA14: Mean monthly flow, March	259.86	187.72	-27.76
MA15: Mean monthly flow, April	148.22	97.79	-34.02
MA16: Mean monthly flow, May	52.86	35.02	-33.74
MA17: Mean monthly flow, June	51.17	62.70	22.53
MA18: Mean monthly flow, July	38.62	61.28	58.67
MA19: Mean monthly flow, August	89.28	104.45	16.99
MA20: Mean monthly flow, September	57.46	60.96	6.09
MA21: Mean monthly flow, October	64.07	57.83	-9.74
MA22: Mean monthly flow, November	66.74	67.44	1.05
MA23: Mean monthly flow, December	124.44	117.13	-5.88
ML1: Mean minimum monthly flow, January	79.42	81.17	2.21
ML2: Mean minimum monthly flow, February	112.28	99.98	-10.96
ML3: Mean minimum monthly flow, March	88.75	62.49	-29.59
ML4: Mean minimum monthly flow, April	41.85	30.77	-26.48
ML5: Mean minimum monthly flow, May	9.25	8.70	-6.00
ML6: Mean minimum monthly flow, June	5.46	7.35	34.60
ML7: Mean minimum monthly flow, July	6.30	19.82	214.53
ML8: Mean minimum monthly flow, August	16.73	30.50	82.24
ML9: Mean minimum monthly flow, September	13.10	13.11	0.05
ML10: Mean minimum monthly flow, October	8.31	11.69	40.77
ML11: Mean minimum monthly flow, November	25.83	28.78	11.42
ML12: Mean minimum monthly flow, December	57.35	50.98	-11.10
ML13: CV of minimum monthly flows	170.24	167.23	-1.76
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.02	-2.94
ML15: Mean minimum annual flow / mean annual flow	0.01	0.01	-19.40
ML16: Median minimum annual flow / median annual flow	0.00	0.01	
ML20: Ratio of baseflow volume to total flow volume	0.42	0.50	17.21
ML22: Mean annual minimum flow divided by catchment area	0.02	0.02	48.00
RA1: Mean of positive changes from one day to next (rise rate)	56.50	30.92	
RA2: CV, mean of positive changes from one day to next (rise rate)	299.83	305.46	
RA3: Mean of negative changes from one day to next (fall rate)	29.53	11.72	
RA4: CV, mean of negative changes from one day to next (fall rate)	296.66	297.72	
RA5: Ratio of days that are higher than previous day	0.28	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.21	0.17	
RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.11	
RA8: Number of flow reversals from one day to the next	64.57	71.78	
RA9: CV, number of flow reversals from one day to the next	27.40	20.07	

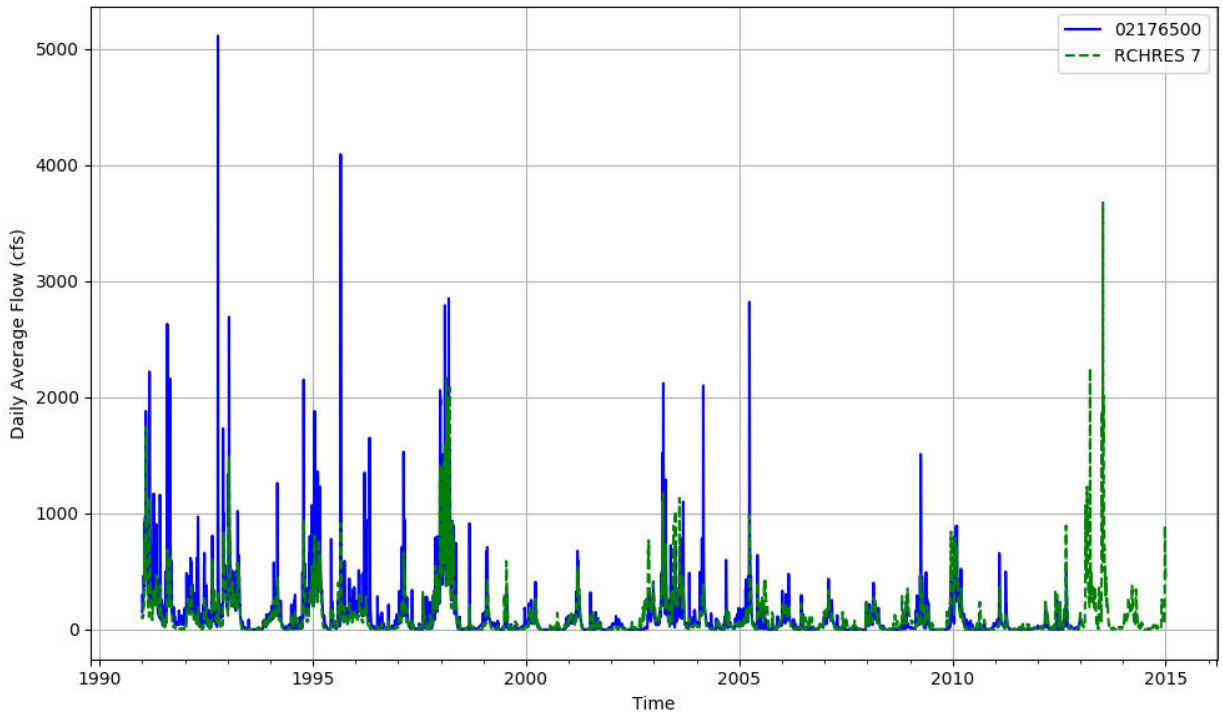


Figure T-03050208-4: Daily flow for HSFP reach 07 and USGS station 02176500.

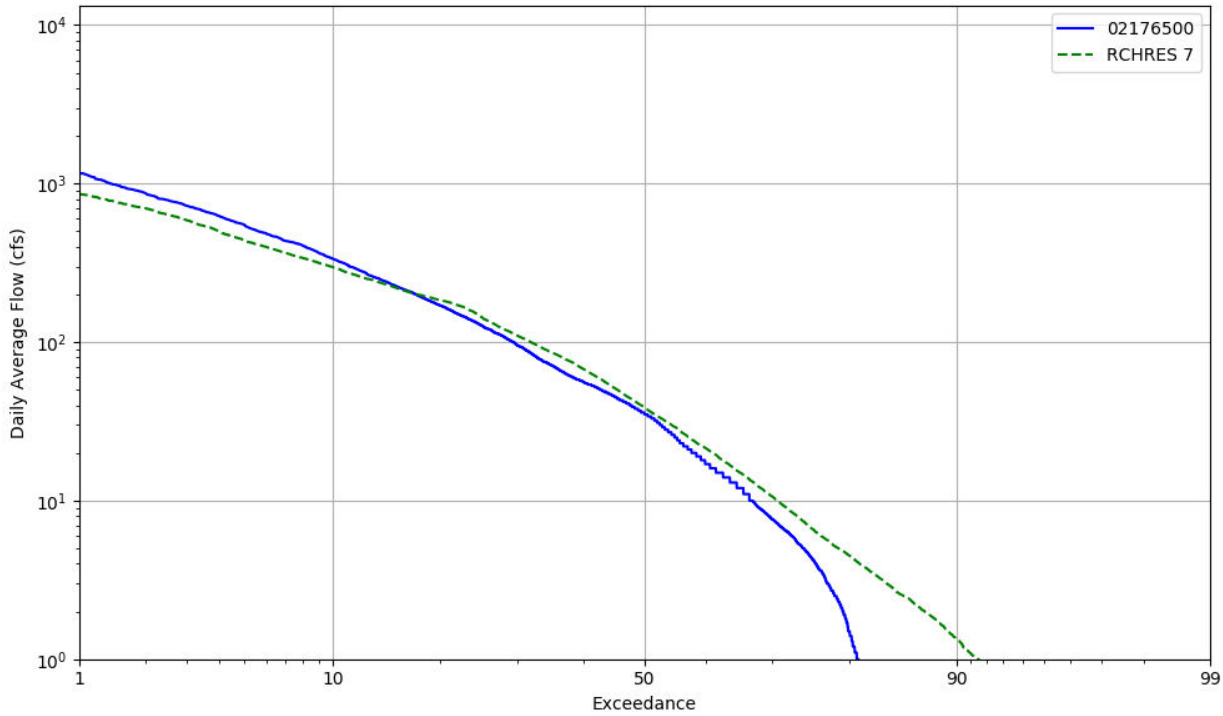


Figure T-03050208-5: Daily exceedance for HSFP reach 07 and USGS station 02176500.

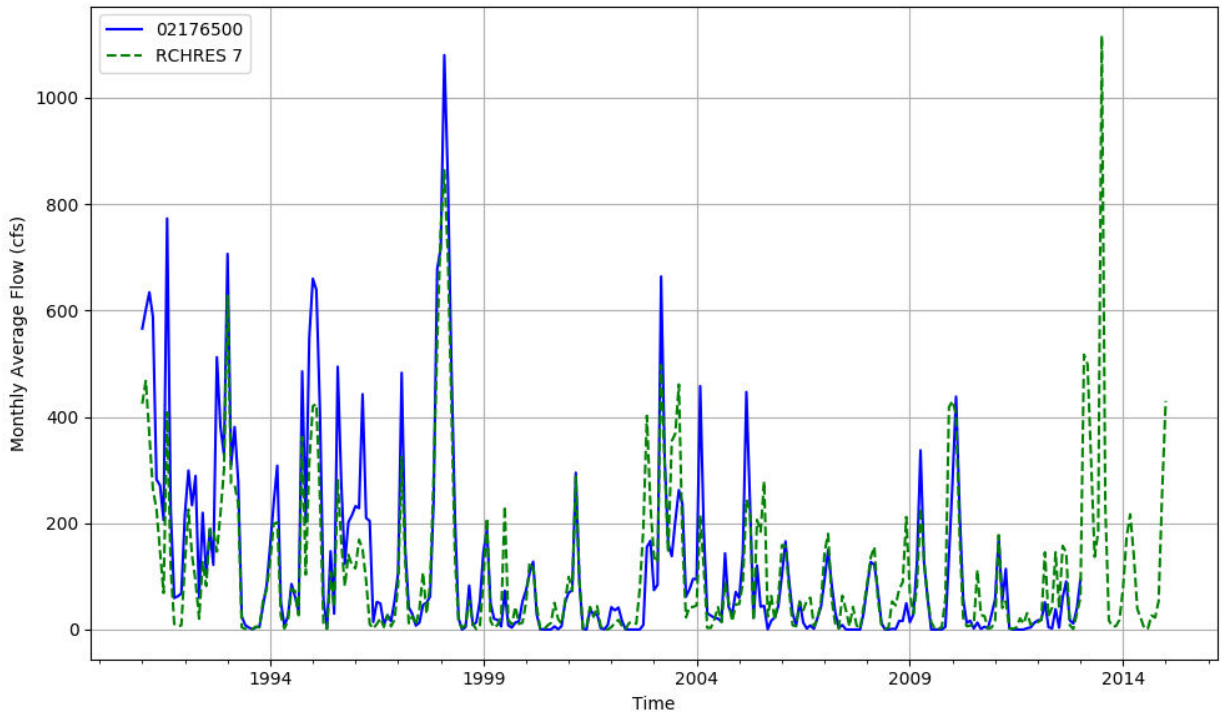


Figure T-03050208-6: Monthly flow for HSFP reach 07 and USGS station 02176500.

Table T-03050208-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	84907	22079	8747	2148	255	1258	160682	58303	20704	17314	23036	188627	4060	1420	22187	615729
AREA(%)	13.7	3.6	1.4	0.3	0.0	0.2	26.0	9.4	3.3	2.8	3.7	30.5	0.7	0.2	3.6	99.5
IMPERVIOUS																
AREA(ACRES)		1329	1005	542	255											3131
AREA(%)		0.2	0.2	0.1	0.0											0.5
SUPY	35.1	34.9	34.8	34.7	34.8	34.9	34.9	35.1	35.0	34.9	34.9	35.0	49.8	55.4	38.5	35.1
SURLI			6.2	6.4	7.0											0.1
UZLI																0.0
LZLI			0.5	0.4	0.4											0.0
SURO: PERVIOUS	0.9	0.5	0.7	0.7	0.3	0.2	0.0	0.4	0.1	0.2	0.0	1.2	1.1	2.4	0.0	0.6
SURO: IMPERVIOUS		18.2	18.2	18.1	18.3											0.1
SURO: COMBINED	0.9	1.5	2.5	4.2	9.3	0.2	0.0	0.4	0.1	0.2	0.0	1.2	1.1	2.4	0.0	0.7
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.2	4.5	7.2	7.1	7.4	7.5	3.0	7.2	5.0	4.8	3.9	0.3	8.6	10.7	4.9	2.6
AGWI	1.6	7.9	11.0	10.9	11.3	11.5	5.9	10.9	8.4	7.9	6.9	1.4	11.6	15.5	8.0	4.8
IGWI	0.8	3.8	5.3	5.3	5.5	5.6	2.8	5.3	4.1	3.9	3.4	0.7	5.6	7.5	3.9	2.4
CEPE		5.0	5.0	5.0	5.0	3.5	6.9	6.0	5.0	6.8	6.8	18.4	17.3	12.1	9.0	9.3
UZET	3.7	2.1	2.4	2.3	2.4	2.2	1.0	2.3	1.8	1.7	1.5	1.7	2.6	2.5	1.7	1.9
LZET	1.8	18.3	19.4	19.5	19.7	13.6	22.0	12.3	18.6	17.5	19.7	1.0	13.3	16.6	19.2	11.1
AGWET	0.9	2.6	3.0	2.9	2.9	3.0	2.5	2.9	2.7	2.6	2.5	0.9	2.0	2.9	2.5	1.8
BASET	0.5	1.3	1.6	1.6	1.6	1.6	0.9	1.6	1.3	1.3	1.1	0.4	1.8	2.3	1.3	0.8
SURET	28.5											14.1				8.2
PERO	1.1	5.1	8.0	7.7	7.8	7.7	3.0	7.6	5.1	5.0	3.9	1.5	9.7	13.1	4.9	3.2
IGWI	0.8	3.8	5.3	5.3	5.5	5.6	2.8	5.3	4.1	3.9	3.4	0.7	5.6	7.5	3.9	2.4
TAET: PERVIOUS	35.5	29.3	31.3	31.4	31.6	23.9	33.3	25.1	29.4	29.8	31.6	36.4	37.0	36.5	33.7	33.2
IMPEV: IMPERVIOUS		16.8	16.7	16.7	16.5											0.1
ET: COMBINED	35.5	28.6	29.8	28.5	24.1	23.9	33.3	25.1	29.4	29.8	31.6	36.4	37.0	36.5	33.7	33.3
PET	42.8	45.6	45.5	45.0	44.1	43.7	46.2	46.4	46.4	46.4	46.4	46.0	45.5	46.4	46.2	45.4

Table T-03050208-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	84907	22079	8747	2148	255	1258	160682	58303	20704	17314	23036	188627	4060	1420	22187	615729
AREA(%)	13.7	3.6	1.4	0.3	0.0	0.2	26.0	9.4	3.3	2.8	3.7	30.5	0.7	0.2	3.6	99.5
IMPERVIOUS																
AREA(ACRES)		1329	1005	542	255											3131
AREA(%)		0.2	0.2	0.1	0.0											0.5
SUPY	52.2	50.8	50.5	50.8	50.2	52.4	50.5	50.4	50.3	49.7	49.9	50.7	68.3	69.3	52.7	50.7
SURLI			6.3	6.2	6.7											0.1
UZLI																0.0
LZLI			1.0	0.8	0.7											0.0
SURO: PERVIOUS	4.5	1.2	1.4	1.5	0.9	0.3	0.0	0.7	0.3	0.5	0.1	3.2	2.7	1.8	0.1	1.8
SURO: IMPERVIOUS		31.2	30.8	31.2	30.6											0.2
SURO: COMBINED	4.5	2.9	4.4	7.4	15.8	0.3	0.0	0.7	0.3	0.5	0.1	3.2	2.7	1.8	0.1	2.0
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0	0.0
AGWO	0.4	7.6	11.3	10.9	11.0	13.4	5.8	11.1	8.1	7.6	6.7	0.4	14.5	16.2	7.4	4.4
AGWI	1.8	13.0	17.3	17.0	17.0	19.7	10.4	17.3	13.6	12.8	11.5	1.5	19.7	22.2	12.3	7.7
IGWI	0.9	6.3	8.4	8.3	8.2	9.5	5.0	8.4	6.6	6.2	5.6	0.7	9.6	10.8	6.0	3.7
CEPE		6.5	6.5	6.4	6.4	4.7	8.9	8.0	6.7	8.9	9.0	21.4	17.4	13.3	11.3	11.3
UZET	2.1	2.6	2.9	3.0	3.0	3.1	1.3	2.7	2.1	1.9	1.6	1.7	3.5	2.9	1.8	1.8
LZET	0.9	19.7	20.2	20.5	20.7	14.1	23.3	12.4	19.7	18.3	20.7	0.8	14.7	17.4	19.9	11.5
AGWET	0.6	3.5	3.8	3.7	3.7	3.8	3.0	3.8	3.6	3.3	3.1	0.6	2.6	3.3	3.1	2.1
BASET	0.8	1.5	1.9	2.0	2.0	2.2	1.2	2.0	1.5	1.4	1.2	0.5	2.3	2.4	1.3	1.1
SURET	39.0											18.2				10.9
PERO	4.9	8.8	12.7	12.4	11.8	13.7	5.8	11.8	8.4	8.1	6.8	3.7	17.2	18.0	7.5	6.2
IGWI	0.9	6.3	8.4	8.3	8.2	9.5	5.0	8.4	6.6	6.2	5.6	0.7	9.6	10.8	6.0	3.7
TAET: PERVIOUS	43.5	33.9	35.3	35.6	35.8	27.8	37.6	28.9	33.6	33.7	35.6	43.3	40.4	39.4	37.4	38.6
IMPEV: IMPERVIOUS		19.6	19.6	19.5	19.4											0.1
ET: COMBINED	43.5	33.1	33.7	32.4	27.6	27.8	37.6	28.9	33.6	33.7	35.6	43.3	40.4	39.4	37.4	38.7
PET	47.7	51.5	51.5	50.7	49.9	48.6	52.4	52.6	52.7	52.9	52.9	52.1	50.3	53.0	52.9	51.4

Table T-03050208-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	84907	22079	8747	2148	255	1258	160682	58303	20704	17314	23036	188627	4060	1420	22187	615729
AREA(%)	13.7	3.6	1.4	0.3	0.0	0.2	26.0	9.4	3.3	2.8	3.7	30.5	0.7	0.2	3.6	99.5
IMPERVIOUS																
AREA(ACRES)		1329	1005	542	255											3131
AREA(%)		0.2	0.2	0.1	0.0											0.5
SUPY	40.0	41.0	41.2	41.0	40.8	39.9	41.1	41.3	41.7	41.4	41.9	40.7	57.4	63.5	44.6	41.0
SURLI			5.9	5.8	6.1											0.1
UZLI																0.0
LZLI			1.1	0.8	0.7											0.0
SURO: PERVIOUS	6.1	1.6	1.7	1.7	1.1	0.6	0.2	1.0	0.6	0.8	0.2	7.1	2.9	2.2	0.2	3.3
SURO: IMPERVIOUS		24.9	24.9	25.1	25.1											0.1
SURO: COMBINED	6.1	2.9	4.0	6.4	13.1	0.6	0.2	1.0	0.6	0.8	0.2	7.1	2.9	2.2	0.2	3.4
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.3	6.0	8.5	8.1	8.4	9.0	5.6	8.7	6.9	6.5	6.3	0.3	10.0	14.8	6.8	3.8
AGWI	1.5	10.0	13.6	13.1	13.4	14.3	8.7	14.0	11.2	10.5	9.9	1.4	14.4	20.4	10.6	6.4
IGWI	0.7	4.8	6.6	6.4	6.5	6.9	4.2	6.8	5.4	5.1	4.8	0.7	7.0	9.9	5.2	3.1
CEPE		5.2	5.1	4.9	4.9	3.5	7.2	6.4	5.5	7.3	7.3	18.2	17.6	12.4	9.3	9.4
UZET	2.9	2.4	2.6	2.7	2.6	2.6	1.3	2.6	2.1	1.8	1.7	2.1	2.9	2.9	1.9	2.0
LZET	1.5	19.9	20.7	21.0	21.3	14.5	23.9	12.7	19.9	18.9	21.4	1.1	14.5	17.3	20.8	11.9
AGWET	0.7	3.3	3.8	3.8	3.7	3.7	2.9	3.8	3.6	3.4	3.2	0.8	2.5	3.2	3.4	2.1
BASET	0.7	1.1	1.7	1.6	1.7	1.8	0.9	1.8	1.2	1.1	1.0	0.4	2.1	2.5	1.1	0.9
SURET	34.6											17.3				10.0
PERO	6.4	7.6	10.1	9.8	9.6	9.6	5.8	9.7	7.5	7.3	6.6	7.4	12.9	17.1	7.0	7.1
IGWI	0.7	4.8	6.6	6.4	6.5	6.9	4.2	6.8	5.4	5.1	4.8	0.7	7.0	9.9	5.2	3.1
TAET: PERVIOUS	40.3	31.9	34.0	34.0	34.3	26.1	36.1	27.3	32.2	32.5	34.6	39.9	39.6	38.2	36.4	36.4
IMPEV: IMPERVIOUS		16.3	16.5	16.1	15.9											0.1
ET: COMBINED	40.3	31.0	32.2	30.4	25.1	26.1	36.1	27.3	32.2	32.5	34.6	39.9	39.6	38.2	36.4	36.4
PET	46.3	48.7	48.8	48.3	47.6	46.9	49.3	49.4	49.5	49.6	49.6	49.0	48.2	49.7	49.7	48.6

Table T-03050208-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	84907	22079	8747	2148	255	1258	160682	58303	20704	17314	23036	188627	4060	1420	22187	615729
AREA(%)	13.7	3.6	1.4	0.3	0.0	0.2	26.0	9.4	3.3	2.8	3.7	30.5	0.7	0.2	3.6	99.5
IMPERVIOUS																
AREA(ACRES)		1329	1005	542	255											3131
AREA(%)		0.2	0.2	0.1	0.0											0.5
SUPY	46.6	46.5	46.5	46.4	46.3	46.7	46.6	46.7	46.7	46.6	46.6	46.6	56.8	61.6	49.2	46.6
SURLI			6.8	7.0	7.6											0.1
UZLI																0.0
LZLI			0.7	0.6	0.5											0.0
SURO: PERVIOUS	6.5	1.2	1.5	1.5	1.0	0.5	0.1	0.9	0.4	0.6	0.2	5.9	2.0	2.1	0.2	2.9
SURO: IMPERVIOUS		28.6	28.6	28.7	28.7											0.1
SURO: COMBINED	6.5	2.8	4.3	7.0	14.9	0.5	0.1	0.9	0.4	0.6	0.2	5.9	2.0	2.1	0.2	3.1
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.4	8.0	11.6	11.5	12.0	12.1	6.6	11.2	8.7	8.3	7.5	0.4	11.3	14.1	8.2	4.7
AGWI	1.7	12.4	16.6	16.4	17.0	17.2	10.3	16.2	13.1	12.5	11.5	1.5	15.5	19.2	12.3	7.5
IGWI	0.8	6.0	8.1	8.0	8.2	8.4	5.0	7.9	6.4	6.1	5.6	0.7	7.5	9.3	6.0	3.6
CEPE		6.1	6.0	6.0	6.0	4.5	8.1	7.3	6.2	8.1	8.1	19.7	14.2	11.7	9.7	10.3
UZET	2.0	2.4	2.7	2.7	2.7	2.6	1.3	2.6	2.1	1.9	1.7	1.1	2.8	2.6	1.8	1.6
LZET	1.0	18.4	19.1	19.4	19.5	13.4	21.7	11.8	18.5	17.4	19.6	0.6	14.9	16.6	19.2	10.8
AGWET	0.6	2.9	3.2	3.2	3.2	3.3	2.6	3.2	3.0	2.8	2.7	0.5	2.4	2.9	2.7	1.8
BASET	0.8	1.5	1.8	1.8	1.8	1.8	1.2	1.8	1.5	1.4	1.3	0.5	1.8	2.2	1.4	1.0
SURET	34.5											17.0				9.9
PERO	6.9	9.2	13.1	13.0	13.0	12.6	6.6	12.1	9.0	8.9	7.6	6.4	13.3	16.2	8.3	7.6
IGWI	0.8	6.0	8.1	8.0	8.2	8.4	5.0	7.9	6.4	6.1	5.6	0.7	7.5	9.3	6.0	3.6
TAET: PERVIOUS	38.9	31.3	32.8	33.0	33.2	25.7	34.9	26.7	31.3	31.6	33.4	39.5	36.0	36.0	34.8	35.5
IMPEV: IMPERVIOUS		17.9	17.9	17.7	17.6											0.1
ET: COMBINED	38.9	30.5	31.3	29.9	25.4	25.7	34.9	26.7	31.3	31.6	33.4	39.5	36.0	36.0	34.8	35.6
PET	43.9	46.2	46.2	45.7	45.1	44.6	46.7	46.8	46.9	46.9	46.9	46.6	46.1	46.9	46.7	46.0

Table T-03050208-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
2	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
3	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
4	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
5	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
6	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
7	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
8	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
9	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
10	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990
11	0.990	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.990

Table T-03050208-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
2	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
3	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
4	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
5	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
6	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
7	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
8	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
9	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
10	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056
11	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056

Table T-03050208-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
2	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
3	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
4	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
5	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
6	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
7	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
8	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
9	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
10	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300
11	0.000	0.018	0.018	0.018	0.018	0.009	0.036	0.027	0.018	0.036	0.036	0.300

Table T-03050208-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
2	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
3	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
4	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
5	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
6	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
7	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
8	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
9	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
10	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
11	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327

Table T-03050208-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001

Table T-03050208-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03050208-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
2	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
3	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
4	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
5	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
6	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
7	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
8	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
9	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
10	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
11	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698

Table T-03050208-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03050208-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
2	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
3	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
4	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
5	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
6	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
7	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
8	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
9	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
10	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
11	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900

Table T-03050208-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
2	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
3	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
4	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
5	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
6	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
7	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
8	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
9	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
10	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100
11	0.200	3.232	3.232	3.232	3.232	3.635	4.847	3.635	3.635	3.635	4.039	0.100

Table T-03050208-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03050210

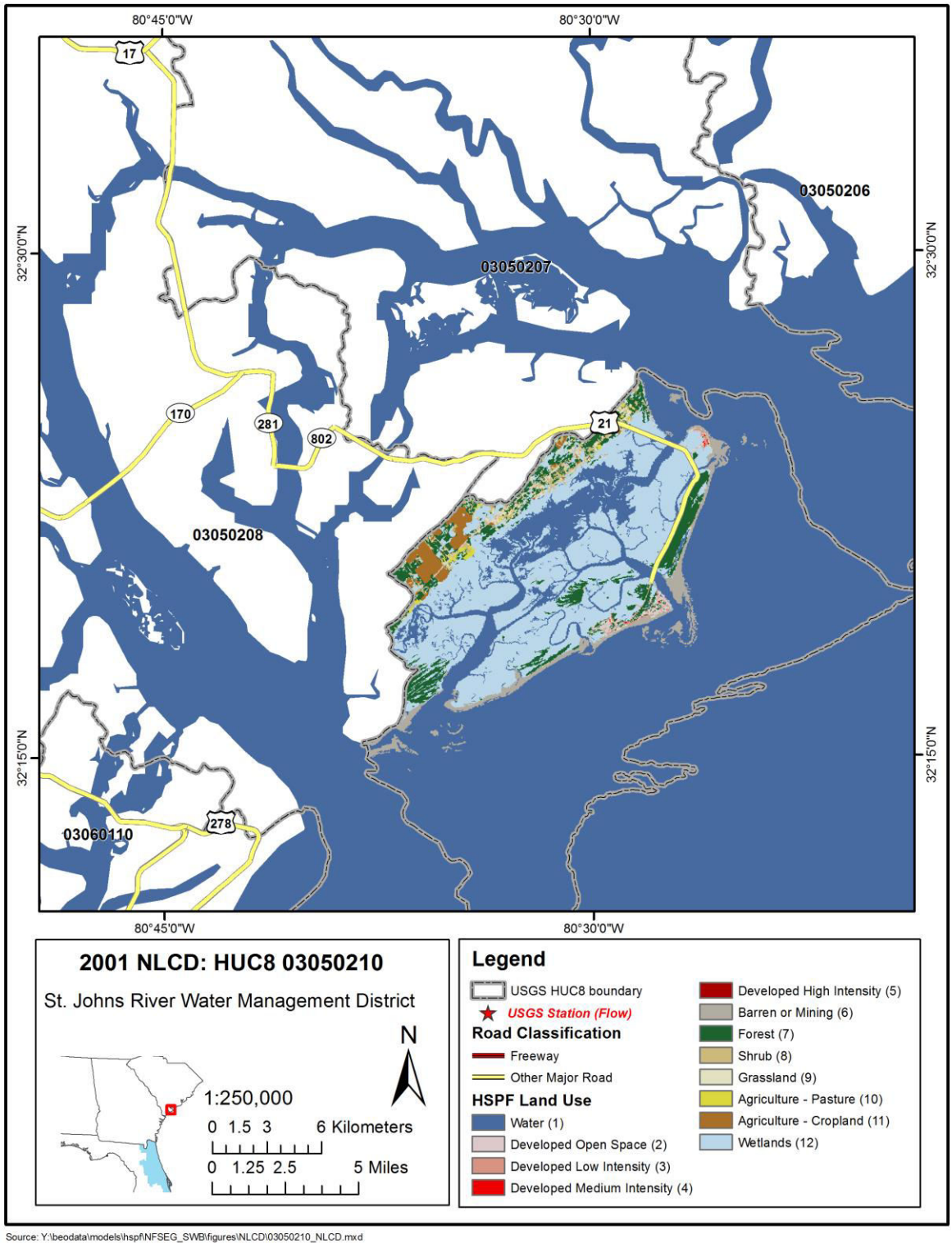


Figure T-03050210-1: Land Cover from the National Land Cover Database.

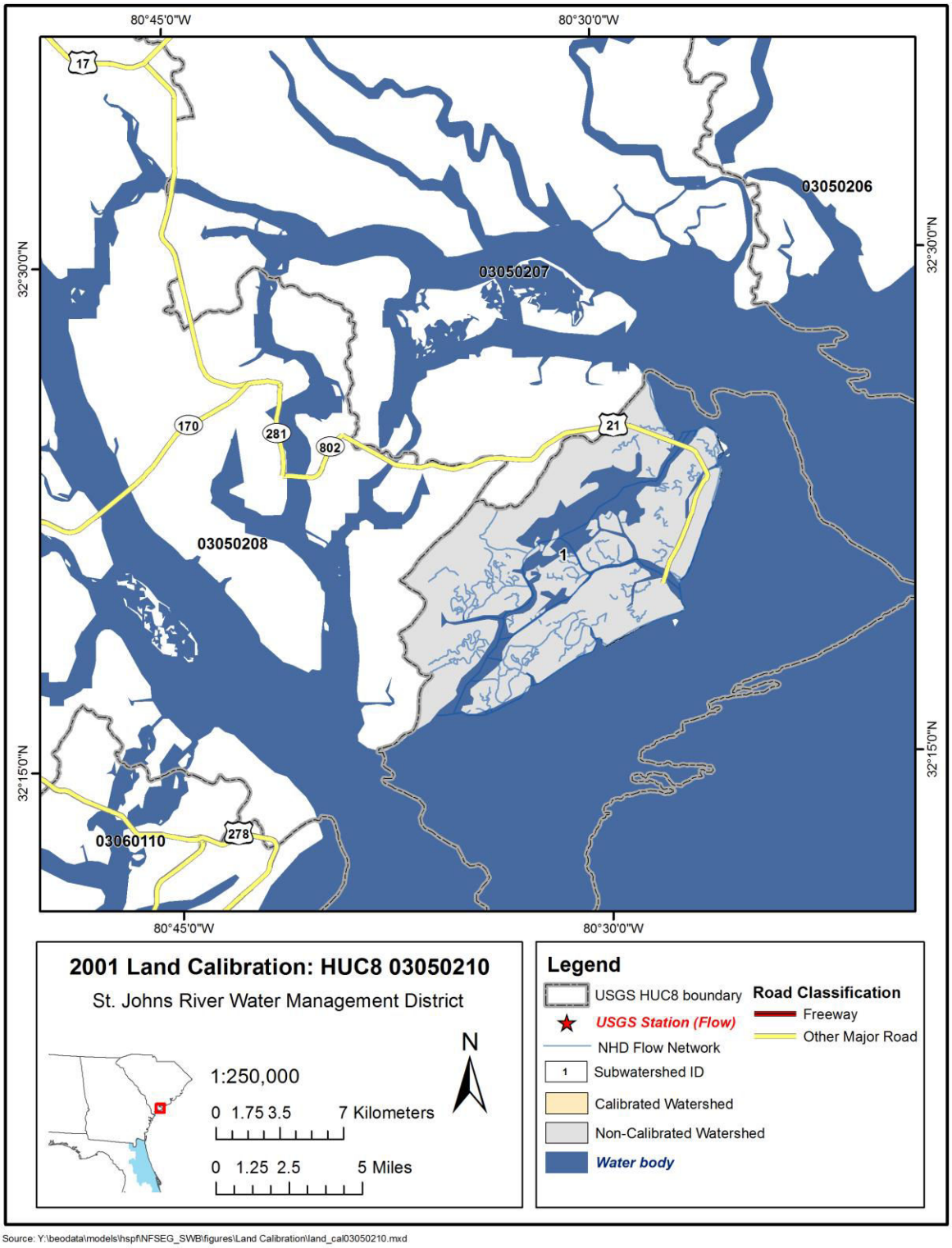


Figure T-03050210-2: Calibrated sub-watersheds.

APPENDIX T-03060101

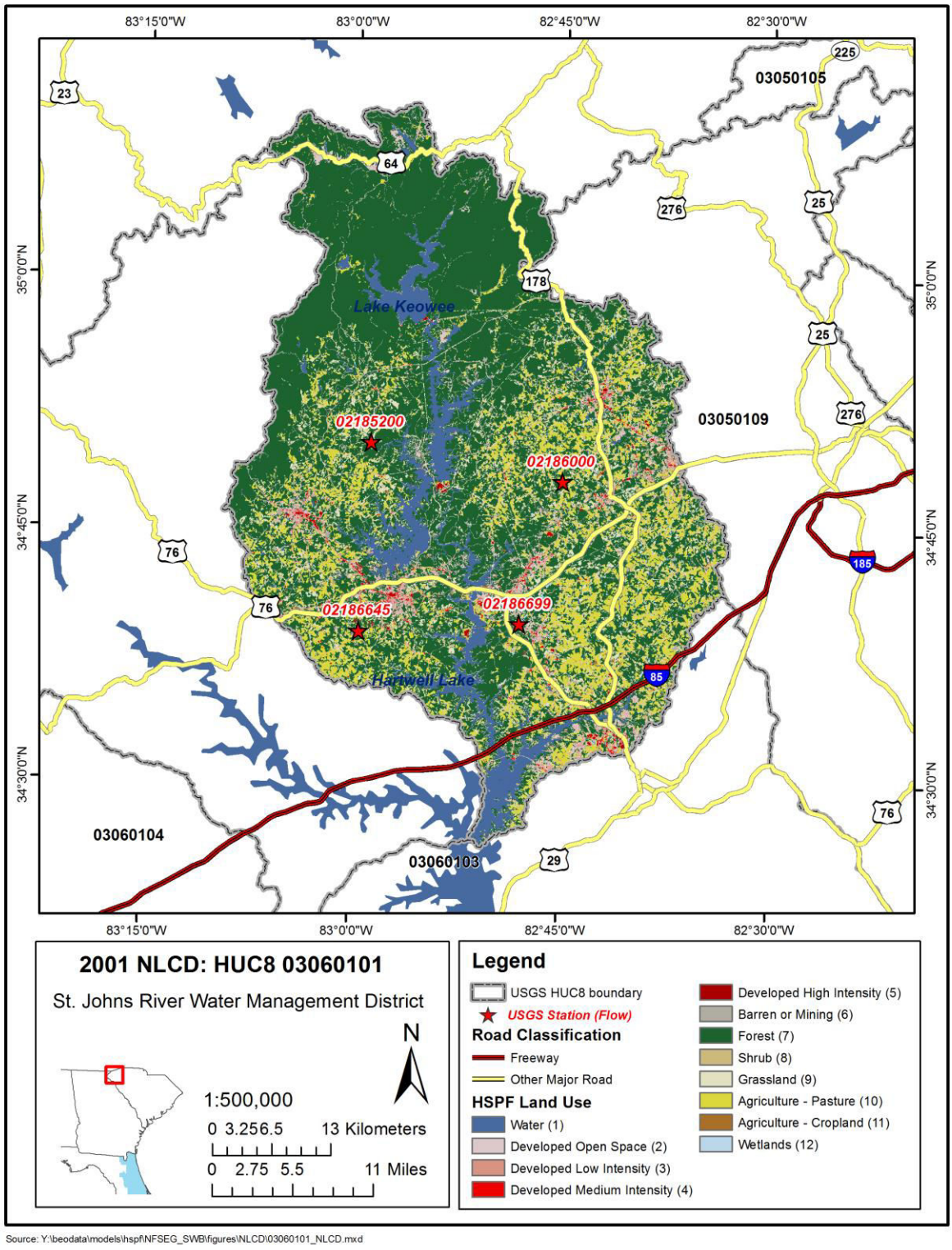


Figure T-03060101-1: Land Cover from the National Land Cover Database.

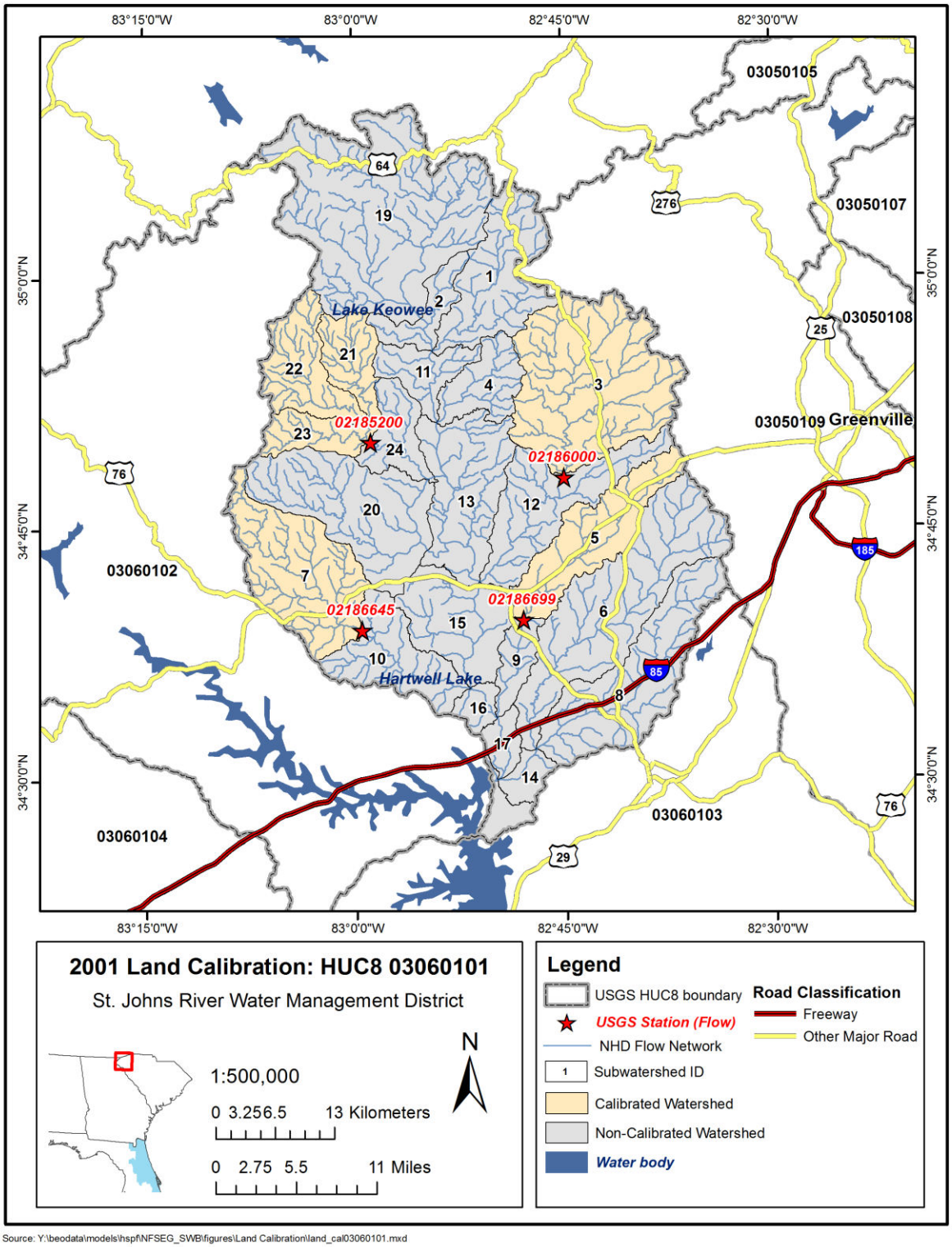


Figure T-03060101-2: Calibrated sub-watersheds.

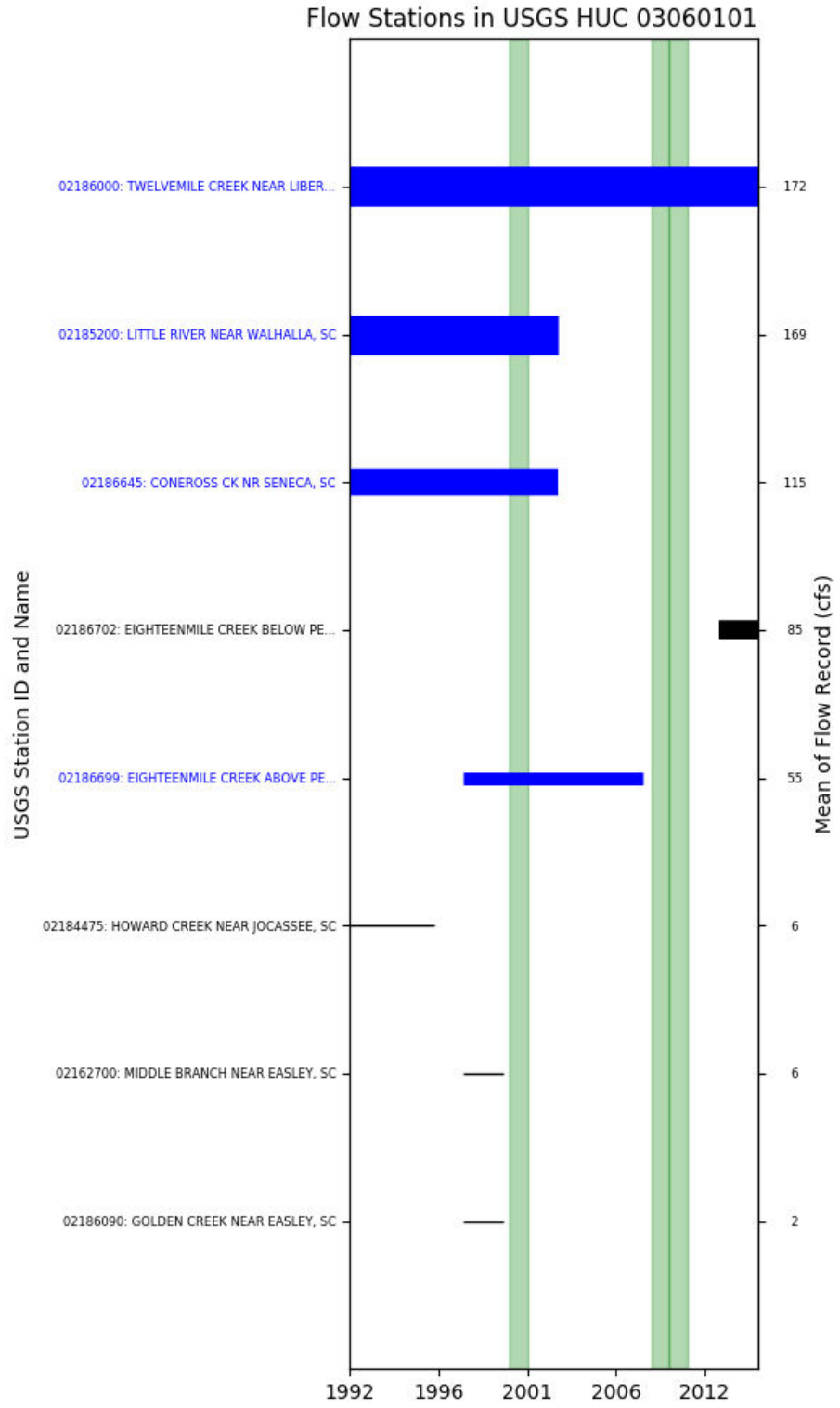


Figure T-03060101-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 03, USGS GAUGE 02186000

Water-Data Report 2009
02186000 TWELVE MILE CREEK NEAR LIBERTY, SC
Savannah Basin Seneca Subbasin

LOCATION.--Lat 344805, long 824455 referenced to North American Datum of 1927, Pickens County, SC, Hydrologic Unit 03060101, on State Highway 137, 0.8 mi downstream from Rices Creek, and 3.4 mi west of Liberty.

DRAINAGE AREA.--106 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1967 to July 1968 (discharge measurements only), July 1954 to September 1964, May 1989 to September 2001, October 2001 to September 2004 (crest-stage partial record), October 2004 to current year.

GAGE.--Data collection platform. Datum of gage is 822.18 ft above NGVD of 1929 (levels by Natural Resources Conservation Service).

REMARKS.--No estimated daily discharges. Records good.

Table T-03060101-1: Comparison Statistics Between HSPF Reach 03 and USGS Gauge 02186000.

Statistic	Value
Bias	-8.43
Standard error	41.73
Relative bias	-0.05
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.89
Coefficient of efficiency	0.67
Index of agreement	0.83

Table T-03060101-2: Hydrologic Indices Between USGS Gauge 02186000 and HSPF Reach 03.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02186000	Simulated Reach 03	Percent Difference
MA1: Mean, all daily flows	171.87	162.10	-5.68
MA2: Median, all daily flows	125.00	121.25	-3.00
MA3: CV, all daily flows	95.70	87.30	-8.78
MA4: CV, log of all daily flows	63.59	60.91	-4.21
MA5: Mean daily flow / median daily flow	1.37	1.34	-2.77
MA9: (Q10 - Q90) / median daily flow	1.95	1.89	-3.39

MA10: (Q20 - Q80) / median daily flow	1.13	1.09	-3.23
MA11: (Q25 - Q75) / median daily flow	0.87	0.91	4.14
MA12: Mean monthly flow, January	212.86	216.26	1.60
MA13: Mean monthly flow, February	200.07	188.94	-5.56
MA14: Mean monthly flow, March	225.21	208.61	-7.37
MA15: Mean monthly flow, April	182.96	170.61	-6.75
MA16: Mean monthly flow, May	138.04	123.85	-10.28
MA17: Mean monthly flow, June	124.18	109.75	-11.62
MA18: Mean monthly flow, July	90.67	85.96	-5.20
MA19: Mean monthly flow, August	119.73	89.88	-24.93
MA20: Mean monthly flow, September	79.69	81.97	2.86
MA21: Mean monthly flow, October	93.18	98.05	5.23
MA22: Mean monthly flow, November	118.10	117.56	-0.45
MA23: Mean monthly flow, December	158.45	151.94	-4.10
ML1: Mean minimum monthly flow, January	123.17	121.03	-1.73
ML2: Mean minimum monthly flow, February	139.17	136.07	-2.22
ML3: Mean minimum monthly flow, March	149.56	136.89	-8.47
ML4: Mean minimum monthly flow, April	144.17	127.76	-11.38
ML5: Mean minimum monthly flow, May	113.50	100.81	-11.18
ML6: Mean minimum monthly flow, June	90.61	88.15	-2.72
ML7: Mean minimum monthly flow, July	67.11	72.21	7.60
ML8: Mean minimum monthly flow, August	65.11	69.01	5.99
ML9: Mean minimum monthly flow, September	60.61	70.92	17.00
ML10: Mean minimum monthly flow, October	73.35	79.31	8.12
ML11: Mean minimum monthly flow, November	88.35	89.84	1.68
ML12: Mean minimum monthly flow, December	104.06	109.57	5.29
ML13: CV of minimum monthly flows	53.05	47.87	-9.76
ML14: Mean minimum daily flow / mean median annual flow	0.31	0.38	22.46
ML15: Mean minimum annual flow / mean annual flow	0.24	0.30	25.19
ML16: Median minimum annual flow / median annual flow	0.31	0.40	30.71
ML20: Ratio of baseflow volume to total flow volume	0.66	0.69	4.62
ML22: Mean annual minimum flow divided by catchment area	14286.16	14286.21	0.00
RA1: Mean of positive changes from one day to next (rise rate)	99.47	91.86	
RA2: CV, mean of positive changes from one day to next (rise rate)	292.14	318.68	
RA3: Mean of negative changes from one day to next (fall rate)	39.74	29.26	
RA4: CV, mean of negative changes from one day to next (fall rate)	391.04	447.19	
RA5: Ratio of days that are higher than previous day	0.27	0.24	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	94.33	81.95	
RA9: CV, number of flow reversals from one day to the next	42.57	43.77	

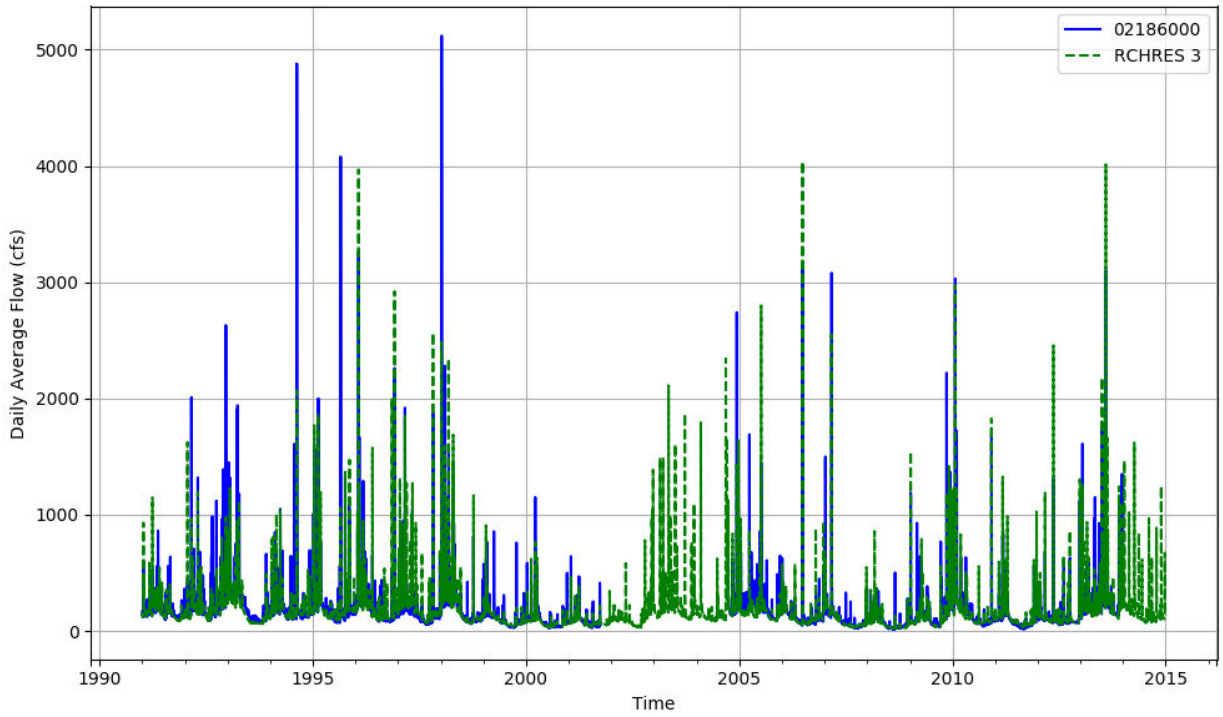


Figure T-03060101-4: Daily flow for HSFP reach 03 and USGS station 02186000.

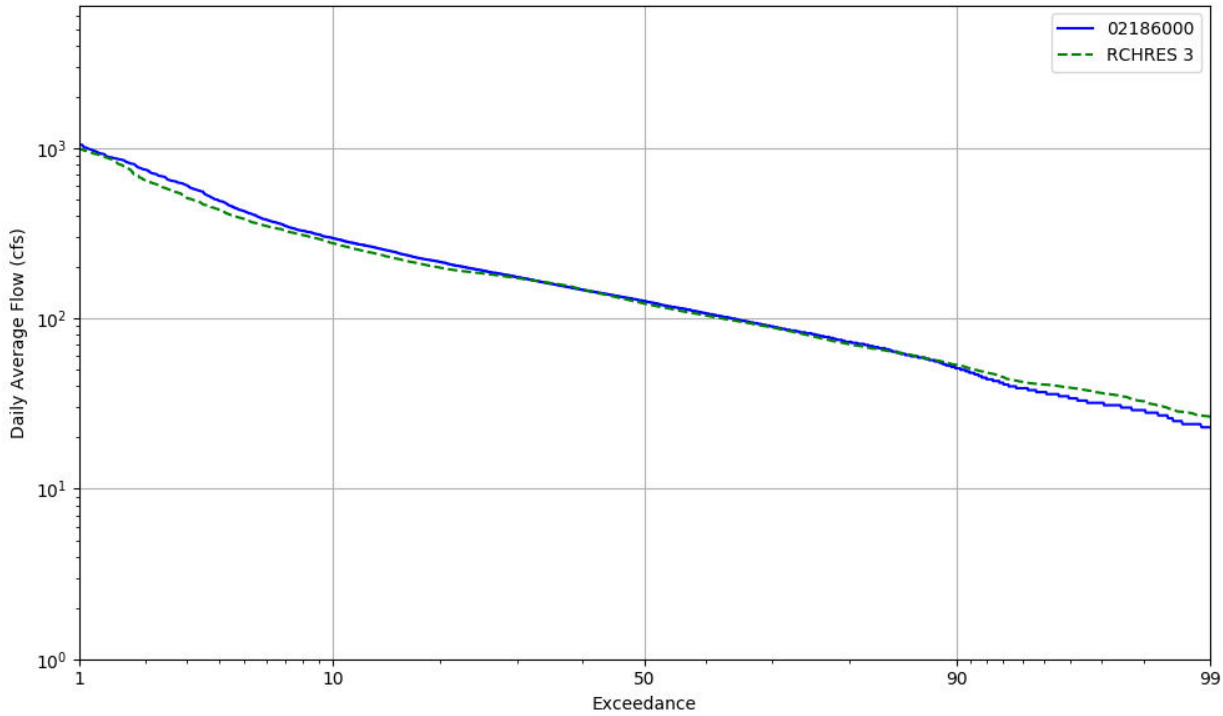


Figure T-03060101-5: Daily exceedance for HSFP reach 03 and USGS station 02186000.

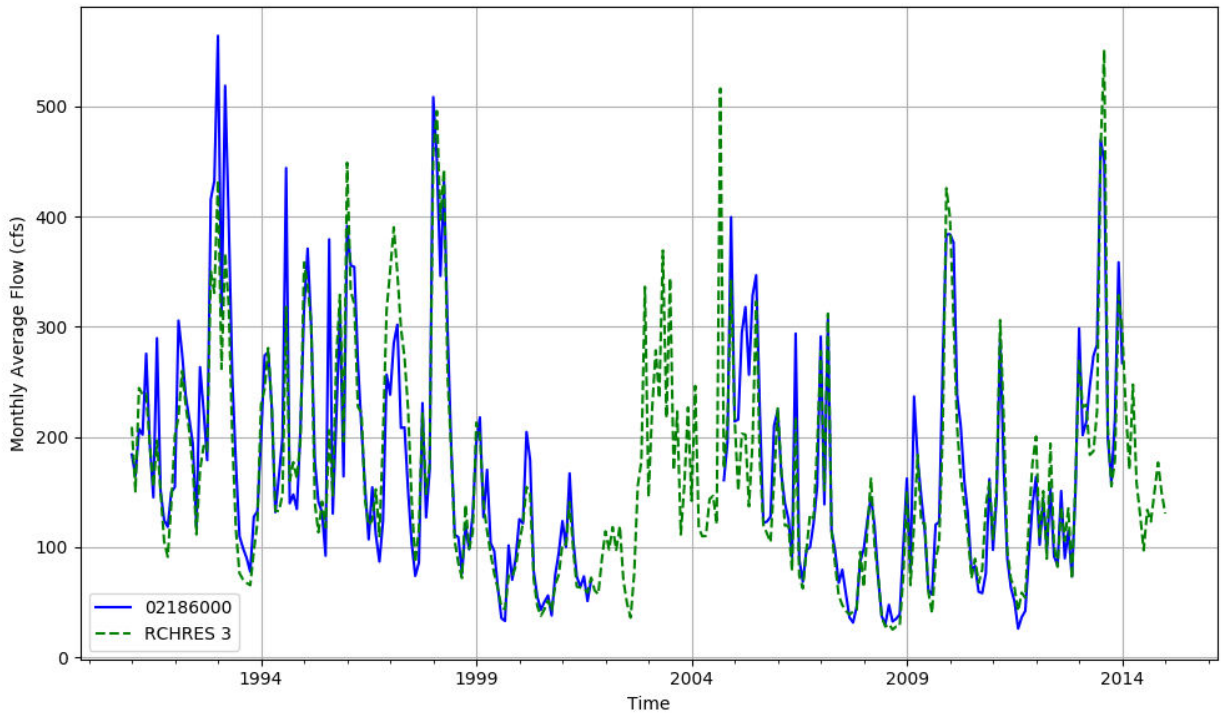


Figure T-03060101-6: Monthly flow for HSFP reach 03 and USGS station 02186000.

HSPF REACH 05, USGS GAUGE 02186699

Water-Data Report 2006
02186699 EIGHTEENMILE CREEK ABOVE PENDLETON, SC
Savannah Basin Seneca Subbasin

LOCATION.--Lat 343932, long 824756 referenced to North American Datum of 1927, Anderson County, SC, Hydrologic Unit 03060101, on downstream side of bridge on County Road 229, 1.0 mi northwest of Pendleton, and 1.5 mi southeast of Clemson.

DRAINAGE AREA.--47.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1998 to current year.

GAGE.--Data collection platform. Elevation of gage is 700 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records good except for estimated daily discharges, which are poor.

Table T-03060101-3: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02186699.

Statistic	Value
Bias	-2.84
Standard error	14.12
Relative bias	-0.05
Relative standard error	0.40
Nash-Sutcliffe coefficient	0.84
Kling-Gupta coefficient	0.90
Coefficient of efficiency	0.62
Index of agreement	0.82

Table T-03060101-4: Hydrologic Indices Between USGS Gauge 02186699 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02186699	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	55.47	52.53	-5.30
MA2: Median, all daily flows	42.00	38.29	-8.84
MA3: CV, all daily flows	123.24	113.86	-7.61
MA4: CV, log of all daily flows	53.47	64.41	20.46
MA5: Mean daily flow / median daily flow	1.32	1.37	3.88
MA9: (Q10 - Q90) / median daily flow	1.60	1.92	20.61
MA10: (Q20 - Q80) / median daily flow	0.98	1.21	23.59
MA11: (Q25 - Q75) / median daily flow	0.76	0.96	26.09

MA12: Mean monthly flow, January	57.01	56.47	-0.94
MA13: Mean monthly flow, February	63.40	60.04	-5.30
MA14: Mean monthly flow, March	79.06	66.47	-15.93
MA15: Mean monthly flow, April	52.12	49.46	-5.10
MA16: Mean monthly flow, May	53.31	49.15	-7.80
MA17: Mean monthly flow, June	52.35	47.13	-9.96
MA18: Mean monthly flow, July	44.05	43.53	-1.18
MA19: Mean monthly flow, August	31.13	30.35	-2.52
MA20: Mean monthly flow, September	46.10	44.75	-2.93
MA21: Mean monthly flow, October	35.48	37.70	6.27
MA22: Mean monthly flow, November	40.52	39.81	-1.77
MA23: Mean monthly flow, December	62.85	60.74	-3.36
ML1: Mean minimum monthly flow, January	39.80	38.13	-4.20
ML2: Mean minimum monthly flow, February	45.00	41.00	-8.89
ML3: Mean minimum monthly flow, March	44.20	40.38	-8.65
ML4: Mean minimum monthly flow, April	40.80	35.95	-11.88
ML5: Mean minimum monthly flow, May	35.82	30.85	-13.88
ML6: Mean minimum monthly flow, June	29.97	25.80	-13.92
ML7: Mean minimum monthly flow, July	25.22	25.37	0.62
ML8: Mean minimum monthly flow, August	21.66	23.93	10.50
ML9: Mean minimum monthly flow, September	20.85	21.61	3.65
ML10: Mean minimum monthly flow, October	24.16	25.25	4.50
ML11: Mean minimum monthly flow, November	28.80	27.82	-3.41
ML12: Mean minimum monthly flow, December	35.30	34.13	-3.32
ML13: CV of minimum monthly flows	49.93	52.58	5.32
ML14: Mean minimum daily flow / mean median annual flow	0.32	0.42	28.56
ML15: Mean minimum annual flow / mean annual flow	0.27	0.31	15.60
ML16: Median minimum annual flow / median annual flow	0.32	0.35	9.71
ML20: Ratio of baseflow volume to total flow volume	0.66	0.66	-0.01
ML22: Mean annual minimum flow divided by catchment area	0.15	0.17	15.49
RA1: Mean of positive changes from one day to next (rise rate)	36.67	32.98	
RA2: CV, mean of positive changes from one day to next (rise rate)	396.07	343.79	
RA3: Mean of negative changes from one day to next (fall rate)	19.03	11.87	
RA4: CV, mean of negative changes from one day to next (fall rate)	530.02	452.84	
RA5: Ratio of days that are higher than previous day	0.29	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.05	
RA8: Number of flow reversals from one day to the next	114.00	105.82	
RA9: CV, number of flow reversals from one day to the next	22.52	22.74	

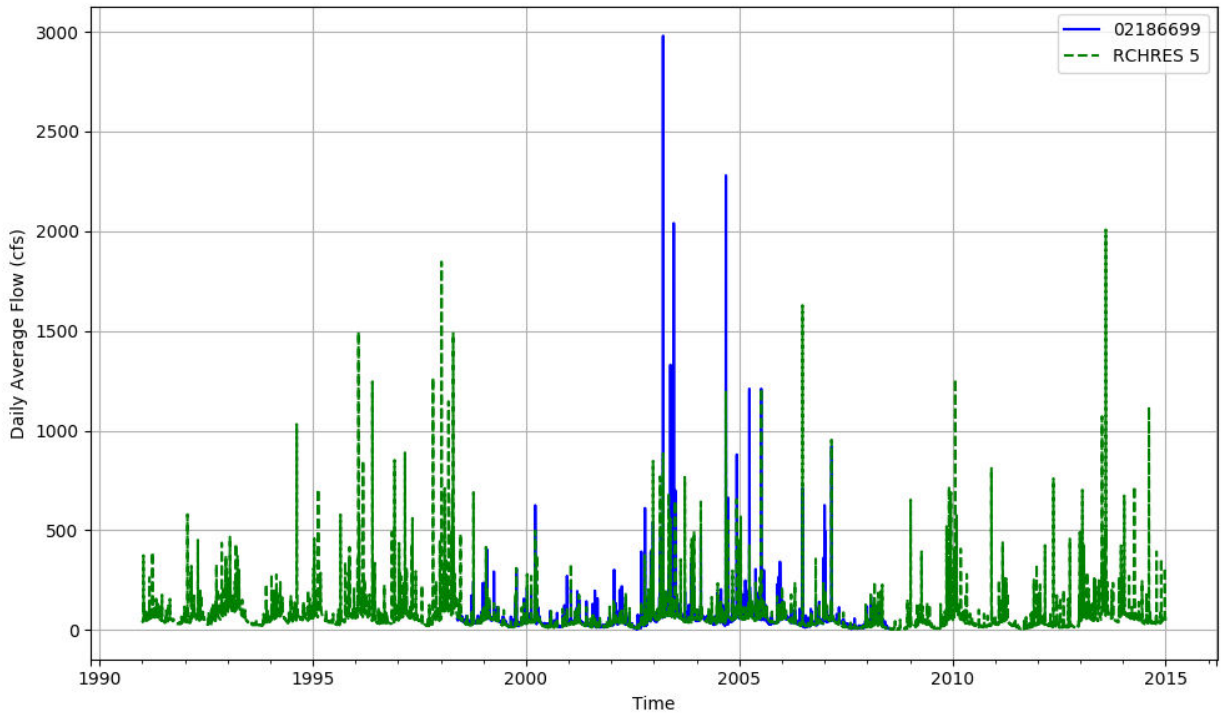


Figure T-03060101-7: Daily flow for HSFP reach 05 and USGS station 02186699.

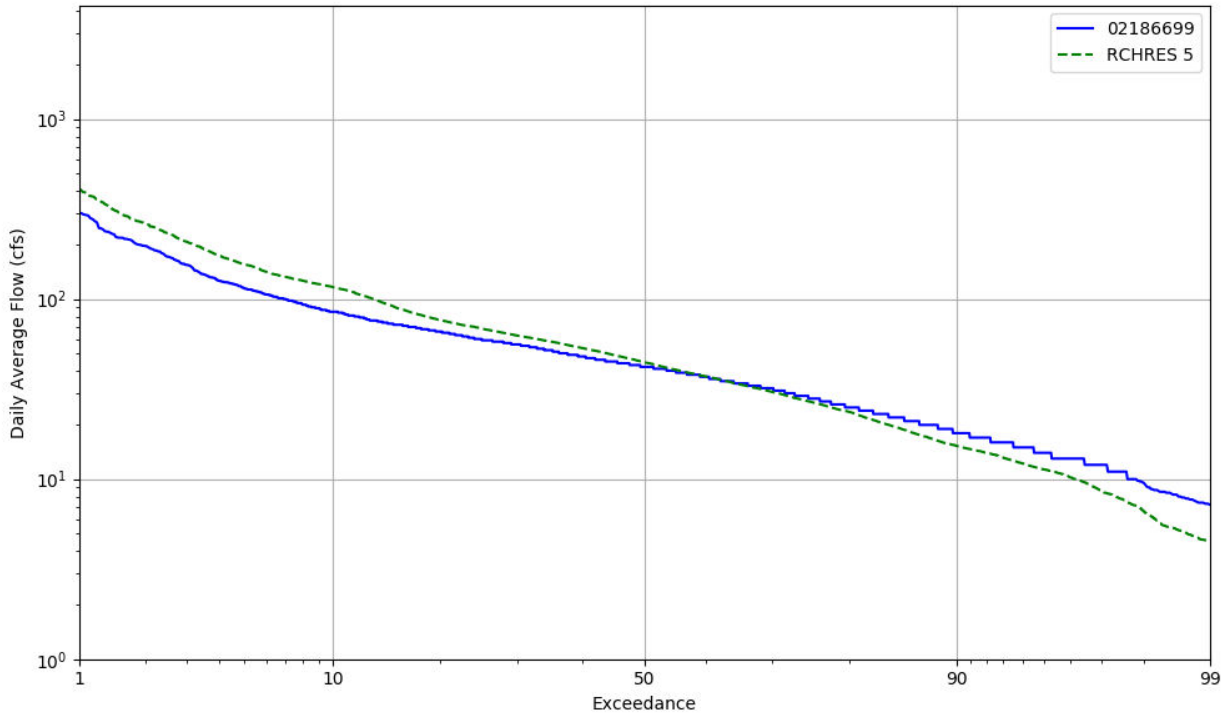


Figure T-03060101-8: Daily exceedance for HSFP reach 05 and USGS station 02186699.

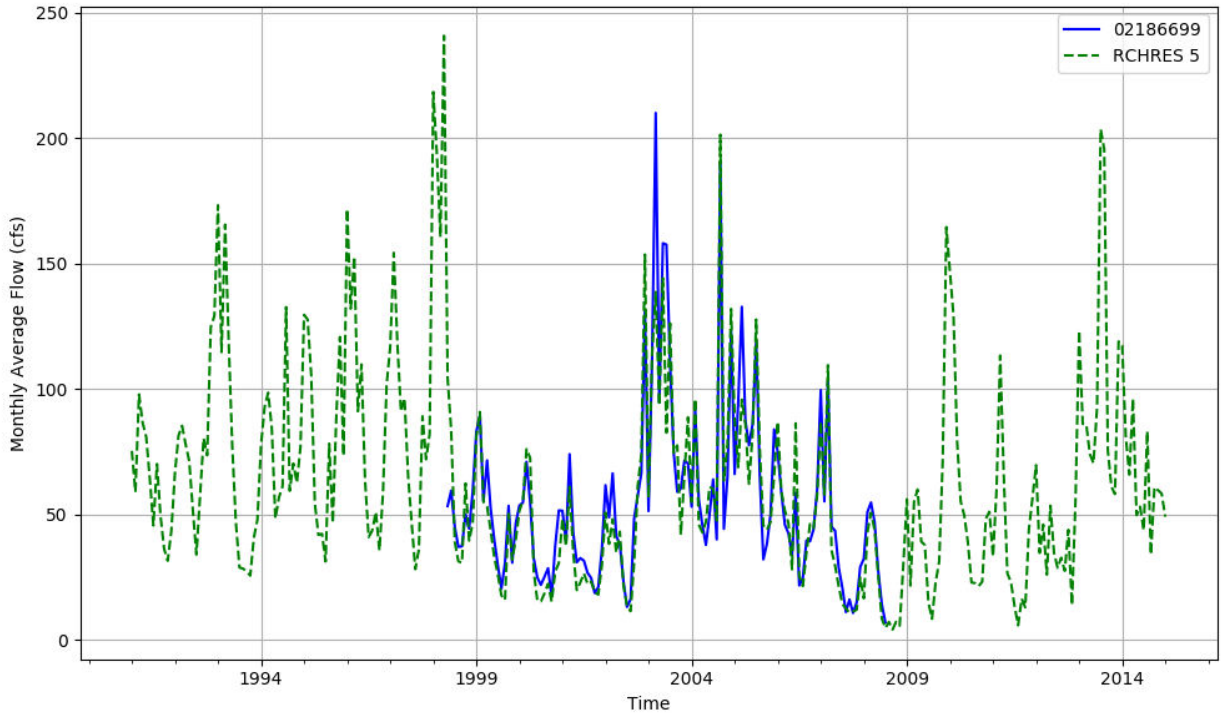


Figure T-03060101-9: Monthly flow for HSFP reach 05 and USGS station 02186699.

HSPF REACH 07, USGS GAUGE 02186645

Water-Data Report 2006
02186699 EIGHTEENMILE CREEK ABOVE PENDLETON, SC
Savannah Basin Seneca Subbasin

LOCATION.--Lat 343932, long 824756 referenced to North American Datum of 1927, Anderson County, SC, Hydrologic Unit 03060101, on downstream side of bridge on County Road 229, 1.0 mi northwest of Pendleton, and 1.5 mi southeast of Clemson.

DRAINAGE AREA.--47.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1998 to current year.

GAGE.--Data collection platform. Elevation of gage is 700 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records good except for estimated daily discharges, which are poor.

Table T-03060101-5: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02186645.

Statistic	Value
Bias	-1.31
Standard error	19.36
Relative bias	-0.01
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.92
Kling-Gupta coefficient	0.93
Coefficient of efficiency	0.75
Index of agreement	0.87

Table T-03060101-6: Hydrologic Indices Between USGS Gauge 02186645 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02186645	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	114.90	113.60	-1.13
MA2: Median, all daily flows	81.00	84.12	3.85
MA3: CV, all daily flows	111.03	104.07	-6.27
MA4: CV, log of all daily flows	70.04	62.29	-11.06
MA5: Mean daily flow / median daily flow	1.42	1.35	-4.80
MA9: (Q10 - Q90) / median daily flow	2.05	1.93	-5.58
MA10: (Q20 - Q80) / median daily flow	1.07	1.12	4.34
MA11: (Q25 - Q75) / median daily flow	0.80	0.92	14.07

MA12: Mean monthly flow, January	150.16	154.59	2.96
MA13: Mean monthly flow, February	166.56	159.92	-3.99
MA14: Mean monthly flow, March	171.07	164.82	-3.65
MA15: Mean monthly flow, April	135.04	137.05	1.49
MA16: Mean monthly flow, May	109.59	108.71	-0.80
MA17: Mean monthly flow, June	86.21	84.32	-2.20
MA18: Mean monthly flow, July	70.83	71.47	0.91
MA19: Mean monthly flow, August	104.15	90.91	-12.71
MA20: Mean monthly flow, September	71.97	74.12	2.99
MA21: Mean monthly flow, October	92.35	91.49	-0.94
MA22: Mean monthly flow, November	91.74	94.04	2.51
MA23: Mean monthly flow, December	105.11	107.88	2.63
ML1: Mean minimum monthly flow, January	72.85	77.87	6.90
ML2: Mean minimum monthly flow, February	85.31	90.98	6.65
ML3: Mean minimum monthly flow, March	91.62	91.53	-0.09
ML4: Mean minimum monthly flow, April	84.62	83.28	-1.58
ML5: Mean minimum monthly flow, May	67.92	68.50	0.85
ML6: Mean minimum monthly flow, June	55.15	57.70	4.61
ML7: Mean minimum monthly flow, July	44.22	46.29	4.67
ML8: Mean minimum monthly flow, August	38.78	44.47	14.69
ML9: Mean minimum monthly flow, September	41.69	47.61	14.20
ML10: Mean minimum monthly flow, October	46.50	51.34	10.40
ML11: Mean minimum monthly flow, November	56.75	60.76	7.06
ML12: Mean minimum monthly flow, December	64.17	72.42	12.87
ML13: CV of minimum monthly flows	48.77	47.87	-1.85
ML14: Mean minimum daily flow / mean median annual flow	0.37	0.42	13.38
ML15: Mean minimum annual flow / mean annual flow	0.27	0.32	18.01
ML16: Median minimum annual flow / median annual flow	0.39	0.41	3.83
ML20: Ratio of baseflow volume to total flow volume	0.61	0.65	7.47
ML22: Mean annual minimum flow divided by catchment area	0.32	0.36	12.46
RA1: Mean of positive changes from one day to next (rise rate)	79.50	74.39	
RA2: CV, mean of positive changes from one day to next (rise rate)	243.16	280.93	
RA3: Mean of negative changes from one day to next (fall rate)	28.27	23.10	
RA4: CV, mean of negative changes from one day to next (fall rate)	345.24	396.24	
RA5: Ratio of days that are higher than previous day	0.24	0.24	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	108.00	97.08	
RA9: CV, number of flow reversals from one day to the next	7.25	13.12	

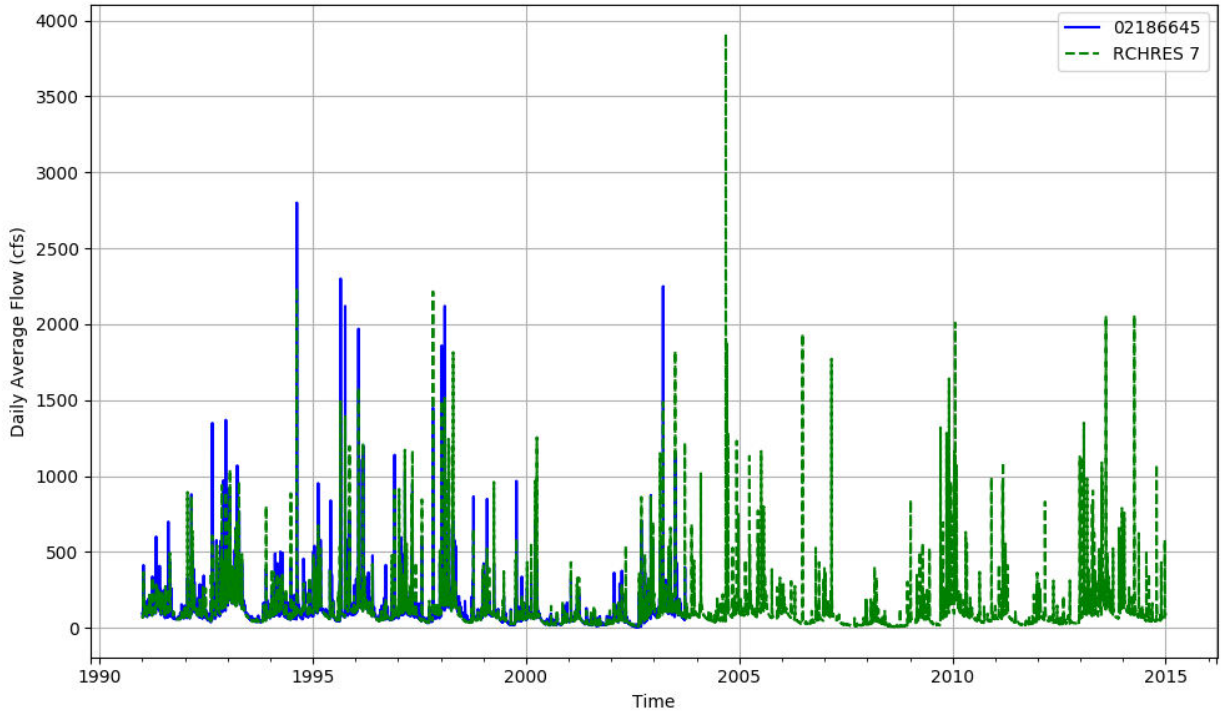


Figure T-03060101-10: Daily flow for HSFP reach 07 and USGS station 02186645.

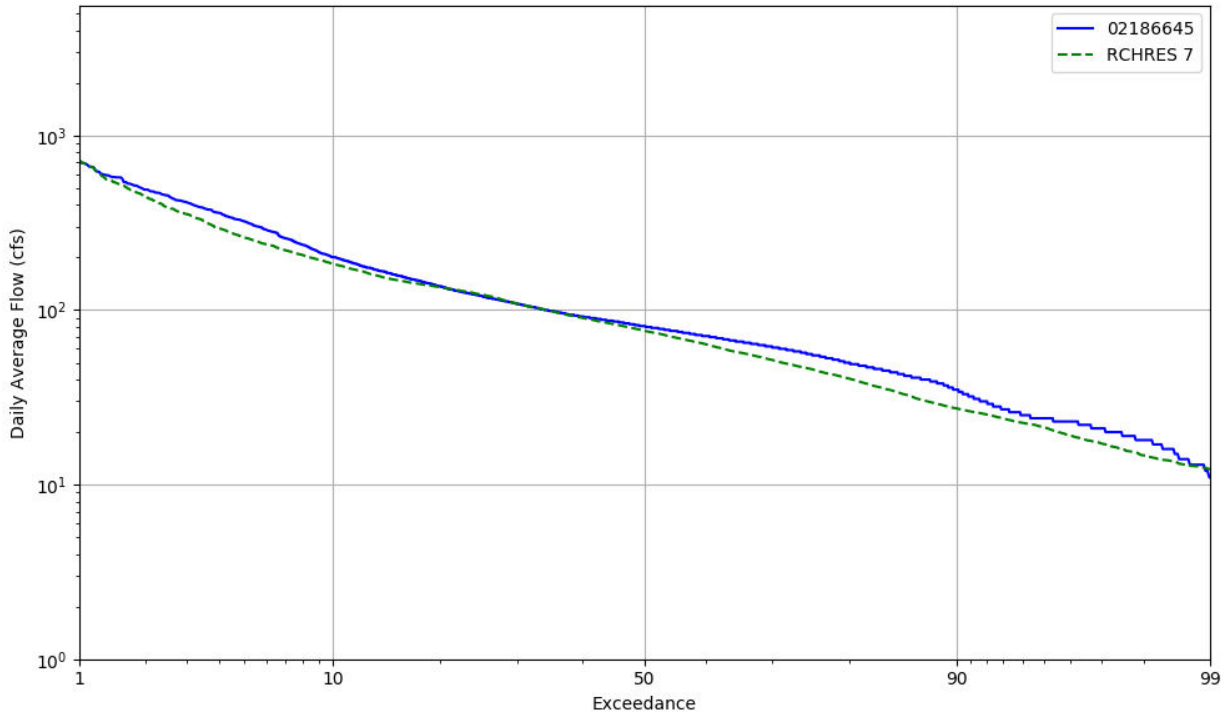


Figure T-03060101-11: Daily exceedance for HSFP reach 07 and USGS station 02186645.

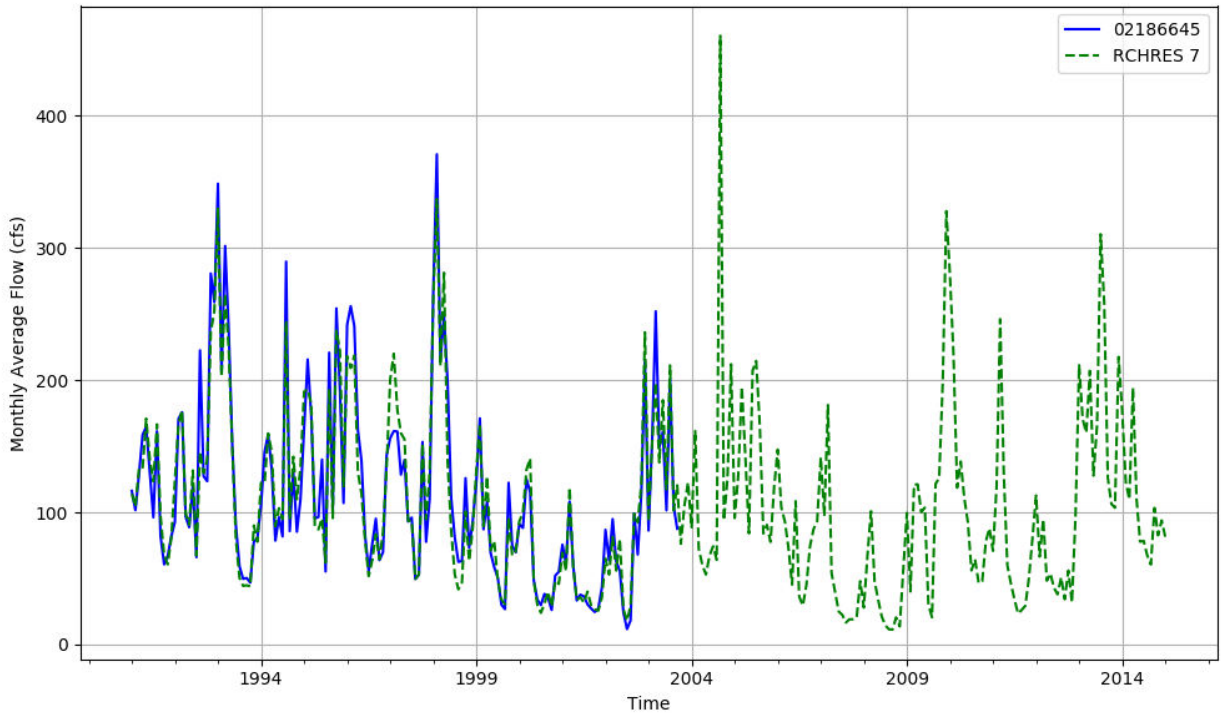


Figure T-03060101-12: Monthly flow for HSFP reach 07 and USGS station 02186645.

HSPF REACH 23, USGS GAUGE 02185200

Water-Data Report 2009
02185200 LITTLE RIVER NEAR WALHALLA, SC
Savannah Basin Seneca Subbasin

LOCATION.--Lat 345011, long 825848 referenced to North American Datum of 1927, Oconee County, SC, Hydrologic Unit 03060101, at downstream side of bridge on County Road 24, 0.5 mi. downstream from Oconee Creek, 3.5 mi south of Salem, and 6.5 mi northeast of Walhalla.

DRAINAGE AREA.--72.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Daily discharge, 1967 to 2003, annual maximum, October 2003 to current year.

GAGE.--Crest-stage gage.

Table T-03060101-7: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02185200.

Statistic	Value
Bias	8.63
Standard error	38.45
Relative bias	0.05
Relative standard error	0.41
Nash-Sutcliffe coefficient	0.83
Kling-Gupta coefficient	0.90
Coefficient of efficiency	0.62
Index of agreement	0.82

Table T-03060101-8: Hydrologic Indices Between USGS Gauge 02185200 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02185200	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	170.68	179.21	5.00
MA2: Median, all daily flows	137.00	139.30	1.68
MA3: CV, all daily flows	84.67	90.54	6.94
MA4: CV, log of all daily flows	56.15	59.16	5.36
MA5: Mean daily flow / median daily flow	1.25	1.29	3.27
MA9: (Q10 - Q90) / median daily flow	1.69	1.74	2.63
MA10: (Q20 - Q80) / median daily flow	1.06	1.07	0.64
MA11: (Q25 - Q75) / median daily flow	0.85	0.81	-4.52
MA12: Mean monthly flow, January	223.48	251.01	12.32
MA13: Mean monthly flow, February	218.88	239.67	9.50
MA14: Mean monthly flow, March	237.74	247.77	4.22
MA15: Mean monthly flow, April	214.94	211.84	-1.44

MA16: Mean monthly flow, May	177.72	170.60	-4.01
MA17: Mean monthly flow, June	146.82	140.20	-4.51
MA18: Mean monthly flow, July	120.93	117.29	-3.01
MA19: Mean monthly flow, August	146.78	135.97	-7.36
MA20: Mean monthly flow, September	110.65	125.34	13.28
MA21: Mean monthly flow, October	121.13	135.47	11.83
MA22: Mean monthly flow, November	135.36	161.54	19.34
MA23: Mean monthly flow, December	156.62	175.91	12.32
ML1: Mean minimum monthly flow, January	125.23	127.30	1.65
ML2: Mean minimum monthly flow, February	135.15	139.59	3.28
ML3: Mean minimum monthly flow, March	154.15	141.15	-8.43
ML4: Mean minimum monthly flow, April	155.85	133.95	-14.05
ML5: Mean minimum monthly flow, May	124.92	106.80	-14.51
ML6: Mean minimum monthly flow, June	99.92	98.07	-1.86
ML7: Mean minimum monthly flow, July	82.46	82.59	0.15
ML8: Mean minimum monthly flow, August	74.08	80.19	8.26
ML9: Mean minimum monthly flow, September	75.46	86.45	14.57
ML10: Mean minimum monthly flow, October	75.75	85.30	12.60
ML11: Mean minimum monthly flow, November	85.92	96.78	12.64
ML12: Mean minimum monthly flow, December	111.00	118.05	6.35
ML13: CV of minimum monthly flows	50.74	41.83	-17.55
ML14: Mean minimum daily flow / mean median annual flow	0.37	0.46	25.98
ML15: Mean minimum annual flow / mean annual flow	0.31	0.37	20.52
ML16: Median minimum annual flow / median annual flow	0.36	0.41	13.53
ML20: Ratio of baseflow volume to total flow volume	0.72	0.67	-5.87
ML22: Mean annual minimum flow divided by catchment area	0.54	0.65	20.62
RA1: Mean of positive changes from one day to next (rise rate)	80.53	107.49	
RA2: CV, mean of positive changes from one day to next (rise rate)	264.75	259.67	
RA3: Mean of negative changes from one day to next (fall rate)	28.80	32.64	
RA4: CV, mean of negative changes from one day to next (fall rate)	390.45	370.33	
RA5: Ratio of days that are higher than previous day	0.25	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.04	
RA8: Number of flow reversals from one day to the next	107.46	100.85	
RA9: CV, number of flow reversals from one day to the next	11.25	11.45	

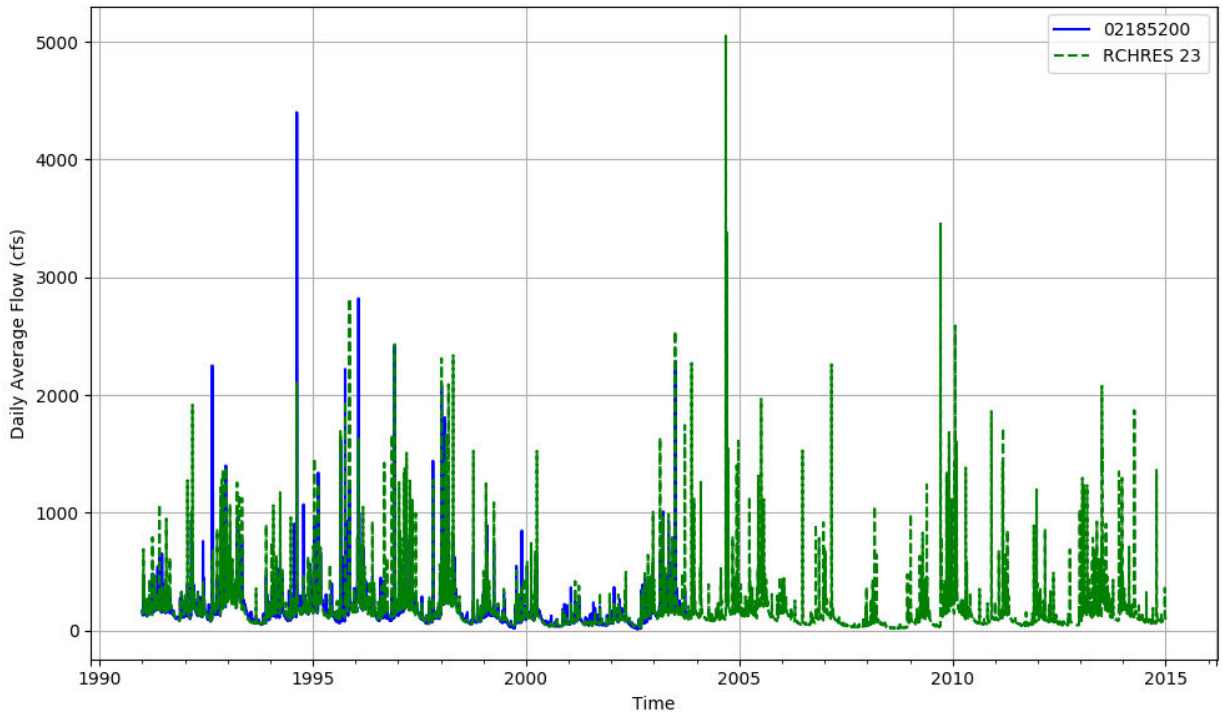


Figure T-03060101-13: Daily flow for HSFP reach 23 and USGS station 02185200.

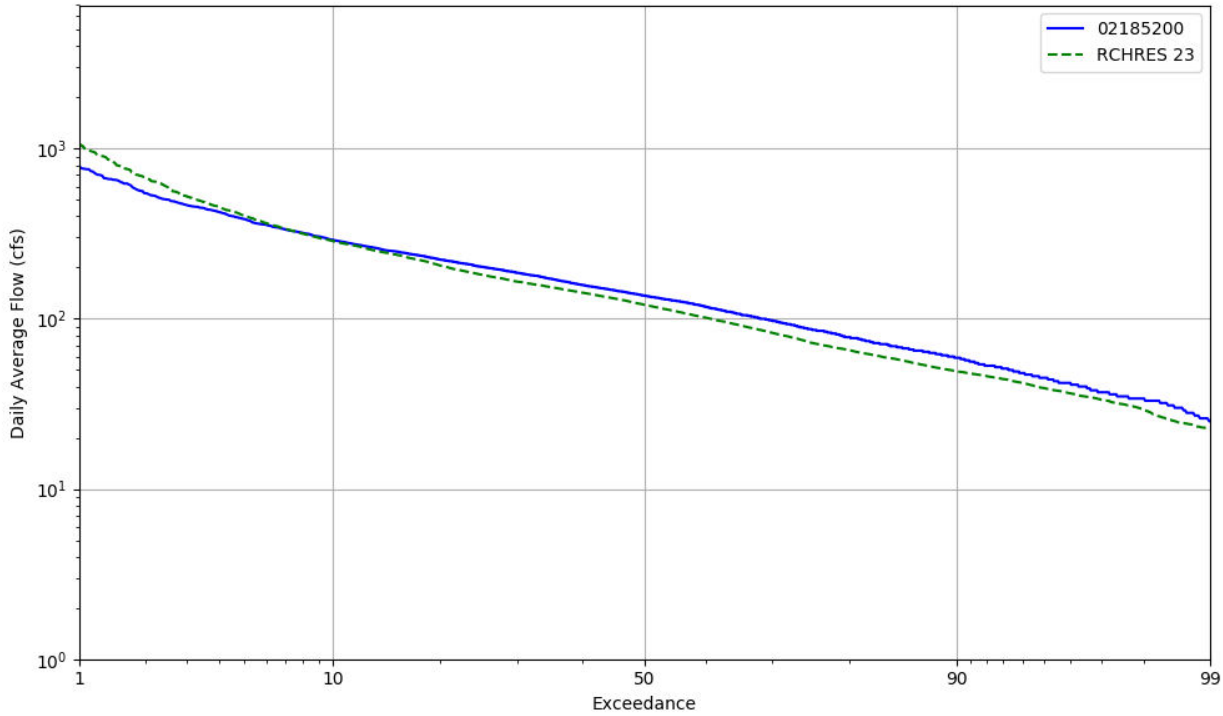


Figure T-03060101-14: Daily exceedance for HSFP reach 23 and USGS station 02185200.

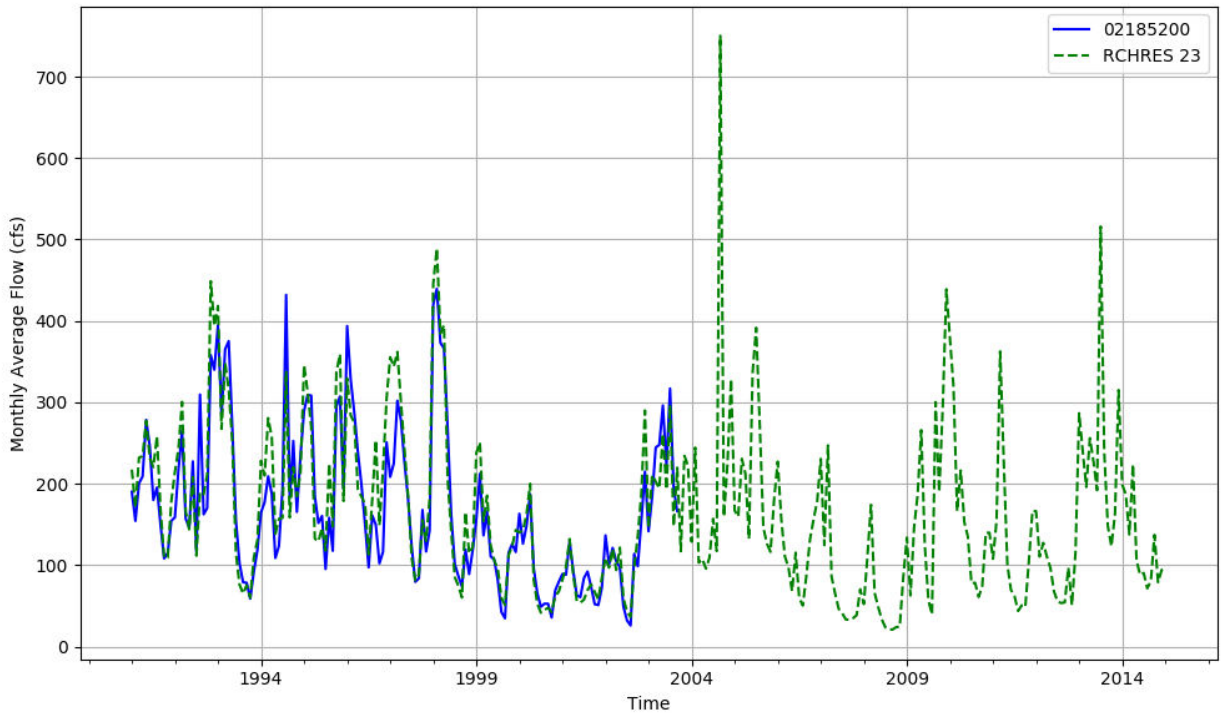


Figure T-03060101-15: Monthly flow for HSFP reach 23 and USGS station 02185200.

Table T-03060101-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	46758	42769	13969	3360	977	4926	389380	4706	50719	89088	196	2864	1477	158	990	652336
AREA(%)	7.1	6.5	2.1	0.5	0.1	0.7	59.2	0.7	7.7	13.5	0.0	0.4	0.2	0.0	0.2	99.1
IMPERVIOUS																
AREA(ACRES)		2267	1559	843	978											5647
AREA(%)		0.3	0.2	0.1	0.1											0.9
SUPY	43.9	42.4	39.6	39.5	39.3	42.0	46.6	44.2	41.2	40.3	39.8	40.4	58.2	48.2	41.3	44.2
SURLI			12.4	12.0	10.9											0.3
UZLI																0.0
LZLI			0.8	0.8	0.8											0.0
SURO: PERVIOUS	2.6	3.4	3.3	3.9	3.2	2.6	0.5	2.6	1.6	1.7	0.8	0.2	5.4	2.8	0.9	1.2
SURO: IMPERVIOUS		24.6	22.2	22.2	22.0											0.2
SURO: COMBINED	2.6	4.5	5.2	7.5	12.6	2.6	0.5	2.6	1.6	1.7	0.8	0.2	5.4	2.8	0.9	1.4
IFWO		1.9	2.5	2.3	2.4	2.1	0.8	2.3	1.3	1.2	0.7		4.0	2.0	0.7	1.0
AGWO	4.9	8.3	16.4	15.8	14.4	11.8	10.4	11.9	8.5	8.9	7.5	4.6	14.0	13.1	8.4	9.6
AGWI	12.3	11.8	19.5	18.9	17.3	15.3	14.0	15.4	11.7	12.4	10.6	7.2	16.1	15.7	11.0	13.3
IGWI	2.0	1.9	3.1	3.0	2.8	2.5	2.2	2.5	1.9	2.0	1.7	1.2	2.6	2.5	1.8	2.1
CEPE		7.7	7.4	7.4	10.4	7.7	11.7	10.3	10.7	7.6	9.8	17.5	19.2	9.0	10.9	9.8
UZET	4.3	3.8	4.1	4.1	3.4	3.8	2.7	3.8	3.0	3.2	2.9	10.2	3.5	4.2	3.1	3.1
LZET	2.1	12.5	13.4	13.4	12.3	8.5	15.2	7.6	11.7	13.1	14.5	2.3	8.0	12.8	14.2	13.2
AGWET	6.5	2.7	2.8	2.8	2.6	2.7	2.4	2.4	2.5	2.8	2.7	4.5	1.6	2.7	2.6	2.8
BASET	1.1	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.3	1.3	1.3	1.1	1.3	1.3	1.3	1.2
SURET	21.5											2.4				1.5
PERO	7.5	13.5	22.2	21.9	20.0	16.5	11.6	16.8	11.4	11.8	8.9	4.8	23.4	17.8	10.0	11.7
IGWI	2.0	1.9	3.1	3.0	2.8	2.5	2.2	2.5	1.9	2.0	1.7	1.2	2.6	2.5	1.8	2.1
TAET: PERVIOUS	35.5	28.0	29.1	29.0	29.9	24.0	33.3	25.4	29.1	28.0	31.2	38.1	33.5	29.9	32.0	31.5
IMPEV: IMPERVIOUS		17.9	17.5	17.5	17.4											0.2
ET: COMBINED	35.5	27.5	27.9	26.7	23.6	24.0	33.3	25.4	29.1	28.0	31.2	38.1	33.5	29.9	32.0	31.7
PET	40.0	40.0	40.7	40.7	40.8	40.2	39.3	39.7	40.2	40.5	40.9	40.4	40.1	41.1	41.0	39.3

Table T-03060101-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	46758	42769	13969	3360	977	4926	389380	4706	50719	89088	196	2864	1477	158	990	652336
AREA(%)	7.1	6.5	2.1	0.5	0.1	0.7	59.2	0.7	7.7	13.5	0.0	0.4	0.2	0.0	0.2	99.1
IMPERVIOUS																
AREA(ACRES)		2267	1559	843	978											5647
AREA(%)		0.3	0.2	0.1	0.1											0.9
SUPY	73.4	68.9	65.1	65.3	65.0	69.0	76.5	73.1	67.2	65.5	62.6	63.9	82.4	74.1	64.2	72.4
SURLI			16.0	15.3	13.7											0.4
UZLI																0.0
LZLI			1.3	1.3	1.4											0.0
SURO: PERVIOUS	17.7	11.9	10.9	12.1	10.7	8.9	4.0	10.0	7.1	6.8	4.1	3.7	14.4	8.6	4.2	6.4
SURO: IMPERVIOUS		47.9	44.7	44.9	44.6											0.4
SURO: COMBINED	17.7	13.7	14.3	18.7	27.7	8.9	4.0	10.0	7.1	6.8	4.1	3.7	14.4	8.6	4.2	6.8
IFWO		6.2	7.6	7.0	7.4	6.8	5.2	7.6	5.2	5.0	3.6		8.7	6.1	3.6	4.9
AGWO	3.1	9.9	21.1	20.2	18.6	14.7	15.1	15.1	10.9	11.2	9.4	3.4	14.0	16.7	10.3	13.0
AGWI	13.5	20.0	30.4	29.5	27.6	25.0	27.7	25.2	21.7	22.3	20.4	16.0	23.1	25.5	21.0	24.7
IGWI	2.2	3.2	4.9	4.7	4.4	4.0	4.4	4.0	3.5	3.6	3.3	2.6	3.7	4.1	3.4	4.0
CEPE		9.9	9.5	9.5	13.0	9.8	14.5	12.9	13.3	9.6	12.1	20.3	18.4	11.0	13.0	12.1
UZET	2.6	4.6	5.0	5.0	4.0	4.7	3.6	4.5	3.7	4.1	3.8	6.2	3.9	5.0	4.0	3.7
LZET	1.6	11.9	13.0	13.0	11.8	8.3	14.3	7.4	11.0	12.5	13.3	1.0	9.0	12.6	13.1	12.4
AGWET	5.7	2.9	2.9	2.9	2.7	2.9	2.4	2.6	2.7	3.0	2.9	5.0	2.1	2.8	2.7	2.8
BASET	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.1	1.4	1.4	1.4	1.3
SURET	29.4											7.5				2.1
PERO	20.8	27.9	39.6	39.3	36.7	30.4	24.3	32.7	23.2	23.0	17.2	7.1	37.1	31.4	18.1	24.3
IGWI	2.2	3.2	4.9	4.7	4.4	4.0	4.4	4.0	3.5	3.6	3.3	2.6	3.7	4.1	3.4	4.0
TAET: PERVIOUS	40.4	30.7	32.0	31.9	32.8	27.1	36.3	28.7	32.1	30.7	33.4	41.2	34.8	32.8	34.3	34.6
IMPEV: IMPERVIOUS		20.9	20.3	20.3	20.2											0.2
ET: COMBINED	40.4	30.2	30.8	29.6	26.5	27.1	36.3	28.7	32.1	30.7	33.4	41.2	34.8	32.8	34.3	34.8
PET	44.6	44.7	45.4	45.4	45.5	44.8	43.9	44.3	44.9	45.2	45.8	45.2	44.7	45.8	45.9	44.0

Table T-03060101-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	46758	42769	13969	3360	977	4926	389380	4706	50719	89088	196	2864	1477	158	990	652336
AREA(%)	7.1	6.5	2.1	0.5	0.1	0.7	59.2	0.7	7.7	13.5	0.0	0.4	0.2	0.0	0.2	99.1
IMPERVIOUS																
AREA(ACRES)		2267	1559	843	978											5647
AREA(%)		0.3	0.2	0.1	0.1											0.9
SUPY	52.0	50.8	48.5	48.6	48.3	50.6	54.7	53.0	50.0	49.0	47.5	48.3	65.6	56.9	49.2	52.4
SURLI			18.8	17.8	15.7											0.5
UZLI																0.0
LZLI			1.2	1.2	1.3											0.0
SURO: PERVIOUS	14.6	8.0	7.7	8.6	7.5	6.3	2.8	6.8	5.1	4.8	3.1	6.8	10.3	6.1	3.0	4.6
SURO: IMPERVIOUS		32.1	30.2	30.3	30.1											0.3
SURO: COMBINED	14.6	9.2	10.0	13.0	18.8	6.3	2.8	6.8	5.1	4.8	3.1	6.8	10.3	6.1	3.0	4.9
IFWO		4.2	5.3	4.9	5.1	4.9	3.6	5.3	3.8	3.6	2.7		6.2	4.5	2.8	3.4
AGWO	4.0	11.3	23.6	22.6	20.6	15.8	17.2	15.9	12.8	13.3	11.9	5.4	15.5	17.0	12.7	14.9
AGWI	12.4	13.2	26.4	25.2	23.0	17.3	17.2	16.9	14.2	15.1	13.5	11.9	16.9	18.3	14.3	16.1
IGWI	2.0	2.1	4.2	4.0	3.7	2.8	2.7	2.7	2.3	2.4	2.2	1.9	2.7	2.9	2.3	2.6
CEPE		8.7	8.3	8.3	11.5	8.6	12.9	11.5	11.9	8.5	10.7	18.5	18.4	9.7	11.5	10.8
UZET	4.0	3.7	4.4	4.3	3.5	3.8	2.8	3.6	3.0	3.3	3.1	8.2	3.4	4.2	3.3	3.1
LZET	1.9	12.3	13.3	13.3	12.1	8.4	15.0	7.6	11.4	12.8	14.2	1.5	8.7	12.6	13.9	13.0
AGWET	6.1	2.8	2.8	2.8	2.6	2.8	2.4	2.5	2.6	2.9	2.7	3.9	1.9	2.7	2.6	2.8
BASET	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3
SURET	24.4											6.5				1.8
PERO	18.5	23.5	36.7	36.0	33.3	26.9	23.6	28.0	21.7	21.8	17.7	12.2	32.0	27.6	18.5	23.0
IGWI	2.0	2.1	4.2	4.0	3.7	2.8	2.7	2.7	2.3	2.4	2.2	1.9	2.7	2.9	2.3	2.6
TAET: PERVIOUS	37.5	28.8	30.1	30.0	30.9	25.0	34.5	26.5	30.2	28.9	32.0	39.8	33.7	30.6	32.7	32.7
IMPEV: IMPERVIOUS		18.8	18.4	18.4	18.3											0.2
ET: COMBINED	37.5	28.3	28.9	27.7	24.6	25.0	34.5	26.5	30.2	28.9	32.0	39.8	33.7	30.6	32.7	32.9
PET	41.7	41.8	42.3	42.3	42.3	41.9	41.2	41.5	42.0	42.2	42.6	42.2	41.8	42.5	42.6	41.2

Table T-03060101-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	46758	42769	13969	3360	977	4926	389380	4706	50719	89088	196	2864	1477	158	990	652336
AREA(%)	7.1	6.5	2.1	0.5	0.1	0.7	59.2	0.7	7.7	13.5	0.0	0.4	0.2	0.0	0.2	99.1
IMPERVIOUS																
AREA(ACRES)		2267	1559	843	978											5647
AREA(%)		0.3	0.2	0.1	0.1											0.9
SUPY	59.2	56.7	53.7	53.7	53.5	56.5	61.9	59.4	55.4	54.1	52.2	53.5	65.0	63.0	53.7	58.9
SURLI			11.5	11.1	10.1											0.3
UZLI																0.0
LZLI			1.0	1.0	1.0											0.0
SURO: PERVIOUS	14.3	8.3	7.2	8.2	7.1	6.4	2.7	7.0	5.0	4.7	2.9	5.4	9.6	6.7	2.9	4.5
SURO: IMPERVIOUS		37.8	35.1	35.2	34.9											0.3
SURO: COMBINED	14.3	9.8	10.0	13.6	21.0	6.4	2.7	7.0	5.0	4.7	2.9	5.4	9.6	6.7	2.9	4.9
IFWO		4.4	5.2	4.8	5.2	4.9	3.5	5.5	3.7	3.5	2.5		5.6	4.5	2.5	3.3
AGWO	5.6	12.5	20.0	19.3	18.1	16.5	18.1	16.7	13.7	14.0	12.5	7.3	15.1	17.4	13.1	15.8
AGWI	12.2	16.8	24.3	23.6	22.2	20.9	22.0	20.8	17.8	18.4	16.7	12.7	18.8	21.7	17.3	20.0
IGWI	2.0	2.7	3.9	3.8	3.6	3.3	3.5	3.3	2.9	3.0	2.7	2.0	3.0	3.5	2.8	3.2
CEPE		8.8	8.6	8.6	11.8	8.8	13.0	11.6	12.0	8.6	11.0	18.4	14.5	10.1	11.9	10.9
UZET	2.5	4.1	4.4	4.4	3.5	4.2	3.1	4.0	3.2	3.7	3.3	6.9	3.9	4.6	3.4	3.3
LZET	1.4	11.5	12.4	12.4	11.2	7.9	13.9	7.1	10.7	12.1	13.1	1.2	9.5	11.9	12.9	12.0
AGWET	4.9	2.6	2.7	2.7	2.4	2.6	2.2	2.3	2.4	2.7	2.6	3.6	2.1	2.5	2.5	2.5
BASET	1.1	1.2	1.3	1.3	1.3	1.3	1.2	1.2	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.2
SURET	26.7											6.9				1.9
PERO	19.9	25.2	32.4	32.2	30.4	27.8	24.3	29.3	22.5	22.2	17.9	12.7	30.3	28.6	18.5	23.6
IGWI	2.0	2.7	3.9	3.8	3.6	3.3	3.5	3.3	2.9	3.0	2.7	2.0	3.0	3.5	2.8	3.2
TAET: PERVIOUS	36.6	28.4	29.4	29.3	30.2	24.8	33.5	26.2	29.6	28.4	31.2	38.1	31.2	30.4	32.0	31.9
IMPEV: IMPERVIOUS		18.9	18.6	18.6	18.5											0.2
ET: COMBINED	36.6	27.9	28.3	27.2	24.4	24.8	33.5	26.2	29.6	28.4	31.2	38.1	31.2	30.4	32.0	32.0
PET	40.3	40.3	40.9	40.9	41.0	40.4	39.6	40.0	40.5	40.7	41.1	40.6	40.3	41.3	41.2	39.7

Table T-03060101-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
2	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
3	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
4	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
5	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
6	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
7	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
8	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
9	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
10	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
11	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
12	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
13	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
14	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
15	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
16	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
17	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
18	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
19	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
20	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
21	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
22	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
23	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999
24	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.999

Table T-03060101-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
2	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
3	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
4	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
5	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
6	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
7	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
8	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
9	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
10	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
11	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
12	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
13	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
14	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
15	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
16	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
17	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
18	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
19	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
20	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
21	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
22	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
23	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
24	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031

Table T-03060101-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
2	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
3	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
4	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
5	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
6	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
7	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
8	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
9	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
10	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
11	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
12	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
13	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
14	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
15	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
16	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
17	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
18	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
19	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
20	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
21	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
22	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
23	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300
24	0.000	0.050	0.050	0.050	0.100	0.050	0.110	0.087	0.100	0.050	0.088	0.300

Table T-03060101-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
2	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
3	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
4	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
5	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
6	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
7	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
8	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
9	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
10	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
11	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
12	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
13	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
14	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
15	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
16	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
17	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
18	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
19	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
20	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
21	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
22	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
23	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
24	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138

Table T-03060101-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
2	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
3	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
4	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
5	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
6	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
7	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
8	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
9	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
10	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
11	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
12	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
13	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
14	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
15	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
16	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
17	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
18	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
19	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
20	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
21	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
22	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
23	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010
24	0.010	0.140	0.140	0.140	0.140	0.199	0.299	0.199	0.199	0.199	0.239	0.010

Table T-03060101-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
2		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
3		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
4		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
5		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
6		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
7		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
8		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
9		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
10		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
11		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
12		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
13		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
14		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
15		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
16		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
17		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
18		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
19		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
20		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
21		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
22		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
23		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	
24		0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	0.681	

Table T-03060101-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03060101-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
2	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
3	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
4	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
5	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
6	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
7	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
8	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
9	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
10	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
11	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
12	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
13	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
14	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
15	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
16	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
17	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
18	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
19	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
20	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
21	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
22	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
23	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341
24	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341

Table T-03060101-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
2	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
3	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
4	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
5	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
6	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
7	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
8	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
9	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
10	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
11	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
12	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
13	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
14	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
15	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
16	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
17	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
18	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
19	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
20	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
21	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
22	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
23	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900
24	0.228	0.399	0.399	0.399	0.399	0.266	0.565	0.266	0.399	0.399	0.466	0.900

Table T-03060101-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
2	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
3	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
4	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
5	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
6	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
7	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
8	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
9	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
10	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
11	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
12	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
13	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
14	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
15	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
16	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
17	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
18	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
19	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
20	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
21	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
22	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
23	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200
24	0.200	4.209	4.209	4.209	4.209	4.735	6.313	4.735	4.735	4.735	5.261	0.200

Table T-03060101-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03060102

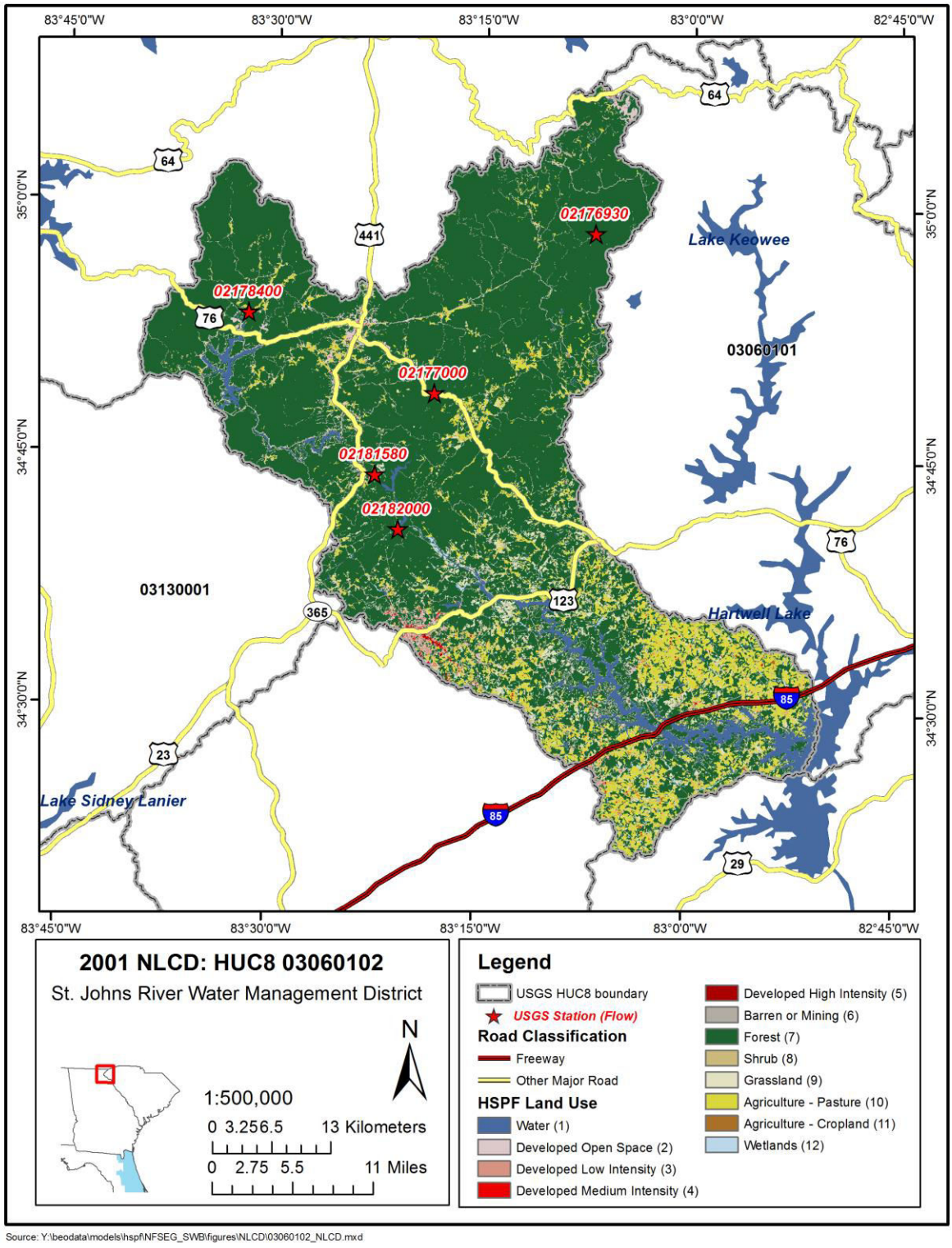


Figure T-03060102-1: Land Cover from the National Land Cover Database.

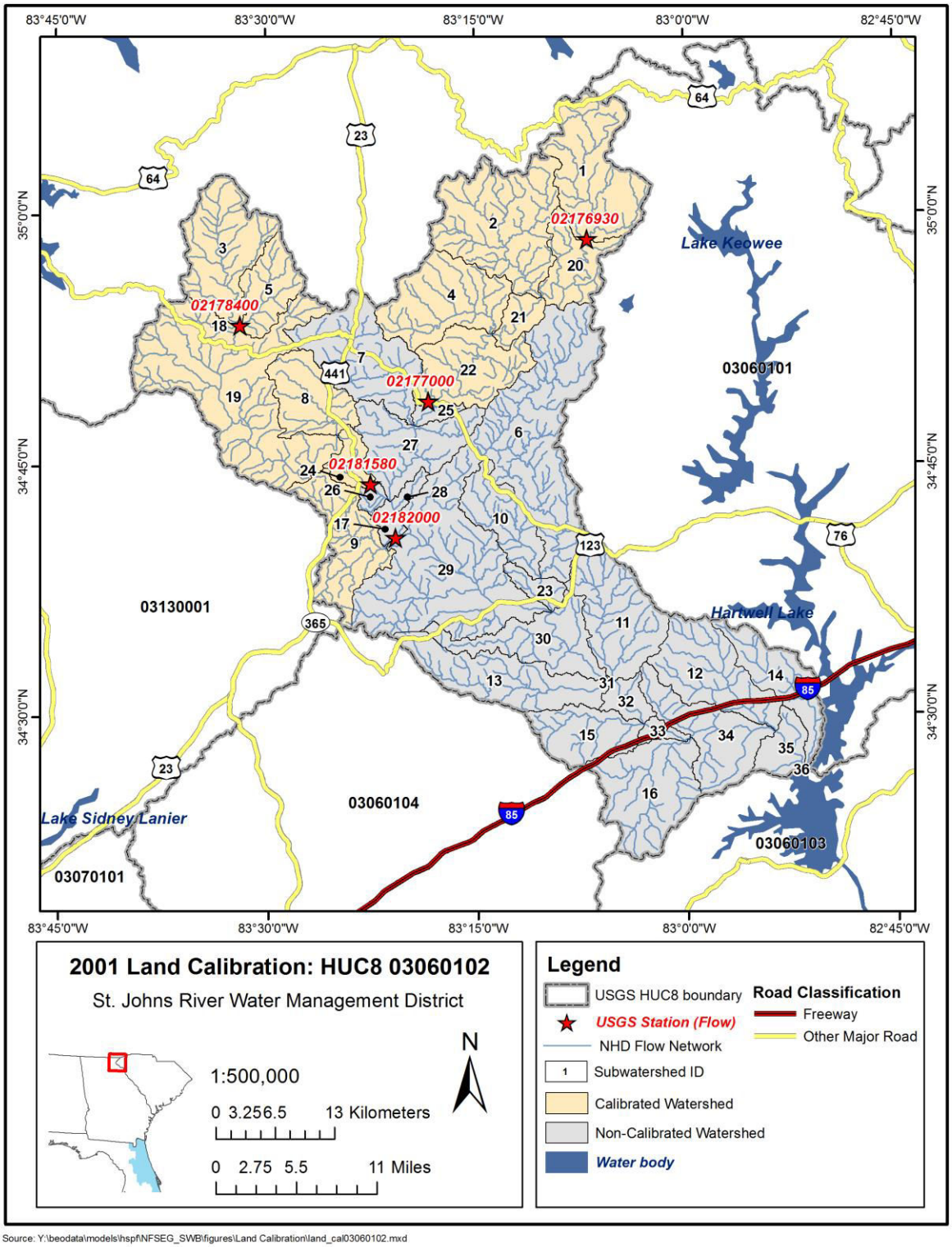


Figure T-03060102-2: Calibrated sub-watersheds.

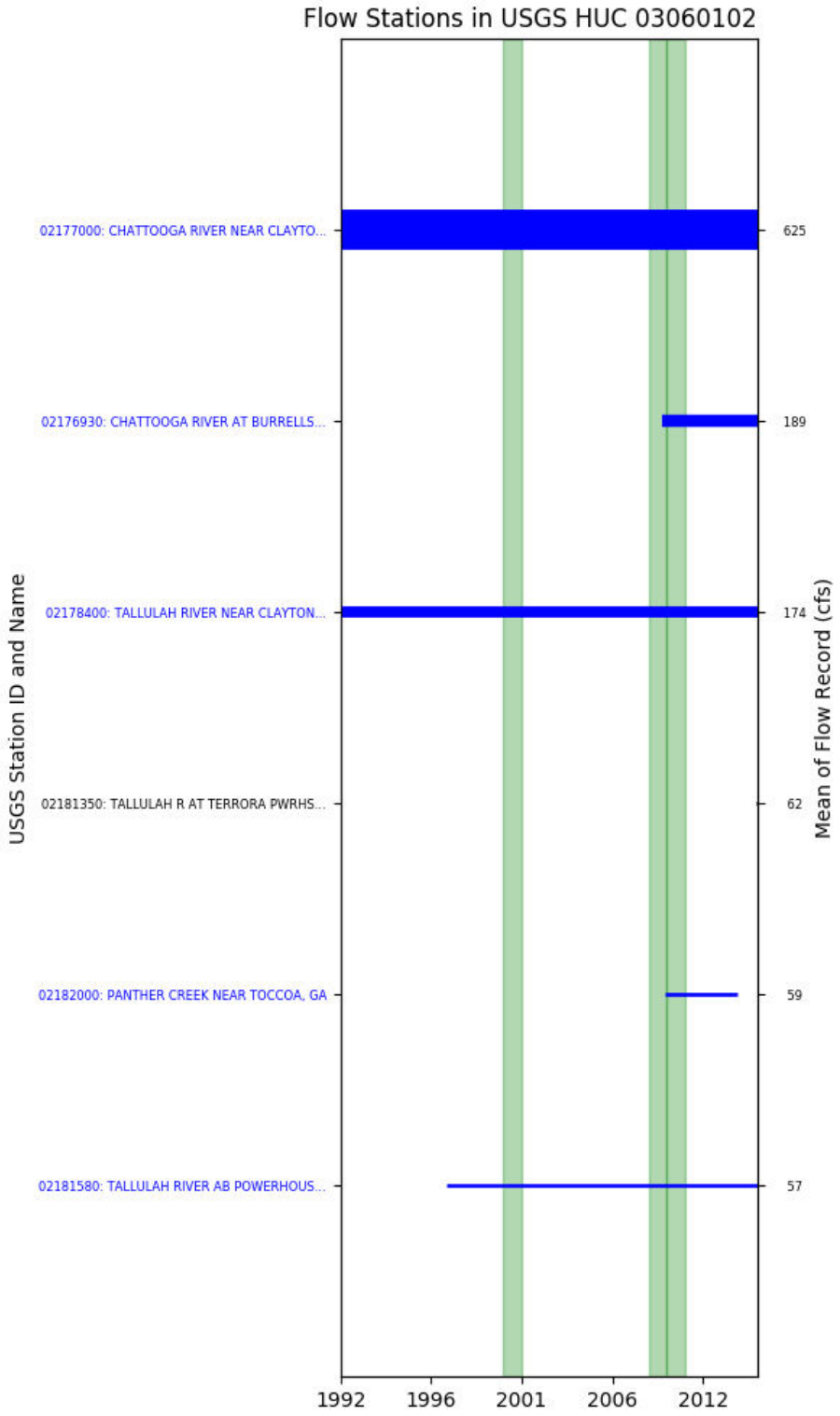


Figure T-03060102-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 01, USGS GAUGE 02176930

Water-Data Report 2010
02176930 CHATTOOGA RIVER AT BURRELLS FORD NEAR PINE MOUNTAIN,GA
Savannah Basin Tugaloo Subbasin

LOCATION.--Lat 3458'28.3", long 8306'58.2" referenced to North American Datum of 1983, Rabun County, GA, Hydrologic Unit 03060102, on left bank at Burrells Ford, 0.65 miles downstream of Harden Creek, 11.3 miles upstream of confluence with West Fork Chattooga River, and 4.68 miles northeast of Pine Mountain, GA.

DRAINAGE AREA.--42.3 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: September 2009 to current year.
GAGE-HEIGHT: September 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 2,050 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--United States Forest Service (USFS).

REMARKS.--Discharge and gage-height records poor September 2009 to November 2009. Discharge records fair. Gage-height records good.

Table T-03060102-1: Comparison Statistics Between HSPF Reach 01 and USGS Gauge 02176930.

Statistic	Value
Bias	-46.41
Standard error	75.97
Relative bias	-0.22
Relative standard error	0.50
Nash-Sutcliffe coefficient	0.75
Kling-Gupta coefficient	0.70
Coefficient of efficiency	0.56
Index of agreement	0.77

Table T-03060102-2: Hydrologic Indices Between USGS Gauge 02176930 and HSPF Reach 01.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02176930	Simulated Reach 01	Percent Difference
MA1: Mean, all daily flows	201.27	153.46	-23.75
MA2: Median, all daily flows	132.00	106.43	-19.37

MA3: CV, all daily flows	145.17	135.89	-6.40
MA4: CV, log of all daily flows	78.09	67.62	-13.41
MA5: Mean daily flow / median daily flow	1.52	1.44	-5.43
MA9: (Q10 - Q90) / median daily flow	2.45	2.28	-7.24
MA10: (Q20 - Q80) / median daily flow	1.42	1.34	-5.73
MA11: (Q25 - Q75) / median daily flow	1.13	1.10	-2.18
MA12: Mean monthly flow, January	229.63	187.51	-18.34
MA13: Mean monthly flow, February	154.79	133.35	-13.85
MA14: Mean monthly flow, March	163.30	120.78	-26.04
MA15: Mean monthly flow, April	152.51	107.39	-29.58
MA16: Mean monthly flow, May	140.05	92.64	-33.85
MA17: Mean monthly flow, June	94.04	77.43	-17.67
MA18: Mean monthly flow, July	176.79	112.84	-36.18
MA19: Mean monthly flow, August	75.94	56.81	-25.20
MA20: Mean monthly flow, September	180.81	163.98	-9.31
MA21: Mean monthly flow, October	99.58	88.29	-11.33
MA22: Mean monthly flow, November	131.95	103.51	-21.56
MA23: Mean monthly flow, December	235.24	180.15	-23.42
ML1: Mean minimum monthly flow, January	151.40	138.25	-8.69
ML2: Mean minimum monthly flow, February	138.00	129.65	-6.05
ML3: Mean minimum monthly flow, March	128.25	119.60	-6.74
ML4: Mean minimum monthly flow, April	123.50	119.46	-3.27
ML5: Mean minimum monthly flow, May	111.25	107.40	-3.46
ML6: Mean minimum monthly flow, June	82.00	91.73	11.86
ML7: Mean minimum monthly flow, July	104.00	94.40	-9.23
ML8: Mean minimum monthly flow, August	68.00	69.60	2.35
ML9: Mean minimum monthly flow, September	56.80	55.12	-2.96
ML10: Mean minimum monthly flow, October	68.20	77.37	13.44
ML11: Mean minimum monthly flow, November	75.40	78.31	3.85
ML12: Mean minimum monthly flow, December	107.60	102.80	-4.46
ML13: CV of minimum monthly flows	57.15	54.65	-4.38
ML14: Mean minimum daily flow / mean median annual flow	0.31	0.36	14.18
ML15: Mean minimum annual flow / mean annual flow	0.18	0.26	40.76
ML16: Median minimum annual flow / median annual flow	0.27	0.32	21.43
ML20: Ratio of baseflow volume to total flow volume	0.57	0.71	25.33
ML22: Mean annual minimum flow divided by catchment area	0.45	0.45	-0.54
RA1: Mean of positive changes from one day to next (rise rate)	134.26	79.67	
RA2: CV, mean of positive changes from one day to next (rise rate)	216.22	208.93	
RA3: Mean of negative changes from one day to next (fall rate)	43.32	15.85	
RA4: CV, mean of negative changes from one day to next (fall rate)	260.64	284.36	
RA5: Ratio of days that are higher than previous day	0.24	0.17	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.02	
RA8: Number of flow reversals from one day to the next	76.83	54.83	
RA9: CV, number of flow reversals from one day to the next	64.33	62.17	

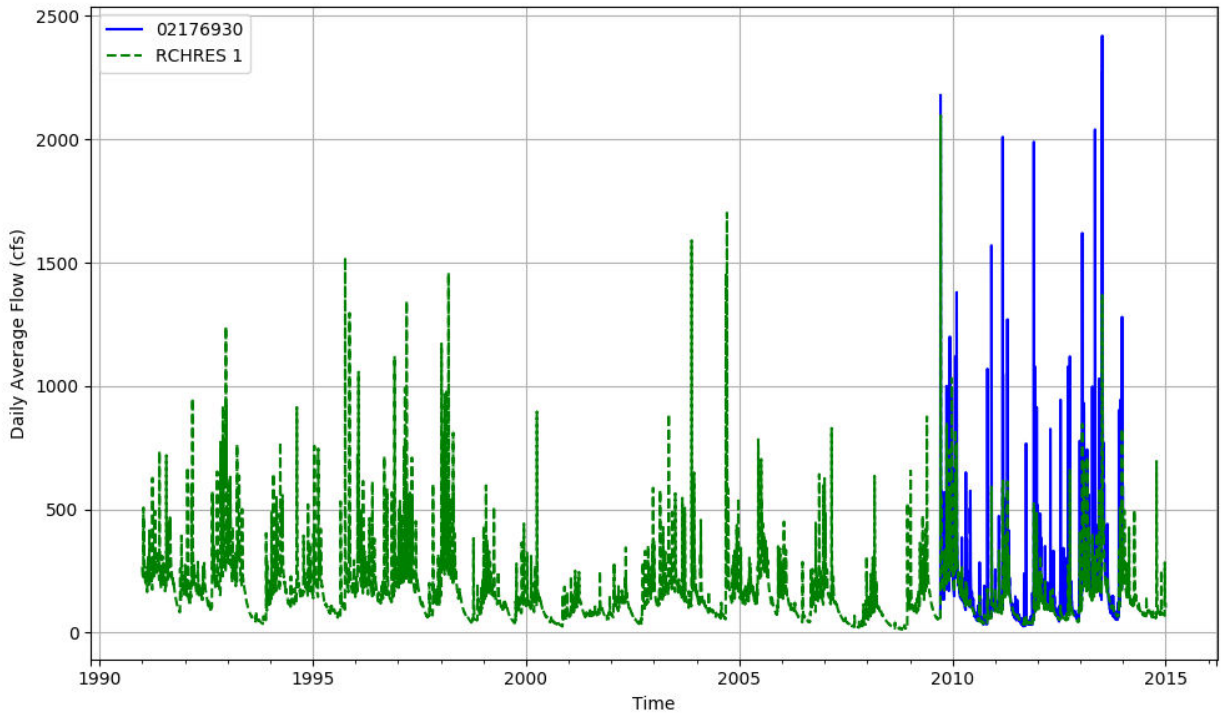


Figure T-03060102-4: Daily flow for HSFP reach 01 and USGS station 02176930.

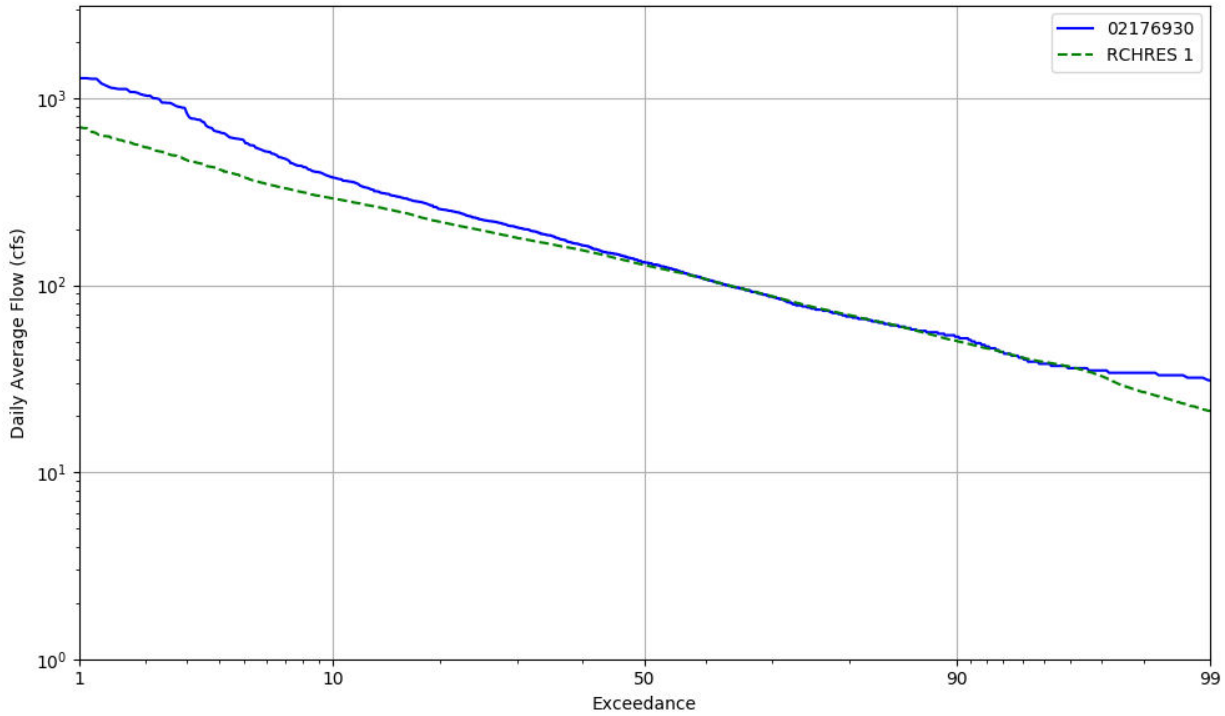


Figure T-03060102-5: Daily exceedance for HSFP reach 01 and USGS station 02176930.

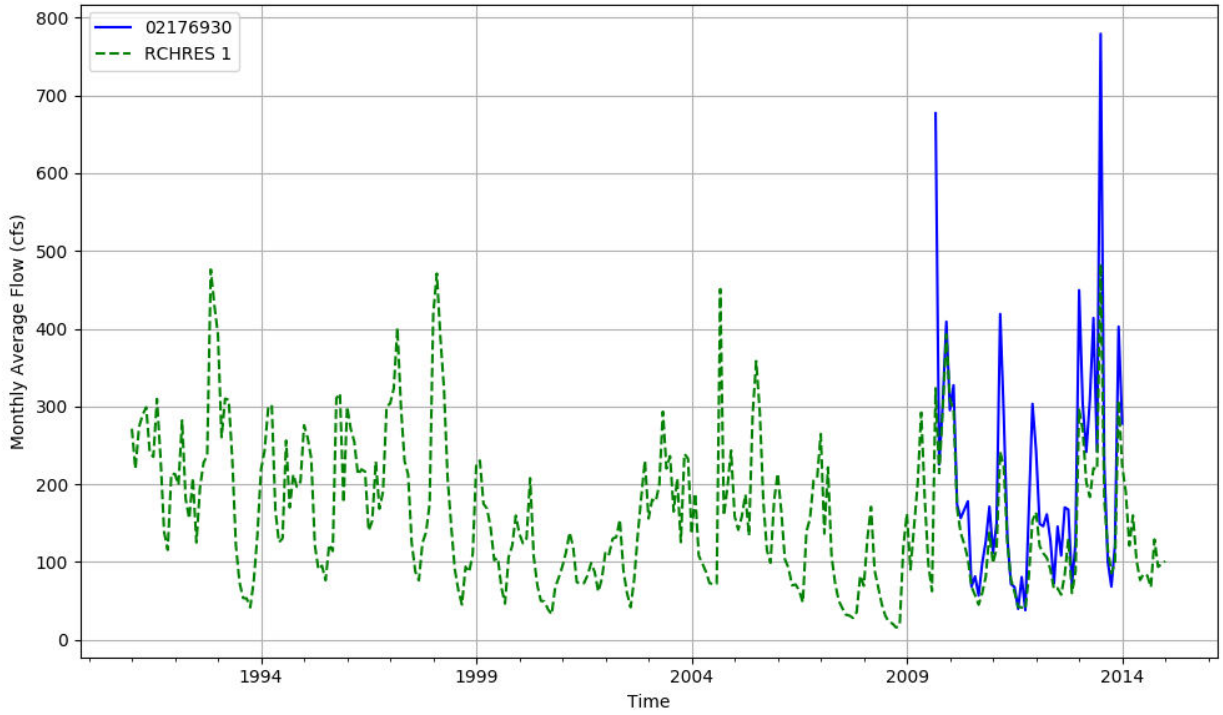


Figure T-03060102-6: Monthly flow for HSFP reach 01 and USGS station 02176930.

HSPF REACH 09, USGS GAUGE 02182000

Water-Data Report 2011
02182000 PANTHER CREEK NEAR TOCCOA, GA
Savannah Basin Tugaloo Subbasin

LOCATION.--Lat 3440'38.47", long 8320'48.99" referenced to North American Datum of 1927, Stephens County, GA, Hydrologic Unit 03060102, on left bank at Yonah Dam Settlement, 0.72 miles from mouth, and 7 miles north of Toccoa, GA.

DRAINAGE AREA.--32.50 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1942 to September 1971, November 2009 to current year. Monthly discharge only for some periods, published in WSP 1303.
GAGE-HEIGHT: November 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 673.53 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Power Co). October 1942 to September 1971 at site 0.2 miles downstream at same datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair, except for days of estimated discharge, which are poor. Gage-height records good. Diversion at point 2.0 miles above station for water supply by City of Toccoa.

Table T-03060102-3: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02182000.

Statistic	Value
Bias	15.65
Standard error	23.30
Relative bias	0.30
Relative standard error	0.56
Nash-Sutcliffe coefficient	0.68
Kling-Gupta coefficient	0.61
Coefficient of efficiency	0.48
Index of agreement	0.76

Table T-03060102-4: Hydrologic Indices Between USGS Gauge 02182000 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02182000	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	52.08	67.35	29.31
MA2: Median, all daily flows	33.00	49.78	50.84
MA3: CV, all daily flows	74.95	72.85	-2.80
MA4: CV, log of all daily flows	77.21	74.07	-4.07
MA5: Mean daily flow / median daily flow	1.58	1.35	-14.27
MA9: (Q10 - Q90) / median daily flow	3.03	2.58	-14.95
MA10: (Q20 - Q80) / median daily flow	1.82	1.56	-14.30
MA11: (Q25 - Q75) / median daily flow	1.44	1.15	-20.32
MA12: Mean monthly flow, January	65.83	94.80	44.00
MA13: Mean monthly flow, February	59.79	78.36	31.04
MA14: Mean monthly flow, March	68.21	86.52	26.85
MA15: Mean monthly flow, April	52.19	64.69	23.96
MA16: Mean monthly flow, May	39.61	47.27	19.34
MA17: Mean monthly flow, June	32.84	36.36	10.71
MA18: Mean monthly flow, July	21.65	24.45	12.95
MA19: Mean monthly flow, August	19.49	27.14	39.21
MA20: Mean monthly flow, September	14.75	18.02	22.12
MA21: Mean monthly flow, October	18.85	22.55	19.63
MA22: Mean monthly flow, November	48.52	65.12	34.20
MA23: Mean monthly flow, December	69.24	98.31	41.98
ML1: Mean minimum monthly flow, January	45.00	60.36	34.13
ML2: Mean minimum monthly flow, February	56.67	71.33	25.88
ML3: Mean minimum monthly flow, March	52.67	67.94	29.00
ML4: Mean minimum monthly flow, April	54.33	68.23	25.57
ML5: Mean minimum monthly flow, May	39.00	50.87	30.45
ML6: Mean minimum monthly flow, June	29.00	39.56	36.41
ML7: Mean minimum monthly flow, July	18.67	26.32	41.02
ML8: Mean minimum monthly flow, August	15.17	20.66	36.21
ML9: Mean minimum monthly flow, September	12.63	17.15	35.76
ML10: Mean minimum monthly flow, October	17.20	21.93	27.50
ML11: Mean minimum monthly flow, November	36.50	44.13	20.89
ML12: Mean minimum monthly flow, December	36.75	50.90	38.50
ML13: CV of minimum monthly flows	79.29	65.54	-17.34
ML14: Mean minimum daily flow / mean median annual flow	0.44	0.37	-17.71
ML15: Mean minimum annual flow / mean annual flow	0.33	0.28	-15.28
ML16: Median minimum annual flow / median annual flow	0.32	0.29	-11.36
ML20: Ratio of baseflow volume to total flow volume	0.75	0.75	-0.24
ML22: Mean annual minimum flow divided by catchment area	0.14	0.15	9.35
RA1: Mean of positive changes from one day to next (rise rate)	21.45	35.54	
RA2: CV, mean of positive changes from one day to next (rise rate)	252.93	227.97	
RA3: Mean of negative changes from one day to next (fall rate)	10.06	6.57	
RA4: CV, mean of negative changes from one day to next (fall rate)	271.13	313.24	
RA5: Ratio of days that are higher than previous day	0.27	0.15	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.09	

RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.02	
RA8: Number of flow reversals from one day to the next	92.25	57.50	
RA9: CV, number of flow reversals from one day to the next	49.43	50.01	

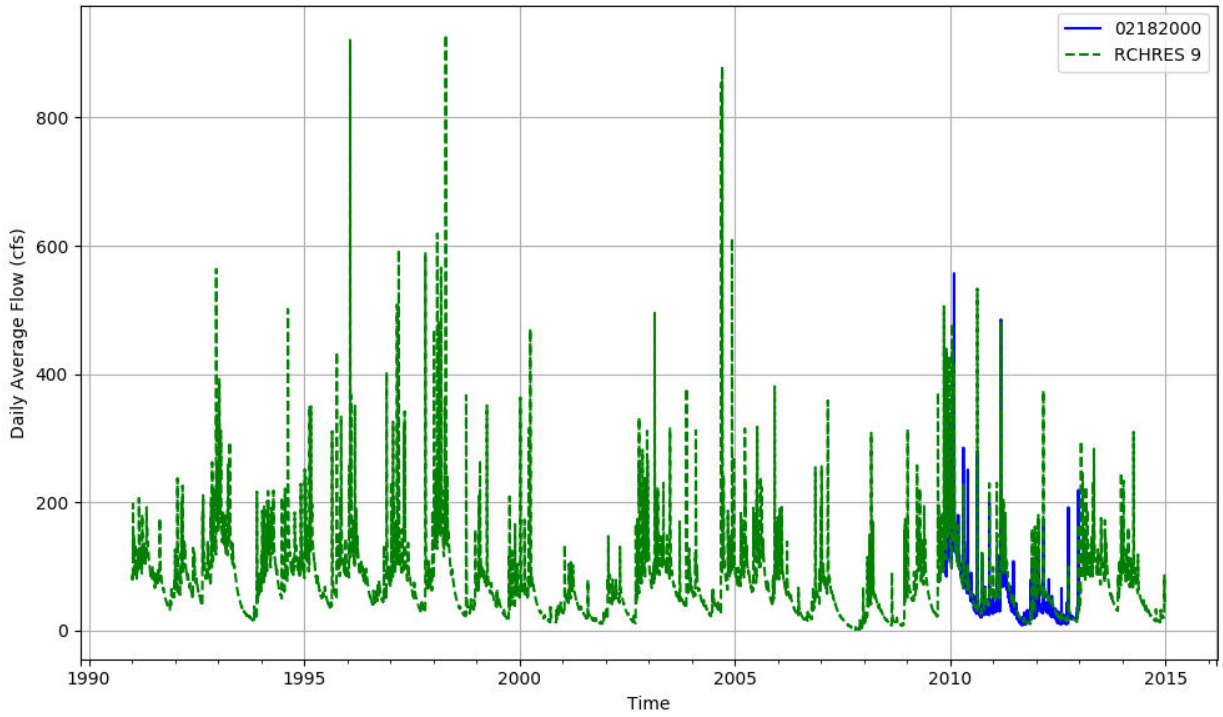


Figure T-03060102-7: Daily flow for HSFP reach 09 and USGS station 02182000.

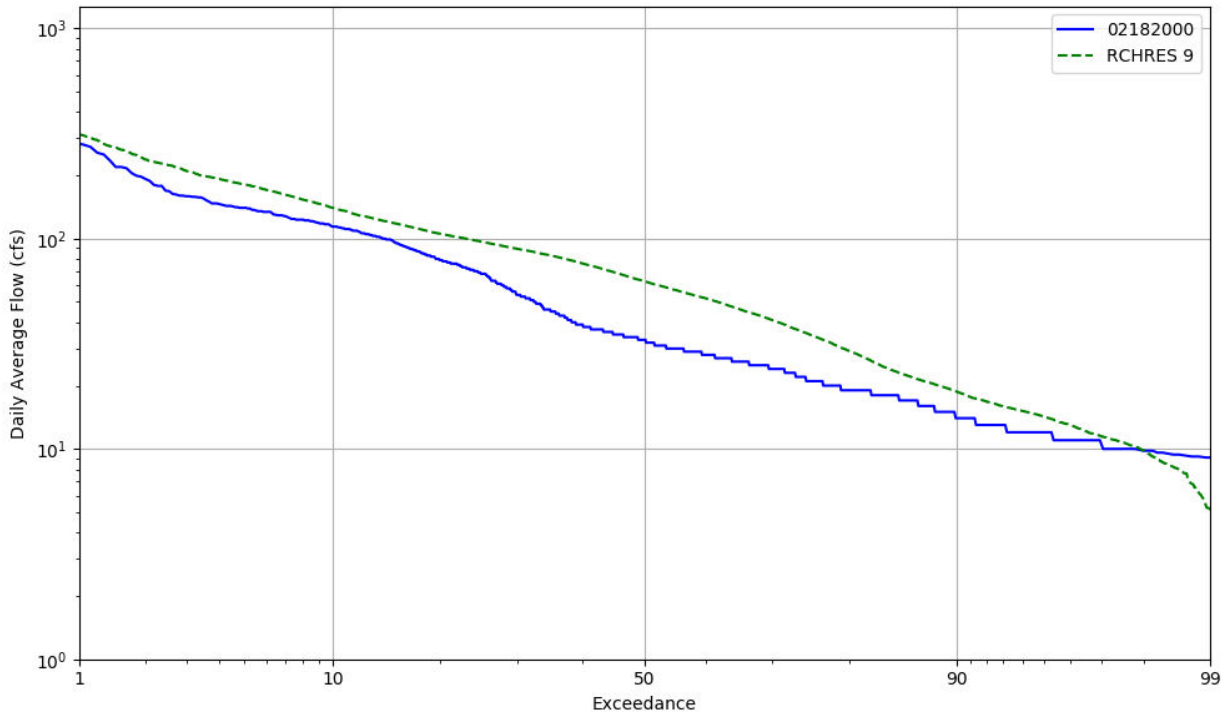


Figure T-03060102-8: Daily exceedance for HSFP reach 09 and USGS station 02182000.

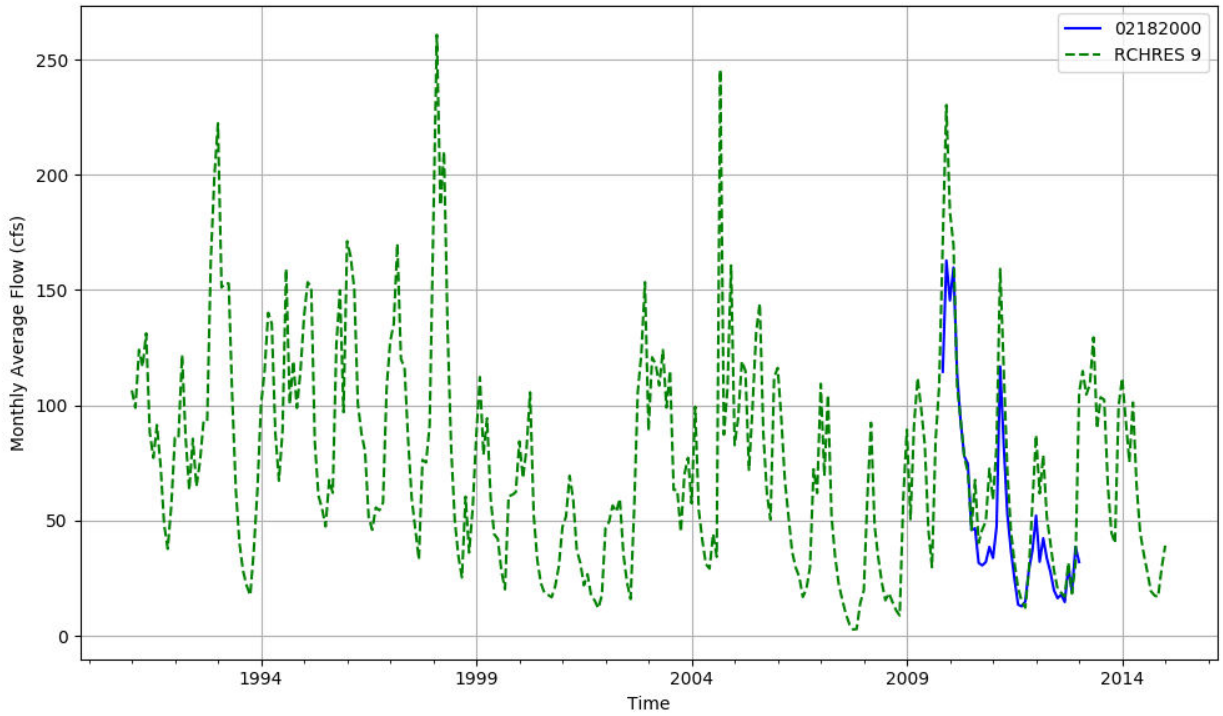


Figure T-03060102-9: Monthly flow for HSFP reach 09 and USGS station 02182000.

HSPF REACH 18, USGS GAUGE 02178400

Water-Data Report 2009
02178400 TALLULAH RIVER NEAR CLAYTON, GA
Savannah Basin Tugaloo Subbasin

LOCATION.--Lat 345325, long 833150 referenced to North American Datum of 1927, Rabun County, GA, Hydrologic Unit 03060102, on right bank 100 feet downstream from Plum Orchard Road bridge, 120 feet downstream from Persimmon Creek, 8.0 miles upstream from Burton Dam, and 10.3 miles west of Clayton.

DRAINAGE AREA.--56.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: July 1964 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 1,868.93 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation).

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records fair. Gage-height records fair. Low streamflows affected by releases from private reservoirs upstream.

Table T-03060102-5: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02178400.

Statistic	Value
Bias	-36.25
Standard error	52.41
Relative bias	-0.20
Relative standard error	0.54
Nash-Sutcliffe coefficient	0.70
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.48
Index of agreement	0.73

Table T-03060102-6: Hydrologic Indices Between USGS Gauge 02178400 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02178400	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	177.50	141.23	-20.43

MA2: Median, all daily flows	143.00	122.27	-14.49
MA3: CV, all daily flows	80.77	63.85	-20.95
MA4: CV, log of all daily flows	58.20	54.59	-6.19
MA5: Mean daily flow / median daily flow	1.24	1.16	-6.95
MA9: (Q10 - Q90) / median daily flow	1.80	1.65	-8.56
MA10: (Q20 - Q80) / median daily flow	1.13	1.07	-4.91
MA11: (Q25 - Q75) / median daily flow	0.89	0.87	-2.18
MA12: Mean monthly flow, January	238.76	203.29	-14.86
MA13: Mean monthly flow, February	219.69	194.00	-11.69
MA14: Mean monthly flow, March	240.00	193.60	-19.33
MA15: Mean monthly flow, April	222.25	173.22	-22.06
MA16: Mean monthly flow, May	180.71	144.57	-20.00
MA17: Mean monthly flow, June	148.07	110.76	-25.20
MA18: Mean monthly flow, July	128.86	96.12	-25.40
MA19: Mean monthly flow, August	114.40	78.44	-31.43
MA20: Mean monthly flow, September	127.10	86.98	-31.57
MA21: Mean monthly flow, October	104.14	88.84	-14.69
MA22: Mean monthly flow, November	142.11	108.24	-23.83
MA23: Mean monthly flow, December	188.32	157.97	-16.12
ML1: Mean minimum monthly flow, January	131.92	128.70	-2.44
ML2: Mean minimum monthly flow, February	150.26	144.06	-4.13
ML3: Mean minimum monthly flow, March	159.70	146.28	-8.40
ML4: Mean minimum monthly flow, April	161.78	141.42	-12.59
ML5: Mean minimum monthly flow, May	124.26	114.94	-7.50
ML6: Mean minimum monthly flow, June	99.35	95.75	-3.62
ML7: Mean minimum monthly flow, July	81.57	78.15	-4.18
ML8: Mean minimum monthly flow, August	71.65	66.82	-6.75
ML9: Mean minimum monthly flow, September	66.17	59.23	-10.50
ML10: Mean minimum monthly flow, October	68.87	65.53	-4.85
ML11: Mean minimum monthly flow, November	77.52	72.41	-6.60
ML12: Mean minimum monthly flow, December	111.04	104.75	-5.67
ML13: CV of minimum monthly flows	50.27	51.67	2.79
ML14: Mean minimum daily flow / mean median annual flow	0.35	0.34	-1.61
ML15: Mean minimum annual flow / mean annual flow	0.28	0.30	7.83
ML16: Median minimum annual flow / median annual flow	0.32	0.31	-2.70
ML20: Ratio of baseflow volume to total flow volume	0.69	0.81	17.41
ML22: Mean annual minimum flow divided by catchment area	0.50	0.45	-9.61
RA1: Mean of positive changes from one day to next (rise rate)	79.24	39.79	
RA2: CV, mean of positive changes from one day to next (rise rate)	221.15	253.68	
RA3: Mean of negative changes from one day to next (fall rate)	26.57	9.96	
RA4: CV, mean of negative changes from one day to next (fall rate)	303.52	295.78	
RA5: Ratio of days that are higher than previous day	0.24	0.20	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.02	
RA8: Number of flow reversals from one day to the next	106.08	85.25	
RA9: CV, number of flow reversals from one day to the next	18.84	22.12	

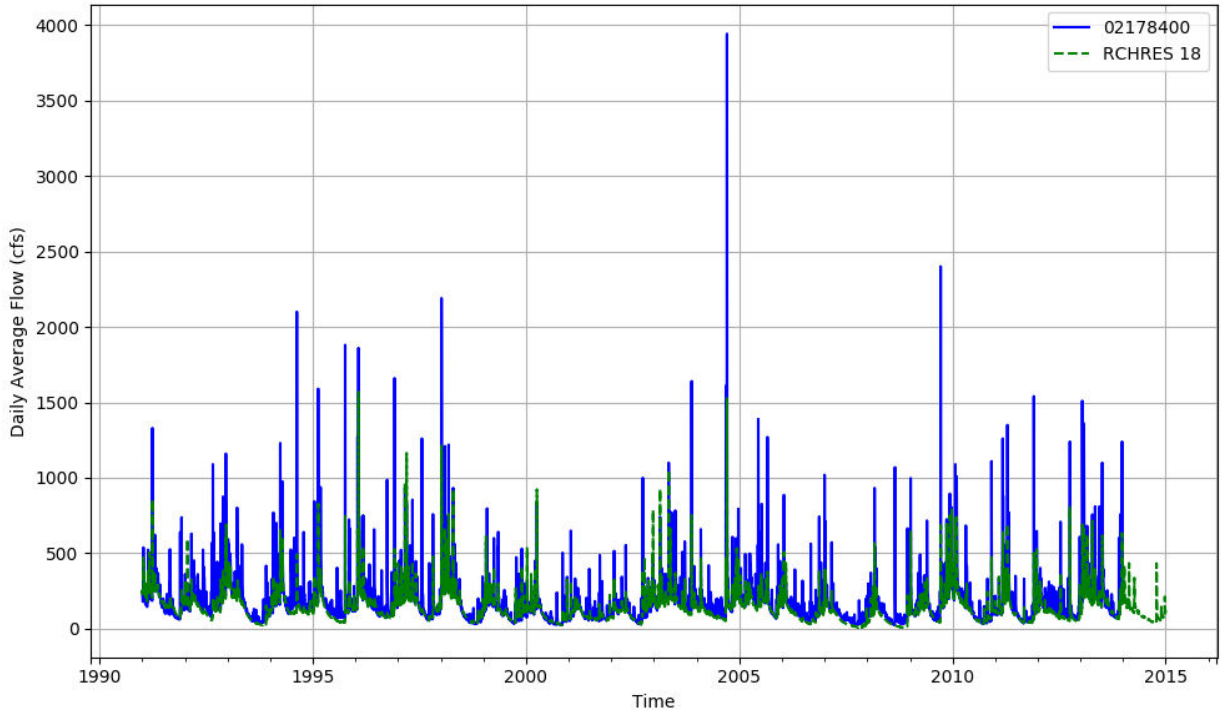


Figure T-03060102-10: Daily flow for HSFP reach 18 and USGS station 02178400.

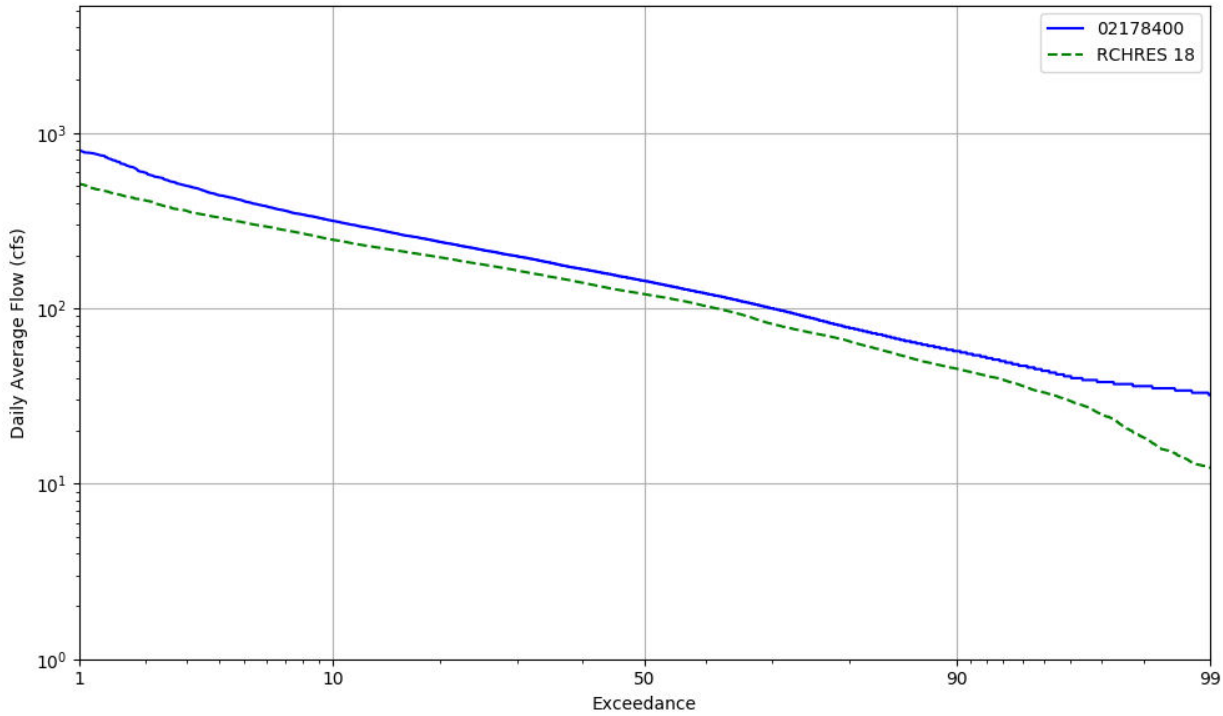


Figure T-03060102-11: Daily exceedance for HSFP reach 18 and USGS station 02178400.

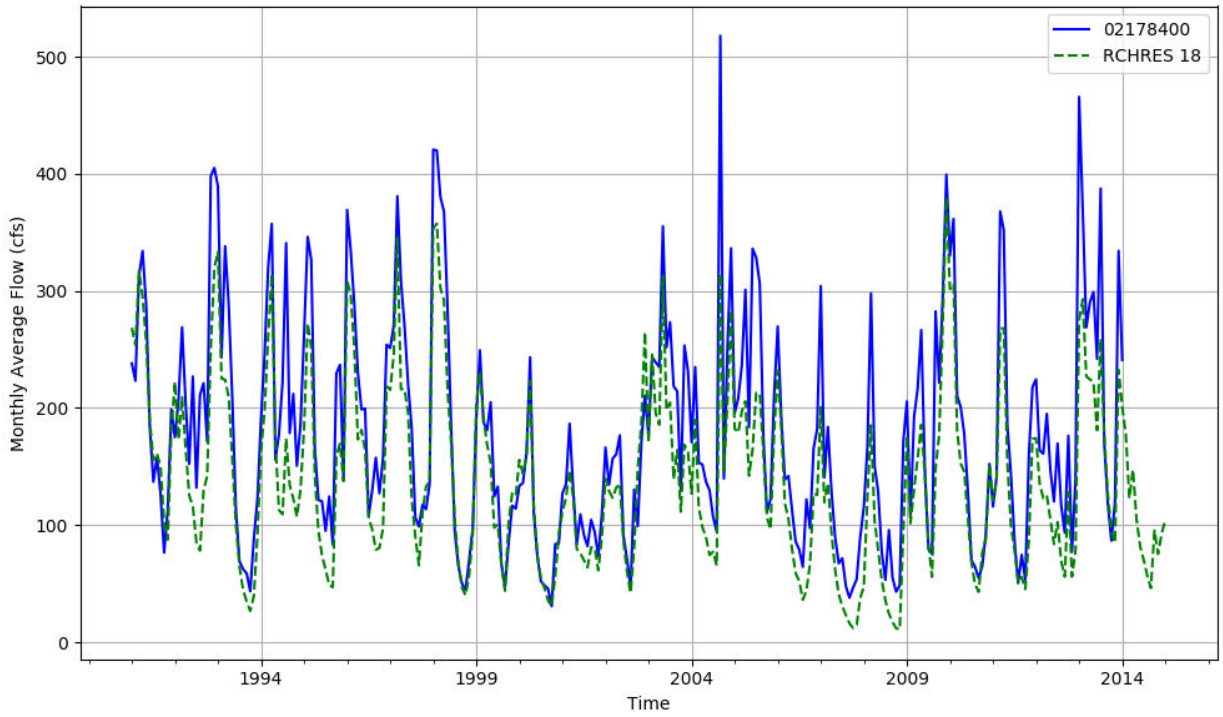


Figure T-03060102-12: Monthly flow for HSFP reach 18 and USGS station 02178400.

HSPF REACH 22, USGS GAUGE 02177000

Water-Data Report 2009
02177000 CHATTOOGA RIVER NEAR CLAYTON, GA
Savannah Basin Tugaloo Subbasin

LOCATION.--Lat 344850, long 831822 referenced to North American Datum of 1927, Oconee County, SC, Hydrologic Unit 03060102, on the left bank 150 feet downstream from bridge on US 76, 2.8 miles upstream from Stekoa Creek, 9.0 miles downstream from confluence with Warwoman Creek, 9.0 miles upstream from confluence with Tallulah River, and 7.0 miles southeast of Clayton.

DRAINAGE AREA.--207 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1907 to June 1908; 1915, 1917-1929 (annual maximum discharge only); October 1939 to current year. Monthly discharge only for May 1907 to June 1908, published in WSP 1303.
GAGE-HEIGHT: October 1999 to current year.

REVISED RECORDS.--WSP 1383: 1940-41, Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 1,165.60 feet above National Geodetic Vertical Datum (NGVD) of 1929. May 1907 to June 1908, a non-recording gage was located at site 400 feet upstream at different datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair, except for the period September 21 to September 30 and days of estimated discharge, which are poor. Gage-height records good, except for the period of September 21 to September 30, which is poor. Periods of monthly discharge only are not included in statistics computations.

Table T-03060102-7: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02177000.

Statistic	Value
Bias	-61.08
Standard error	143.33
Relative bias	-0.10
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85

Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.67
Index of agreement	0.83

Table T-03060102-8: Hydrologic Indices Between USGS Gauge 02177000 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02177000	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	634.54	573.67	-9.59
MA2: Median, all daily flows	508.00	484.16	-4.69
MA3: CV, all daily flows	76.90	64.36	-16.30
MA4: CV, log of all daily flows	60.88	57.52	-5.52
MA5: Mean daily flow / median daily flow	1.25	1.18	-5.14
MA9: (Q10 - Q90) / median daily flow	1.93	1.74	-9.74
MA10: (Q20 - Q80) / median daily flow	1.23	1.15	-6.45
MA11: (Q25 - Q75) / median daily flow	0.98	0.92	-5.33
MA12: Mean monthly flow, January	821.42	793.95	-3.34
MA13: Mean monthly flow, February	742.78	731.89	-1.47
MA14: Mean monthly flow, March	817.86	755.00	-7.69
MA15: Mean monthly flow, April	745.36	666.49	-10.58
MA16: Mean monthly flow, May	615.19	551.31	-10.38
MA17: Mean monthly flow, June	548.30	457.21	-16.61
MA18: Mean monthly flow, July	504.77	410.88	-18.60
MA19: Mean monthly flow, August	447.63	353.01	-21.14
MA20: Mean monthly flow, September	518.28	412.63	-20.38
MA21: Mean monthly flow, October	407.38	400.35	-1.73
MA22: Mean monthly flow, November	502.23	474.83	-5.46
MA23: Mean monthly flow, December	680.17	638.90	-6.07
ML1: Mean minimum monthly flow, January	492.79	495.67	0.59
ML2: Mean minimum monthly flow, February	534.83	537.54	0.51
ML3: Mean minimum monthly flow, March	561.13	541.99	-3.41
ML4: Mean minimum monthly flow, April	556.96	532.93	-4.31
ML5: Mean minimum monthly flow, May	443.91	436.82	-1.60
ML6: Mean minimum monthly flow, June	362.13	366.97	1.34
ML7: Mean minimum monthly flow, July	320.48	320.63	0.05
ML8: Mean minimum monthly flow, August	279.13	281.73	0.93
ML9: Mean minimum monthly flow, September	257.65	258.98	0.51
ML10: Mean minimum monthly flow, October	267.00	281.81	5.55
ML11: Mean minimum monthly flow, November	298.70	312.00	4.45
ML12: Mean minimum monthly flow, December	420.48	425.56	1.21
ML13: CV of minimum monthly flows	55.86	52.28	-6.41
ML14: Mean minimum daily flow / mean median annual flow	0.36	0.36	0.76
ML15: Mean minimum annual flow / mean annual flow	0.29	0.31	7.31
ML16: Median minimum annual flow / median annual flow	0.34	0.34	0.59
ML20: Ratio of baseflow volume to total flow volume	0.72	0.79	9.87
ML22: Mean annual minimum flow divided by catchment area	1.89	1.90	0.57
RA1: Mean of positive changes from one day to next (rise rate)	244.66	174.75	
RA2: CV, mean of positive changes from one day to next (rise rate)	265.50	242.90	
RA3: Mean of negative changes from one day to next (fall rate)	85.58	41.51	
RA4: CV, mean of negative changes from one day to	370.15	296.88	

next (fall rate)			
RA5: Ratio of days that are higher than previous day	0.25	0.19	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.02	
RA8: Number of flow reversals from one day to the next	104.92	68.08	
RA9: CV, number of flow reversals from one day to the next	17.42	20.03	

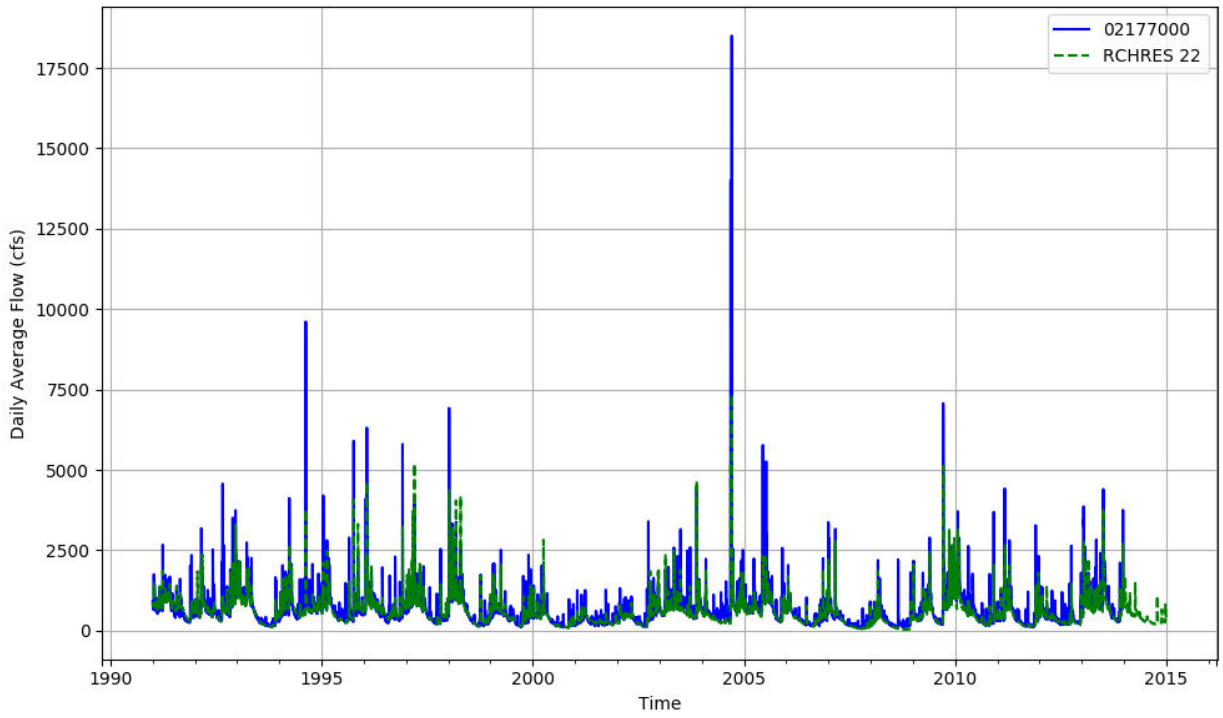


Figure T-03060102-13: Daily flow for HSFP reach 22 and USGS station 02177000.

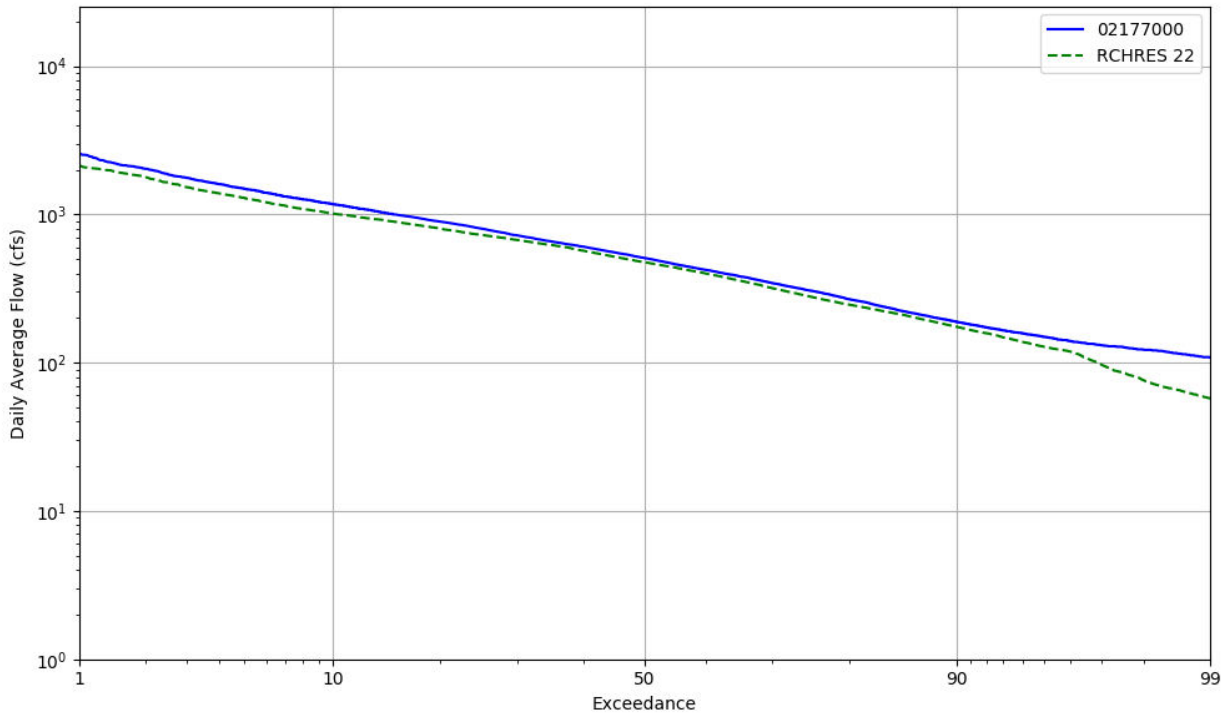


Figure T-03060102-14: Daily exceedance for HSFP reach 22 and USGS station 02177000.

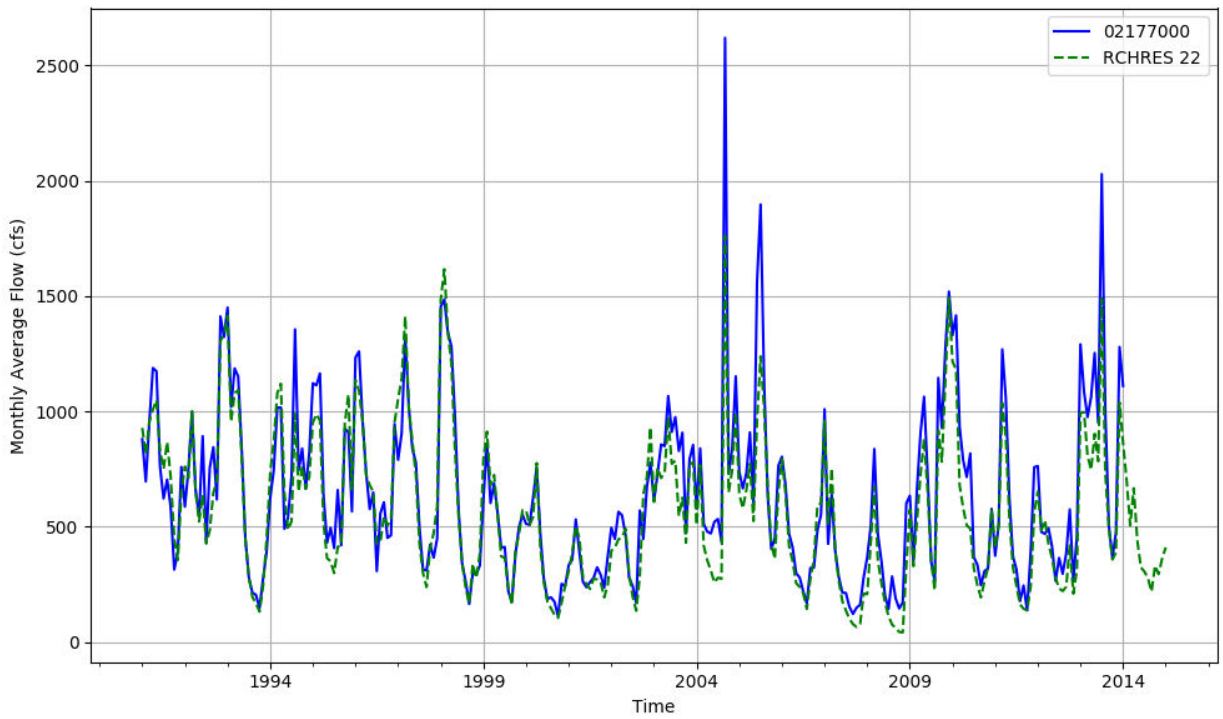


Figure T-03060102-15: Monthly flow for HSFP reach 22 and USGS station 02177000.

HSPF REACH 24, USGS GAUGE 02181580

Water-Data Report 2009
02181580 TALLULAH RIVER ABOVE POWERHOUSE, NEAR TALLULAH FALLS, GA
Savannah Basin Tugaloo Subbasin

LOCATION.--Lat 344355, long 832233 referenced to North American Datum of 1927, Rabun County, GA, Hydrologic Unit 03060102, on right bank 20.0 feet upstream from the Tallulah Falls Powerhouse in the Tallulah Gorge, 1.2 miles downstream from Cascade Falls, 1.7 miles downstream from Tallulah Falls Lake, and 0.5 miles northeast of Tallulah Lodge.

DRAINAGE AREA.--184.4 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 1997 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 940 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records fair. Gage-height records good. Streamflow is regulated by Tallulah Falls Dam.
The USGS gauge '02181580 TALLULAH RIVER ABOVE POWERHOUSE, NEAR TALLULAH FALLS, GA' is 200 feet upstream where the powerhouse releases water from Tallulah Dam. The calibration should be against the sum of this USGS gauge and what is discharged from the powerhouse, but a downstream gauge, nor records of the powerhouse discharge are readily available.

Table T-03060102-9: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02181580.

Statistic	Value
Bias	234.67
Standard error	304.20
Relative bias	4.03
Relative standard error	5.15
Nash-Sutcliffe coefficient	-25.55
Kling-Gupta coefficient	-3.71
Coefficient of efficiency	-9.49
Index of agreement	0.08

Table T-03060102-10: Hydrologic Indices Between USGS Gauge 02181580 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02181580	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	58.29	290.79	398.85
MA2: Median, all daily flows	41.00	233.83	470.31
MA3: CV, all daily flows	164.33	75.29	-54.19
MA4: CV, log of all daily flows	46.70	61.56	31.82
MA5: Mean daily flow / median daily flow	1.42	1.24	-12.53
MA9: (Q10 - Q90) / median daily flow	0.78	1.96	150.84
MA10: (Q20 - Q80) / median daily flow	0.29	1.15	291.74
MA11: (Q25 - Q75) / median daily flow	0.22	0.86	290.55
MA12: Mean monthly flow, January	41.89	422.46	908.56
MA13: Mean monthly flow, February	38.17	400.91	950.41
MA14: Mean monthly flow, March	44.93	362.47	706.74
MA15: Mean monthly flow, April	77.33	336.07	334.60
MA16: Mean monthly flow, May	53.53	280.21	423.46
MA17: Mean monthly flow, June	37.86	219.72	480.39
MA18: Mean monthly flow, July	42.01	212.11	404.95
MA19: Mean monthly flow, August	50.89	166.80	227.79
MA20: Mean monthly flow, September	110.90	183.32	65.30
MA21: Mean monthly flow, October	55.24	172.52	212.29
MA22: Mean monthly flow, November	72.64	237.31	226.68
MA23: Mean monthly flow, December	42.52	365.85	760.38
ML1: Mean minimum monthly flow, January	35.03	257.70	635.67
ML2: Mean minimum monthly flow, February	34.38	281.10	717.75
ML3: Mean minimum monthly flow, March	36.06	264.21	632.64
ML4: Mean minimum monthly flow, April	35.44	257.18	625.72
ML5: Mean minimum monthly flow, May	35.00	217.07	520.21
ML6: Mean minimum monthly flow, June	35.94	185.50	416.17
ML7: Mean minimum monthly flow, July	35.62	162.14	355.13
ML8: Mean minimum monthly flow, August	36.12	132.43	266.59
ML9: Mean minimum monthly flow, September	36.88	108.99	195.56
ML10: Mean minimum monthly flow, October	36.31	139.85	285.14
ML11: Mean minimum monthly flow, November	34.62	160.55	363.71
ML12: Mean minimum monthly flow, December	34.71	214.89	519.17
ML13: CV of minimum monthly flows	20.11	50.40	150.59
ML14: Mean minimum daily flow / mean median annual flow	0.64	0.36	-43.72
ML15: Mean minimum annual flow / mean annual flow	0.46	0.29	-37.06
ML16: Median minimum annual flow / median annual flow	0.69	0.35	-49.95
ML20: Ratio of baseflow volume to total flow volume	0.66	0.78	18.44
ML22: Mean annual minimum flow divided by catchment area	0.26	0.90	243.21
RA1: Mean of positive changes from one day to next (rise rate)	39.36	99.70	
RA2: CV, mean of positive changes from one day to next (rise rate)	708.35	296.97	
RA3: Mean of negative changes from one day to next (fall rate)	28.48	25.66	
RA4: CV, mean of negative changes from one day to next (fall rate)	769.06	421.03	
RA5: Ratio of days that are higher than previous day	0.29	0.18	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.05	

RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.02	
RA8: Number of flow reversals from one day to the next	123.29	54.41	
RA9: CV, number of flow reversals from one day to the next	22.30	34.74	

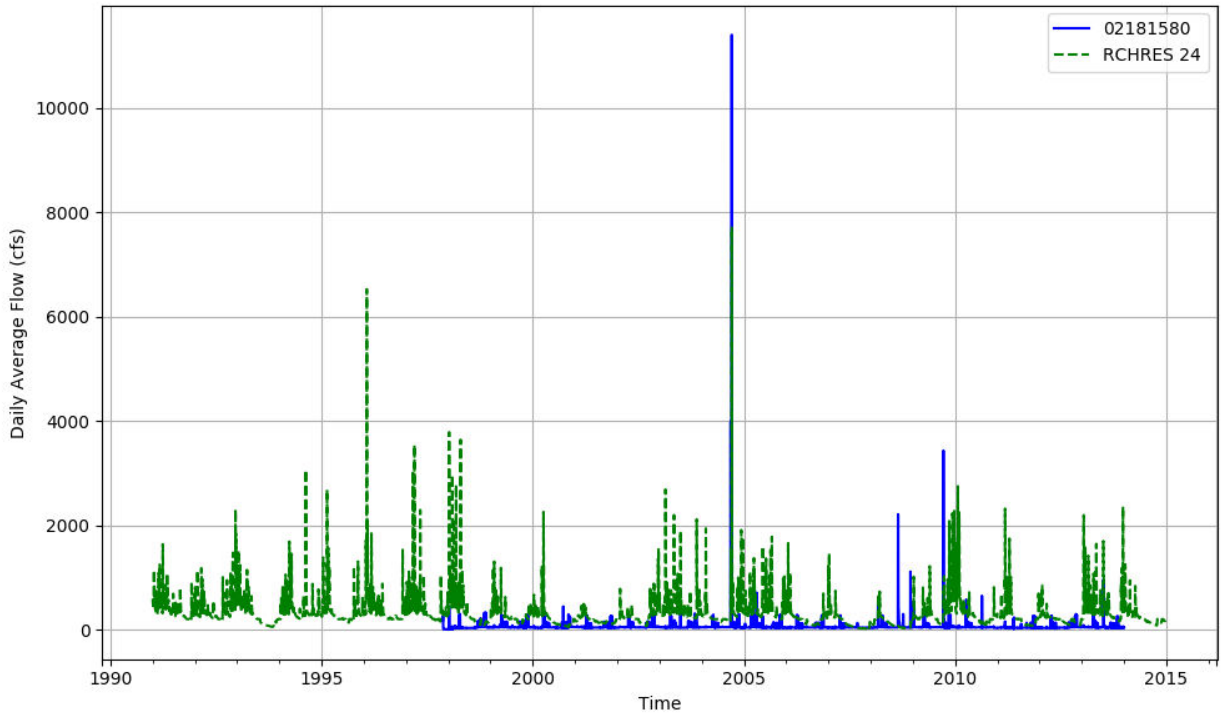


Figure T-03060102-16: Daily flow for HSFP reach 24 and USGS station 02181580.

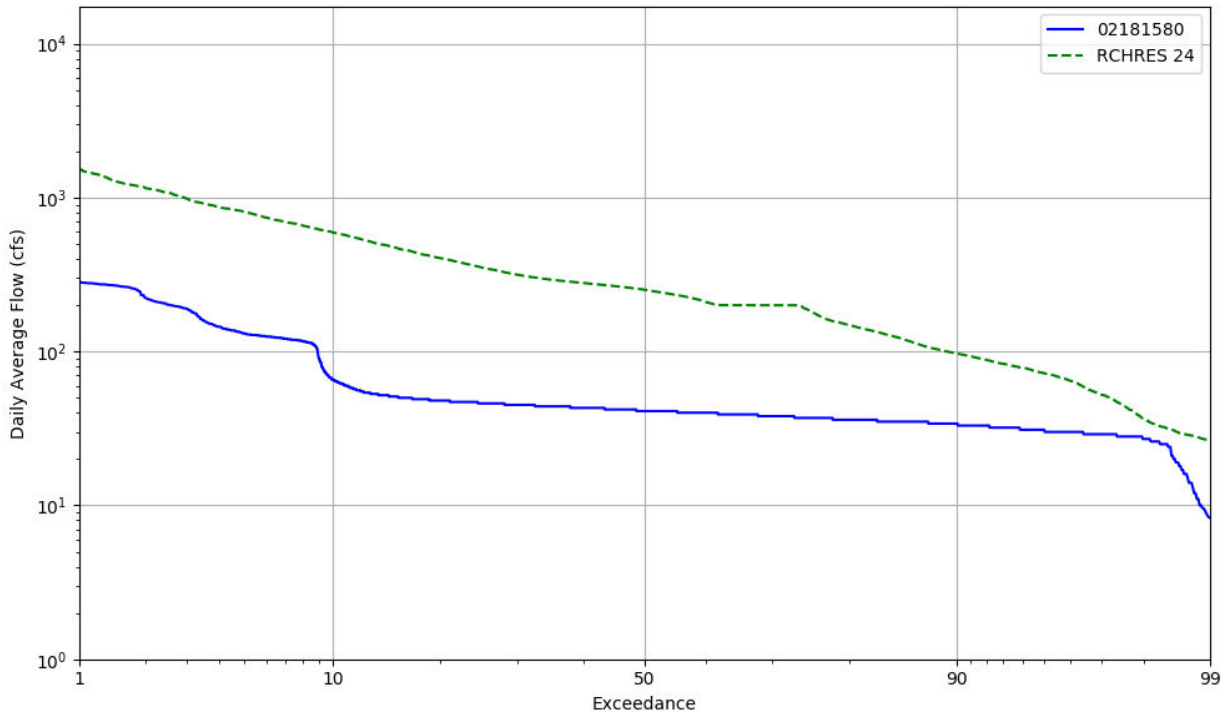


Figure T-03060102-17: Daily exceedance for HSFP reach 24 and USGS station 02181580.

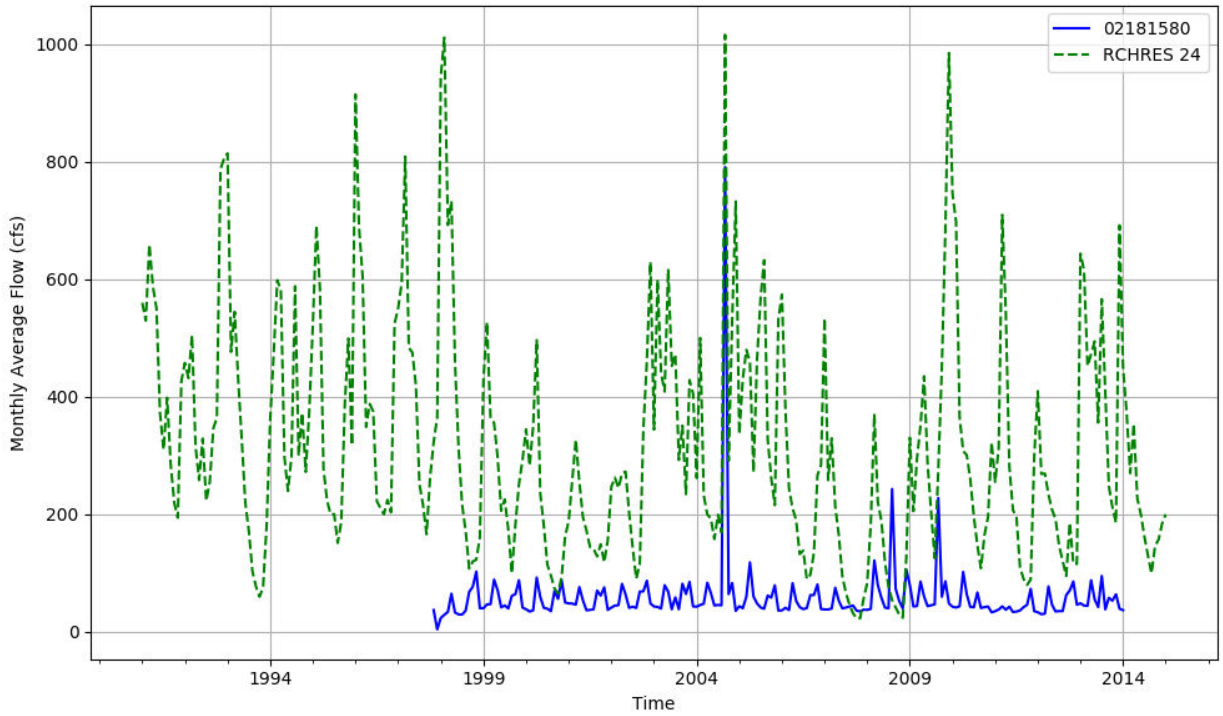


Figure T-03060102-18: Monthly flow for HSFP reach 24 and USGS station 02181580.

Table T-03060102-11: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18632	31415	6182	1248	291	2512	467491	4169	28036	60923	345	3586	449	564	1235	627077
AREA(%)	3.0	5.0	1.0	0.2	0.0	0.4	74.2	0.7	4.4	9.7	0.1	0.6	0.1	0.1	0.2	99.5
IMPERVIOUS																
AREA(ACRES)		1667	690	313	291											2962
AREA(%)		0.3	0.1	0.0	0.0											0.5
SUPY	38.0	45.8	40.0	39.9	38.9	40.4	48.3	48.4	40.4	39.6	41.2	40.4	64.1	41.9	40.4	46.2
SURLI		0.0	6.0	6.3	6.9										4.8	0.1
UZLI																0.0
LZLI		0.0	0.9	0.7	0.6											0.0
SURO: PERVIOUS	0.1	1.0	0.9	0.8	0.6	0.4	0.2	0.8	0.3	0.2	0.2	0.5	5.2	0.2	1.5	0.2
SURO: IMPERVIOUS		28.0	23.0	22.9	22.0											0.1
SURO: COMBINED	0.1	2.4	3.1	5.2	11.3	0.4	0.2	0.8	0.3	0.2	0.2	0.5	5.2	0.2	1.5	0.4
IFWO		2.2	2.2	2.3	2.4	1.7	0.6	2.1	1.3	1.1	0.9		4.4	1.0	2.9	0.8
AGWO	1.1	12.3	15.2	15.6	14.4	15.1	13.7	17.0	11.1	11.4	10.9	2.1	17.0	12.8	11.2	12.8
AGWI	1.2	14.3	16.8	17.1	15.7	16.9	15.8	19.3	12.5	12.8	12.0	2.1	18.0	13.7	11.7	14.7
IGWI	0.0	1.2	0.3	0.1	0.1	0.1	1.2	1.5	0.1	0.2	0.1	0.0	3.6	0.0	0.0	1.0
CEPE		9.4	7.2	7.2	10.1	7.2	11.7	10.7	10.2	8.2	13.2	10.6	21.6	9.5	14.9	10.7
UZET		3.9	3.1	2.9	2.5	2.8	2.7	4.2	2.2	2.1	1.9		3.3	2.1	1.9	2.6
LZET		14.1	16.8	16.9	15.4	11.7	16.5	9.9	14.3	15.4	13.3		7.9	16.0	13.1	15.5
AGWET		2.3	2.7	2.7	2.5	2.7	2.1	2.1	2.5	2.7	2.2		1.2	2.6	2.1	2.1
BASET	0.0	0.4	0.1	0.0	0.0	0.1	0.3	0.4	0.1	0.1	0.1	0.0	1.0	0.0	0.0	0.3
SURET	41.4											30.2				1.4
PERO	1.2	15.5	18.3	18.6	17.4	17.3	14.5	19.9	12.7	12.7	12.0	2.6	26.6	14.1	15.5	13.8
IGWI	0.0	1.2	0.3	0.1	0.1	0.1	1.2	1.5	0.1	0.2	0.1	0.0	3.6	0.0	0.0	1.0
TAET: PERVIOUS	41.4	29.9	29.8	29.7	30.5	24.4	33.4	27.3	29.2	28.5	30.8	40.8	35.0	30.2	32.0	32.6
IMPEV: IMPERVIOUS		17.9	17.1	17.1	17.0											0.1
ET: COMBINED	41.4	29.3	28.5	27.2	23.8	24.4	33.4	27.3	29.2	28.5	30.8	40.8	35.0	30.2	32.0	32.7
PET	41.4	39.7	40.9	40.9	41.1	40.9	39.1	39.1	40.8	41.0	40.6	40.8	39.6	41.7	41.5	39.3

Table T-03060102-12: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18632	31415	6182	1248	291	2512	467491	4169	28036	60923	345	3586	449	564	1235	627077
AREA(%)	3.0	5.0	1.0	0.2	0.0	0.4	74.2	0.7	4.4	9.7	0.1	0.6	0.1	0.1	0.2	99.5
IMPERVIOUS																
AREA(ACRES)		1667	690	313	291											2962
AREA(%)		0.3	0.1	0.0	0.0											0.5
SUPY	68.4	78.8	71.8	71.8	70.4	72.3	81.8	82.0	72.4	70.3	72.3	72.3	89.7	75.5	72.4	79.1
SURLI		0.0	6.2	6.4	6.9										0.3	0.1
UZLI																0.0
LZLI		0.0	1.2	1.0	0.8											0.0
SURO: PERVIOUS	2.4	5.6	4.1	3.4	2.7	2.2	1.6	4.4	1.7	1.5	1.6	6.0	8.7	1.3	1.2	1.9
SURO: IMPERVIOUS		58.6	52.1	52.1	50.8											0.3
SURO: COMBINED	2.4	8.3	8.9	13.2	26.8	2.2	1.6	4.4	1.7	1.5	1.6	6.0	8.7	1.3	1.2	2.1
IFWO		11.7	11.1	11.6	11.8	9.9	6.0	11.3	8.8	7.9	7.2		12.3	7.2	5.7	6.5
AGWO	1.0	22.2	26.4	26.8	25.7	27.2	29.2	28.7	23.9	23.2	23.8	1.8	23.9	25.8	22.2	26.8
AGWI	1.1	29.4	33.9	34.3	32.9	35.3	38.3	36.0	32.2	31.8	32.2	1.8	29.9	34.0	30.3	35.4
IGWI	0.0	2.1	0.4	0.1	0.1	0.2	2.1	2.5	0.3	0.3	0.2	0.0	4.9	0.0	0.0	1.8
CEPE		11.4	9.3	9.4	12.6	9.3	13.8	12.7	12.6	10.4	15.6	13.0	19.2	12.2	18.7	12.7
UZET		4.7	4.2	4.0	3.3	4.0	3.9	5.0	3.3	3.4	2.9		4.4	3.8	2.8	3.7
LZET		13.2	15.9	16.0	14.3	10.9	14.4	9.2	13.0	14.5	11.7		9.5	16.3	13.1	13.7
AGWET		2.4	2.8	2.8	2.6	2.8	2.2	2.2	2.5	2.8	2.3		1.7	2.6	2.1	2.2
BASET	0.0	0.4	0.1	0.1	0.1	0.1	0.4	0.5	0.1	0.1	0.1	0.1	0.9	0.0	0.0	0.3
SURET	45.9											32.3				1.5
PERO	3.4	39.4	41.5	41.9	40.3	39.3	36.8	44.4	34.3	32.5	32.6	7.8	44.9	34.4	29.1	35.2
IGWI	0.0	2.1	0.4	0.1	0.1	0.2	2.1	2.5	0.3	0.3	0.2	0.0	4.9	0.0	0.0	1.8
TAET: PERVIOUS	46.0	32.1	32.3	32.2	32.9	27.1	34.6	29.6	31.5	31.1	32.6	45.3	35.7	34.9	36.8	34.2
IMPEV: IMPERVIOUS		20.0	19.5	19.5	19.5											0.1
ET: COMBINED	46.0	31.5	31.0	29.6	26.2	27.1	34.6	29.6	31.5	31.1	32.6	45.3	35.7	34.9	36.8	34.3
PET	46.0	44.3	45.4	45.4	45.6	45.4	43.8	43.8	45.3	45.6	45.2	45.3	44.2	46.4	46.1	44.0

Table T-03060102-13: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18632	31415	6182	1248	291	2512	467491	4169	28036	60923	345	3586	449	564	1235	627077
AREA(%)	3.0	5.0	1.0	0.2	0.0	0.4	74.2	0.7	4.4	9.7	0.1	0.6	0.1	0.1	0.2	99.5
IMPERVIOUS																
AREA(ACRES)		1667	690	313	291											2962
AREA(%)		0.3	0.1	0.0	0.0											0.5
SUPY	48.9	57.4	51.7	51.6	50.5	51.6	59.5	59.8	52.5	50.4	52.6	52.2	118.3	52.2	51.6	57.5
SURLI		0.0	5.9	6.1	6.6										0.2	0.1
UZLI																0.0
LZLI		0.0	1.3	1.0	0.8											0.0
SURO: PERVIOUS	3.8	3.3	2.4	2.0	1.6	1.2	0.9	2.7	1.0	0.9	0.9	7.3	8.2	0.7	0.7	1.2
SURO: IMPERVIOUS		39.0	34.0	34.0	33.0											0.2
SURO: COMBINED	3.8	5.1	5.6	8.4	17.3	1.2	0.9	2.7	1.0	0.9	0.9	7.3	8.2	0.7	0.7	1.3
IFWO		6.3	6.2	6.4	6.5	5.5	3.2	6.3	4.9	4.4	4.1		17.9	4.0	3.5	3.5
AGWO	1.0	20.0	24.3	24.7	23.4	25.3	26.1	26.0	21.8	21.3	21.8	1.8	49.8	22.5	20.3	24.1
AGWI	1.1	18.4	22.3	22.7	21.2	22.8	22.7	24.2	18.8	18.3	18.3	1.9	52.5	19.2	16.8	21.0
IGWI	0.0	1.4	0.3	0.1	0.1	0.1	1.6	1.7	0.2	0.2	0.2	0.0	3.3	0.0	0.0	1.3
CEPE		10.2	8.2	8.3	11.3	8.2	12.4	11.4	11.2	9.3	14.0	11.6	26.5	10.5	15.5	11.4
UZET		4.2	3.2	3.1	2.6	3.0	3.4	4.5	2.5	2.5	2.3		3.8	2.5	2.1	3.2
LZET		14.6	16.8	16.9	15.3	11.5	16.7	10.0	14.7	15.8	14.0		6.2	16.2	14.4	15.7
AGWET		2.3	2.7	2.7	2.5	2.7	2.2	2.2	2.5	2.6	2.2		0.9	2.6	2.2	2.2
BASET	0.0	0.3	0.1	0.1	0.1	0.1	0.4	0.4	0.1	0.1	0.1	0.1	0.8	0.0	0.0	0.3
SURET	42.5											30.5				1.4
PERO	4.8	29.6	32.8	33.2	31.5	32.0	30.2	34.9	27.8	26.6	26.7	9.1	75.8	27.2	24.5	28.8
IGWI	0.0	1.4	0.3	0.1	0.1	0.1	1.6	1.7	0.2	0.2	0.2	0.0	3.3	0.0	0.0	1.3
TAET: PERVIOUS	42.5	31.6	31.1	31.0	31.7	25.5	35.0	28.4	31.0	30.2	32.5	42.1	38.2	31.9	34.2	34.2
IMPEV: IMPERVIOUS		18.5	17.8	17.8	17.7											0.1
ET: COMBINED	42.5	30.9	29.7	28.3	24.7	25.5	35.0	28.4	31.0	30.2	32.5	42.1	38.2	31.9	34.2	34.2
PET	42.5	41.4	42.2	42.1	42.3	42.2	41.1	41.1	42.1	42.3	42.1	42.1	41.4	42.8	42.6	41.2

Table T-03060102-14: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18632	31415	6182	1248	291	2512	467491	4169	28036	60923	345	3586	449	564	1235	627077
AREA(%)	3.0	5.0	1.0	0.2	0.0	0.4	74.2	0.7	4.4	9.7	0.1	0.6	0.1	0.1	0.2	99.5
IMPERVIOUS																
AREA(ACRES)		1667	690	313	291											2962
AREA(%)		0.3	0.1	0.0	0.0											0.5
SUPY	53.1	61.6	55.6	55.6	54.5	56.1	64.0	64.1	56.1	54.9	56.5	56.0	76.7	57.7	57.4	61.9
SURLI		0.0	5.4	5.5	6.0										4.0	0.1
UZLI																0.0
LZLI		0.0	1.0	0.8	0.6											0.0
SURO: PERVIOUS	10.5	3.2	2.3	1.9	1.5	1.2	0.9	2.6	0.9	0.8	0.8	12.8	5.7	0.7	2.4	1.4
SURO: IMPERVIOUS		42.6	37.4	37.4	36.5											0.2
SURO: COMBINED	10.5	5.2	5.8	9.0	19.0	1.2	0.9	2.6	0.9	0.8	0.8	12.8	5.7	0.7	2.4	1.6
IFWO		6.3	6.0	6.3	6.5	5.2	3.1	6.1	4.4	4.0	3.6		8.4	3.6	4.6	3.3
AGWO	1.2	19.9	23.0	23.5	22.3	24.2	24.9	25.4	20.6	20.5	20.6	2.3	24.6	21.7	20.5	23.0
AGWI	1.2	22.6	25.8	26.2	24.8	27.1	27.4	28.1	23.2	23.2	22.9	2.3	27.0	24.4	22.7	25.5
IGWI	0.0	1.7	0.4	0.1	0.1	0.1	1.8	2.0	0.2	0.2	0.2	0.0	3.6	0.0	0.0	1.5
CEPE		10.8	8.6	8.6	11.6	8.6	13.1	12.0	11.7	9.6	14.5	12.1	18.3	10.7	16.5	12.0
UZET		4.1	3.4	3.3	2.7	3.2	3.3	4.3	2.6	2.6	2.3		4.4	2.8	2.3	3.1
LZET		13.0	15.5	15.6	14.0	10.7	14.4	9.0	13.0	14.3	12.1		9.2	15.4	12.8	13.7
AGWET		2.1	2.5	2.5	2.3	2.5	2.0	2.0	2.3	2.5	2.1		1.4	2.5	2.0	2.0
BASET	0.0	0.4	0.1	0.0	0.0	0.1	0.4	0.4	0.1	0.1	0.1	0.1	0.8	0.0	0.0	0.3
SURET	41.6											29.0				1.4
PERO	11.7	29.4	31.3	31.6	30.3	30.6	28.8	34.1	26.0	25.3	25.0	15.0	38.7	26.0	27.6	27.7
IGWI	0.0	1.7	0.4	0.1	0.1	0.1	1.8	2.0	0.2	0.2	0.2	0.0	3.6	0.0	0.0	1.5
TAET: PERVIOUS	41.7	30.3	30.1	30.0	30.7	25.1	33.1	27.8	29.7	29.1	31.1	41.1	34.2	31.5	33.6	32.5
IMPEV: IMPERVIOUS		18.9	18.1	18.2	18.1											0.1
ET: COMBINED	41.7	29.7	28.9	27.6	24.4	25.1	33.1	27.8	29.7	29.1	31.1	41.1	34.2	31.5	33.6	32.6
PET	41.7	40.2	41.2	41.2	41.4	41.2	39.8	39.8	41.1	41.3	41.0	41.1	40.2	41.9	41.7	39.9

Table T-03060102-15: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
2	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
3	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
4	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
5	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
6	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
7	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
8	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
9	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
10	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
11	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
12	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
13	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
14	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
15	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
16	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
17	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
18	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
19	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
20	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
21	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
22	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
23	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
24	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
25	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
26	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
27	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
28	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
29	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
30	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
31	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
32	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
33	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
34	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
35	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
36	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990

Table T-03060102-16: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060102-17: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
2	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
3	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
4	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
5	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
6	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
7	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
8	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
9	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
10	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
11	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
12	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
13	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
14	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
15	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
16	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
17	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
18	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
19	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
20	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
21	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
22	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
23	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
24	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
25	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
26	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
27	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
28	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
29	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
30	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
31	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
32	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
33	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
34	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
35	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108
36	0.000	0.074	0.050	0.050	0.100	0.050	0.110	0.091	0.100	0.065	0.162	0.108

Table T-03060102-18: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060102-19: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
2	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
3	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
4	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
5	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
6	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
7	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
8	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
9	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
10	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
11	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
12	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
13	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
14	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
15	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
16	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
17	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
18	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
19	0.006	0.169	0.169	0.169	0.169	0.242	0.363	0.242	0.242	0.242	0.290	0.006
20	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
21	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
22	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
23	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
24	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
25	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
26	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
27	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
28	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
29	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
30	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
31	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
32	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
33	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
34	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
35	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001
36	0.001	0.272	0.272	0.272	0.272	0.389	0.583	0.389	0.389	0.389	0.467	0.001

Table T-03060102-20: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
2		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
3		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
4		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
5		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
6		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
7		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
8		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
9		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
10		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
11		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
12		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
13		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
14		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
15		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
16		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
17		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
18		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
21		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
22		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
23		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
24		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
25		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
26		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
27		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
28		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
29		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	

30		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
31		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
32		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
33		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
34		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
35		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	
36		1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	1.208	

Table T-03060102-21: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
25	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
26	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
27	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
28	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
29	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
30	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
31	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
32	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
33	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
34	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
35	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
36	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03060102-22: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
2	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
3	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
4	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
5	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
6	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
7	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
8	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
9	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
10	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
11	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
12	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
13	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
14	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
15	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
16	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
17	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
18	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
19	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
20	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
21	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
22	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
23	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
24	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
25	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
26	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
27	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
28	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
29	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
30	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
31	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
32	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
33	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
34	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
35	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
36	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092

Table T-03060102-23: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
2	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
3	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
4	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
5	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
6	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
7	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
8	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
9	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
10	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
11	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
12	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
13	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
14	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
15	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
16	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
17	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
18	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
19	0.260	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.947
20	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
21	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
22	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
23	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
24	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
25	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
26	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
27	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
28	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
29	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
30	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
31	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
32	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
33	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
34	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
35	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
36	0.029	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900

Table T-03060102-24: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
2	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
3	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
4	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
5	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
6	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
7	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
8	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
9	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
10	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
11	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
12	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
13	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
14	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
15	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
16	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
17	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
18	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
19	0.100	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
20	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
21	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
22	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
23	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
24	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
25	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
26	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
27	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
28	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
29	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
30	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
31	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
32	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
33	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
34	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
35	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100
36	0.061	1.546	1.546	1.546	1.546	1.739	2.319	1.739	1.739	1.739	1.933	0.100

Table T-03060102-25: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
19	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	0.051
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
33	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
34	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
35	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374
36	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.374

APPENDIX T-03060103

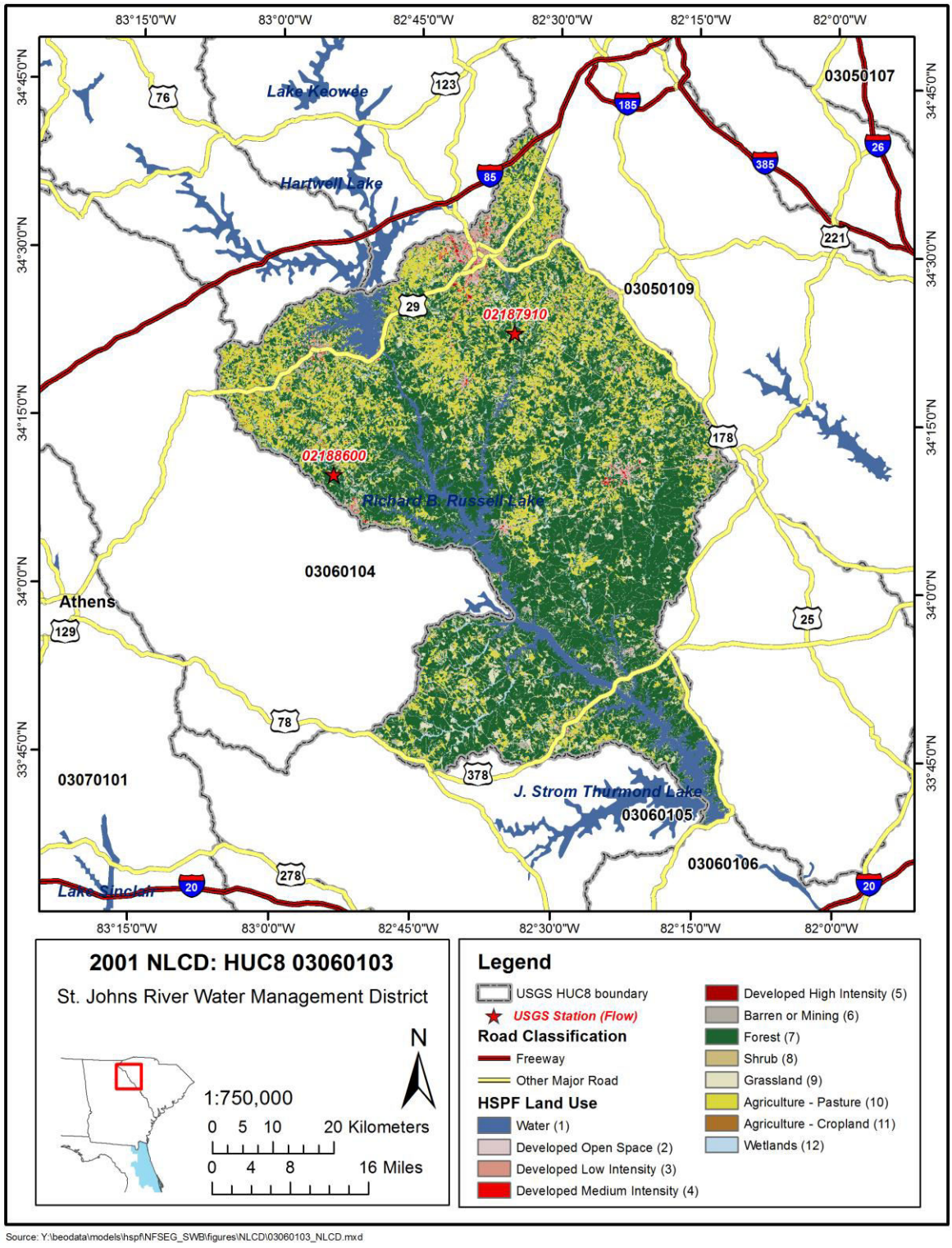


Figure T-03060103-1: Land Cover from the National Land Cover Database.

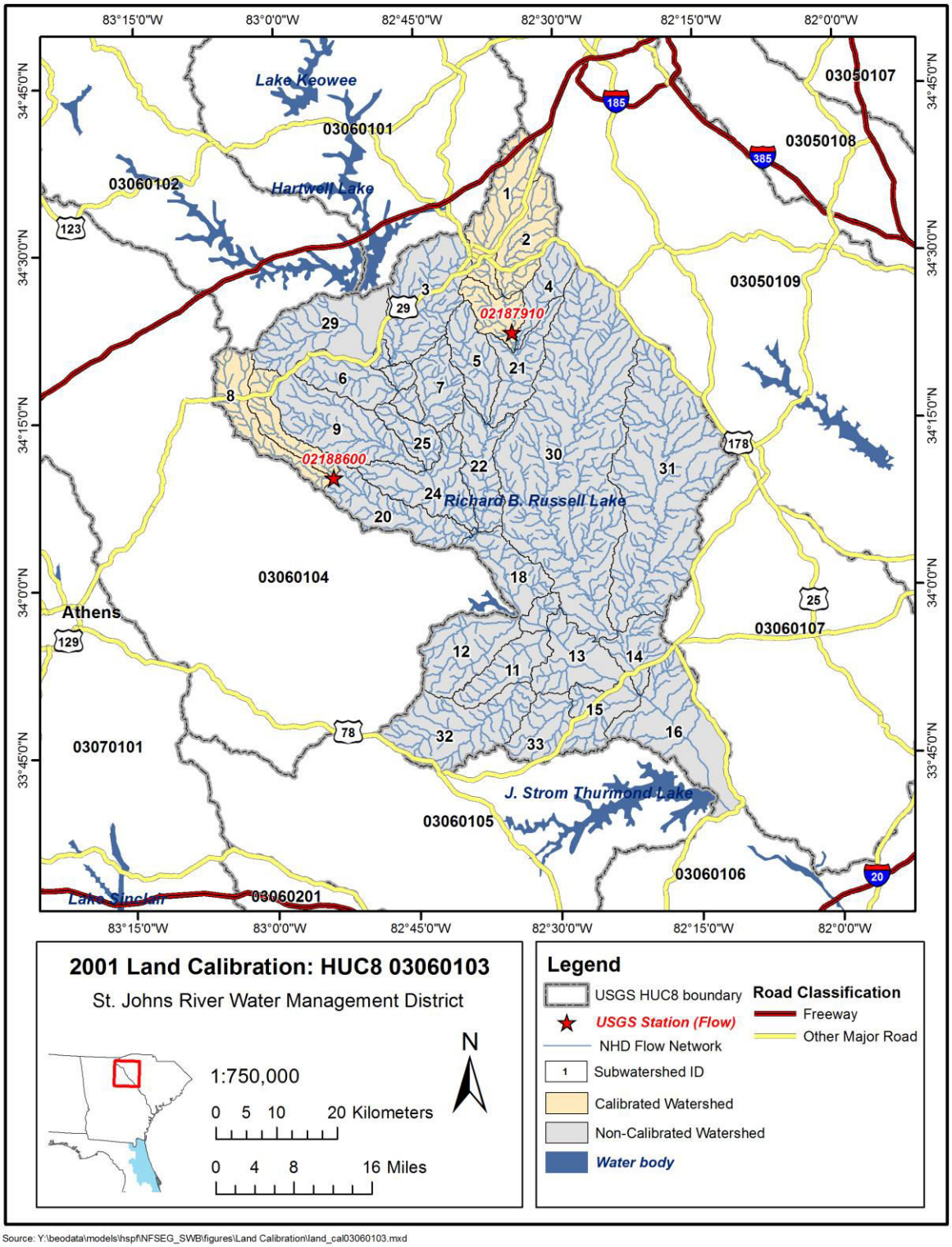


Figure T-03060103-2: Calibrated sub-watersheds.

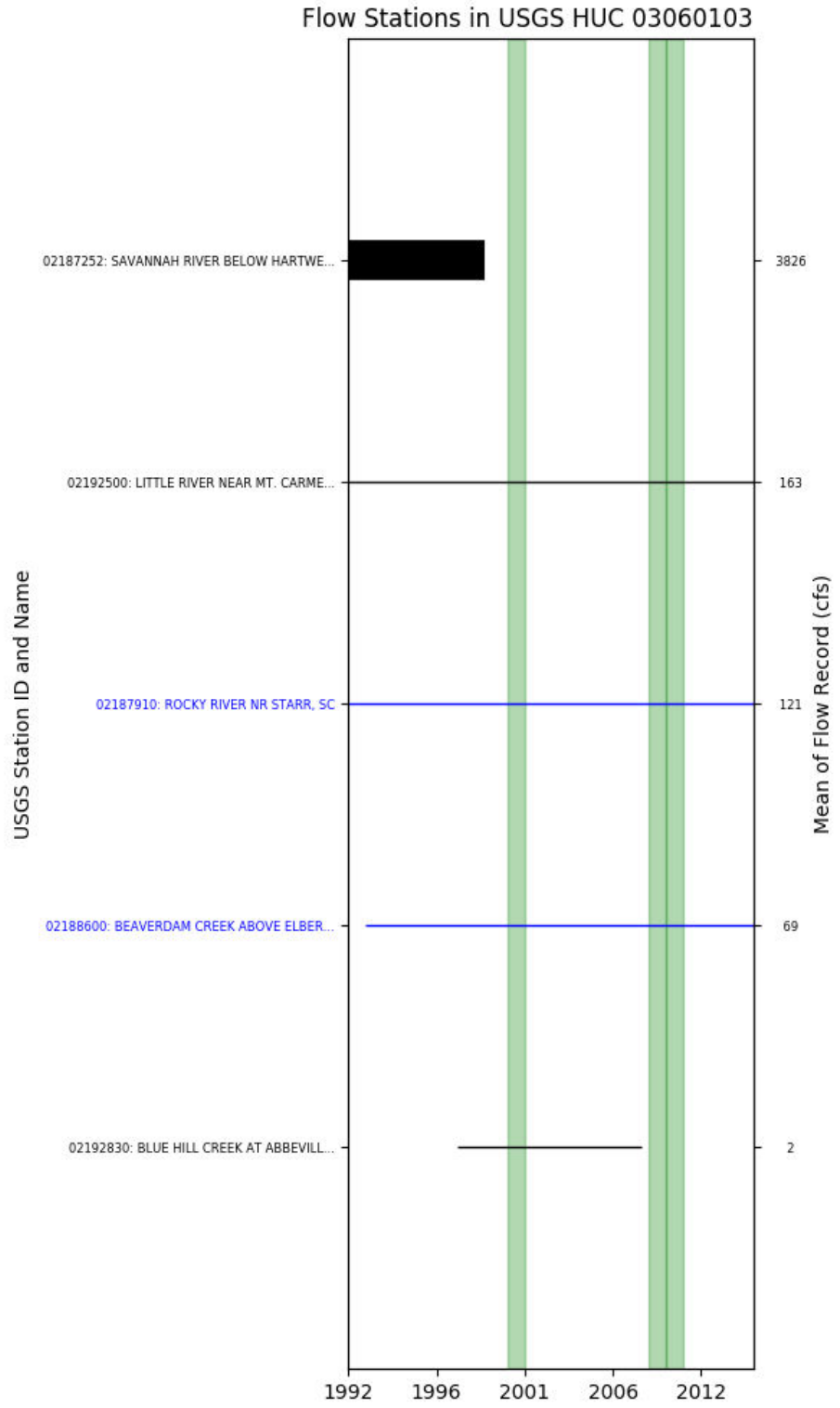


Figure T-03060103-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 08, USGS GAUGE 02188600

Water-Data Report 2009
02188600 BEAVERDAM CREEK ABOVE ELBERTON, GA
Savannah Basin Upper Savannah Subbasin

LOCATION.--Lat 341007, long 825348 referenced to North American Datum of 1927, Elbert County, GA, Hydrologic Unit 03060103, at left edge of channel on downstream end of bridge on County Road 310, 200 feet downstream of Little Beaverdam Creek, 3.25 miles east of Dewey Rose, GA, and 4.3 miles northwest of Elberton, GA.

DRAINAGE AREA.--72.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1986 to September 1996. January 2005 to current year.
GAGE-HEIGHT: January 2005 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 529.38 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--U.S. Army Corps of Engineers, Savannah District.

REMARKS.--Discharge records good. Gage-height records good.

Table T-03060103-1: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02188600.

Statistic	Value
Bias	-18.27
Standard error	34.76
Relative bias	-0.25
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.73
Coefficient of efficiency	0.57
Index of agreement	0.76

Table T-03060103-2: Hydrologic Indices Between USGS Gauge 02188600 and HSPF Reach 08.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02188600	Simulated Reach 08	Percent Difference
MA1: Mean, all daily flows	152.32	109.55	-28.08
MA2: Median, all daily flows	120.00	89.22	-25.65
MA3: CV, all daily flows	12.19	10.15	-16.79
MA4: CV, log of all daily flows	53.67	51.71	-3.65

MA5: Mean daily flow / median daily flow	1.27	1.23	-3.27
MA9: (Q10 - Q90) / median daily flow	1.60	1.62	1.21
MA10: (Q20 - Q80) / median daily flow	0.76	0.90	19.03
MA11: (Q25 - Q75) / median daily flow	0.57	0.74	28.22
MA12: Mean monthly flow, January	28.23	19.73	-30.11
MA13: Mean monthly flow, February	21.45	16.68	-22.24
MA14: Mean monthly flow, March	30.86	20.99	-31.98
MA15: Mean monthly flow, April	22.29	16.22	-27.22
MA16: Mean monthly flow, May	19.04	14.38	-24.48
MA17: Mean monthly flow, June	3.36	4.58	36.09
MA18: Mean monthly flow, July	0.00	0.00	
MA19: Mean monthly flow, August	0.00	0.00	
MA20: Mean monthly flow, September	0.00	0.00	
MA21: Mean monthly flow, October	0.00	0.00	
MA22: Mean monthly flow, November	0.00	0.00	
MA23: Mean monthly flow, December	22.91	15.19	-33.68
ML1: Mean minimum monthly flow, January	90.50	66.98	-25.99
ML2: Mean minimum monthly flow, February	84.50	68.02	-19.50
ML3: Mean minimum monthly flow, March	87.00	65.07	-25.21
ML4: Mean minimum monthly flow, April	79.00	58.43	-26.04
ML5: Mean minimum monthly flow, May	69.00	56.70	-17.82
ML6: Mean minimum monthly flow, June	26.00	39.50	51.92
ML7: Mean minimum monthly flow, July	0.00	0.00	
ML8: Mean minimum monthly flow, August	0.00	0.00	
ML9: Mean minimum monthly flow, September	0.00	0.00	
ML10: Mean minimum monthly flow, October	0.00	0.00	
ML11: Mean minimum monthly flow, November	0.00	0.00	
ML12: Mean minimum monthly flow, December	76.00	67.93	-10.62
ML13: CV of minimum monthly flows	29.58	35.50	20.02
ML14: Mean minimum daily flow / mean median annual flow	0.06	0.07	10.30
ML15: Mean minimum annual flow / mean annual flow	0.05	0.06	9.60
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.62	0.63	1.28
ML22: Mean annual minimum flow divided by catchment area	83333.41	83333.39	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	88.73	54.18	
RA2: CV, mean of positive changes from one day to next (rise rate)	186.52	182.20	
RA3: Mean of negative changes from one day to next (fall rate)	32.72	18.07	
RA4: CV, mean of negative changes from one day to next (fall rate)	202.41	204.56	
RA5: Ratio of days that are higher than previous day	0.26	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.07	
RA8: Number of flow reversals from one day to the next	8.50	7.83	
RA9: CV, number of flow reversals from one day to the next	233.60	233.61	

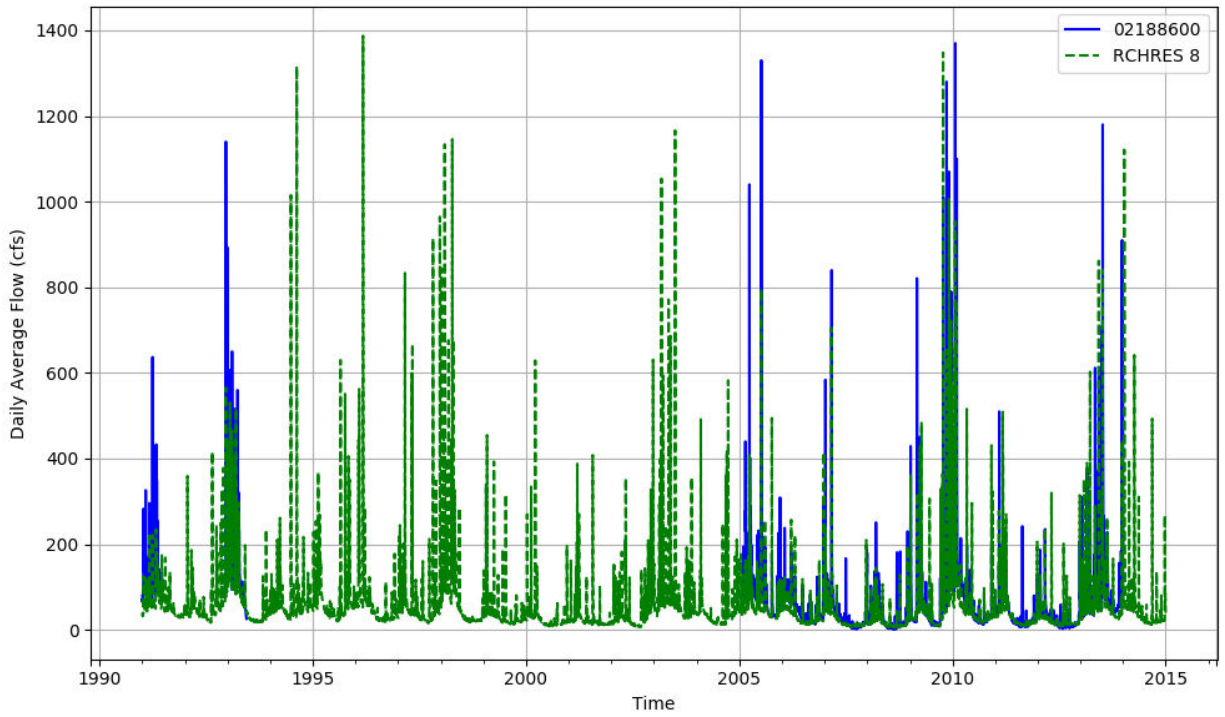


Figure T-03060103-4: Daily flow for HSFP reach 08 and USGS station 02188600.

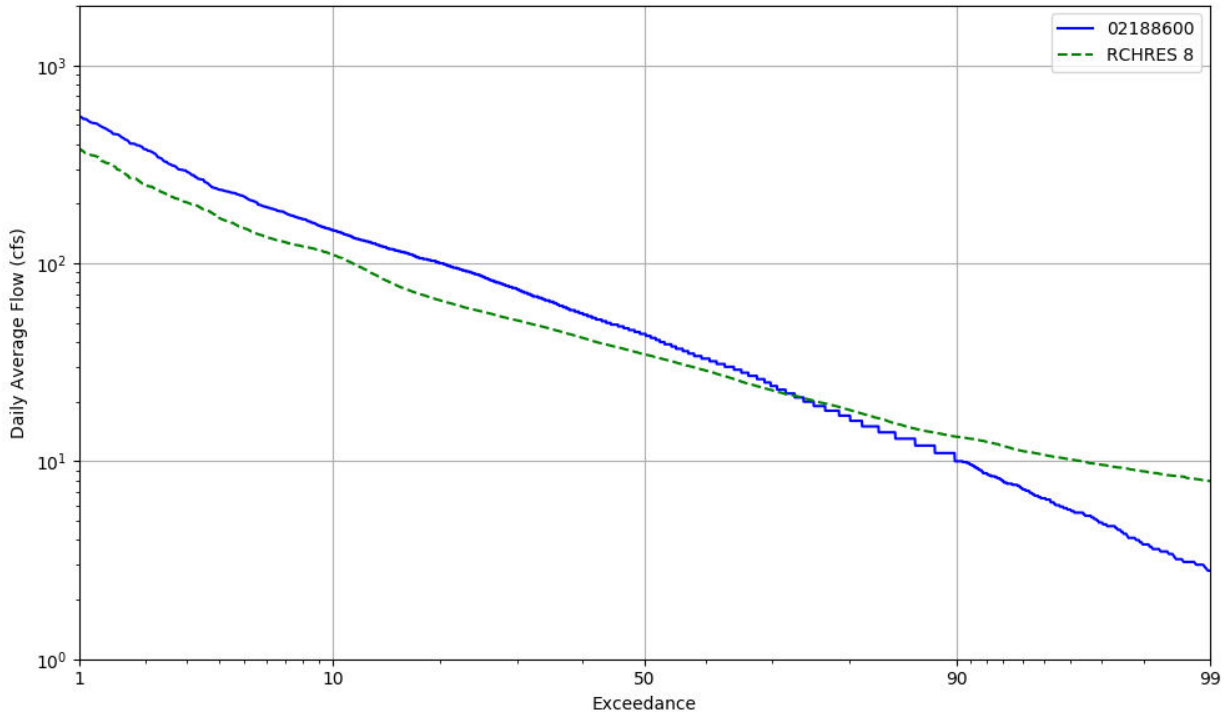


Figure T-03060103-5: Daily exceedance for HSFP reach 08 and USGS station 02188600.

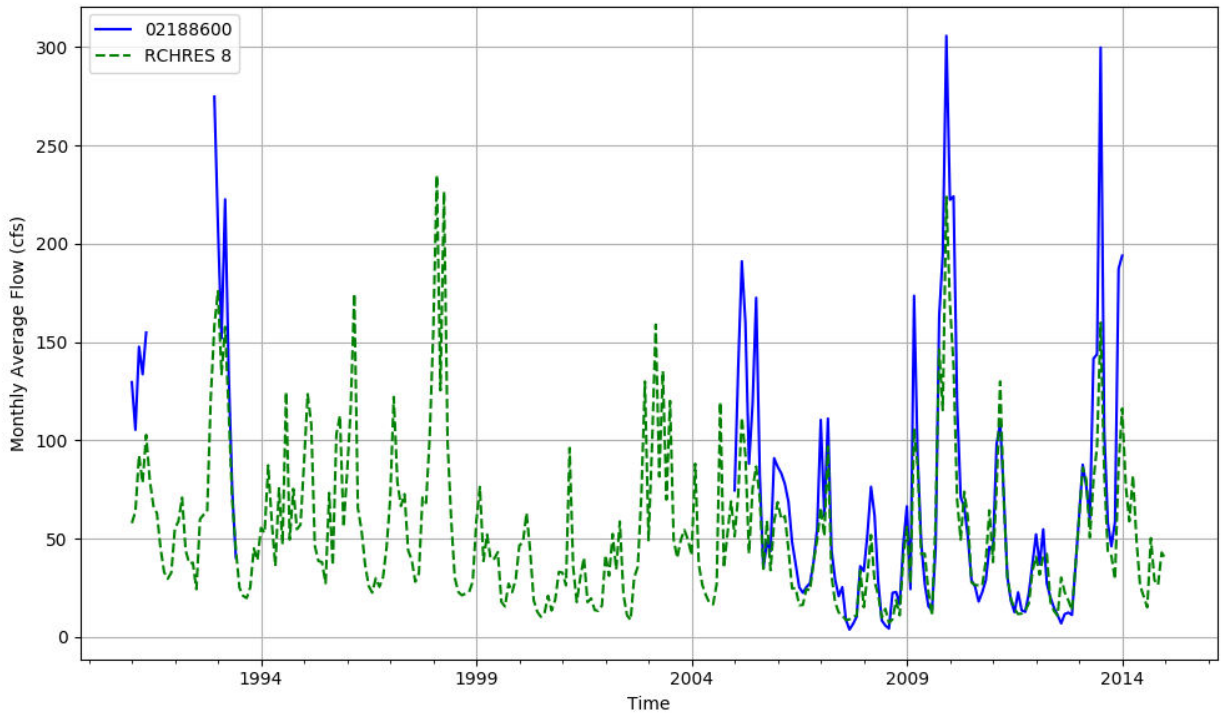


Figure T-03060103-6: Monthly flow for HSFP reach 08 and USGS station 02188600.

HSPF REACH 16, USGS GAUGE 02187910

Water-Data Report 2009
02187910 ROCKY RIVER NEAR STARR, SC
Savannah Basin Upper Savannah Subbasin

LOCATION.--Lat 342259, long 823439 referenced to North American Datum of 1927, Anderson County, SC, Hydrologic Unit 03060103, at downstream side of bridge on StateRoad 244, 0.5 mi upstream from Beaver Creek, 2.5 mi upstream of Secession Lake, and 6.7 mi east of Starr.

DRAINAGE AREA.--111 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1989 to February 1996, October 1996 to September 2001, October 2001 to January 2003, nonrecording gage at same site and datum, February 2003 to March 2004, October 2004 to current year.

GAGE.--Data collection platform. Elevation of gage is 570 ft above NGVD of 1929 (from topographic map).

REMARKS.--No estimated daily discharges. Records good.

Table T-03060103-3: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02187910.

Statistic	Value
Bias	3.89
Standard error	40.97
Relative bias	0.03
Relative standard error	0.43
Nash-Sutcliffe coefficient	0.82
Coefficient of efficiency	0.64
Index of agreement	0.82

Table T-03060103-4: Hydrologic Indices Between USGS Gauge 02187910 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02187910	Simulated Reach 16	Percent Difference
MA1: Mean, all daily flows	120.75	124.41	3.03
MA2: Median, all daily flows	79.00	78.40	-0.76
MA3: CV, all daily flows	122.65	116.82	-4.76
MA4: CV, log of all daily flows	77.83	84.03	7.97
MA5: Mean daily flow / median daily flow	1.53	1.59	3.82

MA9: (Q10 - Q90) / median daily flow	2.44	2.95	20.72
MA10: (Q20 - Q80) / median daily flow	1.32	1.54	16.68
MA11: (Q25 - Q75) / median daily flow	1.00	1.18	18.12
MA12: Mean monthly flow, January	171.33	165.58	-3.36
MA13: Mean monthly flow, February	168.92	168.48	-0.26
MA14: Mean monthly flow, March	171.82	169.55	-1.32
MA15: Mean monthly flow, April	132.29	132.02	-0.20
MA16: Mean monthly flow, May	86.19	88.21	2.34
MA17: Mean monthly flow, June	74.29	80.39	8.21
MA18: Mean monthly flow, July	62.36	85.22	36.66
MA19: Mean monthly flow, August	73.08	75.51	3.32
MA20: Mean monthly flow, September	43.61	52.27	19.87
MA21: Mean monthly flow, October	60.84	73.03	20.04
MA22: Mean monthly flow, November	82.79	87.12	5.24
MA23: Mean monthly flow, December	128.98	119.44	-7.40
ML1: Mean minimum monthly flow, January	87.00	86.90	-0.12
ML2: Mean minimum monthly flow, February	95.18	94.21	-1.02
ML3: Mean minimum monthly flow, March	82.29	90.71	10.24
ML4: Mean minimum monthly flow, April	80.95	75.83	-6.33
ML5: Mean minimum monthly flow, May	58.75	55.94	-4.78
ML6: Mean minimum monthly flow, June	44.22	43.09	-2.55
ML7: Mean minimum monthly flow, July	36.25	45.03	24.22
ML8: Mean minimum monthly flow, August	30.98	38.10	22.96
ML9: Mean minimum monthly flow, September	29.95	38.23	27.67
ML10: Mean minimum monthly flow, October	36.86	42.08	14.16
ML11: Mean minimum monthly flow, November	49.57	51.98	4.85
ML12: Mean minimum monthly flow, December	68.05	66.03	-2.97
ML13: CV of minimum monthly flows	58.75	69.54	18.38
ML14: Mean minimum daily flow / mean median annual flow	0.33	0.37	10.11
ML15: Mean minimum annual flow / mean annual flow	0.24	0.26	9.64
ML16: Median minimum annual flow / median annual flow	0.32	0.33	2.46
ML20: Ratio of baseflow volume to total flow volume	0.55	0.55	-0.01
ML22: Mean annual minimum flow divided by catchment area	0.27	0.31	15.81
RA1: Mean of positive changes from one day to next (rise rate)	72.72	76.47	
RA2: CV, mean of positive changes from one day to next (rise rate)	257.15	328.46	
RA3: Mean of negative changes from one day to next (fall rate)	33.07	32.76	
RA4: CV, mean of negative changes from one day to next (fall rate)	349.05	402.47	
RA5: Ratio of days that are higher than previous day	0.29	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.08	
RA8: Number of flow reversals from one day to the next	97.12	100.42	
RA9: CV, number of flow reversals from one day to the next	36.85	35.64	

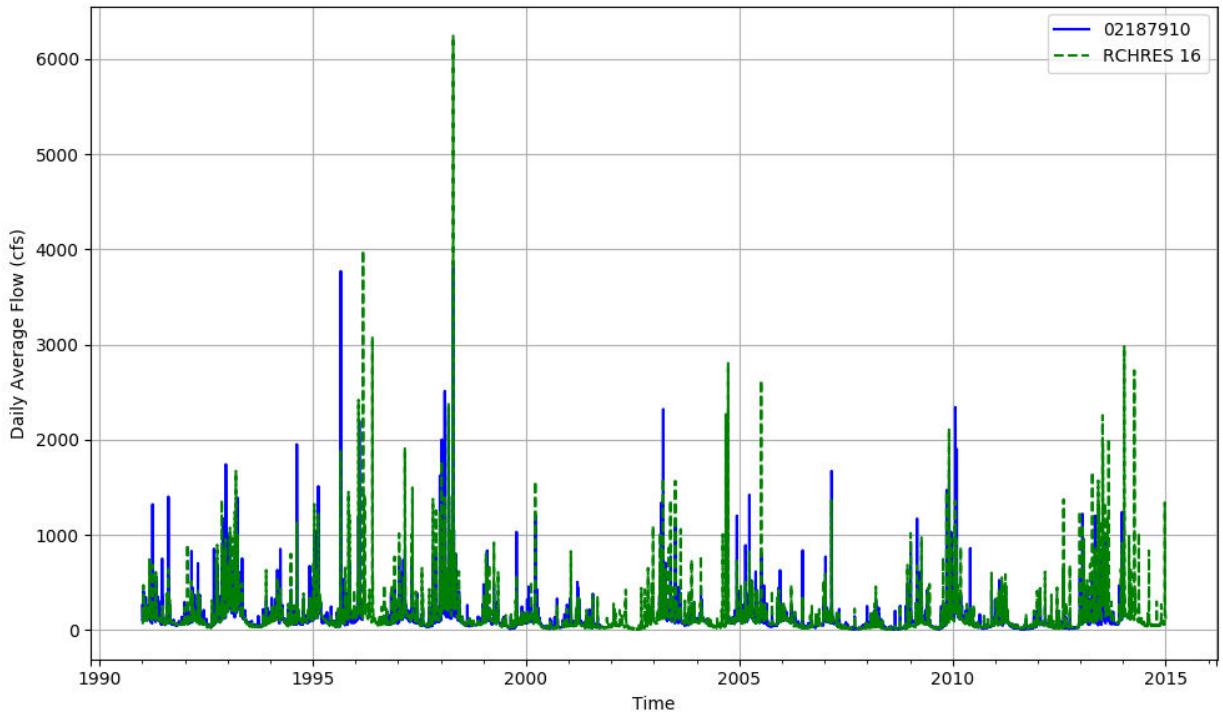


Figure T-03060103-7: Daily flow for HSFP reach 16 and USGS station 02187910.

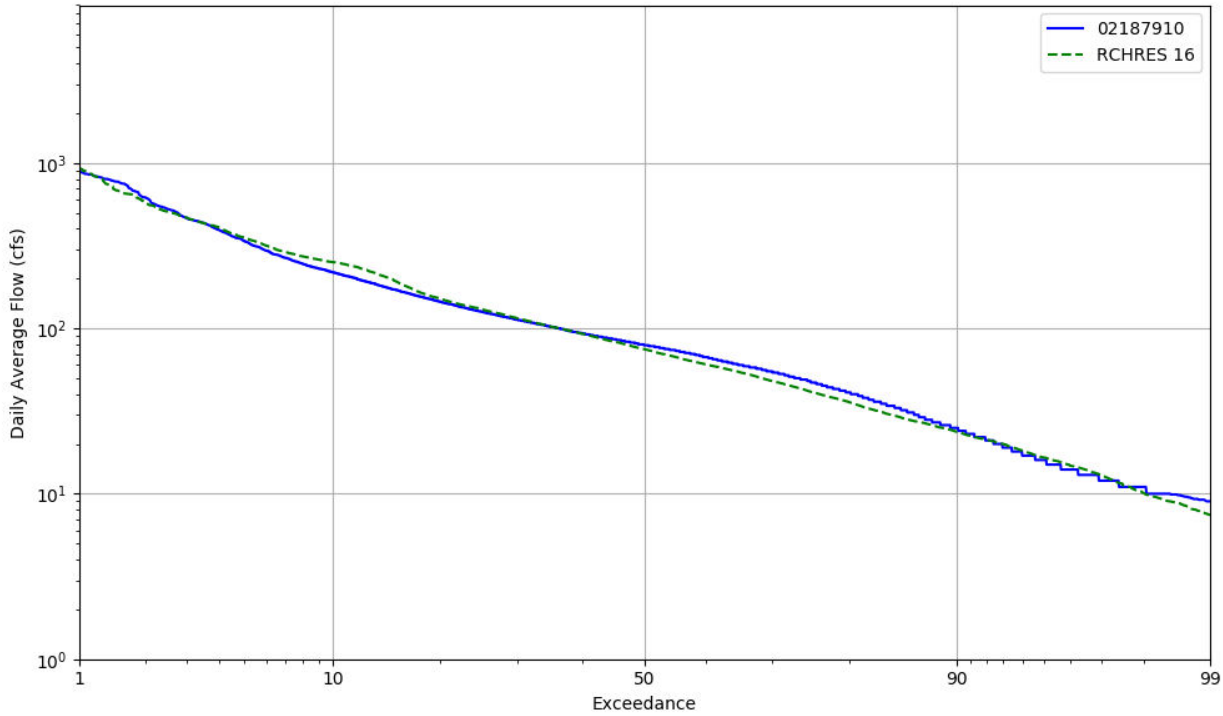


Figure T-03060103-8: Daily exceedance for HSFP reach 16 and USGS station 02187910.

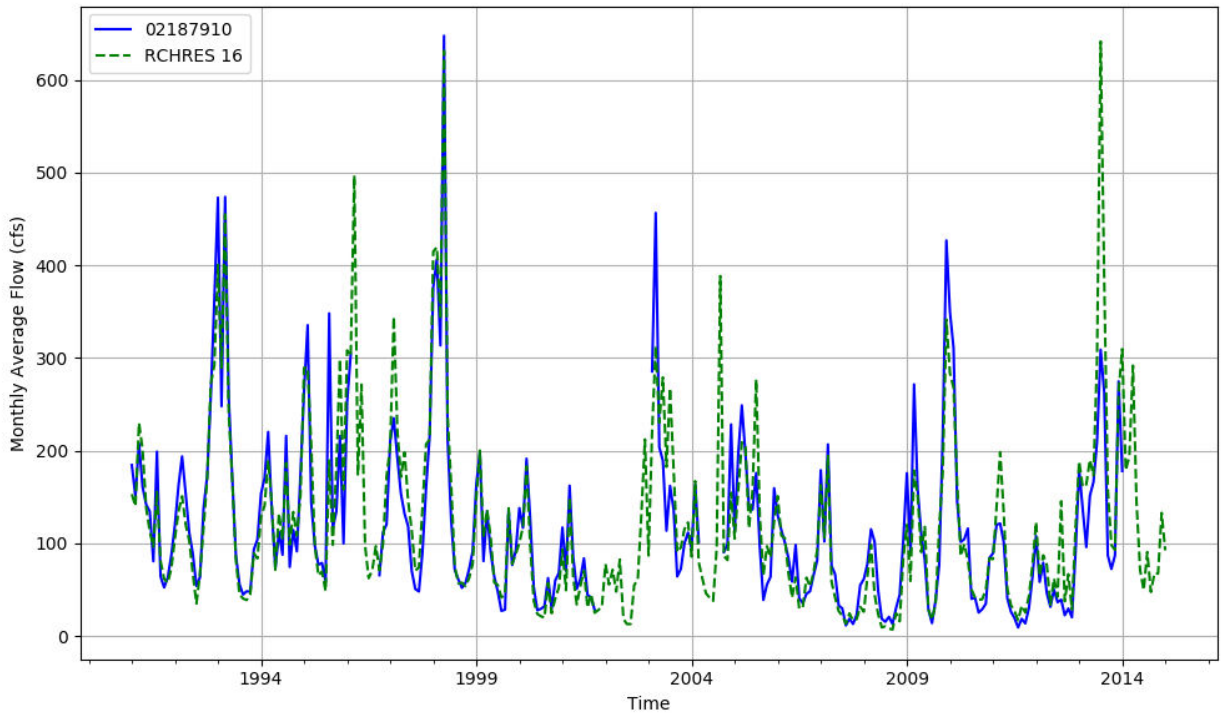


Figure T-03060103-9: Monthly flow for HSFP reach 16 and USGS station 02187910.

Table T-03060103-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	81624	67197	16886	3476	828	13822	623849	6183	109059	218856	1259	23128	1548	1262	1126	1170103
AREA(%)	6.9	5.7	1.4	0.3	0.1	1.2	53.0	0.5	9.3	18.6	0.1	2.0	0.1	0.1	0.1	99.4
IMPERVIOUS																
AREA(ACRES)		3592	1887	872	828											7179
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	33.0	34.2	35.3	35.1	35.1	33.9	33.9	33.5	34.3	35.1	35.9	34.4	53.4	43.8	38.4	34.0
SURLI		0.0	8.1	8.3	7.8											0.1
UZLI																0.0
LZLI		0.0	0.8	0.7	0.6										3.3	0.0
SURO: PERVIOUS		2.2	3.3	3.4	2.7	1.6	0.3	1.4	1.3	1.4	0.6		4.9	2.1	0.6	0.7
SURO: IMPERVIOUS		23.9	24.8	24.7	24.8											0.1
SURO: COMBINED		3.3	5.5	7.6	13.8	1.6	0.3	1.4	1.3	1.4	0.6		4.9	2.1	0.6	0.9
IFWO		1.8	2.7	2.7	2.9	2.5	0.3	2.3	1.4	1.6	1.3		4.2	2.4	1.2	0.8
AGWO	4.0	3.5	9.5	9.4	8.8	7.5	2.9	6.7	4.3	5.5	6.2	6.0	10.1	9.8	9.1	3.9
AGWI	6.1	5.2	11.1	11.0	10.3	9.6	4.9	9.0	6.3	7.3	8.0	7.9	10.5	10.8	10.6	5.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		9.3	6.6	6.6	9.3	6.5	9.7	7.9	9.3	6.6	6.1	9.3	23.5	9.6	8.1	8.3
UZET	0.3	2.3	3.5	3.5	2.9	3.1	1.7	3.0	2.3	2.6	3.0	6.2	2.6	3.6	3.3	2.0
LZET	0.1	15.7	18.8	18.8	17.3	12.4	19.9	11.8	16.4	18.1	20.1	1.4	9.6	17.5	19.9	17.0
AGWET	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0	0.3	0.6	0.7	0.7
BASET	1.6	1.6	1.9	1.9	1.9	1.9	1.5	1.9	1.7	1.8	1.8	1.4	1.9	1.9	1.9	1.6
SURET	39.0											17.6				3.0
PERO	4.0	7.5	15.5	15.5	14.4	11.6	3.5	10.4	7.0	8.4	8.0	6.0	19.1	14.3	10.8	5.4
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	41.7	29.6	31.5	31.5	32.1	24.6	33.5	25.3	30.3	29.9	31.7	36.8	37.9	33.2	33.8	32.6
IMPEV: IMPERVIOUS		10.4	10.5	10.4	10.3											0.1
ET: COMBINED	41.7	28.6	29.4	27.3	21.2	24.6	33.5	25.3	30.3	29.9	31.7	36.8	37.9	33.2	33.8	32.6
PET	43.5	43.0	42.6	42.6	42.5	43.2	43.2	43.3	43.0	42.7	42.5	43.0	42.6	42.4	42.6	42.8

Table T-03060103-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	81624	67197	16886	3476	828	13822	623849	6183	109059	218856	1259	23128	1548	1262	1126	1170103
AREA(%)	6.9	5.7	1.4	0.3	0.1	1.2	53.0	0.5	9.3	18.6	0.1	2.0	0.1	0.1	0.1	99.4
IMPERVIOUS																
AREA(ACRES)		3592	1887	872	828											7179
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	57.4	58.4	59.3	58.8	59.0	58.7	58.3	57.7	59.1	60.7	63.9	59.4	61.5	65.6	57.2	58.5
SURLI		0.0	8.3	8.5	8.0											0.1
UZLI																0.0
LZLI		0.0	1.5	1.3	1.2										3.7	0.0
SURO: PERVIOUS		8.4	10.3	10.1	8.8	5.9	2.3	5.5	5.7	6.2	4.1		7.8	4.9	2.2	3.7
SURO: IMPERVIOUS		44.9	45.9	45.4	45.7											0.3
SURO: COMBINED		10.3	13.8	17.1	27.2	5.9	2.3	5.5	5.7	6.2	4.1		7.8	4.9	2.2	4.0
IFWO		6.2	7.5	7.3	8.1	7.7	2.8	7.1	5.6	6.3	6.5		6.4	5.5	4.3	3.8
AGWO	5.9	5.9	12.9	12.8	12.1	11.6	6.5	10.7	7.8	9.0	10.8	12.6	7.0	12.9	11.7	7.3
AGWI	9.5	12.1	19.2	19.1	18.4	18.4	14.8	17.5	14.9	16.5	19.2	16.7	13.2	19.7	19.1	14.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		12.1	8.7	8.7	11.9	8.7	12.7	10.5	12.1	8.8	8.2	12.1	16.8	11.4	9.3	10.8
UZET	2.5	3.1	4.3	4.3	3.5	4.2	2.7	4.1	3.2	3.7	4.4	8.1	2.9	4.7	4.2	3.1
LZET	0.6	14.9	17.8	17.8	16.2	12.1	19.3	11.5	15.6	17.3	18.8	2.1	12.9	17.6	19.5	16.4
AGWET	2.0	0.7	0.8	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.8	1.8	0.6	0.7	0.8	0.9
BASET	1.5	1.8	2.1	2.1	2.1	2.1	1.8	2.1	1.9	2.0	2.0	1.3	1.9	2.1	2.0	1.8
SURET	35.6											12.4				2.7
PERO	5.9	20.5	30.7	30.2	29.0	25.2	11.6	23.4	19.1	21.5	21.4	12.6	21.2	23.3	18.2	14.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	42.2	32.7	33.7	33.7	34.4	28.0	37.3	28.9	33.5	32.5	34.2	37.9	35.1	36.5	35.8	35.7
IMPEV: IMPERVIOUS		13.3	13.3	13.3	13.2											0.1
ET: COMBINED	42.2	31.7	31.7	29.6	23.8	28.0	37.3	28.9	33.5	32.5	34.2	37.9	35.1	36.5	35.8	35.7
PET	48.9	48.3	47.8	47.8	47.8	48.5	48.5	48.7	48.3	47.9	47.5	48.3	47.9	47.7	48.0	48.1

Table T-03060103-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	81624	67197	16886	3476	828	13822	623849	6183	109059	218856	1259	23128	1548	1262	1126	1170103
AREA(%)	6.9	5.7	1.4	0.3	0.1	1.2	53.0	0.5	9.3	18.6	0.1	2.0	0.1	0.1	0.1	99.4
IMPERVIOUS																
AREA(ACRES)		3592	1887	872	828											7179
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	40.1	40.9	41.5	41.2	41.4	41.1	40.8	40.5	41.4	42.4	44.2	41.6	45.7	46.2	40.4	40.9
SURLI		0.0	8.1	8.3	7.8											0.1
UZLI																0.0
LZLI		0.0	1.4	1.3	1.2										4.3	0.0
SURO: PERVIOUS		4.5	5.7	5.6	4.9	3.3	1.3	3.0	3.1	3.3	2.1		4.6	2.9	1.4	2.0
SURO: IMPERVIOUS		29.9	30.5	30.3	30.5											0.2
SURO: COMBINED		5.8	8.2	10.6	17.7	3.3	1.3	3.0	3.1	3.3	2.1		4.6	2.9	1.4	2.2
IFWO		3.4	4.3	4.3	4.7	4.6	1.8	4.3	3.2	3.6	3.7		3.8	3.3	2.7	2.3
AGWO	6.5	6.9	13.2	13.1	12.5	12.2	9.5	11.4	9.1	10.2	12.2	12.6	7.8	12.5	13.0	9.3
AGWI	8.9	7.2	13.7	13.6	12.9	12.4	9.3	11.7	9.0	10.1	11.6	14.0	8.2	12.1	12.9	9.4
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		10.0	7.3	7.3	9.9	7.4	10.5	8.8	10.1	7.4	6.9	10.2	15.3	9.7	8.0	8.9
UZET	0.6	2.6	3.5	3.5	2.9	3.5	2.2	3.4	2.6	3.0	3.5	9.2	2.5	3.6	3.3	2.5
LZET	0.1	15.7	18.3	18.3	17.0	12.1	20.5	11.6	16.3	17.8	19.6	1.7	13.4	17.3	19.6	17.2
AGWET	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.5	0.6	0.7	0.7	0.7
BASET	1.8	1.8	1.9	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	1.5	1.8	1.9	1.9	1.8
SURET	39.8											16.0				3.1
PERO	6.5	14.8	23.3	23.0	22.1	20.1	12.6	18.7	15.3	17.1	18.0	12.6	16.1	18.7	17.0	13.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	43.1	30.8	31.8	31.8	32.4	25.7	35.8	26.4	31.6	30.8	32.7	40.1	33.6	33.2	33.6	34.3
IMPEV: IMPERVIOUS		11.0	11.1	11.0	10.9											0.1
ET: COMBINED	43.1	29.8	29.7	27.6	21.7	25.7	35.8	26.4	31.6	30.8	32.7	40.1	33.6	33.2	33.6	34.4
PET	44.2	44.1	43.8	43.9	43.8	44.1	44.2	44.2	44.0	43.8	43.6	44.0	44.1	43.9	44.1	43.8

Table T-03060103-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	81624	67197	16886	3476	828	13822	623849	6183	109059	218856	1259	23128	1548	1262	1126	1170103
AREA(%)	6.9	5.7	1.4	0.3	0.1	1.2	53.0	0.5	9.3	18.6	0.1	2.0	0.1	0.1	0.1	99.4
IMPERVIOUS																
AREA(ACRES)		3592	1887	872	828											7179
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	44.2	45.6	46.9	46.6	46.7	45.0	45.0	44.2	45.6	46.9	48.1	45.6	54.0	55.9	48.3	45.2
SURLI		0.0	7.5	7.7	7.2											0.1
UZLI																0.0
LZLI		0.0	1.0	0.9	0.8										3.3	0.0
SURO: PERVIOUS	1.4	4.6	6.0	5.9	4.9	3.1	1.2	2.8	3.0	3.2	1.7	0.3	5.9	4.1	1.6	2.0
SURO: IMPERVIOUS		33.8	35.0	34.7	34.9											0.2
SURO: COMBINED	1.4	6.1	8.9	11.7	19.9	3.1	1.2	2.8	3.0	3.2	1.7	0.3	5.9	4.1	1.6	2.2
IFWO		3.7	4.8	4.7	5.2	4.5	1.5	4.1	3.1	3.5	3.1		5.0	4.4	3.0	2.1
AGWO	5.3	6.8	12.9	12.8	12.3	11.5	7.9	10.7	8.4	9.7	11.1	10.6	9.3	13.7	13.3	8.2
AGWI	7.7	9.3	15.7	15.6	15.0	14.4	10.5	13.5	11.1	12.5	13.9	12.8	11.8	16.5	16.1	10.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		10.7	7.8	7.8	10.7	7.7	11.1	9.2	10.7	7.8	7.3	10.7	16.5	10.0	8.6	9.5
UZET	0.9	2.7	3.9	3.9	3.1	3.6	2.2	3.5	2.7	3.2	3.7	4.7	2.6	4.3	3.8	2.4
LZET	0.3	14.5	17.2	17.2	15.7	11.6	18.5	11.0	15.1	16.8	18.4	1.1	12.1	16.6	18.5	15.8
AGWET	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.6	0.7	0.7
BASET	1.6	1.7	1.9	1.9	1.8	1.9	1.7	1.9	1.7	1.8	1.8	1.5	1.8	1.9	1.8	1.7
SURET	37.0											19.6				2.9
PERO	6.7	15.1	23.7	23.4	22.4	19.1	10.6	17.6	14.5	16.4	15.9	10.9	20.2	22.2	17.8	12.4
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	40.5	30.3	31.4	31.4	32.1	25.5	34.2	26.2	30.9	30.2	31.9	38.3	33.6	33.4	33.4	33.0
IMPEV: IMPERVIOUS		11.8	11.9	11.8	11.8											0.1
ET: COMBINED	40.5	29.3	29.5	27.5	21.9	25.5	34.2	26.2	30.9	30.2	31.9	38.3	33.6	33.4	33.4	33.1
PET	43.7	43.3	42.9	42.9	42.8	43.5	43.4	43.6	43.3	43.0	42.8	43.3	42.7	42.6	42.8	43.1

Table T-03060103-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
2	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
3	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
4	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
5	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
6	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
7	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
8	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
9	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
10	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
11	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
12	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
13	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
14	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
15	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
16	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
17	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
18	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
19	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
20	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
21	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
22	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
23	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
24	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
25	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
26	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
27	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
28	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
29	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
30	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
31	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
32	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
33	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03060103-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
2	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
3	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
4	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
5	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
6	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
7	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
8	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
9	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
10	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
11	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
12	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
13	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
14	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
15	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
16	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
17	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
18	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
19	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
20	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
21	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
22	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
23	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
24	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
25	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
26	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
27	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
28	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
29	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
30	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
31	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
32	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
33	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044

Table T-03060103-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
2	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
3	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
4	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
5	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
6	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
7	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
8	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
9	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
10	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
11	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
12	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
13	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
14	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
15	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
16	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
17	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
18	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
19	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
20	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
21	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
22	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
23	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
24	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
25	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
26	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
27	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
28	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
29	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
30	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
31	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
32	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100
33	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.074	0.100	0.050	0.043	0.100

Table T-03060103-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060103-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
2	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
3	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
4	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
5	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
6	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
7	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
8	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
9	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
10	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
11	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
12	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
13	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
14	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
15	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
16	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
17	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
18	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
19	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
20	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
21	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
22	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
23	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
24	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
25	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
26	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
27	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
28	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
29	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
30	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
31	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
32	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008
33	0.008	0.092	0.092	0.092	0.092	0.132	0.197	0.132	0.132	0.132	0.158	0.008

Table T-03060103-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
2		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
3		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
4		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
5		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
6		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
7		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
8		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
9		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
10		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
11		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
12		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
13		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
14		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
15		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
16		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
17		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
18		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
19		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
20		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
21		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
22		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
23		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
24		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
25		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
26		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
27		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
28		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
29		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	

30		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
31		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
32		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	
33		0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	

Table T-03060103-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
25	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
26	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
27	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
28	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
29	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
30	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
31	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
32	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
33	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03060103-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
2	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
3	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
4	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
5	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
6	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
7	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
8	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
9	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
10	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
11	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
12	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
13	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
14	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
15	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
16	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
17	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
18	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
19	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
20	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
21	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
22	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
23	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
24	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
25	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
26	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
27	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
28	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
29	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
30	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
31	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
32	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478
33	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478	0.478

Table T-03060103-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
2	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
3	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
4	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
5	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
6	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
7	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
8	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
9	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
10	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
11	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
12	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
13	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
14	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
15	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
16	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
17	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
18	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
19	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
20	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
21	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
22	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
23	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
24	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
25	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
26	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
27	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
28	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
29	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
30	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
31	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
32	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
33	0.124	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900

Table T-03060103-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
2	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
3	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
4	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
5	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
6	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
7	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
8	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
9	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
10	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
11	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
12	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
13	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
14	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
15	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
16	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
17	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
18	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
19	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
20	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
21	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
22	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
23	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
24	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
25	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
26	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
27	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
28	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
29	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
30	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
31	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
32	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176
33	0.050	6.394	6.394	6.394	6.394	7.192	9.590	7.192	7.192	7.192	7.993	0.176

Table T-03060103-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
33	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03060104

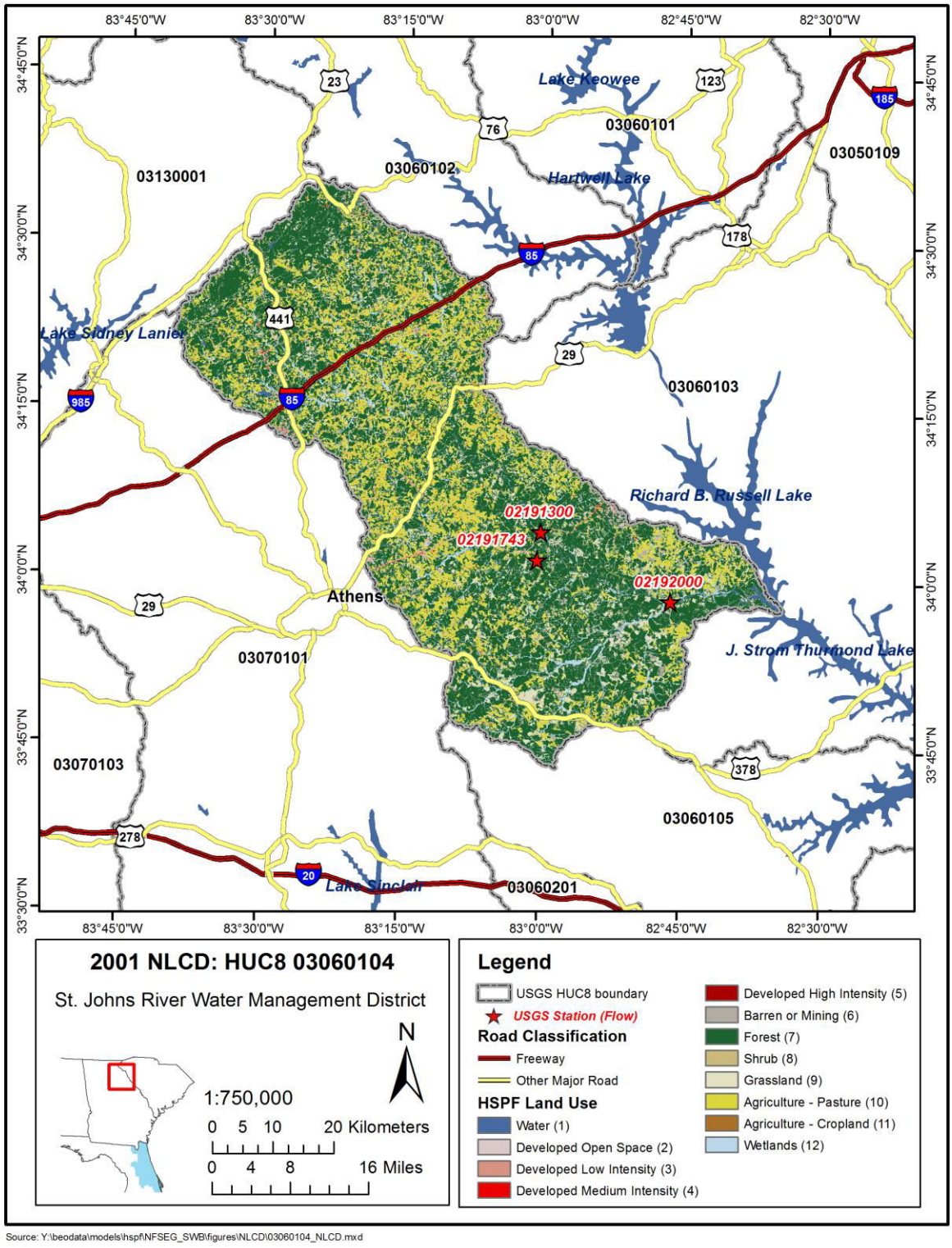


Figure T-03060104-1: Land Cover from the National Land Cover Database.

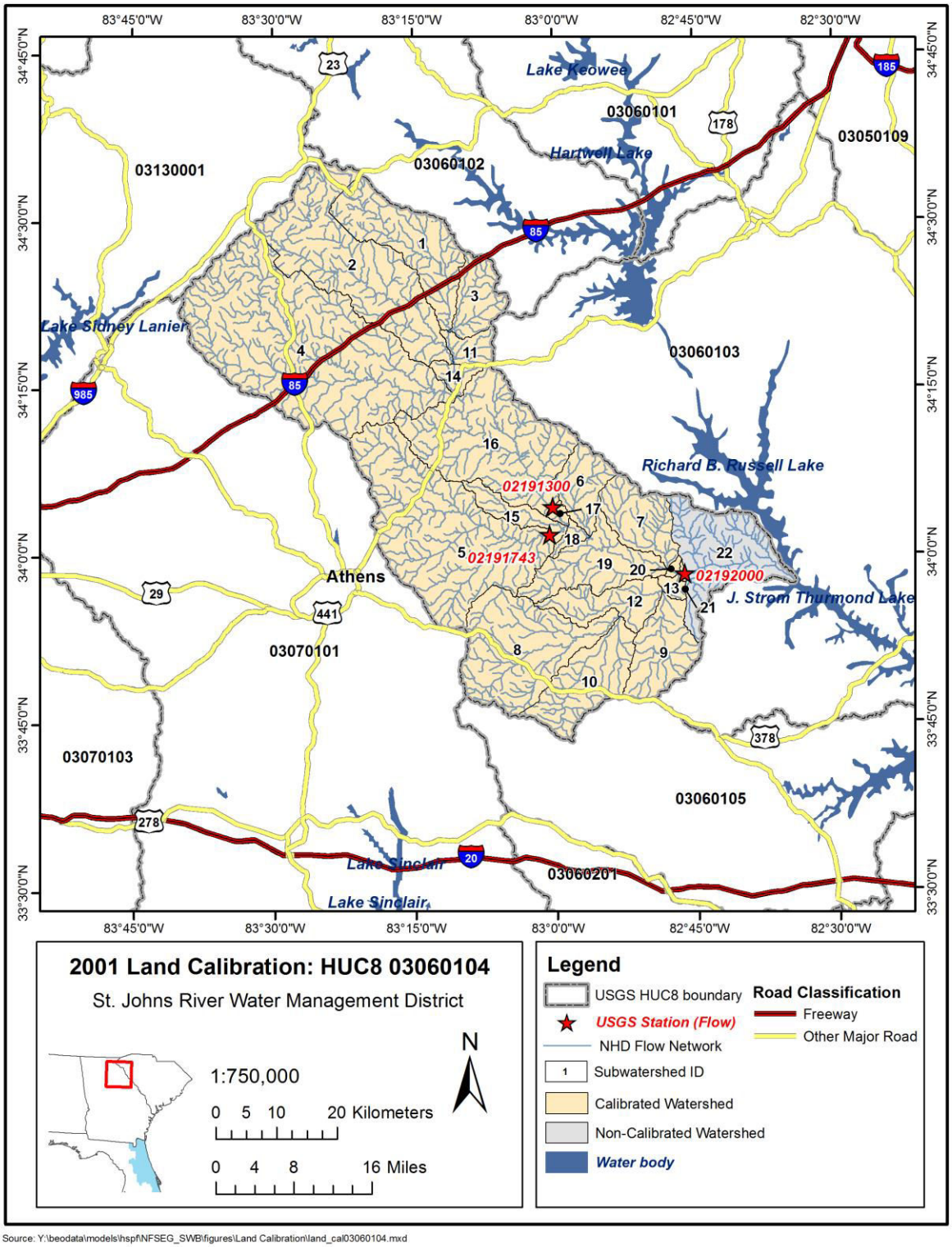


Figure T-03060104-2: Calibrated sub-watersheds.

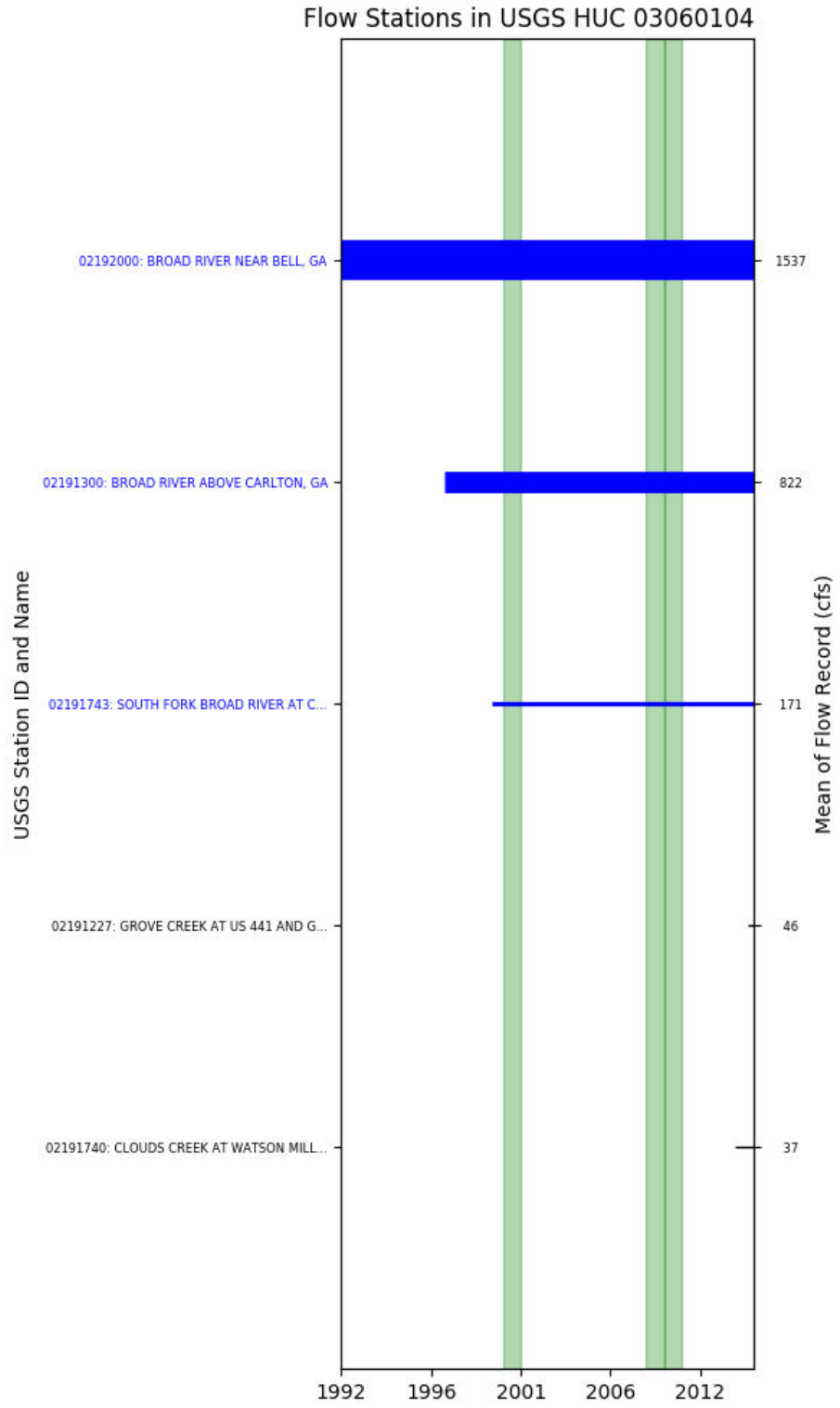


Figure T-03060104-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 05, USGS GAUGE 02191743

Water-Data Report 2009
02329000 OCHLOCKONEE RIVER NEAR HAVANA, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 303314, long 842303 referenced to North American Datum of 1927, Leon County, FL, Hydrologic Unit 03120003, near center of downstream side of downstream bridge on divided U.S. Highway 27, 0.8 mi upstream from Seaboard Air Line Railroad bridge, 4.0 mi downstream from Mill Creek, 5.0 mi southeast of Havana, and 94 mi upstream from mouth.

DRAINAGE AREA.--1,140 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1926 to current year. June 1926 to December 1929 (published as "at Ochlockonee"). Records published for both sites December 1928 to December 1929.

REVISED RECORDS.--WSP 822: 1929 (M). WSP 1504: 1928. WSP 1905: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 59.36 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1930, nonrecording gage at site about 10 mi downstream at datum 9.36 ft lower. Dec. 12, 1928, to Nov. 17, 1963, nonrecording gage at site 100 ft upstream at present datum. Nov. 18, 1963 to Nov. 15, 1976, nonrecording gage at same site and datum.

REMARKS.--Records good. Drainage Area: At site used prior to January 1929, 1,220 mi, approximately.

Table T-03060104-1: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02191743.

Statistic	Value
Bias	13.91
Standard error	58.44
Relative bias	0.09
Relative standard error	0.39
Nash-Sutcliffe coefficient	0.85
Coefficient of efficiency	0.63
Index of agreement	0.82

Table T-03060104-2: Hydrologic Indices Between USGS Gauge 02191743 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02191743	Simulated Reach 05	Percent Difference

MA1: Mean, all daily flows	183.06	186.68	1.98
MA2: Median, all daily flows	116.00	111.58	-3.81
MA3: CV, all daily flows	74.61	76.70	2.80
MA4: CV, log of all daily flows	85.05	87.56	2.95
MA5: Mean daily flow / median daily flow	1.58	1.67	6.01
MA9: (Q10 - Q90) / median daily flow	2.78	3.24	16.22
MA10: (Q20 - Q80) / median daily flow	1.68	1.83	8.82
MA11: (Q25 - Q75) / median daily flow	1.25	1.47	17.83
MA12: Mean monthly flow, January	87.88	88.53	0.74
MA13: Mean monthly flow, February	148.06	139.90	-5.51
MA14: Mean monthly flow, March	240.36	201.56	-16.14
MA15: Mean monthly flow, April	127.98	103.27	-19.30
MA16: Mean monthly flow, May	146.89	142.92	-2.70
MA17: Mean monthly flow, June	108.48	103.54	-4.55
MA18: Mean monthly flow, July	98.26	119.04	21.15
MA19: Mean monthly flow, August	57.81	73.05	26.36
MA20: Mean monthly flow, September	111.59	147.15	31.87
MA21: Mean monthly flow, October	32.99	47.94	45.30
MA22: Mean monthly flow, November	73.79	82.87	12.31
MA23: Mean monthly flow, December	99.55	119.05	19.59
ML1: Mean minimum monthly flow, January	95.00	92.93	-2.18
ML2: Mean minimum monthly flow, February	128.00	125.53	-1.93
ML3: Mean minimum monthly flow, March	159.25	129.41	-18.74
ML4: Mean minimum monthly flow, April	144.75	124.53	-13.97
ML5: Mean minimum monthly flow, May	106.60	96.51	-9.47
ML6: Mean minimum monthly flow, June	79.00	83.81	6.09
ML7: Mean minimum monthly flow, July	49.40	66.98	35.59
ML8: Mean minimum monthly flow, August	44.40	55.62	25.27
ML9: Mean minimum monthly flow, September	37.04	56.07	51.39
ML10: Mean minimum monthly flow, October	44.75	53.27	19.03
ML11: Mean minimum monthly flow, November	60.00	68.31	13.84
ML12: Mean minimum monthly flow, December	83.75	86.50	3.29
ML13: CV of minimum monthly flows	76.85	69.50	-9.56
ML14: Mean minimum daily flow / mean median annual flow	0.15	0.29	96.98
ML15: Mean minimum annual flow / mean annual flow	0.11	0.17	62.36
ML16: Median minimum annual flow / median annual flow	0.15	0.32	114.38
ML20: Ratio of baseflow volume to total flow volume	0.56	0.54	-3.66
ML22: Mean annual minimum flow divided by catchment area	28571.58	28571.68	0.00
RA1: Mean of positive changes from one day to next (rise rate)	102.35	107.10	
RA2: CV, mean of positive changes from one day to next (rise rate)	270.64	319.35	
RA3: Mean of negative changes from one day to next (fall rate)	43.98	36.58	
RA4: CV, mean of negative changes from one day to next (fall rate)	294.08	359.14	
RA5: Ratio of days that are higher than previous day	0.28	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.05	
RA8: Number of flow reversals from one day to the next	64.43	57.14	
RA9: CV, number of flow reversals from one day to the	84.57	85.94	

next			

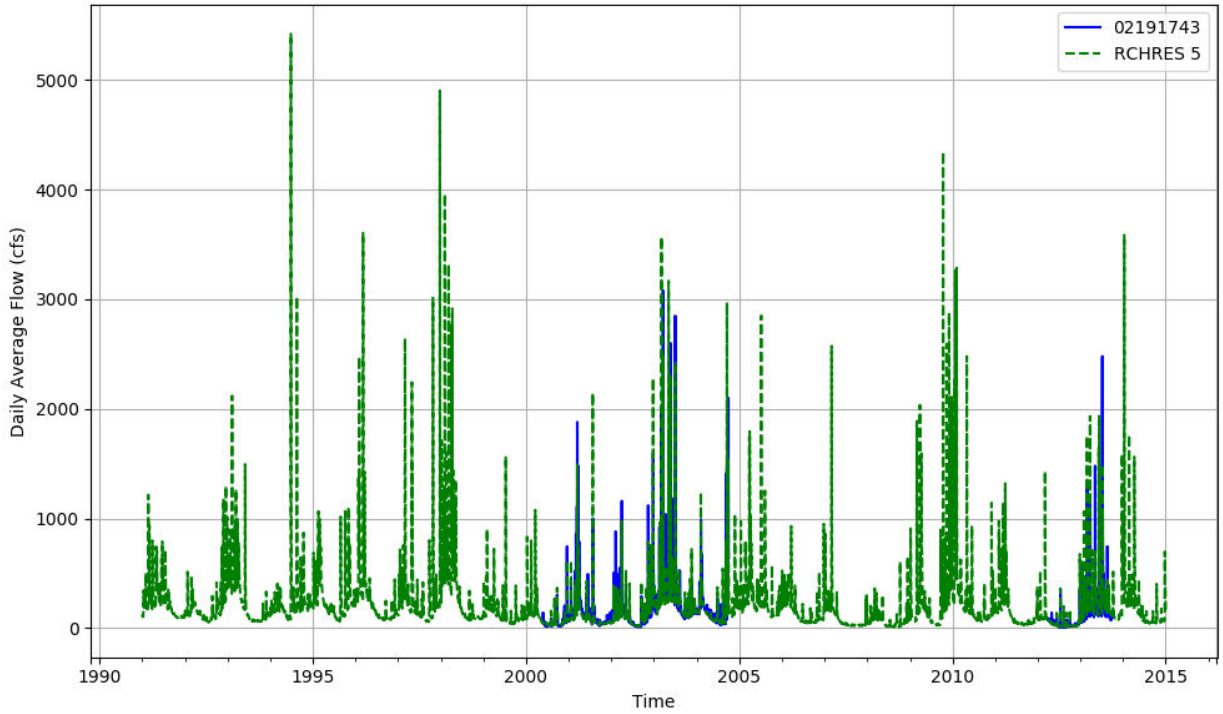


Figure T-03060104-4: Daily flow for HSFP reach 05 and USGS station 02191743.

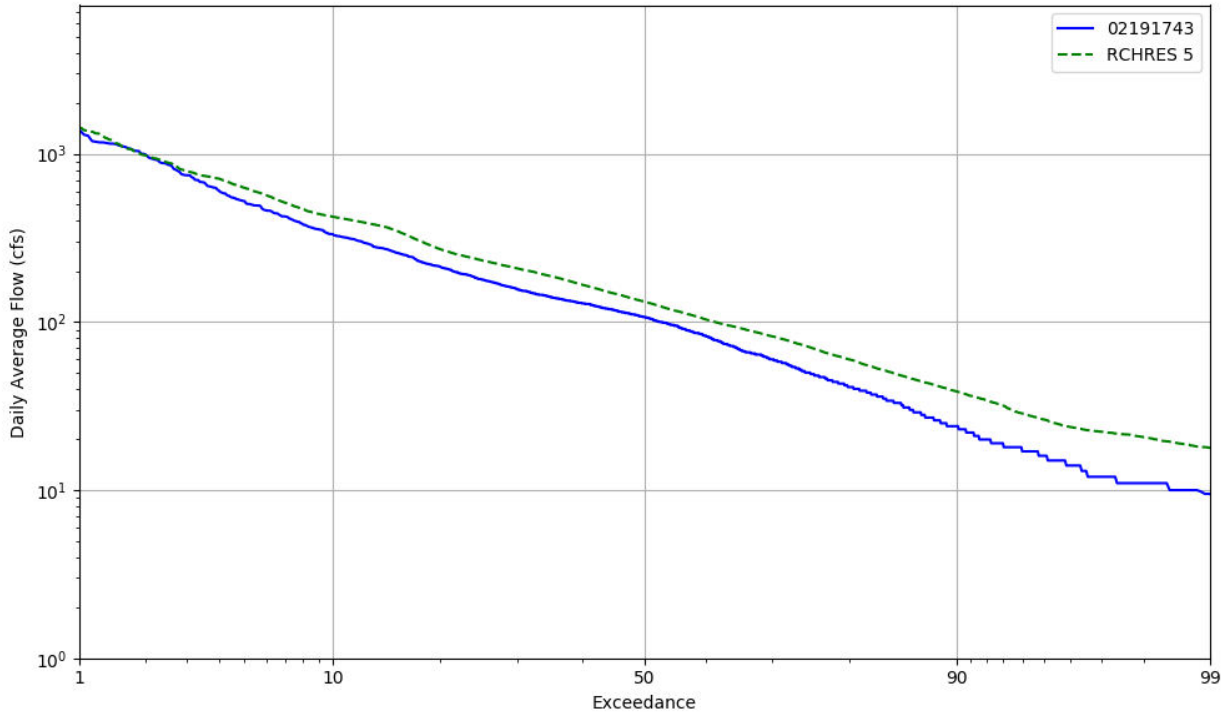


Figure T-03060104-5: Daily exceedance for HSFP reach 05 and USGS station 02191743.

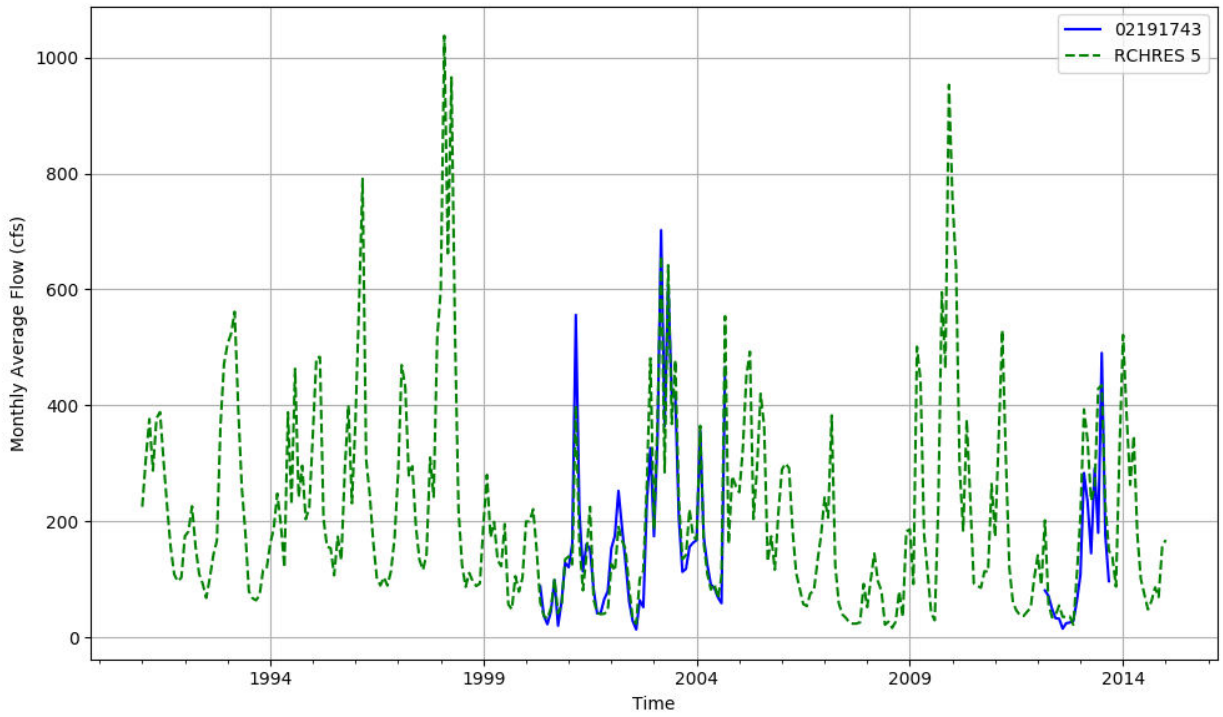


Figure T-03060104-6: Monthly flow for HSFP reach 05 and USGS station 02191743.

HSPF REACH 16, USGS GAUGE 02191300

Water-Data Report 2009
02191300 BROAD RIVER ABOVE CARLTON, GA
Savannah Basin Broad Subbasin

LOCATION.--Lat 340424, long 830012 referenced to North American Datum of 1983, Madison County, GA, Hydrologic Unit 03060104, at the bridge on Georgia Highway 72, 2.5 mi downstream of confluence with Holly Creek, 3.1 mi upstream from confluence with South Fork Broad River, and 2.0 mi northeast of Carlton.

DRAINAGE AREA.--760 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: July 1897 to December 1912, January 1913 to September 1997 (annual maximum discharge only), September 1997 to current year. Prior to January 1, 1918, published as "near Carlton" (02191500).
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR GA-1999, 2000: Annual mean.

GAGE.--Satellite telemetry with water-stage recorder. Datum of gage is 406.55 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment). Prior to January 1, 1918, a non-recording gage was located at Seaboard Coast Line Railway bridge about 0.75 miles downstream at datum 5.67 feet lower. From January 1, 1918 to September 1936, a non-recording gage was located at bridge 100 feet upstream at same datum. From October 1936 to April 1954, a non-recording gage was located at present site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records poor.

Table T-03060104-3: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02191300.

Statistic	Value
Bias	3.33
Standard error	223.04
Relative bias	0.00
Relative standard error	0.33
Nash-Sutcliffe coefficient	0.89
Coefficient of efficiency	0.70

Index of agreement	0.86

Table T-03060104-4: Hydrologic Indices Between USGS Gauge 02191300 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02191300	Simulated Reach 16	Percent Difference
MA1: Mean, all daily flows	820.03	821.13	0.13
MA2: Median, all daily flows	554.00	515.25	-6.99
MA3: CV, all daily flows	102.67	103.58	0.89
MA4: CV, log of all daily flows	75.84	85.19	12.34
MA5: Mean daily flow / median daily flow	1.48	1.59	7.66
MA9: (Q10 - Q90) / median daily flow	2.52	3.00	19.11
MA10: (Q20 - Q80) / median daily flow	1.59	1.72	8.35
MA11: (Q25 - Q75) / median daily flow	1.24	1.43	15.62
MA12: Mean monthly flow, January	1077.66	1114.63	3.43
MA13: Mean monthly flow, February	1181.73	1187.65	0.50
MA14: Mean monthly flow, March	1273.62	1296.27	1.78
MA15: Mean monthly flow, April	1026.27	1028.99	0.26
MA16: Mean monthly flow, May	747.47	729.66	-2.38
MA17: Mean monthly flow, June	605.13	616.77	1.92
MA18: Mean monthly flow, July	600.80	537.24	-10.58
MA19: Mean monthly flow, August	466.51	455.01	-2.46
MA20: Mean monthly flow, September	456.91	451.70	-1.14
MA21: Mean monthly flow, October	517.60	547.17	5.71
MA22: Mean monthly flow, November	585.80	564.67	-3.61
MA23: Mean monthly flow, December	970.09	1018.21	4.96
ML1: Mean minimum monthly flow, January	660.12	593.87	-10.04
ML2: Mean minimum monthly flow, February	704.31	690.53	-1.96
ML3: Mean minimum monthly flow, March	730.38	675.27	-7.55
ML4: Mean minimum monthly flow, April	676.12	584.48	-13.55
ML5: Mean minimum monthly flow, May	503.62	467.83	-7.11
ML6: Mean minimum monthly flow, June	383.69	358.73	-6.50
ML7: Mean minimum monthly flow, July	327.50	300.69	-8.19
ML8: Mean minimum monthly flow, August	283.19	281.34	-0.65
ML9: Mean minimum monthly flow, September	221.50	225.21	1.67
ML10: Mean minimum monthly flow, October	286.82	275.50	-3.95
ML11: Mean minimum monthly flow, November	336.35	331.86	-1.34
ML12: Mean minimum monthly flow, December	464.82	433.74	-6.69
ML13: CV of minimum monthly flows	71.36	71.51	0.21
ML14: Mean minimum daily flow / mean median annual flow	0.27	0.34	28.24
ML15: Mean minimum annual flow / mean annual flow	0.20	0.24	19.84
ML16: Median minimum annual flow / median annual flow	0.21	0.32	51.85
ML20: Ratio of baseflow volume to total flow volume	0.65	0.60	-7.97
ML22: Mean annual minimum flow divided by catchment area	1.72	1.92	12.03
RA1: Mean of positive changes from one day to next (rise rate)	359.26	380.19	
RA2: CV, mean of positive changes from one day to next (rise rate)	302.62	316.47	
RA3: Mean of negative changes from one day to next (fall rate)	147.62	128.55	
RA4: CV, mean of negative changes from one day to next (fall rate)	367.56	338.83	
RA5: Ratio of days that are higher than previous day	0.29	0.25	

RA6: Median of difference in log of flows over two consecutive days of rising	0.09	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	96.41	77.59	
RA9: CV, number of flow reversals from one day to the next	19.30	20.69	

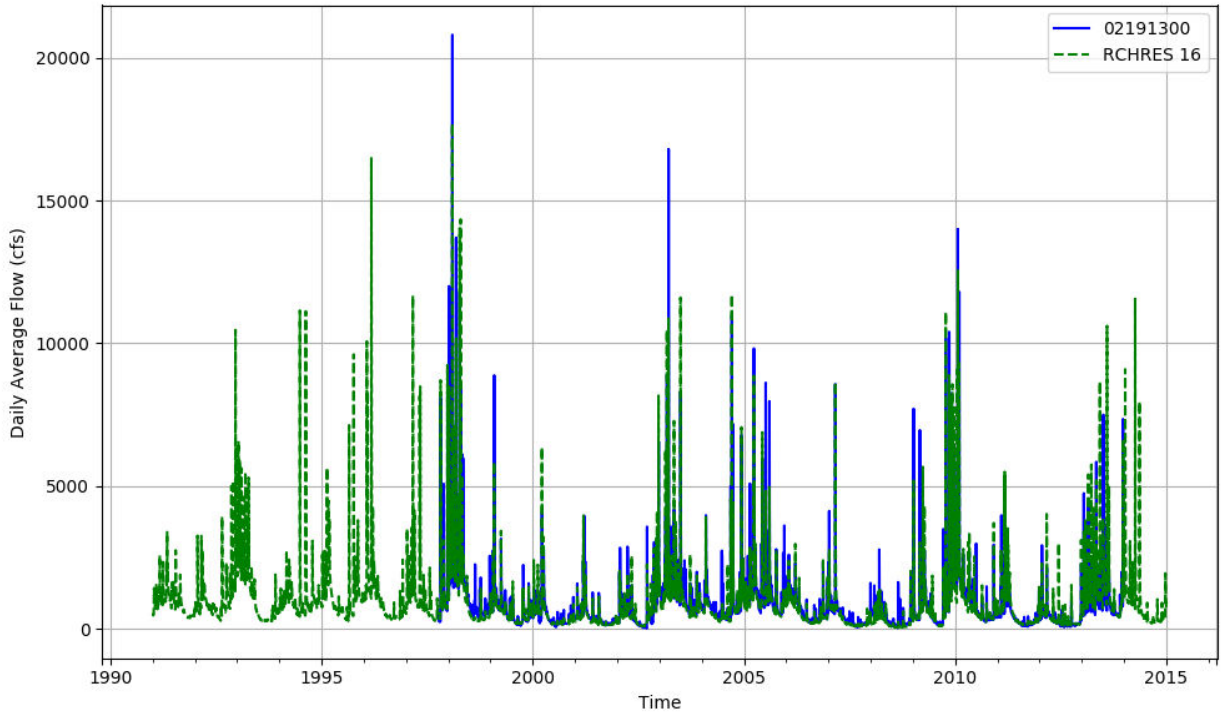


Figure T-03060104-7: Daily flow for HSFP reach 16 and USGS station 02191300.

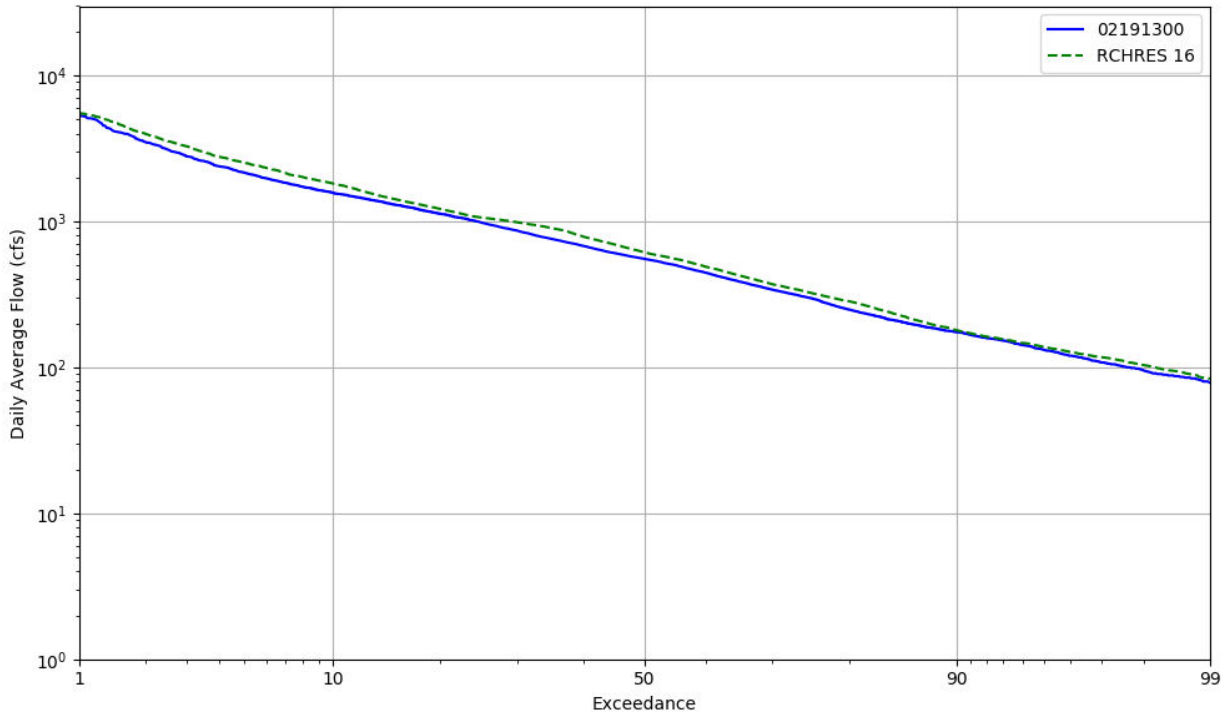


Figure T-03060104-8: Daily exceedance for HSFP reach 16 and USGS station 02191300.

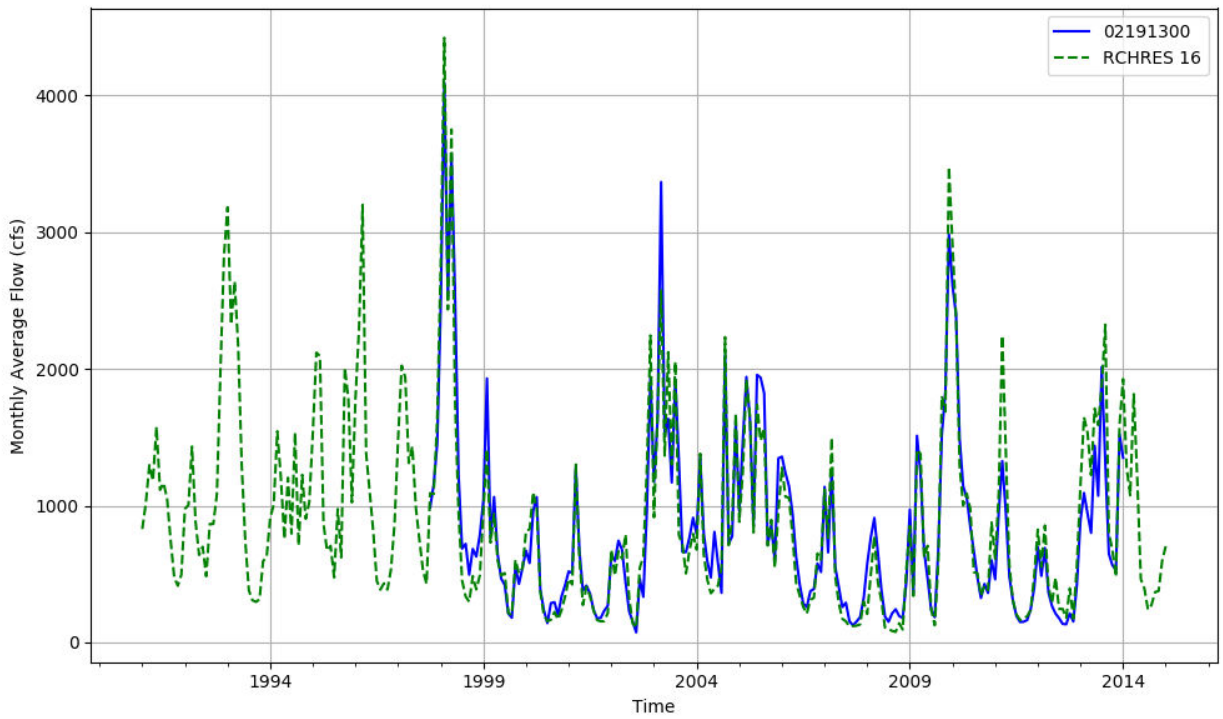


Figure T-03060104-9: Monthly flow for HSFP reach 16 and USGS station 02191300.

HSPF REACH 21, USGS GAUGE 02192000

Water-Data Report 2009
02192000 BROAD RIVER NEAR BELL, GA
Savannah Basin Broad Subbasin

LOCATION.--Lat 335827, long 824612 referenced to North American Datum of 1983, Elbert County, GA, Hydrologic Unit 03060104, at downstream side of main channel pier of bridge on State Highway 17, 0.5 mi downstream from confluence with Long Creek, 1.0 mi south of Bells Crossroads, and 12.0 mi southeast of Elberton.

DRAINAGE AREA.--1,430 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1926 to September 1932 (maximum annual discharge only), August 1937 to current year. Monthly discharge only for October 1926, August to September 1932, published in WSP 1303.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1172: 1928-30. WSP 1382: Drainage Area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 357.19 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to October 1928, a non-recording gage was located at a railroad bridge about 1.0 mile downstream at datum 1.12 feet lower. From October 1928 to July 1932, and August 1937 to January 1939, a non-recording gage was located at present site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good except for estimated discharges, which are poor. Gage-height records good. Records of chemical analsyses for the 1970-79 water years are in reports of the U.S. Geological Survey. Periods of monthly discharge only are not included in statistics computations.

Table T-03060104-5: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02192000.

Statistic	Value
Bias	-65.58
Standard error	347.87
Relative bias	-0.04

Relative standard error	0.28
Nash-Sutcliffe coefficient	0.92
Coefficient of efficiency	0.76
Index of agreement	0.88

Table T-03060104-6: Hydrologic Indices Between USGS Gauge 02192000 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02192000	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	1561.89	1494.33	-4.33
MA2: Median, all daily flows	1020.00	1023.39	0.33
MA3: CV, all daily flows	120.39	97.93	-18.66
MA4: CV, log of all daily flows	80.33	78.15	-2.71
MA5: Mean daily flow / median daily flow	1.53	1.46	-4.64
MA9: (Q10 - Q90) / median daily flow	2.63	2.61	-0.48
MA10: (Q20 - Q80) / median daily flow	1.49	1.51	0.92
MA11: (Q25 - Q75) / median daily flow	1.13	1.19	5.01
MA12: Mean monthly flow, January	2032.14	1971.80	-2.97
MA13: Mean monthly flow, February	2478.56	2234.08	-9.86
MA14: Mean monthly flow, March	2794.16	2528.75	-9.50
MA15: Mean monthly flow, April	1810.82	1798.59	-0.68
MA16: Mean monthly flow, May	1355.79	1378.79	1.70
MA17: Mean monthly flow, June	1146.80	1137.01	-0.85
MA18: Mean monthly flow, July	984.45	940.46	-4.47
MA19: Mean monthly flow, August	940.82	885.73	-5.86
MA20: Mean monthly flow, September	765.23	804.27	5.10
MA21: Mean monthly flow, October	959.70	989.22	3.08
MA22: Mean monthly flow, November	1192.26	1060.39	-11.06
MA23: Mean monthly flow, December	1676.32	1651.09	-1.50
ML1: Mean minimum monthly flow, January	1098.46	1107.78	0.85
ML2: Mean minimum monthly flow, February	1240.57	1282.32	3.37
ML3: Mean minimum monthly flow, March	1357.87	1328.29	-2.18
ML4: Mean minimum monthly flow, April	1173.09	1127.01	-3.93
ML5: Mean minimum monthly flow, May	830.87	880.45	5.97
ML6: Mean minimum monthly flow, June	648.78	696.62	7.37
ML7: Mean minimum monthly flow, July	497.96	565.65	13.59
ML8: Mean minimum monthly flow, August	441.78	513.91	16.33
ML9: Mean minimum monthly flow, September	380.57	469.56	23.38
ML10: Mean minimum monthly flow, October	469.39	530.47	13.01
ML11: Mean minimum monthly flow, November	616.13	644.51	4.61
ML12: Mean minimum monthly flow, December	840.52	852.50	1.42
ML13: CV of minimum monthly flows	66.04	68.20	3.28
ML14: Mean minimum daily flow / mean median annual flow	0.26	0.34	30.15
ML15: Mean minimum annual flow / mean annual flow	0.18	0.25	38.17
ML16: Median minimum annual flow / median annual flow	0.25	0.33	30.94
ML20: Ratio of baseflow volume to total flow volume	0.58	0.63	9.29
ML22: Mean annual minimum flow divided by catchment area	3.00	3.63	21.09
RA1: Mean of positive changes from one day to next (rise rate)	738.02	602.74	
RA2: CV, mean of positive changes from one day to next (rise rate)	248.84	324.19	
RA3: Mean of negative changes from one day to next (fall rate)	331.88	206.62	

RA4: CV, mean of negative changes from one day to next (fall rate)	322.53	336.34	
RA5: Ratio of days that are higher than previous day	0.30	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	92.42	74.46	
RA9: CV, number of flow reversals from one day to the next	15.79	19.80	

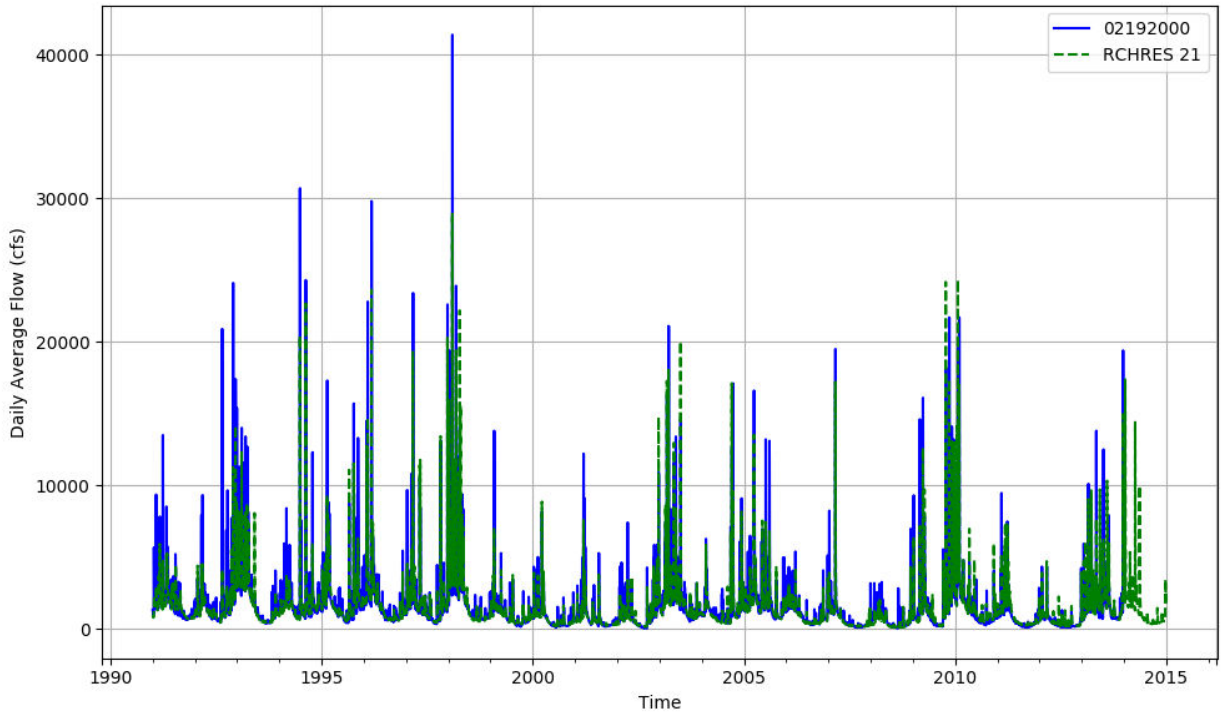


Figure T-03060104-10: Daily flow for HSFP reach 21 and USGS station 02192000.

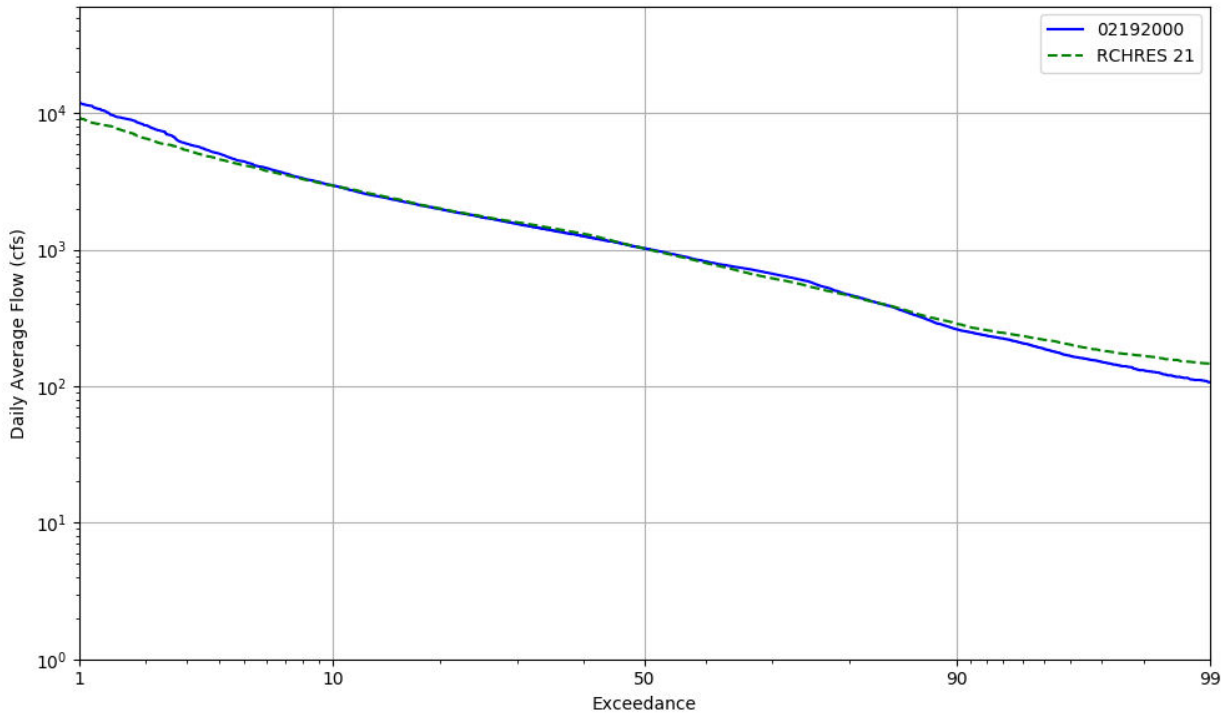


Figure T-03060104-11: Daily exceedance for HSFP reach 21 and USGS station 02192000.

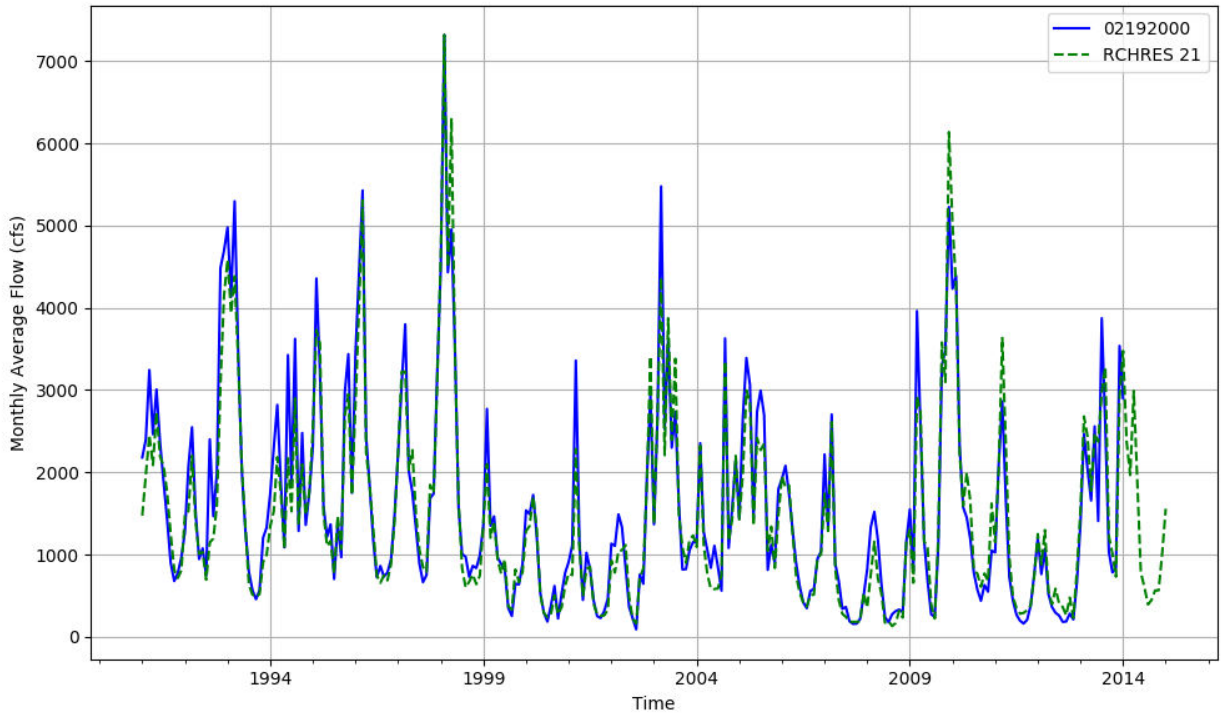


Figure T-03060104-12: Monthly flow for HSFP reach 21 and USGS station 02192000.

Table T-03060104-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6892	50304	13417	2792	410	12084	513803	4372	101883	214866	635	34576	503	245	21	956802
AREA(%)	0.7	5.2	1.4	0.3	0.0	1.3	53.4	0.5	10.6	22.3	0.1	3.6	0.1	0.0	0.0	99.5
IMPERVIOUS																
AREA(ACRES)		2665	1493	699	410											5266
AREA(%)		0.3	0.2	0.1	0.0											0.5
SUPY	36.1	36.6	37.1	37.2	37.1	35.9	36.5	36.0	36.4	36.7	36.0	36.5	56.2	48.0	36.9	36.4
SURLI			4.1	4.1	4.3											0.1
UZLI																0.0
LZLI			1.4	1.3	1.2										48.6	0.0
SURO: PERVIOUS		1.9	2.3	2.2	2.1	1.5	0.2	1.5	1.0	1.0	0.4		3.7	2.0	0.9	0.6
SURO: IMPERVIOUS		21.5	21.8	21.8	21.7											0.1
SURO: COMBINED		2.9	4.2	6.1	11.9	1.5	0.2	1.5	1.0	1.0	0.4		3.7	2.0	0.9	0.7
IFWO		3.4	4.0	3.9	3.8	3.8	1.0	3.6	2.6	2.7	2.0		6.5	5.7	4.4	1.7
AGWO	6.0	3.8	7.0	7.1	6.6	8.0	3.6	7.5	4.9	5.1	5.1	6.4	11.7	10.8	44.7	4.3
AGWI	10.3	7.0	10.0	10.1	9.4	11.4	7.1	10.8	8.3	8.3	8.9	9.7	13.7	13.4	50.3	7.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
CEPE		6.6	6.7	6.7	9.5	4.4	9.8	6.6	6.6	6.7	5.2	16.0	19.1	7.5	5.3	8.6
UZET	3.3	3.2	3.6	3.6	3.0	3.7	2.1	3.5	3.0	2.9	3.1	2.2	3.3	4.2	4.8	2.5
LZET	1.0	17.0	17.8	17.8	16.4	13.0	19.8	12.1	17.6	17.7	20.0	1.9	11.3	17.8	21.6	17.9
AGWET	4.2	3.1	3.1	3.0	2.8	3.4	2.9	3.1	3.2	3.2	3.3	3.6	1.8	2.9	3.1	3.0
BASET	0.6	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.6	0.9	0.9	0.9	0.9
SURET	23.1											7.8				0.4
PERO	6.0	9.1	13.3	13.2	12.5	13.4	4.8	12.6	8.5	8.8	7.5	6.4	21.9	18.5	50.1	6.6
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TAET: PERVIOUS	32.2	30.8	32.0	32.0	32.6	25.3	35.6	26.3	31.3	31.3	32.5	32.0	36.4	33.3	35.7	33.3
IMPEV: IMPERVIOUS		15.3	15.4	15.5	15.6											0.1
ET: COMBINED	32.2	30.0	30.4	28.7	24.1	25.3	35.6	26.3	31.3	31.3	32.5	32.0	36.4	33.3	35.7	33.4
PET	42.3	42.1	41.8	41.7	41.7	42.5	42.2	42.4	42.2	42.0	42.5	42.2	41.8	41.8	41.9	41.9

Table T-03060104-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6892	50304	13417	2792	410	12084	513803	4372	101883	214866	635	34576	503	245	21	956802
AREA(%)	0.7	5.2	1.4	0.3	0.0	1.3	53.4	0.5	10.6	22.3	0.1	3.6	0.1	0.0	0.0	99.5
IMPERVIOUS																
AREA(ACRES)		2665	1493	699	410											5266
AREA(%)		0.3	0.2	0.1	0.0											0.5
SUPY	64.8	66.2	66.5	66.7	66.6	65.3	66.1	65.8	66.0	66.1	66.0	66.1	78.9	79.1	66.4	65.7
SURLI			5.1	5.3	5.4											0.1
UZLI																0.0
LZLI			1.4	1.3	1.2										16.4	0.0
SURO: PERVIOUS	5.5	7.2	7.8	7.7	7.4	5.5	1.3	5.4	4.5	4.2	2.3	4.5	9.1	5.7	2.7	2.9
SURO: IMPERVIOUS		47.3	47.6	47.7	47.6											0.3
SURO: COMBINED	5.5	9.2	11.8	15.7	27.5	5.5	1.3	5.4	4.5	4.2	2.3	4.5	9.1	5.7	2.7	3.2
IFWO		12.1	13.2	13.2	13.2	12.2	6.3	12.1	10.3	10.7	9.2		14.7	14.1	11.0	8.0
AGWO	9.2	6.5	11.4	11.6	11.0	12.7	7.9	12.0	9.0	9.0	10.0	11.5	12.1	15.6	24.7	8.4
AGWI	12.7	16.0	20.4	20.6	19.7	22.1	19.9	21.1	19.3	19.4	21.2	14.2	20.2	23.8	33.3	19.2
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		9.2	9.3	9.3	12.6	6.2	13.1	9.2	9.2	9.2	7.4	19.5	16.6	10.3	7.5	11.5
UZET	2.7	4.1	4.3	4.3	3.5	5.0	3.2	4.7	4.2	3.8	4.8	0.9	3.6	5.4	5.5	3.4
LZET	0.7	16.0	16.8	16.7	15.2	12.8	18.5	11.7	16.7	16.7	19.0	1.1	13.1	18.0	20.8	16.8
AGWET	2.5	3.3	3.2	3.2	3.0	3.6	3.0	3.3	3.3	3.3	3.5	1.9	2.6	3.1	3.3	3.1
BASET	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.7	1.0	1.0	1.0	1.0
SURET	34.1											15.7				0.8
PERO	14.7	25.8	32.3	32.5	31.6	30.4	15.5	29.5	23.7	23.9	21.5	16.0	35.9	35.3	38.5	19.3
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	40.7	33.6	34.6	34.6	35.3	28.6	38.8	29.9	34.3	34.0	35.7	39.8	36.9	37.8	38.1	36.6
IMPEV: IMPERVIOUS		18.7	18.8	18.9	18.9											0.1
ET: COMBINED	40.7	32.8	33.0	31.4	27.1	28.6	38.8	29.9	34.3	34.0	35.7	39.8	36.9	37.8	38.1	36.7
PET	47.6	47.4	46.9	46.7	46.6	47.9	47.5	47.8	47.5	47.2	47.9	47.6	46.9	47.4	47.1	47.1

Table T-03060104-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6892	50304	13417	2792	410	12084	513803	4372	101883	214866	635	34576	503	245	21	956802
AREA(%)	0.7	5.2	1.4	0.3	0.0	1.3	53.4	0.5	10.6	22.3	0.1	3.6	0.1	0.0	0.0	99.5
IMPERVIOUS																
AREA(ACRES)		2665	1493	699	410											5266
AREA(%)		0.3	0.2	0.1	0.0											0.5
SUPY	45.6	46.6	47.3	47.5	47.5	45.5	46.4	45.6	46.2	46.7	45.7	46.2	66.4	54.9	46.4	46.2
SURLI			5.0	5.2	5.3											0.1
UZLI																0.0
LZLI			1.4	1.3	1.2										18.2	0.0
SURO: PERVIOUS	7.2	4.0	4.6	4.6	4.5	3.0	0.8	2.9	2.4	2.4	1.1	6.7	6.4	2.9	1.6	1.8
SURO: IMPERVIOUS		30.3	30.9	31.2	31.1											0.2
SURO: COMBINED	7.2	5.3	7.3	9.9	17.8	3.0	0.8	2.9	2.4	2.4	1.1	6.7	6.4	2.9	1.6	2.0
IFWO		6.7	7.7	7.8	7.9	7.1	3.8	6.9	5.6	6.1	4.6		10.3	7.7	6.3	4.6
AGWO	9.4	7.7	12.0	12.3	11.7	13.0	11.0	12.4	10.2	10.3	11.4	11.1	14.8	14.7	25.1	10.6
AGWI	12.1	9.9	14.2	14.4	13.6	15.2	12.3	14.4	12.1	12.2	13.1	13.6	17.2	15.9	27.2	12.2
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		7.7	7.8	7.9	10.8	5.1	11.1	7.6	7.7	7.7	6.0	17.2	18.6	8.2	6.1	9.7
UZET	1.4	3.5	3.7	3.7	3.0	4.3	2.6	4.1	3.4	3.2	3.9	1.2	3.2	4.3	4.5	2.8
LZET	0.3	16.8	17.5	17.5	16.1	12.7	19.8	11.8	17.5	17.6	19.9	0.9	11.8	18.1	21.1	17.8
AGWET	1.9	3.1	3.1	3.0	2.8	3.3	2.9	3.1	3.1	3.1	3.3	1.8	2.0	3.0	3.2	2.9
BASET	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
SURET	35.8											18.6				0.9
PERO	16.5	18.3	24.4	24.7	24.1	23.1	15.6	22.2	18.2	18.8	17.1	17.7	31.5	25.3	32.9	17.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	40.3	32.1	33.0	33.1	33.7	26.4	37.2	27.5	32.6	32.5	33.9	40.6	36.6	34.5	35.8	35.1
IMPEV: IMPERVIOUS		16.4	16.4	16.5	16.5											0.1
ET: COMBINED	40.3	31.3	31.4	29.7	25.1	26.4	37.2	27.5	32.6	32.5	33.9	40.6	36.6	34.5	35.8	35.2
PET	43.5	43.3	43.1	43.0	42.9	43.5	43.3	43.5	43.4	43.2	43.6	43.4	43.1	43.2	43.2	43.1

Table T-03060104-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6892	50304	13417	2792	410	12084	513803	4372	101883	214866	635	34576	503	245	21	956802
AREA(%)	0.7	5.2	1.4	0.3	0.0	1.3	53.4	0.5	10.6	22.3	0.1	3.6	0.1	0.0	0.0	99.5
IMPERVIOUS																
AREA(ACRES)		2665	1493	699	410											5266
AREA(%)		0.3	0.2	0.1	0.0											0.5
SUPY	47.3	48.2	49.1	49.4	49.6	47.0	47.9	47.1	47.8	48.4	47.0	47.7	60.3	64.6	48.5	47.8
SURLI			3.9	4.0	4.1											0.1
UZLI																0.0
LZLI			1.3	1.2	1.1										91.8	0.0
SURO: PERVIOUS	3.5	3.2	3.8	3.8	3.7	2.5	0.5	2.4	1.9	1.8	0.8	2.6	4.6	6.9	1.5	1.3
SURO: IMPERVIOUS		31.5	32.3	32.6	32.8											0.2
SURO: COMBINED	3.5	4.7	6.6	9.6	18.2	2.5	0.5	2.4	1.9	1.8	0.8	2.6	4.6	6.9	1.5	1.4
IFWO		6.0	7.0	7.1	7.2	6.0	2.6	5.9	4.6	5.1	3.5		8.5	9.5	6.4	3.6
AGWO	8.0	7.3	11.0	11.1	10.8	11.9	8.8	11.2	9.1	9.5	9.5	9.4	12.4	13.5	95.9	9.0
AGWI	11.4	11.5	15.1	15.3	14.7	16.5	12.8	15.6	13.4	13.7	13.9	12.3	15.9	17.6	100.2	13.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
CEPE		8.0	8.1	8.1	11.1	5.4	11.5	8.0	8.0	8.0	6.4	17.4	14.9	8.7	6.5	10.1
UZET	2.3	3.5	3.8	3.8	3.1	4.2	2.4	4.0	3.4	3.2	3.7	1.4	3.4	4.5	4.9	2.7
LZET	0.7	15.9	16.5	16.5	15.0	12.3	18.2	11.3	16.5	16.5	18.7	1.3	12.9	17.3	20.6	16.5
AGWET	2.7	3.1	3.0	3.0	2.7	3.3	2.8	3.0	3.1	3.1	3.2	2.1	2.3	2.9	3.0	2.9
BASET	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.9	0.9	0.9	0.9
SURET	29.8											13.2				0.7
PERO	11.5	16.6	21.7	22.0	21.6	20.4	11.9	19.5	15.6	16.4	13.8	12.1	25.6	29.9	103.8	13.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TAET: PERVIOUS	36.2	31.3	32.3	32.3	32.9	26.1	35.7	27.2	31.8	31.7	33.0	36.0	34.5	34.3	36.0	33.8
IMPEV: IMPERVIOUS		16.7	16.8	16.8	16.8											0.1
ET: COMBINED	36.2	30.6	30.7	29.2	24.8	26.1	35.7	27.2	31.8	31.7	33.0	36.0	34.5	34.3	36.0	33.9
PET	43.1	42.9	42.6	42.4	42.3	43.3	43.0	43.3	43.1	42.8	43.4	43.1	42.5	43.0	42.8	42.7

Table T-03060104-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
2	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
3	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
4	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
5	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
6	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
7	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
8	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
9	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
10	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
11	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
12	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
13	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
14	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
15	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
16	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
17	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
18	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
19	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
20	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
21	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
22	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03060104-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
2	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
3	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
4	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
5	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
6	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
7	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
8	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
9	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
10	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
11	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
12	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
13	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
14	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
15	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
16	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
17	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
18	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
19	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
20	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
21	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
22	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021

Table T-03060104-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
2	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
3	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
4	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
5	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
6	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
7	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
8	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
9	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
10	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
11	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
12	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
13	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
14	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
15	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
16	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
17	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
18	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
19	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
20	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
21	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
22	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300

Table T-03060104-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060104-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
2	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
3	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
4	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
5	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
6	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
7	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
8	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
9	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
10	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
11	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
12	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
13	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
14	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
15	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
16	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
17	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
18	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
19	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
20	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
21	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009
22	0.009	0.100	0.100	0.100	0.100	0.142	0.213	0.142	0.142	0.142	0.171	0.009

Table T-03060104-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
2		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
3		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
4		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
5		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
6		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
7		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
8		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
9		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
10		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
11		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
12		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
13		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
14		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
15		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
16		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
17		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
18		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
19		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
20		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
21		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	
22		1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	1.419	

Table T-03060104-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03060104-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
2	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
3	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
4	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
5	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
6	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
7	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
8	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
9	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
10	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
11	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
12	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
13	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
14	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
15	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
16	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
17	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
18	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
19	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
20	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
21	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
22	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675

Table T-03060104-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
2	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
3	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
4	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
5	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
6	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
7	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
8	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
9	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
10	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
11	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
12	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
13	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
14	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
15	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
16	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
17	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
18	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
19	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
20	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
21	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
22	0.099	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900

Table T-03060104-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
2	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
3	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
4	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
5	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
6	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
7	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
8	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
9	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
10	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
11	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
12	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
13	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
14	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
15	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
16	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
17	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
18	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
19	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
20	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
21	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178
22	0.088	6.114	6.114	6.114	6.114	6.877	9.170	6.877	6.877	6.877	7.642	0.178

Table T-03060104-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.087

APPENDIX T-03060105

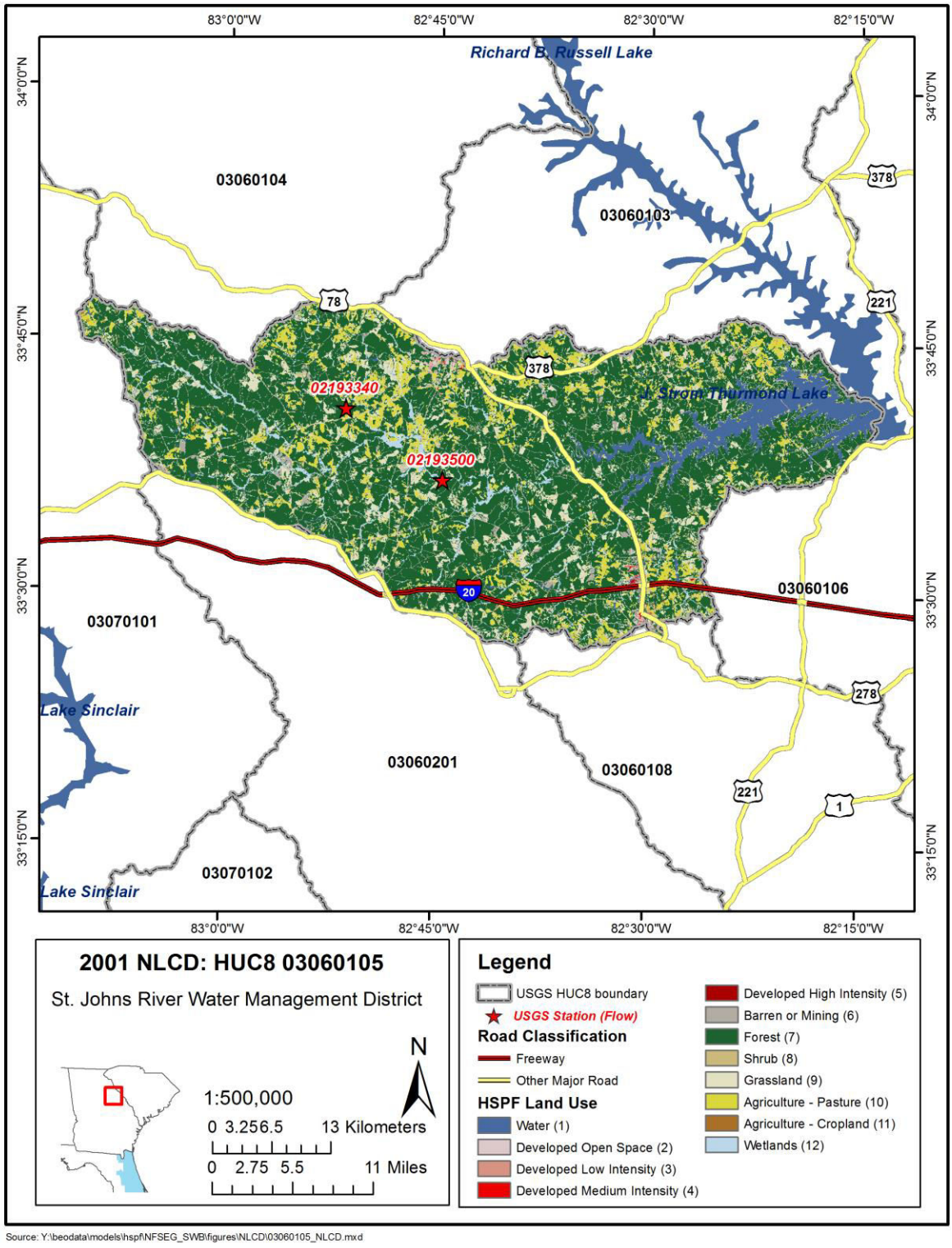


Figure T-03060105-1: Land Cover from the National Land Cover Database.

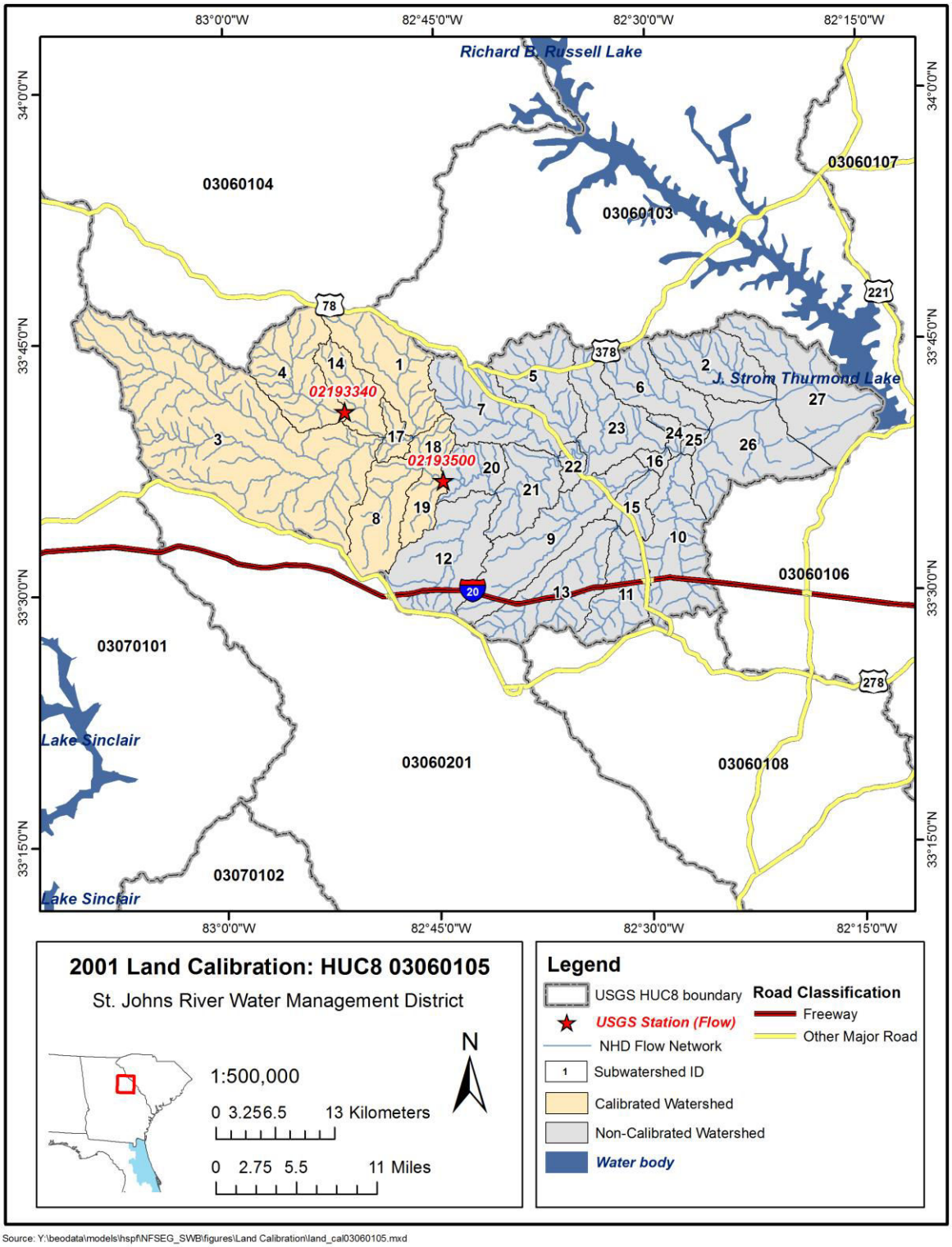


Figure T-03060105-2: Calibrated sub-watersheds.

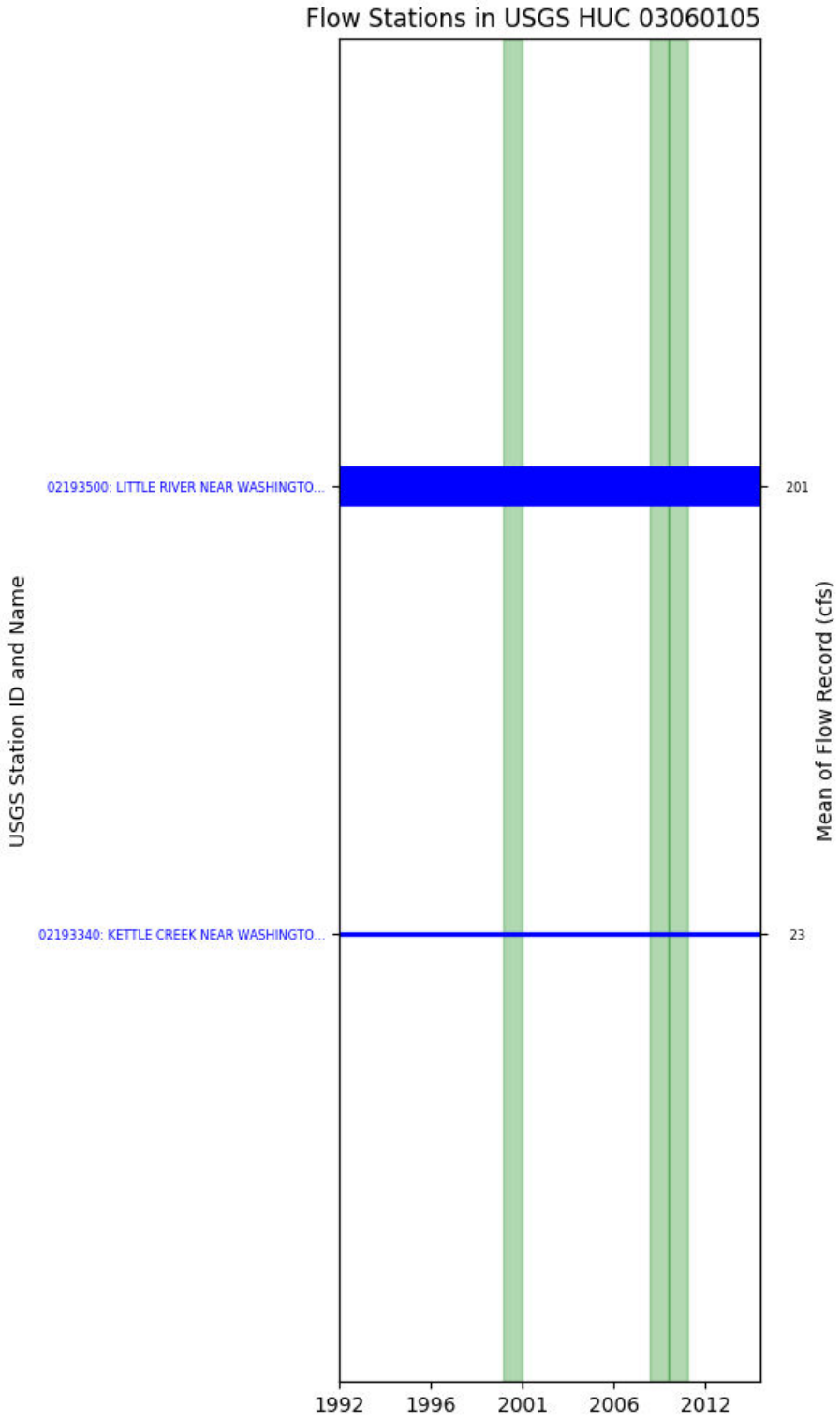


Figure T-03060105-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 04, USGS GAUGE 02193340

Water-Data Report 2009
02193340 KETTLE CREEK NEAR WASHINGTON, GA
Savannah Basin Little Subbasin

LOCATION.--Lat 334057, long 825129 referenced to North American Datum of 1927, Wilkes County, GA, Hydrologic Unit 03060105, on right bank, 300.0 feet upstream from County Road 68, 1.3 miles upstream from Little Kettle Creek, and 7.8 miles southwest of Washington, GA.

DRAINAGE AREA.--33.9 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1986 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR GA-03-01: 2002(M).

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 416.06 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair, except for periods of estimated discharge which are poor. Gage-height records fair.

Table T-03060105-1: Comparison Statistics Between HSPF Reach 04 and USGS Gauge 02193340.

Statistic	Value
Bias	0.35
Standard error	11.86
Relative bias	0.01
Relative standard error	0.43
Nash-Sutcliffe coefficient	0.82
Coefficient of efficiency	0.65
Index of agreement	0.83

Table T-03060105-2: Hydrologic Indices Between USGS Gauge 02193340 and HSPF Reach 04.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02193340	Simulated Reach 04	Percent Difference

MA1: Mean, all daily flows	24.14	24.36	0.91
MA2: Median, all daily flows	8.70	6.77	-22.19
MA3: CV, all daily flows	295.09	274.59	-6.95
MA4: CV, log of all daily flows	119.12	139.66	17.24
MA5: Mean daily flow / median daily flow	2.77	3.60	29.69
MA9: (Q10 - Q90) / median daily flow	4.61	7.49	62.55
MA10: (Q20 - Q80) / median daily flow	2.49	3.16	26.85
MA11: (Q25 - Q75) / median daily flow	1.83	2.33	27.27
MA12: Mean monthly flow, January	29.82	33.62	12.74
MA13: Mean monthly flow, February	50.63	48.52	-4.17
MA14: Mean monthly flow, March	53.03	51.35	-3.16
MA15: Mean monthly flow, April	25.44	24.67	-3.01
MA16: Mean monthly flow, May	17.69	18.07	2.15
MA17: Mean monthly flow, June	13.84	13.35	-3.57
MA18: Mean monthly flow, July	12.17	12.20	0.19
MA19: Mean monthly flow, August	12.59	11.42	-9.29
MA20: Mean monthly flow, September	12.81	13.71	7.04
MA21: Mean monthly flow, October	10.64	11.72	10.18
MA22: Mean monthly flow, November	16.55	15.63	-5.55
MA23: Mean monthly flow, December	25.02	30.05	20.10
ML1: Mean minimum monthly flow, January	10.03	11.12	10.91
ML2: Mean minimum monthly flow, February	12.89	11.88	-7.83
ML3: Mean minimum monthly flow, March	14.13	11.81	-16.40
ML4: Mean minimum monthly flow, April	10.90	8.45	-22.49
ML5: Mean minimum monthly flow, May	6.12	5.61	-8.39
ML6: Mean minimum monthly flow, June	4.33	3.82	-11.80
ML7: Mean minimum monthly flow, July	3.39	3.20	-5.62
ML8: Mean minimum monthly flow, August	2.61	2.91	11.47
ML9: Mean minimum monthly flow, September	2.39	2.44	1.97
ML10: Mean minimum monthly flow, October	3.26	2.79	-14.42
ML11: Mean minimum monthly flow, November	5.08	4.06	-19.98
ML12: Mean minimum monthly flow, December	7.10	6.70	-5.66
ML13: CV of minimum monthly flows	97.12	117.66	21.14
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.17	41.34
ML15: Mean minimum annual flow / mean annual flow	0.05	0.06	18.75
ML16: Median minimum annual flow / median annual flow	0.08	0.16	108.49
ML20: Ratio of baseflow volume to total flow volume	0.34	0.30	-11.25
ML22: Mean annual minimum flow divided by catchment area	0.01	0.02	15.85
RA1: Mean of positive changes from one day to next (rise rate)	35.66	34.29	
RA2: CV, mean of positive changes from one day to next (rise rate)	350.81	349.94	
RA3: Mean of negative changes from one day to next (fall rate)	15.11	12.79	
RA4: CV, mean of negative changes from one day to next (fall rate)	500.52	505.32	
RA5: Ratio of days that are higher than previous day	0.26	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.10	
RA8: Number of flow reversals from one day to the next	102.46	109.08	
RA9: CV, number of flow reversals from one day to the	18.38	19.44	

next			

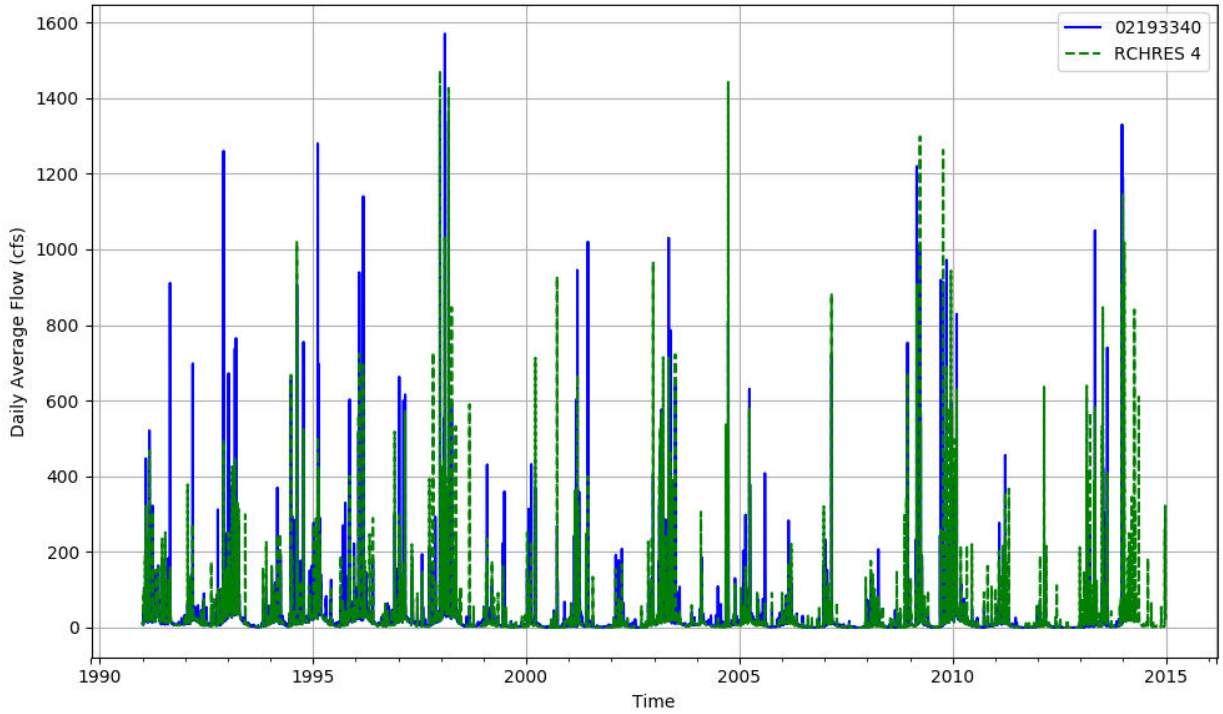


Figure T-03060105-4: Daily flow for HSFP reach 04 and USGS station 02193340.

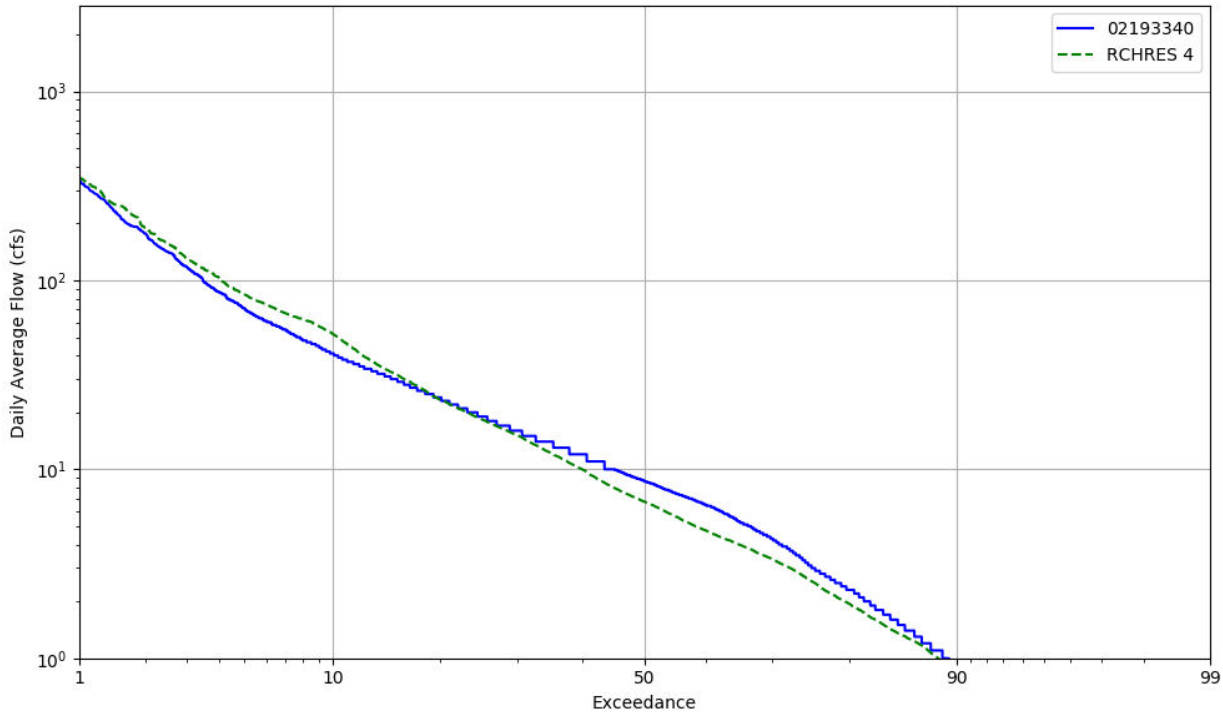


Figure T-03060105-5: Daily exceedance for HSFP reach 04 and USGS station 02193340.

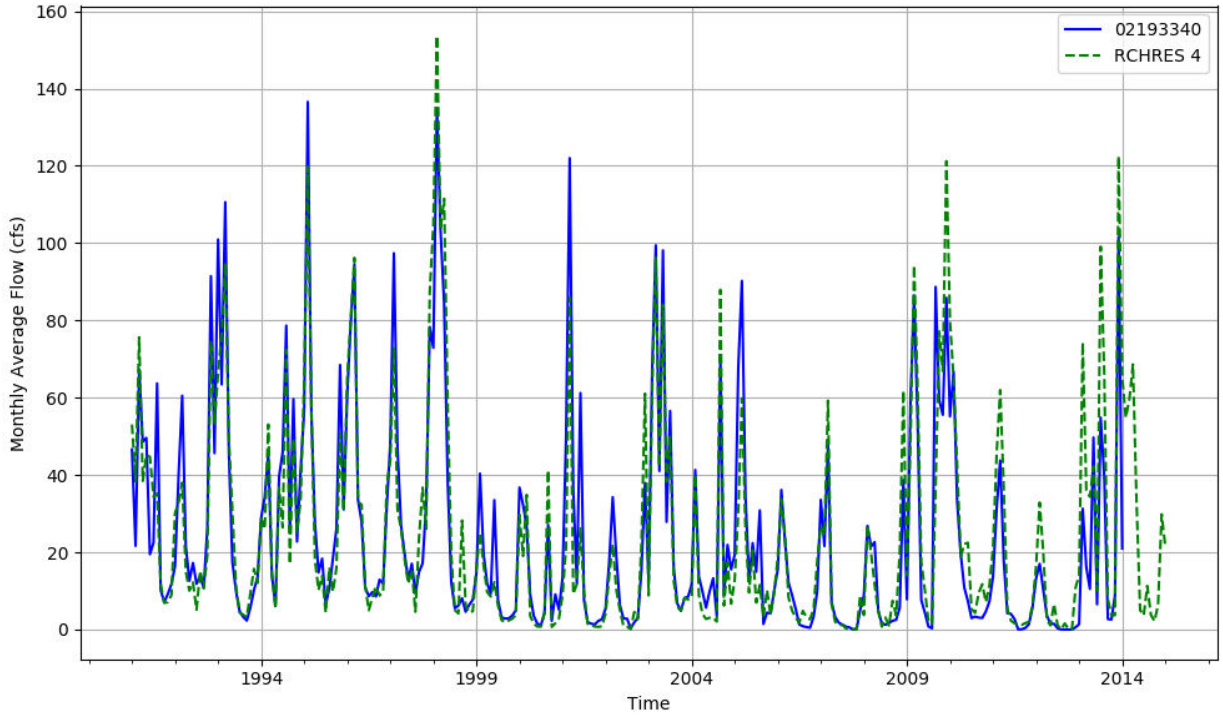


Figure T-03060105-6: Monthly flow for HSFP reach 04 and USGS station 02193340.

HSPF REACH 20, USGS GAUGE 02193500

Water-Data Report 2009
02193500 LITTLE RIVER NEAR WASHINGTON, GA
Savannah Basin Little Subbasin

LOCATION.--Lat 333646, long 824433 referenced to North American Datum of 1983, Wilkes County, GA, Hydrologic Unit 03060105, on left bank on downstream side of county bridge pier, 700 feet downstream from Reedy Creek, 4.0 miles downstream from Georgia Railway bridge, 6.0 miles upstream from Williams Creek, and 9.0 miles south of Washington, GA.

DRAINAGE AREA.--292 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1949 to June 1971, May 1989 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1383: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 353.88 feet above National Geodetic Vertical Datum (NGVD) of 1929. From October 1, 1949 to June 23, 1971, a recording gage was located at the same site and approximately the same datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge which are poor. Gage-height records good.

Table T-03060105-3: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02193500.

Statistic	Value
Bias	8.68
Standard error	98.65
Relative bias	0.04
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85
Coefficient of efficiency	0.70
Index of agreement	0.85

Table T-03060105-4: Hydrologic Indices Between USGS Gauge 02193500 and HSPF Reach 20.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02193500	Simulated Reach 20	Percent Difference
MA1: Mean, all daily flows	206.61	215.49	4.30
MA2: Median, all daily flows	68.00	63.28	-6.94
MA3: CV, all daily flows	239.03	257.75	7.83
MA4: CV, log of all daily flows	143.41	137.26	-4.29
MA5: Mean daily flow / median daily flow	3.04	3.41	12.07
MA9: (Q10 - Q90) / median daily flow	5.85	7.58	29.57
MA10: (Q20 - Q80) / median daily flow	2.81	3.34	18.92
MA11: (Q25 - Q75) / median daily flow	2.09	2.38	14.18
MA12: Mean monthly flow, January	286.82	294.57	2.70
MA13: Mean monthly flow, February	434.75	429.28	-1.26
MA14: Mean monthly flow, March	473.71	457.59	-3.40
MA15: Mean monthly flow, April	218.15	223.82	2.60
MA16: Mean monthly flow, May	151.45	164.22	8.43
MA17: Mean monthly flow, June	113.08	114.96	1.66
MA18: Mean monthly flow, July	95.27	103.95	9.11
MA19: Mean monthly flow, August	92.35	95.07	2.95
MA20: Mean monthly flow, September	104.20	130.69	25.43
MA21: Mean monthly flow, October	85.01	105.23	23.78
MA22: Mean monthly flow, November	143.99	133.83	-7.05
MA23: Mean monthly flow, December	218.19	263.97	20.98
ML1: Mean minimum monthly flow, January	106.17	103.61	-2.41
ML2: Mean minimum monthly flow, February	110.74	109.17	-1.42
ML3: Mean minimum monthly flow, March	118.09	110.06	-6.80
ML4: Mean minimum monthly flow, April	78.87	77.60	-1.61
ML5: Mean minimum monthly flow, May	44.80	51.96	15.96
ML6: Mean minimum monthly flow, June	28.90	35.04	21.25
ML7: Mean minimum monthly flow, July	22.29	29.10	30.55
ML8: Mean minimum monthly flow, August	18.06	25.56	41.51
ML9: Mean minimum monthly flow, September	14.36	21.71	51.20
ML10: Mean minimum monthly flow, October	22.16	25.61	15.60
ML11: Mean minimum monthly flow, November	39.06	37.50	-3.98
ML12: Mean minimum monthly flow, December	61.58	61.03	-0.90
ML13: CV of minimum monthly flows	116.30	119.32	2.60
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.18	83.77
ML15: Mean minimum annual flow / mean annual flow	0.04	0.06	82.88
ML16: Median minimum annual flow / median annual flow	0.04	0.14	250.32
ML20: Ratio of baseflow volume to total flow volume	0.32	0.31	-2.68
ML22: Mean annual minimum flow divided by catchment area	0.09	0.15	79.87
RA1: Mean of positive changes from one day to next (rise rate)	192.44	281.38	
RA2: CV, mean of positive changes from one day to next (rise rate)	308.82	355.99	
RA3: Mean of negative changes from one day to next (fall rate)	78.14	98.75	
RA4: CV, mean of negative changes from one day to next (fall rate)	393.22	528.64	
RA5: Ratio of days that are higher than previous day	0.27	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.24	0.11	

RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.09	
RA8: Number of flow reversals from one day to the next	89.54	94.58	
RA9: CV, number of flow reversals from one day to the next	18.10	18.93	

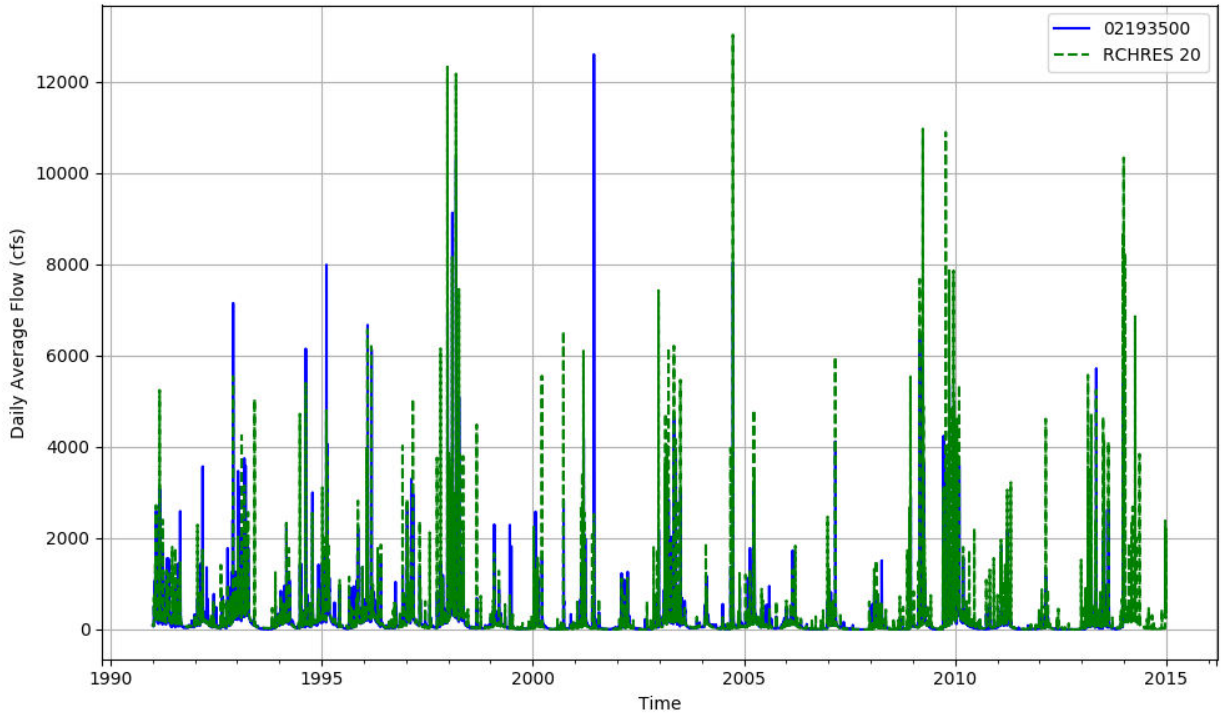


Figure T-03060105-7: Daily flow for HSFP reach 20 and USGS station 02193500.

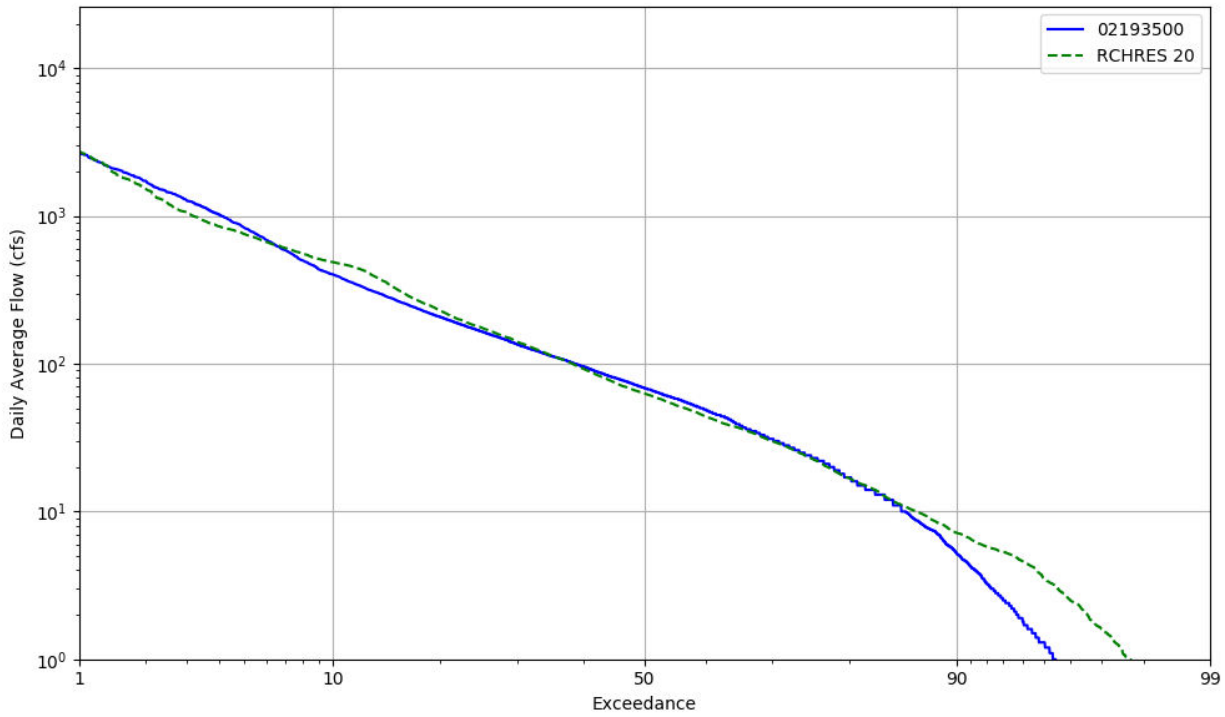


Figure T-03060105-8: Daily exceedance for HSFP reach 20 and USGS station 02193500.

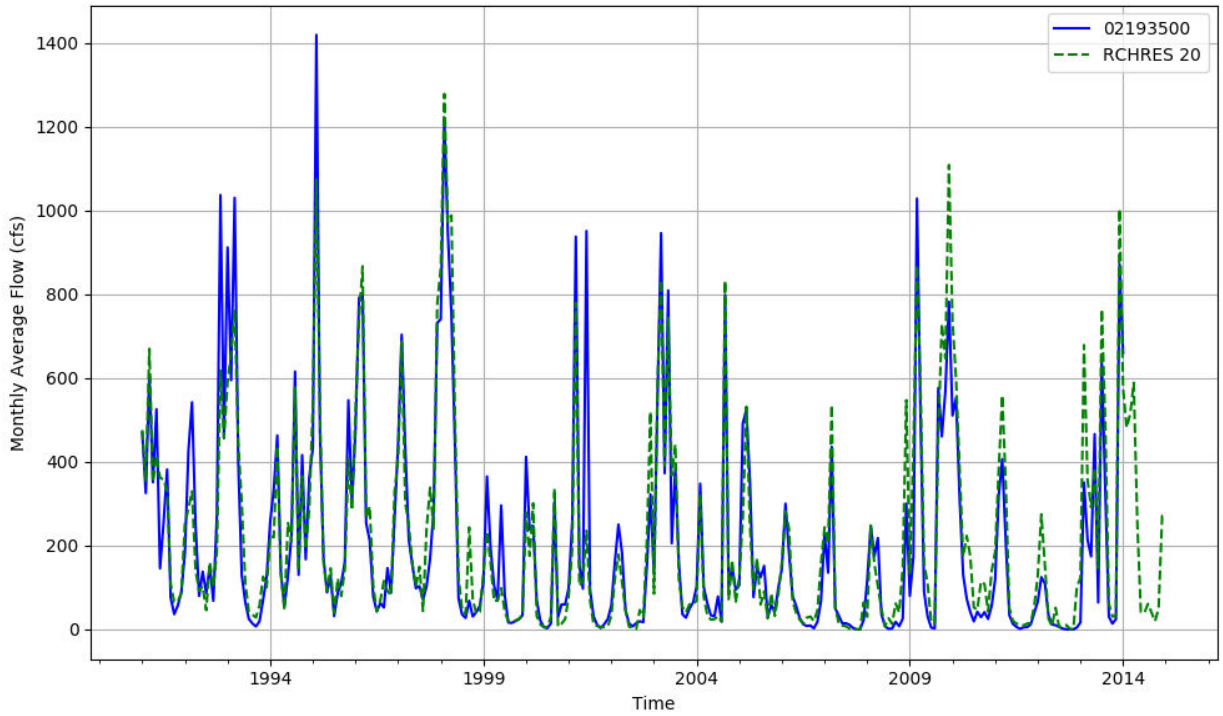


Figure T-03060105-9: Monthly flow for HSFP reach 20 and USGS station 02193500.

Table T-03060105-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	25194	20390	2271	487	47	8180	309077	3607	55300	49039	201	15774	240	170	258	490234
AREA(%)	5.1	4.1	0.5	0.1	0.0	1.7	62.8	0.7	11.2	10.0	0.0	3.2	0.0	0.0	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		1079	264	126	99											1568
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	31.7	33.4	33.4	33.5	32.5	33.6	33.6	33.6	33.5	33.3	35.3	34.1	57.4	39.4	35.2	33.4
SURLI		0.0	9.2	9.0	10.9											0.1
UZLI																0.0
LZLI		0.0	1.6	1.3	1.1										36.0	0.0
SURO: PERVIOUS		5.9	8.1	8.1	7.1	6.5	2.4	6.3	4.8	4.8	4.4		10.1	6.9	7.1	3.0
SURO: IMPERVIOUS		18.4	18.3	18.4	18.6											0.1
SURO: COMBINED		6.5	9.1	10.2	14.9	6.5	2.4	6.3	4.8	4.8	4.4		10.1	6.9	7.1	3.1
IFWO		1.5	1.9	1.9	2.1	2.1	1.1	2.0	1.4	1.5	1.7		4.2	2.2	2.8	1.1
AGWO	2.9	0.3	3.3	2.9	3.5	1.6	0.5	1.3	0.5	0.6	1.2	3.9	6.0	2.0	18.6	0.8
AGWI	6.7	2.9	6.8	6.5	6.9	5.4	3.7	4.9	3.5	3.8	4.9	5.8	8.0	5.3	23.0	3.9
IGWI	1.7	0.7	1.7	1.6	1.7	1.3	0.9	1.2	0.9	1.0	1.2	1.5	2.0	1.3	5.8	1.0
CEPE		9.0	6.4	6.4	8.9	4.2	9.9	6.3	9.0	6.4	4.9	9.0	24.7	6.8	5.2	8.7
UZET	4.1	2.7	3.9	3.9	3.3	4.2	2.2	4.0	2.7	2.9	4.0	11.8	2.1	4.1	5.7	2.8
LZET	1.0	13.3	17.1	17.0	16.3	11.9	17.1	11.1	14.1	15.5	17.9	1.9	7.8	16.2	22.1	15.0
AGWET	3.4	2.6	3.0	3.1	2.9	3.2	2.7	3.1	2.8	3.1	3.1	1.9	1.6	2.9	3.0	2.8
BASET	0.7	0.3	1.0	1.0	1.2	0.9	0.5	0.8	0.5	0.5	0.8	0.5	1.0	1.1	1.5	0.5
SURET	18.5											5.7				1.1
PERO	2.9	7.6	13.3	12.9	12.6	10.2	4.0	9.6	6.8	6.9	7.2	3.9	20.3	11.1	28.5	4.9
IGWI	1.7	0.7	1.7	1.6	1.7	1.3	0.9	1.2	0.9	1.0	1.2	1.5	2.0	1.3	5.8	1.0
TAET: PERVIOUS	27.7	27.9	31.4	31.5	32.5	24.5	32.4	25.3	29.1	28.5	30.8	30.8	37.1	31.1	37.5	30.9
IMPEV: IMPERVIOUS		15.2	15.3	15.4	15.6											0.0
ET: COMBINED	27.7	27.2	29.8	28.2	21.1	24.5	32.4	25.3	29.1	28.5	30.8	30.8	37.1	31.1	37.5	30.9
PET	44.2	43.7	43.9	44.0	44.0	43.7	43.7	43.7	43.7	43.8	43.1	43.5	44.2	42.7	44.0	43.6

Table T-03060105-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	25194	20390	2271	487	47	8180	309077	3607	55300	49039	201	15774	240	170	258	490234
AREA(%)	5.1	4.1	0.5	0.1	0.0	1.7	62.8	0.7	11.2	10.0	0.0	3.2	0.0	0.0	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		1079	264	126	99											1568
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	54.0	59.0	58.3	58.2	57.5	59.3	59.6	59.5	59.7	59.0	64.0	61.2	71.0	79.3	59.1	59.1
SURLI		0.0	7.4	7.1	8.1											0.0
UZLI																0.0
LZLI		0.0	1.5	1.2	1.0										64.1	0.0
SURO: PERVIOUS		16.1	18.7	18.4	17.0	16.2	8.3	15.9	13.9	13.7	13.6		18.0	24.5	16.2	9.3
SURO: IMPERVIOUS		39.3	38.6	38.5	38.4											0.1
SURO: COMBINED		17.3	20.8	22.6	31.5	16.2	8.3	15.9	13.9	13.7	13.6		18.0	24.5	16.2	9.4
IFWO		4.0	4.2	4.2	4.5	5.2	3.8	5.0	4.2	4.2	4.8		5.4	6.5	7.0	3.6
AGWO	5.9	1.0	4.1	3.6	4.0	3.3	2.3	2.9	1.7	1.8	3.0	12.9	4.4	4.2	44.7	2.7
AGWI	9.5	6.4	10.3	9.9	10.1	10.4	9.4	9.7	8.0	8.5	10.8	15.0	9.2	11.2	49.2	9.2
IGWI	2.4	1.6	2.6	2.5	2.5	2.6	2.3	2.4	2.0	2.1	2.7	3.7	2.3	2.8	12.3	2.3
CEPE		12.2	8.8	8.8	12.1	6.0	13.3	8.9	12.2	8.9	7.4	12.4	20.9	9.9	7.0	11.8
UZET	2.9	3.8	5.3	5.3	4.2	6.1	3.4	5.7	3.9	4.5	5.7	6.9	3.4	6.4	8.1	3.7
LZET	0.6	14.0	16.7	16.7	15.4	12.0	17.5	11.0	14.5	16.1	17.9	2.1	11.0	17.1	23.3	15.3
AGWET	2.4	3.1	3.3	3.3	3.0	3.4	3.0	3.2	3.1	3.3	3.3	1.2	2.3	3.0	3.1	3.0
BASET	1.1	0.7	1.1	1.1	1.2	1.1	1.0	1.1	0.9	0.9	1.1	1.0	1.0	1.3	1.7	1.0
SURET	34.4											15.3				2.3
PERO	5.9	21.1	26.9	26.2	25.6	24.7	14.4	23.8	19.8	19.7	21.4	12.9	27.7	35.2	68.0	15.7
IGWI	2.4	1.6	2.6	2.5	2.5	2.6	2.3	2.4	2.0	2.1	2.7	3.7	2.3	2.8	12.3	2.3
TAET: PERVIOUS	41.3	33.8	35.2	35.1	36.0	28.7	38.2	29.9	34.5	33.7	35.4	38.9	38.6	37.6	43.2	37.0
IMPEV: IMPERVIOUS		19.6	19.6	19.6	19.7											0.1
ET: COMBINED	41.3	33.1	33.6	31.9	25.0	28.7	38.2	29.9	34.5	33.7	35.4	38.9	38.6	37.6	43.2	37.0
PET	49.8	49.5	49.6	49.7	49.6	49.4	49.5	49.5	49.5	49.5	49.0	49.4	49.9	48.8	49.9	49.3

Table T-03060105-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	25194	20390	2271	487	47	8180	309077	3607	55300	49039	201	15774	240	170	258	490234
AREA(%)	5.1	4.1	0.5	0.1	0.0	1.7	62.8	0.7	11.2	10.0	0.0	3.2	0.0	0.0	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		1079	264	126	99											1568
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	39.3	40.3	39.7	39.6	39.4	40.3	40.5	40.3	40.5	40.3	41.8	41.0	56.2	52.9	39.8	40.3
SURLI		0.0	7.3	6.9	7.9											0.0
UZLI																0.0
LZLI		0.0	1.5	1.2	1.0										77.8	0.0
SURO: PERVIOUS		7.6	10.0	9.8	9.0	8.7	3.1	8.4	6.2	6.5	4.8		10.9	12.1	9.2	3.9
SURO: IMPERVIOUS		23.9	23.3	23.2	23.0											0.1
SURO: COMBINED		8.4	11.4	12.6	18.5	8.7	3.1	8.4	6.2	6.5	4.8		10.9	12.1	9.2	4.0
IFWO		2.2	2.4	2.4	2.6	3.1	1.8	3.0	2.3	2.3	2.4		3.9	4.0	4.2	1.8
AGWO	5.9	1.4	4.4	4.0	4.3	3.7	3.2	3.3	2.3	2.4	3.7	9.6	5.4	4.4	50.6	3.3
AGWI	8.9	3.9	7.5	7.0	7.2	6.9	5.5	6.4	4.8	5.2	6.5	10.9	7.7	7.3	55.3	5.7
IGWI	2.2	1.0	1.9	1.7	1.8	1.7	1.4	1.6	1.2	1.3	1.6	2.7	1.9	1.8	13.8	1.4
CEPE		9.8	7.0	7.1	9.7	4.7	10.8	7.0	9.8	7.0	5.6	9.9	19.5	7.5	5.8	9.5
UZET	1.0	3.4	4.4	4.4	3.8	5.0	3.1	4.8	3.5	3.8	4.8	10.4	2.9	5.1	6.7	3.4
LZET	0.2	14.4	16.8	16.8	15.7	11.9	18.5	11.1	15.0	16.4	18.4	1.3	10.5	16.9	22.6	16.0
AGWET	1.8	2.9	3.0	3.0	2.8	3.2	2.8	3.0	2.9	3.1	3.1	1.3	2.0	2.8	2.9	2.7
BASET	1.3	0.7	1.1	1.1	1.2	1.2	1.0	1.1	0.9	0.9	1.1	1.0	1.0	1.3	1.5	1.0
SURET	37.3											14.7				2.4
PERO	5.9	11.2	16.8	16.2	15.9	15.5	8.1	14.7	10.7	11.2	10.9	9.6	20.2	20.6	64.0	9.0
IGWI	2.2	1.0	1.9	1.7	1.8	1.7	1.4	1.6	1.2	1.3	1.6	2.7	1.9	1.8	13.8	1.4
TAET: PERVIOUS	41.6	31.2	32.4	32.4	33.2	26.0	36.2	26.9	32.0	31.2	33.0	38.6	35.9	33.6	39.5	35.0
IMPEV: IMPERVIOUS		16.5	16.4	16.5	16.6											0.1
ET: COMBINED	41.6	30.4	30.8	29.1	21.9	26.0	36.2	26.9	32.0	31.2	33.0	38.6	35.9	33.6	39.5	35.1
PET	44.7	44.5	44.6	44.6	44.5	44.4	44.4	44.4	44.4	44.4	44.2	44.4	44.9	44.0	45.0	44.3

Table T-03060105-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	25194	20390	2271	487	47	8180	309077	3607	55300	49039	201	15774	240	170	258	490234
AREA(%)	5.1	4.1	0.5	0.1	0.0	1.7	62.8	0.7	11.2	10.0	0.0	3.2	0.0	0.0	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		1079	264	126	99											1568
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	42.7	43.8	44.0	44.2	43.6	43.8	43.8	43.8	43.8	43.7	44.9	44.1	60.5	54.9	45.4	43.6
SURLI		0.0	7.6	7.3	8.8											0.0
UZLI																0.0
LZLI		0.0	1.6	1.2	1.0										40.2	0.0
SURO: PERVIOUS	0.3	8.1	11.0	11.1	10.0	8.7	3.4	8.4	6.6	6.8	5.2	0.1	12.3	12.4	9.1	4.2
SURO: IMPERVIOUS		26.6	27.0	27.2	27.5											0.1
SURO: COMBINED	0.3	9.1	12.7	14.4	21.9	8.7	3.4	8.4	6.6	6.8	5.2	0.1	12.3	12.4	9.1	4.3
IFWO		2.5	2.9	2.9	3.3	3.2	1.8	3.1	2.4	2.4	2.3		4.8	3.3	4.0	1.8
AGWO	4.8	1.5	4.7	4.3	4.9	3.7	2.6	3.4	2.2	2.3	3.3	7.7	5.6	3.7	26.7	2.8
AGWI	7.5	4.8	8.7	8.4	8.8	8.1	6.2	7.5	5.8	6.2	7.4	9.7	8.5	7.8	31.2	6.3
IGWI	1.9	1.2	2.2	2.1	2.2	2.0	1.5	1.9	1.4	1.5	1.8	2.4	2.1	2.0	7.8	1.6
CEPE		10.6	7.6	7.6	10.4	5.2	11.6	7.7	10.6	7.7	6.3	10.7	20.4	8.4	6.1	10.2
UZET	2.1	3.1	4.4	4.4	3.6	5.0	2.6	4.6	3.1	3.6	4.5	9.2	2.7	4.7	6.2	3.0
LZET	0.5	13.3	16.2	16.2	15.1	11.5	16.8	10.6	13.9	15.4	17.4	1.8	9.7	16.3	21.1	14.7
AGWET	1.6	2.6	2.9	3.0	2.8	3.1	2.6	2.9	2.7	3.0	3.0	1.1	1.9	2.8	2.9	2.6
BASET	1.1	0.7	1.1	1.1	1.2	1.1	0.9	1.1	0.8	0.9	1.0	0.8	1.0	1.2	1.5	0.9
SURET	31.8											11.7				2.0
PERO	5.1	12.2	18.6	18.3	18.1	15.7	7.8	14.9	11.1	11.6	10.8	7.8	22.7	19.5	39.8	8.8
IGWI	1.9	1.2	2.2	2.1	2.2	2.0	1.5	1.9	1.4	1.5	1.8	2.4	2.1	2.0	7.8	1.6
TAET: PERVIOUS	37.0	30.4	32.3	32.2	33.1	25.9	34.5	26.9	31.2	30.5	32.2	35.4	35.6	33.4	37.9	33.4
IMPEV: IMPERVIOUS		17.1	17.1	17.1	17.1											0.1
ET: COMBINED	37.0	29.7	30.7	29.1	22.3	25.9	34.5	26.9	31.2	30.5	32.2	35.4	35.6	33.4	37.9	33.4
PET	44.6	44.5	44.6	44.7	44.6	44.5	44.5	44.5	44.5	44.5	44.4	44.5	44.7	44.3	44.9	44.4

Table T-03060105-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
2	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
3	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
4	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
5	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
6	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
7	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
8	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
9	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
10	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
11	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
12	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
13	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
14	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
15	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
16	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
17	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
18	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
19	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
20	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
21	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
22	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
23	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
24	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
25	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
26	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
27	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03060105-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
2	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
3	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
4	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
5	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
6	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
7	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
8	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
9	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
10	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
11	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
12	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
13	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
14	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
15	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
16	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
17	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
18	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
19	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
20	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
21	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
22	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
23	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
24	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
25	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
26	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
27	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034

Table T-03060105-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
2	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
3	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
4	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
5	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
6	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
7	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
8	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
9	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
10	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
11	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
12	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
13	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
14	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
15	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
16	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
17	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
18	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
19	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
20	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
21	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
22	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
23	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
24	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
25	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
26	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102
27	0.000	0.100	0.050	0.050	0.100	0.020	0.121	0.050	0.100	0.050	0.030	0.102

Table T-03060105-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
4	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
5	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
6	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
7	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
8	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
9	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
10	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
11	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
12	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
13	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
14	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
15	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
16	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
17	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
18	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
19	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
20	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
21	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
22	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
23	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
24	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
25	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
26	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
27	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200

Table T-03060105-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
2	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
3	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
4	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
5	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
6	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
7	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
8	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
9	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
10	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
11	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
12	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
13	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
14	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
15	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
16	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
17	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
18	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
19	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
20	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
21	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
22	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
23	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
24	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
25	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
26	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010
27	0.010	0.047	0.047	0.047	0.047	0.066	0.100	0.066	0.066	0.066	0.080	0.010

Table T-03060105-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
2		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
3		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
4		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
5		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
6		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
7		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
8		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
9		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
10		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
11		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
12		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
13		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
14		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
15		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
16		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
17		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
18		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
19		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
20		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
21		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
22		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
23		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
24		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
25		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
26		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	
27		0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	0.765	

Table T-03060105-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
25	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
26	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
27	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03060105-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
2	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
3	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
4	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
5	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
6	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
7	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
8	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
9	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
10	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
11	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
12	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
13	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
14	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
15	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
16	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
17	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
18	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
19	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
20	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
21	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
22	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
23	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
24	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
25	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
26	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
27	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280

Table T-03060105-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
2	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
3	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
4	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
5	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
6	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
7	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
8	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
9	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
10	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
11	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
12	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
13	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
14	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
15	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
16	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
17	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
18	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
19	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
20	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
21	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
22	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
23	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
24	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
25	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
26	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
27	0.115	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900

Table T-03060105-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
2	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
3	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
4	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
5	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
6	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
7	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
8	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
9	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
10	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
11	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
12	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
13	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
14	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
15	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
16	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
17	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
18	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
19	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
20	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
21	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
22	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
23	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
24	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
25	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
26	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162
27	0.050	4.934	4.934	4.934	4.934	5.550	7.401	5.550	5.550	5.550	6.167	0.162

Table T-03060105-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.923

APPENDIX T-03060106

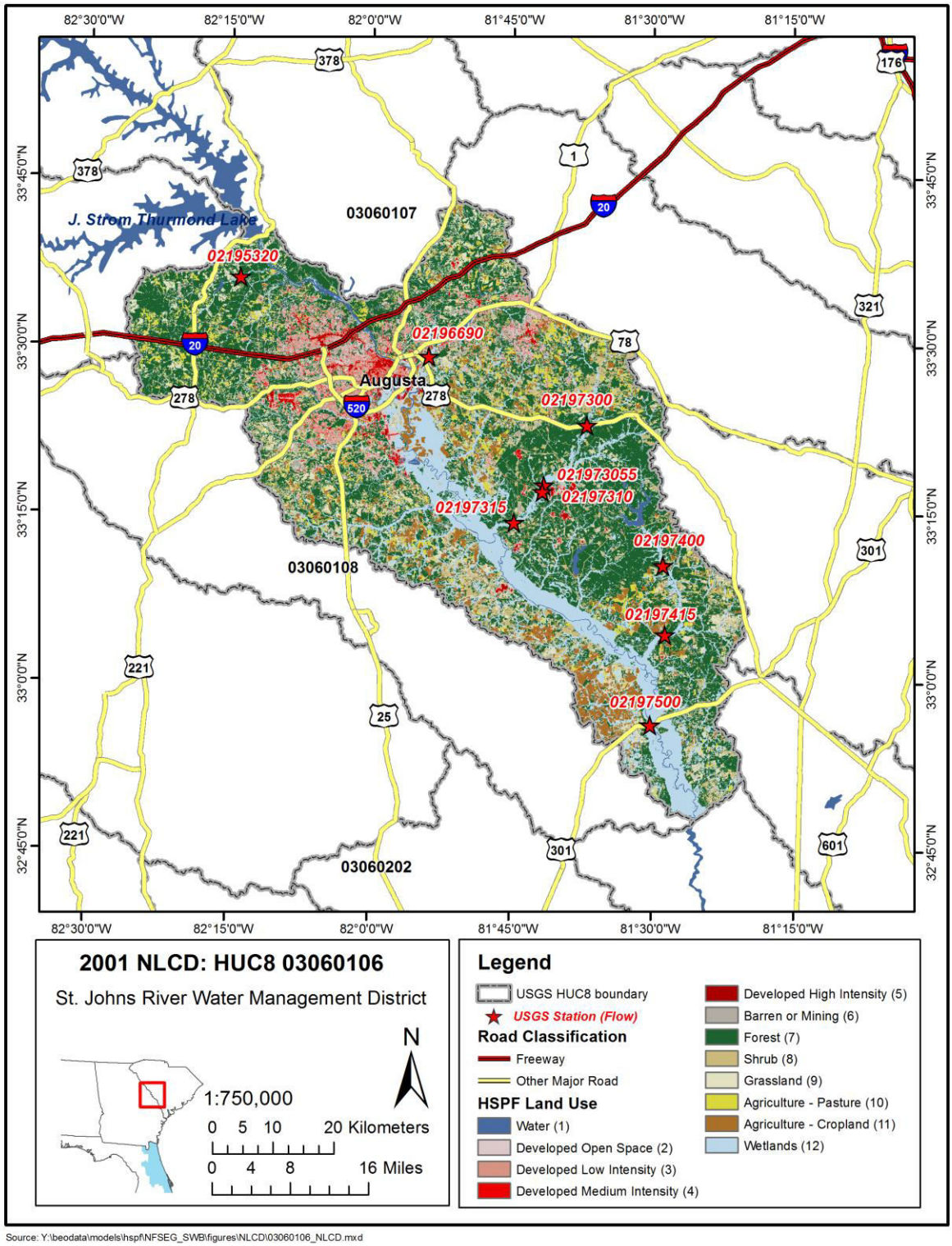


Figure T-03060106-1: Land Cover from the National Land Cover Database.

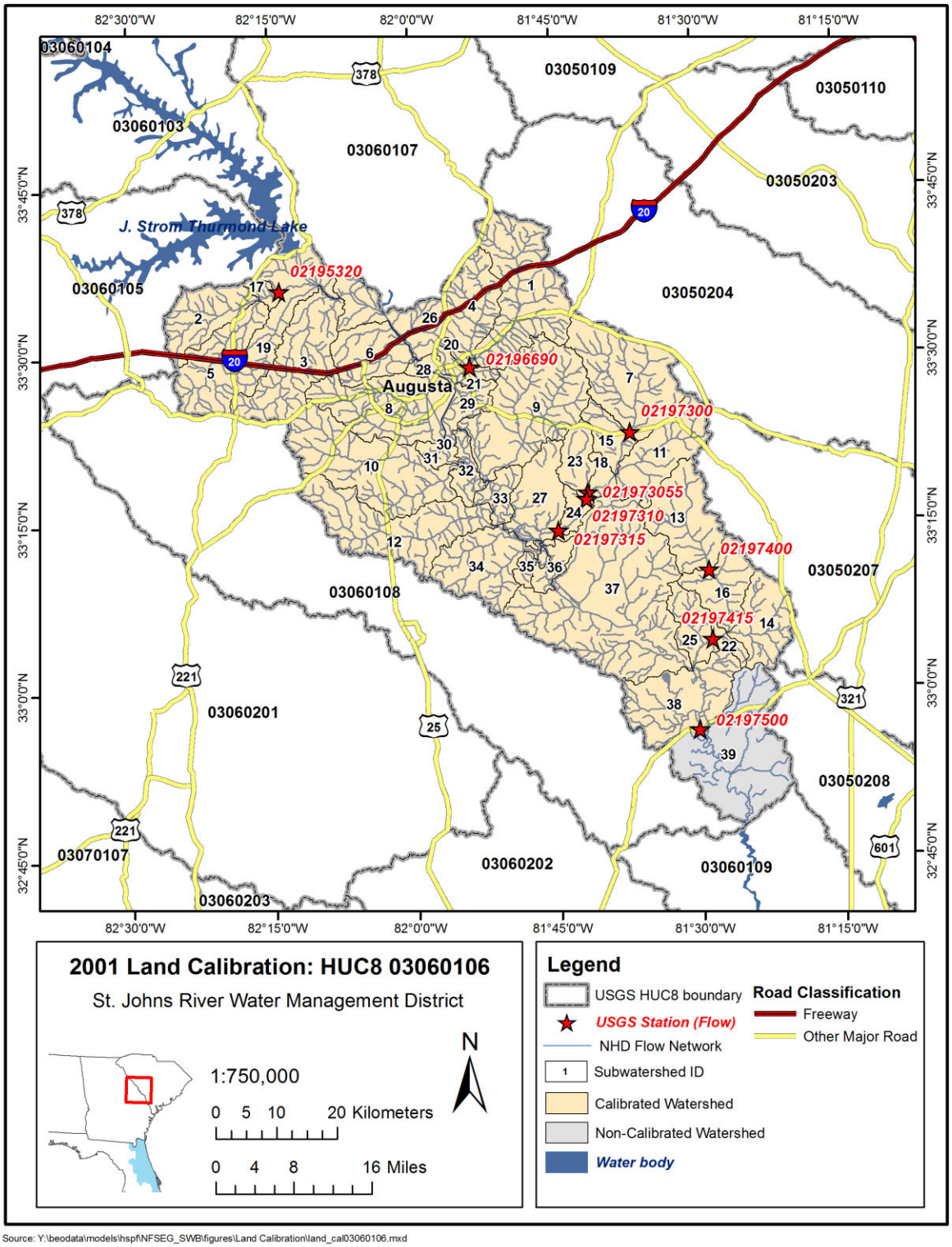


Figure T-03060106-2: Calibrated sub-watersheds.

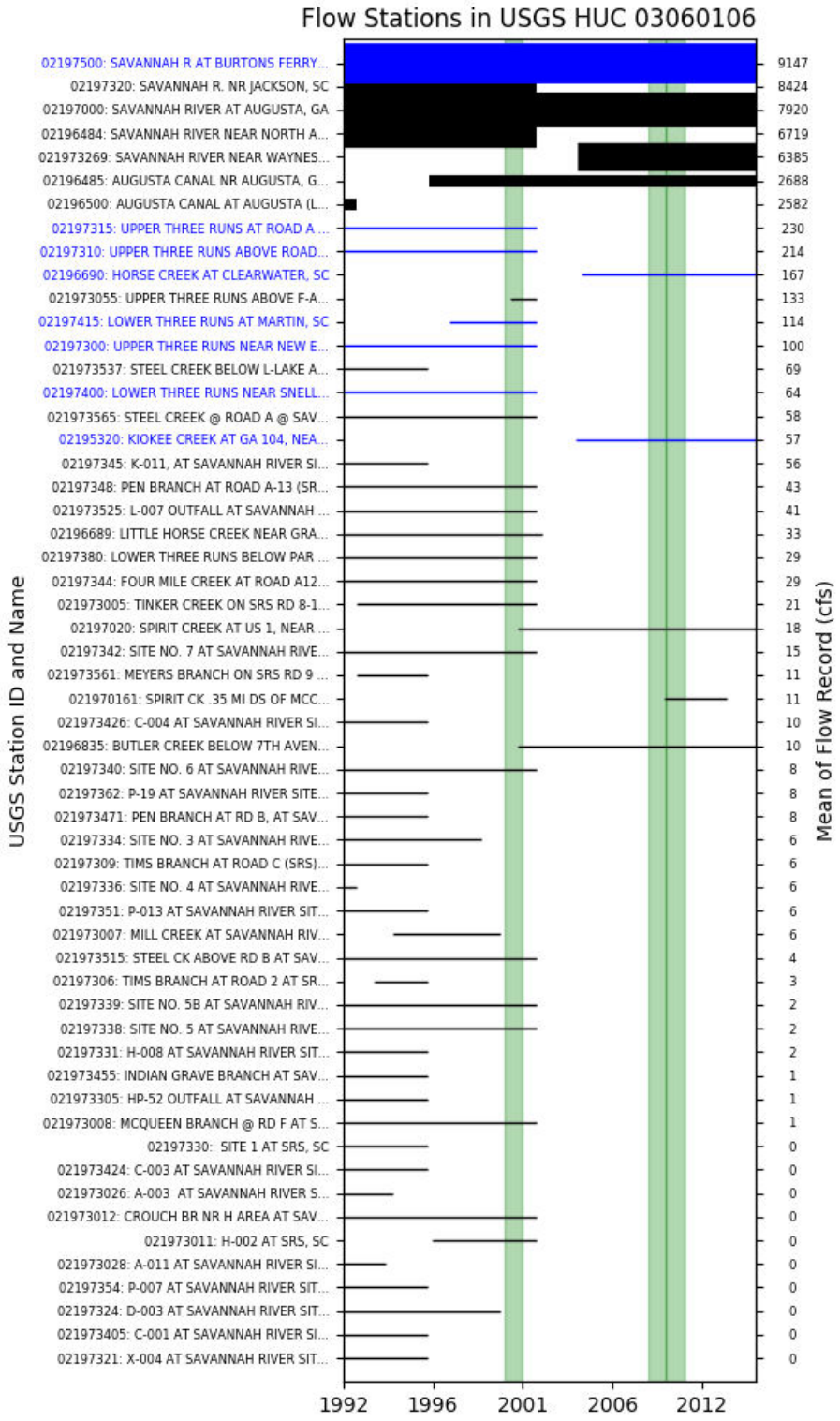


Figure T-03060106-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 07, USGS GAUGE 02197300

Water-Data Report 2009
02347500 FLINT RIVER AT US 19, NEAR CARSONVILLE, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 324317, long 841357 referenced to North American Datum of 1983, Upson County, GA, Hydrologic Unit 03130005, on the downstream left end of U.S. Highway 19, 4.0 miles upstream from Auchumpkee Creek, 5.0 miles downstream from Swift Creek, 13.0 miles southwest of Culloden, and at mile 238.4.

DRAINAGE AREA.--1,850 mi.

SURFACE-WATER RECORDS
PERIOD OF RECORD
DISCHARGE: July 1911 to May 1923, July 1928 to December 1931, March 1937 to September 2005 (published as station 02347500 Flint River near
Culloden, GA). October 2005 to current year.
GAGE-HEIGHT: October 1998 to September 2005 (published as station 02347500 Flint River near Culloden, GA). October 2005 to current year.
REVISED RECORDS.--WSP 697:1911-23. WSP 1002: 1943. WSP 1504: 1913, 196-17, 1918(M), 1919-22, 1923(M), drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 334.54 feet above National Geodetic Vertical Datum (NGVD) of 1929. From July 1, 1911 to October 11, 1918, a non-recording gage was installed. From October 12, 1918 to May 31, 1923, a water-stage recorder was located at a site 2.5 miles downstream at different datum. From July 21, 1928 to December 31, 1931, and from March 18, 1937 to May 3, 1939, a non-recording gage was located at present site and datum.

COOPERATION.--U.S. Army Corps of Engineers, Mobile District.

REMARKS.--Discharge records good. Gage-height records good.

Table T-03060106-1: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02197300.

Statistic	Value
Bias	7.39
Standard error	29.87
Relative bias	0.07
Relative standard error	1.44
Nash-Sutcliffe coefficient	-1.06
Coefficient of efficiency	-0.23
Index of agreement	0.50

Table T-03060106-2: Hydrologic Indices Between USGS Gauge 02197300 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197300	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	101.31	108.62	7.21
MA2: Median, all daily flows	102.00	97.74	-4.17
MA3: CV, all daily flows	20.39	15.70	-23.02
MA4: CV, log of all daily flows	20.93	27.85	33.05
MA5: Mean daily flow / median daily flow	0.99	1.11	11.88
MA9: (Q10 - Q90) / median daily flow	0.59	0.80	35.32
MA10: (Q20 - Q80) / median daily flow	0.39	0.49	24.96
MA11: (Q25 - Q75) / median daily flow	0.30	0.38	26.38
MA12: Mean monthly flow, January	111.51	109.02	-2.23
MA13: Mean monthly flow, February	110.01	125.13	13.74
MA14: Mean monthly flow, March	111.70	132.03	18.20
MA15: Mean monthly flow, April	100.94	128.13	26.93
MA16: Mean monthly flow, May	93.22	115.54	23.95
MA17: Mean monthly flow, June	95.13	106.62	12.07
MA18: Mean monthly flow, July	94.50	99.84	5.65
MA19: Mean monthly flow, August	96.42	95.34	-1.12
MA20: Mean monthly flow, September	97.94	95.18	-2.82
MA21: Mean monthly flow, October	89.91	90.93	1.14
MA22: Mean monthly flow, November	93.88	89.94	-4.20
MA23: Mean monthly flow, December	95.70	90.01	-5.94
ML1: Mean minimum monthly flow, January	94.92	96.93	2.12
ML2: Mean minimum monthly flow, February	97.00	118.64	22.31
ML3: Mean minimum monthly flow, March	97.08	125.62	29.40
ML4: Mean minimum monthly flow, April	91.00	122.18	34.27
ML5: Mean minimum monthly flow, May	84.00	109.07	29.85
ML6: Mean minimum monthly flow, June	81.58	101.35	24.22
ML7: Mean minimum monthly flow, July	80.33	95.93	19.42
ML8: Mean minimum monthly flow, August	82.08	91.15	11.05
ML9: Mean minimum monthly flow, September	83.17	91.35	9.84
ML10: Mean minimum monthly flow, October	89.36	94.87	6.17
ML11: Mean minimum monthly flow, November	94.27	94.29	0.02
ML12: Mean minimum monthly flow, December	94.64	95.32	0.73
ML13: CV of minimum monthly flows	20.15	33.41	65.86
ML14: Mean minimum daily flow / mean median annual flow	0.78	0.75	-3.12
ML15: Mean minimum annual flow / mean annual flow	0.75	0.73	-2.33
ML16: Median minimum annual flow / median annual flow	0.79	0.75	-5.84
ML20: Ratio of baseflow volume to total flow volume	0.92	0.99	8.19
ML22: Mean annual minimum flow divided by catchment area	0.76	0.78	2.70
RA1: Mean of positive changes from one day to next (rise rate)	13.82	0.70	
RA2: CV, mean of positive changes from one day to next (rise rate)	175.87	185.91	
RA3: Mean of negative changes from one day to next (fall rate)	7.32	0.31	
RA4: CV, mean of negative changes from one day to next (fall rate)	198.80	104.92	
RA5: Ratio of days that are higher than previous day	0.29	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.00	

RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.00	
RA8: Number of flow reversals from one day to the next	119.42	29.00	
RA9: CV, number of flow reversals from one day to the next	6.30	34.14	

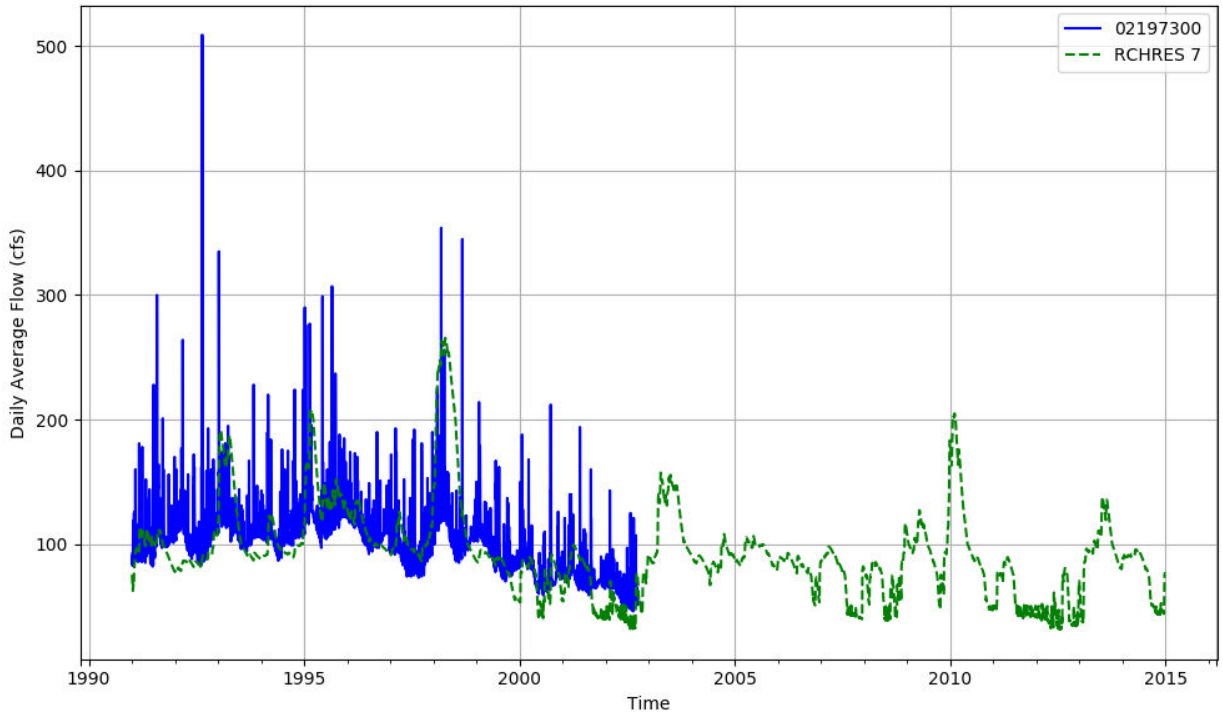


Figure T-03060106-4: Daily flow for HSFP reach 07 and USGS station 02197300.

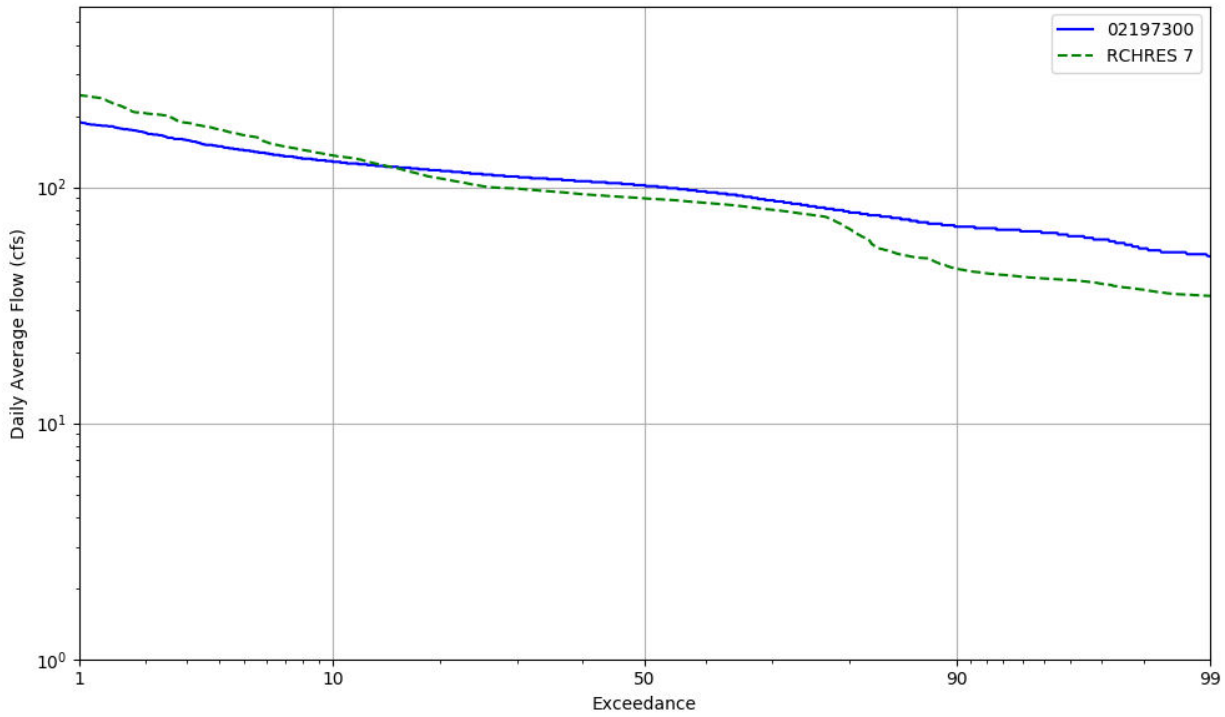


Figure T-03060106-5: Daily exceedance for HSFP reach 07 and USGS station 02197300.

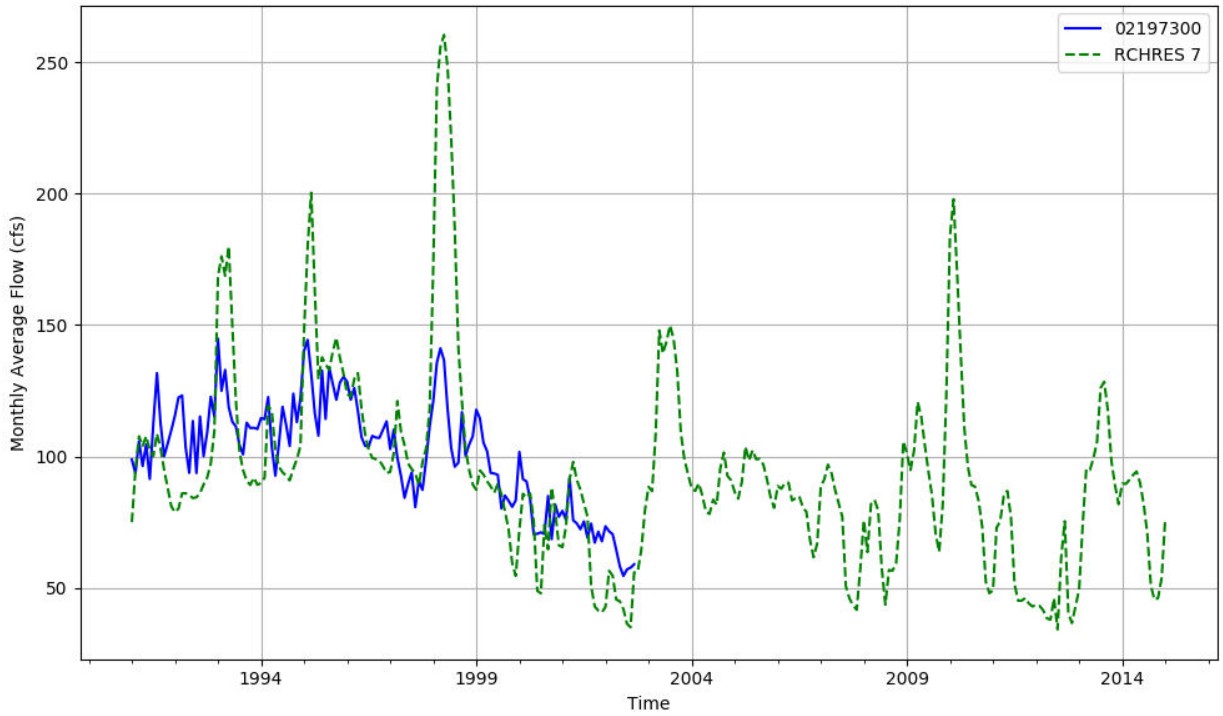


Figure T-03060106-6: Monthly flow for HSFP reach 07 and USGS station 02197300.

HSPF REACH 13, USGS GAUGE 02197400

Water-Data Report 2009
02347500 FLINT RIVER AT US 19, NEAR CARSONVILLE, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 324317, long 841357 referenced to North American Datum of 1983, Upson County, GA, Hydrologic Unit 03130005, on the downstream left end of U.S. Highway 19, 4.0 miles upstream from Auchumpkee Creek, 5.0 miles downstream from Swift Creek, 13.0 miles southwest of Culloden, and at mile 238.4.

DRAINAGE AREA.--1,850 mi.

SURFACE-WATER RECORDS
PERIOD OF RECORD
DISCHARGE: July 1911 to May 1923, July 1928 to December 1931, March 1937 to September 2005 (published as station 02347500 Flint River near
Culloden, GA). October 2005 to current year.
GAGE-HEIGHT: October 1998 to September 2005 (published as station 02347500 Flint River near Culloden, GA). October 2005 to current year.
REVISED RECORDS.--WSP 697:1911-23. WSP 1002: 1943. WSP 1504: 1913, 196-17, 1918(M), 1919-22, 1923(M), drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 334.54 feet above National Geodetic Vertical Datum (NGVD) of 1929. From July 1, 1911 to October 11, 1918, a non-recording gage was installed. From October 12, 1918 to May 31, 1923, a water-stage recorder was located at a site 2.5 miles downstream at different datum. From July 21, 1928 to December 31, 1931, and from March 18, 1937 to May 3, 1939, a non-recording gage was located at present site and datum.

COOPERATION.--U.S. Army Corps of Engineers, Mobile District.

REMARKS.--Discharge records good. Gage-height records good.

Table T-03060106-3: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02197400.

Statistic	Value
Bias	-5.58
Standard error	37.74
Relative bias	-0.08
Relative standard error	0.79
Nash-Sutcliffe coefficient	0.37
Coefficient of efficiency	0.28
Index of agreement	0.59

Table T-03060106-4: Hydrologic Indices Between USGS Gauge 02197400 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197400	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	70.08	64.47	-8.01
MA2: Median, all daily flows	53.00	51.33	-3.15
MA3: CV, all daily flows	62.46	44.58	-28.62
MA4: CV, log of all daily flows	64.63	46.90	-27.44
MA5: Mean daily flow / median daily flow	1.32	1.26	-5.02
MA9: (Q10 - Q90) / median daily flow	2.02	1.55	-23.12
MA10: (Q20 - Q80) / median daily flow	1.11	0.87	-21.99
MA11: (Q25 - Q75) / median daily flow	0.87	0.66	-23.70
MA12: Mean monthly flow, January	85.67	85.60	-0.08
MA13: Mean monthly flow, February	88.79	83.57	-5.88
MA14: Mean monthly flow, March	98.95	81.16	-17.97
MA15: Mean monthly flow, April	68.20	59.86	-12.23
MA16: Mean monthly flow, May	54.99	49.36	-10.24
MA17: Mean monthly flow, June	58.78	52.87	-10.05
MA18: Mean monthly flow, July	52.06	47.62	-8.53
MA19: Mean monthly flow, August	65.10	53.22	-18.25
MA20: Mean monthly flow, September	62.68	51.40	-18.00
MA21: Mean monthly flow, October	48.56	55.14	13.55
MA22: Mean monthly flow, November	55.73	54.46	-2.29
MA23: Mean monthly flow, December	60.01	61.58	2.62
ML1: Mean minimum monthly flow, January	57.82	59.24	2.46
ML2: Mean minimum monthly flow, February	67.00	61.24	-8.60
ML3: Mean minimum monthly flow, March	70.27	59.36	-15.52
ML4: Mean minimum monthly flow, April	46.27	51.03	10.28
ML5: Mean minimum monthly flow, May	42.33	43.85	3.57
ML6: Mean minimum monthly flow, June	33.17	40.26	21.40
ML7: Mean minimum monthly flow, July	30.67	40.59	32.35
ML8: Mean minimum monthly flow, August	35.00	40.83	16.67
ML9: Mean minimum monthly flow, September	31.33	40.09	27.94
ML10: Mean minimum monthly flow, October	30.64	42.05	37.27
ML11: Mean minimum monthly flow, November	42.36	46.30	9.30
ML12: Mean minimum monthly flow, December	43.64	52.38	20.04
ML13: CV of minimum monthly flows	61.49	36.13	-41.23
ML14: Mean minimum daily flow / mean median annual flow	0.42	0.66	58.42
ML15: Mean minimum annual flow / mean annual flow	0.36	0.58	60.27
ML16: Median minimum annual flow / median annual flow	0.45	0.68	51.03
ML20: Ratio of baseflow volume to total flow volume	0.72	0.82	12.53
ML22: Mean annual minimum flow divided by catchment area	0.22	0.35	57.02
RA1: Mean of positive changes from one day to next (rise rate)	22.66	7.72	
RA2: CV, mean of positive changes from one day to next (rise rate)	191.05	233.36	
RA3: Mean of negative changes from one day to next (fall rate)	10.44	3.25	
RA4: CV, mean of negative changes from one day to next (fall rate)	250.62	200.95	
RA5: Ratio of days that are higher than previous day	0.27	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.03	

RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.02	
RA8: Number of flow reversals from one day to the next	100.33	85.50	
RA9: CV, number of flow reversals from one day to the next	16.23	14.12	

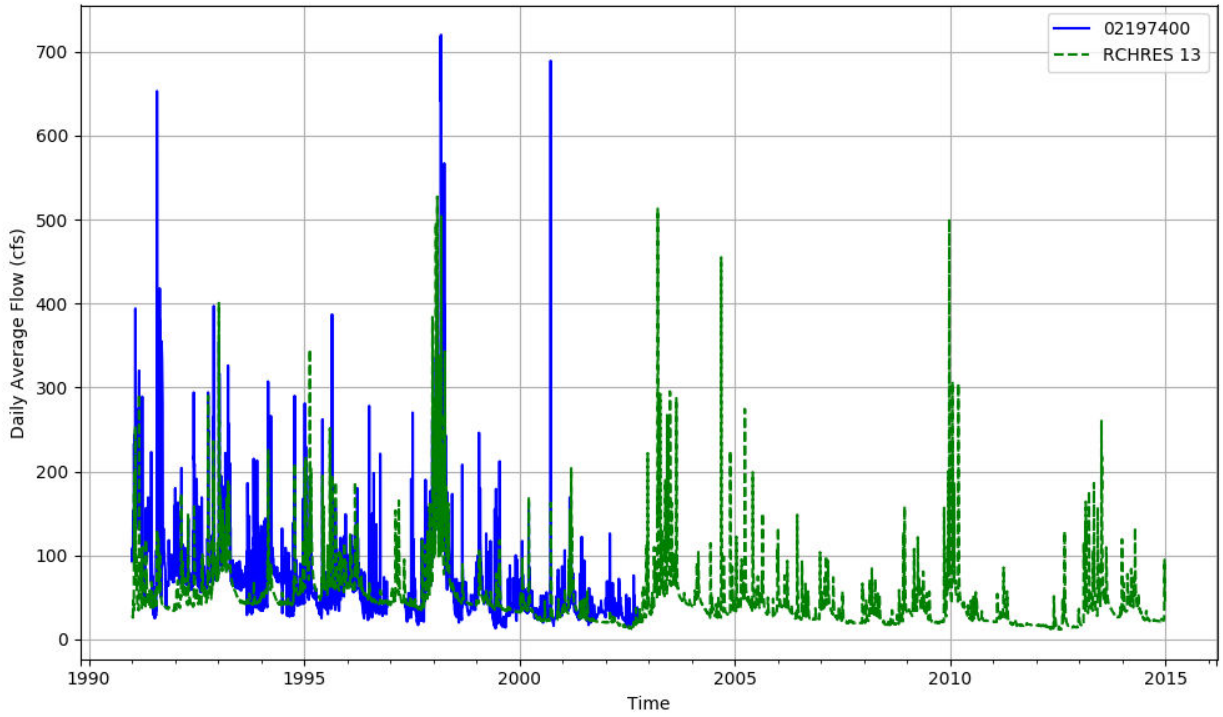


Figure T-03060106-7: Daily flow for HSFP reach 13 and USGS station 02197400.

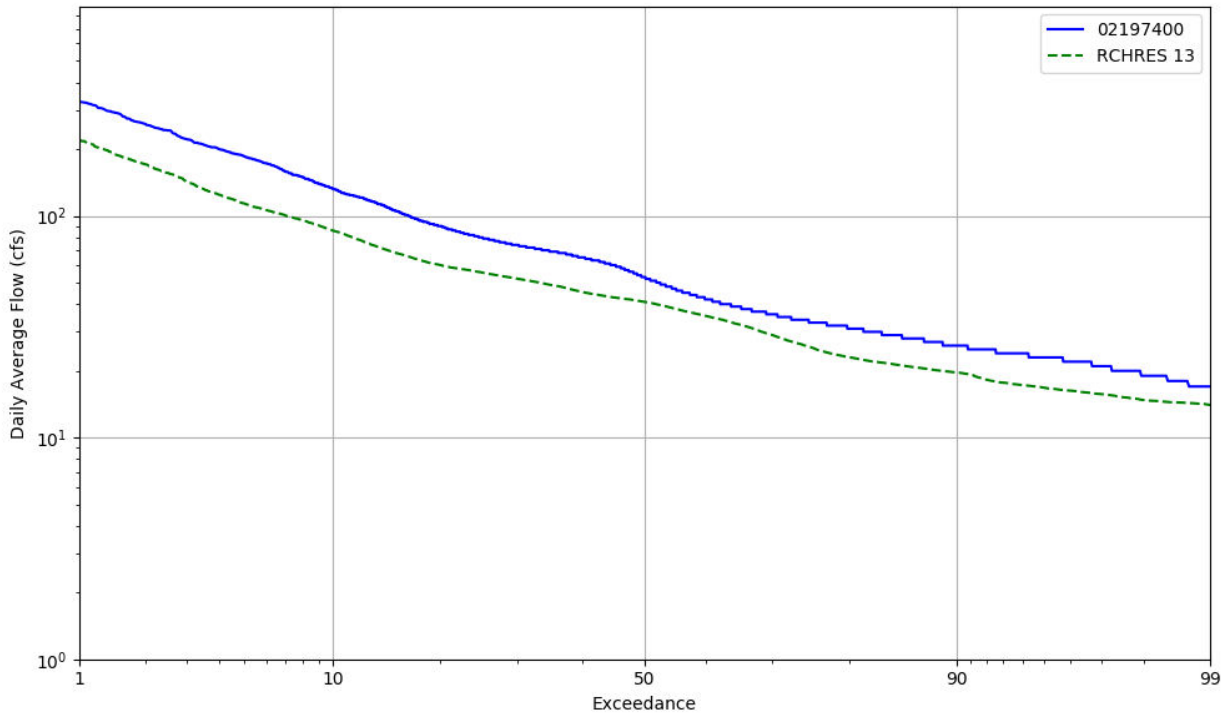


Figure T-03060106-8: Daily exceedance for HSFP reach 13 and USGS station 02197400.

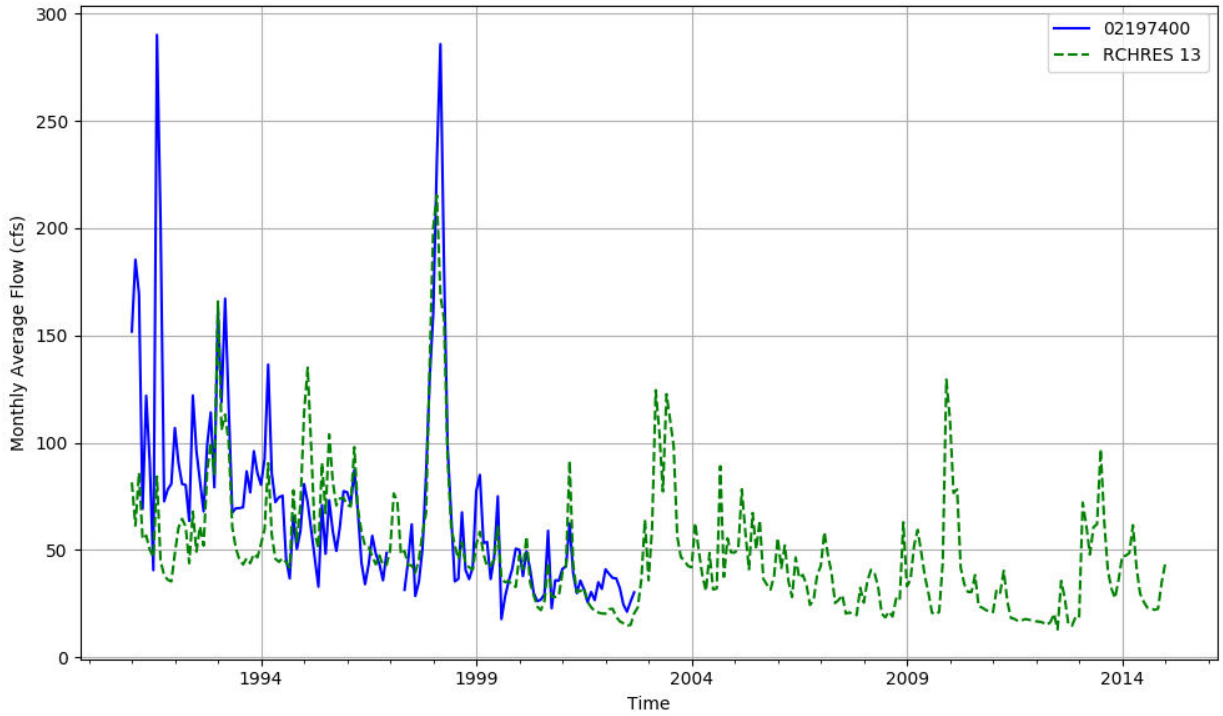


Figure T-03060106-9: Monthly flow for HSFP reach 13 and USGS station 02197400.

HSPF REACH 17, USGS GAUGE 02195320

Water-Data Report 2009
02195320 KIOKEE CREEK AT GA 104, NEAR EVANS, GA
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 333603, long 821358 referenced to North American Datum of 1927, Columbia County, GA, Hydrologic Unit 03060106, at upstream left end of bridge on State Highway 104, 2.7 mi downstream from Greenbrier Creek, 4.0 mi above mouth and 5.5 mi northwest of Evans.

DRAINAGE AREA.--106 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 2004 to current year.
GAGE-HEIGHT: December 2004 to current year.

GAGE.--Satellite telemetry with water-stage recorder. Datum of gage is 200.00 feet above North American Vertical Datum (NAVD) of 1988.

COOPERATION.--U. S. Army Corps of Engineers, Savannah District.

REMARKS.--Discharge records good, except for estimated daily discharges which are fair. Gage-height records good.

Table T-03060106-5: Comparison Statistics Between HSPF Reach 17 and USGS Gauge 02195320.

Statistic	Value
Bias	-4.67
Standard error	29.46
Relative bias	-0.08
Relative standard error	0.37
Nash-Sutcliffe coefficient	0.86
Coefficient of efficiency	0.72
Index of agreement	0.85

Table T-03060106-6: Hydrologic Indices Between USGS Gauge 02195320 and HSPF Reach 17.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02195320	Simulated Reach 17	Percent Difference
MA1: Mean, all daily flows	57.44	52.76	-8.15
MA2: Median, all daily flows	15.00	19.20	28.02
MA3: CV, all daily flows	250.19	247.02	-1.27

MA4: CV, log of all daily flows	142.95	113.53	-20.58
MA5: Mean daily flow / median daily flow	3.83	2.75	-28.25
MA9: (Q10 - Q90) / median daily flow	8.11	4.98	-38.67
MA10: (Q20 - Q80) / median daily flow	4.20	3.16	-24.69
MA11: (Q25 - Q75) / median daily flow	3.12	2.43	-22.13
MA12: Mean monthly flow, January	84.23	76.15	-9.60
MA13: Mean monthly flow, February	93.10	80.68	-13.34
MA14: Mean monthly flow, March	143.37	114.94	-19.83
MA15: Mean monthly flow, April	70.28	63.38	-9.82
MA16: Mean monthly flow, May	20.85	30.12	44.47
MA17: Mean monthly flow, June	17.63	28.29	60.47
MA18: Mean monthly flow, July	27.80	28.12	1.15
MA19: Mean monthly flow, August	28.59	32.13	12.37
MA20: Mean monthly flow, September	6.40	11.53	80.13
MA21: Mean monthly flow, October	11.94	18.96	58.85
MA22: Mean monthly flow, November	41.63	27.57	-33.79
MA23: Mean monthly flow, December	92.92	75.52	-18.73
ML1: Mean minimum monthly flow, January	39.68	43.07	8.55
ML2: Mean minimum monthly flow, February	38.39	39.21	2.13
ML3: Mean minimum monthly flow, March	27.39	48.02	75.31
ML4: Mean minimum monthly flow, April	22.98	35.56	54.78
ML5: Mean minimum monthly flow, May	9.33	18.91	102.61
ML6: Mean minimum monthly flow, June	5.90	12.98	119.90
ML7: Mean minimum monthly flow, July	6.91	9.96	44.13
ML8: Mean minimum monthly flow, August	5.27	10.50	99.33
ML9: Mean minimum monthly flow, September	2.44	6.92	183.96
ML10: Mean minimum monthly flow, October	3.50	5.09	45.22
ML11: Mean minimum monthly flow, November	6.19	8.36	34.92
ML12: Mean minimum monthly flow, December	19.76	20.09	1.65
ML13: CV of minimum monthly flows	139.88	119.52	-14.56
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.28	182.59
ML15: Mean minimum annual flow / mean annual flow	0.03	0.11	257.54
ML16: Median minimum annual flow / median annual flow	0.06	0.25	337.11
ML20: Ratio of baseflow volume to total flow volume	0.37	0.50	36.02
ML22: Mean annual minimum flow divided by catchment area	0.02	0.04	160.05
RA1: Mean of positive changes from one day to next (rise rate)	52.59	48.01	
RA2: CV, mean of positive changes from one day to next (rise rate)	481.79	419.87	
RA3: Mean of negative changes from one day to next (fall rate)	23.56	24.69	
RA4: CV, mean of negative changes from one day to next (fall rate)	554.77	565.66	
RA5: Ratio of days that are higher than previous day	0.28	0.34	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.06	
RA8: Number of flow reversals from one day to the next	78.40	143.40	
RA9: CV, number of flow reversals from one day to the next	27.63	30.02	

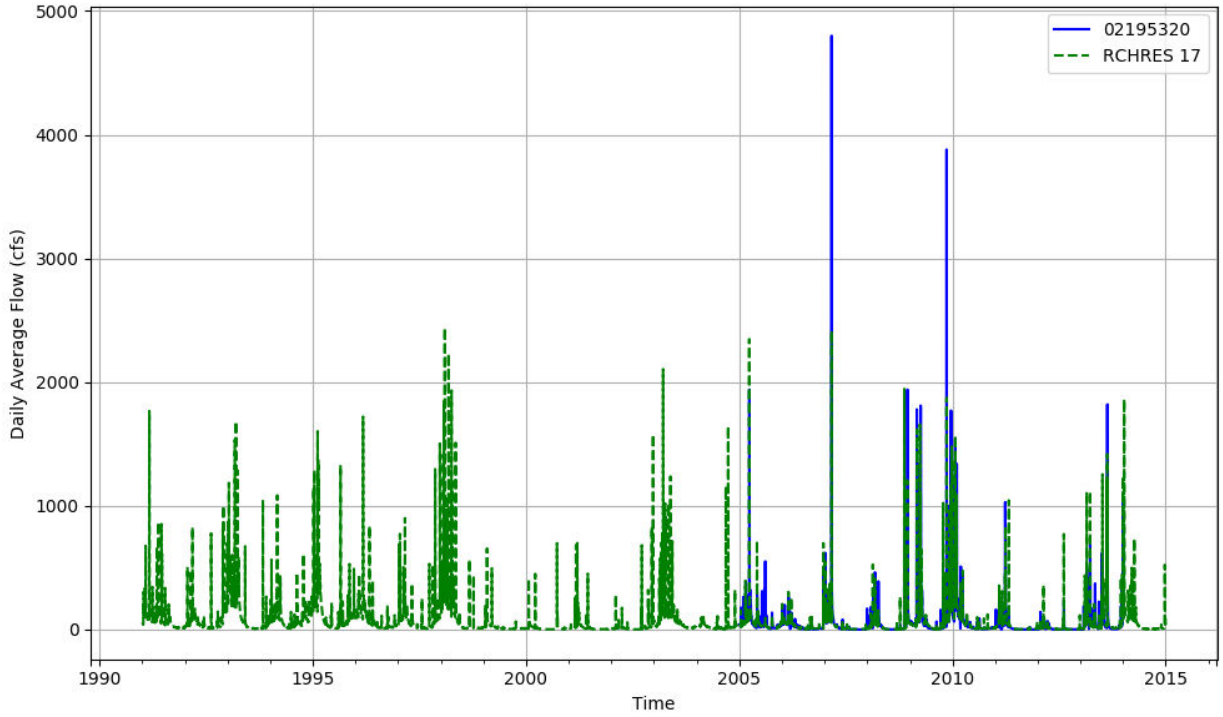


Figure T-03060106-10: Daily flow for HSFP reach 17 and USGS station 02195320.

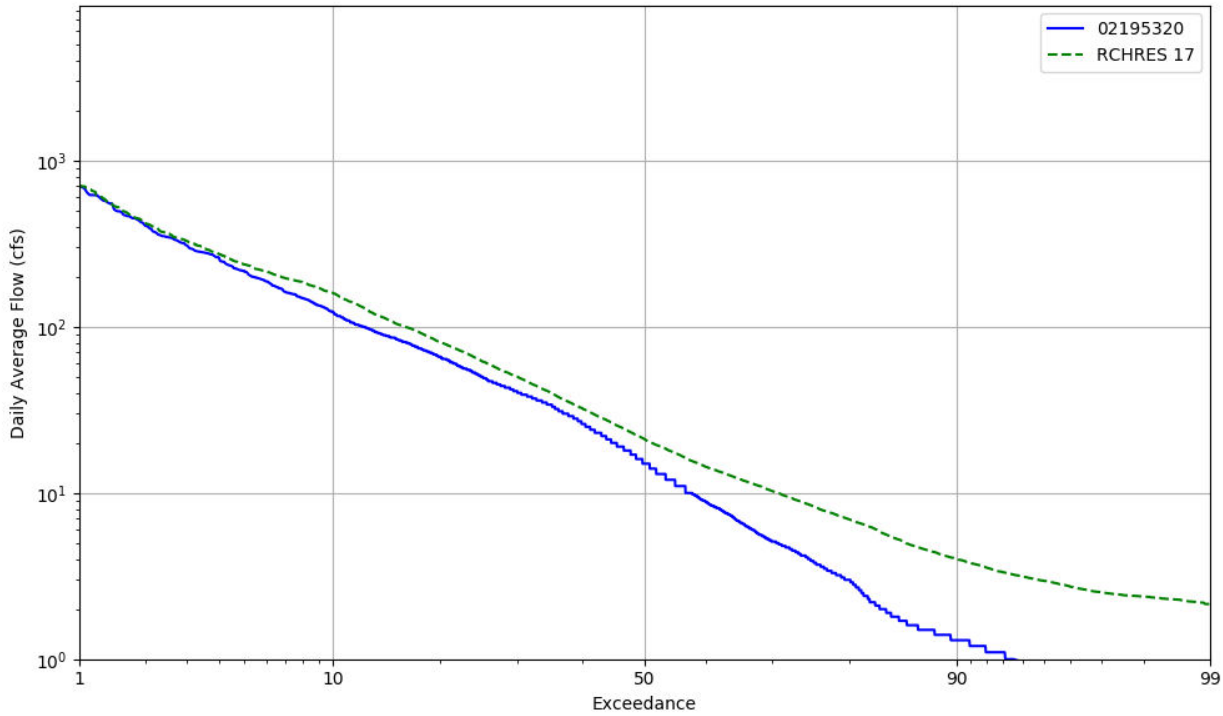


Figure T-03060106-11: Daily exceedance for HSFP reach 17 and USGS station 02195320.

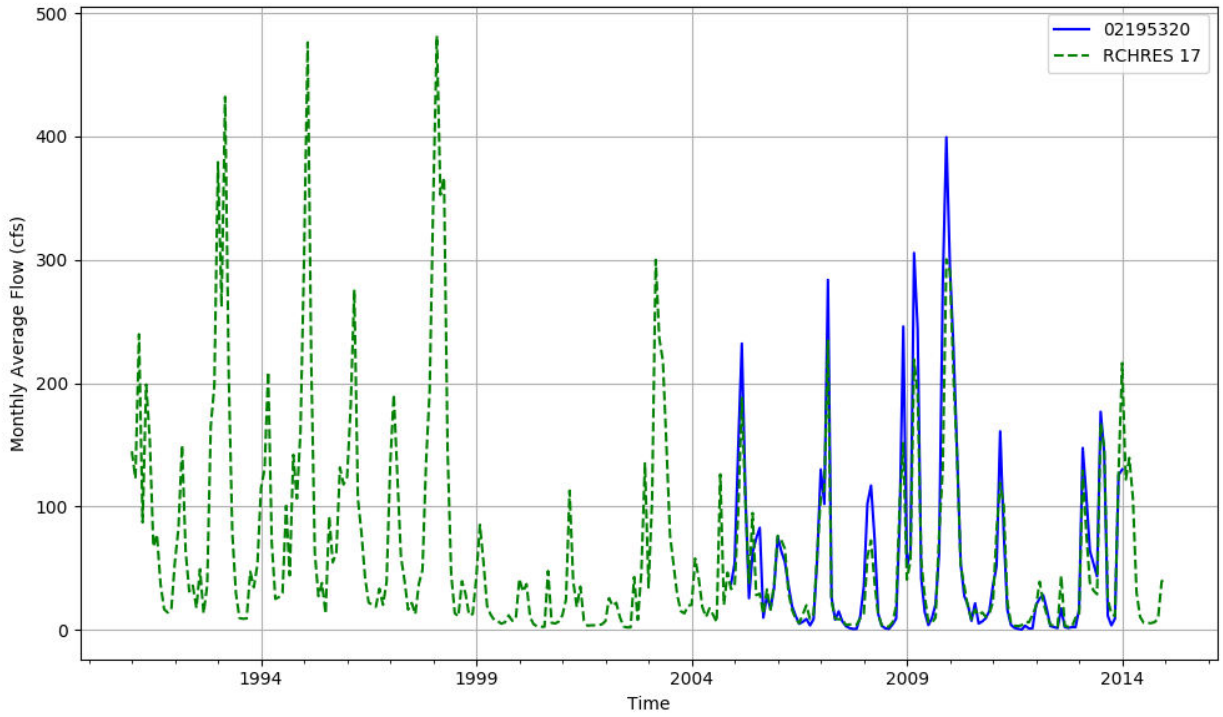


Figure T-03060106-12: Monthly flow for HSFP reach 17 and USGS station 02195320.

HSPF REACH 18, USGS GAUGE 0219730B

Water-Data Report 2009
02195320 KIOKEE CREEK AT GA 104, NEAR EVANS, GA
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 333603, long 821358 referenced to North American Datum of 1927, Columbia County, GA, Hydrologic Unit 03060106, at upstream left end of bridge on State Highway 104, 2.7 mi downstream from Greenbrier Creek, 4.0 mi above mouth and 5.5 mi northwest of Evans.

DRAINAGE AREA.--106 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 2004 to current year.
GAGE-HEIGHT: December 2004 to current year.

GAGE.--Satellite telemetry with water-stage recorder. Datum of gage is 200.00 feet above North American Vertical Datum (NAVD) of 1988.

COOPERATION.--U. S. Army Corps of Engineers, Savannah District.

REMARKS.--Discharge records good, except for estimated daily discharges which are fair. Gage-height records good.

Table T-03060106-7: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 0219730B.

Statistic	Value
Bias	-7.68
Standard error	21.47
Relative bias	-0.06
Relative standard error	0.94
Nash-Sutcliffe coefficient	0.11
Coefficient of efficiency	0.01
Index of agreement	0.52

Table T-03060106-8: Hydrologic Indices Between USGS Gauge 0219730B and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 0219730B	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	133.36	125.13	-6.17
MA2: Median, all daily flows	128.00	126.36	-1.28
MA3: CV, all daily flows	31.32	14.48	-53.78

MA4: CV, log of all daily flows	20.04	18.69	-6.71
MA5: Mean daily flow / median daily flow	1.04	0.99	-4.95
MA9: (Q10 - Q90) / median daily flow	0.59	0.51	-12.61
MA10: (Q20 - Q80) / median daily flow	0.34	0.37	10.26
MA11: (Q25 - Q75) / median daily flow	0.27	0.33	22.64
MA12: Mean monthly flow, January	82.65	61.16	-26.00
MA13: Mean monthly flow, February	82.02	71.49	-12.84
MA14: Mean monthly flow, March	83.02	68.97	-16.93
MA15: Mean monthly flow, April	70.85	62.01	-12.48
MA16: Mean monthly flow, May	126.99	133.27	4.95
MA17: Mean monthly flow, June	124.68	129.37	3.76
MA18: Mean monthly flow, July	137.32	122.70	-10.65
MA19: Mean monthly flow, August	109.90	116.39	5.90
MA20: Mean monthly flow, September	124.87	134.41	7.64
MA21: Mean monthly flow, October	58.03	62.75	8.14
MA22: Mean monthly flow, November	66.60	56.14	-15.71
MA23: Mean monthly flow, December	68.19	51.17	-24.97
ML1: Mean minimum monthly flow, January	132.00	99.50	-24.62
ML2: Mean minimum monthly flow, February	134.00	115.59	-13.74
ML3: Mean minimum monthly flow, March	139.00	127.15	-8.53
ML4: Mean minimum monthly flow, April	110.00	116.93	6.30
ML5: Mean minimum monthly flow, May	107.50	126.28	17.47
ML6: Mean minimum monthly flow, June	103.50	120.90	16.81
ML7: Mean minimum monthly flow, July	97.50	115.02	17.97
ML8: Mean minimum monthly flow, August	89.50	108.11	20.79
ML9: Mean minimum monthly flow, September	99.00	107.56	8.64
ML10: Mean minimum monthly flow, October	110.00	120.86	9.87
ML11: Mean minimum monthly flow, November	124.00	105.62	-14.83
ML12: Mean minimum monthly flow, December	130.00	99.88	-23.17
ML13: CV of minimum monthly flows	17.04	20.45	20.06
ML14: Mean minimum daily flow / mean median annual flow	0.70	0.78	11.20
ML15: Mean minimum annual flow / mean annual flow	0.66	0.77	17.32
ML16: Median minimum annual flow / median annual flow	0.70	0.78	11.20
ML20: Ratio of baseflow volume to total flow volume	0.86	0.95	9.50
ML22: Mean annual minimum flow divided by catchment area	0.90	1.04	16.16
RA1: Mean of positive changes from one day to next (rise rate)	19.64	5.33	
RA2: CV, mean of positive changes from one day to next (rise rate)	170.32	201.04	
RA3: Mean of negative changes from one day to next (fall rate)	10.89	2.01	
RA4: CV, mean of negative changes from one day to next (fall rate)	177.68	150.29	
RA5: Ratio of days that are higher than previous day	0.32	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.01	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.01	
RA8: Number of flow reversals from one day to the next	80.00	81.50	
RA9: CV, number of flow reversals from one day to the next	47.73	42.51	

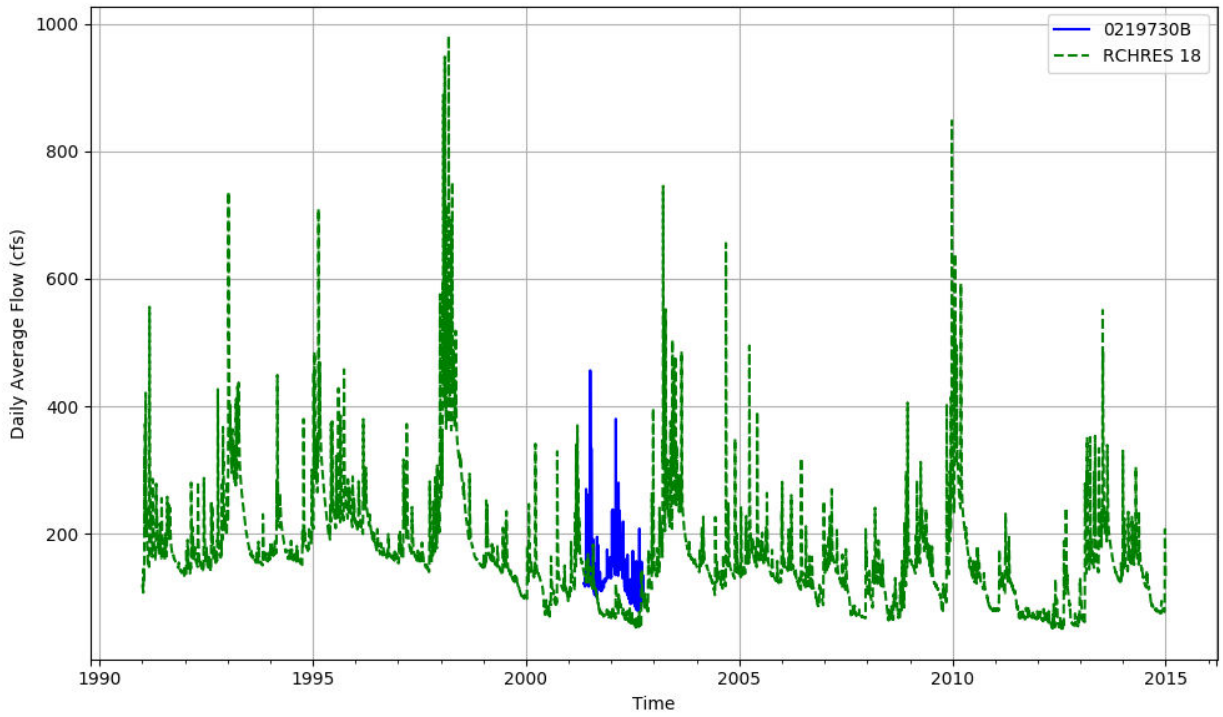


Figure T-03060106-13: Daily flow for HSFP reach 18 and USGS station 0219730B.

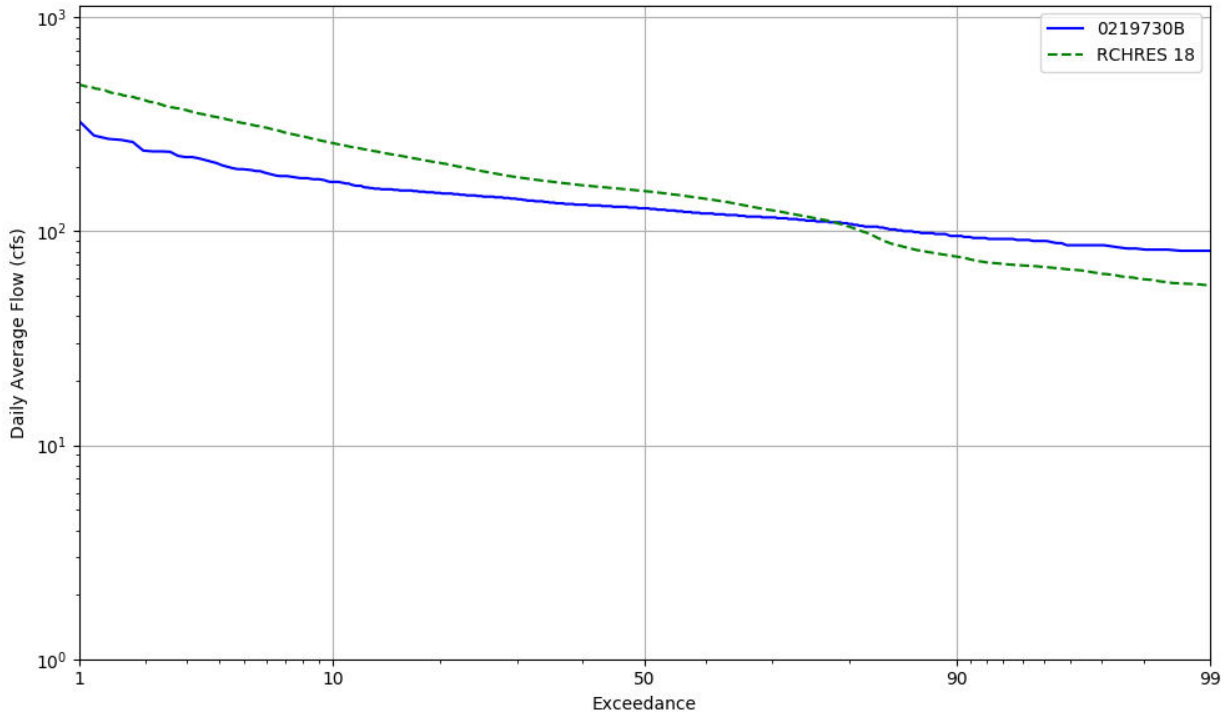


Figure T-03060106-14: Daily exceedance for HSFP reach 18 and USGS station 0219730B.

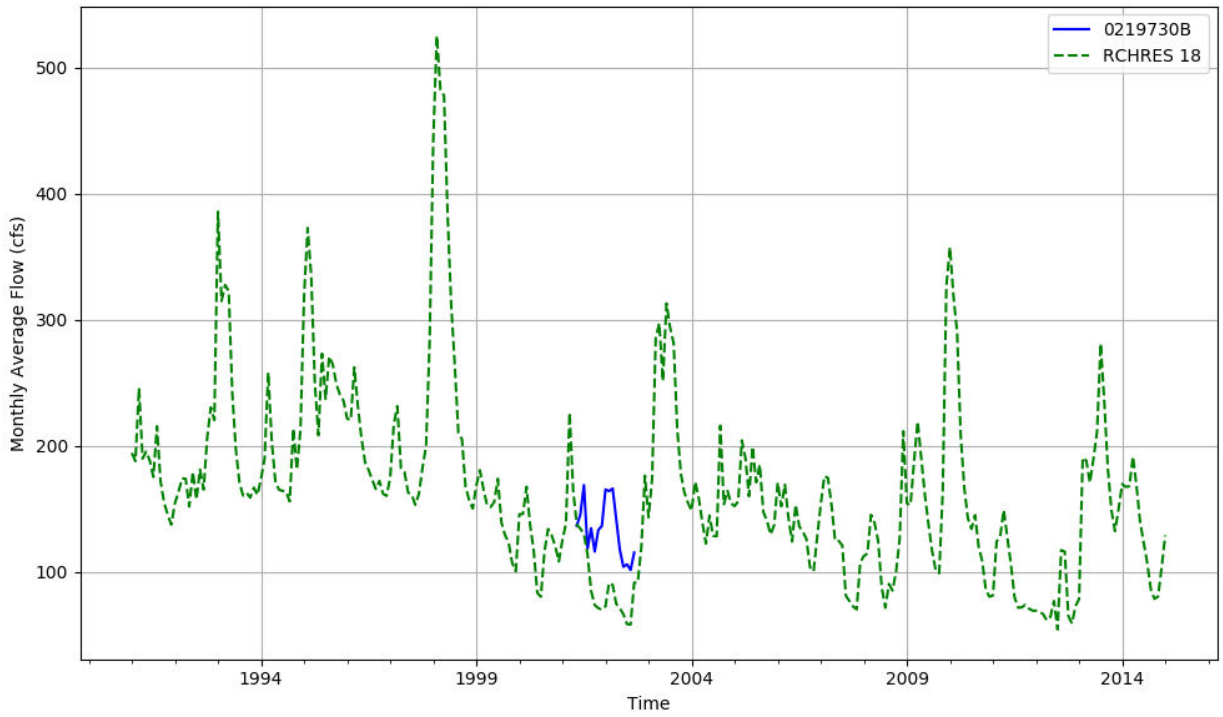


Figure T-03060106-15: Monthly flow for HSFP reach 18 and USGS station 0219730B.

HSPF REACH 20, USGS GAUGE 02196690

Water-Data Report 2009
02196690 HORSE CREEK AT CLEARWATER, S.C.
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 332905, long 815350 referenced to North American Datum of 1927, Aiken County, SC, Hydrologic Unit 03060106, on U.S. Hwy SC125S, 1.7 mi southwest of Clearwater and 3 mi east of Hamburg.

DRAINAGE AREA.--155 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 2005 to current year. Gage height record collected at same site January 2004 to August 2004 by U.S. Army Corps of Engineers.

GAGE.--Data collection platform. Elevation of gage is 118 ft above NGVD of 1929 (from topographic map).

REMARKS.--No estimated daily discharges. Records good.

Table T-03060106-9: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02196690.

Statistic	Value
Bias	-15.44
Standard error	31.29
Relative bias	-0.09
Relative standard error	0.56
Nash-Sutcliffe coefficient	0.68
Coefficient of efficiency	0.47
Index of agreement	0.76

Table T-03060106-10: Hydrologic Indices Between USGS Gauge 02196690 and HSPF Reach 20.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02196690	Simulated Reach 20	Percent Difference
MA1: Mean, all daily flows	165.49	150.15	-9.27
MA2: Median, all daily flows	145.00	128.30	-11.52
MA3: CV, all daily flows	45.27	50.18	10.83
MA4: CV, log of all daily flows	35.71	33.13	-7.22
MA5: Mean daily flow / median daily flow	1.14	1.17	2.54
MA9: (Q10 - Q90) / median daily flow	1.07	0.95	-10.88
MA10: (Q20 - Q80) / median daily flow	0.63	0.59	-6.45
MA11: (Q25 - Q75) / median daily flow	0.48	0.46	-2.71

MA12: Mean monthly flow, January	175.51	165.07	-5.95
MA13: Mean monthly flow, February	154.57	148.14	-4.16
MA14: Mean monthly flow, March	157.74	144.97	-8.09
MA15: Mean monthly flow, April	154.81	143.36	-7.39
MA16: Mean monthly flow, May	125.58	115.04	-8.39
MA17: Mean monthly flow, June	162.45	131.42	-19.10
MA18: Mean monthly flow, July	138.79	122.93	-11.43
MA19: Mean monthly flow, August	140.89	126.21	-10.42
MA20: Mean monthly flow, September	109.11	104.40	-4.32
MA21: Mean monthly flow, October	118.55	109.34	-7.77
MA22: Mean monthly flow, November	142.02	123.57	-12.99
MA23: Mean monthly flow, December	187.13	169.02	-9.68
ML1: Mean minimum monthly flow, January	114.67	149.55	30.42
ML2: Mean minimum monthly flow, February	133.25	134.38	0.85
ML3: Mean minimum monthly flow, March	148.75	140.66	-5.44
ML4: Mean minimum monthly flow, April	128.67	130.85	1.70
ML5: Mean minimum monthly flow, May	105.56	111.16	5.31
ML6: Mean minimum monthly flow, June	96.33	106.38	10.43
ML7: Mean minimum monthly flow, July	96.00	111.61	16.26
ML8: Mean minimum monthly flow, August	105.67	108.45	2.63
ML9: Mean minimum monthly flow, September	96.89	103.99	7.33
ML10: Mean minimum monthly flow, October	99.89	100.89	1.00
ML11: Mean minimum monthly flow, November	115.11	104.41	-9.30
ML12: Mean minimum monthly flow, December	140.56	117.83	-16.17
ML13: CV of minimum monthly flows	31.01	26.40	-14.86
ML14: Mean minimum daily flow / mean median annual flow	0.55	0.71	29.34
ML15: Mean minimum annual flow / mean annual flow	0.49	0.62	27.45
ML16: Median minimum annual flow / median annual flow	0.55	0.74	33.35
ML20: Ratio of baseflow volume to total flow volume	0.77	0.84	8.46
ML22: Mean annual minimum flow divided by catchment area	0.83	0.93	12.32
RA1: Mean of positive changes from one day to next (rise rate)	30.34	34.56	
RA2: CV, mean of positive changes from one day to next (rise rate)	182.61	317.57	
RA3: Mean of negative changes from one day to next (fall rate)	17.80	13.14	
RA4: CV, mean of negative changes from one day to next (fall rate)	179.73	350.10	
RA5: Ratio of days that are higher than previous day	0.35	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.02	
RA8: Number of flow reversals from one day to the next	102.80	98.70	
RA9: CV, number of flow reversals from one day to the next	31.05	36.00	

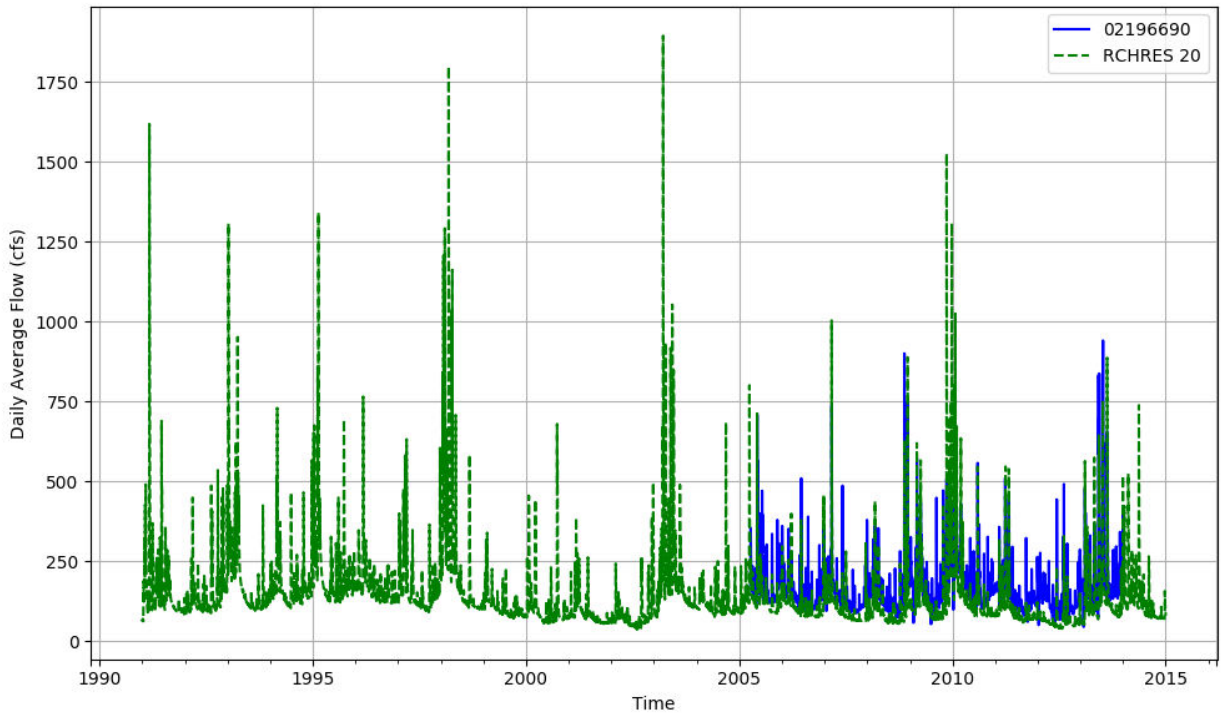


Figure T-03060106-16: Daily flow for HSFP reach 20 and USGS station 02196690.

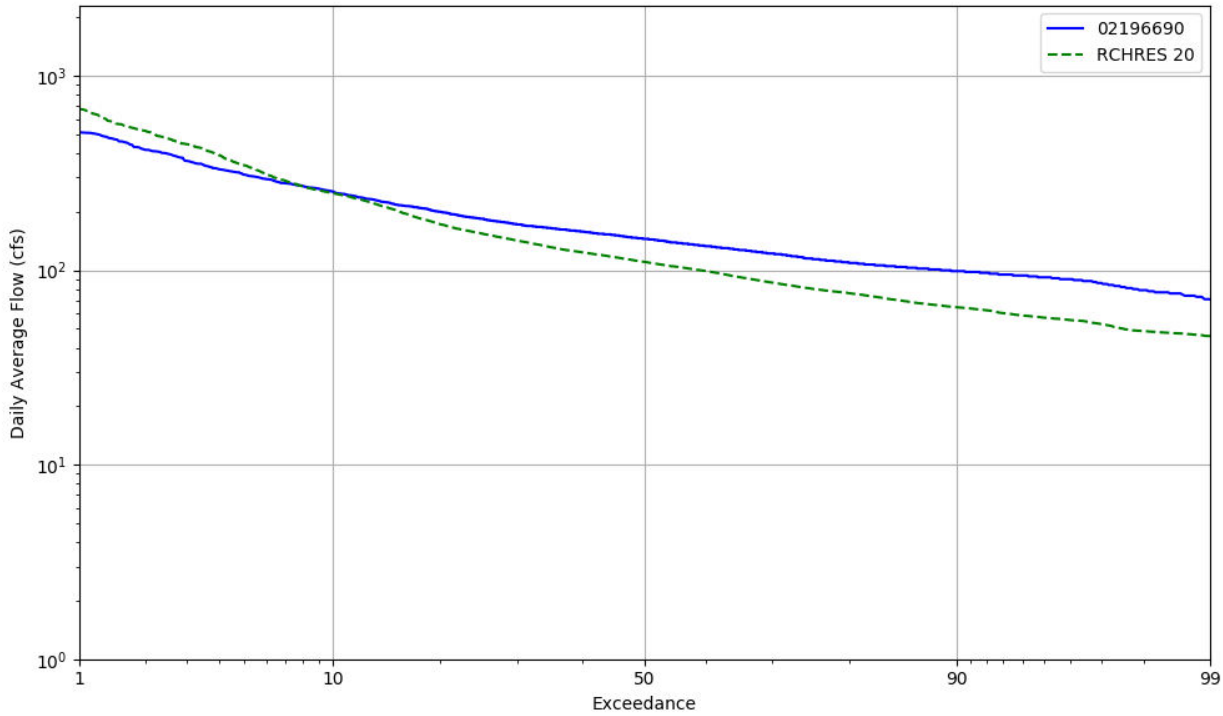


Figure T-03060106-17: Daily exceedance for HSFP reach 20 and USGS station 02196690.

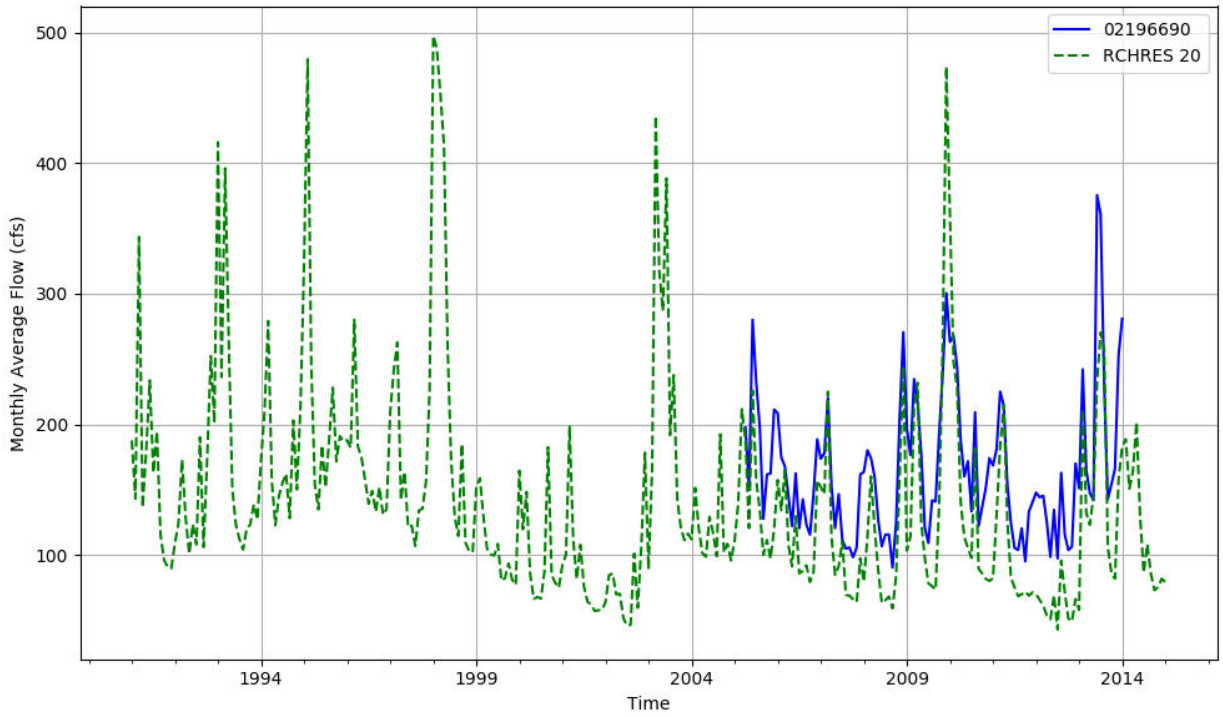


Figure T-03060106-18: Monthly flow for HSFP reach 20 and USGS station 02196690.

HSPF REACH 22, USGS GAUGE 02197415

Water-Data Report 2009
02196690 HORSE CREEK AT CLEARWATER, S.C.
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 332905, long 815350 referenced to North American Datum of 1927, Aiken County, SC, Hydrologic Unit 03060106, on U.S. Hwy SC125S, 1.7 mi southwest of Clearwater and 3 mi east of Hamburg.

DRAINAGE AREA.--155 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 2005 to current year. Gage height record collected at same site January 2004 to August 2004 by U.S. Army Corps of Engineers.

GAGE.--Data collection platform. Elevation of gage is 118 ft above NGVD of 1929 (from topographic map).

REMARKS.--No estimated daily discharges. Records good.

Table T-03060106-11: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02197415.

Statistic	Value
Bias	33.25
Standard error	46.91
Relative bias	0.29
Relative standard error	0.47
Nash-Sutcliffe coefficient	0.78
Coefficient of efficiency	0.35
Index of agreement	0.65

Table T-03060106-12: Hydrologic Indices Between USGS Gauge 02197415 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197415	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	114.06	147.25	29.11
MA2: Median, all daily flows	79.00	113.94	44.23
MA3: CV, all daily flows	74.68	51.44	-31.11
MA4: CV, log of all daily flows	72.14	52.44	-27.32
MA5: Mean daily flow / median daily flow	1.44	1.29	-10.48
MA9: (Q10 - Q90) / median daily flow	2.25	1.70	-24.34
MA10: (Q20 - Q80) / median daily flow	0.94	0.70	-25.51
MA11: (Q25 - Q75) / median daily flow	0.72	0.50	-30.75

MA12: Mean monthly flow, January	164.35	217.34	32.24
MA13: Mean monthly flow, February	178.16	222.09	24.66
MA14: Mean monthly flow, March	198.26	202.21	1.99
MA15: Mean monthly flow, April	145.27	150.82	3.82
MA16: Mean monthly flow, May	87.18	119.84	37.46
MA17: Mean monthly flow, June	77.73	113.03	45.41
MA18: Mean monthly flow, July	82.37	117.44	42.58
MA19: Mean monthly flow, August	57.73	104.80	81.54
MA20: Mean monthly flow, September	82.08	136.02	65.72
MA21: Mean monthly flow, October	54.52	89.16	63.55
MA22: Mean monthly flow, November	66.23	84.04	26.89
MA23: Mean monthly flow, December	135.99	158.80	16.78
ML1: Mean minimum monthly flow, January	108.00	139.91	29.55
ML2: Mean minimum monthly flow, February	121.80	145.91	19.79
ML3: Mean minimum monthly flow, March	120.00	137.02	14.18
ML4: Mean minimum monthly flow, April	78.80	122.11	54.96
ML5: Mean minimum monthly flow, May	60.60	101.75	67.90
ML6: Mean minimum monthly flow, June	51.20	92.78	81.20
ML7: Mean minimum monthly flow, July	47.60	93.49	96.41
ML8: Mean minimum monthly flow, August	42.20	89.12	111.19
ML9: Mean minimum monthly flow, September	49.00	92.19	88.15
ML10: Mean minimum monthly flow, October	57.50	99.54	73.11
ML11: Mean minimum monthly flow, November	66.00	94.76	43.57
ML12: Mean minimum monthly flow, December	85.20	115.27	35.29
ML13: CV of minimum monthly flows	68.23	41.93	-38.55
ML14: Mean minimum daily flow / mean median annual flow	0.43	0.68	57.83
ML15: Mean minimum annual flow / mean annual flow	0.39	0.59	52.42
ML16: Median minimum annual flow / median annual flow	0.42	0.71	69.60
ML20: Ratio of baseflow volume to total flow volume	0.71	0.81	14.17
ML22: Mean annual minimum flow divided by catchment area	0.41	0.83	103.32
RA1: Mean of positive changes from one day to next (rise rate)	34.44	23.12	
RA2: CV, mean of positive changes from one day to next (rise rate)	259.72	333.80	
RA3: Mean of negative changes from one day to next (fall rate)	18.62	9.41	
RA4: CV, mean of negative changes from one day to next (fall rate)	312.48	302.96	
RA5: Ratio of days that are higher than previous day	0.32	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.02	
RA8: Number of flow reversals from one day to the next	106.60	95.00	
RA9: CV, number of flow reversals from one day to the next	9.18	12.21	

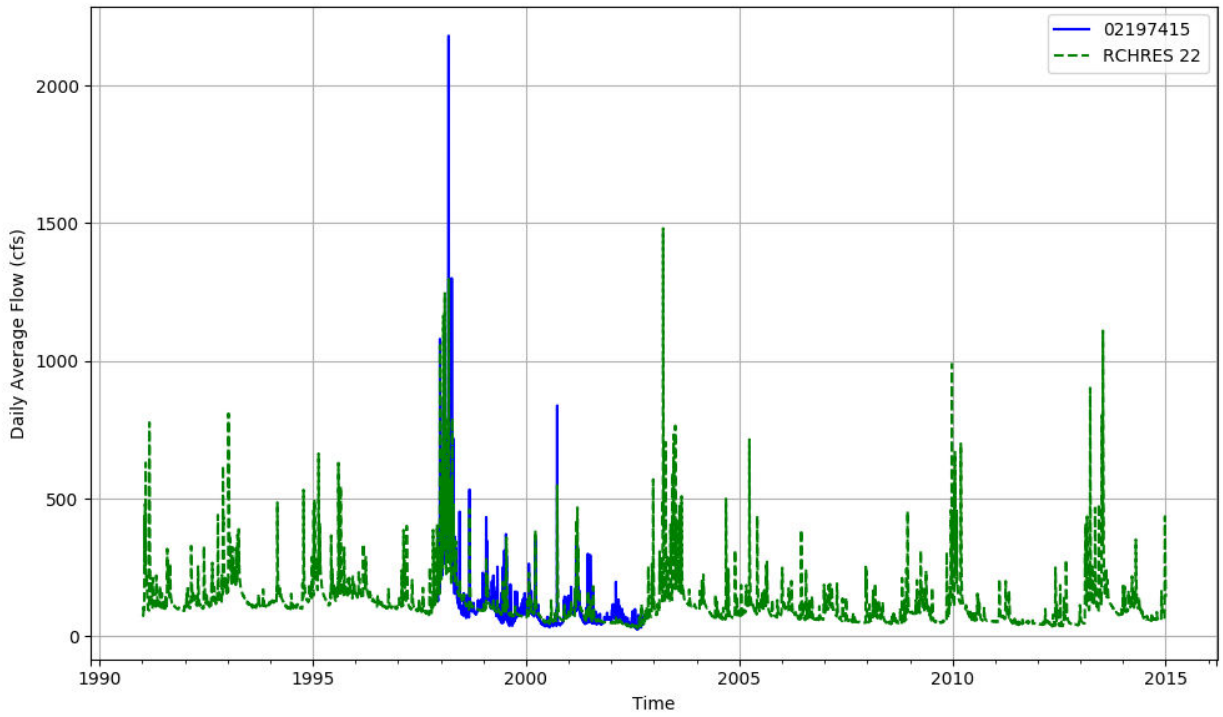


Figure T-03060106-19: Daily flow for HSFP reach 22 and USGS station 02197415.

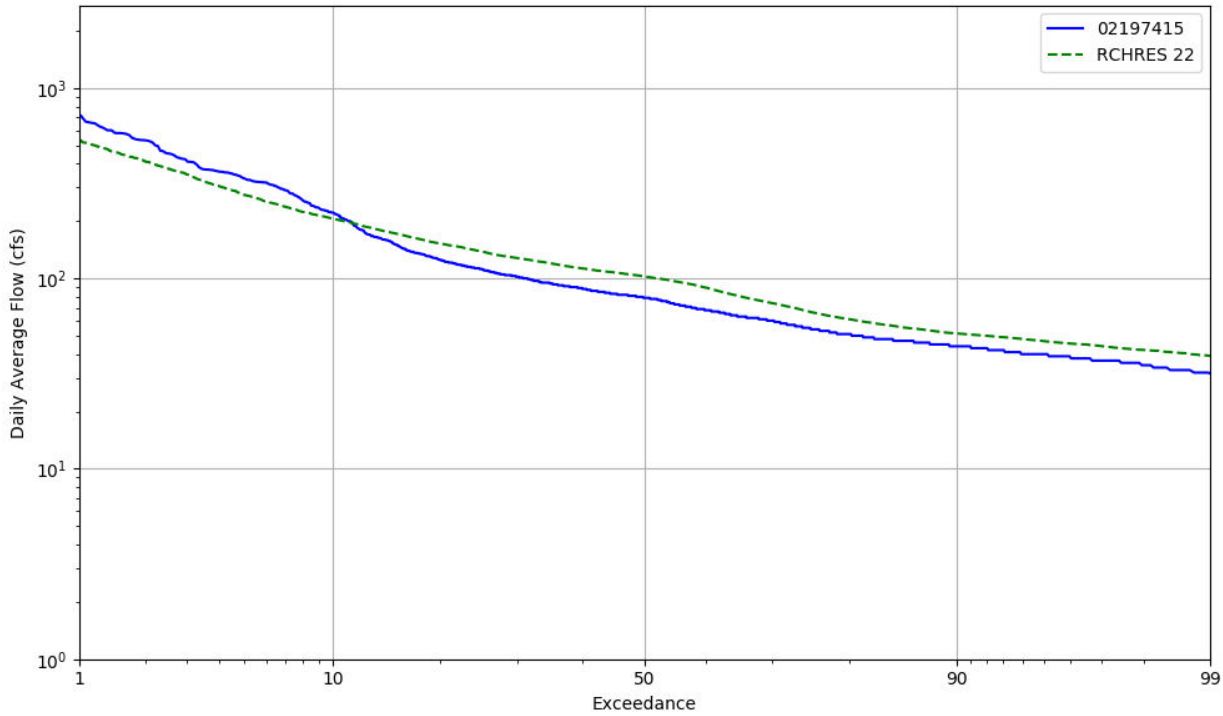


Figure T-03060106-20: Daily exceedance for HSFP reach 22 and USGS station 02197415.

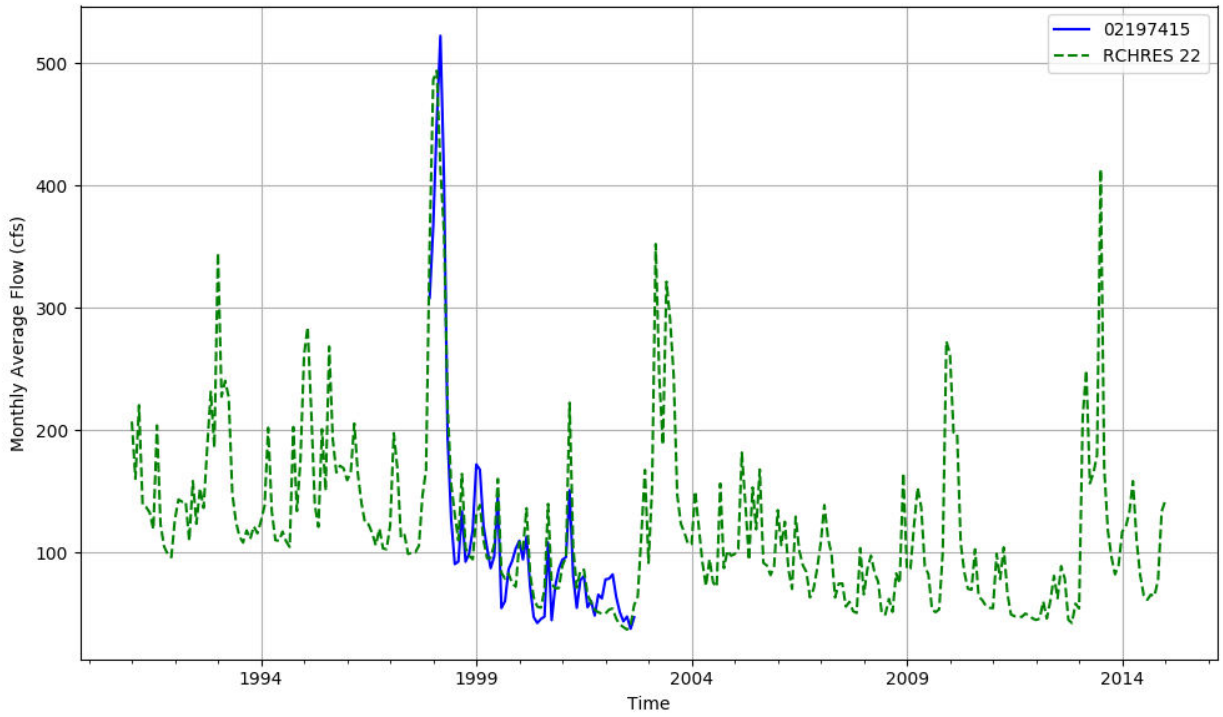


Figure T-03060106-21: Monthly flow for HSFP reach 22 and USGS station 02197415.

HSPF REACH 23, USGS GAUGE 02197310

Water-Data Report 2009
02196690 HORSE CREEK AT CLEARWATER, S.C.
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 332905, long 815350 referenced to North American Datum of 1927, Aiken County, SC, Hydrologic Unit 03060106, on U.S. Hwy SC125S, 1.7 mi southwest of Clearwater and 3 mi east of Hamburg.

DRAINAGE AREA.--155 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 2005 to current year. Gage height record collected at same site January 2004 to August 2004 by U.S. Army Corps of Engineers.

GAGE.--Data collection platform. Elevation of gage is 118 ft above NGVD of 1929 (from topographic map).

REMARKS.--No estimated daily discharges. Records good.

Table T-03060106-13: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02197310.

Statistic	Value
Bias	-3.41
Standard error	45.53
Relative bias	-0.02
Relative standard error	0.68
Nash-Sutcliffe coefficient	0.54
Coefficient of efficiency	0.36
Index of agreement	0.68

Table T-03060106-14: Hydrologic Indices Between USGS Gauge 02197310 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197310	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	218.08	214.31	-1.73
MA2: Median, all daily flows	196.00	192.16	-1.96
MA3: CV, all daily flows	43.02	26.45	-38.52
MA4: CV, log of all daily flows	35.54	30.07	-15.39
MA5: Mean daily flow / median daily flow	1.11	1.12	0.23
MA9: (Q10 - Q90) / median daily flow	1.03	0.90	-12.75
MA10: (Q20 - Q80) / median daily flow	0.58	0.55	-4.77
MA11: (Q25 - Q75) / median daily flow	0.43	0.44	2.56

MA12: Mean monthly flow, January	270.46	265.63	-1.79
MA13: Mean monthly flow, February	228.78	239.06	4.50
MA14: Mean monthly flow, March	237.30	243.27	2.52
MA15: Mean monthly flow, April	195.31	204.63	4.77
MA16: Mean monthly flow, May	165.17	174.04	5.37
MA17: Mean monthly flow, June	180.79	174.53	-3.46
MA18: Mean monthly flow, July	181.62	163.07	-10.21
MA19: Mean monthly flow, August	184.04	170.58	-7.31
MA20: Mean monthly flow, September	181.28	169.26	-6.63
MA21: Mean monthly flow, October	168.64	172.80	2.47
MA22: Mean monthly flow, November	179.34	172.22	-3.97
MA23: Mean monthly flow, December	211.79	198.22	-6.41
ML1: Mean minimum monthly flow, January	191.92	201.21	4.84
ML2: Mean minimum monthly flow, February	192.55	214.25	11.27
ML3: Mean minimum monthly flow, March	191.82	219.63	14.50
ML4: Mean minimum monthly flow, April	171.82	199.04	15.84
ML5: Mean minimum monthly flow, May	149.00	176.15	18.22
ML6: Mean minimum monthly flow, June	144.55	165.22	14.30
ML7: Mean minimum monthly flow, July	137.18	164.17	19.68
ML8: Mean minimum monthly flow, August	142.00	163.68	15.26
ML9: Mean minimum monthly flow, September	144.73	161.52	11.60
ML10: Mean minimum monthly flow, October	159.50	171.63	7.61
ML11: Mean minimum monthly flow, November	179.80	179.55	-0.14
ML12: Mean minimum monthly flow, December	186.64	190.43	2.03
ML13: CV of minimum monthly flows	25.37	27.97	10.23
ML14: Mean minimum daily flow / mean median annual flow	0.66	0.71	7.21
ML15: Mean minimum annual flow / mean annual flow	0.60	0.67	12.01
ML16: Median minimum annual flow / median annual flow	0.66	0.70	6.80
ML20: Ratio of baseflow volume to total flow volume	0.81	0.92	13.55
ML22: Mean annual minimum flow divided by catchment area	1.31	1.45	10.34
RA1: Mean of positive changes from one day to next (rise rate)	49.10	18.14	
RA2: CV, mean of positive changes from one day to next (rise rate)	166.29	218.40	
RA3: Mean of negative changes from one day to next (fall rate)	26.21	6.22	
RA4: CV, mean of negative changes from one day to next (fall rate)	194.66	217.58	
RA5: Ratio of days that are higher than previous day	0.32	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.09	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.01	
RA8: Number of flow reversals from one day to the next	104.25	93.25	
RA9: CV, number of flow reversals from one day to the next	22.55	24.82	

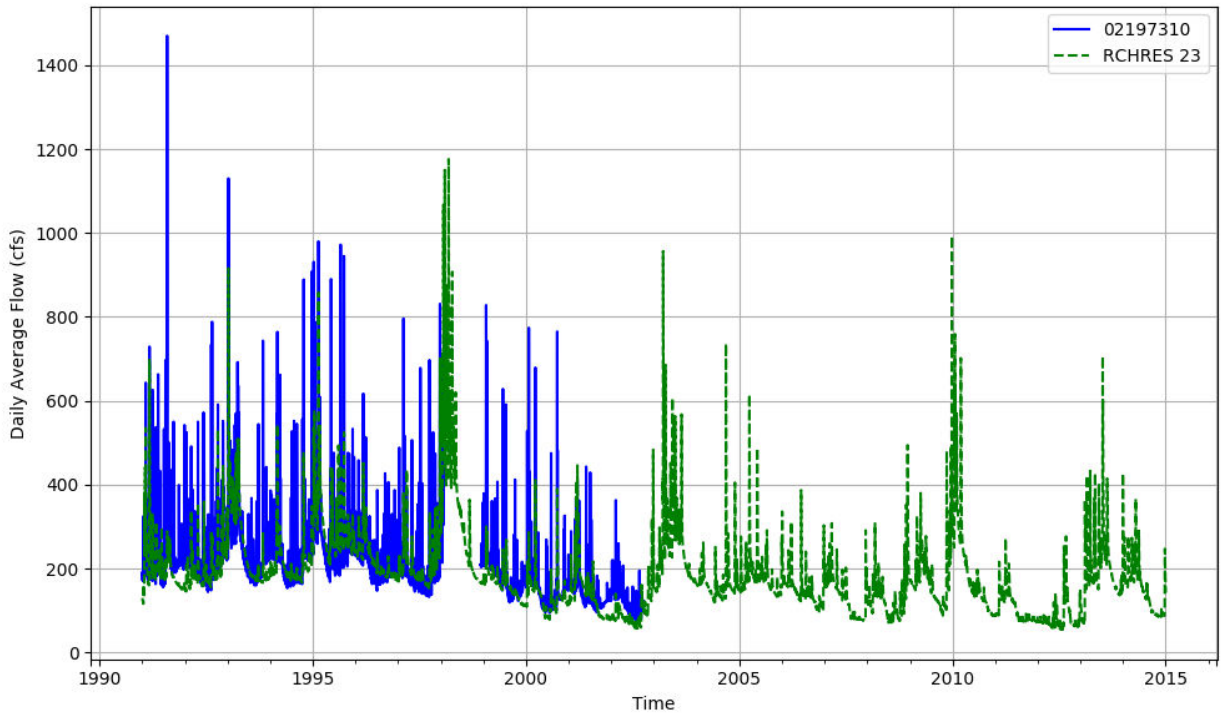


Figure T-03060106-22: Daily flow for HSFP reach 23 and USGS station 02197310.

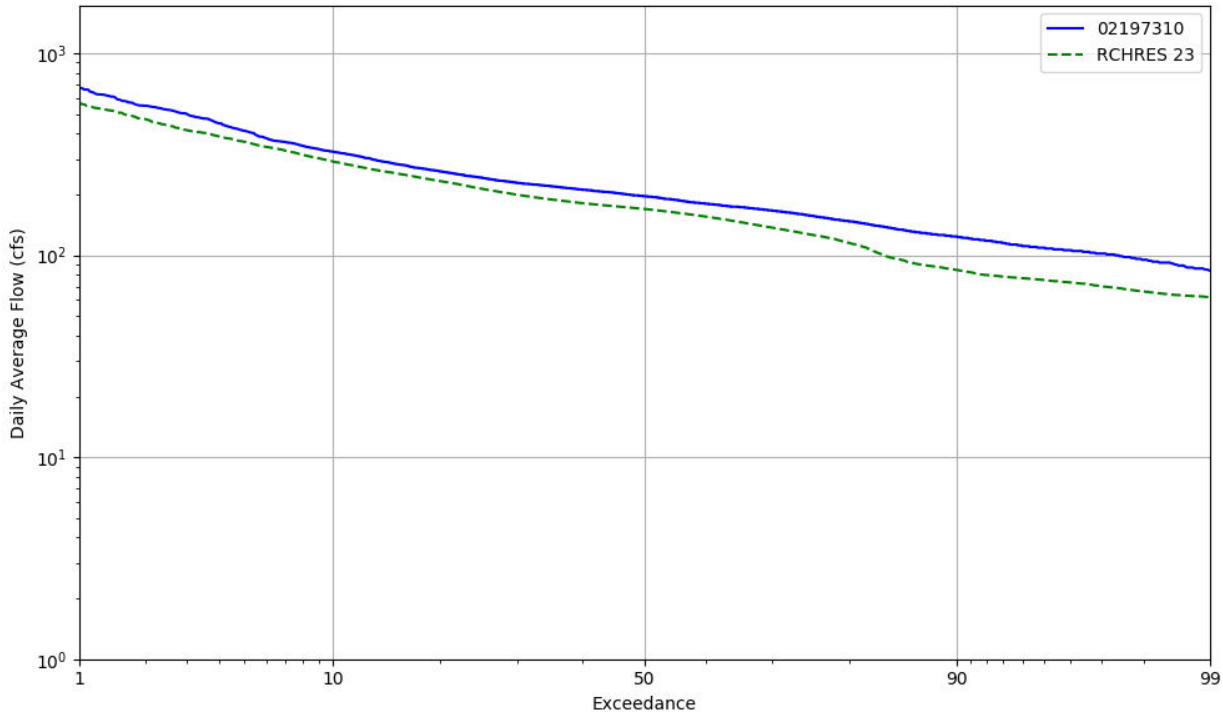


Figure T-03060106-23: Daily exceedance for HSFP reach 23 and USGS station 02197310.

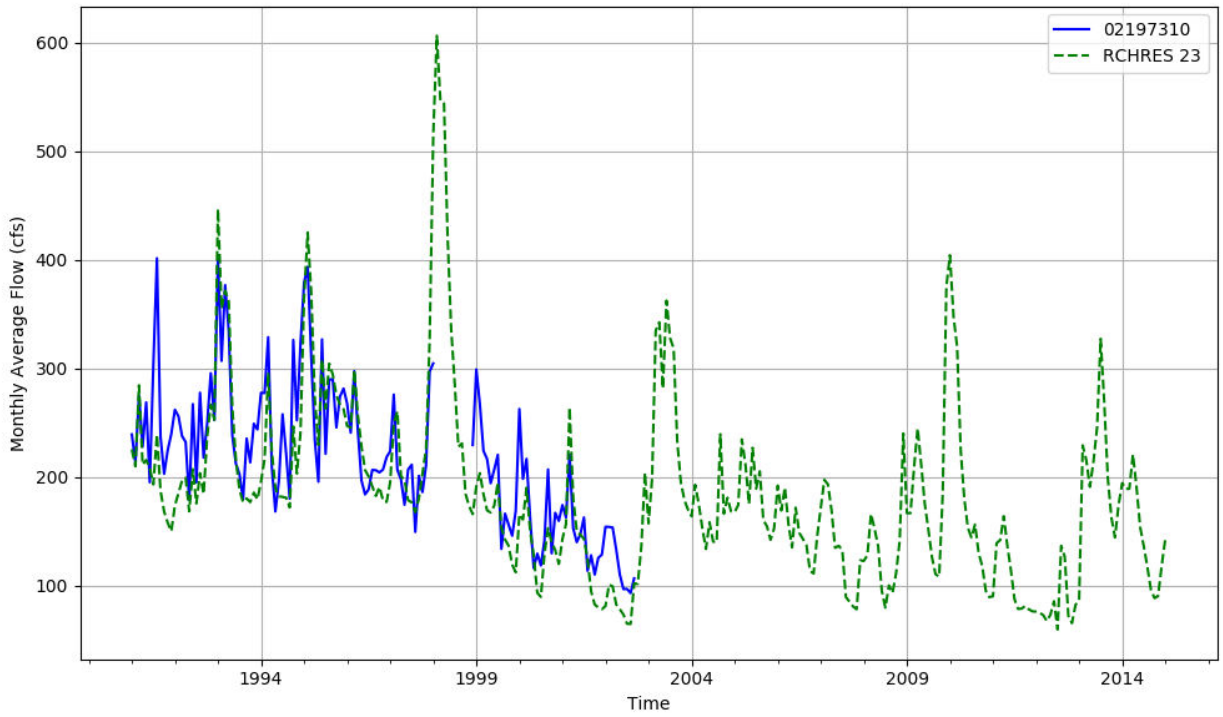


Figure T-03060106-24: Monthly flow for HSFP reach 23 and USGS station 02197310.

HSPF REACH 24, USGS GAUGE 02197315

Water-Data Report 2009
02196690 HORSE CREEK AT CLEARWATER, S.C.
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 332905, long 815350 referenced to North American Datum of 1927, Aiken County, SC, Hydrologic Unit 03060106, on U.S. Hwy SC125S, 1.7 mi southwest of Clearwater and 3 mi east of Hamburg.

DRAINAGE AREA.--155 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 2005 to current year. Gage height record collected at same site January 2004 to August 2004 by U.S. Army Corps of Engineers.

GAGE.--Data collection platform. Elevation of gage is 118 ft above NGVD of 1929 (from topographic map).

REMARKS.--No estimated daily discharges. Records good.

Table T-03060106-15: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02197315.

Statistic	Value
Bias	1.79
Standard error	56.26
Relative bias	0.01
Relative standard error	0.73
Nash-Sutcliffe coefficient	0.47
Coefficient of efficiency	0.31
Index of agreement	0.67

Table T-03060106-16: Hydrologic Indices Between USGS Gauge 02197315 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197315	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	234.43	236.08	0.70
MA2: Median, all daily flows	210.00	204.93	-2.41
MA3: CV, all daily flows	37.72	28.68	-23.95
MA4: CV, log of all daily flows	35.89	34.33	-4.34
MA5: Mean daily flow / median daily flow	1.12	1.15	3.19
MA9: (Q10 - Q90) / median daily flow	1.08	1.03	-4.54
MA10: (Q20 - Q80) / median daily flow	0.61	0.60	-2.38
MA11: (Q25 - Q75) / median daily flow	0.46	0.48	4.08

MA12: Mean monthly flow, January	294.68	289.82	-1.65
MA13: Mean monthly flow, February	285.20	304.53	6.78
MA14: Mean monthly flow, March	293.96	304.21	3.49
MA15: Mean monthly flow, April	239.92	256.29	6.82
MA16: Mean monthly flow, May	196.16	215.59	9.91
MA17: Mean monthly flow, June	202.21	210.88	4.28
MA18: Mean monthly flow, July	201.31	193.70	-3.78
MA19: Mean monthly flow, August	206.98	198.39	-4.15
MA20: Mean monthly flow, September	205.43	198.89	-3.19
MA21: Mean monthly flow, October	192.94	199.46	3.38
MA22: Mean monthly flow, November	212.21	197.29	-7.03
MA23: Mean monthly flow, December	226.45	209.41	-7.52
ML1: Mean minimum monthly flow, January	218.00	211.30	-3.07
ML2: Mean minimum monthly flow, February	220.50	241.84	9.68
ML3: Mean minimum monthly flow, March	217.33	244.33	12.42
ML4: Mean minimum monthly flow, April	188.83	223.96	18.60
ML5: Mean minimum monthly flow, May	157.58	197.61	25.40
ML6: Mean minimum monthly flow, June	150.08	183.07	21.98
ML7: Mean minimum monthly flow, July	141.58	177.22	25.17
ML8: Mean minimum monthly flow, August	147.75	173.51	17.44
ML9: Mean minimum monthly flow, September	152.42	171.73	12.67
ML10: Mean minimum monthly flow, October	171.91	179.39	4.35
ML11: Mean minimum monthly flow, November	196.55	186.64	-5.04
ML12: Mean minimum monthly flow, December	205.73	198.66	-3.44
ML13: CV of minimum monthly flows	27.89	32.72	17.32
ML14: Mean minimum daily flow / mean median annual flow	0.62	0.70	13.51
ML15: Mean minimum annual flow / mean annual flow	0.57	0.65	13.87
ML16: Median minimum annual flow / median annual flow	0.61	0.70	14.19
ML20: Ratio of baseflow volume to total flow volume	0.82	0.91	10.41
ML22: Mean annual minimum flow divided by catchment area	1.33	1.50	12.87
RA1: Mean of positive changes from one day to next (rise rate)	40.37	23.83	
RA2: CV, mean of positive changes from one day to next (rise rate)	167.07	247.55	
RA3: Mean of negative changes from one day to next (fall rate)	23.58	8.09	
RA4: CV, mean of negative changes from one day to next (fall rate)	183.12	273.68	
RA5: Ratio of days that are higher than previous day	0.35	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.01	
RA8: Number of flow reversals from one day to the next	106.58	96.75	
RA9: CV, number of flow reversals from one day to the next	7.28	12.45	

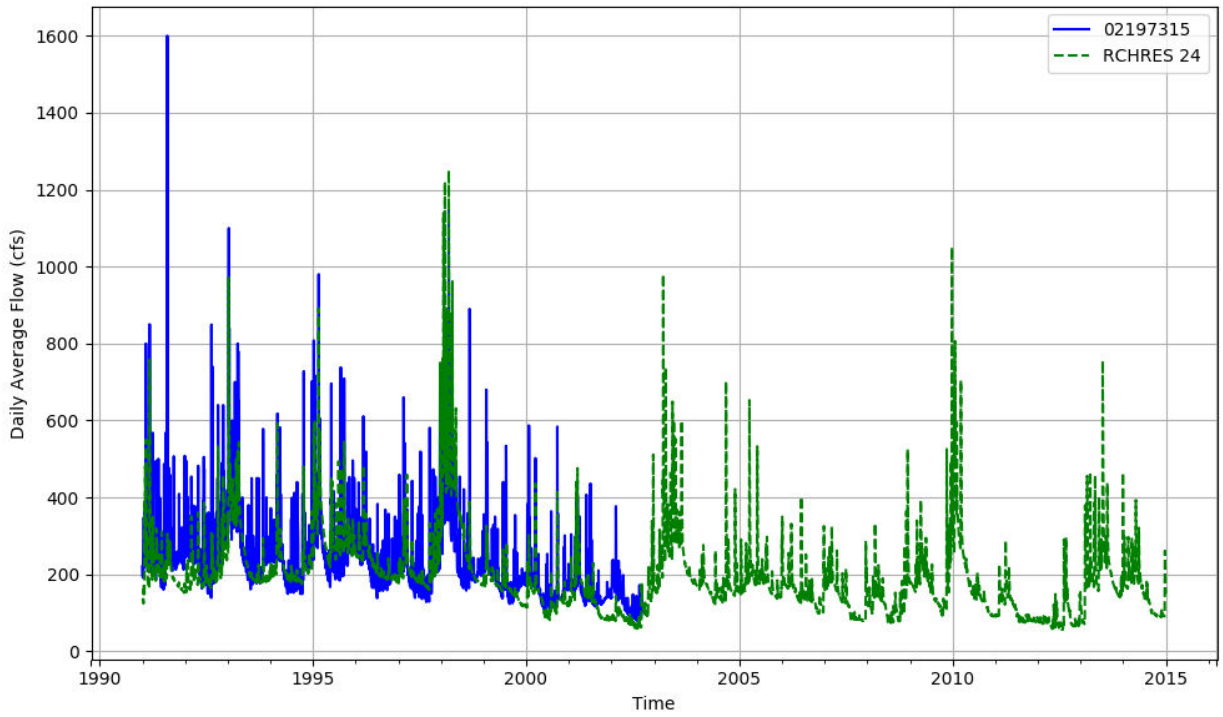


Figure T-03060106-25: Daily flow for HSFP reach 24 and USGS station 02197315.

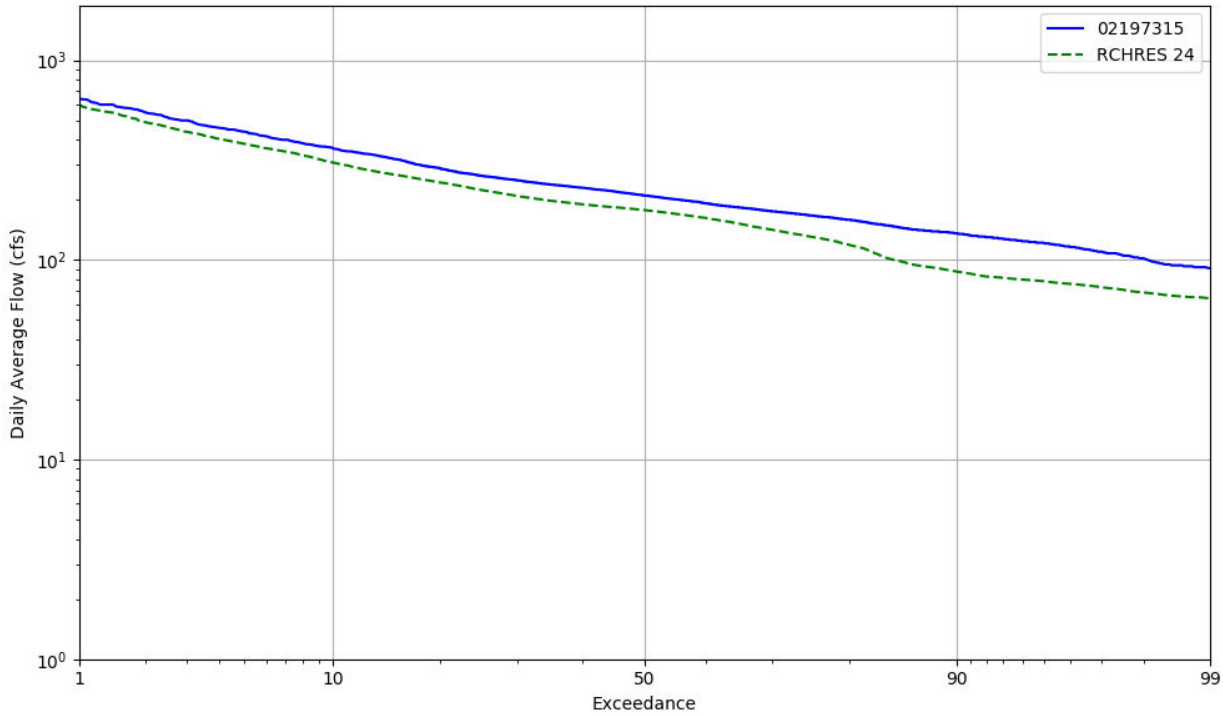


Figure T-03060106-26: Daily exceedance for HSFP reach 24 and USGS station 02197315.

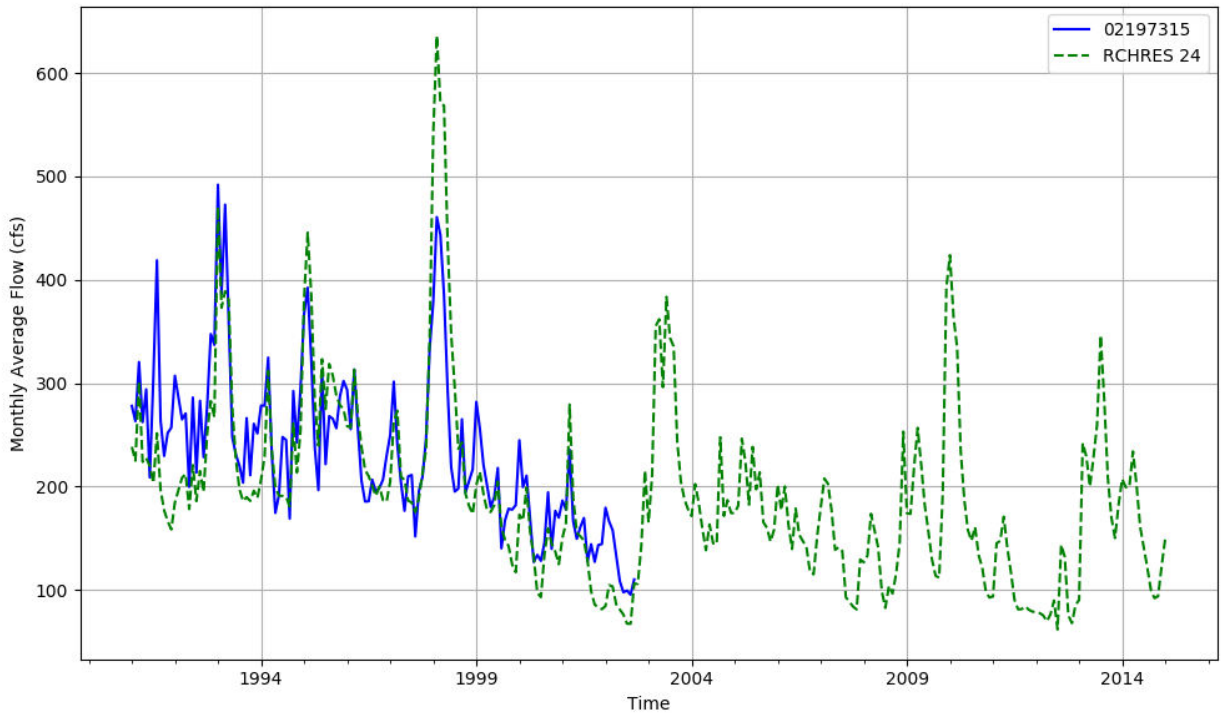


Figure T-03060106-27: Monthly flow for HSFP reach 24 and USGS station 02197315.

HSPF REACH 38, USGS GAUGE 02197500

Water-Data Report 2009
02197500 SAVANNAH RIVER AT BURTONS FERRY BRIDGE NEAR MILLHAVEN, GA
Savannah Basin Middle Savannah Subbasin

LOCATION.--Lat 325620, long 813010 referenced to North American Datum of 1927, Screven County, GA, Hydrologic Unit 03060106, on right bank 500 ft downstream from U.S. Highway 301 bridge, 2.0 mi downstream from Rocky Creek, 9.0 mi east of Millhaven, and at mile 118.7.

DRAINAGE AREA.--8,650 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1939 to September 1970, October 1982 to September 2003, October 2004 to present.

GAGE.--Data collection platform. Datum of gage is 52.42 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Thurmond Lake and by other powerplants above station.
The USGS gauge '02197500 SAVANNAH RIVER AT BURTONS FERRY BRIDGE NEAR MILLHAVEN, GA' is regulated by Thurmond Lake and by other powerplants above gauge.

Table T-03060106-17: Comparison Statistics Between HSPF Reach 38 and USGS Gauge 02197500.

Statistic	Value
Bias	-6047.35
Standard error	7238.07
Relative bias	-0.65
Relative standard error	1.19
Nash-Sutcliffe coefficient	-0.42
Coefficient of efficiency	-0.37
Index of agreement	0.43

Table T-03060106-18: Hydrologic Indices Between USGS Gauge 02197500 and HSPF Reach 38.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197500	Simulated Reach 38	Percent Difference
MA1: Mean, all daily flows	9252.00	3209.79	-65.31
MA2: Median, all daily flows	6550.00	2165.63	-66.94
MA3: CV, all daily flows	45.07	67.80	50.45
MA4: CV, log of all daily flows	64.02	76.71	19.81
MA5: Mean daily flow / median daily flow	1.41	1.48	4.93

MA9: (Q10 - Q90) / median daily flow	2.18	3.32	52.49
MA10: (Q20 - Q80) / median daily flow	1.04	1.75	69.44
MA11: (Q25 - Q75) / median daily flow	0.70	1.39	98.51
MA12: Mean monthly flow, January	10036.79	4225.86	-57.90
MA13: Mean monthly flow, February	11202.22	5005.97	-55.31
MA14: Mean monthly flow, March	12175.82	5676.15	-53.38
MA15: Mean monthly flow, April	9820.99	4309.51	-56.12
MA16: Mean monthly flow, May	7940.23	2804.29	-64.68
MA17: Mean monthly flow, June	7337.72	2281.43	-68.91
MA18: Mean monthly flow, July	7967.15	1885.87	-76.33
MA19: Mean monthly flow, August	7888.94	1846.62	-76.59
MA20: Mean monthly flow, September	6186.90	1513.90	-75.53
MA21: Mean monthly flow, October	6751.73	1692.11	-74.94
MA22: Mean monthly flow, November	6866.44	1867.23	-72.81
MA23: Mean monthly flow, December	8758.88	2765.45	-68.43
ML1: Mean minimum monthly flow, January	7964.78	3265.48	-59.00
ML2: Mean minimum monthly flow, February	9030.00	3831.41	-57.57
ML3: Mean minimum monthly flow, March	8230.91	4325.22	-47.45
ML4: Mean minimum monthly flow, April	6802.73	3376.33	-50.37
ML5: Mean minimum monthly flow, May	6212.27	2377.51	-61.73
ML6: Mean minimum monthly flow, June	5636.82	1814.10	-67.82
ML7: Mean minimum monthly flow, July	5718.18	1531.74	-73.21
ML8: Mean minimum monthly flow, August	6446.36	1479.07	-77.06
ML9: Mean minimum monthly flow, September	5294.09	1144.28	-78.39
ML10: Mean minimum monthly flow, October	5163.48	1193.78	-76.88
ML11: Mean minimum monthly flow, November	5289.55	1400.08	-73.53
ML12: Mean minimum monthly flow, December	7187.73	2153.59	-70.04
ML13: CV of minimum monthly flows	61.41	87.17	41.94
ML14: Mean minimum daily flow / mean median annual flow	0.68	0.43	-37.21
ML15: Mean minimum annual flow / mean annual flow	0.59	0.33	-43.94
ML16: Median minimum annual flow / median annual flow	0.69	0.38	-44.24
ML20: Ratio of baseflow volume to total flow volume	0.81	0.83	2.99
ML22: Mean annual minimum flow divided by catchment area	47.12	8.79	-81.35
RA1: Mean of positive changes from one day to next (rise rate)	607.75	375.57	
RA2: CV, mean of positive changes from one day to next (rise rate)	123.71	542.84	
RA3: Mean of negative changes from one day to next (fall rate)	559.00	181.77	
RA4: CV, mean of negative changes from one day to next (fall rate)	132.93	675.47	
RA5: Ratio of days that are higher than previous day	0.47	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.02	
RA8: Number of flow reversals from one day to the next	108.88	50.54	
RA9: CV, number of flow reversals from one day to the next	31.28	35.43	

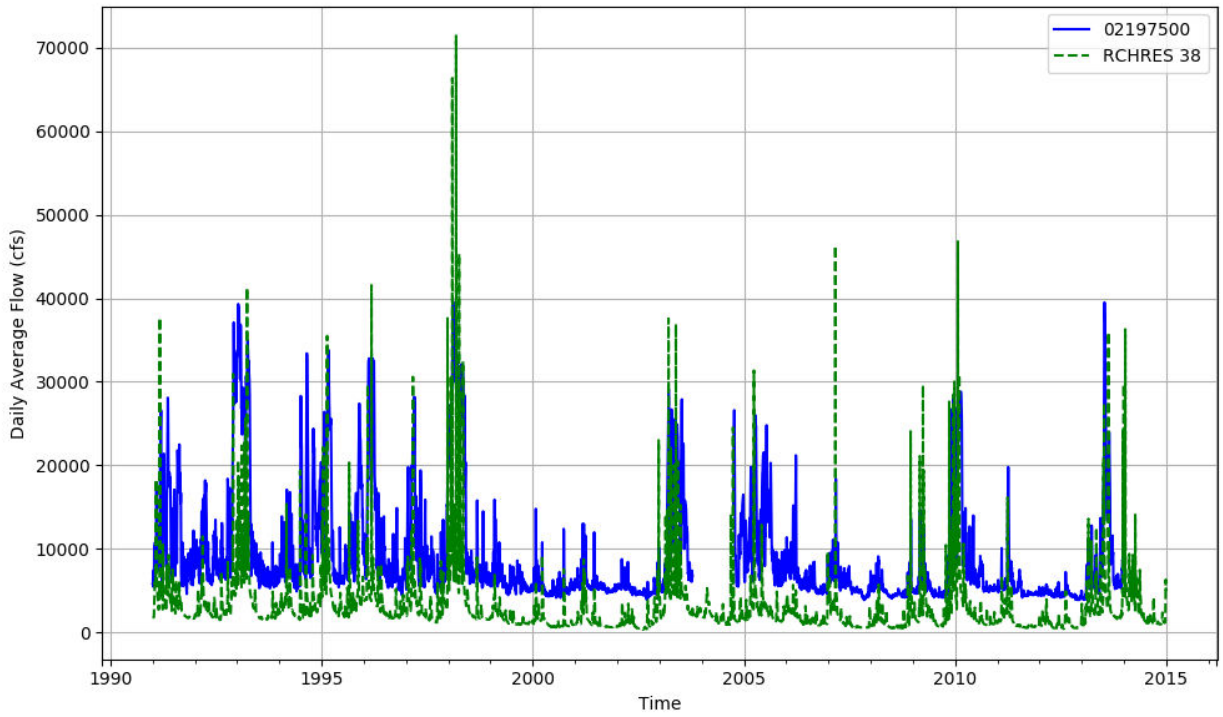


Figure T-03060106-28: Daily flow for HSFP reach 38 and USGS station 02197500.

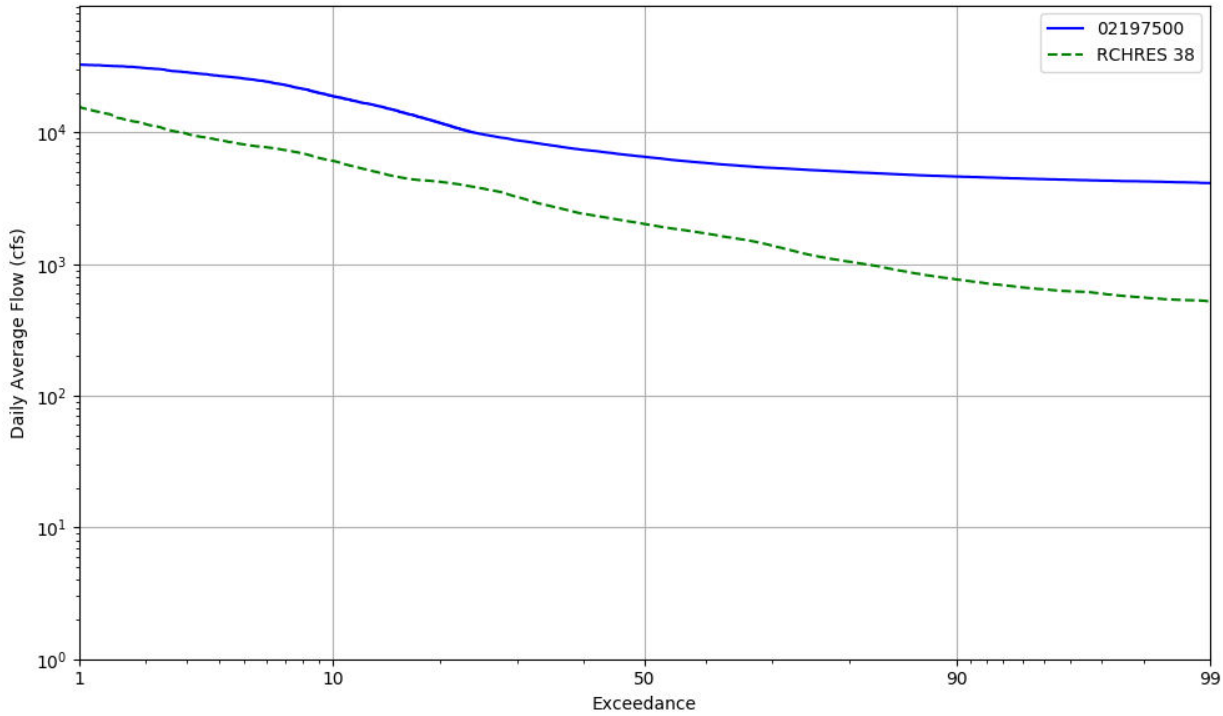


Figure T-03060106-29: Daily exceedance for HSFP reach 38 and USGS station 02197500.

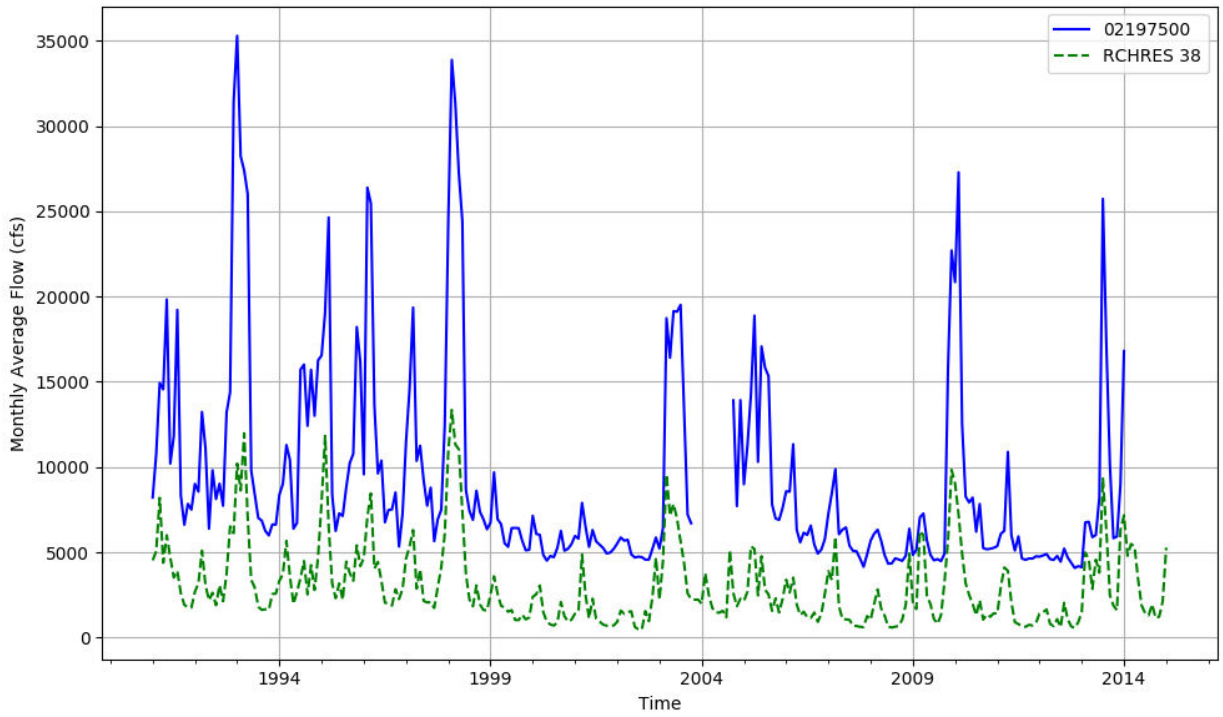


Figure T-03060106-30: Monthly flow for HSFP reach 38 and USGS station 02197500.

Table T-03060106-19: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18161	62329	47557	12730	3573	5062	476640	100121	92921	52864	54638	210102	3120	7154	11338	1158309
AREA(%)	1.5	5.3	4.1	1.1	0.3	0.4	40.6	8.5	7.9	4.5	4.7	17.9	0.3	0.6	1.0	98.7
IMPERVIOUS																
AREA(ACRES)		3375	5328	3201	3579											15483
AREA(%)		0.3	0.5	0.3	0.3											1.3
SUPY	33.3	32.9	32.8	32.9	32.9	33.0	33.5	34.0	32.8	33.3	33.1	33.4	62.6	44.4	36.5	33.1
SURLI		0.0	8.7	8.0	7.9										0.9	0.5
UZLI																0.0
LZLI		0.0	0.2	0.1	0.1										5.3	0.1
SURO: PERVIOUS	6.3	2.0	2.1	0.6	0.6	1.6	0.4	2.6	1.2	1.1	1.1	5.3	6.4	8.2	1.4	1.9
SURO: IMPERVIOUS		26.5	26.5	26.6	26.7											0.4
SURO: COMBINED	6.3	3.3	4.5	5.8	13.6	1.6	0.4	2.6	1.2	1.1	1.1	5.3	6.4	8.2	1.4	2.3
IFWO		0.0	0.0			0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0
AGWO	0.4	9.3	15.0	14.1	13.0	10.9	6.2	9.9	8.9	9.5	8.1	0.3	24.1	4.2	13.2	6.5
AGWI	1.5	8.2	13.6	12.4	11.2	10.4	5.3	8.0	7.9	8.5	6.4	1.0	18.4	3.9	11.3	5.7
IGWI	0.5	0.7	1.0	1.0	1.0	0.8	0.7	1.6	0.9	0.7	1.4	0.7	1.2	4.0	2.3	0.9
CEPE		7.1	7.0	7.0	9.8	7.1	13.2	8.1	7.2	7.4	6.1	10.6	27.6	10.3	7.9	10.2
UZET	5.2	2.2	2.3	4.5	4.5	2.4	1.6	2.7	2.2	2.0	2.8	8.0	2.3	4.5	3.3	3.1
LZET	0.8	14.2	16.7	17.2	15.7	12.4	15.5	13.2	15.7	15.7	18.3	1.7	7.8	17.6	19.1	12.6
AGWET	1.0	0.4	0.3	0.2	0.1	0.8	0.3	0.1	0.5	0.6	0.1	0.7	0.2	0.0	0.1	0.4
BASET	0.2	0.7	0.8	0.7	0.6	1.2	0.6	0.5	0.8	0.9	0.5	0.1	1.2	0.5	0.5	0.5
SURET	20.6											8.9				1.9
PERO	6.7	11.4	17.0	14.7	13.6	12.5	6.7	12.5	10.1	10.6	9.2	5.6	30.5	12.4	14.7	8.4
IGWI	0.5	0.7	1.0	1.0	1.0	0.8	0.7	1.6	0.9	0.7	1.4	0.7	1.2	4.0	2.3	0.9
TAET: PERVIOUS	27.8	24.6	27.1	29.6	30.6	23.8	31.3	24.5	26.3	26.5	27.7	30.0	39.0	32.9	30.9	28.7
IMPEV: IMPERVIOUS		6.4	6.3	6.3	6.3											0.1
ET: COMBINED	27.8	23.6	25.0	24.9	18.4	23.8	31.3	24.5	26.3	26.5	27.7	30.0	39.0	32.9	30.9	28.8
PET	45.2	45.0	44.9	44.9	45.0	44.9	45.2	45.4	45.1	45.0	45.5	45.5	44.9	46.2	45.7	44.6

Table T-03060106-20: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18161	62329	47557	12730	3573	5062	476640	100121	92921	52864	54638	210102	3120	7154	11338	1158309
AREA(%)	1.5	5.3	4.1	1.1	0.3	0.4	40.6	8.5	7.9	4.5	4.7	17.9	0.3	0.6	1.0	98.7
IMPERVIOUS																
AREA(ACRES)		3375	5328	3201	3579											15483
AREA(%)		0.3	0.5	0.3	0.3											1.3
SUPY	51.1	51.7	52.0	51.8	51.5	52.1	51.3	50.8	51.6	52.2	50.4	49.6	60.9	51.7	52.7	50.4
SURLI		0.0	9.6	8.7	8.4										0.1	0.5
UZLI																0.0
LZLI		0.0	0.5	0.3	0.2										0.3	0.0
SURO: PERVIOUS	14.0	6.5	6.8	1.8	1.8	5.3	1.5	5.9	4.1	4.3	2.4	11.3	8.3	8.8	2.2	4.7
SURO: IMPERVIOUS		44.1	44.6	44.4	44.2											0.6
SURO: COMBINED	14.0	8.4	10.6	10.4	23.0	5.3	1.5	5.9	4.1	4.3	2.4	11.3	8.3	8.8	2.2	5.3
IFWO		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
AGWO	0.6	10.7	17.7	16.7	15.1	13.3	7.6	11.1	10.7	11.5	9.0	0.5	14.3	3.9	10.3	7.6
AGWI	1.9	15.3	23.4	22.9	21.1	19.4	12.1	14.7	15.7	16.7	13.0	1.4	19.2	5.1	14.0	11.4
IGWI	0.6	1.3	1.7	1.8	1.7	1.4	1.4	2.6	1.6	1.3	2.3	1.1	1.2	3.7	2.3	1.5
CEPE		8.4	8.3	8.2	11.5	8.4	15.3	9.5	8.6	8.7	7.2	12.3	15.1	11.0	8.8	11.8
UZET	5.5	3.2	3.3	7.9	7.4	3.6	2.4	3.3	3.1	2.9	4.0	6.6	3.0	4.0	4.2	3.6
LZET	0.6	16.5	18.2	17.1	15.4	13.4	17.1	14.2	17.8	17.6	20.1	1.4	13.7	18.2	20.3	13.8
AGWET	1.1	0.4	0.3	0.2	0.1	1.0	0.4	0.1	0.6	0.7	0.1	0.8	0.4	0.0	0.1	0.5
BASET	0.3	0.8	0.9	0.8	0.6	1.4	0.9	0.5	1.0	1.1	0.5	0.2	1.1	0.4	0.5	0.7
SURET	26.9											13.9				2.9
PERO	14.6	17.1	24.5	18.5	16.9	18.6	9.1	17.0	14.9	15.7	11.4	11.8	22.7	12.7	12.5	12.4
IGWI	0.6	1.3	1.7	1.8	1.7	1.4	1.4	2.6	1.6	1.3	2.3	1.1	1.2	3.7	2.3	1.5
TAET: PERVIOUS	34.3	29.3	31.0	34.2	35.1	27.8	36.1	27.7	31.1	31.1	31.9	35.1	33.4	33.6	33.8	33.2
IMPEV: IMPERVIOUS		7.6	7.4	7.3	7.3											0.1
ET: COMBINED	34.3	28.2	28.6	28.8	21.2	27.8	36.1	27.7	31.1	31.1	31.9	35.1	33.4	33.6	33.8	33.3
PET	51.8	51.6	51.4	51.5	51.5	51.3	51.8	52.3	51.7	51.6	52.3	52.4	51.4	53.0	52.5	51.3

Table T-03060106-21: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18161	62329	47557	12730	3573	5062	476640	100121	92921	52864	54638	210102	3120	7154	11338	1158309
AREA(%)	1.5	5.3	4.1	1.1	0.3	0.4	40.6	8.5	7.9	4.5	4.7	17.9	0.3	0.6	1.0	98.7
IMPERVIOUS																
AREA(ACRES)		3375	5328	3201	3579											15483
AREA(%)		0.3	0.5	0.3	0.3											1.3
SUPY	35.9	35.7	35.6	35.2	34.9	35.7	36.2	35.9	36.1	36.2	35.4	35.3	48.3	38.4	38.5	35.5
SURLI		0.0	9.8	8.8	8.5										0.2	0.5
UZLI																0.0
LZLI		0.0	0.5	0.3	0.2										0.4	0.0
SURO: PERVIOUS	8.1	3.5	3.6	1.8	1.9	3.0	1.3	3.4	2.2	2.2	1.5	7.7	5.0	5.2	1.5	3.1
SURO: IMPERVIOUS		29.2	29.3	28.9	28.6											0.4
SURO: COMBINED	8.1	4.8	6.2	7.3	15.3	3.0	1.3	3.4	2.2	2.2	1.5	7.7	5.0	5.2	1.5	3.5
IFWO		0.0	0.0	0.0		0.0		0.0	0.0	0.0			0.0	0.0		0.0
AGWO	0.5	10.8	17.8	17.3	15.8	13.0	8.1	11.2	11.0	11.6	9.7	0.3	14.2	4.0	10.9	7.9
AGWI	1.7	8.4	15.3	14.9	13.2	11.1	6.1	8.1	8.7	9.3	7.2	1.1	12.0	3.1	8.3	6.3
IGWI	0.5	0.7	1.1	1.1	1.1	0.8	0.7	1.6	1.0	0.8	1.4	0.7	0.7	2.6	1.6	0.9
CEPE		7.3	7.1	7.1	10.0	7.2	13.6	8.4	7.4	7.5	6.3	10.9	17.2	9.7	7.9	10.4
UZET	5.0	2.4	2.6	7.5	6.8	2.7	3.4	2.8	2.5	2.3	5.0	8.5	2.4	3.7	5.5	4.2
LZET	0.7	15.3	17.4	16.7	15.5	12.9	16.8	13.7	16.8	16.7	18.5	1.7	12.0	17.8	18.8	13.4
AGWET	1.0	0.4	0.3	0.2	0.1	0.9	0.4	0.1	0.6	0.7	0.1	0.8	0.4	0.0	0.1	0.5
BASET	0.3	0.7	0.9	0.7	0.6	1.2	0.7	0.5	0.8	0.9	0.5	0.1	1.0	0.4	0.5	0.6
SURET	23.1											8.6				1.9
PERO	8.6	14.3	21.4	19.2	17.7	15.9	9.3	14.6	13.2	13.8	11.2	8.0	19.2	9.2	12.4	11.0
IGWI	0.5	0.7	1.1	1.1	1.1	0.8	0.7	1.6	1.0	0.8	1.4	0.7	0.7	2.6	1.6	0.9
TAET: PERVIOUS	30.1	26.1	28.3	32.2	33.0	25.0	34.9	25.4	28.1	28.1	30.4	30.7	32.9	31.6	32.6	30.9
IMPEV: IMPERVIOUS		6.5	6.3	6.3	6.3											0.1
ET: COMBINED	30.1	25.1	26.1	27.0	19.6	25.0	34.9	25.4	28.1	28.1	30.4	30.7	32.9	31.6	32.6	31.0
PET	47.5	47.1	47.0	47.0	47.0	46.8	47.5	48.1	47.3	47.3	48.1	48.2	46.9	48.8	48.5	47.0

Table T-03060106-22: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18161	62329	47557	12730	3573	5062	476640	100121	92921	52864	54638	210102	3120	7154	11338	1158309
AREA(%)	1.5	5.3	4.1	1.1	0.3	0.4	40.6	8.5	7.9	4.5	4.7	17.9	0.3	0.6	1.0	98.7
IMPERVIOUS																
AREA(ACRES)		3375	5328	3201	3579											15483
AREA(%)		0.3	0.5	0.3	0.3											1.3
SUPY	44.0	43.5	43.2	43.1	42.9	43.5	44.4	44.9	43.9	44.1	44.2	44.4	60.3	53.5	47.0	43.8
SURLI		0.0	7.6	7.0	6.8										0.4	0.4
UZLI																0.0
LZLI		0.0	0.3	0.2	0.1										2.5	0.0
SURO: PERVIOUS	11.9	4.0	4.0	1.2	1.3	3.2	1.2	4.4	2.6	2.4	2.1	10.3	6.2	10.7	2.2	3.8
SURO: IMPERVIOUS		36.0	35.8	35.7	35.6											0.5
SURO: COMBINED	11.9	5.7	7.2	8.1	18.4	3.2	1.2	4.4	2.6	2.4	2.1	10.3	6.2	10.7	2.2	4.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	10.6	16.3	15.4	14.1	12.7	7.7	10.9	10.5	11.1	9.1	0.4	18.6	4.1	12.1	7.6
AGWI	1.8	12.6	18.5	17.3	15.8	15.7	9.4	12.5	12.6	13.5	10.5	1.3	20.9	4.9	13.5	9.2
IGWI	0.6	1.2	1.4	1.4	1.4	1.2	1.3	2.5	1.5	1.2	2.3	1.0	1.4	4.9	2.7	1.4
CEPE		8.3	8.2	8.2	11.2	8.2	14.4	9.3	8.4	8.5	7.2	11.9	18.3	11.0	8.5	11.3
UZET	4.6	2.7	2.7	5.8	5.4	2.9	2.2	3.0	2.7	2.4	3.7	7.1	2.5	4.6	4.0	3.4
LZET	0.6	14.8	16.3	16.4	14.9	12.3	16.0	13.2	16.2	16.1	18.5	1.3	11.1	17.5	18.9	12.8
AGWET	1.0	0.4	0.3	0.2	0.1	0.8	0.3	0.1	0.5	0.6	0.1	0.7	0.4	0.0	0.1	0.4
BASET	0.3	0.7	0.8	0.7	0.6	1.3	0.8	0.5	0.9	1.0	0.5	0.2	1.0	0.5	0.5	0.6
SURET	24.7											11.5				2.4
PERO	12.5	14.7	20.3	16.6	15.4	15.9	8.9	15.3	13.0	13.5	11.2	10.7	24.8	14.8	14.3	11.4
IGWI	0.6	1.2	1.4	1.4	1.4	1.2	1.3	2.5	1.5	1.2	2.3	1.0	1.4	4.9	2.7	1.4
TAET: PERVIOUS	31.1	26.8	28.3	31.2	32.1	25.4	33.7	26.1	28.6	28.6	30.0	32.7	33.2	33.6	32.0	30.9
IMPEV: IMPERVIOUS		7.5	7.4	7.4	7.4											0.1
ET: COMBINED	31.1	25.8	26.2	26.4	19.7	25.4	33.7	26.1	28.6	28.6	30.0	32.7	33.2	33.6	32.0	31.0
PET	45.7	45.6	45.5	45.6	45.6	45.5	45.8	46.0	45.7	45.6	46.1	46.2	45.4	46.7	46.2	45.2

Table T-03060106-23: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.990
3	0.990	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
12	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
13	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
19	0.990	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.990
20	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
21	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
22	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
23	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
24	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
25	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
26	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
27	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
28	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
29	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
30	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
31	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
32	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
33	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
34	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
35	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
36	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
37	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
38	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

39	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03060106-24: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
2	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
3	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
4	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
5	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
6	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
7	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
8	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
9	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
10	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
11	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
12	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
13	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
14	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
15	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
16	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
17	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
18	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
19	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
20	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
21	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
22	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
23	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
24	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
25	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
26	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
27	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
28	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
29	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
30	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
31	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
32	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
33	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
34	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
35	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
36	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
37	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076
38	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076

39	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076

Table T-03060106-25: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
2	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
3	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
4	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
5	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
6	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
7	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
8	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
9	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
10	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
11	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
12	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
13	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
14	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
15	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
16	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
17	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
18	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
19	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
20	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
21	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
22	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
23	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
24	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
25	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
26	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
27	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
28	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
29	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
30	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
31	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
32	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
33	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
34	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
35	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
36	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
37	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100
38	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100

39	0.000	0.050	0.050	0.050	0.100	0.050	0.167	0.058	0.050	0.051	0.033	0.100

Table T-03060106-26: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
7	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
8	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
9	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
10	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
11	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
12	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
13	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
14	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
15	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
16	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
17	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
18	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
21	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
22	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
23	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
24	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
25	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
26	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
27	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
28	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
29	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
30	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
31	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
32	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
33	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
34	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
35	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
36	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
37	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
38	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900

39	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900

Table T-03060106-27: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
2	0.001	0.083	0.083	0.083	0.083	0.117	0.176	0.117	0.117	0.117	0.141	0.001
3	0.001	0.083	0.083	0.083	0.083	0.117	0.176	0.117	0.117	0.117	0.141	0.001
4	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
5	0.001	0.083	0.083	0.083	0.083	0.117	0.176	0.117	0.117	0.117	0.141	0.001
6	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
7	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
8	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
9	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
10	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
11	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
12	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
13	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
14	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
15	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
16	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
17	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
18	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
19	0.001	0.083	0.083	0.083	0.083	0.117	0.176	0.117	0.117	0.117	0.141	0.001
20	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
21	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
22	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
23	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
24	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
25	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
26	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
27	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
28	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
29	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
30	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
31	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
32	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
33	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
34	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
35	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
36	0.001	0.364	0.364	0.364	0.364	0.517	0.774	0.517	0.517	0.517	0.622	0.001
37	0.001	0.028	0.028	0.028	0.028	0.039	0.059	0.039	0.039	0.039	0.047	0.001
38	0.001	0.028	0.028	0.028	0.028	0.039	0.059	0.039	0.039	0.039	0.047	0.001

39	0.001	0.028	0.028	0.028	0.028	0.039	0.059	0.039	0.039	0.039	0.047	0.001

Table T-03060106-28: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
2		0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	
3		0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	
4		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
5		0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	
6		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
7		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
8		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
9		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
10		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
11		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
12		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
13		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
14		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
15		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
16		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
17		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
18		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
19		0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	
20		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
21		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
22		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
23		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
24		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
25		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
26		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
27		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
28		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
29		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	

30		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
31		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
32		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
33		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
34		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
35		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
36		0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
37		0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	
38		0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	
39		0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	0.117	

Table T-03060106-29: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
17	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
22	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
23	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
24	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
25	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
26	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
27	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
28	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
29	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
30	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
31	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
32	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
33	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
34	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
35	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
36	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
37	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685
38	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685

39	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685	0.685

Table T-03060106-30: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
2	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
3	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
4	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
5	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
6	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
7	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
8	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
9	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
10	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
11	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
12	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
13	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
14	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
15	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
16	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
17	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
18	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
19	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
20	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
21	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
22	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
23	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
24	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
25	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
26	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
27	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
28	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
29	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
30	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
31	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
32	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
33	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
34	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
35	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
36	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060106-31: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
2	0.161	0.533	0.533	0.533	0.533	0.355	0.755	0.355	0.533	0.533	0.622	1.198
3	0.161	0.533	0.533	0.533	0.533	0.355	0.755	0.355	0.533	0.533	0.622	1.198
4	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
5	0.161	0.533	0.533	0.533	0.533	0.355	0.755	0.355	0.533	0.533	0.622	1.198
6	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
7	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
8	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
9	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
10	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
11	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
12	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
13	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
14	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
15	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
16	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
17	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
18	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
19	0.161	0.533	0.533	0.533	0.533	0.355	0.755	0.355	0.533	0.533	0.622	1.198
20	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
21	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
22	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
23	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
24	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
25	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
26	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
27	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
28	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
29	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
30	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
31	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
32	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
33	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
34	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
35	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
36	0.035	0.469	0.473	0.552	0.600	0.389	0.850	0.419	0.529	0.516	0.618	0.900
37	0.075	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.901
38	0.075	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.901

39	0.075	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.901

Table T-03060106-32: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.200
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.200
4	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.200
6	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
7	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
8	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
9	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
10	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
11	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
12	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
13	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
14	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
15	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
16	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
17	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
18	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
19	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.200
20	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
21	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
22	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
23	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
24	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
25	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
26	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
27	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
28	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
29	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
30	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
31	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
32	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
33	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
34	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
35	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
36	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
37	0.180	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
38	0.180	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100

39	0.180	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100

Table T-03060106-33: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
2	0.050	0.099	0.099	0.099	0.099	0.099	0.141	0.113	0.113	0.099	0.141	0.177
3	0.050	0.099	0.099	0.099	0.099	0.099	0.141	0.113	0.113	0.099	0.141	0.177
4	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
5	0.050	0.099	0.099	0.099	0.099	0.099	0.141	0.113	0.113	0.099	0.141	0.177
6	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
7	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
8	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
9	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
10	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
11	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
12	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
13	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
14	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
15	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
16	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
17	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
18	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
19	0.050	0.099	0.099	0.099	0.099	0.099	0.141	0.113	0.113	0.099	0.141	0.177
20	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
21	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
22	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
23	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
24	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
25	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
26	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
27	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
28	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
29	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
30	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
31	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
32	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
33	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
34	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
35	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
36	0.050	0.070	0.070	2.000	2.000	0.070	2.000	0.080	0.080	0.070	2.000	0.050
37	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
38	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

39	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03060107

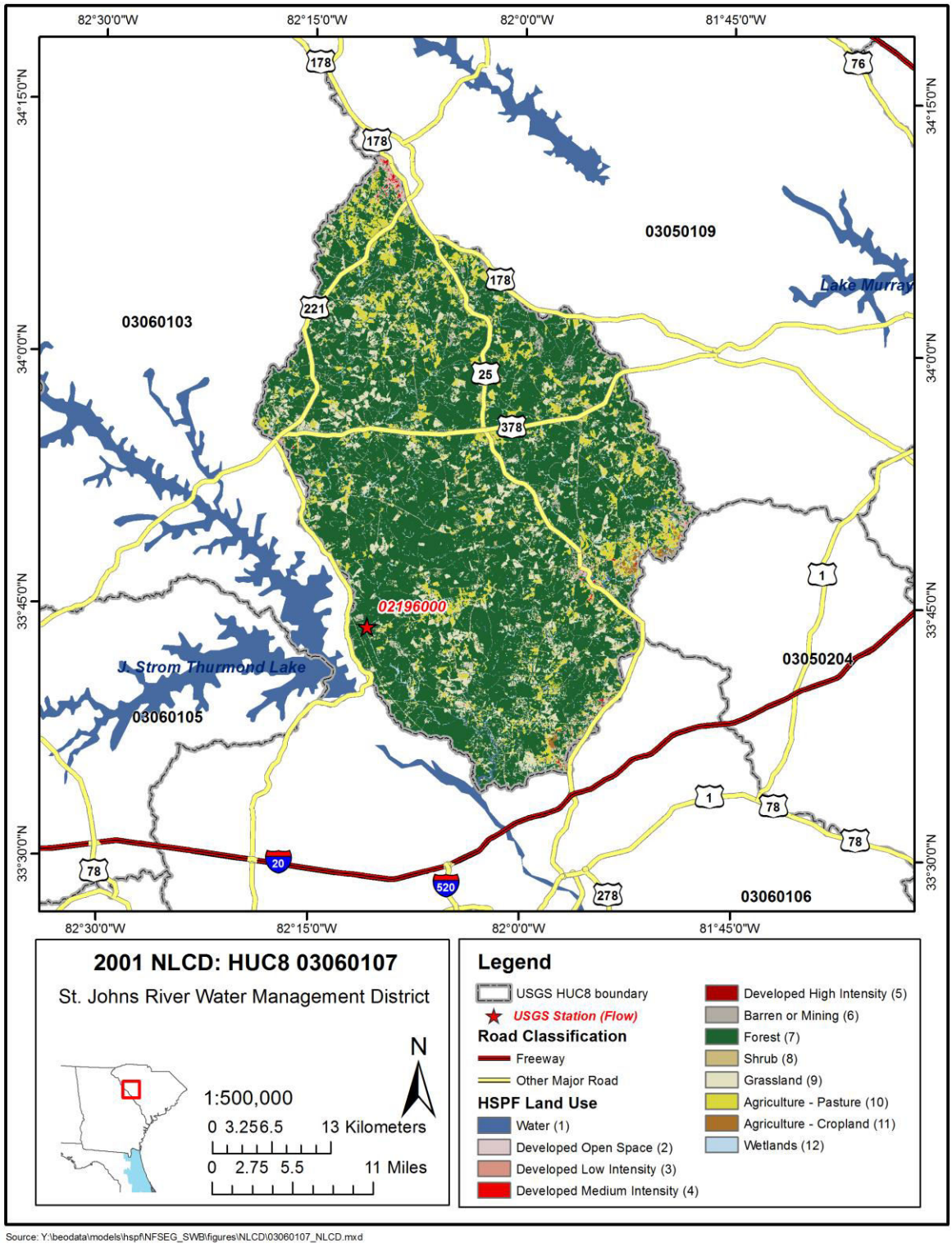


Figure T-03060107-1: Land Cover from the National Land Cover Database.

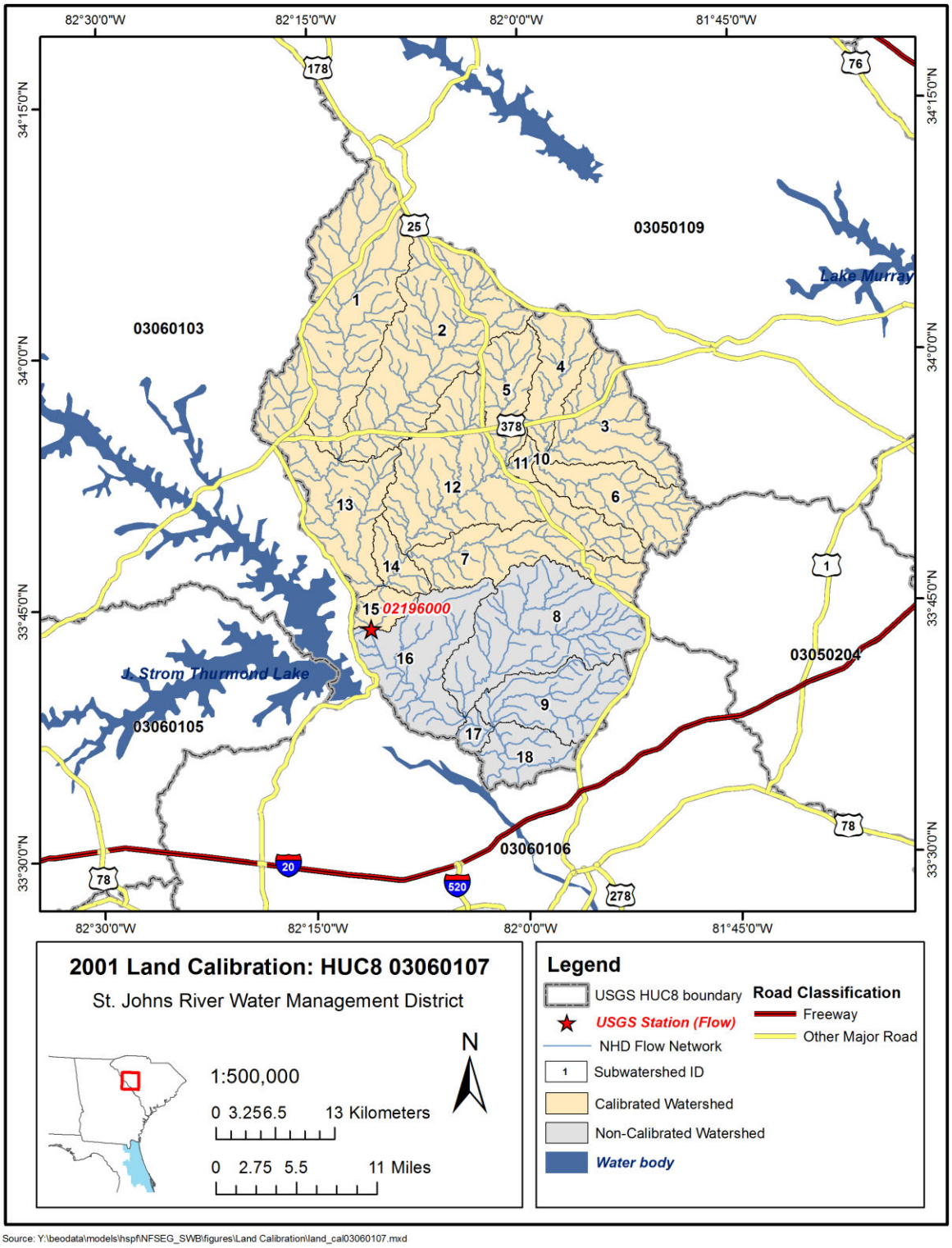


Figure T-03060107-2: Calibrated sub-watersheds.

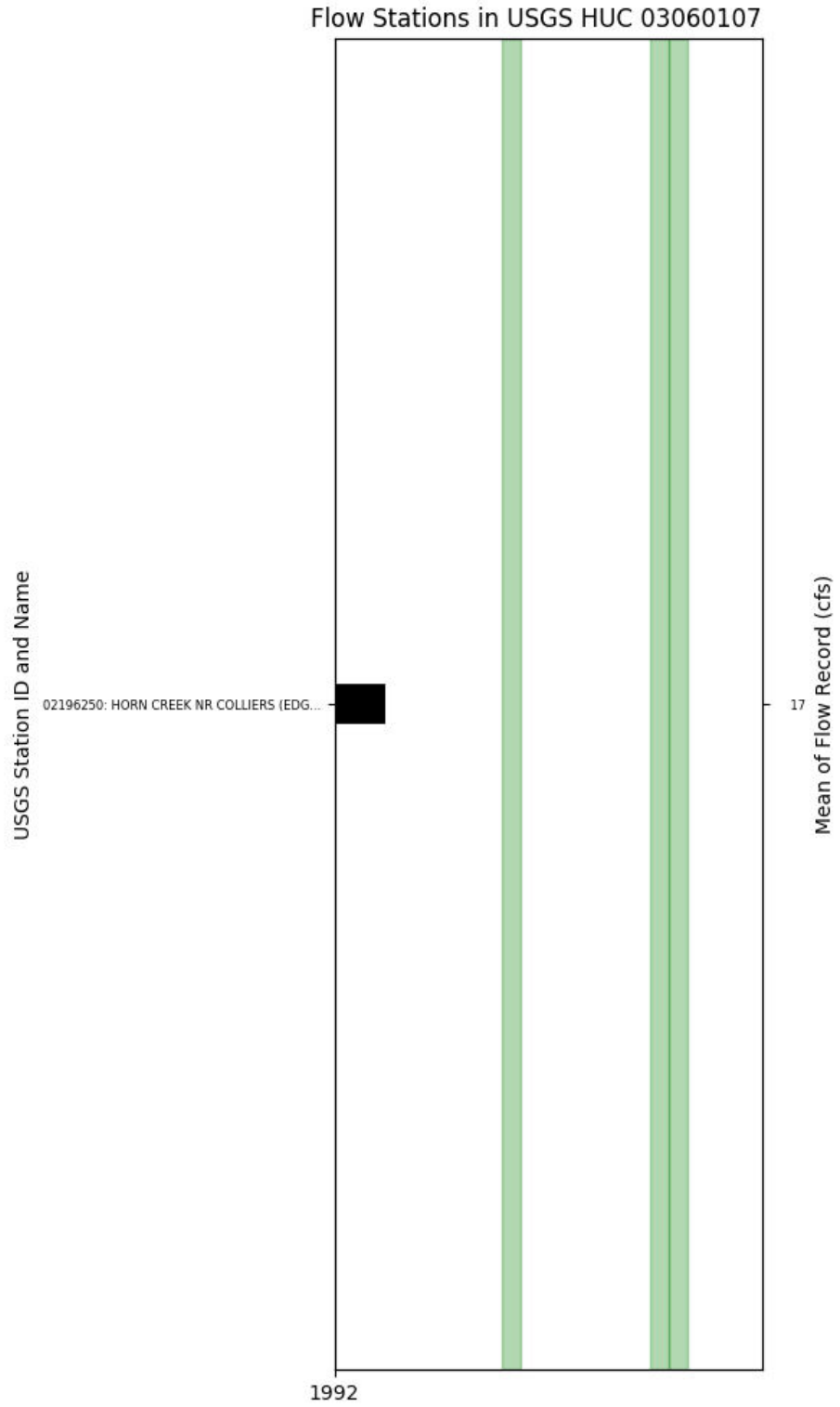


Figure T-03060107-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 15, USGS GAUGE 02196000

Water-Data Report 2009
02196000 STEVENS CREEK NEAR MODOC, SC
Savannah Basin Stevens Subbasin

LOCATION.--Lat 334345, long 821055 referenced to North American Datum of 1927, Edgefield County, SC, Hydrologic Unit 03060107, on left bank, 15 ft upstream of bridge on State Highway 23, 1.4 mi east of Modoc, and 3.2 mi downstream from Turkey Creek.

DRAINAGE AREA.--545 mi,(from topographic and highway planning survey maps).

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1929 to September 1931, February 1940 to September 1978, November 1983 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1032: Drainage area. WSP 1533: 1954(M).

GAGE.--Data collection platform. Datum of gage is 196.34 ft above NGVD of 1929 (levels by Southeastern Power Administration). Prior to September 6, 1999, at present site at datum 1.00 ft higher. October 15, 1929 to September 30, 1931, nonrecording gage at site 1,100 ft upstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

Table T-03060107-1: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02196000.

Statistic	Value
Bias	16.57
Standard error	155.50
Relative bias	0.05
Relative standard error	0.37
Nash-Sutcliffe coefficient	0.86
Kling-Gupta coefficient	0.90
Coefficient of efficiency	0.68
Index of agreement	0.84

Table T-03060107-2: Hydrologic Indices Between USGS Gauge 02196000 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02196000	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	304.23	320.98	5.51

MA2: Median, all daily flows	65.00	61.94	-4.70
MA3: CV, all daily flows	269.81	267.72	-0.77
MA4: CV, log of all daily flows	162.88	161.70	-0.72
MA5: Mean daily flow / median daily flow	4.68	5.18	10.71
MA9: (Q10 - Q90) / median daily flow	8.63	12.04	39.46
MA10: (Q20 - Q80) / median daily flow	4.03	4.61	14.25
MA11: (Q25 - Q75) / median daily flow	2.97	3.20	7.74
MA12: Mean monthly flow, January	501.08	483.92	-3.42
MA13: Mean monthly flow, February	651.76	618.31	-5.13
MA14: Mean monthly flow, March	833.04	745.62	-10.49
MA15: Mean monthly flow, April	314.93	351.56	11.63
MA16: Mean monthly flow, May	222.04	265.33	19.50
MA17: Mean monthly flow, June	174.21	232.17	33.27
MA18: Mean monthly flow, July	126.74	146.68	15.73
MA19: Mean monthly flow, August	141.08	171.01	21.22
MA20: Mean monthly flow, September	58.21	101.26	73.95
MA21: Mean monthly flow, October	74.49	109.54	47.06
MA22: Mean monthly flow, November	182.35	186.90	2.50
MA23: Mean monthly flow, December	305.78	368.10	20.38
ML1: Mean minimum monthly flow, January	94.42	99.66	5.56
ML2: Mean minimum monthly flow, February	127.00	125.83	-0.92
ML3: Mean minimum monthly flow, March	143.58	112.96	-21.32
ML4: Mean minimum monthly flow, April	89.53	79.31	-11.41
ML5: Mean minimum monthly flow, May	43.92	44.55	1.43
ML6: Mean minimum monthly flow, June	25.79	29.38	13.93
ML7: Mean minimum monthly flow, July	19.24	21.59	12.22
ML8: Mean minimum monthly flow, August	16.18	17.65	9.07
ML9: Mean minimum monthly flow, September	9.68	15.79	63.14
ML10: Mean minimum monthly flow, October	12.29	19.04	54.91
ML11: Mean minimum monthly flow, November	24.59	29.97	21.89
ML12: Mean minimum monthly flow, December	50.43	57.84	14.70
ML13: CV of minimum monthly flows	125.83	136.89	8.79
ML14: Mean minimum daily flow / mean median annual flow	0.05	0.06	13.90
ML15: Mean minimum annual flow / mean annual flow	0.02	0.02	7.94
ML16: Median minimum annual flow / median annual flow	0.04	0.06	36.74
ML20: Ratio of baseflow volume to total flow volume	0.24	0.23	-4.99
ML22: Mean annual minimum flow divided by catchment area	0.05	0.07	34.75
RA1: Mean of positive changes from one day to next (rise rate)	379.15	415.01	
RA2: CV, mean of positive changes from one day to next (rise rate)	307.14	345.12	
RA3: Mean of negative changes from one day to next (fall rate)	151.63	183.43	
RA4: CV, mean of negative changes from one day to next (fall rate)	417.39	459.52	
RA5: Ratio of days that are higher than previous day	0.27	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.30	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.17	
RA8: Number of flow reversals from one day to the next	94.17	107.71	
RA9: CV, number of flow reversals from one day to the next	13.31	14.91	

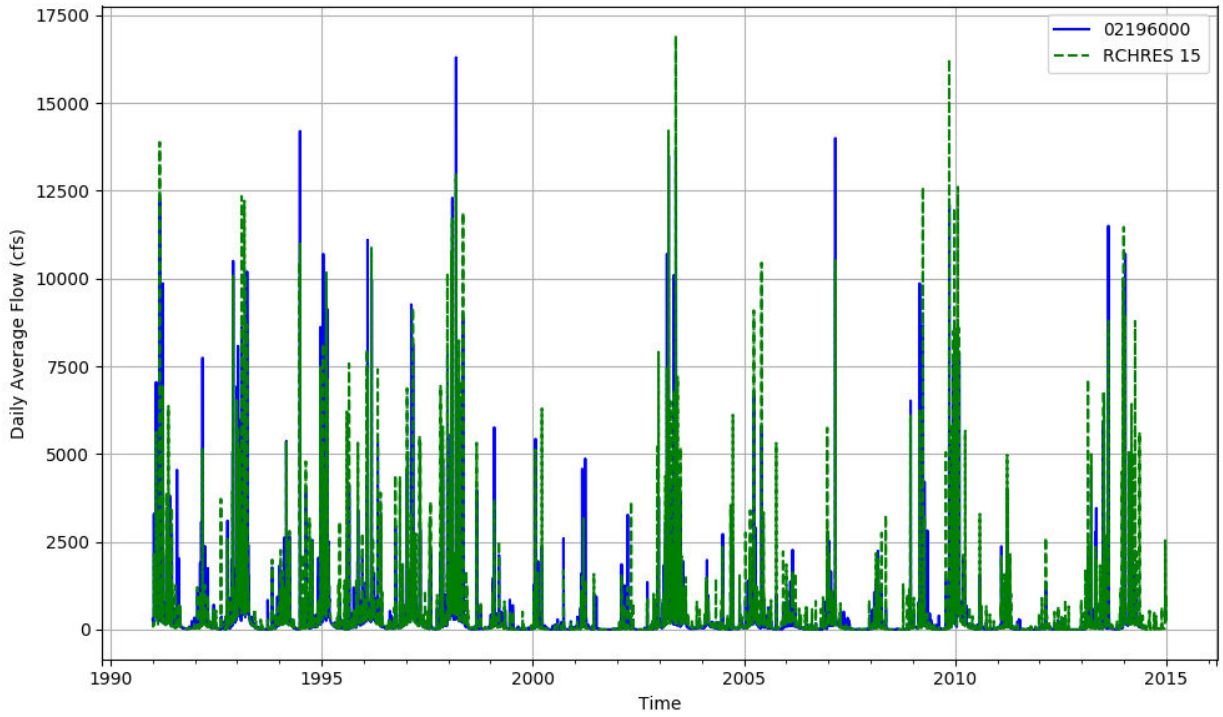


Figure T-03060107-4: Daily flow for HSFP reach 15 and USGS station 02196000.

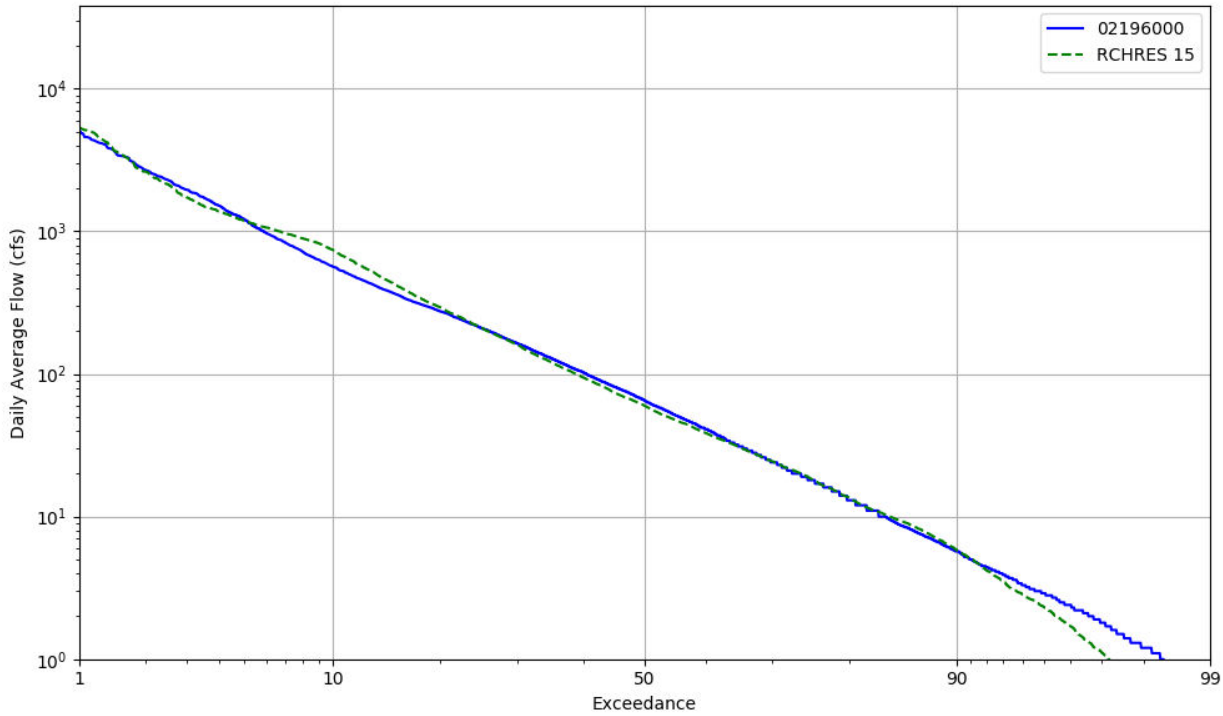


Figure T-03060107-5: Daily exceedance for HSFP reach 15 and USGS station 02196000.

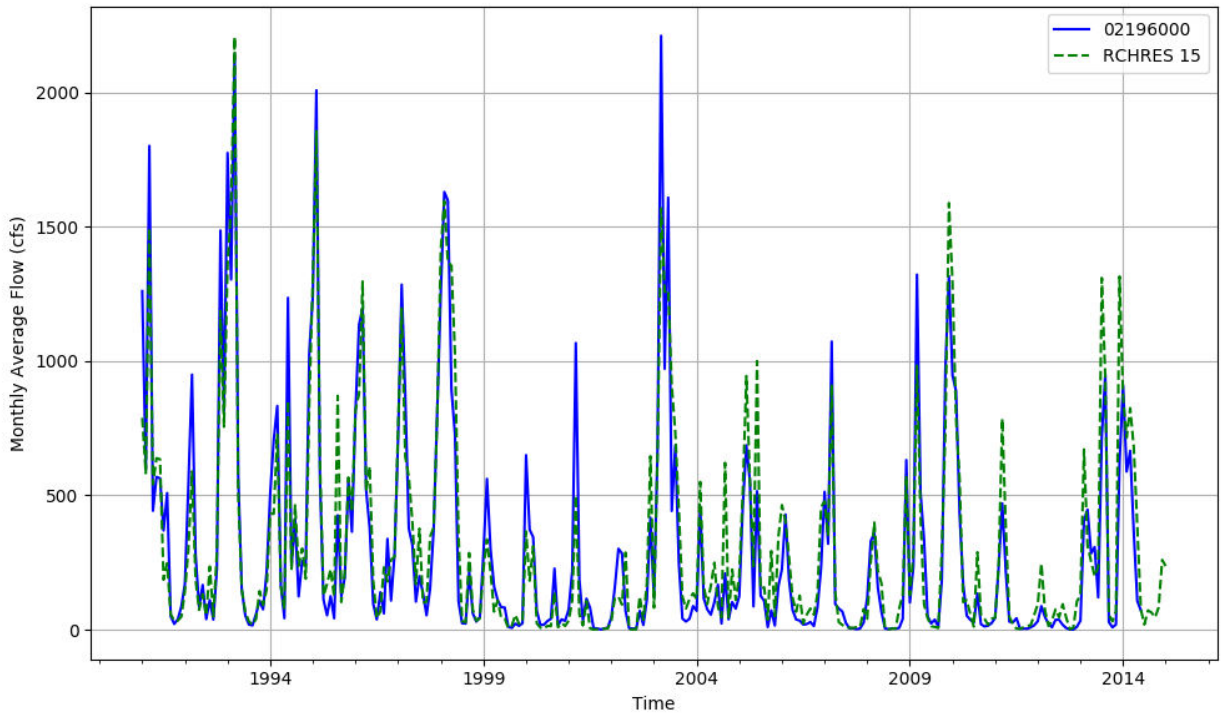


Figure T-03060107-6: Monthly flow for HSFP reach 15 and USGS station 02196000.

Table T-03060107-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	19671	2355	540	120	4458	331405	5467	51972	41432	1105	8705	320	273	1896	472066
AREA(%)	0.5	4.2	0.5	0.1	0.0	0.9	70.0	1.2	11.0	8.7	0.2	1.8	0.1	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		1039	263	136	120											1558
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	31.4	30.1	30.8	30.6	30.5	30.2	30.4	30.4	30.6	30.1	31.3	30.3	49.4	40.0	40.5	30.3
SURLI			16.0	17.7	18.7											0.1
UZLI																0.0
LZLI			0.8	0.6	0.6											0.0
SURO: PERVIOUS	0.3	3.9	7.0	7.2	6.6	4.3	0.7	4.0	3.0	3.2	2.3	0.0	8.3	8.0	3.6	1.4
SURO: IMPERVIOUS		16.5	17.0	17.0	17.0											0.1
SURO: COMBINED	0.3	4.6	8.1	9.2	11.8	4.3	0.7	4.0	3.0	3.2	2.3	0.0	8.3	8.0	3.6	1.5
IFWO		0.4	1.2	1.2	1.4	0.8	0.1	0.8	0.5	0.5	0.5		2.0	0.8	0.7	0.2
AGWO	2.6	0.2	5.2	5.5	5.8	1.2	0.1	1.1	0.5	0.5	0.7	1.9	2.9	1.2	1.9	0.3
AGWI	6.0	1.9	9.3	9.8	10.2	4.1	1.4	3.8	2.5	2.7	3.3	3.7	5.4	3.9	4.8	1.9
IGWI	1.5	0.5	2.3	2.4	2.6	1.0	0.4	0.9	0.6	0.7	0.8	0.9	1.3	1.0	1.2	0.5
CEPE		9.5	6.8	6.7	9.2	4.6	13.3	6.9	9.6	6.8	5.7	9.6	22.9	8.9	8.7	11.8
UZET	4.1	2.2	4.2	4.3	3.5	3.8	1.1	3.5	2.2	2.5	3.0	10.6	2.4	3.5	4.2	1.6
LZET	3.0	14.2	18.7	19.2	18.1	14.2	16.1	13.1	15.2	16.7	19.7	2.0	10.1	16.9	20.4	15.6
AGWET	2.0	1.7	1.7	1.6	1.5	1.9	1.6	1.8	1.7	1.9	1.9	0.8	0.9	1.7	1.6	1.6
BASET	1.7	0.6	3.1	3.3	3.5	1.5	0.4	1.5	0.9	0.9	1.1	1.4	2.1	1.6	2.0	0.6
SURET	17.4											4.8				0.2
PERO	2.9	4.6	13.4	13.9	13.8	6.3	1.0	5.9	4.0	4.2	3.5	1.9	13.2	10.1	6.2	2.0
IGWI	1.5	0.5	2.3	2.4	2.6	1.0	0.4	0.9	0.6	0.7	0.8	0.9	1.3	1.0	1.2	0.5
TAET: PERVIOUS	28.1	28.3	34.5	35.0	35.8	26.0	32.5	26.8	29.6	28.8	31.4	29.1	38.5	32.5	36.9	31.4
IMPEV: IMPERVIOUS		13.8	13.9	13.7	13.7											0.0
ET: COMBINED	28.1	27.5	32.4	30.7	24.7	26.0	32.5	26.8	29.6	28.8	31.4	29.1	38.5	32.5	36.9	31.5
PET	44.9	44.9	44.9	44.9	45.0	44.9	44.9	44.9	44.9	44.9	45.0	44.9	44.9	44.9	45.0	44.8

Table T-03060107-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	19671	2355	540	120	4458	331405	5467	51972	41432	1105	8705	320	273	1896	472066
AREA(%)	0.5	4.2	0.5	0.1	0.0	0.9	70.0	1.2	11.0	8.7	0.2	1.8	0.1	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		1039	263	136	120											1558
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	52.8	52.8	52.9	52.8	52.8	52.8	52.8	52.9	52.8	52.8	53.4	52.9	57.4	57.0	59.5	52.7
SURLI			16.0	17.2	18.2											0.1
UZLI																0.0
LZLI			1.2	0.9	0.9											0.0
SURO: PERVIOUS	7.5	14.0	18.7	18.7	17.6	14.1	5.3	13.6	11.3	11.8	9.5	2.0	15.6	14.1	10.9	7.1
SURO: IMPERVIOUS		35.4	35.7	35.6	35.6											0.1
SURO: COMBINED	7.5	15.1	20.4	22.1	26.6	14.1	5.3	13.6	11.3	11.8	9.5	2.0	15.6	14.1	10.9	7.3
IFWO		1.5	2.5	2.6	3.1	2.3	1.3	2.2	1.8	1.8	1.7		1.8	1.9	1.9	1.4
AGWO	4.0	0.5	6.4	6.7	7.3	2.2	0.7	2.0	1.1	1.2	1.5	6.3	1.0	1.6	2.2	1.0
AGWI	8.1	4.4	12.5	12.9	13.4	7.8	5.4	7.3	5.7	6.2	6.9	9.3	5.0	6.5	7.9	5.6
IGWI	2.0	1.1	3.1	3.2	3.4	2.0	1.3	1.8	1.4	1.6	1.7	2.3	1.2	1.6	2.0	1.4
CEPE		12.2	8.4	8.4	11.7	5.7	16.4	8.6	12.0	8.7	6.7	12.0	15.7	9.3	8.7	14.5
UZET	3.8	3.4	5.4	5.4	4.4	5.5	1.9	5.1	3.4	4.0	4.7	8.8	3.3	4.5	5.6	2.5
LZET	2.7	15.0	18.6	18.7	17.4	14.3	18.8	13.1	15.8	17.5	20.6	1.8	13.8	17.8	21.1	17.6
AGWET	2.0	1.8	1.8	1.8	1.7	2.0	1.7	1.9	1.8	2.0	2.0	0.7	1.6	1.9	1.9	1.7
BASET	2.1	0.9	3.2	3.4	3.6	2.0	1.1	1.9	1.3	1.4	1.6	2.4	1.3	1.7	2.0	1.2
SURET	25.3											12.0				0.3
PERO	11.5	16.0	27.7	28.1	27.9	18.6	7.3	17.8	14.1	14.9	12.6	8.3	18.4	17.6	15.1	9.5
IGWI	2.0	1.1	3.1	3.2	3.4	2.0	1.3	1.8	1.4	1.6	1.7	2.3	1.2	1.6	2.0	1.4
TAET: PERVIOUS	36.0	33.3	37.5	37.7	38.7	29.5	39.8	30.5	34.4	33.5	35.7	37.7	35.7	35.2	39.3	38.0
IMPEV: IMPERVIOUS		17.3	17.1	17.1	17.1											0.1
ET: COMBINED	36.0	32.5	35.4	33.6	27.9	29.5	39.8	30.5	34.4	33.5	35.7	37.7	35.7	35.2	39.3	38.0
PET	50.9	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8	51.0	50.8	50.9	50.9	51.1	50.6

Table T-03060107-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	19671	2355	540	120	4458	331405	5467	51972	41432	1105	8705	320	273	1896	472066
AREA(%)	0.5	4.2	0.5	0.1	0.0	0.9	70.0	1.2	11.0	8.7	0.2	1.8	0.1	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		1039	263	136	120											1558
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	38.8	38.9	38.8	38.4	38.4	39.2	39.1	39.3	39.1	39.0	39.6	39.0	57.8	44.4	45.9	39.0
SURLI			15.9	16.9	17.8											0.1
UZLI																0.0
LZLI			1.2	0.9	0.9											0.0
SURO: PERVIOUS	8.4	8.5	12.3	12.1	11.2	9.6	3.4	9.4	7.0	7.4	6.0	5.9	13.4	10.1	7.4	4.6
SURO: IMPERVIOUS		25.0	24.9	24.6	24.6											0.1
SURO: COMBINED	8.4	9.3	13.6	14.6	17.9	9.6	3.4	9.4	7.0	7.4	6.0	5.9	13.4	10.1	7.4	4.7
IFWO		0.9	1.6	1.7	2.0	1.5	0.9	1.4	1.1	1.1	1.0		1.7	1.3	1.1	0.9
AGWO	3.2	0.8	6.4	6.6	7.2	2.4	1.4	2.2	1.4	1.5	1.9	4.0	1.7	1.9	2.6	1.5
AGWI	7.7	3.0	10.5	10.8	11.4	5.4	3.6	4.9	3.8	4.1	4.4	6.1	5.3	4.7	5.4	3.8
IGWI	1.9	0.7	2.6	2.7	2.9	1.3	0.9	1.2	0.9	1.0	1.1	1.5	1.3	1.2	1.3	0.9
CEPE		9.7	7.0	6.9	9.4	4.9	13.3	7.1	9.7	7.1	5.7	9.7	22.9	8.2	7.8	11.8
UZET	3.7	3.0	4.6	4.5	3.8	4.6	1.8	4.3	3.1	3.4	4.3	13.7	2.7	4.1	5.1	2.5
LZET	2.5	16.1	19.1	19.2	18.2	14.5	22.1	13.5	16.9	18.3	21.4	1.7	11.3	18.1	21.1	20.2
AGWET	2.5	1.8	1.7	1.7	1.6	1.9	1.6	1.8	1.7	1.9	1.9	1.0	1.0	1.8	1.7	1.6
BASET	2.0	1.0	3.1	3.2	3.4	1.9	1.3	1.8	1.4	1.5	1.6	1.8	1.7	1.8	2.0	1.4
SURET	23.4											9.3				0.3
PERO	11.6	10.1	20.3	20.5	20.4	13.5	5.7	12.9	9.5	10.0	8.9	9.9	16.9	13.3	11.1	7.0
IGWI	1.9	0.7	2.6	2.7	2.9	1.3	0.9	1.2	0.9	1.0	1.1	1.5	1.3	1.2	1.3	0.9
TAET: PERVIOUS	34.1	31.5	35.4	35.6	36.4	27.7	40.2	28.6	32.9	32.1	35.0	37.2	39.7	34.0	37.7	37.8
IMPEV: IMPERVIOUS		14.0	14.0	13.9	13.9											0.0
ET: COMBINED	34.1	30.7	33.3	31.2	25.1	27.7	40.2	28.6	32.9	32.1	35.0	37.2	39.7	34.0	37.7	37.9
PET	46.8	46.5	46.6	46.4	46.4	46.6	46.6	46.7	46.6	46.6	47.0	46.6	46.9	46.9	47.2	46.4

Table T-03060107-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	19671	2355	540	120	4458	331405	5467	51972	41432	1105	8705	320	273	1896	472066
AREA(%)	0.5	4.2	0.5	0.1	0.0	0.9	70.0	1.2	11.0	8.7	0.2	1.8	0.1	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		1039	263	136	120											1558
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	44.5	44.5	44.5	44.2	44.2	44.7	44.7	44.8	44.7	44.6	45.4	44.7	51.8	50.3	50.7	44.6
SURLI			13.5	14.6	15.3											0.1
UZLI																0.0
LZLI			0.9	0.7	0.6											0.0
SURO: PERVIOUS	5.3	9.7	13.3	13.3	12.2	10.1	3.5	9.7	7.6	8.0	6.1	2.9	11.8	11.2	7.4	4.8
SURO: IMPERVIOUS		29.1	29.1	28.8	28.8											0.1
SURO: COMBINED	5.3	10.7	14.9	16.4	20.5	10.1	3.5	9.7	7.6	8.0	6.1	2.9	11.8	11.2	7.4	4.9
IFWO		1.3	2.1	2.2	2.6	2.0	1.0	1.9	1.4	1.5	1.3		1.8	1.6	1.5	1.1
AGWO	3.5	1.1	6.0	6.2	6.7	2.9	1.7	2.7	1.8	1.9	2.3	4.5	2.0	2.3	3.1	1.8
AGWI	7.5	4.0	10.8	11.1	11.6	7.1	4.7	6.6	5.1	5.5	6.1	7.3	5.2	6.1	7.2	4.9
IGWI	1.9	1.0	2.7	2.8	2.9	1.8	1.2	1.7	1.3	1.4	1.5	1.8	1.3	1.5	1.8	1.2
CEPE		10.8	7.8	7.7	10.6	5.3	14.6	7.9	10.8	7.9	6.3	10.7	15.9	8.8	8.0	13.0
UZET	3.3	3.1	4.7	4.7	3.8	4.9	1.9	4.5	3.1	3.6	4.4	9.6	3.0	4.1	5.1	2.4
LZET	2.3	14.6	17.5	17.6	16.4	13.7	18.0	12.6	15.3	16.8	19.6	1.4	12.9	16.9	19.6	16.9
AGWET	1.8	1.6	1.6	1.6	1.4	1.7	1.4	1.6	1.6	1.7	1.7	0.6	1.3	1.6	1.6	1.5
BASET	2.2	1.2	3.1	3.2	3.4	2.2	1.5	2.1	1.6	1.7	1.9	2.3	1.8	2.0	2.4	1.6
SURET	24.2											10.9				0.3
PERO	8.8	12.1	21.4	21.7	21.4	14.9	6.1	14.3	10.8	11.4	9.7	7.4	15.5	15.2	12.0	7.7
IGWI	1.9	1.0	2.7	2.8	2.9	1.8	1.2	1.7	1.3	1.4	1.5	1.8	1.3	1.5	1.8	1.2
TAET: PERVIOUS	33.8	31.3	34.6	34.9	35.6	27.8	37.4	28.7	32.4	31.7	34.0	35.6	34.9	33.4	36.7	35.7
IMPEV: IMPERVIOUS		15.4	15.4	15.4	15.4											0.1
ET: COMBINED	33.8	30.5	32.7	30.9	25.5	27.8	37.4	28.7	32.4	31.7	34.0	35.6	34.9	33.4	36.7	35.7
PET	44.8	44.6	44.7	44.6	44.6	44.6	44.6	44.6	44.7	44.6	44.8	44.6	44.7	44.7	44.8	44.5

Table T-03060107-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
12	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
13	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

Table T-03060107-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
2	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
3	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
4	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
5	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
6	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
7	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
8	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
9	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
10	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
11	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
12	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
13	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
14	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
15	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
16	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
17	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
18	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150

Table T-03060107-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
2	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
3	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
4	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
5	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
6	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
7	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
8	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
9	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
10	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
11	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
12	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
13	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
14	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
15	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
16	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
17	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100
18	0.000	0.100	0.050	0.050	0.100	0.020	0.200	0.050	0.100	0.050	0.030	0.100

Table T-03060107-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
4	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
5	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
6	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
7	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
8	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
9	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
10	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
11	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
12	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
13	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
14	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
15	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
16	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
17	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
18	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200

Table T-03060107-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
2	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
3	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
4	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
5	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
6	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
7	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
8	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
9	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
10	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
11	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
12	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
13	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
14	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
15	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
16	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
17	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006
18	0.006	0.039	0.039	0.039	0.039	0.056	0.084	0.056	0.056	0.056	0.067	0.006

Table T-03060107-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
2		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
3		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
4		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
5		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
6		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
7		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
8		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
9		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
10		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
11		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
12		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
13		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
14		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
15		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
16		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
17		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	
18		0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	0.669	

Table T-03060107-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03060107-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
2	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
3	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
4	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
5	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
6	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
7	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
8	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
9	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
10	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
11	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
12	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
13	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
14	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
15	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
16	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
17	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701
18	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701	2.701

Table T-03060107-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
2	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
3	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
4	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
5	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
6	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
7	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
8	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
9	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
10	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
11	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
12	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
13	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
14	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
15	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
16	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
17	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
18	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900

Table T-03060107-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
2	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
3	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
4	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
5	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
6	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
7	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
8	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
9	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
10	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
11	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
12	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
13	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
14	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
15	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
16	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
17	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100
18	0.200	6.625	6.625	6.625	6.625	7.452	9.936	7.452	7.452	7.452	8.280	0.100

Table T-03060107-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03060108

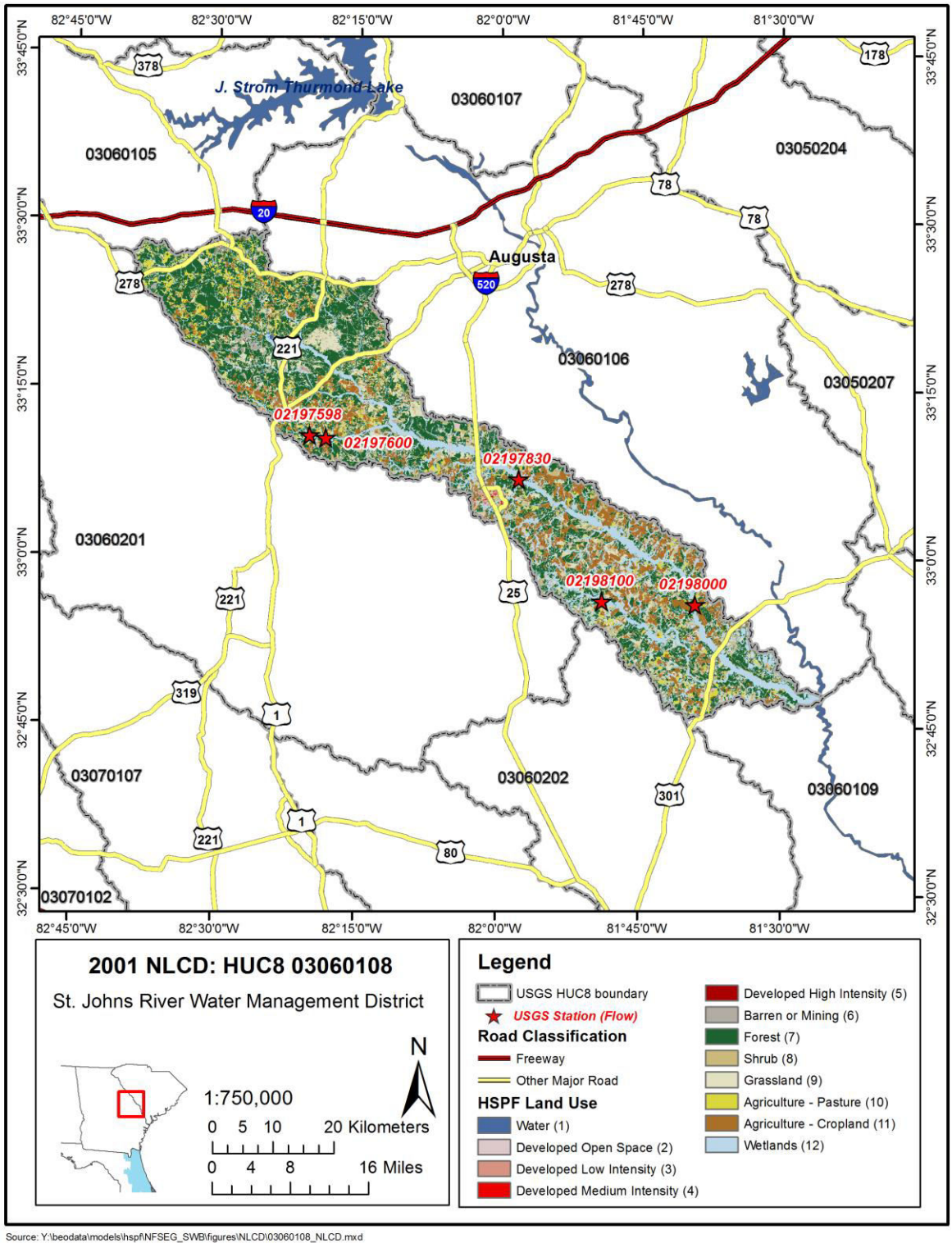


Figure T-03060108-1: Land Cover from the National Land Cover Database.

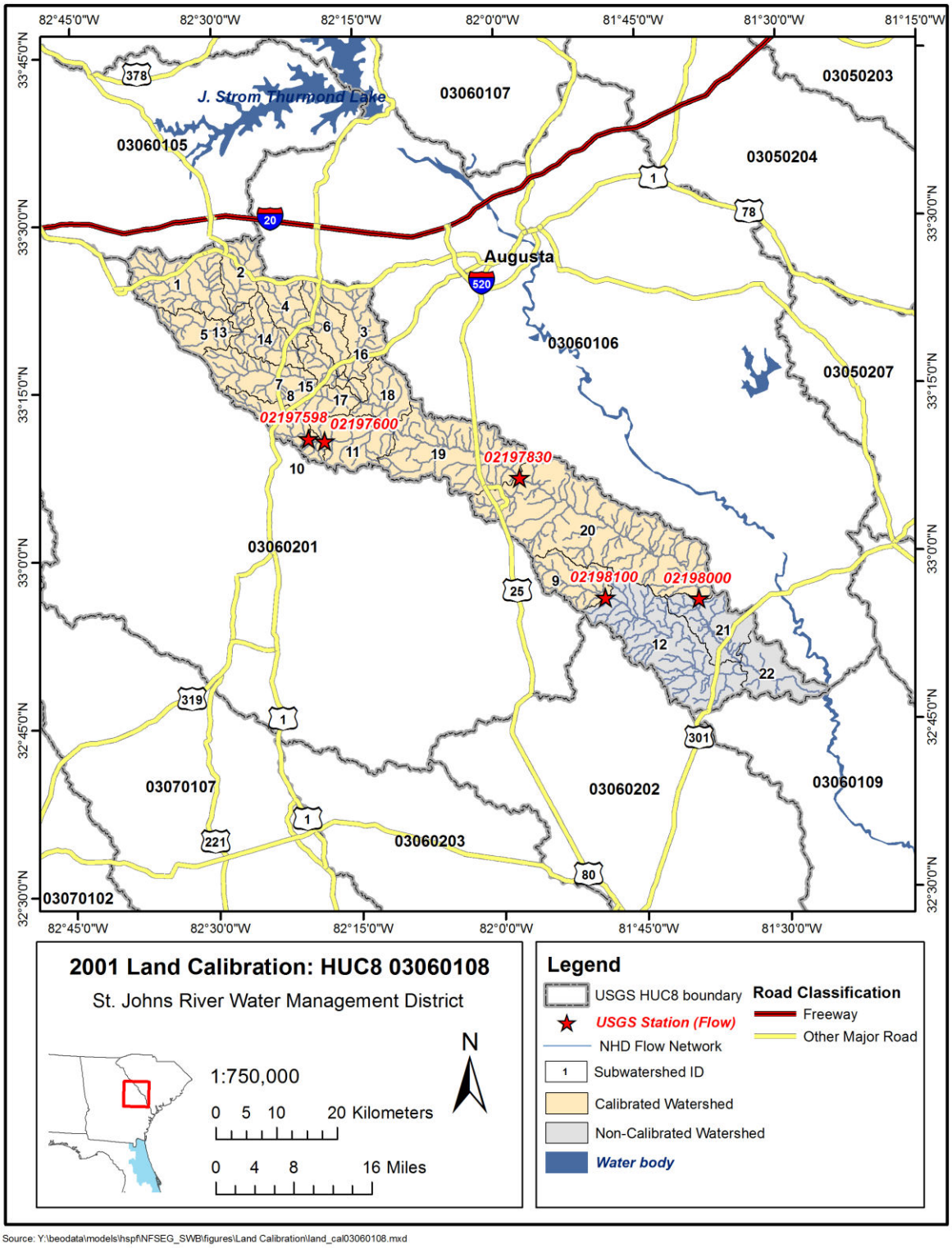


Figure T-03060108-2: Calibrated sub-watersheds.

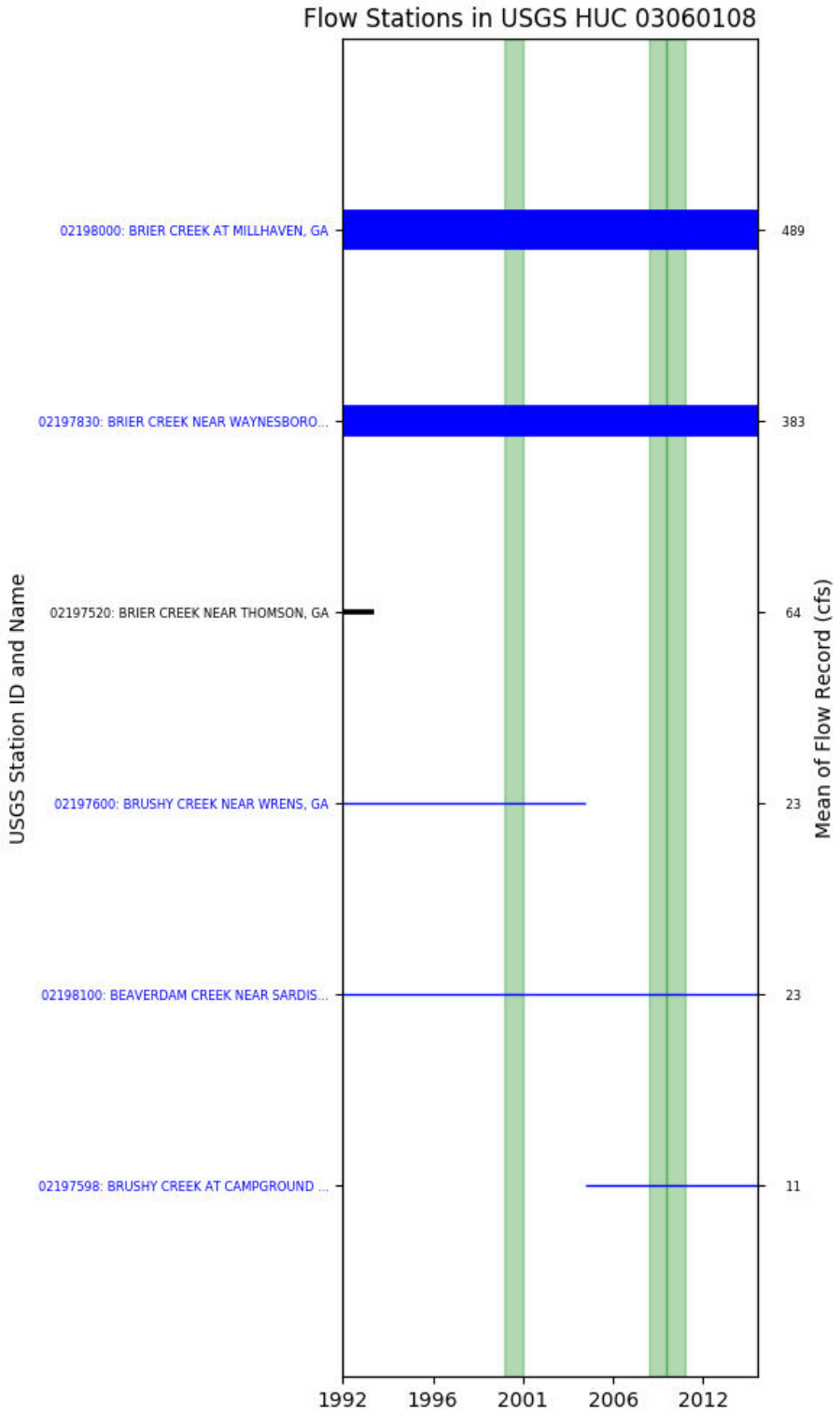


Figure T-03060108-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 08, USGS GAUGE 02197598

Water-Data Report 2009
02197598 BRUSHY CREEK AT CAMPGOUND ROAD, NEAR WRENS, GA
Savannah Basin Brier Subbasin

LOCATION.--Lat 331050, long 822004 referenced to North American Datum of 1927, Jefferson County, GA, Hydrologic Unit 03060108, near left downstream wingwall of culvert at Campground Road crossing, 4.0 miles southeast of Wrens, and 7.0 miles upstream from Little Brushy Creek.

DRAINAGE AREA.--21.8 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 2005 to current year.
GAGE-HEIGHT: June 2005 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 310 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03060108-1: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02197598.

Statistic	Value
Bias	2.65
Standard error	7.34
Relative bias	0.23
Relative standard error	0.87
Nash-Sutcliffe coefficient	0.24
Kling-Gupta coefficient	0.42
Coefficient of efficiency	0.31
Index of agreement	0.72

Table T-03060108-2: Hydrologic Indices Between USGS Gauge 02197598 and HSPF Reach 08.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197598	Simulated Reach 08	Percent Difference
MA1: Mean, all daily flows	11.47	13.97	21.75
MA2: Median, all daily flows	7.80	8.37	7.30

MA3: CV, all daily flows	118.51	117.54	-0.83
MA4: CV, log of all daily flows	71.17	88.39	24.20
MA5: Mean daily flow / median daily flow	1.47	1.67	13.48
MA9: (Q10 - Q90) / median daily flow	2.19	2.67	21.68
MA10: (Q20 - Q80) / median daily flow	1.23	1.41	14.57
MA11: (Q25 - Q75) / median daily flow	1.04	1.13	8.64
MA12: Mean monthly flow, January	13.19	18.60	41.04
MA13: Mean monthly flow, February	13.74	19.23	40.03
MA14: Mean monthly flow, March	14.49	19.73	36.18
MA15: Mean monthly flow, April	11.09	11.96	7.85
MA16: Mean monthly flow, May	6.21	7.77	25.10
MA17: Mean monthly flow, June	10.32	9.36	-9.26
MA18: Mean monthly flow, July	8.45	9.34	10.55
MA19: Mean monthly flow, August	8.72	8.48	-2.78
MA20: Mean monthly flow, September	5.44	6.35	16.70
MA21: Mean monthly flow, October	6.54	8.01	22.50
MA22: Mean monthly flow, November	8.20	9.93	21.18
MA23: Mean monthly flow, December	13.83	19.02	37.52
ML1: Mean minimum monthly flow, January	9.72	12.48	28.39
ML2: Mean minimum monthly flow, February	9.07	10.17	12.06
ML3: Mean minimum monthly flow, March	9.36	10.88	16.26
ML4: Mean minimum monthly flow, April	6.35	8.35	31.53
ML5: Mean minimum monthly flow, May	4.33	5.98	38.12
ML6: Mean minimum monthly flow, June	3.40	5.30	55.62
ML7: Mean minimum monthly flow, July	4.08	5.52	35.26
ML8: Mean minimum monthly flow, August	3.71	5.06	36.64
ML9: Mean minimum monthly flow, September	3.28	4.94	50.83
ML10: Mean minimum monthly flow, October	4.09	5.04	23.34
ML11: Mean minimum monthly flow, November	6.01	6.07	0.94
ML12: Mean minimum monthly flow, December	7.18	7.98	11.13
ML13: CV of minimum monthly flows	65.35	69.25	5.97
ML14: Mean minimum daily flow / mean median annual flow	0.32	0.41	28.12
ML15: Mean minimum annual flow / mean annual flow	0.23	0.30	27.87
ML16: Median minimum annual flow / median annual flow	0.31	0.33	6.66
ML20: Ratio of baseflow volume to total flow volume	0.58	0.58	-1.23
ML22: Mean annual minimum flow divided by catchment area	0.03	0.04	43.17
RA1: Mean of positive changes from one day to next (rise rate)	6.69	7.23	
RA2: CV, mean of positive changes from one day to next (rise rate)	287.22	348.10	
RA3: Mean of negative changes from one day to next (fall rate)	3.48	3.27	
RA4: CV, mean of negative changes from one day to next (fall rate)	302.48	369.66	
RA5: Ratio of days that are higher than previous day	0.31	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.07	
RA8: Number of flow reversals from one day to the next	101.90	105.10	
RA9: CV, number of flow reversals from one day to the next	36.62	37.60	

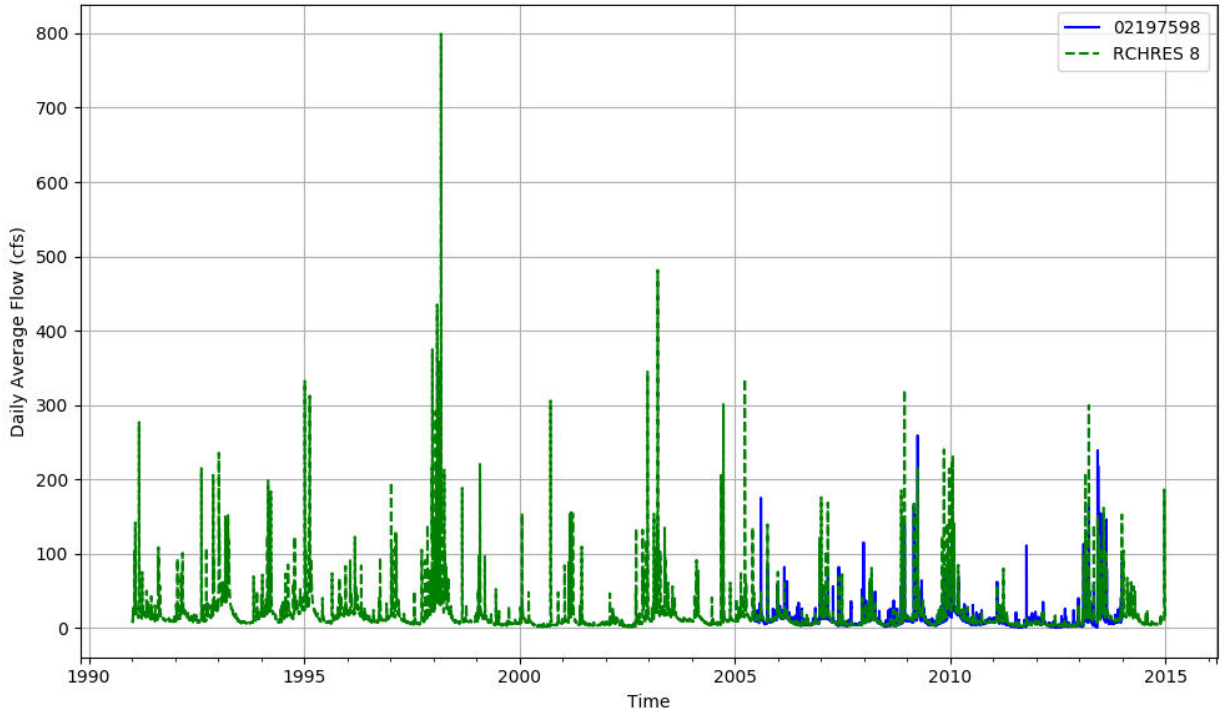


Figure T-03060108-4: Daily flow for HSFP reach 08 and USGS station 02197598.

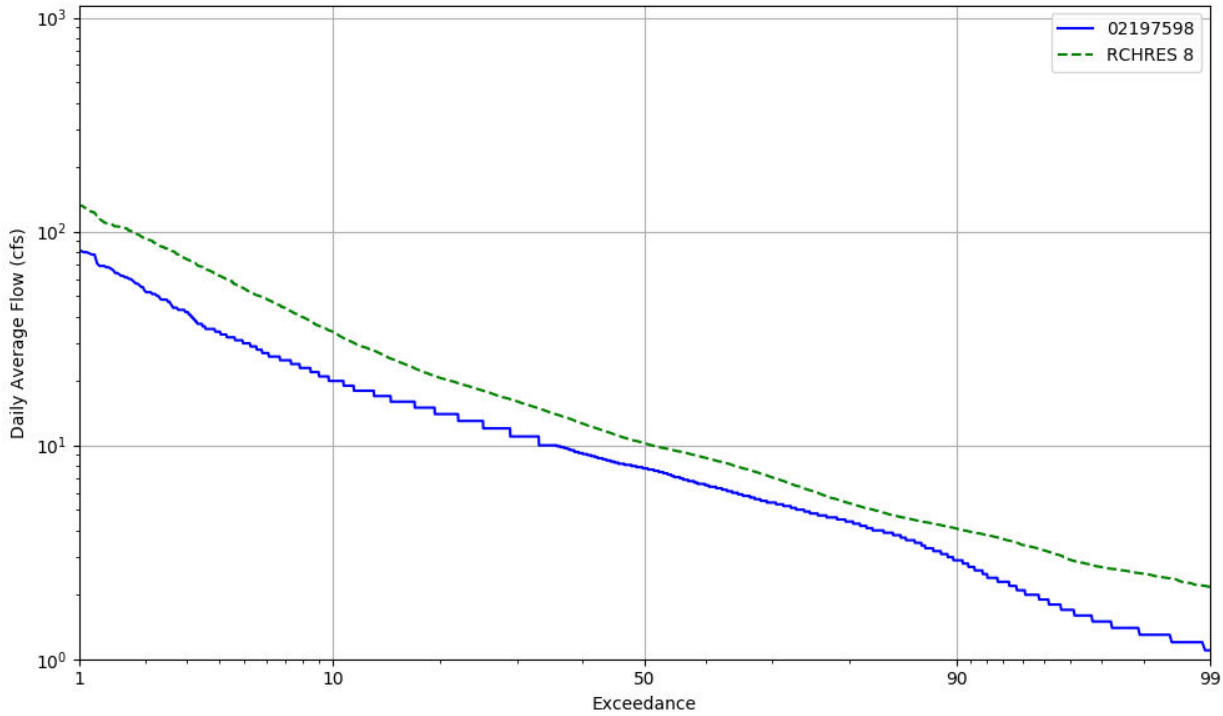


Figure T-03060108-5: Daily exceedance for HSFP reach 08 and USGS station 02197598.

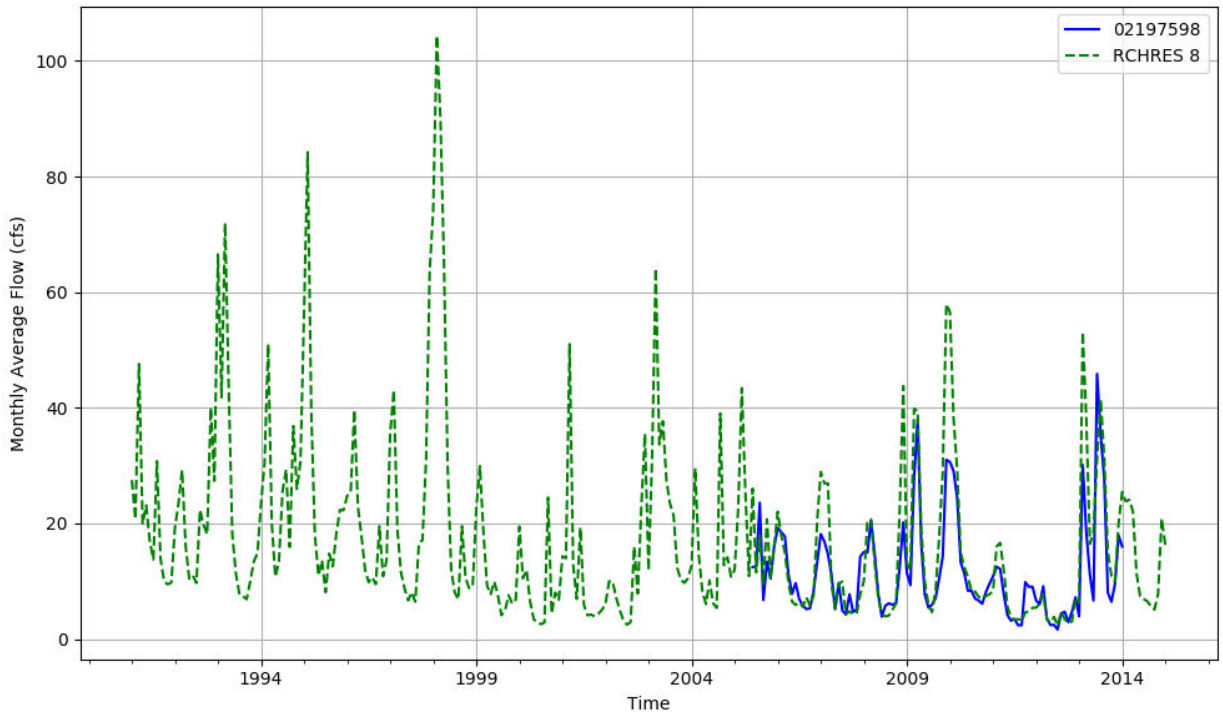


Figure T-03060108-6: Monthly flow for HSFP reach 08 and USGS station 02197598.

HSPF REACH 09, USGS GAUGE 02198100

Water-Data Report 2009
02198100 BEAVERDAM CREEK NEAR SARDIS, GA
Savannah Basin Brier Subbasin

LOCATION.--Lat 325615, long 814856 referenced to North American Datum of 1927, Burke County, GA, Hydrologic Unit 03060108, at downstream side of bridge on GA 23, 0.8 miles downstream from Slough Branch, and 4.2 miles southwest of Sardis.

DRAINAGE AREA.--30.8 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 1986 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 186.48 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for estimated periods which are fair. Gage-height records good.

Table T-03060108-3: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02198100.

Statistic	Value
Bias	-6.99
Standard error	26.22
Relative bias	-0.28
Relative standard error	0.69
Nash-Sutcliffe coefficient	0.52
Kling-Gupta coefficient	0.33
Coefficient of efficiency	0.49
Index of agreement	0.67

Table T-03060108-4: Hydrologic Indices Between USGS Gauge 02198100 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02198100	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	24.61	17.64	-28.30
MA2: Median, all daily flows	6.40	11.75	83.53

MA3: CV, all daily flows	213.54	91.84	-56.99
MA4: CV, log of all daily flows	140.91	80.16	-43.11
MA5: Mean daily flow / median daily flow	3.84	1.50	-60.93
MA9: (Q10 - Q90) / median daily flow	7.47	2.50	-66.50
MA10: (Q20 - Q80) / median daily flow	3.16	1.33	-57.78
MA11: (Q25 - Q75) / median daily flow	2.17	1.07	-50.93
MA12: Mean monthly flow, January	37.35	23.90	-36.01
MA13: Mean monthly flow, February	50.55	27.63	-45.34
MA14: Mean monthly flow, March	59.05	29.18	-50.58
MA15: Mean monthly flow, April	27.72	18.13	-34.59
MA16: Mean monthly flow, May	13.80	12.23	-11.40
MA17: Mean monthly flow, June	13.32	13.00	-2.41
MA18: Mean monthly flow, July	16.25	12.82	-21.15
MA19: Mean monthly flow, August	16.38	12.99	-20.68
MA20: Mean monthly flow, September	6.89	10.34	50.11
MA21: Mean monthly flow, October	10.17	11.97	17.76
MA22: Mean monthly flow, November	11.29	13.07	15.78
MA23: Mean monthly flow, December	22.04	18.88	-14.34
ML1: Mean minimum monthly flow, January	11.23	13.43	19.62
ML2: Mean minimum monthly flow, February	15.23	14.99	-1.59
ML3: Mean minimum monthly flow, March	14.87	14.73	-0.93
ML4: Mean minimum monthly flow, April	8.19	12.15	48.43
ML5: Mean minimum monthly flow, May	4.94	8.70	75.93
ML6: Mean minimum monthly flow, June	3.93	7.30	85.97
ML7: Mean minimum monthly flow, July	4.01	7.50	86.84
ML8: Mean minimum monthly flow, August	4.29	7.75	80.55
ML9: Mean minimum monthly flow, September	3.73	7.70	106.60
ML10: Mean minimum monthly flow, October	3.97	8.02	102.28
ML11: Mean minimum monthly flow, November	5.91	9.83	66.21
ML12: Mean minimum monthly flow, December	7.82	11.70	49.62
ML13: CV of minimum monthly flows	105.64	62.52	-40.82
ML14: Mean minimum daily flow / mean median annual flow	0.42	0.44	6.88
ML15: Mean minimum annual flow / mean annual flow	0.21	0.35	70.37
ML16: Median minimum annual flow / median annual flow	0.44	0.42	-4.45
ML20: Ratio of baseflow volume to total flow volume	0.37	0.67	81.64
ML22: Mean annual minimum flow divided by catchment area	0.03	0.06	95.80
RA1: Mean of positive changes from one day to next (rise rate)	21.95	4.89	
RA2: CV, mean of positive changes from one day to next (rise rate)	428.23	386.11	
RA3: Mean of negative changes from one day to next (fall rate)	10.47	2.66	
RA4: CV, mean of negative changes from one day to next (fall rate)	590.15	343.84	
RA5: Ratio of days that are higher than previous day	0.28	0.35	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.04	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.05	
RA8: Number of flow reversals from one day to the next	97.50	123.92	
RA9: CV, number of flow reversals from one day to the next	17.98	20.44	

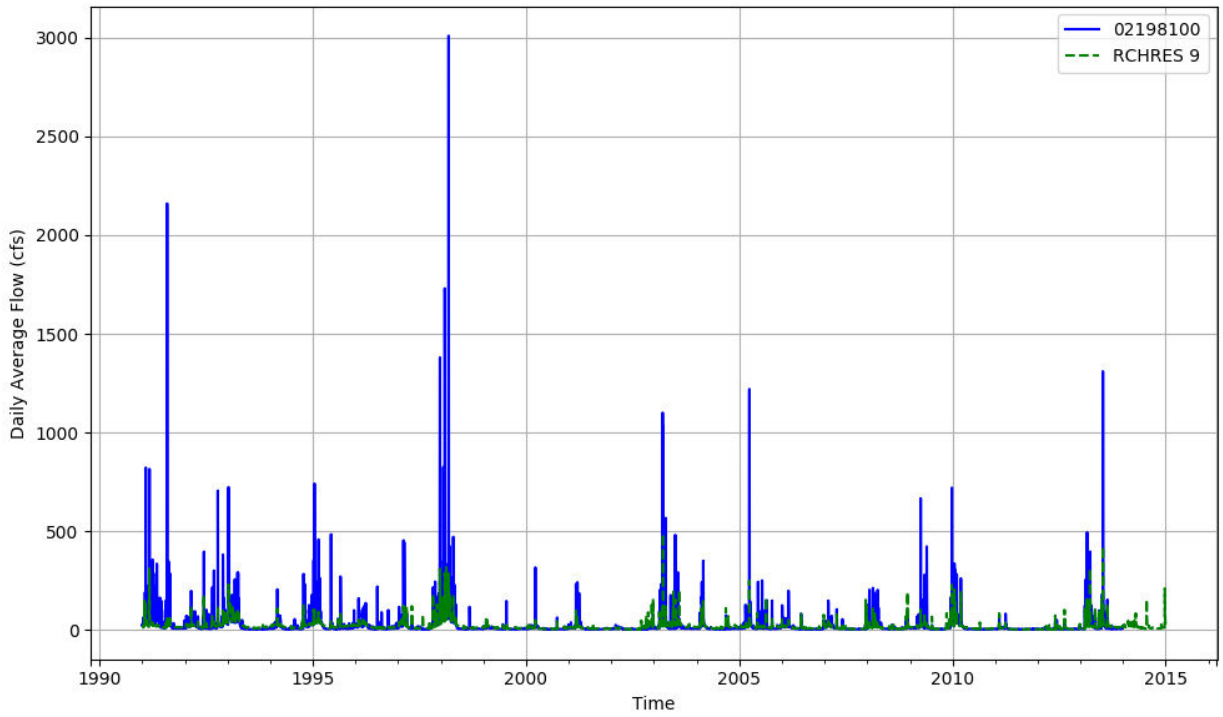


Figure T-03060108-7: Daily flow for HSFP reach 09 and USGS station 02198100.

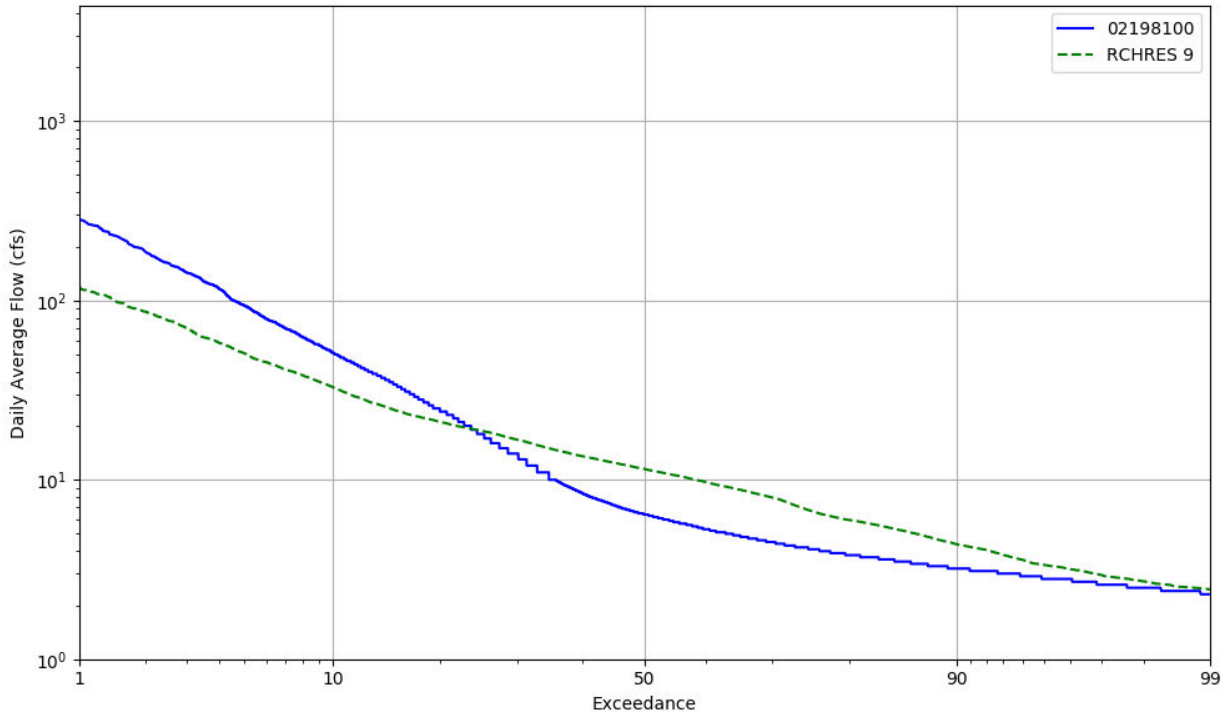


Figure T-03060108-8: Daily exceedance for HSFP reach 09 and USGS station 02198100.

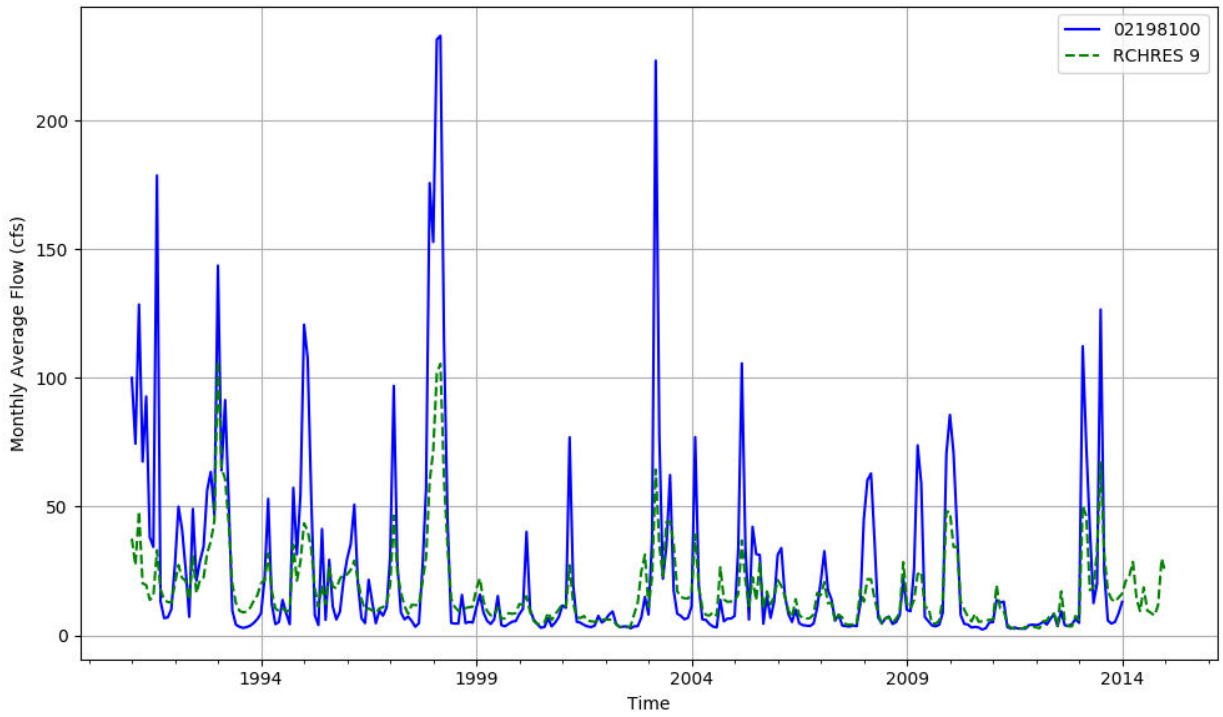


Figure T-03060108-9: Monthly flow for HSFP reach 09 and USGS station 02198100.

HSPF REACH 10, USGS GAUGE 02197600

Water-Data Report 2009
02198100 BEAVERDAM CREEK NEAR SARDIS, GA
Savannah Basin Brier Subbasin

LOCATION.--Lat 325615, long 814856 referenced to North American Datum of 1927, Burke County, GA, Hydrologic Unit 03060108, at downstream side of bridge on GA 23, 0.8 miles downstream from Slough Branch, and 4.2 miles southwest of Sardis.

DRAINAGE AREA.--30.8 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 1986 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 186.48 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for estimated periods which are fair. Gage-height records good.

Table T-03060108-5: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02197600.

Statistic	Value
Bias	0.08
Standard error	11.94
Relative bias	0.00
Relative standard error	0.56
Nash-Sutcliffe coefficient	0.68
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.52
Index of agreement	0.77

Table T-03060108-6: Hydrologic Indices Between USGS Gauge 02197600 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197600	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	24.60	24.57	-0.11
MA2: Median, all daily flows	15.00	14.09	-6.08

MA3: CV, all daily flows	138.12	126.60	-8.34
MA4: CV, log of all daily flows	78.16	88.12	12.74
MA5: Mean daily flow / median daily flow	1.64	1.74	6.35
MA9: (Q10 - Q90) / median daily flow	2.53	3.13	23.84
MA10: (Q20 - Q80) / median daily flow	1.29	1.59	23.58
MA11: (Q25 - Q75) / median daily flow	0.95	1.18	25.12
MA12: Mean monthly flow, January	35.01	35.10	0.25
MA13: Mean monthly flow, February	40.57	43.10	6.24
MA14: Mean monthly flow, March	41.49	49.94	20.35
MA15: Mean monthly flow, April	25.51	26.28	2.99
MA16: Mean monthly flow, May	20.71	16.59	-19.88
MA17: Mean monthly flow, June	20.15	17.30	-14.15
MA18: Mean monthly flow, July	15.07	11.17	-25.92
MA19: Mean monthly flow, August	18.20	13.72	-24.64
MA20: Mean monthly flow, September	16.34	17.42	6.61
MA21: Mean monthly flow, October	15.33	15.45	0.77
MA22: Mean monthly flow, November	17.98	18.87	4.99
MA23: Mean monthly flow, December	20.02	22.36	11.69
ML1: Mean minimum monthly flow, January	14.39	14.69	2.14
ML2: Mean minimum monthly flow, February	18.45	18.36	-0.48
ML3: Mean minimum monthly flow, March	16.57	18.51	11.72
ML4: Mean minimum monthly flow, April	13.75	13.02	-5.32
ML5: Mean minimum monthly flow, May	10.36	8.81	-14.98
ML6: Mean minimum monthly flow, June	9.25	8.28	-10.47
ML7: Mean minimum monthly flow, July	7.69	6.24	-18.89
ML8: Mean minimum monthly flow, August	7.35	6.43	-12.55
ML9: Mean minimum monthly flow, September	7.83	6.67	-14.83
ML10: Mean minimum monthly flow, October	10.02	8.36	-16.60
ML11: Mean minimum monthly flow, November	11.48	10.87	-5.33
ML12: Mean minimum monthly flow, December	13.06	13.81	5.68
ML13: CV of minimum monthly flows	59.26	69.29	16.93
ML14: Mean minimum daily flow / mean median annual flow	0.33	0.29	-12.59
ML15: Mean minimum annual flow / mean annual flow	0.23	0.20	-15.29
ML16: Median minimum annual flow / median annual flow	0.32	0.28	-12.13
ML20: Ratio of baseflow volume to total flow volume	0.55	0.55	-1.53
ML22: Mean annual minimum flow divided by catchment area	0.06	0.05	-16.66
RA1: Mean of positive changes from one day to next (rise rate)	15.39	11.47	
RA2: CV, mean of positive changes from one day to next (rise rate)	328.19	365.74	
RA3: Mean of negative changes from one day to next (fall rate)	9.09	5.81	
RA4: CV, mean of negative changes from one day to next (fall rate)	383.97	354.66	
RA5: Ratio of days that are higher than previous day	0.31	0.34	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.13	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.10	
RA8: Number of flow reversals from one day to the next	113.33	144.07	
RA9: CV, number of flow reversals from one day to the next	18.95	17.18	

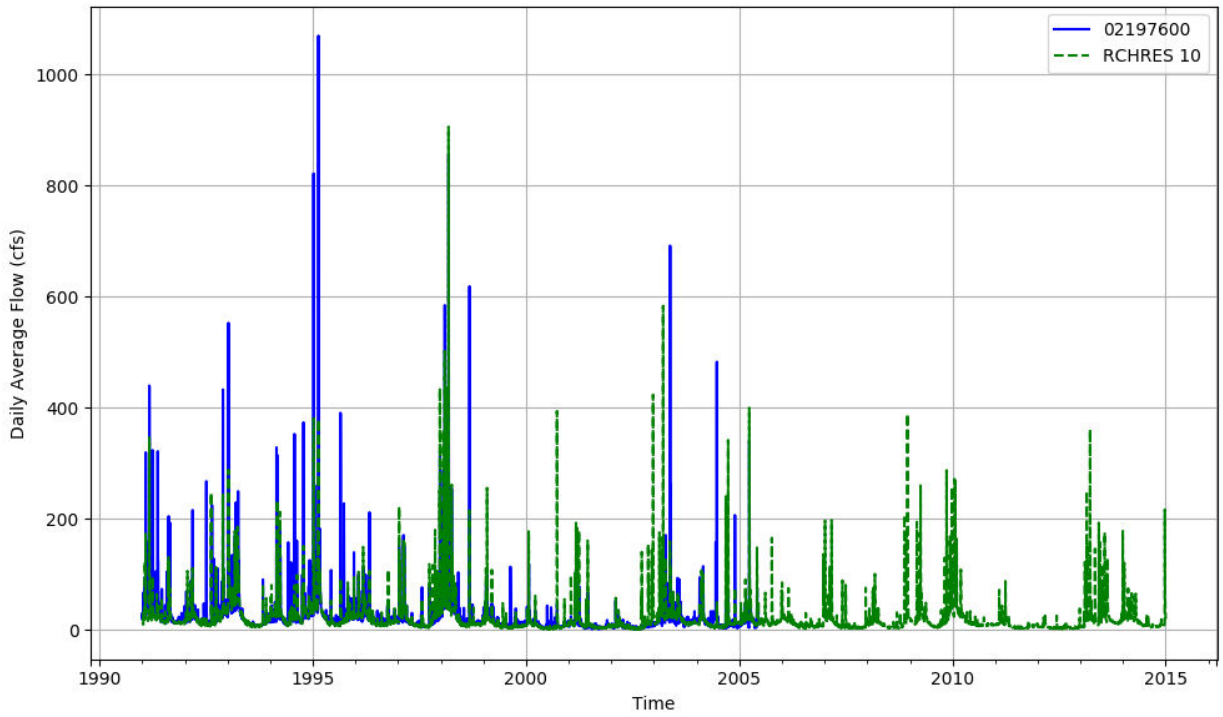


Figure T-03060108-10: Daily flow for HSFP reach 10 and USGS station 02197600.

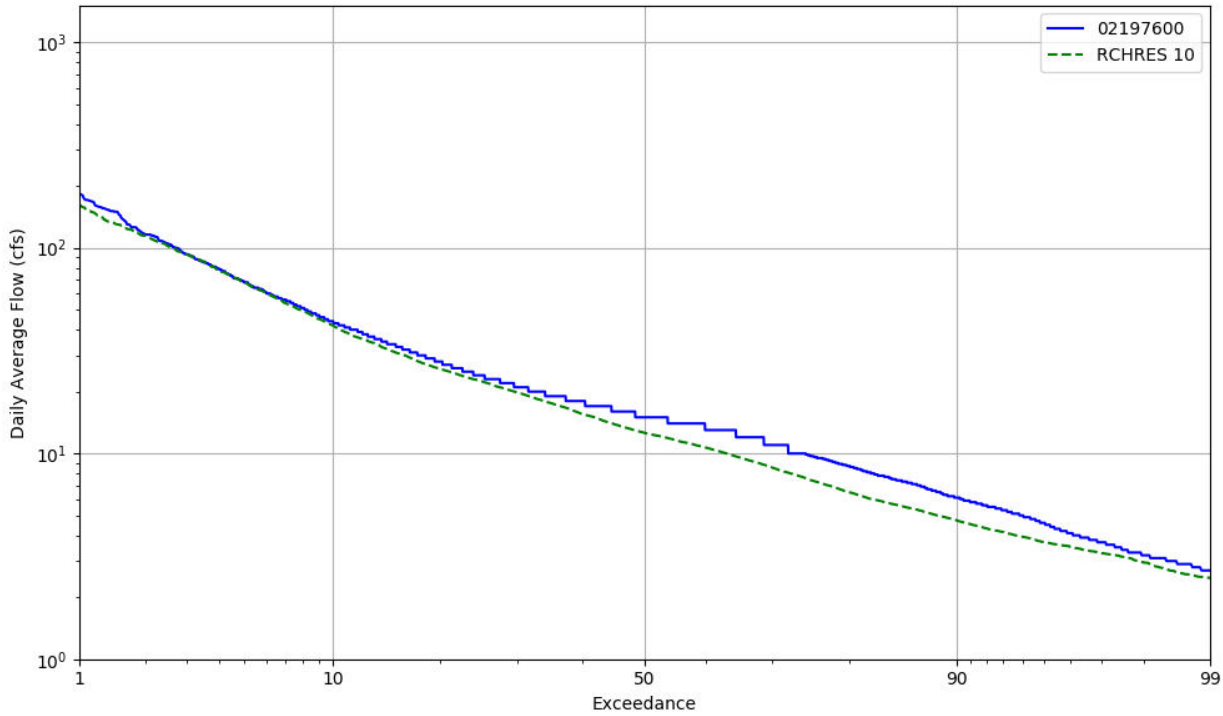


Figure T-03060108-11: Daily exceedance for HSFP reach 10 and USGS station 02197600.

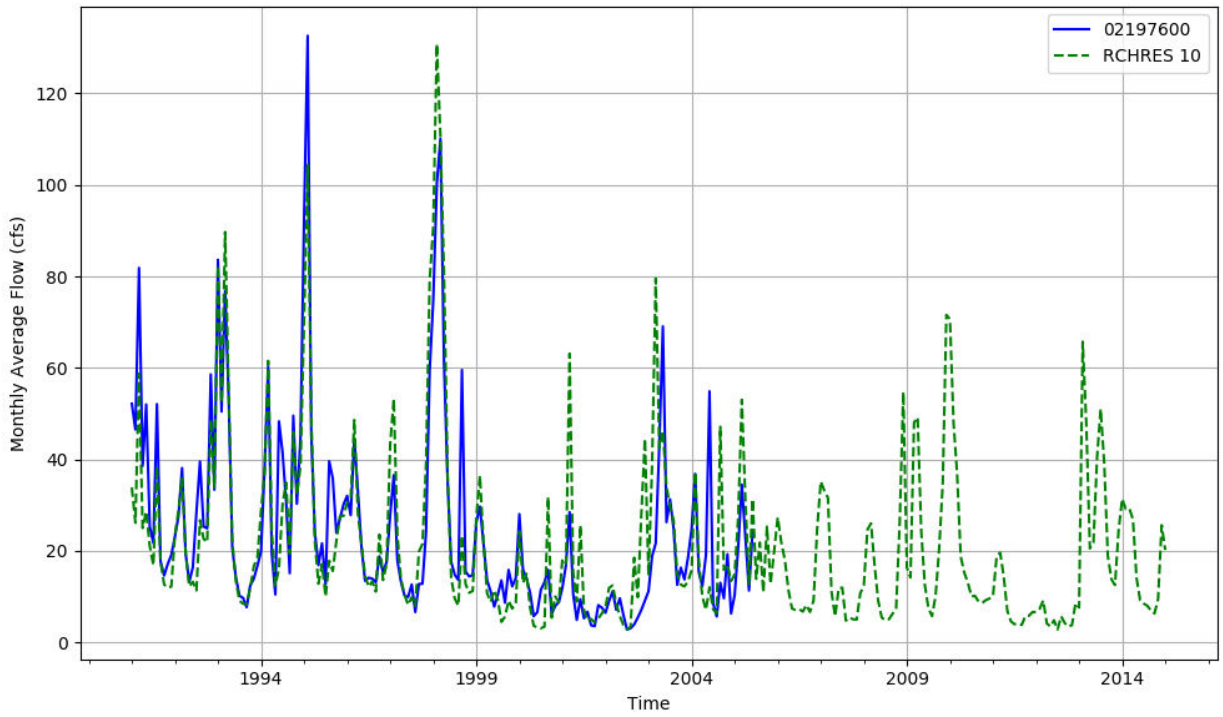


Figure T-03060108-12: Monthly flow for HSFP reach 10 and USGS station 02197600.

HSPF REACH 19, USGS GAUGE 02197830

Water-Data Report 2010
02197830 BRIER CREEK NEAR WAYNESBORO, GA
Savannah Basin Brier Subbasin

LOCATION.--Lat 330705, long 815750 referenced to North American Datum of 1927, Burke County, GA, Hydrologic Unit 03060108, at the downstream side of the bridge on GA 56, 1.0 mi upstream from confluence with McIntosh Creek, and 3.8 mi northeast of Waynesboro.

DRAINAGE AREA.--473 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: July 1969 to January 1995, May 2009 to current year.
GAGE-HEIGHT: May 2009 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 170 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map). Prior to February 1995, at different site and at datum of 173.78 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair. Gage-height records good.

Table T-03060108-7: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02197830.

Statistic	Value
Bias	-40.35
Standard error	117.48
Relative bias	-0.10
Relative standard error	0.37
Nash-Sutcliffe coefficient	0.87
Kling-Gupta coefficient	0.88
Coefficient of efficiency	0.68
Index of agreement	0.84

Table T-03060108-8: Hydrologic Indices Between USGS Gauge 02197830 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02197830	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	582.93	491.23	-15.73

MA2: Median, all daily flows	471.50	375.94	-20.27
MA3: CV, all daily flows	36.37	42.53	16.93
MA4: CV, log of all daily flows	61.17	64.35	5.20
MA5: Mean daily flow / median daily flow	1.24	1.31	5.69
MA9: (Q10 - Q90) / median daily flow	1.89	1.97	4.60
MA10: (Q20 - Q80) / median daily flow	1.22	1.10	-10.43
MA11: (Q25 - Q75) / median daily flow	1.00	0.88	-12.20
MA12: Mean monthly flow, January	453.87	417.16	-8.09
MA13: Mean monthly flow, February	316.06	252.54	-20.10
MA14: Mean monthly flow, March	437.60	397.37	-9.19
MA15: Mean monthly flow, April	286.53	227.07	-20.75
MA16: Mean monthly flow, May	166.29	142.12	-14.53
MA17: Mean monthly flow, June	142.90	116.61	-18.39
MA18: Mean monthly flow, July	151.97	100.74	-33.71
MA19: Mean monthly flow, August	200.19	167.25	-16.46
MA20: Mean monthly flow, September	116.29	106.85	-8.12
MA21: Mean monthly flow, October	164.99	152.85	-7.36
MA22: Mean monthly flow, November	205.35	174.12	-15.21
MA23: Mean monthly flow, December	238.72	185.10	-22.46
ML1: Mean minimum monthly flow, January	458.40	368.54	-19.60
ML2: Mean minimum monthly flow, February	493.75	409.54	-17.06
ML3: Mean minimum monthly flow, March	576.50	491.27	-14.78
ML4: Mean minimum monthly flow, April	395.25	363.18	-8.11
ML5: Mean minimum monthly flow, May	284.25	258.92	-8.91
ML6: Mean minimum monthly flow, June	181.50	202.85	11.77
ML7: Mean minimum monthly flow, July	187.75	181.59	-3.28
ML8: Mean minimum monthly flow, August	216.50	206.17	-4.77
ML9: Mean minimum monthly flow, September	184.00	198.87	8.08
ML10: Mean minimum monthly flow, October	201.50	203.85	1.17
ML11: Mean minimum monthly flow, November	288.00	273.28	-5.11
ML12: Mean minimum monthly flow, December	444.25	387.33	-12.81
ML13: CV of minimum monthly flows	52.95	49.77	-5.99
ML14: Mean minimum daily flow / mean median annual flow	0.15	0.22	50.26
ML15: Mean minimum annual flow / mean annual flow	0.12	0.17	40.93
ML16: Median minimum annual flow / median annual flow	0.11	0.14	33.36
ML20: Ratio of baseflow volume to total flow volume	0.65	0.69	7.06
ML22: Mean annual minimum flow divided by catchment area	50000.72	50000.85	0.00
RA1: Mean of positive changes from one day to next (rise rate)	107.54	113.74	
RA2: CV, mean of positive changes from one day to next (rise rate)	188.45	329.57	
RA3: Mean of negative changes from one day to next (fall rate)	72.20	49.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	189.72	296.20	
RA5: Ratio of days that are higher than previous day	0.40	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	40.80	30.80	
RA9: CV, number of flow reversals from one day to the next	118.50	124.01	

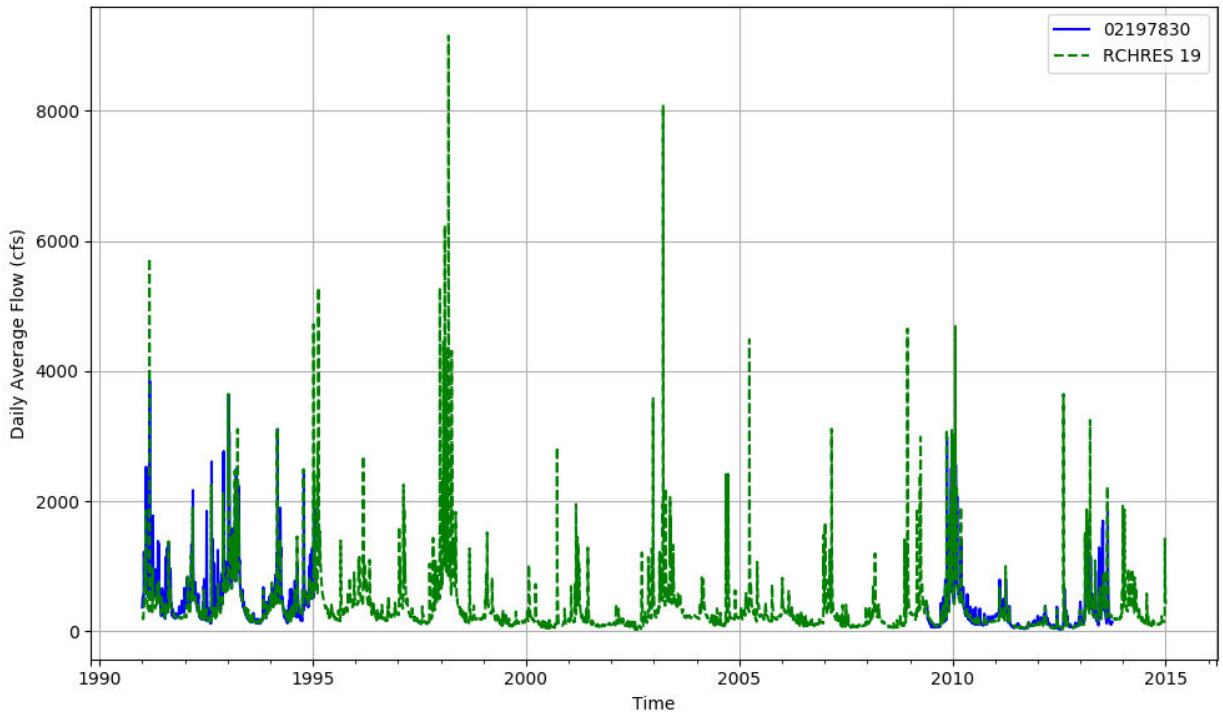


Figure T-03060108-13: Daily flow for HSFP reach 19 and USGS station 02197830.

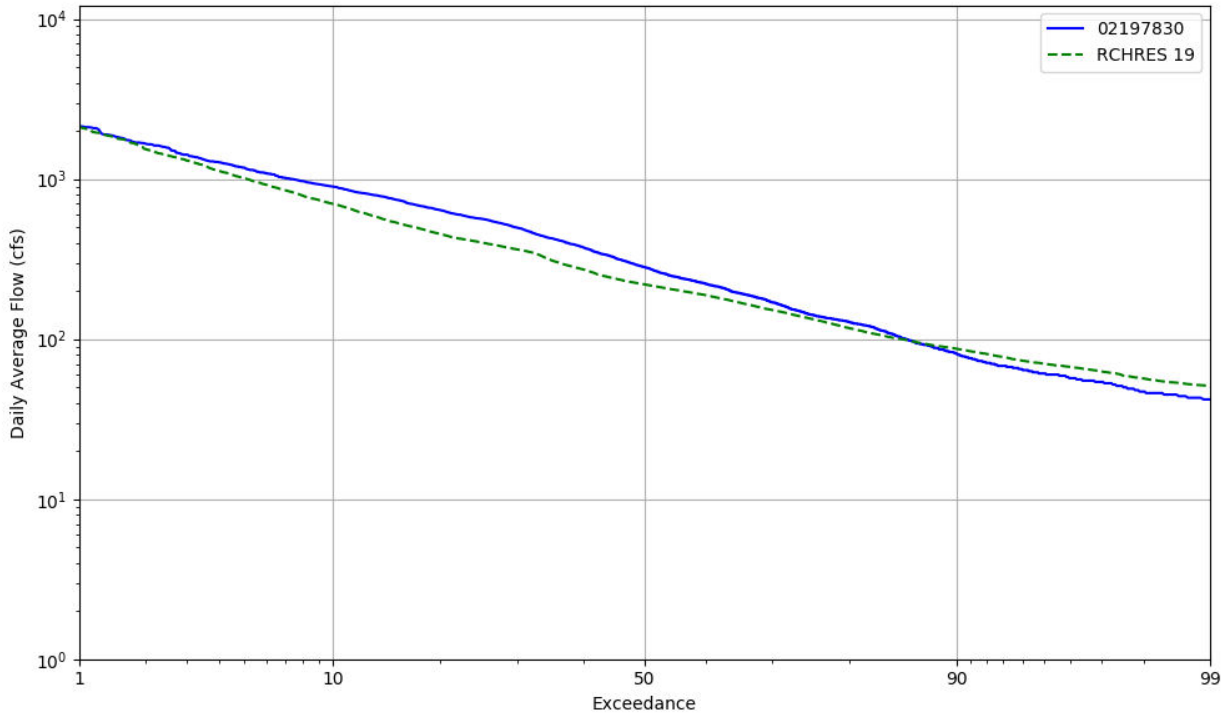


Figure T-03060108-14: Daily exceedance for HSFP reach 19 and USGS station 02197830.

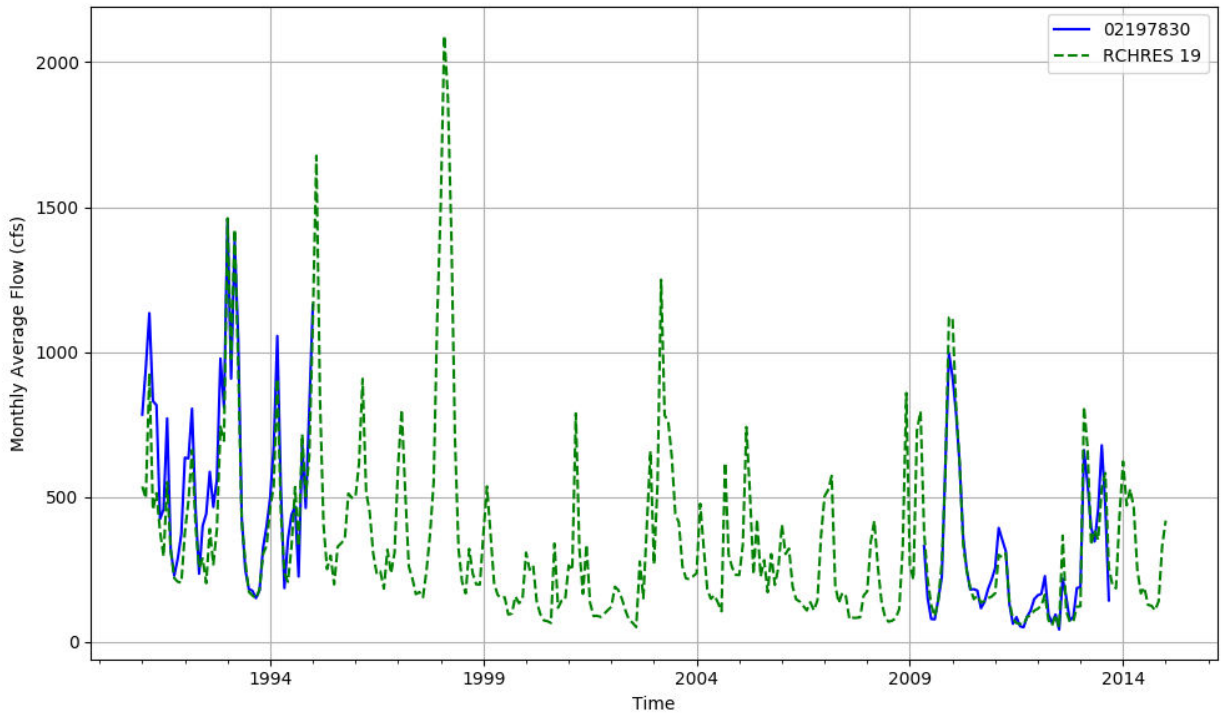


Figure T-03060108-15: Monthly flow for HSFP reach 19 and USGS station 02197830.

HSPF REACH 20, USGS GAUGE 02198000

Water-Data Report 2009
02198000 BRIER CREEK AT MILLHAVEN, GA
Savannah Basin Brier Subbasin

LOCATION.--Lat 325600, long 813905 referenced to North American Datum of 1927, Screven County, GA, Hydrologic Unit 03060108, near right bank on downstream side of pier of Girard-Millhaven Road, 8.5 mi upstream from Beaverdam Creek, and at Millhaven.

DRAINAGE AREA.--646 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1936 to current year. Monthly discharges only for October 1936 to April 1937, published in WSP 1303.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1383: Drainage area. WSP 1503: 1956.

GAGE.--Satellite telemtry with a water-stage recorder. Datum of gage is 95.88 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to June 7, 1950, a non-recording gage was located at a site 200 feet downstream at same datum. From June 7, 1950 to April 30, 1951, a non-recording gage was located at present site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for estimated discharges which are poor. Gage-height records are good.

Table T-03060108-9: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02198000.

Statistic	Value
Bias	-33.06
Standard error	127.48
Relative bias	-0.06
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03060108-10: Hydrologic Indices Between USGS Gauge 02198000 and HSPF Reach 20.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02198000	Simulated Reach 20	Percent Difference
MA1: Mean, all daily flows	505.75	472.25	-6.62
MA2: Median, all daily flows	349.00	303.81	-12.95
MA3: CV, all daily flows	78.73	87.94	11.70
MA4: CV, log of all daily flows	77.86	77.27	-0.76
MA5: Mean daily flow / median daily flow	1.45	1.55	7.27
MA9: (Q10 - Q90) / median daily flow	2.76	2.71	-1.79
MA10: (Q20 - Q80) / median daily flow	1.62	1.52	-6.34
MA11: (Q25 - Q75) / median daily flow	1.25	1.17	-6.54
MA12: Mean monthly flow, January	730.44	672.50	-7.93
MA13: Mean monthly flow, February	809.04	759.47	-6.13
MA14: Mean monthly flow, March	919.76	872.19	-5.17
MA15: Mean monthly flow, April	637.39	538.04	-15.59
MA16: Mean monthly flow, May	352.06	345.95	-1.73
MA17: Mean monthly flow, June	338.66	322.61	-4.74
MA18: Mean monthly flow, July	310.60	248.77	-19.91
MA19: Mean monthly flow, August	325.81	292.10	-10.35
MA20: Mean monthly flow, September	264.50	279.06	5.50
MA21: Mean monthly flow, October	294.85	303.40	2.90
MA22: Mean monthly flow, November	355.42	354.06	-0.38
MA23: Mean monthly flow, December	537.46	506.27	-5.80
ML1: Mean minimum monthly flow, January	460.04	392.16	-14.76
ML2: Mean minimum monthly flow, February	501.48	432.04	-13.85
ML3: Mean minimum monthly flow, March	542.61	459.76	-15.27
ML4: Mean minimum monthly flow, April	350.17	349.69	-0.14
ML5: Mean minimum monthly flow, May	207.83	244.87	17.83
ML6: Mean minimum monthly flow, June	162.78	205.54	26.27
ML7: Mean minimum monthly flow, July	163.30	182.70	11.88
ML8: Mean minimum monthly flow, August	160.87	185.86	15.53
ML9: Mean minimum monthly flow, September	141.22	182.07	28.93
ML10: Mean minimum monthly flow, October	177.96	208.93	17.40
ML11: Mean minimum monthly flow, November	244.30	255.40	4.54
ML12: Mean minimum monthly flow, December	359.57	327.14	-9.02
ML13: CV of minimum monthly flows	74.55	69.16	-7.23
ML14: Mean minimum daily flow / mean median annual flow	0.30	0.41	39.31
ML15: Mean minimum annual flow / mean annual flow	0.23	0.32	38.83
ML16: Median minimum annual flow / median annual flow	0.28	0.40	41.73
ML20: Ratio of baseflow volume to total flow volume	0.68	0.70	2.68
ML22: Mean annual minimum flow divided by catchment area	1.11	1.40	26.28
RA1: Mean of positive changes from one day to next (rise rate)	79.44	103.43	
RA2: CV, mean of positive changes from one day to next (rise rate)	236.84	413.24	
RA3: Mean of negative changes from one day to next (fall rate)	54.35	46.74	
RA4: CV, mean of negative changes from one day to next (fall rate)	230.71	370.61	
RA5: Ratio of days that are higher than previous day	0.40	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.03	

RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.03	
RA8: Number of flow reversals from one day to the next	89.50	62.00	
RA9: CV, number of flow reversals from one day to the next	19.14	19.77	

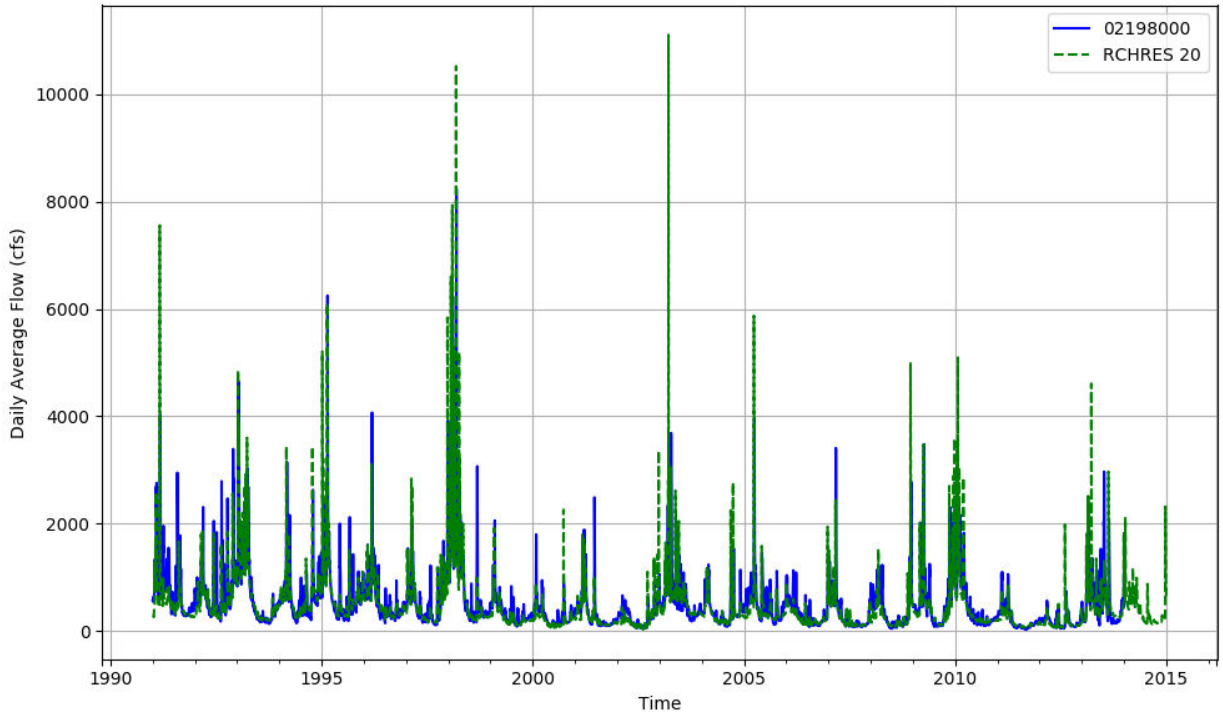


Figure T-03060108-16: Daily flow for HSFP reach 20 and USGS station 02198000.

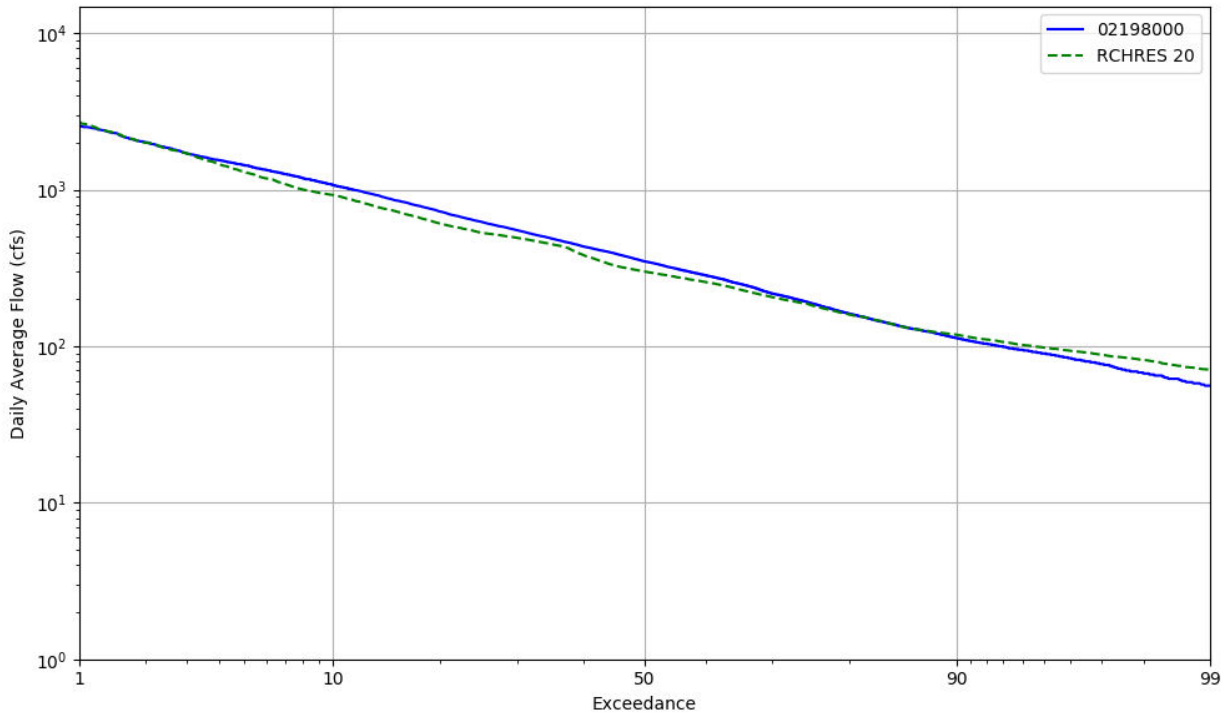


Figure T-03060108-17: Daily exceedance for HSFP reach 20 and USGS station 02198000.

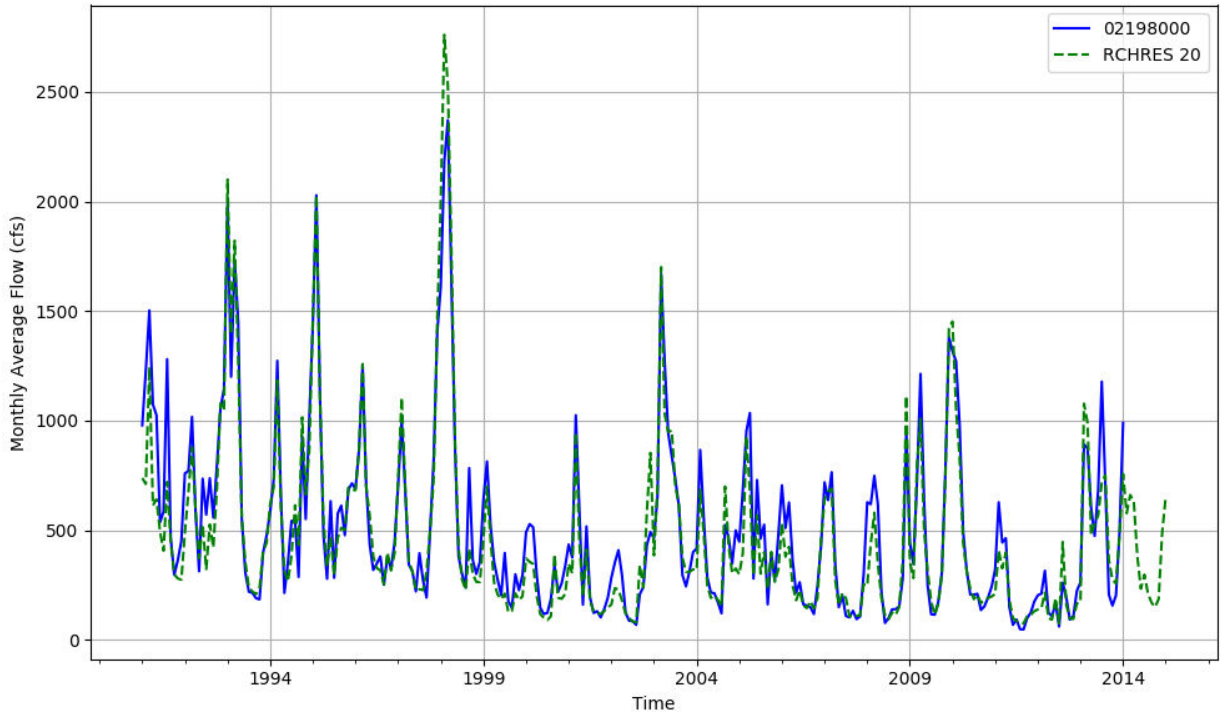


Figure T-03060108-18: Monthly flow for HSFP reach 20 and USGS station 02198000.

Table T-03060108-11: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	1539	22908	5808	1168	164	3085	199788	37678	53736	32296	64643	102661	532	11830	2968	540804
AREA(%)	0.3	4.2	1.1	0.2	0.0	0.6	36.8	6.9	9.9	5.9	11.9	18.9	0.1	2.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		1243	658	313	167											2381
AREA(%)		0.2	0.1	0.1	0.0											0.4
SUPY	34.4	33.6	33.3	33.4	32.9	35.3	33.9	32.6	34.0	34.1	33.0	32.5	53.6	45.3	35.2	33.6
SURLI			8.6	9.7	8.8										4.7	0.1
UZLI																0.0
LZLI			1.1	1.0	1.0									0.1	15.1	0.1
SURO: PERVIOUS		1.7	2.1	2.1	1.6	1.3	0.2	1.1	1.0	1.0	0.5		3.5	2.9	1.4	0.6
SURO: IMPERVIOUS		26.4	26.1	26.3	25.8											0.1
SURO: COMBINED		3.0	4.5	7.2	13.8	1.3	0.2	1.1	1.0	1.0	0.5		3.5	2.9	1.4	0.7
IFWO		2.5	3.1	3.3	3.3	3.9	1.0	2.1	2.2	2.3	1.3		5.6	2.3	2.7	1.3
AGWO	1.1	3.7	8.6	9.1	8.0	7.2	3.7	6.7	4.8	4.8	3.9	2.0	10.4	9.0	14.7	4.0
AGWI	2.2	5.4	10.0	10.5	9.3	9.4	6.1	8.1	6.8	6.8	5.8	3.4	9.8	10.6	17.0	6.0
IGWI	0.3	0.8	1.4	1.5	1.3	1.3	0.9	1.2	1.0	1.0	0.8	0.5	1.4	1.5	2.4	0.9
CEPE		8.9	7.3	7.2	10.0	5.5	10.5	7.6	7.2	7.1	11.1	12.9	24.0	11.4	10.8	10.1
UZET		2.2	3.0	3.0	2.4	3.2	1.6	3.0	2.4	2.2	1.8		2.3	3.0	2.8	1.6
LZET		14.9	18.3	18.5	16.9	12.6	17.6	12.3	16.5	16.5	15.5		9.5	16.9	19.6	13.2
AGWET		0.6	0.7	0.6	0.6	0.7	0.6	0.7	0.7	0.7	0.6		0.3	0.6	0.6	0.5
BASET	1.0	1.9	2.3	2.3	2.3	2.3	1.9	2.3	2.1	2.1	2.0	1.5	2.3	2.5	2.4	1.9
SURET	43.9											31.6				6.1
PERO	1.1	7.9	13.7	14.4	12.9	12.5	5.0	9.9	7.9	8.1	5.7	2.0	19.4	14.2	18.9	5.9
IGWI	0.3	0.8	1.4	1.5	1.3	1.3	0.9	1.2	1.0	1.0	0.8	0.5	1.4	1.5	2.4	0.9
TAET: PERVIOUS	44.9	28.5	31.6	31.7	32.2	24.3	32.2	25.8	28.9	28.6	31.0	46.0	38.4	34.4	36.1	33.5
IMPEV: IMPERVIOUS		7.1	7.2	7.1	7.1											0.0
ET: COMBINED	44.9	27.4	29.1	26.5	19.5	24.3	32.2	25.8	28.9	28.6	31.0	46.0	38.4	34.4	36.1	33.5
PET	44.9	45.4	45.4	45.2	45.1	44.5	45.3	46.0	45.3	45.1	45.7	46.0	45.4	45.9	45.1	45.3

Table T-03060108-12: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	1539	22908	5808	1168	164	3085	199788	37678	53736	32296	64643	102661	532	11830	2968	540804
AREA(%)	0.3	4.2	1.1	0.2	0.0	0.6	36.8	6.9	9.9	5.9	11.9	18.9	0.1	2.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		1243	658	313	167											2381
AREA(%)		0.2	0.1	0.1	0.0											0.4
SUPY	53.8	52.4	52.0	52.5	52.4	56.0	52.9	50.5	52.9	53.8	51.3	50.7	56.3	54.2	53.4	52.0
SURLI			6.6	7.6	5.9										1.1	0.1
UZLI																0.0
LZLI			1.2	1.0	1.1									0.2	9.1	0.1
SURO: PERVIOUS		3.5	3.9	4.0	3.1	2.3	0.5	2.4	2.0	2.1	1.2		4.0	1.7	1.6	1.1
SURO: IMPERVIOUS		43.5	43.3	43.8	43.7											0.2
SURO: COMBINED		5.5	7.9	12.4	23.6	2.3	0.5	2.4	2.0	2.1	1.2		4.0	1.7	1.6	1.3
IFWO		5.7	6.4	6.8	7.1	8.0	2.6	5.1	4.7	5.3	3.0		6.3	4.1	4.3	2.9
AGWO	1.7	5.2	9.5	10.3	8.8	11.3	6.4	8.6	7.2	7.4	6.0	2.6	6.2	8.0	14.3	6.0
AGWI	4.1	10.5	15.1	16.0	14.3	17.7	12.7	14.4	13.2	13.5	11.7	5.3	11.4	12.9	19.2	11.3
IGWI	0.6	1.5	2.2	2.3	2.0	2.5	1.8	2.1	1.9	1.9	1.7	0.8	1.6	1.8	2.7	1.6
CEPE		10.8	8.8	8.8	12.1	7.2	12.8	8.9	8.9	8.8	13.2	15.3	14.0	11.4	13.2	12.2
UZET	1.9	3.2	3.9	4.0	3.2	4.5	2.4	4.1	3.5	3.3	2.7	9.1	3.1	3.3	3.3	4.1
LZET	0.6	16.5	18.8	18.8	16.9	13.2	19.0	12.8	18.0	18.1	16.9	1.1	15.3	18.4	18.4	14.5
AGWET	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.3	0.7	0.7	0.6	0.8
BASET	1.2	2.2	2.5	2.5	2.5	2.6	2.3	2.6	2.4	2.4	2.3	1.3	2.3	2.6	2.6	2.1
SURET	42.8											15.5				3.0
PERO	1.7	14.4	19.8	21.0	19.1	21.6	9.5	16.0	13.8	14.8	10.2	2.6	16.5	13.8	20.2	10.0
IGWI	0.6	1.5	2.2	2.3	2.0	2.5	1.8	2.1	1.9	1.9	1.7	0.8	1.6	1.8	2.7	1.6
TAET: PERVIOUS	47.7	33.3	34.7	34.8	35.3	28.2	37.2	29.2	33.5	33.3	35.8	43.5	35.2	36.4	38.2	36.7
IMPEV: IMPERVIOUS		8.7	8.7	8.6	8.6											0.0
ET: COMBINED	47.7	32.0	32.1	29.3	21.8	28.2	37.2	29.2	33.5	33.3	35.8	43.5	35.2	36.4	38.2	36.7
PET	51.2	51.9	51.9	51.7	51.7	50.7	51.7	52.6	51.7	51.5	52.3	52.6	52.0	52.6	51.7	51.8

Table T-03060108-13: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	1539	22908	5808	1168	164	3085	199788	37678	53736	32296	64643	102661	532	11830	2968	540804
AREA(%)	0.3	4.2	1.1	0.2	0.0	0.6	36.8	6.9	9.9	5.9	11.9	18.9	0.1	2.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		1243	658	313	167											2381
AREA(%)		0.2	0.1	0.1	0.0											0.4
SUPY	36.9	36.5	36.1	36.2	35.6	38.0	36.9	36.1	36.9	37.5	36.0	36.3	43.0	38.9	36.4	36.5
SURLI			6.6	7.7	5.8										1.8	0.1
UZLI																0.0
LZLI			1.2	1.0	1.1									0.2	11.2	0.1
SURO: PERVIOUS		2.0	2.2	2.3	1.8	1.3	0.4	1.5	1.2	1.2	0.9		2.6	1.2	1.0	0.7
SURO: IMPERVIOUS		29.0	28.6	28.7	28.2											0.1
SURO: COMBINED		3.4	4.9	7.8	15.1	1.3	0.4	1.5	1.2	1.2	0.9		2.6	1.2	1.0	0.8
IFWO		3.0	3.3	3.5	3.6	4.0	2.0	3.0	2.6	2.8	2.2		4.0	2.7	2.6	1.9
AGWO	1.8	5.5	9.6	10.2	8.6	10.9	7.0	8.7	7.3	7.6	6.4	2.9	6.8	7.7	14.2	6.4
AGWI	3.5	5.4	9.7	10.4	8.4	10.8	6.4	8.9	7.0	7.2	5.8	4.4	7.2	7.1	14.1	6.3
IGWI	0.5	0.8	1.4	1.5	1.2	1.5	0.9	1.3	1.0	1.0	0.8	0.6	1.0	1.0	2.0	0.9
CEPE		9.4	7.6	7.6	10.8	6.0	11.2	7.7	7.6	7.5	11.8	13.6	14.7	10.1	11.6	10.7
UZET	0.8	2.4	3.1	3.1	2.4	3.4	1.5	3.3	2.6	2.5	1.7	9.6	2.2	2.4	2.4	3.5
LZET	0.3	16.4	18.7	18.7	16.8	13.1	19.6	12.7	18.1	18.2	16.9	0.8	13.9	17.8	18.8	14.6
AGWET	0.6	0.7	0.7	0.7	0.6	0.7	0.6	0.7	0.7	0.7	0.6	1.2	0.6	0.7	0.6	0.8
BASET	1.3	2.1	2.3	2.4	2.3	2.5	2.2	2.5	2.3	2.3	2.1	1.4	2.2	2.3	2.4	2.0
SURET	41.9											16.4				3.2
PERO	1.8	10.4	15.1	16.0	14.0	16.1	9.4	13.3	11.1	11.6	9.5	2.9	13.4	11.5	17.8	9.0
IGWI	0.5	0.8	1.4	1.5	1.2	1.5	0.9	1.3	1.0	1.0	0.8	0.6	1.0	1.0	2.0	0.9
TAET: PERVIOUS	44.9	30.9	32.4	32.4	32.8	25.7	35.1	27.0	31.2	31.1	33.2	43.1	33.6	33.3	35.9	34.8
IMPEV: IMPERVIOUS		7.5	7.5	7.5	7.5											0.0
ET: COMBINED	44.9	29.7	29.8	27.2	20.0	25.7	35.1	27.0	31.2	31.1	33.2	43.1	33.6	33.3	35.9	34.8
PET	46.6	47.2	47.3	47.0	47.0	46.0	47.1	48.1	47.0	46.8	47.7	48.1	47.4	48.1	47.1	47.2

Table T-03060108-14: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	1539	22908	5808	1168	164	3085	199788	37678	53736	32296	64643	102661	532	11830	2968	540804
AREA(%)	0.3	4.2	1.1	0.2	0.0	0.6	36.8	6.9	9.9	5.9	11.9	18.9	0.1	2.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		1243	658	313	167											2381
AREA(%)		0.2	0.1	0.1	0.0											0.4
SUPY	44.5	44.5	44.5	44.5	44.3	44.8	44.6	44.5	44.6	44.7	44.5	44.5	55.6	53.8	44.8	44.6
SURLI			6.3	7.1	6.1										2.3	0.1
UZLI																0.0
LZLI			1.0	1.0	1.0									0.1	10.2	0.1
SURO: PERVIOUS	2.3	2.6	3.0	3.0	2.4	1.7	0.4	2.0	1.5	1.5	0.9	1.0	3.6	3.1	1.3	1.0
SURO: IMPERVIOUS		36.2	36.1	36.2	36.0											0.2
SURO: COMBINED	2.3	4.3	6.4	10.0	19.4	1.7	0.4	2.0	1.5	1.5	0.9	1.0	3.6	3.1	1.3	1.2
IFWO		4.0	4.6	4.8	5.0	5.0	1.7	3.9	3.1	3.4	2.2		5.9	3.6	3.0	2.0
AGWO	1.3	5.7	9.7	10.2	9.1	10.2	6.5	9.3	7.3	7.4	6.5	2.9	8.8	10.0	14.3	6.2
AGWI	2.7	8.6	12.9	13.4	12.2	13.6	9.4	12.6	10.4	10.5	9.5	4.8	11.7	13.3	17.4	9.0
IGWI	0.4	1.2	1.8	1.9	1.7	1.9	1.3	1.8	1.5	1.5	1.3	0.7	1.7	1.9	2.5	1.3
CEPE		10.2	8.4	8.4	11.5	6.6	11.9	8.7	8.4	8.2	12.5	14.3	18.1	11.4	12.4	11.4
UZET	0.7	2.7	3.4	3.4	2.7	3.6	1.9	3.5	2.9	2.7	2.2	3.8	2.5	3.4	2.8	2.6
LZET	0.3	15.3	17.5	17.6	15.9	12.4	17.9	12.0	16.8	16.8	15.7	0.4	12.2	17.3	17.8	13.5
AGWET	0.3	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.7	0.6	0.4	0.5	0.6	0.6	0.6
BASET	1.1	2.0	2.3	2.3	2.2	2.3	2.0	2.3	2.1	2.1	2.1	1.5	2.2	2.4	2.3	2.0
SURET	40.9											22.7				4.4
PERO	3.6	12.2	17.4	18.0	16.5	16.9	8.6	15.1	11.9	12.3	9.7	3.8	18.2	16.7	18.6	9.3
IGWI	0.4	1.2	1.8	1.9	1.7	1.9	1.3	1.8	1.5	1.5	1.3	0.7	1.7	1.9	2.5	1.3
TAET: PERVIOUS	43.4	30.7	32.3	32.3	32.9	25.5	34.4	27.1	30.8	30.6	33.1	43.1	35.4	35.0	35.9	34.5
IMPEV: IMPERVIOUS		8.3	8.3	8.3	8.3											0.0
ET: COMBINED	43.4	29.6	29.8	27.2	20.5	25.5	34.4	27.1	30.8	30.6	33.1	43.1	35.4	35.0	35.9	34.5
PET	45.8	46.1	46.1	46.0	45.9	45.4	46.1	46.7	46.1	45.9	46.4	46.6	46.2	46.6	46.1	46.1

Table T-03060108-15: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
2	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
3	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
4	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
5	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
6	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
7	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
8	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
9	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
10	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
11	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
12	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
13	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
14	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
15	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
16	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
17	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
18	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
19	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
20	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
21	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
22	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03060108-16: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
2	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
3	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
4	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
5	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
6	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
7	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
8	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
9	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
10	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
11	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
12	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
13	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
14	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
15	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
16	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
17	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
18	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
19	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
20	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
21	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
22	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055

Table T-03060108-17: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
2	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
3	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
4	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
5	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
6	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
7	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
8	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
9	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
10	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
11	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
12	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
13	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
14	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
15	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
16	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
17	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
18	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
19	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
20	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
21	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156
22	0.000	0.076	0.050	0.050	0.100	0.032	0.110	0.050	0.050	0.050	0.117	0.156

Table T-03060108-18: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
2	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
3	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
4	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
5	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
6	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
7	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
8	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
9	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
10	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
11	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
12	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
13	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
14	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
15	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
16	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
17	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
18	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
19	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
20	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
21	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
22	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125

Table T-03060108-19: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
2	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
3	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
4	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
5	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
6	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
7	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
8	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
9	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
10	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
11	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
12	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
13	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
14	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
15	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
16	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
17	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
18	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
19	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
20	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
21	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002
22	0.002	0.122	0.122	0.122	0.122	0.173	0.260	0.173	0.173	0.173	0.209	0.002

Table T-03060108-20: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
2		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
3		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
4		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
5		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
6		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
7		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
8		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
9		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
10		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
11		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
12		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
13		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
14		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
15		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
16		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
17		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
18		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
19		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
20		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
21		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	
22		1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	1.198	

Table T-03060108-21: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
2	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
3	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
4	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
5	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
6	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
7	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
8	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
9	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
10	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
11	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
12	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
13	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
14	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
15	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
16	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
17	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
18	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
19	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
20	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
21	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666
22	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666	0.666

Table T-03060108-22: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
2	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
3	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
4	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
5	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
6	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
7	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
8	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
9	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
10	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
11	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
12	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
13	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
14	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
15	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
16	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
17	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
18	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
19	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
20	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
21	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
22	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500

Table T-03060108-23: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
2	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
3	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
4	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
5	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
6	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
7	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
8	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
9	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
10	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
11	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
12	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
13	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
14	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
15	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
16	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
17	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
18	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
19	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
20	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
21	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900
22	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.900

Table T-03060108-24: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
2	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
3	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
4	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
5	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
6	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
7	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
8	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
9	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
10	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
11	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
12	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
13	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
14	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
15	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
16	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
17	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
18	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
19	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
20	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
21	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101
22	0.114	3.467	3.467	3.467	3.467	3.900	5.199	3.900	3.900	3.900	4.333	0.101

Table T-03060108-25: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.874

APPENDIX T-03060109

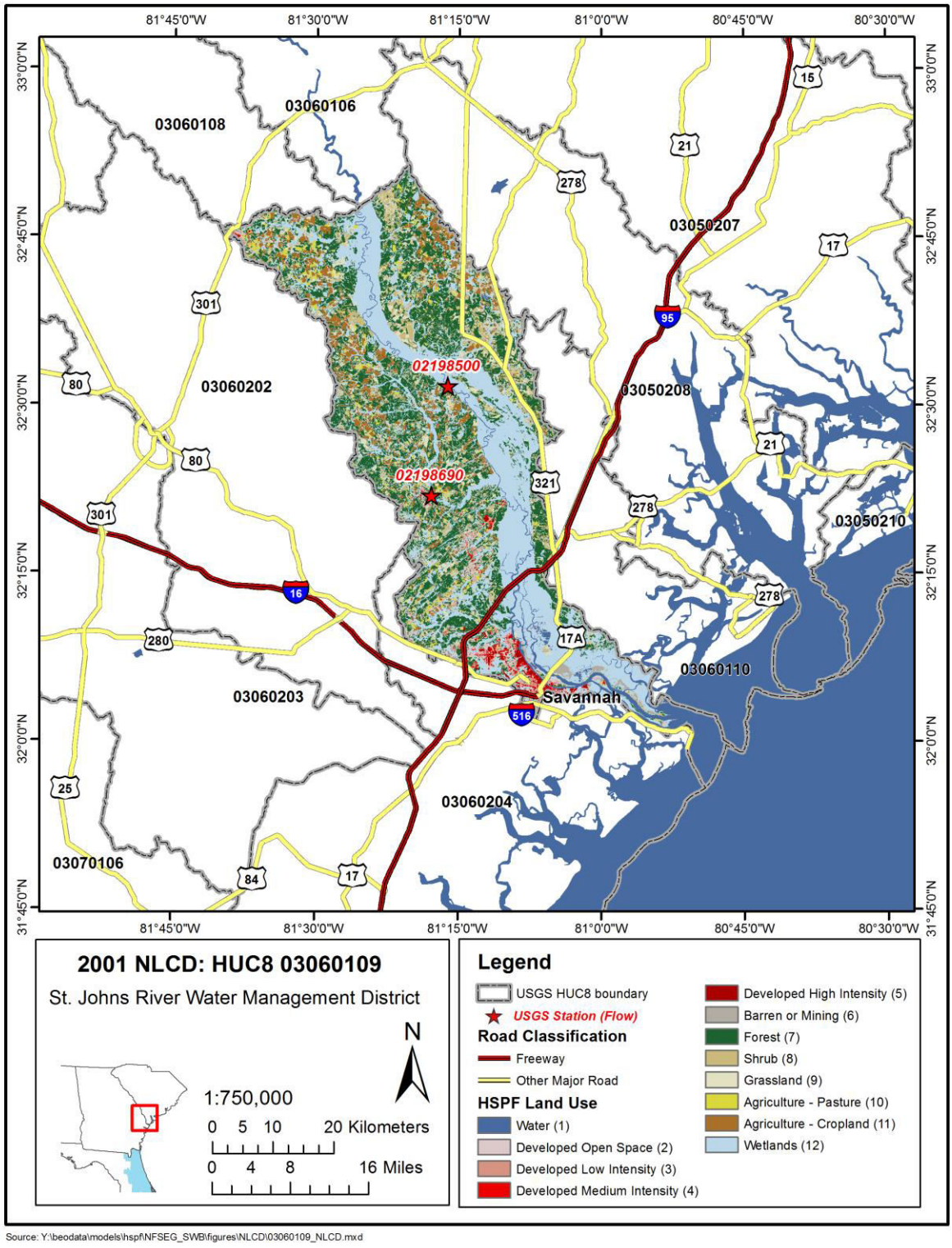


Figure T-03060109-1: Land Cover from the National Land Cover Database.

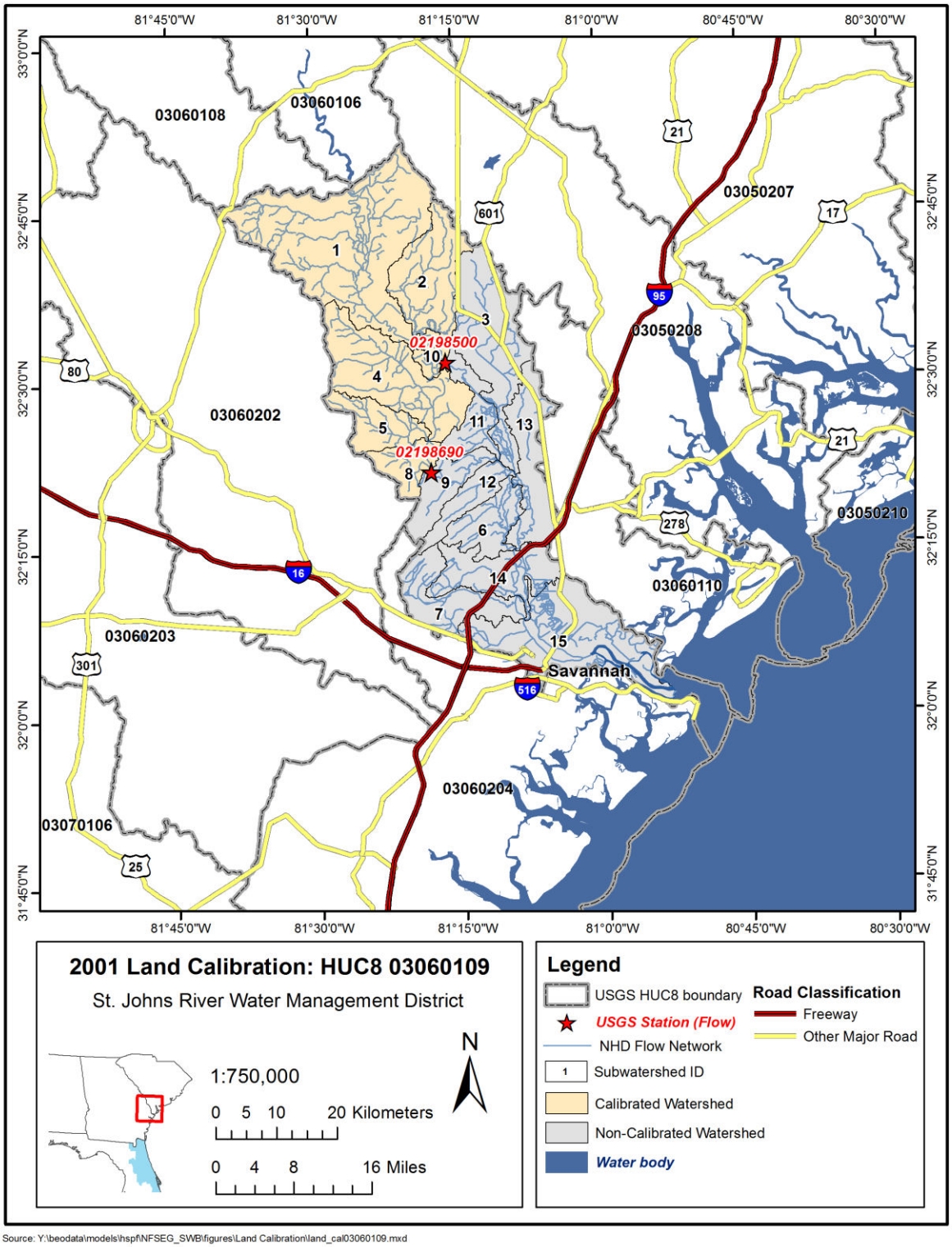


Figure T-03060109-2: Calibrated sub-watersheds.

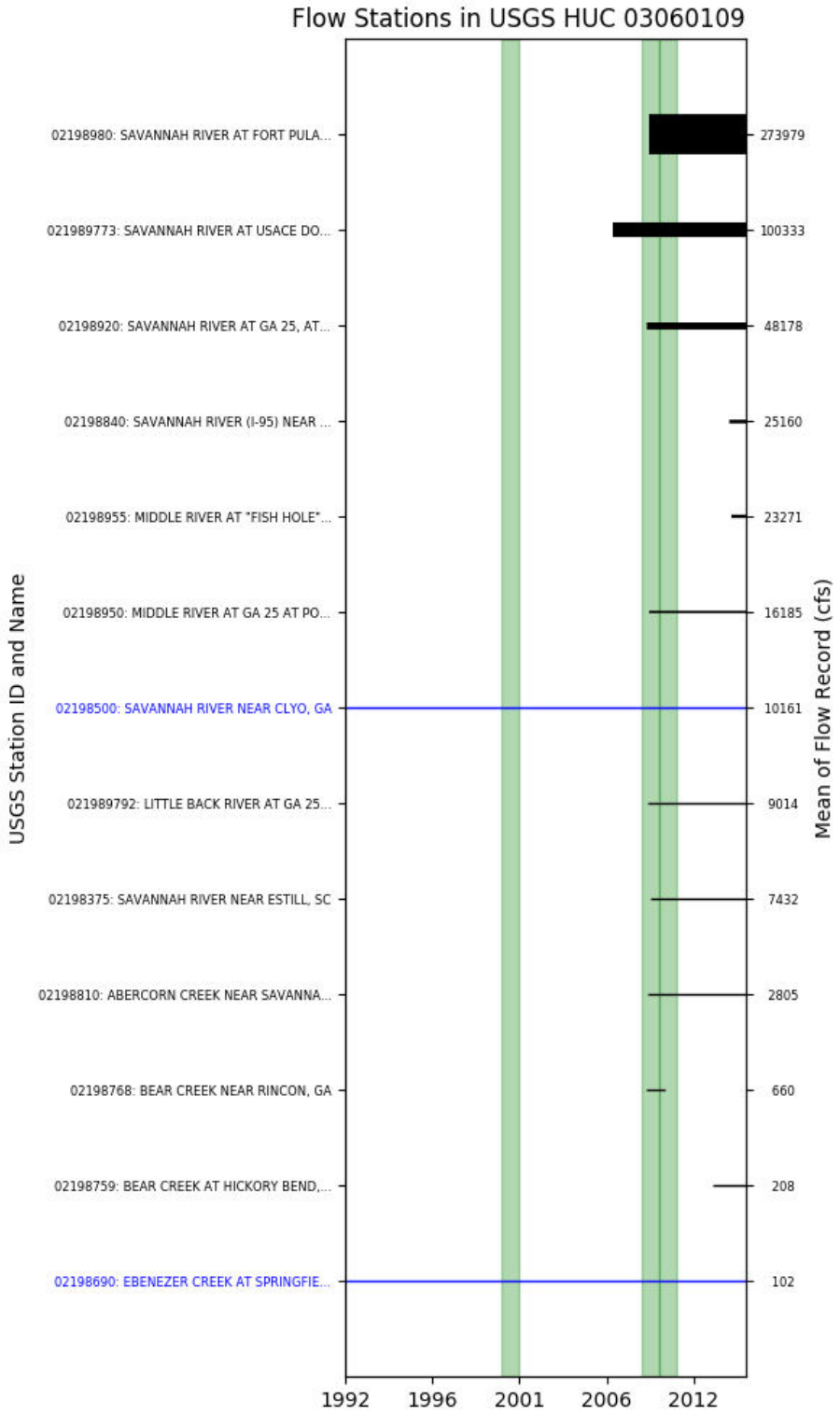


Figure T-03060109-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 08, USGS GAUGE 02198690

Water-Data Report 2009
02198690 EBENEZER CREEK AT SPRINGFIELD, GA
Savannah Basin Lower Savannah Subbasin

LOCATION.--Lat 322156, long 811751 referenced to North American Datum of 1927, Effingham County, GA, Hydrologic Unit 03060109, at downstream side of bridge pier on Stillwell Road, 0.5 miles east of Springfield, and 3.0 miles upstream from Little Ebenezer Creek.

DRAINAGE AREA.--162 mi, revised.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: March 1990 to current year.
GAGE-HEIGHT: March 1990 to current year.

REVISED RECORDS.--WDR GA-08-1: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 20 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map). Prior to April 25, 1990, a non-recording gage was located at same site and datum.

COOPERATION.--City of Springfield.

REMARKS.--Discharge records good, except those less than 5.0 cfs, which are fair, and days of estimated discharge, which are poor. Gage-height records good.

Table T-03060109-1: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02198690.

Statistic	Value
Bias	-4.71
Standard error	80.72
Relative bias	-0.04
Relative standard error	0.46
Nash-Sutcliffe coefficient	0.79
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.65
Index of agreement	0.82

Table T-03060109-2: Hydrologic Indices Between USGS Gauge 02198690 and HSPF Reach 08.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02198690	Reach 08	Difference
MA1: Mean, all daily flows	112.02	107.21	-4.30
MA2: Median, all daily flows	19.00	23.61	24.28
MA3: CV, all daily flows	176.67	169.32	-4.16
MA4: CV, log of all daily flows	172.56	160.18	-7.17
MA5: Mean daily flow / median daily flow	5.90	4.54	-22.99
MA9: (Q10 - Q90) / median daily flow	16.23	12.16	-25.10
MA10: (Q20 - Q80) / median daily flow	6.87	6.09	-11.30
MA11: (Q25 - Q75) / median daily flow	4.74	4.00	-15.73
MA12: Mean monthly flow, January	168.24	181.48	7.87
MA13: Mean monthly flow, February	213.06	223.87	5.07
MA14: Mean monthly flow, March	189.60	181.07	-4.50
MA15: Mean monthly flow, April	128.70	94.31	-26.72
MA16: Mean monthly flow, May	39.79	40.20	1.04
MA17: Mean monthly flow, June	86.56	64.44	-25.55
MA18: Mean monthly flow, July	84.67	71.96	-15.01
MA19: Mean monthly flow, August	146.54	105.28	-28.16
MA20: Mean monthly flow, September	43.35	41.76	-3.68
MA21: Mean monthly flow, October	54.07	53.14	-1.72
MA22: Mean monthly flow, November	43.27	67.02	54.92
MA23: Mean monthly flow, December	99.74	118.65	18.97
ML1: Mean minimum monthly flow, January	44.94	43.70	-2.76
ML2: Mean minimum monthly flow, February	58.71	49.96	-14.90
ML3: Mean minimum monthly flow, March	42.11	30.79	-26.89
ML4: Mean minimum monthly flow, April	21.76	13.30	-38.89
ML5: Mean minimum monthly flow, May	4.56	5.37	17.58
ML6: Mean minimum monthly flow, June	3.95	3.98	0.68
ML7: Mean minimum monthly flow, July	8.97	9.97	11.26
ML8: Mean minimum monthly flow, August	15.81	11.04	-30.17
ML9: Mean minimum monthly flow, September	5.02	4.70	-6.35
ML10: Mean minimum monthly flow, October	3.71	3.11	-16.06
ML11: Mean minimum monthly flow, November	9.05	12.29	35.91
ML12: Mean minimum monthly flow, December	29.89	30.31	1.42
ML13: CV of minimum monthly flows	188.06	177.20	-5.77
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.01	-36.10
ML15: Mean minimum annual flow / mean annual flow	0.00	0.00	-9.73
ML16: Median minimum annual flow / median annual flow	0.00	0.00	-100.00
ML20: Ratio of baseflow volume to total flow volume	0.29	0.30	3.20
ML22: Mean annual minimum flow divided by catchment area	0.01	0.01	59.16
RA1: Mean of positive changes from one day to next (rise rate)	54.45	65.08	
RA2: CV, mean of positive changes from one day to next (rise rate)	395.18	351.86	
RA3: Mean of negative changes from one day to next (fall rate)	27.78	25.63	
RA4: CV, mean of negative changes from one day to next (fall rate)	383.08	381.79	
RA5: Ratio of days that are higher than previous day	0.32	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.27	0.36	
RA7: Median of difference in log of flows over two consecutive days of falling	0.21	0.19	
RA8: Number of flow reversals from one day to the next	83.92	83.83	

RA9: CV, number of flow reversals from one day to the next	19.23	20.73	

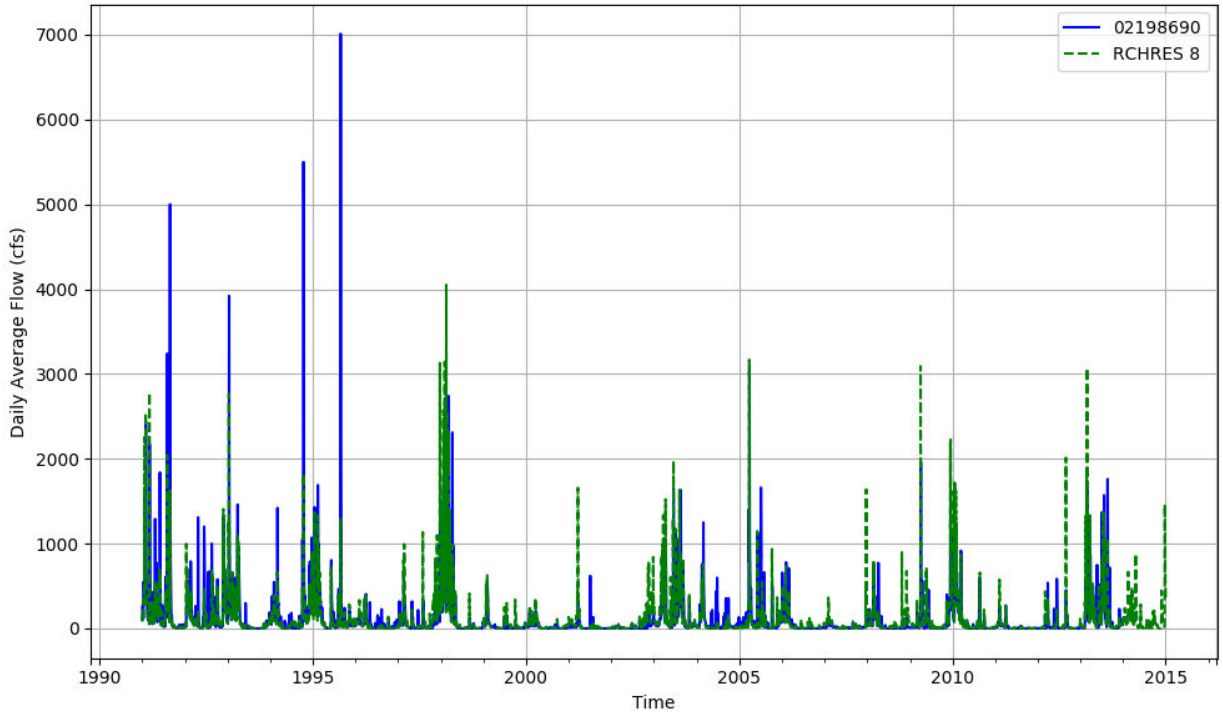


Figure T-03060109-4: Daily flow for HSFP reach 08 and USGS station 02198690.

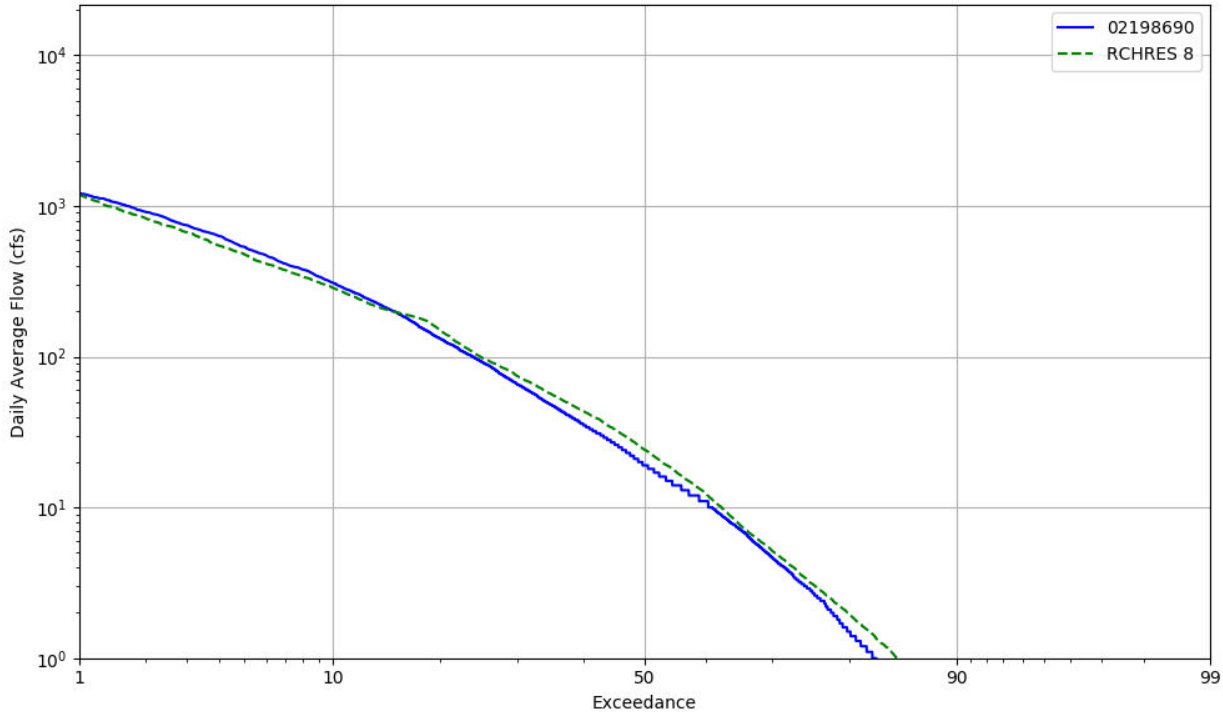


Figure T-03060109-5: Daily exceedance for HSFP reach 08 and USGS station 02198690.

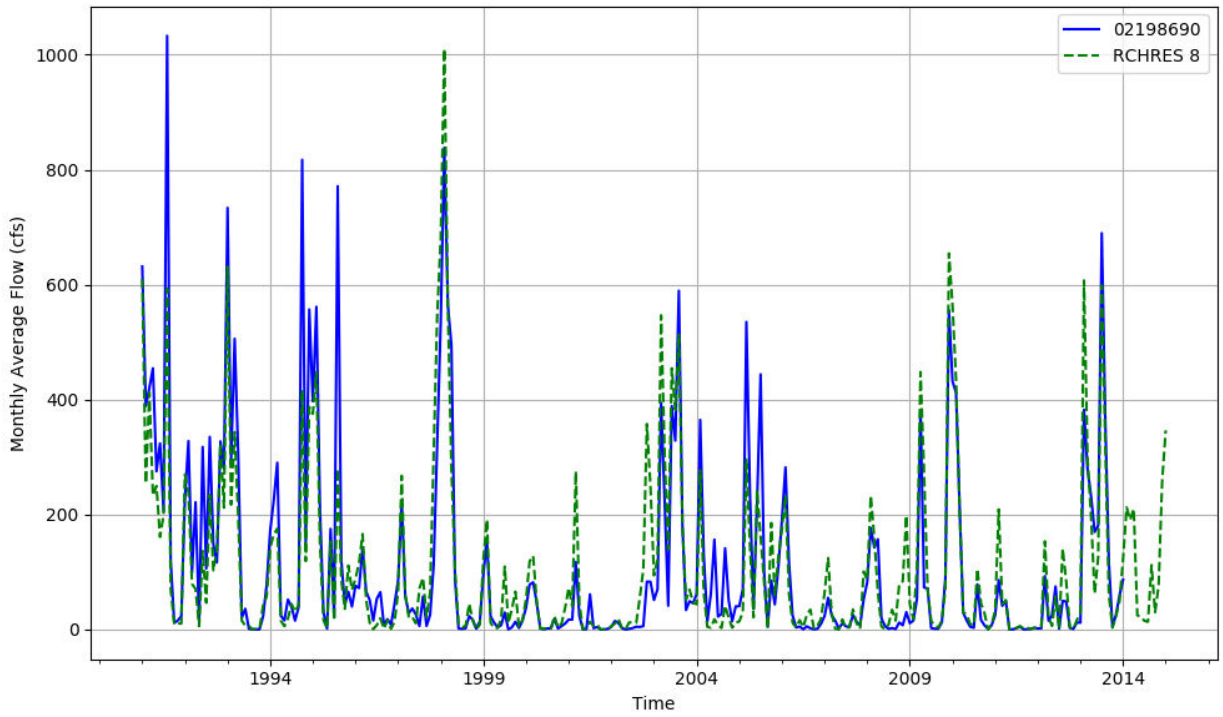


Figure T-03060109-6: Monthly flow for HSFP reach 08 and USGS station 02198690.

HSPF REACH 10, USGS GAUGE 02198500

Water-Data Report 2009
02198500 SAVANNAH RIVER NEAR CLYO, GA
Savannah Basin Lower Savannah Subbasin

LOCATION.--Lat 323141, long 811608 referenced to North American Datum of 1927, Effingham County, GA, Hydrologic Unit 03060109, at GeorgiaSouth Carolina State line, on downstream side of State Highway 119 bridge, 3.0 mi north of Clyo, and at river mile 61.4.

DRAINAGE AREA.--9,850 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1929 to September 1933, October 1937 to current year. Gage-height records collected at same site 1921-43 by National Weather Service (unpublished prior to 1933).

REVISED RECORDS.--WSP 1112: 1940.

GAGE.--Data collection platform. Datum of gage is 13.39 ft above NGVD of 1929. Prior to July 26, 2000, at site 2,100 ft downstream at same datum. Prior to Jan. 31, 1933, nonrecording gage at same site and at datum 4.00 ft higher. Jan. 31, 1933, to June 12, 1945, nonrecording gage at same site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by Thurmond Lake, and by other powerplants above station.

Table T-03060109-3: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02198500.

Statistic	Value
Bias	-6637.20
Standard error	7755.44
Relative bias	-0.64
Relative standard error	1.10
Nash-Sutcliffe coefficient	-0.20
Kling-Gupta coefficient	0.23
Coefficient of efficiency	-0.35
Index of agreement	0.46

Table T-03060109-4: Hydrologic Indices Between USGS Gauge 02198500 and HSPF Reach 10.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02198500	Reach 10	Difference
MA1: Mean, all daily flows	10293.50	3654.22	-64.50
MA2: Median, all daily flows	7500.00	2086.18	-72.18
MA3: CV, all daily flows	46.62	99.93	114.36
MA4: CV, log of all daily flows	62.65	97.29	55.30
MA5: Mean daily flow / median daily flow	1.37	1.75	27.63
MA9: (Q10 - Q90) / median daily flow	2.01	3.91	94.96
MA10: (Q20 - Q80) / median daily flow	1.03	2.37	131.15
MA11: (Q25 - Q75) / median daily flow	0.75	1.90	152.56
MA12: Mean monthly flow, January	11811.88	5438.25	-53.96
MA13: Mean monthly flow, February	13245.51	6593.62	-50.22
MA14: Mean monthly flow, March	14516.51	7699.10	-46.96
MA15: Mean monthly flow, April	11866.18	5391.53	-54.56
MA16: Mean monthly flow, May	8858.50	3218.79	-63.66
MA17: Mean monthly flow, June	8453.83	2326.41	-72.48
MA18: Mean monthly flow, July	9058.04	2080.36	-77.03
MA19: Mean monthly flow, August	8905.97	1804.14	-79.74
MA20: Mean monthly flow, September	7579.32	1464.43	-80.68
MA21: Mean monthly flow, October	7251.94	1487.11	-79.49
MA22: Mean monthly flow, November	7510.71	1826.05	-75.69
MA23: Mean monthly flow, December	10127.65	3251.91	-67.89
ML1: Mean minimum monthly flow, January	9265.00	3337.22	-63.98
ML2: Mean minimum monthly flow, February	10293.48	4163.29	-59.55
ML3: Mean minimum monthly flow, March	10045.22	4607.72	-54.13
ML4: Mean minimum monthly flow, April	8049.56	3675.36	-54.34
ML5: Mean minimum monthly flow, May	6967.83	2238.50	-67.87
ML6: Mean minimum monthly flow, June	6772.17	1604.08	-76.31
ML7: Mean minimum monthly flow, July	6735.65	1433.73	-78.71
ML8: Mean minimum monthly flow, August	7156.96	1308.84	-81.71
ML9: Mean minimum monthly flow, September	6197.39	914.52	-85.24
ML10: Mean minimum monthly flow, October	5749.56	909.46	-84.18
ML11: Mean minimum monthly flow, November	6114.78	1147.55	-81.23
ML12: Mean minimum monthly flow, December	8078.70	1948.48	-75.88
ML13: CV of minimum monthly flows	62.25	104.18	67.35
ML14: Mean minimum daily flow / mean median annual flow	0.66	0.17	-73.92
ML15: Mean minimum annual flow / mean annual flow	0.57	0.12	-79.04
ML16: Median minimum annual flow / median annual flow	0.64	0.15	-77.18
ML20: Ratio of baseflow volume to total flow volume	0.84	0.77	-7.22
ML22: Mean annual minimum flow divided by catchment area	51.79	4.49	-91.32
RA1: Mean of positive changes from one day to next (rise rate)	494.84	703.12	
RA2: CV, mean of positive changes from one day to next (rise rate)	137.94	525.76	
RA3: Mean of negative changes from one day to next (fall rate)	458.83	364.64	
RA4: CV, mean of negative changes from one day to next (fall rate)	132.15	663.63	
RA5: Ratio of days that are higher than previous day	0.47	0.34	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.04	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.03	
RA8: Number of flow reversals from one day to the next	90.88	37.08	

RA9: CV, number of flow reversals from one day to the next	27.75	32.25	

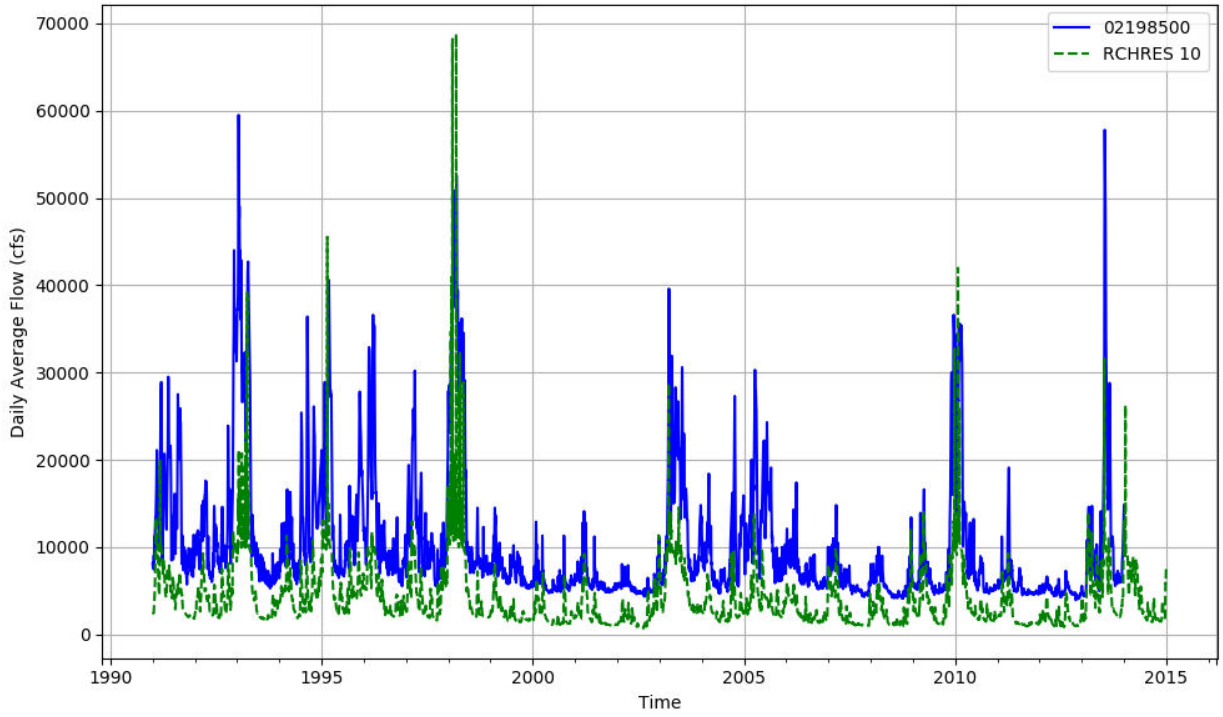


Figure T-03060109-7: Daily flow for HSFP reach 10 and USGS station 02198500.

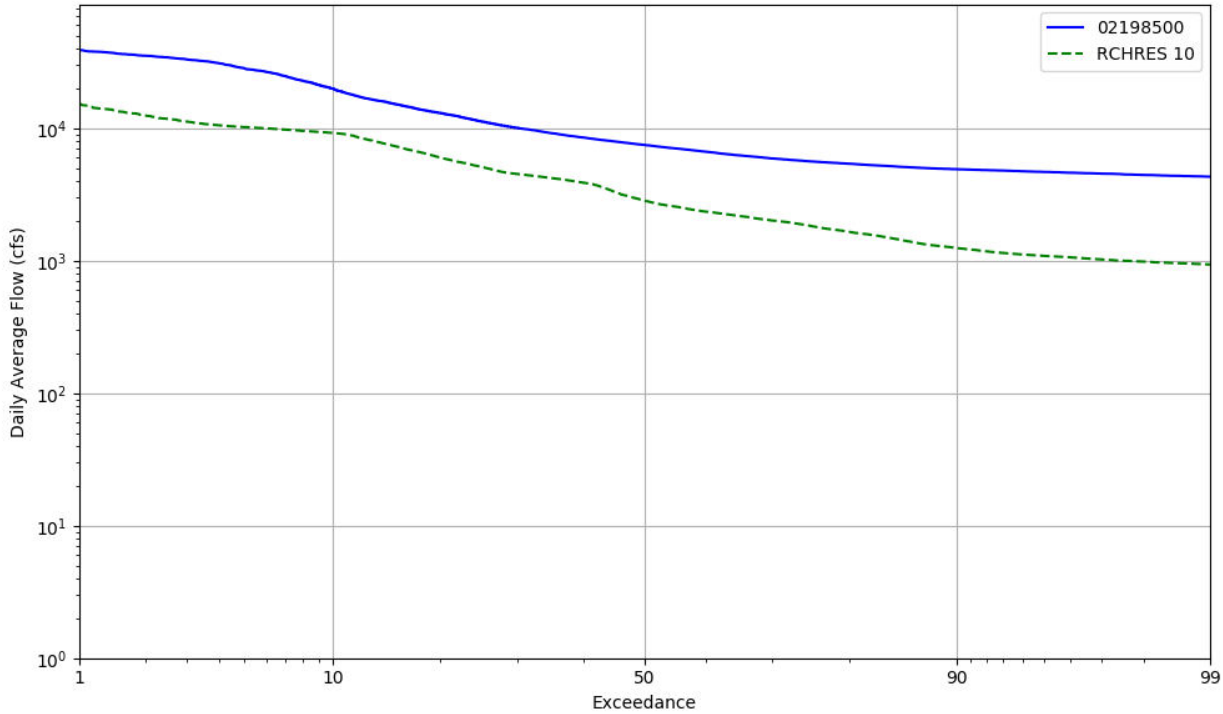


Figure T-03060109-8: Daily exceedance for HSFP reach 10 and USGS station 02198500.

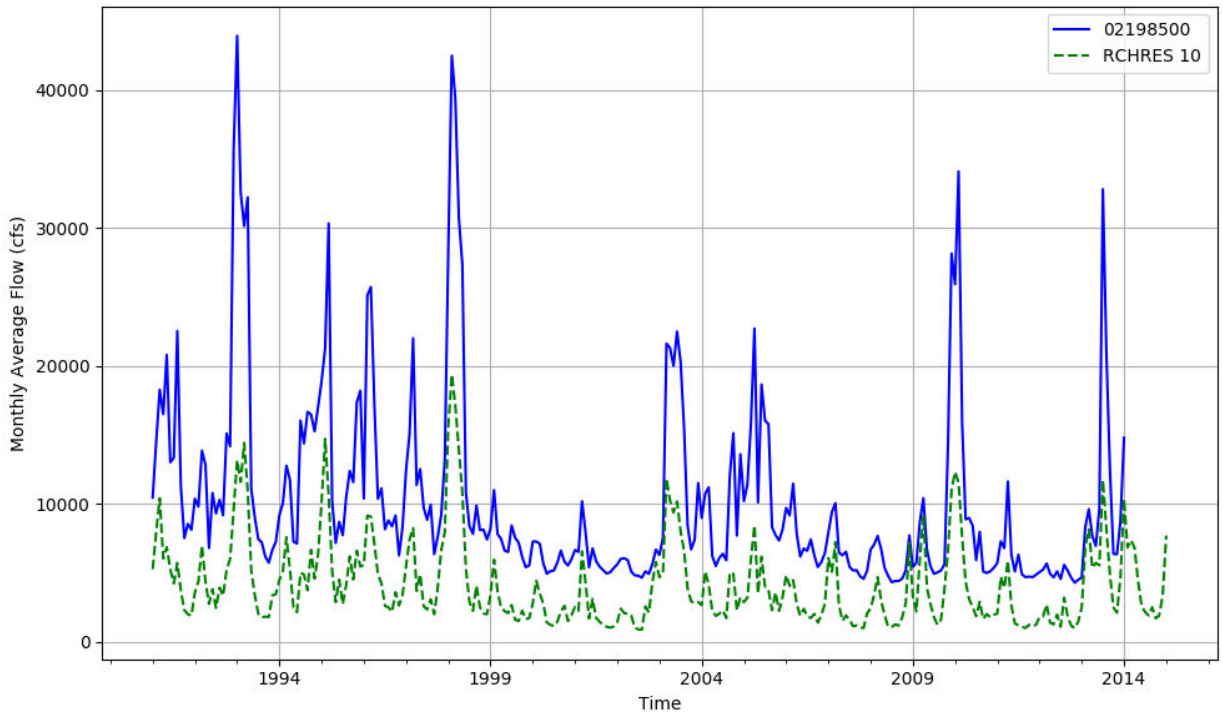


Figure T-03060109-9: Monthly flow for HSFP reach 10 and USGS station 02198500.

Table T-03060109-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18135	23333	9363	3520	1845	3448	180827	53428	31252	14058	32684	235923	831	5396	8124	622169
AREA(%)	2.9	3.7	1.5	0.6	0.3	0.5	28.8	8.5	5.0	2.2	5.2	37.6	0.1	0.9	1.3	99.2
IMPERVIOUS																
AREA(ACRES)		1272	1053	885	1853											5063
AREA(%)		0.2	0.2	0.1	0.3											0.8
SUPY	34.0	33.8	34.1	34.2	34.2	34.1	33.3	33.2	33.3	33.0	32.7	33.6	60.4	45.7	33.9	33.3
SURLI			10.7	9.6	7.6										0.2	0.2
UZLI																0.0
LZLI			0.5	0.3	0.2										3.2	0.1
SURO: PERVIOUS	0.1	0.6	0.7	0.6	0.4	0.2	0.1	0.5	0.3	0.3	0.2	0.5	1.9	0.5	0.1	0.3
SURO: IMPERVIOUS		24.6	24.7	24.8	24.9											0.2
SURO: COMBINED	0.1	1.8	3.1	5.5	12.7	0.2	0.1	0.5	0.3	0.3	0.2	0.5	1.9	0.5	0.1	0.5
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	3.8	7.9	16.8	15.7	13.1	13.3	5.3	11.5	8.3	8.8	7.1	3.3	20.7	14.8	13.1	5.9
AGWI	9.8	7.2	15.6	14.4	11.7	12.1	5.0	10.6	7.7	8.1	7.3	6.8	16.5	13.5	11.5	7.1
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		11.6	8.7	8.7	12.3	8.6	12.4	10.3	10.2	8.4	6.5	19.2	32.2	13.5	7.2	13.6
UZET	7.8	1.6	2.2	2.1	1.6	1.7	0.8	2.0	1.5	1.5	1.7	2.3	1.9	2.1	1.2	1.8
LZET	4.1	15.5	20.1	20.1	17.9	13.6	18.8	12.4	16.7	17.7	20.8	1.9	9.4	18.7	20.3	11.2
AGWET	7.5	0.2	0.2	0.1	0.1	0.0	0.2	0.4	0.3	0.4	0.8	4.9	0.0	0.5	0.0	2.2
BASET	0.0	0.2	0.3	0.2	0.1	0.1	0.2	0.4	0.3	0.3	0.5	0.1	0.0	0.6	0.1	0.2
SURET	13.7											5.0				2.3
PERO	3.9	8.5	17.5	16.3	13.5	13.5	5.4	12.0	8.6	9.1	7.3	3.8	22.6	15.3	13.2	6.2
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	33.1	29.1	31.5	31.3	32.1	24.0	32.4	25.4	29.0	28.3	30.3	33.4	43.5	35.3	28.7	31.4
IMPEV: IMPERVIOUS		9.2	9.3	9.4	9.3											0.1
ET: COMBINED	33.1	28.1	29.2	26.9	20.7	24.0	32.4	25.4	29.0	28.3	30.3	33.4	43.5	35.3	28.7	31.4
PET	49.1	48.4	48.9	49.2	49.4	49.5	47.9	47.8	47.9	47.9	47.7	48.2	49.5	47.5	47.3	47.7

Table T-03060109-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18135	23333	9363	3520	1845	3448	180827	53428	31252	14058	32684	235923	831	5396	8124	622169
AREA(%)	2.9	3.7	1.5	0.6	0.3	0.5	28.8	8.5	5.0	2.2	5.2	37.6	0.1	0.9	1.3	99.2
IMPERVIOUS																
AREA(ACRES)		1272	1053	885	1853											5063
AREA(%)		0.2	0.2	0.1	0.3											0.8
SUPY	55.7	56.4	56.5	56.4	56.2	55.7	55.6	55.1	55.5	55.1	55.3	55.5	60.1	59.1	53.8	55.1
SURLI			11.0	9.6	7.4										0.0	0.2
UZLI																0.0
LZLI			0.8	0.5	0.2										0.1	0.0
SURO: PERVIOUS	2.9	3.3	3.9	3.7	2.8	1.6	0.6	2.4	1.9	1.8	1.3	4.0	3.2	1.8	0.4	2.4
SURO: IMPERVIOUS		45.6	46.1	46.2	46.1											0.4
SURO: COMBINED	2.9	5.5	8.2	12.2	24.5	1.6	0.6	2.4	1.9	1.8	1.3	4.0	3.2	1.8	0.4	2.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	7.1	13.9	24.6	23.5	20.9	22.6	11.1	18.6	14.2	14.7	13.3	5.5	16.7	16.1	14.3	10.3
AGWI	15.0	17.2	28.0	26.6	23.7	25.8	14.7	22.8	18.2	18.7	17.8	10.3	19.2	20.2	18.0	14.6
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		13.3	9.6	9.4	13.2	9.2	14.6	12.3	12.2	10.1	8.3	22.0	15.9	13.9	9.3	15.8
UZET	6.7	2.5	3.4	3.3	2.6	3.1	1.5	3.0	2.4	2.5	3.1	2.8	2.5	2.4	1.7	2.5
LZET	4.0	18.8	22.2	22.4	20.3	15.0	22.5	13.4	19.5	20.7	23.2	2.3	18.3	19.5	23.1	13.1
AGWET	8.4	0.3	0.2	0.1	0.1	0.0	0.4	0.5	0.5	0.5	1.1	5.3	0.0	0.5	0.0	2.5
BASET	0.1	0.4	0.4	0.3	0.1	0.1	0.5	0.6	0.5	0.5	1.1	0.2	0.1	0.5	0.1	0.4
SURET	23.2											10.0				4.4
PERO	10.0	17.2	28.6	27.2	23.8	24.2	11.7	21.1	16.1	16.5	14.7	9.4	20.0	17.9	14.7	12.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	42.5	35.3	35.9	35.5	36.3	27.4	39.5	29.8	35.1	34.2	36.8	42.5	36.8	36.9	34.2	38.7
IMPEV: IMPERVIOUS		10.6	10.3	10.1	10.0											0.1
ET: COMBINED	42.5	34.0	33.3	30.4	23.1	27.4	39.5	29.8	35.1	34.2	36.8	42.5	36.8	36.9	34.2	38.8
PET	53.4	53.7	53.5	53.4	53.3	53.2	53.8	53.8	53.8	53.9	53.9	53.7	53.3	54.0	53.7	53.3

Table T-03060109-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18135	23333	9363	3520	1845	3448	180827	53428	31252	14058	32684	235923	831	5396	8124	622169
AREA(%)	2.9	3.7	1.5	0.6	0.3	0.5	28.8	8.5	5.0	2.2	5.2	37.6	0.1	0.9	1.3	99.2
IMPERVIOUS																
AREA(ACRES)		1272	1053	885	1853											5063
AREA(%)		0.2	0.2	0.1	0.3											0.8
SUPY	42.0	43.8	42.8	42.2	41.7	41.5	44.4	44.4	44.5	44.4	44.6	43.7	48.7	50.3	45.1	43.7
SURLI			11.1	9.7	7.5										0.0	0.2
UZLI																0.0
LZLI			0.8	0.5	0.2										0.1	0.0
SURO: PERVIOUS	5.3	3.1	3.3	3.0	2.4	1.5	0.8	2.4	2.0	1.9	1.3	7.3	3.0	1.6	0.6	3.8
SURO: IMPERVIOUS		35.2	34.6	34.1	33.7											0.3
SURO: COMBINED	5.3	4.8	6.4	9.2	18.1	1.5	0.8	2.4	2.0	1.9	1.3	7.3	3.0	1.6	0.6	4.0
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	5.6	15.3	25.2	23.9	21.3	23.2	14.2	20.8	16.8	17.4	14.9	4.1	17.4	19.6	19.8	11.3
AGWI	12.4	11.7	20.5	18.8	15.9	17.5	11.2	17.6	13.5	14.0	13.8	8.7	12.6	16.6	14.7	11.4
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		10.9	7.7	7.5	10.8	7.4	12.3	10.2	10.1	8.2	6.6	18.9	16.5	12.0	7.4	13.4
UZET	6.0	2.1	2.8	2.6	2.0	2.4	1.5	2.7	2.2	2.3	3.0	3.0	1.9	2.3	1.8	2.5
LZET	4.4	18.6	22.2	22.2	20.3	14.9	23.0	13.7	19.7	20.7	23.5	2.4	16.8	20.1	23.2	13.3
AGWET	8.8	0.4	0.3	0.1	0.1	0.0	0.5	0.5	0.5	0.6	1.2	5.8	0.0	0.5	0.0	2.7
BASET	0.0	0.3	0.4	0.3	0.1	0.1	0.4	0.6	0.5	0.5	0.9	0.1	0.1	0.5	0.1	0.3
SURET	18.8											9.0				3.9
PERO	10.9	18.4	28.4	26.9	23.8	24.7	15.0	23.2	18.7	19.3	16.2	11.4	20.5	21.1	20.4	15.1
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	38.1	32.3	33.3	32.7	33.3	24.8	37.7	27.8	32.9	32.2	35.2	39.3	35.3	35.4	32.5	36.2
IMPEV: IMPERVIOUS		8.6	8.3	8.1	8.1											0.1
ET: COMBINED	38.1	31.1	30.8	27.8	20.6	24.8	37.7	27.8	32.9	32.2	35.2	39.3	35.3	35.4	32.5	36.2
PET	50.7	50.7	50.8	50.9	50.9	50.8	50.5	50.4	50.4	50.5	50.3	50.5	50.9	50.1	50.0	50.1

Table T-03060109-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18135	23333	9363	3520	1845	3448	180827	53428	31252	14058	32684	235923	831	5396	8124	622169
AREA(%)	2.9	3.7	1.5	0.6	0.3	0.5	28.8	8.5	5.0	2.2	5.2	37.6	0.1	0.9	1.3	99.2
IMPERVIOUS																
AREA(ACRES)		1272	1053	885	1853											5063
AREA(%)		0.2	0.2	0.1	0.3											0.8
SUPY	46.4	46.4	46.4	46.4	46.4	46.4	46.3	46.4	46.4	46.2	46.3	46.4	59.6	54.8	47.1	46.1
SURLI			8.6	7.9	6.7										0.1	0.2
UZLI																0.0
LZLI			0.6	0.4	0.2										1.5	0.0
SURO: PERVIOUS	2.8	1.8	2.1	2.0	1.5	1.0	0.3	1.5	1.0	1.1	0.7	3.9	2.8	1.2	0.4	2.0
SURO: IMPERVIOUS		36.3	36.3	36.3	36.4											0.3
SURO: COMBINED	2.8	3.6	5.6	8.9	19.0	1.0	0.3	1.5	1.0	1.1	0.7	3.9	2.8	1.2	0.4	2.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	6.4	12.9	20.6	20.1	18.4	19.7	10.7	17.5	13.6	14.1	12.4	5.1	19.1	18.4	16.9	9.8
AGWI	13.0	13.6	21.2	20.5	18.6	20.0	11.6	18.6	14.6	15.2	14.4	9.5	19.3	19.6	17.1	12.2
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		12.3	9.4	9.4	12.8	9.4	13.3	11.3	11.1	9.3	7.5	19.9	22.3	12.9	8.3	14.4
UZET	5.4	2.0	2.5	2.4	1.9	2.2	1.3	2.4	2.0	2.0	2.5	2.1	1.9	2.4	1.6	2.0
LZET	3.5	16.6	20.2	20.3	18.4	13.8	19.9	12.5	17.6	18.6	21.1	1.7	13.4	18.7	21.3	11.5
AGWET	6.6	0.3	0.2	0.1	0.1	0.0	0.3	0.4	0.4	0.4	0.9	4.2	0.0	0.4	0.0	2.0
BASET	0.0	0.3	0.3	0.2	0.1	0.1	0.4	0.6	0.5	0.5	1.0	0.1	0.0	0.6	0.1	0.3
SURET	21.5											9.1				4.1
PERO	9.2	14.7	22.7	22.1	19.8	20.7	11.0	19.0	14.7	15.2	13.2	9.1	21.9	19.6	17.2	11.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	37.1	31.5	32.7	32.5	33.3	25.5	35.2	27.1	31.5	30.9	33.0	37.2	37.6	35.0	31.2	34.4
IMPEV: IMPERVIOUS		10.1	10.1	10.0	10.0											0.1
ET: COMBINED	37.1	30.4	30.4	28.0	21.6	25.5	35.2	27.1	31.5	30.9	33.0	37.2	37.6	35.0	31.2	34.4
PET	49.0	48.5	48.9	49.1	49.3	49.3	48.1	48.0	48.1	48.1	48.0	48.3	49.3	47.6	47.5	47.8

Table T-03060109-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
2	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
3	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
4	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
5	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
6	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
7	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
8	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
9	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
10	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
11	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
12	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
13	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
14	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
15	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990

Table T-03060109-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
5	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060109-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
2	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
3	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
4	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
5	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
6	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
7	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
8	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
9	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
10	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
11	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
12	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
13	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
14	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300
15	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.076	0.074	0.050	0.030	0.300

Table T-03060109-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060109-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
2	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
3	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
4	0.001	0.115	0.115	0.115	0.115	0.164	0.246	0.164	0.164	0.164	0.198	0.001
5	0.001	0.115	0.115	0.115	0.115	0.164	0.246	0.164	0.164	0.164	0.198	0.001
6	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
7	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
8	0.001	0.115	0.115	0.115	0.115	0.164	0.246	0.164	0.164	0.164	0.198	0.001
9	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
10	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
11	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
12	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
13	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
14	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010
15	0.010	0.469	0.469	0.469	0.469	0.667	1.000	0.667	0.667	0.667	0.803	0.010

Table T-03060109-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
2		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
3		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
4		0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	
5		0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	
6		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
7		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
8		0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	
9		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
10		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
11		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
12		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
13		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
14		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
15		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	

Table T-03060109-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
2	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
3	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
4	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
5	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
6	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
7	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
8	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
9	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
10	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
11	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
12	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
13	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
14	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
15	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697

Table T-03060109-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060109-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
2	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
3	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
4	0.047	0.567	0.567	0.567	0.567	0.378	0.804	0.378	0.567	0.567	0.662	0.951
5	0.047	0.567	0.567	0.567	0.567	0.378	0.804	0.378	0.567	0.567	0.662	0.951
6	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
7	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
8	0.047	0.567	0.567	0.567	0.567	0.378	0.804	0.378	0.567	0.567	0.662	0.951
9	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
10	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
11	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
12	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
13	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
14	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933
15	0.262	0.529	0.529	0.529	0.529	0.353	0.750	0.353	0.529	0.529	0.618	0.933

Table T-03060109-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
2	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
3	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
4	0.053	6.459	6.459	6.459	6.459	7.265	9.688	7.265	7.265	7.265	8.073	0.200
5	0.053	6.459	6.459	6.459	6.459	7.265	9.688	7.265	7.265	7.265	8.073	0.200
6	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
7	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
8	0.053	6.459	6.459	6.459	6.459	7.265	9.688	7.265	7.265	7.265	8.073	0.200
9	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
10	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
11	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
12	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
13	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
14	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100
15	0.200	2.219	2.219	2.219	2.219	2.496	3.328	2.496	2.496	2.496	2.773	0.100

Table T-03060109-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.113	0.113	0.113	0.113	0.113	0.161	0.129	0.129	0.113	0.161	0.239
5	0.050	0.113	0.113	0.113	0.113	0.113	0.161	0.129	0.129	0.113	0.161	0.239
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.113	0.113	0.113	0.113	0.113	0.161	0.129	0.129	0.113	0.161	0.239
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03060110

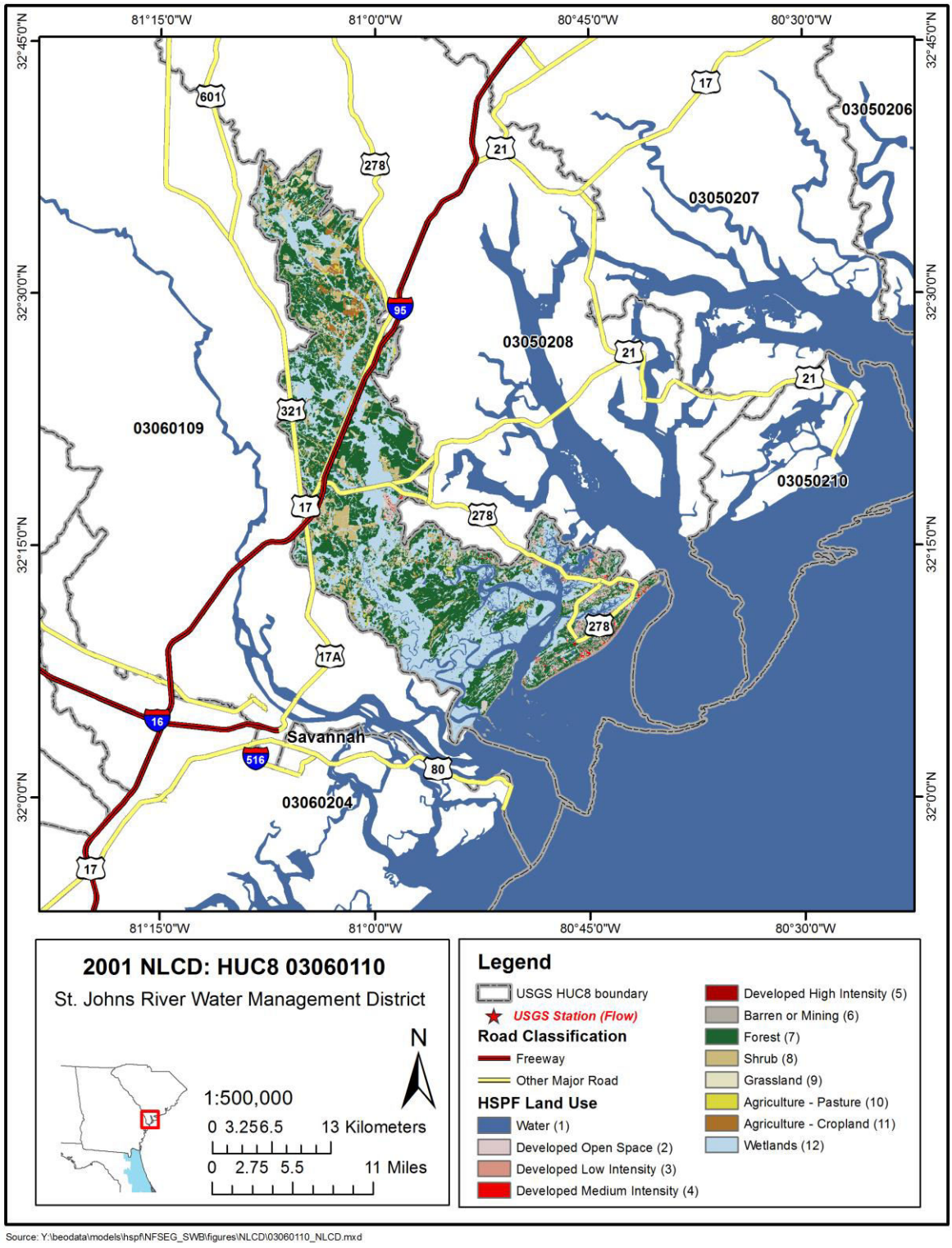


Figure T-03060110-1: Land Cover from the National Land Cover Database.

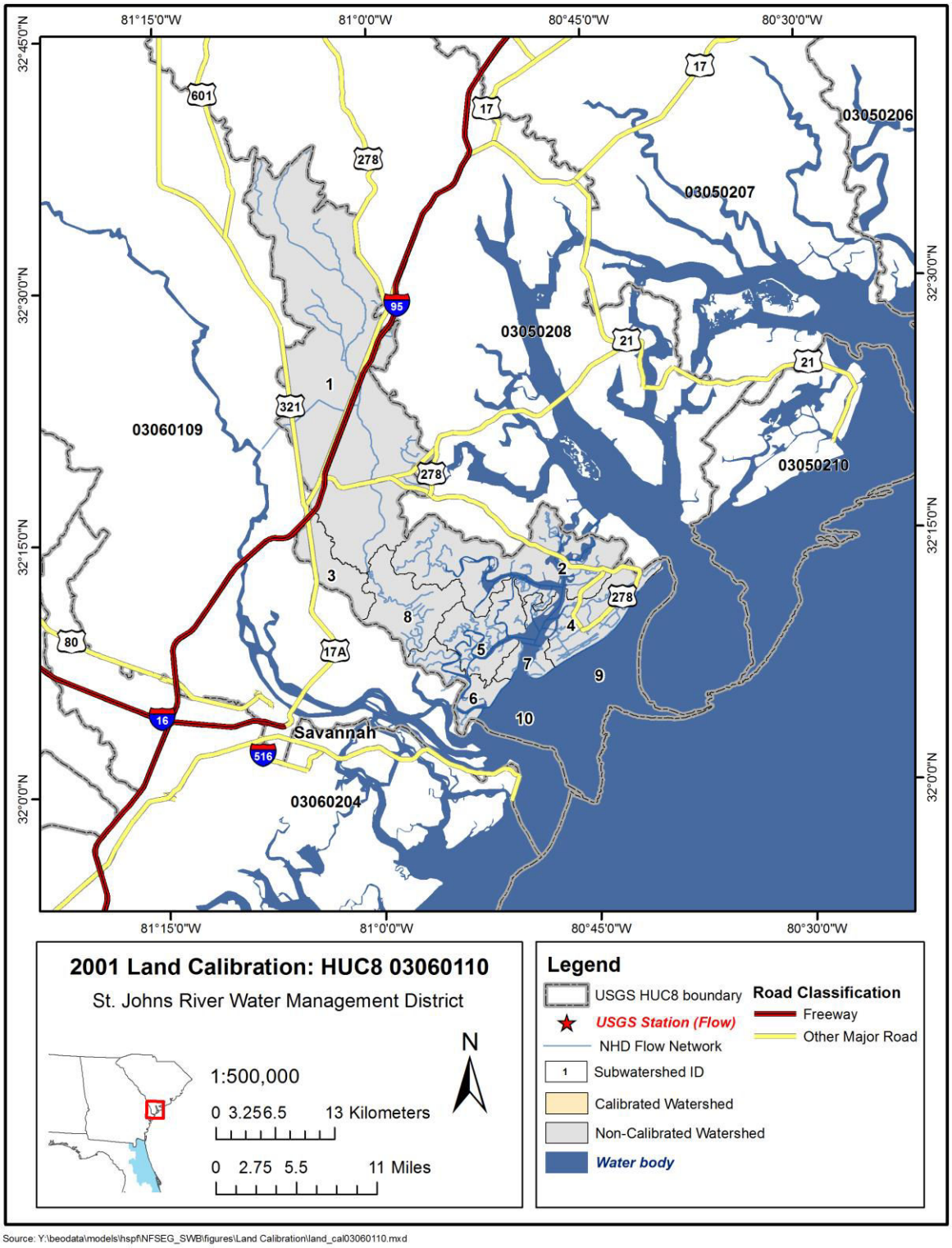


Figure T-03060110-2: Calibrated sub-watersheds.

APPENDIX T-03060201

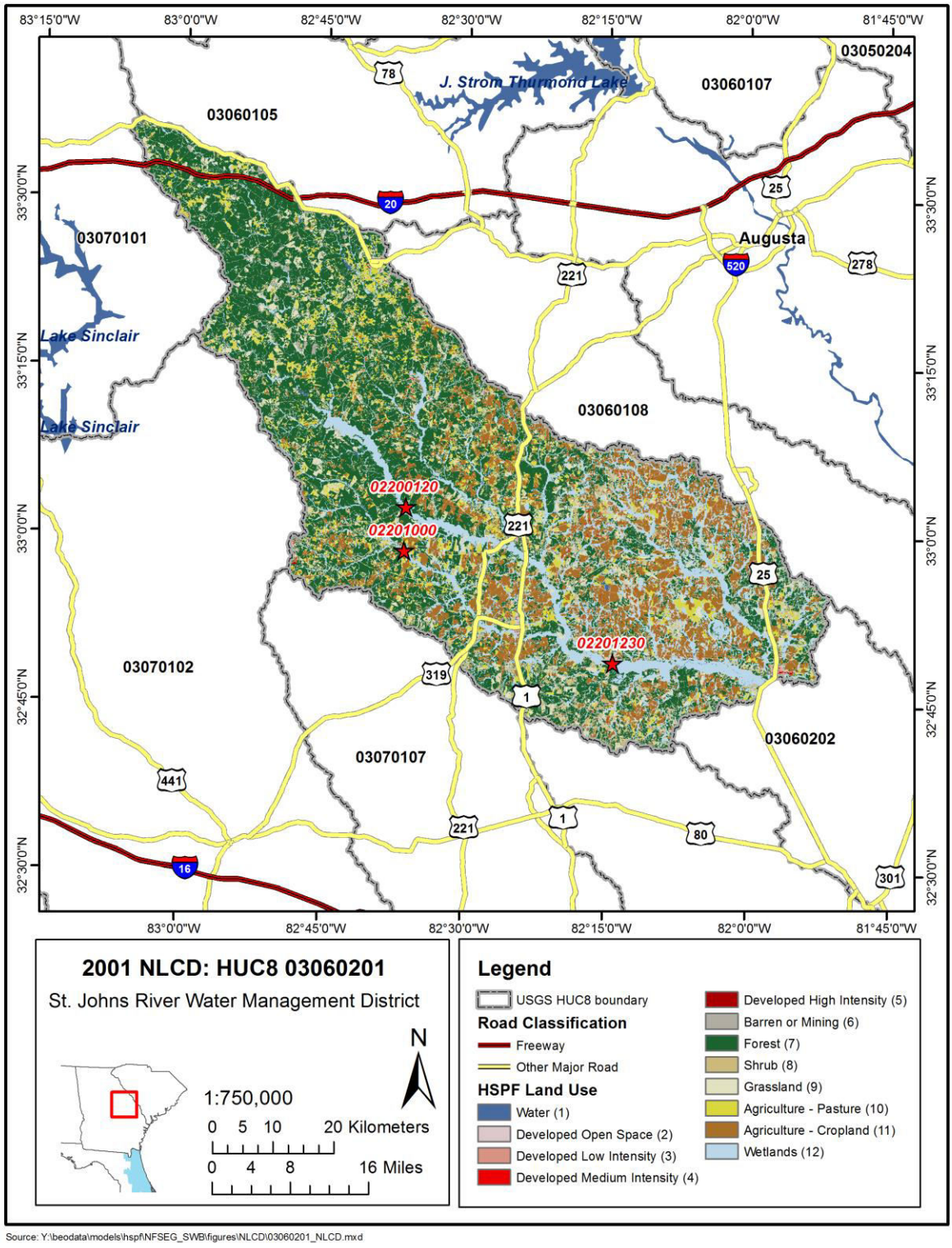
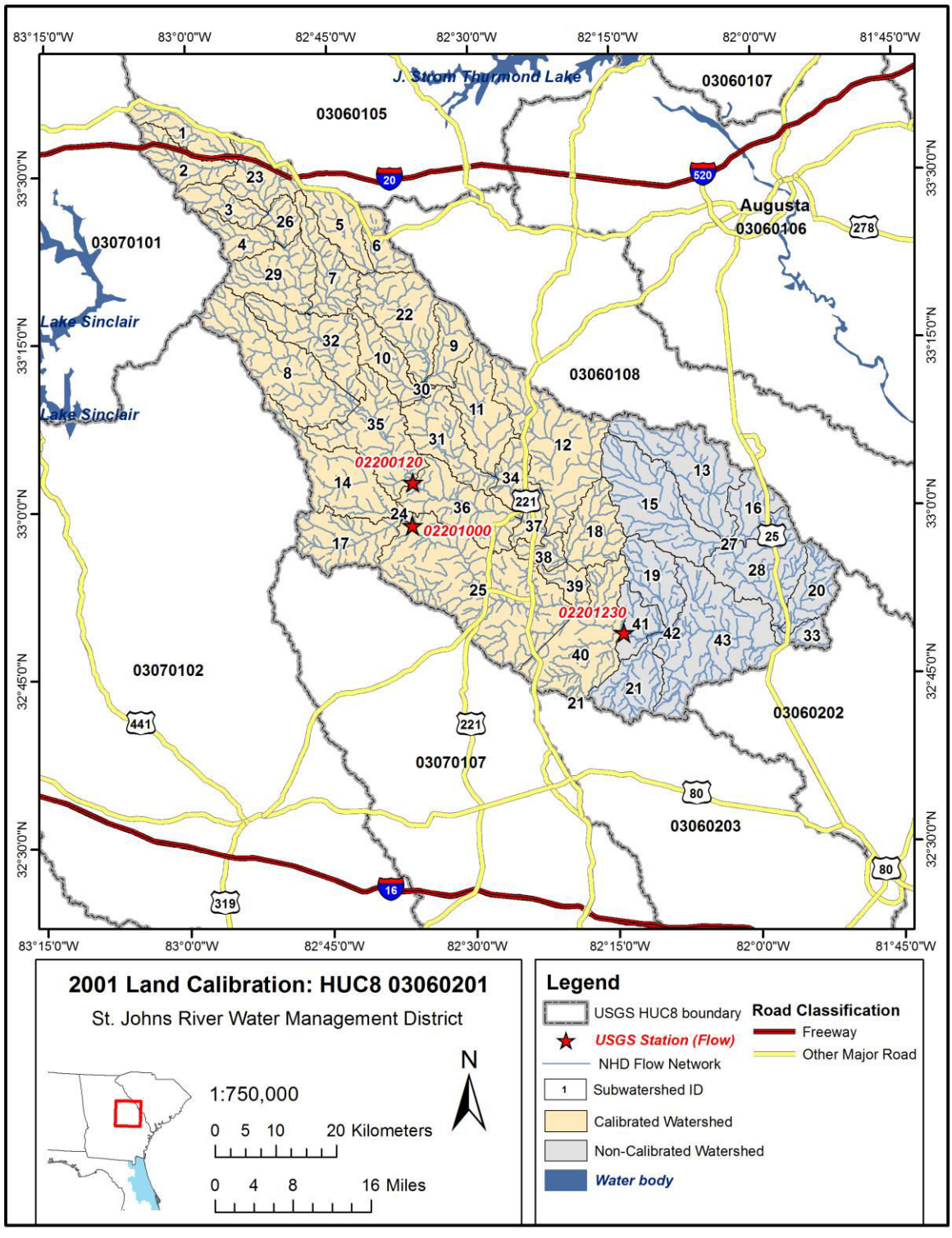


Figure T-03060201-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03060201.mxd

Figure T-03060201-2: Calibrated sub-watersheds.

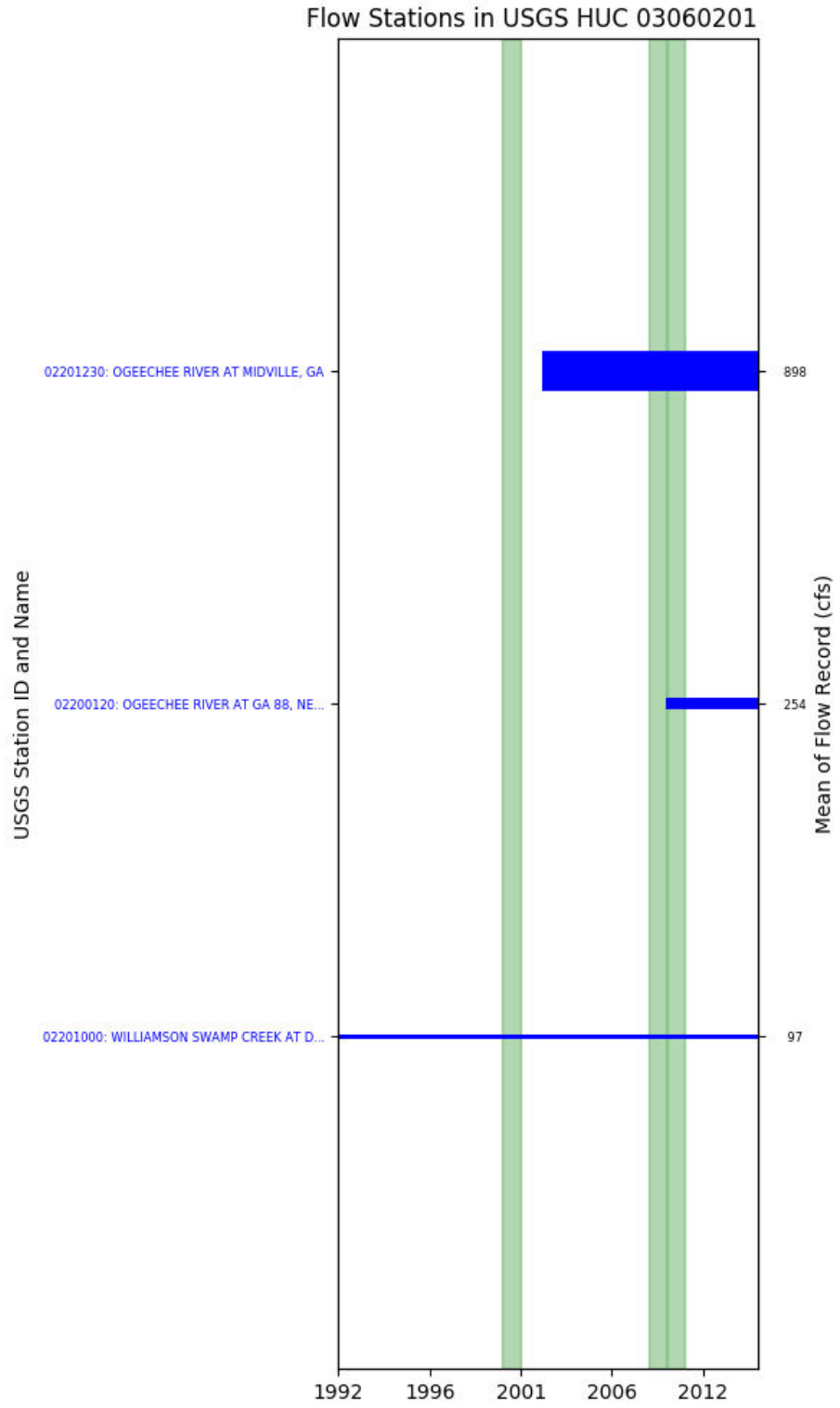


Figure T-03060201-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 24, USGS GAUGE 02201000

Water-Data Report 2009
02201000 WILLIAMSON SWAMP CREEK AT DAVISBORO, GA
Ogeechee Basin Upper Ogeechee Subbasin

LOCATION.--Lat 325832, long 823636 referenced to North American Datum of 1927, Washington County, GA, Hydrologic Unit 03060201, on downstream side of bridge on GA 231 at Davisboro, 1.2 miles downstream from Central of Georgia Railroad bridge, and 1.9 miles downstream from Sun Hill Creek.

DRAINAGE AREA.--109 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: July to December 1903, water years 1979-80 (annual maximum), May 1980 to current year. Monthly discharges only for July to December 1903, published in WSP 1304.
GAGE-HEIGHT: Water years 1979-80 (annual maximum), October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 263 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from information obtained from Georgia Department of Transportation). From August 16, 1978 to May 8, 1980, a crest-stage gage located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good. Periods of monthly discharges only are not included in statistics computations. Gage-height records good.

Table T-03060201-1: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02201000.

Statistic	Value
Bias	-0.70
Standard error	28.38
Relative bias	-0.01
Relative standard error	0.33
Nash-Sutcliffe coefficient	0.89
Kling-Gupta coefficient	0.94
Coefficient of efficiency	0.70
Index of agreement	0.85

Table T-03060201-2: Hydrologic Indices Between USGS Gauge 02201000 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02201000	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	99.46	98.69	-0.77
MA2: Median, all daily flows	60.00	56.57	-5.72
MA3: CV, all daily flows	128.62	117.80	-8.41
MA4: CV, log of all daily flows	86.70	91.45	5.48
MA5: Mean daily flow / median daily flow	1.66	1.74	5.25
MA9: (Q10 - Q90) / median daily flow	3.04	3.37	10.52
MA10: (Q20 - Q80) / median daily flow	1.65	1.73	5.01
MA11: (Q25 - Q75) / median daily flow	1.28	1.29	0.34
MA12: Mean monthly flow, January	142.23	144.06	1.28
MA13: Mean monthly flow, February	163.23	171.80	5.25
MA14: Mean monthly flow, March	184.53	181.40	-1.70
MA15: Mean monthly flow, April	112.06	102.17	-8.83
MA16: Mean monthly flow, May	72.42	63.36	-12.50
MA17: Mean monthly flow, June	57.76	53.84	-6.78
MA18: Mean monthly flow, July	57.32	58.41	1.90
MA19: Mean monthly flow, August	65.96	60.66	-8.04
MA20: Mean monthly flow, September	56.86	69.56	22.35
MA21: Mean monthly flow, October	62.55	63.30	1.19
MA22: Mean monthly flow, November	71.79	72.70	1.26
MA23: Mean monthly flow, December	105.99	103.41	-2.44
ML1: Mean minimum monthly flow, January	72.00	68.40	-5.00
ML2: Mean minimum monthly flow, February	81.39	79.79	-1.97
ML3: Mean minimum monthly flow, March	83.43	80.46	-3.56
ML4: Mean minimum monthly flow, April	55.83	58.91	5.53
ML5: Mean minimum monthly flow, May	33.62	37.36	11.11
ML6: Mean minimum monthly flow, June	26.31	31.04	17.97
ML7: Mean minimum monthly flow, July	24.31	29.04	19.45
ML8: Mean minimum monthly flow, August	23.65	29.31	23.96
ML9: Mean minimum monthly flow, September	23.06	28.13	21.99
ML10: Mean minimum monthly flow, October	30.19	36.06	19.42
ML11: Mean minimum monthly flow, November	42.53	44.61	4.87
ML12: Mean minimum monthly flow, December	58.48	56.93	-2.65
ML13: CV of minimum monthly flows	72.51	68.29	-5.83
ML14: Mean minimum daily flow / mean median annual flow	0.25	0.31	23.98
ML15: Mean minimum annual flow / mean annual flow	0.17	0.21	23.55
ML16: Median minimum annual flow / median annual flow	0.24	0.28	15.37
ML20: Ratio of baseflow volume to total flow volume	0.54	0.57	5.67
ML22: Mean annual minimum flow divided by catchment area	0.17	0.20	19.00
RA1: Mean of positive changes from one day to next (rise rate)	55.50	35.37	
RA2: CV, mean of positive changes from one day to next (rise rate)	285.55	373.89	
RA3: Mean of negative changes from one day to next (fall rate)	27.35	17.29	
RA4: CV, mean of negative changes from one day to next (fall rate)	348.20	304.09	
RA5: Ratio of days that are higher than previous day	0.30	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.06	

RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.06	
RA8: Number of flow reversals from one day to the next	97.50	114.38	
RA9: CV, number of flow reversals from one day to the next	18.18	23.31	

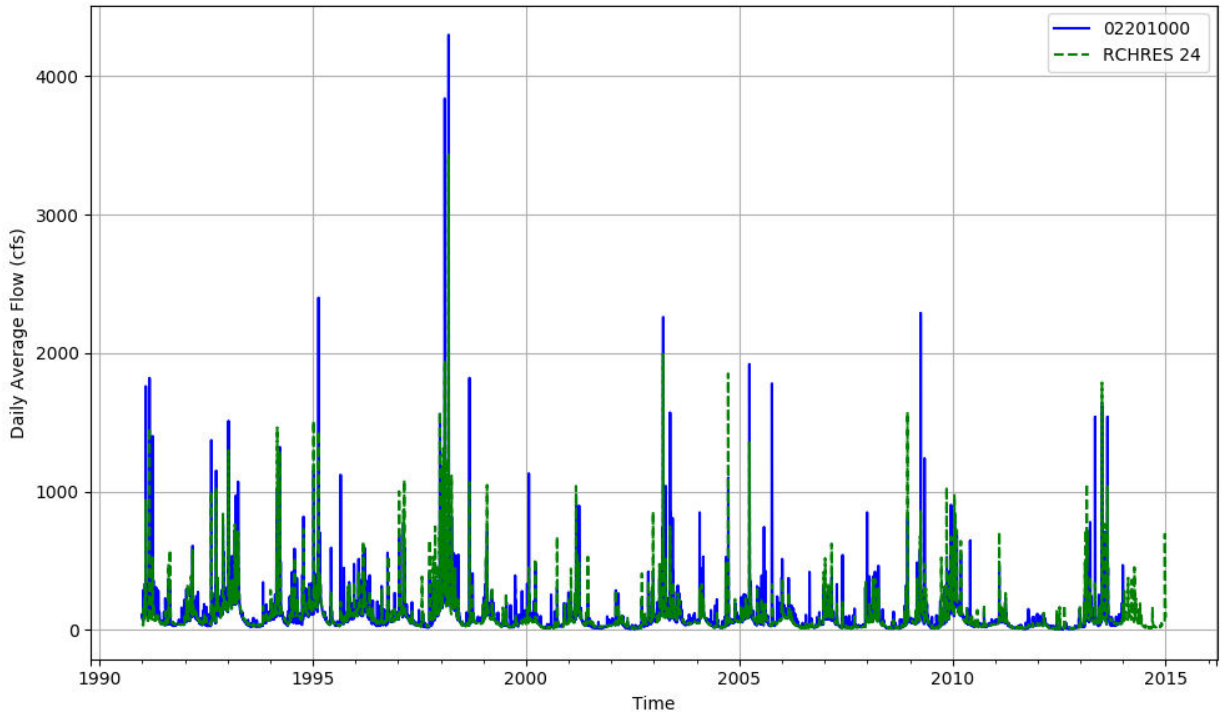


Figure T-03060201-4: Daily flow for HSFP reach 24 and USGS station 02201000.

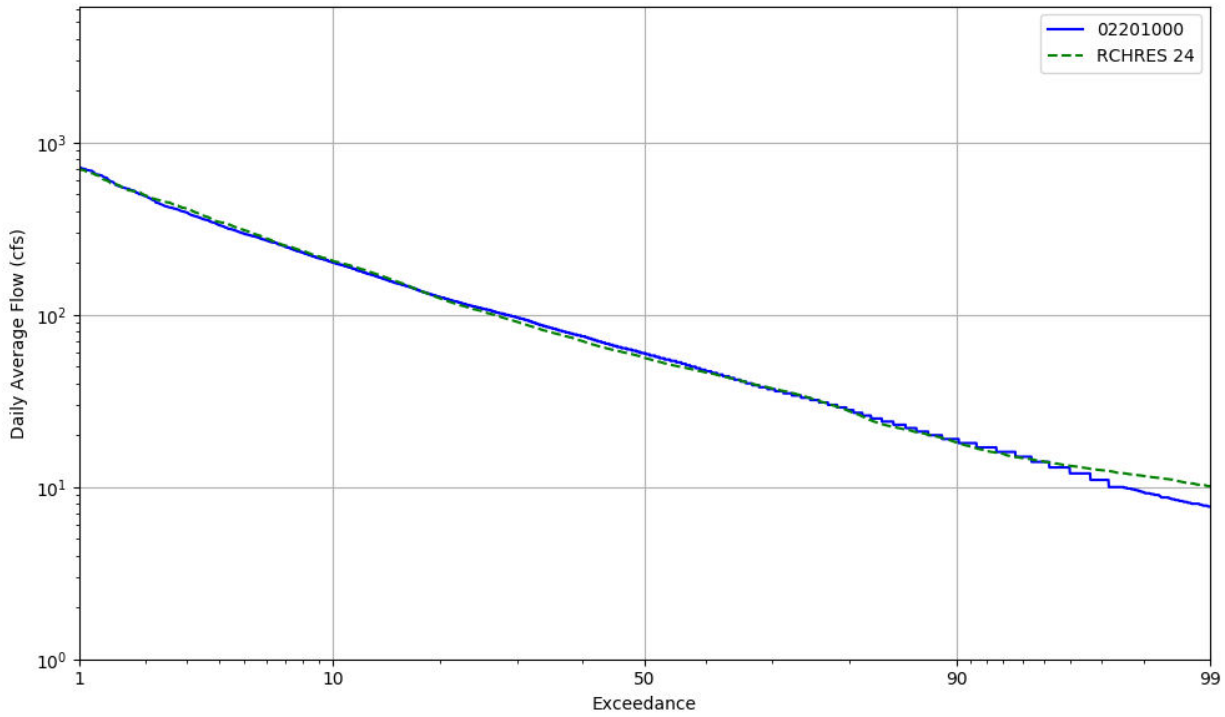


Figure T-03060201-5: Daily exceedance for HSFP reach 24 and USGS station 02201000.

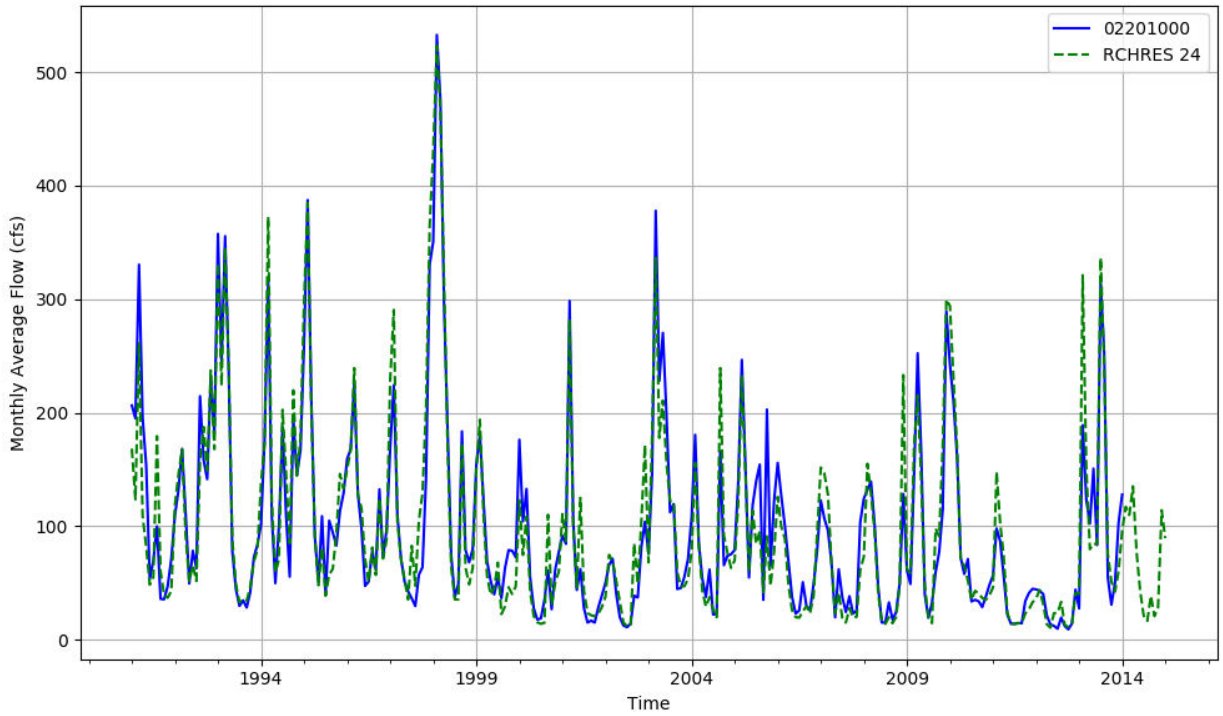


Figure T-03060201-6: Monthly flow for HSFP reach 24 and USGS station 02201000.

HSPF REACH 35, USGS GAUGE 02200120

Water-Data Report 2010
02200120 OGEECHEE RIVER AT GA 88, NEAR GRANGE, GA
Ogeechee Basin Upper Ogeechee Subbasin

LOCATION.--Lat 330240, long 823614 referenced to North American Datum of 1927, Jefferson County, GA, Hydrologic Unit 03060201, at the downstream side of the bridge on GA 88, 1.4 mi downstream from confluence with May Branch, and 3.0 mi southwest of Grange.

DRAINAGE AREA.--452.97 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 2009 to September 2010.
GAGE-HEIGHT: December 2009 to September 2010.

GAGE.--Satellite telemetry with a water stage recorder. Datum of gage is 240 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records poor. Gage-height records good.

Table T-03060201-3: Comparison Statistics Between HSPF Reach 35 and USGS Gauge 02200120.

Statistic	Value
Bias	-3.48
Standard error	343.50
Relative bias	-0.01
Relative standard error	0.57
Nash-Sutcliffe coefficient	0.67
Kling-Gupta coefficient	0.67
Coefficient of efficiency	0.68
Index of agreement	0.83

Table T-03060201-4: Hydrologic Indices Between USGS Gauge 02200120 and HSPF Reach 35.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02200120	Simulated Reach 35	Percent Difference
MA1: Mean, all daily flows	241.81	278.97	15.37
MA2: Median, all daily flows	66.00	103.01	56.08
MA3: CV, all daily flows	170.50	131.00	-23.17

MA4: CV, log of all daily flows	144.16	139.61	-3.16
MA5: Mean daily flow / median daily flow	3.66	2.71	-26.08
MA9: (Q10 - Q90) / median daily flow	9.81	7.50	-23.54
MA10: (Q20 - Q80) / median daily flow	5.04	3.88	-22.91
MA11: (Q25 - Q75) / median daily flow	3.50	2.94	-16.05
MA12: Mean monthly flow, January	999.86	598.28	-40.16
MA13: Mean monthly flow, February	385.35	505.22	31.11
MA14: Mean monthly flow, March	365.57	416.37	13.90
MA15: Mean monthly flow, April	228.41	237.40	3.94
MA16: Mean monthly flow, May	224.21	216.93	-3.24
MA17: Mean monthly flow, June	101.54	127.55	25.62
MA18: Mean monthly flow, July	249.87	280.39	12.22
MA19: Mean monthly flow, August	137.10	201.49	46.96
MA20: Mean monthly flow, September	32.58	51.00	56.51
MA21: Mean monthly flow, October	20.37	33.10	62.48
MA22: Mean monthly flow, November	33.07	22.56	-31.78
MA23: Mean monthly flow, December	454.70	507.51	11.62
ML1: Mean minimum monthly flow, January	871.80	389.79	-55.29
ML2: Mean minimum monthly flow, February	197.50	201.16	1.85
ML3: Mean minimum monthly flow, March	216.50	239.44	10.60
ML4: Mean minimum monthly flow, April	102.75	94.56	-7.97
ML5: Mean minimum monthly flow, May	60.02	98.08	63.39
ML6: Mean minimum monthly flow, June	33.60	69.12	105.70
ML7: Mean minimum monthly flow, July	59.99	81.33	35.57
ML8: Mean minimum monthly flow, August	41.67	70.25	68.59
ML9: Mean minimum monthly flow, September	19.02	11.74	-38.28
ML10: Mean minimum monthly flow, October	13.65	11.39	-16.56
ML11: Mean minimum monthly flow, November	25.15	14.06	-44.10
ML12: Mean minimum monthly flow, December	232.64	264.16	13.55
ML13: CV of minimum monthly flows	315.62	196.40	-37.77
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.11	-9.26
ML15: Mean minimum annual flow / mean annual flow	0.03	0.03	-13.77
ML16: Median minimum annual flow / median annual flow	0.02	0.03	43.67
ML20: Ratio of baseflow volume to total flow volume	0.52	0.46	-12.26
ML22: Mean annual minimum flow divided by catchment area	0.11	0.06	-46.20
RA1: Mean of positive changes from one day to next (rise rate)	95.51	78.91	
RA2: CV, mean of positive changes from one day to next (rise rate)	359.28	269.11	
RA3: Mean of negative changes from one day to next (fall rate)	49.65	30.00	
RA4: CV, mean of negative changes from one day to next (fall rate)	327.69	210.49	
RA5: Ratio of days that are higher than previous day	0.33	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.14	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.09	
RA8: Number of flow reversals from one day to the next	67.80	51.60	
RA9: CV, number of flow reversals from one day to the next	37.68	44.71	

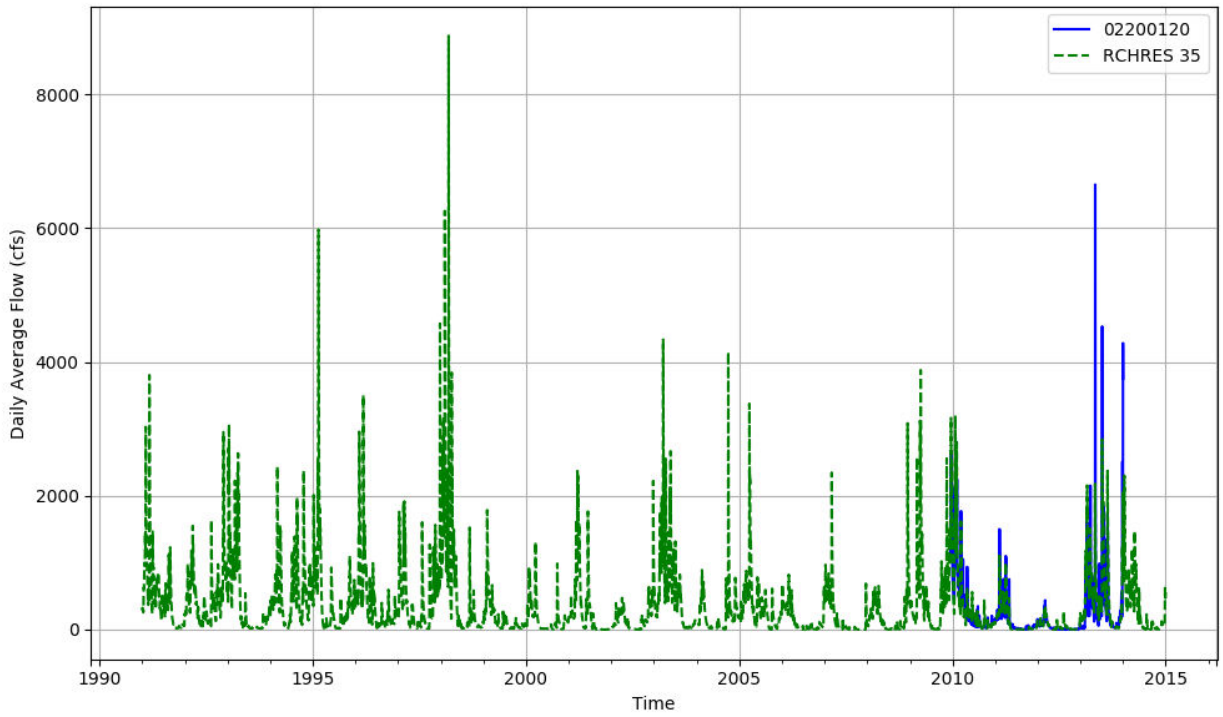


Figure T-03060201-7: Daily flow for HSFP reach 35 and USGS station 02200120.

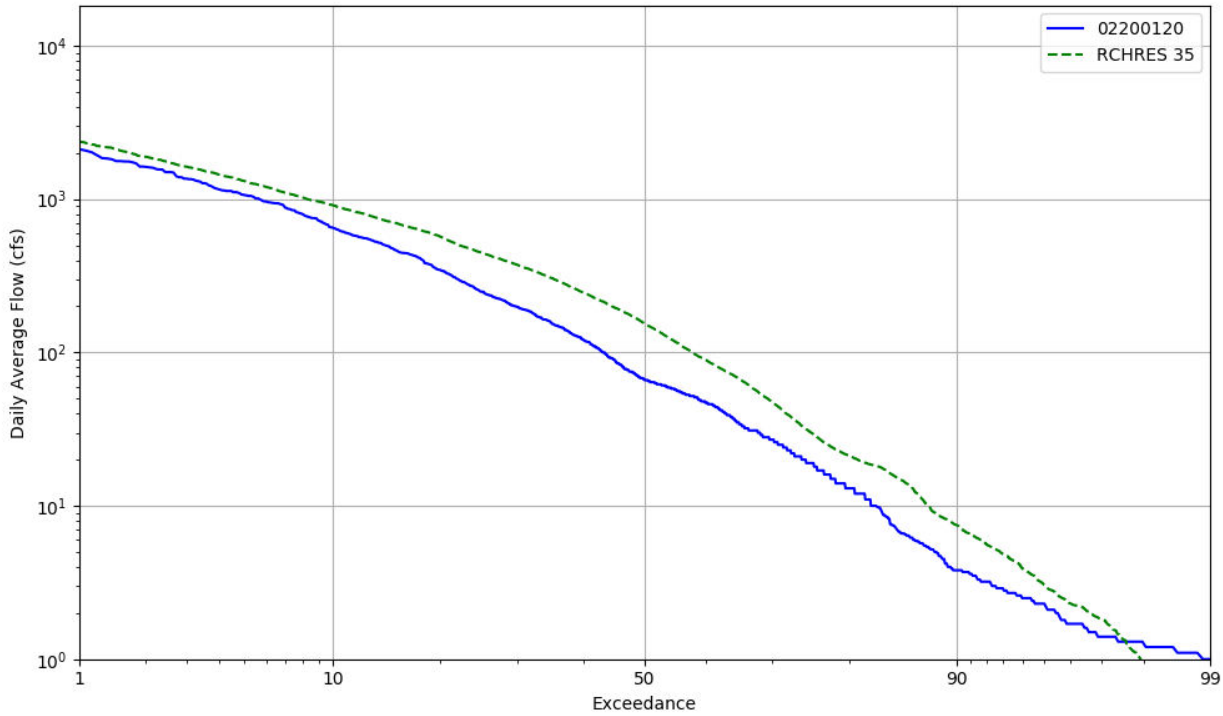


Figure T-03060201-8: Daily exceedance for HSFP reach 35 and USGS station 02200120.

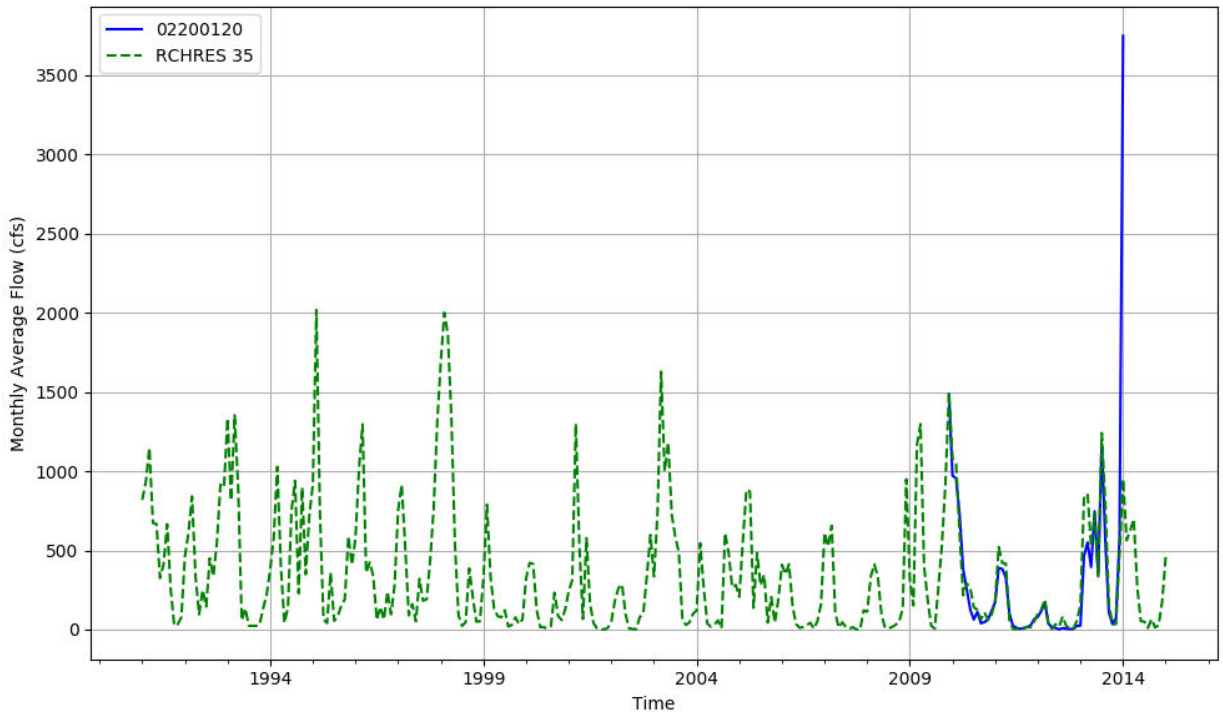


Figure T-03060201-9: Monthly flow for HSFP reach 35 and USGS station 02200120.

HSPF REACH 40, USGS GAUGE 02201230

Water-Data Report 2009
02201230 OGEECHEE RIVER AT MIDVILLE, GA
Ogeechee Basin Upper Ogeechee Subbasin

LOCATION.--Lat 324852, long 821407 referenced to North American Datum of 1927, Burke County, GA, Hydrologic Unit 03060201, at left bank on upstream side of bridge on GA 56, 0.9 mi downstream from confluence with Daniels Mill Creek, 3.0 mi upstream from confluence with Mill Creek, and 0.3 mile south of Midville.

DRAINAGE AREA.--1,300 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1928 to September 1996 (annual maximum only), February 2003 to current year.
GAGE-HEIGHT: July 1930 to October 1989 (gage-height only), February 2003 to current year. Gage-height only records contained in reports of National Weather Service.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 168.86 feet above National Geodetic Vertical Datum (NGVD) of 1929. Staff gage was installed from July 1930 to October 1931 at gage datum of 171.96 feet, referenced to the National Geodetic Vertical Datum (NGVD) of 1929. A staff gage or wire-weight gage was installed from October 1931 to October 1989 at gage datum of 169.96 feet, referenced to the National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Discharge records good except for estimated periods, which are fair. Gage-height records are good.

Table T-03060201-5: Comparison Statistics Between HSPF Reach 40 and USGS Gauge 02201230.

Statistic	Value
Bias	-0.57
Standard error	265.68
Relative bias	-0.00
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.92
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.76
Index of agreement	0.89

Table T-03060201-6: Hydrologic Indices Between USGS Gauge 02201230 and HSPF Reach 40.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02201230	Simulated Reach 40	Percent Difference
MA1: Mean, all daily flows	892.88	889.39	-0.39
MA2: Median, all daily flows	459.00	398.44	-13.19
MA3: CV, all daily flows	113.70	117.28	3.15
MA4: CV, log of all daily flows	107.40	116.74	8.69
MA5: Mean daily flow / median daily flow	1.95	2.23	14.75
MA9: (Q10 - Q90) / median daily flow	4.36	5.64	29.24
MA10: (Q20 - Q80) / median daily flow	2.63	3.43	30.68
MA11: (Q25 - Q75) / median daily flow	2.05	2.73	33.09
MA12: Mean monthly flow, January	1171.88	1121.84	-4.27
MA13: Mean monthly flow, February	1397.38	1496.99	7.13
MA14: Mean monthly flow, March	1724.85	1764.84	2.32
MA15: Mean monthly flow, April	1364.70	1206.65	-11.58
MA16: Mean monthly flow, May	719.03	674.25	-6.23
MA17: Mean monthly flow, June	649.72	679.34	4.56
MA18: Mean monthly flow, July	605.48	600.12	-0.89
MA19: Mean monthly flow, August	527.85	549.96	4.19
MA20: Mean monthly flow, September	271.24	349.53	28.86
MA21: Mean monthly flow, October	381.28	359.31	-5.76
MA22: Mean monthly flow, November	399.07	350.39	-12.20
MA23: Mean monthly flow, December	912.66	965.61	5.80
ML1: Mean minimum monthly flow, January	861.91	761.20	-11.68
ML2: Mean minimum monthly flow, February	878.73	855.30	-2.67
ML3: Mean minimum monthly flow, March	926.36	896.02	-3.28
ML4: Mean minimum monthly flow, April	546.82	474.70	-13.19
ML5: Mean minimum monthly flow, May	306.00	295.17	-3.54
ML6: Mean minimum monthly flow, June	200.41	228.59	14.06
ML7: Mean minimum monthly flow, July	283.57	306.03	7.92
ML8: Mean minimum monthly flow, August	209.45	208.23	-0.58
ML9: Mean minimum monthly flow, September	128.82	66.17	-48.64
ML10: Mean minimum monthly flow, October	182.82	129.86	-28.97
ML11: Mean minimum monthly flow, November	250.91	184.44	-26.49
ML12: Mean minimum monthly flow, December	462.91	375.24	-18.94
ML13: CV of minimum monthly flows	111.39	132.70	19.14
ML14: Mean minimum daily flow / mean median annual flow	0.21	0.10	-51.69
ML15: Mean minimum annual flow / mean annual flow	0.12	0.05	-58.63
ML16: Median minimum annual flow / median annual flow	0.16	0.04	-72.47
ML20: Ratio of baseflow volume to total flow volume	0.57	0.53	-7.44
ML22: Mean annual minimum flow divided by catchment area	1.03	0.38	-62.75
RA1: Mean of positive changes from one day to next (rise rate)	161.93	206.54	
RA2: CV, mean of positive changes from one day to next (rise rate)	263.65	321.23	
RA3: Mean of negative changes from one day to next (fall rate)	104.68	91.89	
RA4: CV, mean of negative changes from one day to next (fall rate)	250.35	227.74	
RA5: Ratio of days that are higher than previous day	0.38	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.10	

RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.07	
RA8: Number of flow reversals from one day to the next	60.92	57.75	
RA9: CV, number of flow reversals from one day to the next	26.14	31.51	

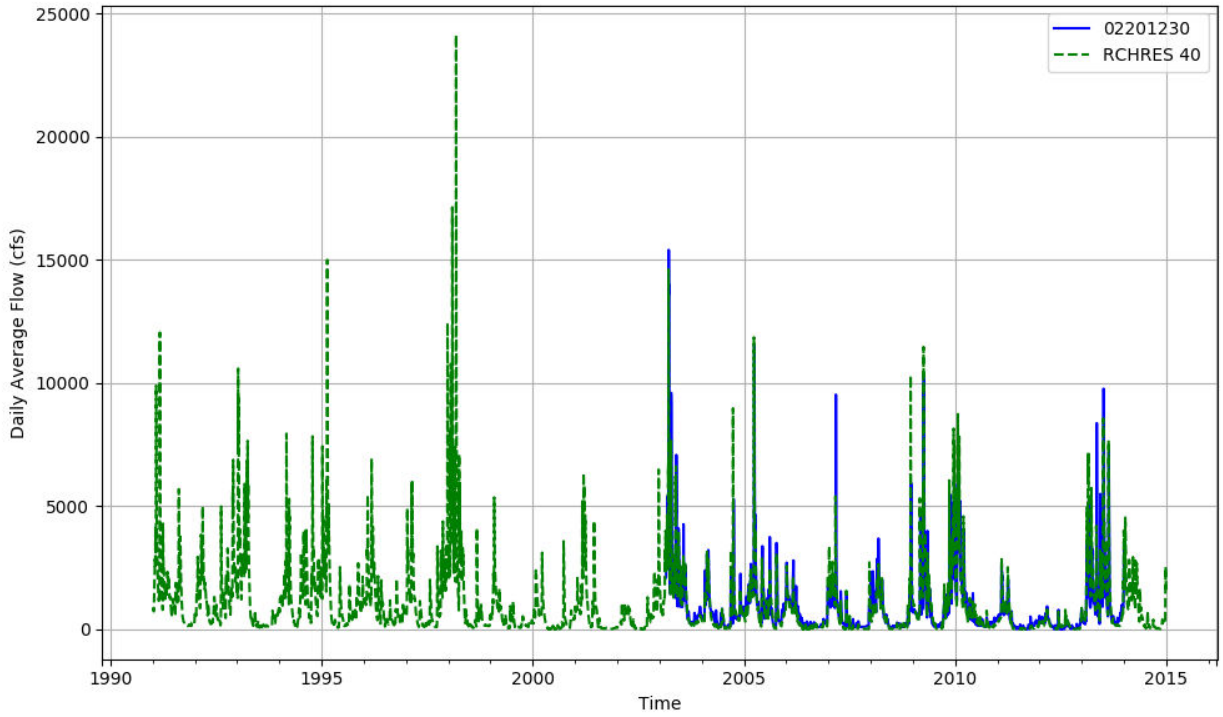


Figure T-03060201-10: Daily flow for HSFP reach 40 and USGS station 02201230.

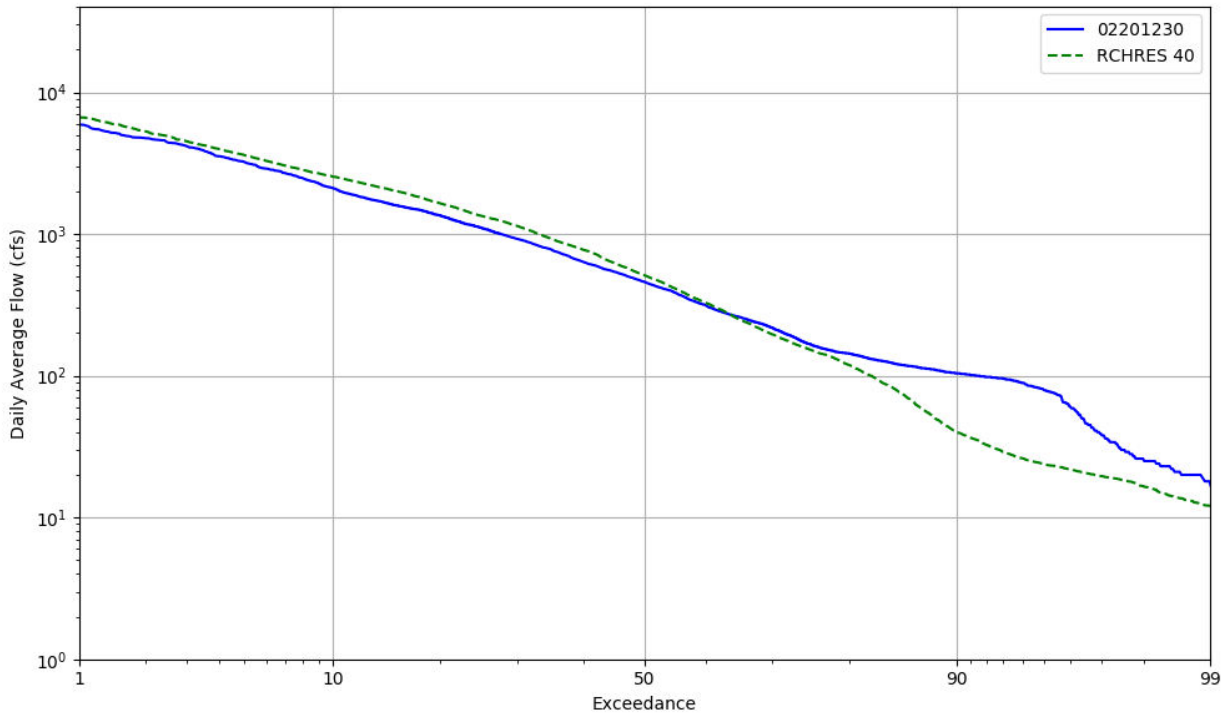


Figure T-03060201-11: Daily exceedance for HSFP reach 40 and USGS station 02201230.

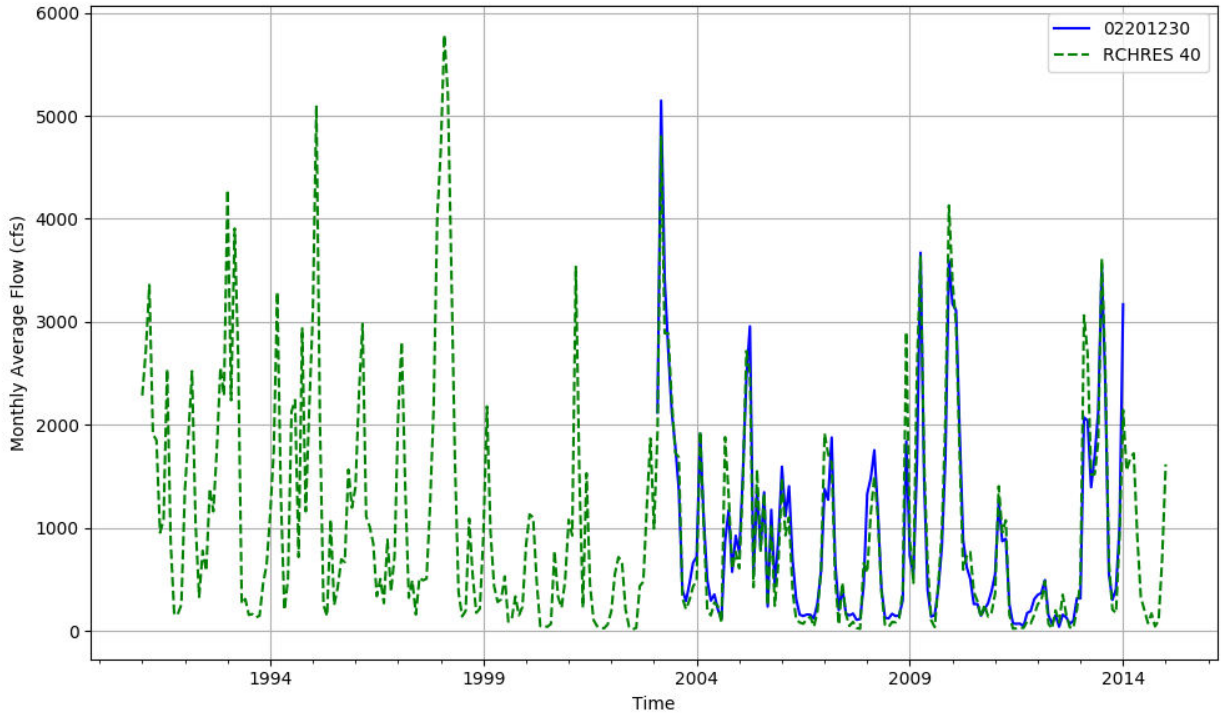


Figure T-03060201-12: Monthly flow for HSFP reach 40 and USGS station 02201230.

Table T-03060201-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3936	41449	8065	1428	135	5273	499905	52180	105143	78016	138849	195970	267	37614	3022	1171252
AREA(%)	0.3	3.5	0.7	0.1	0.0	0.4	42.5	4.4	8.9	6.6	11.8	16.7	0.0	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		2236	914	390	141											3680
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	35.8	35.5	34.9	34.7	35.8	36.7	36.2	34.8	36.0	35.9	34.6	34.8	74.0	43.7	36.8	35.8
SURLI		0.0	4.5	4.6	8.9										3.4	0.0
UZLI																0.0
LZLI		0.0	1.0	0.8	1.1										5.3	0.0
SURO: PERVIOUS		0.3	0.4	0.5	0.8	0.1	0.0	0.1	0.1	0.2	0.0		0.7	0.1	0.3	0.1
SURO: IMPERVIOUS		17.5	16.5	16.2	17.2											0.1
SURO: COMBINED		1.1	2.0	3.9	9.2	0.1	0.0	0.1	0.1	0.2	0.0		0.7	0.1	0.3	0.1
IFWO		4.1	4.2	4.0	5.3	4.5	1.0	3.1	3.0	3.2	1.3		13.4	3.3	2.7	1.5
AGWO	5.1	5.7	8.0	8.0	10.6	9.1	5.8	7.5	6.8	6.2	5.6	4.9	18.2	8.9	9.0	5.9
AGWI	7.9	7.4	10.1	10.1	13.2	11.7	7.5	9.4	8.8	7.8	6.9	7.5	19.0	10.2	12.0	7.7
IGWI	1.5	1.4	1.8	1.7	1.6	2.4	1.4	1.8	1.6	1.4	1.3	1.4	3.8	2.0	1.4	1.5
CEPE		7.7	8.0	8.0	8.0	5.3	10.7	9.9	7.6	10.8	11.3	10.3	29.5	15.8	11.7	10.4
UZET	3.9	3.7	4.1	4.0	4.2	4.2	2.3	3.9	3.5	2.6	2.6	2.6	3.2	3.5	3.1	2.7
LZET	0.7	14.6	15.2	15.2	15.4	10.7	18.3	9.6	15.1	13.8	16.2	2.3	5.9	12.8	16.9	13.9
AGWET	3.7	2.3	2.7	2.6	2.8	3.1	1.9	2.6	2.5	2.1	1.9	3.8	1.1	2.1	2.5	2.3
BASET	0.1	0.1	0.2	0.2	0.7	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	1.0	0.1
SURET	24.0											13.3				2.3
PERO	5.1	10.0	12.6	12.6	16.7	13.8	6.8	10.7	10.0	9.5	6.9	4.9	32.3	12.2	12.0	7.5
IGWI	1.5	1.4	1.8	1.7	1.6	2.4	1.4	1.8	1.6	1.4	1.3	1.4	3.8	2.0	1.4	1.5
TAET: PERVIOUS	32.4	28.5	30.1	30.1	31.0	23.3	33.5	26.1	28.8	29.5	32.1	32.4	39.7	34.3	35.3	31.8
IMPEV: IMPERVIOUS		18.3	18.6	18.6	18.9											0.1
ET: COMBINED	32.4	28.0	28.9	27.6	24.8	23.3	33.5	26.1	28.8	29.5	32.1	32.4	39.7	34.3	35.3	31.8
PET	44.5	44.8	45.2	45.4	45.0	43.7	44.4	45.4	44.5	44.6	45.4	45.3	44.2	45.4	44.9	44.6

Table T-03060201-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3936	41449	8065	1428	135	5273	499905	52180	105143	78016	138849	195970	267	37614	3022	1171252
AREA(%)	0.3	3.5	0.7	0.1	0.0	0.4	42.5	4.4	8.9	6.6	11.8	16.7	0.0	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		2236	914	390	141											3680
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	57.0	56.0	55.0	54.5	55.8	59.7	57.0	54.2	56.6	56.6	53.9	54.3	68.0	59.3	55.7	55.8
SURLI		0.0	3.9	3.9	7.2										2.6	0.0
UZLI																0.0
LZLI		0.0	1.0	0.9	1.2										3.6	0.0
SURO: PERVIOUS		0.5	0.8	1.0	1.2	0.2	0.1	0.2	0.2	0.3	0.1		0.5	0.1	0.5	0.1
SURO: IMPERVIOUS		33.8	32.6	32.1	33.5											0.1
SURO: COMBINED		2.2	4.0	7.6	17.7	0.2	0.1	0.2	0.2	0.3	0.1		0.5	0.1	0.5	0.2
IFWO		8.7	9.0	8.8	10.8	9.4	2.2	6.8	6.0	6.4	2.9		13.4	5.6	5.5	3.2
AGWO	6.1	9.8	11.8	11.4	13.2	16.7	11.3	12.2	12.3	11.3	9.6	7.1	13.7	11.3	12.5	10.4
AGWI	9.4	13.2	15.5	15.3	18.1	20.5	14.4	15.9	15.9	14.6	12.8	10.9	16.3	14.7	17.9	13.8
IGWI	1.8	2.5	2.9	2.7	2.4	4.1	2.7	3.1	3.0	2.7	2.4	2.1	3.3	2.9	2.0	2.6
CEPE		9.9	9.9	9.9	9.9	7.4	13.6	12.1	9.9	13.6	13.7	12.6	15.9	17.0	13.9	12.9
UZET	3.4	5.0	5.2	5.1	5.2	6.2	3.3	5.1	4.9	3.7	3.6	2.8	5.0	4.0	4.1	3.6
LZET	0.4	15.0	15.5	15.5	15.5	10.6	18.6	9.7	15.4	14.0	16.9	2.4	12.6	13.6	17.0	14.2
AGWET	2.9	2.7	3.1	3.1	3.1	3.4	2.2	3.1	2.8	2.5	2.4	3.6	2.4	2.8	2.7	2.6
BASET	0.1	0.1	0.2	0.3	0.8	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	1.1	0.2
SURET	37.6											20.3				3.5
PERO	6.1	19.0	21.6	21.1	25.2	26.4	13.5	19.2	18.5	18.0	12.6	7.1	27.5	17.1	18.5	13.7
IGWI	1.8	2.5	2.9	2.7	2.4	4.1	2.7	3.1	3.0	2.7	2.4	2.1	3.3	2.9	2.0	2.6
TAET: PERVIOUS	44.5	32.8	33.9	33.9	34.4	27.7	37.9	30.2	33.2	33.9	36.7	41.8	35.8	37.6	38.9	37.0
IMPEV: IMPERVIOUS		21.9	22.1	22.1	22.0											0.1
ET: COMBINED	44.5	32.2	32.7	31.3	28.1	27.7	37.9	30.2	33.2	33.9	36.7	41.8	35.8	37.6	38.9	37.1
PET	51.5	51.8	52.3	52.4	52.1	50.5	51.4	52.5	51.6	51.5	52.5	52.4	50.7	52.5	52.1	51.7

Table T-03060201-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3936	41449	8065	1428	135	5273	499905	52180	105143	78016	138849	195970	267	37614	3022	1171252
AREA(%)	0.3	3.5	0.7	0.1	0.0	0.4	42.5	4.4	8.9	6.6	11.8	16.7	0.0	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		2236	914	390	141											3680
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	39.3	38.7	38.2	37.8	38.7	41.1	39.4	37.7	39.2	39.2	37.4	37.8	50.0	42.2	39.1	38.7
SURLI		0.0	3.9	3.9	7.0										4.8	0.0
UZLI																0.0
LZLI		0.0	1.0	0.9	1.2										4.6	0.0
SURO: PERVIOUS		0.2	0.4	0.5	0.6	0.1	0.0	0.1	0.1	0.1	0.0		0.3	0.1	0.3	0.1
SURO: IMPERVIOUS		19.8	19.1	18.7	19.5											0.1
SURO: COMBINED		1.2	2.3	4.4	10.3	0.1	0.0	0.1	0.1	0.1	0.0		0.3	0.1	0.3	0.1
IFWO		4.7	4.9	4.8	5.8	5.3	1.5	3.9	3.3	3.5	2.1		7.2	3.4	3.4	1.9
AGWO	6.7	5.9	8.2	8.0	10.4	10.8	7.2	8.0	7.5	6.8	6.1	6.2	9.2	7.4	11.1	6.9
AGWI	8.7	8.3	10.9	10.7	13.2	13.9	9.0	10.7	10.1	9.0	7.8	8.7	11.2	9.4	13.6	9.0
IGWI	1.7	1.6	2.0	1.8	1.7	2.8	1.7	2.1	1.9	1.7	1.5	1.7	2.3	1.9	1.5	1.7
CEPE		8.1	8.2	8.2	8.1	5.8	11.4	10.2	8.0	11.5	11.8	10.7	15.2	15.1	11.9	10.9
UZET	2.2	4.1	4.3	4.2	4.4	5.3	2.6	4.1	3.9	3.1	2.6	2.5	4.3	3.1	3.4	2.9
LZET	0.3	15.3	15.7	15.7	15.8	10.6	19.3	9.9	15.7	14.3	17.3	1.9	12.1	13.6	17.5	14.6
AGWET	2.6	3.1	3.3	3.2	3.2	3.4	2.6	3.3	3.2	2.8	2.6	4.0	2.4	2.8	2.8	3.0
BASET	0.2	0.1	0.2	0.3	0.7	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	1.1	0.2
SURET	37.4											20.7				3.6
PERO	6.7	10.8	13.4	13.3	16.8	16.2	8.7	12.0	11.0	10.5	8.2	6.2	16.6	11.0	14.8	8.9
IGWI	1.7	1.6	2.0	1.8	1.7	2.8	1.7	2.1	1.9	1.7	1.5	1.7	2.3	1.9	1.5	1.7
TAET: PERVIOUS	42.7	30.7	31.6	31.6	32.1	25.2	36.1	27.6	31.1	31.9	34.4	39.9	34.1	34.6	36.8	35.0
IMPEV: IMPERVIOUS		19.0	19.2	19.2	19.3											0.1
ET: COMBINED	42.7	30.1	30.4	28.9	25.6	25.2	36.1	27.6	31.1	31.9	34.4	39.9	34.1	34.6	36.8	35.1
PET	46.9	47.2	47.7	47.9	47.6	45.7	46.8	48.1	46.9	46.9	48.0	47.9	45.9	48.0	47.5	47.1

Table T-03060201-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3936	41449	8065	1428	135	5273	499905	52180	105143	78016	138849	195970	267	37614	3022	1171252
AREA(%)	0.3	3.5	0.7	0.1	0.0	0.4	42.5	4.4	8.9	6.6	11.8	16.7	0.0	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		2236	914	390	141											3680
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	45.2	45.1	45.1	45.1	45.4	45.1	45.1	45.1	45.1	45.2	45.0	45.1	64.0	52.0	45.9	45.2
SURLI		0.0	3.7	3.7	6.9										3.0	0.0
UZLI																0.0
LZLI		0.0	0.9	0.8	1.0										3.2	0.0
SURO: PERVIOUS	0.3	0.3	0.6	0.7	0.9	0.2	0.0	0.2	0.2	0.2	0.1	0.1	0.4	0.1	0.4	0.1
SURO: IMPERVIOUS		25.5	25.3	25.2	25.6											0.1
SURO: COMBINED	0.3	1.6	3.1	5.9	13.5	0.2	0.0	0.2	0.2	0.2	0.1	0.1	0.4	0.1	0.4	0.2
IFWO		5.3	5.8	5.8	7.0	5.1	1.4	4.8	3.7	3.9	2.1		10.0	4.2	3.6	2.0
AGWO	6.0	7.7	10.0	9.8	11.7	12.2	7.8	10.4	9.1	8.4	7.7	6.4	14.6	10.4	10.5	7.9
AGWI	8.1	10.2	12.9	12.8	15.3	15.3	9.9	13.1	11.8	10.8	9.8	8.7	16.4	12.8	14.2	10.2
IGWI	1.5	2.0	2.4	2.2	2.0	3.1	1.8	2.6	2.2	2.0	1.9	1.7	3.3	2.5	1.6	1.9
CEPE		9.2	9.3	9.3	9.3	6.5	12.5	11.3	9.1	12.5	12.9	11.8	20.6	16.4	13.2	11.9
UZET	2.2	4.0	4.3	4.3	4.3	4.7	2.4	4.1	3.7	2.8	2.8	1.5	3.7	3.5	3.2	2.6
LZET	0.4	14.0	14.5	14.4	14.6	10.1	17.2	9.1	14.4	13.0	15.5	1.3	9.6	12.4	15.9	13.0
AGWET	2.0	2.4	2.7	2.7	2.7	3.0	1.9	2.6	2.5	2.2	2.0	2.2	1.7	2.3	2.4	2.1
BASET	0.1	0.1	0.2	0.2	0.7	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	1.0	0.1
SURET	34.4											21.8				3.7
PERO	6.3	13.4	16.3	16.3	19.6	17.4	9.2	15.3	12.9	12.4	9.8	6.5	25.1	14.7	14.5	10.0
IGWI	1.5	2.0	2.4	2.2	2.0	3.1	1.8	2.6	2.2	2.0	1.9	1.7	3.3	2.5	1.6	1.9
TAET: PERVIOUS	39.1	29.7	30.9	31.0	31.5	24.5	34.1	27.2	29.9	30.7	33.2	38.7	35.6	34.7	35.7	33.6
IMPEV: IMPERVIOUS		19.6	19.8	19.9	19.8											0.1
ET: COMBINED	39.1	29.2	29.8	28.6	25.6	24.5	34.1	27.2	29.9	30.7	33.2	38.7	35.6	34.7	35.7	33.6
PET	45.9	46.1	46.3	46.4	46.3	45.2	45.8	46.5	45.9	45.9	46.4	46.4	45.3	46.5	46.3	45.9

Table T-03060201-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
2	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
3	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
4	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
5	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
6	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
7	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
8	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
9	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
10	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
11	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
12	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
13	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
16	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
19	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
20	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
21	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
22	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
23	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
24	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
25	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
26	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
27	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
28	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
29	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
30	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
31	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
32	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
33	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
34	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
35	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
36	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
37	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
38	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994

39	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
40	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
41	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
42	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994
43	0.994	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.978	0.994

Table T-03060201-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060201-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
2	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
3	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
4	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
5	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
6	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
7	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
8	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
9	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
10	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
11	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
12	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
13	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
14	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
15	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
16	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
17	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
18	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
19	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
20	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
21	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
22	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
23	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
24	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
25	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
26	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
27	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
28	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
29	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
30	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
31	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
32	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
33	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
34	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
35	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
36	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
37	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
38	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100

39	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
40	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
41	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
42	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100
43	0.000	0.060	0.060	0.060	0.060	0.030	0.120	0.090	0.060	0.120	0.120	0.100

Table T-03060201-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
2	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
3	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
4	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
5	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
6	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
7	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
8	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
9	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
10	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
11	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
12	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
13	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
14	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
15	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
16	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
17	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
18	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
19	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
20	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
21	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
22	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
23	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
24	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
25	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
26	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
27	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
28	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
29	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
30	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
31	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
32	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
33	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
34	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
35	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
36	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
37	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
38	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167

39	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
40	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
41	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
42	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
43	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167

Table T-03060201-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
2	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
3	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
4	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
5	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
6	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
7	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
8	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
9	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
10	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
11	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
12	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
13	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
14	0.010	0.102	0.102	0.102	0.102	0.146	0.219	0.146	0.146	0.146	0.175	0.010
15	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
16	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
17	0.010	0.102	0.102	0.102	0.102	0.146	0.219	0.146	0.146	0.146	0.175	0.010
18	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
19	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
20	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
21	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
22	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
23	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
24	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
25	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
26	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
27	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
28	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
29	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
30	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
31	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
32	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
33	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
34	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
35	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
36	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
37	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
38	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010

39	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
40	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
41	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
42	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010
43	0.010	0.146	0.146	0.146	0.146	0.209	0.313	0.209	0.209	0.209	0.251	0.010

Table T-03060201-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
2		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
12		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
13		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
14		1.610	1.610	1.610	1.610	1.610	1.610	1.610	1.610	1.610	1.610	
15		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
16		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
17		1.610	1.610	1.610	1.610	1.610	1.610	1.610	1.610	1.610	1.610	
18		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
19		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
20		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
21		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
22		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
23		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
24		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
25		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
26		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
27		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
28		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
29		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

30		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
31		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
32		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
33		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
34		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
35		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
36		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
37		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
38		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
39		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
40		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
41		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
42		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
43		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

Table T-03060201-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
2	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
3	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
4	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
5	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
6	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
7	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
8	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
9	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
10	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
11	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
12	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
13	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
14	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602
15	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
16	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
17	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602	0.602
18	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
19	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
20	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
21	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
22	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
23	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
24	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
25	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
26	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
27	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
28	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
29	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
30	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
31	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
32	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
33	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
34	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
35	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
36	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
37	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
38	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698

39	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
40	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
41	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
42	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698
43	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698	0.698

Table T-03060201-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
2	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
3	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
4	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
5	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
6	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
7	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
8	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
9	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
10	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
11	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
12	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
13	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
14	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
15	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
16	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
17	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
18	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
19	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
20	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
21	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
22	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
23	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
24	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
25	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
26	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
27	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
28	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
29	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
30	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
31	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
32	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
33	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
34	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
35	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
36	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
37	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
38	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209

39	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
40	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
41	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
42	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209
43	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209

Table T-03060201-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
3	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
4	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
5	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
6	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
7	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
9	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
10	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
11	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
12	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
13	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
14	0.032	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
15	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
16	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
17	0.032	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
18	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
19	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
20	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
21	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
22	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
23	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
24	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
25	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
26	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
27	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
28	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
29	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
30	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
31	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
32	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
33	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
34	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
35	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
36	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
37	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
38	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

39	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
40	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
41	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
42	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
43	0.057	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03060201-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
2	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
3	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
4	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
5	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
6	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
7	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
8	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
9	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
10	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
11	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
12	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
13	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
14	0.200	3.055	3.055	3.055	3.055	3.438	4.583	3.438	3.438	3.438	3.820	0.103
15	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
16	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
17	0.200	3.055	3.055	3.055	3.055	3.438	4.583	3.438	3.438	3.438	3.820	0.103
18	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
19	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
20	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
21	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
22	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
23	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
24	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
25	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
26	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
27	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
28	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
29	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
30	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
31	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
32	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
33	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
34	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
35	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
36	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
37	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
38	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100

39	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
40	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
41	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
42	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
43	0.055	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100

Table T-03060201-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
2	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
3	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
4	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
5	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
6	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
7	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
8	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
9	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
10	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
11	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
12	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
13	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.052
15	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
16	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.052
18	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
19	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
20	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
21	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
22	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
23	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
24	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
25	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
26	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
27	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
28	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
29	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
30	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
31	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
32	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
33	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
34	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
35	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
36	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
37	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
38	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050

39	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
40	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
41	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
42	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050
43	0.050	0.110	0.110	0.110	0.110	0.110	0.158	0.126	0.126	0.110	0.158	0.050

APPENDIX T-03060202

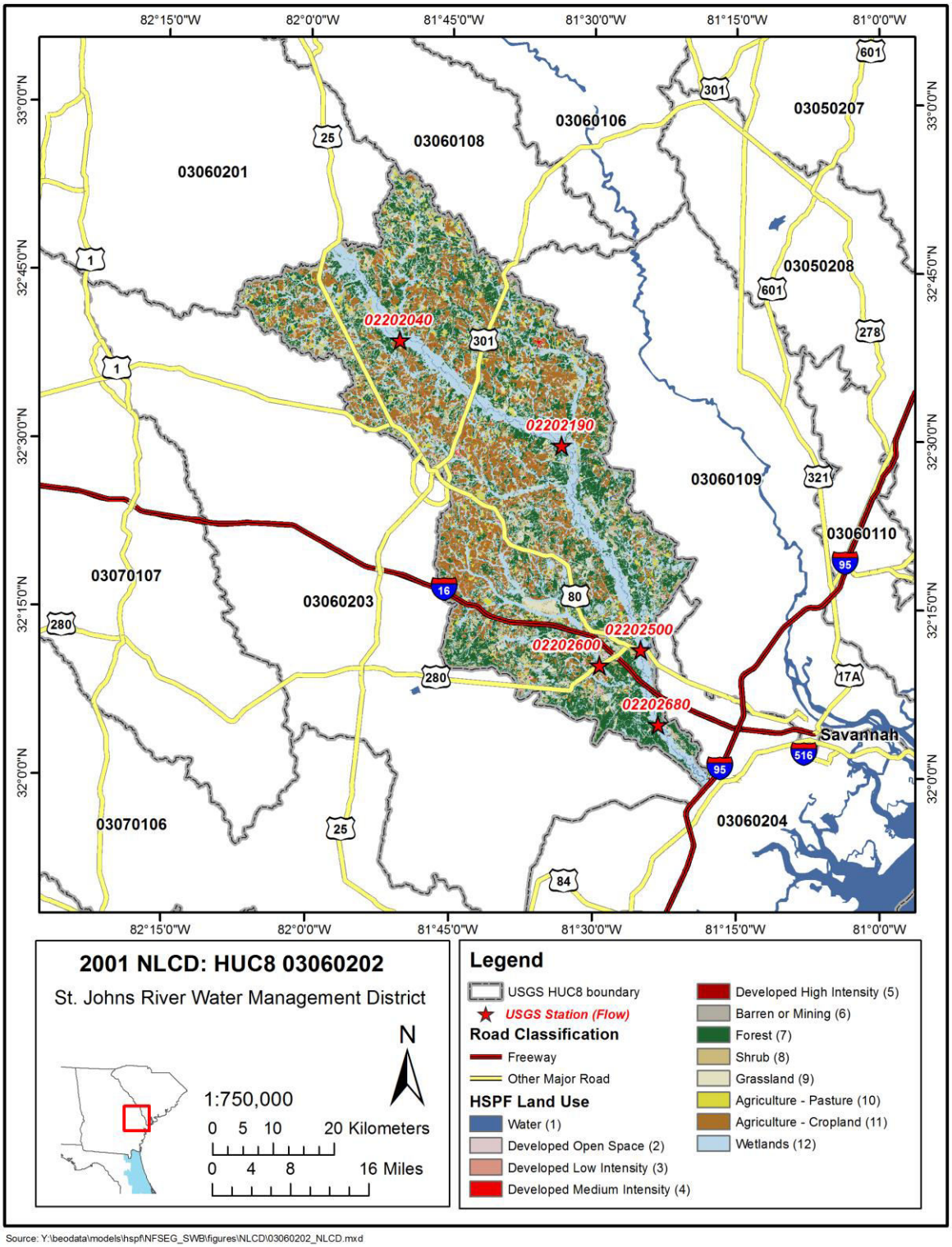


Figure T-03060202-1: Land Cover from the National Land Cover Database.

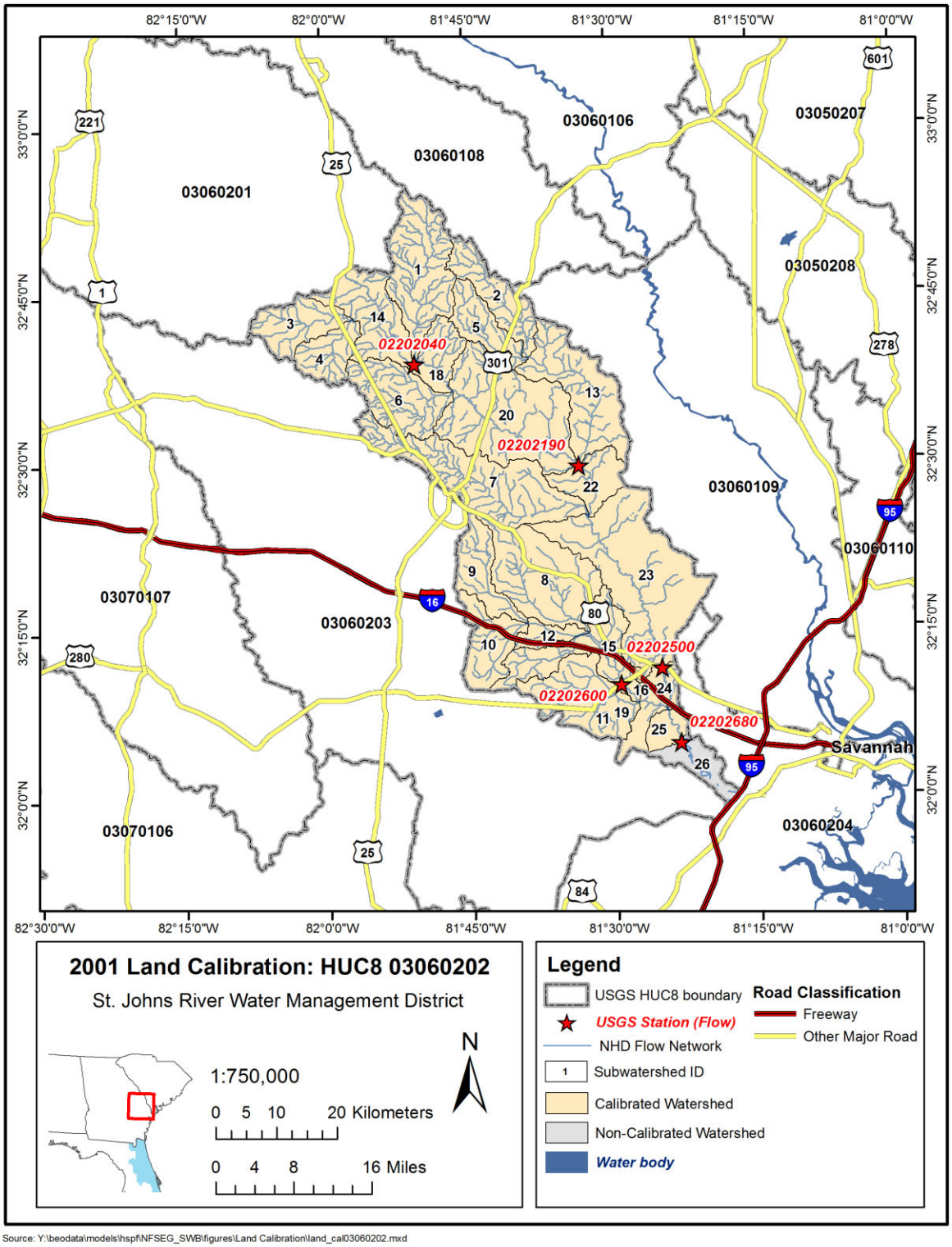


Figure T-03060202-2: Calibrated sub-watersheds.

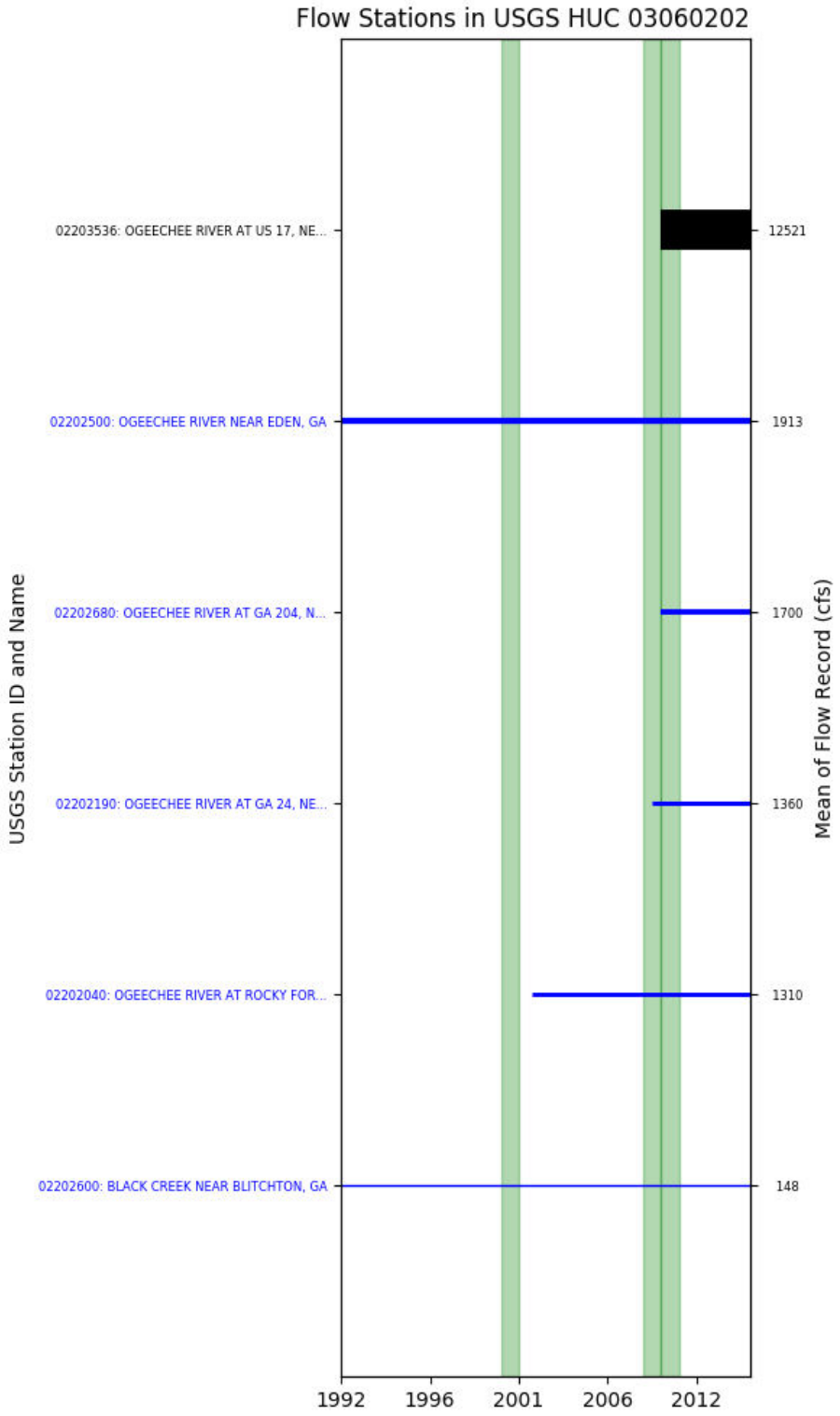


Figure T-03060202-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 14, USGS GAUGE 02202040

Water-Data Report 2009
02202040 OGEECHEE RIVER AT ROCKY FORD ROAD, NEAR ROCKY FORD, GA
Ogeechee Basin Lower Ogeechee Subbasin

LOCATION.--Lat 323856, long 815027 referenced to North American Datum of 1927, Screven County, GA, Hydrologic Unit 03060202, at downstream side of bridge on Rocky Ford Road, 0.5 mi upstream from confluence with Horse Creek, 3.7 mi downstream from confluence with Long Branch, and 0.6 mi southwest of Rocky Ford.

DRAINAGE AREA.--2,040 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: September 2002 to current year.
GAGE-HEIGHT: September 2002 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 105.37 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by National Weather Service).

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Gage-height records fair. Discharge records fair except for estimated days, which are poor.

Table T-03060202-1: Comparison Statistics Between HSPF Reach 14 and USGS Gauge 02202040.

Statistic	Value
Bias	-170.29
Standard error	464.34
Relative bias	-0.13
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.90
Coefficient of efficiency	0.73
Index of agreement	0.86

Table T-03060202-2: Hydrologic Indices Between USGS Gauge 02202040 and HSPF Reach 14.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02202040	Simulated Reach 14	Percent Difference
MA1: Mean, all daily flows	1302.63	1128.16	-13.39
MA2: Median, all daily flows	544.00	575.01	5.70
MA3: CV, all daily flows	97.80	104.29	6.64

MA4: CV, log of all daily flows	116.86	108.09	-7.50
MA5: Mean daily flow / median daily flow	2.39	1.96	-18.06
MA9: (Q10 - Q90) / median daily flow	6.10	4.66	-23.51
MA10: (Q20 - Q80) / median daily flow	3.29	3.05	-7.35
MA11: (Q25 - Q75) / median daily flow	2.52	2.44	-3.02
MA12: Mean monthly flow, January	1427.87	1240.07	-13.15
MA13: Mean monthly flow, February	1913.50	1606.07	-16.07
MA14: Mean monthly flow, March	2472.76	2139.32	-13.48
MA15: Mean monthly flow, April	1966.81	1589.25	-19.20
MA16: Mean monthly flow, May	897.74	930.85	3.69
MA17: Mean monthly flow, June	974.87	812.32	-16.67
MA18: Mean monthly flow, July	915.14	734.56	-19.73
MA19: Mean monthly flow, August	759.18	623.26	-17.90
MA20: Mean monthly flow, September	372.99	449.56	20.53
MA21: Mean monthly flow, October	456.20	358.41	-21.44
MA22: Mean monthly flow, November	461.83	427.37	-7.46
MA23: Mean monthly flow, December	1113.42	1026.68	-7.79
ML1: Mean minimum monthly flow, January	953.67	841.75	-11.74
ML2: Mean minimum monthly flow, February	1122.45	966.80	-13.87
ML3: Mean minimum monthly flow, March	1438.18	1411.55	-1.85
ML4: Mean minimum monthly flow, April	824.45	1114.00	35.12
ML5: Mean minimum monthly flow, May	465.18	675.73	45.26
ML6: Mean minimum monthly flow, June	348.00	519.36	49.24
ML7: Mean minimum monthly flow, July	511.00	539.01	5.48
ML8: Mean minimum monthly flow, August	322.73	401.36	24.37
ML9: Mean minimum monthly flow, September	192.83	228.52	18.51
ML10: Mean minimum monthly flow, October	222.75	210.37	-5.56
ML11: Mean minimum monthly flow, November	288.67	263.66	-8.66
ML12: Mean minimum monthly flow, December	513.42	448.72	-12.60
ML13: CV of minimum monthly flows	111.17	112.39	1.10
ML14: Mean minimum daily flow / mean median annual flow	0.26	0.17	-33.07
ML15: Mean minimum annual flow / mean annual flow	0.18	0.15	-17.56
ML16: Median minimum annual flow / median annual flow	0.17	0.04	-75.86
ML20: Ratio of baseflow volume to total flow volume	0.63	0.71	13.76
ML22: Mean annual minimum flow divided by catchment area	1.34	1.14	-14.69
RA1: Mean of positive changes from one day to next (rise rate)	163.22	355.05	
RA2: CV, mean of positive changes from one day to next (rise rate)	237.69	563.02	
RA3: Mean of negative changes from one day to next (fall rate)	117.49	146.45	
RA4: CV, mean of negative changes from one day to next (fall rate)	201.24	744.27	
RA5: Ratio of days that are higher than previous day	0.41	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	52.08	47.54	
RA9: CV, number of flow reversals from one day to the next	41.62	46.27	

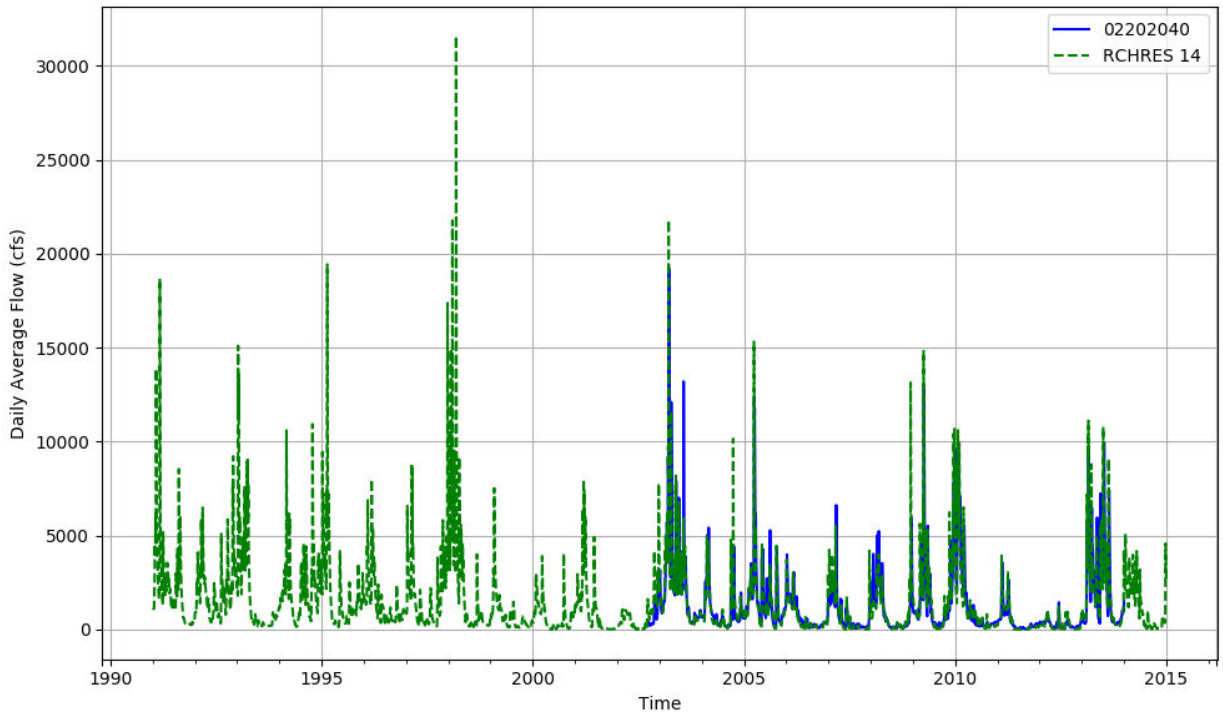


Figure T-03060202-4: Daily flow for HSFP reach 14 and USGS station 02202040.

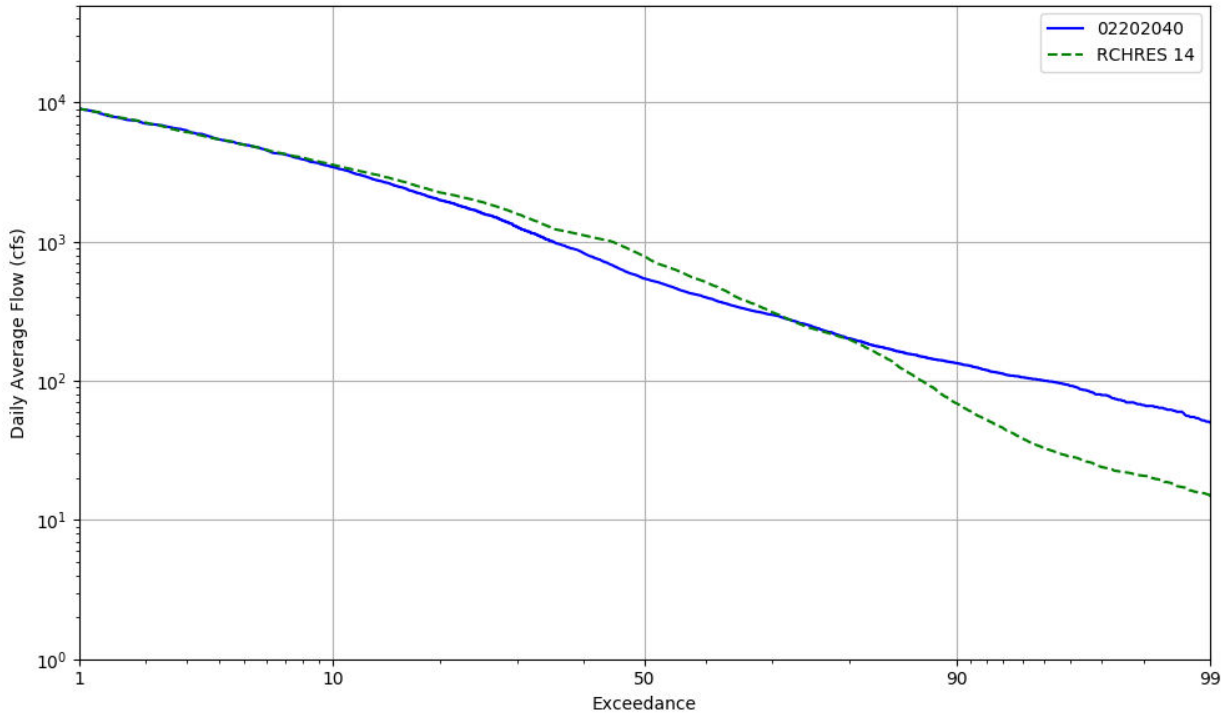


Figure T-03060202-5: Daily exceedance for HSFP reach 14 and USGS station 02202040.

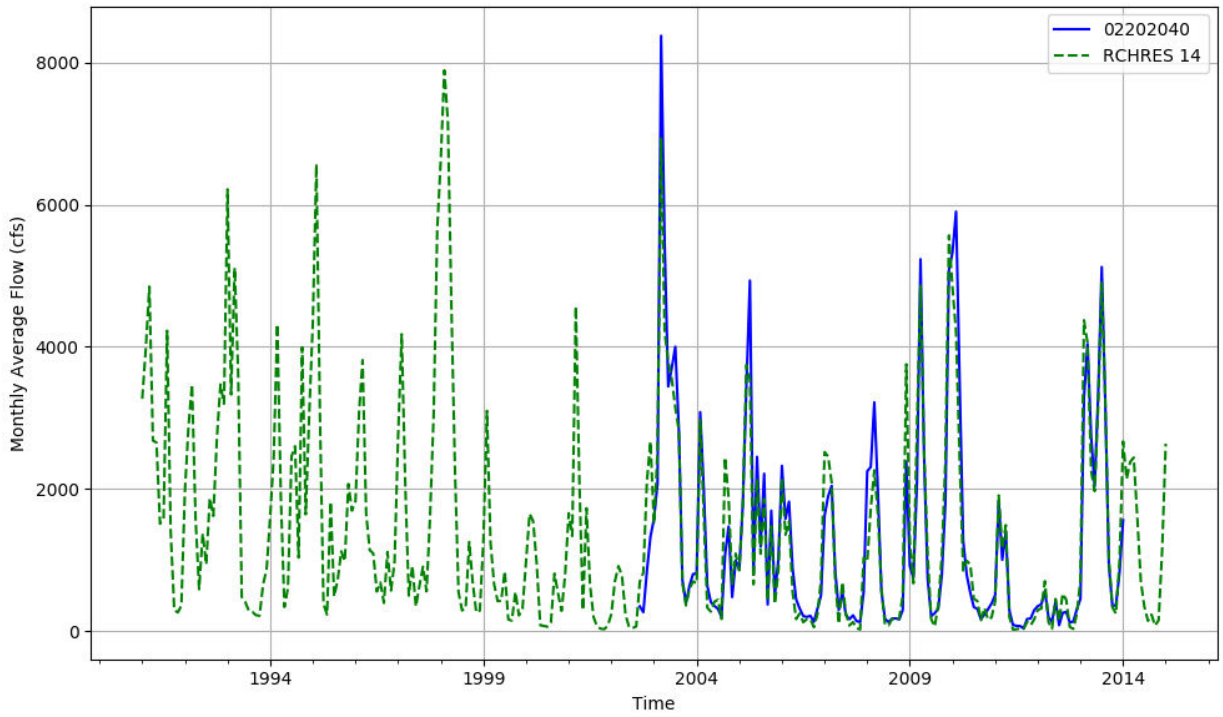


Figure T-03060202-6: Monthly flow for HSFP reach 14 and USGS station 02202040.

HSPF REACH 15, USGS GAUGE 02202600

Water-Data Report 2009
02202600 BLACK CREEK NEAR BLITCHTON, GA
Ogeechee Basin Lower Ogeechee Subbasin

LOCATION.--Lat 321004, long 812918 referenced to North American Datum of 1927, Bryan County, GA, Hydrologic Unit 03060202, on upstream side of bridge on US 280 (GA 30), 4.2 miles upstream from Mill Creek, 5.8 miles southwest of Blitchton, and 8.7 miles upstream from mouth.

DRAINAGE AREA.--232 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: Occasional low-flow measurements made during water years 1944, 1951, 1954, 1959, 1961-62, 1964-68, 1973. February 1980 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 30 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except days of estimated discharge, which are fair. Gage-height records good.

Table T-03060202-3: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02202600.

Statistic	Value
Bias	-15.93
Standard error	113.49
Relative bias	-0.10
Relative standard error	0.43
Nash-Sutcliffe coefficient	0.81
Coefficient of efficiency	0.71
Index of agreement	0.84

Table T-03060202-4: Hydrologic Indices Between USGS Gauge 02202600 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02202600	Simulated Reach 15	Percent Difference

MA1: Mean, all daily flows	166.26	150.36	-9.56
MA2: Median, all daily flows	29.00	52.16	79.88
MA3: CV, all daily flows	170.35	117.37	-31.10
MA4: CV, log of all daily flows	178.56	134.17	-24.86
MA5: Mean daily flow / median daily flow	5.73	2.88	-49.72
MA9: (Q10 - Q90) / median daily flow	14.81	7.77	-47.55
MA10: (Q20 - Q80) / median daily flow	6.54	4.21	-35.67
MA11: (Q25 - Q75) / median daily flow	4.66	2.78	-40.28
MA12: Mean monthly flow, January	234.47	209.48	-10.66
MA13: Mean monthly flow, February	317.28	275.39	-13.20
MA14: Mean monthly flow, March	283.38	250.78	-11.50
MA15: Mean monthly flow, April	165.76	152.37	-8.08
MA16: Mean monthly flow, May	76.48	72.74	-4.90
MA17: Mean monthly flow, June	153.50	102.46	-33.26
MA18: Mean monthly flow, July	101.96	94.12	-7.69
MA19: Mean monthly flow, August	160.50	138.99	-13.40
MA20: Mean monthly flow, September	53.15	82.36	54.96
MA21: Mean monthly flow, October	104.16	79.34	-23.83
MA22: Mean monthly flow, November	66.94	80.54	20.32
MA23: Mean monthly flow, December	144.21	144.67	0.32
ML1: Mean minimum monthly flow, January	68.67	73.17	6.55
ML2: Mean minimum monthly flow, February	95.30	107.79	13.10
ML3: Mean minimum monthly flow, March	70.97	92.25	29.97
ML4: Mean minimum monthly flow, April	34.97	48.28	38.05
ML5: Mean minimum monthly flow, May	13.67	25.58	87.10
ML6: Mean minimum monthly flow, June	4.90	20.66	321.76
ML7: Mean minimum monthly flow, July	10.48	33.18	216.44
ML8: Mean minimum monthly flow, August	12.86	42.87	233.37
ML9: Mean minimum monthly flow, September	6.02	26.97	348.14
ML10: Mean minimum monthly flow, October	5.36	16.34	205.07
ML11: Mean minimum monthly flow, November	15.96	27.62	73.06
ML12: Mean minimum monthly flow, December	42.42	54.90	29.42
ML13: CV of minimum monthly flows	182.08	150.88	-17.14
ML14: Mean minimum daily flow / mean median annual flow	0.07	0.07	9.60
ML15: Mean minimum annual flow / mean annual flow	0.02	0.04	65.81
ML16: Median minimum annual flow / median annual flow	0.02	0.06	245.57
ML20: Ratio of baseflow volume to total flow volume	0.30	0.47	55.17
ML22: Mean annual minimum flow divided by catchment area	0.01	0.07	419.85
RA1: Mean of positive changes from one day to next (rise rate)	70.93	49.62	
RA2: CV, mean of positive changes from one day to next (rise rate)	418.33	353.75	
RA3: Mean of negative changes from one day to next (fall rate)	38.79	19.31	
RA4: CV, mean of negative changes from one day to next (fall rate)	373.20	367.15	
RA5: Ratio of days that are higher than previous day	0.33	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.16	0.10	
RA8: Number of flow reversals from one day to the next	82.67	70.38	
RA9: CV, number of flow reversals from one day to the	31.27	23.72	

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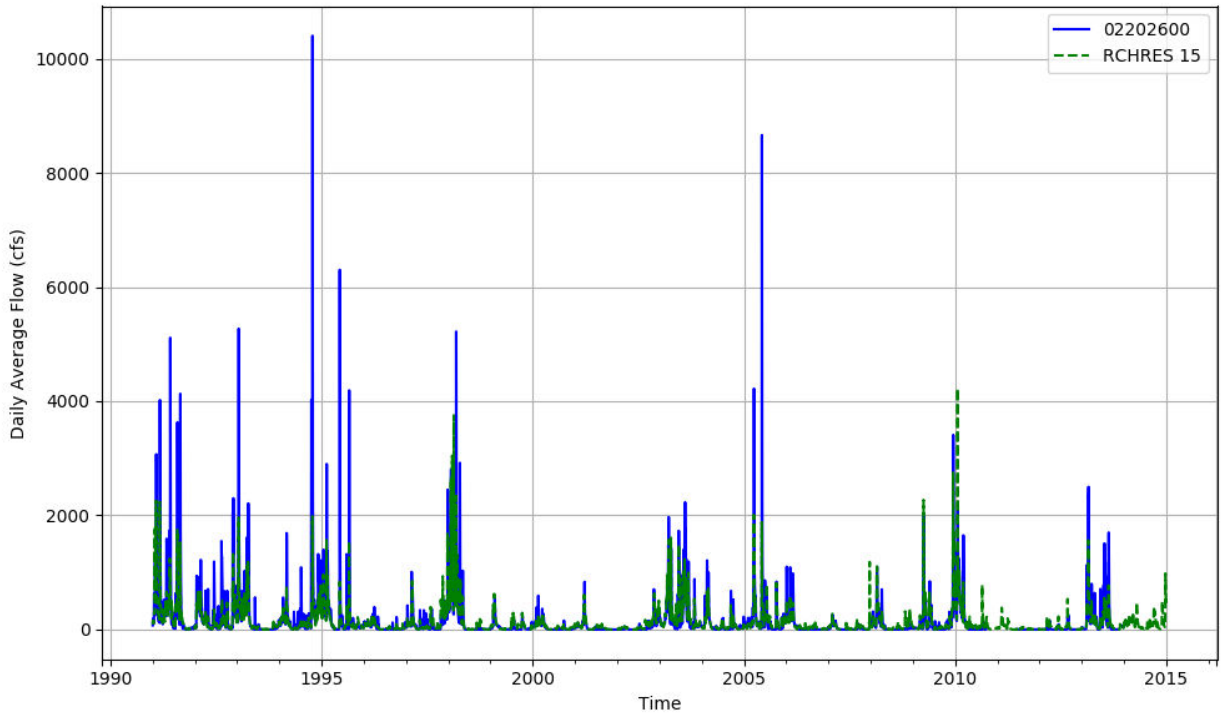


Figure T-03060202-7: Daily flow for HSFP reach 15 and USGS station 02202600.

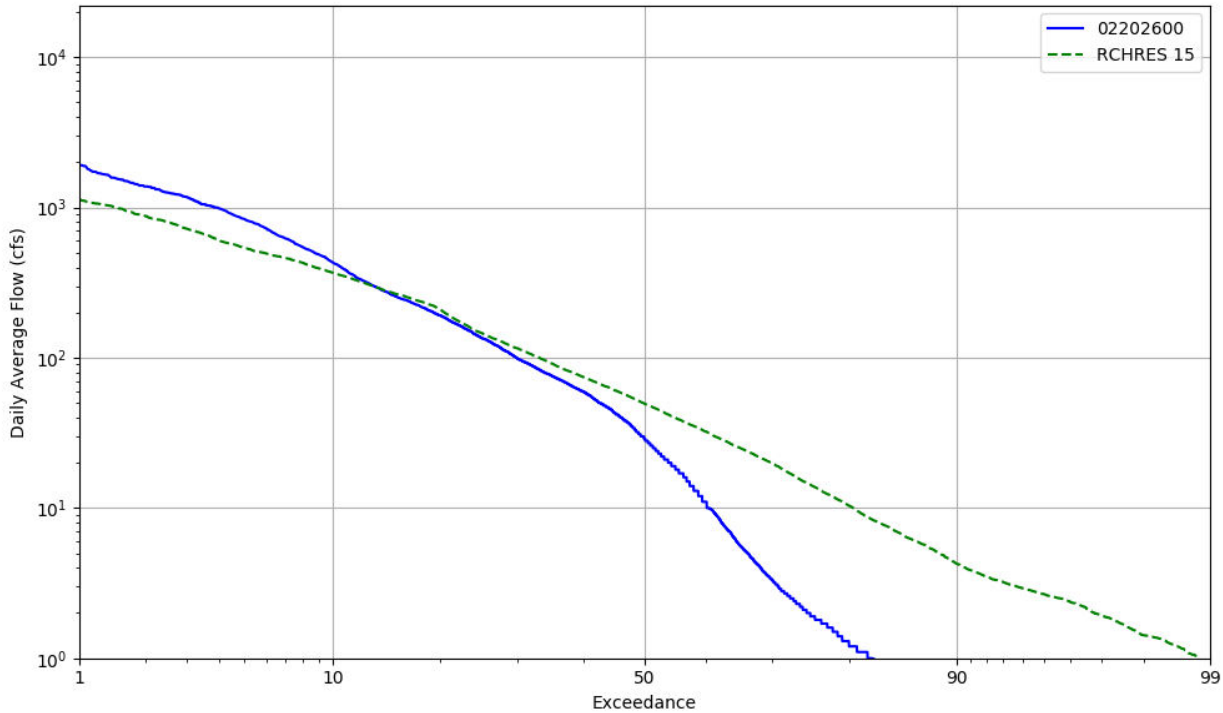


Figure T-03060202-8: Daily exceedance for HSFP reach 15 and USGS station 02202600.

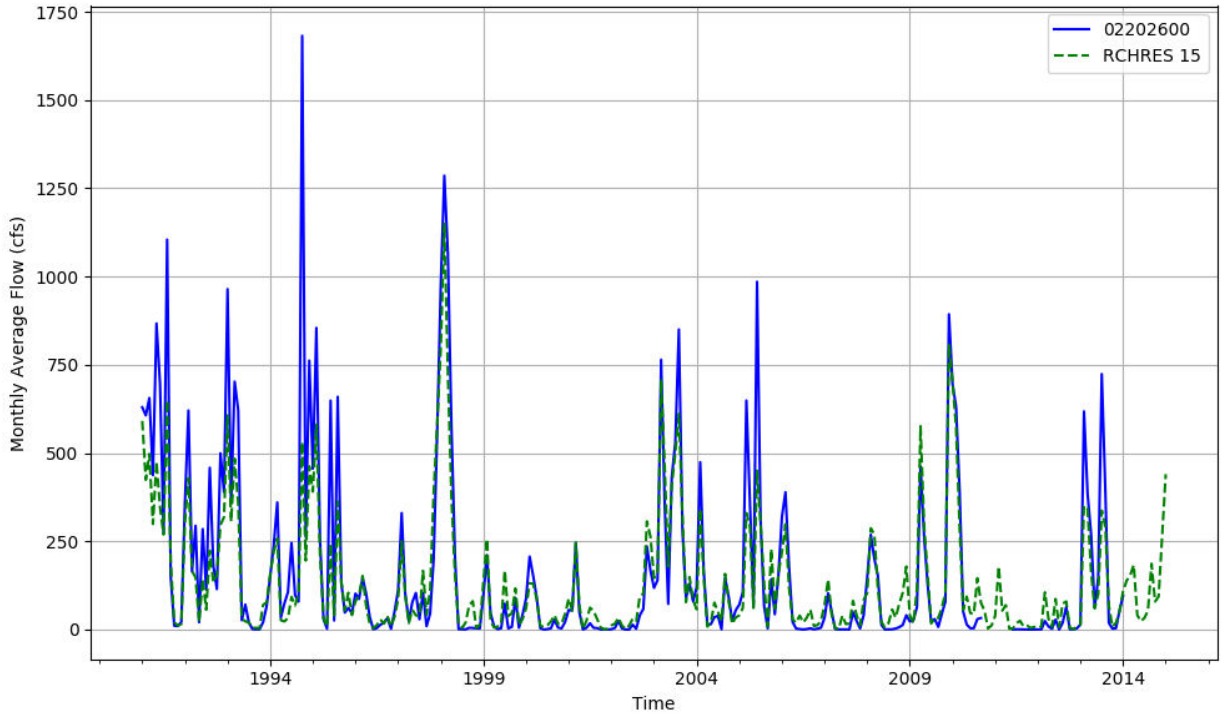


Figure T-03060202-9: Monthly flow for HSFP reach 15 and USGS station 02202600.

HSPF REACH 21, USGS GAUGE 02202190

Water-Data Report 2009
02202190 OGEECHEE RIVER NEAR OLIVER, GA
Ogeechee Basin Lower Ogeechee Subbasin

LOCATION.--Lat 322940, long 813321 referenced to North American Datum of 1927, Screven County, GA, Hydrologic Unit 03060202, at downstream side of the bridge on GA Hwy 24, 0.3 mi upstream from confluence with Ogeechee Creek, and 2.0 mi southwest of Oliver, GA.

DRAINAGE AREA.--2,370 mi.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1974 to February 1994, December 1994 to current year.

REMARKS.--Analyzing agency is represented by the five-digit code listed under USGS Water Science Center special parameter code 99920. Laboratory analyses with analyzing agency code 81330 are by the Agricultural and Environmental Services Laboratory, College of Agricultural and Environmental Sciences, The University of Georgia, Athens, Georgia; laboratory analyses with analyzing agency code 81341 are by the Laboratory Services Section, Environmental Protection Division, Georgia Department of Natural Resources. Field determinations of Discharge, Specific Conductance, pH, Water Temperature, Air Temperature, and Dissolved Oxygen are by the U.S. Geological Survey.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

Table T-03060202-5: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02202190.

Statistic	Value
Bias	-44.63
Standard error	364.64
Relative bias	-0.03
Relative standard error	0.21
Nash-Sutcliffe coefficient	0.96
Coefficient of efficiency	0.81
Index of agreement	0.91

Table T-03060202-6: Hydrologic Indices Between USGS Gauge 02202190 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02202190	Simulated Reach 21	Percent Difference

MA1: Mean, all daily flows	1304.82	1249.15	-4.27
MA2: Median, all daily flows	399.00	432.30	8.34
MA3: CV, all daily flows	83.54	94.53	13.16
MA4: CV, log of all daily flows	142.00	136.63	-3.78
MA5: Mean daily flow / median daily flow	3.27	2.89	-11.64
MA9: (Q10 - Q90) / median daily flow	10.06	8.00	-20.46
MA10: (Q20 - Q80) / median daily flow	4.75	4.09	-14.04
MA11: (Q25 - Q75) / median daily flow	2.70	2.90	7.32
MA12: Mean monthly flow, January	1413.28	1506.96	6.63
MA13: Mean monthly flow, February	2016.54	1974.17	-2.10
MA14: Mean monthly flow, March	1793.95	1661.48	-7.38
MA15: Mean monthly flow, April	1169.65	1011.58	-13.51
MA16: Mean monthly flow, May	628.51	646.02	2.79
MA17: Mean monthly flow, June	837.11	841.73	0.55
MA18: Mean monthly flow, July	1263.98	1136.10	-10.12
MA19: Mean monthly flow, August	797.23	774.22	-2.89
MA20: Mean monthly flow, September	380.45	435.75	14.54
MA21: Mean monthly flow, October	297.26	285.31	-4.02
MA22: Mean monthly flow, November	450.93	362.30	-19.66
MA23: Mean monthly flow, December	1139.10	1135.79	-0.29
ML1: Mean minimum monthly flow, January	1016.00	937.95	-7.68
ML2: Mean minimum monthly flow, February	1232.25	1000.38	-18.82
ML3: Mean minimum monthly flow, March	1588.25	1529.38	-3.71
ML4: Mean minimum monthly flow, April	759.00	947.98	24.90
ML5: Mean minimum monthly flow, May	351.75	584.80	66.25
ML6: Mean minimum monthly flow, June	225.40	570.84	153.26
ML7: Mean minimum monthly flow, July	807.20	736.99	-8.70
ML8: Mean minimum monthly flow, August	331.00	438.25	32.40
ML9: Mean minimum monthly flow, September	206.80	298.05	44.12
ML10: Mean minimum monthly flow, October	233.20	192.16	-17.60
ML11: Mean minimum monthly flow, November	266.60	236.78	-11.19
ML12: Mean minimum monthly flow, December	610.60	432.69	-29.14
ML13: CV of minimum monthly flows	138.47	129.69	-6.34
ML14: Mean minimum daily flow / mean median annual flow	0.29	0.16	-43.09
ML15: Mean minimum annual flow / mean annual flow	0.21	0.11	-48.35
ML16: Median minimum annual flow / median annual flow	0.16	0.07	-53.04
ML20: Ratio of baseflow volume to total flow volume	0.61	0.67	10.19
ML22: Mean annual minimum flow divided by catchment area	1.15	0.61	-46.97
RA1: Mean of positive changes from one day to next (rise rate)	134.00	356.06	
RA2: CV, mean of positive changes from one day to next (rise rate)	224.32	474.44	
RA3: Mean of negative changes from one day to next (fall rate)	100.50	171.76	
RA4: CV, mean of negative changes from one day to next (fall rate)	200.98	519.78	
RA5: Ratio of days that are higher than previous day	0.42	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	40.67	41.33	
RA9: CV, number of flow reversals from one day to the	51.92	61.20	

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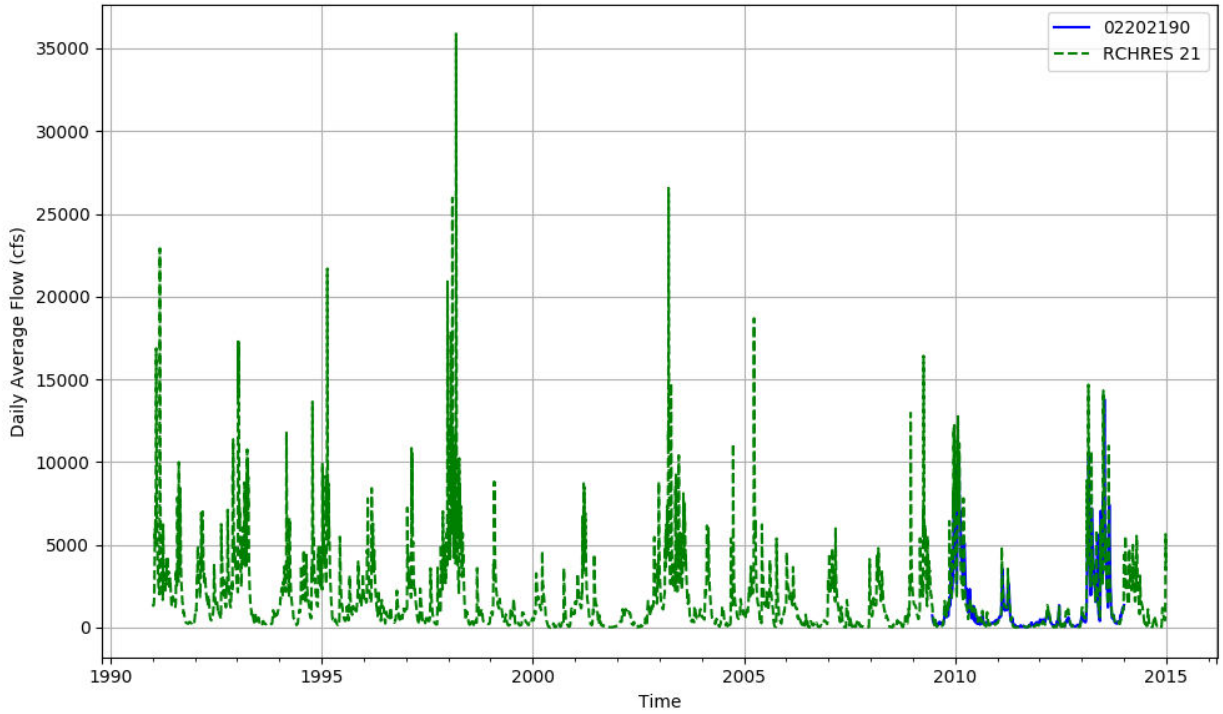


Figure T-03060202-10: Daily flow for HSFP reach 21 and USGS station 02202190.

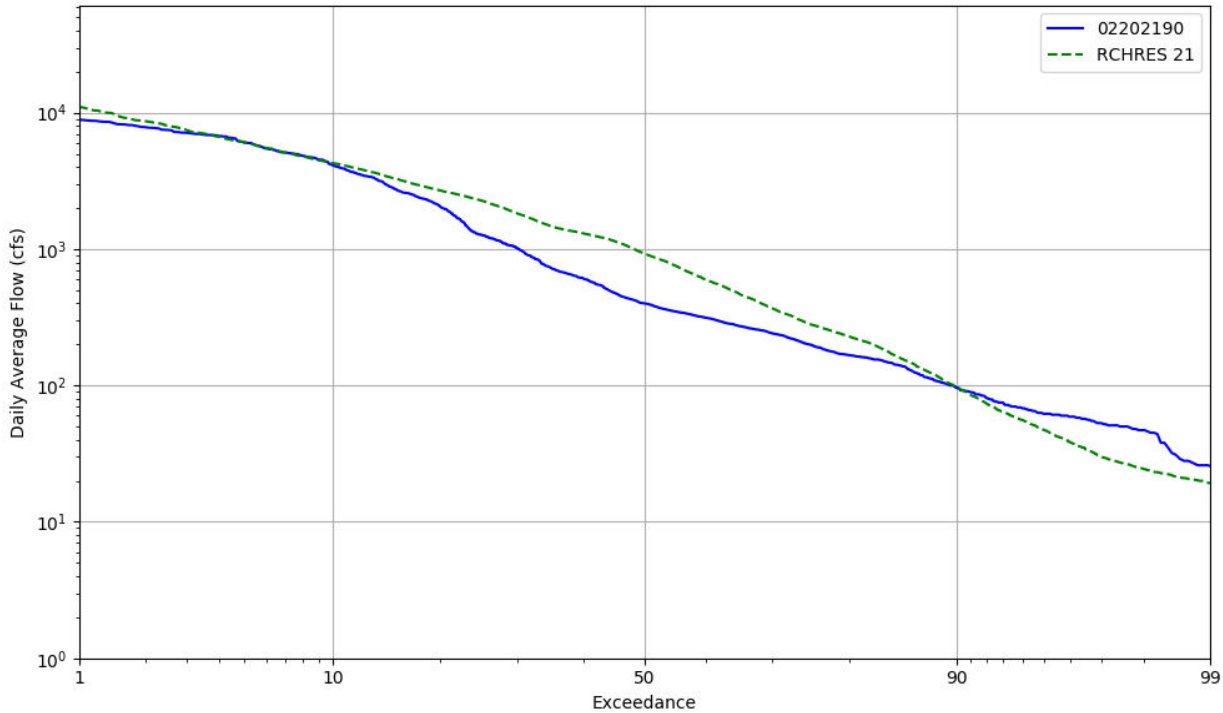


Figure T-03060202-11: Daily exceedance for HSFP reach 21 and USGS station 02202190.

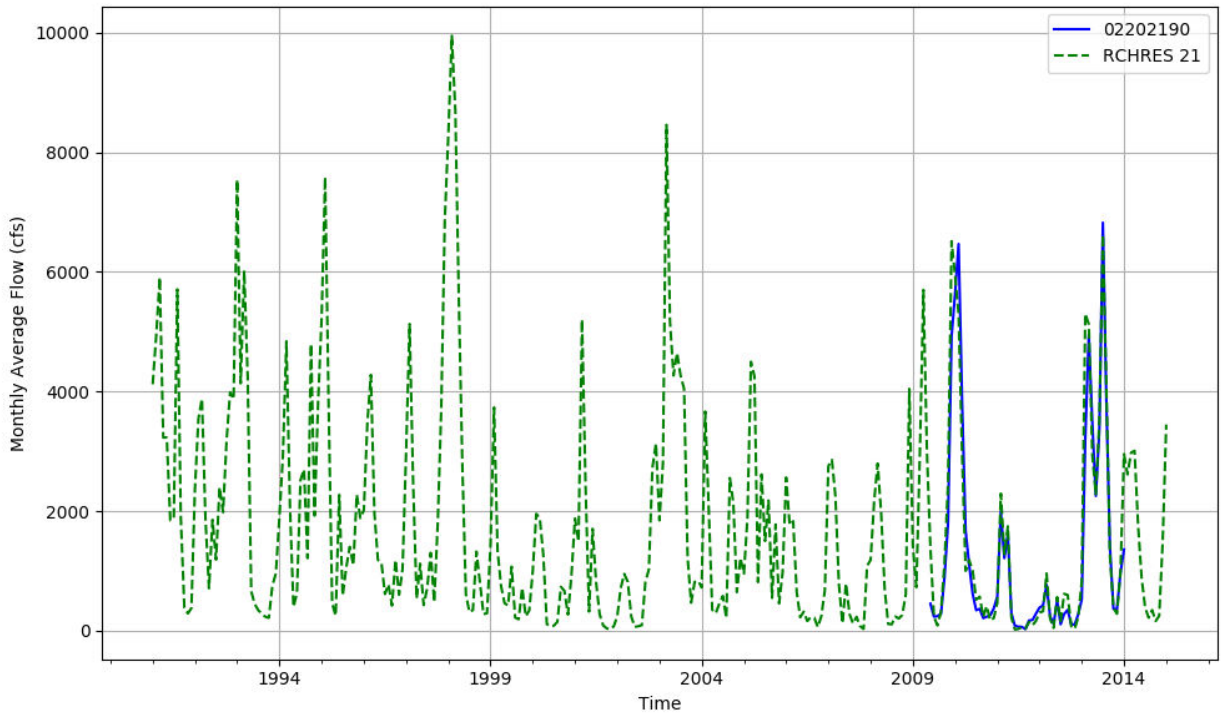


Figure T-03060202-12: Monthly flow for HSFP reach 21 and USGS station 02202190.

HSPF REACH 23, USGS GAUGE 02202500

Water-Data Report 2009
02202500 OGEECHEE RIVER NEAR EDEN, GA
Ogeechee Basin Lower Ogeechee Subbasin

LOCATION.--Lat 321129, long 812458 referenced to North American Datum of 1927, Effingham County, GA, Hydrologic Unit 03060202, on right bank 600 feet downstream from bridge on US 80, 2.0 miles west of Eden, 2.0 miles upstream from Seaboard Coast Line Railroad bridge, and 3.0 miles upstream from Black Creek.

DRAINAGE AREA.--2,650 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 17.64 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by U.S. Army Corps of Engineers). Prior to October 1, 2001, datum of gage was 19.64 feet above NGVD. Prior to October 1, 1939, a non-recording gage was located at site 600 feet upstream at same datum.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Discharge records good except for estimated periods, which are fair. Discharge may be affected by possible storage upstream. Gage-height records good.

Table T-03060202-7: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02202500.

Statistic	Value
Bias	-198.44
Standard error	647.67
Relative bias	-0.10
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.93
Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03060202-8: Hydrologic Indices Between USGS Gauge 02202500 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02202500	Simulated Reach 23	Percent Difference

MA1: Mean, all daily flows	2011.21	1814.41	-9.79
MA2: Median, all daily flows	944.00	891.97	-5.51
MA3: CV, all daily flows	101.22	108.55	7.24
MA4: CV, log of all daily flows	111.97	110.85	-1.00
MA5: Mean daily flow / median daily flow	2.13	2.03	-4.52
MA9: (Q10 - Q90) / median daily flow	5.08	4.84	-4.57
MA10: (Q20 - Q80) / median daily flow	2.85	2.81	-1.19
MA11: (Q25 - Q75) / median daily flow	2.25	2.18	-3.00
MA12: Mean monthly flow, January	2774.16	2556.00	-7.86
MA13: Mean monthly flow, February	3780.32	3525.32	-6.75
MA14: Mean monthly flow, March	4299.58	3929.85	-8.60
MA15: Mean monthly flow, April	3199.30	2496.76	-21.96
MA16: Mean monthly flow, May	1311.65	1347.36	2.72
MA17: Mean monthly flow, June	1213.69	1101.71	-9.23
MA18: Mean monthly flow, July	1141.89	1031.98	-9.63
MA19: Mean monthly flow, August	1353.11	1122.02	-17.08
MA20: Mean monthly flow, September	857.77	716.50	-16.47
MA21: Mean monthly flow, October	952.94	768.47	-19.36
MA22: Mean monthly flow, November	833.79	845.51	1.41
MA23: Mean monthly flow, December	1595.98	1582.40	-0.85
ML1: Mean minimum monthly flow, January	1457.29	1232.47	-15.43
ML2: Mean minimum monthly flow, February	2248.09	1864.51	-17.06
ML3: Mean minimum monthly flow, March	2193.52	1994.50	-9.07
ML4: Mean minimum monthly flow, April	1488.39	1470.37	-1.21
ML5: Mean minimum monthly flow, May	685.87	808.02	17.81
ML6: Mean minimum monthly flow, June	493.52	593.59	20.28
ML7: Mean minimum monthly flow, July	675.65	645.09	-4.52
ML8: Mean minimum monthly flow, August	591.00	628.08	6.27
ML9: Mean minimum monthly flow, September	355.00	402.13	13.27
ML10: Mean minimum monthly flow, October	371.70	383.66	3.22
ML11: Mean minimum monthly flow, November	511.78	491.00	-4.06
ML12: Mean minimum monthly flow, December	942.83	855.97	-9.21
ML13: CV of minimum monthly flows	116.75	110.99	-4.94
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.12	-37.07
ML15: Mean minimum annual flow / mean annual flow	0.12	0.08	-31.24
ML16: Median minimum annual flow / median annual flow	0.19	0.09	-52.62
ML20: Ratio of baseflow volume to total flow volume	0.65	0.68	4.23
ML22: Mean annual minimum flow divided by catchment area	2.10	1.68	-20.10
RA1: Mean of positive changes from one day to next (rise rate)	192.99	439.86	
RA2: CV, mean of positive changes from one day to next (rise rate)	273.85	445.39	
RA3: Mean of negative changes from one day to next (fall rate)	151.79	213.06	
RA4: CV, mean of negative changes from one day to next (fall rate)	222.15	589.14	
RA5: Ratio of days that are higher than previous day	0.43	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.04	
RA8: Number of flow reversals from one day to the next	48.96	40.46	
RA9: CV, number of flow reversals from one day to the	22.41	34.38	

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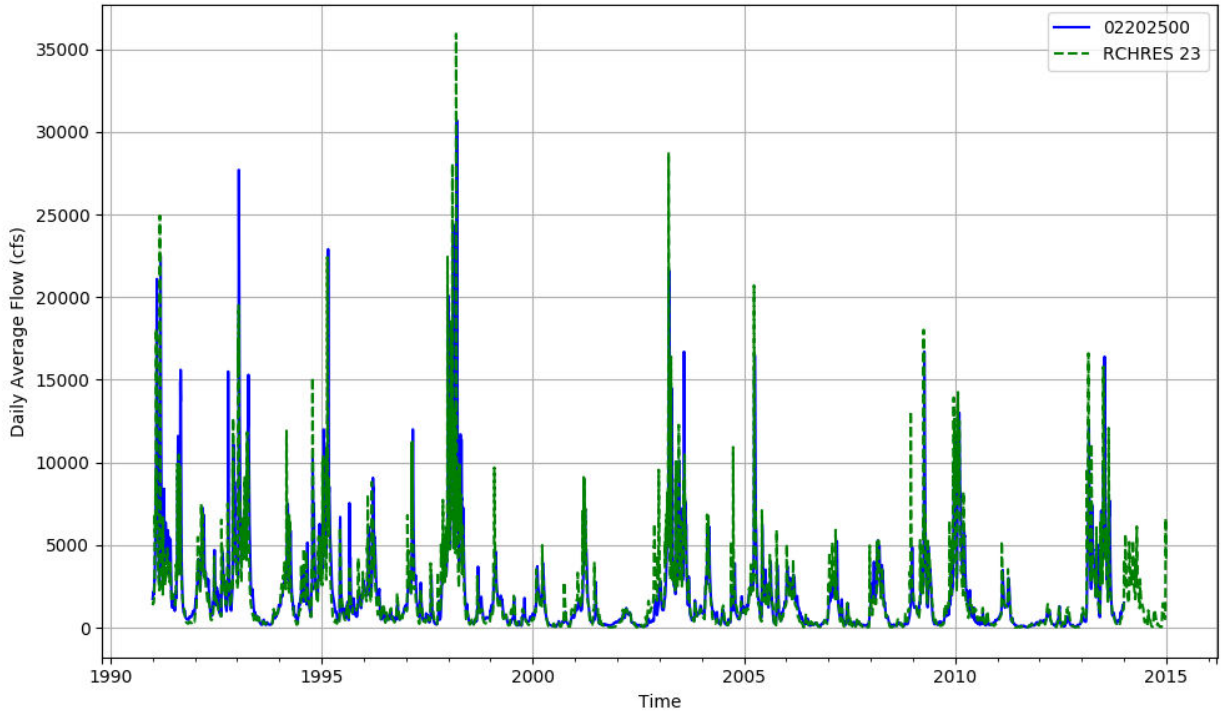


Figure T-03060202-13: Daily flow for HSFP reach 23 and USGS station 02202500.

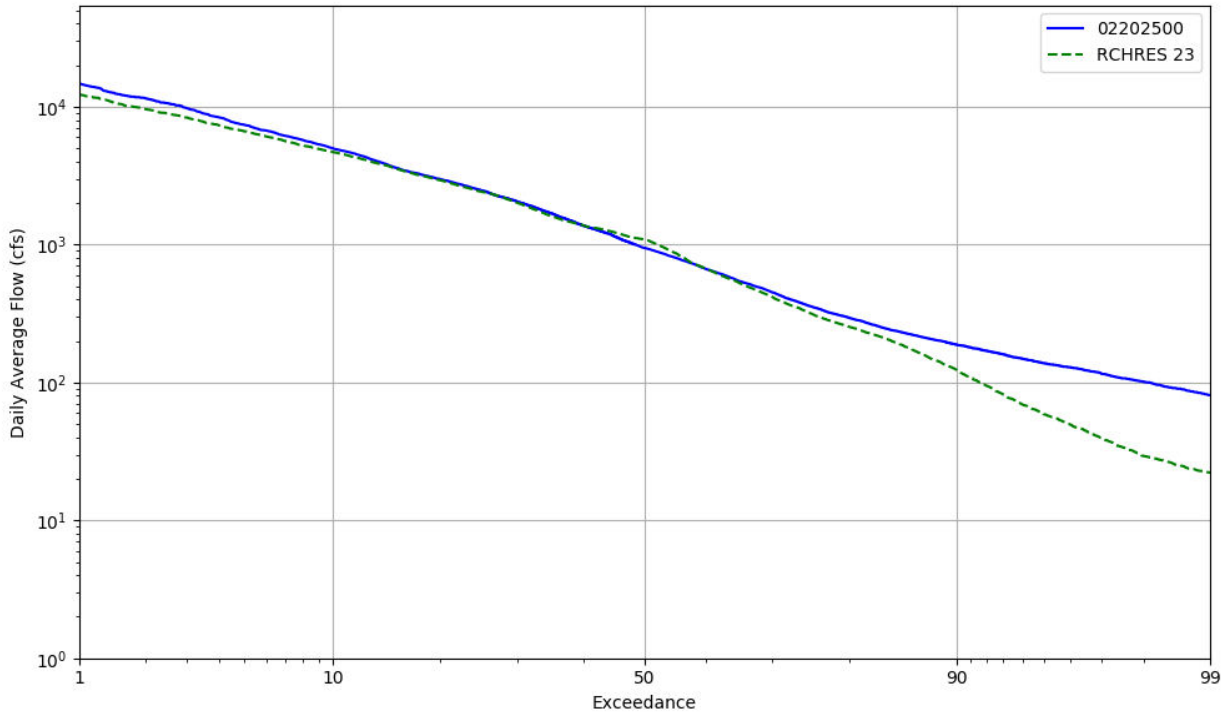


Figure T-03060202-14: Daily exceedance for HSFP reach 23 and USGS station 02202500.

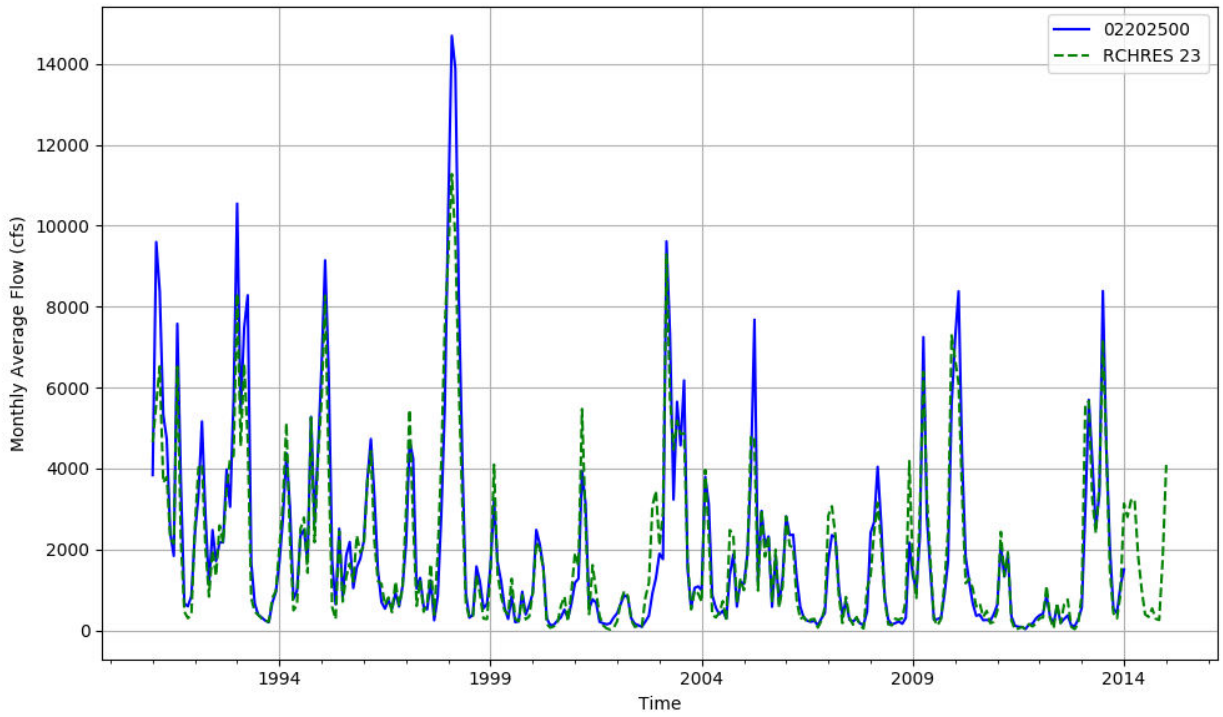


Figure T-03060202-15: Monthly flow for HSFP reach 23 and USGS station 02202500.

HSPF REACH 25, USGS GAUGE 02202680

Water-Data Report 2012
02202680 OGEECHEE RIVER AT GA 204, NEAR ELLABELL, GA
Ogeechee Basin Lower Ogeechee Subbasin

LOCATION.--Lat 320448, long 812308 referenced to North American Datum of 1927, Bryan County, GA, Hydrologic Unit 03060202, on downstream side of bridge at GA 204, 6.2 miles west of Bloomingdale, GA.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 20 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair, except for estimated daily discharges, which are poor. Gage-height records fair.

Table T-03060202-9: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02202680.

Statistic	Value
Bias	-24.04
Standard error	462.70
Relative bias	-0.01
Relative standard error	0.19
Nash-Sutcliffe coefficient	0.96
Coefficient of efficiency	0.84
Index of agreement	0.92

Table T-03060202-10: Hydrologic Indices Between USGS Gauge 02202680 and HSPF Reach 25.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02202680	Simulated Reach 25	Percent Difference
MA1: Mean, all daily flows	1629.45	1592.35	-2.28
MA2: Median, all daily flows	484.00	527.73	9.03
MA3: CV, all daily flows	97.16	106.85	9.98
MA4: CV, log of all daily flows	147.66	140.33	-4.96
MA5: Mean daily flow / median daily flow	3.37	3.02	-10.37
MA9: (Q10 - Q90) / median daily flow	10.23	8.29	-18.95
MA10: (Q20 - Q80) / median daily flow	4.75	4.30	-9.47
MA11: (Q25 - Q75) / median daily flow	2.67	2.74	2.58

MA12: Mean monthly flow, January	2133.34	2147.85	0.68
MA13: Mean monthly flow, February	2876.67	2919.08	1.47
MA14: Mean monthly flow, March	2461.97	2462.52	0.02
MA15: Mean monthly flow, April	1671.07	1463.96	-12.39
MA16: Mean monthly flow, May	842.33	892.37	5.94
MA17: Mean monthly flow, June	961.70	881.16	-8.38
MA18: Mean monthly flow, July	1790.37	1516.21	-15.31
MA19: Mean monthly flow, August	1096.01	1184.58	8.08
MA20: Mean monthly flow, September	610.73	663.96	8.72
MA21: Mean monthly flow, October	216.99	287.51	32.50
MA22: Mean monthly flow, November	195.27	121.21	-37.92
MA23: Mean monthly flow, December	2282.45	2358.11	3.31
ML1: Mean minimum monthly flow, January	1168.40	1006.97	-13.82
ML2: Mean minimum monthly flow, February	1472.25	1251.19	-15.02
ML3: Mean minimum monthly flow, March	1803.50	1780.79	-1.26
ML4: Mean minimum monthly flow, April	1023.00	1178.77	15.23
ML5: Mean minimum monthly flow, May	491.75	674.19	37.10
ML6: Mean minimum monthly flow, June	405.00	603.52	49.02
ML7: Mean minimum monthly flow, July	1165.50	1000.09	-14.19
ML8: Mean minimum monthly flow, August	550.00	687.04	24.92
ML9: Mean minimum monthly flow, September	308.00	455.46	47.88
ML10: Mean minimum monthly flow, October	166.00	157.60	-5.06
ML11: Mean minimum monthly flow, November	182.75	106.10	-41.94
ML12: Mean minimum monthly flow, December	2046.80	1493.10	-27.05
ML13: CV of minimum monthly flows	164.69	148.26	-9.98
ML14: Mean minimum daily flow / mean median annual flow	0.23	0.17	-28.05
ML15: Mean minimum annual flow / mean annual flow	0.17	0.12	-28.77
ML16: Median minimum annual flow / median annual flow	0.14	0.11	-24.14
ML20: Ratio of baseflow volume to total flow volume	0.70	0.69	-0.28
ML22: Mean annual minimum flow divided by catchment area	1.36	0.92	-32.20
RA1: Mean of positive changes from one day to next (rise rate)	130.62	403.99	
RA2: CV, mean of positive changes from one day to next (rise rate)	231.62	428.37	
RA3: Mean of negative changes from one day to next (fall rate)	108.92	208.72	
RA4: CV, mean of negative changes from one day to next (fall rate)	179.78	490.07	
RA5: Ratio of days that are higher than previous day	0.42	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.05	
RA8: Number of flow reversals from one day to the next	44.80	38.40	
RA9: CV, number of flow reversals from one day to the next	48.22	42.89	

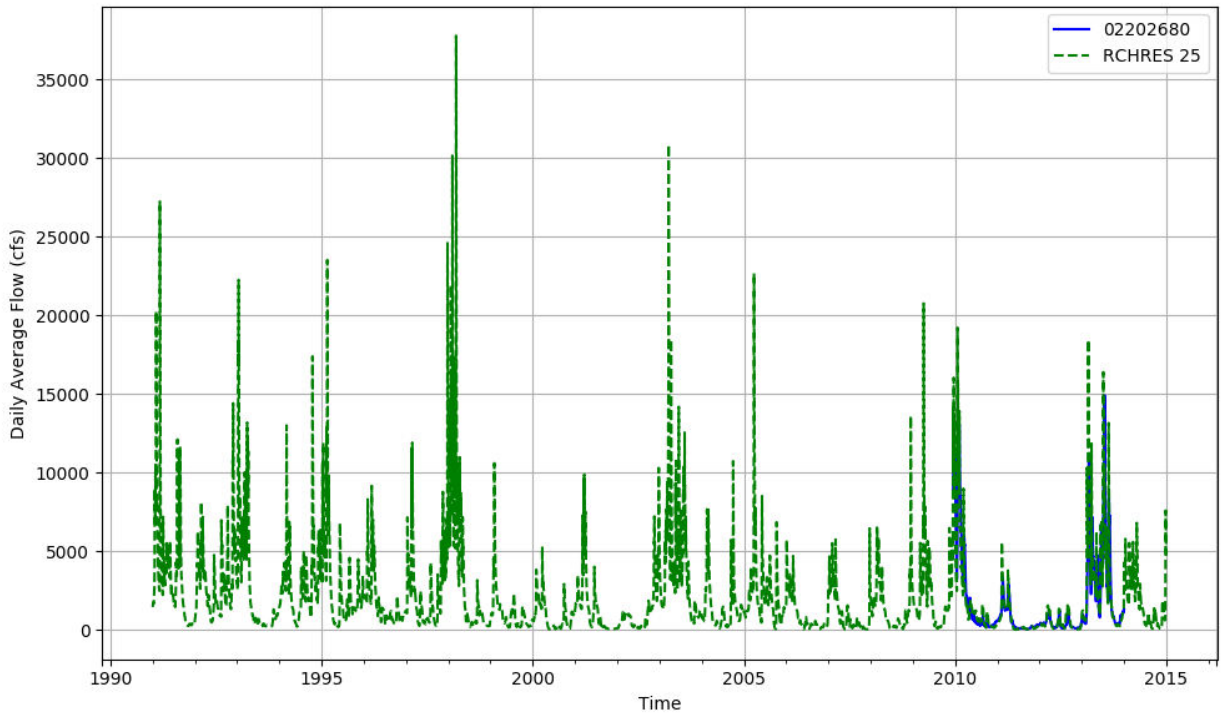


Figure T-03060202-16: Daily flow for HSFP reach 25 and USGS station 02202680.

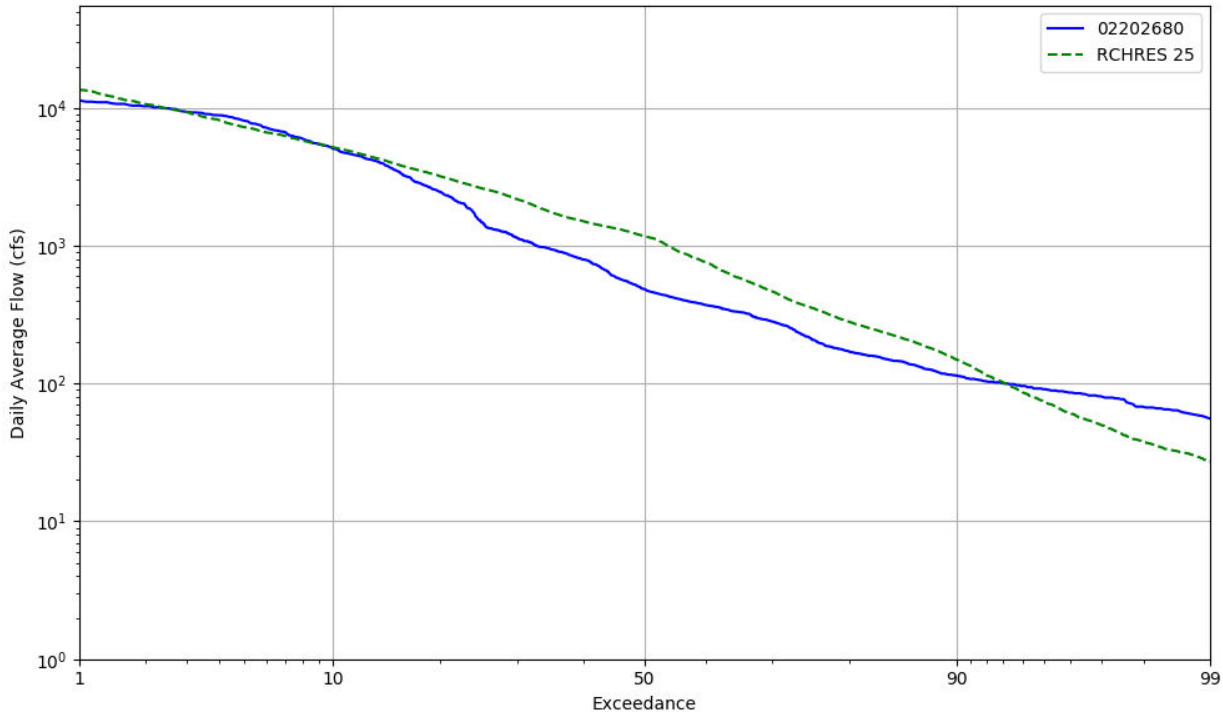


Figure T-03060202-17: Daily exceedance for HSFP reach 25 and USGS station 02202680.

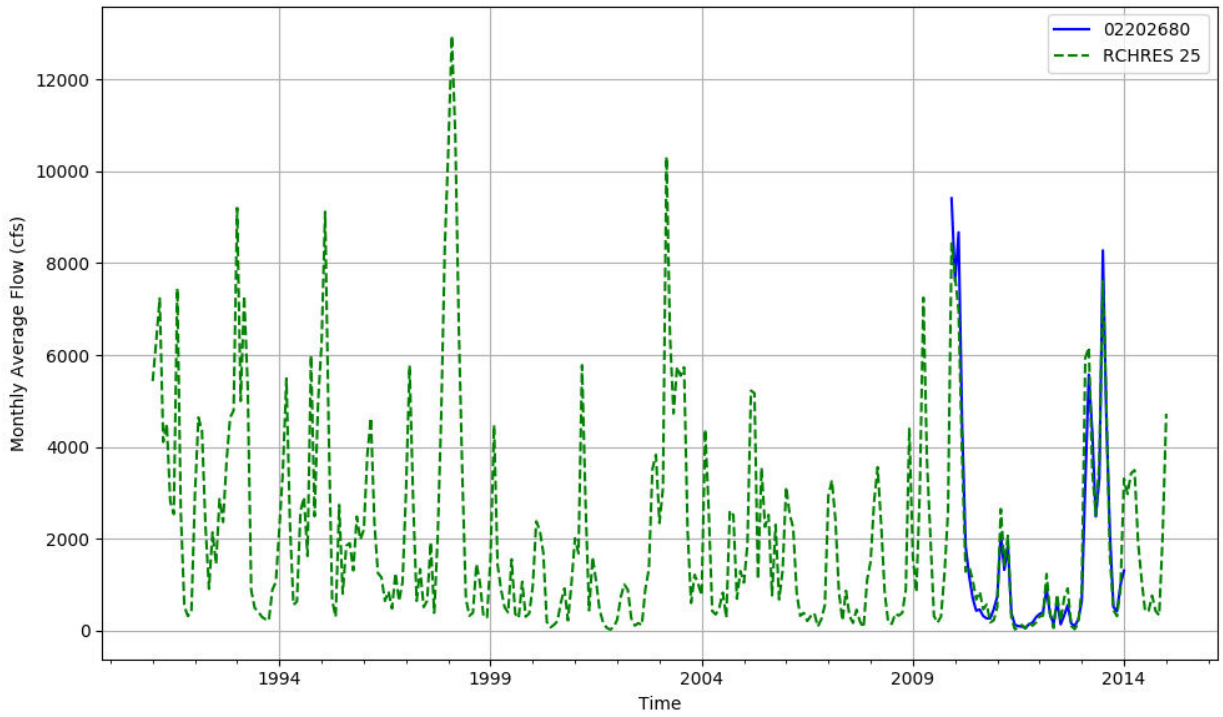


Figure T-03060202-18: Monthly flow for HSFP reach 25 and USGS station 02202680.

Table T-03060202-11: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4642	29271	8554	1253	232	360	211914	57635	40751	23250	133701	220918	108	21695	1637	755922
AREA(%)	0.6	3.9	1.1	0.2	0.0	0.0	27.9	7.6	5.4	3.1	17.6	29.1	0.0	2.9	0.2	99.6
IMPERVIOUS																
AREA(ACRES)		1557	976	329	253											3115
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	33.6	33.3	33.3	33.1	33.1	34.0	33.4	33.1	33.2	32.9	32.9	33.2	61.5	40.4	34.3	33.3
SURLI		0.0	6.4	6.1	4.2										3.3	0.1
UZLI																0.0
LZLI		0.0	1.0	1.0	0.9									0.0	12.5	0.0
SURO: PERVIOUS		0.2	0.4	0.5	0.4	0.3	0.0	0.2	0.1	0.1	0.0		1.3	0.1	0.2	0.0
SURO: IMPERVIOUS		24.0	24.0	23.9	23.9											0.1
SURO: COMBINED		1.4	2.9	5.3	12.6	0.3	0.0	0.2	0.1	0.1	0.0		1.3	0.1	0.2	0.1
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
AGWO	3.6	6.1	11.1	10.7	8.0	10.7	1.8	9.4	6.1	6.3	3.5	1.8	18.7	9.8	13.4	3.6
AGWI	15.8	7.1	12.4	12.0	9.1	12.2	2.5	10.7	7.1	7.3	4.1	4.6	20.4	11.4	15.3	5.1
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		8.8	8.7	8.6	12.4	5.7	15.1	8.7	8.7	8.5	16.7	14.1	28.2	11.7	17.6	13.5
UZET	5.1	1.6	1.9	1.9	1.5	1.9	0.4	1.8	1.3	1.2	0.7	8.4	2.1	1.7	1.2	3.1
LZET	6.5	20.5	21.7	21.8	19.4	17.4	20.9	15.8	21.0	21.0	17.1	10.2	11.1	20.8	19.8	16.5
AGWET	13.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.2	0.1	0.2	0.2	1.1
BASET	0.7	1.5	1.8	1.8	1.7	2.0	0.8	1.9	1.6	1.5	1.0	0.5	2.2	2.1	2.3	1.0
SURET	8.5											0.3				0.1
PERO	3.6	6.3	11.6	11.2	8.4	11.0	1.8	9.5	6.1	6.4	3.5	1.8	20.1	10.0	13.5	3.6
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	34.8	32.5	34.4	34.3	35.2	27.3	37.3	28.3	32.8	32.5	35.6	36.6	43.7	36.5	41.1	35.3
IMPEV: IMPERVIOUS		9.3	9.2	9.1	9.2											0.0
ET: COMBINED	34.8	31.4	31.8	29.1	21.7	27.3	37.3	28.3	32.8	32.5	35.6	36.6	43.7	36.5	41.1	35.4
PET	47.9	47.8	47.8	47.8	47.9	48.0	47.8	47.8	47.8	47.7	47.8	47.8	47.9	47.7	47.7	47.6

Table T-03060202-12: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4642	29271	8554	1253	232	360	211914	57635	40751	23250	133701	220918	108	21695	1637	755922
AREA(%)	0.6	3.9	1.1	0.2	0.0	0.0	27.9	7.6	5.4	3.1	17.6	29.1	0.0	2.9	0.2	99.6
IMPERVIOUS																
AREA(ACRES)		1557	976	329	253											3115
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	55.8	55.7	55.5	54.8	55.0	57.5	55.8	55.4	55.5	54.3	54.8	55.4	59.1	56.2	55.2	55.2
SURLI		0.0	6.8	6.5	4.7										0.5	0.1
UZLI																0.0
LZLI		0.0	1.1	1.0	1.0									0.0	1.1	0.0
SURO: PERVIOUS		1.5	2.5	2.4	2.1	1.5	0.1	1.2	0.8	0.8	0.4		2.1	0.8	0.4	0.4
SURO: IMPERVIOUS		45.2	44.9	44.2	44.5											0.2
SURO: COMBINED		3.7	6.8	11.1	24.2	1.5	0.1	1.2	0.8	0.8	0.4		2.1	0.8	0.4	0.5
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	6.3	14.5	20.3	19.5	17.3	22.7	7.7	20.0	14.8	14.0	10.6	4.5	16.3	14.6	12.1	9.4
AGWI	24.6	17.1	23.1	22.3	19.9	26.0	9.8	23.1	17.5	16.6	12.6	13.3	19.0	17.3	14.3	13.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		9.9	9.9	9.9	13.9	6.6	16.7	9.9	9.9	9.8	18.7	15.6	10.1	11.6	19.2	15.0
UZET	4.4	2.6	2.8	2.7	2.2	3.3	1.0	2.8	2.3	2.1	1.3	14.4	2.8	2.1	1.4	5.3
LZET	4.9	22.7	23.4	23.4	21.0	18.4	25.1	16.7	23.1	23.1	19.6	9.3	23.0	22.5	19.6	18.3
AGWET	16.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	5.2	0.2	0.2	0.2	1.7
BASET	1.4	2.2	2.4	2.4	2.3	2.8	1.5	2.6	2.2	2.2	1.6	1.1	2.3	2.3	1.8	1.6
SURET	17.5											1.1				0.4
PERO	6.3	16.0	22.7	21.9	19.4	24.2	7.8	21.1	15.6	14.8	10.9	4.5	18.4	15.4	12.5	9.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	44.1	37.6	38.7	38.6	39.5	31.3	44.5	32.3	37.7	37.3	41.3	46.8	38.3	38.7	42.1	42.4
IMPEV: IMPERVIOUS		10.5	10.5	10.5	10.5											0.0
ET: COMBINED	44.1	36.2	35.8	32.8	24.4	31.3	44.5	32.3	37.7	37.3	41.3	46.8	38.3	38.7	42.1	42.4
PET	54.2	54.2	54.2	54.3	54.3	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.3	54.2	54.2	54.0

Table T-03060202-13: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4642	29271	8554	1253	232	360	211914	57635	40751	23250	133701	220918	108	21695	1637	755922
AREA(%)	0.6	3.9	1.1	0.2	0.0	0.0	27.9	7.6	5.4	3.1	17.6	29.1	0.0	2.9	0.2	99.6
IMPERVIOUS																
AREA(ACRES)		1557	976	329	253											3115
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	42.4	42.6	42.6	42.6	43.1	42.9	42.4	42.4	42.6	41.8	42.6	42.4	44.1	44.0	43.6	42.3
SURLI		0.0	6.9	6.6	4.9										0.7	0.1
UZLI																0.0
LZLI		0.0	1.1	1.1	1.0									0.0	1.5	0.0
SURO: PERVIOUS		1.9	2.5	2.5	2.4	1.8	0.2	1.4	1.1	1.1	0.7		2.5	1.1	0.7	0.5
SURO: IMPERVIOUS		34.3	34.3	34.2	34.6											0.1
SURO: COMBINED		3.5	5.8	9.1	19.2	1.8	0.2	1.4	1.1	1.1	0.7		2.5	1.1	0.7	0.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	10.3	10.1	15.2	14.8	12.7	15.8	7.7	14.6	10.8	10.4	8.6	9.3	10.4	11.1	9.8	9.4
AGWI	23.1	12.1	17.6	17.3	15.1	18.6	8.8	17.3	12.9	12.5	10.1	8.8	12.6	13.3	11.7	10.4
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		7.9	7.9	8.0	11.3	5.2	13.6	7.9	7.9	7.9	15.5	12.9	8.0	9.4	16.1	12.3
UZET	3.4	2.3	2.5	2.5	2.0	2.8	0.9	2.5	2.0	1.8	1.2	13.5	2.5	1.9	1.3	5.0
LZET	5.5	23.2	24.0	23.9	22.1	18.5	26.6	17.1	23.7	23.5	21.0	11.3	23.7	23.1	21.1	19.7
AGWET	15.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.4	0.2	0.2	0.2	1.2
BASET	1.0	2.1	2.4	2.4	2.4	2.6	1.4	2.5	2.2	2.1	1.7	0.5	2.2	2.3	2.0	1.4
SURET	15.7											0.4				0.2
PERO	10.3	11.9	17.7	17.3	15.1	17.6	8.0	16.0	11.9	11.5	9.2	9.3	12.9	12.2	10.5	9.9
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	40.7	35.8	37.0	37.0	38.1	29.3	42.8	30.3	36.0	35.5	39.6	42.1	36.6	36.8	40.7	39.8
IMPEV: IMPERVIOUS		8.4	8.4	8.5	8.5											0.0
ET: COMBINED	40.7	34.4	34.1	31.1	22.7	29.3	42.8	30.3	36.0	35.5	39.6	42.1	36.6	36.8	40.7	39.8
PET	50.6	50.6	50.6	50.4	50.6	50.9	50.6	50.5	50.5	50.3	50.4	50.5	51.5	50.2	50.3	50.3

Table T-03060202-14: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4642	29271	8554	1253	232	360	211914	57635	40751	23250	133701	220918	108	21695	1637	755922
AREA(%)	0.6	3.9	1.1	0.2	0.0	0.0	27.9	7.6	5.4	3.1	17.6	29.1	0.0	2.9	0.2	99.6
IMPERVIOUS																
AREA(ACRES)		1557	976	329	253											3115
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	46.2	46.1	46.2	46.2	46.2	46.0	46.1	46.1	46.1	46.0	46.2	46.1	56.0	52.3	47.6	46.1
SURLI		0.0	4.7	4.7	3.8										1.8	0.1
UZLI																0.0
LZLI		0.0	1.0	0.9	0.9									0.0	6.8	0.0
SURO: PERVIOUS	0.1	1.0	1.5	1.6	1.5	1.0	0.1	0.8	0.6	0.7	0.3	0.0	2.2	0.8	0.5	0.3
SURO: IMPERVIOUS		36.3	36.4	36.5	36.5											0.1
SURO: COMBINED	0.1	2.8	5.1	8.8	19.7	1.0	0.1	0.8	0.6	0.7	0.3	0.0	2.2	0.8	0.5	0.4
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	8.5	11.1	15.0	14.9	13.3	16.6	6.7	15.7	11.4	11.4	8.7	7.1	16.2	14.5	15.7	8.8
AGWI	22.2	13.1	17.3	17.2	15.5	19.1	8.2	18.1	13.4	13.4	10.3	11.8	18.4	16.9	17.9	11.4
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		9.2	9.2	9.2	12.5	6.3	15.1	9.2	9.2	9.2	16.8	14.2	16.0	11.5	17.7	13.6
UZET	3.3	2.1	2.3	2.3	1.9	2.4	0.8	2.3	1.8	1.7	1.1	12.5	2.1	2.1	1.4	4.6
LZET	4.4	20.6	21.4	21.5	19.4	17.1	21.9	15.6	21.0	21.0	17.7	7.6	17.3	21.0	18.7	16.1
AGWET	12.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.6	0.2	0.2	0.2	1.3
BASET	1.3	1.8	2.0	2.0	2.0	2.3	1.2	2.2	1.8	1.8	1.4	0.9	2.0	2.2	2.1	1.4
SURET	18.0											2.1				0.7
PERO	8.6	12.1	16.6	16.5	14.8	17.6	6.8	16.5	11.9	12.0	9.0	7.2	18.4	15.3	16.1	9.1
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	39.2	33.9	35.2	35.2	36.0	28.3	39.2	29.4	34.1	33.9	37.1	40.9	37.5	36.9	40.1	37.7
IMPEV: IMPERVIOUS		9.8	9.8	9.7	9.7											0.0
ET: COMBINED	39.2	32.7	32.6	29.9	22.3	28.3	39.2	29.4	34.1	33.9	37.1	40.9	37.5	36.9	40.1	37.7
PET	48.5	48.4	48.4	48.4	48.5	48.6	48.4	48.4	48.4	48.2	48.3	48.4	48.9	48.2	48.3	48.2

Table T-03060202-15: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
2	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
3	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
4	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
5	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
6	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
7	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
8	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
9	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
10	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
11	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
12	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
13	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
14	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
15	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
16	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
17	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
18	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
19	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
20	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
21	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
22	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
23	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
24	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
25	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998
26	0.998	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.998

Table T-03060202-16: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
2	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
3	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
4	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
5	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
6	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
7	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
8	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
9	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
10	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
11	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
12	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
13	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
14	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
15	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
16	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
17	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
18	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
19	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
20	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
21	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
22	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
23	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
24	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
25	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057
26	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057

Table T-03060202-17: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
2	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
3	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
4	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
5	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
6	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
7	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
8	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
9	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
10	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
11	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
12	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
13	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
14	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
15	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
16	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
17	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
18	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
19	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
20	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
21	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
22	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
23	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
24	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
25	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131
26	0.000	0.050	0.050	0.050	0.100	0.020	0.151	0.050	0.050	0.050	0.200	0.131

Table T-03060202-18: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060202-19: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
2	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
3	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
4	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
5	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
6	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
7	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
8	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
9	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
10	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
11	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
12	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
13	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
14	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
15	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
16	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
17	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
18	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
19	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
20	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
21	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
22	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
23	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
24	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
25	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017
26	0.017	0.339	0.339	0.339	0.339	0.485	0.726	0.485	0.485	0.485	0.581	0.017

Table T-03060202-20: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
2		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
3		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
4		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
5		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
6		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
7		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
8		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
9		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
10		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
11		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
12		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
13		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
14		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
15		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
16		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
17		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
18		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
19		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
20		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
21		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
22		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
23		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
24		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
25		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
26		0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	

Table T-03060202-21: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
2	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
3	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
4	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
5	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
6	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
7	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
8	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
9	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
10	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
11	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
12	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
13	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
14	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
15	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
16	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
17	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
18	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
19	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
20	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
21	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
22	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
23	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
24	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
25	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
26	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603

Table T-03060202-22: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
2	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
3	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
4	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
5	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
6	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
7	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
8	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
9	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
10	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
11	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
12	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
13	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
14	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
15	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
16	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
17	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
18	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
19	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
20	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
21	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
22	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
23	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
24	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
25	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964
26	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964	2.964

Table T-03060202-23: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
2	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
3	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
4	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
5	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
6	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
7	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
8	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
9	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
10	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
11	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
12	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
13	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
14	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
15	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
16	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
17	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
18	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
19	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
20	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
21	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
22	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
23	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
24	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
25	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900
26	0.285	0.602	0.602	0.602	0.602	0.402	0.854	0.402	0.602	0.602	0.703	0.900

Table T-03060202-24: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
2	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
3	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
4	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
5	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
6	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
7	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
8	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
9	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
10	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
11	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
12	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
13	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
14	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
15	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
16	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
17	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
18	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
19	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
20	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
21	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
22	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
23	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
24	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
25	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625
26	1.625	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	1.625

Table T-03060202-25: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.012	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03060203

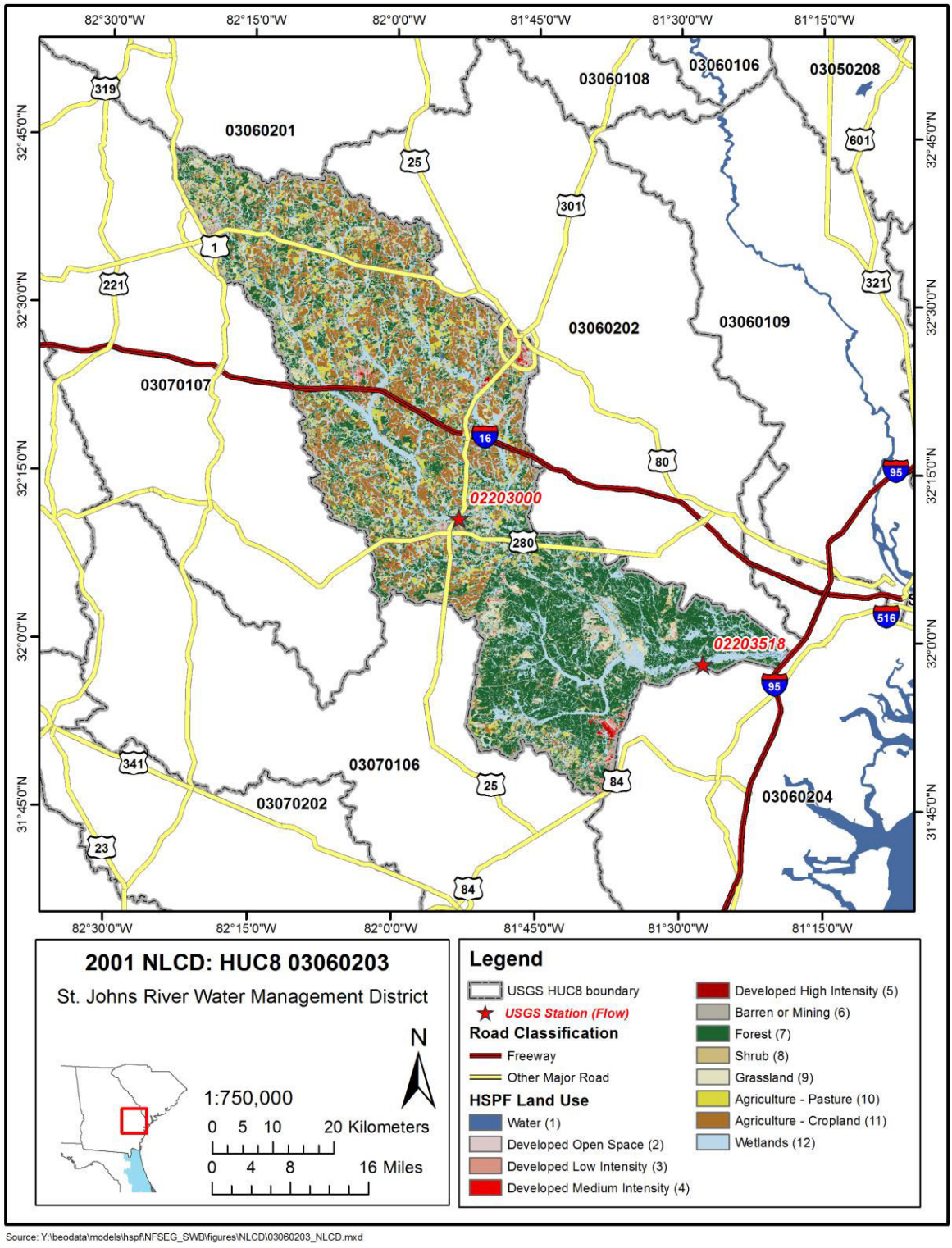


Figure T-03060203-1: Land Cover from the National Land Cover Database.

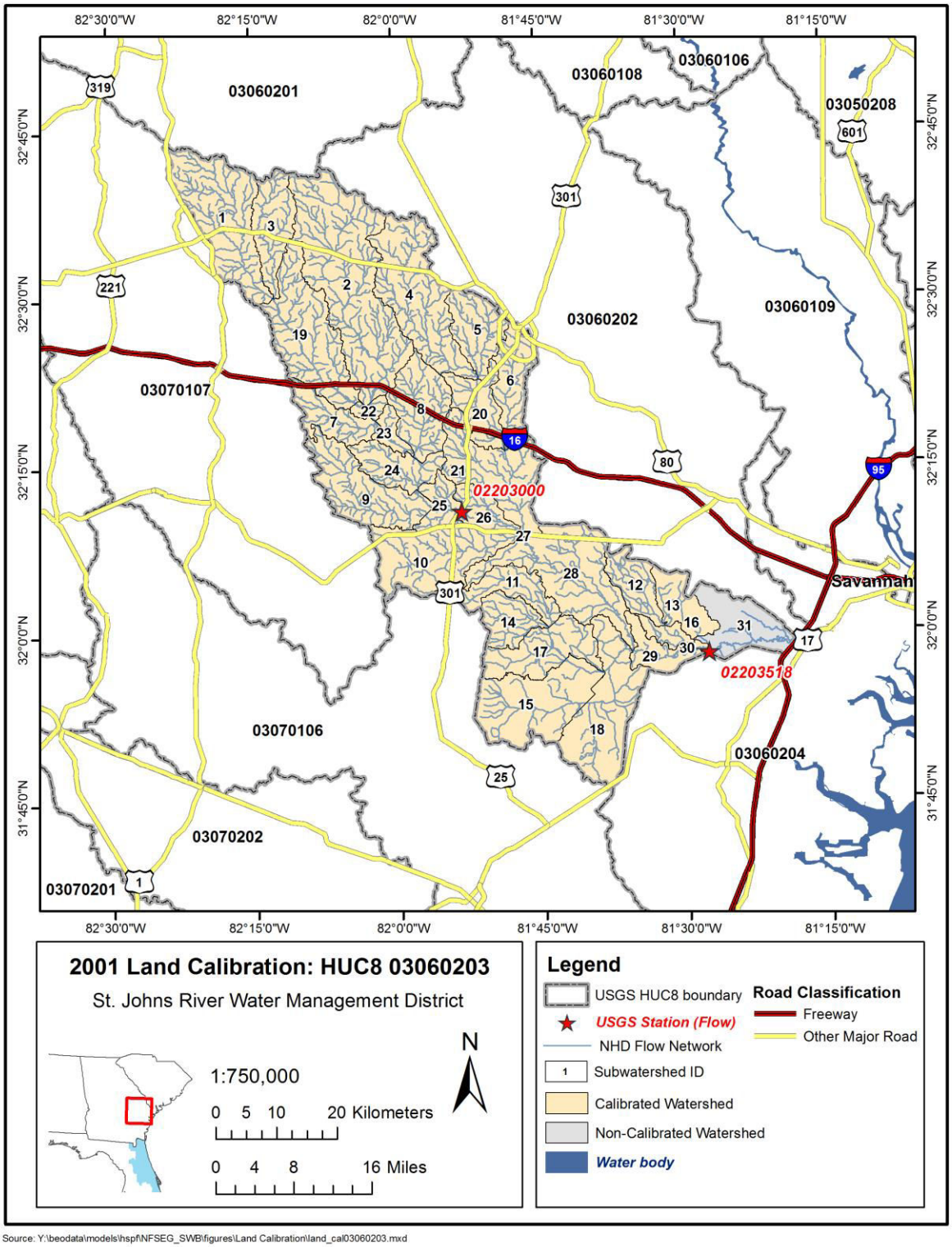


Figure T-03060203-2: Calibrated sub-watersheds.

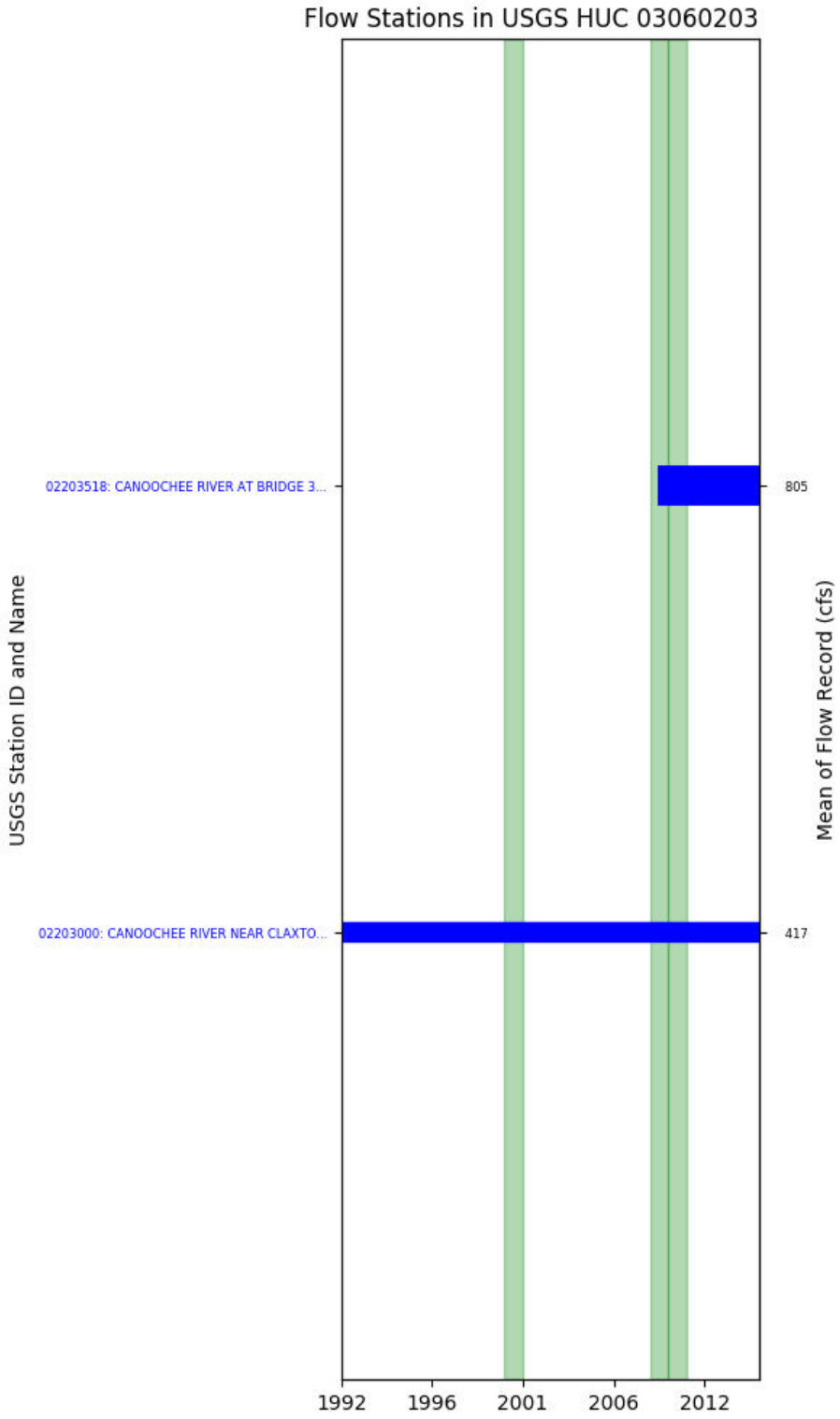


Figure T-03060203-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 25, USGS GAUGE 02203000

Water-Data Report 2009
02203000 CANOOCHEE RIVER NEAR CLAXTON, GA
Ogeechee Basin Canoochee Subbasin

LOCATION.--Lat 321105, long 815320 referenced to North American Datum of 1927, Evans County, GA, Hydrologic Unit 03060203, on right bank 400 feet upstream from bridge on GA 73, 1.9 miles northeast of Claxton, and 10.0 miles upstream from Lotts Creek.

DRAINAGE AREA.--555 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1112: 1939-41, 1944.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 80.5 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). Prior to October 20, 1949, a non-recording gage was located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03060203-1: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02203000.

Statistic	Value
Bias	21.56
Standard error	150.17
Relative bias	0.05
Relative standard error	0.26
Nash-Sutcliffe coefficient	0.93
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03060203-2: Hydrologic Indices Between USGS Gauge 02203000 and HSPF Reach 25.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02203000	Simulated Reach 25	Percent Difference
MA1: Mean, all daily flows	436.29	458.00	4.98
MA2: Median, all daily flows	123.00	198.60	61.46
MA3: CV, all daily flows	138.31	118.08	-14.62
MA4: CV, log of all daily flows	141.08	124.18	-11.98
MA5: Mean daily flow / median daily flow	3.55	2.31	-34.99
MA9: (Q10 - Q90) / median daily flow	9.73	6.00	-38.35
MA10: (Q20 - Q80) / median daily flow	5.67	3.62	-36.09
MA11: (Q25 - Q75) / median daily flow	4.30	2.77	-35.71
MA12: Mean monthly flow, January	656.49	693.84	5.69
MA13: Mean monthly flow, February	913.60	926.86	1.45
MA14: Mean monthly flow, March	943.60	886.47	-6.05
MA15: Mean monthly flow, April	527.24	498.00	-5.55
MA16: Mean monthly flow, May	199.06	183.52	-7.81
MA17: Mean monthly flow, June	241.50	245.27	1.56
MA18: Mean monthly flow, July	233.43	302.41	29.55
MA19: Mean monthly flow, August	386.36	404.99	4.82
MA20: Mean monthly flow, September	187.58	247.60	32.00
MA21: Mean monthly flow, October	210.99	240.68	14.07
MA22: Mean monthly flow, November	173.54	242.26	39.59
MA23: Mean monthly flow, December	389.88	440.24	12.92
ML1: Mean minimum monthly flow, January	255.76	273.82	7.06
ML2: Mean minimum monthly flow, February	385.87	384.62	-0.33
ML3: Mean minimum monthly flow, March	355.19	321.79	-9.40
ML4: Mean minimum monthly flow, April	156.36	156.79	0.28
ML5: Mean minimum monthly flow, May	48.18	52.82	9.63
ML6: Mean minimum monthly flow, June	31.18	47.36	51.87
ML7: Mean minimum monthly flow, July	69.65	130.49	87.35
ML8: Mean minimum monthly flow, August	61.62	129.13	109.56
ML9: Mean minimum monthly flow, September	27.74	52.18	88.09
ML10: Mean minimum monthly flow, October	32.42	55.35	70.74
ML11: Mean minimum monthly flow, November	72.25	113.66	57.32
ML12: Mean minimum monthly flow, December	162.37	200.46	23.45
ML13: CV of minimum monthly flows	160.20	142.43	-11.09
ML14: Mean minimum daily flow / mean median annual flow	0.05	0.04	-20.11
ML15: Mean minimum annual flow / mean annual flow	0.01	0.02	38.26
ML16: Median minimum annual flow / median annual flow	0.03	0.01	-68.37
ML20: Ratio of baseflow volume to total flow volume	0.47	0.53	13.01
ML22: Mean annual minimum flow divided by catchment area	0.07	0.12	71.64
RA1: Mean of positive changes from one day to next (rise rate)	113.39	108.71	
RA2: CV, mean of positive changes from one day to next (rise rate)	269.12	307.74	
RA3: Mean of negative changes from one day to next (fall rate)	64.34	48.29	
RA4: CV, mean of negative changes from one day to next (fall rate)	283.39	235.90	
RA5: Ratio of days that are higher than previous day	0.35	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.15	

RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.09	
RA8: Number of flow reversals from one day to the next	80.62	69.71	
RA9: CV, number of flow reversals from one day to the next	21.45	23.52	

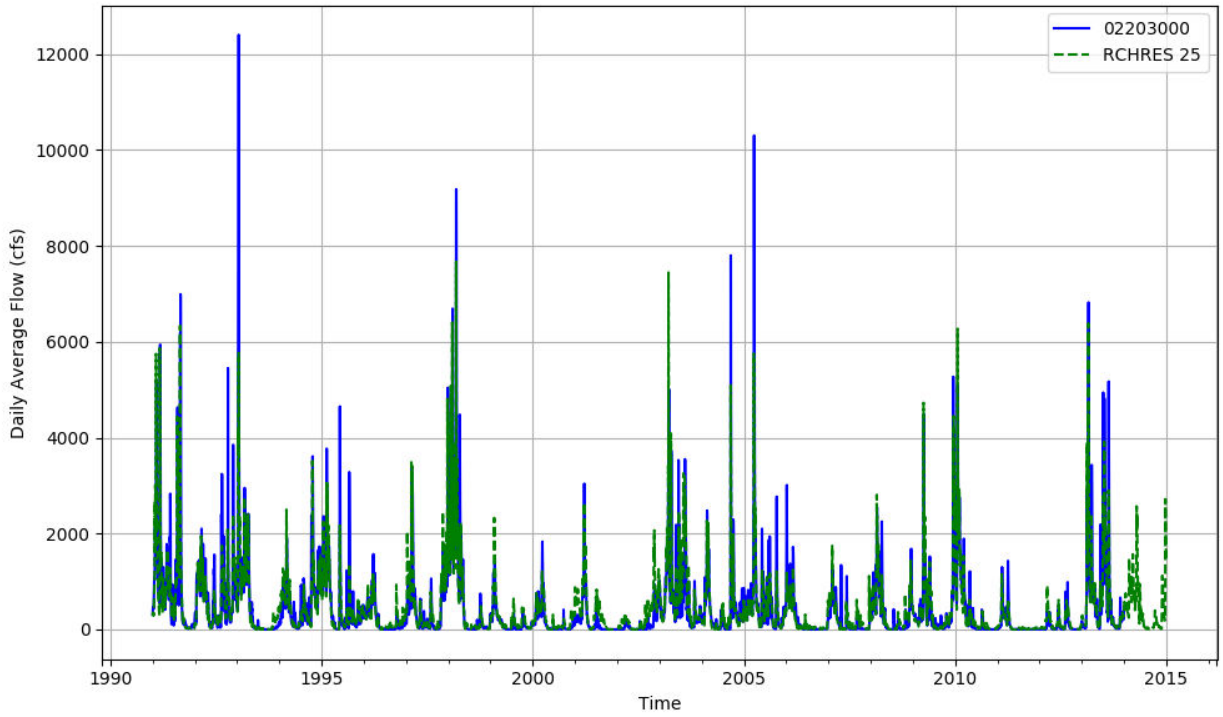


Figure T-03060203-4: Daily flow for HSFP reach 25 and USGS station 02203000.

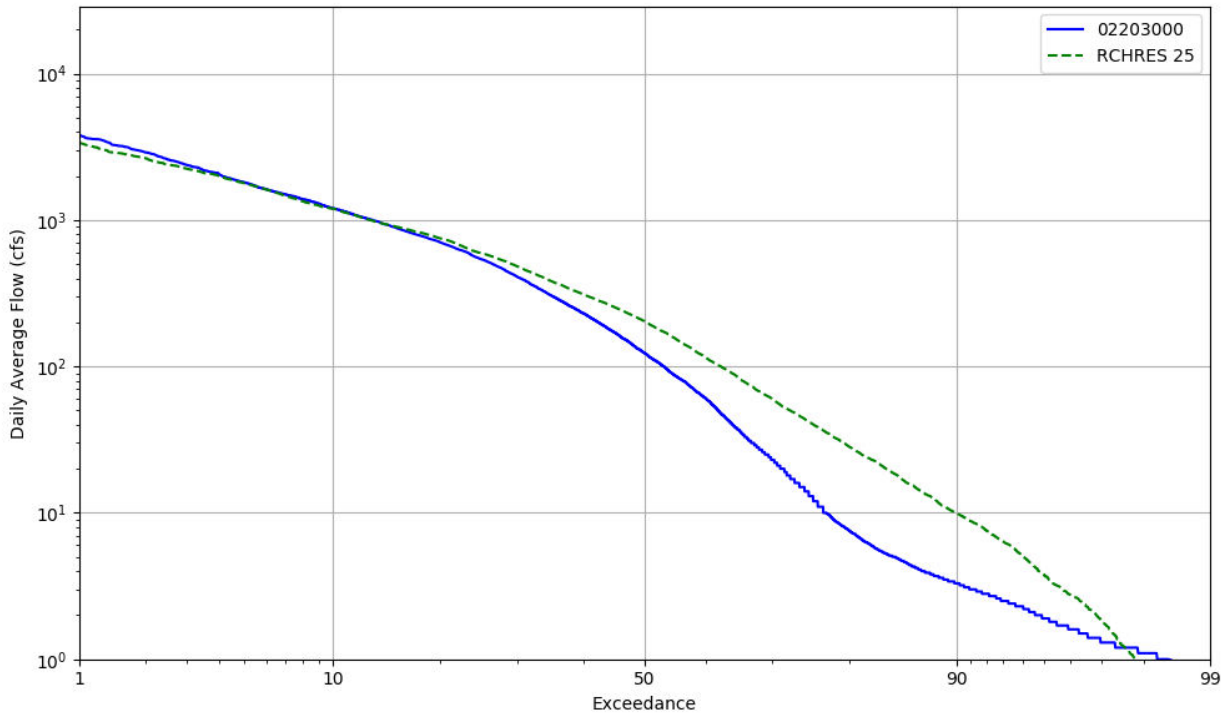


Figure T-03060203-5: Daily exceedance for HSFP reach 25 and USGS station 02203000.

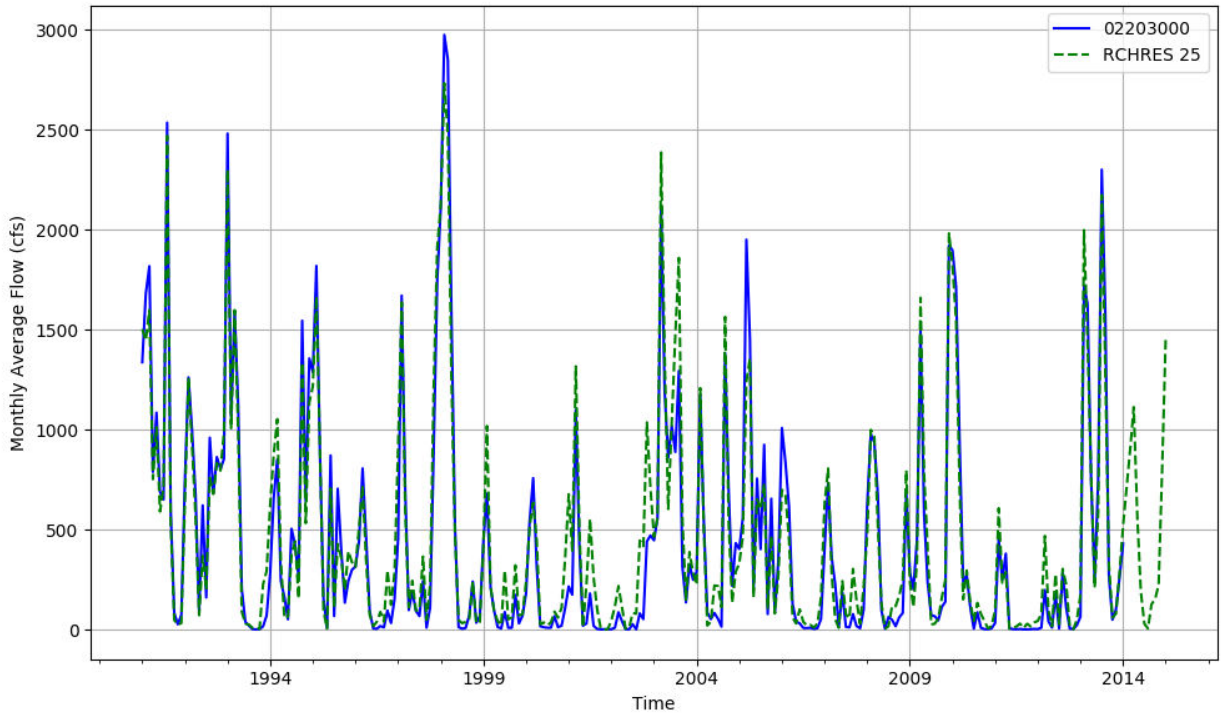


Figure T-03060203-6: Monthly flow for HSFP reach 25 and USGS station 02203000.

HSPF REACH 30, USGS GAUGE 02203518

Water-Data Report 2009
02203000 CANOOCHEE RIVER NEAR CLAXTON, GA
Ogeechee Basin Canoochee Subbasin

LOCATION.--Lat 321105, long 815320 referenced to North American Datum of 1927, Evans County, GA, Hydrologic Unit 03060203, on right bank 400 feet upstream from bridge on GA 73, 1.9 miles northeast of Claxton, and 10.0 miles upstream from Lotts Creek.

DRAINAGE AREA.--555 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1112: 1939-41, 1944.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 80.5 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). Prior to October 20, 1949, a non-recording gage was located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03060203-3: Comparison Statistics Between HSPF Reach 30 and USGS Gauge 02203518.

Statistic	Value
Bias	-6.68
Standard error	310.35
Relative bias	-0.01
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.93
Kling-Gupta coefficient	0.96
Coefficient of efficiency	0.79
Index of agreement	0.89

Table T-03060203-4: Hydrologic Indices Between USGS Gauge 02203518 and HSPF Reach 30.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02203518	Simulated Reach 30	Percent Difference
MA1: Mean, all daily flows	759.97	750.37	-1.26
MA2: Median, all daily flows	162.00	184.85	14.11
MA3: CV, all daily flows	118.58	118.94	0.31
MA4: CV, log of all daily flows	158.92	160.09	0.73
MA5: Mean daily flow / median daily flow	4.69	4.06	-13.47
MA9: (Q10 - Q90) / median daily flow	13.98	10.50	-24.89
MA10: (Q20 - Q80) / median daily flow	6.19	5.14	-17.01
MA11: (Q25 - Q75) / median daily flow	4.15	3.70	-10.75
MA12: Mean monthly flow, January	792.27	875.61	10.52
MA13: Mean monthly flow, February	1198.27	1383.30	15.44
MA14: Mean monthly flow, March	1104.38	1008.41	-8.69
MA15: Mean monthly flow, April	577.14	440.88	-23.61
MA16: Mean monthly flow, May	236.81	186.25	-21.35
MA17: Mean monthly flow, June	508.41	460.40	-9.44
MA18: Mean monthly flow, July	793.24	723.70	-8.77
MA19: Mean monthly flow, August	823.58	651.00	-20.95
MA20: Mean monthly flow, September	273.35	312.84	14.45
MA21: Mean monthly flow, October	103.44	120.11	16.12
MA22: Mean monthly flow, November	91.83	103.85	13.09
MA23: Mean monthly flow, December	636.11	810.17	27.36
ML1: Mean minimum monthly flow, January	559.20	408.34	-26.98
ML2: Mean minimum monthly flow, February	664.00	518.24	-21.95
ML3: Mean minimum monthly flow, March	647.00	622.72	-3.75
ML4: Mean minimum monthly flow, April	322.25	314.88	-2.29
ML5: Mean minimum monthly flow, May	120.00	72.72	-39.40
ML6: Mean minimum monthly flow, June	115.80	98.84	-14.64
ML7: Mean minimum monthly flow, July	363.00	254.46	-29.90
ML8: Mean minimum monthly flow, August	241.20	206.80	-14.26
ML9: Mean minimum monthly flow, September	103.20	90.13	-12.66
ML10: Mean minimum monthly flow, October	47.20	45.67	-3.25
ML11: Mean minimum monthly flow, November	61.20	50.71	-17.14
ML12: Mean minimum monthly flow, December	207.20	206.96	-0.12
ML13: CV of minimum monthly flows	171.93	159.36	-7.31
ML14: Mean minimum daily flow / mean median annual flow	0.25	0.09	-63.18
ML15: Mean minimum annual flow / mean annual flow	0.11	0.04	-59.67
ML16: Median minimum annual flow / median annual flow	0.28	0.07	-75.07
ML20: Ratio of baseflow volume to total flow volume	0.55	0.49	-10.79
ML22: Mean annual minimum flow divided by catchment area	0.43	0.17	-61.45
RA1: Mean of positive changes from one day to next (rise rate)	147.11	162.82	
RA2: CV, mean of positive changes from one day to next (rise rate)	299.26	388.68	
RA3: Mean of negative changes from one day to next (fall rate)	93.21	81.75	
RA4: CV, mean of negative changes from one day to next (fall rate)	256.98	345.01	
RA5: Ratio of days that are higher than previous day	0.35	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.09	0.10	

RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.08	
RA8: Number of flow reversals from one day to the next	39.67	41.67	
RA9: CV, number of flow reversals from one day to the next	45.93	50.93	

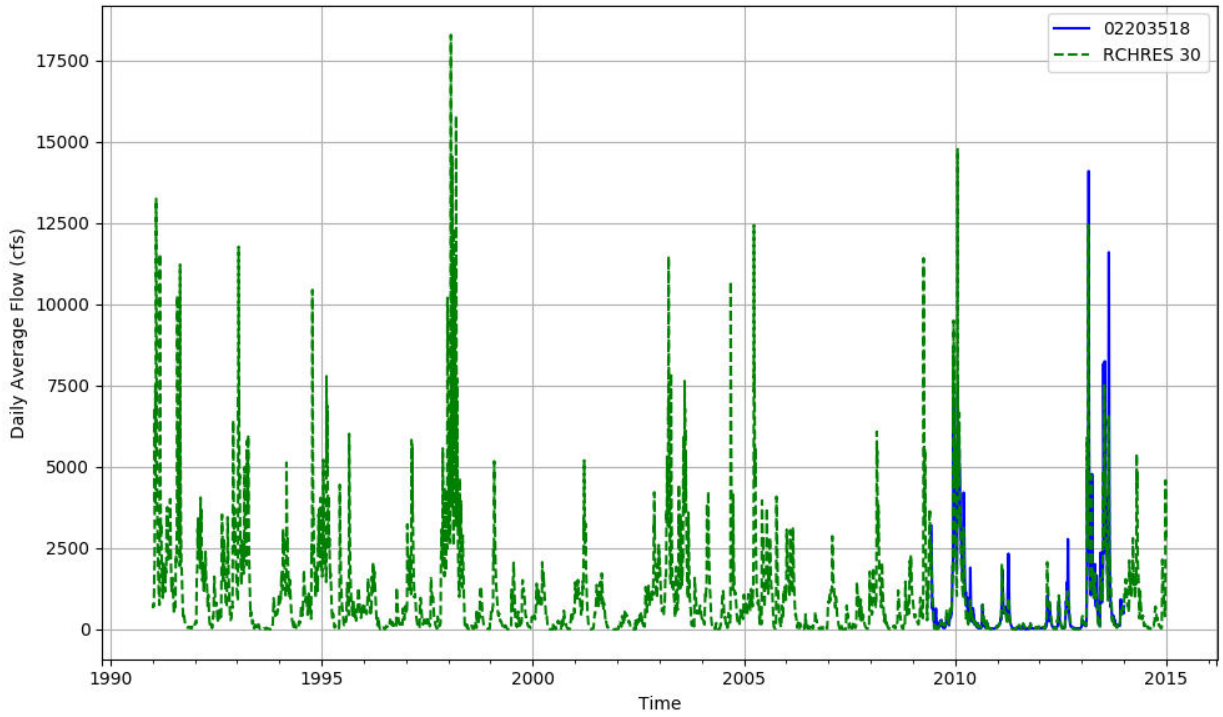


Figure T-03060203-7: Daily flow for HSFP reach 30 and USGS station 02203518.

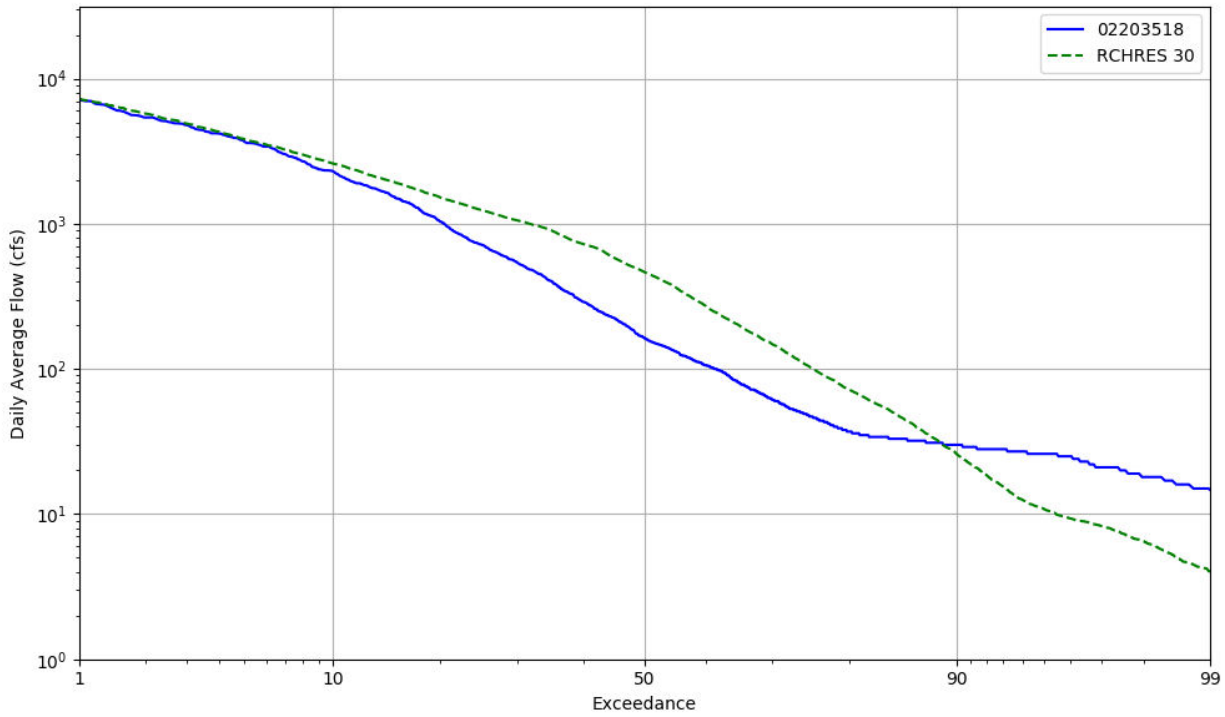


Figure T-03060203-8: Daily exceedance for HSFP reach 30 and USGS station 02203518.

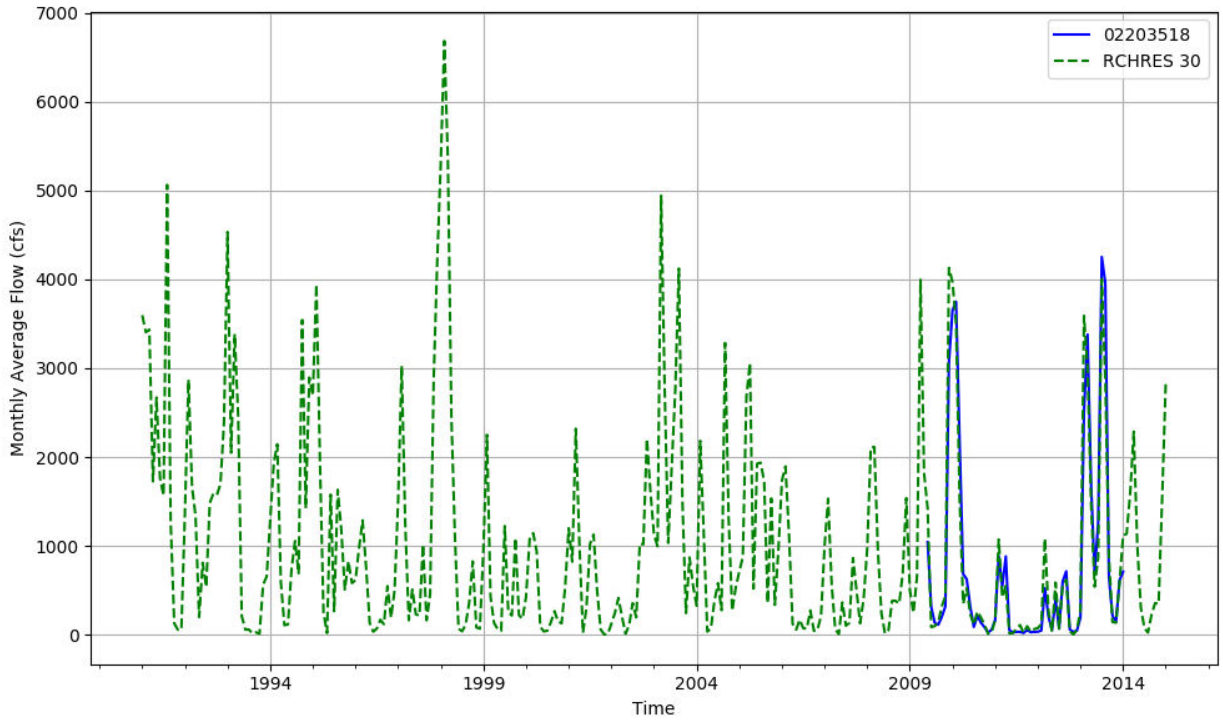


Figure T-03060203-9: Monthly flow for HSFP reach 30 and USGS station 02203518.

Table T-03060203-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3742	42935	13680	3468	720	3052	295831	74735	45363	37693	120858	212250	723	23773	3977	882800
AREA(%)	0.4	4.8	1.5	0.4	0.1	0.3	33.3	8.4	5.1	4.2	13.6	23.9	0.1	2.7	0.4	99.4
IMPERVIOUS																
AREA(ACRES)		2327	1564	903	757											5550
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	37.5	37.8	37.7	37.9	37.2	39.3	38.3	37.9	38.0	37.6	36.9	37.7	64.8	42.1	40.7	37.7
SURLI			3.7	4.4	5.0										2.3	0.1
UZLI																0.0
LZLI			0.6	0.6	0.6										1.4	0.0
SURO: PERVIOUS	4.7	0.5	0.6	0.6	0.3	0.2	0.0	0.3	0.2	0.2	0.0	1.7	2.6	0.2	0.0	0.5
SURO: IMPERVIOUS		21.0	21.1	21.1	20.7											0.1
SURO: COMBINED	4.7	1.5	2.7	4.8	10.8	0.2	0.0	0.3	0.2	0.2	0.0	1.7	2.6	0.2	0.0	0.7
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.9	9.0	11.2	11.5	10.8	14.2	5.6	11.7	9.4	9.5	7.9	1.5	19.5	10.9	10.4	6.2
AGWI	1.9	10.7	13.3	13.6	12.6	16.6	7.3	13.6	11.2	11.2	9.6	2.1	20.8	12.9	12.8	7.7
IGWI	0.3	1.9	2.3	2.4	2.2	2.9	1.3	2.4	1.9	1.9	1.7	0.4	3.6	2.2	2.2	1.3
CEPE		8.8	8.9	9.0	12.8	5.7	13.7	10.9	8.8	8.6	8.7	20.7	28.4	11.4	10.7	13.4
UZET	3.9	2.4	2.5	2.6	2.1	3.1	1.1	2.4	2.1	1.9	1.6	8.3	2.7	2.2	1.9	3.2
LZET	1.7	17.2	17.9	17.9	16.1	13.0	19.3	11.1	17.7	17.8	20.0	0.6	9.0	17.1	20.2	13.7
AGWET	0.9	2.3	2.6	2.6	2.4	2.9	1.9	2.4	2.4	2.4	2.3	0.6	1.2	2.5	2.8	1.8
BASET	0.4	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.4	0.7	0.6	0.6	0.5
SURET	29.9											8.7				2.2
PERO	5.6	9.5	11.8	12.1	11.1	14.4	5.6	12.0	9.5	9.6	7.9	3.2	22.1	11.1	10.5	6.8
IGWI	0.3	1.9	2.3	2.4	2.2	2.9	1.3	2.4	1.9	1.9	1.7	0.4	3.6	2.2	2.2	1.3
TAET: PERVIOUS	36.7	31.3	32.4	32.7	33.9	25.3	36.5	27.4	31.5	31.3	33.1	39.3	42.0	33.8	36.3	34.8
IMPEV: IMPERVIOUS		16.8	16.8	16.9	16.7											0.1
ET: COMBINED	36.7	30.5	30.8	29.4	25.1	25.3	36.5	27.4	31.5	31.3	33.1	39.3	42.0	33.8	36.3	34.9
PET	46.6	46.6	46.6	46.7	46.9	46.7	46.7	46.4	46.5	46.4	46.6	46.6	47.1	46.6	46.5	46.3

Table T-03060203-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3742	42935	13680	3468	720	3052	295831	74735	45363	37693	120858	212250	723	23773	3977	882800
AREA(%)	0.4	4.8	1.5	0.4	0.1	0.3	33.3	8.4	5.1	4.2	13.6	23.9	0.1	2.7	0.4	99.4
IMPERVIOUS																
AREA(ACRES)		2327	1564	903	757											5550
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	56.4	56.1	55.7	55.6	55.6	56.1	56.4	56.0	56.1	56.0	56.2	56.3	63.3	59.3	58.5	56.0
SURLI			4.3	5.1	5.9										1.0	0.1
UZLI																0.0
LZLI			0.8	0.7	0.7										0.4	0.0
SURO: PERVIOUS	7.5	1.5	1.8	1.8	1.2	0.3	0.0	1.1	0.6	0.7	0.1	4.0	2.5	0.7	0.1	1.3
SURO: IMPERVIOUS		37.7	37.4	37.1	37.1											0.2
SURO: COMBINED	7.5	3.4	5.5	9.1	19.6	0.3	0.0	1.1	0.6	0.7	0.1	4.0	2.5	0.7	0.1	1.5
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.1	13.9	17.1	17.5	17.6	21.1	10.7	18.6	14.6	14.6	13.2	1.7	16.8	15.6	15.1	10.3
AGWI	2.3	18.2	21.6	22.0	21.7	26.1	14.3	23.0	19.0	18.9	17.3	2.5	20.8	20.1	19.3	13.5
IGWI	0.4	3.2	3.7	3.8	3.8	4.5	2.5	4.0	3.3	3.3	3.0	0.4	3.6	3.5	3.4	2.3
CEPE		10.2	10.2	10.3	14.2	7.2	14.8	12.2	10.2	10.0	10.1	22.4	16.3	12.3	12.0	14.8
UZET	4.6	2.7	2.8	2.8	2.4	3.2	1.4	2.8	2.4	2.2	2.1	8.9	2.7	2.4	2.2	3.6
LZET	1.6	19.0	19.5	19.5	17.6	13.7	21.6	11.9	19.4	19.5	21.9	0.7	16.5	18.8	21.3	15.1
AGWET	0.8	3.3	3.4	3.4	3.1	3.8	2.6	3.3	3.3	3.3	3.2	0.4	2.9	3.4	3.2	2.3
BASET	0.4	0.7	0.8	0.8	0.8	0.9	0.5	0.8	0.7	0.7	0.6	0.5	0.8	0.8	0.7	0.6
SURET	36.9											13.8				3.4
PERO	8.6	15.4	18.9	19.2	18.8	21.4	10.8	19.6	15.2	15.3	13.3	5.7	19.3	16.3	15.2	11.6
IGWI	0.4	3.2	3.7	3.8	3.8	4.5	2.5	4.0	3.3	3.3	3.0	0.4	3.6	3.5	3.4	2.3
TAET: PERVIOUS	44.3	35.9	36.7	36.9	38.1	28.8	40.9	31.0	35.9	35.7	37.8	46.6	39.1	37.7	39.4	39.9
IMPEV: IMPERVIOUS		18.2	18.2	18.3	18.3											0.1
ET: COMBINED	44.3	35.0	34.8	33.0	27.9	28.8	40.9	31.0	35.9	35.7	37.8	46.6	39.1	37.7	39.4	40.0
PET	54.1	54.0	54.0	54.0	54.0	54.0	54.0	53.9	54.0	54.0	54.1	54.0	54.2	54.2	54.1	53.7

Table T-03060203-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3742	42935	13680	3468	720	3052	295831	74735	45363	37693	120858	212250	723	23773	3977	882800
AREA(%)	0.4	4.8	1.5	0.4	0.1	0.3	33.3	8.4	5.1	4.2	13.6	23.9	0.1	2.7	0.4	99.4
IMPERVIOUS																
AREA(ACRES)		2327	1564	903	757											5550
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	40.4	39.7	39.7	39.4	39.5	38.1	39.3	39.7	39.6	40.3	40.6	39.9	50.0	42.9	42.7	39.6
SURLI			4.5	5.4	6.2										1.6	0.1
UZLI																0.0
LZLI			0.8	0.7	0.7										0.5	0.0
SURO: PERVIOUS	9.3	1.4	1.5	1.5	1.2	0.4	0.2	0.9	0.7	0.8	0.3	7.4	2.1	0.9	0.3	2.2
SURO: IMPERVIOUS		24.9	24.9	24.5	24.6											0.2
SURO: COMBINED	9.3	2.6	3.9	6.2	13.2	0.4	0.2	0.9	0.7	0.8	0.3	7.4	2.1	0.9	0.3	2.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.7	7.7	10.5	10.7	10.9	12.1	6.9	11.3	8.4	8.8	8.4	1.5	11.1	9.6	9.4	6.5
AGWI	1.9	11.1	14.3	14.6	14.5	16.4	9.0	15.1	11.9	12.3	11.5	1.8	14.2	13.1	12.9	8.7
IGWI	0.3	1.9	2.5	2.5	2.5	2.8	1.6	2.6	2.1	2.1	2.0	0.3	2.5	2.3	2.2	1.5
CEPE		8.2	8.2	8.2	11.5	5.6	12.1	9.9	8.2	8.2	8.3	18.8	16.4	9.8	10.4	12.1
UZET	5.5	2.0	2.1	2.1	1.8	2.2	1.0	2.0	1.7	1.7	1.6	10.7	2.1	1.8	1.7	3.6
LZET	2.4	18.7	19.4	19.5	18.0	13.6	21.5	12.1	19.0	19.1	21.6	0.8	15.4	18.8	21.1	15.1
AGWET	1.1	3.4	3.5	3.5	3.3	3.7	2.5	3.3	3.5	3.5	3.3	0.4	2.7	3.3	3.4	2.3
BASET	0.3	0.6	0.8	0.8	0.8	0.8	0.4	0.8	0.6	0.7	0.5	0.3	0.8	0.7	0.7	0.5
SURET	27.5											7.9				2.0
PERO	10.0	9.1	12.0	12.2	12.1	12.5	7.1	12.2	9.1	9.6	8.7	8.9	13.2	10.5	9.6	8.7
IGWI	0.3	1.9	2.5	2.5	2.5	2.8	1.6	2.6	2.1	2.1	2.0	0.3	2.5	2.3	2.2	1.5
TAET: PERVIOUS	36.8	32.9	34.0	34.1	35.2	26.0	37.4	28.2	33.0	33.1	35.3	38.9	37.4	34.5	37.3	35.7
IMPEV: IMPERVIOUS		15.0	15.0	15.1	15.0											0.1
ET: COMBINED	36.8	32.0	32.0	30.2	24.9	26.0	37.4	28.2	33.0	33.1	35.3	38.9	37.4	34.5	37.3	35.7
PET	50.4	50.6	50.5	50.6	50.5	51.3	50.9	50.4	50.6	50.3	50.2	50.6	50.4	50.6	50.7	50.3

Table T-03060203-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3742	42935	13680	3468	720	3052	295831	74735	45363	37693	120858	212250	723	23773	3977	882800
AREA(%)	0.4	4.8	1.5	0.4	0.1	0.3	33.3	8.4	5.1	4.2	13.6	23.9	0.1	2.7	0.4	99.4
IMPERVIOUS																
AREA(ACRES)		2327	1564	903	757											5550
AREA(%)		0.3	0.2	0.1	0.1											0.6
SUPY	47.2	46.7	46.8	46.6	46.5	46.2	46.5	46.8	46.8	47.2	47.2	46.8	65.6	52.7	50.0	46.7
SURLI			3.7	4.4	5.1										2.0	0.1
UZLI																0.0
LZLI			0.6	0.5	0.6										1.4	0.0
SURO: PERVIOUS	7.8	1.2	1.3	1.3	0.9	0.4	0.1	0.8	0.5	0.6	0.1	5.2	3.0	0.7	0.2	1.5
SURO: IMPERVIOUS		30.4	30.4	30.2	30.2											0.2
SURO: COMBINED	7.8	2.7	4.3	7.3	15.9	0.4	0.1	0.8	0.5	0.6	0.1	5.2	3.0	0.7	0.2	1.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.0	11.1	13.7	14.0	14.0	16.3	8.3	14.8	11.6	11.9	10.8	1.6	20.1	14.2	13.8	8.3
AGWI	2.2	14.2	17.2	17.5	17.2	20.3	10.8	18.2	14.8	15.1	13.8	2.4	22.6	17.7	17.2	10.6
IGWI	0.4	2.5	3.0	3.0	3.0	3.5	1.9	3.2	2.6	2.6	2.4	0.4	3.9	3.1	3.0	1.8
CEPE		9.4	9.4	9.5	12.9	6.6	13.5	11.3	9.4	9.4	9.5	20.0	21.6	11.6	11.0	13.4
UZET	3.6	2.2	2.3	2.4	2.0	2.6	1.1	2.3	1.9	1.9	1.7	8.0	2.3	2.1	2.0	3.1
LZET	1.6	17.2	17.7	17.8	16.2	12.7	19.2	11.0	17.5	17.6	19.7	0.6	12.1	17.4	19.8	13.6
AGWET	0.8	2.6	2.8	2.9	2.6	3.3	2.0	2.8	2.7	2.7	2.5	0.4	1.9	2.8	2.8	1.9
BASET	0.4	0.5	0.6	0.6	0.6	0.7	0.4	0.7	0.6	0.6	0.5	0.4	0.7	0.7	0.6	0.5
SURET	31.4											10.2				2.6
PERO	8.8	12.2	15.0	15.3	14.8	16.7	8.3	15.6	12.1	12.5	10.9	6.8	23.1	14.9	14.0	9.8
IGWI	0.4	2.5	3.0	3.0	3.0	3.5	1.9	3.2	2.6	2.6	2.4	0.4	3.9	3.1	3.0	1.8
TAET: PERVIOUS	37.8	32.0	33.0	33.2	34.3	25.8	36.3	27.9	32.1	32.0	33.9	39.6	38.5	34.6	36.3	35.1
IMPEV: IMPERVIOUS		16.4	16.4	16.5	16.4											0.1
ET: COMBINED	37.8	31.2	31.3	29.7	25.1	25.8	36.3	27.9	32.1	32.0	33.9	39.6	38.5	34.6	36.3	35.2
PET	48.2	48.3	48.3	48.4	48.3	48.6	48.4	48.2	48.3	48.1	48.2	48.3	48.4	48.4	48.4	48.0

Table T-03060203-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
2	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
3	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
4	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
5	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
6	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
7	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
8	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
9	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
10	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
11	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
12	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
13	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
14	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
15	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
16	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
17	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
18	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
19	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
20	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
21	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
22	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
23	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
24	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
25	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
26	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
27	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
28	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
29	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
30	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988
31	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988

Table T-03060203-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
2	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
3	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
4	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
5	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
6	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
7	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
8	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
9	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
10	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
11	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
12	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
13	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
14	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
15	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
16	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
17	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
18	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
19	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
20	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
21	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
22	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
23	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
24	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
25	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
26	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
27	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
28	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
29	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
30	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
31	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017

Table T-03060203-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
2	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
3	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
4	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
5	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
6	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
7	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
8	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
9	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
10	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
11	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
12	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
13	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
14	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
15	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
16	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
17	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
18	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
19	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
20	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
21	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
22	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
23	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
24	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
25	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
26	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
27	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
28	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
29	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
30	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300
31	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.075	0.050	0.050	0.051	0.300

Table T-03060203-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
2	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
3	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
4	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
5	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
6	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
7	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
8	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
9	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
10	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
11	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
12	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
13	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
14	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
15	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
16	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
17	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
18	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
19	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
20	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
21	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
22	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
23	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
24	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
25	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
26	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
27	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
28	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
29	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
30	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
31	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148

Table T-03060203-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
2	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
3	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
4	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
5	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
6	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
7	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
8	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
9	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
10	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
11	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
12	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
13	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
14	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
15	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
16	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
17	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
18	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
19	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
20	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
21	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
22	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
23	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
24	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
25	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
26	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
27	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
28	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
29	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
30	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001
31	0.001	0.457	0.457	0.457	0.457	0.653	0.979	0.653	0.653	0.653	0.783	0.001

Table T-03060203-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
31		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03060203-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
2	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
3	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
4	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
5	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
6	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
7	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
8	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
9	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
10	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
11	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
12	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
13	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
14	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
15	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
16	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
17	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
18	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
19	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
20	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
21	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
22	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
23	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
24	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
25	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
26	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
27	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
28	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
29	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
30	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615
31	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615	0.615

Table T-03060203-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
15	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
19	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
22	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
23	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
24	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
25	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
26	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
27	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
28	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
29	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
30	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
31	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03060203-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
10	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
11	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
12	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
16	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
21	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
22	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
23	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
24	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
25	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
26	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
27	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
28	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
29	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
30	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
31	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03060203-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
2	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
3	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
4	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
5	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
6	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
7	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
8	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
9	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
10	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
11	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
12	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
13	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
14	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
15	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
16	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
17	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
18	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
19	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
20	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
21	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
22	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
23	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
24	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
25	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
26	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
27	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
28	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
29	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
30	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100
31	0.200	4.535	4.535	4.535	4.535	5.101	6.802	5.101	5.101	5.101	5.668	0.100

Table T-03060203-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.743

APPENDIX T-03060204

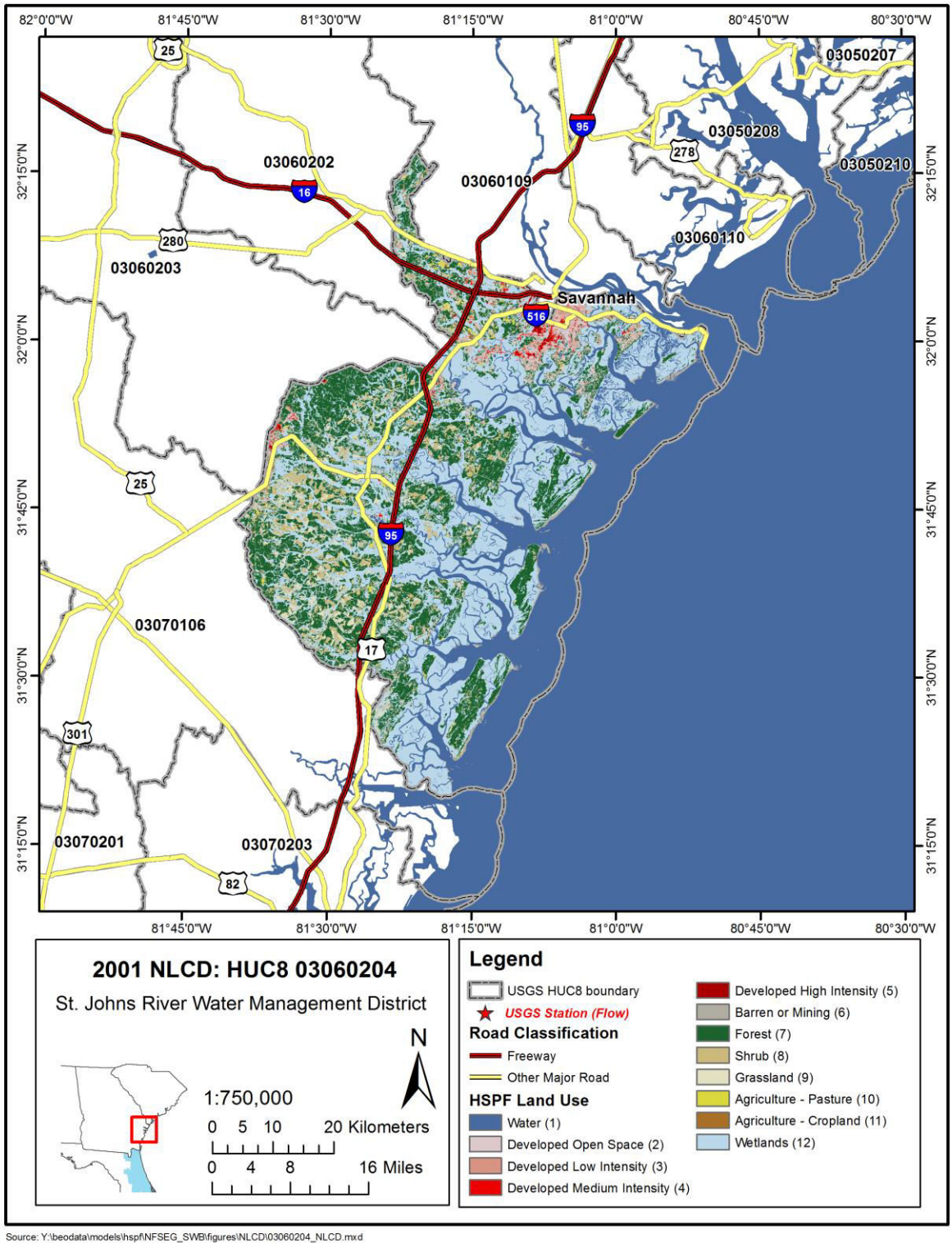


Figure T-03060204-1: Land Cover from the National Land Cover Database.

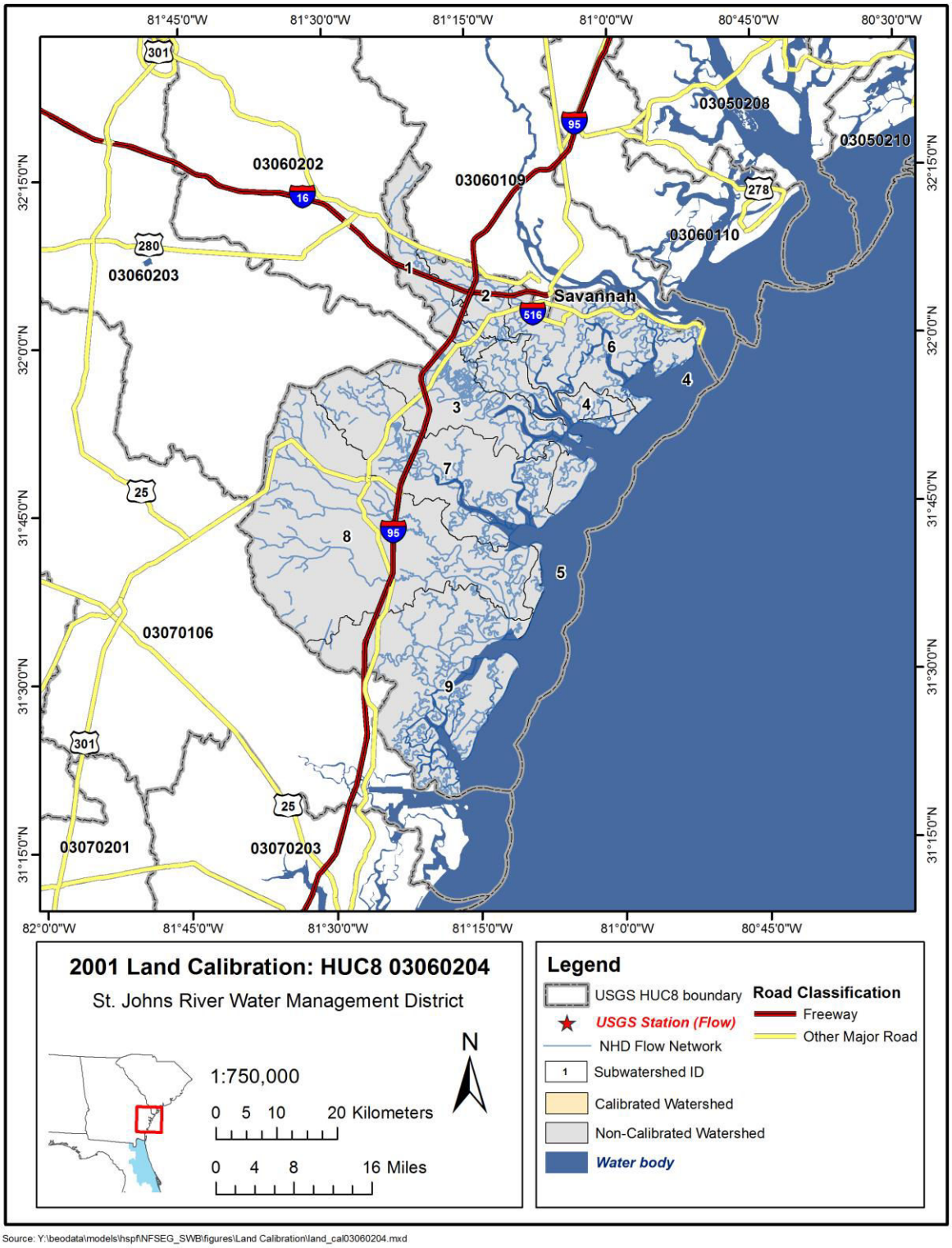


Figure T-03060204-2: Calibrated sub-watersheds.

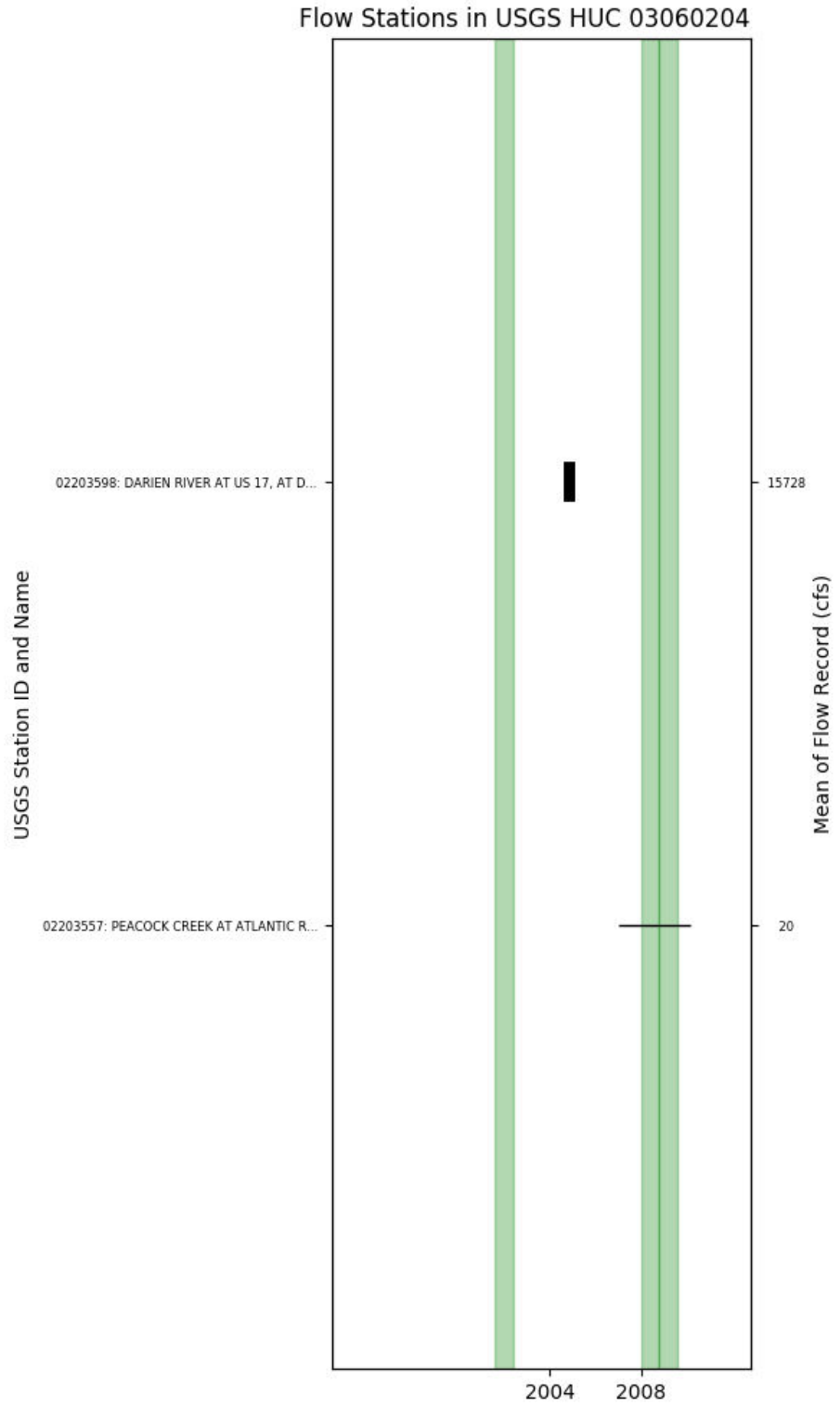


Figure T-03060204-3: Station period of record. Blue color identifies gauges used for calibration.

Table T-03060204-1: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	229124	37849	14391	4092	1137	9293	228854	48840	24725	4126	1227	365213	2350	33	971252	
AREA(%)	23.4	3.9	1.5	0.4	0.1	1.0	23.4	5.0	2.5	0.4	0.1	37.4	0.2	0.0	99.4	
IMPERVIOUS																
AREA(ACRES)		2056	1614	1026	1141										5837	
AREA(%)		0.2	0.2	0.1	0.1										0.6	
SUPY	37.8	38.3	37.8	37.7	37.8	38.2	39.1	39.4	39.4	38.2	37.8	38.9	70.5	36.8	38.5	
SURLI			11.9	12.4	13.1									1712.1	0.3	
UZLI															0.0	
LZLI			1.0	0.9	0.9									642.9	0.0	
SURO: PERVIOUS	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	395.4	0.1	
SURO: IMPERVIOUS		21.9	21.6	21.5	21.6										0.1	
SURO: COMBINED	0.1	1.2	2.2	4.4	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	395.4	0.2	
IFWO		0.6	0.9	0.9	0.9	0.5	0.0	0.6	0.3	0.3	0.1		4.2	1133.7	0.1	
AGWO	1.4	9.8	20.0	20.3	19.5	15.8	5.6	14.6	10.5	10.5	8.6	2.6	28.8	809.7	4.7	
AGWI	1.4	11.1	20.4	20.7	19.6	15.8	7.1	15.0	12.0	11.7	10.3	2.4	24.3	810.6	5.1	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	
CEPE		9.9	9.5	9.4	13.2	9.6	14.5	12.8	11.6	10.1	7.6	13.7	33.3	7.2	10.2	
UZET		2.1	2.7	2.7	2.3	2.0	0.8	1.9	1.6	1.6	1.4		2.8	26.3	0.5	
LZET		17.3	19.0	19.1	17.6	11.6	19.3	10.5	16.4	17.2	21.6		7.1	12.3	6.7	
AGWET		1.6	1.6	1.7	1.5	1.4	1.4	1.4	1.5	1.6	1.7		0.5	0.7	0.5	
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SURET	41.9											31.1			21.5	
PERO	1.6	10.5	20.9	21.2	20.4	16.3	5.6	15.2	10.8	10.8	8.7	2.6	33.2	2338.8	4.9	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	
TAET: PERVIOUS	42.0	30.9	32.9	33.0	34.6	24.6	36.0	26.6	31.1	30.4	32.5	44.8	43.8	46.6	39.5	
IMPEV: IMPERVIOUS		16.4	16.2	16.2	16.2										0.1	
ET: COMBINED	42.0	30.1	31.2	29.6	25.4	24.6	36.0	26.6	31.1	30.4	32.5	44.8	43.8	46.6	39.6	
PET	42.0	46.9	48.2	48.5	48.7	42.8	45.0	45.5	45.5	46.7	47.3	44.8	47.9	48.4	44.1	

Table T-03060204-2: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	229124	37849	14391	4092	1137	9293	228854	48840	24725	4126	1227	365213	2350	33	971252	
AREA(%)	23.4	3.9	1.5	0.4	0.1	1.0	23.4	5.0	2.5	0.4	0.1	37.4	0.2	0.0	99.4	
IMPERVIOUS																
AREA(ACRES)		2056	1614	1026	1141										5837	
AREA(%)		0.2	0.2	0.1	0.1										0.6	
SUPY	57.8	58.1	58.7	58.8	58.6	57.4	57.4	57.3	57.2	58.4	58.9	57.5	64.1	59.7	57.2	
SURLI			11.1	11.6	12.1									33.8	0.2	
UZLI															0.0	
LZLI			0.6	0.5	0.5									13.1	0.0	
SURO: PERVIOUS	8.3	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.2	0.0	2.1	
SURO: IMPERVIOUS		40.5	41.3	41.5	41.4										0.2	
SURO: COMBINED	8.3	2.2	4.3	8.5	20.8	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.2	0.0	2.3	
IFWO		2.0	3.0	3.1	3.2	1.8	0.1	1.4	0.8	1.0	0.4		2.9	1.4	0.3	
AGWO	1.3	16.7	26.9	27.3	26.4	23.2	11.6	21.1	16.7	17.6	15.6	2.1	19.8	89.1	6.8	
AGWI	1.3	22.5	33.1	33.5	32.2	29.2	16.8	27.0	22.3	24.0	22.2	2.1	25.6	65.7	9.0	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
CEPE		10.4	10.1	10.1	13.9	9.8	15.3	13.4	12.1	10.6	8.4	14.4	14.4	8.2	10.7	
UZET		3.1	3.5	3.6	3.0	3.2	1.6	3.1	2.6	2.6	2.5	0.3	3.3	4.7	0.9	
LZET		18.7	19.4	19.4	17.6	12.4	21.9	11.3	18.2	18.8	23.8	0.0	16.8	25.8	7.5	
AGWET		1.7	1.7	1.7	1.5	1.5	1.5	1.5	1.6	1.7	1.9	0.0	1.5	1.8	0.6	
BASET	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	
SURET	44.1											33.8			23.0	
PERO	9.5	18.8	30.0	30.5	29.7	25.1	11.7	22.6	17.5	18.7	16.0	2.4	22.8	90.5	9.2	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
TAET: PERVIOUS	44.2	33.9	34.7	34.7	36.1	27.0	40.3	29.3	34.5	33.9	36.7	48.6	36.0	40.7	42.9	
IMPEV: IMPERVIOUS		17.5	17.2	17.2	17.1										0.1	
ET: COMBINED	44.2	33.1	32.9	31.2	26.6	27.0	40.3	29.3	34.5	33.9	36.7	48.6	36.0	40.7	43.0	
PET	44.2	49.8	50.3	50.3	50.0	45.5	49.2	50.1	50.1	51.1	52.5	48.6	49.7	53.4	47.6	

Table T-03060204-3: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	229124	37849	14391	4092	1137	9293	228854	48840	24725	4126	1227	365213	2350	33	971252	
AREA(%)	23.4	3.9	1.5	0.4	0.1	1.0	23.4	5.0	2.5	0.4	0.1	37.4	0.2	0.0	99.4	
IMPERVIOUS																
AREA(ACRES)		2056	1614	1026	1141										5837	
AREA(%)		0.2	0.2	0.1	0.1										0.6	
SUPY	37.2	38.2	38.6	38.6	38.5	37.2	37.7	37.8	37.9	38.8	39.2	37.6	45.4	40.0	37.4	
SURLI			11.3	11.9	12.3									43.5	0.2	
UZLI															0.0	
LZLI			0.5	0.4	0.4									16.3	0.0	
SURO: PERVIOUS	1.8	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.5	
SURO: IMPERVIOUS		24.6	25.2	25.3	25.3										0.1	
SURO: COMBINED	1.8	1.4	2.7	5.3	12.7	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.6	
IFWO		1.6	2.1	2.2	2.3	1.4	0.3	1.3	0.9	1.1	0.6		2.2	1.3	0.3	
AGWO	1.3	16.4	26.7	27.1	26.1	22.0	11.9	20.4	16.2	17.9	16.7	2.1	19.7	67.0	6.8	
AGWI	1.3	11.8	20.9	21.2	20.3	16.1	8.5	15.4	11.8	13.2	12.6	2.1	14.3	62.6	5.3	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
CEPE		8.0	7.7	7.7	10.7	7.6	12.0	10.5	9.4	8.2	6.3	11.2	13.7	6.0	8.4	
UZET	0.0	2.0	2.5	2.5	2.1	2.1	0.9	2.0	1.6	1.7	1.7	0.5	2.3	4.0	0.7	
LZET		19.2	20.4	20.4	19.1	13.6	23.0	12.2	18.9	19.3	23.5	0.0	16.8	27.2	7.9	
AGWET		1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.8	1.8	2.0	0.1	1.5	1.9	0.7	
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	
SURET	44.8											36.2			24.0	
PERO	3.1	18.2	29.0	29.5	28.5	23.5	12.2	21.8	17.1	19.0	17.3	2.2	22.1	68.4	7.6	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
TAET: PERVIOUS	44.9	31.1	32.4	32.4	33.7	24.9	37.5	26.4	31.7	31.0	33.5	48.1	34.3	39.1	41.8	
IMPEV: IMPERVIOUS		13.8	13.5	13.4	13.3										0.1	
ET: COMBINED	44.9	30.2	30.5	28.6	23.5	24.9	37.5	26.4	31.7	31.0	33.5	48.1	34.3	39.1	41.8	
PET	44.9	49.1	49.3	49.3	49.2	45.9	48.7	49.4	49.4	50.0	50.8	48.3	48.9	51.2	47.4	

Table T-03060204-4: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	229124	37849	14391	4092	1137	9293	228854	48840	24725	4126	1227	365213	2350	33	971252	
AREA(%)	23.4	3.9	1.5	0.4	0.1	1.0	23.4	5.0	2.5	0.4	0.1	37.4	0.2	0.0	99.4	
IMPERVIOUS																
AREA(ACRES)		2056	1614	1026	1141										5837	
AREA(%)		0.2	0.2	0.1	0.1										0.6	
SUPY	47.3	46.9	47.0	47.0	47.1	47.1	46.7	46.7	46.7	46.6	46.4	46.8	63.3	46.4	46.7	
SURLI			10.4	10.9	11.4									799.2	0.2	
UZLI															0.0	
LZLI			0.8	0.7	0.7									295.9	0.0	
SURO: PERVIOUS	4.5	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	1.5	0.3	165.6	1.6	
SURO: IMPERVIOUS		31.1	31.3	31.4	31.5										0.2	
SURO: COMBINED	4.5	1.7	3.3	6.4	15.8	0.1	0.0	0.1	0.0	0.0	0.0	1.5	0.3	165.6	1.8	
IFWO		1.6	2.2	2.3	2.4	1.5	0.2	1.2	0.8	0.8	0.3		3.7	520.5	0.3	
AGWO	1.3	13.8	23.0	23.2	22.5	19.8	10.0	18.2	14.2	14.6	12.9	2.3	21.4	411.8	6.1	
AGWI	1.4	15.6	24.9	25.2	24.3	21.6	11.6	20.1	16.0	16.5	14.9	2.7	22.7	413.2	6.9	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	
CEPE		9.9	9.7	9.6	12.9	9.6	13.8	12.2	11.2	10.0	8.0	13.1	21.7	7.8	9.8	
UZET	0.0	2.2	2.5	2.6	2.2	2.2	1.1	2.1	1.8	1.8	1.6	1.1	2.4	17.3	1.0	
LZET	0.0	17.5	18.7	18.8	17.3	12.0	20.2	10.8	16.9	17.4	21.5	0.1	12.5	16.6	7.0	
AGWET	0.0	1.6	1.6	1.7	1.5	1.5	1.4	1.5	1.5	1.6	1.8	0.2	1.1	1.1	0.7	
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SURET	42.8											30.8			21.5	
PERO	5.8	15.5	25.4	25.7	25.0	21.4	10.2	19.5	15.0	15.5	13.2	3.8	25.3	1097.9	8.0	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	
TAET: PERVIOUS	42.9	31.2	32.6	32.7	34.1	25.3	36.5	26.7	31.5	30.9	33.0	45.4	37.7	42.9	40.1	
IMPEV: IMPERVIOUS		15.8	15.7	15.7	15.7										0.1	
ET: COMBINED	42.9	30.4	30.9	29.3	24.8	25.3	36.5	26.7	31.5	30.9	33.0	45.4	37.7	42.9	40.2	
PET	43.0	47.4	48.3	48.5	48.5	43.8	46.2	46.8	46.7	47.6	48.2	45.9	48.0	49.0	45.2	

Table T-03060204-5: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
2	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
3	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
4	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
5	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
6	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
7	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
8	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999
9	0.999	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.999

Table T-03060204-6: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060204-7: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
2	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
3	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
4	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
5	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
6	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
7	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
8	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100
9	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.080	0.065	0.052	0.030	0.100

Table T-03060204-8: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03060204-9: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001

Table T-03060204-10: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
2		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

Table T-03060204-11: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03060204-12: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
2	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
3	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
4	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
5	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
6	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
7	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
8	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
9	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Table T-03060204-13: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
2	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
3	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
4	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
5	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
6	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
7	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
8	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
9	0.010	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200

Table T-03060204-14: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
2	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
3	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
4	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
5	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
6	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
7	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
8	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100
9	0.200	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.334	0.100

Table T-03060204-15: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.639

APPENDIX T-03070101

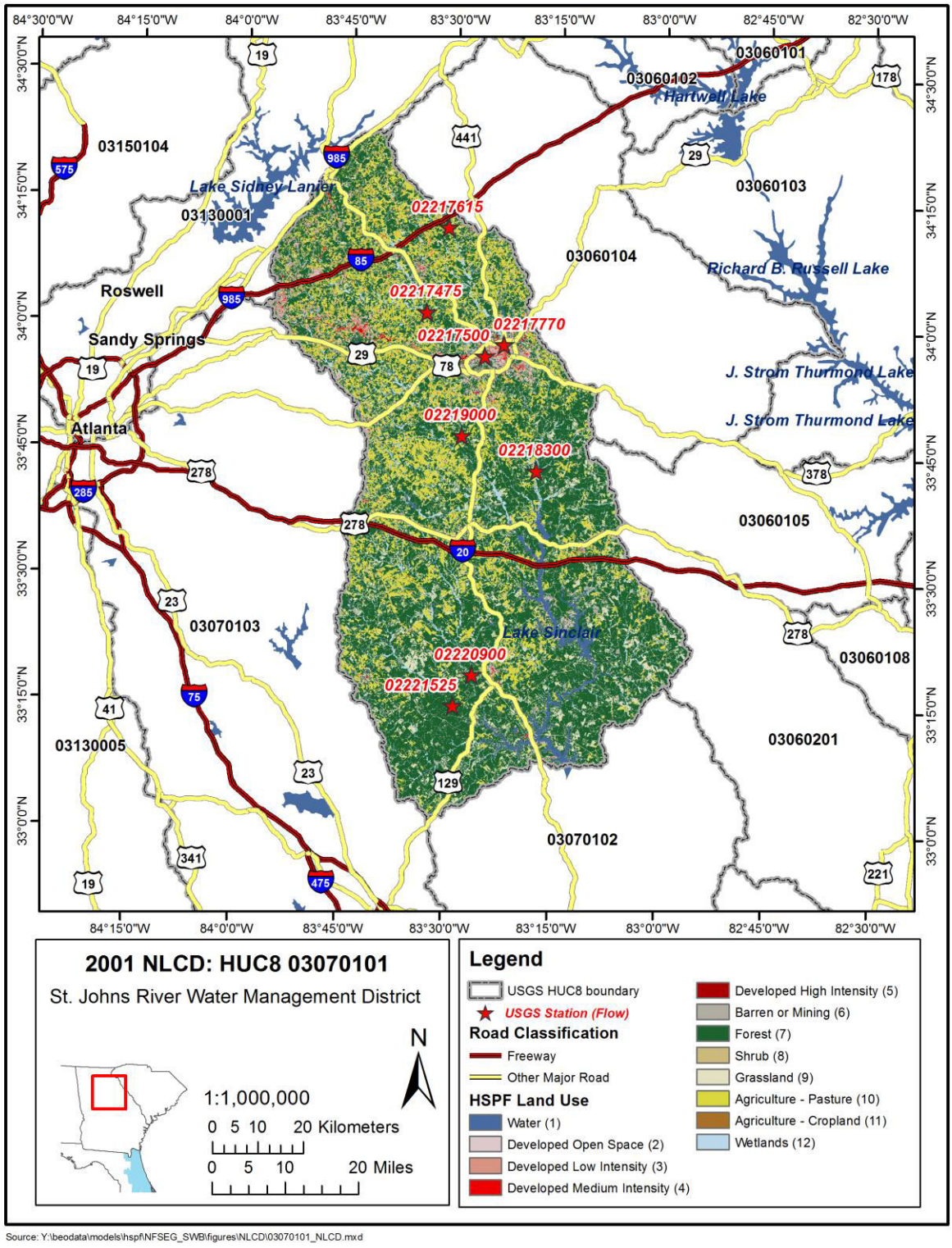


Figure T-03070101-1: Land Cover from the National Land Cover Database.

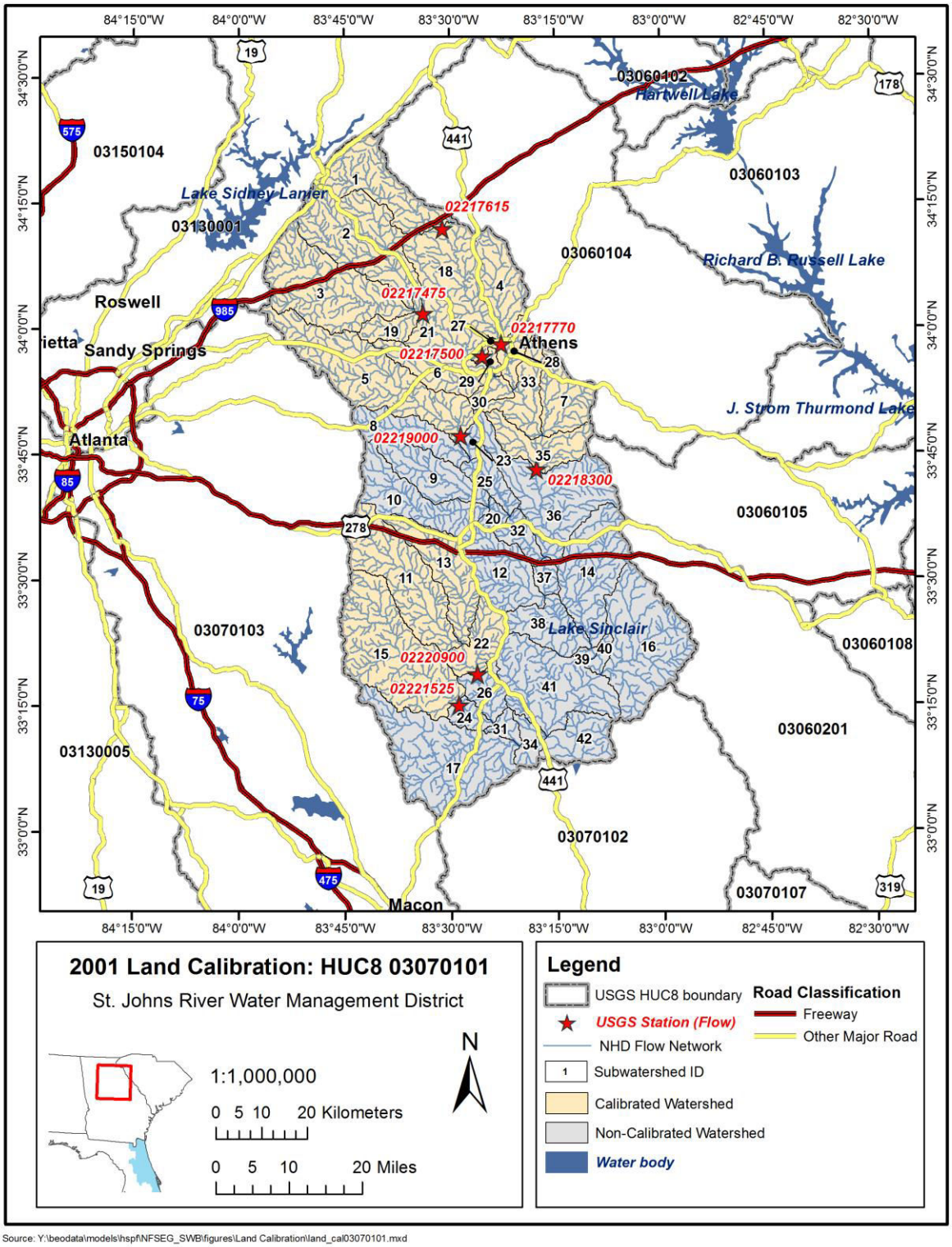


Figure T-03070101-2: Calibrated sub-watersheds.

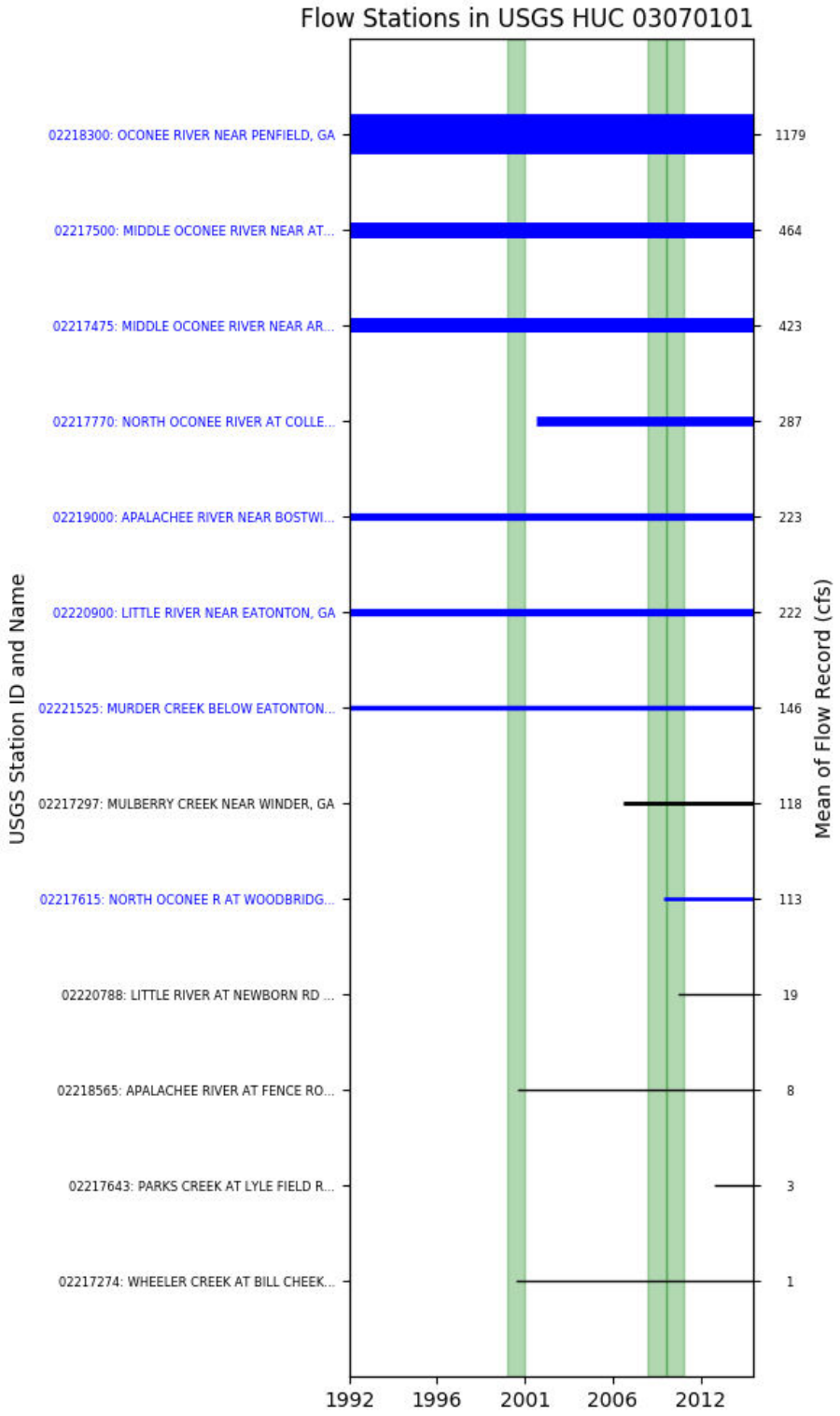


Figure T-03070101-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 01, USGS GAUGE 02217615

Water-Data Report 2009
02201230 OGEECHEE RIVER AT MIDVILLE, GA
Ogeechee Basin Upper Ogeechee Subbasin

LOCATION.--Lat 324852, long 821407 referenced to North American Datum of 1927, Burke County, GA, Hydrologic Unit 03060201, at left bank on upstream side of bridge on GA 56, 0.9 mi downstream from confluence with Daniels Mill Creek, 3.0 mi upstream from confluence with Mill Creek, and 0.3 mile south of Midville.

DRAINAGE AREA.--1,300 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1928 to September 1996 (annual maximum only), February 2003 to current year.
GAGE-HEIGHT: July 1930 to October 1989 (gage-height only), February 2003 to current year. Gage-height only records contained in reports of National Weather Service.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 168.86 feet above National Geodetic Vertical Datum (NGVD) of 1929. Staff gage was installed from July 1930 to October 1931 at gage datum of 171.96 feet, referenced to the National Geodetic Vertical Datum (NGVD) of 1929. A staff gage or wire-weight gage was installed from October 1931 to October 1989 at gage datum of 169.96 feet, referenced to the National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Discharge records good except for estimated periods, which are fair. Gage-height records are good.

Table T-03070101-1: Comparison Statistics Between HSPF Reach 01 and USGS Gauge 02217615.

Statistic	Value
Bias	0.61
Standard error	21.31
Relative bias	0.01
Relative standard error	0.25
Nash-Sutcliffe coefficient	0.94
Kling-Gupta coefficient	0.94
Coefficient of efficiency	0.78
Index of agreement	0.89

Table T-03070101-2: Hydrologic Indices Between USGS Gauge 02217615 and HSPF Reach 01.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02217615	Simulated Reach 01	Percent Difference
MA1: Mean, all daily flows	111.68	112.32	0.58
MA2: Median, all daily flows	73.00	76.46	4.74
MA3: CV, all daily flows	125.20	126.57	1.10
MA4: CV, log of all daily flows	78.73	79.72	1.26
MA5: Mean daily flow / median daily flow	1.53	1.47	-3.97
MA9: (Q10 - Q90) / median daily flow	2.56	2.48	-3.10
MA10: (Q20 - Q80) / median daily flow	1.51	1.53	1.61
MA11: (Q25 - Q75) / median daily flow	1.15	1.17	1.45
MA12: Mean monthly flow, January	165.82	158.74	-4.27
MA13: Mean monthly flow, February	134.46	126.51	-5.91
MA14: Mean monthly flow, March	128.14	121.66	-5.06
MA15: Mean monthly flow, April	92.72	101.38	9.34
MA16: Mean monthly flow, May	107.28	97.84	-8.80
MA17: Mean monthly flow, June	58.22	58.91	1.18
MA18: Mean monthly flow, July	89.68	79.61	-11.23
MA19: Mean monthly flow, August	63.48	80.51	26.83
MA20: Mean monthly flow, September	36.75	41.28	12.34
MA21: Mean monthly flow, October	48.19	70.02	45.29
MA22: Mean monthly flow, November	71.48	70.50	-1.37
MA23: Mean monthly flow, December	164.80	160.26	-2.75
ML1: Mean minimum monthly flow, January	97.40	93.54	-3.96
ML2: Mean minimum monthly flow, February	89.50	82.88	-7.40
ML3: Mean minimum monthly flow, March	87.50	82.57	-5.64
ML4: Mean minimum monthly flow, April	75.50	64.60	-14.44
ML5: Mean minimum monthly flow, May	64.50	61.28	-4.99
ML6: Mean minimum monthly flow, June	48.25	48.90	1.36
ML7: Mean minimum monthly flow, July	40.25	50.29	24.94
ML8: Mean minimum monthly flow, August	44.58	47.03	5.50
ML9: Mean minimum monthly flow, September	33.90	37.61	10.95
ML10: Mean minimum monthly flow, October	36.25	38.51	6.23
ML11: Mean minimum monthly flow, November	55.40	53.98	-2.57
ML12: Mean minimum monthly flow, December	65.20	62.79	-3.70
ML13: CV of minimum monthly flows	67.45	68.39	1.40
ML14: Mean minimum daily flow / mean median annual flow	0.36	0.34	-3.88
ML15: Mean minimum annual flow / mean annual flow	0.24	0.24	2.19
ML16: Median minimum annual flow / median annual flow	0.30	0.31	3.77
ML20: Ratio of baseflow volume to total flow volume	0.59	0.57	-3.87
ML22: Mean annual minimum flow divided by catchment area	0.29	0.30	3.80
RA1: Mean of positive changes from one day to next (rise rate)	83.22	87.70	
RA2: CV, mean of positive changes from one day to next (rise rate)	250.89	272.22	
RA3: Mean of negative changes from one day to next (fall rate)	33.14	29.98	
RA4: CV, mean of negative changes from one day to next (fall rate)	403.18	383.07	
RA5: Ratio of days that are higher than previous day	0.26	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.09	

RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.06	
RA8: Number of flow reversals from one day to the next	86.00	86.00	
RA9: CV, number of flow reversals from one day to the next	38.01	39.53	

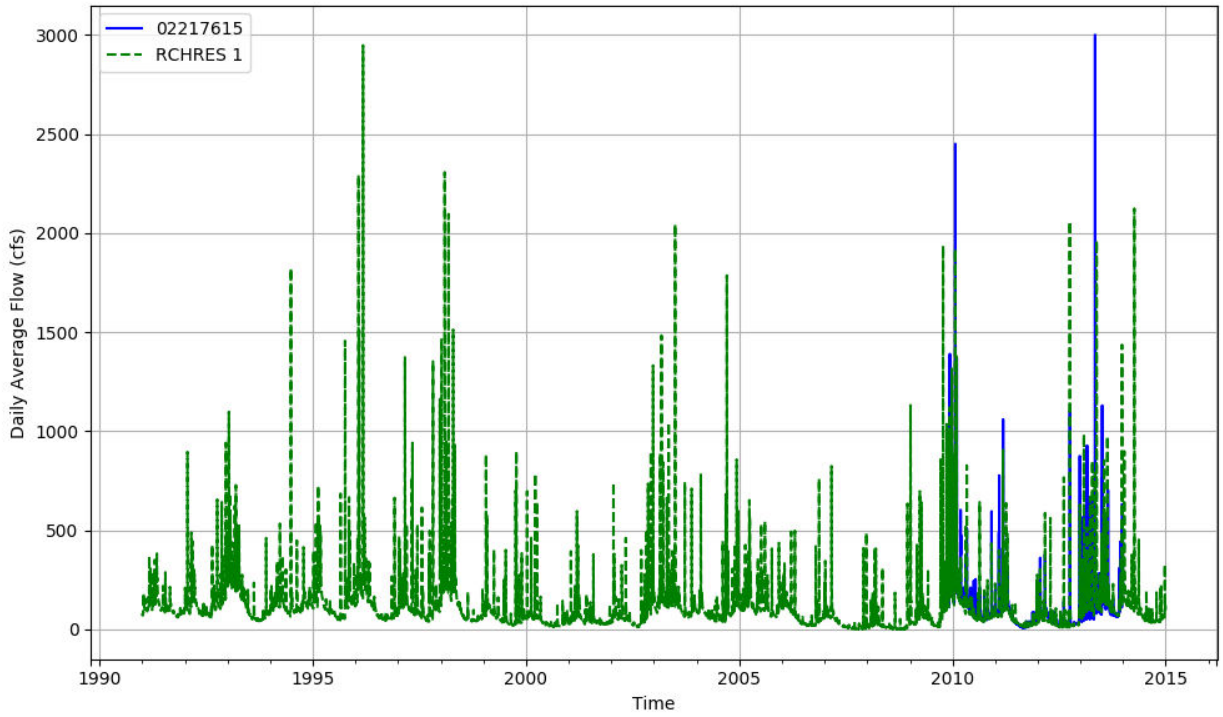


Figure T-03070101-4: Daily flow for HSFP reach 01 and USGS station 02217615.

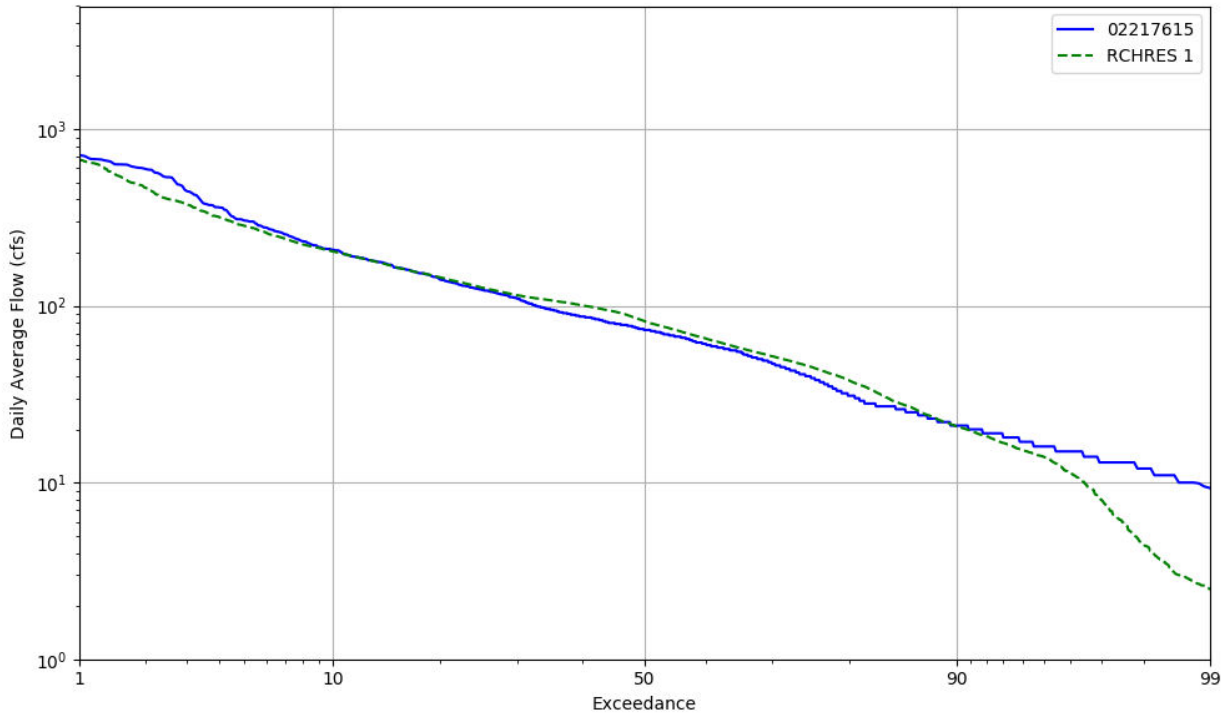


Figure T-03070101-5: Daily exceedance for HSFP reach 01 and USGS station 02217615.

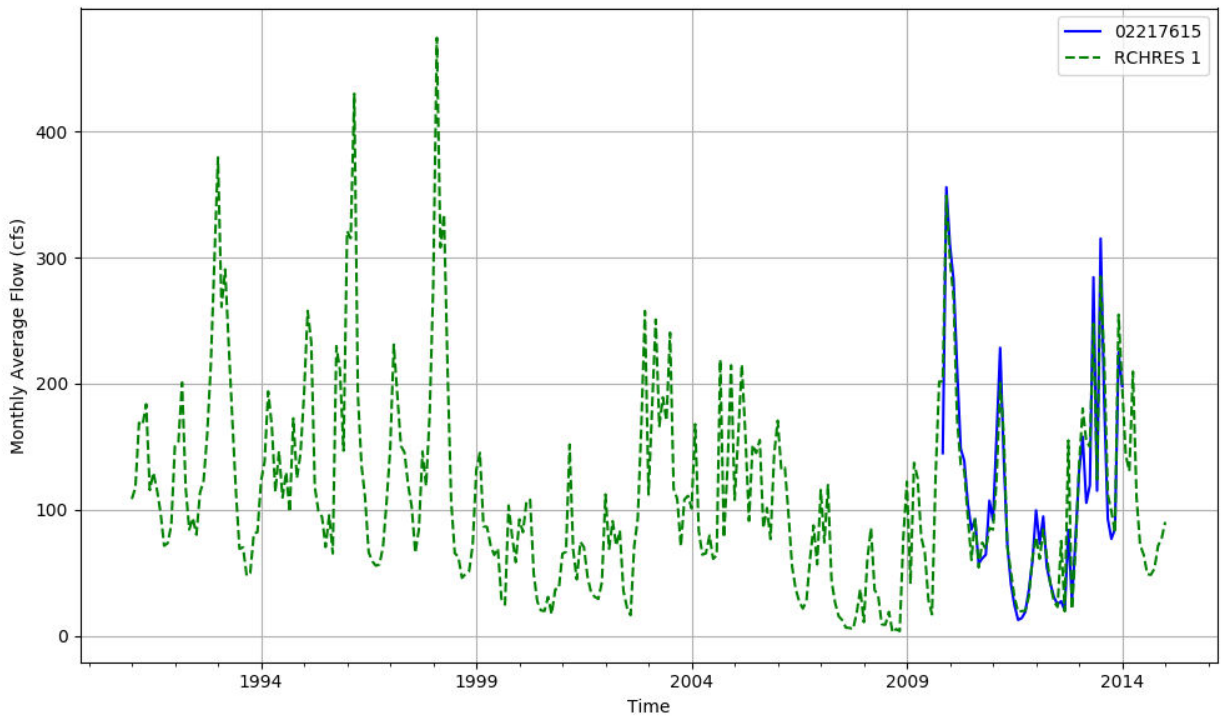


Figure T-03070101-6: Monthly flow for HSFP reach 01 and USGS station 02217615.

HSPF REACH 05, USGS GAUGE 02219000

Water-Data Report 2009
02219000 APALACHEE RIVER NEAR BOSTWICK, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 334717, long 832827 referenced to North American Datum of 1927, Oconee County, GA, Hydrologic Unit 03070101, on left bank, 1,000 feet upstream from bridge on Price Mill Road, 500 feet upstream from abandoned bridge, 3.0 miles Southwest of Bishop, GA, 4.0 miles downstream from High Shoals, 4.0 miles upstream of Jacks Creek, and 4.0 miles Northeast of Bostwick, GA.

DRAINAGE AREA.--176 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: July 1944 to December 1949, April 1977 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 544.14 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment).

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records good, except for estimated days, which are fair. Gage-height records good. Some regulation at low flow occurs due to the operation of the High Shoals power plant.

Table T-03070101-3: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02219000.

Statistic	Value
Bias	-0.09
Standard error	56.24
Relative bias	-0.00
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.94
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03070101-4: Hydrologic Indices Between USGS Gauge 02219000 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02219000	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	224.89	224.83	-0.03
MA2: Median, all daily flows	141.00	135.94	-3.59
MA3: CV, all daily flows	126.45	107.70	-14.82
MA4: CV, log of all daily flows	82.24	87.68	6.61
MA5: Mean daily flow / median daily flow	1.59	1.65	3.69
MA9: (Q10 - Q90) / median daily flow	2.62	3.19	21.50
MA10: (Q20 - Q80) / median daily flow	1.49	1.89	26.92
MA11: (Q25 - Q75) / median daily flow	1.17	1.51	28.85
MA12: Mean monthly flow, January	277.26	293.55	5.87
MA13: Mean monthly flow, February	352.42	337.69	-4.18
MA14: Mean monthly flow, March	382.02	375.68	-1.66
MA15: Mean monthly flow, April	243.18	247.76	1.88
MA16: Mean monthly flow, May	189.86	198.05	4.31
MA17: Mean monthly flow, June	162.53	147.41	-9.31
MA18: Mean monthly flow, July	167.24	159.87	-4.40
MA19: Mean monthly flow, August	116.54	101.61	-12.81
MA20: Mean monthly flow, September	139.92	140.97	0.75
MA21: Mean monthly flow, October	148.86	171.83	15.43
MA22: Mean monthly flow, November	195.85	190.67	-2.65
MA23: Mean monthly flow, December	232.75	242.35	4.12
ML1: Mean minimum monthly flow, January	151.46	147.72	-2.47
ML2: Mean minimum monthly flow, February	164.52	174.69	6.18
ML3: Mean minimum monthly flow, March	176.09	170.12	-3.39
ML4: Mean minimum monthly flow, April	143.78	139.21	-3.18
ML5: Mean minimum monthly flow, May	97.13	101.67	4.68
ML6: Mean minimum monthly flow, June	74.78	83.97	12.28
ML7: Mean minimum monthly flow, July	63.30	72.63	14.75
ML8: Mean minimum monthly flow, August	52.79	58.97	11.72
ML9: Mean minimum monthly flow, September	50.79	58.53	15.23
ML10: Mean minimum monthly flow, October	63.71	72.94	14.49
ML11: Mean minimum monthly flow, November	90.43	93.87	3.80
ML12: Mean minimum monthly flow, December	118.70	119.05	0.30
ML13: CV of minimum monthly flows	68.84	68.92	0.11
ML14: Mean minimum daily flow / mean median annual flow	0.22	0.31	40.40
ML15: Mean minimum annual flow / mean annual flow	0.15	0.20	36.45
ML16: Median minimum annual flow / median annual flow	0.17	0.30	76.47
ML20: Ratio of baseflow volume to total flow volume	0.53	0.56	4.21
ML22: Mean annual minimum flow divided by catchment area	0.35	0.42	22.23
RA1: Mean of positive changes from one day to next (rise rate)	101.69	97.51	
RA2: CV, mean of positive changes from one day to next (rise rate)	293.83	296.25	
RA3: Mean of negative changes from one day to next (fall rate)	58.38	37.00	
RA4: CV, mean of negative changes from one day to next (fall rate)	299.49	270.07	
RA5: Ratio of days that are higher than previous day	0.35	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.10	

RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.06	
RA8: Number of flow reversals from one day to the next	127.67	94.92	
RA9: CV, number of flow reversals from one day to the next	21.99	22.12	

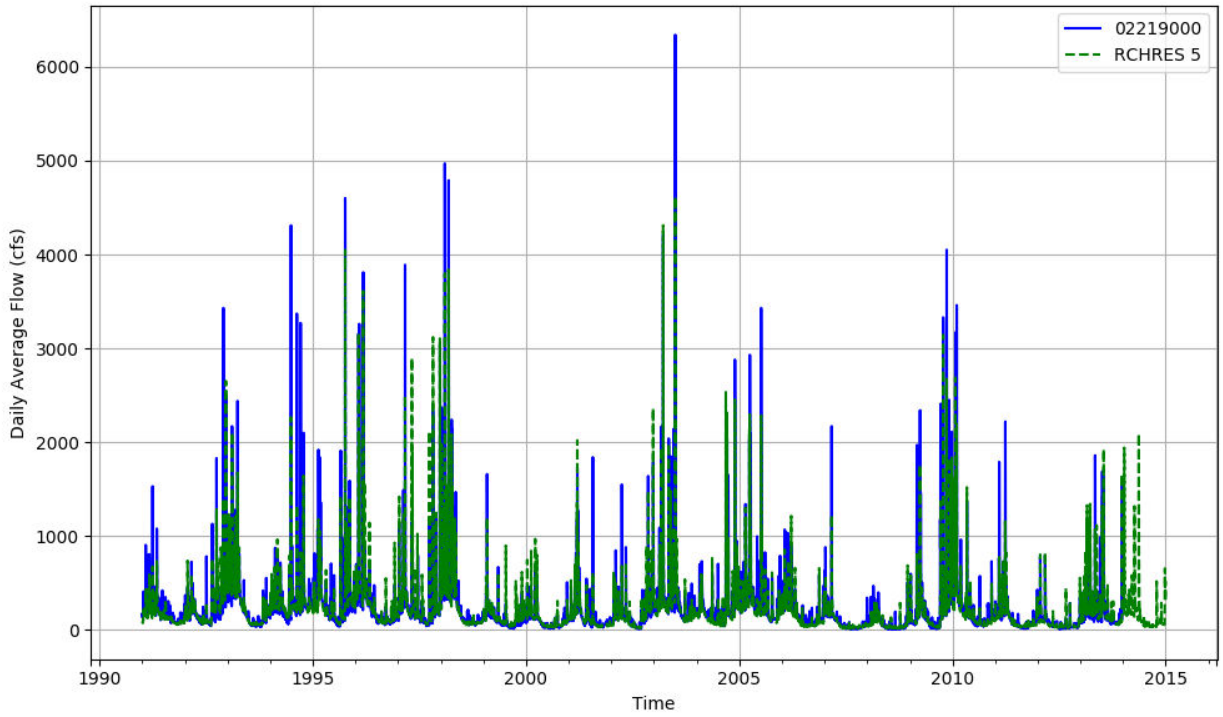


Figure T-03070101-7: Daily flow for HSFP reach 05 and USGS station 02219000.

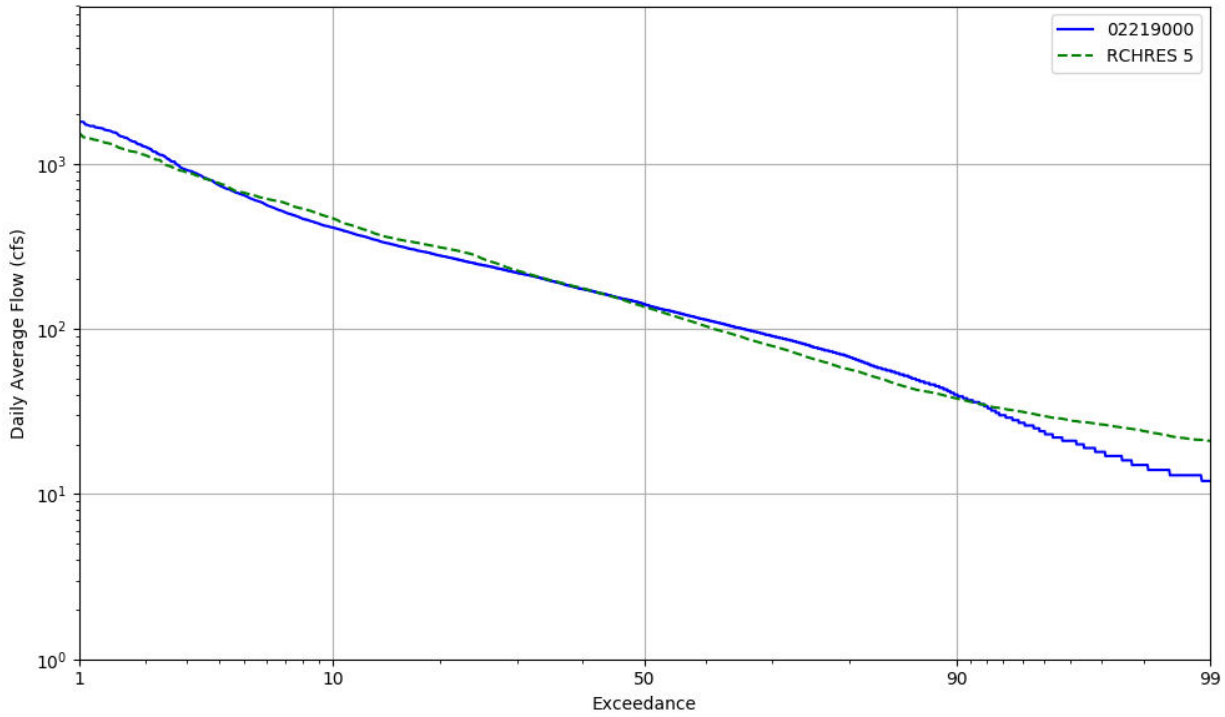


Figure T-03070101-8: Daily exceedance for HSFP reach 05 and USGS station 02219000.

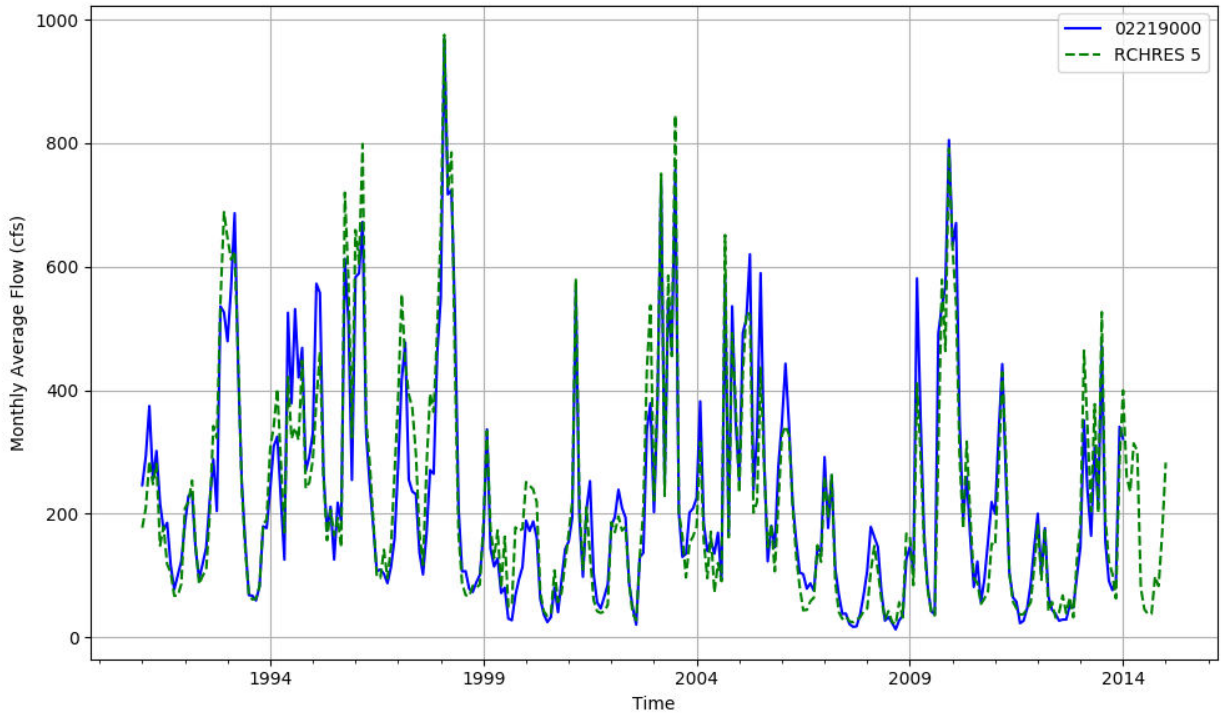


Figure T-03070101-9: Monthly flow for HSFP reach 05 and USGS station 02219000.

HSPF REACH 15, USGS GAUGE 02221525

Water-Data Report 2009
02221525 MURDER CREEK BELOW EATONTON, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 331508, long 832853 referenced to North American Datum of 1927, Putnam County, GA, Hydrologic Unit 03070101, on left bank, 300 feet upstream of bridge on Glenwood Springs Road, 3.0 miles downstream of Beaverdam Creek, and 7.4 miles Southwest of Eatonton, GA.

DRAINAGE AREA.--190 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1977 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 375.09 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment).

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records fair, except estimated periods which are poor. Gage-height records good. Some diurnal fluctuation occurs at low flow.

Table T-03070101-5: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02221525.

Statistic	Value
Bias	-33.01
Standard error	76.96
Relative bias	-0.22
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.76
Coefficient of efficiency	0.53
Index of agreement	0.77

Table T-03070101-6: Hydrologic Indices Between USGS Gauge 02221525 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02221525	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	147.98	114.28	-22.78

MA2: Median, all daily flows	76.00	16.74	-77.97
MA3: CV, all daily flows	168.01	240.03	42.86
MA4: CV, log of all daily flows	106.38	173.44	63.04
MA5: Mean daily flow / median daily flow	1.95	6.83	250.59
MA9: (Q10 - Q90) / median daily flow	3.59	16.93	371.42
MA10: (Q20 - Q80) / median daily flow	1.99	6.96	250.17
MA11: (Q25 - Q75) / median daily flow	1.50	4.21	180.88
MA12: Mean monthly flow, January	191.65	153.89	-19.70
MA13: Mean monthly flow, February	281.23	238.38	-15.24
MA14: Mean monthly flow, March	327.96	260.44	-20.59
MA15: Mean monthly flow, April	187.86	107.32	-42.87
MA16: Mean monthly flow, May	112.75	71.24	-36.82
MA17: Mean monthly flow, June	74.02	44.86	-39.40
MA18: Mean monthly flow, July	86.26	63.21	-26.72
MA19: Mean monthly flow, August	67.28	48.19	-28.38
MA20: Mean monthly flow, September	60.09	83.09	38.27
MA21: Mean monthly flow, October	64.89	55.92	-13.83
MA22: Mean monthly flow, November	113.79	80.15	-29.57
MA23: Mean monthly flow, December	157.34	137.45	-12.64
ML1: Mean minimum monthly flow, January	93.96	34.41	-63.37
ML2: Mean minimum monthly flow, February	108.78	20.23	-81.41
ML3: Mean minimum monthly flow, March	122.26	20.50	-83.23
ML4: Mean minimum monthly flow, April	95.30	13.63	-85.69
ML5: Mean minimum monthly flow, May	55.13	12.08	-78.10
ML6: Mean minimum monthly flow, June	36.98	9.27	-74.93
ML7: Mean minimum monthly flow, July	29.00	8.30	-71.40
ML8: Mean minimum monthly flow, August	24.12	7.34	-69.59
ML9: Mean minimum monthly flow, September	20.27	7.03	-65.29
ML10: Mean minimum monthly flow, October	28.59	6.00	-79.02
ML11: Mean minimum monthly flow, November	43.62	6.35	-85.45
ML12: Mean minimum monthly flow, December	67.01	10.48	-84.37
ML13: CV of minimum monthly flows	88.36	258.98	193.08
ML14: Mean minimum daily flow / mean median annual flow	0.13	0.19	45.93
ML15: Mean minimum annual flow / mean annual flow	0.07	0.04	-48.58
ML16: Median minimum annual flow / median annual flow	0.08	0.19	149.95
ML20: Ratio of baseflow volume to total flow volume	0.48	0.15	-67.67
ML22: Mean annual minimum flow divided by catchment area	0.12	0.04	-69.82
RA1: Mean of positive changes from one day to next (rise rate)	98.46	133.37	
RA2: CV, mean of positive changes from one day to next (rise rate)	294.05	318.32	
RA3: Mean of negative changes from one day to next (fall rate)	43.19	39.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	388.94	399.20	
RA5: Ratio of days that are higher than previous day	0.28	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.24	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.14	
RA8: Number of flow reversals from one day to the next	94.71	77.96	
RA9: CV, number of flow reversals from one day to the next	17.24	17.99	

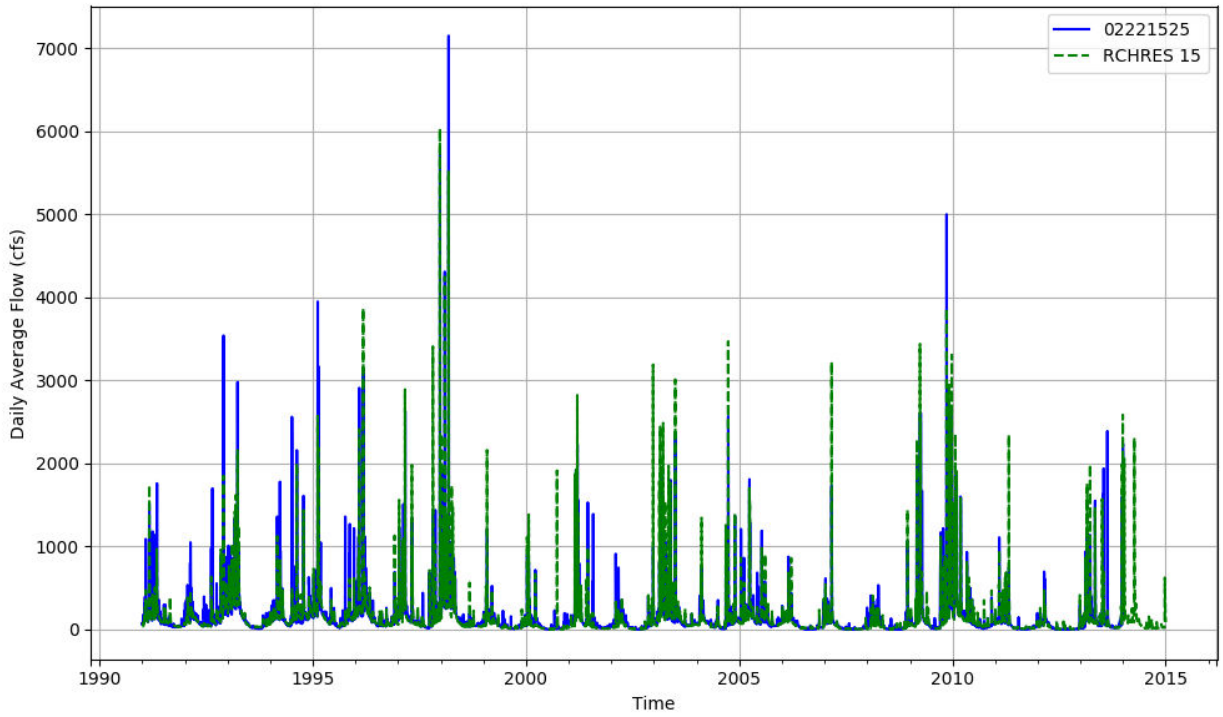


Figure T-03070101-10: Daily flow for HSFP reach 15 and USGS station 02221525.

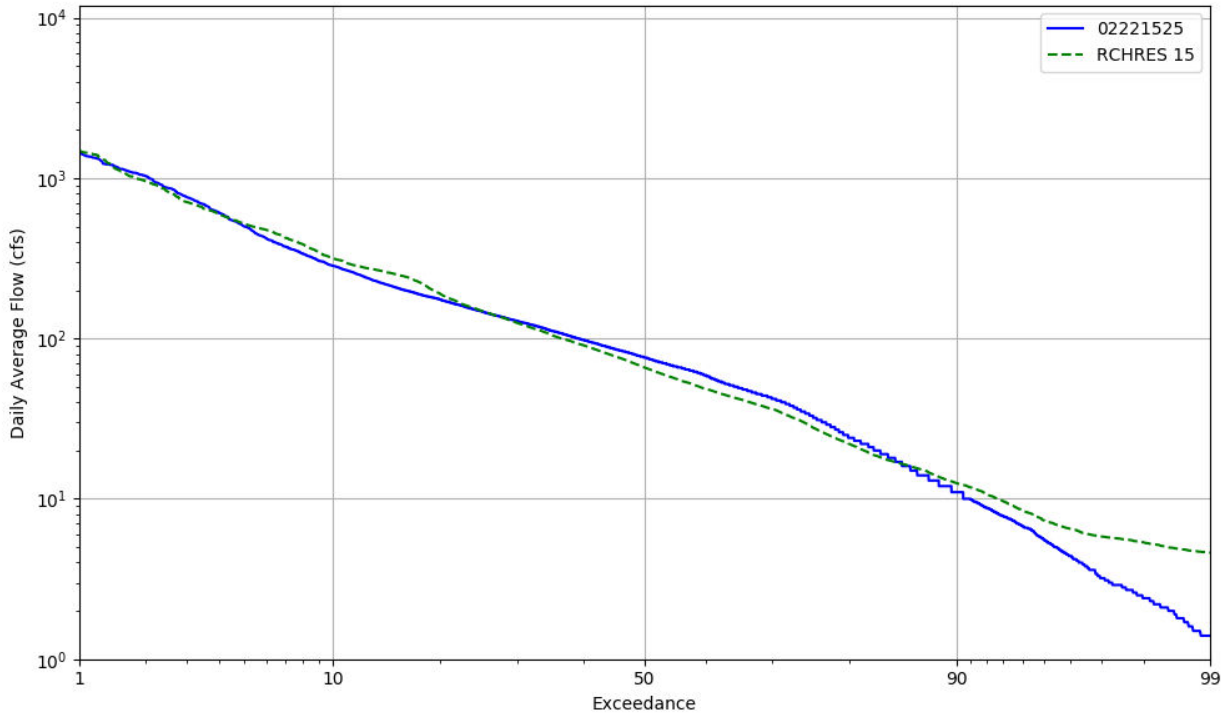


Figure T-03070101-11: Daily exceedance for HSFP reach 15 and USGS station 02221525.

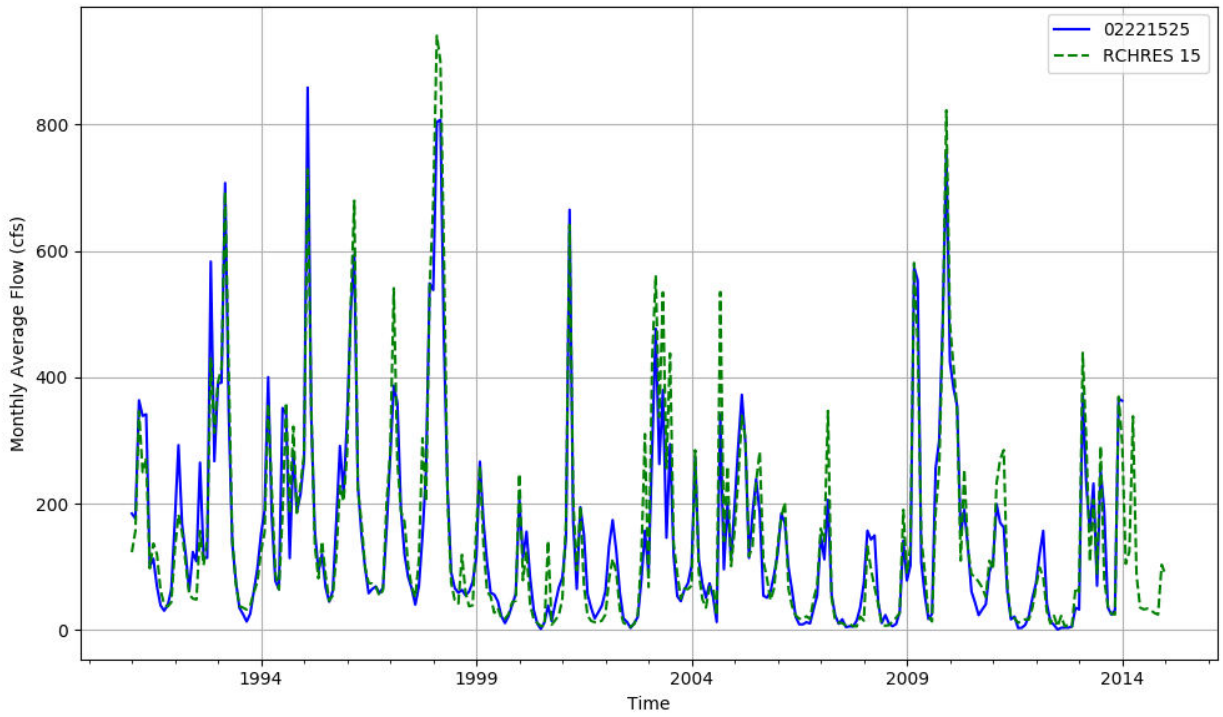


Figure T-03070101-12: Monthly flow for HSFP reach 15 and USGS station 02221525.

HSPF REACH 19, USGS GAUGE 02217475

Water-Data Report 2009
02217475 MIDDLE OCONEE RIVER NEAR ARCADE, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 340154, long 833348 referenced to North American Datum of 1983, Jackson County, GA, Hydrologic Unit 03070101, on downstream side of bridge on GA HWY 82, 1.7 miles downstream from Mulberry River, 3.6 miles upstream from Redstone Creek, and 3.2 miles South of Arcade, GA.

DRAINAGE AREA.--332 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: March 1987 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR GA-96-1: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 656.52 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment).

COOPERATION.--Oglethorpe Power Corporation.

REMARKS.--Discharge and gage-height records good.

Table T-03070101-7: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02217475.

Statistic	Value
Bias	-18.52
Standard error	80.69
Relative bias	-0.04
Relative standard error	0.25
Nash-Sutcliffe coefficient	0.94
Kling-Gupta coefficient	0.95
Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03070101-8: Hydrologic Indices Between USGS Gauge 02217475 and HSPF Reach 19.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02217475	Reach 19	Difference
MA1: Mean, all daily flows	426.69	408.25	-4.32
MA2: Median, all daily flows	275.00	271.11	-1.42
MA3: CV, all daily flows	117.64	105.56	-10.27
MA4: CV, log of all daily flows	82.62	85.00	2.89
MA5: Mean daily flow / median daily flow	1.55	1.51	-2.95
MA9: (Q10 - Q90) / median daily flow	2.80	2.80	-0.20
MA10: (Q20 - Q80) / median daily flow	1.52	1.56	2.76
MA11: (Q25 - Q75) / median daily flow	1.18	1.20	1.20
MA12: Mean monthly flow, January	558.83	546.20	-2.26
MA13: Mean monthly flow, February	642.60	613.21	-4.57
MA14: Mean monthly flow, March	710.98	659.36	-7.26
MA15: Mean monthly flow, April	494.23	438.79	-11.22
MA16: Mean monthly flow, May	378.51	362.01	-4.36
MA17: Mean monthly flow, June	310.73	286.04	-7.94
MA18: Mean monthly flow, July	271.11	275.19	1.51
MA19: Mean monthly flow, August	244.79	205.34	-16.12
MA20: Mean monthly flow, September	230.46	254.31	10.35
MA21: Mean monthly flow, October	283.42	304.80	7.54
MA22: Mean monthly flow, November	355.28	334.22	-5.93
MA23: Mean monthly flow, December	464.81	452.50	-2.65
ML1: Mean minimum monthly flow, January	297.08	275.35	-7.31
ML2: Mean minimum monthly flow, February	329.04	322.34	-2.04
ML3: Mean minimum monthly flow, March	357.17	317.85	-11.01
ML4: Mean minimum monthly flow, April	311.35	259.79	-16.56
ML5: Mean minimum monthly flow, May	219.39	205.65	-6.26
ML6: Mean minimum monthly flow, June	160.13	166.72	4.12
ML7: Mean minimum monthly flow, July	126.00	137.93	9.46
ML8: Mean minimum monthly flow, August	108.74	120.65	10.95
ML9: Mean minimum monthly flow, September	100.57	115.68	15.03
ML10: Mean minimum monthly flow, October	130.61	138.25	5.85
ML11: Mean minimum monthly flow, November	172.96	175.70	1.58
ML12: Mean minimum monthly flow, December	241.48	223.90	-7.28
ML13: CV of minimum monthly flows	66.79	69.33	3.81
ML14: Mean minimum daily flow / mean median annual flow	0.25	0.29	17.28
ML15: Mean minimum annual flow / mean annual flow	0.17	0.21	20.22
ML16: Median minimum annual flow / median annual flow	0.21	0.27	28.87
ML20: Ratio of baseflow volume to total flow volume	0.57	0.58	0.64
ML22: Mean annual minimum flow divided by catchment area	0.78	0.86	10.09
RA1: Mean of positive changes from one day to next (rise rate)	251.14	219.72	
RA2: CV, mean of positive changes from one day to next (rise rate)	248.99	285.12	
RA3: Mean of negative changes from one day to next (fall rate)	105.16	74.48	
RA4: CV, mean of negative changes from one day to next (fall rate)	327.45	310.06	
RA5: Ratio of days that are higher than previous day	0.29	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.07	
RA8: Number of flow reversals from one day to the next	108.12	91.25	

RA9: CV, number of flow reversals from one day to the next	18.57	16.84	

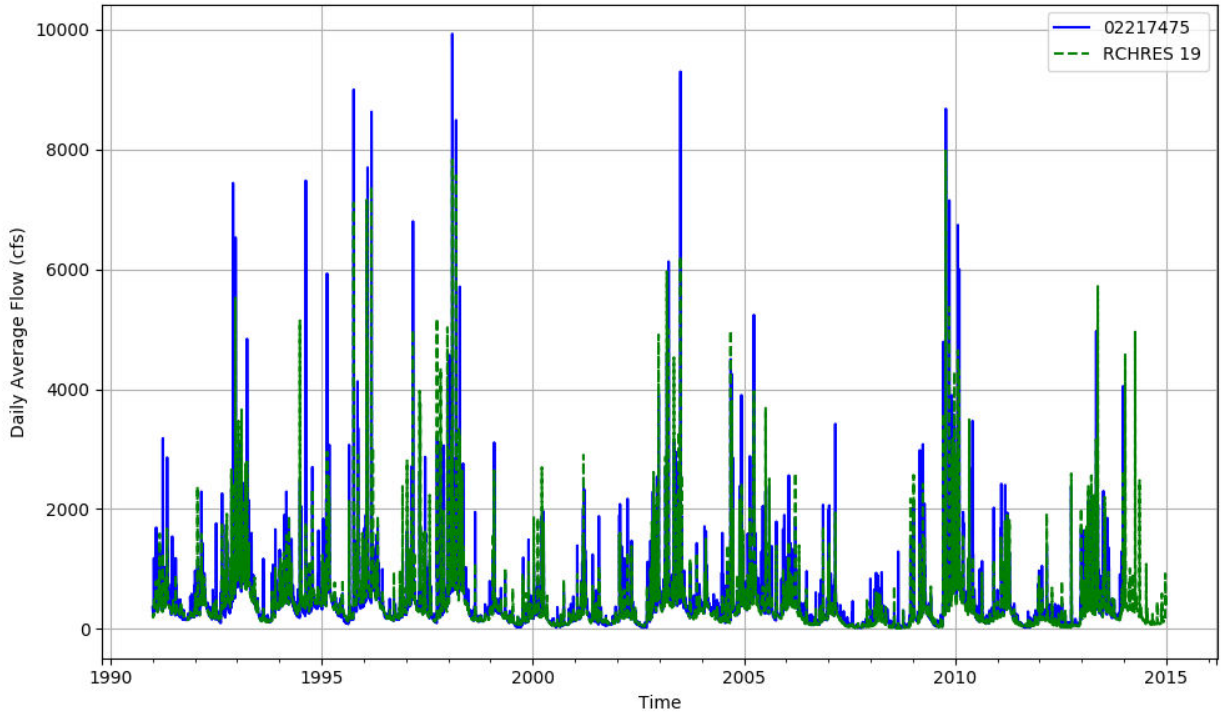


Figure T-03070101-13: Daily flow for HSFP reach 19 and USGS station 02217475.

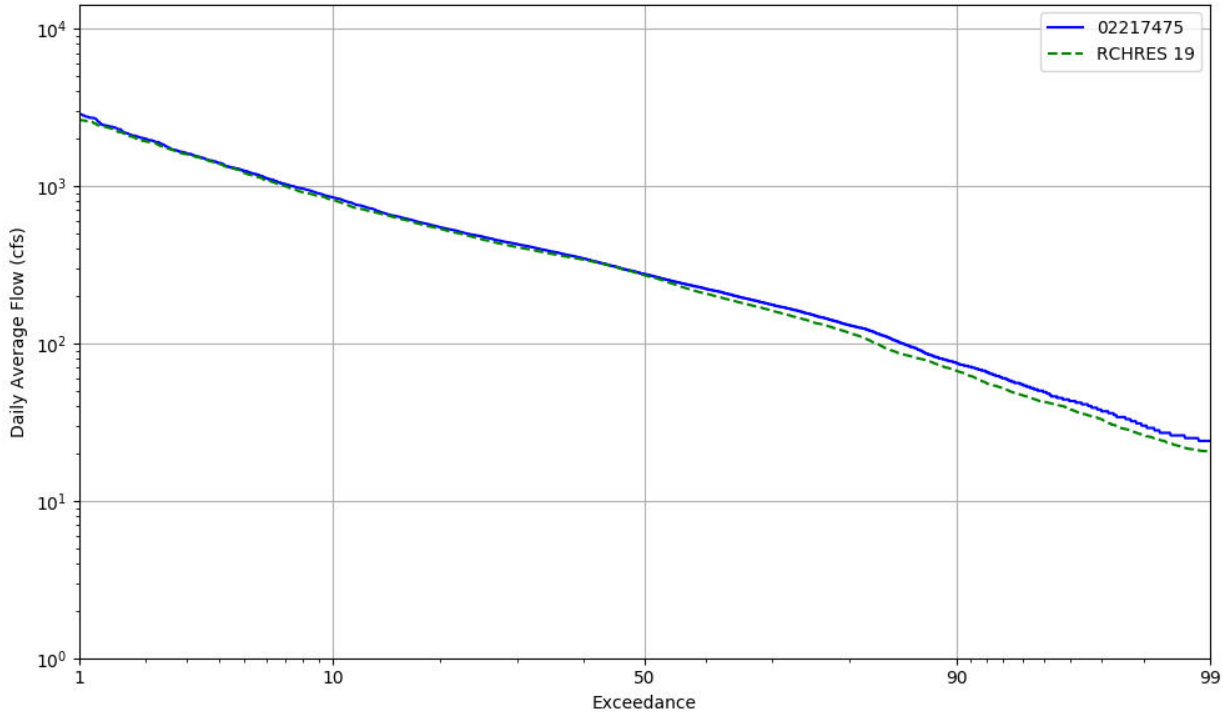


Figure T-03070101-14: Daily exceedance for HSFP reach 19 and USGS station 02217475.

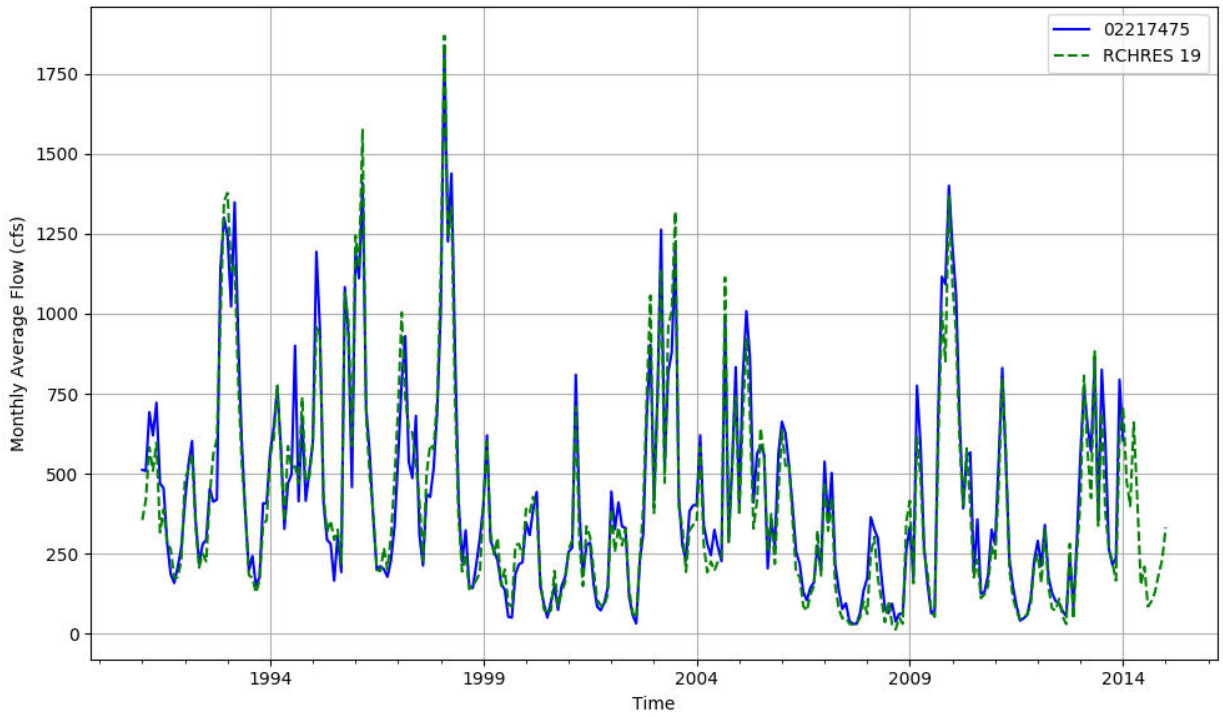


Figure T-03070101-15: Monthly flow for HSFP reach 19 and USGS station 02217475.

HSPF REACH 21, USGS GAUGE 02217500

Water-Data Report 2009
02217500 MIDDLE OCONEE RIVER NEAR ATHENS, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 335648, long 832522 referenced to North American Datum of 1983, Clarke County, GA, Hydrologic Unit 03070101, on left bank 0.5 miles upstream from US 78 and US 29 Business, 2.0 miles west of Athens, and 5.0 miles upstream from Barber Creek.

DRAINAGE AREA.--398 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1901 to September 1902, January 1929 to March 1932, May 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR GA-95-1: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 555.66 feet above National Geodetic Vertical Datum (NGVD) of 1929. From October 11, 1901 to October 25, 1902, a non-recording gage was located at site 1.0 mile upstream at different datum. From January 16, 1929 to March 15, 1932, and from April 29, 1937 to September 30, 1940, a water-stage recorder was located at a site 4.0 miles downstream at different datum.

COOPERATION.--Upper Oconee Water Authority.

REMARKS.--Discharge records good, except for estimated days which are poor. Gage height records good. Diversion upstream from station for municipal supply of Athens.

Table T-03070101-9: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02217500.

Statistic	Value
Bias	11.10
Standard error	95.25
Relative bias	0.02
Relative standard error	0.26
Nash-Sutcliffe coefficient	0.93
Kling-Gupta coefficient	0.94
Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03070101-10: Hydrologic Indices Between USGS Gauge 02217500 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02217500	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	468.19	479.10	2.33
MA2: Median, all daily flows	308.00	316.68	2.82
MA3: CV, all daily flows	117.99	102.69	-12.97
MA4: CV, log of all daily flows	81.31	83.23	2.37
MA5: Mean daily flow / median daily flow	1.52	1.51	-0.47
MA9: (Q10 - Q90) / median daily flow	2.66	2.85	6.92
MA10: (Q20 - Q80) / median daily flow	1.49	1.55	3.99
MA11: (Q25 - Q75) / median daily flow	1.17	1.29	10.15
MA12: Mean monthly flow, January	591.64	639.27	8.05
MA13: Mean monthly flow, February	707.94	722.41	2.04
MA14: Mean monthly flow, March	799.25	781.08	-2.27
MA15: Mean monthly flow, April	550.30	518.44	-5.79
MA16: Mean monthly flow, May	422.59	423.84	0.30
MA17: Mean monthly flow, June	344.95	332.32	-3.66
MA18: Mean monthly flow, July	306.94	326.25	6.29
MA19: Mean monthly flow, August	266.49	238.87	-10.37
MA20: Mean monthly flow, September	253.89	295.53	16.40
MA21: Mean monthly flow, October	307.99	356.34	15.70
MA22: Mean monthly flow, November	385.68	391.11	1.41
MA23: Mean monthly flow, December	489.52	529.88	8.25
ML1: Mean minimum monthly flow, January	318.21	324.62	2.02
ML2: Mean minimum monthly flow, February	365.39	386.48	5.77
ML3: Mean minimum monthly flow, March	395.22	381.74	-3.41
ML4: Mean minimum monthly flow, April	345.83	308.73	-10.73
ML5: Mean minimum monthly flow, May	245.78	240.37	-2.20
ML6: Mean minimum monthly flow, June	178.57	195.35	9.40
ML7: Mean minimum monthly flow, July	145.52	161.78	11.17
ML8: Mean minimum monthly flow, August	121.43	139.69	15.04
ML9: Mean minimum monthly flow, September	109.83	132.93	21.04
ML10: Mean minimum monthly flow, October	137.46	161.25	17.31
ML11: Mean minimum monthly flow, November	195.83	203.36	3.85
ML12: Mean minimum monthly flow, December	256.70	263.00	2.45
ML13: CV of minimum monthly flows	69.00	70.02	1.49
ML14: Mean minimum daily flow / mean median annual flow	0.22	0.29	32.26
ML15: Mean minimum annual flow / mean annual flow	0.15	0.21	35.87
ML16: Median minimum annual flow / median annual flow	0.20	0.26	31.20
ML20: Ratio of baseflow volume to total flow volume	0.58	0.58	0.68
ML22: Mean annual minimum flow divided by catchment area	0.75	0.99	31.63
RA1: Mean of positive changes from one day to next (rise rate)	220.84	228.93	
RA2: CV, mean of positive changes from one day to next (rise rate)	261.90	294.41	
RA3: Mean of negative changes from one day to next (fall rate)	119.45	79.75	
RA4: CV, mean of negative changes from one day to next (fall rate)	345.59	307.56	
RA5: Ratio of days that are higher than previous day	0.34	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.10	

RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.06	
RA8: Number of flow reversals from one day to the next	123.71	83.21	
RA9: CV, number of flow reversals from one day to the next	18.88	16.02	

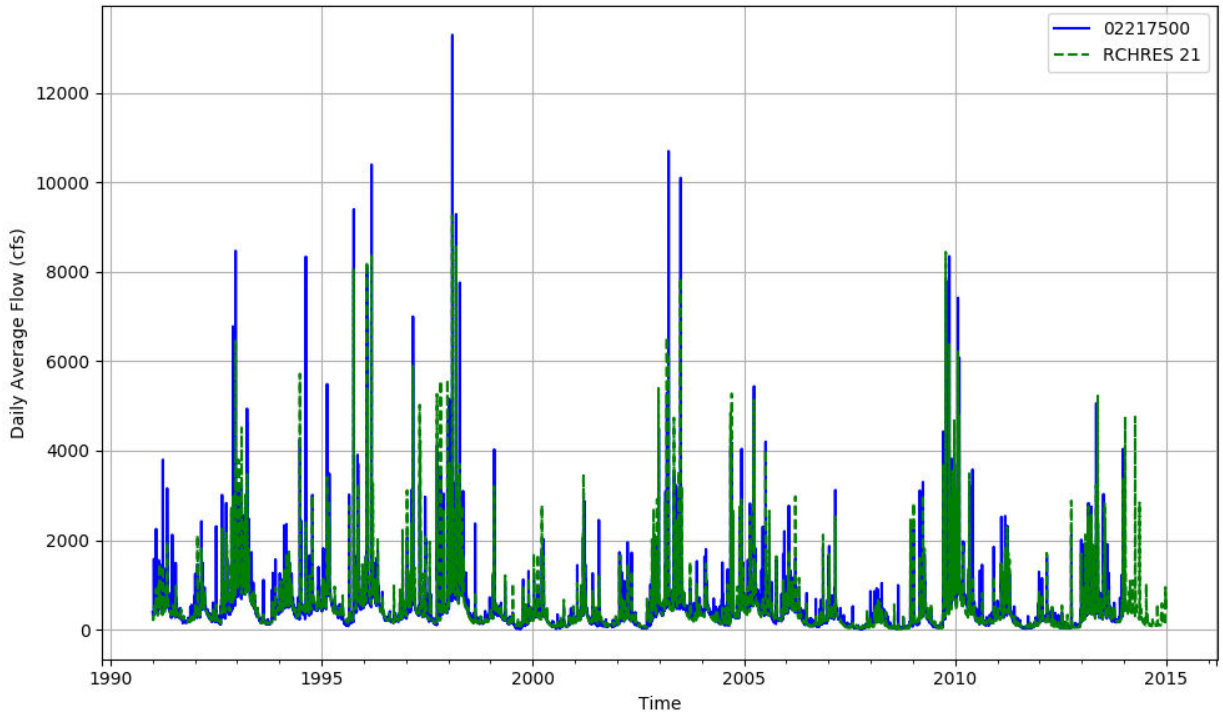


Figure T-03070101-16: Daily flow for HSFP reach 21 and USGS station 02217500.

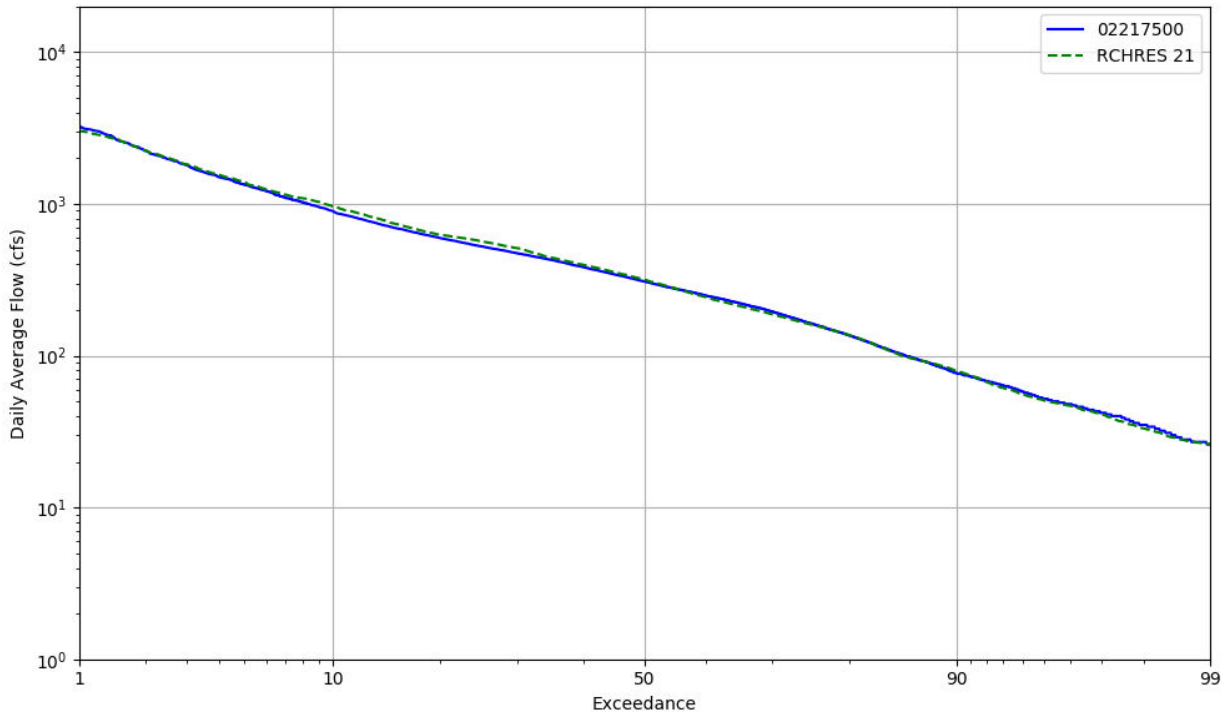


Figure T-03070101-17: Daily exceedance for HSFP reach 21 and USGS station 02217500.

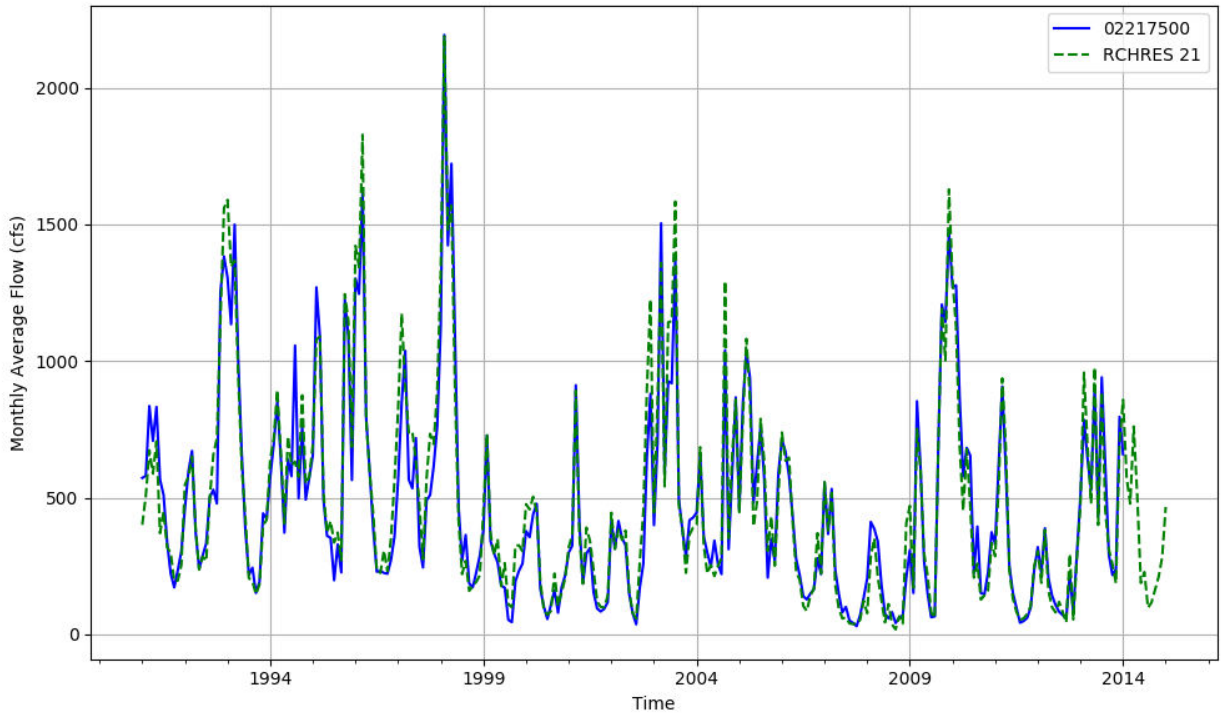


Figure T-03070101-18: Monthly flow for HSFP reach 21 and USGS station 02217500.

HSPF REACH 22, USGS GAUGE 02220900

Water-Data Report 2009
02220900 LITTLE RIVER NEAR EATONTON, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 331850, long 832614 referenced to North American Datum of 1927, Putnam County, GA, Hydrologic Unit 03070101, on right bank, 80.0 feet upstream from GA HWY 16, 0.9 miles downstream from Glady Creek, and 3.0 miles West of Eatonton, GA.

DRAINAGE AREA.--262 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: Water years 1971-77 (annual maximum), August 1977 to current year.
GAGE-HEIGHT: Water years 1971-77 (annual maximum), October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 356.03 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment). From February 19, 1970 to August 1, 1977, a crest-stage gage was located on the downstream side of bridge 80.0 feet downstream. From August 2, 1977 to August 25, 1987, a water-stage recorder was located 80.0 feet downstream on downstream side of bridge and datum 4.00 feet higher. From August 26, 1987 to December 10, 1995, a gage was located at downstream side of bridge 80.0 feet downstream and at same datum. From December 11, 1995 to August 8, 1997, a water-stage recorder was located at a site 20.0 feet upstream at same datum.

COOPERATION.--Georgia Power Company.

REMARKS.--Discharge records fair, except for days of estimated discharge, which are poor. Gage-height records fair.

Table T-03070101-11: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02220900.

Statistic	Value
Bias	-67.31
Standard error	120.57
Relative bias	-0.29
Relative standard error	0.50
Nash-Sutcliffe coefficient	0.75
Kling-Gupta coefficient	0.66
Coefficient of efficiency	0.52
Index of agreement	0.76

Table T-03070101-12: Hydrologic Indices Between USGS Gauge 02220900 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02220900	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	226.36	158.48	-29.99
MA2: Median, all daily flows	113.00	24.97	-77.90
MA3: CV, all daily flows	168.84	227.22	34.58
MA4: CV, log of all daily flows	105.53	173.99	64.88
MA5: Mean daily flow / median daily flow	2.00	6.35	216.79
MA9: (Q10 - Q90) / median daily flow	3.84	17.51	356.04
MA10: (Q20 - Q80) / median daily flow	2.11	6.45	206.05
MA11: (Q25 - Q75) / median daily flow	1.59	4.05	154.35
MA12: Mean monthly flow, January	288.29	220.51	-23.51
MA13: Mean monthly flow, February	426.74	326.99	-23.38
MA14: Mean monthly flow, March	484.93	350.18	-27.79
MA15: Mean monthly flow, April	266.94	146.31	-45.19
MA16: Mean monthly flow, May	171.05	102.67	-39.97
MA17: Mean monthly flow, June	116.39	67.69	-41.84
MA18: Mean monthly flow, July	120.09	88.46	-26.34
MA19: Mean monthly flow, August	105.38	63.32	-39.91
MA20: Mean monthly flow, September	126.52	113.71	-10.13
MA21: Mean monthly flow, October	110.32	80.37	-27.14
MA22: Mean monthly flow, November	175.00	118.06	-32.54
MA23: Mean monthly flow, December	248.29	184.81	-25.57
ML1: Mean minimum monthly flow, January	140.33	49.37	-64.82
ML2: Mean minimum monthly flow, February	158.74	29.95	-81.13
ML3: Mean minimum monthly flow, March	180.22	29.42	-83.67
ML4: Mean minimum monthly flow, April	130.65	17.03	-86.97
ML5: Mean minimum monthly flow, May	74.73	13.22	-82.31
ML6: Mean minimum monthly flow, June	52.33	9.98	-80.92
ML7: Mean minimum monthly flow, July	43.24	9.58	-77.85
ML8: Mean minimum monthly flow, August	33.47	9.10	-72.82
ML9: Mean minimum monthly flow, September	28.93	9.48	-67.23
ML10: Mean minimum monthly flow, October	44.49	8.33	-81.27
ML11: Mean minimum monthly flow, November	65.26	9.11	-86.05
ML12: Mean minimum monthly flow, December	98.26	17.21	-82.48
ML13: CV of minimum monthly flows	88.44	260.60	194.65
ML14: Mean minimum daily flow / mean median annual flow	0.13	0.14	3.94
ML15: Mean minimum annual flow / mean annual flow	0.07	0.03	-59.83
ML16: Median minimum annual flow / median annual flow	0.08	0.10	21.71
ML20: Ratio of baseflow volume to total flow volume	0.46	0.15	-66.57
ML22: Mean annual minimum flow divided by catchment area	0.18	0.04	-76.56
RA1: Mean of positive changes from one day to next (rise rate)	144.95	151.52	
RA2: CV, mean of positive changes from one day to next (rise rate)	303.81	335.26	
RA3: Mean of negative changes from one day to next (fall rate)	62.67	56.26	
RA4: CV, mean of negative changes from one day to next (fall rate)	387.25	357.38	
RA5: Ratio of days that are higher than previous day	0.29	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.28	

RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.21	
RA8: Number of flow reversals from one day to the next	94.54	90.38	
RA9: CV, number of flow reversals from one day to the next	18.93	19.97	

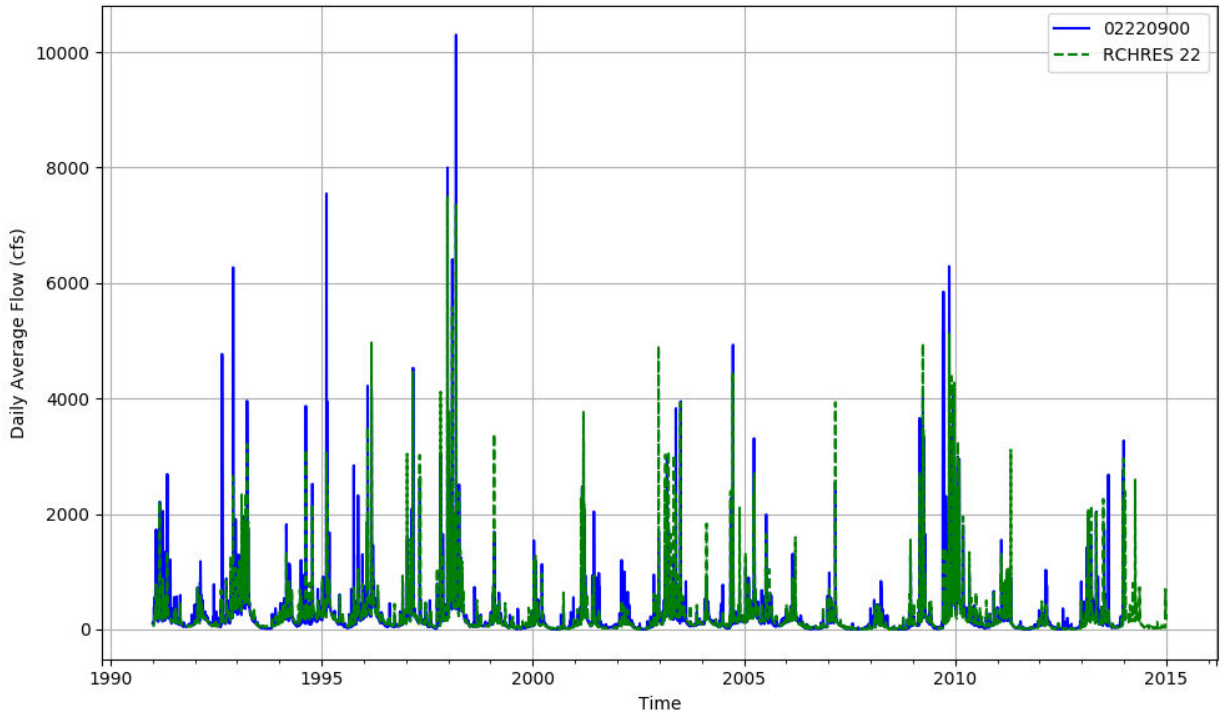


Figure T-03070101-19: Daily flow for HSFP reach 22 and USGS station 02220900.

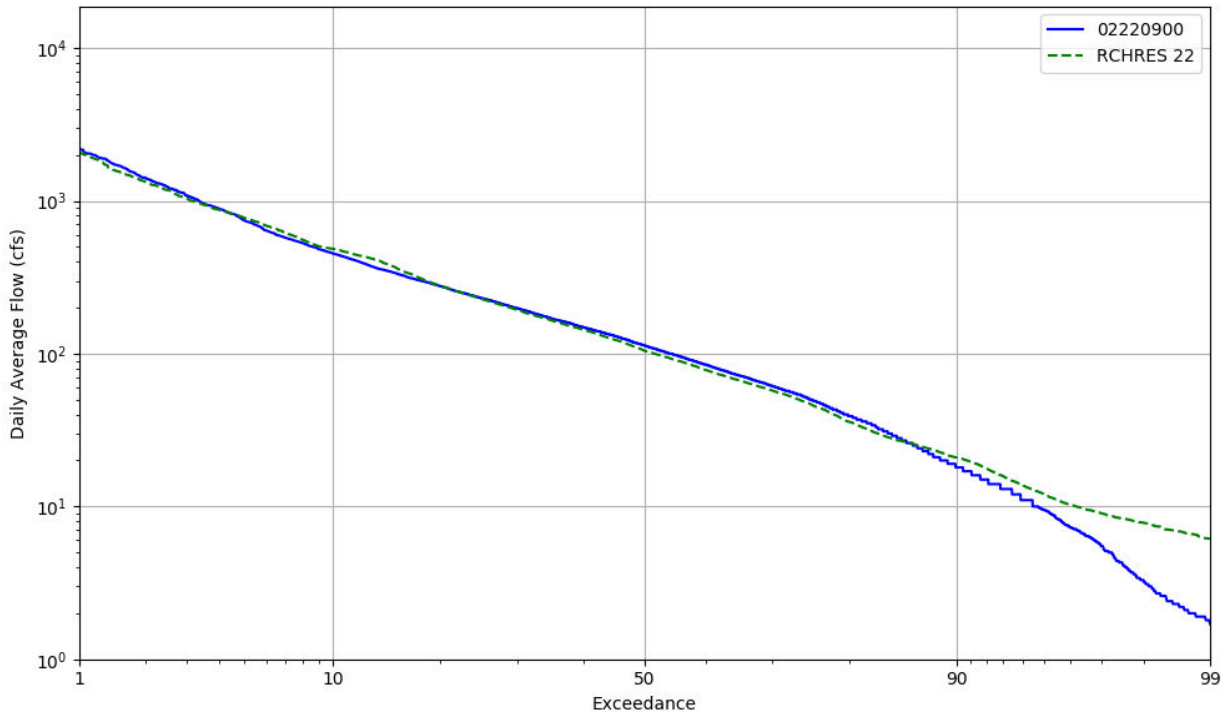


Figure T-03070101-20: Daily exceedance for HSFP reach 22 and USGS station 02220900.

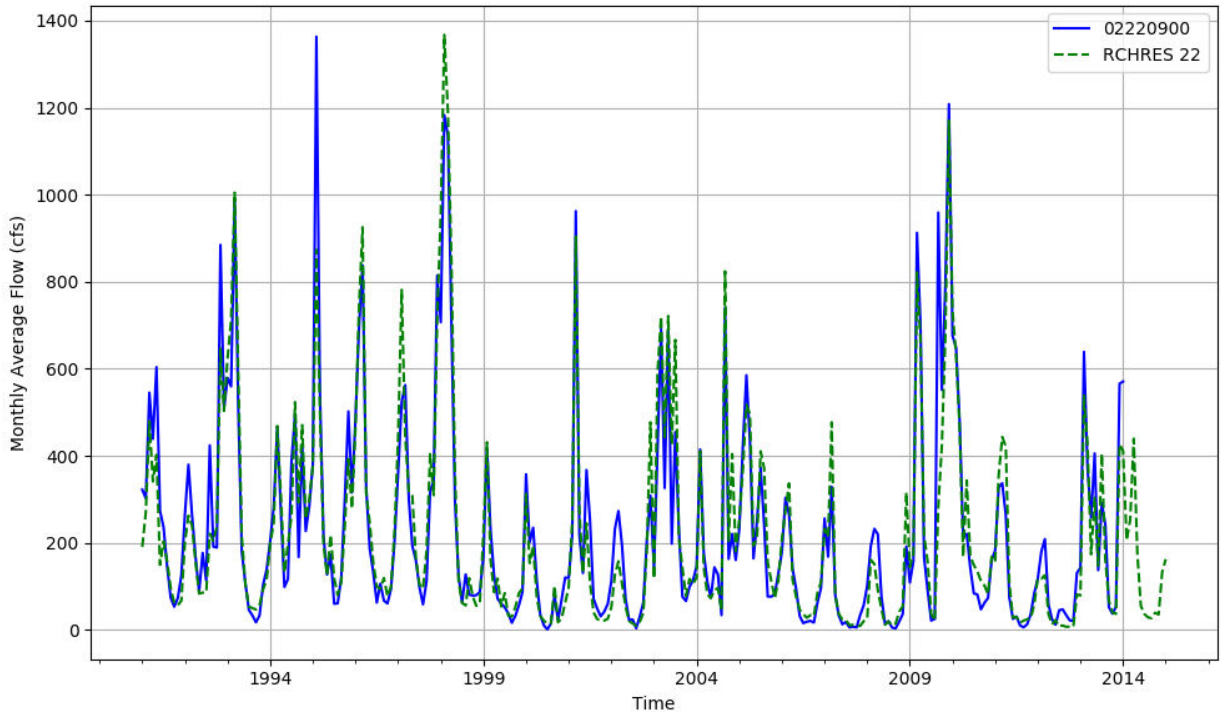


Figure T-03070101-21: Monthly flow for HSFP reach 22 and USGS station 02220900.

HSPF REACH 27, USGS GAUGE 02217770

Water-Data Report 2009
02217770 NORTH OCONEE RIVER AT COLLEGE STREET, NEAR ATHENS, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 335811, long 832239 referenced to North American Datum of 1927, Clarke County, GA, Hydrologic Unit 03070101, at bridge on College Street, 0.4 miles downstream from GA Loop 10.

DRAINAGE AREA.--264 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: August 2002 to current year.
GAGE-HEIGHT: August 2002 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 600 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Athens-Clarke County Public Utilities.

REMARKS.--Discharge and gage height records fair.

Table T-03070101-13: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02217770.

Statistic	Value
Bias	0.90
Standard error	57.11
Relative bias	0.00
Relative standard error	0.25
Nash-Sutcliffe coefficient	0.94
Kling-Gupta coefficient	0.97
Coefficient of efficiency	0.77
Index of agreement	0.89

Table T-03070101-14: Hydrologic Indices Between USGS Gauge 02217770 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02217770	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	284.06	285.98	0.67
MA2: Median, all daily flows	185.00	191.32	3.42
MA3: CV, all daily flows	104.93	102.65	-2.17
MA4: CV, log of all daily flows	85.86	85.65	-0.25

MA5: Mean daily flow / median daily flow	1.54	1.49	-2.65
MA9: (Q10 - Q90) / median daily flow	2.96	2.83	-4.53
MA10: (Q20 - Q80) / median daily flow	1.75	1.68	-4.20
MA11: (Q25 - Q75) / median daily flow	1.40	1.34	-4.20
MA12: Mean monthly flow, January	349.22	344.41	-1.38
MA13: Mean monthly flow, February	351.54	339.62	-3.39
MA14: Mean monthly flow, March	429.33	407.66	-5.05
MA15: Mean monthly flow, April	273.97	263.37	-3.87
MA16: Mean monthly flow, May	212.28	214.88	1.23
MA17: Mean monthly flow, June	166.47	169.17	1.62
MA18: Mean monthly flow, July	205.57	214.69	4.44
MA19: Mean monthly flow, August	146.66	150.52	2.63
MA20: Mean monthly flow, September	153.25	183.10	19.48
MA21: Mean monthly flow, October	172.98	189.07	9.30
MA22: Mean monthly flow, November	219.77	210.52	-4.21
MA23: Mean monthly flow, December	362.51	366.09	0.99
ML1: Mean minimum monthly flow, January	223.00	214.75	-3.70
ML2: Mean minimum monthly flow, February	229.00	231.21	0.96
ML3: Mean minimum monthly flow, March	238.09	232.42	-2.38
ML4: Mean minimum monthly flow, April	194.55	183.38	-5.74
ML5: Mean minimum monthly flow, May	131.18	139.03	5.98
ML6: Mean minimum monthly flow, June	99.82	116.24	16.45
ML7: Mean minimum monthly flow, July	84.82	105.19	24.02
ML8: Mean minimum monthly flow, August	73.16	86.63	18.41
ML9: Mean minimum monthly flow, September	57.94	70.23	21.21
ML10: Mean minimum monthly flow, October	84.00	90.01	7.16
ML11: Mean minimum monthly flow, November	109.25	115.24	5.49
ML12: Mean minimum monthly flow, December	160.42	155.87	-2.84
ML13: CV of minimum monthly flows	76.05	72.01	-5.31
ML14: Mean minimum daily flow / mean median annual flow	0.24	0.32	34.03
ML15: Mean minimum annual flow / mean annual flow	0.15	0.20	28.25
ML16: Median minimum annual flow / median annual flow	0.19	0.27	46.13
ML20: Ratio of baseflow volume to total flow volume	0.56	0.57	2.38
ML22: Mean annual minimum flow divided by catchment area	0.48	0.57	18.57
RA1: Mean of positive changes from one day to next (rise rate)	104.85	147.17	
RA2: CV, mean of positive changes from one day to next (rise rate)	233.77	276.16	
RA3: Mean of negative changes from one day to next (fall rate)	62.05	48.99	
RA4: CV, mean of negative changes from one day to next (fall rate)	284.16	303.31	
RA5: Ratio of days that are higher than previous day	0.36	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.12	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.06	
RA8: Number of flow reversals from one day to the next	98.00	75.23	
RA9: CV, number of flow reversals from one day to the next	35.96	34.15	

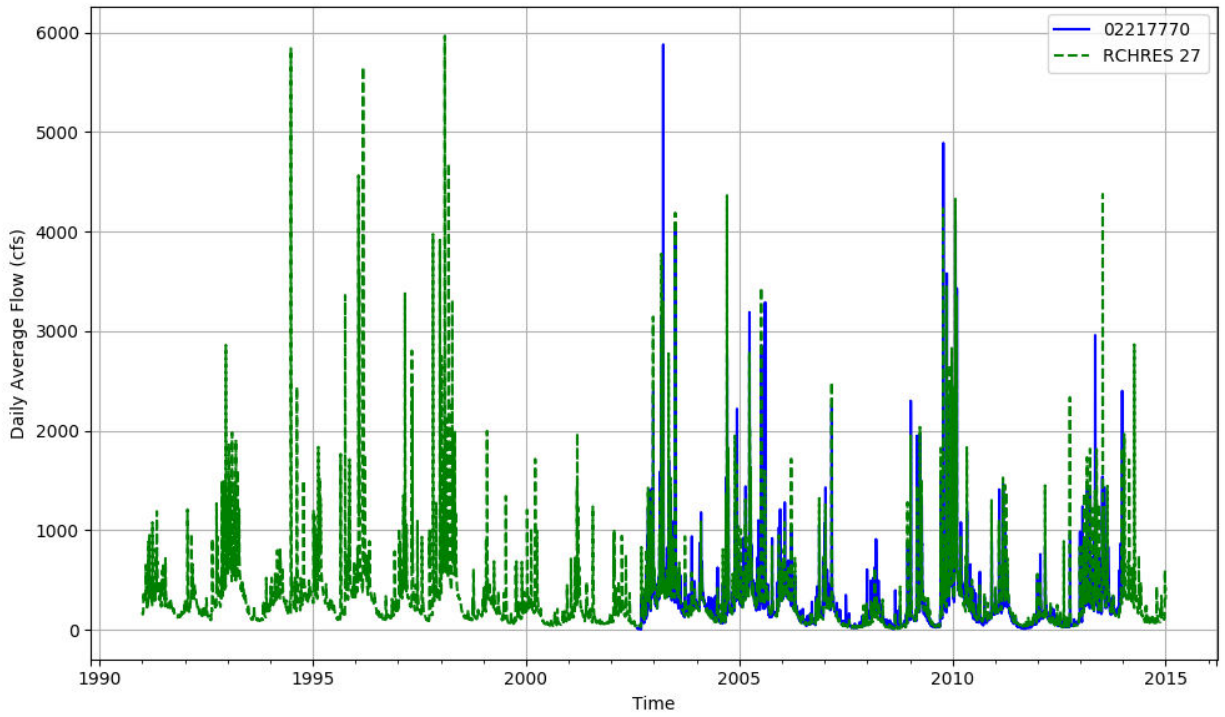


Figure T-03070101-22: Daily flow for HSFP reach 27 and USGS station 02217770.

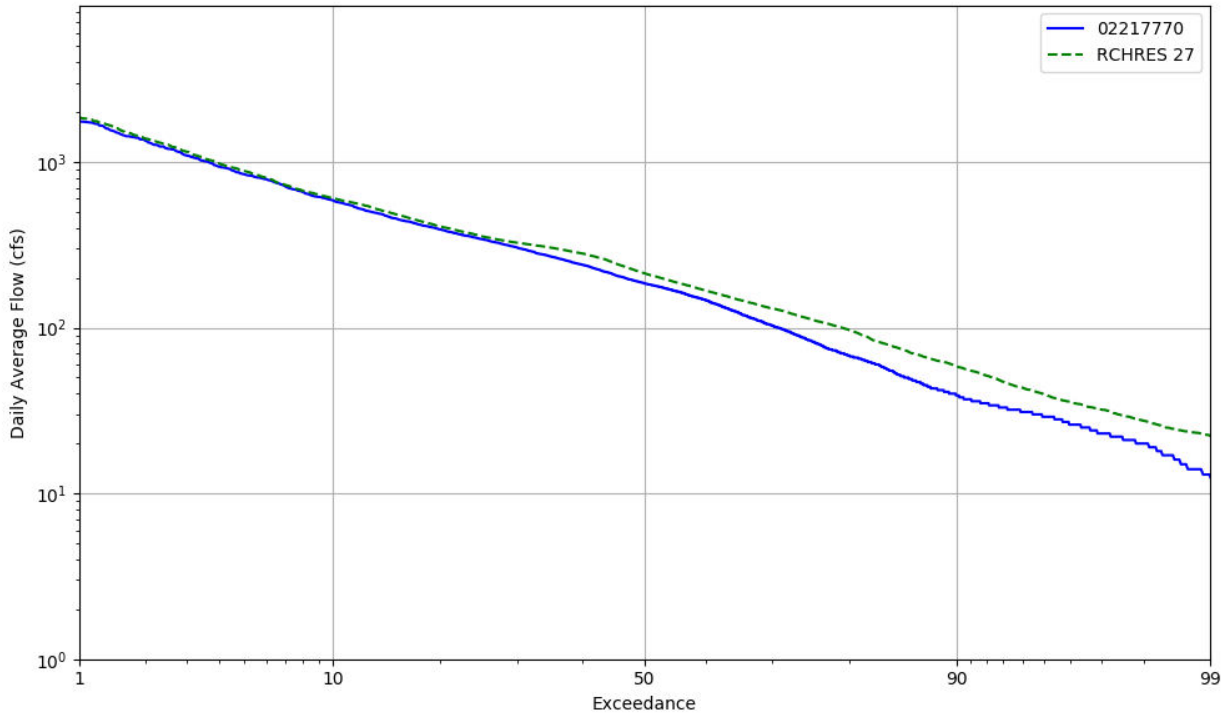


Figure T-03070101-23: Daily exceedance for HSFP reach 27 and USGS station 02217770.

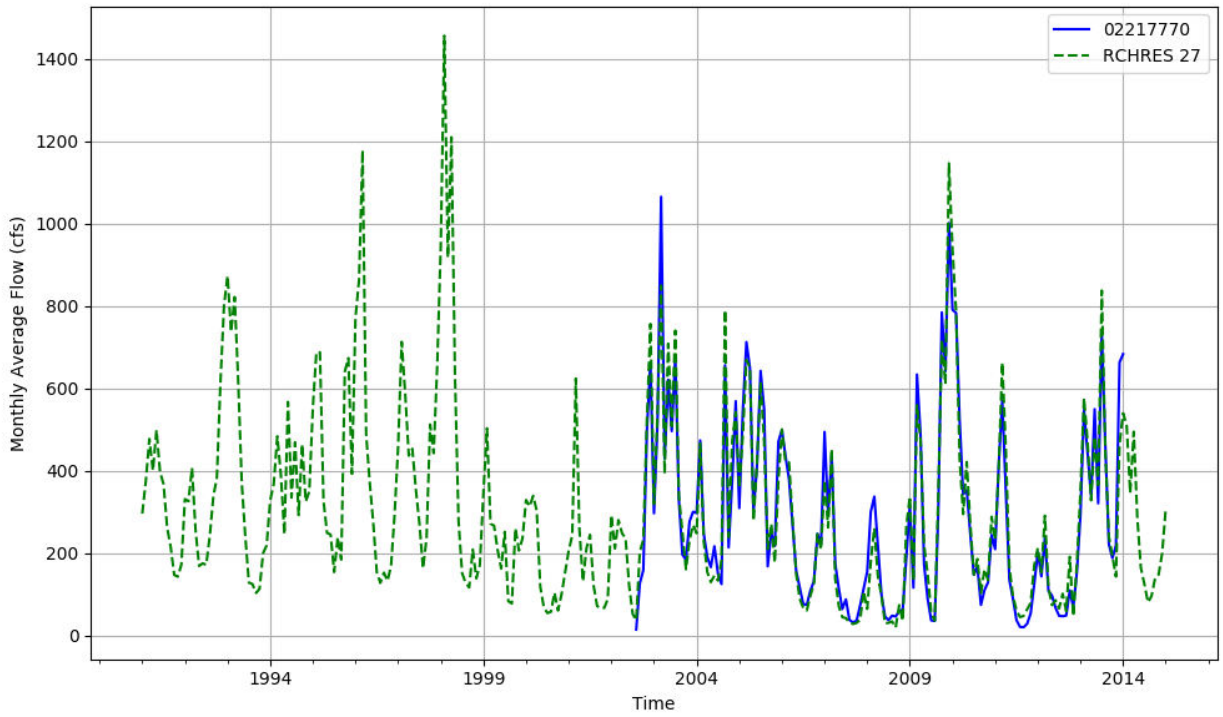


Figure T-03070101-24: Monthly flow for HSFP reach 27 and USGS station 02217770.

HSPF REACH 35, USGS GAUGE 02218300

Water-Data Report 2009
02218300 OCONEE RIVER NEAR PENFIELD, GA
Altamaha Basin Upper Oconee Subbasin

LOCATION.--Lat 334316, long 831744 referenced to North American Datum of 1927, Greene County, GA, Hydrologic Unit 03070101, on downstream side of bridge on GA 15, 7.0 miles upstream from Greenbrier Creek, 8.0 miles northwest of Penfield, GA, and 10.0 mi southeast of Watkinsville, GA.

DRAINAGE AREA.--940 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: Water years 1970-77 (annual maximum). August 1977 to current year.
GAGE-HEIGHT: Water years 1970-77 (annual maximum). October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 433.26 feet above National Geodetic Vertical Datum (NGVD) of 1929. From November 4, 1969 to July 21, 1977, a crest-stage partial-record station, and from July 22, 1977 to August 1, 1990, a water-stage recorder was located at site 300 feet upstream at same datum.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge and gage-height records good. Some regulation at low streamflow occurs from operation of Barnett Shoals Dam.

Table T-03070101-15: Comparison Statistics Between HSPF Reach 35 and USGS Gauge 02218300.

Statistic	Value
Bias	-95.59
Standard error	214.00
Relative bias	-0.08
Relative standard error	0.24
Nash-Sutcliffe coefficient	0.94
Kling-Gupta coefficient	0.91
Coefficient of efficiency	0.78
Index of agreement	0.89

Table T-03070101-16: Hydrologic Indices Between USGS Gauge 02218300 and HSPF Reach 35.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02218300	Reach 35	Difference
MA1: Mean, all daily flows	1186.69	1091.08	-8.06
MA2: Median, all daily flows	830.00	737.03	-11.20
MA3: CV, all daily flows	101.44	100.58	-0.85
MA4: CV, log of all daily flows	77.66	81.65	5.13
MA5: Mean daily flow / median daily flow	1.43	1.48	3.54
MA9: (Q10 - Q90) / median daily flow	2.51	2.72	8.47
MA10: (Q20 - Q80) / median daily flow	1.46	1.58	8.30
MA11: (Q25 - Q75) / median daily flow	1.13	1.28	12.83
MA12: Mean monthly flow, January	1498.91	1463.54	-2.36
MA13: Mean monthly flow, February	1808.31	1671.10	-7.59
MA14: Mean monthly flow, March	2032.41	1812.90	-10.80
MA15: Mean monthly flow, April	1381.83	1215.48	-12.04
MA16: Mean monthly flow, May	1048.93	947.85	-9.64
MA17: Mean monthly flow, June	902.56	756.68	-16.16
MA18: Mean monthly flow, July	792.85	733.43	-7.49
MA19: Mean monthly flow, August	664.00	545.58	-17.84
MA20: Mean monthly flow, September	641.86	652.99	1.73
MA21: Mean monthly flow, October	782.23	793.74	1.47
MA22: Mean monthly flow, November	967.00	872.95	-9.73
MA23: Mean monthly flow, December	1252.30	1203.69	-3.88
ML1: Mean minimum monthly flow, January	850.67	762.99	-10.31
ML2: Mean minimum monthly flow, February	978.30	904.20	-7.57
ML3: Mean minimum monthly flow, March	1045.70	903.68	-13.58
ML4: Mean minimum monthly flow, April	894.13	734.28	-17.88
ML5: Mean minimum monthly flow, May	635.13	548.46	-13.65
ML6: Mean minimum monthly flow, June	495.65	444.50	-10.32
ML7: Mean minimum monthly flow, July	398.65	369.04	-7.43
ML8: Mean minimum monthly flow, August	315.43	314.82	-0.20
ML9: Mean minimum monthly flow, September	279.70	296.56	6.03
ML10: Mean minimum monthly flow, October	378.48	368.23	-2.71
ML11: Mean minimum monthly flow, November	504.78	462.35	-8.41
ML12: Mean minimum monthly flow, December	674.74	609.83	-9.62
ML13: CV of minimum monthly flows	66.12	69.39	4.94
ML14: Mean minimum daily flow / mean median annual flow	0.23	0.30	29.03
ML15: Mean minimum annual flow / mean annual flow	0.16	0.21	27.65
ML16: Median minimum annual flow / median annual flow	0.21	0.27	28.47
ML20: Ratio of baseflow volume to total flow volume	0.60	0.59	-2.04
ML22: Mean annual minimum flow divided by catchment area	2.04	2.24	9.91
RA1: Mean of positive changes from one day to next (rise rate)	420.76	458.24	
RA2: CV, mean of positive changes from one day to next (rise rate)	231.41	302.60	
RA3: Mean of negative changes from one day to next (fall rate)	206.89	164.94	
RA4: CV, mean of negative changes from one day to next (fall rate)	264.30	294.04	
RA5: Ratio of days that are higher than previous day	0.33	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.06	
RA8: Number of flow reversals from one day to the next	111.17	77.00	

RA9: CV, number of flow reversals from one day to the next	18.13	17.82	

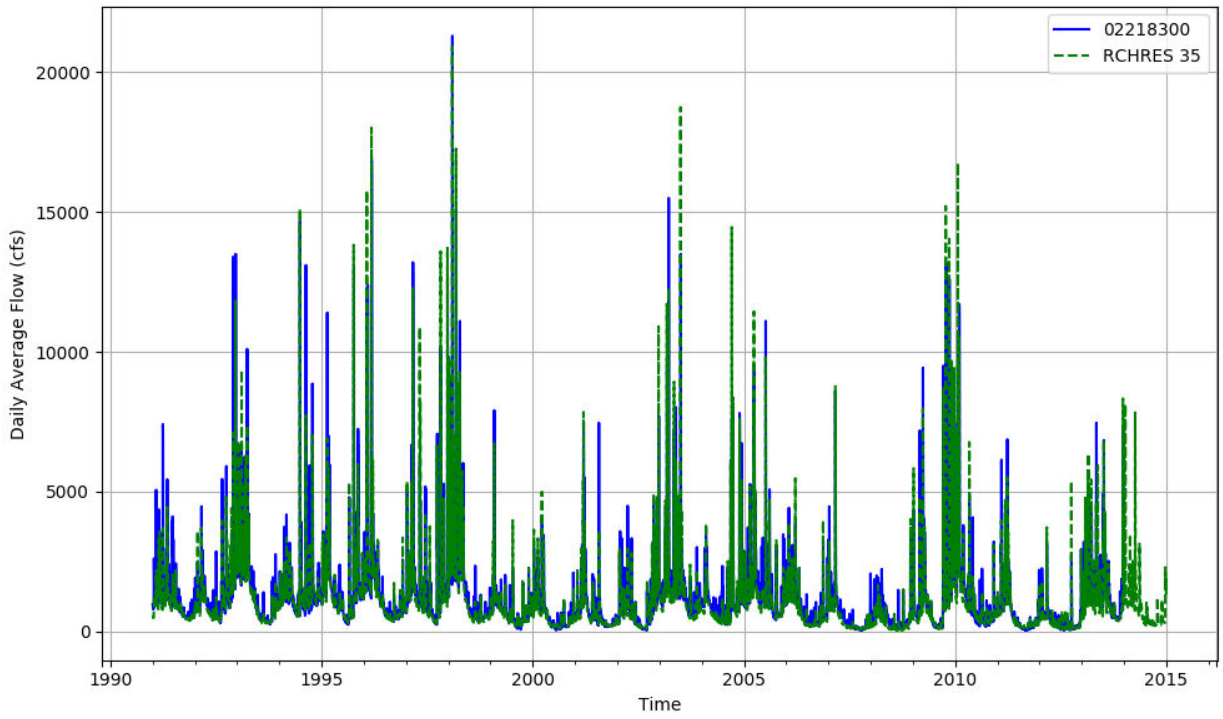


Figure T-03070101-25: Daily flow for HSFP reach 35 and USGS station 02218300.

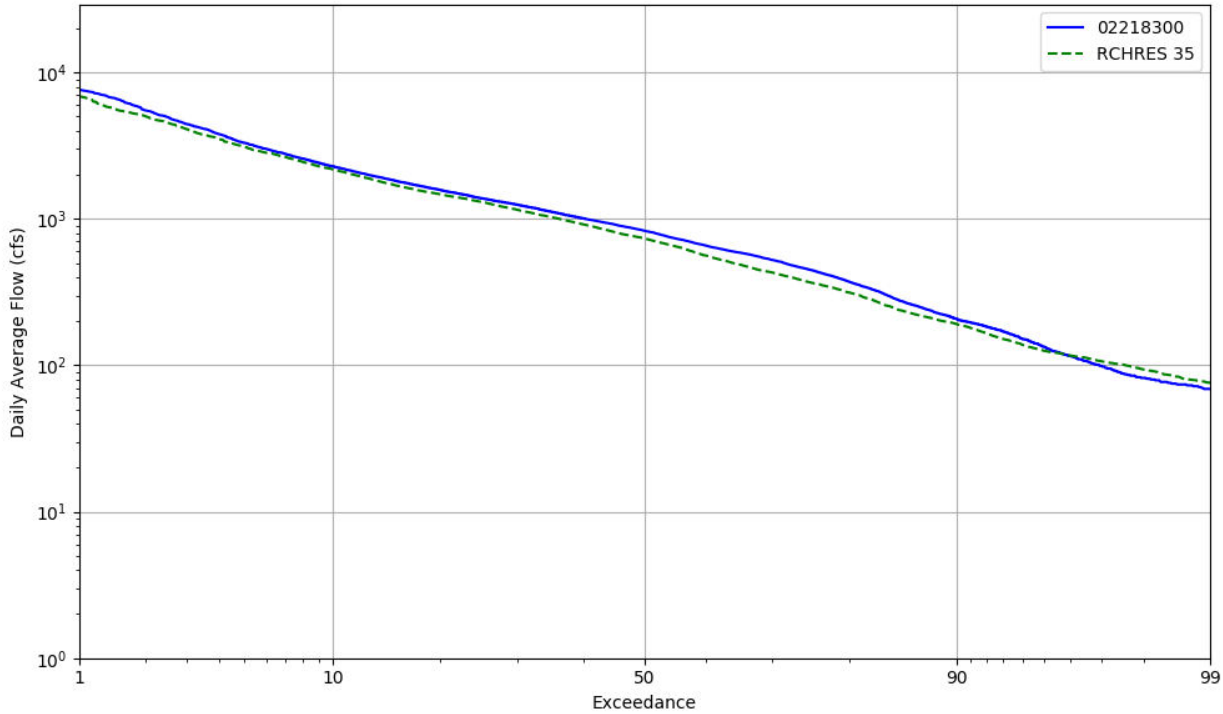


Figure T-03070101-26: Daily exceedance for HSFP reach 35 and USGS station 02218300.

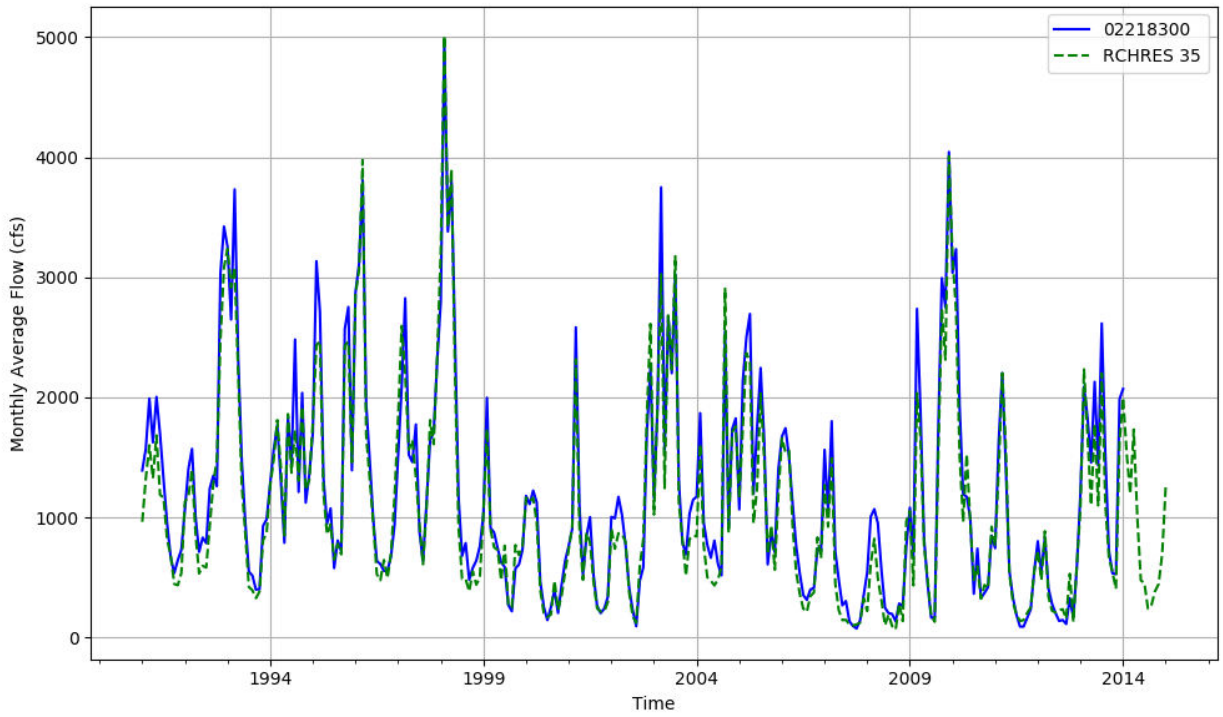


Figure T-03070101-27: Monthly flow for HSFP reach 35 and USGS station 02218300.

Table T-03070101-17: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	44873	106280	41192	7444	1477	20826	1021855	6112	184695	333805	2519	72741	4377	886	2783	1851865
AREA(%)	2.4	5.7	2.2	0.4	0.1	1.1	54.8	0.3	9.9	17.9	0.1	3.9	0.2	0.0	0.1	99.3
IMPERVIOUS																
AREA(ACRES)		5705	4615	1874	1479											13672
AREA(%)		0.3	0.2	0.1	0.1											0.7
SUPY	38.1	39.3	40.1	40.0	40.2	39.1	39.1	39.2	39.1	39.5	38.5	39.2	69.6	66.1	40.3	39.0
SURLI			6.7	6.9	6.6										0.1	0.2
UZLI																0.0
LZLI			1.0	0.9	0.8										55.4	0.1
SURO: PERVIOUS		1.4	2.0	2.0	1.7	1.0	0.5	0.9	0.7	0.8	0.4		2.7	12.8	0.5	0.6
SURO: IMPERVIOUS		33.9	34.7	34.6	34.8											0.3
SURO: COMBINED		3.1	5.3	8.5	18.2	1.0	0.5	0.9	0.7	0.8	0.4		2.7	12.8	0.5	0.9
IFWO		6.8	7.5	7.7	7.7	7.4	3.3	7.1	5.5	5.3	4.2		15.1	13.6	5.5	4.0
AGWO	7.5	3.8	8.7	8.5	8.2	7.3	4.5	6.7	4.7	5.3	4.7	6.3	17.0	6.1	56.3	5.0
AGWI	10.3	6.5	11.3	11.2	10.8	10.0	7.8	9.4	7.7	8.2	7.0	7.6	17.9	7.5	58.7	8.0
IGWI	0.1	1.0	0.9	0.9	0.9	1.7	0.9	1.7	1.6	1.6	3.1	0.3	0.7	6.5	3.3	1.1
CEPE		8.1	6.7	7.2	9.3	5.9	9.7	7.9	7.8	6.6	5.6	9.9	23.9	7.4	5.8	8.5
UZET	2.2	3.1	4.0	3.8	3.3	3.8	2.9	3.7	3.1	3.2	3.5	8.2	2.5	4.4	4.2	3.2
LZET	1.6	15.0	17.0	16.8	15.7	11.4	18.0	10.6	15.8	16.5	18.4	1.5	8.2	16.6	19.8	16.0
AGWET	3.2	2.3	2.6	2.6	2.4	2.4	2.1	2.2	2.2	2.3	1.9	1.6	1.1	1.2	2.2	2.2
BASET	0.9	1.0	1.2	1.2	1.3	1.1	1.0	1.1	1.0	1.1	0.8	0.8	1.1	0.7	1.0	1.0
SURET	25.6											14.1				1.2
PERO	7.5	11.9	18.2	18.1	17.5	15.6	8.2	14.7	10.9	11.5	9.2	6.3	34.8	32.6	62.2	9.6
IGWI	0.1	1.0	0.9	0.9	0.9	1.7	0.9	1.7	1.6	1.6	3.1	0.3	0.7	6.5	3.3	1.1
TAET: PERVIOUS	33.5	29.5	31.5	31.6	32.1	24.5	33.7	25.5	30.0	29.7	30.1	36.1	36.8	30.3	32.9	32.1
IMPEV: IMPERVIOUS		5.4	5.4	5.4	5.4											0.0
ET: COMBINED	33.5	28.3	28.9	26.3	18.7	24.5	33.7	25.5	30.0	29.7	30.1	36.1	36.8	30.3	32.9	32.1
PET	42.3	41.7	41.3	41.4	41.3	41.9	41.9	42.0	41.9	41.6	42.0	41.8	41.6	41.8	41.6	41.5

Table T-03070101-18: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	44873	106280	41192	7444	1477	20826	1021855	6112	184695	333805	2519	72741	4377	886	2783	1851865
AREA(%)	2.4	5.7	2.2	0.4	0.1	1.1	54.8	0.3	9.9	17.9	0.1	3.9	0.2	0.0	0.1	99.3
IMPERVIOUS																
AREA(ACRES)		5705	4615	1874	1479											13672
AREA(%)		0.3	0.2	0.1	0.1											0.7
SUPY	63.6	65.6	66.8	66.3	66.5	65.4	65.3	65.4	65.2	66.2	65.3	65.6	80.0	83.7	66.8	65.0
SURLI			7.6	7.6	7.2										4.8	0.2
UZLI																0.0
LZLI			0.6	0.6	0.5										31.6	0.1
SURO: PERVIOUS		3.9	5.4	5.3	4.7	2.6	1.2	2.4	2.0	2.6	1.2		4.4	4.6	1.4	1.7
SURO: IMPERVIOUS		58.0	59.1	58.7	58.9											0.4
SURO: COMBINED		6.7	10.8	16.0	31.8	2.6	1.2	2.4	2.0	2.6	1.2		4.4	4.6	1.4	2.2
IFWO		16.4	17.5	17.4	17.7	16.6	9.2	16.4	14.0	14.0	11.6		21.1	19.7	16.1	10.7
AGWO	10.2	4.9	11.0	10.6	10.0	9.9	6.5	9.1	6.7	7.2	6.7	12.5	10.0	7.8	36.8	7.1
AGWI	14.6	12.6	19.3	18.9	18.0	17.6	16.0	16.5	14.7	15.8	14.0	15.7	16.9	12.0	41.7	15.6
IGWI	0.7	1.9	1.5	1.6	1.5	3.0	1.8	3.0	3.0	3.0	6.0	2.1	1.1	11.6	6.3	2.1
CEPE		11.1	9.3	9.9	12.8	8.2	13.2	10.8	10.7	9.3	7.9	13.6	21.0	10.3	8.3	11.6
UZET	3.2	3.7	4.6	4.4	3.6	4.9	3.6	4.6	3.9	3.9	4.7	6.1	3.3	6.1	7.0	3.8
LZET	1.5	14.6	16.2	15.9	14.5	11.3	17.2	10.4	15.5	16.1	18.2	2.0	11.0	18.1	21.2	15.5
AGWET	3.2	2.5	2.8	2.8	2.6	2.6	2.3	2.4	2.4	2.5	2.0	1.7	1.8	1.3	2.2	2.3
BASET	1.0	1.0	1.3	1.3	1.3	1.2	1.0	1.2	1.1	1.1	0.8	0.8	1.2	0.8	1.1	1.0
SURET	31.7											15.4				1.4
PERO	10.2	25.2	34.0	33.3	32.4	29.2	16.9	28.0	22.7	23.8	19.6	12.5	35.5	32.1	54.3	19.5
IGWI	0.7	1.9	1.5	1.6	1.5	3.0	1.8	3.0	3.0	3.0	6.0	2.1	1.1	11.6	6.3	2.1
TAET: PERVIOUS	40.6	33.0	34.3	34.3	34.8	28.2	37.4	29.4	33.5	33.0	33.6	39.6	38.3	36.6	39.9	35.6
IMPEV: IMPERVIOUS		7.5	7.6	7.6	7.6											0.1
ET: COMBINED	40.6	31.7	31.6	28.9	21.2	28.2	37.4	29.4	33.5	33.0	33.6	39.6	38.3	36.6	39.9	35.7
PET	49.1	48.0	47.1	47.2	47.1	48.3	48.3	48.4	48.3	47.7	48.2	48.1	47.7	48.3	47.6	47.8

Table T-03070101-19: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	44873	106280	41192	7444	1477	20826	1021855	6112	184695	333805	2519	72741	4377	886	2783	1851865
AREA(%)	2.4	5.7	2.2	0.4	0.1	1.1	54.8	0.3	9.9	17.9	0.1	3.9	0.2	0.0	0.1	99.3
IMPERVIOUS																
AREA(ACRES)		5705	4615	1874	1479											13672
AREA(%)		0.3	0.2	0.1	0.1											0.7
SUPY	44.0	45.4	45.8	45.9	45.9	45.0	45.1	45.0	45.1	45.7	45.5	45.4	64.9	58.3	46.6	45.0
SURLI			7.8	7.9	7.4										5.3	0.2
UZLI																0.0
LZLI			0.6	0.6	0.5										28.3	0.1
SURO: PERVIOUS		1.9	2.9	2.8	2.5	1.3	0.6	1.2	0.9	1.3	0.6		2.8	2.3	0.8	0.8
SURO: IMPERVIOUS		39.6	40.0	40.0	40.0											0.3
SURO: COMBINED		3.8	6.6	10.3	21.3	1.3	0.6	1.2	0.9	1.3	0.6		2.8	2.3	0.8	1.1
IFWO		8.2	9.4	9.5	9.5	9.1	4.4	8.7	6.5	6.9	5.2		13.3	11.0	8.8	5.2
AGWO	12.0	5.3	11.1	10.9	10.3	9.9	8.0	9.2	7.1	7.6	7.0	12.6	10.9	7.6	31.2	8.1
AGWI	13.2	7.7	13.6	13.5	12.8	12.1	9.6	11.2	9.1	9.6	8.5	13.2	13.0	8.3	33.1	9.8
IGWI	0.6	1.2	1.2	1.2	1.1	2.2	1.3	2.2	1.9	1.9	3.9	2.0	1.1	7.6	5.2	1.5
CEPE		8.8	7.3	7.9	10.4	6.3	10.6	8.5	8.4	7.3	6.1	10.9	22.8	7.9	6.5	9.3
UZET	0.4	3.5	4.2	4.0	3.4	4.4	3.6	4.2	3.6	3.6	4.2	6.7	3.1	5.2	6.4	3.7
LZET	0.1	16.1	17.2	17.0	15.8	11.6	19.0	10.9	17.0	17.4	19.8	0.9	9.8	18.2	20.7	16.9
AGWET	0.2	2.4	2.7	2.6	2.5	2.5	2.1	2.3	2.3	2.4	1.9	0.9	1.4	1.3	2.1	2.1
BASET	1.2	1.1	1.3	1.3	1.3	1.1	1.1	1.1	1.1	1.1	0.8	1.0	1.2	0.7	1.0	1.1
SURET	42.2											22.2				1.9
PERO	12.0	15.4	23.4	23.1	22.2	20.3	13.0	19.1	14.5	15.8	12.7	12.6	27.0	20.9	40.8	14.1
IGWI	0.6	1.2	1.2	1.2	1.1	2.2	1.3	2.2	1.9	1.9	3.9	2.0	1.1	7.6	5.2	1.5
TAET: PERVIOUS	44.1	31.8	32.7	32.9	33.4	25.9	36.5	27.0	32.4	31.8	32.9	42.6	38.3	33.3	36.7	34.9
IMPEV: IMPERVIOUS		5.8	5.9	5.8	5.9											0.0
ET: COMBINED	44.1	30.5	30.0	27.4	19.6	25.9	36.5	27.0	32.4	31.8	32.9	42.6	38.3	33.3	36.7	34.9
PET	44.5	43.8	43.3	43.4	43.3	44.0	44.0	44.1	44.0	43.6	43.9	43.9	43.7	44.0	43.5	43.6

Table T-03070101-20: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	44873	106280	41192	7444	1477	20826	1021855	6112	184695	333805	2519	72741	4377	886	2783	1851865
AREA(%)	2.4	5.7	2.2	0.4	0.1	1.1	54.8	0.3	9.9	17.9	0.1	3.9	0.2	0.0	0.1	99.3
IMPERVIOUS																
AREA(ACRES)		5705	4615	1874	1479											13672
AREA(%)		0.3	0.2	0.1	0.1											0.7
SUPY	45.6	47.6	49.2	49.0	49.2	47.2	47.0	47.0	47.0	48.1	46.8	47.4	63.9	84.9	49.5	47.0
SURLI			6.4	6.5	6.2										1.4	0.2
UZLI																0.0
LZLI			0.8	0.7	0.6										32.6	0.1
SURO: PERVIOUS	1.0	1.7	2.6	2.6	2.2	1.2	0.5	1.1	0.8	1.1	0.5	1.8	2.4	23.6	0.6	0.8
SURO: IMPERVIOUS		41.0	42.6	42.4	42.6											0.3
SURO: COMBINED	1.0	3.7	6.7	10.6	22.4	1.2	0.5	1.1	0.8	1.1	0.5	1.8	2.4	23.6	0.6	1.1
IFWO		8.0	9.6	9.5	9.6	8.2	3.7	7.8	6.1	6.5	4.6		12.8	13.7	7.1	4.7
AGWO	8.1	5.6	10.8	10.5	10.2	9.4	6.9	8.7	6.7	7.5	6.4	9.1	11.8	6.9	36.9	7.2
AGWI	11.0	9.2	14.9	14.7	14.1	13.3	10.2	12.4	10.3	11.2	9.4	10.8	14.9	9.0	40.5	10.5
IGWI	0.3	1.3	1.1	1.2	1.2	2.2	1.3	2.2	2.0	2.0	3.8	0.9	0.9	7.9	3.7	1.5
CEPE		9.7	8.1	8.6	11.0	7.3	11.6	9.6	9.4	8.1	7.0	11.8	19.4	9.0	7.1	10.2
UZET	1.9	3.2	4.0	3.9	3.2	4.0	2.9	3.7	3.2	3.3	3.7	6.1	2.9	4.7	5.0	3.1
LZET	1.1	14.4	16.0	15.8	14.6	10.9	16.9	10.1	15.2	15.9	17.9	1.5	10.6	16.9	19.5	15.2
AGWET	1.9	2.3	2.6	2.6	2.4	2.4	2.1	2.2	2.2	2.3	1.9	1.0	1.6	1.2	2.2	2.1
BASET	1.0	1.0	1.2	1.2	1.3	1.1	1.0	1.1	1.0	1.0	0.8	0.8	1.1	0.7	1.0	1.0
SURET	32.0											16.7				1.4
PERO	9.1	15.3	23.0	22.6	22.0	18.8	11.0	17.6	13.7	15.1	11.5	10.8	27.0	44.2	44.6	12.6
IGWI	0.3	1.3	1.1	1.2	1.2	2.2	1.3	2.2	2.0	2.0	3.8	0.9	0.9	7.9	3.7	1.5
TAET: PERVIOUS	37.9	30.7	31.9	32.0	32.5	25.7	34.5	26.7	31.0	30.6	31.2	37.8	35.7	32.5	34.7	33.0
IMPEV: IMPERVIOUS		6.6	6.6	6.6	6.6											0.0
ET: COMBINED	37.9	29.4	29.4	26.9	19.5	25.7	34.5	26.7	31.0	30.6	31.2	37.8	35.7	32.5	34.7	33.0
PET	44.4	43.6	42.8	42.9	42.8	43.8	43.9	43.9	43.9	43.3	43.9	43.7	43.3	43.9	43.3	43.4

Table T-03070101-21: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
2	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
3	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
4	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
5	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
6	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
7	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
8	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
9	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
10	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
11	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
12	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
13	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
14	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
15	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
16	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
17	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
18	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
19	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
20	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
21	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
22	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
23	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
24	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
25	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
26	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
27	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
28	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
29	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
30	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
31	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
32	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
33	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
34	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
35	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
36	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
37	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
38	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994

39	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
40	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
41	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994
42	0.994	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.994

Table T-03070101-22: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
2	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
3	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
4	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
5	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
6	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
7	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
8	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
9	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
10	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
17	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
18	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
19	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
20	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
21	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
24	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
25	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
26	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
27	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
28	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
29	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
30	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
31	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
32	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
33	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
34	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
35	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
36	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
37	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
38	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028

39	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
40	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
41	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
42	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028

Table T-03070101-23: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
2	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
3	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
4	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
5	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
6	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
7	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
8	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
9	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
10	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
11	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
12	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
13	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
14	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
15	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
16	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
17	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
18	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
19	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
20	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
21	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
22	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
23	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
24	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
25	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
26	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
27	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
28	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
29	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
30	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
31	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
32	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
33	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
34	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
35	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
36	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
37	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
38	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115

39	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
40	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
41	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115
42	0.000	0.075	0.050	0.059	0.100	0.039	0.110	0.072	0.070	0.050	0.035	0.115

Table T-03070101-24: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
2	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070101-25: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.093	0.093	0.093	0.093	0.132	0.263	0.132	0.132	0.132	0.159	0.010
2	0.010	0.093	0.093	0.093	0.093	0.132	0.263	0.132	0.132	0.132	0.159	0.010
3	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
4	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
5	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
6	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
7	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
8	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
9	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
10	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
11	0.010	0.093	0.093	0.093	0.093	0.132	0.062	0.132	0.132	0.132	0.159	0.003
12	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
13	0.010	0.093	0.093	0.093	0.093	0.132	0.062	0.132	0.132	0.132	0.159	0.003
14	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
15	0.010	0.093	0.093	0.093	0.093	0.132	0.062	0.132	0.132	0.132	0.159	0.003
16	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
17	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
18	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
19	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
20	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
21	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
22	0.010	0.093	0.093	0.093	0.093	0.132	0.062	0.132	0.132	0.132	0.159	0.003
23	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
24	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
25	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
26	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
27	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
28	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
29	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
30	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
31	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
32	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
33	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
34	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
35	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
36	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
37	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
38	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010

39	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
40	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
41	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010
42	0.010	0.093	0.093	0.093	0.093	0.132	0.198	0.132	0.132	0.132	0.159	0.010

Table T-03070101-26: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.733	0.733	0.733	0.733	0.733	0.733	0.733	0.733	0.733	0.733	
2		0.733	0.733	0.733	0.733	0.733	0.733	0.733	0.733	0.733	0.733	
3		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
4		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
5		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
6		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
7		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
8		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
9		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
10		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
11		1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	
12		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
13		1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	
14		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
15		1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	
16		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
17		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
18		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
19		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
20		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
21		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
22		1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	1.779	
23		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
24		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
25		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
26		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
27		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
28		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
29		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	

30		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
31		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
32		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
33		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
34		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
35		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
36		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
37		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
38		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
39		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
40		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
41		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	
42		2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	

Table T-03070101-27: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649
2	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649	0.649
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
25	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
26	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
27	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
28	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
29	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
30	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
31	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
32	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
33	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
34	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
35	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
36	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
37	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
38	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

39	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
40	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
41	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
42	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03070101-28: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
2	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224	0.224
3	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
4	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
5	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
6	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
7	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
8	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
9	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
10	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
11	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
12	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
13	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
14	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
15	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
16	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
17	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
18	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
19	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
20	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
21	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
22	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
23	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
24	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
25	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
26	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
27	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
28	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
29	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
30	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
31	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
32	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
33	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
34	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
35	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
36	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
37	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
38	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974

39	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
40	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
41	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974
42	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974

Table T-03070101-29: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.232	0.496	0.496	0.496	0.496	0.331	0.718	0.331	0.496	0.496	0.579	0.900
2	0.232	0.496	0.496	0.496	0.496	0.331	0.718	0.331	0.496	0.496	0.579	0.900
3	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
4	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
5	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
6	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
7	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
8	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
9	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
10	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
11	0.233	0.496	0.496	0.496	0.496	0.331	0.650	0.331	0.496	0.496	0.579	0.900
12	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
13	0.233	0.496	0.496	0.496	0.496	0.331	0.650	0.331	0.496	0.496	0.579	0.900
14	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
15	0.233	0.496	0.496	0.496	0.496	0.331	0.650	0.331	0.496	0.496	0.579	0.900
16	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
17	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
18	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
19	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
20	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
21	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
22	0.233	0.496	0.496	0.496	0.496	0.331	0.650	0.331	0.496	0.496	0.579	0.900
23	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
24	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
25	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
26	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
27	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
28	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
29	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
30	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
31	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
32	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
33	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
34	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
35	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
36	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
37	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
38	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900

39	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
40	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
41	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900
42	0.166	0.496	0.496	0.496	0.496	0.331	0.703	0.331	0.496	0.496	0.579	0.900

Table T-03070101-30: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.173	5.082	5.082	5.082	5.082	5.717	10.000	5.717	5.717	5.717	6.354	0.130
2	0.173	5.082	5.082	5.082	5.082	5.717	10.000	5.717	5.717	5.717	6.354	0.130
3	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
4	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
5	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
6	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
7	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
8	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
9	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
10	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
11	0.050	5.082	5.082	5.082	5.082	5.717	10.000	5.717	5.717	5.717	6.354	0.100
12	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
13	0.050	5.082	5.082	5.082	5.082	5.717	10.000	5.717	5.717	5.717	6.354	0.100
14	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
15	0.050	5.082	5.082	5.082	5.082	5.717	10.000	5.717	5.717	5.717	6.354	0.100
16	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
17	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
18	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
19	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
20	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
21	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
22	0.050	5.082	5.082	5.082	5.082	5.717	10.000	5.717	5.717	5.717	6.354	0.100
23	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
24	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
25	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
26	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
27	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
28	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
29	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
30	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
31	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
32	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
33	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
34	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
35	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
36	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
37	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
38	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200

39	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
40	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
41	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200
42	0.200	5.082	5.082	5.082	5.082	5.717	7.624	5.717	5.717	5.717	6.354	0.200

Table T-03070101-31: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.826
2	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.826
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
33	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
34	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
35	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
36	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
37	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
38	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

39	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
40	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
41	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
42	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03070102

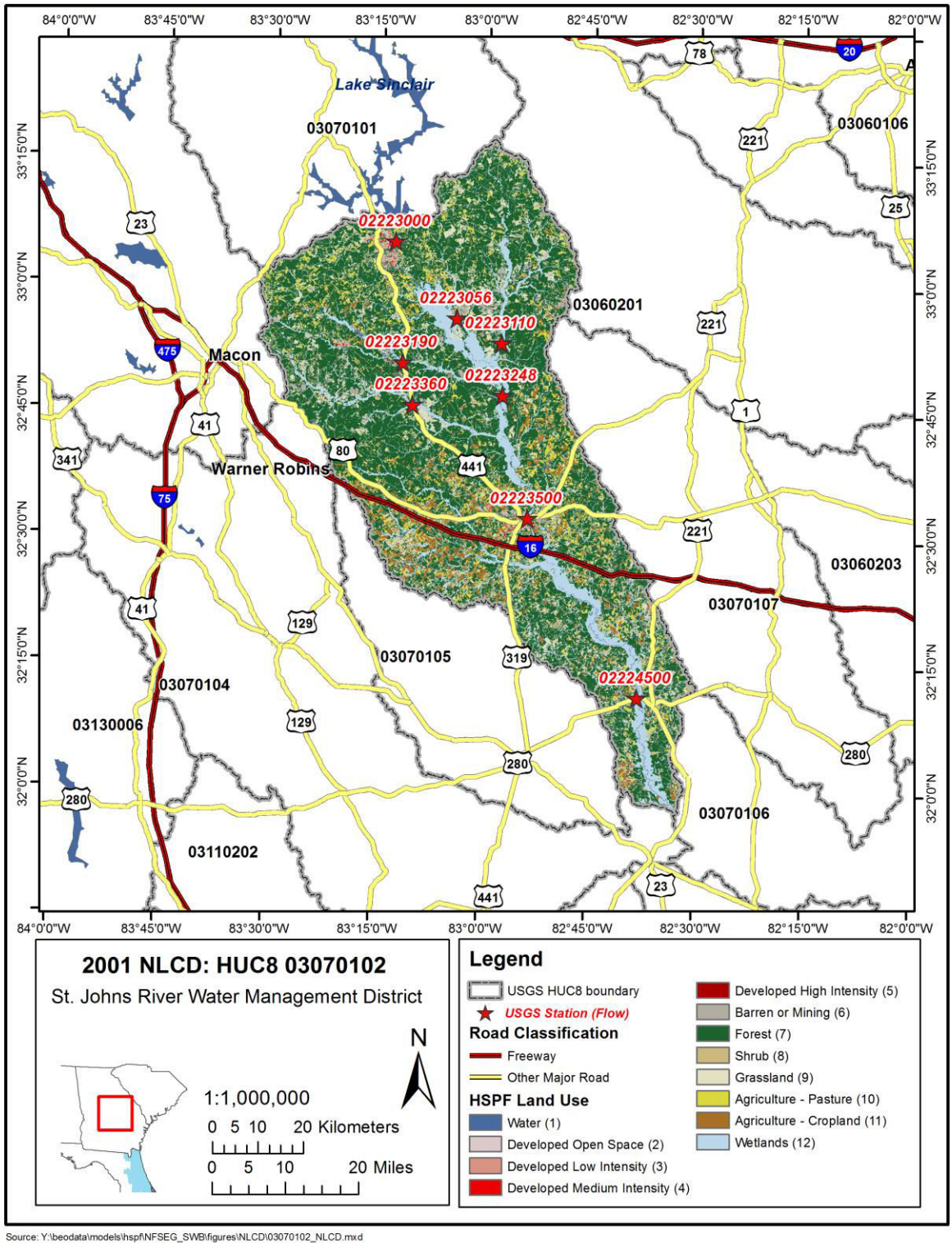


Figure T-03070102-1: Land Cover from the National Land Cover Database.

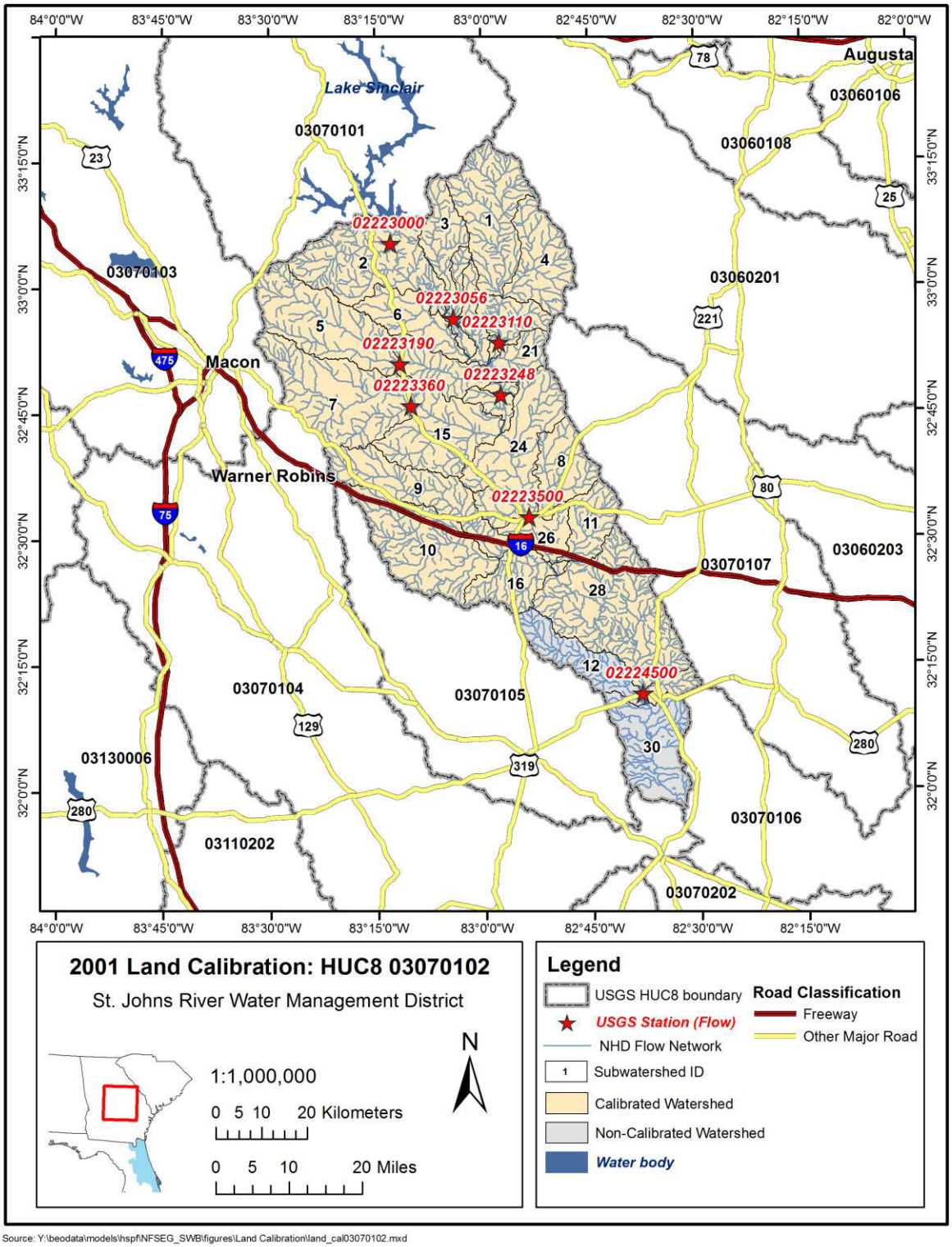


Figure T-03070102-2: Calibrated sub-watersheds.

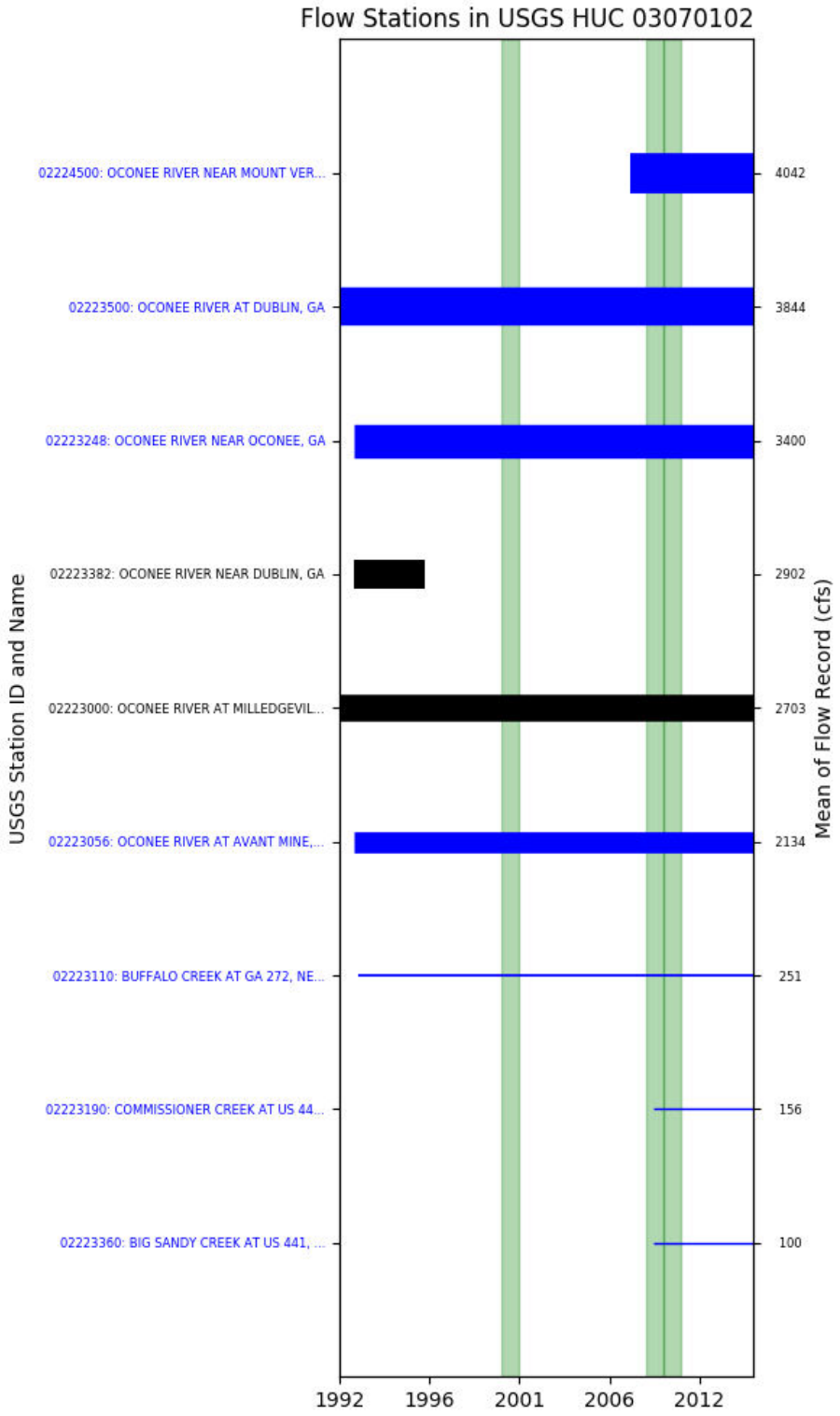


Figure T-03070102-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 05, USGS GAUGE 02223190

Water-Data Report 2012
02202680 OGEECHEE RIVER AT GA 204, NEAR ELLABELL, GA
Ogeechee Basin Lower Ogeechee Subbasin

LOCATION.--Lat 320448, long 812308 referenced to North American Datum of 1927, Bryan County, GA, Hydrologic Unit 03060202, on downstream side of bridge at GA 204, 6.2 miles west of Bloomingdale, GA.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 20 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair, except for estimated daily discharges, which are poor. Gage-height records fair.

Table T-03070102-1: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02223190.

Statistic	Value
Bias	-91.52
Standard error	130.39
Relative bias	-0.57
Relative standard error	0.74
Nash-Sutcliffe coefficient	0.45
Coefficient of efficiency	0.30
Index of agreement	0.65

Table T-03070102-2: Hydrologic Indices Between USGS Gauge 02223190 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02223190	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	152.96	60.86	-60.21
MA2: Median, all daily flows	60.00	12.72	-78.80
MA3: CV, all daily flows	126.04	203.02	61.07
MA4: CV, log of all daily flows	127.94	189.51	48.13
MA5: Mean daily flow / median daily flow	2.55	4.78	87.68
MA9: (Q10 - Q90) / median daily flow	7.04	14.27	102.64
MA10: (Q20 - Q80) / median daily flow	3.33	4.00	20.01
MA11: (Q25 - Q75) / median daily flow	2.09	2.40	14.86

MA12: Mean monthly flow, January	217.59	118.68	-45.45
MA13: Mean monthly flow, February	241.36	113.89	-52.81
MA14: Mean monthly flow, March	180.93	55.72	-69.21
MA15: Mean monthly flow, April	96.36	20.49	-78.74
MA16: Mean monthly flow, May	78.25	15.96	-79.60
MA17: Mean monthly flow, June	56.36	16.44	-70.82
MA18: Mean monthly flow, July	71.52	28.57	-60.05
MA19: Mean monthly flow, August	66.07	45.71	-30.82
MA20: Mean monthly flow, September	63.89	40.25	-37.00
MA21: Mean monthly flow, October	58.35	23.72	-59.35
MA22: Mean monthly flow, November	90.75	33.35	-63.25
MA23: Mean monthly flow, December	211.27	96.18	-54.48
ML1: Mean minimum monthly flow, January	173.40	90.95	-47.55
ML2: Mean minimum monthly flow, February	126.50	18.13	-85.67
ML3: Mean minimum monthly flow, March	112.25	17.46	-84.45
ML4: Mean minimum monthly flow, April	53.00	12.89	-75.67
ML5: Mean minimum monthly flow, May	36.50	10.64	-70.86
ML6: Mean minimum monthly flow, June	30.25	13.04	-56.88
ML7: Mean minimum monthly flow, July	28.25	9.60	-66.03
ML8: Mean minimum monthly flow, August	26.20	7.88	-69.92
ML9: Mean minimum monthly flow, September	21.34	7.31	-65.74
ML10: Mean minimum monthly flow, October	29.60	8.84	-70.13
ML11: Mean minimum monthly flow, November	41.40	8.64	-79.14
ML12: Mean minimum monthly flow, December	64.80	9.33	-85.61
ML13: CV of minimum monthly flows	133.01	304.32	128.80
ML14: Mean minimum daily flow / mean median annual flow	0.32	0.37	13.13
ML15: Mean minimum annual flow / mean annual flow	0.15	0.11	-27.15
ML16: Median minimum annual flow / median annual flow	0.28	0.29	3.63
ML20: Ratio of baseflow volume to total flow volume	0.47	0.32	-32.02
ML22: Mean annual minimum flow divided by catchment area	0.17	0.05	-72.35
RA1: Mean of positive changes from one day to next (rise rate)	68.04	46.26	
RA2: CV, mean of positive changes from one day to next (rise rate)	220.75	266.17	
RA3: Mean of negative changes from one day to next (fall rate)	36.25	12.23	
RA4: CV, mean of negative changes from one day to next (fall rate)	238.20	323.35	
RA5: Ratio of days that are higher than previous day	0.31	0.21	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.26	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.07	
RA8: Number of flow reversals from one day to the next	68.83	54.00	
RA9: CV, number of flow reversals from one day to the next	58.32	53.25	

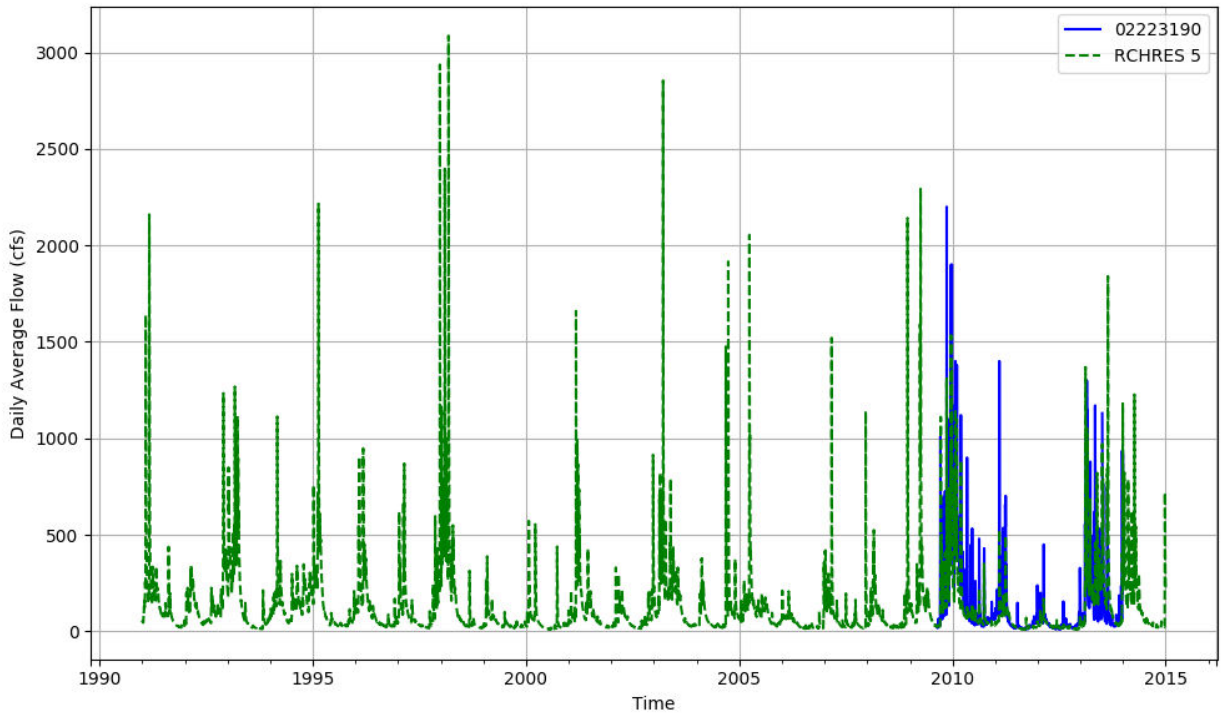


Figure T-03070102-4: Daily flow for HSFP reach 05 and USGS station 02223190.

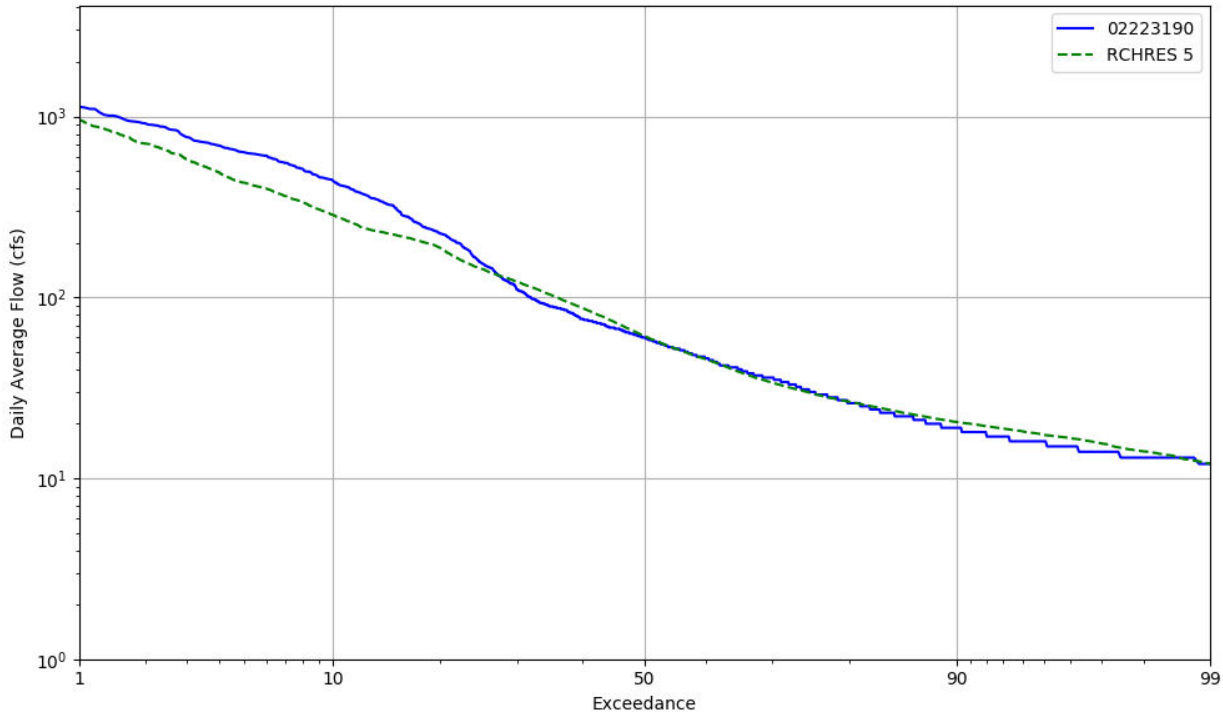


Figure T-03070102-5: Daily exceedance for HSFP reach 05 and USGS station 02223190.

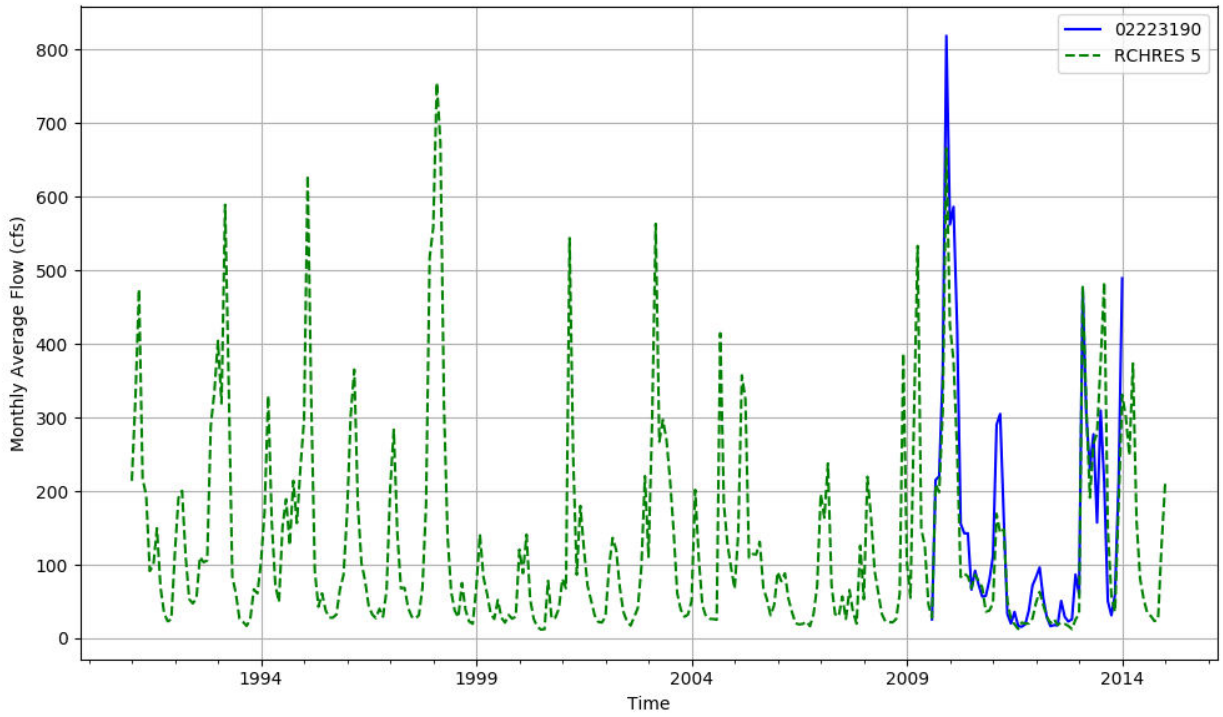


Figure T-03070102-6: Monthly flow for HSFP reach 05 and USGS station 02223190.

HSPF REACH 07, USGS GAUGE 02223360

Water-Data Report 2012
02223360 BIG SANDY CREEK AT US 441, NEAR IRWINTON, GA
Altamaha Basin Lower Oconee Subbasin

LOCATION.--Lat 324559, long 831005 referenced to North American Datum of 1927, Wilkinson County, GA, Hydrologic Unit 03070102.

DRAINAGE AREA.--177.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 2009 to current year.
GAGE-HEIGHT: June 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 225 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Environmental Protection (GAEPD).

REMARKS.--Discharge and gage-height records fair.

Table T-03070102-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02223360.

Statistic	Value
Bias	-25.20
Standard error	61.83
Relative bias	-0.24
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.82
Coefficient of efficiency	0.61
Index of agreement	0.81

Table T-03070102-4: Hydrologic Indices Between USGS Gauge 02223360 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02223360	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	98.11	71.13	-27.50
MA2: Median, all daily flows	35.00	14.53	-58.50
MA3: CV, all daily flows	152.34	205.40	34.83
MA4: CV, log of all daily flows	162.38	194.84	19.99
MA5: Mean daily flow / median daily flow	2.80	4.90	74.71
MA9: (Q10 - Q90) / median daily flow	5.57	13.46	141.67
MA10: (Q20 - Q80) / median daily flow	2.20	3.39	54.15

MA11: (Q25 - Q75) / median daily flow	1.54	2.02	31.23
MA12: Mean monthly flow, January	157.31	131.39	-16.48
MA13: Mean monthly flow, February	187.76	146.47	-21.99
MA14: Mean monthly flow, March	121.55	61.59	-49.33
MA15: Mean monthly flow, April	55.06	24.87	-54.82
MA16: Mean monthly flow, May	32.02	13.11	-59.06
MA17: Mean monthly flow, June	26.27	13.65	-48.04
MA18: Mean monthly flow, July	43.39	33.31	-23.24
MA19: Mean monthly flow, August	45.29	50.30	11.05
MA20: Mean monthly flow, September	22.16	45.95	107.35
MA21: Mean monthly flow, October	26.26	25.81	-1.69
MA22: Mean monthly flow, November	41.29	35.84	-13.22
MA23: Mean monthly flow, December	168.70	117.98	-30.07
ML1: Mean minimum monthly flow, January	112.40	97.73	-13.05
ML2: Mean minimum monthly flow, February	63.75	21.86	-65.70
ML3: Mean minimum monthly flow, March	58.25	23.94	-58.90
ML4: Mean minimum monthly flow, April	31.48	17.21	-45.33
ML5: Mean minimum monthly flow, May	17.88	13.82	-22.71
ML6: Mean minimum monthly flow, June	14.93	13.08	-12.36
ML7: Mean minimum monthly flow, July	17.57	12.75	-27.43
ML8: Mean minimum monthly flow, August	13.42	11.00	-18.00
ML9: Mean minimum monthly flow, September	7.86	10.27	30.65
ML10: Mean minimum monthly flow, October	13.78	12.38	-10.16
ML11: Mean minimum monthly flow, November	24.80	11.78	-52.52
ML12: Mean minimum monthly flow, December	40.20	12.73	-68.34
ML13: CV of minimum monthly flows	159.76	267.96	67.73
ML14: Mean minimum daily flow / mean median annual flow	0.26	0.47	83.79
ML15: Mean minimum annual flow / mean annual flow	0.10	0.16	51.24
ML16: Median minimum annual flow / median annual flow	0.19	0.44	135.71
ML20: Ratio of baseflow volume to total flow volume	0.41	0.34	-18.50
ML22: Mean annual minimum flow divided by catchment area	0.08	0.07	-9.62
RA1: Mean of positive changes from one day to next (rise rate)	50.23	47.71	
RA2: CV, mean of positive changes from one day to next (rise rate)	275.77	284.15	
RA3: Mean of negative changes from one day to next (fall rate)	24.32	13.66	
RA4: CV, mean of negative changes from one day to next (fall rate)	285.70	330.79	
RA5: Ratio of days that are higher than previous day	0.29	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.05	
RA8: Number of flow reversals from one day to the next	67.67	57.17	
RA9: CV, number of flow reversals from one day to the next	56.16	55.40	

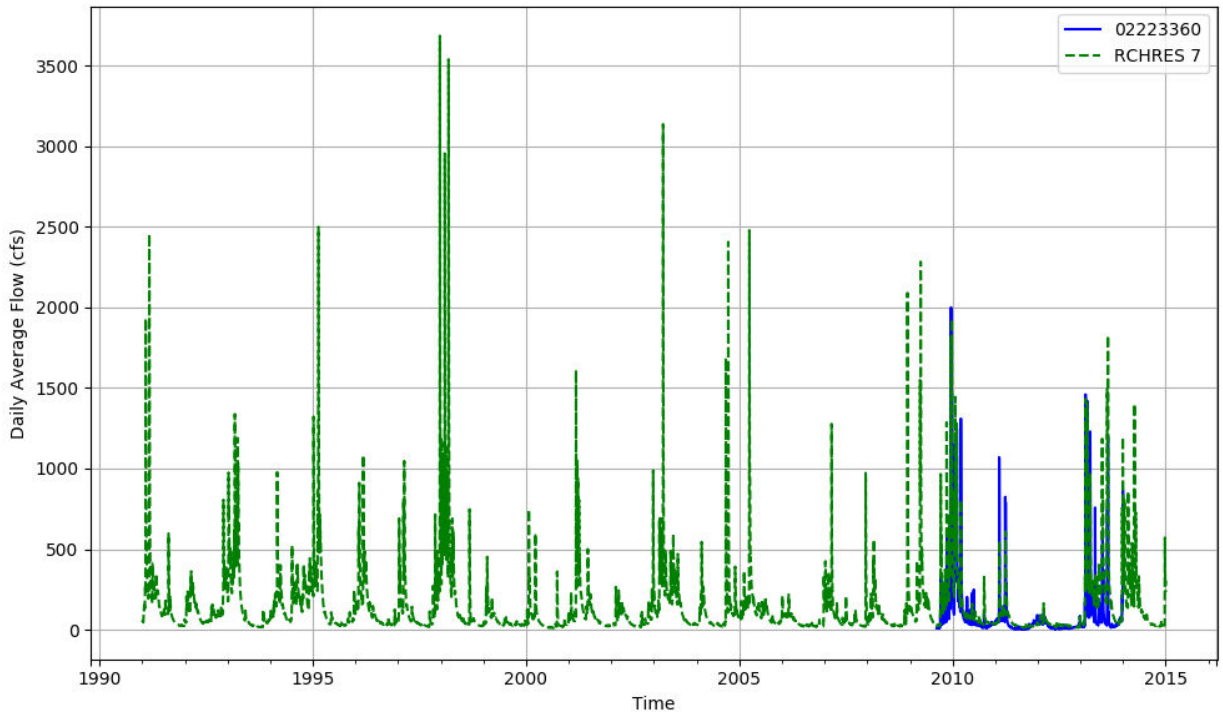


Figure T-03070102-7: Daily flow for HSFP reach 07 and USGS station 02223360.

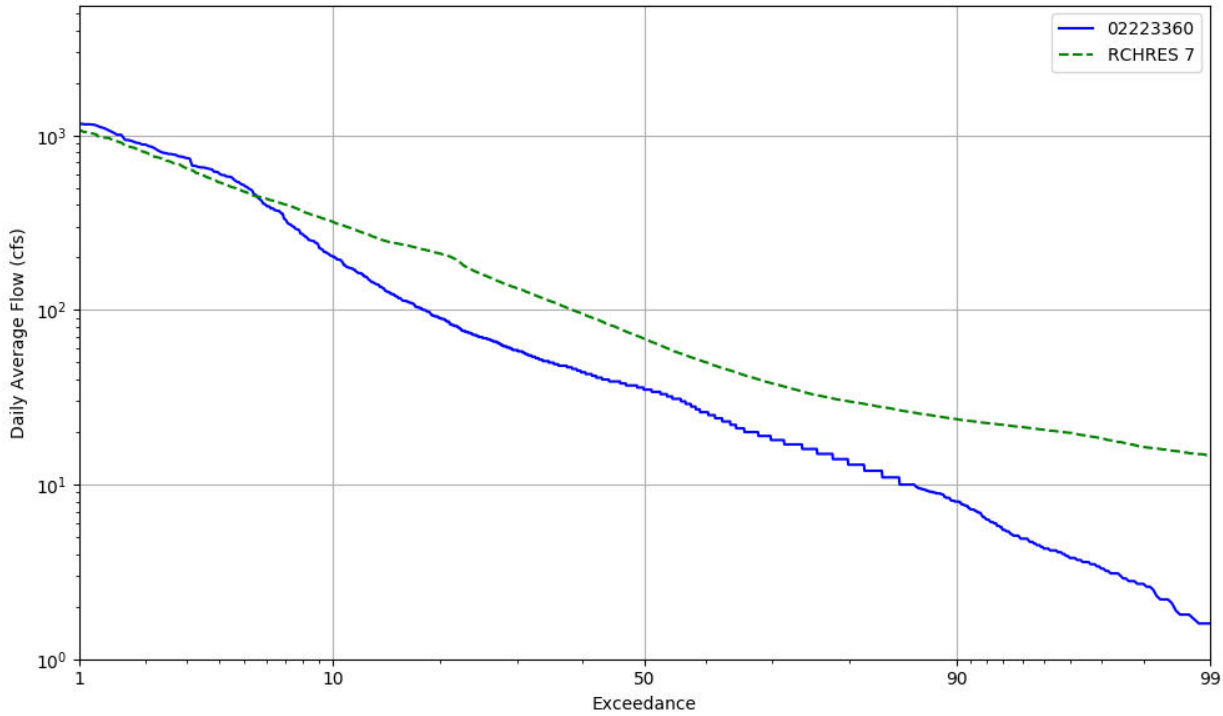


Figure T-03070102-8: Daily exceedance for HSFP reach 07 and USGS station 02223360.

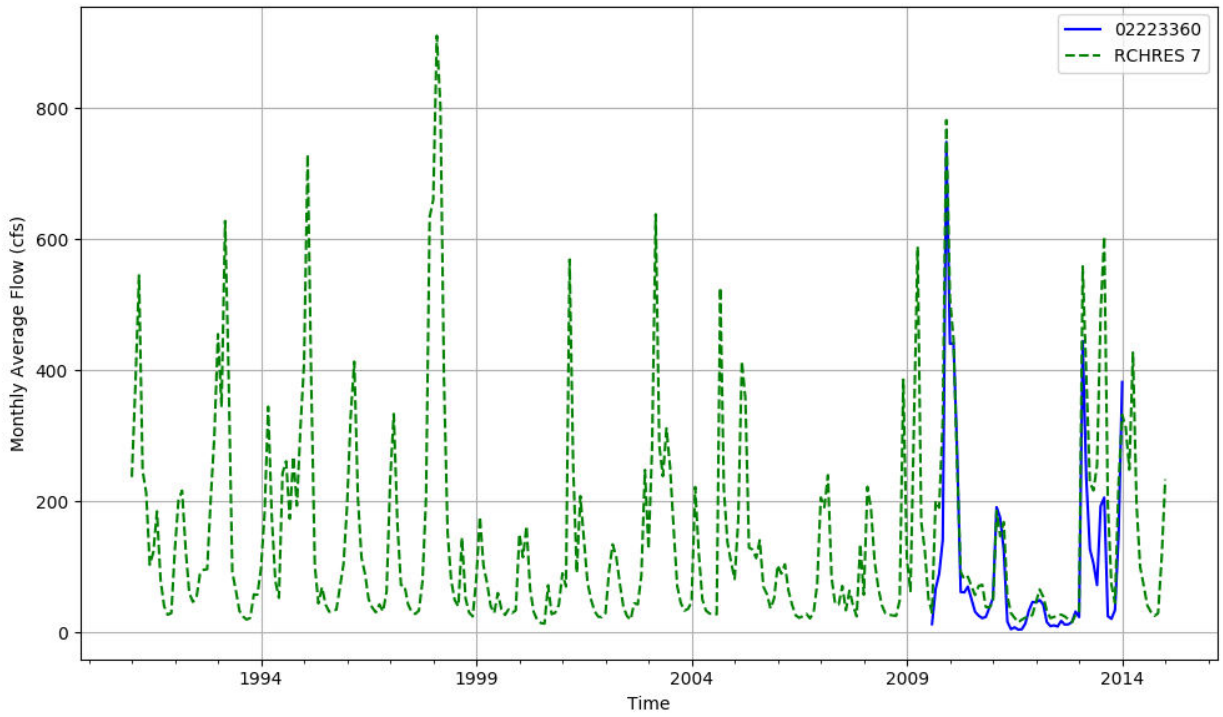


Figure T-03070102-9: Monthly flow for HSFP reach 07 and USGS station 02223360.

HSPF REACH 14, USGS GAUGE 02223110

Water-Data Report 2010
02223110 BUFFALO CREEK AT GA 272, NEAR OCONEE, GA
Altamaha Basin Lower Oconee Subbasin

LOCATION.--Lat 325328, long 825740 referenced to North American Datum of 1927, Washington County, GA, Hydrologic Unit 03070102, on downstream side of bridge on GA Highway 272, 2.4 miles downstream from Lamars Creek, and 2.5 miles north of Oconee, and 3.7 miles above mouth.

DRAINAGE AREA.--291 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: February 1993 to September 1996, May 2009 to current year.
GAGE-HEIGHT: May 2009 to current year.

GAGE.--Satellite telemetry with a water stage recorder. Datum of gage is 191.33 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Power Company).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division (GAEPD).

REMARKS.--Discharge record poor. Gage-height record fair.

Table T-03070102-5: Comparison Statistics Between HSPF Reach 14 and USGS Gauge 02223110.

Statistic	Value
Bias	3.91
Standard error	81.92
Relative bias	0.01
Relative standard error	0.28
Nash-Sutcliffe coefficient	0.92
Coefficient of efficiency	0.78
Index of agreement	0.89

Table T-03070102-6: Hydrologic Indices Between USGS Gauge 02223110 and HSPF Reach 14.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02223110	Simulated Reach 14	Percent Difference
MA1: Mean, all daily flows	348.72	353.76	1.45
MA2: Median, all daily flows	181.50	201.18	10.84
MA3: CV, all daily flows	56.58	52.06	-7.98

MA4: CV, log of all daily flows	103.12	98.20	-4.77
MA5: Mean daily flow / median daily flow	1.92	1.76	-8.48
MA9: (Q10 - Q90) / median daily flow	4.46	3.94	-11.67
MA10: (Q20 - Q80) / median daily flow	2.32	2.27	-2.25
MA11: (Q25 - Q75) / median daily flow	1.70	1.80	5.77
MA12: Mean monthly flow, January	194.47	204.32	5.07
MA13: Mean monthly flow, February	309.27	307.96	-0.42
MA14: Mean monthly flow, March	360.05	369.50	2.62
MA15: Mean monthly flow, April	157.84	148.05	-6.20
MA16: Mean monthly flow, May	64.82	70.76	9.17
MA17: Mean monthly flow, June	50.97	61.57	20.78
MA18: Mean monthly flow, July	88.95	74.12	-16.68
MA19: Mean monthly flow, August	78.71	77.50	-1.54
MA20: Mean monthly flow, September	37.14	37.17	0.08
MA21: Mean monthly flow, October	133.23	103.58	-22.25
MA22: Mean monthly flow, November	70.59	87.67	24.19
MA23: Mean monthly flow, December	105.76	93.95	-11.16
ML1: Mean minimum monthly flow, January	263.25	268.40	1.96
ML2: Mean minimum monthly flow, February	296.00	296.97	0.33
ML3: Mean minimum monthly flow, March	334.75	347.98	3.95
ML4: Mean minimum monthly flow, April	184.25	171.83	-6.74
ML5: Mean minimum monthly flow, May	68.00	82.26	20.97
ML6: Mean minimum monthly flow, June	61.50	64.93	5.58
ML7: Mean minimum monthly flow, July	66.00	80.45	21.90
ML8: Mean minimum monthly flow, August	54.50	80.36	47.45
ML9: Mean minimum monthly flow, September	61.25	57.15	-6.69
ML10: Mean minimum monthly flow, October	197.75	107.85	-45.46
ML11: Mean minimum monthly flow, November	140.67	132.52	-5.79
ML12: Mean minimum monthly flow, December	190.00	176.91	-6.89
ML13: CV of minimum monthly flows	85.14	79.95	-6.10
ML14: Mean minimum daily flow / mean median annual flow	0.18	0.17	-2.73
ML15: Mean minimum annual flow / mean annual flow	0.13	0.14	4.67
ML16: Median minimum annual flow / median annual flow	0.08	0.07	-10.26
ML20: Ratio of baseflow volume to total flow volume	0.50	0.51	1.05
ML22: Mean annual minimum flow divided by catchment area	50000.72	50000.36	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	139.26	160.50	
RA2: CV, mean of positive changes from one day to next (rise rate)	244.32	262.33	
RA3: Mean of negative changes from one day to next (fall rate)	79.17	56.00	
RA4: CV, mean of negative changes from one day to next (fall rate)	281.52	273.00	
RA5: Ratio of days that are higher than previous day	0.35	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.07	
RA8: Number of flow reversals from one day to the next	31.30	30.40	
RA9: CV, number of flow reversals from one day to the next	130.61	129.71	

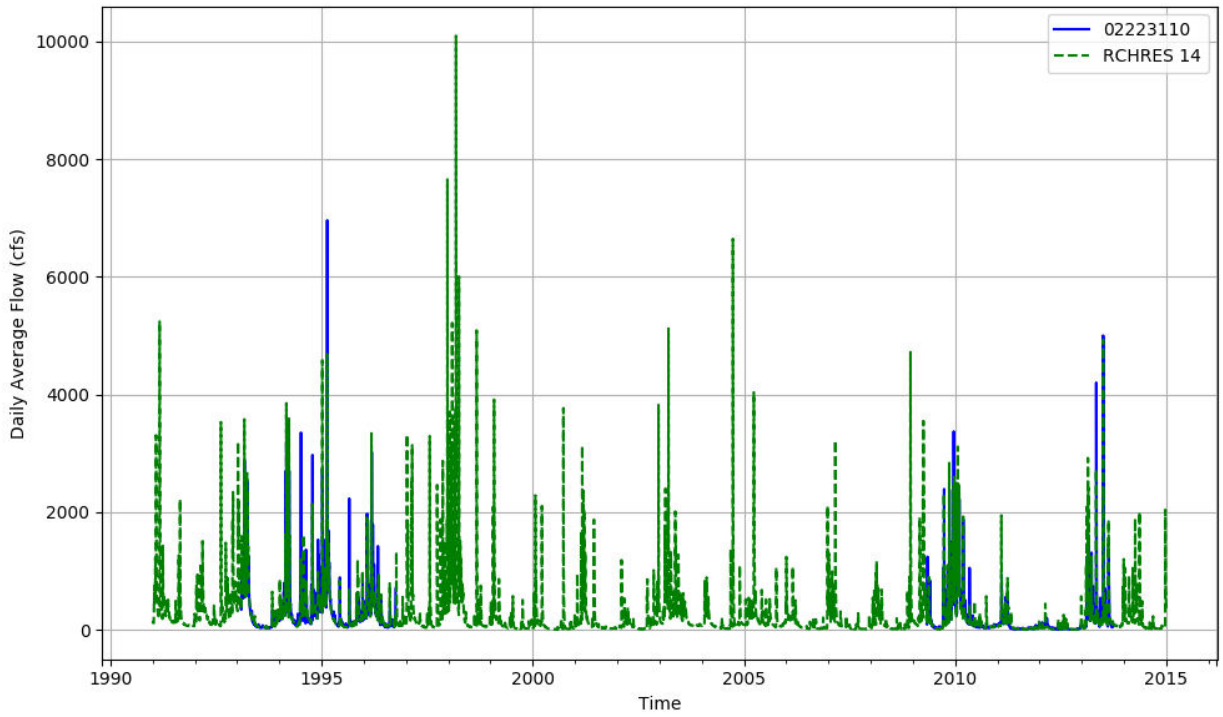


Figure T-03070102-10: Daily flow for HSFP reach 14 and USGS station 02223110.

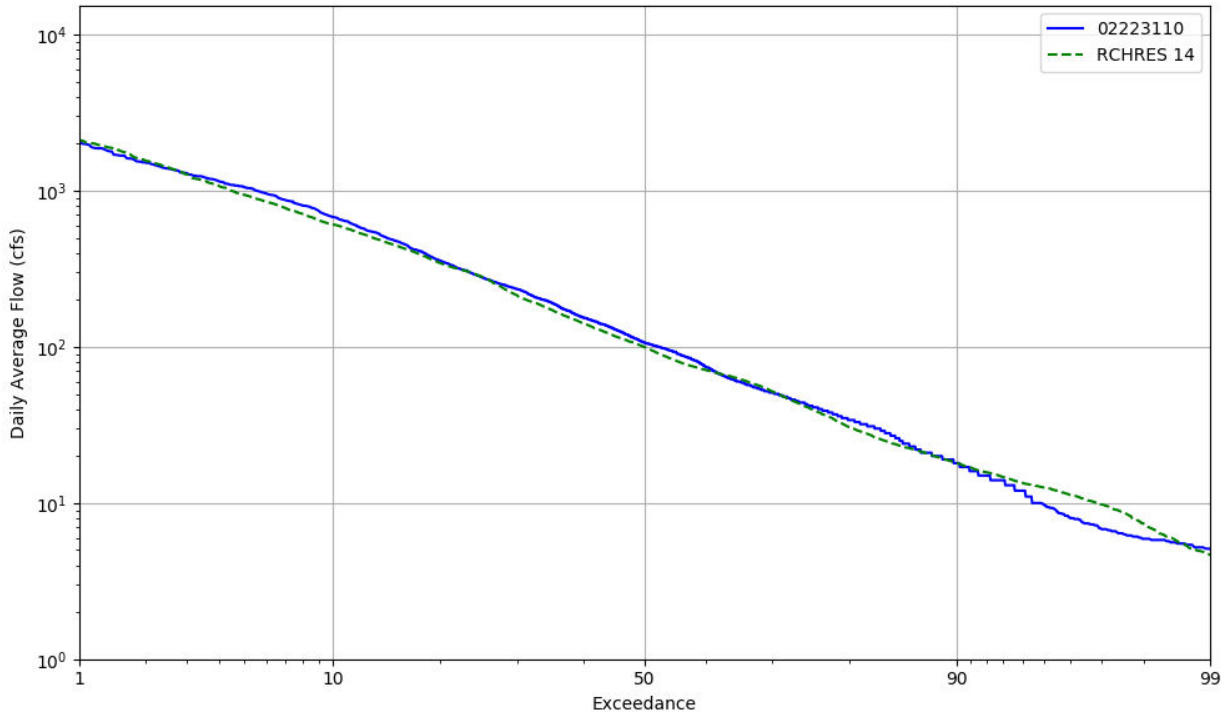


Figure T-03070102-11: Daily exceedance for HSFP reach 14 and USGS station 02223110.

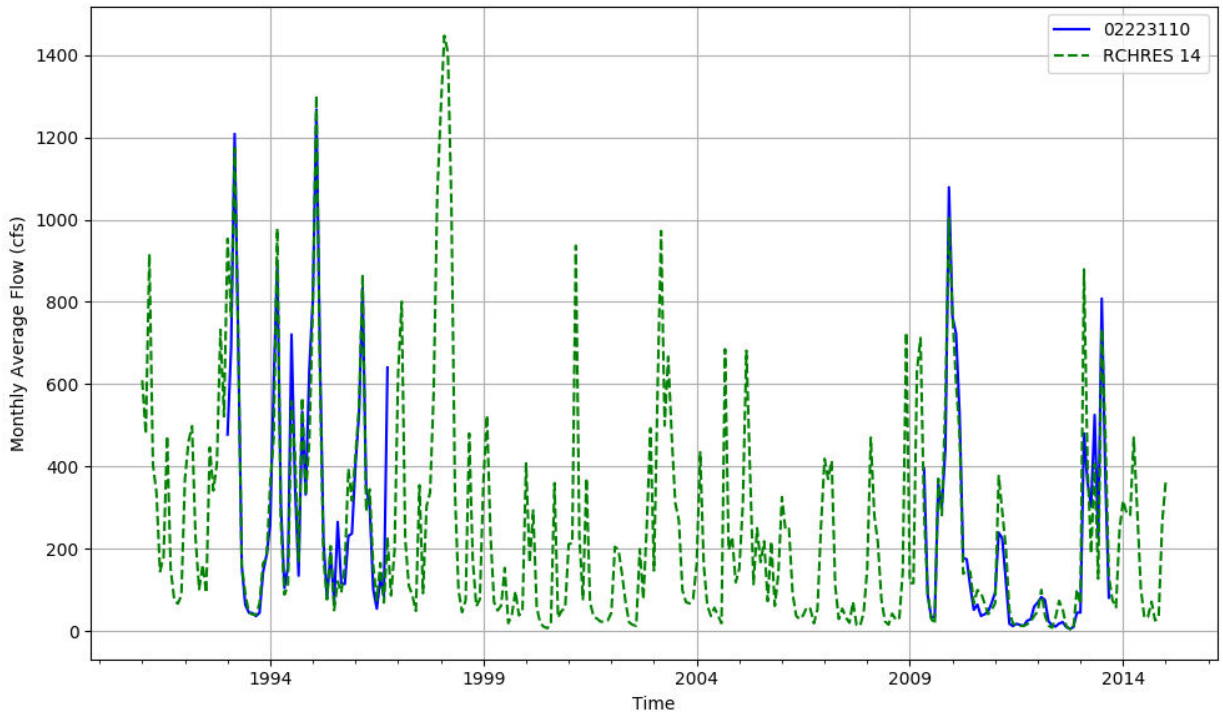


Figure T-03070102-12: Monthly flow for HSFP reach 14 and USGS station 02223110.

HSPF REACH 18, USGS GAUGE 02223056

Water-Data Report 2009
02223056 OCONEE RIVER AT AVANT MINE, NEAR OCONEE, GA
Altamaha Basin Lower Oconee Subbasin

LOCATION.--Lat 325623, long 830401 referenced to North American Datum of 1927, Washington County, GA, Hydrologic Unit 03070102, on left bank, 1.1 miles downstream from Gumm Creek, 1.6 miles upstream from Bluff Creek, and 8.8 miles Northwest of Oconee, GA.

DRAINAGE AREA.--3,100 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 1992 to September 2001, discharges less than 8,800 cfs only. October 2001 to current year, discharges less than 11,200 cfs only.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR GA-2006: 2004-2005.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 203.36 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Power Company).

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge and gage-height records poor. Flow regulated by Lake Oconee and Sinclair Reservoir.

Table T-03070102-7: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02223056.

Statistic	Value
Bias	281.62
Standard error	1147.80
Relative bias	0.13
Relative standard error	0.65
Nash-Sutcliffe coefficient	0.57
Coefficient of efficiency	0.51
Index of agreement	0.79

Table T-03070102-8: Hydrologic Indices Between USGS Gauge 02223056 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02223056	Simulated Reach 18	Percent Difference

MA1: Mean, all daily flows	2080.52	2286.43	9.90
MA2: Median, all daily flows	1260.00	1402.68	11.32
MA3: CV, all daily flows	83.56	101.25	21.17
MA4: CV, log of all daily flows	99.58	95.04	-4.56
MA5: Mean daily flow / median daily flow	1.65	1.63	-1.28
MA9: (Q10 - Q90) / median daily flow	4.08	3.62	-11.43
MA10: (Q20 - Q80) / median daily flow	2.31	2.57	11.24
MA11: (Q25 - Q75) / median daily flow	1.77	2.09	18.22
MA12: Mean monthly flow, January	2723.22	3301.14	21.22
MA13: Mean monthly flow, February	3465.55	4604.43	32.86
MA14: Mean monthly flow, March	3502.20	4424.11	26.32
MA15: Mean monthly flow, April	2858.41	3344.52	17.01
MA16: Mean monthly flow, May	1848.54	2164.71	17.10
MA17: Mean monthly flow, June	1549.52	1542.44	-0.46
MA18: Mean monthly flow, July	1493.16	1460.23	-2.21
MA19: Mean monthly flow, August	1097.98	903.71	-17.69
MA20: Mean monthly flow, September	1026.40	834.20	-18.73
MA21: Mean monthly flow, October	897.98	963.15	7.26
MA22: Mean monthly flow, November	1630.33	1562.27	-4.17
MA23: Mean monthly flow, December	2179.51	2385.85	9.47
ML1: Mean minimum monthly flow, January	1154.47	2111.03	82.86
ML2: Mean minimum monthly flow, February	1749.53	2927.43	67.33
ML3: Mean minimum monthly flow, March	1883.56	2996.18	59.07
ML4: Mean minimum monthly flow, April	1313.37	2281.47	73.71
ML5: Mean minimum monthly flow, May	730.74	1419.99	94.32
ML6: Mean minimum monthly flow, June	606.25	1005.67	65.88
ML7: Mean minimum monthly flow, July	682.45	836.64	22.59
ML8: Mean minimum monthly flow, August	586.50	602.90	2.80
ML9: Mean minimum monthly flow, September	496.35	382.99	-22.84
ML10: Mean minimum monthly flow, October	563.72	574.28	1.87
ML11: Mean minimum monthly flow, November	594.79	953.41	60.29
ML12: Mean minimum monthly flow, December	1119.84	1628.19	45.40
ML13: CV of minimum monthly flows	100.70	101.96	1.25
ML14: Mean minimum daily flow / mean median annual flow	0.37	0.06	-82.61
ML15: Mean minimum annual flow / mean annual flow	0.22	0.05	-78.83
ML16: Median minimum annual flow / median annual flow	0.31	0.03	-89.85
ML20: Ratio of baseflow volume to total flow volume	0.51	0.71	38.48
ML22: Mean annual minimum flow divided by catchment area	4765.64	4763.25	-0.05
RA1: Mean of positive changes from one day to next (rise rate)	580.85	759.57	
RA2: CV, mean of positive changes from one day to next (rise rate)	166.82	479.06	
RA3: Mean of negative changes from one day to next (fall rate)	396.49	297.21	
RA4: CV, mean of negative changes from one day to next (fall rate)	169.97	728.46	
RA5: Ratio of days that are higher than previous day	0.39	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	124.00	50.38	
RA9: CV, number of flow reversals from one day to the	31.54	33.93	

next			

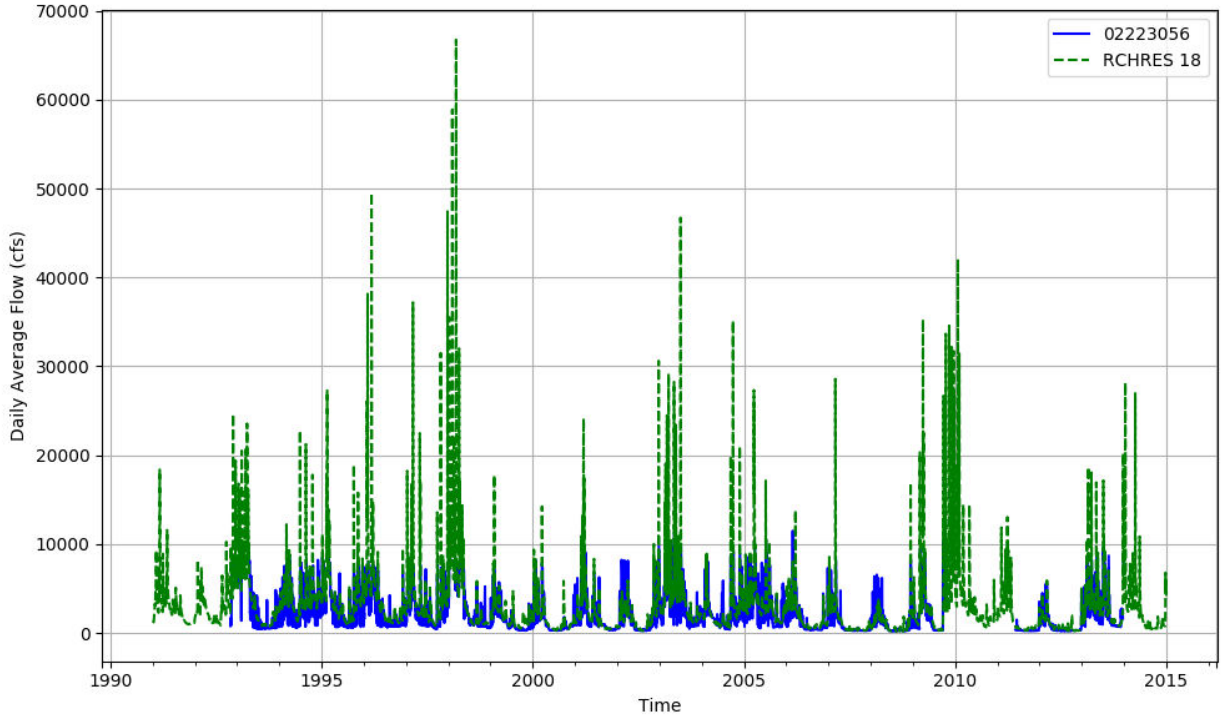


Figure T-03070102-13: Daily flow for HSFP reach 18 and USGS station 02223056.

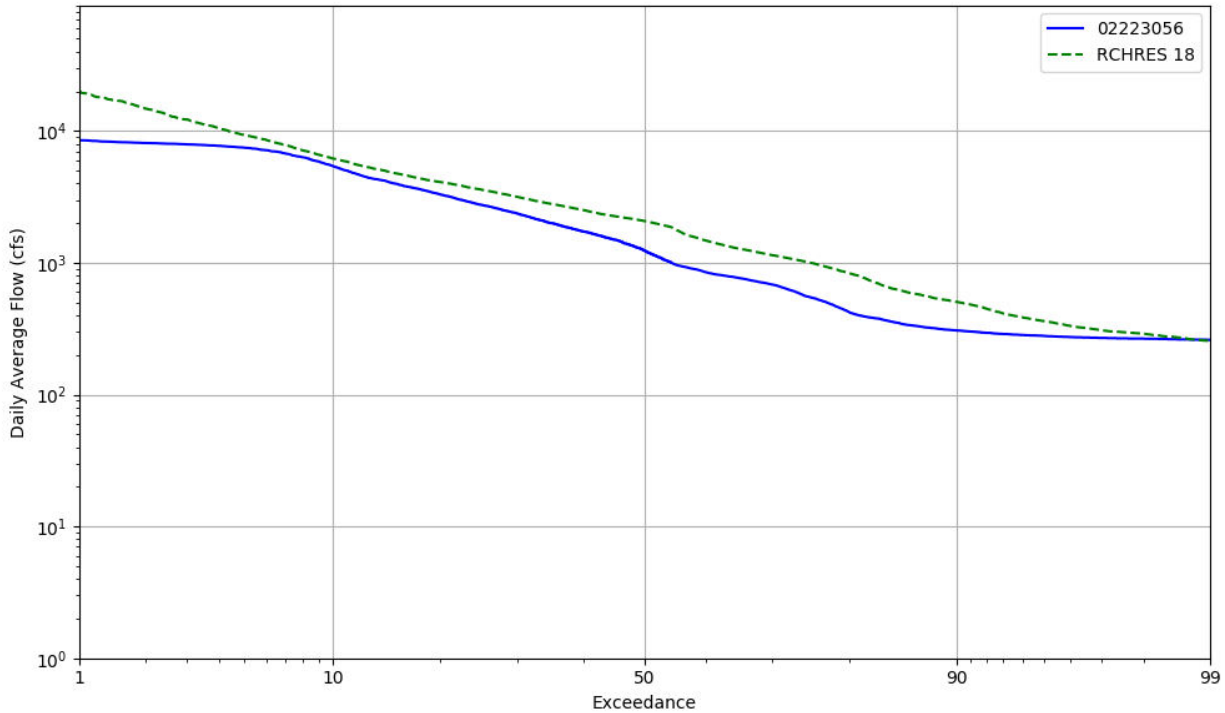


Figure T-03070102-14: Daily exceedance for HSFP reach 18 and USGS station 02223056.

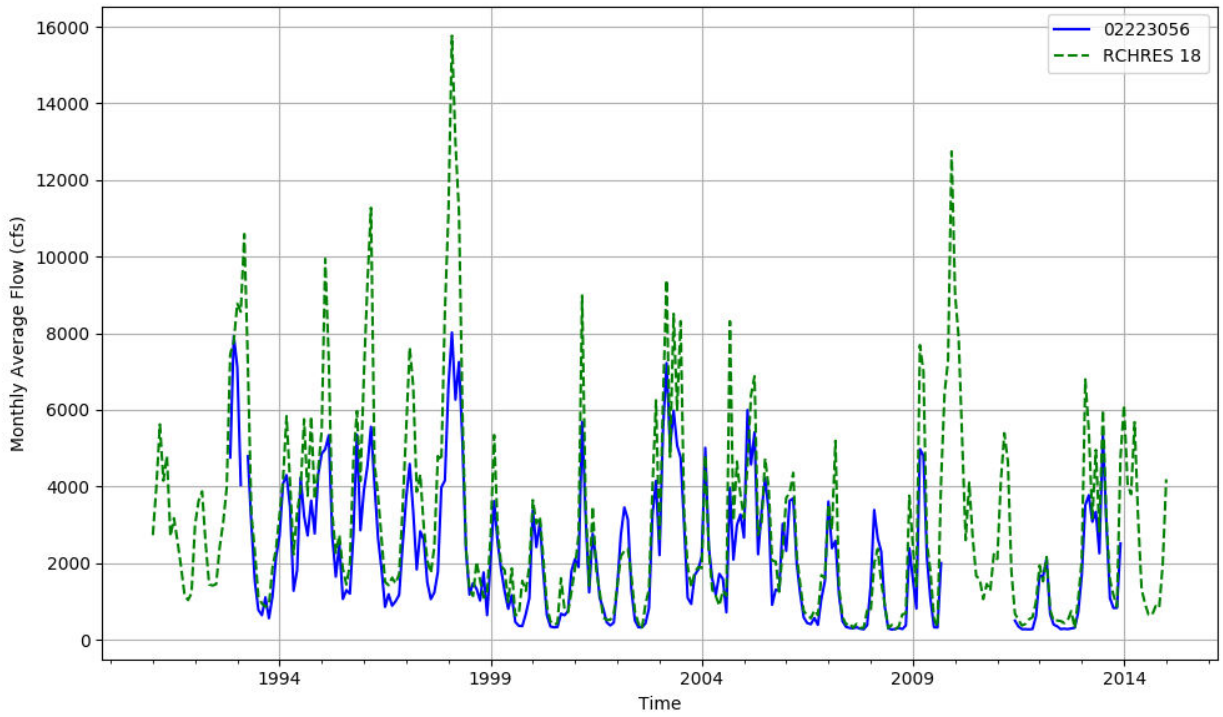


Figure T-03070102-15: Monthly flow for HSFP reach 18 and USGS station 02223056.

HSPF REACH 22, USGS GAUGE 02223248

Water-Data Report 2009
02223248 OCONEE RIVER NEAR OCONEE, GA
Altamaha Basin Lower Oconee Subbasin

LOCATION.--Lat 324714, long 825726 referenced to North American Datum of 1927, Wilkinson County, GA, Hydrologic Unit 03070102, on right bank, 0.4 miles upstream from GA HWY 57, 0.5 miles upstream from Oochee Creek, and 6.0 miles South of Oconee,GA, at river mile 96.6.

DRAINAGE AREA.--3,770 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 1992 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR-GA-96-1:1993-95 (M).

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 171.83 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage-height records are good. Flow regulated by Lake Oconee since January 1979 and Sinclair Reservoir since November 1952.

Table T-03070102-9: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02223248.

Statistic	Value
Bias	-78.89
Standard error	946.41
Relative bias	-0.02
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.93
Coefficient of efficiency	0.77
Index of agreement	0.89

Table T-03070102-10: Hydrologic Indices Between USGS Gauge 02223248 and HSPF Reach 22.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02223248	Reach 22	Difference
MA1: Mean, all daily flows	3423.51	3365.71	-1.69
MA2: Median, all daily flows	1780.00	1886.19	5.97
MA3: CV, all daily flows	115.60	126.95	9.81
MA4: CV, log of all daily flows	111.02	102.52	-7.66
MA5: Mean daily flow / median daily flow	1.92	1.78	-7.22
MA9: (Q10 - Q90) / median daily flow	4.98	3.90	-21.77
MA10: (Q20 - Q80) / median daily flow	2.31	2.40	3.49
MA11: (Q25 - Q75) / median daily flow	1.77	1.97	11.41
MA12: Mean monthly flow, January	4743.39	4889.98	3.09
MA13: Mean monthly flow, February	6260.39	6676.27	6.64
MA14: Mean monthly flow, March	7140.49	7327.39	2.62
MA15: Mean monthly flow, April	4426.93	4319.95	-2.42
MA16: Mean monthly flow, May	2505.73	2619.48	4.54
MA17: Mean monthly flow, June	1983.55	1803.70	-9.07
MA18: Mean monthly flow, July	2020.20	1702.60	-15.72
MA19: Mean monthly flow, August	1491.08	1135.92	-23.82
MA20: Mean monthly flow, September	1446.15	1148.27	-20.60
MA21: Mean monthly flow, October	1844.04	1571.10	-14.80
MA22: Mean monthly flow, November	2601.52	2317.46	-10.92
MA23: Mean monthly flow, December	3847.55	3884.44	0.96
ML1: Mean minimum monthly flow, January	2154.73	2636.09	22.34
ML2: Mean minimum monthly flow, February	2362.67	3297.81	39.58
ML3: Mean minimum monthly flow, March	2744.33	3556.49	29.59
ML4: Mean minimum monthly flow, April	1706.29	2475.09	45.06
ML5: Mean minimum monthly flow, May	955.48	1573.96	64.73
ML6: Mean minimum monthly flow, June	774.24	1152.09	48.80
ML7: Mean minimum monthly flow, July	841.76	950.25	12.89
ML8: Mean minimum monthly flow, August	740.29	695.35	-6.07
ML9: Mean minimum monthly flow, September	595.48	441.50	-25.86
ML10: Mean minimum monthly flow, October	745.05	739.30	-0.77
ML11: Mean minimum monthly flow, November	933.18	1151.50	23.40
ML12: Mean minimum monthly flow, December	1506.86	1909.49	26.72
ML13: CV of minimum monthly flows	108.17	101.02	-6.61
ML14: Mean minimum daily flow / mean median annual flow	0.32	0.09	-70.70
ML15: Mean minimum annual flow / mean annual flow	0.16	0.06	-66.22
ML16: Median minimum annual flow / median annual flow	0.25	0.07	-73.60
ML20: Ratio of baseflow volume to total flow volume	0.49	0.65	32.04
ML22: Mean annual minimum flow divided by catchment area	4.73	1.88	-60.19
RA1: Mean of positive changes from one day to next (rise rate)	879.54	1568.97	
RA2: CV, mean of positive changes from one day to next (rise rate)	234.23	396.05	
RA3: Mean of negative changes from one day to next (fall rate)	585.83	568.74	
RA4: CV, mean of negative changes from one day to next (fall rate)	214.27	574.52	
RA5: Ratio of days that are higher than previous day	0.39	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.05	
RA8: Number of flow reversals from one day to the next	111.27	58.45	

RA9: CV, number of flow reversals from one day to the next	21.15	25.24	

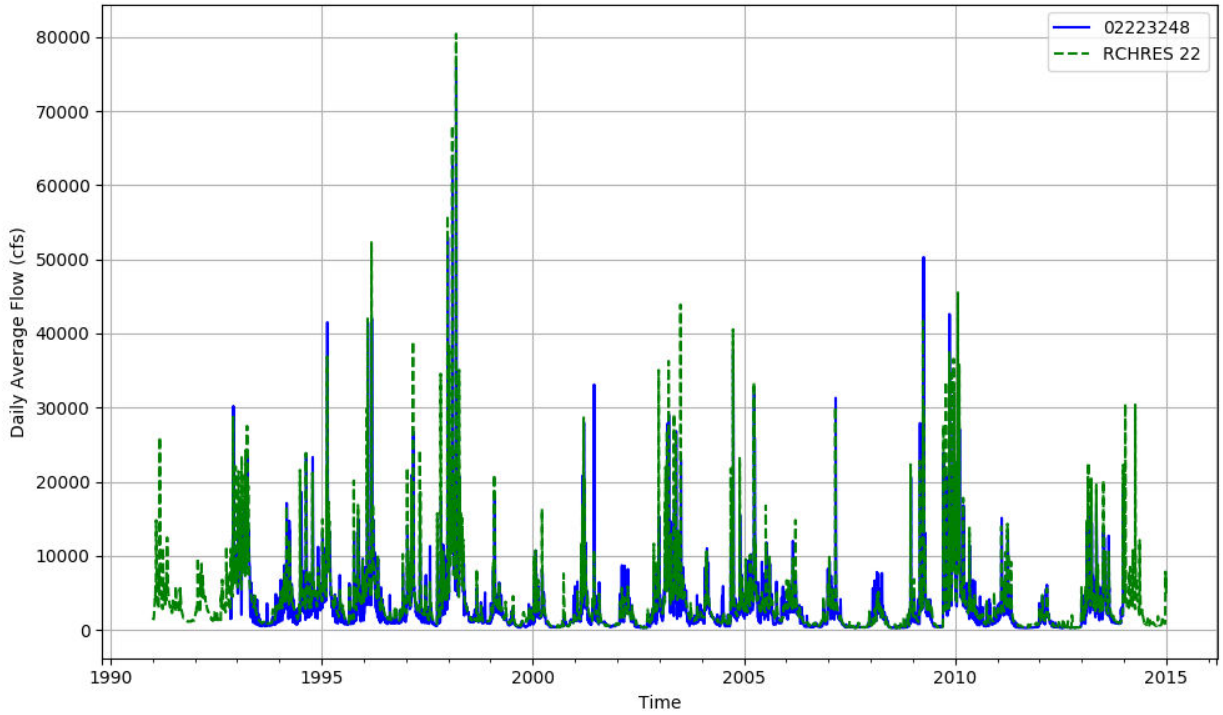


Figure T-03070102-16: Daily flow for HSFP reach 22 and USGS station 02223248.

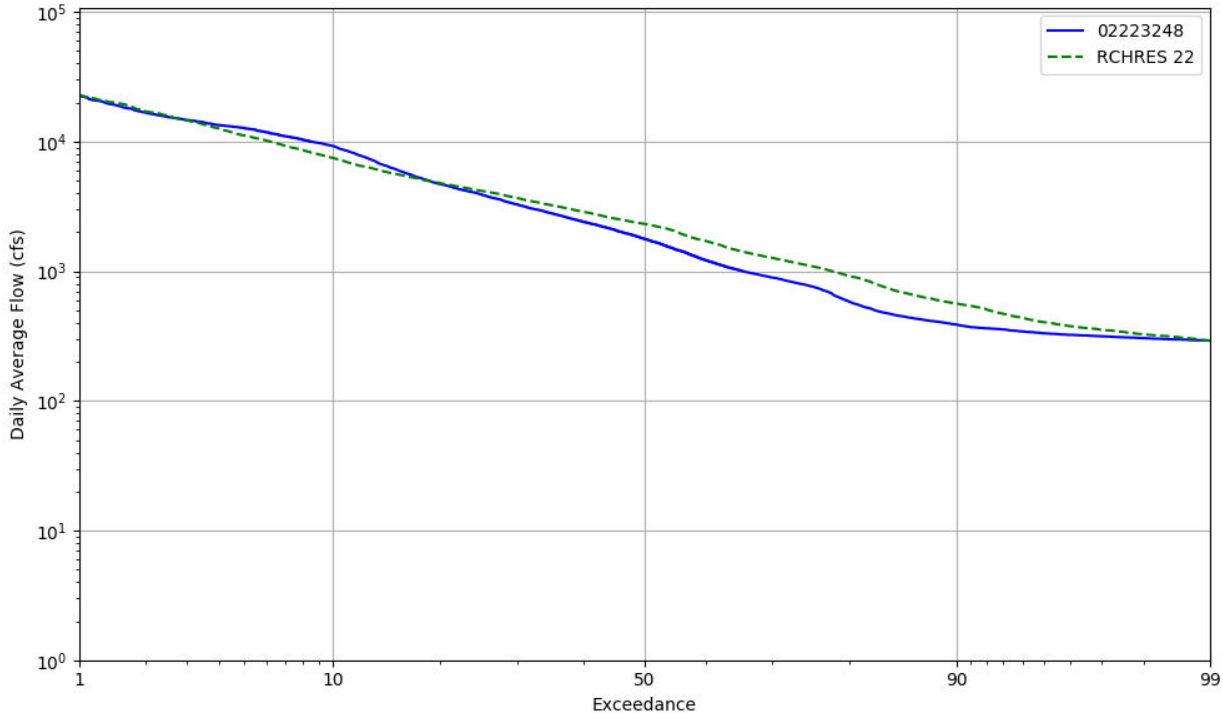


Figure T-03070102-17: Daily exceedance for HSFP reach 22 and USGS station 02223248.

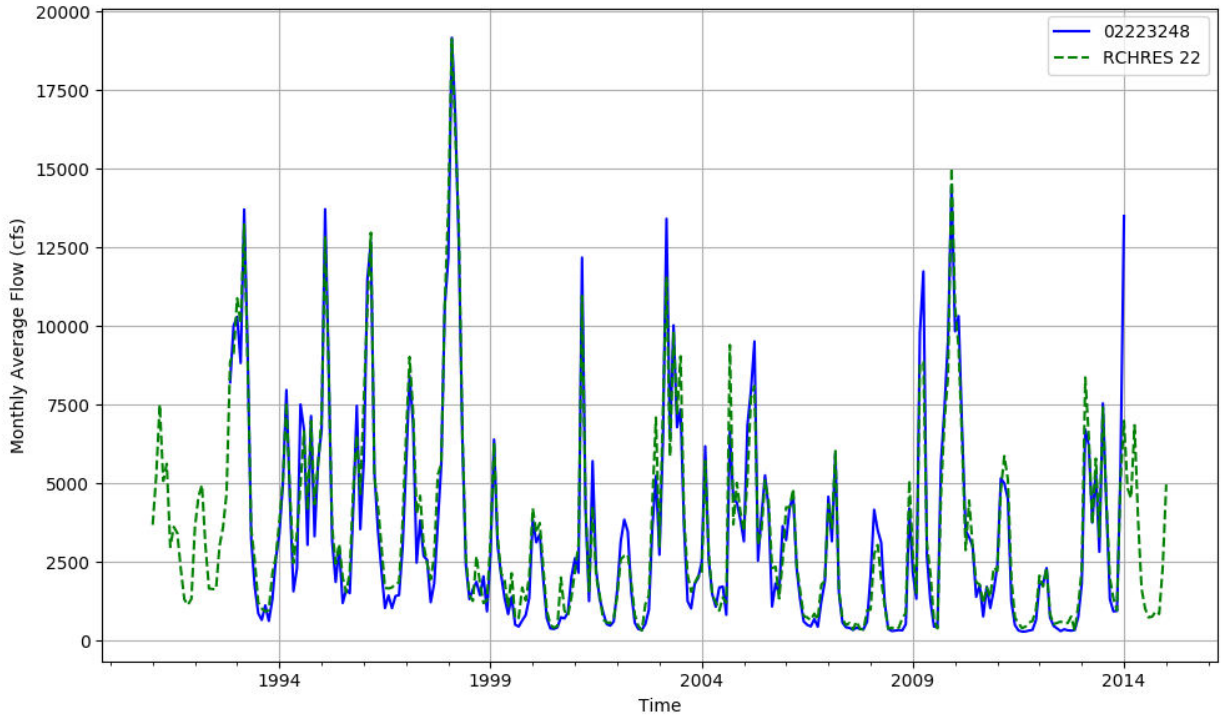


Figure T-03070102-18: Monthly flow for HSFP reach 22 and USGS station 02223248.

HSPF REACH 25, USGS GAUGE 02223500

Water-Data Report 2009
02223500 OCONEE RIVER AT DUBLIN, GA
Altamaha Basin Lower Oconee Subbasin

LOCATION.--Lat 323240, long 825341 referenced to North American Datum of 1927, Laurens County, GA, Hydrologic Unit 03070102, near left bank on downstream end of pier of bridge, on US HWY 80, at Dublin GA, and at river mile 74.3.

DRAINAGE AREA.--4,400 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1897 to current year.
GAGE-HEIGHT: October 1998 to current year. Gage-height records collected at same site since 1893 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 822: Drainage area. WSP 1504: 1898-1903, 1905-6, 1908-9, 1912, 1913(M), 1925(M).

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 149.08 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to April 14, 1932, a non-recording gage was installed, and from April 15, 1932, to June 17, 1934, a water-stage recorder was located at a site 420 feet downstream at datum 3.0 feet higher. From October 1, 1933, to July 17, 1934 recorded data are corrected to present datum. From July 18, 1934, to April 14, 1936, a water-stage recorder and from April 15, 1936, to October 12, 1938, a non-recording gage, and from October 13, 1938 to January 20, 1953, a water-stage recorder was located at a site 80 feet upstream at present datum.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records good. Gage-height records are good. Flow regulated by Lake Oconee and Sinclair Reservoir.

Table T-03070102-11: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02223500.

Statistic	Value
Bias	-230.41
Standard error	1248.37
Relative bias	-0.06
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90

Coefficient of efficiency	0.75
Index of agreement	0.88

Table T-03070102-12: Hydrologic Indices Between USGS Gauge 02223500 and HSPF Reach 25.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02223500	Simulated Reach 25	Percent Difference
MA1: Mean, all daily flows	3896.23	3707.60	-4.84
MA2: Median, all daily flows	2140.00	2166.90	1.26
MA3: CV, all daily flows	106.98	120.48	12.62
MA4: CV, log of all daily flows	104.04	101.49	-2.45
MA5: Mean daily flow / median daily flow	1.82	1.71	-6.02
MA9: (Q10 - Q90) / median daily flow	4.50	3.76	-16.49
MA10: (Q20 - Q80) / median daily flow	2.29	2.29	0.17
MA11: (Q25 - Q75) / median daily flow	1.74	1.87	7.75
MA12: Mean monthly flow, January	5499.83	5238.19	-4.76
MA13: Mean monthly flow, February	7169.57	7308.53	1.94
MA14: Mean monthly flow, March	7939.80	8152.66	2.68
MA15: Mean monthly flow, April	5311.49	4818.27	-9.29
MA16: Mean monthly flow, May	2949.64	2922.40	-0.92
MA17: Mean monthly flow, June	2302.53	1987.33	-13.69
MA18: Mean monthly flow, July	2348.15	1929.36	-17.84
MA19: Mean monthly flow, August	1926.11	1458.57	-24.27
MA20: Mean monthly flow, September	1599.27	1400.42	-12.43
MA21: Mean monthly flow, October	2176.79	1810.66	-16.82
MA22: Mean monthly flow, November	2591.86	2271.45	-12.36
MA23: Mean monthly flow, December	4045.44	3903.35	-3.51
ML1: Mean minimum monthly flow, January	2781.17	2779.55	-0.06
ML2: Mean minimum monthly flow, February	2877.74	3617.66	25.71
ML3: Mean minimum monthly flow, March	3361.30	3979.36	18.39
ML4: Mean minimum monthly flow, April	2173.39	2752.93	26.67
ML5: Mean minimum monthly flow, May	1229.78	1775.79	44.40
ML6: Mean minimum monthly flow, June	926.91	1292.51	39.44
ML7: Mean minimum monthly flow, July	988.17	1135.58	14.92
ML8: Mean minimum monthly flow, August	839.74	879.28	4.71
ML9: Mean minimum monthly flow, September	697.35	614.96	-11.81
ML10: Mean minimum monthly flow, October	855.43	886.24	3.60
ML11: Mean minimum monthly flow, November	1072.52	1190.21	10.97
ML12: Mean minimum monthly flow, December	1754.04	1973.41	12.51
ML13: CV of minimum monthly flows	114.95	99.10	-13.79
ML14: Mean minimum daily flow / mean median annual flow	0.29	0.12	-60.72
ML15: Mean minimum annual flow / mean annual flow	0.16	0.07	-56.78
ML16: Median minimum annual flow / median annual flow	0.25	0.09	-65.09
ML20: Ratio of baseflow volume to total flow volume	0.51	0.65	26.31
ML22: Mean annual minimum flow divided by catchment area	5.35	2.65	-50.57
RA1: Mean of positive changes from one day to next (rise rate)	775.20	1470.01	
RA2: CV, mean of positive changes from one day to next (rise rate)	199.43	402.16	
RA3: Mean of negative changes from one day to next (fall rate)	542.45	574.94	
RA4: CV, mean of negative changes from one day to next (fall rate)	192.65	562.77	

RA5: Ratio of days that are higher than previous day	0.41	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.05	
RA8: Number of flow reversals from one day to the next	101.33	53.08	
RA9: CV, number of flow reversals from one day to the next	21.03	27.23	

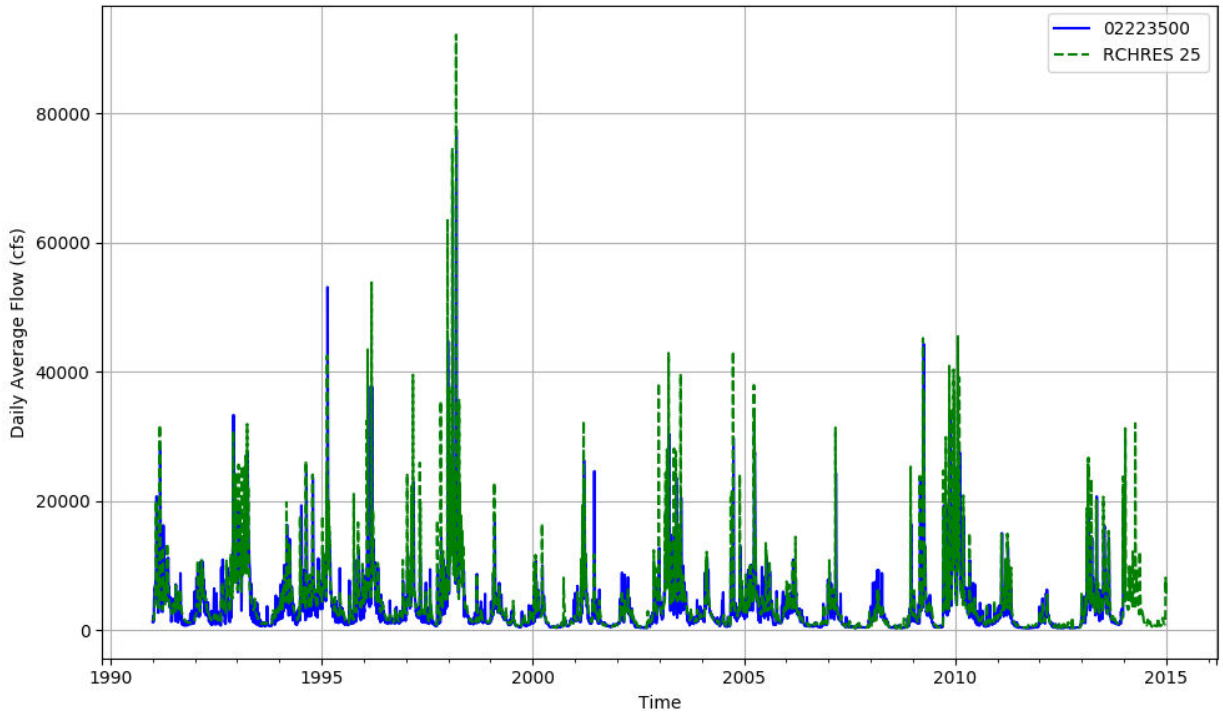


Figure T-03070102-19: Daily flow for HSFP reach 25 and USGS station 02223500.

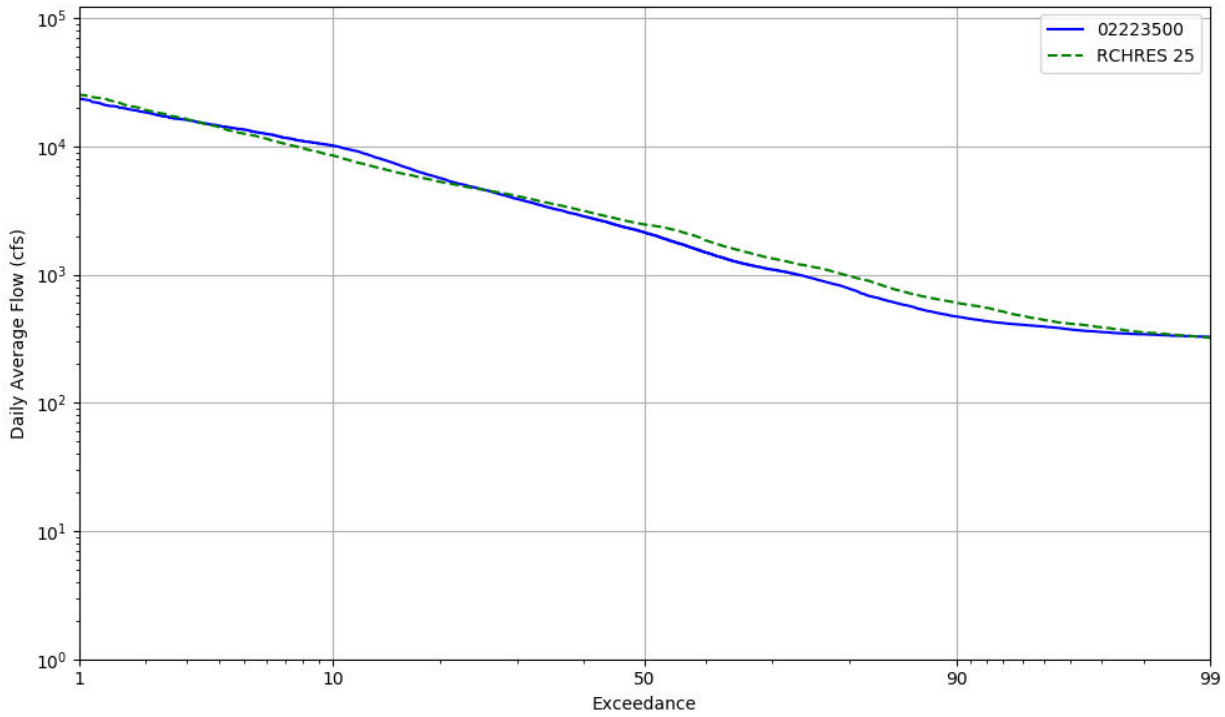


Figure T-03070102-20: Daily exceedance for HSFP reach 25 and USGS station 02223500.

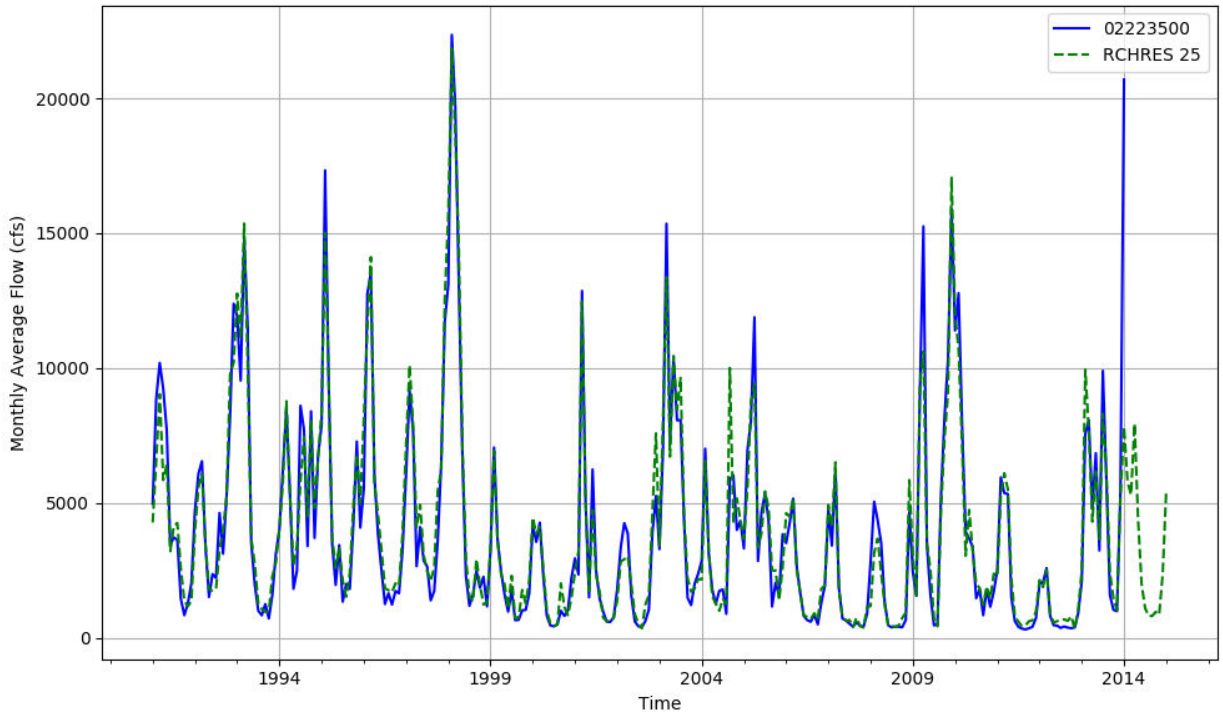


Figure T-03070102-21: Monthly flow for HSFP reach 25 and USGS station 02223500.

HSPF REACH 28, USGS GAUGE 02224500

Water-Data Report 2010
02224500 OCONEE RIVER NEAR MOUNT VERNON, GA
Altamaha Basin Lower Oconee Subbasin

LOCATION.--Lat 321128, long 823800 referenced to North American Datum of 1927, Wheeler County, GA, Hydrologic Unit 03070102.

DRAINAGE AREA.--5110.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1937 to December 1955. March 2008 to current year.
GAGE-HEIGHT: March 2008 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 103.34 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

Table T-03070102-13: Comparison Statistics Between HSPF Reach 28 and USGS Gauge 02224500.

Statistic	Value
Bias	-421.47
Standard error	1825.37
Relative bias	-0.10
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.86
Coefficient of efficiency	0.73
Index of agreement	0.86

Table T-03070102-14: Hydrologic Indices Between USGS Gauge 02224500 and HSPF Reach 28.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02224500	Simulated Reach 28	Percent Difference
MA1: Mean, all daily flows	3937.76	3682.97	-6.47
MA2: Median, all daily flows	1685.00	1816.47	7.80
MA3: CV, all daily flows	107.02	118.53	10.76
MA4: CV, log of all daily flows	124.90	115.62	-7.43
MA5: Mean daily flow / median daily flow	2.34	2.03	-13.24
MA9: (Q10 - Q90) / median daily flow	5.96	4.73	-20.60
MA10: (Q20 - Q80) / median daily flow	3.05	2.77	-9.29
MA11: (Q25 - Q75) / median daily flow	2.31	2.31	0.04
MA12: Mean monthly flow, January	6127.42	5028.43	-17.94

MA13: Mean monthly flow, February	6646.08	6404.97	-3.63
MA14: Mean monthly flow, March	6340.69	6126.72	-3.37
MA15: Mean monthly flow, April	5854.89	4837.53	-17.38
MA16: Mean monthly flow, May	2896.01	2848.36	-1.65
MA17: Mean monthly flow, June	1687.01	1706.11	1.13
MA18: Mean monthly flow, July	2510.21	1672.32	-33.38
MA19: Mean monthly flow, August	1803.52	1413.53	-21.62
MA20: Mean monthly flow, September	1224.22	918.69	-24.96
MA21: Mean monthly flow, October	1991.90	1540.46	-22.66
MA22: Mean monthly flow, November	2125.81	1959.09	-7.84
MA23: Mean monthly flow, December	4383.67	4800.07	9.50
ML1: Mean minimum monthly flow, January	5006.67	3600.68	-28.08
ML2: Mean minimum monthly flow, February	4271.67	3823.59	-10.49
ML3: Mean minimum monthly flow, March	3081.67	4098.10	32.98
ML4: Mean minimum monthly flow, April	2380.83	2906.91	22.10
ML5: Mean minimum monthly flow, May	1612.33	2077.84	28.87
ML6: Mean minimum monthly flow, June	890.50	1393.50	56.49
ML7: Mean minimum monthly flow, July	1055.83	850.68	-19.43
ML8: Mean minimum monthly flow, August	906.00	769.59	-15.06
ML9: Mean minimum monthly flow, September	644.00	416.47	-35.33
ML10: Mean minimum monthly flow, October	984.00	815.75	-17.10
ML11: Mean minimum monthly flow, November	1009.67	1086.89	7.65
ML12: Mean minimum monthly flow, December	1542.17	1487.10	-3.57
ML13: CV of minimum monthly flows	139.97	106.07	-24.22
ML14: Mean minimum daily flow / mean median annual flow	0.41	0.13	-67.74
ML15: Mean minimum annual flow / mean annual flow	0.20	0.06	-68.73
ML16: Median minimum annual flow / median annual flow	0.29	0.08	-73.13
ML20: Ratio of baseflow volume to total flow volume	0.54	0.63	15.99
ML22: Mean annual minimum flow divided by catchment area	5.24	1.45	-72.41
RA1: Mean of positive changes from one day to next (rise rate)	640.46	1438.78	
RA2: CV, mean of positive changes from one day to next (rise rate)	166.35	415.35	
RA3: Mean of negative changes from one day to next (fall rate)	428.75	603.12	
RA4: CV, mean of negative changes from one day to next (fall rate)	212.17	527.71	
RA5: Ratio of days that are higher than previous day	0.39	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.04	
RA8: Number of flow reversals from one day to the next	68.29	38.43	
RA9: CV, number of flow reversals from one day to the next	37.73	47.93	

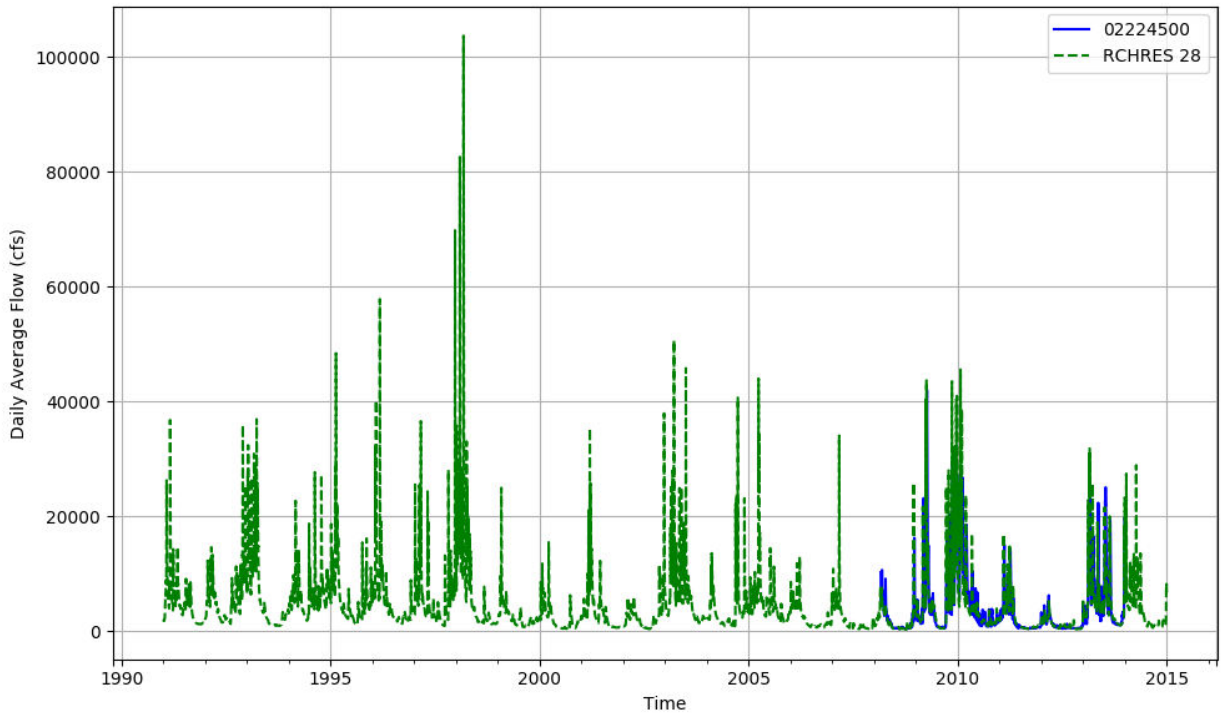


Figure T-03070102-22: Daily flow for HSFP reach 28 and USGS station 02224500.

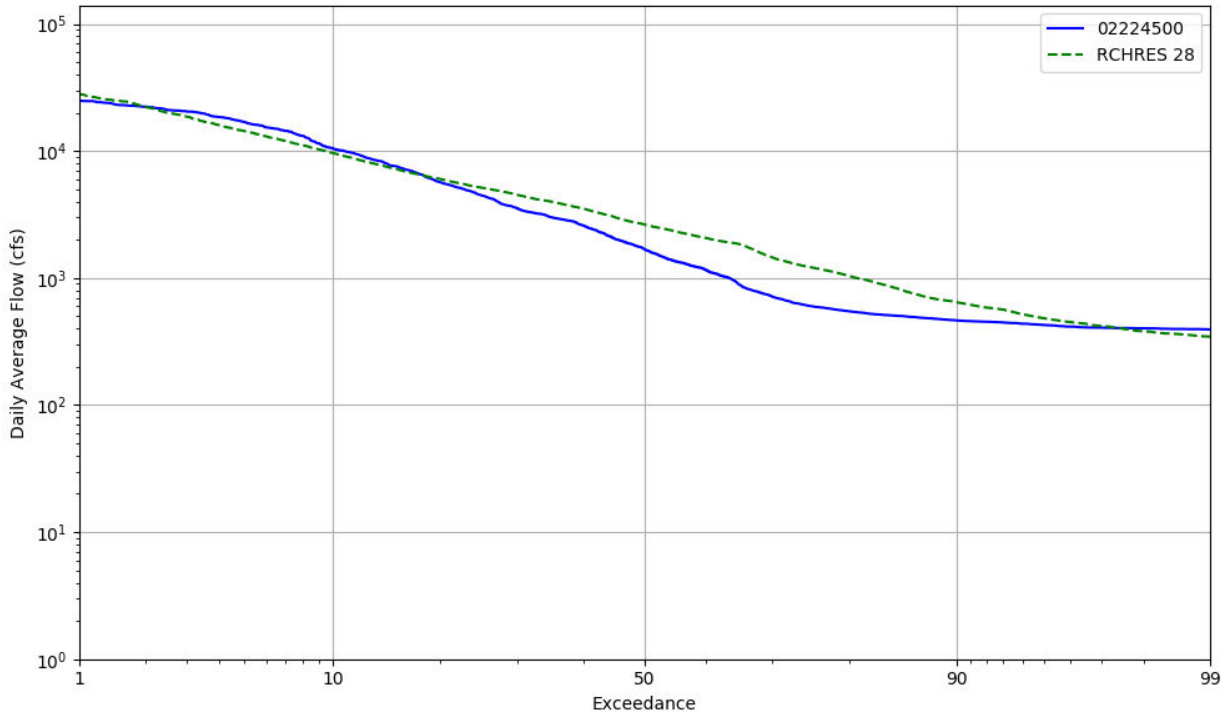


Figure T-03070102-23: Daily exceedance for HSFP reach 28 and USGS station 02224500.

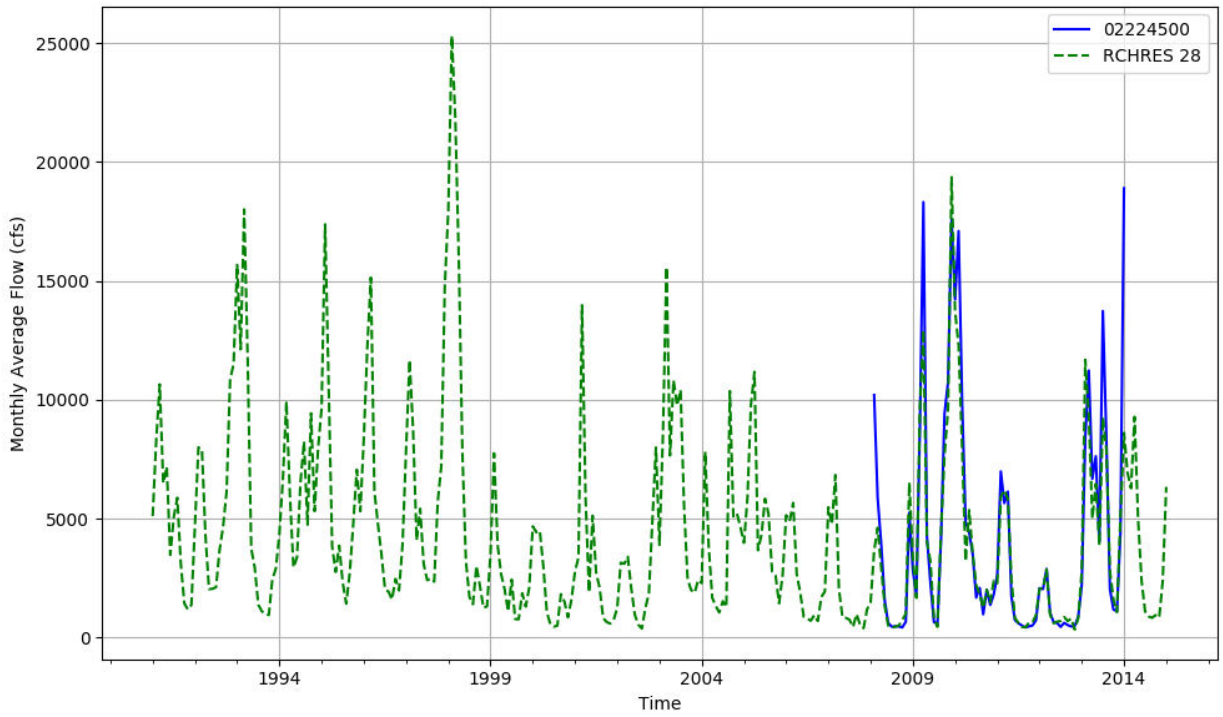


Figure T-03070102-24: Monthly flow for HSFP reach 28 and USGS station 02224500.

Table T-03070102-15: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	10301	55751	11318	2244	552	15785	850711	31972	146876	96519	80674	220807	582	12419	1030	1537540
AREA(%)	0.7	3.6	0.7	0.1	0.0	1.0	55.1	2.1	9.5	6.3	5.2	14.3	0.0	0.8	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		2962	1264	564	553											5343
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	40.5	40.6	40.9	40.7	40.6	41.1	40.6	39.7	40.6	40.6	40.7	40.2	59.5	49.0	42.4	40.5
SURLI		0.0	10.0	11.7	11.7										0.8	0.1
UZLI																0.0
LZLI		0.0	1.3	1.0	1.0									0.0	8.4	0.0
SURO: PERVIOUS		1.2	2.4	2.7	0.8	1.5	0.2	0.7	0.9	0.6	0.2		4.0	0.6	0.2	0.4
SURO: IMPERVIOUS		27.1	27.5	27.6	27.4											0.1
SURO: COMBINED		2.5	5.0	7.7	14.1	1.5	0.2	0.7	0.9	0.6	0.2		4.0	0.6	0.2	0.5
IFWO		1.7	1.6	1.8	2.2	5.5	1.4	1.3	2.4	1.5	0.4		3.7	0.2	0.4	1.3
AGWO	1.0	9.6	18.6	19.0	14.5	6.3	4.2	13.7	8.2	10.6	11.4	1.5	15.4	18.2	17.8	5.6
AGWI	1.7	11.4	21.3	21.6	16.2	8.3	6.3	16.0	10.0	12.7	13.8	2.2	16.2	20.5	20.7	7.5
IGWI	1.7	0.9	1.7	2.0	2.4	4.2	1.6	0.9	1.5	1.1	0.5	0.8	2.0	0.1	1.0	1.4
CEPE		10.7	7.5	7.3	10.4	4.8	12.2	8.4	10.5	7.6	6.1	10.9	24.3	11.0	6.9	10.9
UZET	0.4	3.3	4.2	4.4	6.7	6.5	2.2	3.5	3.3	3.1	2.7	2.0	4.1	2.7	3.0	2.5
LZET	0.2	14.5	15.5	15.5	17.3	12.4	20.7	11.3	15.1	17.3	20.9	0.3	8.2	17.3	21.9	16.2
AGWET	0.2	2.1	2.6	2.5	2.0	1.4	1.7	2.6	1.9	2.4	2.9	0.1	0.9	2.7	3.0	1.6
BASET	0.5	0.6	0.8	0.8	0.8	0.9	0.6	0.8	0.7	0.7	0.7	0.6	0.7	0.8	0.7	0.6
SURET	40.3											28.6				4.4
PERO	1.0	12.5	22.7	23.5	17.5	13.3	5.9	15.8	11.4	12.7	12.0	1.5	23.2	19.0	18.4	7.3
IGWI	1.7	0.9	1.7	2.0	2.4	4.2	1.6	0.9	1.5	1.1	0.5	0.8	2.0	0.1	1.0	1.4
TAET: PERVIOUS	41.6	31.2	30.5	30.5	37.2	26.0	37.3	26.5	31.4	31.0	33.2	42.5	38.2	34.4	35.6	36.2
IMPEV: IMPERVIOUS		13.5	13.4	13.2	13.2											0.0
ET: COMBINED	41.6	30.3	28.8	27.1	25.2	26.0	37.3	26.5	31.4	31.0	33.2	42.5	38.2	34.4	35.6	36.2
PET	43.5	43.5	43.4	43.3	43.4	42.9	43.4	44.1	43.3	43.5	43.9	43.8	43.1	44.2	44.4	43.4

Table T-03070102-16: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	10301	55751	11318	2244	552	15785	850711	31972	146876	96519	80674	220807	582	12419	1030	1537540
AREA(%)	0.7	3.6	0.7	0.1	0.0	1.0	55.1	2.1	9.5	6.3	5.2	14.3	0.0	0.8	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		2962	1264	564	553											5343
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	59.1	58.7	58.8	58.7	58.6	59.4	58.8	59.2	58.7	58.6	58.3	58.7	66.4	67.5	60.6	58.6
SURLI		0.0	11.0	12.6	13.0										0.5	0.1
UZLI																0.0
LZLI		0.0	1.5	1.1	1.1									0.0	5.5	0.0
SURO: PERVIOUS		2.1	3.7	3.8	1.3	2.6	0.4	1.3	1.5	1.0	0.3		2.7	0.6	0.3	0.6
SURO: IMPERVIOUS		43.1	43.1	43.2	43.1											0.1
SURO: COMBINED		4.2	7.6	11.7	22.2	2.6	0.4	1.3	1.5	1.0	0.3		2.7	0.6	0.3	0.8
IFWO		3.4	3.2	3.6	4.3	10.6	3.1	2.5	5.0	3.1	1.0		6.3	0.4	0.8	2.8
AGWO	1.1	15.8	26.0	26.0	20.0	9.3	8.5	22.2	13.3	16.9	18.0	2.3	16.2	25.2	23.0	9.9
AGWI	2.1	19.1	30.3	30.2	23.0	12.6	11.6	26.7	16.6	20.7	22.0	3.5	18.8	30.0	27.8	12.8
IGWI	2.1	1.6	3.2	3.8	4.7	6.4	3.1	1.4	2.6	1.8	0.9	1.5	3.2	0.1	1.4	2.5
CEPE		12.6	9.2	9.1	12.4	6.1	14.3	9.9	12.5	9.2	7.6	12.7	18.1	13.0	8.3	12.8
UZET	1.4	3.5	4.4	4.7	6.4	7.6	2.7	3.9	3.7	3.4	2.8	3.5	4.0	2.7	3.2	3.1
LZET	0.4	15.0	16.1	16.1	18.1	12.6	20.8	12.1	15.3	17.8	21.7	0.7	12.1	19.1	23.3	16.5
AGWET	0.4	2.2	3.0	3.0	2.1	1.6	1.6	3.1	1.9	2.5	2.9	0.4	1.6	3.4	3.5	1.6
BASET	0.6	0.6	0.8	0.8	0.7	0.9	0.6	0.8	0.7	0.7	0.6	0.7	0.6	1.0	0.8	0.6
SURET	45.8											30.9				4.7
PERO	1.1	21.3	32.9	33.5	25.6	22.5	12.0	26.1	19.7	21.0	19.2	2.3	25.1	26.3	24.1	13.2
IGWI	2.1	1.6	3.2	3.8	4.7	6.4	3.1	1.4	2.6	1.8	0.9	1.5	3.2	0.1	1.4	2.5
TAET: PERVIOUS	48.6	33.9	33.7	33.7	39.6	28.6	39.9	29.8	34.1	33.6	35.7	48.8	36.4	39.1	39.0	39.4
IMPEV: IMPERVIOUS		15.5	15.5	15.4	15.3											0.1
ET: COMBINED	48.6	33.0	31.8	30.0	27.5	28.6	39.9	29.8	34.1	33.6	35.7	48.8	36.4	39.1	39.0	39.4
PET	51.7	51.8	51.6	51.4	51.5	51.0	51.7	52.6	51.6	51.8	52.4	52.2	51.1	52.7	52.9	51.6

Table T-03070102-17: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	10301	55751	11318	2244	552	15785	850711	31972	146876	96519	80674	220807	582	12419	1030	1537540
AREA(%)	0.7	3.6	0.7	0.1	0.0	1.0	55.1	2.1	9.5	6.3	5.2	14.3	0.0	0.8	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		2962	1264	564	553											5343
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	40.8	40.7	40.8	40.7	40.7	41.2	40.7	40.4	40.8	40.7	40.8	40.5	53.0	48.6	42.3	40.6
SURLI		0.0	10.7	12.2	12.4										0.5	0.1
UZLI																0.0
LZLI		0.0	1.6	1.2	1.1									0.0	6.4	0.0
SURO: PERVIOUS	0.4	1.1	1.9	2.0	0.8	1.4	0.2	0.6	0.8	0.5	0.1		1.7	0.4	0.1	0.3
SURO: IMPERVIOUS		27.5	27.6	27.7	27.6											0.1
SURO: COMBINED	0.4	2.4	4.5	7.1	14.2	1.4	0.2	0.6	0.8	0.5	0.1		1.7	0.4	0.1	0.4
IFWO		1.6	1.6	1.8	2.1	5.7	1.4	1.3	2.3	1.5	0.4		3.2	0.2	0.4	1.3
AGWO	1.2	9.3	18.8	18.9	14.5	6.6	7.3	14.2	8.3	10.3	11.5	2.3	11.2	17.1	16.0	7.4
AGWI	1.8	11.9	22.3	22.3	17.1	8.3	8.1	17.6	10.5	13.2	14.7	3.0	13.2	20.5	19.8	8.8
IGWI	1.8	0.8	2.4	2.9	3.6	4.1	1.4	0.9	1.4	1.0	0.5	1.1	2.1	0.1	0.8	1.3
CEPE		10.5	7.4	7.3	10.4	4.5	12.0	8.0	10.2	7.4	6.2	10.5	19.9	11.0	6.9	10.6
UZET	0.0	2.9	3.8	4.0	6.7	6.5	2.1	3.3	3.1	2.8	2.2	2.2	3.7	2.1	2.5	2.3
LZET	0.0	15.9	16.6	16.6	18.4	13.2	23.0	12.3	16.5	18.6	22.1	0.3	11.5	18.9	23.2	17.9
AGWET	0.0	2.6	2.9	2.9	2.3	1.7	1.6	3.1	2.3	2.9	3.3	0.2	1.6	3.2	3.5	1.7
BASET	0.6	0.7	0.9	0.8	0.8	0.9	0.6	0.9	0.8	0.8	0.7	0.8	0.8	0.9	0.8	0.6
SURET	46.6											33.3				5.1
PERO	1.7	12.0	22.3	22.7	17.4	13.7	9.0	16.1	11.4	12.4	12.1	2.3	16.0	17.7	16.4	9.1
IGWI	1.8	0.8	2.4	2.9	3.6	4.1	1.4	0.9	1.4	1.0	0.5	1.1	2.1	0.1	0.8	1.3
TAET: PERVIOUS	47.3	32.6	31.6	31.5	38.6	26.8	39.2	27.6	32.9	32.4	34.6	47.4	37.5	36.1	36.9	38.3
IMPEV: IMPERVIOUS		13.3	13.4	13.2	13.3											0.0
ET: COMBINED	47.3	31.6	29.7	27.8	25.9	26.8	39.2	27.6	32.9	32.4	34.6	47.4	37.5	36.1	36.9	38.4
PET	47.4	47.5	47.3	47.0	47.1	46.5	47.4	48.6	47.2	47.5	48.4	48.0	46.5	48.8	49.2	47.4

Table T-03070102-18: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	10301	55751	11318	2244	552	15785	850711	31972	146876	96519	80674	220807	582	12419	1030	1537540
AREA(%)	0.7	3.6	0.7	0.1	0.0	1.0	55.1	2.1	9.5	6.3	5.2	14.3	0.0	0.8	0.1	99.7
IMPERVIOUS																
AREA(ACRES)		2962	1264	564	553											5343
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	45.6	45.7	45.8	45.6	45.7	45.5	45.7	45.7	45.6	45.7	46.1	45.7	64.2	55.6	48.6	45.6
SURLI		0.0	9.2	10.6	10.9										0.6	0.1
UZLI																0.0
LZLI		0.0	1.2	0.9	0.9									0.0	7.6	0.0
SURO: PERVIOUS	2.0	1.2	2.0	2.2	0.8	1.5	0.2	0.8	0.9	0.6	0.2	1.9	3.1	0.6	0.2	0.7
SURO: IMPERVIOUS		31.5	31.6	31.6	31.6											0.1
SURO: COMBINED	2.0	2.7	5.0	8.1	16.2	1.5	0.2	0.8	0.9	0.6	0.2	1.9	3.1	0.6	0.2	0.8
IFWO		1.9	1.8	2.0	2.3	5.8	1.4	1.4	2.6	1.6	0.5		3.7	0.2	0.3	1.3
AGWO	1.0	10.5	19.2	19.4	14.5	7.0	5.9	15.6	9.0	11.3	12.1	1.8	18.1	19.4	19.2	6.8
AGWI	1.8	13.2	22.8	22.9	17.2	9.3	7.8	19.1	11.5	14.4	15.5	2.6	19.9	23.1	23.1	8.9
IGWI	1.7	1.1	2.3	2.7	3.3	5.0	1.9	1.0	1.8	1.3	0.6	0.6	2.4	0.1	1.2	1.6
CEPE		11.6	8.5	8.4	11.5	5.7	13.1	9.0	11.5	8.5	6.9	11.7	23.3	11.6	7.4	11.7
UZET	0.9	2.7	3.5	3.7	5.0	5.9	1.8	3.0	2.8	2.6	2.1	2.1	3.1	2.2	2.6	2.1
LZET	0.3	14.1	15.2	15.2	17.4	12.1	19.4	11.2	14.5	16.7	20.3	0.4	8.8	17.7	21.9	15.4
AGWET	0.3	2.1	2.7	2.7	2.0	1.5	1.4	2.8	1.9	2.4	2.8	0.2	1.1	2.9	3.1	1.5
BASET	0.5	0.6	0.8	0.8	0.7	0.8	0.5	0.8	0.7	0.6	0.6	0.7	0.7	0.8	0.7	0.6
SURET	40.8											28.7				4.4
PERO	3.1	13.5	23.0	23.6	17.7	14.4	7.6	17.7	12.4	13.6	12.7	3.8	24.9	20.2	19.8	8.8
IGWI	1.7	1.1	2.3	2.7	3.3	5.0	1.9	1.0	1.8	1.3	0.6	0.6	2.4	0.1	1.2	1.6
TAET: PERVIOUS	42.8	31.1	30.7	30.8	36.5	26.1	36.2	26.8	31.3	30.8	32.7	43.7	36.9	35.2	35.8	35.7
IMPEV: IMPERVIOUS		14.2	14.2	14.1	14.1											0.0
ET: COMBINED	42.8	30.2	29.1	27.4	25.3	26.1	36.2	26.8	31.3	30.8	32.7	43.7	36.9	35.2	35.8	35.8
PET	46.2	46.3	46.1	46.0	46.0	45.7	46.2	46.9	46.1	46.2	46.7	46.5	45.8	46.9	47.2	46.1

Table T-03070102-19: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
2	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
3	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
4	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
5	0.990	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.990
6	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
7	0.990	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.990
8	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
9	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
10	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
11	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
12	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
13	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
14	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
15	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
16	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
17	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
18	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
19	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
20	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
21	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
22	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
23	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
24	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
25	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
26	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
27	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
28	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
29	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
30	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990

Table T-03070102-20: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
2	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
3	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
4	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
9	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
10	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
11	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
12	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
13	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
14	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
15	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
16	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
17	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
18	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
19	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
20	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
21	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
22	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
23	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
24	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
25	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
26	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
27	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
28	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
29	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
30	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018

Table T-03070102-21: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
2	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
3	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
4	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
5	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
6	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
7	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
8	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
9	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
10	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
11	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
12	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
13	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
14	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
15	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
16	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
17	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
18	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
19	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
20	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
21	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
22	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
23	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
24	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
25	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
26	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
27	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
28	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
29	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100
30	0.000	0.099	0.050	0.050	0.100	0.020	0.132	0.056	0.099	0.050	0.030	0.100

Table T-03070102-22: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
2	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
3	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
4	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
5	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
6	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
7	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
8	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
9	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
10	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
11	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
12	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
13	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
14	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
15	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
16	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
17	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
18	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
19	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
20	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
21	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
22	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
23	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
24	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
25	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
26	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
27	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
28	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
29	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
30	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Table T-03070102-23: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.004	0.047	0.047	0.047	0.047	0.067	0.100	0.067	0.067	0.067	0.080	0.004
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
3	0.004	0.047	0.047	0.047	0.047	0.067	0.100	0.067	0.067	0.067	0.080	0.004
4	0.004	0.047	0.047	0.047	0.047	0.067	0.100	0.067	0.067	0.067	0.080	0.004
5	0.008	0.085	0.085	0.085	0.085	0.121	0.182	0.121	0.121	0.121	0.145	0.008
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
7	0.008	0.085	0.085	0.085	0.085	0.121	0.182	0.121	0.121	0.121	0.145	0.008
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
12	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
13	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
14	0.004	0.047	0.047	0.047	0.047	0.067	0.100	0.067	0.067	0.067	0.080	0.004
15	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
16	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
17	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
18	0.004	0.047	0.047	0.047	0.047	0.067	0.100	0.067	0.067	0.067	0.080	0.004
19	0.004	0.047	0.047	0.047	0.047	0.067	0.100	0.067	0.067	0.067	0.080	0.004
20	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
21	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
22	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
23	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
24	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
25	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
26	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
27	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
28	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
29	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001
30	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.799	0.001

Table T-03070102-24: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	
2		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
3		1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	
4		1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
9		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
10		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
11		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
12		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
13		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
14		1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	
15		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
16		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
17		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
18		1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	
19		1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	1.784	
20		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
21		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
22		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
23		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
24		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
25		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
26		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
27		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
28		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	
29		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	

30		0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198	

Table T-03070102-25: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
9	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
10	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
11	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
12	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
13	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
16	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
17	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
21	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
22	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
23	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
24	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
25	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
26	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
27	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
28	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
29	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
30	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652

Table T-03070102-26: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
4	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
5	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
15	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
19	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276	1.276
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
22	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
23	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
24	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
25	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
26	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
27	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
28	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
29	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
30	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03070102-27: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.242	0.473	0.473	0.473	0.473	0.315	0.670	0.315	0.473	0.473	0.552	0.900
2	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
3	0.242	0.473	0.473	0.473	0.473	0.315	0.670	0.315	0.473	0.473	0.552	0.900
4	0.242	0.473	0.473	0.473	0.473	0.315	0.670	0.315	0.473	0.473	0.552	0.900
5	0.185	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
7	0.185	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
9	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
10	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
11	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
12	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
13	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
14	0.242	0.473	0.473	0.473	0.473	0.315	0.670	0.315	0.473	0.473	0.552	0.900
15	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
16	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
17	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
18	0.242	0.473	0.473	0.473	0.473	0.315	0.670	0.315	0.473	0.473	0.552	0.900
19	0.242	0.473	0.473	0.473	0.473	0.315	0.670	0.315	0.473	0.473	0.552	0.900
20	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
21	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
22	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
23	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
24	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
25	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
26	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
27	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
28	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
29	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937
30	0.240	0.447	0.400	0.400	0.635	0.450	0.889	0.311	0.472	0.469	0.535	0.937

Table T-03070102-28: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.051	3.221	3.221	3.221	3.221	3.624	4.832	3.624	3.624	3.624	4.027	0.169
2	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
3	0.051	3.221	3.221	3.221	3.221	3.624	4.832	3.624	3.624	3.624	4.027	0.169
4	0.051	3.221	3.221	3.221	3.221	3.624	4.832	3.624	3.624	3.624	4.027	0.169
5	0.115	1.852	1.852	1.852	1.852	2.084	2.779	2.084	2.084	2.084	2.316	0.200
6	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
7	0.115	1.852	1.852	1.852	1.852	2.084	2.779	2.084	2.084	2.084	2.316	0.200
8	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
9	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
10	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
11	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
12	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
13	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
14	0.051	3.221	3.221	3.221	3.221	3.624	4.832	3.624	3.624	3.624	4.027	0.169
15	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
16	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
17	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
18	0.051	3.221	3.221	3.221	3.221	3.624	4.832	3.624	3.624	3.624	4.027	0.169
19	0.051	3.221	3.221	3.221	3.221	3.624	4.832	3.624	3.624	3.624	4.027	0.169
20	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
21	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
22	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
23	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
24	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
25	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
26	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
27	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
28	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
29	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100
30	0.050	6.666	6.666	6.666	6.666	7.499	10.000	7.499	7.499	7.499	8.333	0.100

Table T-03070102-29: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.074	0.074	0.074	0.074	0.074	0.105	0.084	0.084	0.074	0.105	0.933
2	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
3	0.050	0.074	0.074	0.074	0.074	0.074	0.105	0.084	0.084	0.074	0.105	0.933
4	0.050	0.074	0.074	0.074	0.074	0.074	0.105	0.084	0.084	0.074	0.105	0.933
5	0.050	0.500	0.500	0.500	0.500	0.500	0.714	0.571	0.571	0.500	0.714	0.995
6	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
7	0.050	0.500	0.500	0.500	0.500	0.500	0.714	0.571	0.571	0.500	0.714	0.995
8	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
9	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
10	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
11	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
12	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
13	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
14	0.050	0.074	0.074	0.074	0.074	0.074	0.105	0.084	0.084	0.074	0.105	0.933
15	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
16	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
17	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
18	0.050	0.074	0.074	0.074	0.074	0.074	0.105	0.084	0.084	0.074	0.105	0.933
19	0.050	0.074	0.074	0.074	0.074	0.074	0.105	0.084	0.084	0.074	0.105	0.933
20	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
21	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
22	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
23	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
24	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
25	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
26	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
27	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
28	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
29	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291
30	0.050	0.082	0.070	0.070	2.000	0.070	0.100	0.080	0.080	0.070	0.100	0.291

APPENDIX T-03070103

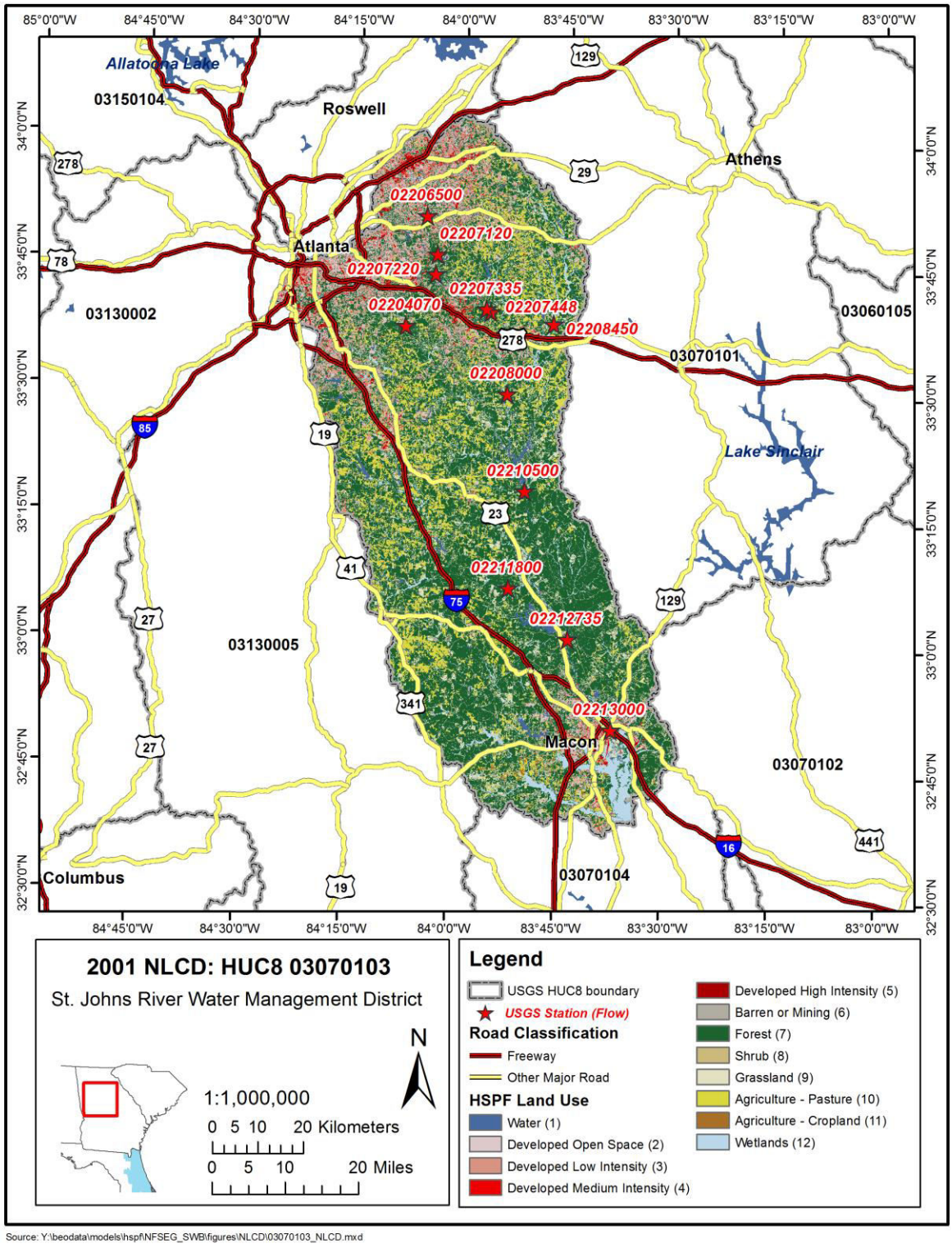


Figure T-03070103-1: Land Cover from the National Land Cover Database.

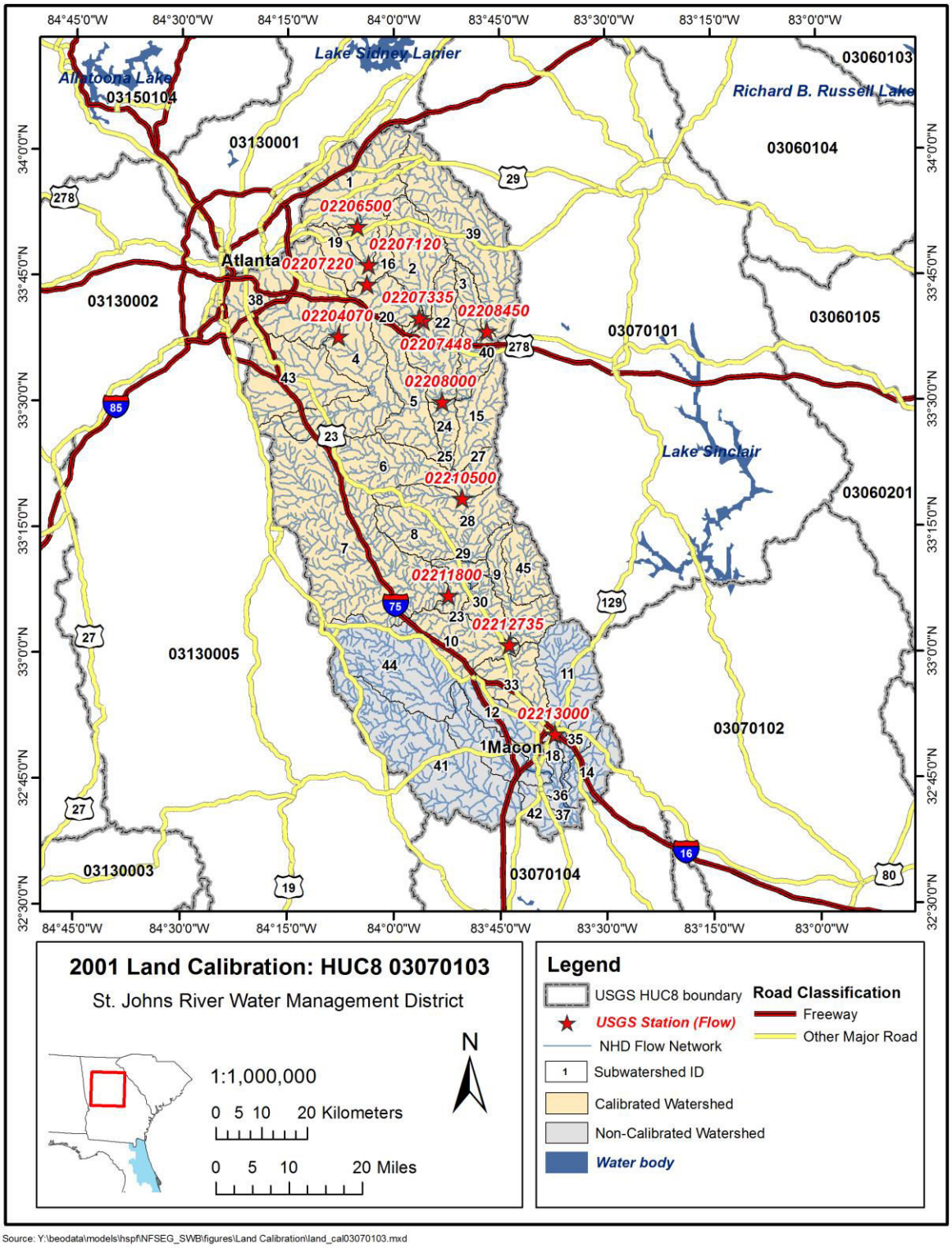


Figure T-03070103-2: Calibrated sub-watersheds.

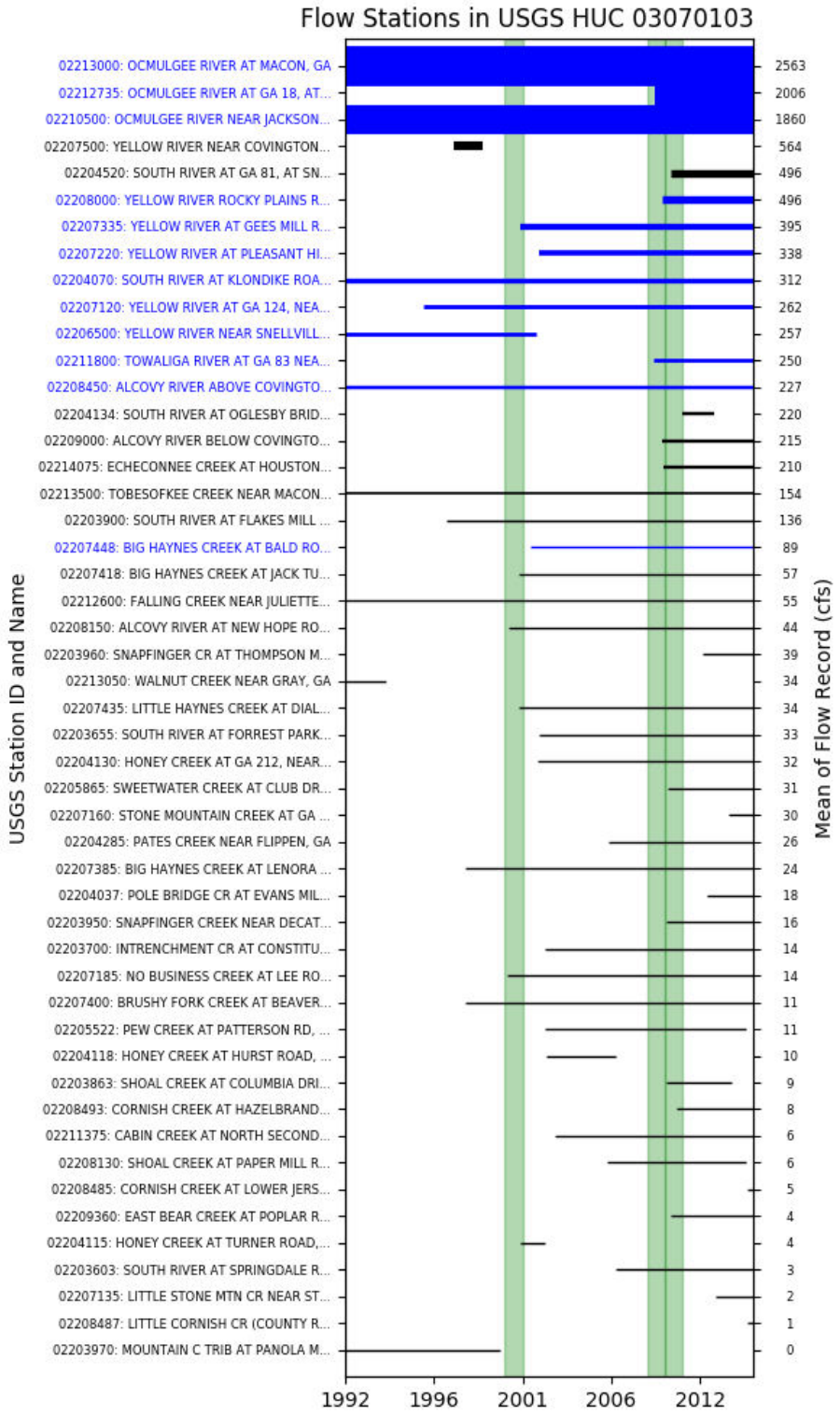


Figure T-03070103-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 01, USGS GAUGE 02206500

Water-Data Report 2009
02203000 CANOOCHEE RIVER NEAR CLAXTON, GA
Ogeechee Basin Canoochee Subbasin

LOCATION.--Lat 321105, long 815320 referenced to North American Datum of 1927, Evans County, GA, Hydrologic Unit 03060203, on right bank 400 feet upstream from bridge on GA 73, 1.9 miles northeast of Claxton, and 10.0 miles upstream from Lotts Creek.

DRAINAGE AREA.--555 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1112: 1939-41, 1944.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 80.5 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). Prior to October 20, 1949, a non-recording gage was located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03070103-1: Comparison Statistics Between HSPF Reach 01 and USGS Gauge 02206500.

Statistic	Value
Bias	-26.06
Standard error	58.36
Relative bias	-0.10
Relative standard error	0.39
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.88
Coefficient of efficiency	0.62
Index of agreement	0.81

Table T-03070103-2: Hydrologic Indices Between USGS Gauge 02206500 and HSPF Reach 01.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02206500	Simulated Reach 01	Percent Difference
MA1: Mean, all daily flows	255.88	229.84	-10.18
MA2: Median, all daily flows	152.00	136.58	-10.15
MA4: CV, log of all daily flows	86.50	82.09	-5.09
MA5: Mean daily flow / median daily flow	1.68	1.68	-0.04
MA9: (Q10 - Q90) / median daily flow	2.82	2.07	-26.63
MA10: (Q20 - Q80) / median daily flow	1.36	1.26	-7.19
MA11: (Q25 - Q75) / median daily flow	0.99	1.05	5.76
MA12: Mean monthly flow, January	318.40	315.25	-0.99
MA13: Mean monthly flow, February	343.69	334.78	-2.59
MA14: Mean monthly flow, March	376.82	327.30	-13.14
MA15: Mean monthly flow, April	246.79	233.01	-5.58
MA16: Mean monthly flow, May	193.93	174.24	-10.15
MA17: Mean monthly flow, June	212.85	149.80	-29.62
MA18: Mean monthly flow, July	172.44	142.17	-17.55
MA19: Mean monthly flow, August	167.15	125.51	-24.91
MA20: Mean monthly flow, September	178.47	164.89	-7.61
MA21: Mean monthly flow, October	170.49	160.30	-5.97
MA22: Mean monthly flow, November	219.86	194.70	-11.44
MA23: Mean monthly flow, December	191.11	185.34	-3.02
ML1: Mean minimum monthly flow, January	127.42	130.63	2.52
ML2: Mean minimum monthly flow, February	148.50	152.38	2.62
ML3: Mean minimum monthly flow, March	146.67	151.45	3.26
ML4: Mean minimum monthly flow, April	128.42	128.04	-0.29
ML5: Mean minimum monthly flow, May	96.83	94.02	-2.91
ML6: Mean minimum monthly flow, June	84.00	72.94	-13.16
ML7: Mean minimum monthly flow, July	71.25	66.43	-6.77
ML8: Mean minimum monthly flow, August	62.50	63.34	1.34
ML9: Mean minimum monthly flow, September	60.75	63.82	5.06
ML10: Mean minimum monthly flow, October	75.92	76.45	0.70
ML11: Mean minimum monthly flow, November	94.45	94.81	0.38
ML12: Mean minimum monthly flow, December	117.27	116.02	-1.07
ML13: CV of minimum monthly flows	43.75	55.80	27.53
ML14: Mean minimum daily flow / mean median annual flow	0.37	0.37	-0.63
ML15: Mean minimum annual flow / mean annual flow	0.26	0.27	2.17
ML16: Median minimum annual flow / median annual flow	0.33	0.32	-2.51
ML20: Ratio of baseflow volume to total flow volume	0.45	0.50	11.28
ML22: Mean annual minimum flow divided by catchment area	0.54	0.48	-11.57
RA1: Mean of positive changes from one day to next (rise rate)	203.12	250.85	
RA2: CV, mean of positive changes from one day to next (rise rate)	205.36	249.39	
RA3: Mean of negative changes from one day to next (fall rate)	96.68	100.59	
RA4: CV, mean of negative changes from one day to next (fall rate)	284.10	393.42	
RA5: Ratio of days that are higher than previous day	0.31	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.25	
RA7: Median of difference in log of flows over two	0.12	0.07	

consecutive days of falling			
RA8: Number of flow reversals from one day to the next	113.00	108.38	
RA9: CV, number of flow reversals from one day to the next	31.68	31.71	

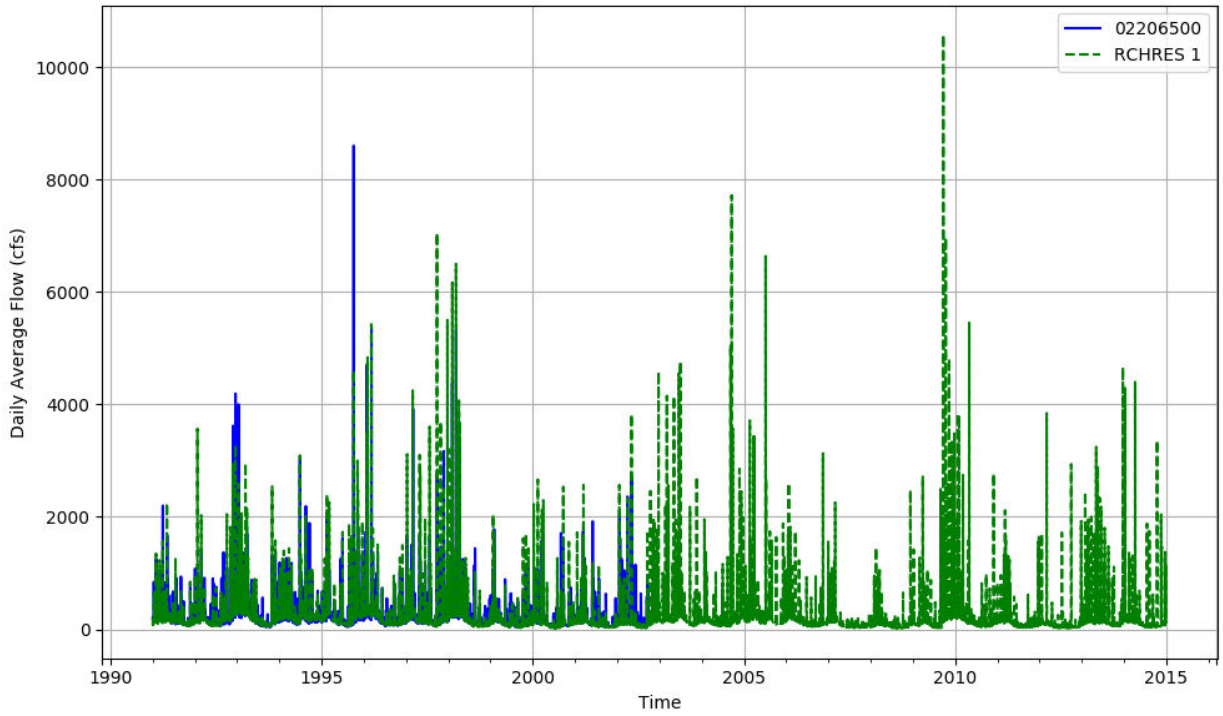


Figure T-03070103-4: Daily flow for HSFP reach 01 and USGS station 02206500.

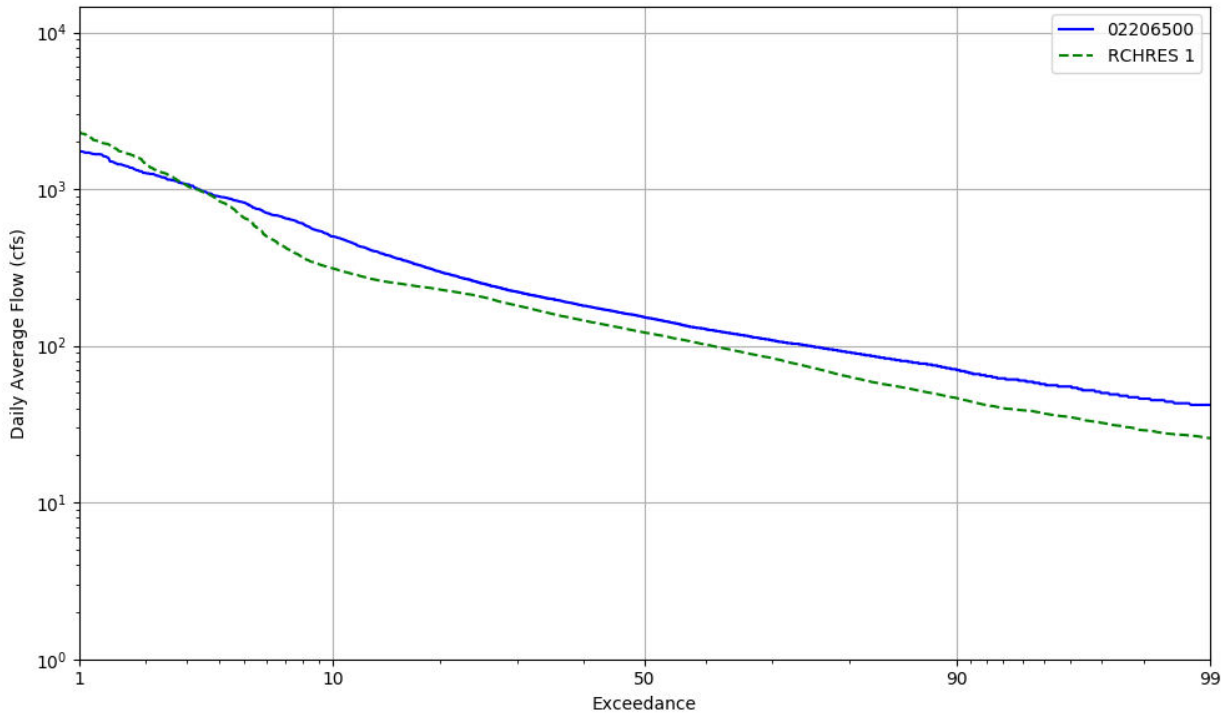


Figure T-03070103-5: Daily exceedance for HSFP reach 01 and USGS station 02206500.

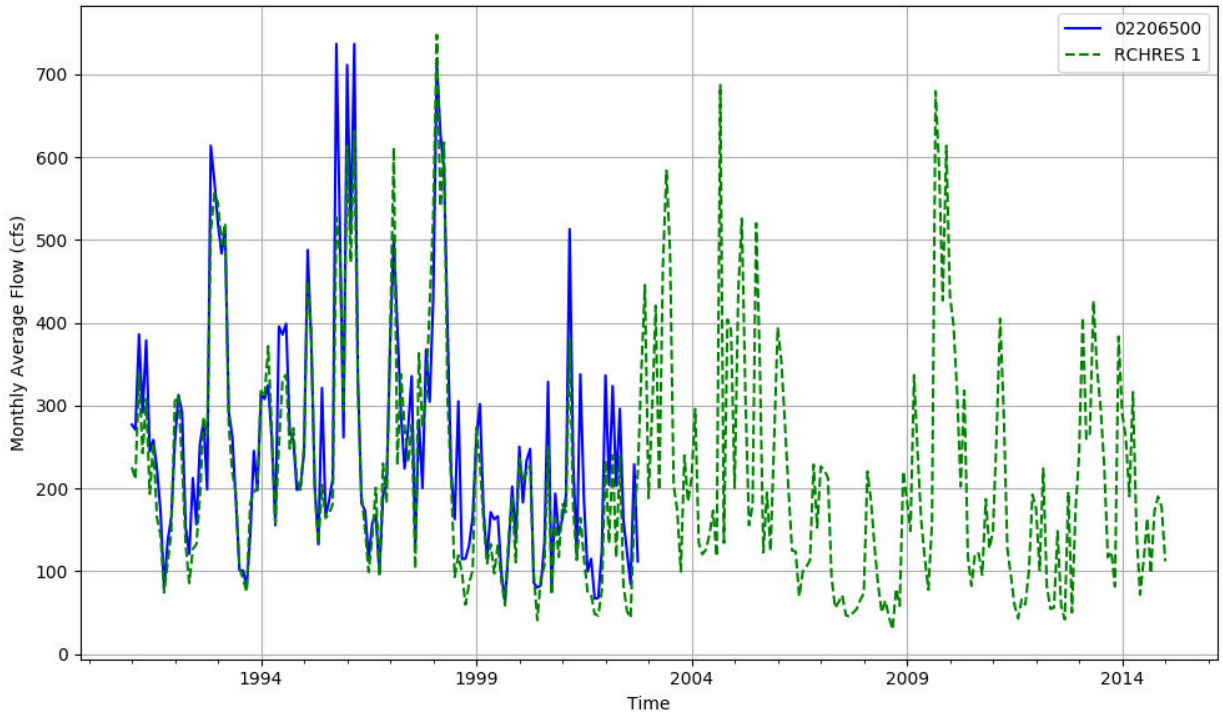


Figure T-03070103-6: Monthly flow for HSFP reach 01 and USGS station 02206500.

HSPF REACH 02, USGS GAUGE 02207448

Water-Data Report 2009
02207448 BIG HAYNES CREEK AT BALD ROCK ROAD, NEAR MILSTEAD, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 333941, long 835540 referenced to North American Datum of 1983, Newton County, GA, Hydrologic Unit 03070103, on downstream left bank at Bald Rock Road, 0.75 miles upstream of Yellow River confluence, 0.5 miles south of Gees Mill Road, and 4.0 miles east of Milstead.

DRAINAGE AREA.--79 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 2002 to current year.
GAGE-HEIGHT: June 2002 to current year.

GAGE.--Satellite telemetry with water-stage recorder. Datum of gage is 620 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Rockdale County Department of Water Resources.

REMARKS.--Discharge records poor. Gage-height records good. Flow is regulated by Jack Turner Dam and affected by backwater from the Yellow River.

Table T-03070103-3: Comparison Statistics Between HSPF Reach 02 and USGS Gauge 02207448.

Statistic	Value
Bias	6.46
Standard error	40.14
Relative bias	0.07
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.83
Kling-Gupta coefficient	0.73
Coefficient of efficiency	0.64
Index of agreement	0.79

Table T-03070103-4: Hydrologic Indices Between USGS Gauge 02207448 and HSPF Reach 02.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02207448	Simulated Reach 02	Percent Difference
MA1: Mean, all daily flows	92.32	99.08	7.33
MA2: Median, all daily flows	45.00	64.84	44.10

MA3: CV, all daily flows	118.20	132.26	11.89
MA4: CV, log of all daily flows	97.65	67.02	-31.37
MA5: Mean daily flow / median daily flow	2.05	1.53	-25.52
MA9: (Q10 - Q90) / median daily flow	3.93	2.07	-47.47
MA10: (Q20 - Q80) / median daily flow	2.55	1.33	-47.80
MA11: (Q25 - Q75) / median daily flow	2.07	1.15	-44.40
MA12: Mean monthly flow, January	91.65	103.26	12.66
MA13: Mean monthly flow, February	115.25	117.95	2.35
MA14: Mean monthly flow, March	133.42	129.57	-2.88
MA15: Mean monthly flow, April	88.87	85.39	-3.92
MA16: Mean monthly flow, May	96.73	84.08	-13.08
MA17: Mean monthly flow, June	72.15	74.23	2.88
MA18: Mean monthly flow, July	88.52	92.08	4.02
MA19: Mean monthly flow, August	37.06	49.31	33.07
MA20: Mean monthly flow, September	57.62	71.51	24.12
MA21: Mean monthly flow, October	50.30	67.22	33.63
MA22: Mean monthly flow, November	74.06	80.44	8.61
MA23: Mean monthly flow, December	87.67	107.77	22.93
ML1: Mean minimum monthly flow, January	55.23	71.62	29.67
ML2: Mean minimum monthly flow, February	63.44	79.75	25.71
ML3: Mean minimum monthly flow, March	73.59	79.57	8.12
ML4: Mean minimum monthly flow, April	53.61	66.28	23.64
ML5: Mean minimum monthly flow, May	36.00	47.65	32.37
ML6: Mean minimum monthly flow, June	19.27	39.02	102.52
ML7: Mean minimum monthly flow, July	31.38	40.56	29.25
ML8: Mean minimum monthly flow, August	17.19	31.94	85.81
ML9: Mean minimum monthly flow, September	13.96	28.40	103.49
ML10: Mean minimum monthly flow, October	20.60	38.23	85.60
ML11: Mean minimum monthly flow, November	28.70	47.15	64.30
ML12: Mean minimum monthly flow, December	40.06	59.10	47.53
ML13: CV of minimum monthly flows	105.21	63.80	-39.36
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.35	160.13
ML15: Mean minimum annual flow / mean annual flow	0.09	0.25	183.79
ML16: Median minimum annual flow / median annual flow	0.12	0.33	170.29
ML20: Ratio of baseflow volume to total flow volume	0.49	0.60	23.33
ML22: Mean annual minimum flow divided by catchment area	0.07	0.23	242.45
RA1: Mean of positive changes from one day to next (rise rate)	44.42	74.87	
RA2: CV, mean of positive changes from one day to next (rise rate)	322.92	332.92	
RA3: Mean of negative changes from one day to next (fall rate)	26.22	34.84	
RA4: CV, mean of negative changes from one day to next (fall rate)	342.79	468.19	
RA5: Ratio of days that are higher than previous day	0.35	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.19	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.06	
RA8: Number of flow reversals from one day to the next	118.23	115.31	
RA9: CV, number of flow reversals from one day to the next	33.82	34.59	

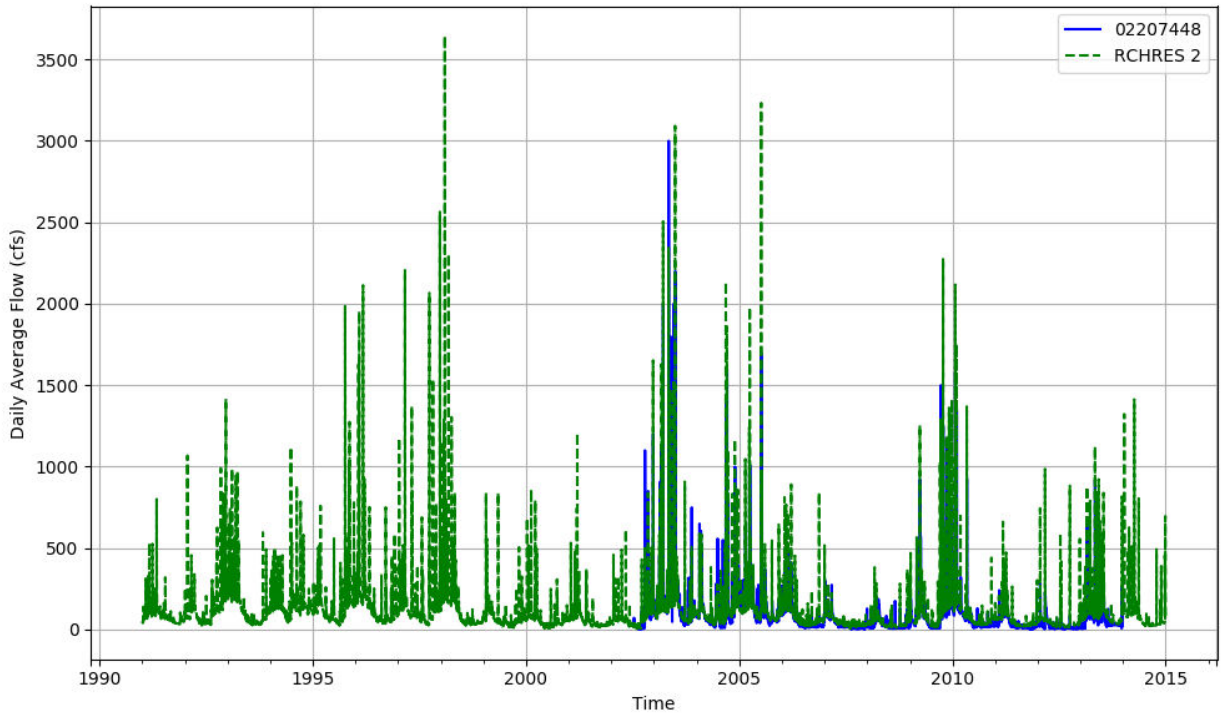


Figure T-03070103-7: Daily flow for HSFP reach 02 and USGS station 02207448.

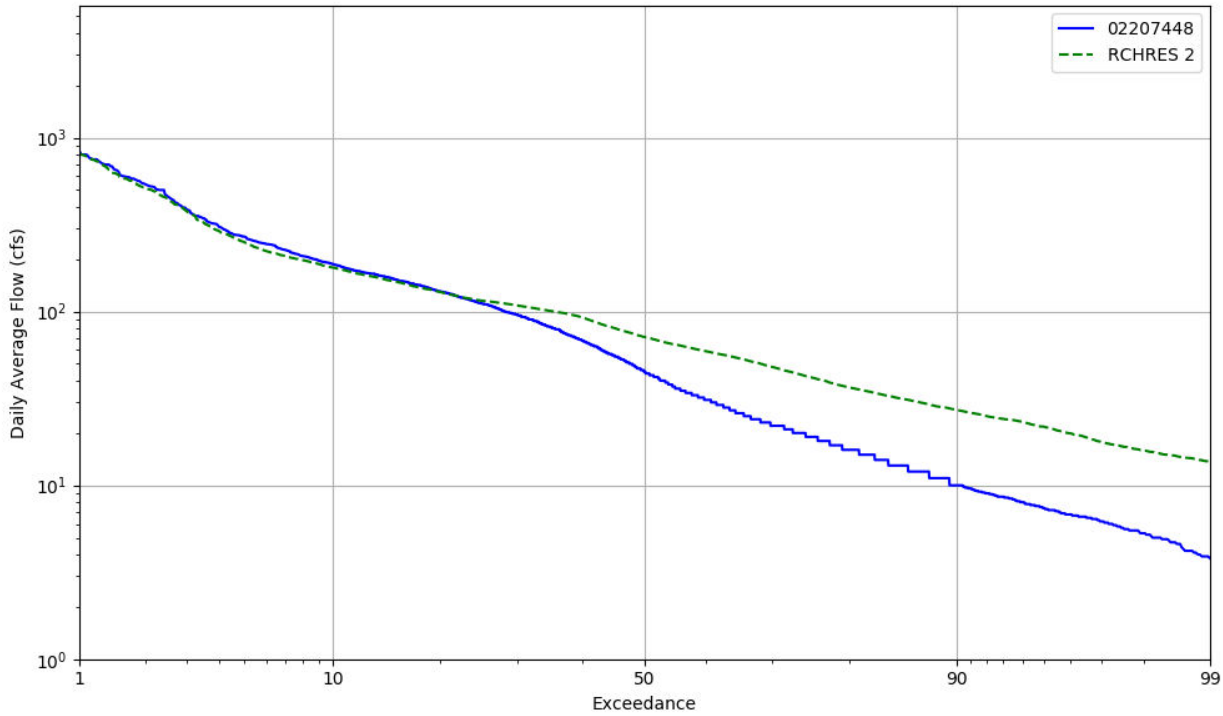


Figure T-03070103-8: Daily exceedance for HSFP reach 02 and USGS station 02207448.

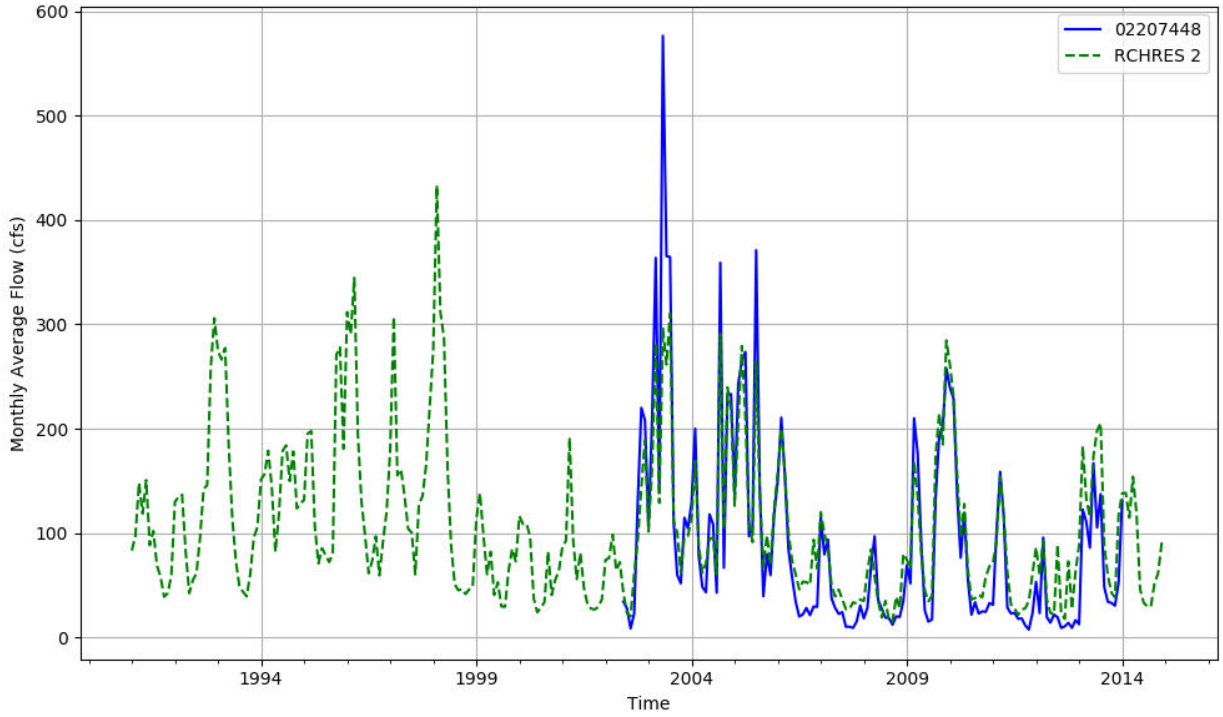


Figure T-03070103-9: Monthly flow for HSFP reach 02 and USGS station 02207448.

HSPF REACH 07, USGS GAUGE 02211800

Water-Data Report 2010
02211800 TOWALIGA RIVER AT GA 83 NEAR JULIETTE, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 330653, long 835214 referenced to North American Datum of 1927, Monroe County, GA, Hydrologic Unit 03070103.

DRAINAGE AREA.--339.0 square miles.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 2009 to current year.
GAGE-HEIGHT: May 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 385 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge record fair. Gage-height records good.

Table T-03070103-5: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02211800.

Statistic	Value
Bias	20.32
Standard error	92.73
Relative bias	0.08
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.90
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03070103-6: Hydrologic Indices Between USGS Gauge 02211800 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02211800	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	249.94	269.73	7.92
MA2: Median, all daily flows	115.00	117.13	1.85
MA3: CV, all daily flows	150.10	149.67	-0.29
MA4: CV, log of all daily flows	106.45	118.30	11.13

MA5: Mean daily flow / median daily flow	2.17	2.30	5.96
MA9: (Q10 - Q90) / median daily flow	4.24	5.27	24.32
MA10: (Q20 - Q80) / median daily flow	2.38	2.59	8.83
MA11: (Q25 - Q75) / median daily flow	1.90	1.91	0.53
MA12: Mean monthly flow, January	323.99	363.14	12.08
MA13: Mean monthly flow, February	368.34	403.91	9.66
MA14: Mean monthly flow, March	326.77	329.35	0.79
MA15: Mean monthly flow, April	181.41	196.94	8.56
MA16: Mean monthly flow, May	210.28	262.03	24.61
MA17: Mean monthly flow, June	111.66	116.61	4.43
MA18: Mean monthly flow, July	87.57	76.88	-12.21
MA19: Mean monthly flow, August	80.78	123.90	53.38
MA20: Mean monthly flow, September	63.29	62.81	-0.77
MA21: Mean monthly flow, October	92.71	133.24	43.71
MA22: Mean monthly flow, November	195.68	160.13	-18.17
MA23: Mean monthly flow, December	408.40	414.97	1.61
ML1: Mean minimum monthly flow, January	244.80	265.37	8.40
ML2: Mean minimum monthly flow, February	193.75	210.17	8.48
ML3: Mean minimum monthly flow, March	229.25	208.65	-8.98
ML4: Mean minimum monthly flow, April	142.00	128.87	-9.25
ML5: Mean minimum monthly flow, May	101.40	106.17	4.70
ML6: Mean minimum monthly flow, June	57.32	62.66	9.32
ML7: Mean minimum monthly flow, July	54.20	53.70	-0.92
ML8: Mean minimum monthly flow, August	39.06	45.09	15.45
ML9: Mean minimum monthly flow, September	32.17	34.45	7.12
ML10: Mean minimum monthly flow, October	39.40	43.79	11.15
ML11: Mean minimum monthly flow, November	67.60	70.91	4.90
ML12: Mean minimum monthly flow, December	97.80	102.18	4.48
ML13: CV of minimum monthly flows	111.32	110.66	-0.59
ML14: Mean minimum daily flow / mean median annual flow	0.24	0.30	26.97
ML15: Mean minimum annual flow / mean annual flow	0.11	0.13	17.54
ML16: Median minimum annual flow / median annual flow	0.16	0.17	7.86
ML20: Ratio of baseflow volume to total flow volume	0.46	0.42	-8.73
ML22: Mean annual minimum flow divided by catchment area	0.22	0.29	31.86
RA1: Mean of positive changes from one day to next (rise rate)	168.54	146.02	
RA2: CV, mean of positive changes from one day to next (rise rate)	346.48	306.94	
RA3: Mean of negative changes from one day to next (fall rate)	69.29	56.72	
RA4: CV, mean of negative changes from one day to next (fall rate)	413.93	289.81	
RA5: Ratio of days that are higher than previous day	0.28	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.09	
RA8: Number of flow reversals from one day to the next	77.00	75.67	
RA9: CV, number of flow reversals from one day to the next	42.41	43.29	

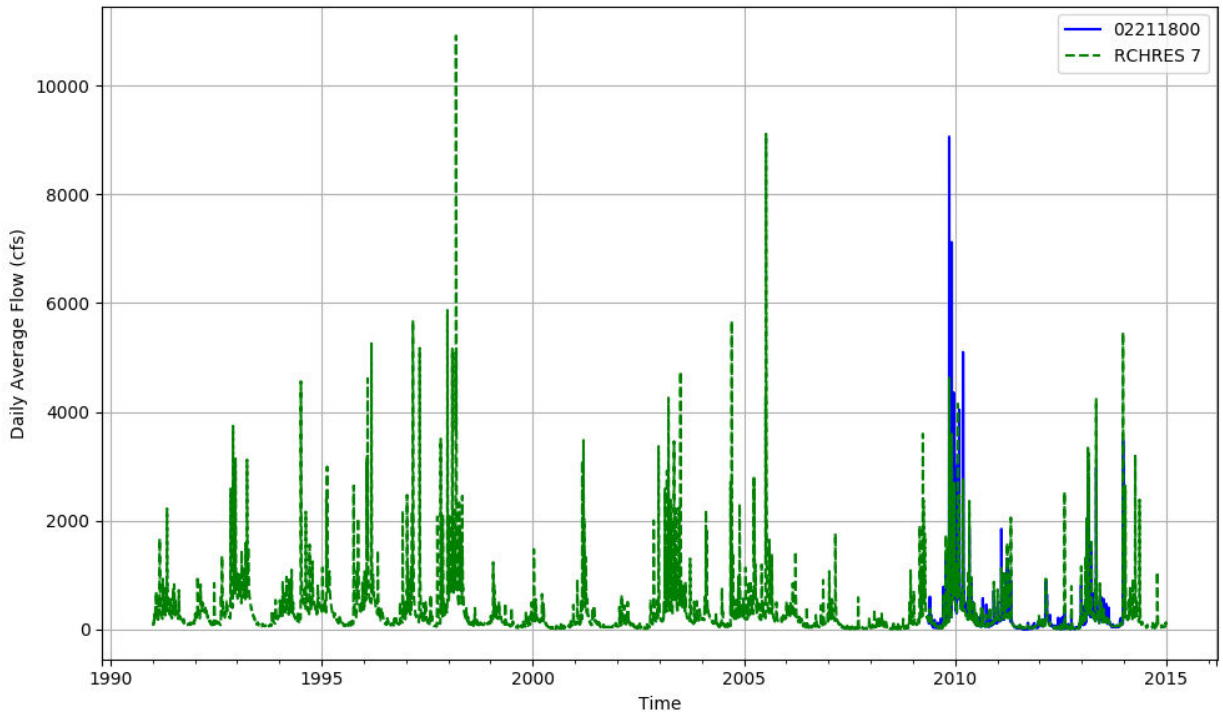


Figure T-03070103-10: Daily flow for HSFP reach 07 and USGS station 02211800.

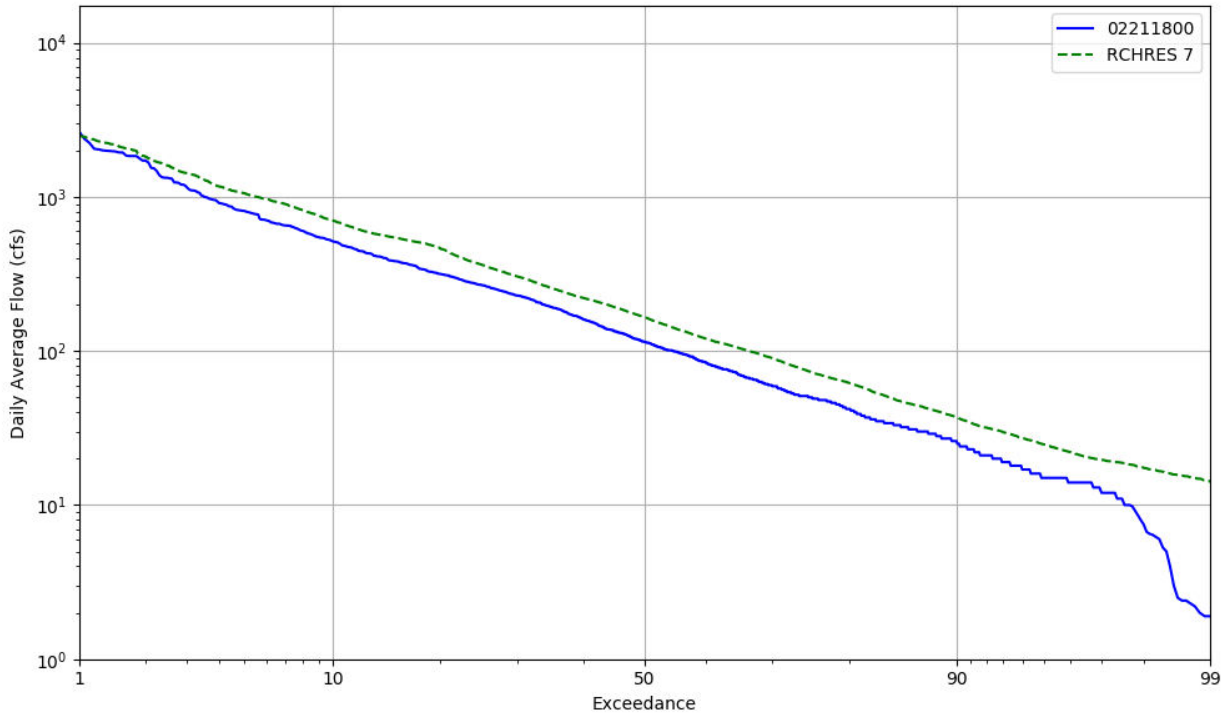


Figure T-03070103-11: Daily exceedance for HSFP reach 07 and USGS station 02211800.

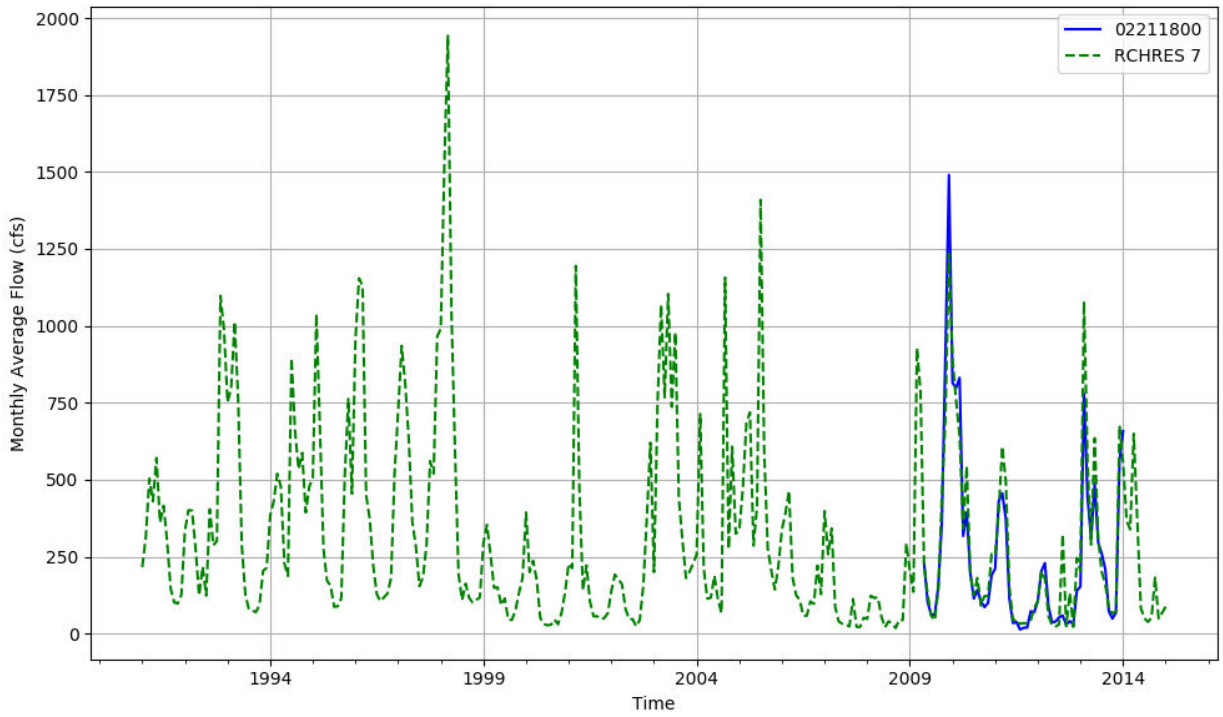


Figure T-03070103-12: Monthly flow for HSFP reach 07 and USGS station 02211800.

HSPF REACH 16, USGS GAUGE 02207120

Water-Data Report 2009
02207120 YELLOW RIVER AT GA 124, NEAR LITHONIA, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 334622, long 840330 referenced to North American Datum of 1927, Gwinnett County, GA, Hydrologic Unit 03070103, on GA 124 bridge, 5.0 miles south of the intersection of GA 124 and US 78.

DRAINAGE AREA.--162 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: August 2001 to current year.
GAGE-HEIGHT: August 2001 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 730 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map). Revised.

COOPERATION.--Gwinnett County Department of Water Resources.

REMARKS.--Discharge records good, except for periods of estimated discharge, which are fair. Gage-height records good.

Table T-03070103-7: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02207120.

Statistic	Value
Bias	-28.89
Standard error	81.00
Relative bias	-0.11
Relative standard error	0.40
Nash-Sutcliffe coefficient	0.84
Kling-Gupta coefficient	0.79
Coefficient of efficiency	0.69
Index of agreement	0.84

Table T-03070103-8: Hydrologic Indices Between USGS Gauge 02207120 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02207120	Simulated Reach 16	Percent Difference
MA1: Mean, all daily flows	284.38	248.10	-12.76
MA2: Median, all daily flows	150.00	137.41	-8.39
MA4: CV, log of all daily flows	96.83	84.26	-12.98

MA5: Mean daily flow / median daily flow	1.90	1.81	-4.77
MA9: (Q10 - Q90) / median daily flow	3.25	2.28	-29.76
MA10: (Q20 - Q80) / median daily flow	1.47	1.37	-7.27
MA11: (Q25 - Q75) / median daily flow	1.08	1.08	-0.10
MA12: Mean monthly flow, January	188.45	170.06	-9.76
MA13: Mean monthly flow, February	221.91	198.09	-10.73
MA14: Mean monthly flow, March	232.80	210.89	-9.41
MA15: Mean monthly flow, April	151.25	129.83	-14.16
MA16: Mean monthly flow, May	183.53	150.62	-17.93
MA17: Mean monthly flow, June	139.33	115.69	-16.97
MA18: Mean monthly flow, July	161.10	125.87	-21.87
MA19: Mean monthly flow, August	116.86	97.67	-16.43
MA20: Mean monthly flow, September	218.05	170.31	-21.90
MA21: Mean monthly flow, October	125.16	119.92	-4.18
MA22: Mean monthly flow, November	166.07	151.43	-8.81
MA23: Mean monthly flow, December	194.91	188.57	-3.25
ML1: Mean minimum monthly flow, January	128.11	123.69	-3.45
ML2: Mean minimum monthly flow, February	154.56	145.26	-6.02
ML3: Mean minimum monthly flow, March	157.56	146.12	-7.26
ML4: Mean minimum monthly flow, April	123.22	122.28	-0.77
ML5: Mean minimum monthly flow, May	112.30	102.72	-8.53
ML6: Mean minimum monthly flow, June	79.44	77.35	-2.63
ML7: Mean minimum monthly flow, July	73.78	74.39	0.83
ML8: Mean minimum monthly flow, August	69.70	67.01	-3.86
ML9: Mean minimum monthly flow, September	58.90	56.46	-4.14
ML10: Mean minimum monthly flow, October	76.67	80.54	5.05
ML11: Mean minimum monthly flow, November	93.00	92.45	-0.60
ML12: Mean minimum monthly flow, December	116.11	119.16	2.63
ML13: CV of minimum monthly flows	49.44	55.13	11.51
ML14: Mean minimum daily flow / mean median annual flow	0.31	0.34	9.94
ML15: Mean minimum annual flow / mean annual flow	0.22	0.23	8.98
ML16: Median minimum annual flow / median annual flow	0.36	0.34	-6.52
ML20: Ratio of baseflow volume to total flow volume	0.41	0.46	12.62
ML22: Mean annual minimum flow divided by catchment area	26667.18	26667.14	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	277.07	306.89	
RA2: CV, mean of positive changes from one day to next (rise rate)	215.61	297.13	
RA3: Mean of negative changes from one day to next (fall rate)	116.17	130.59	
RA4: CV, mean of negative changes from one day to next (fall rate)	331.06	432.48	
RA5: Ratio of days that are higher than previous day	0.28	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.32	0.22	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.08	
RA8: Number of flow reversals from one day to the next	71.47	75.40	
RA9: CV, number of flow reversals from one day to the next	82.11	82.37	

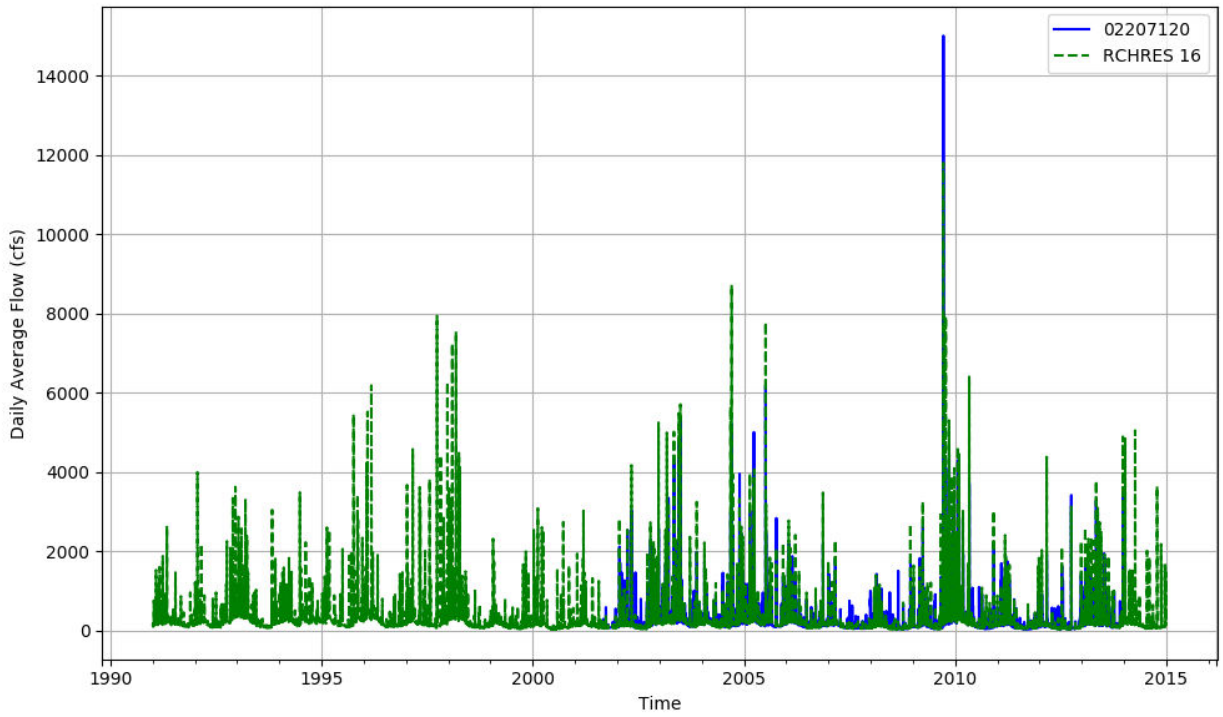


Figure T-03070103-13: Daily flow for HSFP reach 16 and USGS station 02207120.

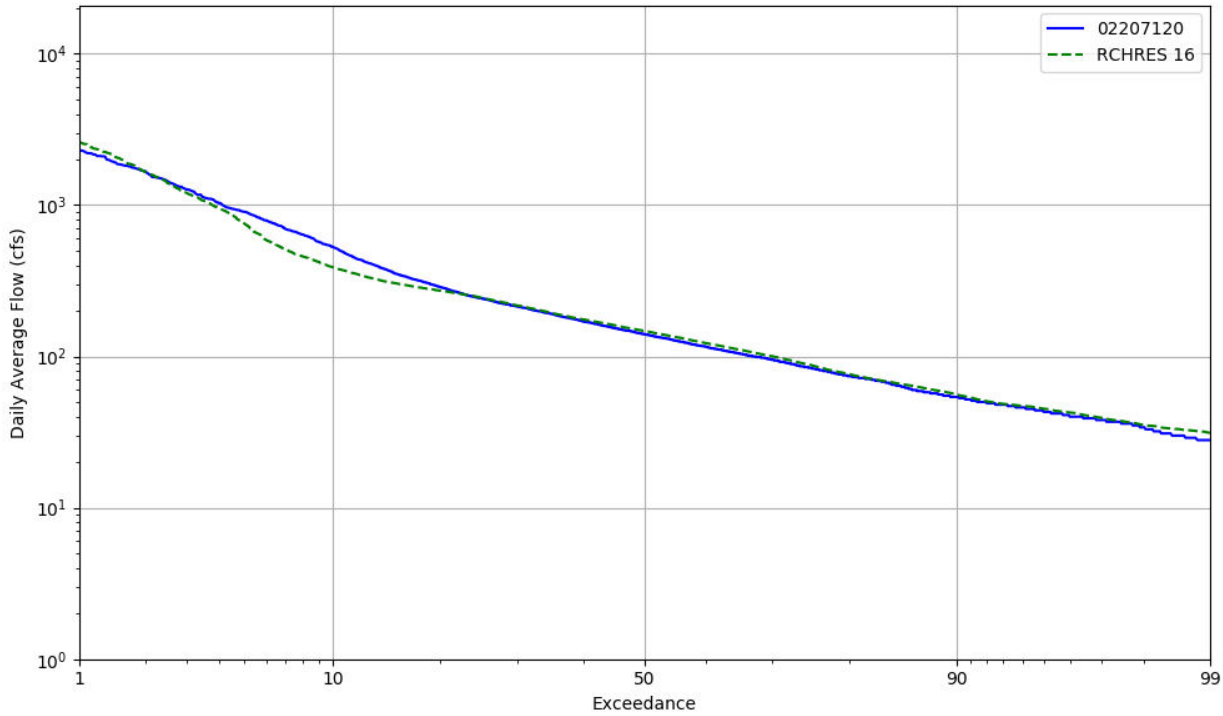


Figure T-03070103-14: Daily exceedance for HSFP reach 16 and USGS station 02207120.

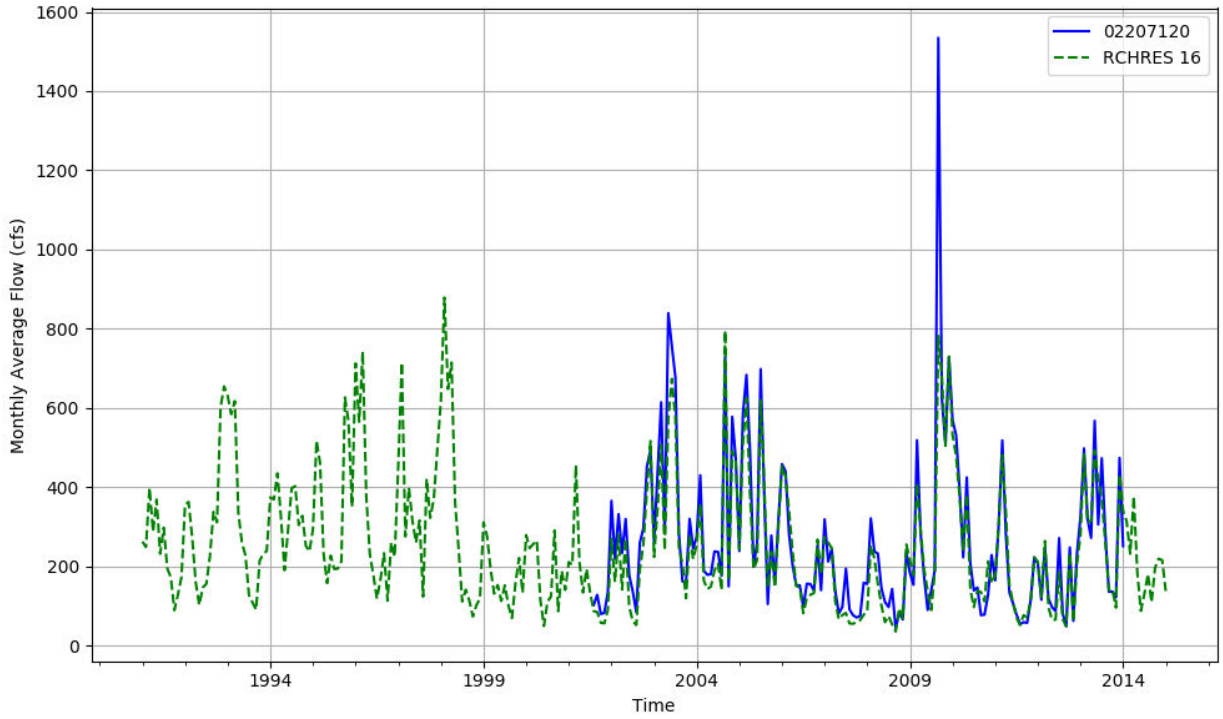


Figure T-03070103-15: Monthly flow for HSFP reach 16 and USGS station 02207120.

HSPF REACH 19, USGS GAUGE 02207220

Water-Data Report 2009
02207220 YELLOW RIVER AT PLEASANT HILL ROAD, NEAR LITHONIA, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 334401, long 840343 referenced to North American Datum of 1927, DeKalb County, GA, Hydrologic Unit 03070103, on right upstream side of bridge on Pleasant Hill Road, 0.30 miles upstream of Johnson Creek confluence, 1.6 miles east of GA 124, 0.75 miles west of Dekalb/Rockdale County line.

DRAINAGE AREA.--213 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 2002 to current year.
GAGE-HEIGHT: November 2002 to current year.

GAGE.--Satellite telemetry with water-stage recorder. Datum of gage is 720 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Rockdale County Department of Water Resources.

REMARKS.--Discharge records fair, except for days of estimated discharge, which are poor. Gage-height records good.

Table T-03070103-9: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02207220.

Statistic	Value
Bias	-28.56
Standard error	123.34
Relative bias	-0.08
Relative standard error	0.43
Nash-Sutcliffe coefficient	0.81
Kling-Gupta coefficient	0.75
Coefficient of efficiency	0.72
Index of agreement	0.85

Table T-03070103-10: Hydrologic Indices Between USGS Gauge 02207220 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02207220	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	345.05	316.61	-8.24
MA2: Median, all daily flows	192.00	182.13	-5.14

MA3: CV, all daily flows	156.73	188.53	20.29
MA4: CV, log of all daily flows	94.29	84.45	-10.44
MA5: Mean daily flow / median daily flow	1.80	1.74	-3.27
MA9: (Q10 - Q90) / median daily flow	3.26	2.25	-31.00
MA10: (Q20 - Q80) / median daily flow	1.58	1.32	-16.89
MA11: (Q25 - Q75) / median daily flow	1.16	1.04	-9.90
MA12: Mean monthly flow, January	367.60	340.49	-7.38
MA13: Mean monthly flow, February	429.38	403.02	-6.14
MA14: Mean monthly flow, March	454.01	426.75	-6.00
MA15: Mean monthly flow, April	289.80	279.48	-3.56
MA16: Mean monthly flow, May	326.59	273.43	-16.28
MA17: Mean monthly flow, June	259.01	240.07	-7.32
MA18: Mean monthly flow, July	317.55	266.18	-16.18
MA19: Mean monthly flow, August	200.05	182.30	-8.88
MA20: Mean monthly flow, September	335.63	264.80	-21.10
MA21: Mean monthly flow, October	215.60	217.40	0.83
MA22: Mean monthly flow, November	271.44	264.97	-2.38
MA23: Mean monthly flow, December	410.71	397.25	-3.28
ML1: Mean minimum monthly flow, January	184.92	176.55	-4.52
ML2: Mean minimum monthly flow, February	196.00	193.79	-1.13
ML3: Mean minimum monthly flow, March	199.73	197.16	-1.28
ML4: Mean minimum monthly flow, April	155.82	164.49	5.56
ML5: Mean minimum monthly flow, May	123.82	124.68	0.70
ML6: Mean minimum monthly flow, June	96.73	105.57	9.14
ML7: Mean minimum monthly flow, July	94.27	104.44	10.78
ML8: Mean minimum monthly flow, August	84.64	94.17	11.27
ML9: Mean minimum monthly flow, September	69.82	78.14	11.91
ML10: Mean minimum monthly flow, October	83.64	99.82	19.36
ML11: Mean minimum monthly flow, November	110.33	119.98	8.74
ML12: Mean minimum monthly flow, December	140.42	149.04	6.14
ML13: CV of minimum monthly flows	60.45	54.70	-9.50
ML14: Mean minimum daily flow / mean median annual flow	0.30	0.40	34.65
ML15: Mean minimum annual flow / mean annual flow	0.17	0.23	36.00
ML16: Median minimum annual flow / median annual flow	0.21	0.37	80.09
ML20: Ratio of baseflow volume to total flow volume	0.42	0.48	14.53
ML22: Mean annual minimum flow divided by catchment area	0.60	0.71	19.36
RA1: Mean of positive changes from one day to next (rise rate)	292.74	379.97	
RA2: CV, mean of positive changes from one day to next (rise rate)	234.33	282.44	
RA3: Mean of negative changes from one day to next (fall rate)	128.21	153.64	
RA4: CV, mean of negative changes from one day to next (fall rate)	331.49	421.27	
RA5: Ratio of days that are higher than previous day	0.30	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.29	0.24	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.07	
RA8: Number of flow reversals from one day to the next	109.17	114.42	
RA9: CV, number of flow reversals from one day to the next	23.19	24.18	

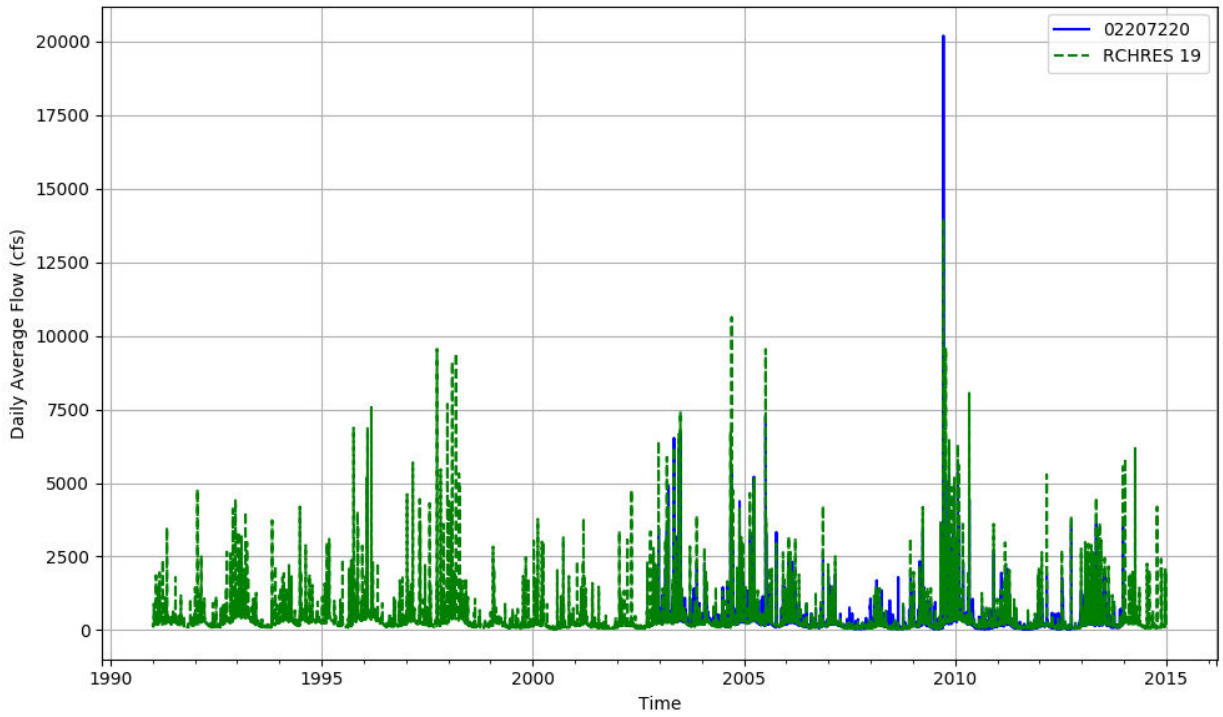


Figure T-03070103-16: Daily flow for HSFP reach 19 and USGS station 02207220.

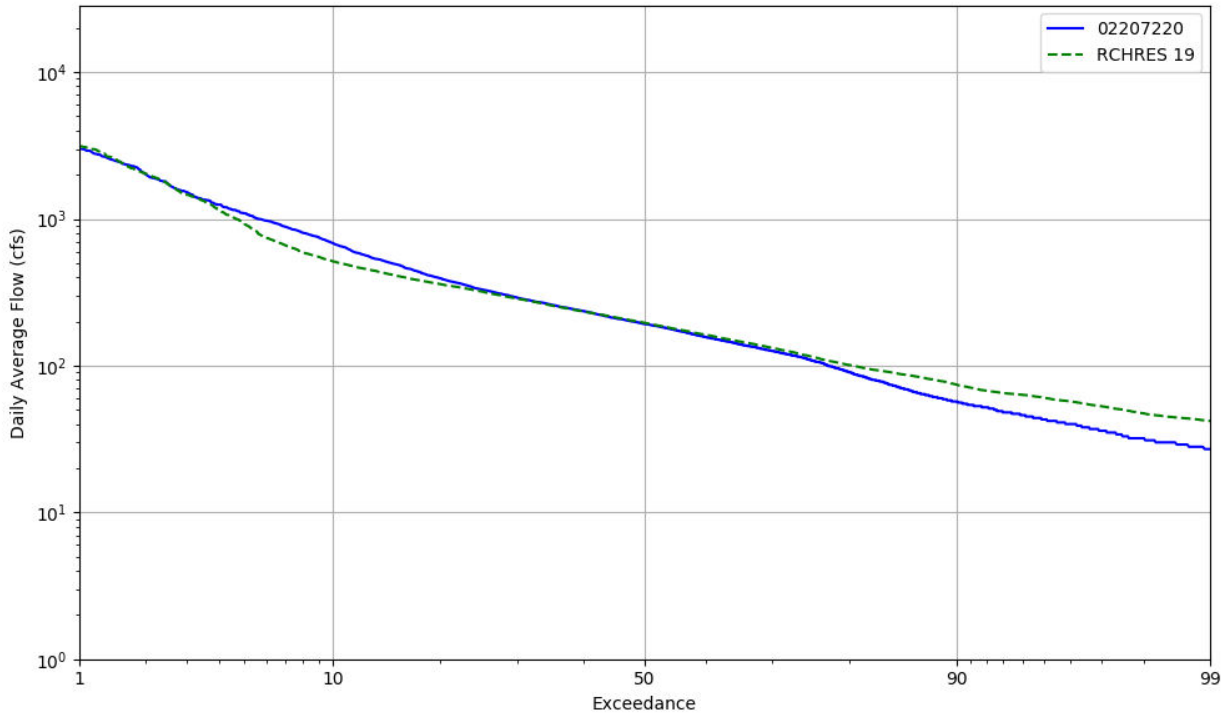


Figure T-03070103-17: Daily exceedance for HSFP reach 19 and USGS station 02207220.

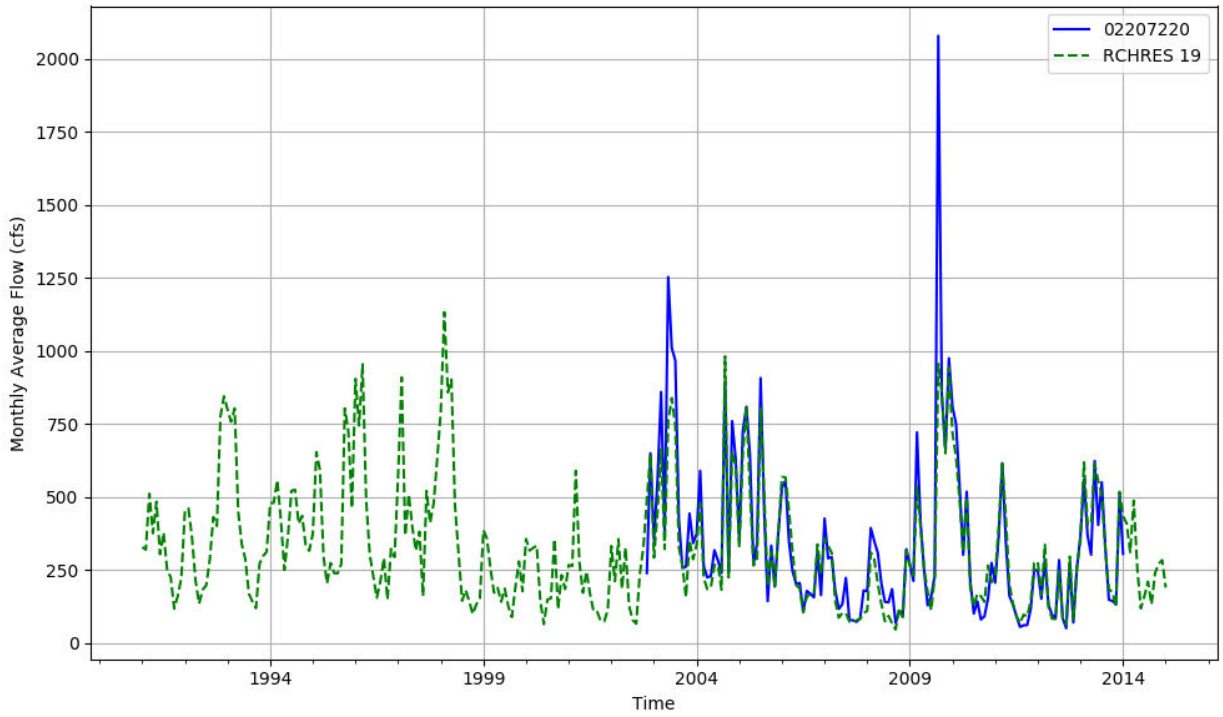


Figure T-03070103-18: Monthly flow for HSFP reach 19 and USGS station 02207220.

HSPF REACH 20, USGS GAUGE 02207335

Water-Data Report 2009
02207335 YELLOW RIVER AT GEES MILL ROAD, NEAR MILSTEAD, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 334001, long 835617 referenced to North American Datum of 1983, Rockdale County, GA, Hydrologic Unit 03070103, 100.0 feet upstream of Gees Mill Road, 1.0 miles north of confluence with Big Haynes Creek, and 2.2 miles south of GA 138.

DRAINAGE AREA.--260 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 2001 to current year.
GAGE-HEIGHT: November 2001 to current year.

REVISED RECORDS.--WDR GA-09:2008.

GAGE.--Satellite telemetry with water-stage recorder and a continuous water-quality monitor. Datum of gage 620 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Rockdale County Department of Water Resources.

REMARKS.--Discharge records fair, except for days of estimated discharge, which are poor. Gage-height records good. Regulation upstream from unknown source.

Table T-03070103-11: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02207335.

Statistic	Value
Bias	-46.63
Standard error	137.87
Relative bias	-0.12
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.82
Kling-Gupta coefficient	0.73
Coefficient of efficiency	0.67
Index of agreement	0.83

Table T-03070103-12: Hydrologic Indices Between USGS Gauge 02207335 and HSPF Reach 20.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02207335	Reach 20	Difference
MA1: Mean, all daily flows	402.81	356.09	-11.60
MA2: Median, all daily flows	228.00	209.28	-8.21
MA3: CV, all daily flows	143.21	173.05	20.83
MA4: CV, log of all daily flows	92.95	78.33	-15.73
MA5: Mean daily flow / median daily flow	1.77	1.70	-3.69
MA9: (Q10 - Q90) / median daily flow	2.98	2.32	-22.27
MA10: (Q20 - Q80) / median daily flow	1.55	1.45	-6.37
MA11: (Q25 - Q75) / median daily flow	1.16	1.17	1.35
MA12: Mean monthly flow, January	435.17	397.56	-8.64
MA13: Mean monthly flow, February	505.35	451.48	-10.66
MA14: Mean monthly flow, March	533.22	492.47	-7.64
MA15: Mean monthly flow, April	360.01	320.63	-10.94
MA16: Mean monthly flow, May	391.86	322.30	-17.75
MA17: Mean monthly flow, June	305.13	264.67	-13.26
MA18: Mean monthly flow, July	374.03	290.22	-22.41
MA19: Mean monthly flow, August	227.93	199.51	-12.47
MA20: Mean monthly flow, September	373.22	294.88	-20.99
MA21: Mean monthly flow, October	262.91	259.13	-1.44
MA22: Mean monthly flow, November	340.42	309.14	-9.19
MA23: Mean monthly flow, December	449.54	429.53	-4.45
ML1: Mean minimum monthly flow, January	214.31	206.06	-3.85
ML2: Mean minimum monthly flow, February	243.50	229.49	-5.75
ML3: Mean minimum monthly flow, March	237.17	235.19	-0.83
ML4: Mean minimum monthly flow, April	196.42	196.10	-0.16
ML5: Mean minimum monthly flow, May	153.08	145.25	-5.11
ML6: Mean minimum monthly flow, June	121.50	123.41	1.57
ML7: Mean minimum monthly flow, July	120.17	119.75	-0.35
ML8: Mean minimum monthly flow, August	102.25	106.40	4.06
ML9: Mean minimum monthly flow, September	79.92	87.96	10.07
ML10: Mean minimum monthly flow, October	104.00	118.76	14.19
ML11: Mean minimum monthly flow, November	125.46	132.61	5.70
ML12: Mean minimum monthly flow, December	177.77	171.19	-3.70
ML13: CV of minimum monthly flows	59.48	58.02	-2.45
ML14: Mean minimum daily flow / mean median annual flow	0.29	0.37	29.02
ML15: Mean minimum annual flow / mean annual flow	0.17	0.22	28.84
ML16: Median minimum annual flow / median annual flow	0.27	0.34	25.67
ML20: Ratio of baseflow volume to total flow volume	0.44	0.49	13.57
ML22: Mean annual minimum flow divided by catchment area	0.69	0.79	14.58
RA1: Mean of positive changes from one day to next (rise rate)	296.28	373.09	
RA2: CV, mean of positive changes from one day to next (rise rate)	232.06	297.71	
RA3: Mean of negative changes from one day to next (fall rate)	135.40	156.21	
RA4: CV, mean of negative changes from one day to next (fall rate)	311.58	425.14	
RA5: Ratio of days that are higher than previous day	0.30	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.23	0.19	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.08	
RA8: Number of flow reversals from one day to the next	107.31	109.62	

RA9: CV, number of flow reversals from one day to the next	22.32	22.29	

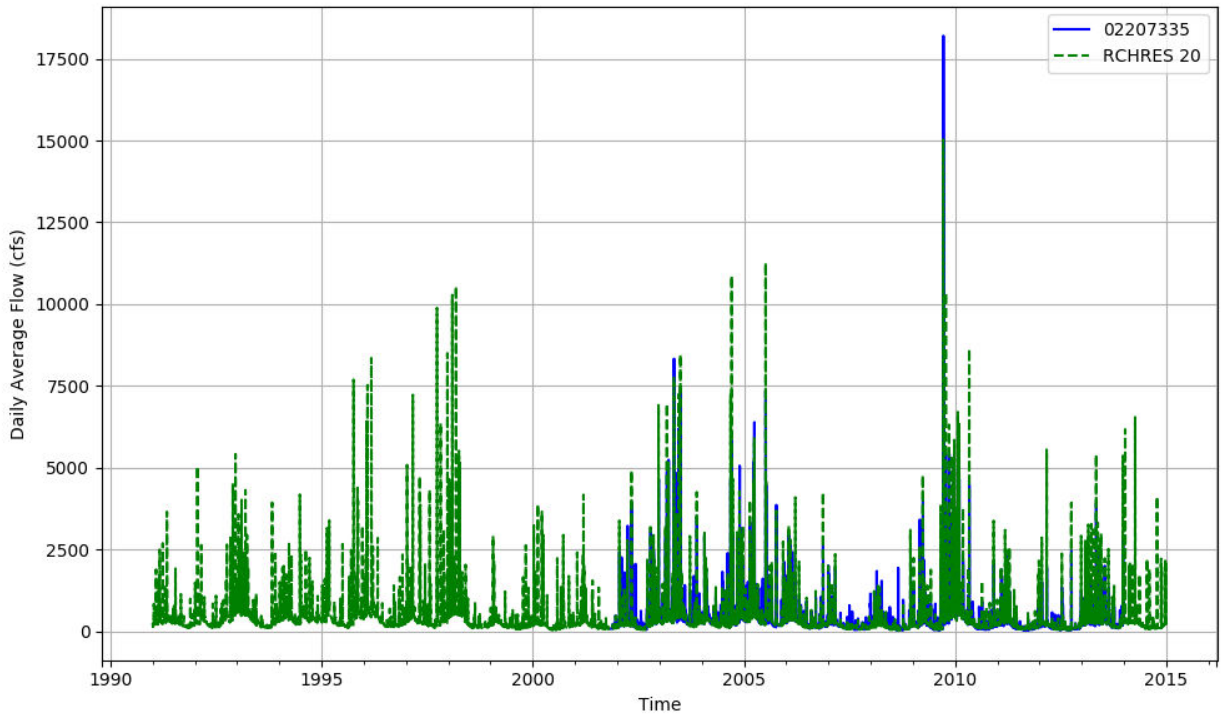


Figure T-03070103-19: Daily flow for HSFP reach 20 and USGS station 02207335.

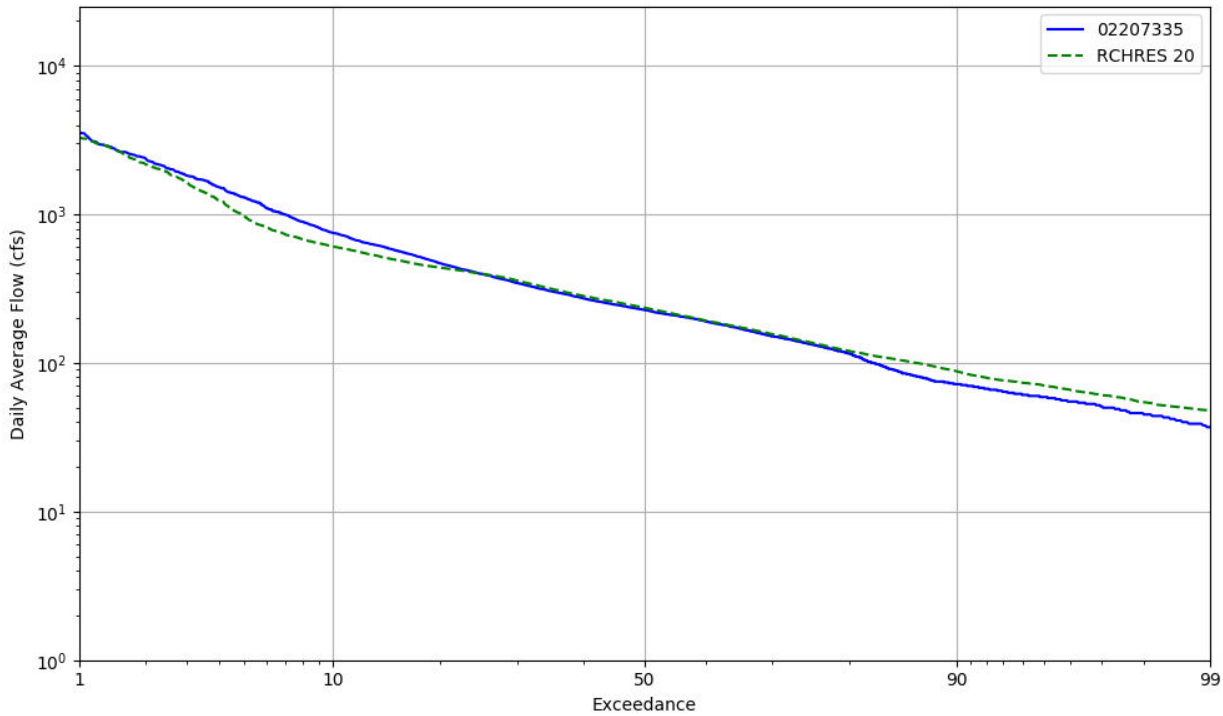


Figure T-03070103-20: Daily exceedance for HSFP reach 20 and USGS station 02207335.

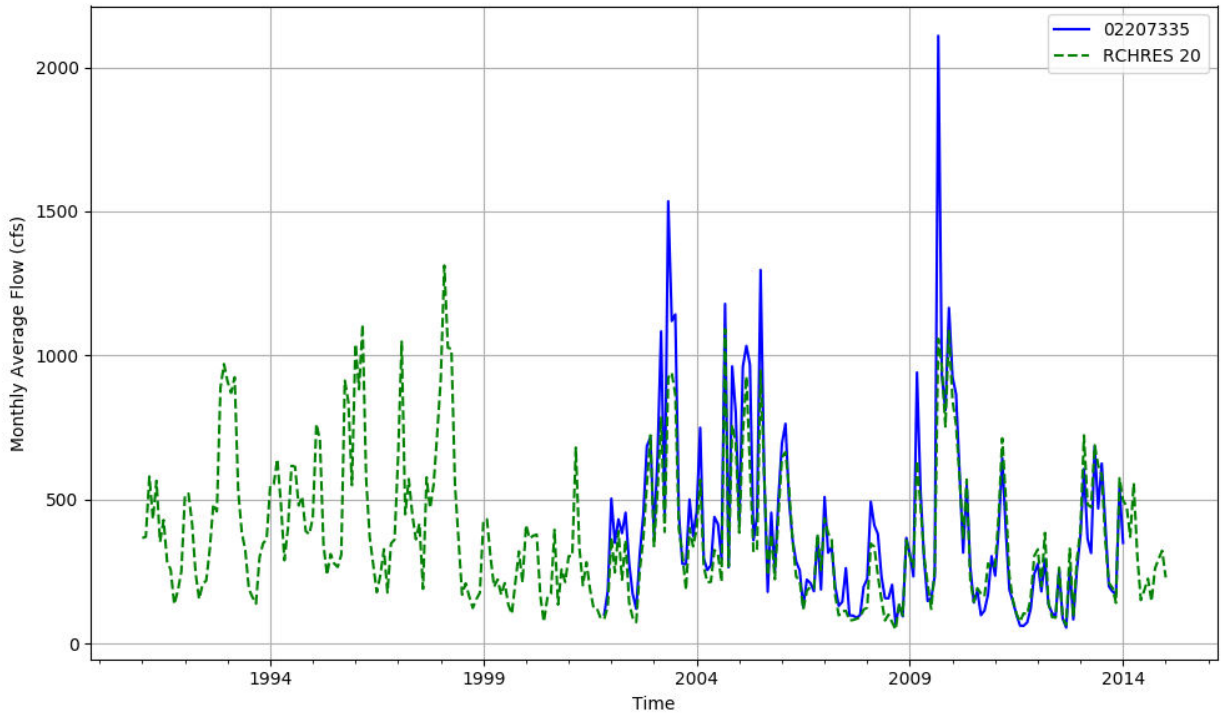


Figure T-03070103-21: Monthly flow for HSFP reach 20 and USGS station 02207335.

HSPF REACH 22, USGS GAUGE 02208000

Water-Data Report 2010
02208000 YELLOW RIVER ROCKY PLAINS RD NR ROCKY PLAINS, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 332959.5, long 835303 referenced to North American Datum of 1983, Newton County, GA, Hydrologic Unit 03070103.

DRAINAGE AREA.--428.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 2009 to September 2010.
GAGE-HEIGHT: November 2009 to September 2010.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 579.7 feet above North American Vertical Datum (NAVD) of 1988.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03070103-13: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02208000.

Statistic	Value
Bias	2.29
Standard error	72.16
Relative bias	0.00
Relative standard error	0.18
Nash-Sutcliffe coefficient	0.97
Kling-Gupta coefficient	0.94
Coefficient of efficiency	0.83
Index of agreement	0.91

Table T-03070103-14: Hydrologic Indices Between USGS Gauge 02208000 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02208000	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	499.26	503.39	0.83
MA2: Median, all daily flows	292.50	296.48	1.36
MA3: CV, all daily flows	122.08	151.88	24.41
MA4: CV, log of all daily flows	96.81	83.04	-14.23

MA5: Mean daily flow / median daily flow	1.71	1.70	-0.53
MA9: (Q10 - Q90) / median daily flow	3.34	2.71	-18.99
MA10: (Q20 - Q80) / median daily flow	1.82	1.66	-8.33
MA11: (Q25 - Q75) / median daily flow	1.38	1.38	-0.09
MA12: Mean monthly flow, January	698.58	689.52	-1.30
MA13: Mean monthly flow, February	699.99	669.75	-4.32
MA14: Mean monthly flow, March	648.99	656.22	1.11
MA15: Mean monthly flow, April	402.15	428.47	6.55
MA16: Mean monthly flow, May	483.31	463.53	-4.09
MA17: Mean monthly flow, June	307.27	326.73	6.34
MA18: Mean monthly flow, July	355.58	331.18	-6.86
MA19: Mean monthly flow, August	204.74	196.01	-4.26
MA20: Mean monthly flow, September	119.25	147.38	23.58
MA21: Mean monthly flow, October	171.29	208.48	21.71
MA22: Mean monthly flow, November	306.18	308.31	0.70
MA23: Mean monthly flow, December	774.38	769.51	-0.63
ML1: Mean minimum monthly flow, January	385.80	390.49	1.22
ML2: Mean minimum monthly flow, February	360.25	379.89	5.45
ML3: Mean minimum monthly flow, March	375.50	393.29	4.74
ML4: Mean minimum monthly flow, April	286.75	285.26	-0.52
ML5: Mean minimum monthly flow, May	226.00	221.81	-1.85
ML6: Mean minimum monthly flow, June	175.00	176.32	0.75
ML7: Mean minimum monthly flow, July	158.25	181.96	14.99
ML8: Mean minimum monthly flow, August	122.25	133.98	9.59
ML9: Mean minimum monthly flow, September	81.25	108.89	34.02
ML10: Mean minimum monthly flow, October	95.75	119.28	24.57
ML11: Mean minimum monthly flow, November	205.60	221.38	7.68
ML12: Mean minimum monthly flow, December	246.20	245.89	-0.13
ML13: CV of minimum monthly flows	73.26	68.04	-7.12
ML14: Mean minimum daily flow / mean median annual flow	0.30	0.37	20.29
ML15: Mean minimum annual flow / mean annual flow	0.17	0.20	19.19
ML16: Median minimum annual flow / median annual flow	0.18	0.25	39.22
ML20: Ratio of baseflow volume to total flow volume	0.50	0.52	2.58
ML22: Mean annual minimum flow divided by catchment area	0.77	0.98	26.11
RA1: Mean of positive changes from one day to next (rise rate)	269.96	433.44	
RA2: CV, mean of positive changes from one day to next (rise rate)	174.66	277.14	
RA3: Mean of negative changes from one day to next (fall rate)	130.33	176.58	
RA4: CV, mean of negative changes from one day to next (fall rate)	246.25	387.27	
RA5: Ratio of days that are higher than previous day	0.32	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.24	0.14	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.08	
RA8: Number of flow reversals from one day to the next	90.40	85.80	
RA9: CV, number of flow reversals from one day to the next	38.71	38.87	

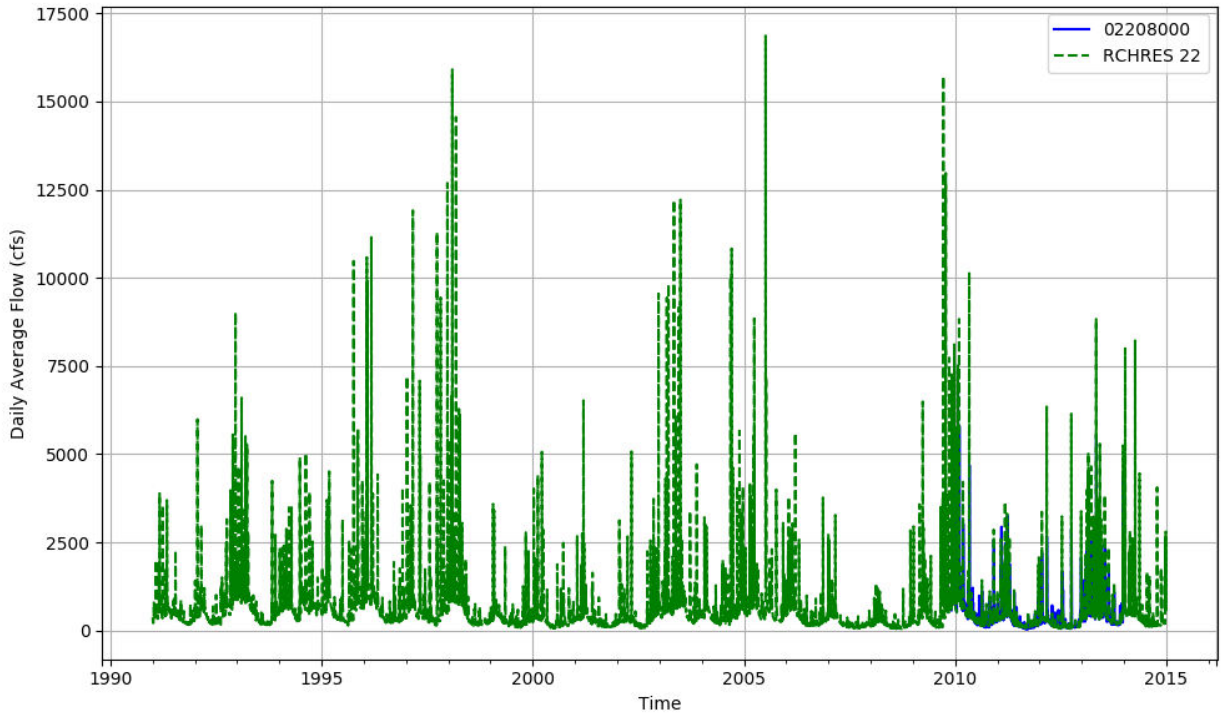


Figure T-03070103-22: Daily flow for HSFP reach 22 and USGS station 02208000.

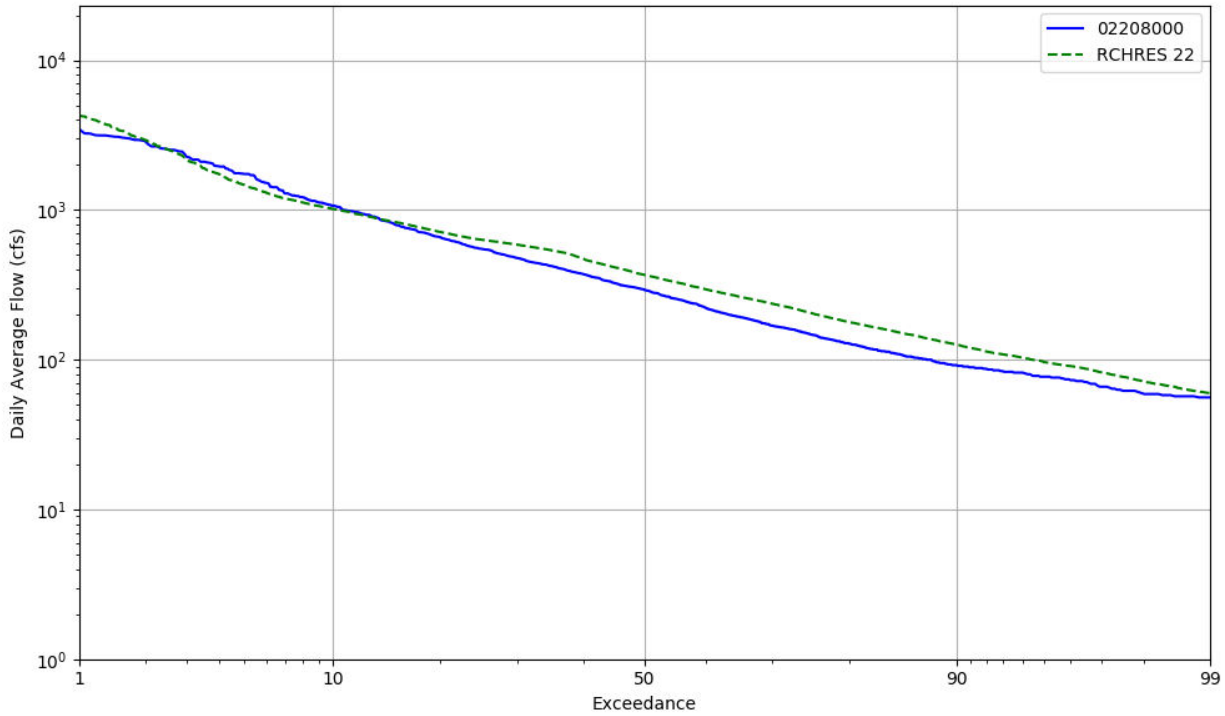


Figure T-03070103-23: Daily exceedance for HSFP reach 22 and USGS station 02208000.

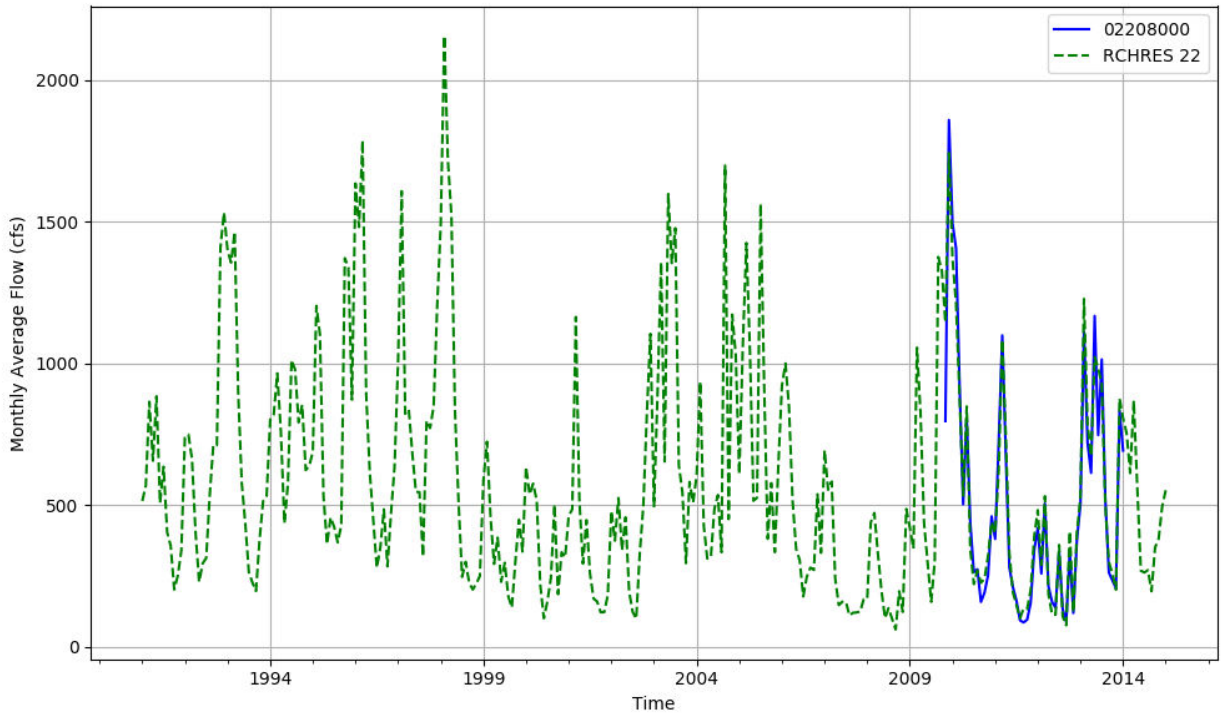


Figure T-03070103-24: Monthly flow for HSFP reach 22 and USGS station 02208000.

HSPF REACH 27, USGS GAUGE 02210500

Water-Data Report 2009
02210500 OCMULGEE RIVER NEAR JACKSON, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 331828, long 835018 referenced to North American Datum of 1927, Butts County, GA, Hydrologic Unit 03070103, on right bank, 500.0 feet upstream from bridge on GA 16, 1.50 miles downstream from Lloyd Shoals Dam, and 7.0 miles East of Jackson, GA.

DRAINAGE AREA.--1,420 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1906 to September 1915, August 1939 to September 1960, October 1975 to September 1982, March 1987 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 419.29 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to January 1, 1913, staff gages were located at this site. From January 1 to December 31, 1913, a water-stage recorder was located at this site. From January 1, 1914 to December 31, 1915, a staff gage was located at this site. From August 1, 1939 to September 30, 1960 and from October 1, 1975 to September 30, 1982, a water-stage recorder was located at this site. All were at present site and gage datum.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records good, except for days of estimated discharge which are poor. Gage-height records good. Flow regulated by Lloyd Shoals Reservoir since November 1910. Statistics prior to regulation are available upon request.

Table T-03070103-15: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02210500.

Statistic	Value
Bias	-230.12
Standard error	475.44
Relative bias	-0.12
Relative standard error	0.33
Nash-Sutcliffe coefficient	0.89
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03070103-16: Hydrologic Indices Between USGS Gauge 02210500 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02210500	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	1875.83	1646.95	-12.20
MA2: Median, all daily flows	1170.00	1038.36	-11.25
MA3: CV, all daily flows	114.18	119.69	4.83
MA4: CV, log of all daily flows	79.60	82.58	3.74
MA5: Mean daily flow / median daily flow	1.60	1.59	-1.07
MA9: (Q10 - Q90) / median daily flow	2.85	2.80	-1.44
MA10: (Q20 - Q80) / median daily flow	1.85	1.62	-12.30
MA11: (Q25 - Q75) / median daily flow	1.52	1.29	-14.90
MA12: Mean monthly flow, January	2139.61	2105.32	-1.60
MA13: Mean monthly flow, February	2849.28	2531.60	-11.15
MA14: Mean monthly flow, March	3112.50	2767.30	-11.09
MA15: Mean monthly flow, April	2051.93	1718.87	-16.23
MA16: Mean monthly flow, May	1631.38	1406.13	-13.81
MA17: Mean monthly flow, June	1316.07	1018.13	-22.64
MA18: Mean monthly flow, July	1607.68	1235.57	-23.15
MA19: Mean monthly flow, August	1065.21	871.16	-18.22
MA20: Mean monthly flow, September	1243.04	1142.07	-8.12
MA21: Mean monthly flow, October	1208.09	1110.63	-8.07
MA22: Mean monthly flow, November	1583.90	1417.10	-10.53
MA23: Mean monthly flow, December	1947.01	1775.87	-8.79
ML1: Mean minimum monthly flow, January	970.71	1056.58	8.85
ML2: Mean minimum monthly flow, February	1175.39	1245.07	5.93
ML3: Mean minimum monthly flow, March	1074.57	1241.53	15.54
ML4: Mean minimum monthly flow, April	658.48	998.07	51.57
ML5: Mean minimum monthly flow, May	563.57	703.37	24.81
ML6: Mean minimum monthly flow, June	486.30	555.09	14.14
ML7: Mean minimum monthly flow, July	506.09	550.61	8.80
ML8: Mean minimum monthly flow, August	462.57	473.69	2.41
ML9: Mean minimum monthly flow, September	460.09	421.82	-8.32
ML10: Mean minimum monthly flow, October	461.22	525.94	14.03
ML11: Mean minimum monthly flow, November	560.96	652.51	16.32
ML12: Mean minimum monthly flow, December	852.65	886.04	3.92
ML13: CV of minimum monthly flows	70.85	70.73	-0.18
ML14: Mean minimum daily flow / mean median annual flow	0.34	0.28	-19.62
ML15: Mean minimum annual flow / mean annual flow	0.22	0.18	-15.47
ML16: Median minimum annual flow / median annual flow	0.29	0.24	-19.74
ML20: Ratio of baseflow volume to total flow volume	0.46	0.55	19.49
ML22: Mean annual minimum flow divided by catchment area	3.56	2.98	-16.39
RA1: Mean of positive changes from one day to next (rise rate)	637.67	1005.92	
RA2: CV, mean of positive changes from one day to next (rise rate)	285.92	292.32	
RA3: Mean of negative changes from one day to next (fall rate)	513.23	375.99	
RA4: CV, mean of negative changes from one day to next (fall rate)	231.31	351.51	
RA5: Ratio of days that are higher than previous day	0.40	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.12	

RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.08	
RA8: Number of flow reversals from one day to the next	126.12	85.00	
RA9: CV, number of flow reversals from one day to the next	24.17	17.54	

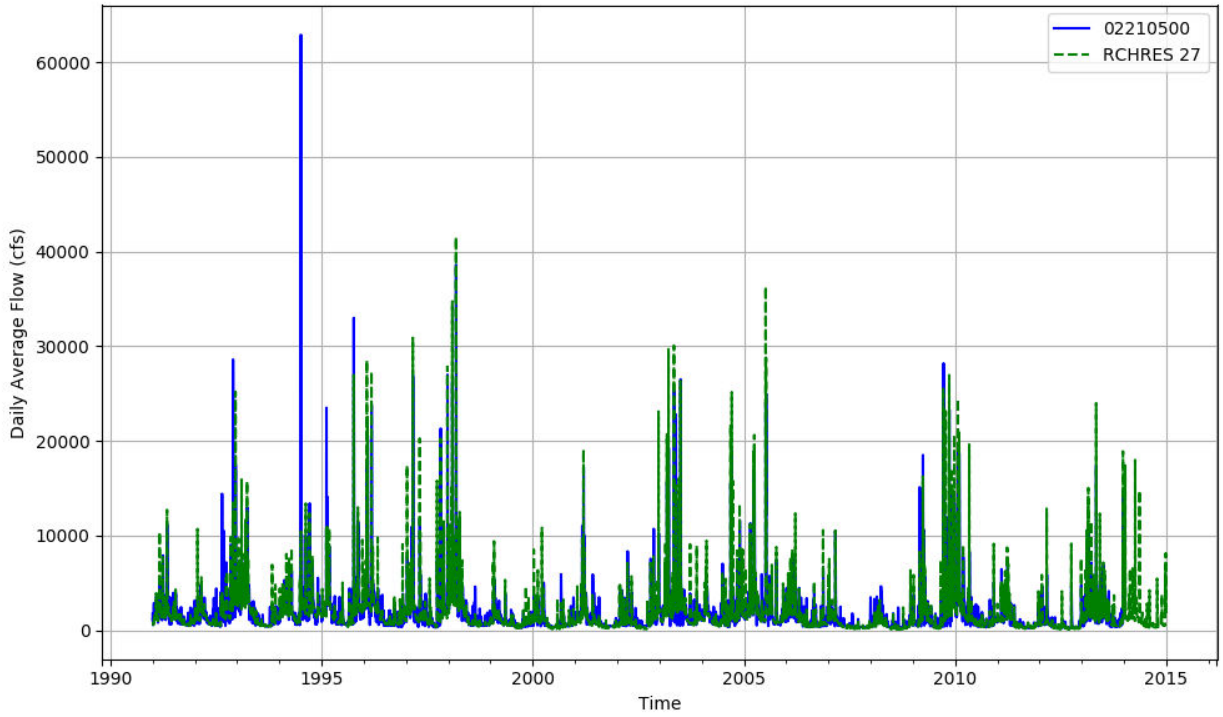


Figure T-03070103-25: Daily flow for HSFP reach 27 and USGS station 02210500.

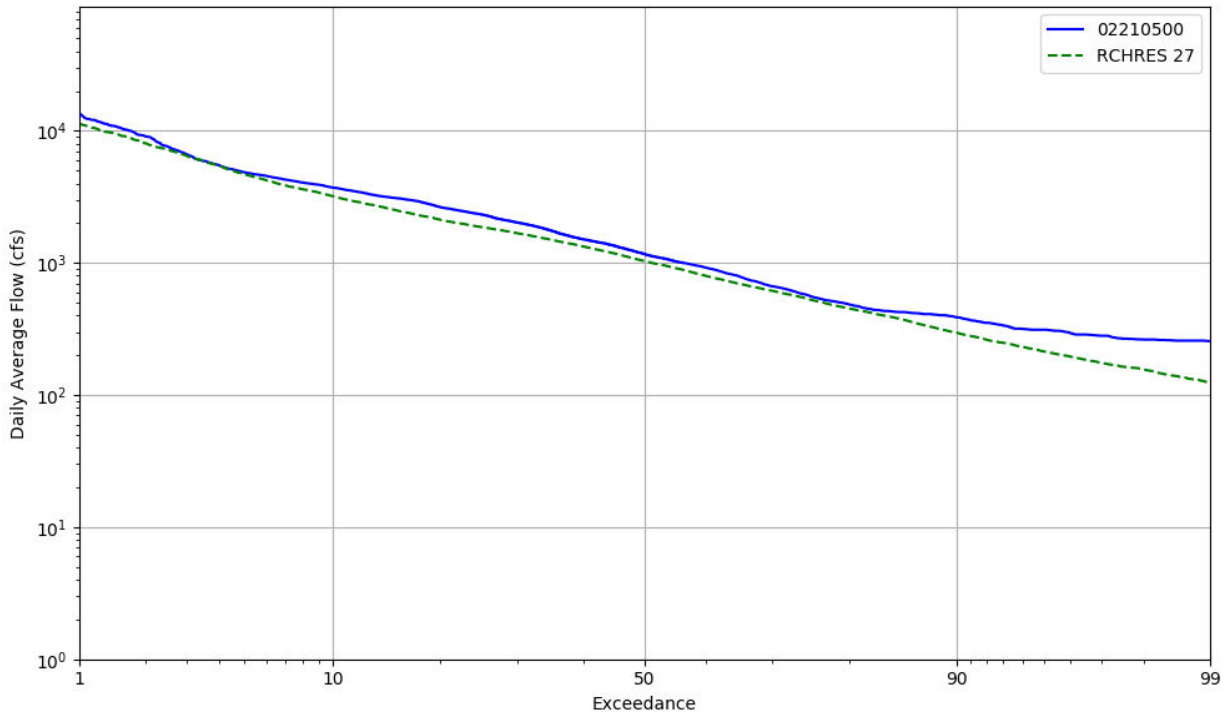


Figure T-03070103-26: Daily exceedance for HSFP reach 27 and USGS station 02210500.

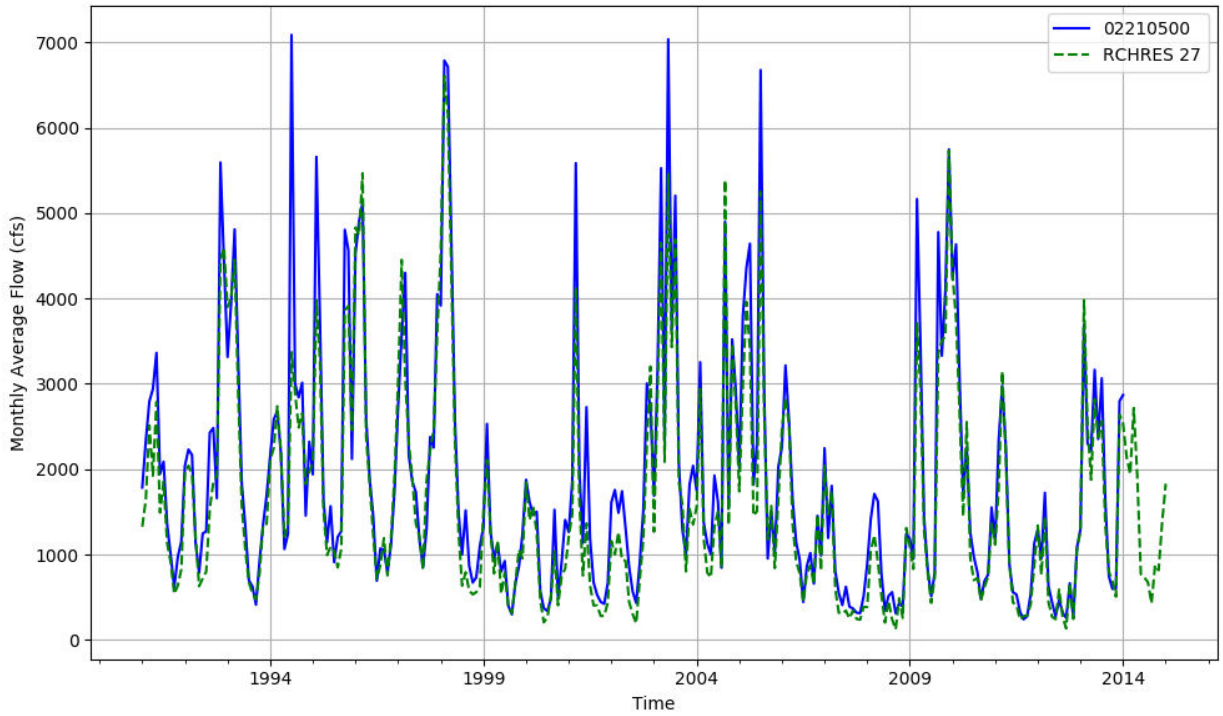


Figure T-03070103-27: Monthly flow for HSFP reach 27 and USGS station 02210500.

HSPF REACH 31, USGS GAUGE 02212735

Water-Data Report 2009
02210500 OCMULGEE RIVER NEAR JACKSON, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 331828, long 835018 referenced to North American Datum of 1927, Butts County, GA, Hydrologic Unit 03070103, on right bank, 500.0 feet upstream from bridge on GA 16, 1.50 miles downstream from Lloyd Shoals Dam, and 7.0 miles East of Jackson, GA.

DRAINAGE AREA.--1,420 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1906 to September 1915, August 1939 to September 1960, October 1975 to September 1982, March 1987 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 419.29 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to January 1, 1913, staff gages were located at this site. From January 1 to December 31, 1913, a water-stage recorder was located at this site. From January 1, 1914 to December 31, 1915, a staff gage was located at this site. From August 1, 1939 to September 30, 1960 and from October 1, 1975 to September 30, 1982, a water-stage recorder was located at this site. All were at present site and gage datum.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records good, except for days of estimated discharge which are poor. Gage-height records good. Flow regulated by Lloyd Shoals Reservoir since November 1910. Statistics prior to regulation are available upon request.

Table T-03070103-17: Comparison Statistics Between HSPF Reach 31 and USGS Gauge 02212735.

Statistic	Value
Bias	-36.34
Standard error	373.05
Relative bias	-0.02
Relative standard error	0.20
Nash-Sutcliffe coefficient	0.96
Kling-Gupta coefficient	0.96
Coefficient of efficiency	0.83
Index of agreement	0.91

Table T-03070103-18: Hydrologic Indices Between USGS Gauge 02212735 and HSPF Reach 31.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02212735	Simulated Reach 31	Percent Difference
MA1: Mean, all daily flows	2015.29	1978.72	-1.81
MA2: Median, all daily flows	887.00	1057.04	19.17
MA3: CV, all daily flows	134.80	141.70	5.12
MA4: CV, log of all daily flows	104.34	98.07	-6.01
MA5: Mean daily flow / median daily flow	2.27	1.87	-17.61
MA9: (Q10 - Q90) / median daily flow	5.10	3.70	-27.52
MA10: (Q20 - Q80) / median daily flow	3.10	2.07	-33.22
MA11: (Q25 - Q75) / median daily flow	2.27	1.68	-26.19
MA12: Mean monthly flow, January	2337.26	2483.55	6.26
MA13: Mean monthly flow, February	2502.41	2412.89	-3.58
MA14: Mean monthly flow, March	2282.45	2235.18	-2.07
MA15: Mean monthly flow, April	1559.13	1339.77	-14.07
MA16: Mean monthly flow, May	1482.75	1519.72	2.49
MA17: Mean monthly flow, June	951.99	917.92	-3.58
MA18: Mean monthly flow, July	1063.90	980.77	-7.81
MA19: Mean monthly flow, August	752.25	744.40	-1.04
MA20: Mean monthly flow, September	1109.66	994.94	-10.34
MA21: Mean monthly flow, October	1040.23	1182.41	13.67
MA22: Mean monthly flow, November	1352.41	1217.10	-10.01
MA23: Mean monthly flow, December	2623.89	2690.52	2.54
ML1: Mean minimum monthly flow, January	1624.80	1749.31	7.66
ML2: Mean minimum monthly flow, February	1288.75	1533.85	19.02
ML3: Mean minimum monthly flow, March	1176.75	1539.44	30.82
ML4: Mean minimum monthly flow, April	895.25	1068.22	19.32
ML5: Mean minimum monthly flow, May	621.25	804.07	29.43
ML6: Mean minimum monthly flow, June	547.40	563.37	2.92
ML7: Mean minimum monthly flow, July	546.20	550.41	0.77
ML8: Mean minimum monthly flow, August	448.20	421.52	-5.95
ML9: Mean minimum monthly flow, September	354.60	319.18	-9.99
ML10: Mean minimum monthly flow, October	398.80	526.37	31.99
ML11: Mean minimum monthly flow, November	476.60	675.38	41.71
ML12: Mean minimum monthly flow, December	901.40	860.30	-4.56
ML13: CV of minimum monthly flows	92.60	90.42	-2.36
ML14: Mean minimum daily flow / mean median annual flow	0.43	0.33	-23.98
ML15: Mean minimum annual flow / mean annual flow	0.20	0.15	-24.20
ML16: Median minimum annual flow / median annual flow	0.42	0.21	-50.04
ML20: Ratio of baseflow volume to total flow volume	0.44	0.49	10.88
ML22: Mean annual minimum flow divided by catchment area	3.27	2.70	-17.43
RA1: Mean of positive changes from one day to next (rise rate)	699.65	1217.54	
RA2: CV, mean of positive changes from one day to next (rise rate)	242.60	306.87	
RA3: Mean of negative changes from one day to next (fall rate)	482.88	465.35	
RA4: CV, mean of negative changes from one day to next (fall rate)	228.41	345.19	
RA5: Ratio of days that are higher than previous day	0.40	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.12	

RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.08	
RA8: Number of flow reversals from one day to the next	99.00	61.83	
RA9: CV, number of flow reversals from one day to the next	53.82	46.82	

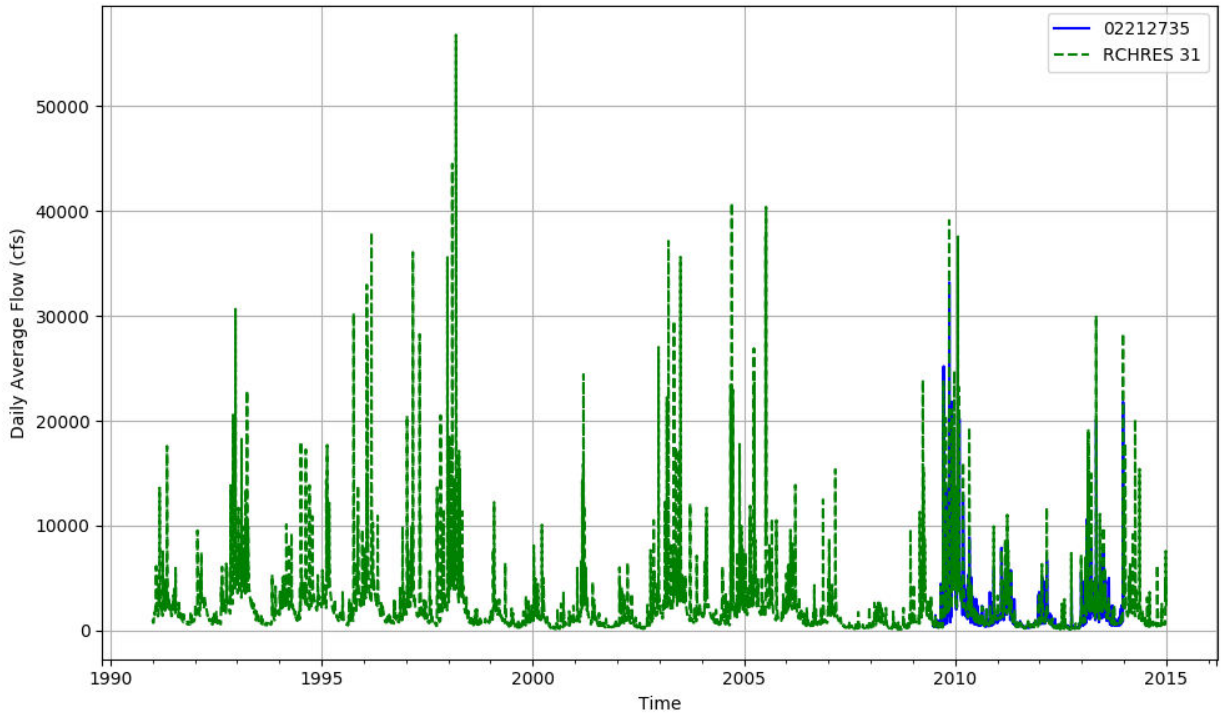


Figure T-03070103-28: Daily flow for HSFP reach 31 and USGS station 02212735.

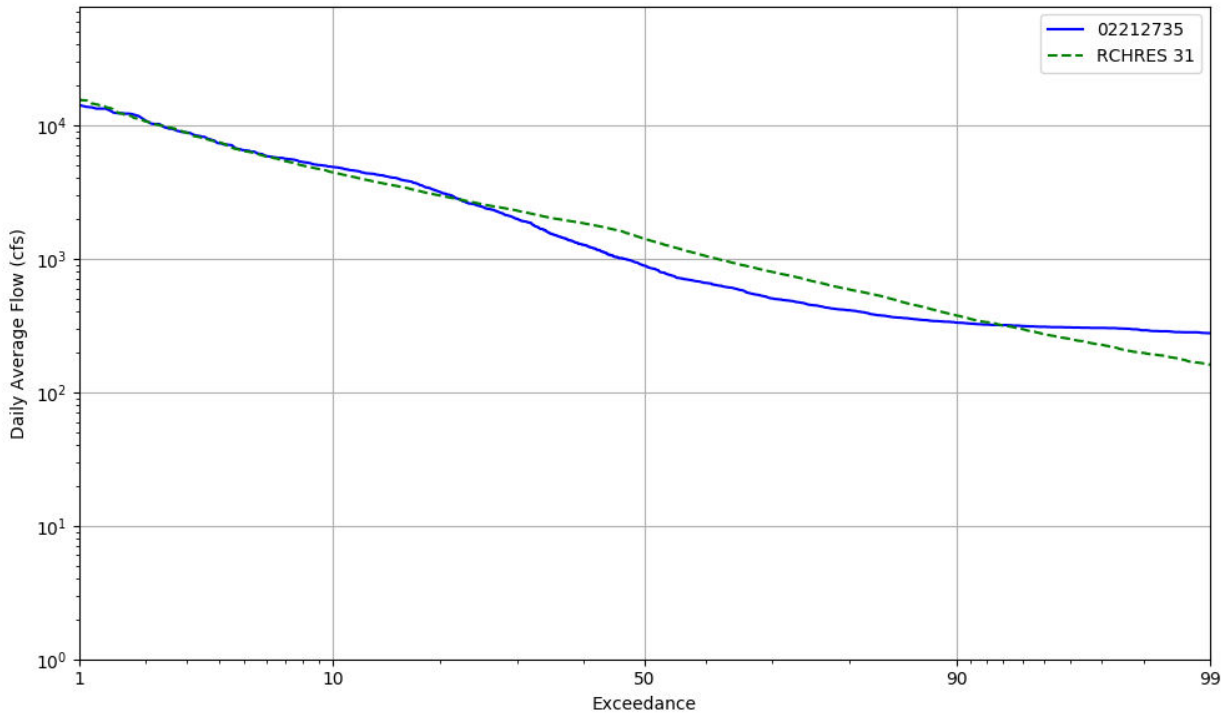


Figure T-03070103-29: Daily exceedance for HSFP reach 31 and USGS station 02212735.

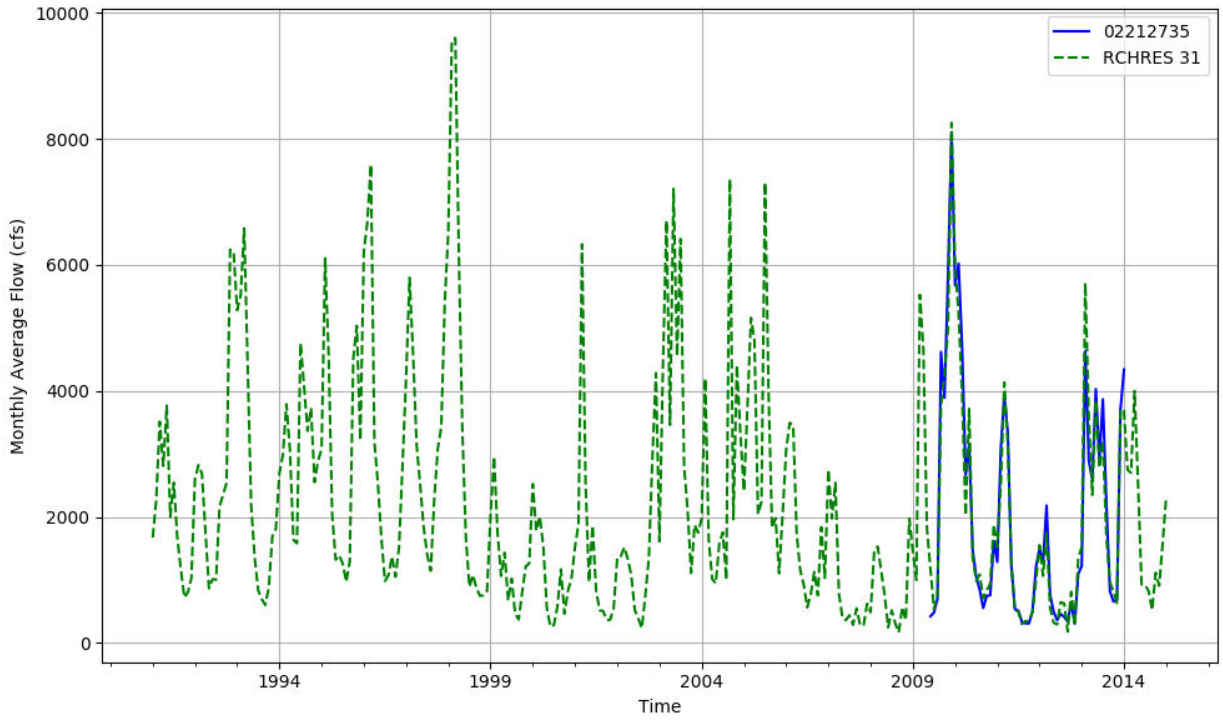


Figure T-03070103-30: Monthly flow for HSFP reach 31 and USGS station 02212735.

HSPF REACH 33, USGS GAUGE 02213000

Water-Data Report 2009
02213000 OCMULGEE RIVER AT MACON, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 325019, long 833714 referenced to North American Datum of 1983, Bibb County, GA, Hydrologic Unit 03070103, at downstream end of right pier of Fifth Street Bridge in Macon, 1.5 miles upstream from Walnut Creek, and at mile 198.0.

DRAINAGE AREA.--2,240 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: February 1893 to July 1912, August 1912 to December 1913 (gage-heights and discharge measurements only), October 1928 to current year.
GAGE-HEIGHT: February 1893 to July 1912, August 1912 to December 1913 (gage-heights and discharge measurements only), October 1998 to current year. Gage-height records collected at same site since 1895 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 822: Drainage area. WSP 1504: 1893-1903, 1905-10, 1932, 1937, 1942(M).

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 269.80 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to October 9, 1905, a non-recording gage was located at site within 1.5 miles downstream at about same datum. From October 9, 1905 to December 31, 1913, a non-recording gage was located at present site and datum. From January 10, 1929 to June 25, 1934, a water-stage recorder was located at a site 500 feet downstream at same datum. From June 25, 1934 to June 25, 1973, a water-stage recorder was located at the present site and datum, and from June 26, 1973 to October 13, 1974, a non-recording gage was located at present site and datum.

COOPERATION.--City of Macon and Bibb County EMA.

REMARKS.--Discharge records are good, except for days of estimated discharge, which are poor. Gage-height records are good. Flow regulated by Lloyd Shoals Reservoir since November 1910; records of reservoir contents not available prior to October 1929. Records of chemical analyses for the water years 1968-73 are published in reports of the U.S. Geological Survey. Statistics prior to regulation are available upon request.

Table T-03070103-19: Comparison Statistics Between HSPF Reach 33 and USGS Gauge 02213000.

Statistic	Value
Bias	-231.32
Standard error	735.70
Relative bias	-0.09
Relative standard error	0.33
Nash-Sutcliffe coefficient	0.89
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03070103-20: Hydrologic Indices Between USGS Gauge 02213000 and HSPF Reach 33.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02213000	Simulated Reach 33	Percent Difference
MA1: Mean, all daily flows	2582.90	2355.21	-8.82
MA2: Median, all daily flows	1510.00	1565.48	3.67
MA3: CV, all daily flows	117.35	112.84	-3.84
MA4: CV, log of all daily flows	90.49	83.68	-7.53
MA5: Mean daily flow / median daily flow	1.71	1.50	-12.05
MA9: (Q10 - Q90) / median daily flow	3.37	2.75	-18.45
MA10: (Q20 - Q80) / median daily flow	1.93	1.64	-15.27
MA11: (Q25 - Q75) / median daily flow	1.50	1.28	-14.69
MA12: Mean monthly flow, January	3070.72	2998.80	-2.34
MA13: Mean monthly flow, February	4153.41	3707.18	-10.74
MA14: Mean monthly flow, March	4681.07	4190.24	-10.49
MA15: Mean monthly flow, April	2964.55	2592.43	-12.55
MA16: Mean monthly flow, May	2141.24	2004.88	-6.37
MA17: Mean monthly flow, June	1614.55	1388.98	-13.97
MA18: Mean monthly flow, July	2164.81	1707.09	-21.14
MA19: Mean monthly flow, August	1444.15	1251.09	-13.37
MA20: Mean monthly flow, September	1528.55	1543.92	1.01
MA21: Mean monthly flow, October	1493.70	1479.58	-0.94
MA22: Mean monthly flow, November	2072.76	1939.37	-6.44
MA23: Mean monthly flow, December	2706.32	2562.46	-5.32
ML1: Mean minimum monthly flow, January	1514.54	1602.72	5.82
ML2: Mean minimum monthly flow, February	1764.48	1859.81	5.40
ML3: Mean minimum monthly flow, March	1786.00	1909.05	6.89
ML4: Mean minimum monthly flow, April	1163.87	1490.52	28.07
ML5: Mean minimum monthly flow, May	889.17	1043.10	17.31
ML6: Mean minimum monthly flow, June	686.74	814.20	18.56
ML7: Mean minimum monthly flow, July	726.83	814.96	12.13
ML8: Mean minimum monthly flow, August	624.61	695.48	11.35
ML9: Mean minimum monthly flow, September	583.91	605.75	3.74
ML10: Mean minimum monthly flow, October	630.35	750.32	19.03
ML11: Mean minimum monthly flow, November	792.00	935.52	18.12
ML12: Mean minimum monthly flow, December	1122.91	1302.04	15.95
ML13: CV of minimum monthly flows	77.90	74.73	-4.07
ML14: Mean minimum daily flow / mean median annual flow	0.28	0.27	-1.34
ML15: Mean minimum annual flow / mean annual flow	0.17	0.18	5.50
ML16: Median minimum annual flow / median annual flow	0.23	0.24	7.51
ML20: Ratio of baseflow volume to total flow volume	0.48	0.57	17.78

ML22: Mean annual minimum flow divided by catchment area	3.95	4.17	5.73
RA1: Mean of positive changes from one day to next (rise rate)	811.70	1059.24	
RA2: CV, mean of positive changes from one day to next (rise rate)	283.07	322.65	
RA3: Mean of negative changes from one day to next (fall rate)	534.23	430.65	
RA4: CV, mean of negative changes from one day to next (fall rate)	248.18	341.65	
RA5: Ratio of days that are higher than previous day	0.39	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.07	
RA8: Number of flow reversals from one day to the next	129.21	68.25	
RA9: CV, number of flow reversals from one day to the next	19.56	17.54	

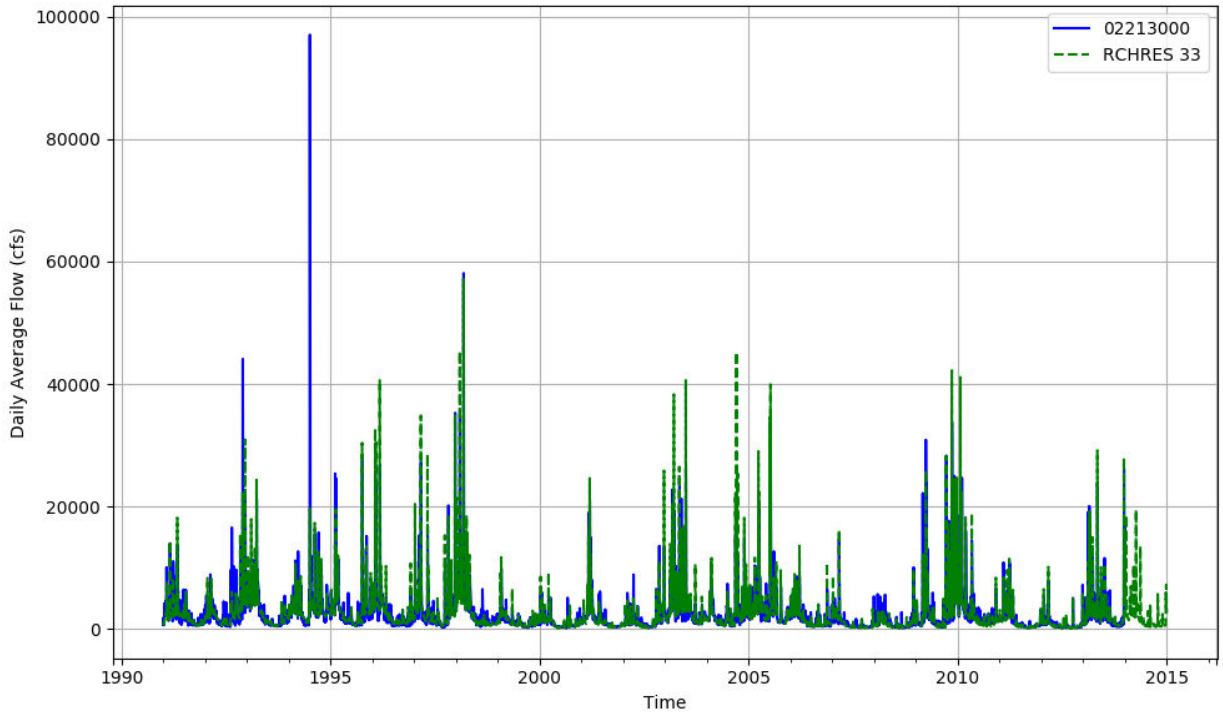


Figure T-03070103-31: Daily flow for HSFP reach 33 and USGS station 02213000.

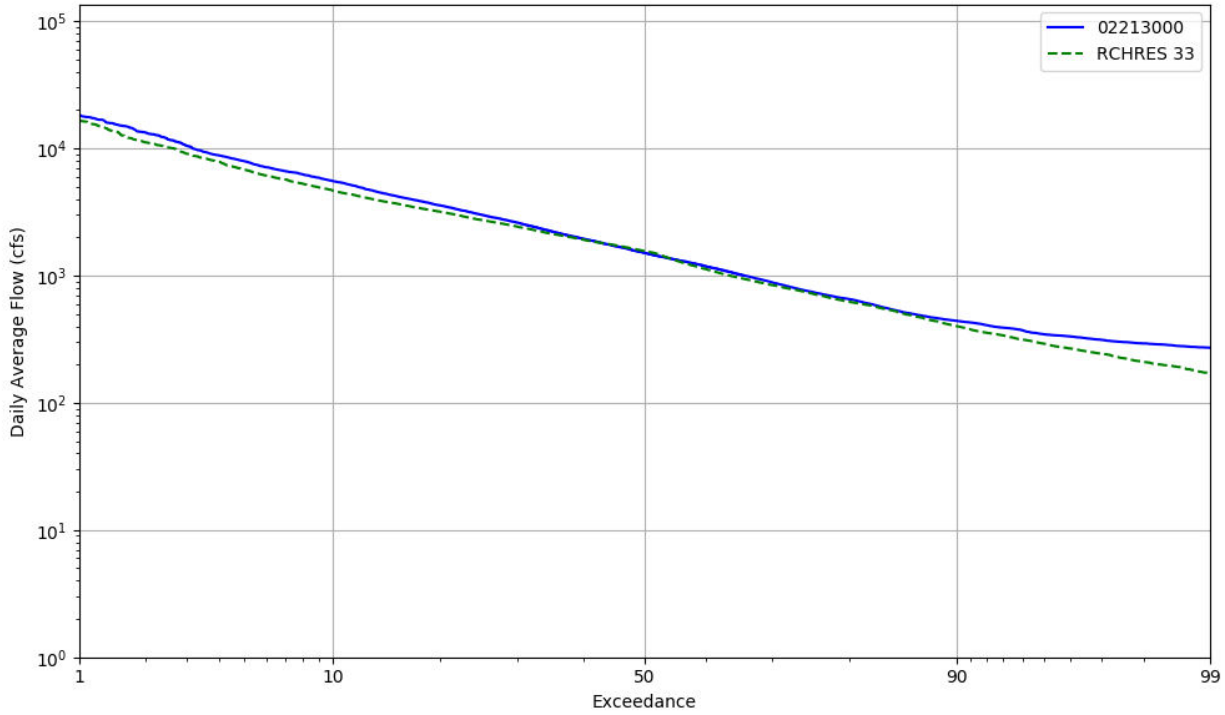


Figure T-03070103-32: Daily exceedance for HSFP reach 33 and USGS station 02213000.

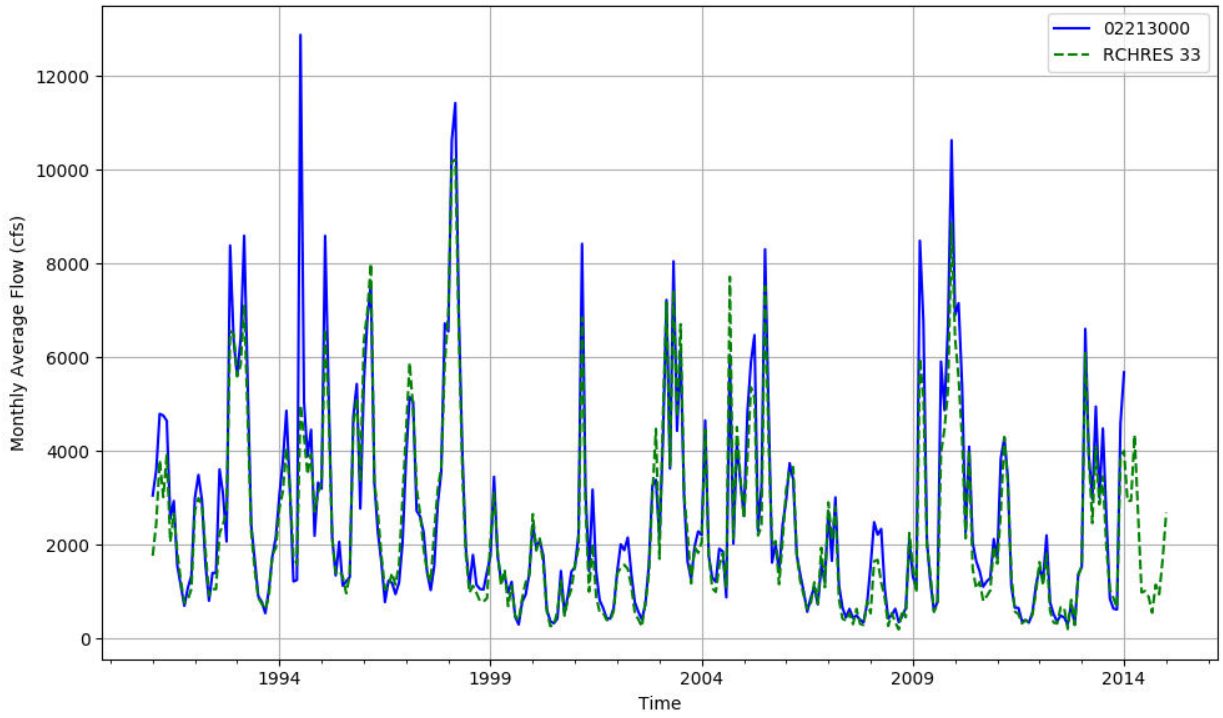


Figure T-03070103-33: Monthly flow for HSFP reach 33 and USGS station 02213000.

HSPF REACH 38, USGS GAUGE 02204070

Water-Data Report 2009
02204070 SOUTH RIVER AT KLONDIKE ROAD, NEAR LITHONIA, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 333747, long 840743 referenced to North American Datum of 1927, DeKalb County, GA, Hydrologic Unit 03070103, Lat 333747, long 840743referenced to North American Datum of 1927; at downstream end of pier of bridge on Klondike Road, 1.1 miles south of GA 212, 1.2 miles downstream from Pole Bridge Creek, 5.8 miles southwest of Lithonia, Ga; and 8.6 miles downstream of Snapfinger Creek.

DRAINAGE AREA.--182 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: September 1983 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 660.90 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels from Dekalb County benchmark).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage height records good. Streamflow includes some water diverted from the Chattahoochee River by DeKalb County and City of Atlanta for municipial supply.

Table T-03070103-21: Comparison Statistics Between HSPF Reach 38 and USGS Gauge 02204070.

Statistic	Value
Bias	-38.96
Standard error	72.09
Relative bias	-0.12
Relative standard error	0.37
Nash-Sutcliffe coefficient	0.86
Kling-Gupta coefficient	0.86
Coefficient of efficiency	0.63
Index of agreement	0.82

Table T-03070103-22: Hydrologic Indices Between USGS Gauge 02204070 and HSPF Reach 38.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02204070	Simulated Reach 38	Percent Difference
MA1: Mean, all daily flows	314.33	275.27	-12.43
MA2: Median, all daily flows	183.00	168.82	-7.75
MA3: CV, all daily flows	153.56	177.09	15.33
MA4: CV, log of all daily flows	82.82	85.61	3.38
MA5: Mean daily flow / median daily flow	1.72	1.63	-5.07
MA9: (Q10 - Q90) / median daily flow	2.52	2.03	-19.53
MA10: (Q20 - Q80) / median daily flow	1.19	1.18	-0.66
MA11: (Q25 - Q75) / median daily flow	0.88	0.94	6.33
MA12: Mean monthly flow, January	356.06	336.43	-5.51
MA13: Mean monthly flow, February	411.40	396.22	-3.69
MA14: Mean monthly flow, March	457.04	425.06	-7.00
MA15: Mean monthly flow, April	302.04	274.54	-9.10
MA16: Mean monthly flow, May	281.83	234.19	-16.90
MA17: Mean monthly flow, June	256.29	179.56	-29.94
MA18: Mean monthly flow, July	289.06	228.03	-21.11
MA19: Mean monthly flow, August	224.29	167.79	-25.19
MA20: Mean monthly flow, September	263.31	214.72	-18.45
MA21: Mean monthly flow, October	219.26	186.66	-14.87
MA22: Mean monthly flow, November	272.69	250.35	-8.19
MA23: Mean monthly flow, December	299.24	289.25	-3.34
ML1: Mean minimum monthly flow, January	159.83	155.70	-2.59
ML2: Mean minimum monthly flow, February	176.13	178.47	1.33
ML3: Mean minimum monthly flow, March	185.35	183.34	-1.08
ML4: Mean minimum monthly flow, April	169.17	155.97	-7.80
ML5: Mean minimum monthly flow, May	132.57	109.30	-17.55
ML6: Mean minimum monthly flow, June	119.78	77.02	-35.70
ML7: Mean minimum monthly flow, July	113.96	79.61	-30.14
ML8: Mean minimum monthly flow, August	103.61	74.50	-28.09
ML9: Mean minimum monthly flow, September	95.22	68.01	-28.57
ML10: Mean minimum monthly flow, October	100.74	83.31	-17.30
ML11: Mean minimum monthly flow, November	119.83	102.21	-14.70
ML12: Mean minimum monthly flow, December	141.48	134.75	-4.76
ML13: CV of minimum monthly flows	37.98	61.17	61.07
ML14: Mean minimum daily flow / mean median annual flow	0.46	0.27	-42.38
ML15: Mean minimum annual flow / mean annual flow	0.27	0.16	-40.88
ML16: Median minimum annual flow / median annual flow	0.44	0.25	-42.19
ML20: Ratio of baseflow volume to total flow volume	0.47	0.49	3.02
ML22: Mean annual minimum flow divided by catchment area	0.82	0.46	-44.15
RA1: Mean of positive changes from one day to next (rise rate)	310.29	349.55	
RA2: CV, mean of positive changes from one day to next (rise rate)	227.58	242.33	
RA3: Mean of negative changes from one day to next (fall rate)	139.90	121.49	
RA4: CV, mean of negative changes from one day to next (fall rate)	322.69	409.90	
RA5: Ratio of days that are higher than previous day	0.30	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.27	0.24	

RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.07	
RA8: Number of flow reversals from one day to the next	124.25	104.17	
RA9: CV, number of flow reversals from one day to the next	17.71	18.20	

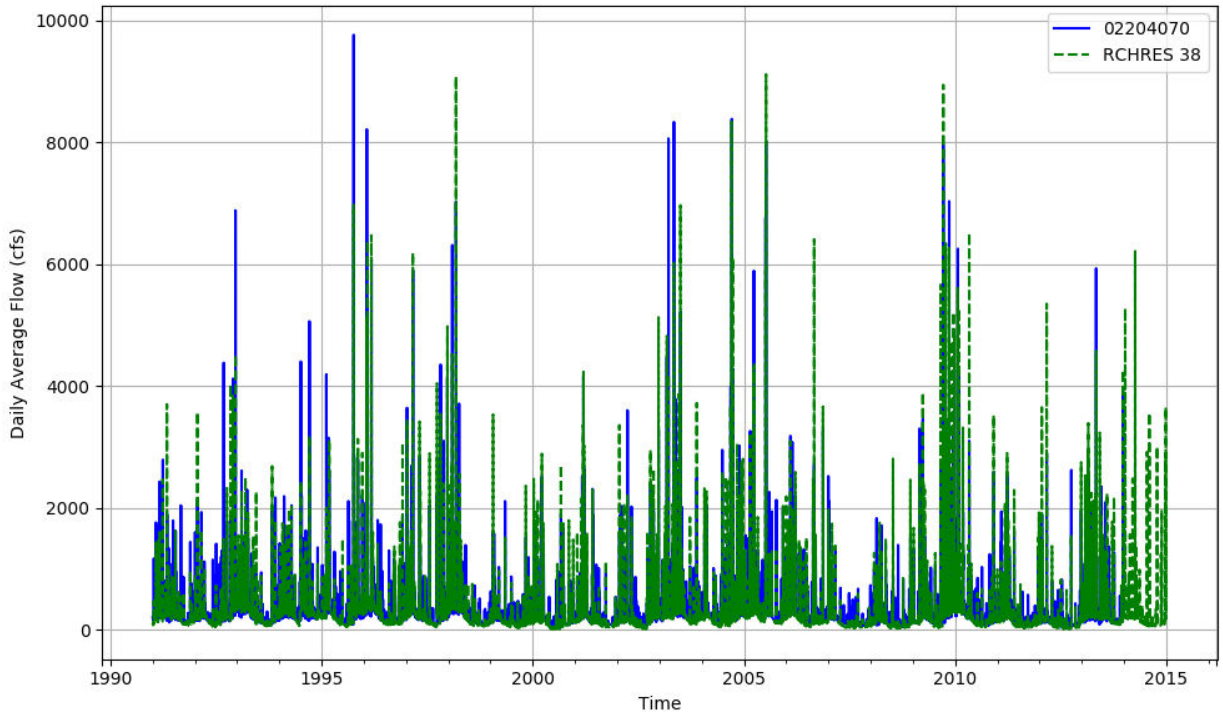


Figure T-03070103-34: Daily flow for HSFP reach 38 and USGS station 02204070.

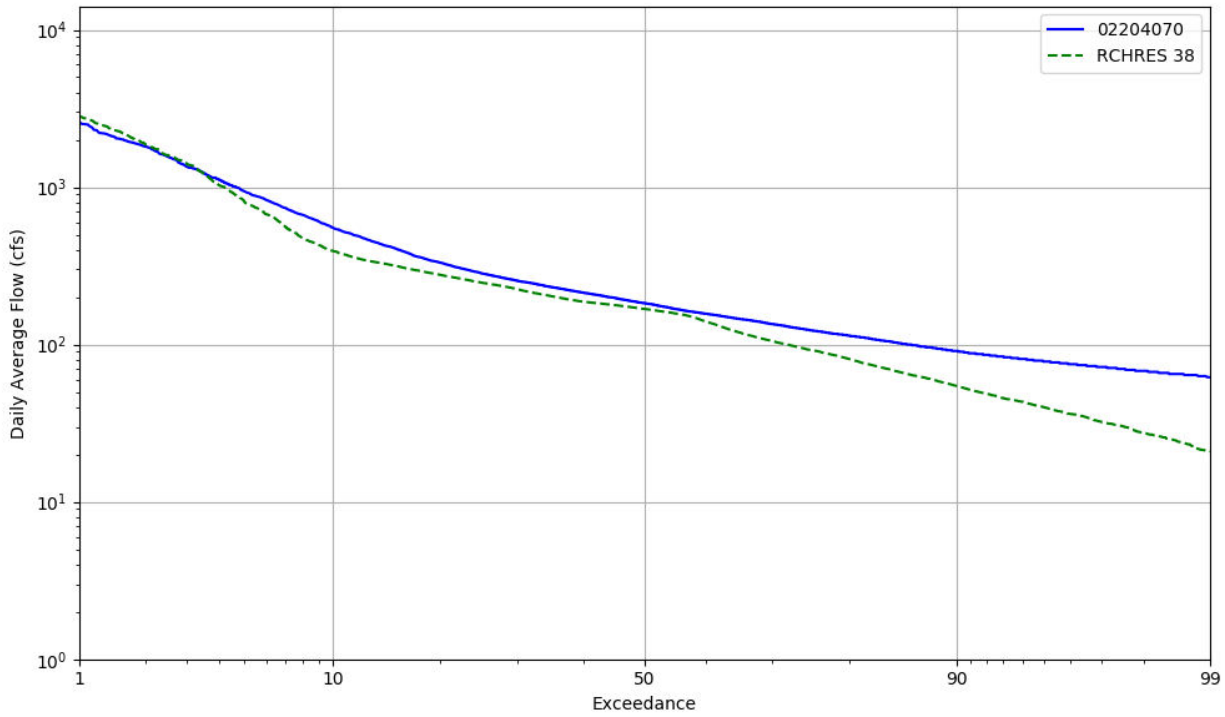


Figure T-03070103-35: Daily exceedance for HSFP reach 38 and USGS station 02204070.

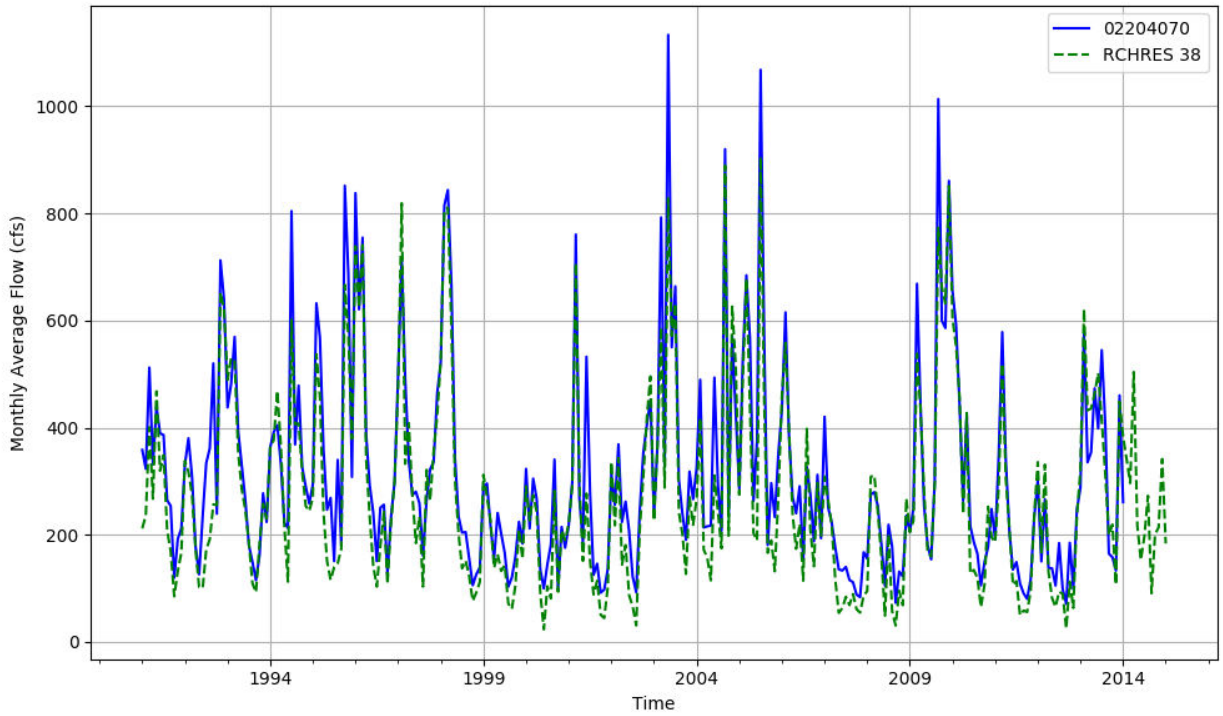


Figure T-03070103-36: Monthly flow for HSFP reach 38 and USGS station 02204070.

HSPF REACH 39, USGS GAUGE 02208450

Water-Data Report 2009
02208450 ALCOVY RIVER ABOVE COVINGTON, GA
Altamaha Basin Upper Ocmulgee Subbasin

LOCATION.--Lat 333824, long 834645 referenced to North American Datum of 1927, Newton County, GA, Hydrologic Unit 03070103, at bridge on Alcovy Trestle Road, 600.0 feet downstream from Strouds Creek, 100.0 feet upstream from railroad bridge, and 6.0 miles Northeast of Covington, GA.

DRAINAGE AREA.--185 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1972 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 646.10 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment). Prior to October 1986, at site 400 feet upstream at same datum.

COOPERATION.--City of Covington.

REMARKS.--Discharge records good, except for days of estimated discharge which are poor. Gage-height records are good.

Table T-03070103-23: Comparison Statistics Between HSPF Reach 39 and USGS Gauge 02208450.

Statistic	Value
Bias	-31.47
Standard error	63.25
Relative bias	-0.14
Relative standard error	0.33
Nash-Sutcliffe coefficient	0.89
Kling-Gupta coefficient	0.86
Coefficient of efficiency	0.68
Index of agreement	0.84

Table T-03070103-24: Hydrologic Indices Between USGS Gauge 02208450 and HSPF Reach 39.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02208450	Simulated Reach 39	Percent Difference
MA1: Mean, all daily flows	230.18	199.29	-13.42

MA2: Median, all daily flows	145.00	110.27	-23.95
MA3: CV, all daily flows	113.60	123.67	8.86
MA4: CV, log of all daily flows	88.39	101.32	14.63
MA5: Mean daily flow / median daily flow	1.59	1.81	13.85
MA9: (Q10 - Q90) / median daily flow	3.12	3.66	17.23
MA10: (Q20 - Q80) / median daily flow	1.88	2.01	6.95
MA11: (Q25 - Q75) / median daily flow	1.48	1.56	5.98
MA12: Mean monthly flow, January	282.12	257.11	-8.87
MA13: Mean monthly flow, February	353.93	313.77	-11.35
MA14: Mean monthly flow, March	390.50	331.73	-15.05
MA15: Mean monthly flow, April	257.75	200.29	-22.29
MA16: Mean monthly flow, May	205.27	168.58	-17.88
MA17: Mean monthly flow, June	160.62	122.19	-23.93
MA18: Mean monthly flow, July	168.85	150.90	-10.63
MA19: Mean monthly flow, August	114.67	85.62	-25.34
MA20: Mean monthly flow, September	149.25	141.69	-5.07
MA21: Mean monthly flow, October	149.06	141.33	-5.18
MA22: Mean monthly flow, November	205.91	180.95	-12.12
MA23: Mean monthly flow, December	236.15	216.67	-8.25
ML1: Mean minimum monthly flow, January	151.79	119.80	-21.08
ML2: Mean minimum monthly flow, February	177.26	142.71	-19.49
ML3: Mean minimum monthly flow, March	188.57	135.83	-27.97
ML4: Mean minimum monthly flow, April	151.74	101.26	-33.27
ML5: Mean minimum monthly flow, May	96.61	72.48	-24.97
ML6: Mean minimum monthly flow, June	72.30	57.79	-20.06
ML7: Mean minimum monthly flow, July	65.02	59.95	-7.79
ML8: Mean minimum monthly flow, August	48.49	45.67	-5.81
ML9: Mean minimum monthly flow, September	48.93	43.64	-10.81
ML10: Mean minimum monthly flow, October	63.93	55.77	-12.76
ML11: Mean minimum monthly flow, November	90.30	71.90	-20.38
ML12: Mean minimum monthly flow, December	120.91	98.07	-18.89
ML13: CV of minimum monthly flows	79.72	83.14	4.28
ML14: Mean minimum daily flow / mean median annual flow	0.16	0.24	50.60
ML15: Mean minimum annual flow / mean annual flow	0.10	0.14	37.78
ML16: Median minimum annual flow / median annual flow	0.14	0.20	44.01
ML20: Ratio of baseflow volume to total flow volume	0.54	0.50	-7.29
ML22: Mean annual minimum flow divided by catchment area	0.28	0.28	-0.78
RA1: Mean of positive changes from one day to next (rise rate)	88.18	108.45	
RA2: CV, mean of positive changes from one day to next (rise rate)	278.79	290.54	
RA3: Mean of negative changes from one day to next (fall rate)	48.42	38.35	
RA4: CV, mean of negative changes from one day to next (fall rate)	300.72	281.47	
RA5: Ratio of days that are higher than previous day	0.34	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.14	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.08	
RA8: Number of flow reversals from one day to the next	95.00	92.04	
RA9: CV, number of flow reversals from one day to the next	19.78	20.88	

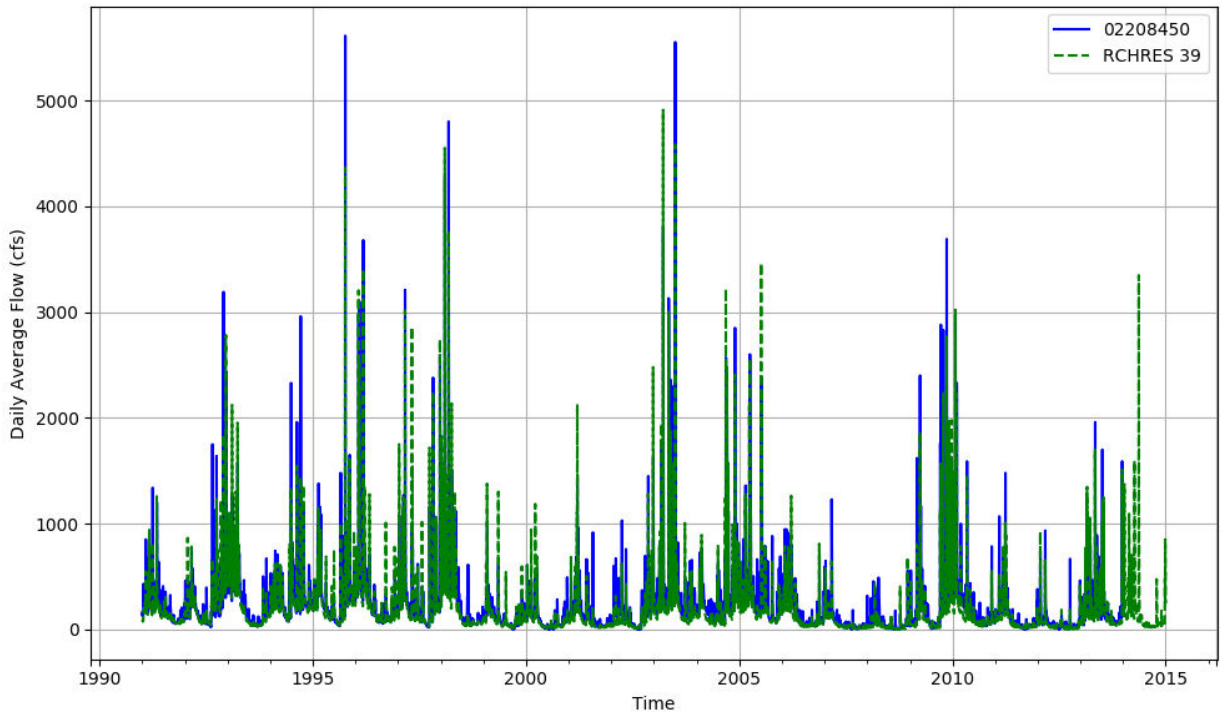


Figure T-03070103-37: Daily flow for HSFP reach 39 and USGS station 02208450.

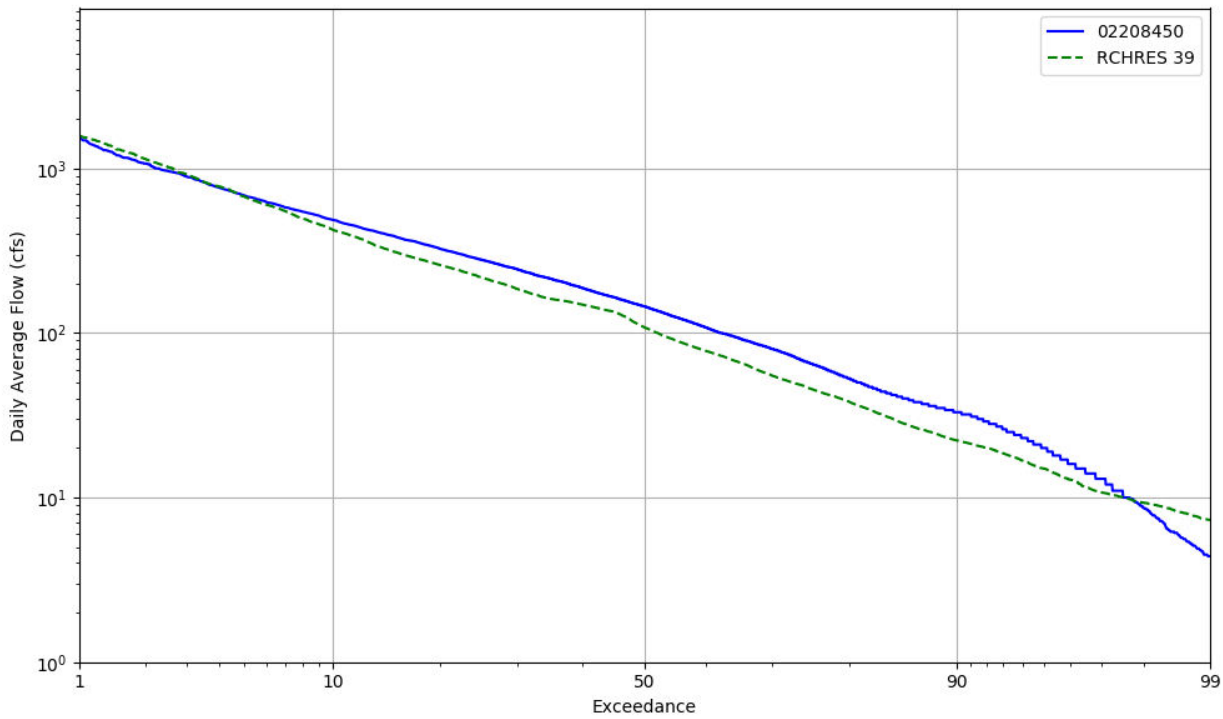


Figure T-03070103-38: Daily exceedance for HSFP reach 39 and USGS station 02208450.

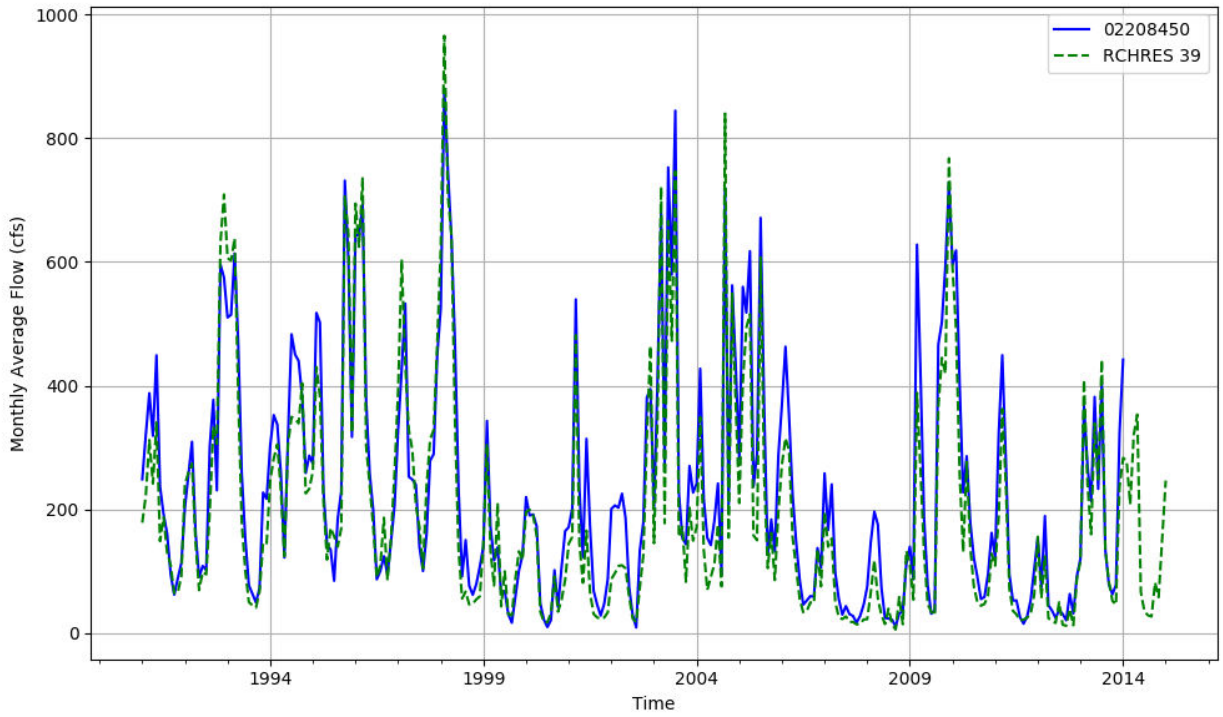


Figure T-03070103-39: Monthly flow for HSFP reach 39 and USGS station 02208450.

Table T-03070103-25: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	31708	182053	119298	29463	10180	17771	983383	17542	134933	232321	7159	88243	6053	763	1493	1862363
AREA(%)	1.7	9.6	6.3	1.5	0.5	0.9	51.7	0.9	7.1	12.2	0.4	4.6	0.3	0.0	0.1	97.9
IMPERVIOUS																
AREA(ACRES)		9765	13313	7384	10183											40645
AREA(%)		0.5	0.7	0.4	0.5											2.1
SUPY	39.6	38.9	38.2	38.6	38.5	39.1	40.1	39.6	40.1	39.3	43.2	40.9	57.2	51.6	41.5	38.9
SURLI			6.0	5.8	6.1										0.6	0.5
UZLI																0.0
LZLI			0.3	0.3	0.3										49.9	0.1
SURO: PERVIOUS		2.7	4.2	3.9	4.5	1.5	0.3	0.8	0.6	1.0	0.4		4.9	1.3	1.5	0.9
SURO: IMPERVIOUS		33.2	32.6	33.1	33.0											0.7
SURO: COMBINED		4.3	7.0	9.8	18.7	1.5	0.3	0.8	0.6	1.0	0.4		4.9	1.3	1.5	1.7
IFWO		3.7	4.0	3.0	1.6	6.1	3.3	6.6	5.5	4.7	5.8		5.9	8.7	6.6	3.5
AGWO	0.5	4.7	9.9	10.3	11.1	7.8	4.8	7.3	4.6	4.9	4.2	0.6	11.6	9.0	45.5	4.9
AGWI	1.0	8.4	12.5	12.8	13.6	11.7	9.4	11.0	8.6	8.6	9.7	1.1	13.9	11.9	49.7	8.8
IGWI	0.2	1.0	1.1	1.0	0.9	1.9	1.7	2.1	1.6	1.6	2.0	0.2	1.5	2.5	4.5	1.4
CEPE		4.2	4.1	4.1	4.1	3.3	8.4	7.4	10.9	10.5	6.1	15.3	16.3	12.2	5.8	8.0
UZET		5.3	4.7	5.8	7.0	4.9	2.9	4.3	3.0	3.3	4.3		5.2	5.3	5.4	3.2
LZET		16.6	16.2	16.8	16.0	11.9	17.6	9.6	12.7	12.5	17.7		11.4	12.2	19.3	14.8
AGWET		3.0	3.0	2.9	2.8	3.2	2.9	2.9	2.6	2.6	3.0		1.8	2.3	2.9	2.6
BASET	0.5	1.2	1.2	1.2	1.2	1.3	1.2	1.4	1.3	1.3	1.3	0.5	1.3	1.4	1.4	1.2
SURET	41.2											26.0				1.9
PERO	0.5	11.2	18.1	17.3	17.2	15.5	8.3	14.6	10.8	10.7	10.4	0.6	22.4	19.0	53.6	9.4
IGWI	0.2	1.0	1.1	1.0	0.9	1.9	1.7	2.1	1.6	1.6	2.0	0.2	1.5	2.5	4.5	1.4
TAET: PERVIOUS	41.7	30.3	29.3	30.8	31.1	24.5	33.1	25.5	30.5	30.3	32.4	41.8	36.0	33.3	34.8	31.7
IMPEV: IMPERVIOUS		5.7	5.6	5.6	5.5											0.1
ET: COMBINED	41.7	29.0	27.0	25.8	18.3	24.5	33.1	25.5	30.5	30.3	32.4	41.8	36.0	33.3	34.8	31.8
PET	41.7	41.4	41.2	41.2	41.1	41.6	41.7	41.7	41.7	41.7	42.1	41.8	41.3	41.9	41.8	40.7

Table T-03070103-26: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	31708	182053	119298	29463	10180	17771	983383	17542	134933	232321	7159	88243	6053	763	1493	1862363
AREA(%)	1.7	9.6	6.3	1.5	0.5	0.9	51.7	0.9	7.1	12.2	0.4	4.6	0.3	0.0	0.1	97.9
IMPERVIOUS																
AREA(ACRES)		9765	13313	7384	10183											40645
AREA(%)		0.5	0.7	0.4	0.5											2.1
SUPY	66.8	68.3	69.3	69.6	70.1	67.0	66.6	66.2	66.1	66.1	64.8	65.6	82.5	75.4	66.3	65.5
SURLI			5.1	4.7	4.5										0.7	0.4
UZLI																0.0
LZLI			0.4	0.4	0.3										21.8	0.0
SURO: PERVIOUS		9.8	13.7	13.6	15.2	5.3	0.7	2.5	2.0	2.9	0.8		13.4	1.8	2.9	3.1
SURO: IMPERVIOUS		60.7	61.7	61.9	62.5											1.3
SURO: COMBINED		12.4	18.5	23.3	38.8	5.3	0.7	2.5	2.0	2.9	0.8		13.4	1.8	2.9	4.4
IFWO		9.6	9.6	7.4	4.3	13.9	8.2	14.8	13.0	11.6	11.0		11.2	14.6	11.9	8.6
AGWO	0.4	6.1	10.6	10.9	11.7	10.9	8.1	10.5	7.1	7.3	7.8	0.5	11.7	12.4	26.6	7.4
AGWI	0.9	15.9	20.0	20.5	21.6	20.2	19.3	19.2	16.1	16.5	17.2	1.0	19.5	19.4	33.6	16.9
IGWI	0.2	1.8	1.9	1.7	1.6	3.1	3.1	3.6	3.0	3.0	3.6	0.2	2.0	4.0	5.7	2.6
CEPE		5.6	5.6	5.6	5.6	4.3	10.9	9.6	14.0	13.6	7.7	18.8	15.6	15.4	7.7	10.4
UZET		7.3	6.3	7.6	9.3	6.6	4.0	5.5	3.7	4.2	4.8		6.8	6.2	6.0	4.3
LZET		16.7	16.3	16.6	15.5	12.2	17.9	9.6	12.6	12.4	18.2		12.7	12.5	20.0	15.0
AGWET		3.3	3.4	3.2	3.0	3.6	3.2	3.2	3.0	2.9	3.6		2.4	2.6	3.3	2.9
BASET	0.5	1.2	1.4	1.4	1.4	1.5	1.3	1.5	1.4	1.4	1.5	0.5	1.4	1.6	1.6	1.3
SURET	48.0											29.8				2.2
PERO	0.4	25.5	33.9	32.0	31.3	30.1	17.1	27.8	22.1	21.8	19.5	0.5	36.3	28.8	41.3	19.1
IGWI	0.2	1.8	1.9	1.7	1.6	3.1	3.1	3.6	3.0	3.0	3.6	0.2	2.0	4.0	5.7	2.6
TAET: PERVIOUS	48.5	34.2	32.9	34.4	34.8	28.1	37.4	29.4	34.6	34.5	35.7	49.1	38.9	38.2	38.6	35.9
IMPEV: IMPERVIOUS		7.6	7.6	7.6	7.6											0.2
ET: COMBINED	48.5	32.9	30.4	29.0	21.2	28.1	37.4	29.4	34.6	34.5	35.7	49.1	38.9	38.2	38.6	36.1
PET	48.5	47.9	47.6	47.7	47.5	48.2	48.6	48.3	48.6	48.3	50.0	49.1	47.8	48.8	48.8	47.4

Table T-03070103-27: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	31708	182053	119298	29463	10180	17771	983383	17542	134933	232321	7159	88243	6053	763	1493	1862363
AREA(%)	1.7	9.6	6.3	1.5	0.5	0.9	51.7	0.9	7.1	12.2	0.4	4.6	0.3	0.0	0.1	97.9
IMPERVIOUS																
AREA(ACRES)		9765	13313	7384	10183											40645
AREA(%)		0.5	0.7	0.4	0.5											2.1
SUPY	45.7	44.6	44.1	44.2	43.9	45.1	45.6	45.4	45.6	45.4	45.2	45.2	66.1	53.6	45.0	44.4
SURLI			5.1	4.7	4.5										0.6	0.4
UZLI																0.0
LZLI			0.4	0.4	0.3										22.8	0.0
SURO: PERVIOUS	0.2	4.3	6.0	5.8	6.4	2.6	0.4	1.2	1.0	1.5	0.4	0.1	6.6	1.1	1.5	1.4
SURO: IMPERVIOUS		39.1	38.6	38.7	38.5											0.8
SURO: COMBINED	0.2	6.0	9.3	12.4	22.5	2.6	0.4	1.2	1.0	1.5	0.4	0.1	6.6	1.1	1.5	2.3
IFWO		4.6	5.2	3.7	2.0	8.0	4.5	8.6	7.1	6.2	6.3		7.3	8.8	7.0	4.6
AGWO	0.5	6.7	10.4	10.7	11.5	10.7	9.4	10.3	7.7	7.9	8.2	0.5	13.8	11.2	23.5	8.2
AGWI	0.9	9.3	13.1	13.1	13.5	13.5	11.3	12.8	10.0	10.2	10.4	1.0	16.6	12.7	26.2	10.2
IGWI	0.2	1.1	1.3	1.2	1.1	2.1	2.0	2.4	1.9	1.9	2.2	0.2	2.0	2.6	4.4	1.7
CEPE		4.0	4.0	4.0	3.9	3.2	8.5	7.4	11.3	11.0	6.1	15.9	17.0	12.4	5.9	8.1
UZET		6.0	5.2	6.3	8.0	5.6	3.5	5.0	3.4	3.9	4.2		6.1	5.2	5.0	3.7
LZET		17.6	16.6	17.3	16.2	12.3	19.2	10.1	13.6	13.4	19.4		11.9	13.3	20.4	16.0
AGWET		3.3	3.3	3.2	3.0	3.4	3.1	3.1	2.9	2.8	3.5		2.0	2.6	3.3	2.8
BASET	0.5	1.3	1.3	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.5	0.5	1.4	1.5	1.5	1.3
SURET	44.4											29.1				2.1
PERO	0.7	15.6	21.7	20.2	19.9	21.3	14.3	20.2	15.8	15.6	14.9	0.6	27.7	21.1	32.1	14.3
IGWI	0.2	1.1	1.3	1.2	1.1	2.1	2.0	2.4	1.9	1.9	2.2	0.2	2.0	2.6	4.4	1.7
TAET: PERVIOUS	44.8	32.2	30.3	32.1	32.4	25.9	35.8	27.0	32.7	32.5	34.6	45.5	38.3	35.1	36.1	34.1
IMPEV: IMPERVIOUS		5.5	5.5	5.5	5.5											0.1
ET: COMBINED	44.8	30.9	27.8	26.7	18.9	25.9	35.8	27.0	32.7	32.5	34.6	45.5	38.3	35.1	36.1	34.2
PET	44.8	44.4	44.1	44.2	44.1	44.7	44.9	44.9	45.0	44.8	46.8	45.5	44.4	45.6	45.5	43.9

Table T-03070103-28: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	31708	182053	119298	29463	10180	17771	983383	17542	134933	232321	7159	88243	6053	763	1493	1862363
AREA(%)	1.7	9.6	6.3	1.5	0.5	0.9	51.7	0.9	7.1	12.2	0.4	4.6	0.3	0.0	0.1	97.9
IMPERVIOUS																
AREA(ACRES)		9765	13313	7384	10183											40645
AREA(%)		0.5	0.7	0.4	0.5											2.1
SUPY	47.8	48.4	48.8	48.8	48.9	48.0	47.7	47.9	47.6	47.9	46.5	47.2	60.9	60.7	48.8	46.9
SURLI			5.8	5.8	5.7										0.9	0.5
UZLI																0.0
LZLI			0.3	0.3	0.2										45.2	0.1
SURO: PERVIOUS	4.5	4.3	6.4	6.0	6.7	2.5	0.3	1.2	0.9	1.3	0.3	3.7	6.3	3.3	2.1	1.6
SURO: IMPERVIOUS		41.6	42.1	42.0	42.2											0.9
SURO: COMBINED	4.5	6.2	9.9	13.3	24.5	2.5	0.3	1.2	0.9	1.3	0.3	3.7	6.3	3.3	2.1	2.5
IFWO		4.1	4.8	3.3	1.7	6.8	3.4	7.2	5.8	5.3	4.6		5.5	9.4	6.3	3.7
AGWO	0.6	6.9	11.5	11.9	12.7	10.3	7.6	9.6	6.9	7.3	6.3	0.6	11.5	10.1	44.7	7.3
AGWI	1.1	11.5	16.3	16.6	17.4	15.4	12.1	14.3	11.2	11.6	11.2	1.2	15.4	14.2	49.6	11.4
IGWI	0.2	1.3	1.4	1.3	1.2	2.4	2.0	2.7	2.1	2.1	2.4	0.2	1.6	3.0	5.4	1.8
CEPE		5.1	5.0	5.0	5.0	4.0	9.7	8.7	12.4	12.2	6.9	16.7	13.4	13.7	6.9	9.3
UZET	0.0	5.7	5.2	6.2	7.4	5.3	2.9	4.5	2.9	3.3	3.8	0.0	5.6	5.0	5.2	3.3
LZET	0.0	16.4	15.8	16.3	15.5	11.7	17.3	9.4	12.3	12.1	17.4	0.0	13.0	12.3	19.4	14.5
AGWET	0.0	3.1	3.1	3.0	2.9	3.3	3.0	3.0	2.8	2.7	3.3	0.0	2.3	2.5	3.1	2.7
BASET	0.5	1.2	1.3	1.3	1.3	1.3	1.2	1.4	1.3	1.3	1.3	0.6	1.3	1.4	1.4	1.2
SURET	43.6											27.2				2.0
PERO	5.1	15.3	22.7	21.3	21.1	19.5	11.2	18.0	13.6	13.9	11.2	4.3	23.2	22.7	53.1	12.6
IGWI	0.2	1.3	1.4	1.3	1.2	2.4	2.0	2.7	2.1	2.1	2.4	0.2	1.6	3.0	5.4	1.8
TAET: PERVIOUS	44.2	31.4	30.4	31.8	32.1	25.7	34.2	26.8	31.7	31.6	32.7	44.5	35.6	34.8	36.0	32.9
IMPEV: IMPERVIOUS		6.8	6.7	6.8	6.7											0.1
ET: COMBINED	44.2	30.2	28.0	26.8	19.4	25.7	34.2	26.8	31.7	31.6	32.7	44.5	35.6	34.8	36.0	33.1
PET	44.2	43.7	43.4	43.4	43.3	44.0	44.3	44.2	44.3	44.1	45.5	44.6	43.6	44.7	44.5	43.2

Table T-03070103-29: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
4	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
5	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
6	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
7	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
8	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
9	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
10	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
11	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
12	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
13	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
14	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
18	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
19	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
20	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
21	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
22	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
23	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
24	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
25	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
26	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
27	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
28	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
29	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
30	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
31	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
32	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
33	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
34	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
35	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
36	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
37	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
38	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

39	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
40	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
41	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
42	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
43	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
44	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
45	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03070103-30: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
2	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
3	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
4	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
5	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
6	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
7	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
8	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
9	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
10	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
11	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
12	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
13	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
14	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
15	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
16	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
17	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
18	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
19	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
20	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028
21	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
22	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
23	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
24	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
25	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
26	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
27	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
28	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
29	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
30	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
31	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
32	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
33	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
34	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
35	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
36	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
37	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
38	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028

39	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
40	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
41	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
42	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
43	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
44	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033
45	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033

Table T-03070103-31: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
2	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
3	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
4	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
5	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
6	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
7	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
8	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
9	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
10	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
11	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
12	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
13	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
14	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
15	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
16	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
17	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
18	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
19	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
20	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
21	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
22	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
23	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
24	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
25	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
26	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
27	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
28	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
29	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
30	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
31	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
32	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
33	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
34	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
35	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
36	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
37	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
38	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245

39	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
40	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
41	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
42	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
43	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
44	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245
45	0.000	0.015	0.015	0.015	0.015	0.009	0.069	0.053	0.120	0.114	0.030	0.245

Table T-03070103-32: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
4	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
5	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
6	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
7	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
8	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
9	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
10	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
11	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
12	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
13	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
14	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
18	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
22	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
23	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
24	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
25	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
26	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
27	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
28	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
29	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
30	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
31	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
32	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
33	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
34	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
35	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
36	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
37	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
40	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
41	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
42	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
43	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
44	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178
45	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178	0.178

Table T-03070103-33: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001
2	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001
3	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
4	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
5	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
6	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
7	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
8	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
9	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
10	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
11	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
12	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
13	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
14	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
15	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001
16	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001
17	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
18	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
19	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001
20	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001
21	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
22	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
23	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
24	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
25	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
26	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
27	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
28	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
29	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
30	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
31	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
32	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
33	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
34	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
35	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
36	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
37	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
38	0.001	0.095	0.095	0.095	0.095	0.132	1.000	0.151	0.151	0.151	0.171	0.001

39	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
40	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
41	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
42	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
43	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
44	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001
45	0.001	0.095	0.095	0.095	0.095	0.132	0.189	0.151	0.151	0.151	0.171	0.001

Table T-03070103-34: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
2		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
12		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
13		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
14		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
15		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
16		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
17		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
18		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
19		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
20		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
21		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
22		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
23		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
24		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
25		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
26		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
27		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
28		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
29		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

30		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
31		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
32		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
33		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
34		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
35		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
36		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
37		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
38		0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
39		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
40		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
41		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
42		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
43		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
44		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
45		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

Table T-03070103-35: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
2	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
16	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
20	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
25	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
26	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
27	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
28	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
29	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
30	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
31	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
32	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
33	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
34	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
35	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
36	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
37	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
38	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605

39	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
40	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
41	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
42	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
43	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
44	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
45	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03070103-36: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578
2	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578
3	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
4	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
5	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
6	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
7	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
8	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
9	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
10	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
11	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
12	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
13	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
14	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
15	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578
16	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578
17	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
18	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
19	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578
20	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578
21	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
22	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
23	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
24	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
25	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
26	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
27	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
28	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
29	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
30	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
31	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
32	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
33	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
34	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
35	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
36	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
37	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
38	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578	0.578

39	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
40	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
41	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
42	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
43	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
44	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915
45	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915	0.915

Table T-03070103-37: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950
2	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950
3	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
4	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
5	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
6	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
7	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
8	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
9	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
10	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
11	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
12	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
13	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
14	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
15	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950
16	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950
17	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
18	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
19	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950
20	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950
21	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
22	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
23	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
24	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
25	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
26	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
27	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
28	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
29	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
30	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
31	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
32	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
33	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
34	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
35	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
36	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
37	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
38	0.260	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.950

39	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
40	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
41	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
42	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
43	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
44	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965
45	0.262	0.600	0.470	0.600	0.600	0.335	0.600	0.297	0.432	0.428	0.494	0.965

Table T-03070103-38: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100
2	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100
3	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
4	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
5	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
6	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
7	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
8	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
9	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
10	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
11	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
12	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
13	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
14	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
15	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100
16	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100
17	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
18	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
19	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100
20	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100
21	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
22	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
23	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
24	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
25	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
26	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
27	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
28	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
29	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
30	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
31	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
32	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
33	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
34	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
35	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
36	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
37	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
38	0.050	5.662	5.662	5.662	5.662	6.369	2.000	6.369	6.369	6.369	7.077	0.100

39	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
40	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
41	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
42	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
43	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
44	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112
45	0.200	5.662	5.662	5.662	5.662	6.369	8.492	6.369	6.369	6.369	7.077	0.112

Table T-03070103-39: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050
3	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
4	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
5	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
6	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
7	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
8	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
9	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
10	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
11	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
12	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
13	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
14	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050
16	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050
17	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
18	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
19	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050
20	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050
21	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
22	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
23	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
24	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
25	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
26	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
27	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
28	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
29	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
30	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
31	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
32	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
33	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
34	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
35	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
36	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
37	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
38	0.050	0.070	0.070	0.070	0.070	0.070	0.779	0.080	0.080	0.070	0.100	0.050

39	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
40	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
41	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
42	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
43	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
44	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050
45	0.050	0.181	0.083	0.212	0.985	0.083	0.100	0.095	0.095	0.117	0.100	0.050

APPENDIX T-03070104

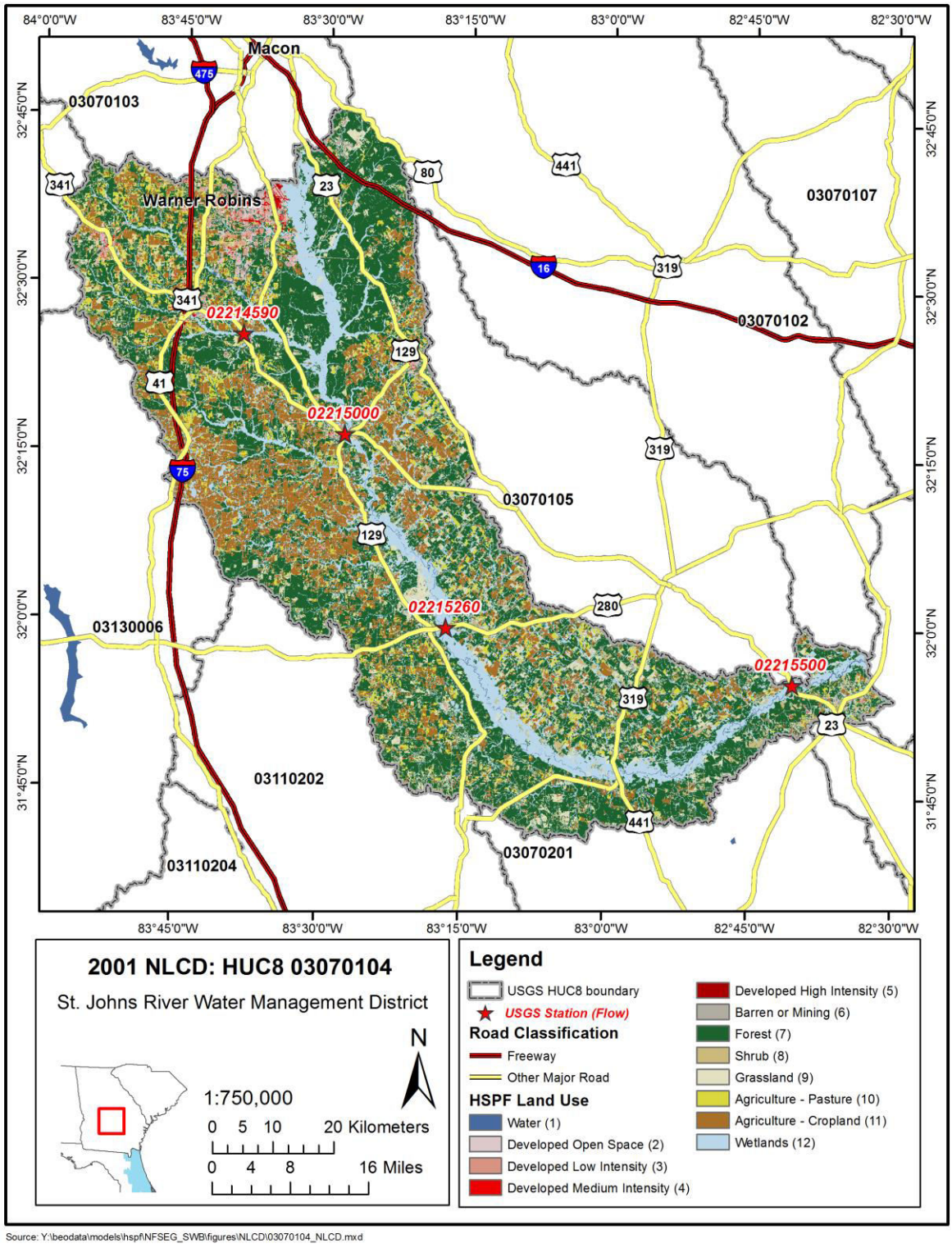


Figure T-03070104-1: Land Cover from the National Land Cover Database.

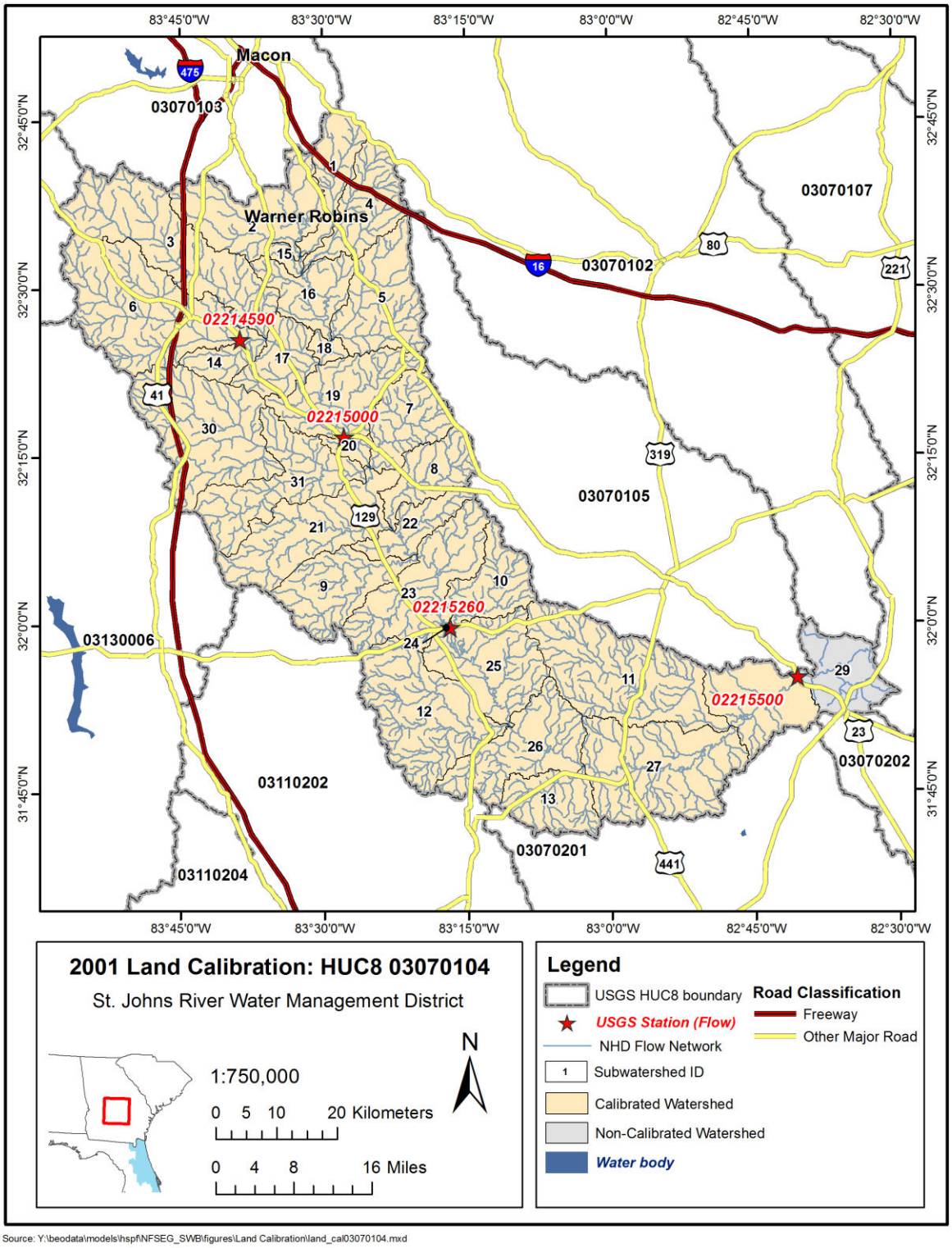


Figure T-03070104-2: Calibrated sub-watersheds.

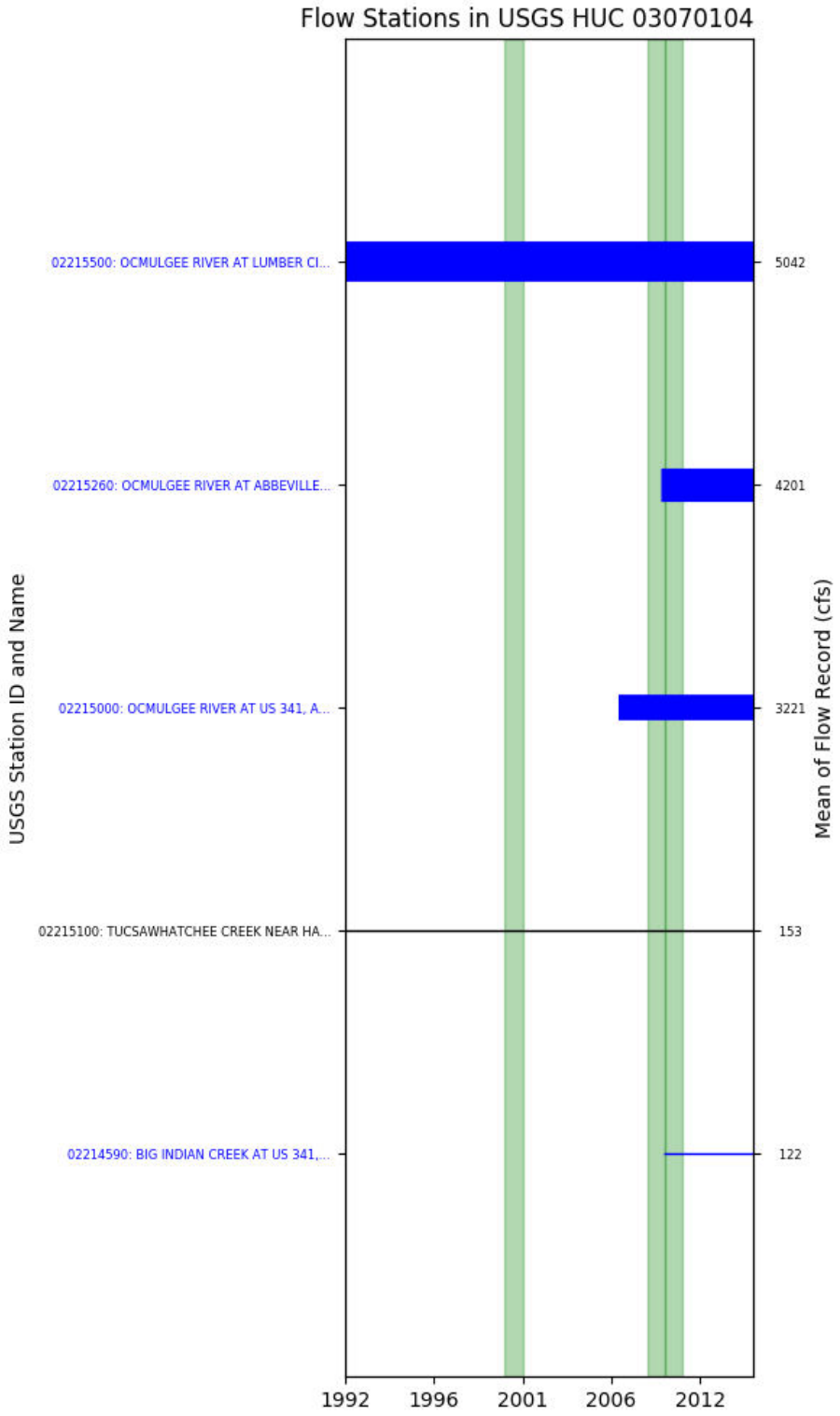


Figure T-03070104-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 06, USGS GAUGE 02214590

Water-Data Report 2009
02192000 BROAD RIVER NEAR BELL, GA
Savannah Basin Broad Subbasin

LOCATION.--Lat 335827, long 824612 referenced to North American Datum of 1983, Elbert County, GA, Hydrologic Unit 03060104, at downstream side of main channel pier of bridge on State Highway 17, 0.5 mi downstream from confluence with Long Creek, 1.0 mi south of Bells Crossroads, and 12.0 mi southeast of Elberton.

DRAINAGE AREA.--1,430 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1926 to September 1932 (maximum annual discharge only), August 1937 to current year. Monthly discharge only for October 1926, August to September 1932, published in WSP 1303.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1172: 1928-30. WSP 1382: Drainage Area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 357.19 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to October 1928, a non-recording gage was located at a railroad bridge about 1.0 mile downstream at datum 1.12 feet lower. From October 1928 to July 1932, and August 1937 to January 1939, a non-recording gage was located at present site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good except for estimated discharges, which are poor. Gage-height records good. Records of chemical analsyses for the 1970-79 water years are in reports of the U.S. Geological Survey. Periods of monthly discharge only are not included in statistics computations.

Table T-03070104-1: Comparison Statistics Between HSPF Reach 06 and USGS Gauge 02214590.

Statistic	Value
Bias	24.11
Standard error	54.21
Relative bias	0.19

Relative standard error	0.44
Nash-Sutcliffe coefficient	0.80
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.58
Index of agreement	0.81

Table T-03070104-2: Hydrologic Indices Between USGS Gauge 02214590 and HSPF Reach 06.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02214590	Simulated Reach 06	Percent Difference
MA1: Mean, all daily flows	118.79	140.92	18.63
MA2: Median, all daily flows	64.50	76.66	18.85
MA3: CV, all daily flows	118.00	101.15	-14.28
MA4: CV, log of all daily flows	94.24	97.06	2.99
MA5: Mean daily flow / median daily flow	1.84	1.84	-0.19
MA9: (Q10 - Q90) / median daily flow	3.45	3.80	10.09
MA10: (Q20 - Q80) / median daily flow	1.63	2.05	26.01
MA11: (Q25 - Q75) / median daily flow	1.05	1.58	50.29
MA12: Mean monthly flow, January	197.43	254.86	29.09
MA13: Mean monthly flow, February	220.71	259.79	17.71
MA14: Mean monthly flow, March	137.34	193.10	40.60
MA15: Mean monthly flow, April	79.46	117.87	48.34
MA16: Mean monthly flow, May	64.35	98.49	53.06
MA17: Mean monthly flow, June	65.08	68.25	4.87
MA18: Mean monthly flow, July	67.66	79.83	17.98
MA19: Mean monthly flow, August	69.67	87.23	25.20
MA20: Mean monthly flow, September	56.98	65.22	14.46
MA21: Mean monthly flow, October	41.23	49.06	18.99
MA22: Mean monthly flow, November	51.97	34.15	-34.29
MA23: Mean monthly flow, December	219.50	204.63	-6.78
ML1: Mean minimum monthly flow, January	134.60	170.43	26.62
ML2: Mean minimum monthly flow, February	103.25	133.68	29.47
ML3: Mean minimum monthly flow, March	102.00	165.48	62.23
ML4: Mean minimum monthly flow, April	62.00	103.58	67.07
ML5: Mean minimum monthly flow, May	42.50	75.53	77.72
ML6: Mean minimum monthly flow, June	34.75	62.75	80.57
ML7: Mean minimum monthly flow, July	37.75	63.10	67.15
ML8: Mean minimum monthly flow, August	33.00	55.03	66.77
ML9: Mean minimum monthly flow, September	35.75	48.74	36.33
ML10: Mean minimum monthly flow, October	43.00	40.57	-5.64
ML11: Mean minimum monthly flow, November	50.50	35.42	-29.87
ML12: Mean minimum monthly flow, December	80.60	82.95	2.92
ML13: CV of minimum monthly flows	87.30	97.97	12.22
ML14: Mean minimum daily flow / mean median annual flow	0.44	0.33	-24.83
ML15: Mean minimum annual flow / mean annual flow	0.29	0.21	-25.98
ML16: Median minimum annual flow / median annual flow	0.40	0.35	-10.71
ML20: Ratio of baseflow volume to total flow volume	0.57	0.70	21.49
ML22: Mean annual minimum flow divided by catchment area	0.33	0.27	-19.23
RA1: Mean of positive changes from one day to next (rise rate)	52.50	36.78	
RA2: CV, mean of positive changes from one day to next (rise rate)	207.12	277.47	
RA3: Mean of negative changes from one day to next	25.85	12.97	

(fall rate)			
RA4: CV, mean of negative changes from one day to next (fall rate)	238.38	235.08	
RA5: Ratio of days that are higher than previous day	0.30	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	77.80	66.60	
RA9: CV, number of flow reversals from one day to the next	38.60	47.68	

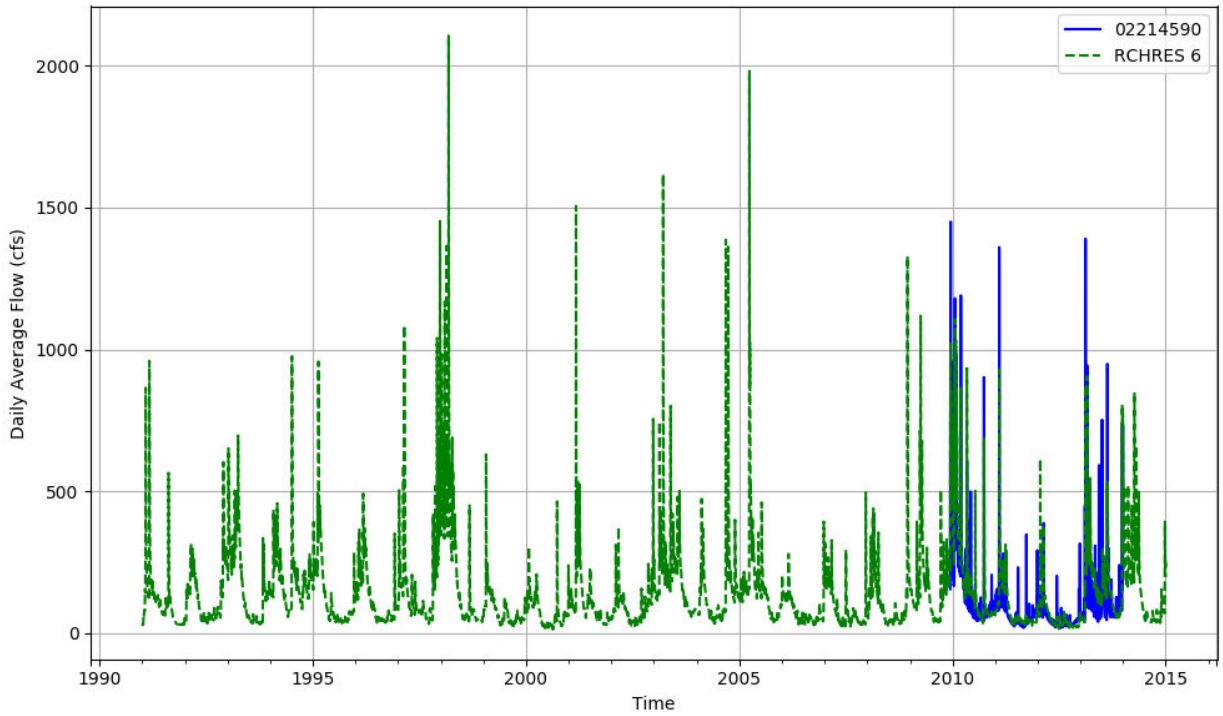


Figure T-03070104-4: Daily flow for HSFP reach 06 and USGS station 02214590.

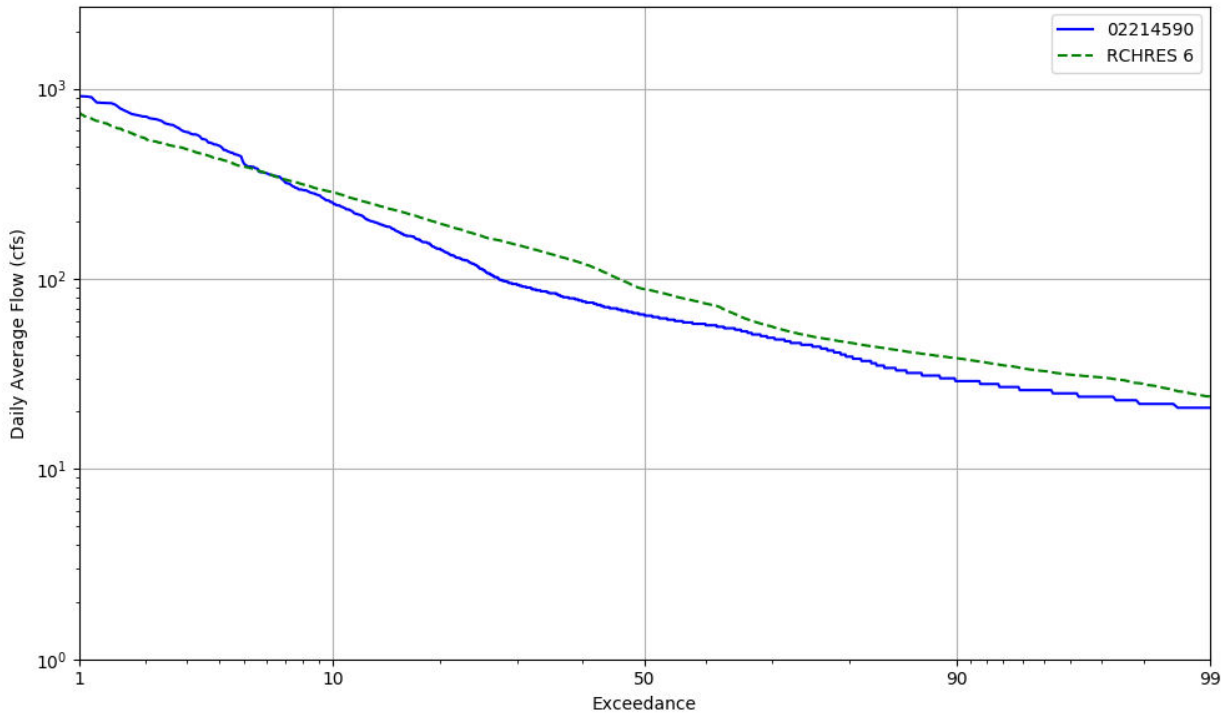


Figure T-03070104-5: Daily exceedance for HSFP reach 06 and USGS station 02214590.

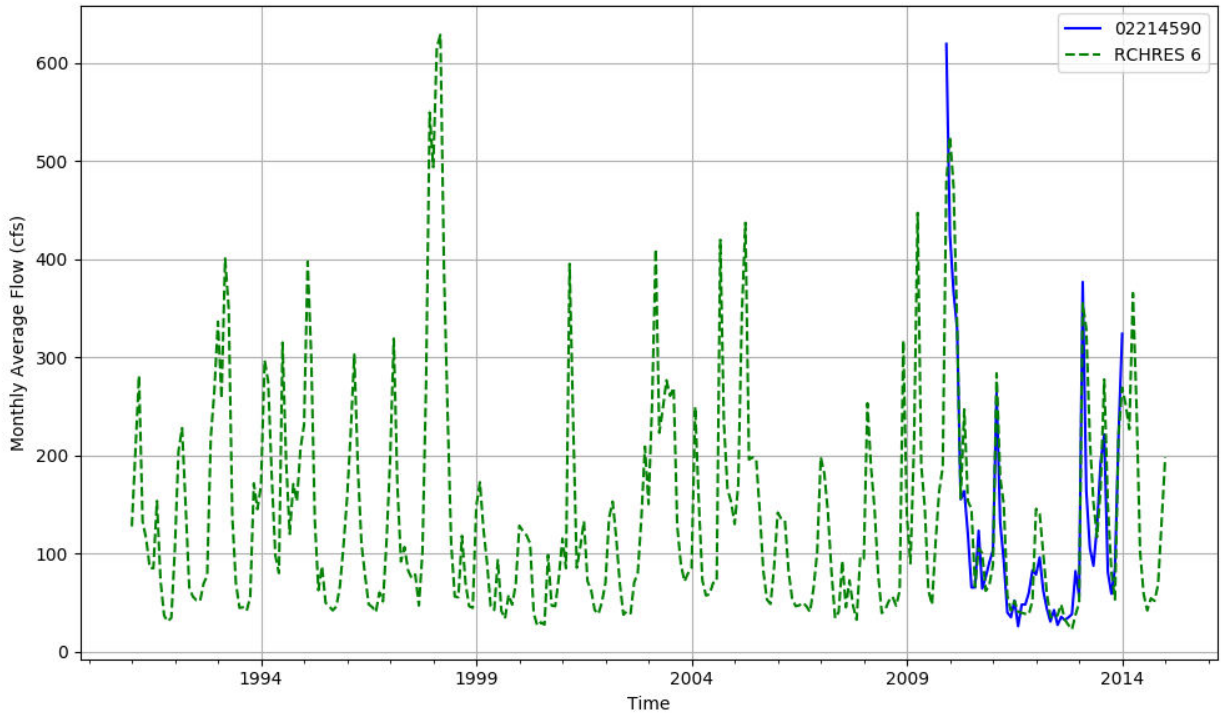


Figure T-03070104-6: Monthly flow for HSFP reach 06 and USGS station 02214590.

HSPF REACH 19, USGS GAUGE 02215000

Water-Data Report 2009
02215000 OCMULGEE RIVER AT HAWKINSVILLE, GA.
Altamaha Basin Lower Ocmulgee Subbasin

LOCATION.--Lat 321650, long 832740 referenced to North American Datum of 1927, Pulaski County, GA, Hydrologic Unit 03070104, at downstream side of bridge on US 341, 0.9 mi downstream from confluence with Double Branch, 0.9 mi upstream from confluence with Mile Creek, and 0.8 mi east of Hawkinsville.

DRAINAGE AREA.--3,800 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1928 to December 1931, October 1943 to September 1959, October 1959 to September 1996 (annual maximum only), and June 2007 to September 2008.
GAGE-HEIGHT: June 2007 to September 2008.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

Table T-03070104-3: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02215000.

Statistic	Value
Bias	-99.70
Standard error	1268.01
Relative bias	-0.03
Relative standard error	0.39
Nash-Sutcliffe coefficient	0.84
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.69
Index of agreement	0.85

Table T-03070104-4: Hydrologic Indices Between USGS Gauge 02215000 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02215000	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	3140.66	3104.05	-1.17
MA2: Median, all daily flows	1620.00	1510.35	-6.77
MA3: CV, all daily flows	90.08	119.33	32.46
MA4: CV, log of all daily flows	100.81	105.80	4.96
MA5: Mean daily flow / median daily flow	1.94	2.06	6.01
MA9: (Q10 - Q90) / median daily flow	4.00	4.46	11.40
MA10: (Q20 - Q80) / median daily flow	2.27	2.82	24.61
MA11: (Q25 - Q75) / median daily flow	1.77	2.32	31.19

MA12: Mean monthly flow, January	4414.52	4031.38	-8.68
MA13: Mean monthly flow, February	4126.96	4708.43	14.09
MA14: Mean monthly flow, March	4366.65	5024.27	15.06
MA15: Mean monthly flow, April	4039.72	3760.65	-6.91
MA16: Mean monthly flow, May	2296.46	2434.69	6.02
MA17: Mean monthly flow, June	1568.38	1527.94	-2.58
MA18: Mean monthly flow, July	1739.32	1423.98	-18.13
MA19: Mean monthly flow, August	1427.70	1037.21	-27.35
MA20: Mean monthly flow, September	1557.78	1082.06	-30.54
MA21: Mean monthly flow, October	1490.40	1259.64	-15.48
MA22: Mean monthly flow, November	1881.28	1556.92	-17.24
MA23: Mean monthly flow, December	3685.63	3750.66	1.76
ML1: Mean minimum monthly flow, January	3421.43	2867.41	-16.19
ML2: Mean minimum monthly flow, February	2383.33	2676.22	12.29
ML3: Mean minimum monthly flow, March	2770.00	3813.91	37.69
ML4: Mean minimum monthly flow, April	2070.83	2820.99	36.22
ML5: Mean minimum monthly flow, May	1550.33	1964.66	26.73
ML6: Mean minimum monthly flow, June	915.71	1110.30	21.25
ML7: Mean minimum monthly flow, July	1038.86	930.84	-10.40
ML8: Mean minimum monthly flow, August	894.00	721.20	-19.33
ML9: Mean minimum monthly flow, September	693.71	501.95	-27.64
ML10: Mean minimum monthly flow, October	989.43	716.60	-27.57
ML11: Mean minimum monthly flow, November	1081.43	887.36	-17.95
ML12: Mean minimum monthly flow, December	1672.00	1315.24	-21.34
ML13: CV of minimum monthly flows	103.94	106.34	2.30
ML14: Mean minimum daily flow / mean median annual flow	0.39	0.22	-42.91
ML15: Mean minimum annual flow / mean annual flow	0.27	0.12	-54.78
ML16: Median minimum annual flow / median annual flow	0.35	0.20	-42.78
ML20: Ratio of baseflow volume to total flow volume	0.55	0.64	16.42
ML22: Mean annual minimum flow divided by catchment area	5.75	2.11	-63.28
RA1: Mean of positive changes from one day to next (rise rate)	484.53	1452.21	
RA2: CV, mean of positive changes from one day to next (rise rate)	216.87	443.88	
RA3: Mean of negative changes from one day to next (fall rate)	348.25	620.23	
RA4: CV, mean of negative changes from one day to next (fall rate)	180.87	601.69	
RA5: Ratio of days that are higher than previous day	0.42	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	70.00	50.88	
RA9: CV, number of flow reversals from one day to the next	35.86	41.38	

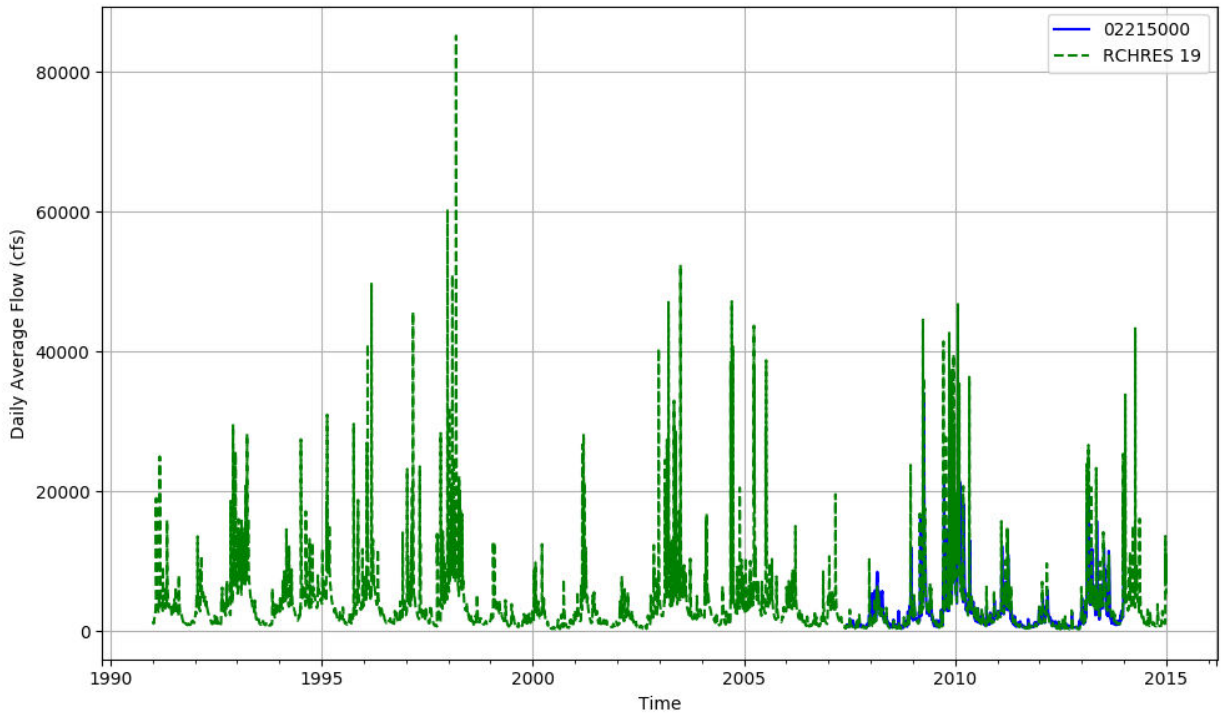


Figure T-03070104-7: Daily flow for HSFP reach 19 and USGS station 02215000.

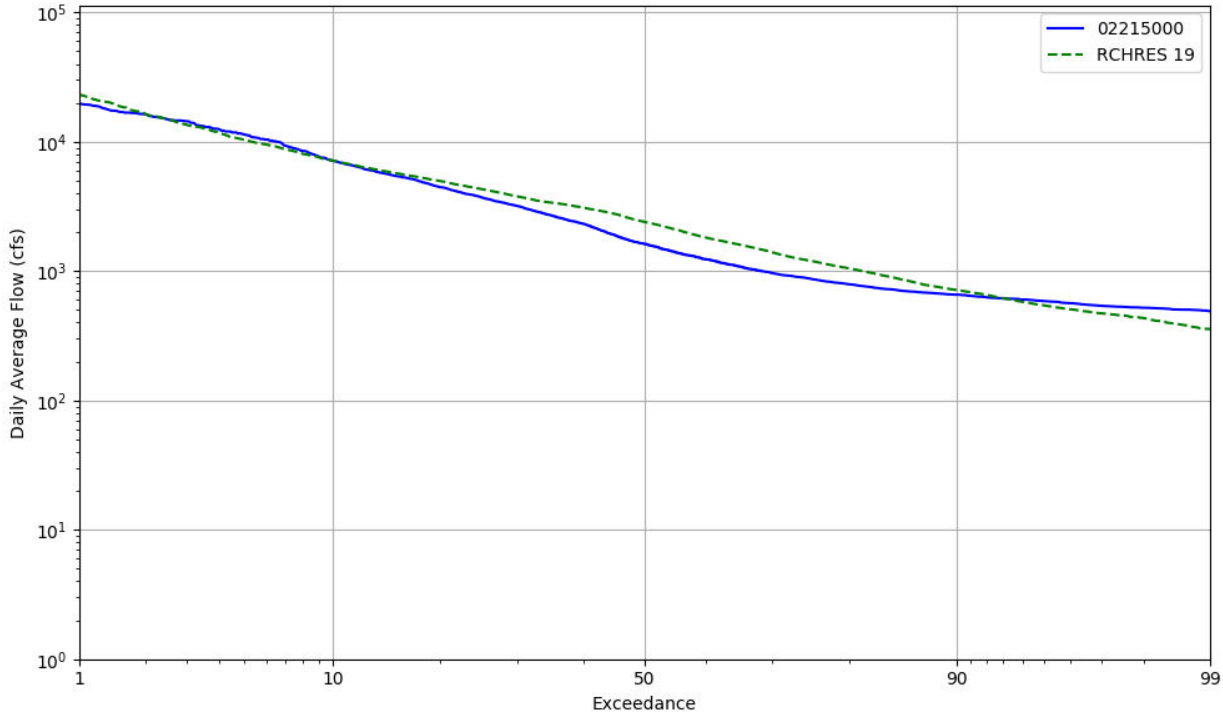


Figure T-03070104-8: Daily exceedance for HSFP reach 19 and USGS station 02215000.

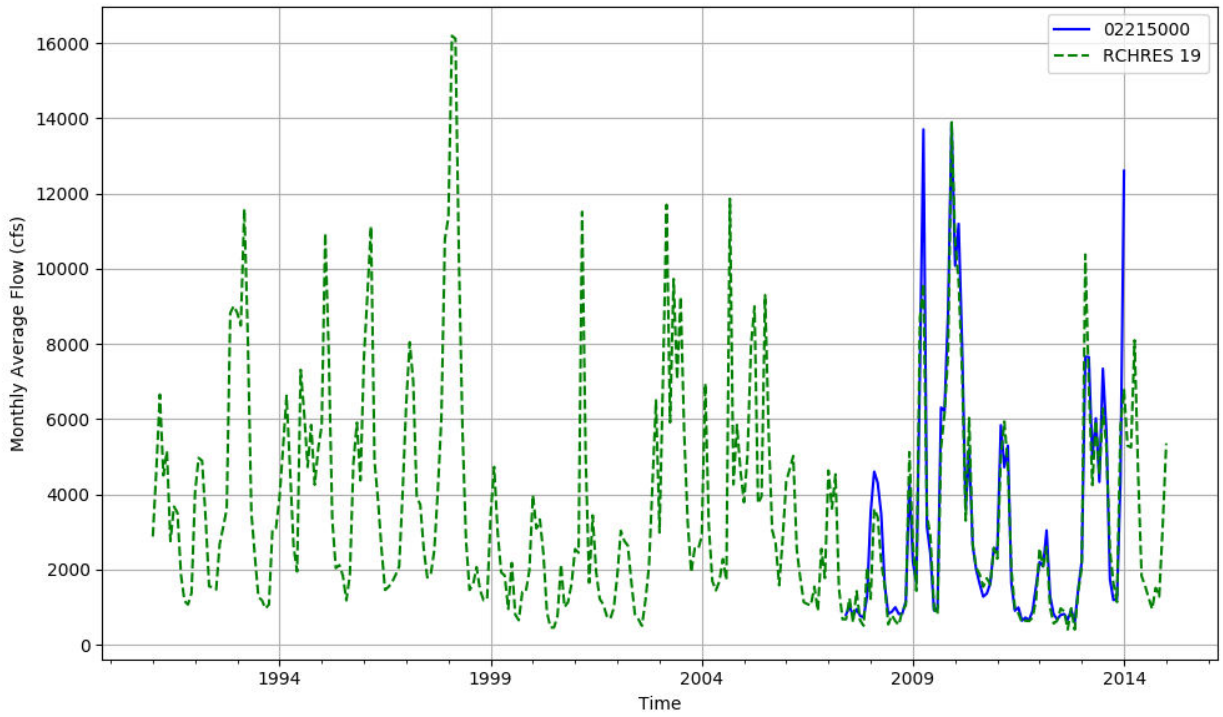


Figure T-03070104-9: Monthly flow for HSFP reach 19 and USGS station 02215000.

HSPF REACH 24, USGS GAUGE 02215260

Water-Data Report 2010
02215260 OCMULGEE RIVER AT ABBEVILLE, GA
Altamaha Basin Lower Ocmulgee Subbasin

LOCATION.--Lat 315947, long 831643 referenced to North American Datum of 1927, Wilcox County, GA, Hydrologic Unit 03070104, on downstream side of US Highway 280, and 1.7 miles east of Abbeville, GA.

DRAINAGE AREA.--4460.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2009 to September 2010.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 162 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Discharge records fair. Gage-height records good.

Table T-03070104-5: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02215260.

Statistic	Value
Bias	-142.58
Standard error	1753.99
Relative bias	-0.03
Relative standard error	0.39
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.77
Index of agreement	0.89

Table T-03070104-6: Hydrologic Indices Between USGS Gauge 02215260 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02215260	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	4074.39	4109.14	0.85
MA2: Median, all daily flows	2010.00	2176.91	8.30
MA3: CV, all daily flows	92.04	112.14	21.83
MA4: CV, log of all daily flows	110.21	102.27	-7.20
MA5: Mean daily flow / median daily flow	2.03	1.89	-6.88
MA9: (Q10 - Q90) / median daily flow	5.03	4.05	-19.57
MA10: (Q20 - Q80) / median daily flow	2.38	2.62	9.94

MA11: (Q25 - Q75) / median daily flow	1.82	2.12	16.16
MA12: Mean monthly flow, January	7682.90	6383.45	-16.91
MA13: Mean monthly flow, February	6739.36	7703.83	14.31
MA14: Mean monthly flow, March	5691.29	6012.89	5.65
MA15: Mean monthly flow, April	3733.40	3473.92	-6.95
MA16: Mean monthly flow, May	3175.16	3147.97	-0.86
MA17: Mean monthly flow, June	1926.96	1959.43	1.69
MA18: Mean monthly flow, July	2754.45	2267.49	-17.68
MA19: Mean monthly flow, August	2116.78	1781.72	-15.83
MA20: Mean monthly flow, September	945.19	1055.29	11.65
MA21: Mean monthly flow, October	2372.79	2323.53	-2.08
MA22: Mean monthly flow, November	2924.91	2528.21	-13.56
MA23: Mean monthly flow, December	5454.52	5397.15	-1.05
ML1: Mean minimum monthly flow, January	5624.00	4061.53	-27.78
ML2: Mean minimum monthly flow, February	3172.50	3929.43	23.86
ML3: Mean minimum monthly flow, March	3690.00	4759.20	28.98
ML4: Mean minimum monthly flow, April	2302.50	2898.26	25.87
ML5: Mean minimum monthly flow, May	2034.25	2159.68	6.17
ML6: Mean minimum monthly flow, June	1331.50	1678.94	26.09
ML7: Mean minimum monthly flow, July	1668.25	1784.45	6.97
ML8: Mean minimum monthly flow, August	1212.75	1357.11	11.90
ML9: Mean minimum monthly flow, September	732.00	923.98	26.23
ML10: Mean minimum monthly flow, October	1418.80	1126.38	-20.61
ML11: Mean minimum monthly flow, November	1495.00	1346.04	-9.96
ML12: Mean minimum monthly flow, December	2105.20	1711.12	-18.72
ML13: CV of minimum monthly flows	121.91	96.24	-21.06
ML14: Mean minimum daily flow / mean median annual flow	0.35	0.24	-32.38
ML15: Mean minimum annual flow / mean annual flow	0.24	0.13	-44.70
ML16: Median minimum annual flow / median annual flow	0.28	0.18	-35.09
ML20: Ratio of baseflow volume to total flow volume	0.57	0.66	15.79
ML22: Mean annual minimum flow divided by catchment area	6.24	3.76	-39.67
RA1: Mean of positive changes from one day to next (rise rate)	535.82	1697.95	
RA2: CV, mean of positive changes from one day to next (rise rate)	189.73	399.95	
RA3: Mean of negative changes from one day to next (fall rate)	388.16	745.79	
RA4: CV, mean of negative changes from one day to next (fall rate)	173.14	532.21	
RA5: Ratio of days that are higher than previous day	0.42	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.04	
RA8: Number of flow reversals from one day to the next	65.80	49.80	
RA9: CV, number of flow reversals from one day to the next	37.37	51.48	

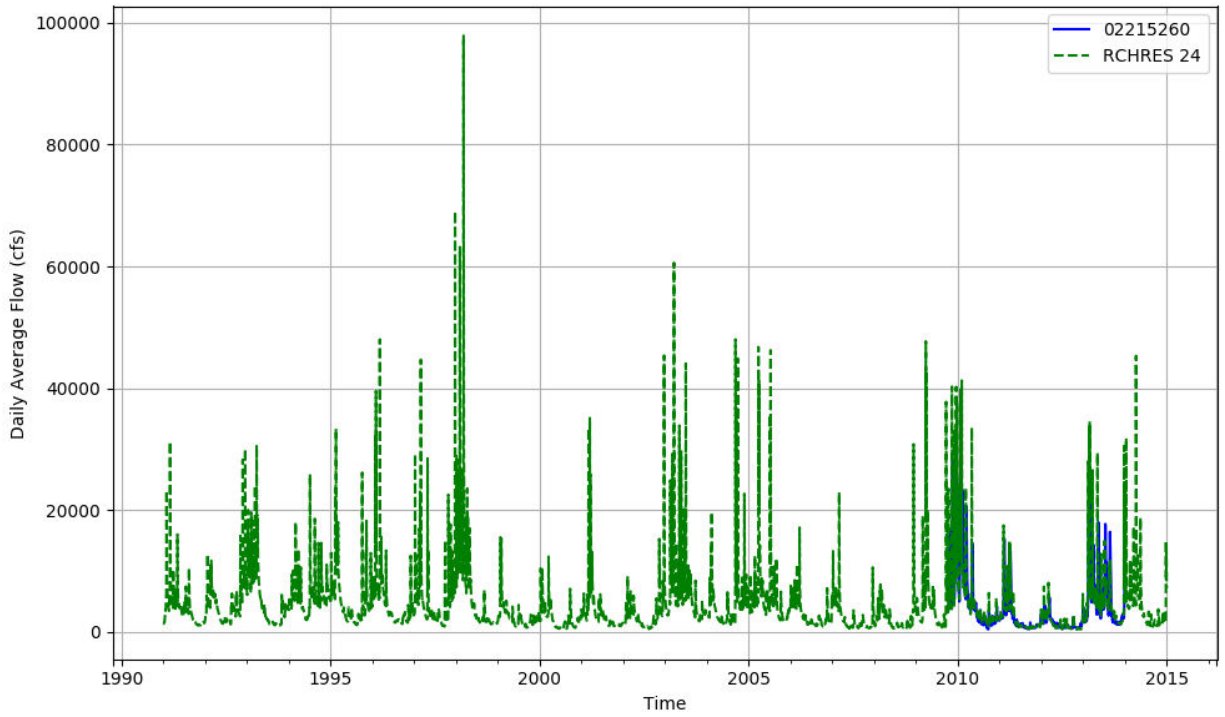


Figure T-03070104-10: Daily flow for HSFP reach 24 and USGS station 02215260.

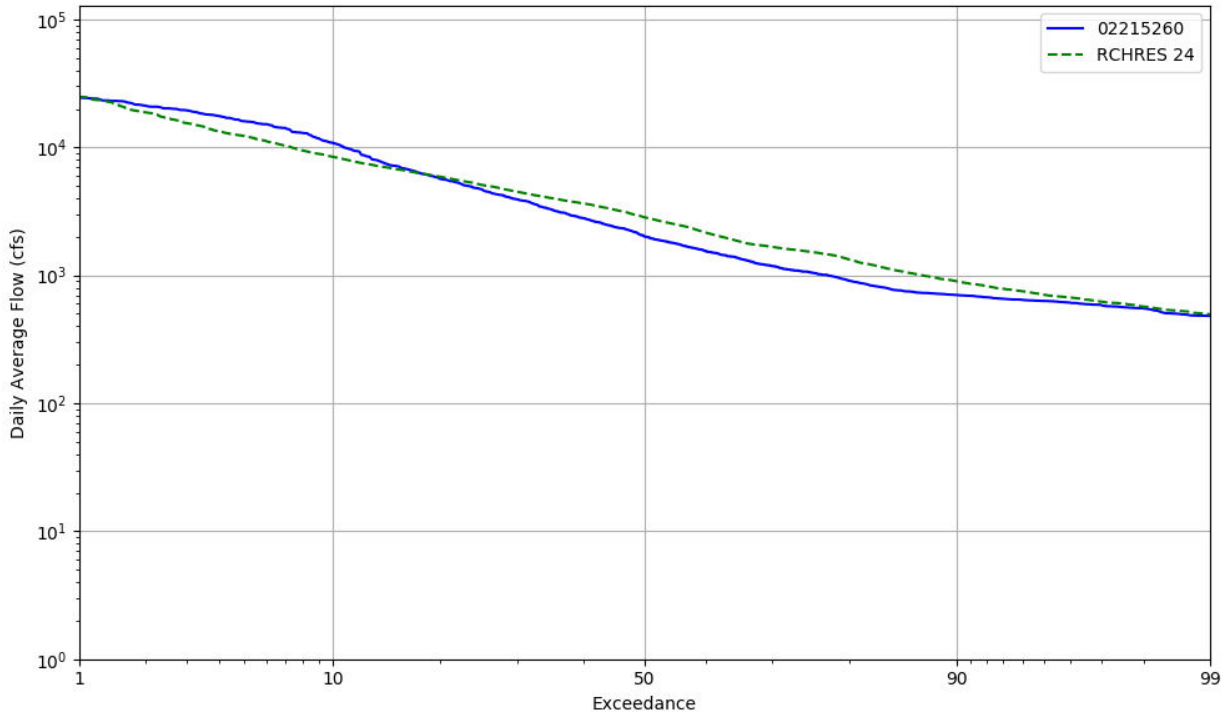


Figure T-03070104-11: Daily exceedance for HSFP reach 24 and USGS station 02215260.

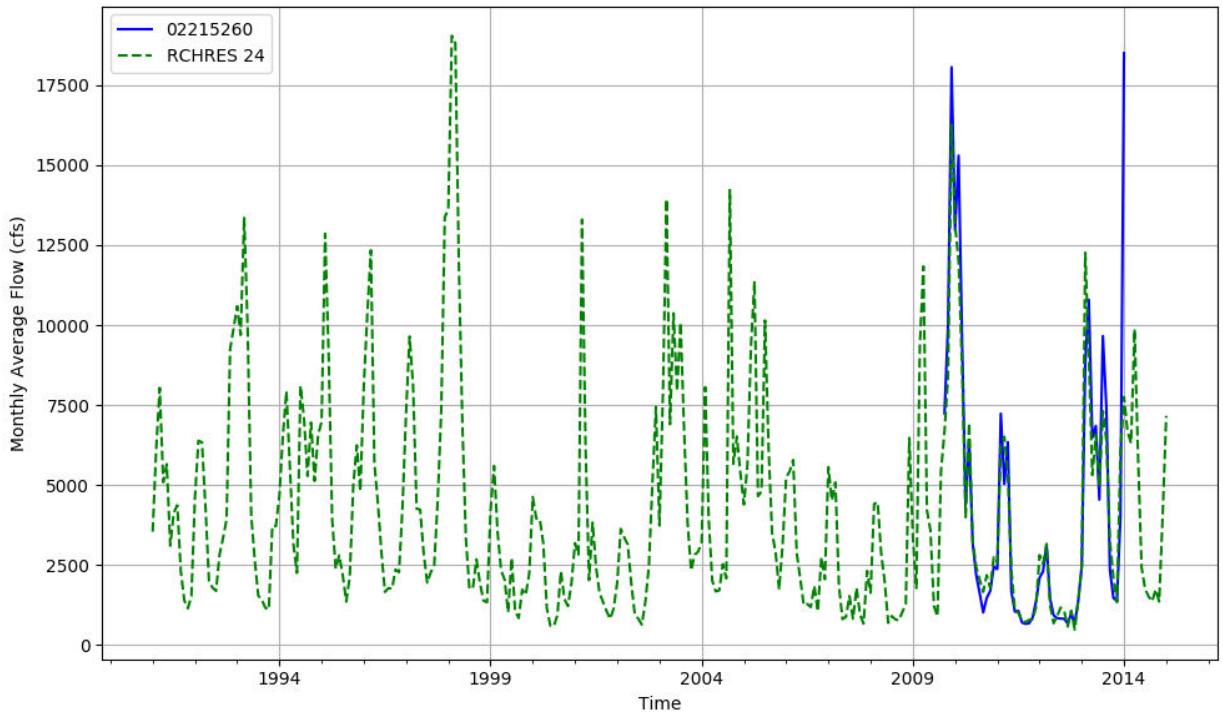


Figure T-03070104-12: Monthly flow for HSFP reach 24 and USGS station 02215260.

HSPF REACH 28, USGS GAUGE 02215500

Water-Data Report 2009
02215500 OCMULGEE RIVER AT LUMBER CITY, GA
Altamaha Basin Lower Ocmulgee Subbasin

LOCATION.--Lat 315512, long 824027 referenced to North American Datum of 1927, Jeff Davis County, GA, Hydrologic Unit 03070104, near left bank on downstream end of pier of bridge on US 341, 500 ft downstream from Southern Railway bridge, 1.0 mi upstream from confluence with Little Ocmulgee River, 12.0 mi upstream from confluence with Oconee River, and at Lumber City.

DRAINAGE AREA.--5,180 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1936 to current year.
GAGE-HEIGHT: October 1998 to current year. Gage-height records collected at same site since 1908 are contained in reports of National Weather Service.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 87.48 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to November 8, 1937, a non-recording gage was located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair. Gage-height records fair.

Table T-03070104-7: Comparison Statistics Between HSPF Reach 28 and USGS Gauge 02215500.

Statistic	Value
Bias	-220.83
Standard error	1642.68
Relative bias	-0.04
Relative standard error	0.35
Nash-Sutcliffe coefficient	0.88
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03070104-8: Hydrologic Indices Between USGS Gauge 02215500 and HSPF Reach 28.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02215500	Simulated Reach 28	Percent Difference
MA1: Mean, all daily flows	5061.75	4823.63	-4.70
MA2: Median, all daily flows	3210.00	3037.91	-5.36
MA3: CV, all daily flows	83.79	102.20	21.97
MA4: CV, log of all daily flows	85.11	86.95	2.16
MA5: Mean daily flow / median daily flow	1.58	1.59	0.69
MA9: (Q10 - Q90) / median daily flow	3.02	3.11	2.88
MA10: (Q20 - Q80) / median daily flow	1.79	2.03	13.55
MA11: (Q25 - Q75) / median daily flow	1.37	1.63	18.83
MA12: Mean monthly flow, January	6113.31	6351.19	3.89
MA13: Mean monthly flow, February	8348.09	8941.99	7.11
MA14: Mean monthly flow, March	9691.48	9948.96	2.66
MA15: Mean monthly flow, April	7471.90	6372.33	-14.72
MA16: Mean monthly flow, May	3905.71	3951.69	1.18
MA17: Mean monthly flow, June	3195.71	2671.70	-16.40
MA18: Mean monthly flow, July	3916.84	2950.35	-24.68
MA19: Mean monthly flow, August	2875.67	2278.38	-20.77
MA20: Mean monthly flow, September	2519.69	2329.89	-7.53
MA21: Mean monthly flow, October	2856.34	2475.10	-13.35
MA22: Mean monthly flow, November	3018.82	2992.16	-0.88
MA23: Mean monthly flow, December	4778.02	4879.09	2.12
ML1: Mean minimum monthly flow, January	3852.92	3732.95	-3.11
ML2: Mean minimum monthly flow, February	5004.78	5080.12	1.51
ML3: Mean minimum monthly flow, March	5251.30	5439.61	3.59
ML4: Mean minimum monthly flow, April	3881.74	4184.31	7.79
ML5: Mean minimum monthly flow, May	2539.17	2640.80	4.00
ML6: Mean minimum monthly flow, June	2046.04	1950.66	-4.66
ML7: Mean minimum monthly flow, July	2110.70	1843.12	-12.68
ML8: Mean minimum monthly flow, August	1913.43	1683.45	-12.02
ML9: Mean minimum monthly flow, September	1496.91	1332.28	-11.00
ML10: Mean minimum monthly flow, October	1851.70	1568.08	-15.32
ML11: Mean minimum monthly flow, November	1995.13	1770.04	-11.28
ML12: Mean minimum monthly flow, December	3070.22	2692.58	-12.30
ML13: CV of minimum monthly flows	76.06	83.46	9.73
ML14: Mean minimum daily flow / mean median annual flow	0.38	0.26	-30.54
ML15: Mean minimum annual flow / mean annual flow	0.28	0.17	-37.26
ML16: Median minimum annual flow / median annual flow	0.35	0.25	-29.80
ML20: Ratio of baseflow volume to total flow volume	0.71	0.72	1.49
ML22: Mean annual minimum flow divided by catchment area	11.46	7.43	-35.18
RA1: Mean of positive changes from one day to next (rise rate)	432.49	1405.49	
RA2: CV, mean of positive changes from one day to next (rise rate)	279.83	391.11	
RA3: Mean of negative changes from one day to next (fall rate)	339.46	603.90	
RA4: CV, mean of negative changes from one day to next (fall rate)	215.34	488.07	
RA5: Ratio of days that are higher than previous day	0.42	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.04	

RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.03	
RA8: Number of flow reversals from one day to the next	64.04	44.29	
RA9: CV, number of flow reversals from one day to the next	20.29	37.32	

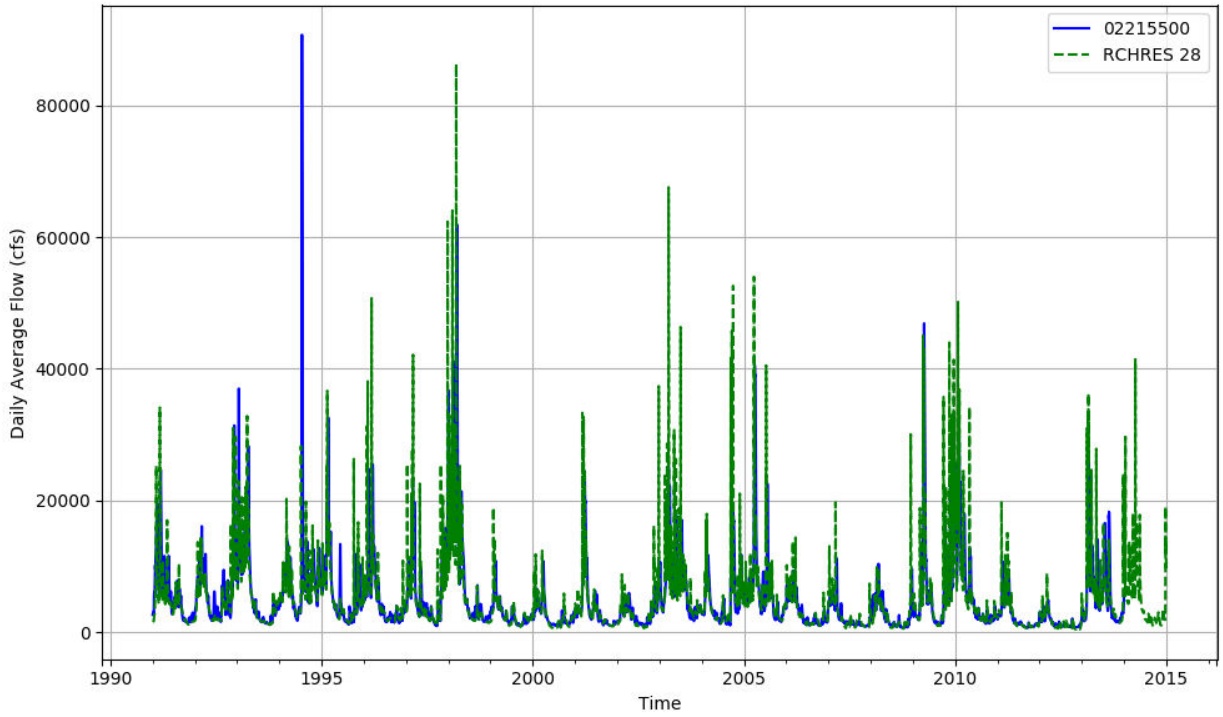


Figure T-03070104-13: Daily flow for HSFP reach 28 and USGS station 02215500.

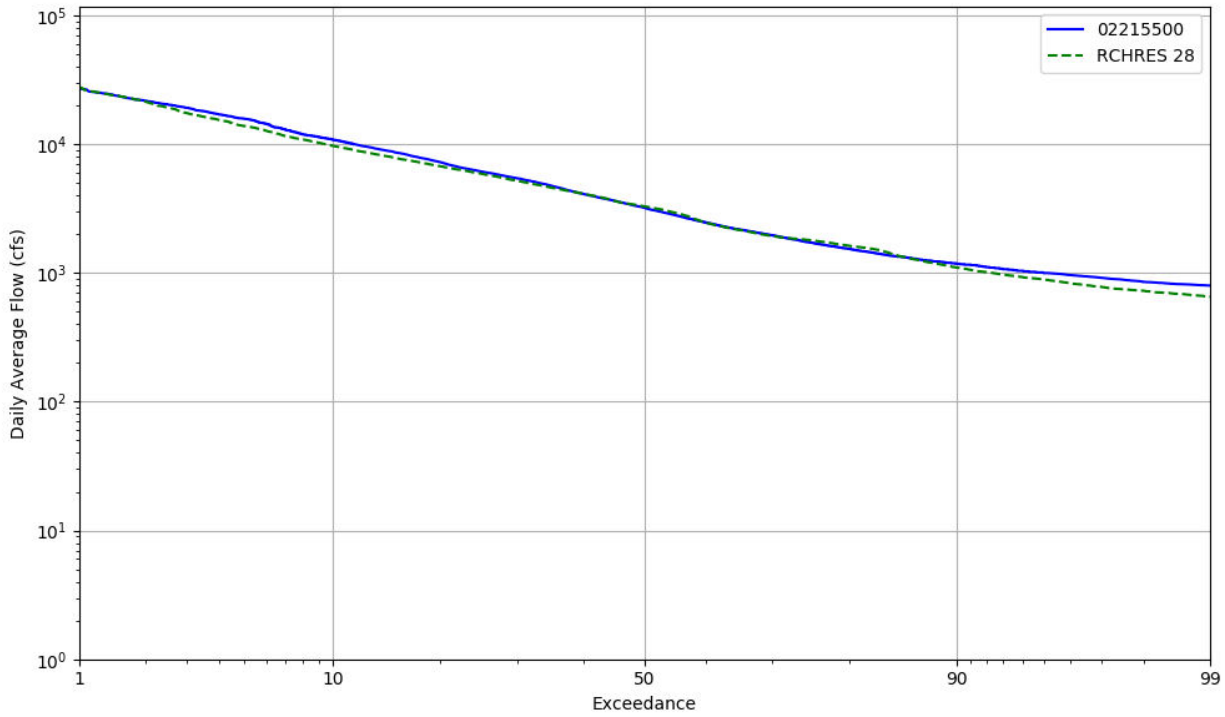


Figure T-03070104-14: Daily exceedance for HSFP reach 28 and USGS station 02215500.

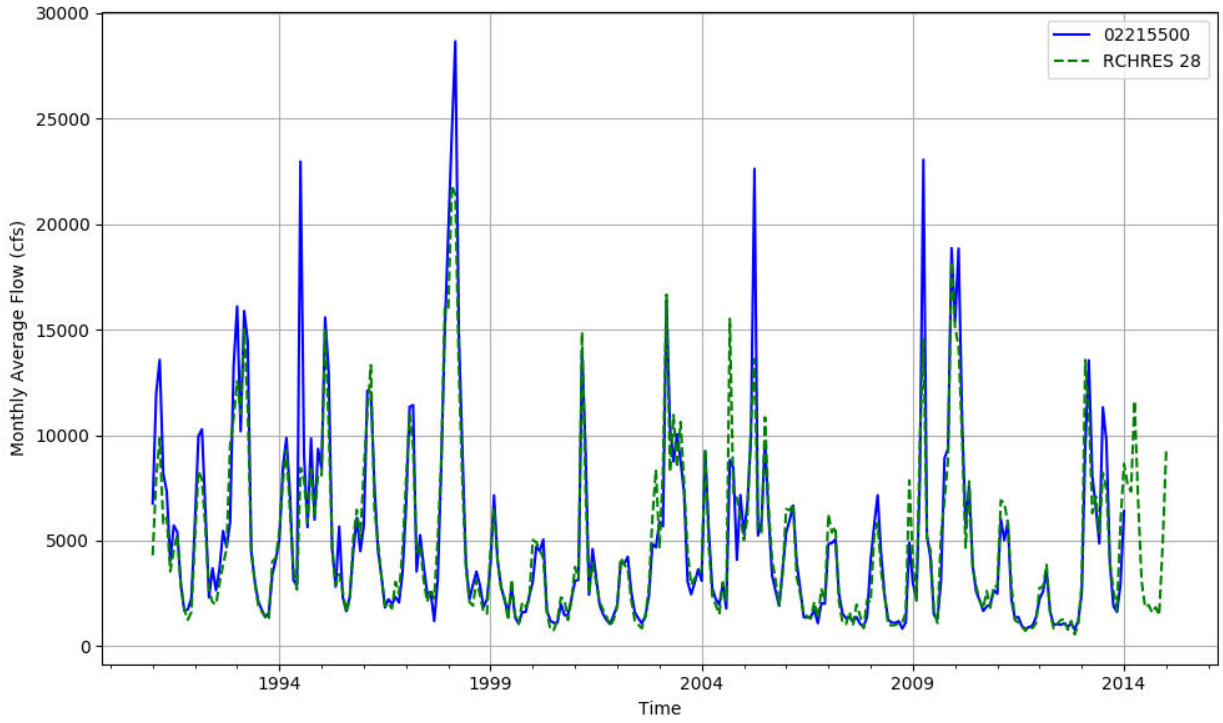


Figure T-03070104-15: Monthly flow for HSFP reach 28 and USGS station 02215500.

Table T-03070104-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7943	63938	17803	3780	1197	2513	633513	31722	110152	94259	165731	244125	1306	80729	21461	1480175
AREA(%)	0.5	4.3	1.2	0.3	0.1	0.2	42.6	2.1	7.4	6.3	11.1	16.4	0.1	5.4	1.4	99.5
IMPERVIOUS																
AREA(ACRES)		3520	2034	956	1200											7710
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	42.0	43.2	44.1	44.7	45.1	43.0	42.7	41.5	42.6	42.8	42.7	42.6	58.2	49.9	44.0	42.9
SURLI		0.0	8.4	9.9	10.8									0.0	1.5	0.2
UZLI																0.0
LZLI		0.0	0.9	0.6	0.5									0.0	3.0	0.1
SURO: PERVIOUS	7.7	0.2	0.3	0.6	0.5	0.3	0.0	0.1	0.1	0.1	0.0	8.2	0.5	0.1	0.1	1.4
SURO: IMPERVIOUS		25.6	26.6	27.3	27.8											0.1
SURO: COMBINED	7.7	1.5	3.0	6.0	14.2	0.3	0.0	0.1	0.1	0.1	0.0	8.2	0.5	0.1	0.1	1.6
IFWO		4.6	6.0	6.2	6.8	4.0	1.2	3.4	2.9	3.0	1.7		9.1	3.6	1.8	1.7
AGWO	1.0	7.2	14.3	15.1	14.9	12.3	7.0	11.6	8.3	8.9	8.7	0.9	14.6	12.9	12.6	7.0
AGWI	2.1	10.0	17.0	17.8	17.4	15.2	10.0	13.6	11.0	11.8	12.0	1.9	13.3	14.7	15.1	9.5
IGWI	0.4	2.0	3.5	3.6	3.5	3.1	2.0	2.8	2.2	2.4	2.5	0.4	2.7	3.0	3.1	1.9
CEPE		11.6	8.0	8.0	11.5	8.0	12.2	9.8	11.6	9.5	6.1	19.4	22.4	12.9	6.7	12.2
UZET	4.2	2.7	3.7	3.8	3.2	3.4	2.0	3.4	2.5	2.7	3.1	1.6	2.8	3.1	3.4	2.3
LZET	1.5	13.8	16.2	16.2	14.7	10.5	18.1	10.3	14.3	15.3	19.7	0.8	9.5	14.3	19.8	14.2
AGWET	1.3	2.9	3.1	3.1	2.8	3.2	2.9	3.1	2.9	3.1	3.4	1.0	1.8	2.7	3.3	2.7
BASET	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURET	29.5											13.6				2.4
PERO	8.7	12.0	20.6	22.0	22.2	16.6	8.2	15.0	11.3	12.0	10.4	9.1	24.1	16.7	14.5	10.1
IGWI	0.4	2.0	3.5	3.6	3.5	3.1	2.0	2.8	2.2	2.4	2.5	0.4	2.7	3.0	3.1	1.9
TAET: PERVIOUS	36.5	31.1	31.1	31.1	32.2	25.2	35.4	26.6	31.4	30.6	32.3	36.5	36.5	33.1	33.2	33.8
IMPEV: IMPERVIOUS		17.8	17.6	17.5	17.5											0.1
ET: COMBINED	36.5	30.4	29.7	28.4	24.8	25.2	35.4	26.6	31.4	30.6	32.3	36.5	36.5	33.1	33.2	33.9
PET	43.9	43.3	43.0	42.8	42.7	43.3	43.6	44.2	43.6	43.4	43.5	43.7	42.9	43.5	42.8	43.3

Table T-03070104-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7943	63938	17803	3780	1197	2513	633513	31722	110152	94259	165731	244125	1306	80729	21461	1480175
AREA(%)	0.5	4.3	1.2	0.3	0.1	0.2	42.6	2.1	7.4	6.3	11.1	16.4	0.1	5.4	1.4	99.5
IMPERVIOUS																
AREA(ACRES)		3520	2034	956	1200											7710
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	59.3	59.3	59.3	59.3	59.2	59.5	59.3	59.4	59.3	59.4	59.1	59.2	68.9	70.2	61.1	59.6
SURLI		0.0	9.0	10.8	11.9									0.0	2.4	0.2
UZLI																0.0
LZLI		0.0	0.9	0.6	0.4									0.0	5.0	0.1
SURO: PERVIOUS	15.2	0.2	0.2	0.4	0.3	0.4	0.0	0.2	0.1	0.1	0.1	15.6	0.3	0.1	0.1	2.7
SURO: IMPERVIOUS		39.4	39.4	39.4	39.4											0.2
SURO: COMBINED	15.2	2.3	4.3	8.3	19.9	0.4	0.0	0.2	0.1	0.1	0.1	15.6	0.3	0.1	0.1	2.9
IFWO		7.8	8.8	8.8	9.1	6.7	2.2	7.0	5.2	5.3	3.1		10.6	5.9	3.2	3.0
AGWO	1.3	9.8	17.8	19.0	18.8	16.0	10.0	14.7	11.4	12.1	11.9	1.2	13.7	17.9	19.2	9.7
AGWI	2.2	16.9	24.5	25.5	24.9	22.9	18.0	21.5	18.7	19.7	20.1	1.9	19.2	23.9	25.6	16.2
IGWI	0.4	3.4	5.0	5.2	5.1	4.7	3.7	4.4	3.8	4.0	4.1	0.4	3.9	4.9	5.2	3.3
CEPE		13.3	9.7	9.7	13.2	9.7	13.9	11.3	13.3	11.1	7.8	20.9	20.4	15.9	8.7	13.9
UZET	3.6	2.6	3.4	3.5	2.9	3.3	2.0	3.3	2.5	2.6	3.0	1.3	2.4	3.2	3.5	2.2
LZET	1.6	14.2	16.9	16.9	15.3	11.1	18.3	11.0	14.8	15.8	20.0	0.7	11.5	15.7	21.5	14.5
AGWET	0.8	3.6	3.8	3.8	3.5	3.9	3.6	3.8	3.6	3.8	4.1	0.7	2.9	3.3	3.9	3.1
BASET	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURET	33.9											16.0				2.8
PERO	16.5	17.8	26.9	28.2	28.3	23.1	12.2	21.9	16.7	17.5	15.0	16.8	24.6	23.9	22.5	15.4
IGWI	0.4	3.4	5.0	5.2	5.1	4.7	3.7	4.4	3.8	4.0	4.1	0.4	3.9	4.9	5.2	3.3
TAET: PERVIOUS	40.0	33.7	33.9	33.9	35.0	28.0	37.9	29.5	34.3	33.4	35.0	39.6	37.2	38.1	37.6	36.7
IMPEV: IMPERVIOUS		19.6	19.6	19.6	19.5											0.1
ET: COMBINED	40.0	33.0	32.4	31.0	27.2	28.0	37.9	29.5	34.3	33.4	35.0	39.6	37.2	38.1	37.6	36.8
PET	52.2	51.7	51.5	51.3	51.3	51.8	52.0	52.7	51.9	51.7	51.8	52.2	51.5	51.9	50.7	51.7

Table T-03070104-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7943	63938	17803	3780	1197	2513	633513	31722	110152	94259	165731	244125	1306	80729	21461	1480175
AREA(%)	0.5	4.3	1.2	0.3	0.1	0.2	42.6	2.1	7.4	6.3	11.1	16.4	0.1	5.4	1.4	99.5
IMPERVIOUS																
AREA(ACRES)		3520	2034	956	1200											7710
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	42.9	44.4	45.1	45.8	45.9	43.4	43.7	41.9	43.7	44.3	44.1	43.2	60.4	51.3	47.7	44.0
SURLI		0.0	9.2	11.0	12.1									0.0	1.9	0.2
UZLI																0.0
LZLI		0.0	1.0	0.6	0.5									0.0	4.1	0.1
SURO: PERVIOUS	11.9	0.2	0.2	0.4	0.3	0.3	0.0	0.1	0.1	0.1	0.0	12.3	0.3	0.1	0.1	2.1
SURO: IMPERVIOUS		27.0	27.8	28.4	28.6											0.1
SURO: COMBINED	11.9	1.6	3.0	6.1	14.5	0.3	0.0	0.1	0.1	0.1	0.0	12.3	0.3	0.1	0.1	2.3
IFWO		5.5	6.6	7.0	7.3	4.4	1.7	3.6	3.6	3.8	2.4		8.8	4.3	3.5	2.2
AGWO	1.1	10.0	17.2	18.3	18.1	15.1	11.4	14.2	11.7	12.4	12.7	1.0	14.3	16.1	17.8	10.3
AGWI	2.0	10.3	17.8	18.9	18.5	15.4	11.2	14.3	11.6	12.5	12.8	1.7	14.2	15.3	17.4	10.3
IGWI	0.4	2.1	3.6	3.9	3.8	3.2	2.3	2.9	2.4	2.5	2.6	0.3	2.9	3.1	3.6	2.1
CEPE		11.3	8.0	8.0	11.2	7.9	11.9	9.3	11.4	9.3	6.2	19.0	22.8	12.7	7.3	12.0
UZET	4.8	2.3	3.2	3.3	2.8	3.0	1.7	3.0	2.1	2.2	2.5	1.7	2.2	2.6	2.9	2.0
LZET	2.0	15.0	17.6	17.7	16.3	11.4	19.0	11.0	15.3	16.4	20.6	0.9	10.7	15.7	21.4	15.0
AGWET	1.0	3.5	3.7	3.7	3.4	3.8	3.5	3.7	3.5	3.7	4.0	0.8	2.3	3.4	3.8	3.1
BASET	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURET	27.7											13.1				2.3
PERO	13.0	15.7	24.1	25.7	25.7	19.8	13.1	17.9	15.4	16.4	15.2	13.3	23.4	20.5	21.3	14.6
IGWI	0.4	2.1	3.6	3.9	3.8	3.2	2.3	2.9	2.4	2.5	2.6	0.3	2.9	3.1	3.6	2.1
TAET: PERVIOUS	35.6	32.2	32.5	32.7	33.7	26.0	36.2	27.1	32.4	31.7	33.4	35.6	38.1	34.5	35.5	34.5
IMPEV: IMPERVIOUS		17.7	17.6	17.6	17.6											0.1
ET: COMBINED	35.6	31.4	31.0	29.6	25.6	26.0	36.2	27.1	32.4	31.7	33.4	35.6	38.1	34.5	35.5	34.6
PET	49.3	48.8	48.4	48.2	48.1	48.7	49.0	49.7	49.0	48.8	48.9	49.2	48.4	49.0	47.9	48.7

Table T-03070104-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7943	63938	17803	3780	1197	2513	633513	31722	110152	94259	165731	244125	1306	80729	21461	1480175
AREA(%)	0.5	4.3	1.2	0.3	0.1	0.2	42.6	2.1	7.4	6.3	11.1	16.4	0.1	5.4	1.4	99.5
IMPERVIOUS																
AREA(ACRES)		3520	2034	956	1200											7710
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	47.0	46.9	46.8	46.8	46.8	46.7	46.9	47.1	46.9	46.9	46.8	47.0	66.0	54.8	47.6	47.1
SURLI		0.0	7.3	8.6	9.4									0.0	2.3	0.2
UZLI																0.0
LZLI		0.0	0.8	0.6	0.5									0.0	4.1	0.1
SURO: PERVIOUS	10.5	0.2	0.2	0.3	0.3	0.2	0.0	0.1	0.1	0.1	0.0	10.7	0.3	0.1	0.0	1.9
SURO: IMPERVIOUS		29.1	29.1	29.1	29.2											0.2
SURO: COMBINED	10.5	1.7	3.2	6.1	14.7	0.2	0.0	0.1	0.1	0.1	0.0	10.7	0.3	0.1	0.0	2.0
IFWO		4.3	5.0	5.0	5.3	3.7	1.1	3.8	2.8	2.9	1.7		8.5	3.3	1.8	1.6
AGWO	1.1	8.4	14.2	14.9	14.6	13.1	8.2	12.5	9.5	10.0	9.7	1.0	15.8	13.5	13.8	7.9
AGWI	2.1	12.1	18.2	18.9	18.3	17.1	11.9	16.4	13.2	13.9	14.0	1.8	18.3	17.1	17.9	11.2
IGWI	0.4	2.5	3.7	3.9	3.7	3.5	2.4	3.4	2.7	2.8	2.8	0.4	3.7	3.5	3.7	2.3
CEPE		12.0	8.8	8.8	11.9	8.8	12.6	10.3	12.1	10.1	7.1	19.0	24.2	13.6	7.8	12.6
UZET	4.2	2.2	3.0	3.0	2.5	2.8	1.6	2.9	2.1	2.2	2.5	1.5	2.0	2.6	2.7	1.9
LZET	1.9	13.4	16.0	16.0	14.6	10.4	17.1	10.1	13.8	14.8	18.8	0.8	9.0	14.7	20.0	13.6
AGWET	1.0	3.2	3.5	3.4	3.2	3.5	3.2	3.4	3.2	3.4	3.7	0.8	2.0	3.0	3.6	2.9
BASET	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURET	27.8											12.5				2.2
PERO	11.6	13.0	19.5	20.3	20.2	17.0	9.4	16.3	12.4	12.9	11.4	11.7	24.6	16.9	15.7	11.4
IGWI	0.4	2.5	3.7	3.9	3.7	3.5	2.4	3.4	2.7	2.8	2.8	0.4	3.7	3.5	3.7	2.3
TAET: PERVIOUS	34.8	31.0	31.3	31.3	32.3	25.6	34.6	26.8	31.3	30.6	32.0	34.7	37.2	34.0	34.1	33.3
IMPEV: IMPERVIOUS		17.8	17.7	17.7	17.6											0.1
ET: COMBINED	34.8	30.3	29.9	28.6	25.0	25.6	34.6	26.8	31.3	30.6	32.0	34.7	37.2	34.0	34.1	33.3
PET	47.0	46.6	46.4	46.3	46.2	46.6	46.7	47.2	46.7	46.6	46.7	46.9	46.3	46.7	46.1	46.5

Table T-03070104-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
12	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
13	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
19	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
20	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
21	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
22	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
23	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
24	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
25	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
26	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
27	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
28	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
29	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
30	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
31	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

Table T-03070104-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070104-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
2	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
3	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
4	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
5	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
6	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
7	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
8	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
9	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
10	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
11	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
12	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
13	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
14	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
15	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
16	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
17	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
18	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
19	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
20	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
21	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
22	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
23	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
24	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
25	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
26	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
27	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
28	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
29	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
30	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300
31	0.000	0.100	0.050	0.050	0.100	0.050	0.110	0.069	0.100	0.068	0.030	0.300

Table T-03070104-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
2	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
3	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
4	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
5	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
6	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
7	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
8	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
9	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
10	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
11	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
12	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
13	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
14	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
15	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
16	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
17	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
18	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
19	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
20	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
21	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
22	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
23	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
24	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
25	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
26	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
27	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
28	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
29	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
30	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
31	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170

Table T-03070104-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
2	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
3	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
4	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
5	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
6	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
7	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
8	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
9	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
10	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
11	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
12	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
13	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
14	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
15	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
16	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
17	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
18	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
19	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
20	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
21	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
22	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
23	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
24	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
25	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
26	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
27	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
28	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
29	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
30	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001
31	0.001	0.286	0.286	0.286	0.286	0.408	0.612	0.408	0.408	0.408	0.490	0.001

Table T-03070104-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
2		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
3		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
4		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
5		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
6		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
7		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
8		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
9		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
10		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
11		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
12		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
13		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
14		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
15		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
16		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
17		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
18		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
19		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
20		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
21		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
22		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
23		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
24		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
25		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
26		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
27		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
28		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
29		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	

30		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	
31		2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	2.542	

Table T-03070104-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
2	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
3	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
4	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
5	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
6	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
7	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
8	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
9	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
10	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
11	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
12	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
13	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
14	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
15	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
16	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
17	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
18	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
19	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
20	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
21	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
22	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
23	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
24	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
25	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
26	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
27	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
28	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
29	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
30	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658
31	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658	0.658

Table T-03070104-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
2	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
3	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
4	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
5	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
6	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
7	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
8	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
9	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
10	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
11	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
12	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
13	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
14	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
15	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
16	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
17	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
18	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
19	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
20	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
21	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
22	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
23	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
24	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
25	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
26	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
27	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
28	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
29	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
30	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418
31	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418	1.418

Table T-03070104-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
2	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
3	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
4	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
5	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
6	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
7	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
8	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
9	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
10	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
11	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
12	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
13	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
14	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
15	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
16	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
17	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
18	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
19	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
20	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
21	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
22	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
23	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
24	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
25	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
26	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
27	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
28	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
29	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
30	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900
31	0.262	0.439	0.439	0.439	0.439	0.293	0.622	0.293	0.439	0.439	0.512	0.900

Table T-03070104-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
2	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
3	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
4	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
5	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
6	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
7	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
8	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
9	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
10	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
11	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
12	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
13	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
14	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
15	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
16	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
17	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
18	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
19	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
20	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
21	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
22	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
23	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
24	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
25	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
26	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
27	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
28	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
29	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
30	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100
31	0.200	2.925	2.925	2.925	2.925	3.290	4.387	3.290	3.290	3.290	3.656	0.100

Table T-03070104-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03070105

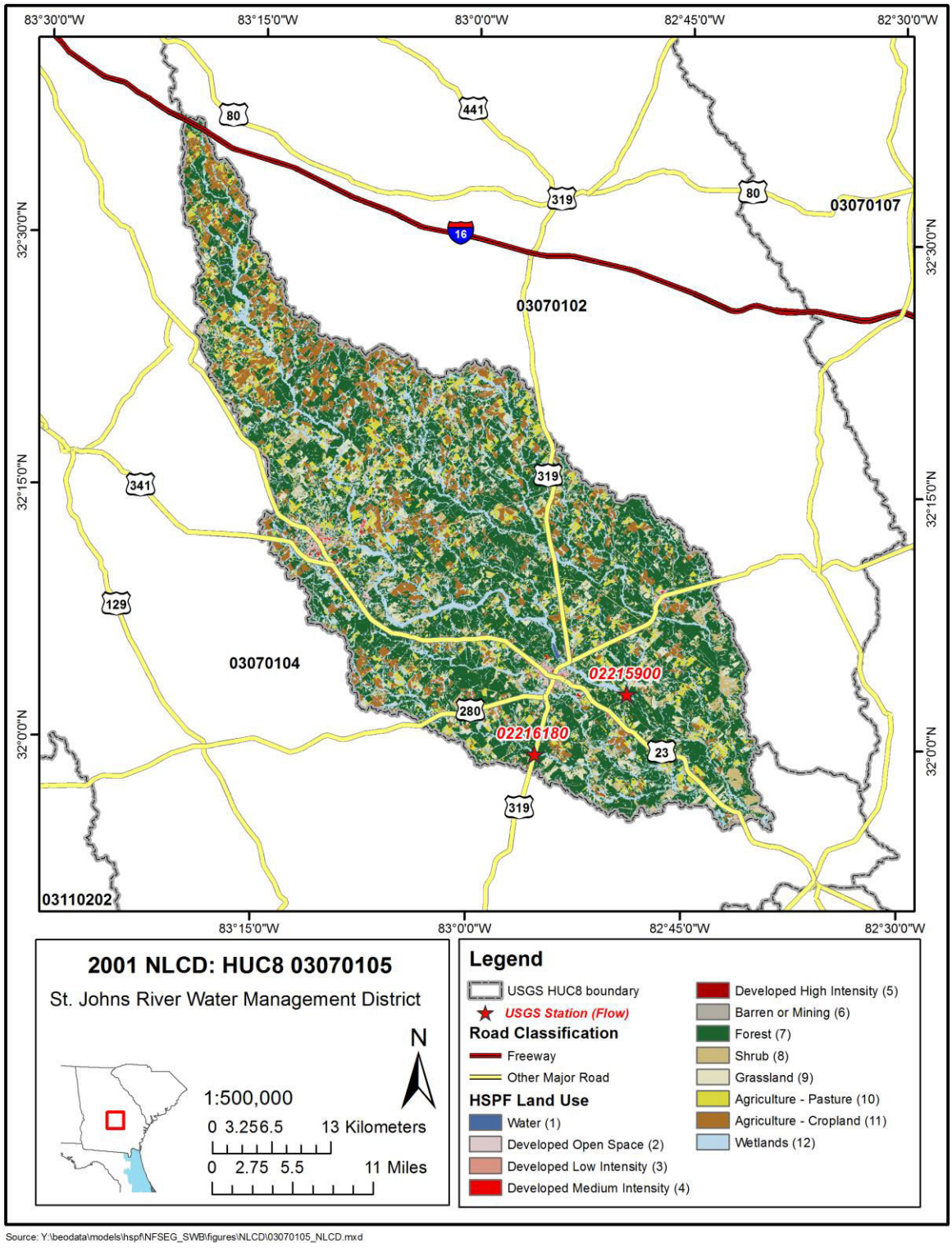


Figure T-03070105-1: Land Cover from the National Land Cover Database.

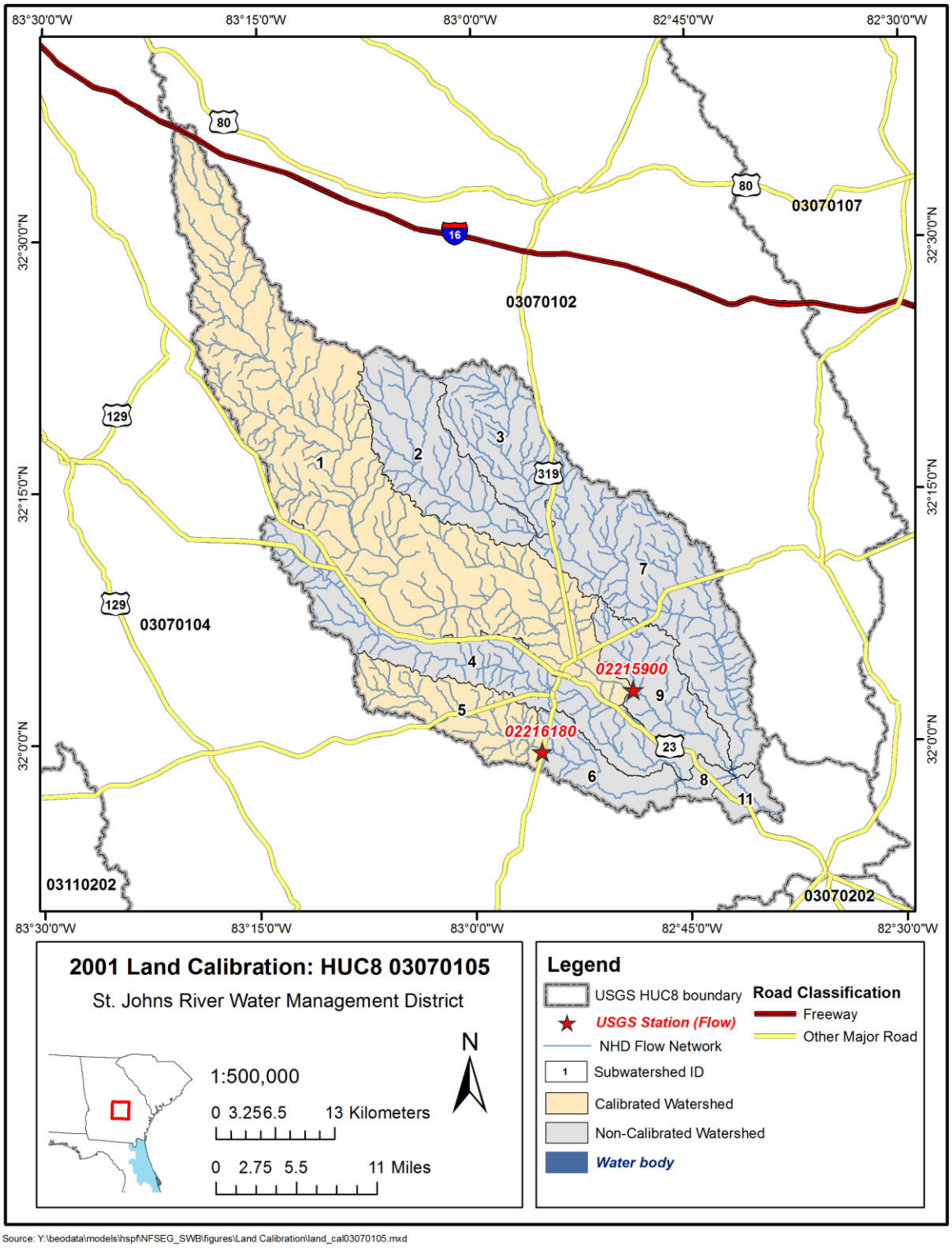


Figure T-03070105-2: Calibrated sub-watersheds.

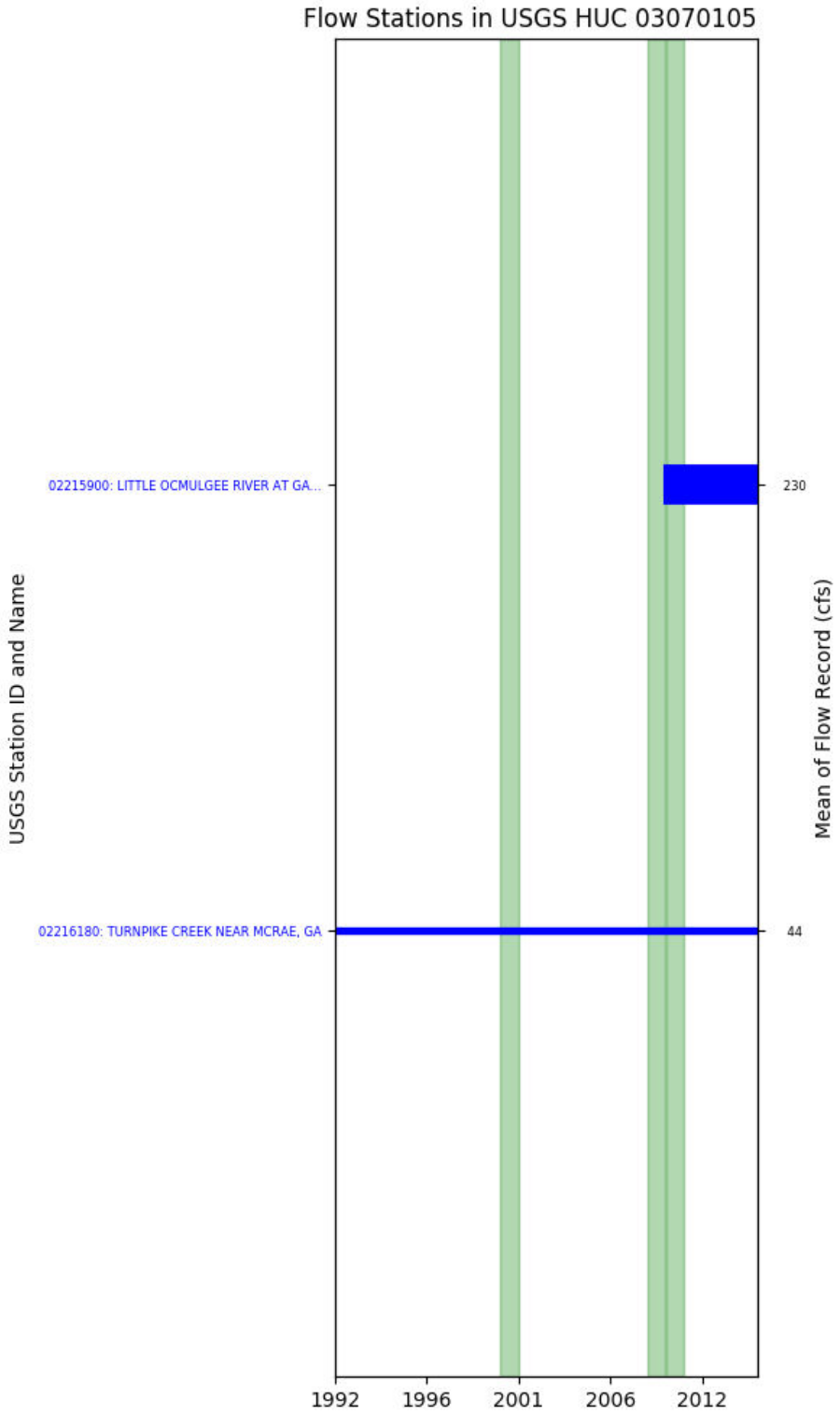


Figure T-03070105-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 01, USGS GAUGE 02215900

Water-Data Report 2009
02215900 LITTLE OCMULGEE RIVER AT GA 149, AT SCOTLAND, GA
Altamaha Basin Little Ocmulgee Subbasin

LOCATION.--Lat 320308, long 824857 referenced to North American Datum of 1927, Telfair County, GA, Hydrologic Unit 03070105, at bridge on State Route 165, 1.6 miles north of Chauncy, GA.

DRAINAGE AREA.--316 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 1983 to July 1985, June 1996 to July 2003, September 2004 to current year.

GAGE.--Crest-stage partial-record gage. Datum of gage is 316 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Transportation.

REMARKS.--A crest stage gage is a device that will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. Only the maximum discharge for each water year is given. Information of some lower floods may have been obtained, but is not published within. The years given in the period of record represent water years for which the annual maximum has been determined.

Table T-03070105-1: Comparison Statistics Between HSPF Reach 01 and USGS Gauge 02215900.

Statistic	Value
Bias	-5.80
Standard error	118.16
Relative bias	-0.03
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.75
Index of agreement	0.87

Table T-03070105-2: Hydrologic Indices Between USGS Gauge 02215900 and HSPF Reach 01.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02215900	Reach 01	Difference
MA1: Mean, all daily flows	216.53	210.26	-2.90
MA2: Median, all daily flows	6.05	47.80	690.09
MA3: CV, all daily flows	139.34	137.57	-1.27
MA4: CV, log of all daily flows	194.49	154.68	-20.47
MA5: Mean daily flow / median daily flow	35.79	4.40	-87.71
MA9: (Q10 - Q90) / median daily flow	121.38	11.45	-90.56
MA10: (Q20 - Q80) / median daily flow	48.14	6.11	-87.30
MA11: (Q25 - Q75) / median daily flow	31.32	4.36	-86.09
MA12: Mean monthly flow, January	323.33	296.54	-8.29
MA13: Mean monthly flow, February	456.50	492.80	7.95
MA14: Mean monthly flow, March	383.11	301.80	-21.22
MA15: Mean monthly flow, April	162.91	140.01	-14.05
MA16: Mean monthly flow, May	98.24	93.75	-4.56
MA17: Mean monthly flow, June	51.54	95.37	85.04
MA18: Mean monthly flow, July	242.70	218.35	-10.04
MA19: Mean monthly flow, August	165.89	152.24	-8.23
MA20: Mean monthly flow, September	26.07	56.48	116.61
MA21: Mean monthly flow, October	4.09	22.19	442.99
MA22: Mean monthly flow, November	47.21	45.46	-3.71
MA23: Mean monthly flow, December	292.77	280.19	-4.30
ML1: Mean minimum monthly flow, January	176.08	149.75	-14.95
ML2: Mean minimum monthly flow, February	188.65	156.53	-17.02
ML3: Mean minimum monthly flow, March	227.95	217.56	-4.56
ML4: Mean minimum monthly flow, April	69.27	96.07	38.69
ML5: Mean minimum monthly flow, May	18.84	37.89	101.17
ML6: Mean minimum monthly flow, June	7.64	23.82	211.63
ML7: Mean minimum monthly flow, July	86.08	41.76	-51.49
ML8: Mean minimum monthly flow, August	17.29	43.73	152.93
ML9: Mean minimum monthly flow, September	2.81	36.99	1216.40
ML10: Mean minimum monthly flow, October	0.81	11.37	1304.31
ML11: Mean minimum monthly flow, November	13.32	33.20	149.26
ML12: Mean minimum monthly flow, December	41.86	37.79	-9.74
ML13: CV of minimum monthly flows	221.66	160.98	-27.37
ML14: Mean minimum daily flow / mean median annual flow	0.03	0.09	217.77
ML15: Mean minimum annual flow / mean annual flow	0.01	0.06	442.41
ML16: Median minimum annual flow / median annual flow	0.01	0.01	41.27
ML20: Ratio of baseflow volume to total flow volume	0.45	0.42	-7.19
ML22: Mean annual minimum flow divided by catchment area	0.01	0.05	730.84
RA1: Mean of positive changes from one day to next (rise rate)	64.88	77.57	
RA2: CV, mean of positive changes from one day to next (rise rate)	309.86	302.43	
RA3: Mean of negative changes from one day to next (fall rate)	32.94	29.43	
RA4: CV, mean of negative changes from one day to next (fall rate)	300.50	297.71	
RA5: Ratio of days that are higher than previous day	0.32	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.14	
RA7: Median of difference in log of flows over two consecutive days of falling	0.17	0.07	
RA8: Number of flow reversals from one day to the next	86.00	52.60	

RA9: CV, number of flow reversals from one day to the next	39.59	45.80	

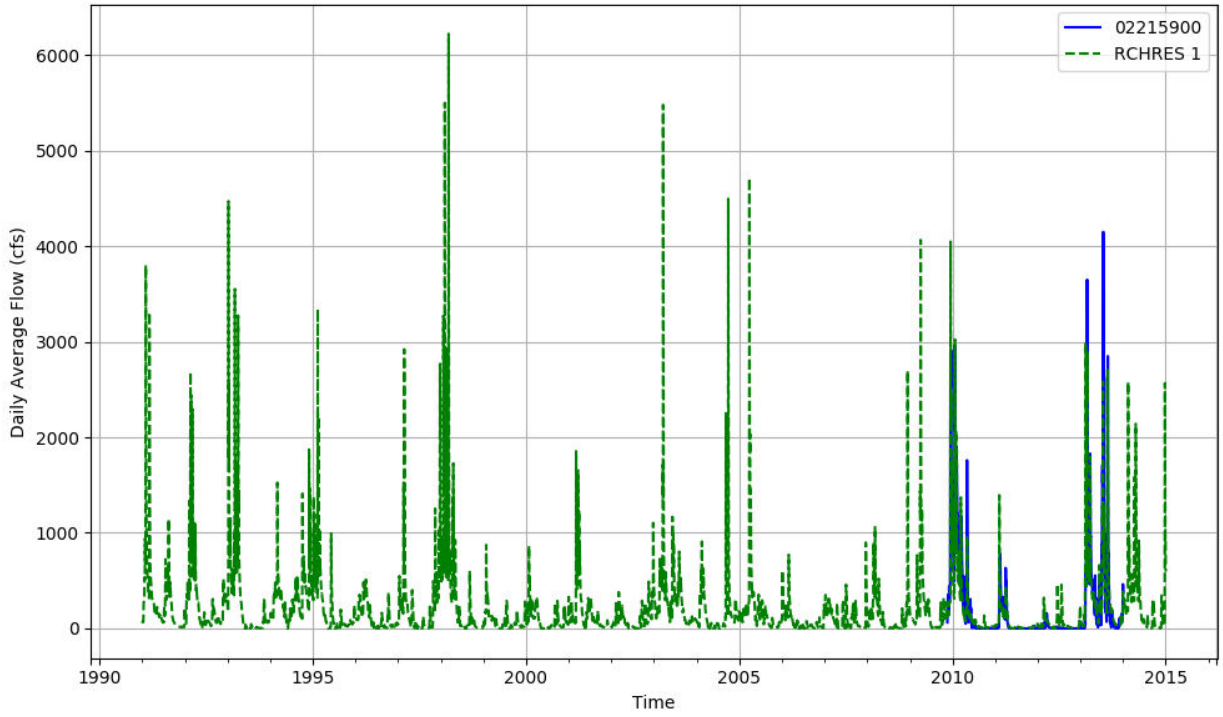


Figure T-03070105-4: Daily flow for HSFP reach 01 and USGS station 02215900.

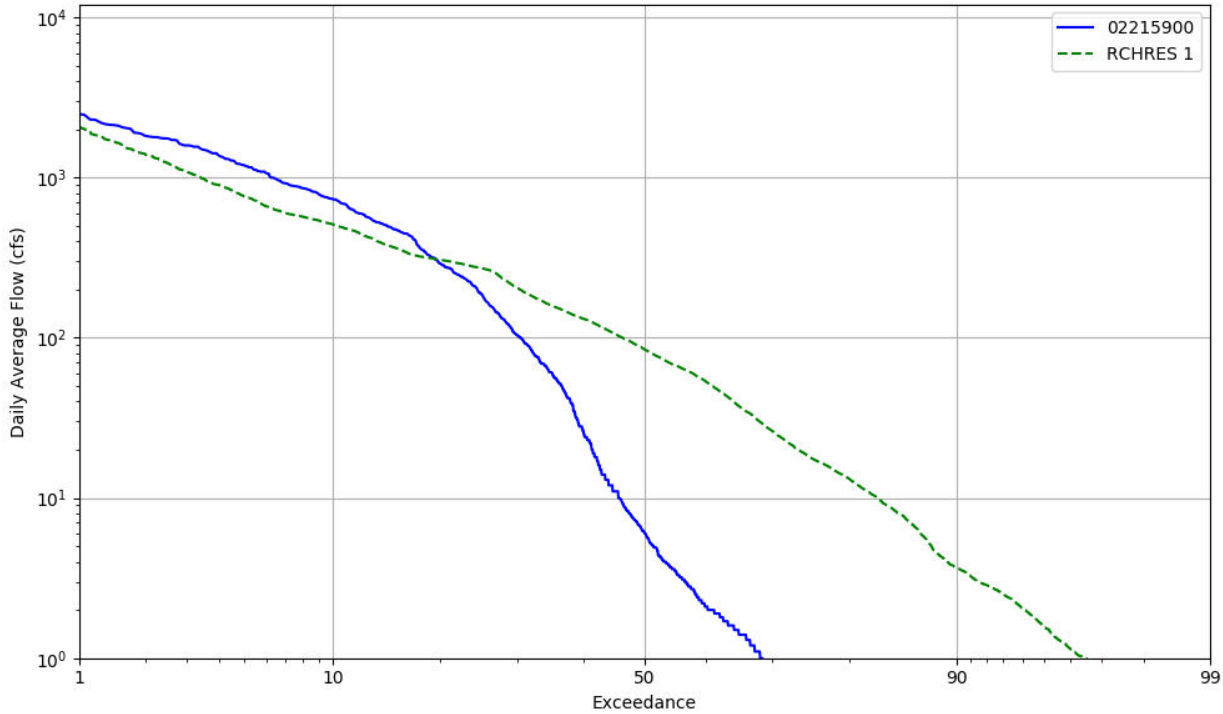


Figure T-03070105-5: Daily exceedance for HSFP reach 01 and USGS station 02215900.

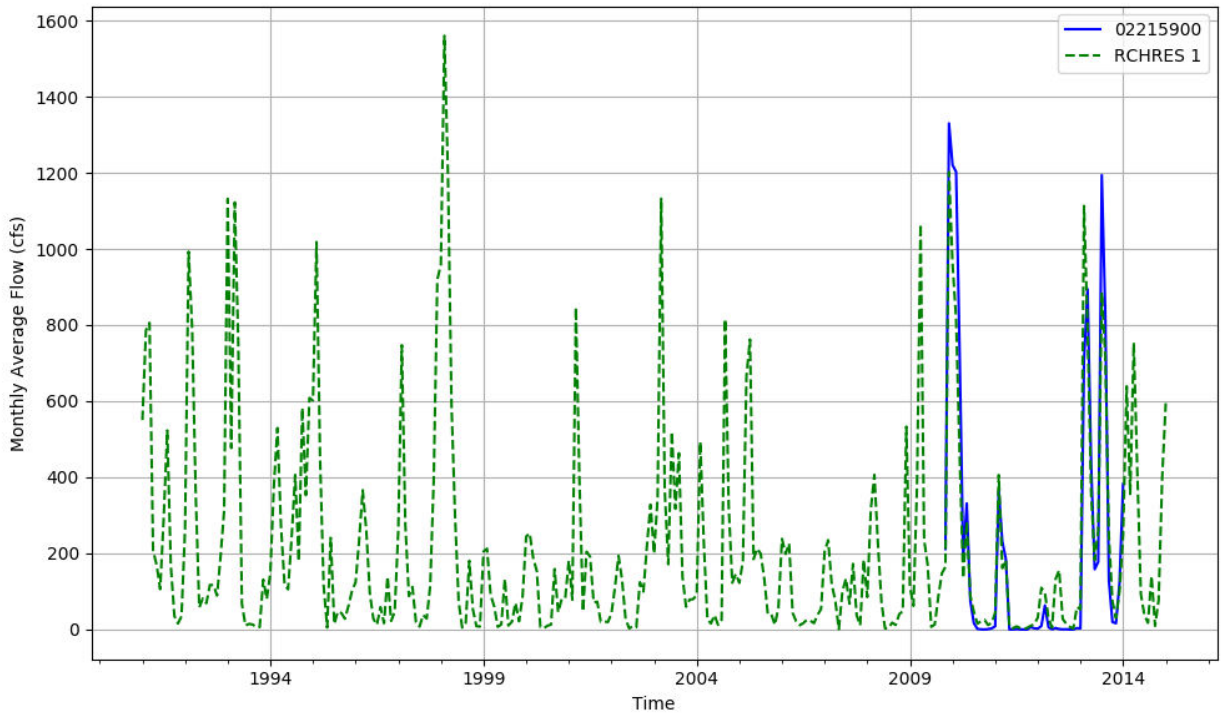


Figure T-03070105-6: Monthly flow for HSFP reach 01 and USGS station 02215900.

HSPF REACH 05, USGS GAUGE 02216180

Water-Data Report 2009
02216180 TURNPIKE CREEK NEAR MCRAE, GA
Altamaha Basin Little Ocmulgee Subbasin

LOCATION.--Lat 315929, long 825519 referenced to North American Datum of 1983, Telfair County, GA, Hydrologic Unit 03070105, on downstream side of bridge pier on US 319 and 441, 4.8 miles south of McRae and 13.8 miles upstream from mouth.

DRAINAGE AREA.--49.2 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1983 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 173.17 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor; and days with discharge less than 1 cfs, which are poor. Gage-height records good.

Table T-03070105-3: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02216180.

Statistic	Value
Bias	-0.30
Standard error	30.64
Relative bias	-0.01
Relative standard error	0.43
Nash-Sutcliffe coefficient	0.82
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.64
Index of agreement	0.81

Table T-03070105-4: Hydrologic Indices Between USGS Gauge 02216180 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02216180	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	44.77	44.51	-0.58

MA2: Median, all daily flows	3.20	8.96	179.90
MA3: CV, all daily flows	210.41	204.76	-2.68
MA4: CV, log of all daily flows	180.42	165.34	-8.36
MA5: Mean daily flow / median daily flow	13.99	4.97	-64.48
MA9: (Q10 - Q90) / median daily flow	37.19	13.15	-64.63
MA10: (Q20 - Q80) / median daily flow	17.81	6.11	-65.71
MA11: (Q25 - Q75) / median daily flow	12.50	4.54	-63.69
MA12: Mean monthly flow, January	79.42	90.33	13.74
MA13: Mean monthly flow, February	101.64	110.40	8.63
MA14: Mean monthly flow, March	116.74	98.52	-15.61
MA15: Mean monthly flow, April	56.26	39.76	-29.33
MA16: Mean monthly flow, May	17.25	8.55	-50.45
MA17: Mean monthly flow, June	15.55	17.47	12.32
MA18: Mean monthly flow, July	13.26	12.87	-2.92
MA19: Mean monthly flow, August	17.89	19.67	9.95
MA20: Mean monthly flow, September	12.43	20.84	67.66
MA21: Mean monthly flow, October	16.51	20.04	21.36
MA22: Mean monthly flow, November	21.80	23.65	8.51
MA23: Mean monthly flow, December	54.18	57.39	5.93
ML1: Mean minimum monthly flow, January	21.65	20.46	-5.49
ML2: Mean minimum monthly flow, February	30.42	26.92	-11.53
ML3: Mean minimum monthly flow, March	25.07	21.86	-12.82
ML4: Mean minimum monthly flow, April	6.21	6.08	-2.07
ML5: Mean minimum monthly flow, May	1.06	0.64	-40.04
ML6: Mean minimum monthly flow, June	0.32	0.37	17.51
ML7: Mean minimum monthly flow, July	0.18	1.44	716.05
ML8: Mean minimum monthly flow, August	1.13	2.55	125.12
ML9: Mean minimum monthly flow, September	0.52	1.06	106.09
ML10: Mean minimum monthly flow, October	1.38	1.47	6.35
ML11: Mean minimum monthly flow, November	4.65	4.83	3.83
ML12: Mean minimum monthly flow, December	11.31	11.26	-0.39
ML13: CV of minimum monthly flows	205.85	184.02	-10.61
ML14: Mean minimum daily flow / mean median annual flow	0.00	0.00	209.37
ML15: Mean minimum annual flow / mean annual flow	0.00	0.00	1550.74
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.31	0.28	-7.74
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	3738.19
RA1: Mean of positive changes from one day to next (rise rate)	52.96	30.51	
RA2: CV, mean of positive changes from one day to next (rise rate)	248.30	331.79	
RA3: Mean of negative changes from one day to next (fall rate)	21.83	11.18	
RA4: CV, mean of negative changes from one day to next (fall rate)	336.75	312.92	
RA5: Ratio of days that are higher than previous day	0.19	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.50	0.40	
RA7: Median of difference in log of flows over two consecutive days of falling	0.29	0.16	
RA8: Number of flow reversals from one day to the next	61.38	77.92	
RA9: CV, number of flow reversals from one day to the next	38.86	20.33	

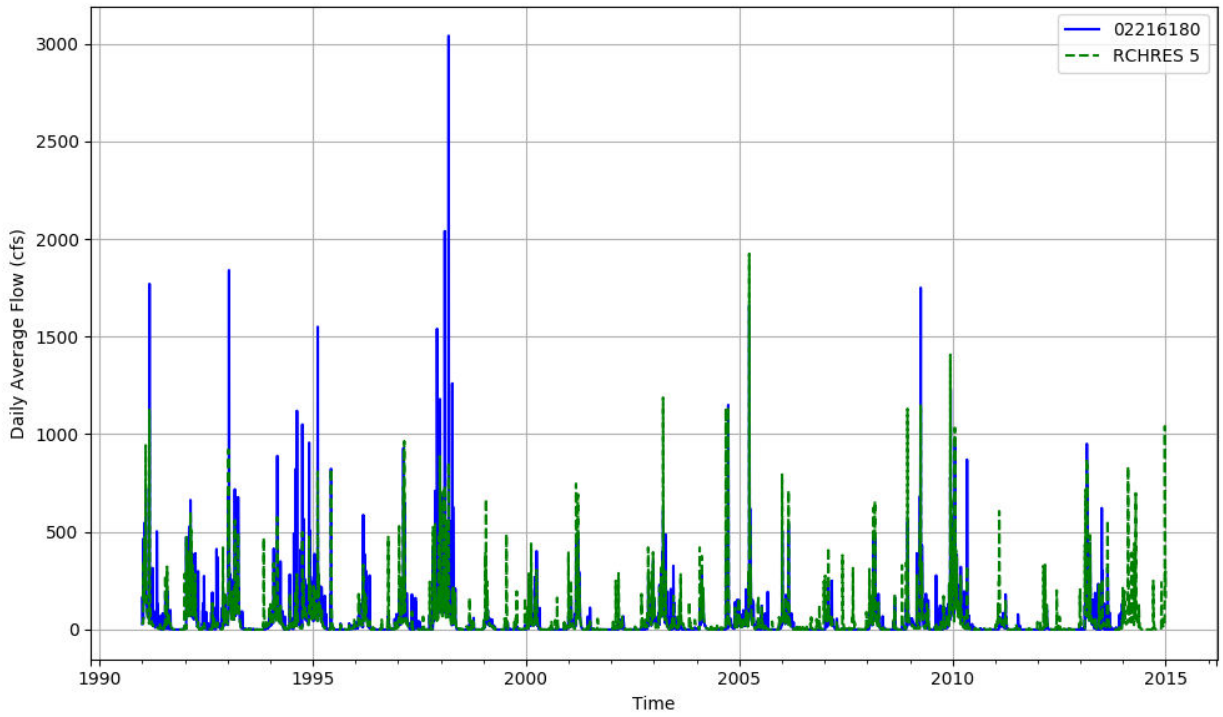


Figure T-03070105-7: Daily flow for HSFP reach 05 and USGS station 02216180.

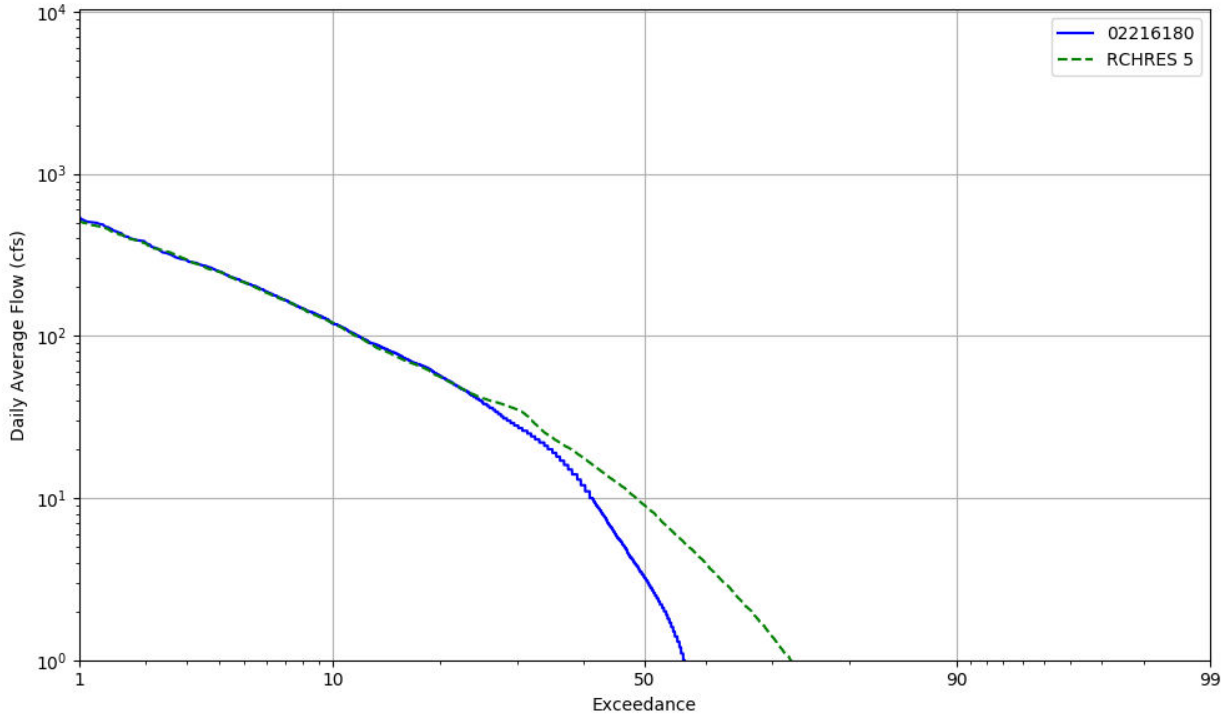


Figure T-03070105-8: Daily exceedance for HSFP reach 05 and USGS station 02216180.

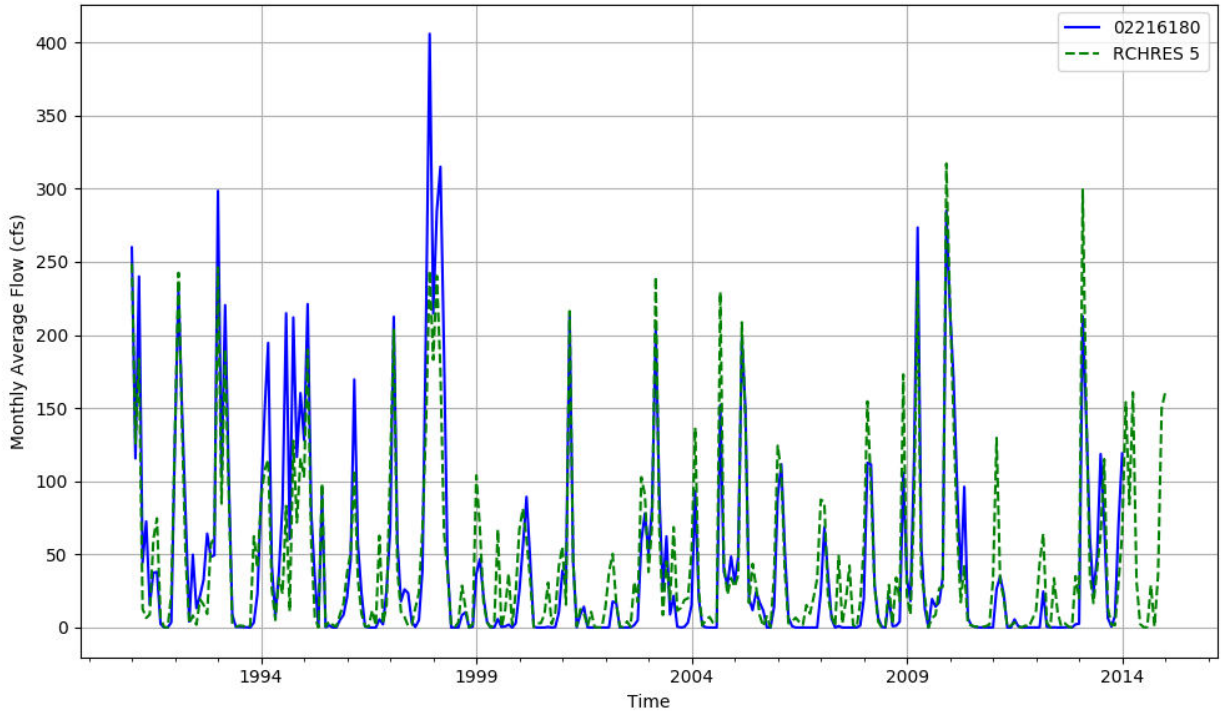


Figure T-03070105-9: Monthly flow for HSFP reach 05 and USGS station 02216180.

Table T-03070105-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	20578	3362	611	137	373	243012	28355	35910	33759	42480	83717	276	16572	1415	512906
AREA(%)	0.5	4.0	0.7	0.1	0.0	0.1	47.2	5.5	7.0	6.6	8.3	16.3	0.1	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		1110	383	156	137											1785
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	41.1	41.0	41.0	41.1	41.3	40.4	40.6	40.4	40.9	41.0	41.4	40.9	53.5	48.9	41.6	40.9
SURLI		0.0	7.6	7.5	7.5										1.5	0.1
UZLI																0.0
LZLI		0.0	1.7	1.5	1.5									0.1	5.6	0.0
SURO: PERVIOUS	0.4	0.5	0.7	1.6	0.4	0.9	0.1	0.4	0.3	0.3	0.2	0.2	0.8	0.4	0.2	0.2
SURO: IMPERVIOUS		27.8	27.8	27.8	28.1											0.1
SURO: COMBINED	0.4	1.9	3.4	6.9	14.3	0.9	0.1	0.4	0.3	0.3	0.2	0.2	0.8	0.4	0.2	0.3
IFWO		6.6	10.0	9.3	6.1	7.3	2.0	7.5	6.0	6.2	4.7		10.9	7.9	5.4	3.2
AGWO	0.5	3.4	8.0	7.8	6.7	6.5	2.5	5.8	4.2	4.1	4.7	0.7	6.7	7.1	7.8	3.0
AGWI	1.2	5.8	10.9	10.7	8.9	9.4	4.7	8.5	6.9	6.9	7.5	1.2	7.9	9.4	10.7	5.1
IGWI	0.3	1.4	2.7	2.7	2.2	2.3	1.2	2.1	1.7	1.7	1.9	0.3	2.0	2.3	2.6	1.3
CEPE		11.7	8.3	8.3	11.8	5.5	15.2	8.2	8.6	8.3	6.4	19.7	20.2	11.5	6.5	13.4
UZET	0.4	5.9	5.5	5.4	7.1	5.8	2.9	5.3	4.4	4.2	4.9	0.7	6.2	5.0	5.7	3.2
LZET	0.0	11.4	13.9	13.8	16.1	11.1	19.1	10.3	15.6	16.0	18.7	0.2	8.0	14.8	19.7	14.4
AGWET	0.2	2.1	2.5	2.5	2.0	2.7	1.9	2.5	2.5	2.5	2.6	0.1	1.3	2.2	2.6	1.8
BASET	0.5	1.0	1.3	1.3	1.2	1.2	0.7	1.2	1.1	1.1	1.1	0.5	1.2	1.2	1.2	0.8
SURET	42.1											22.4				3.8
PERO	0.9	10.5	18.7	18.7	13.2	14.7	4.6	13.7	10.4	10.6	9.6	0.8	18.4	15.4	13.4	6.4
IGWI	0.3	1.4	2.7	2.7	2.2	2.3	1.2	2.1	1.7	1.7	1.9	0.3	2.0	2.3	2.6	1.3
TAET: PERVIOUS	43.2	32.2	31.3	31.2	38.2	26.2	39.8	27.5	32.2	32.1	33.7	43.5	37.0	34.7	35.8	37.5
IMPEV: IMPERVIOUS		13.2	13.2	13.2	13.2											0.0
ET: COMBINED	43.2	31.2	29.5	27.6	25.7	26.2	39.8	27.5	32.2	32.1	33.7	43.5	37.0	34.7	35.8	37.6
PET	43.9	44.0	44.0	43.9	43.9	44.2	44.0	44.1	44.0	43.9	43.9	44.0	43.4	43.8	44.3	43.8

Table T-03070105-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	20578	3362	611	137	373	243012	28355	35910	33759	42480	83717	276	16572	1415	512906
AREA(%)	0.5	4.0	0.7	0.1	0.0	0.1	47.2	5.5	7.0	6.6	8.3	16.3	0.1	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		1110	383	156	137											1785
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	59.8	59.8	59.8	59.8	59.7	60.2	59.9	60.0	59.9	59.8	59.7	59.9	63.4	69.8	61.0	60.0
SURLI		0.0	7.3	7.1	7.0										1.0	0.1
UZLI																0.0
LZLI		0.0	2.2	2.0	1.9									0.1	3.7	0.0
SURO: PERVIOUS	1.0	0.9	1.3	2.7	0.7	2.1	0.2	0.7	0.5	0.6	0.4	0.5	0.7	0.6	0.4	0.4
SURO: IMPERVIOUS		45.3	45.3	45.3	45.2											0.2
SURO: COMBINED	1.0	3.2	5.8	11.4	22.9	2.1	0.2	0.7	0.5	0.6	0.4	0.5	0.7	0.6	0.4	0.5
IFWO		14.1	18.5	17.0	12.5	15.4	5.3	15.5	12.6	12.8	9.9		15.0	14.2	10.8	7.1
AGWO	0.9	5.2	10.2	10.0	9.0	8.6	5.7	8.3	6.5	6.4	7.4	1.1	6.6	9.7	9.4	5.4
AGWI	2.0	9.9	15.2	15.0	13.6	14.1	10.0	13.6	11.7	11.7	12.7	2.2	11.1	14.7	14.8	9.5
IGWI	0.5	2.5	3.8	3.8	3.4	3.5	2.5	3.4	2.9	2.9	3.1	0.5	2.8	3.6	3.6	2.4
CEPE		13.0	9.5	9.5	13.0	6.4	16.5	9.5	10.0	9.6	7.8	20.9	16.2	14.0	7.9	14.8
UZET	0.8	5.8	5.0	4.9	7.2	5.6	3.2	5.0	4.2	4.0	4.7	1.2	5.6	5.0	5.4	3.4
LZET	0.2	12.3	15.0	14.9	17.0	12.1	20.3	11.2	16.7	17.1	19.8	0.4	10.9	16.6	21.4	15.4
AGWET	0.4	2.7	3.1	3.1	2.7	3.3	2.2	3.1	3.2	3.2	3.2	0.3	2.5	2.8	3.2	2.2
BASET	0.7	1.0	1.3	1.3	1.1	1.3	0.8	1.2	1.0	1.0	1.0	0.8	1.0	1.5	1.3	0.9
SURET	49.2											27.7				4.7
PERO	1.9	20.2	29.9	29.7	22.3	26.1	11.1	24.5	19.6	19.7	17.6	1.6	22.3	24.5	20.6	12.9
IGWI	0.5	2.5	3.8	3.8	3.4	3.5	2.5	3.4	2.9	2.9	3.1	0.5	2.8	3.6	3.6	2.4
TAET: PERVIOUS	51.2	34.8	34.0	33.8	40.9	28.7	43.1	30.1	35.1	34.9	36.5	51.3	36.3	39.8	39.2	41.4
IMPEV: IMPERVIOUS		14.4	14.4	14.4	14.4											0.0
ET: COMBINED	51.2	33.8	32.0	29.9	27.6	28.7	43.1	30.1	35.1	34.9	36.5	51.3	36.3	39.8	39.2	41.5
PET	52.7	52.7	52.7	52.7	52.6	52.9	52.8	52.8	52.7	52.7	52.6	52.7	52.3	52.6	52.9	52.6

Table T-03070105-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	20578	3362	611	137	373	243012	28355	35910	33759	42480	83717	276	16572	1415	512906
AREA(%)	0.5	4.0	0.7	0.1	0.0	0.1	47.2	5.5	7.0	6.6	8.3	16.3	0.1	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		1110	383	156	137											1785
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	41.9	41.7	41.8	41.9	41.9	42.1	41.7	41.7	41.8	41.7	41.9	41.7	72.2	48.8	42.5	41.8
SURLI		0.0	7.7	7.6	7.5										1.7	0.1
UZLI																0.0
LZLI		0.0	2.3	2.1	2.0									0.1	6.3	0.0
SURO: PERVIOUS	0.7	0.4	0.5	1.2	0.2	0.8	0.1	0.2	0.2	0.2	0.1	0.5	0.5	0.2	0.2	0.2
SURO: IMPERVIOUS		29.2	29.3	29.3	29.3											0.1
SURO: COMBINED	0.7	1.8	3.4	6.9	14.8	0.8	0.1	0.2	0.2	0.2	0.1	0.5	0.5	0.2	0.2	0.3
IFWO		7.6	10.5	9.8	7.0	8.5	3.4	8.3	6.6	6.7	5.4		14.3	7.7	5.8	4.1
AGWO	0.9	4.5	8.5	8.4	7.4	7.0	6.2	6.6	5.6	5.5	6.2	1.2	10.4	7.3	8.4	5.3
AGWI	1.7	6.1	11.8	11.6	9.2	10.1	6.6	9.3	7.4	7.3	7.9	1.8	12.4	9.4	11.4	6.3
IGWI	0.4	1.5	2.9	2.9	2.3	2.5	1.6	2.3	1.8	1.8	1.9	0.4	3.1	2.3	2.8	1.5
CEPE		11.3	8.0	8.0	11.4	5.1	14.7	7.9	8.4	8.1	6.4	19.1	32.6	11.4	6.6	13.1
UZET	0.4	5.2	4.8	4.7	6.1	5.3	2.8	4.8	3.7	3.5	3.9	0.7	4.3	4.2	4.8	2.9
LZET	0.0	12.4	15.1	15.0	17.8	12.0	19.3	11.2	16.7	17.0	19.8	0.1	5.3	16.3	21.3	14.9
AGWET	0.2	2.6	3.0	3.0	2.6	3.2	1.9	3.0	3.0	3.0	3.1	0.0	0.9	2.7	3.1	2.0
BASET	0.7	0.9	1.3	1.3	1.0	1.3	0.7	1.2	0.9	0.9	0.9	0.8	1.4	1.2	1.2	0.8
SURET	47.0											27.9				4.8
PERO	1.6	12.4	19.5	19.4	14.6	16.4	9.7	15.2	12.4	12.5	11.7	1.6	25.1	15.2	14.4	9.5
IGWI	0.4	1.5	2.9	2.9	2.3	2.5	1.6	2.3	1.8	1.8	1.9	0.4	3.1	2.3	2.8	1.5
TAET: PERVIOUS	48.3	32.4	32.2	32.0	38.9	26.8	39.4	28.1	32.8	32.6	34.1	48.5	44.5	36.0	36.9	38.4
IMPEV: IMPERVIOUS		12.7	12.7	12.7	12.8											0.0
ET: COMBINED	48.3	31.4	30.2	28.1	25.8	26.8	39.4	28.1	32.8	32.6	34.1	48.5	44.5	36.0	36.9	38.4
PET	49.4	49.5	49.5	49.5	49.4	49.7	49.5	49.6	49.5	49.4	49.4	49.5	49.1	49.4	49.7	49.3

Table T-03070105-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2348	20578	3362	611	137	373	243012	28355	35910	33759	42480	83717	276	16572	1415	512906
AREA(%)	0.5	4.0	0.7	0.1	0.0	0.1	47.2	5.5	7.0	6.6	8.3	16.3	0.1	3.2	0.3	99.7
IMPERVIOUS																
AREA(ACRES)		1110	383	156	137											1785
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	46.9	46.8	46.9	46.9	47.0	46.8	46.7	46.7	46.8	46.8	46.9	46.8	61.5	56.1	48.6	46.9
SURLI		0.0	6.6	6.5	6.5										1.2	0.1
UZLI																0.0
LZLI		0.0	1.6	1.5	1.5									0.1	5.2	0.0
SURO: PERVIOUS	2.6	0.5	0.7	1.6	0.4	1.2	0.1	0.4	0.3	0.3	0.2	2.3	0.6	0.4	0.2	0.5
SURO: IMPERVIOUS		33.6	33.6	33.6	33.7											0.1
SURO: COMBINED	2.6	2.2	4.0	8.1	17.0	1.2	0.1	0.4	0.3	0.3	0.2	2.3	0.6	0.4	0.2	0.6
IFWO		8.1	11.4	10.6	7.0	9.1	2.3	8.9	7.0	7.1	5.3		11.9	8.6	6.5	3.7
AGWO	0.7	4.7	8.7	8.5	7.4	7.5	4.5	7.1	5.5	5.5	6.0	0.8	8.4	8.4	9.0	4.5
AGWI	1.5	7.9	12.6	12.4	10.7	11.6	6.8	11.0	9.1	9.0	9.6	1.6	11.1	12.1	13.0	7.0
IGWI	0.3	1.9	3.1	3.1	2.7	2.9	1.7	2.7	2.2	2.2	2.4	0.4	2.8	3.0	3.2	1.7
CEPE		12.0	8.7	8.7	12.0	5.9	15.2	8.7	9.1	8.8	7.0	18.9	22.5	12.1	7.2	13.5
UZET	0.9	5.0	4.6	4.5	6.0	5.0	2.6	4.5	3.7	3.5	4.1	0.9	4.6	4.6	5.0	2.9
LZET	0.1	11.4	14.0	13.9	16.1	11.1	18.0	10.4	15.4	15.7	18.3	0.3	8.0	15.4	19.8	13.9
AGWET	0.3	2.3	2.8	2.8	2.3	3.0	1.7	2.8	2.6	2.7	2.7	0.2	1.5	2.4	2.8	1.8
BASET	0.5	0.8	1.2	1.2	1.0	1.1	0.7	1.1	0.9	0.9	0.8	0.6	1.1	1.2	1.2	0.7
SURET	42.6											23.7				4.1
PERO	3.3	13.3	20.8	20.7	14.8	17.7	6.9	16.4	12.8	12.9	11.5	3.1	20.9	17.3	15.8	8.7
IGWI	0.3	1.9	3.1	3.1	2.7	2.9	1.7	2.7	2.2	2.2	2.4	0.4	2.8	3.0	3.2	1.7
TAET: PERVIOUS	44.5	31.5	31.2	31.0	37.4	26.1	38.1	27.4	31.7	31.6	33.0	44.6	37.7	35.8	35.9	36.8
IMPEV: IMPERVIOUS		13.3	13.3	13.3	13.3											0.0
ET: COMBINED	44.5	30.6	29.3	27.4	25.3	26.1	38.1	27.4	31.7	31.6	33.0	44.6	37.7	35.8	35.9	36.8
PET	47.0	47.1	47.1	47.1	47.0	47.3	47.1	47.2	47.1	47.1	47.0	47.1	46.7	47.0	47.2	46.9

Table T-03070105-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
2	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
3	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
4	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
5	0.990	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.990
6	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
7	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
8	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
9	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
10	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990
11	0.990	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.996	0.990

Table T-03070105-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
2	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
3	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
4	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
5	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065
6	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
7	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
8	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
9	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
10	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
11	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029

Table T-03070105-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
2	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
3	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
4	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
5	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
6	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
7	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
8	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
9	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
10	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300
11	0.000	0.100	0.050	0.050	0.100	0.020	0.171	0.050	0.055	0.051	0.030	0.300

Table T-03070105-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
4	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
5	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
6	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
7	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
8	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
9	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
10	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
11	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200

Table T-03070105-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
2	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
3	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
4	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
5	0.005	0.037	0.037	0.037	0.037	0.053	0.080	0.053	0.053	0.053	0.064	0.005
6	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
7	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
8	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
9	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
10	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001
11	0.001	0.097	0.097	0.097	0.097	0.139	0.208	0.139	0.139	0.139	0.166	0.001

Table T-03070105-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
2		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		2.982	2.982	2.982	2.982	2.982	2.982	2.982	2.982	2.982	2.982	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

Table T-03070105-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
2	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
3	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
4	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
5	0.638	0.638	0.638	0.638	0.638	0.638	0.638	0.638	0.638	0.638	0.638	0.638
6	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
7	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
8	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
9	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
10	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656
11	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656	0.656

Table T-03070105-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	2.087	2.087	2.087	2.087	2.087	2.087	2.087	2.087	2.087	2.087	2.087	2.087
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03070105-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
2	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
3	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
4	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
5	0.011	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	1.200
6	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
7	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
8	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
9	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
10	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900
11	0.262	0.400	0.400	0.400	0.615	0.300	0.900	0.306	0.463	0.467	0.535	0.900

Table T-03070105-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
2	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
3	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
4	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
5	0.155	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.191
6	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
7	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
8	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
9	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
10	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100
11	0.055	4.085	4.085	4.085	4.085	4.596	6.127	4.596	4.596	4.596	5.106	0.100

Table T-03070105-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
2	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
3	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
4	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
5	0.050	0.129	0.129	0.129	0.129	0.129	0.184	0.147	0.147	0.129	0.184	0.960
6	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
7	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
8	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
9	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
10	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050
11	0.050	0.158	0.070	0.070	0.261	0.070	0.276	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03070106

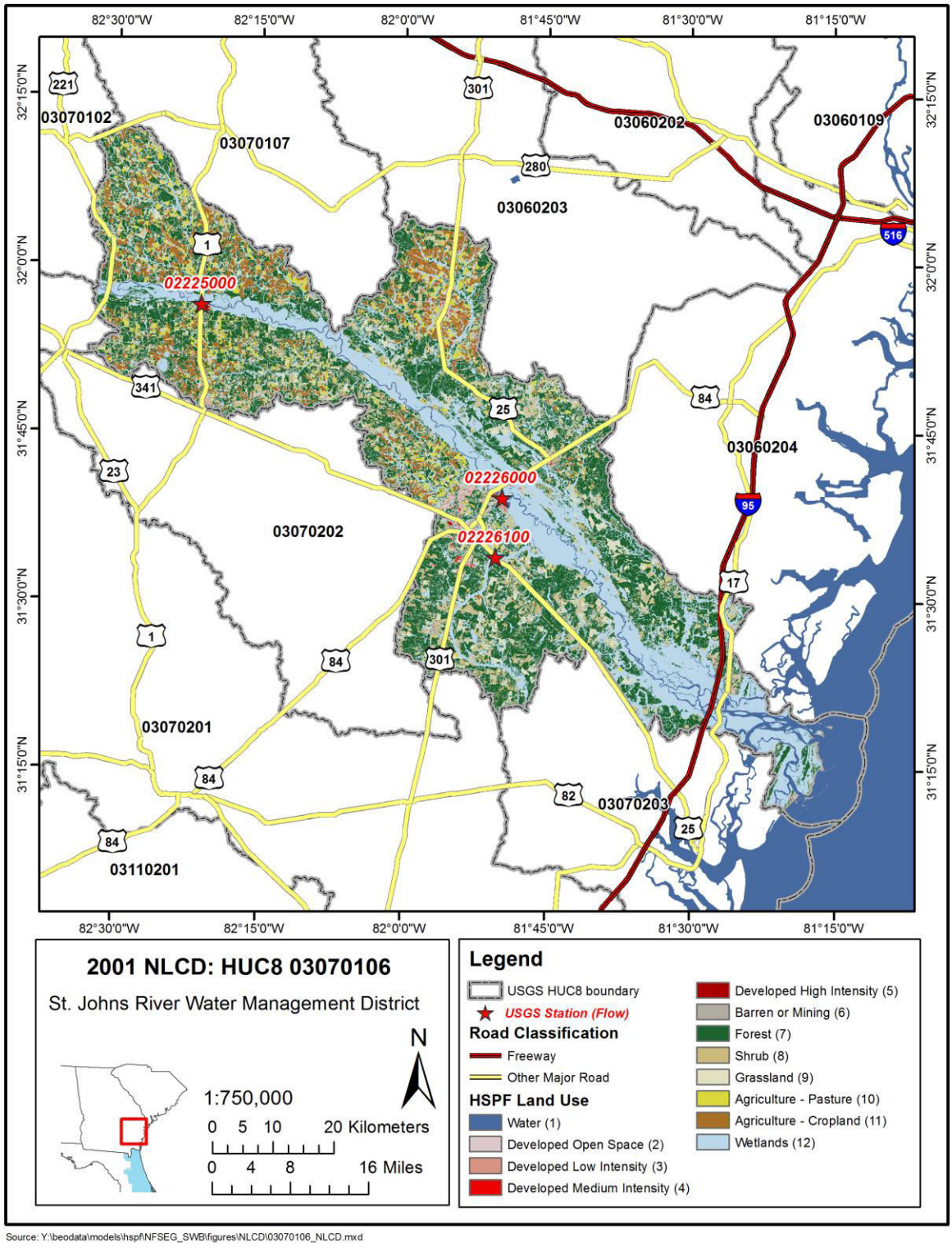


Figure T-03070106-1: Land Cover from the National Land Cover Database.

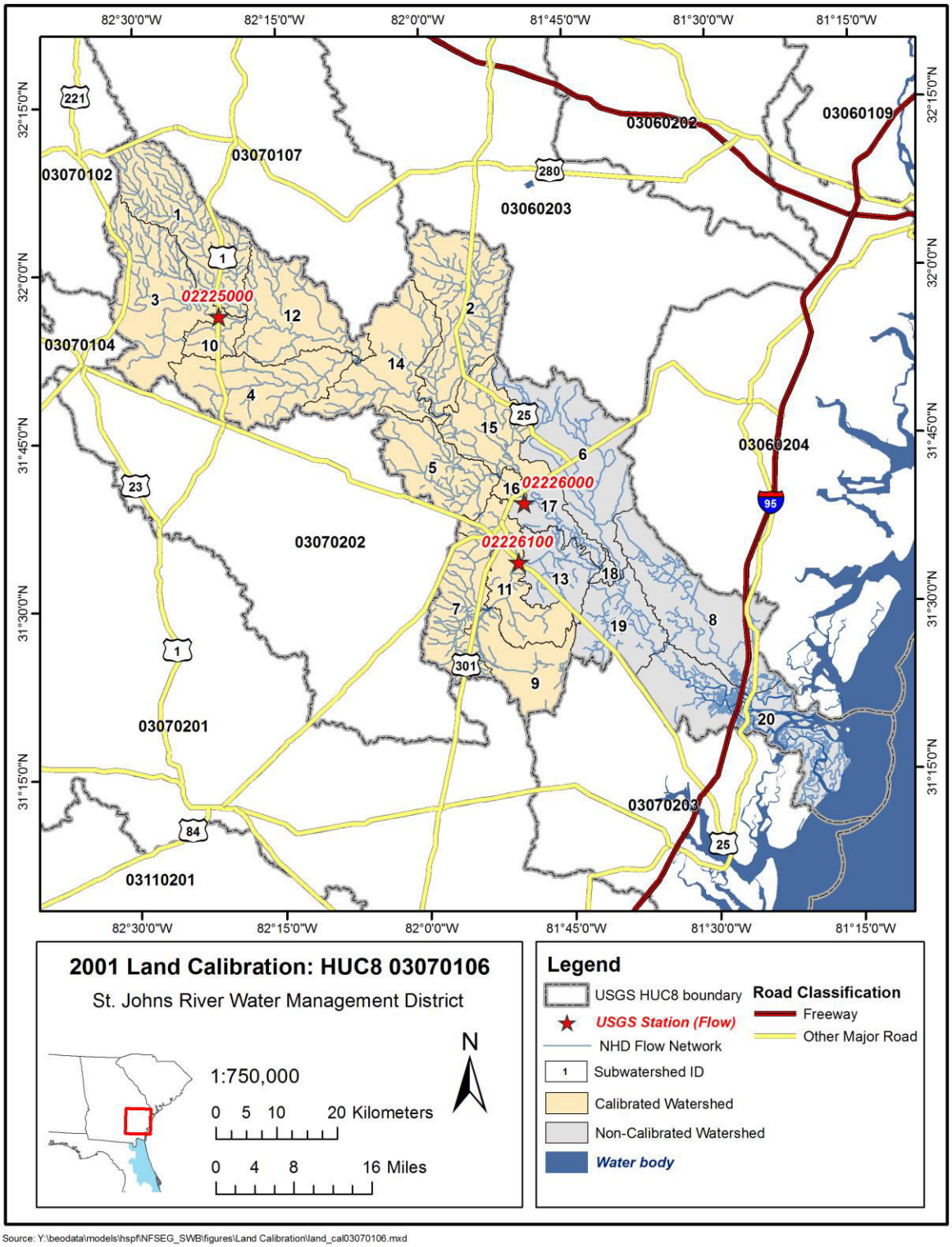


Figure T-03070106-2: Calibrated sub-watersheds.

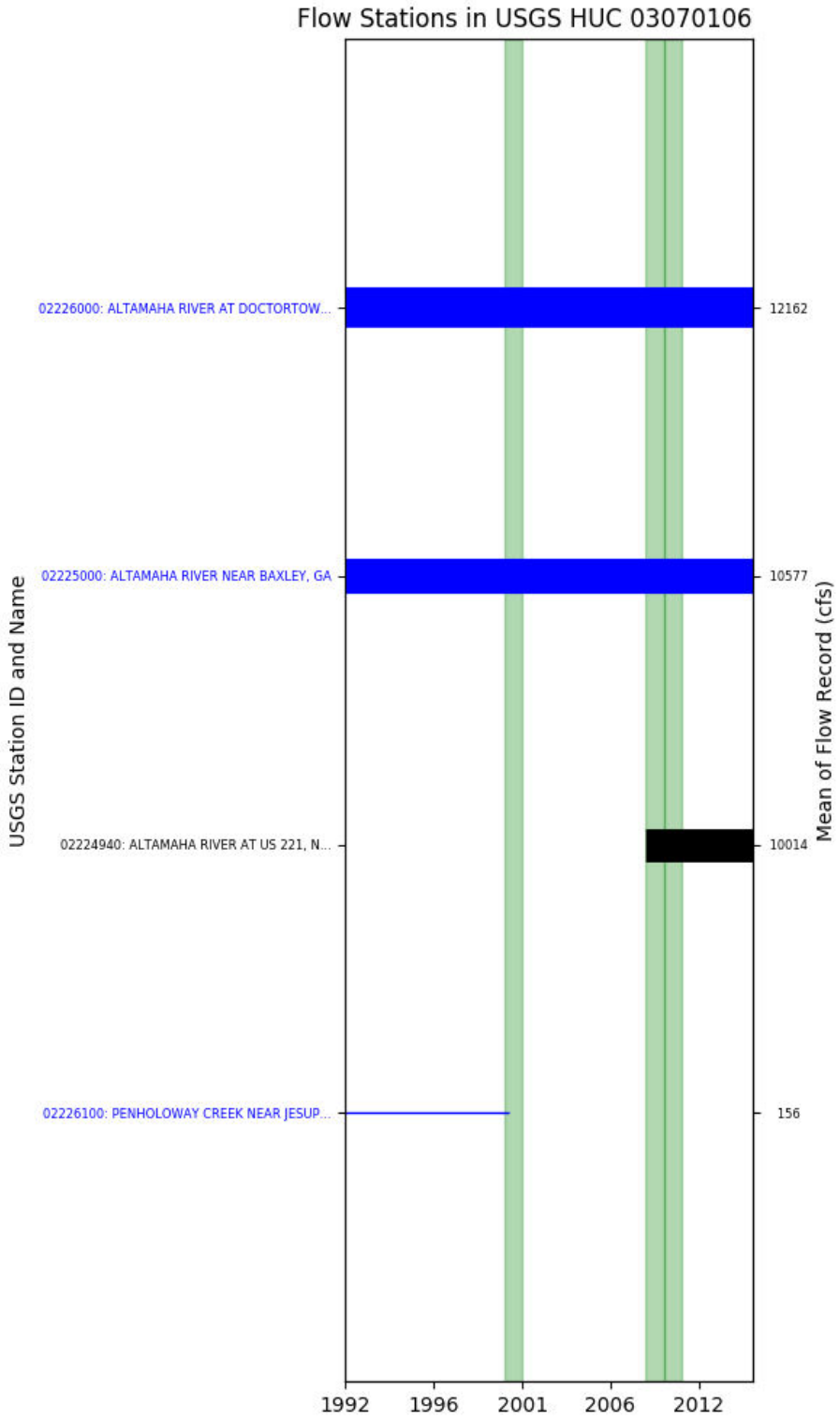


Figure T-03070106-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 03, USGS GAUGE 02225000

Water-Data Report 2009
02225000 ALTAMAHA RIVER NEAR BAXLEY, GA
Altamaha Basin Altamaha Subbasin

LOCATION.--Lat 315620, long 822113 referenced to North American Datum of 1927, Appling County, GA, Hydrologic Unit 03070106, on right bank 400 feet downstream from bridge on U.S. 1, 2.2 miles upstream from Bay Creek, 8.0 miles downstream from Bullards Creek, and 12.0 miles north of Baxley.

DRAINAGE AREA.--11,600 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: August 1949 to June 1951, October 1970 to current year.
GAGE-HEIGHT: August 1949 to June 1951, October 1998 to current year.

GAGE.--Satellite transmitter with a water-stage recorder. Datum of gage is 61.51 feet above National Geodetic Vertical Datum (NGVD) of 1929. From August 13, 1949, to June 30, 1951, a non-recording gage was located at site 400 feet upstream at same datum.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records are poor. Gage-height records are poor.

Table T-03070106-1: Comparison Statistics Between HSPF Reach 03 and USGS Gauge 02225000.

Statistic	Value
Bias	-1071.01
Standard error	3402.70
Relative bias	-0.10
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.90
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03070106-2: Hydrologic Indices Between USGS Gauge 02225000 and HSPF Reach 03.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02225000	Simulated Reach 03	Percent Difference

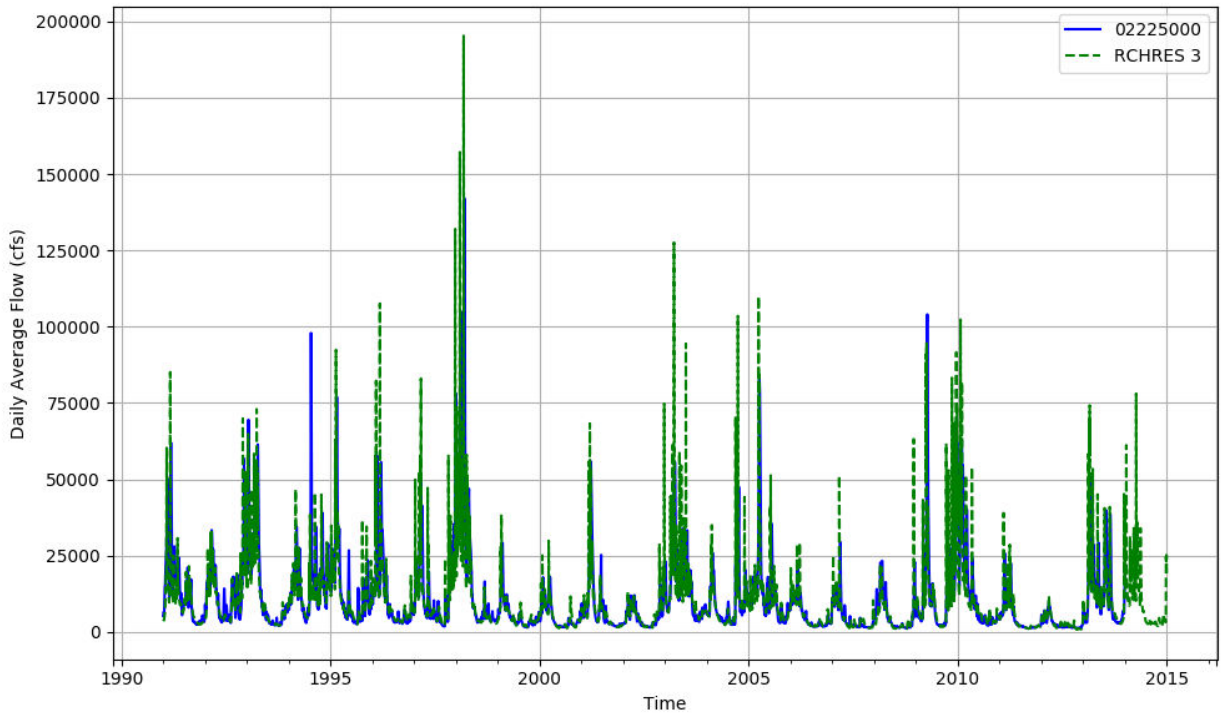


Figure T-03070106-4: Daily flow for HSFP reach 03 and USGS station 02225000.

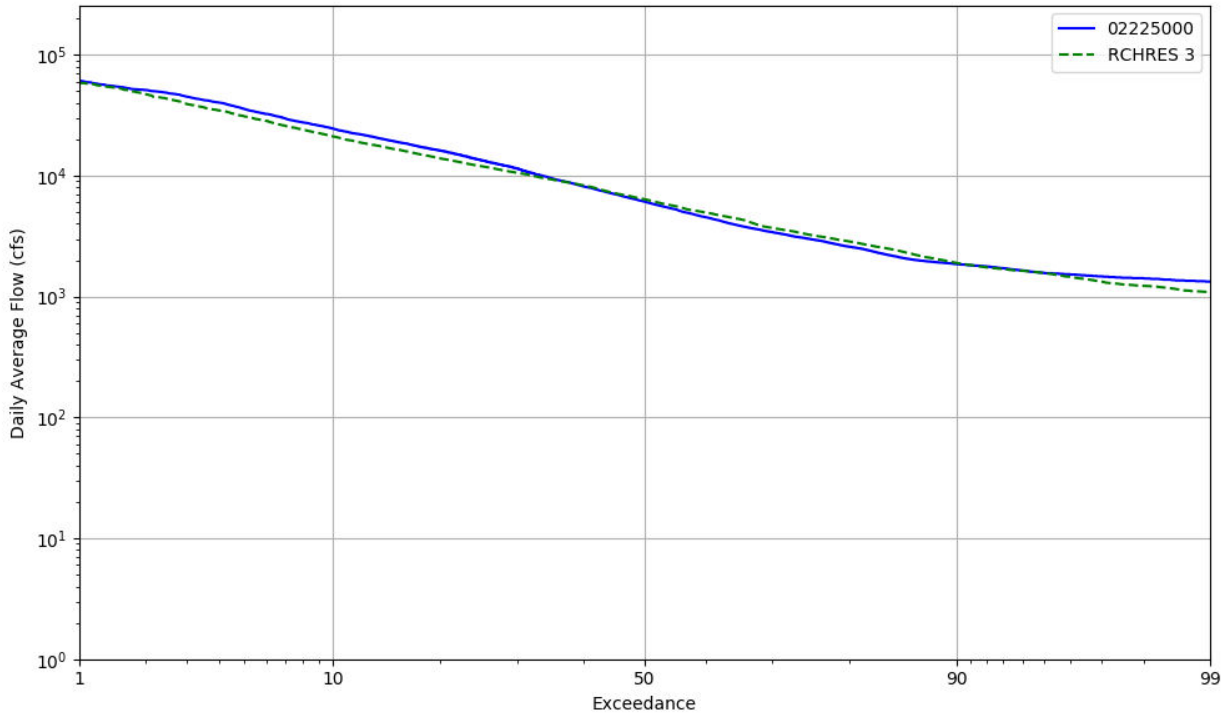


Figure T-03070106-5: Daily exceedance for HSFP reach 03 and USGS station 02225000.

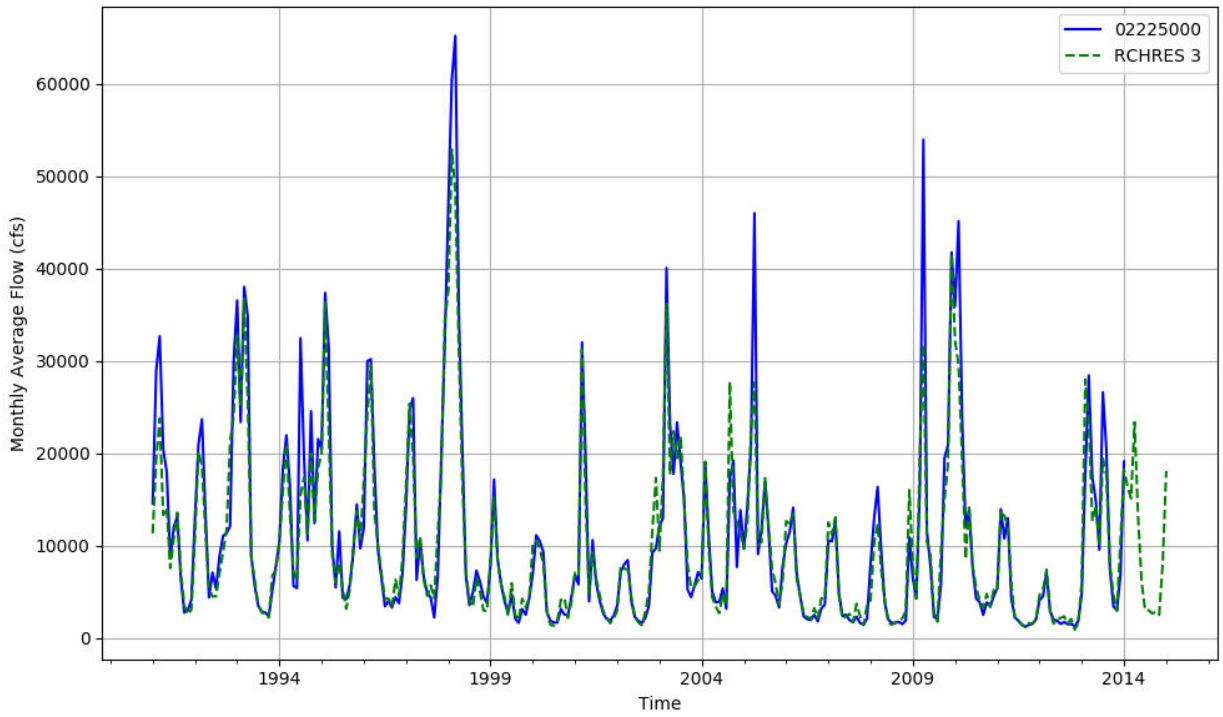


Figure T-03070106-6: Monthly flow for HSFP reach 03 and USGS station 02225000.

HSPF REACH 11, USGS GAUGE 02226100

Water-Data Report 2009
02225000 ALTAMAHA RIVER NEAR BAXLEY, GA
Altamaha Basin Altamaha Subbasin

LOCATION.--Lat 315620, long 822113 referenced to North American Datum of 1927, Appling County, GA, Hydrologic Unit 03070106, on right bank 400 feet downstream from bridge on U.S. 1, 2.2 miles upstream from Bay Creek, 8.0 miles downstream from Bullards Creek, and 12.0 miles north of Baxley.

DRAINAGE AREA.--11,600 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: August 1949 to June 1951, October 1970 to current year.
GAGE-HEIGHT: August 1949 to June 1951, October 1998 to current year.

GAGE.--Satellite transmitter with a water-stage recorder. Datum of gage is 61.51 feet above National Geodetic Vertical Datum (NGVD) of 1929. From August 13, 1949, to June 30, 1951, a non-recording gage was located at site 400 feet upstream at same datum.

COOPERATION.--Georgia Power Corporation.

REMARKS.--Discharge records are poor. Gage-height records are poor.

Table T-03070106-3: Comparison Statistics Between HSPF Reach 11 and USGS Gauge 02226100.

Statistic	Value
Bias	0.20
Standard error	104.08
Relative bias	0.00
Relative standard error	0.41
Nash-Sutcliffe coefficient	0.83
Coefficient of efficiency	0.66
Index of agreement	0.82

Table T-03070106-4: Hydrologic Indices Between USGS Gauge 02226100 and HSPF Reach 11.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02226100	Simulated Reach 11	Percent Difference

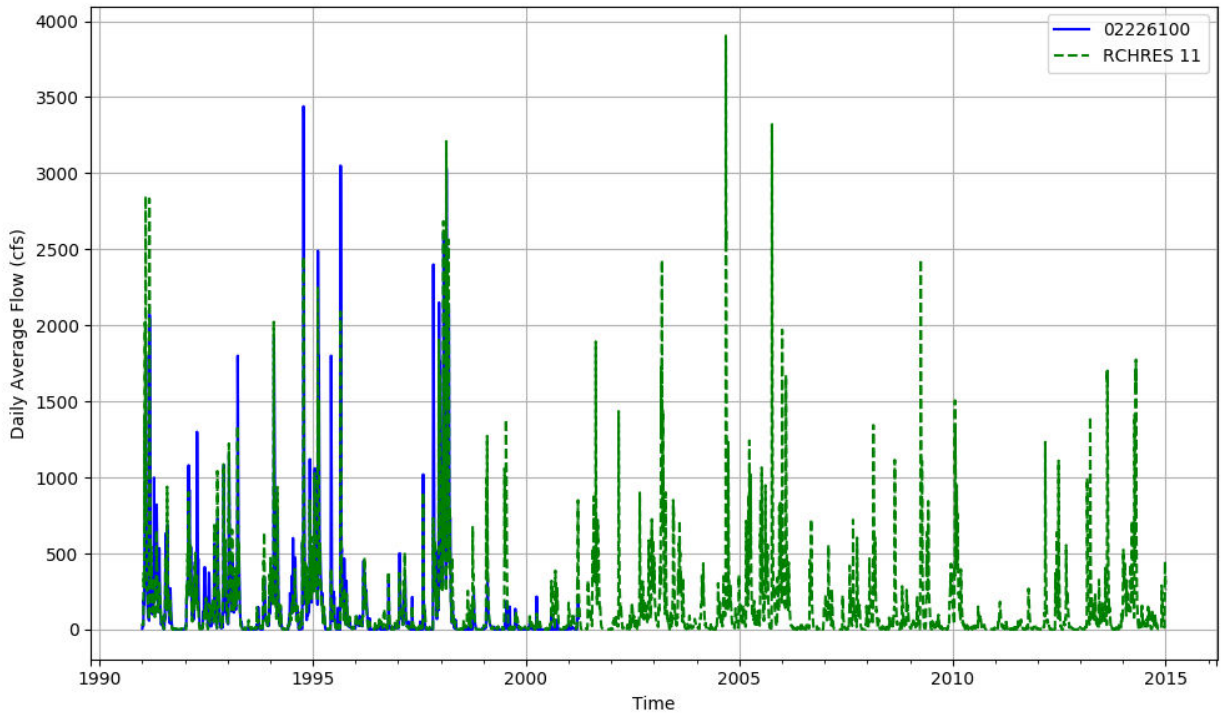


Figure T-03070106-7: Daily flow for HSFP reach 11 and USGS station 02226100.

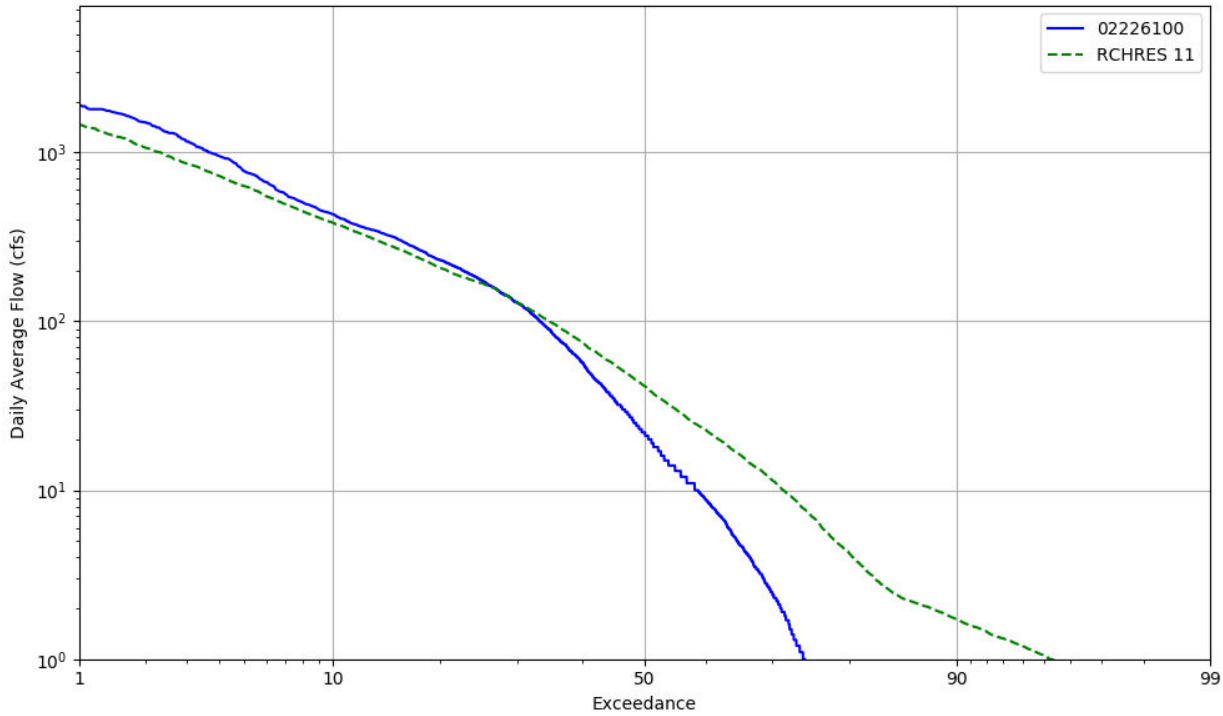


Figure T-03070106-8: Daily exceedance for HSFP reach 11 and USGS station 02226100.

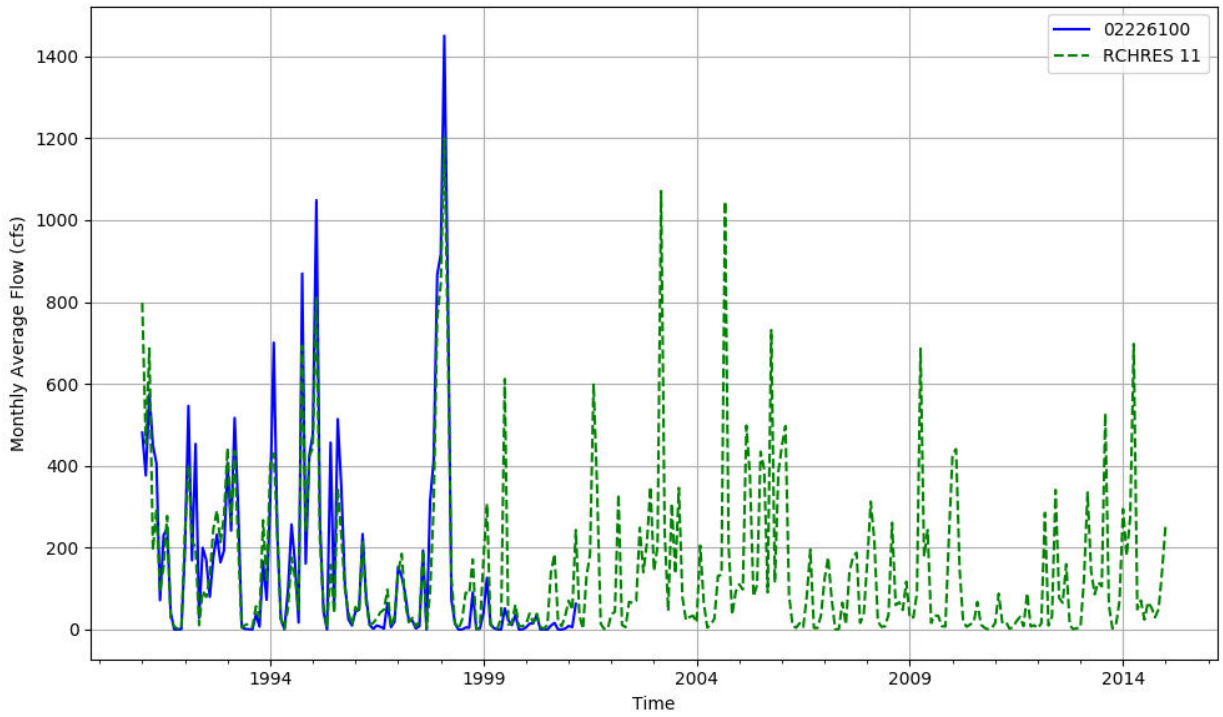


Figure T-03070106-9: Monthly flow for HSFP reach 11 and USGS station 02226100.

HSPF REACH 16, USGS GAUGE 02226000

Water-Data Report 2009
02226000 ALTAMAHA RIVER AT DOCTORTOWN, GA
Altamaha Basin Altamaha Subbasin

LOCATION.--Lat 313916, long 814941 referenced to North American Datum of 1927, Wayne County, GA, Hydrologic Unit 03070106, on right bank 60.0 feet downstream from Seaboard Coast Line Railroad bridge at Doctortown, 4.5 miles northeast of Jesup, and at mile 64.5.

DRAINAGE AREA.--13,600 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1931 to current year.
GAGE-HEIGHT: October 1998 to current year. Gage-heights collected at same site since 1925 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 822: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 24.48 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to September 5, 1934, a non-recording gage was installed, and from September 5, 1934 to September 30, 1975, a water-stage recorder was located at same site at datum 4.0 feet higher. Peak stages for 1925-1975 have been converted to present datum.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage-height records good.

Table T-03070106-5: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02226000.

Statistic	Value
Bias	-1203.95
Standard error	3917.77
Relative bias	-0.10
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.90
Coefficient of efficiency	0.73
Index of agreement	0.86

Table T-03070106-6: Hydrologic Indices Between USGS Gauge 02226000 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02226000	Simulated Reach 16	Percent Difference

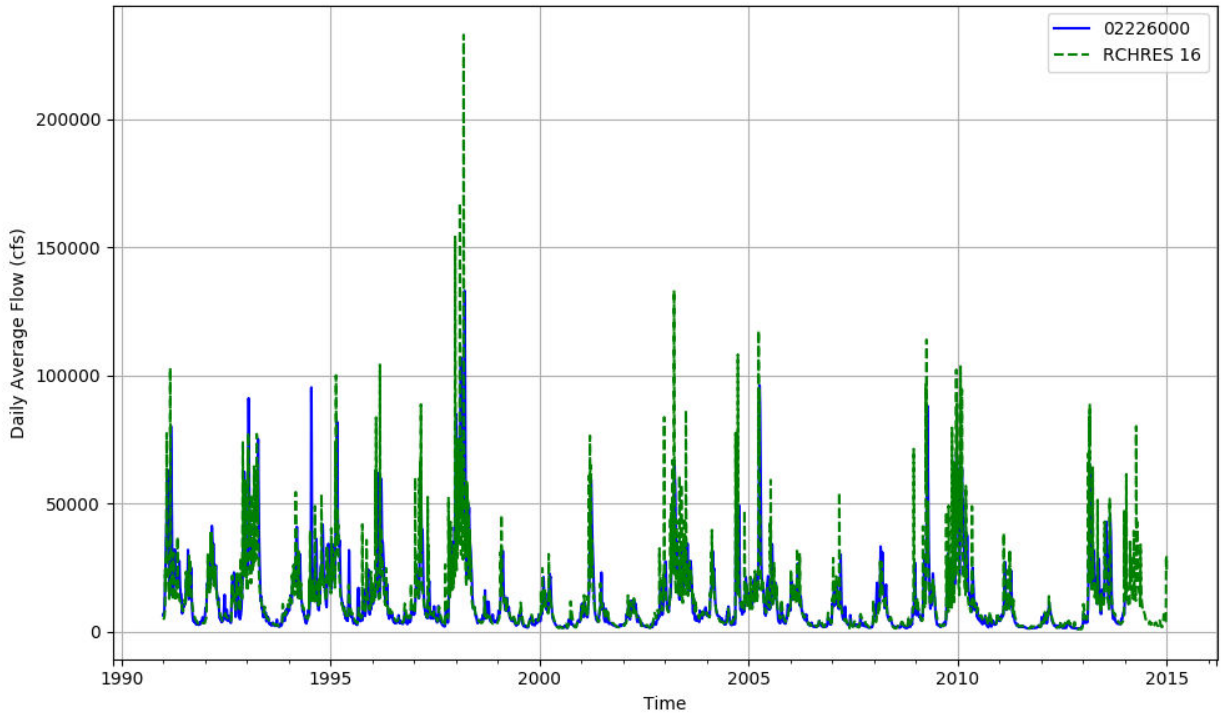


Figure T-03070106-10: Daily flow for HSFP reach 16 and USGS station 02226000.

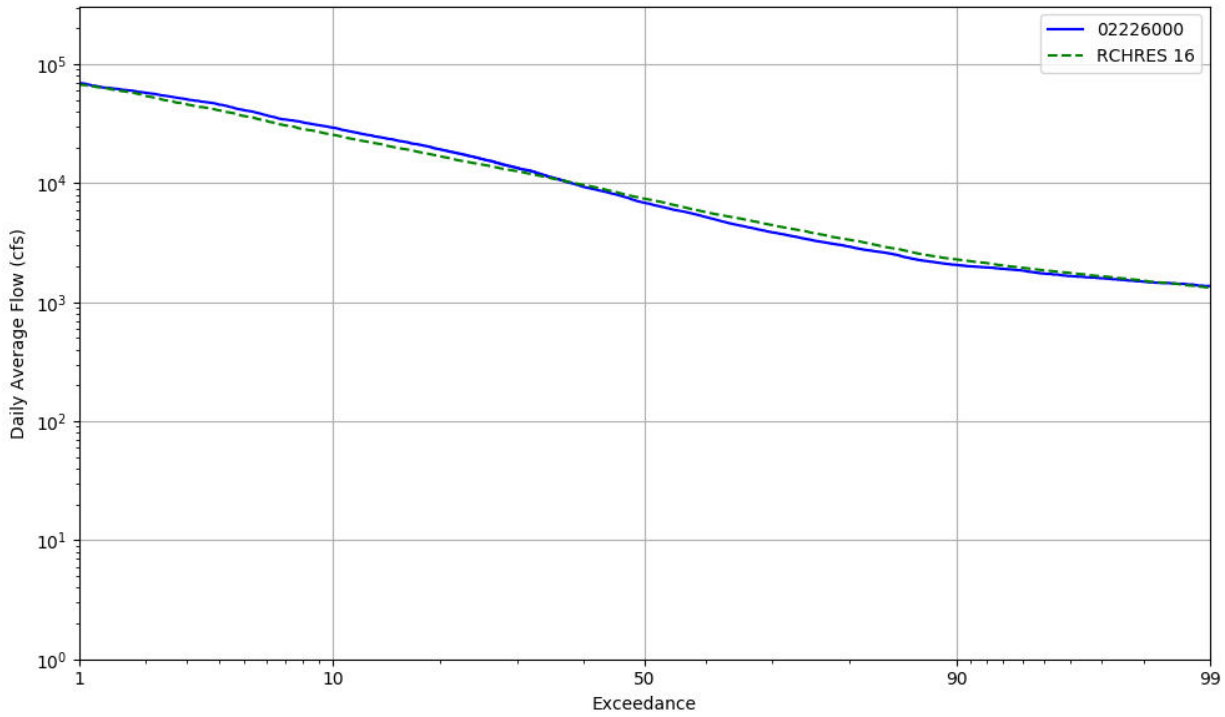


Figure T-03070106-11: Daily exceedance for HSFP reach 16 and USGS station 02226000.

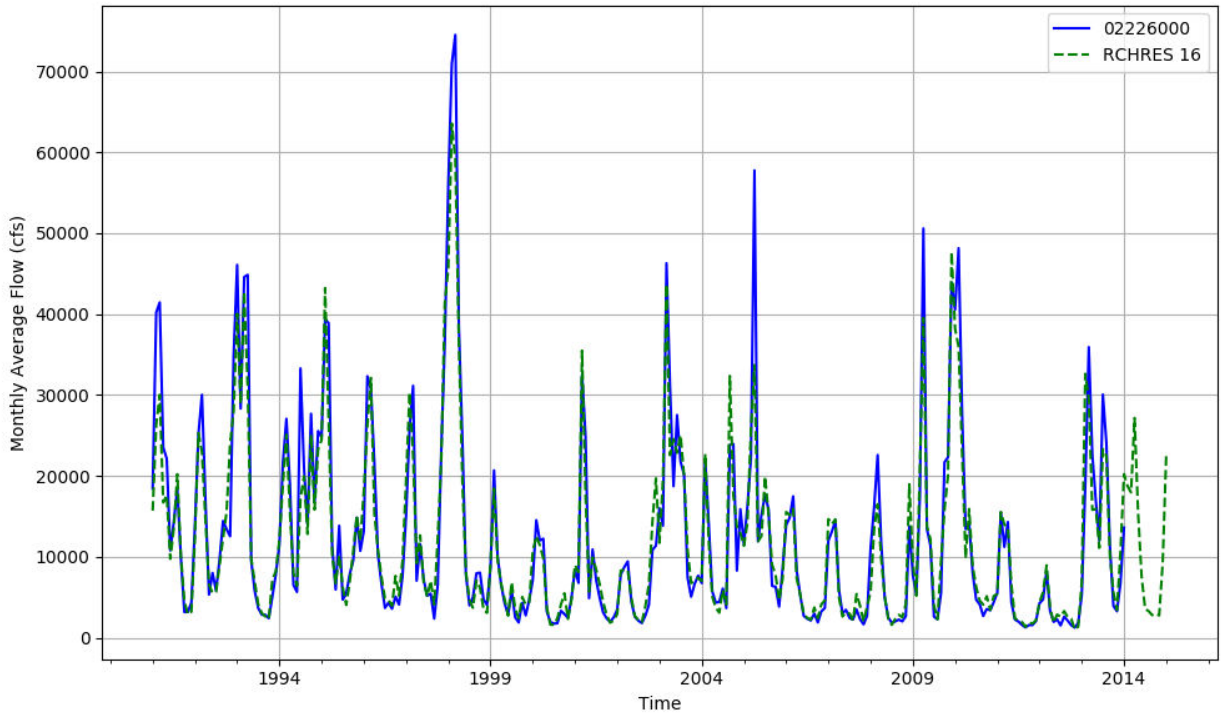


Figure T-03070106-12: Monthly flow for HSFP reach 16 and USGS station 02226000.

Table T-03070106-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	22099	41956	10346	1751	368	2668	345746	99305	51317	38383	57109	334456	294	12194	5132	1023124
AREA(%)	2.2	4.1	1.0	0.2	0.0	0.3	33.7	9.7	5.0	3.7	5.6	32.6	0.0	1.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		2237	1185	470	383											4276
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	39.1	42.2	42.1	42.8	43.5	39.8	41.9	42.3	42.4	40.6	40.3	41.4	40.3	44.1	43.7	41.5
SURLI		0.0	3.7	4.0	3.8										1.8	0.1
UZLI																0.0
LZLI		0.0	1.1	1.0	0.8									0.0	1.0	0.0
SURO: PERVIOUS	4.3	1.7	1.9	1.7	0.6	0.4	0.1	1.5	0.8	0.5	0.2	1.6	0.7	0.4	0.1	1.0
SURO: IMPERVIOUS		28.4	28.2	28.6	29.2											0.1
SURO: COMBINED	4.3	3.0	4.6	7.4	15.2	0.4	0.1	1.5	0.8	0.5	0.2	1.6	0.7	0.4	0.1	1.1
IFWO		0.9	1.3	1.9	2.4	0.3	0.3	0.9	0.6	0.2	0.0		1.8	0.0	0.1	0.3
AGWO	1.1	12.1	14.8	14.3	13.8	17.3	8.6	15.6	13.1	13.7	12.6	1.5	9.4	15.8	16.5	7.8
AGWI	2.4	12.5	15.2	15.3	15.2	16.8	9.2	15.6	13.5	13.3	12.3	2.6	10.8	15.0	15.7	8.4
IGWI	0.0	0.2	0.4	0.5	0.6	0.1	0.2	0.3	0.3	0.1	0.0	0.0	0.5	0.0	0.1	0.1
CEPE		9.7	9.6	9.8	12.4	8.4	15.5	11.5	9.8	9.2	7.1	20.3	9.3	11.9	8.6	14.9
UZET	2.7	3.1	3.3	3.4	2.9	3.0	1.5	3.1	2.8	2.7	2.8	9.5	2.4	2.8	3.0	4.6
LZET	1.3	17.0	17.8	17.7	16.4	12.5	18.6	11.5	17.6	17.9	21.4	0.2	17.2	17.1	22.0	11.5
AGWET	1.6	0.6	0.8	0.9	0.9	0.5	0.5	0.7	0.7	0.5	0.5	0.9	0.8	0.4	0.5	0.7
BASET	0.0	0.6	0.8	1.2	1.5	0.3	0.5	0.7	0.7	0.2	0.1	0.1	1.2	0.0	0.2	0.4
SURET	30.6											10.1				3.9
PERO	5.4	14.8	17.9	17.9	16.9	18.1	8.9	18.0	14.6	14.3	12.8	3.1	11.9	16.1	16.7	9.0
IGWI	0.0	0.2	0.4	0.5	0.6	0.1	0.2	0.3	0.3	0.1	0.0	0.0	0.5	0.0	0.1	0.1
TAET: PERVIOUS	36.2	31.1	32.3	33.0	34.2	24.7	36.7	27.5	31.5	30.5	31.9	41.0	30.9	32.3	34.3	35.9
IMPEV: IMPERVIOUS		13.8	13.8	14.0	14.1											0.1
ET: COMBINED	36.2	30.2	30.4	29.0	23.9	24.7	36.7	27.5	31.5	30.5	31.9	41.0	30.9	32.3	34.3	36.0
PET	41.2	45.6	45.7	45.7	45.8	42.5	45.3	45.8	45.6	45.9	45.9	44.4	41.0	45.9	45.8	44.9

Table T-03070106-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	22099	41956	10346	1751	368	2668	345746	99305	51317	38383	57109	334456	294	12194	5132	1023124
AREA(%)	2.2	4.1	1.0	0.2	0.0	0.3	33.7	9.7	5.0	3.7	5.6	32.6	0.0	1.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		2237	1185	470	383											4276
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	53.9	56.4	56.7	56.4	56.5	54.7	56.4	56.6	56.4	57.4	57.5	55.7	54.2	63.0	61.2	56.1
SURLI		0.0	4.2	4.5	3.9										1.0	0.1
UZLI																0.0
LZLI		0.0	1.3	1.2	1.0									0.0	0.7	0.0
SURO: PERVIOUS	8.0	2.9	3.5	2.8	1.2	1.1	0.2	2.6	1.5	1.4	0.6	4.0	1.5	1.5	0.7	2.1
SURO: IMPERVIOUS		41.3	41.6	41.2	41.1											0.2
SURO: COMBINED	8.0	4.8	7.4	10.9	21.6	1.1	0.2	2.6	1.5	1.4	0.6	4.0	1.5	1.5	0.7	2.3
IFWO		0.6	0.9	1.4	1.7	0.2	0.1	0.6	0.4	0.1	0.0		1.3	0.0	0.0	0.2
AGWO	1.3	15.0	18.7	17.8	16.8	23.6	12.6	20.2	16.3	18.9	18.3	1.8	12.9	22.3	21.8	10.6
AGWI	2.5	17.8	22.0	21.6	20.9	25.7	14.6	23.4	19.1	21.5	20.7	2.7	15.6	24.7	24.6	12.5
IGWI	0.0	0.3	0.4	0.7	0.8	0.2	0.2	0.4	0.3	0.1	0.0	0.0	0.6	0.0	0.1	0.2
CEPE		10.7	10.7	10.8	13.5	9.1	16.9	12.6	10.7	10.4	8.3	22.6	10.6	13.2	9.8	16.5
UZET	2.8	3.3	3.5	3.5	3.1	3.8	1.7	3.4	3.0	2.9	3.1	9.1	3.3	3.2	3.3	4.6
LZET	1.1	19.7	20.2	20.3	19.1	13.8	21.5	12.7	20.2	20.0	23.8	0.3	20.2	19.2	23.1	13.1
AGWET	1.4	0.9	1.1	1.4	1.5	0.7	0.7	1.0	1.0	0.7	0.6	0.9	1.2	0.5	0.6	0.8
BASET	0.0	0.6	0.9	1.3	1.5	0.3	0.4	0.9	0.6	0.2	0.1	0.1	1.2	0.1	0.2	0.3
SURET	37.5											14.7				5.6
PERO	9.3	18.5	23.1	21.9	19.8	24.9	12.9	23.4	18.2	20.4	18.9	5.8	15.7	23.8	22.6	12.9
IGWI	0.0	0.3	0.4	0.7	0.8	0.2	0.2	0.4	0.3	0.1	0.0	0.0	0.6	0.0	0.1	0.2
TAET: PERVIOUS	42.9	35.2	36.4	37.4	38.7	27.7	41.2	30.6	35.5	34.1	35.8	47.7	36.5	36.2	37.1	40.9
IMPEV: IMPERVIOUS		15.0	14.9	15.2	15.3											0.1
ET: COMBINED	42.9	34.2	34.2	32.7	26.8	27.7	41.2	30.6	35.5	34.1	35.8	47.7	36.5	36.2	37.1	41.0
PET	47.2	52.8	53.1	52.9	53.0	48.9	52.5	53.1	52.8	53.7	53.9	51.3	46.6	54.0	54.0	52.0

Table T-03070106-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	22099	41956	10346	1751	368	2668	345746	99305	51317	38383	57109	334456	294	12194	5132	1023124
AREA(%)	2.2	4.1	1.0	0.2	0.0	0.3	33.7	9.7	5.0	3.7	5.6	32.6	0.0	1.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		2237	1185	470	383											4276
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	35.8	39.4	39.6	39.5	39.8	37.1	39.3	39.7	39.4	40.0	40.1	38.4	39.2	43.6	44.2	39.0
SURLI		0.0	4.2	4.5	4.0										1.6	0.1
UZLI																0.0
LZLI		0.0	1.3	1.2	1.0									0.0	0.9	0.0
SURO: PERVIOUS	3.3	1.5	1.7	1.5	0.8	0.7	0.2	1.3	0.9	0.6	0.3	3.6	1.1	0.6	0.3	1.6
SURO: IMPERVIOUS		27.1	27.4	27.2	27.3											0.1
SURO: COMBINED	3.3	2.8	4.4	6.9	14.3	0.7	0.2	1.3	0.9	0.6	0.3	3.6	1.1	0.6	0.3	1.7
IFWO		0.5	0.7	1.0	1.2	0.1	0.2	0.5	0.3	0.1	0.0		1.0	0.0	0.0	0.2
AGWO	0.7	11.1	14.4	13.1	12.0	15.9	8.9	15.2	11.9	15.1	14.8	1.2	6.2	17.9	18.3	7.8
AGWI	2.2	10.1	13.6	13.1	12.3	14.6	8.0	14.4	11.0	12.7	12.2	1.7	7.3	14.9	15.7	7.2
IGWI	0.0	0.2	0.3	0.4	0.5	0.1	0.1	0.3	0.2	0.1	0.0	0.0	0.3	0.0	0.1	0.1
CEPE		8.7	8.6	8.8	11.1	7.3	14.0	10.3	8.7	8.5	6.7	19.4	11.2	10.4	8.6	13.8
UZET	4.8	2.5	2.8	2.7	2.4	2.6	1.1	2.7	2.2	2.2	2.2	12.2	2.0	2.4	2.4	5.2
LZET	2.3	19.0	20.1	20.3	19.1	14.2	20.9	12.9	19.6	19.5	23.0	0.4	18.7	19.1	23.1	12.8
AGWET	1.8	0.8	1.0	1.3	1.3	0.7	0.6	1.0	0.9	0.6	0.6	1.0	1.0	0.5	0.6	0.8
BASET	0.0	0.4	0.6	0.8	0.9	0.2	0.2	0.6	0.4	0.1	0.1	0.0	0.7	0.1	0.2	0.2
SURET	26.4											7.0				2.8
PERO	3.9	13.1	16.8	15.6	14.1	16.7	9.2	16.9	13.1	15.8	15.1	4.8	8.3	18.5	18.6	9.6
IGWI	0.0	0.2	0.3	0.4	0.5	0.1	0.1	0.3	0.2	0.1	0.0	0.0	0.3	0.0	0.1	0.1
TAET: PERVIOUS	35.3	31.4	33.2	33.9	34.9	25.0	36.8	27.5	31.7	30.9	32.5	39.9	33.6	32.5	34.9	35.7
IMPEV: IMPERVIOUS		12.3	12.3	12.4	12.6											0.1
ET: COMBINED	35.3	30.5	31.0	29.3	23.5	25.0	36.8	27.5	31.7	30.9	32.5	39.9	33.6	32.5	34.9	35.7
PET	46.8	50.7	50.8	50.7	50.8	47.9	50.5	50.9	50.7	51.0	51.1	49.7	46.4	51.1	51.1	50.0

Table T-03070106-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	22099	41956	10346	1751	368	2668	345746	99305	51317	38383	57109	334456	294	12194	5132	1023124
AREA(%)	2.2	4.1	1.0	0.2	0.0	0.3	33.7	9.7	5.0	3.7	5.6	32.6	0.0	1.2	0.5	99.6
IMPERVIOUS																
AREA(ACRES)		2237	1185	470	383											4276
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	46.5	47.5	47.6	47.9	48.3	46.8	47.5	47.7	47.7	46.8	46.6	47.2	48.5	51.6	50.0	47.2
SURLI		0.0	3.4	3.7	3.4										1.3	0.0
UZLI																0.0
LZLI		0.0	1.0	0.9	0.8									0.0	0.9	0.0
SURO: PERVIOUS	7.2	1.9	2.2	1.9	0.9	0.9	0.2	1.7	1.0	0.8	0.4	4.7	1.4	0.9	0.4	2.1
SURO: IMPERVIOUS		34.1	34.2	34.3	34.6											0.1
SURO: COMBINED	7.2	3.6	5.5	8.8	18.1	0.9	0.2	1.7	1.0	0.8	0.4	4.7	1.4	0.9	0.4	2.3
IFWO		0.7	1.0	1.4	1.8	0.2	0.2	0.6	0.4	0.1	0.0		1.4	0.0	0.1	0.2
AGWO	1.3	13.1	15.7	15.1	14.5	20.2	10.4	17.2	14.0	15.2	14.3	1.5	12.0	18.0	17.9	8.8
AGWI	2.5	14.4	17.5	17.4	17.1	21.1	11.4	18.8	15.4	16.0	15.0	2.4	14.0	18.6	18.7	9.9
IGWI	0.0	0.3	0.4	0.6	0.7	0.1	0.2	0.4	0.3	0.1	0.0	0.0	0.5	0.0	0.1	0.2
CEPE		9.7	9.7	9.8	12.0	8.7	15.1	11.4	9.8	9.4	7.5	20.1	10.5	11.7	8.8	14.7
UZET	2.6	2.7	2.9	2.9	2.6	2.9	1.4	2.8	2.4	2.3	2.4	9.3	2.6	2.6	2.7	4.3
LZET	1.2	17.7	18.4	18.5	17.4	12.8	19.1	11.8	18.2	18.0	21.3	0.3	18.2	17.8	21.6	11.8
AGWET	1.2	0.8	0.9	1.1	1.2	0.6	0.6	0.8	0.8	0.6	0.5	0.8	1.0	0.5	0.6	0.7
BASET	0.0	0.6	0.8	1.2	1.4	0.3	0.4	0.7	0.6	0.2	0.1	0.1	1.0	0.0	0.2	0.3
SURET	32.9											10.4				4.1
PERO	8.6	15.7	18.9	18.5	17.2	21.3	10.7	19.6	15.5	16.1	14.7	6.2	14.8	18.8	18.3	11.1
IGWI	0.0	0.3	0.4	0.6	0.7	0.1	0.2	0.4	0.3	0.1	0.0	0.0	0.5	0.0	0.1	0.2
TAET: PERVIOUS	37.9	31.5	32.6	33.4	34.5	25.4	36.6	27.6	31.8	30.5	31.8	41.1	33.2	32.6	33.8	36.0
IMPEV: IMPERVIOUS		13.4	13.4	13.5	13.6											0.1
ET: COMBINED	37.9	30.6	30.6	29.2	23.8	25.4	36.6	27.6	31.8	30.5	31.8	41.1	33.2	32.6	33.8	36.0
PET	43.7	48.0	48.1	48.0	48.2	45.0	47.8	48.2	48.0	48.4	48.5	46.8	43.3	48.5	48.5	47.3

Table T-03070106-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
2	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
3	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
4	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
5	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
6	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
7	0.999	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.999
8	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
9	0.999	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.999
10	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
11	0.999	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.999
12	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
13	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
14	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
15	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
16	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
17	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
18	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
19	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990
20	0.990	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.974	0.990

Table T-03070106-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070106-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
2	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
3	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
4	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
5	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
6	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
7	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
8	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
9	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
10	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
11	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
12	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
13	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
14	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
15	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
16	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
17	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
18	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
19	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300
20	0.000	0.050	0.050	0.050	0.080	0.040	0.139	0.072	0.050	0.050	0.030	0.300

Table T-03070106-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070106-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
2	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
3	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
4	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
5	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
6	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
7	0.002	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.002
8	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
9	0.002	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.002
10	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
11	0.002	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.002
12	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
13	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
14	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
15	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
16	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
17	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
18	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
19	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001
20	0.001	0.280	0.280	0.280	0.280	0.400	0.600	0.400	0.400	0.400	0.480	0.001

Table T-03070106-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
2		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
3		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
4		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
5		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
6		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
7		2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	
8		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
9		2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	
10		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
11		2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	
12		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
13		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
14		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
15		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
16		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
17		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
18		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
19		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	
20		0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	0.238	

Table T-03070106-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
2	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
3	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
4	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
5	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
6	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
13	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
14	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
15	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
16	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
17	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
18	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
19	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
20	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696

Table T-03070106-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
2	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
3	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
4	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
5	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
6	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
7	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
8	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
9	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
10	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
11	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
12	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
13	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
14	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
15	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
16	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
17	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
18	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
19	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
20	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003

Table T-03070106-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.208	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.951
8	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.208	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.951
10	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
11	0.208	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.951
12	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
16	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.258	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03070106-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
2	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
3	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
4	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
5	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
6	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
7	0.200	3.116	3.116	3.116	3.116	3.504	4.672	3.504	3.504	3.504	3.894	0.085
8	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
9	0.200	3.116	3.116	3.116	3.116	3.504	4.672	3.504	3.504	3.504	3.894	0.085
10	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
11	0.200	3.116	3.116	3.116	3.116	3.504	4.672	3.504	3.504	3.504	3.894	0.085
12	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
13	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
14	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
15	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
16	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
17	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
18	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
19	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050
20	0.200	4.163	4.163	4.163	4.163	4.683	6.243	4.683	4.683	4.683	5.204	0.050

Table T-03070106-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.668
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.668
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.668
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03070107

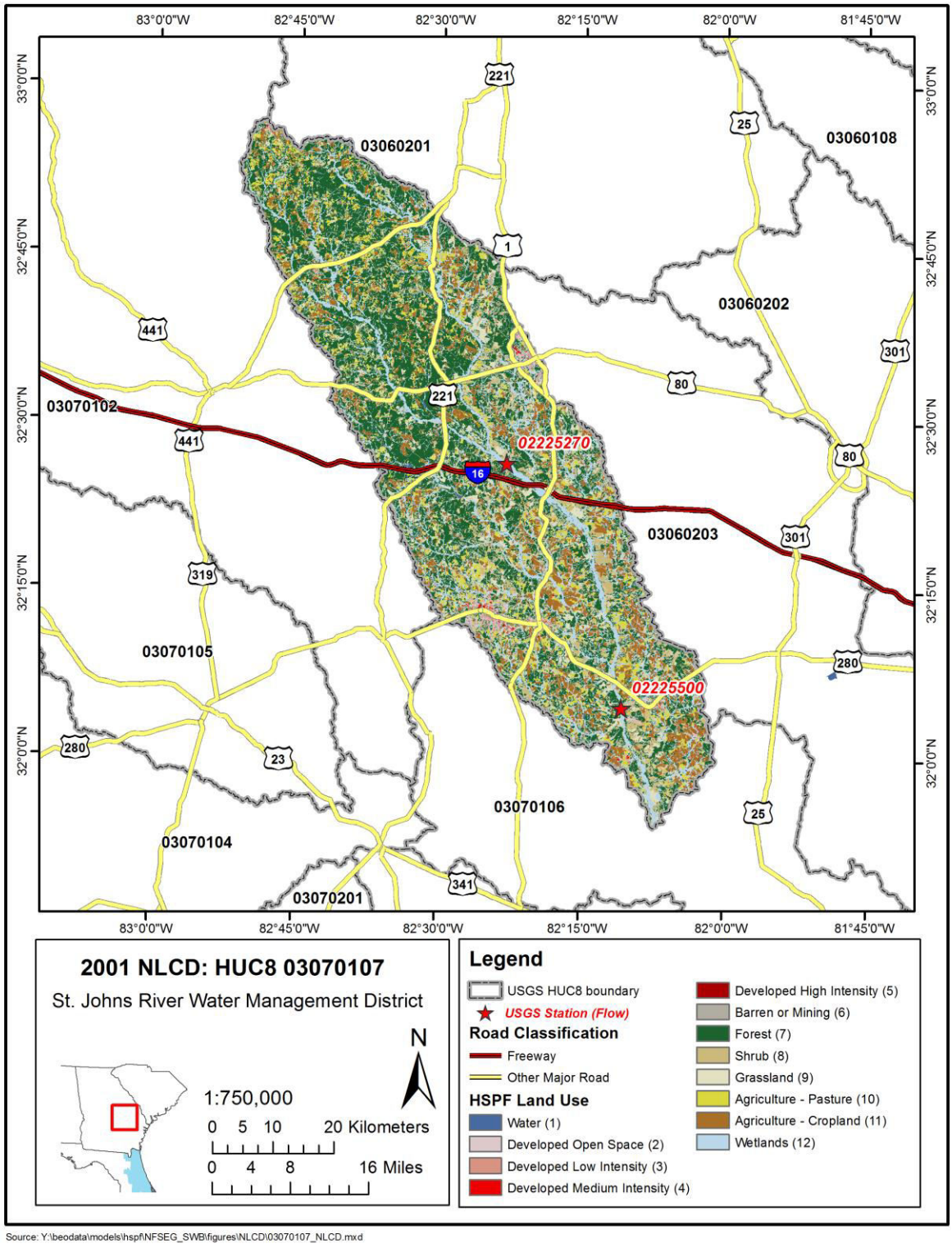


Figure T-03070107-1: Land Cover from the National Land Cover Database.

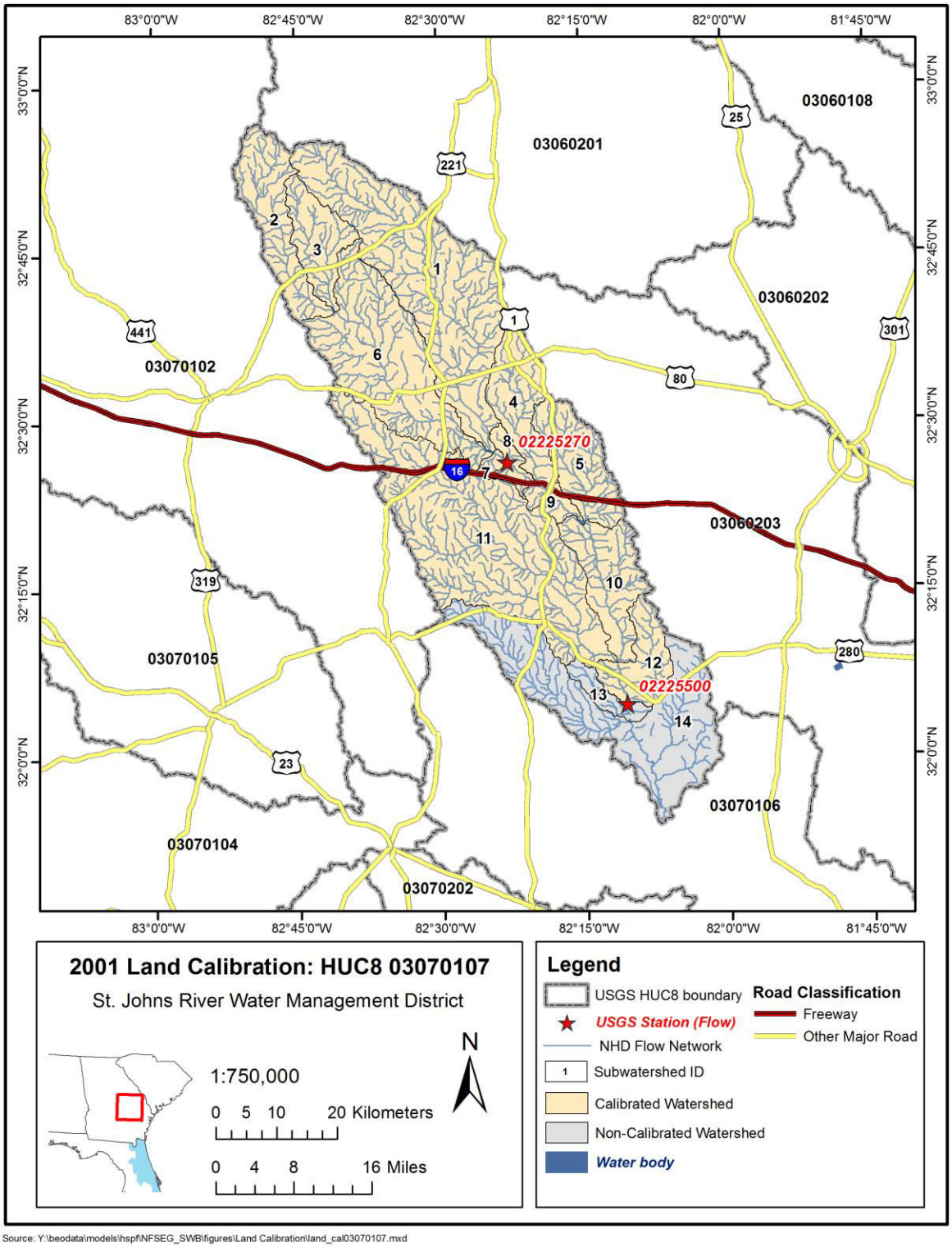


Figure T-03070107-2: Calibrated sub-watersheds.

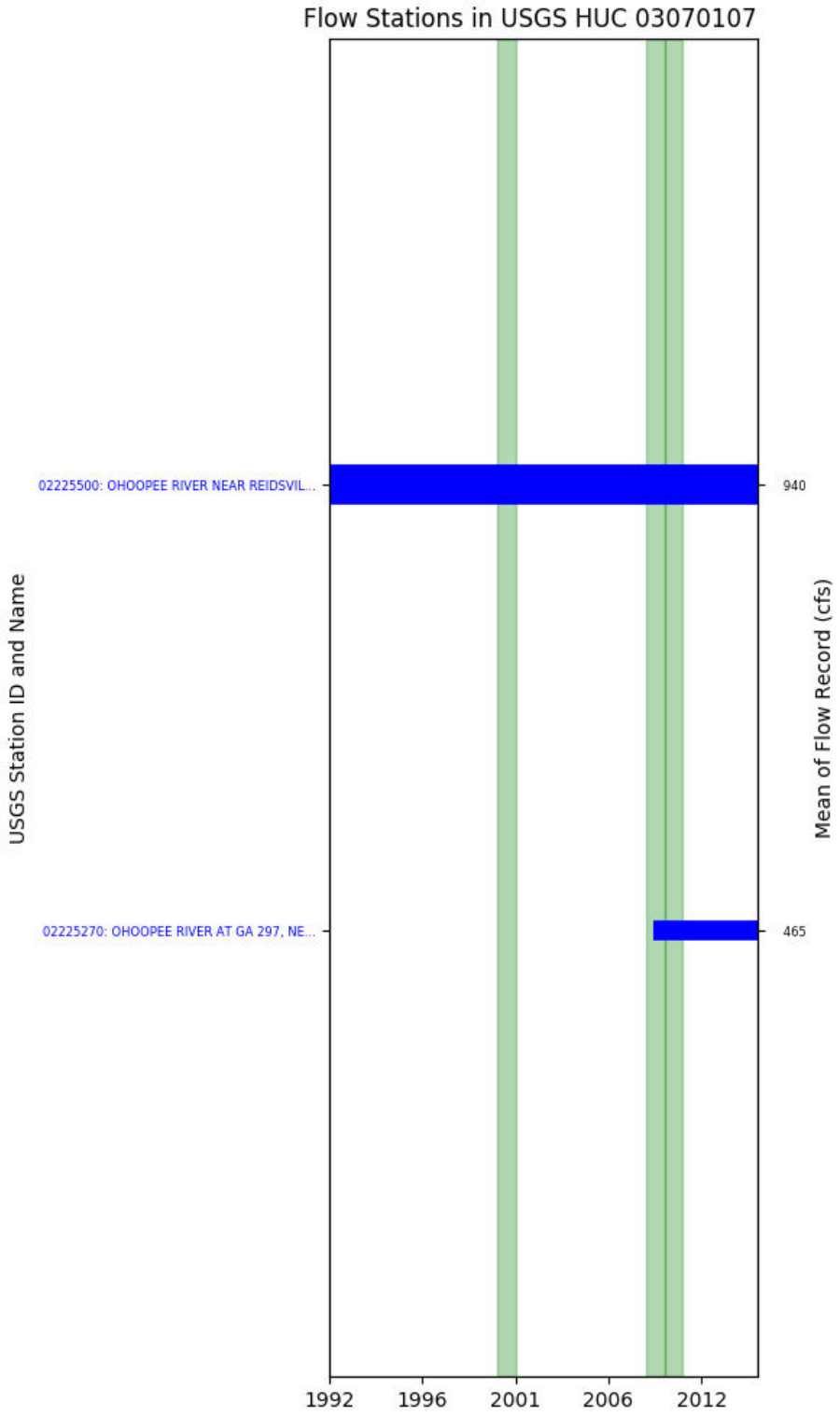


Figure T-03070107-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 07, USGS GAUGE 02225270

Water-Data Report 2009
02225270 OHOOPEE RIVER AT GA 297, NEAR SWAINSBORO, GA
Altamaha Basin Ohoopee Subbasin

LOCATION.--Lat 322625, long 822256 referenced to North American Datum of 1927, Emanuel County, GA, Hydrologic Unit 03070107, at the bridge on GA 297, 1.6 miles downstream from confluence with Little Ohoopee River, 1.6 miles north of US Interstate Highway 16, and 9.6 miles south of Swainsboro.

DRAINAGE AREA.-SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 2009 to September 2009.
GAGE-HEIGHT: June 2009 to September 2009.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 170 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division (GAEPD).

REMARKS.--Discharge and gage-height records are good.

Table T-03070107-1: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02225270.

Statistic	Value
Bias	-110.77
Standard error	326.97
Relative bias	-0.23
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.82
Kling-Gupta coefficient	0.66
Coefficient of efficiency	0.76
Index of agreement	0.87

Table T-03070107-2: Hydrologic Indices Between USGS Gauge 02225270 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02225270	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	473.85	364.97	-22.98
MA2: Median, all daily flows	53.00	74.57	40.70
MA3: CV, all daily flows	133.63	114.53	-14.29
MA4: CV, log of all daily flows	194.77	166.88	-14.32

MA5: Mean daily flow / median daily flow	8.94	4.89	-45.26
MA9: (Q10 - Q90) / median daily flow	24.81	14.01	-43.54
MA10: (Q20 - Q80) / median daily flow	11.45	6.84	-40.27
MA11: (Q25 - Q75) / median daily flow	7.08	4.53	-36.07
MA12: Mean monthly flow, January	517.32	452.98	-12.44
MA13: Mean monthly flow, February	960.57	810.40	-15.63
MA14: Mean monthly flow, March	615.69	535.08	-13.09
MA15: Mean monthly flow, April	300.19	232.22	-22.64
MA16: Mean monthly flow, May	182.19	100.10	-45.06
MA17: Mean monthly flow, June	384.26	168.01	-56.28
MA18: Mean monthly flow, July	473.08	190.78	-59.67
MA19: Mean monthly flow, August	361.05	305.31	-15.44
MA20: Mean monthly flow, September	77.78	92.75	19.25
MA21: Mean monthly flow, October	36.79	54.65	48.54
MA22: Mean monthly flow, November	95.67	93.92	-1.83
MA23: Mean monthly flow, December	484.77	419.33	-13.50
ML1: Mean minimum monthly flow, January	276.80	242.52	-12.38
ML2: Mean minimum monthly flow, February	303.25	288.45	-4.88
ML3: Mean minimum monthly flow, March	378.75	400.50	5.74
ML4: Mean minimum monthly flow, April	140.12	111.70	-20.29
ML5: Mean minimum monthly flow, May	31.77	43.14	35.78
ML6: Mean minimum monthly flow, June	19.57	33.41	70.72
ML7: Mean minimum monthly flow, July	124.75	76.36	-38.79
ML8: Mean minimum monthly flow, August	46.00	51.87	12.77
ML9: Mean minimum monthly flow, September	23.29	21.77	-6.53
ML10: Mean minimum monthly flow, October	19.83	30.52	53.86
ML11: Mean minimum monthly flow, November	33.56	50.02	49.04
ML12: Mean minimum monthly flow, December	100.66	119.97	19.18
ML13: CV of minimum monthly flows	194.54	170.37	-12.42
ML14: Mean minimum daily flow / mean median annual flow	0.11	0.09	-14.74
ML15: Mean minimum annual flow / mean annual flow	0.04	0.04	-1.31
ML16: Median minimum annual flow / median annual flow	0.02	0.04	118.93
ML20: Ratio of baseflow volume to total flow volume	0.42	0.52	25.22
ML22: Mean annual minimum flow divided by catchment area	0.05	0.04	-13.53
RA1: Mean of positive changes from one day to next (rise rate)	159.14	71.78	
RA2: CV, mean of positive changes from one day to next (rise rate)	315.53	332.00	
RA3: Mean of negative changes from one day to next (fall rate)	87.98	35.35	
RA4: CV, mean of negative changes from one day to next (fall rate)	270.18	231.69	
RA5: Ratio of days that are higher than previous day	0.34	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.08	
RA8: Number of flow reversals from one day to the next	57.83	55.17	
RA9: CV, number of flow reversals from one day to the next	53.09	52.01	

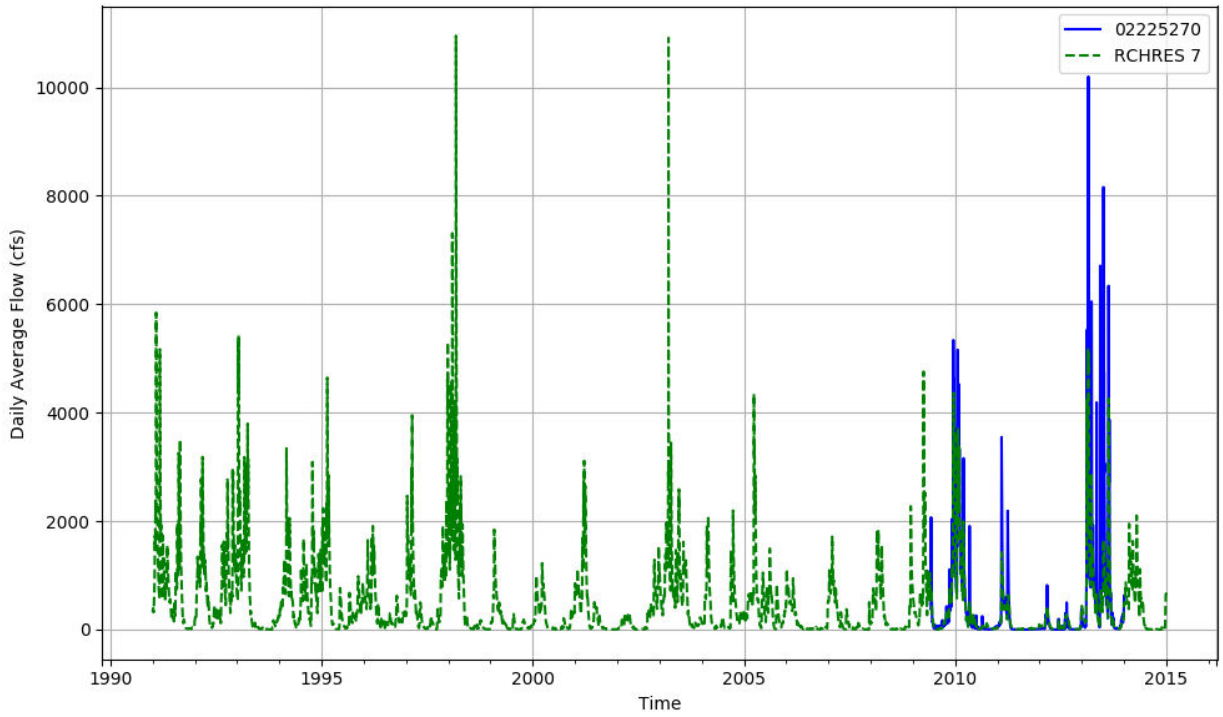


Figure T-03070107-4: Daily flow for HSFP reach 07 and USGS station 02225270.

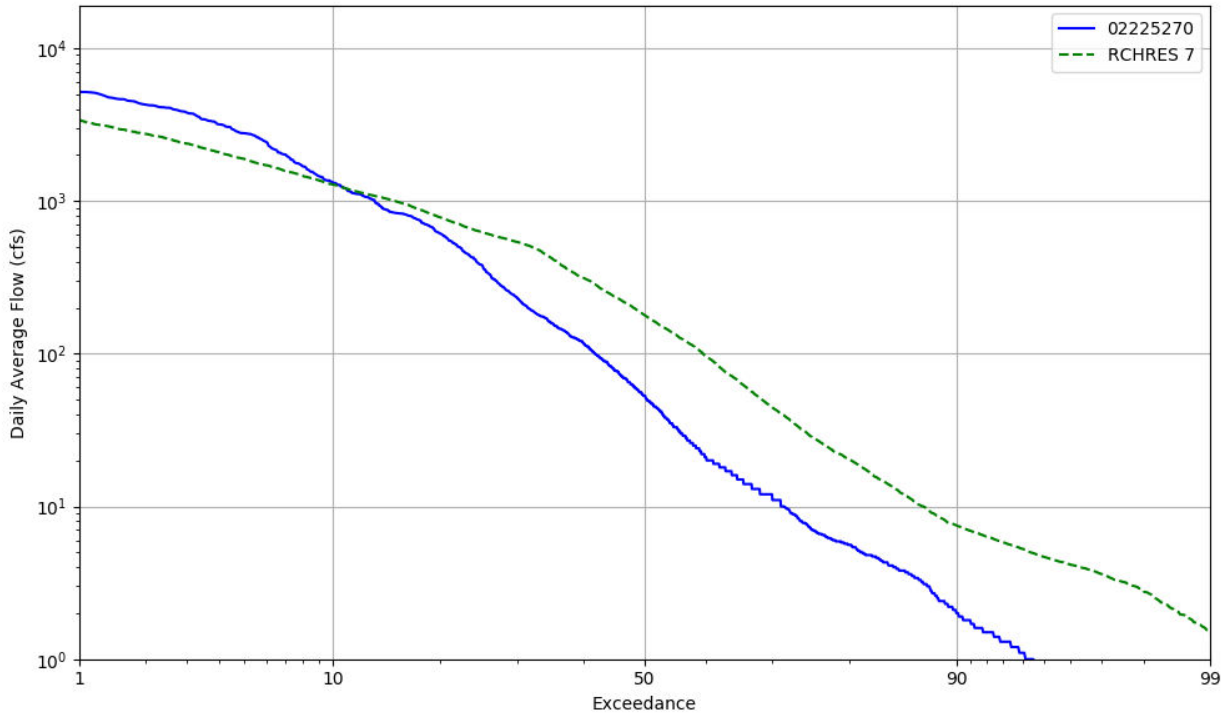


Figure T-03070107-5: Daily exceedance for HSFP reach 07 and USGS station 02225270.

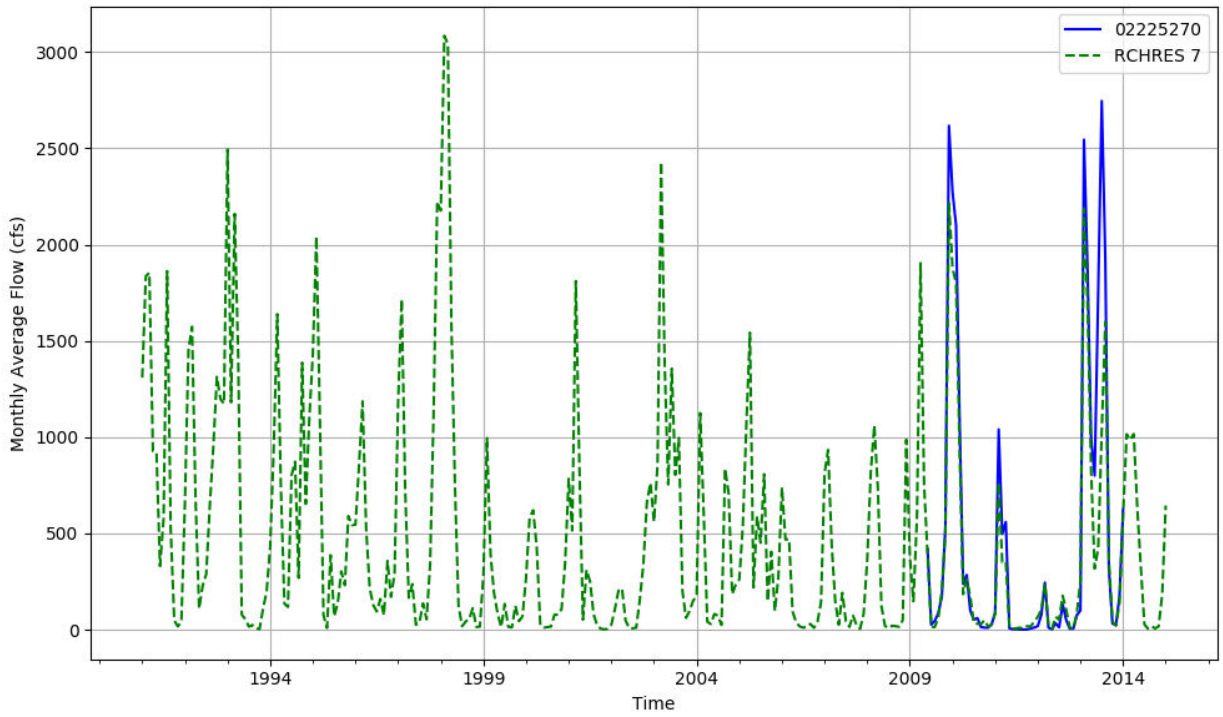


Figure T-03070107-6: Monthly flow for HSFP reach 07 and USGS station 02225270.

HSPF REACH 12, USGS GAUGE 02225500

Water-Data Report 2009
02225500 OHOOPEE RIVER NEAR REIDSVILLE, GA
Altamaha Basin Ohoopee Subbasin

LOCATION.--Lat 320442, long 821039 referenced to North American Datum of 1927, Tattnall County, GA, Hydrologic Unit 03070107, on downstream side of pier near center span of bridge on GA 56, 0.5 miles downstream from Brazells Creek, 1.5 miles downstream from Rocky Creek, 3.5 miles west of Reidsville, 6.0 miles downstream from Pendleton Creek, and 14.0 miles upstream from mouth.

DRAINAGE AREA.--1,110 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1903 to December 1907, April 1937 to current year. Monthly discharge only for April to June 1903, April to May 1937, published in WSP 1304.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 822: Drainage area. WSP 892: 1938(M). WSP 1504: 1905. WDR GA-84-1: 1983.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 73.8 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). Prior to February 15, 1941, a non-recording gage was located at same site, at different datum June 13, 1903, to December 31, 1907, and at same datum May 25, 1937, to February 15, 1941.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records are good.

Table T-03070107-3: Comparison Statistics Between HSPF Reach 12 and USGS Gauge 02225500.

Statistic	Value
Bias	10.41
Standard error	336.01
Relative bias	0.01
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.93
Kling-Gupta coefficient	0.95

Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03070107-4: Hydrologic Indices Between USGS Gauge 02225500 and HSPF Reach 12.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02225500	Simulated Reach 12	Percent Difference
MA1: Mean, all daily flows	982.84	993.73	1.11
MA2: Median, all daily flows	326.00	443.88	36.16
MA3: CV, all daily flows	128.13	112.66	-12.07
MA4: CV, log of all daily flows	129.84	121.09	-6.74
MA5: Mean daily flow / median daily flow	3.01	2.24	-25.74
MA9: (Q10 - Q90) / median daily flow	8.07	5.78	-28.35
MA10: (Q20 - Q80) / median daily flow	4.76	3.34	-29.81
MA11: (Q25 - Q75) / median daily flow	3.57	2.62	-26.64
MA12: Mean monthly flow, January	1451.33	1472.77	1.48
MA13: Mean monthly flow, February	2112.92	2075.96	-1.75
MA14: Mean monthly flow, March	2265.34	2124.86	-6.20
MA15: Mean monthly flow, April	1351.92	1264.99	-6.43
MA16: Mean monthly flow, May	496.71	442.77	-10.86
MA17: Mean monthly flow, June	489.94	454.35	-7.26
MA18: Mean monthly flow, July	418.10	468.93	12.16
MA19: Mean monthly flow, August	669.91	726.55	8.46
MA20: Mean monthly flow, September	448.40	502.29	12.02
MA21: Mean monthly flow, October	434.53	527.05	21.29
MA22: Mean monthly flow, November	386.77	506.90	31.06
MA23: Mean monthly flow, December	877.01	955.62	8.96
ML1: Mean minimum monthly flow, January	653.25	641.21	-1.84
ML2: Mean minimum monthly flow, February	1005.74	993.17	-1.25
ML3: Mean minimum monthly flow, March	1022.30	946.25	-7.44
ML4: Mean minimum monthly flow, April	490.48	518.21	5.65
ML5: Mean minimum monthly flow, May	171.26	170.34	-0.53
ML6: Mean minimum monthly flow, June	115.09	111.53	-3.09
ML7: Mean minimum monthly flow, July	161.00	200.70	24.66
ML8: Mean minimum monthly flow, August	213.65	319.98	49.77
ML9: Mean minimum monthly flow, September	99.57	138.69	39.30
ML10: Mean minimum monthly flow, October	118.48	164.19	38.58
ML11: Mean minimum monthly flow, November	188.04	282.32	50.13
ML12: Mean minimum monthly flow, December	374.61	462.03	23.34
ML13: CV of minimum monthly flows	141.03	129.53	-8.16
ML14: Mean minimum daily flow / mean median annual flow	0.16	0.05	-71.54
ML15: Mean minimum annual flow / mean annual flow	0.07	0.03	-54.73
ML16: Median minimum annual flow / median annual flow	0.13	0.01	-90.51
ML20: Ratio of baseflow volume to total flow volume	0.56	0.59	6.49
ML22: Mean annual minimum flow divided by catchment area	0.47	0.34	-27.12
RA1: Mean of positive changes from one day to next (rise rate)	210.21	181.54	
RA2: CV, mean of positive changes from one day to next (rise rate)	252.44	321.19	
RA3: Mean of negative changes from one day to next (fall rate)	111.47	86.27	
RA4: CV, mean of negative changes from one day to next (fall rate)	278.07	235.88	

RA5: Ratio of days that are higher than previous day	0.33	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.07	
RA8: Number of flow reversals from one day to the next	62.38	53.83	
RA9: CV, number of flow reversals from one day to the next	18.11	24.59	

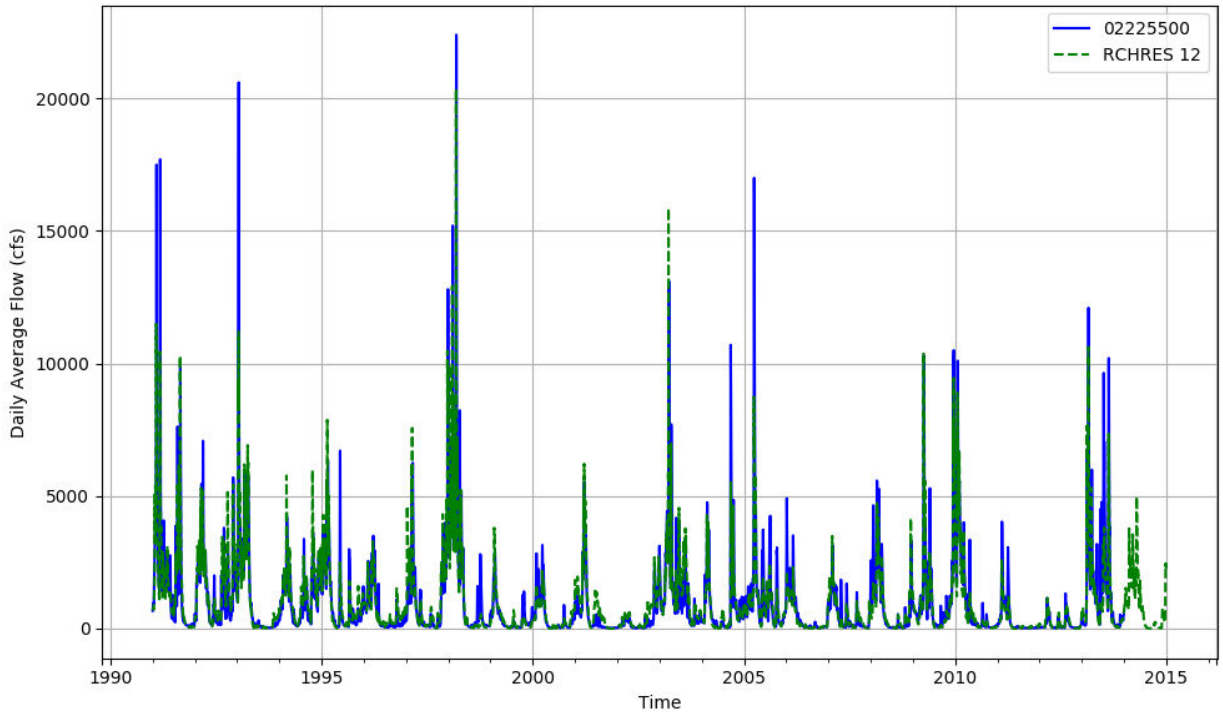


Figure T-03070107-7: Daily flow for HSFP reach 12 and USGS station 02225500.

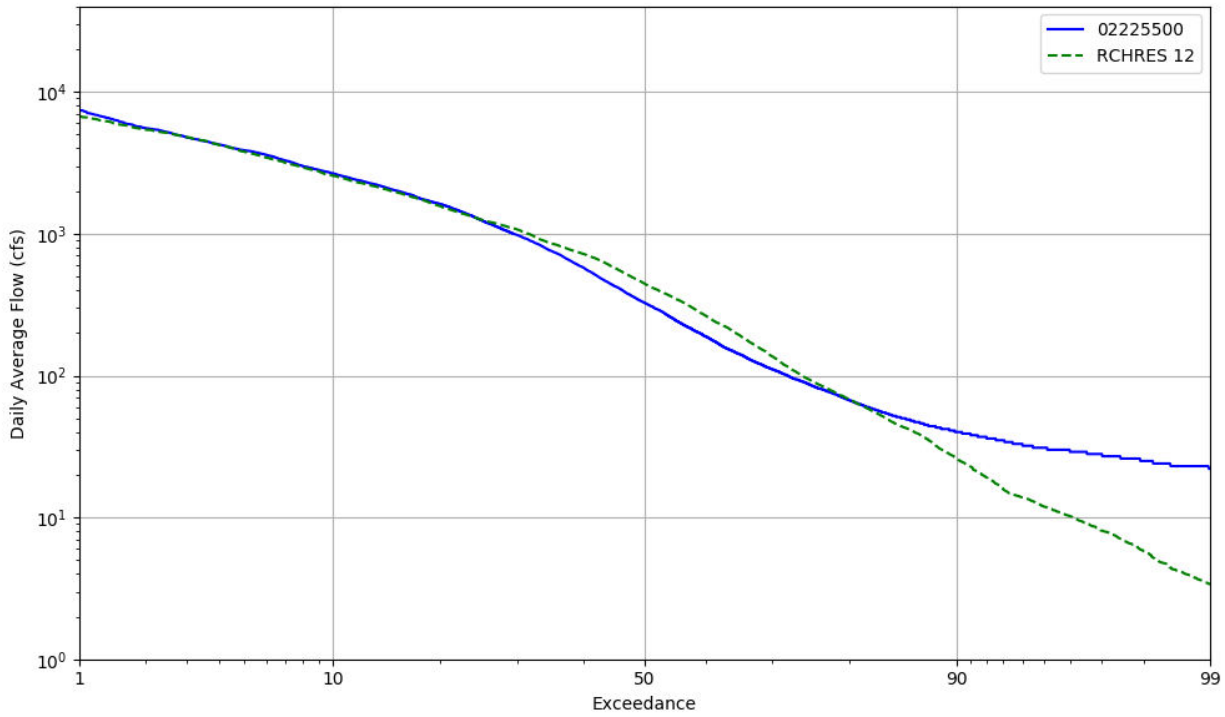


Figure T-03070107-8: Daily exceedance for HSFP reach 12 and USGS station 02225500.

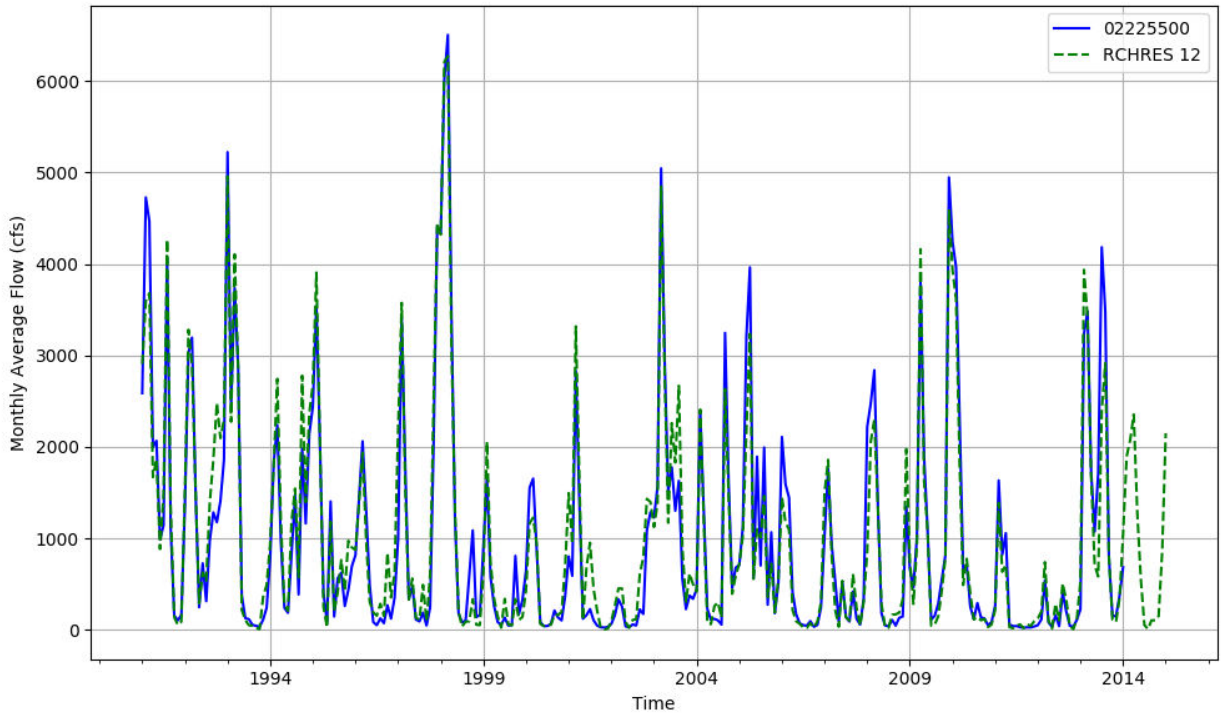


Figure T-03070107-9: Monthly flow for HSFP reach 12 and USGS station 02225500.

Table T-03070107-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3191	38438	10105	1682	408	664	332179	72701	71319	66264	88627	150796	365	14677	5444	856860
AREA(%)	0.4	4.5	1.2	0.2	0.0	0.1	38.6	8.4	8.3	7.7	10.3	17.5	0.0	1.7	0.6	99.5
IMPERVIOUS																
AREA(ACRES)		2058	1149	445	420											4072
AREA(%)		0.2	0.1	0.1	0.0											0.5
SUPY	38.6	38.6	39.1	39.1	39.1	38.3	38.2	39.1	38.2	38.4	38.6	38.7	81.2	45.4	43.7	38.5
SURLI			4.6	4.8	4.8										2.4	0.1
UZLI																0.0
LZLI			1.0	0.9	0.8										1.3	0.0
SURO: PERVIOUS	5.8	0.2	0.3	0.3	0.4	0.5	0.0	0.3	0.2	0.3	0.1	2.6	3.2	0.4	0.1	0.6
SURO: IMPERVIOUS		21.8	21.9	21.8	21.7											0.1
SURO: COMBINED	5.8	1.3	2.5	4.8	11.2	0.5	0.0	0.3	0.2	0.3	0.1	2.6	3.2	0.4	0.1	0.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.8	12.3	16.1	16.2	14.8	16.8	8.6	15.7	11.5	11.8	8.9	1.7	37.6	15.3	12.0	8.9
AGWI	2.4	14.5	18.7	18.7	17.0	19.8	10.7	18.3	13.8	14.4	10.5	2.6	38.9	18.0	14.1	10.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		8.6	8.5	8.6	12.3	5.3	12.2	9.0	9.7	8.2	15.9	19.9	32.3	11.7	20.7	12.9
UZET	3.4	2.0	2.3	2.3	2.0	2.8	1.2	2.7	1.9	2.0	1.4	8.9	2.3	2.3	1.7	2.9
LZET	1.0	17.0	17.9	17.9	16.0	12.6	19.4	11.5	16.9	17.8	15.5	0.5	5.8	16.7	14.2	14.3
AGWET	1.2	2.8	3.1	3.1	2.7	3.3	2.3	2.9	2.7	2.9	2.0	0.6	0.9	2.8	2.2	2.1
BASET	0.6	1.0	1.1	1.1	1.1	1.2	0.9	1.2	1.0	1.0	0.9	0.8	1.4	1.2	1.3	0.9
SURET	30.9											9.7				1.8
PERO	6.7	12.5	16.4	16.4	15.2	17.2	8.6	15.9	11.7	12.1	9.0	4.3	40.8	15.7	12.1	9.5
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	37.1	31.3	32.9	32.9	34.1	25.2	36.0	27.4	32.4	31.9	35.7	40.4	42.8	34.8	40.0	35.0
IMPEV: IMPERVIOUS		16.9	17.4	17.4	17.5											0.1
ET: COMBINED	37.1	30.6	31.3	29.7	25.7	25.2	36.0	27.4	32.4	31.9	35.7	40.4	42.8	34.8	40.0	35.1
PET	45.2	45.2	45.3	45.4	45.5	45.2	45.1	45.3	45.1	45.2	45.2	45.2	45.4	45.4	45.6	45.0

Table T-03070107-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3191	38438	10105	1682	408	664	332179	72701	71319	66264	88627	150796	365	14677	5444	856860
AREA(%)	0.4	4.5	1.2	0.2	0.0	0.1	38.6	8.4	8.3	7.7	10.3	17.5	0.0	1.7	0.6	99.5
IMPERVIOUS																
AREA(ACRES)		2058	1149	445	420											4072
AREA(%)		0.2	0.1	0.1	0.0											0.5
SUPY	56.5	56.5	56.9	56.8	56.5	56.4	56.3	56.9	56.3	56.5	56.6	56.7	73.6	64.4	60.2	56.4
SURLI			5.1	5.1	5.1										1.3	0.1
UZLI																0.0
LZLI			1.2	1.1	0.9										0.9	0.0
SURO: PERVIOUS	9.0	0.6	0.9	0.9	1.2	1.5	0.1	0.9	0.5	0.8	0.2	4.6	2.3	1.0	0.3	1.1
SURO: IMPERVIOUS		37.9	38.1	38.0	37.7											0.2
SURO: COMBINED	9.0	2.5	4.7	8.6	19.7	1.5	0.1	0.9	0.5	0.8	0.2	4.6	2.3	1.0	0.3	1.3
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.0	18.8	23.7	23.6	21.9	24.4	14.0	23.1	17.6	17.9	14.9	1.9	28.9	21.7	17.6	13.7
AGWI	2.8	23.9	29.3	29.3	27.1	30.6	18.2	29.0	22.6	23.2	18.9	3.5	33.2	27.6	22.1	17.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		10.1	9.8	9.8	13.5	6.7	13.8	10.4	11.3	9.6	17.4	21.5	21.3	13.5	20.6	14.4
UZET	3.9	2.3	2.5	2.5	2.1	3.2	1.4	3.0	2.2	2.3	1.5	9.1	2.3	2.7	1.7	3.1
LZET	1.1	18.5	19.5	19.5	17.6	13.5	20.9	12.4	18.2	19.1	17.0	0.7	13.8	18.4	16.3	15.5
AGWET	1.1	3.4	3.8	3.8	3.4	4.2	2.7	3.8	3.3	3.5	2.4	0.7	2.5	3.6	2.6	2.6
BASET	0.6	1.1	1.3	1.3	1.3	1.5	0.9	1.5	1.1	1.2	1.0	0.8	1.3	1.6	1.1	1.0
SURET	36.6											13.5				2.5
PERO	10.0	19.4	24.6	24.5	23.1	25.9	14.0	24.0	18.1	18.7	15.1	6.5	31.3	22.7	17.9	14.9
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	43.2	35.4	36.9	36.9	37.8	29.0	39.6	31.1	36.2	35.7	39.3	46.3	41.2	39.7	42.4	39.1
IMPEV: IMPERVIOUS		18.4	18.6	18.6	18.7											0.1
ET: COMBINED	43.2	34.5	35.0	33.1	28.1	29.0	39.6	31.1	36.2	35.7	39.3	46.3	41.2	39.7	42.4	39.2
PET	53.4	53.4	53.6	53.7	53.7	53.3	53.3	53.6	53.3	53.3	53.4	53.5	53.6	53.6	53.9	53.1

Table T-03070107-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3191	38438	10105	1682	408	664	332179	72701	71319	66264	88627	150796	365	14677	5444	856860
AREA(%)	0.4	4.5	1.2	0.2	0.0	0.1	38.6	8.4	8.3	7.7	10.3	17.5	0.0	1.7	0.6	99.5
IMPERVIOUS																
AREA(ACRES)		2058	1149	445	420											4072
AREA(%)		0.2	0.1	0.1	0.0											0.5
SUPY	39.9	39.8	40.2	40.4	40.2	39.2	39.5	40.2	39.5	39.8	40.0	40.0	60.7	46.6	44.5	39.7
SURLI			5.1	5.1	5.1										2.1	0.1
UZLI																0.0
LZLI			1.2	1.1	1.0										1.3	0.0
SURO: PERVIOUS	10.3	0.4	0.5	0.5	0.7	0.8	0.1	0.4	0.3	0.5	0.2	8.0	1.1	0.5	0.2	1.6
SURO: IMPERVIOUS		24.2	24.5	24.6	24.4											0.1
SURO: COMBINED	10.3	1.6	3.0	5.5	12.7	0.8	0.1	0.4	0.3	0.5	0.2	8.0	1.1	0.5	0.2	1.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.8	11.2	15.2	15.2	13.9	15.6	10.0	15.3	11.2	11.4	9.8	1.8	22.0	14.9	11.8	9.3
AGWI	2.4	14.7	19.7	19.7	18.0	20.4	12.0	19.9	14.7	15.1	11.9	2.5	25.3	18.8	15.1	11.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		8.2	8.1	8.1	11.4	5.2	11.6	8.5	9.3	7.8	14.9	18.6	22.0	11.1	18.7	12.2
UZET	4.9	1.6	1.8	1.8	1.5	2.3	1.0	2.3	1.6	1.6	1.1	10.4	1.9	2.0	1.4	3.0
LZET	1.5	18.3	19.3	19.3	17.7	13.2	20.9	12.4	18.1	19.0	17.1	0.8	12.5	18.4	16.6	15.5
AGWET	1.4	3.6	3.8	3.9	3.6	4.0	2.6	3.7	3.5	3.7	2.5	0.7	2.4	3.5	2.9	2.6
BASET	0.5	1.1	1.4	1.4	1.4	1.5	0.8	1.5	1.1	1.2	0.8	0.7	1.4	1.4	1.3	0.9
SURET	28.6											8.9				1.7
PERO	11.1	11.6	15.7	15.7	14.6	16.4	10.0	15.8	11.5	11.9	10.0	9.8	23.1	15.4	11.9	11.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	36.8	32.8	34.4	34.5	35.5	26.2	37.0	28.5	33.6	33.3	36.5	40.1	40.2	36.4	40.9	35.8
IMPEV: IMPERVIOUS		15.8	16.0	16.0	16.1											0.1
ET: COMBINED	36.8	32.0	32.6	30.7	25.6	26.2	37.0	28.5	33.6	33.3	36.5	40.1	40.2	36.4	40.9	35.9
PET	49.5	49.5	49.9	50.0	50.0	49.3	49.2	49.9	49.2	49.4	49.5	49.6	49.7	50.0	50.7	49.2

Table T-03070107-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3191	38438	10105	1682	408	664	332179	72701	71319	66264	88627	150796	365	14677	5444	856860
AREA(%)	0.4	4.5	1.2	0.2	0.0	0.1	38.6	8.4	8.3	7.7	10.3	17.5	0.0	1.7	0.6	99.5
IMPERVIOUS																
AREA(ACRES)		2058	1149	445	420											4072
AREA(%)		0.2	0.1	0.1	0.0											0.5
SUPY	46.3	46.3	46.6	46.7	46.5	46.3	46.1	46.7	46.2	46.3	46.4	46.5	79.5	53.5	50.2	46.2
SURLI			4.1	4.2	4.3										2.0	0.1
UZLI																0.0
LZLI			0.9	0.8	0.7										1.1	0.0
SURO: PERVIOUS	8.2	0.5	0.7	0.6	0.9	1.0	0.1	0.6	0.4	0.6	0.2	5.3	2.8	0.7	0.2	1.2
SURO: IMPERVIOUS		29.6	29.7	29.7	29.6											0.1
SURO: COMBINED	8.2	1.9	3.6	6.7	15.4	1.0	0.1	0.6	0.4	0.6	0.2	5.3	2.8	0.7	0.2	1.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.0	14.2	17.8	17.9	16.6	19.4	10.5	18.1	13.3	13.6	11.0	1.8	36.9	17.2	13.9	10.5
AGWI	2.6	18.0	22.2	22.3	20.6	24.3	13.5	22.6	17.1	17.6	13.8	3.0	39.9	21.6	17.5	13.5
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		9.2	9.0	9.0	12.4	5.9	12.7	9.5	10.4	8.9	15.9	19.3	25.1	12.0	19.1	13.1
UZET	3.7	1.8	2.0	2.0	1.7	2.6	1.1	2.4	1.7	1.8	1.2	8.6	1.8	2.1	1.5	2.7
LZET	1.1	16.7	17.6	17.7	15.9	12.4	18.8	11.4	16.5	17.4	15.2	0.6	9.8	17.0	14.9	14.0
AGWET	1.1	2.9	3.2	3.2	2.9	3.6	2.2	3.3	2.8	3.0	2.0	0.6	1.7	3.1	2.3	2.1
BASET	0.6	1.0	1.2	1.2	1.1	1.3	0.8	1.3	1.0	1.0	0.8	0.7	1.3	1.3	1.1	0.9
SURET	30.6											9.7				1.8
PERO	9.2	14.7	18.5	18.5	17.4	20.4	10.6	18.7	13.6	14.1	11.2	7.0	39.7	17.9	14.2	11.6
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	37.0	31.6	33.0	33.1	34.0	25.8	35.5	27.8	32.4	32.1	35.2	39.4	39.7	35.6	38.9	34.6
IMPEV: IMPERVIOUS		16.7	16.9	16.9	17.0											0.1
ET: COMBINED	37.0	30.8	31.4	29.7	25.4	25.8	35.5	27.8	32.4	32.1	35.2	39.4	39.7	35.6	38.9	34.7
PET	47.5	47.5	47.7	47.8	47.8	47.3	47.3	47.7	47.3	47.4	47.5	47.5	47.6	47.8	48.2	47.2

Table T-03070107-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
2	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
3	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
4	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
5	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
6	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
7	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
8	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
9	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
10	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
11	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
12	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
13	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990
14	0.990	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.990

Table T-03070107-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
2	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
3	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
4	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
5	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
6	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
7	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
8	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
9	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
10	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
11	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
12	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
13	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
14	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031

Table T-03070107-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
2	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
3	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
4	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
5	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
6	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
7	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
8	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
9	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
10	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
11	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
12	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
13	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300
14	0.000	0.054	0.050	0.050	0.100	0.020	0.110	0.056	0.071	0.050	0.184	0.300

Table T-03070107-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070107-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
2	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
3	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
4	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
5	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
6	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
7	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
8	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
9	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
10	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
11	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
12	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
13	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001
14	0.001	0.666	0.666	0.666	0.666	0.666	1.000	0.666	0.666	0.666	0.800	0.001

Table T-03070107-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
2		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
3		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
4		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
5		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
6		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
7		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
8		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
9		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
10		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
11		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
12		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
13		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
14		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	

Table T-03070107-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03070107-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
2	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
3	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
4	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
5	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
6	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
7	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
8	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
9	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
10	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
11	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
12	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
13	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
14	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059

Table T-03070107-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
2	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
3	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
4	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
5	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
6	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
7	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
8	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
9	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
10	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
11	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
12	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
13	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900
14	0.145	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.536	0.900

Table T-03070107-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
2	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
3	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
4	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
5	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
6	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
7	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
8	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
9	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
10	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
11	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
12	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
13	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100
14	0.200	4.083	4.083	4.083	4.083	4.375	7.000	6.125	6.125	6.125	5.833	0.100

Table T-03070107-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03070201

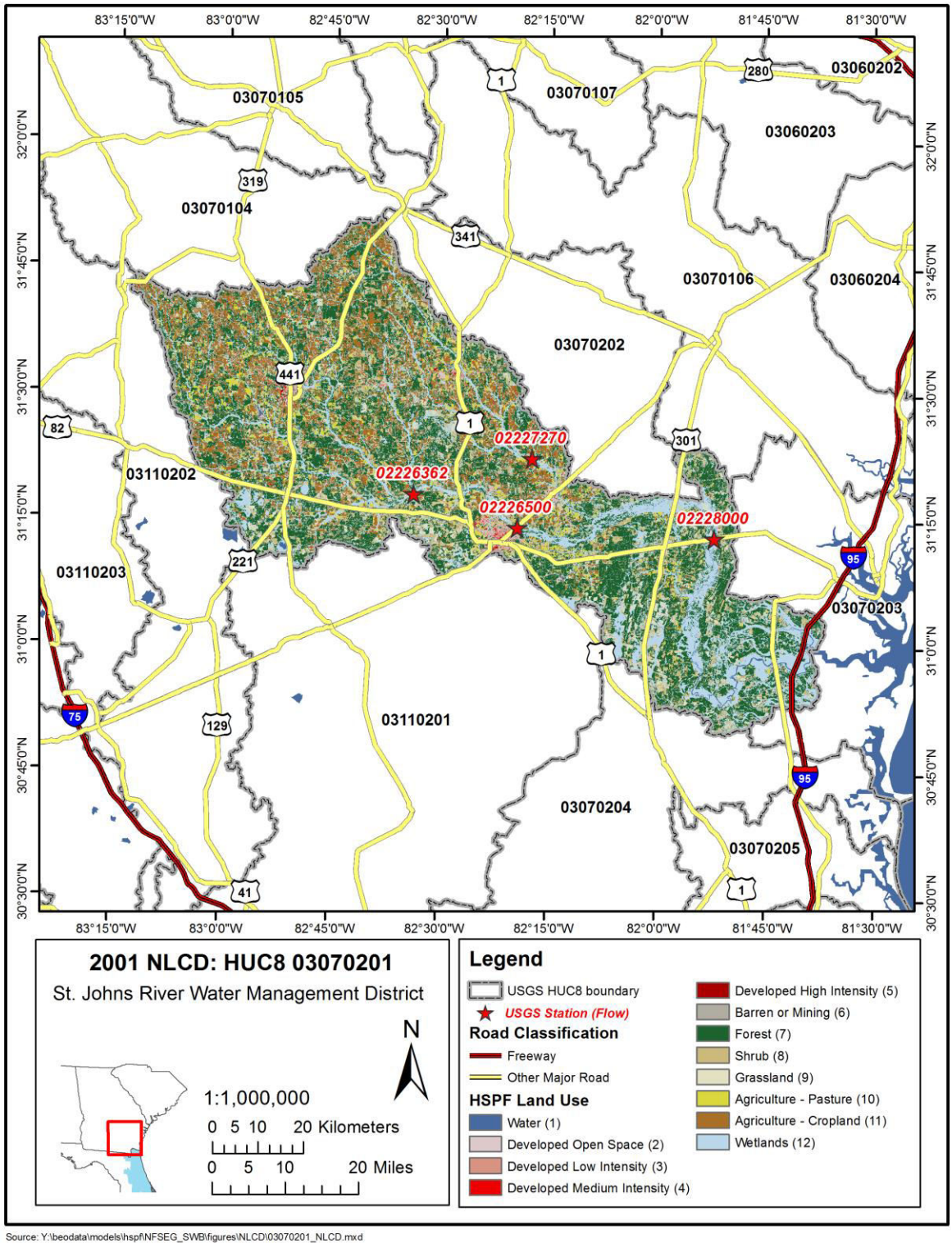


Figure T-03070201-1: Land Cover from the National Land Cover Database.

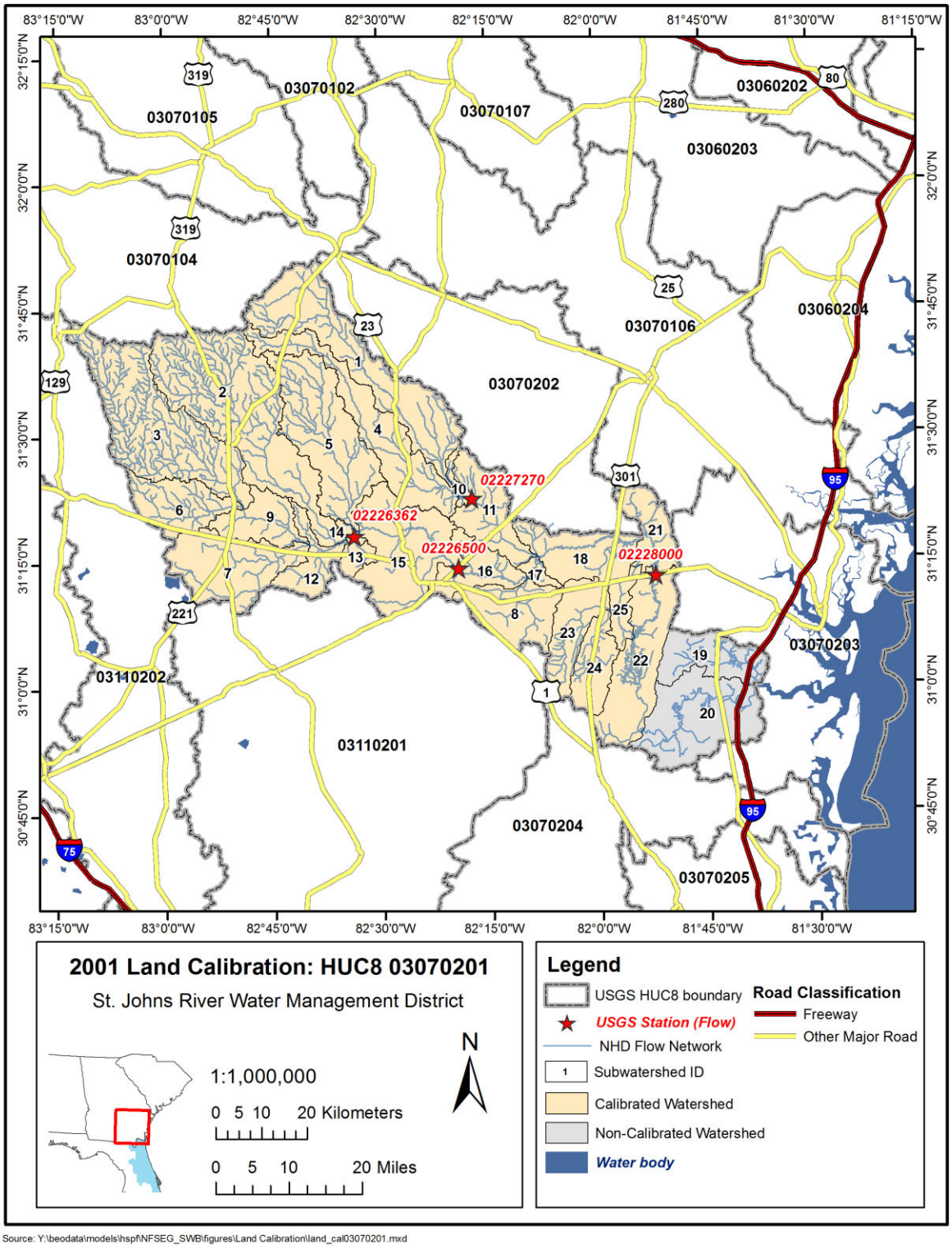


Figure T-03070201-2: Calibrated sub-watersheds.

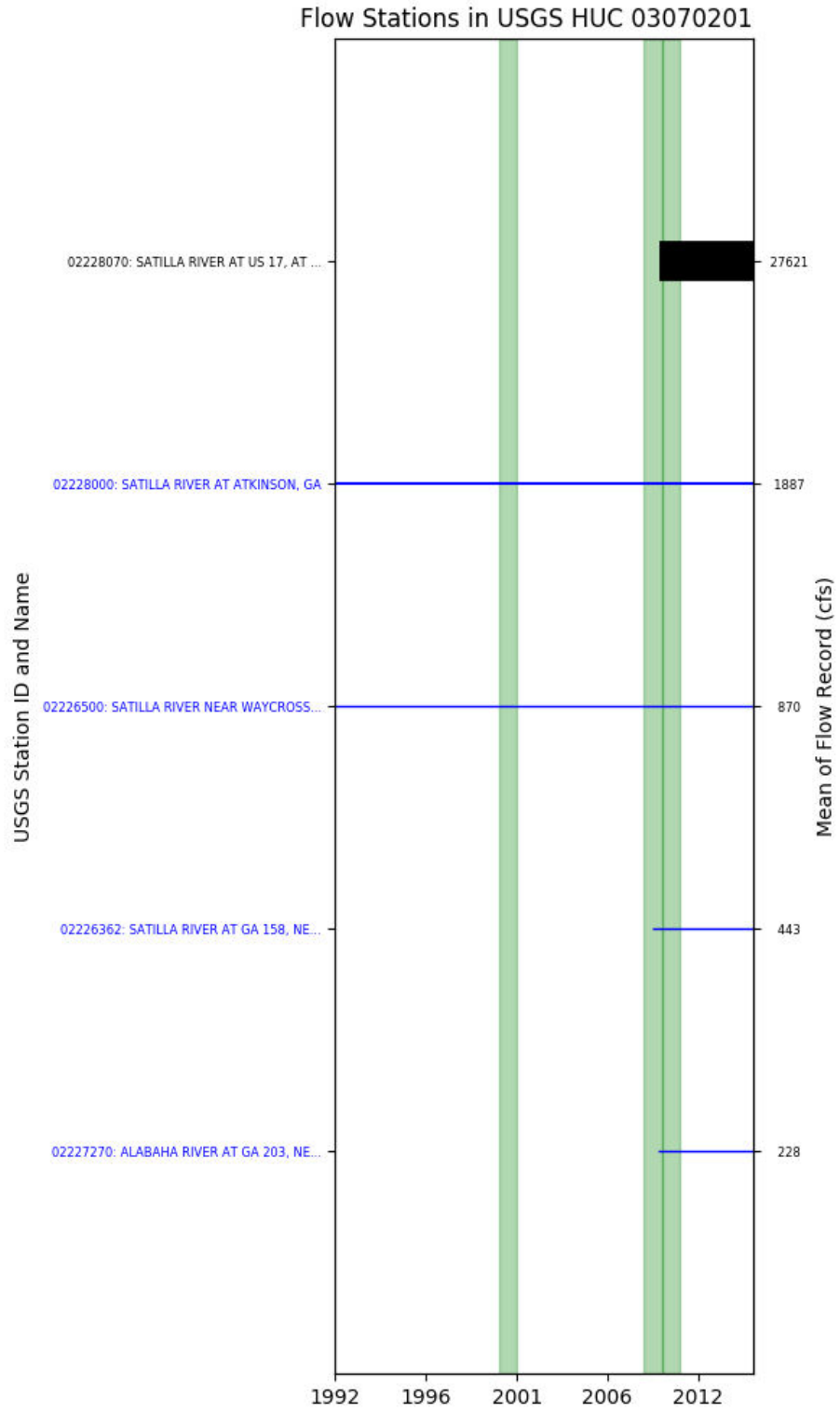


Figure T-03070201-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 10, USGS GAUGE 02227270

Water-Data Report 2013
02227270 ALABAHA RIVER AT GA 203, NEAR BLACKSHEAR, GA
St. Marys-Satilla Basin Satilla Subbasin

LOCATION.--Lat 312231, long 821720 referenced to North American Datum of 1927, Pierce County, GA, Hydrologic Unit 03070201.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 2009 to current year. GAGE HEIGHT: October 2009 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 82.6 feet above the North American Vertical Datum (NAVD) of 1988 (leveling by Global Positioning System equipment).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

Table T-03070201-1: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02227270.

Statistic	Value
Bias	-88.08
Standard error	190.94
Relative bias	-0.42
Relative standard error	0.59
Nash-Sutcliffe coefficient	0.65
Kling-Gupta coefficient	0.41
Coefficient of efficiency	0.60
Index of agreement	0.77

Table T-03070201-2: Hydrologic Indices Between USGS Gauge 02227270 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02227270	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	199.89	116.46	-41.74
MA2: Median, all daily flows	18.00	21.74	20.77
MA3: CV, all daily flows	165.21	159.36	-3.54
MA4: CV, log of all daily flows	182.65	168.66	-7.66
MA5: Mean daily flow / median daily flow	11.10	5.36	-51.76
MA9: (Q10 - Q90) / median daily flow	35.55	15.57	-56.21
MA10: (Q20 - Q80) / median daily flow	14.51	6.45	-55.59
MA11: (Q25 - Q75) / median daily flow	9.53	4.26	-55.33
MA12: Mean monthly flow, January	270.22	188.44	-30.27
MA13: Mean monthly flow, February	375.28	217.97	-41.92

MA14: Mean monthly flow, March	353.51	222.35	-37.10
MA15: Mean monthly flow, April	128.10	56.86	-55.62
MA16: Mean monthly flow, May	96.16	39.75	-58.67
MA17: Mean monthly flow, June	120.86	49.29	-59.22
MA18: Mean monthly flow, July	267.18	107.39	-59.81
MA19: Mean monthly flow, August	258.79	195.30	-24.53
MA20: Mean monthly flow, September	59.95	44.87	-25.16
MA21: Mean monthly flow, October	18.68	12.99	-30.47
MA22: Mean monthly flow, November	23.87	9.42	-60.52
MA23: Mean monthly flow, December	190.49	102.43	-46.23
ML1: Mean minimum monthly flow, January	148.58	80.53	-45.80
ML2: Mean minimum monthly flow, February	106.00	63.58	-40.02
ML3: Mean minimum monthly flow, March	87.78	68.15	-22.36
ML4: Mean minimum monthly flow, April	45.16	21.88	-51.55
ML5: Mean minimum monthly flow, May	5.95	6.40	7.59
ML6: Mean minimum monthly flow, June	9.10	12.21	34.29
ML7: Mean minimum monthly flow, July	116.61	44.93	-61.47
ML8: Mean minimum monthly flow, August	10.75	19.72	83.49
ML9: Mean minimum monthly flow, September	5.91	6.35	7.32
ML10: Mean minimum monthly flow, October	6.36	3.25	-48.84
ML11: Mean minimum monthly flow, November	4.80	2.69	-44.03
ML12: Mean minimum monthly flow, December	42.63	22.26	-47.77
ML13: CV of minimum monthly flows	239.73	195.19	-18.58
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.08	223.47
ML15: Mean minimum annual flow / mean annual flow	0.00	0.02	249.36
ML16: Median minimum annual flow / median annual flow	0.00	0.00	-46.61
ML20: Ratio of baseflow volume to total flow volume	0.31	0.33	6.79
ML22: Mean annual minimum flow divided by catchment area	0.01	0.01	89.21
RA1: Mean of positive changes from one day to next (rise rate)	73.26	34.29	
RA2: CV, mean of positive changes from one day to next (rise rate)	318.62	334.35	
RA3: Mean of negative changes from one day to next (fall rate)	38.18	12.64	
RA4: CV, mean of negative changes from one day to next (fall rate)	316.20	296.03	
RA5: Ratio of days that are higher than previous day	0.31	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.24	0.21	
RA7: Median of difference in log of flows over two consecutive days of falling	0.18	0.12	
RA8: Number of flow reversals from one day to the next	66.00	65.40	
RA9: CV, number of flow reversals from one day to the next	39.47	40.35	

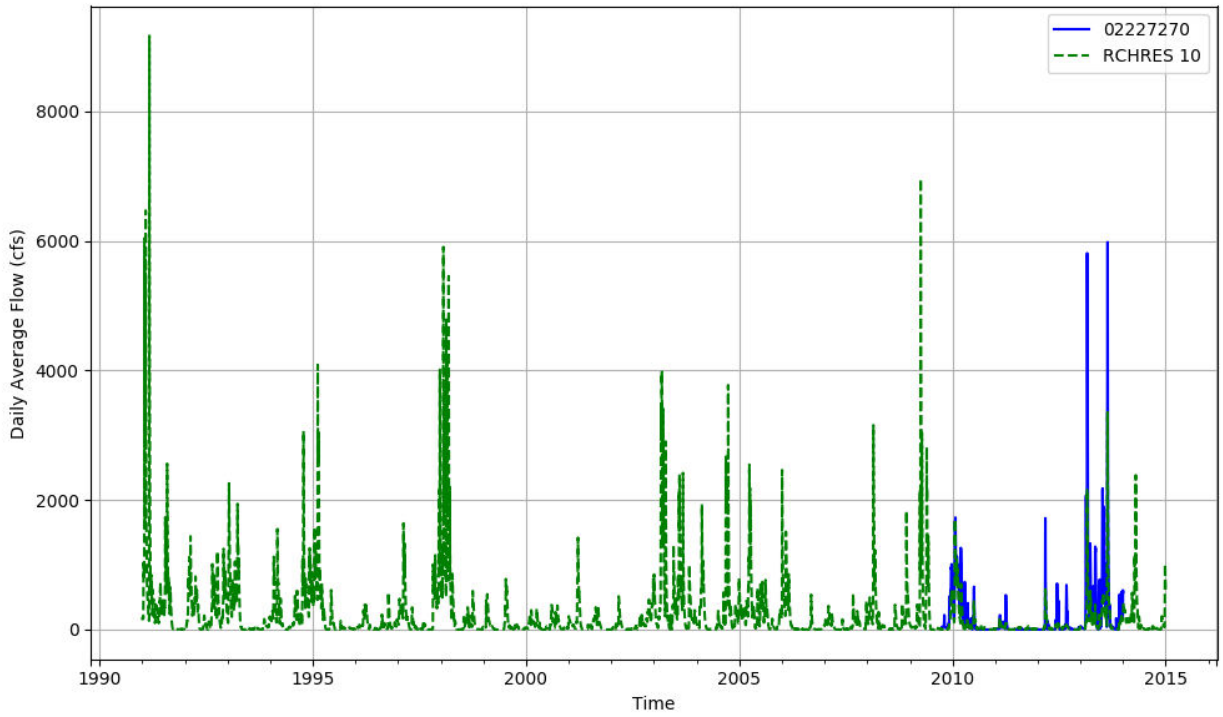


Figure T-03070201-4: Daily flow for HSFP reach 10 and USGS station 02227270.

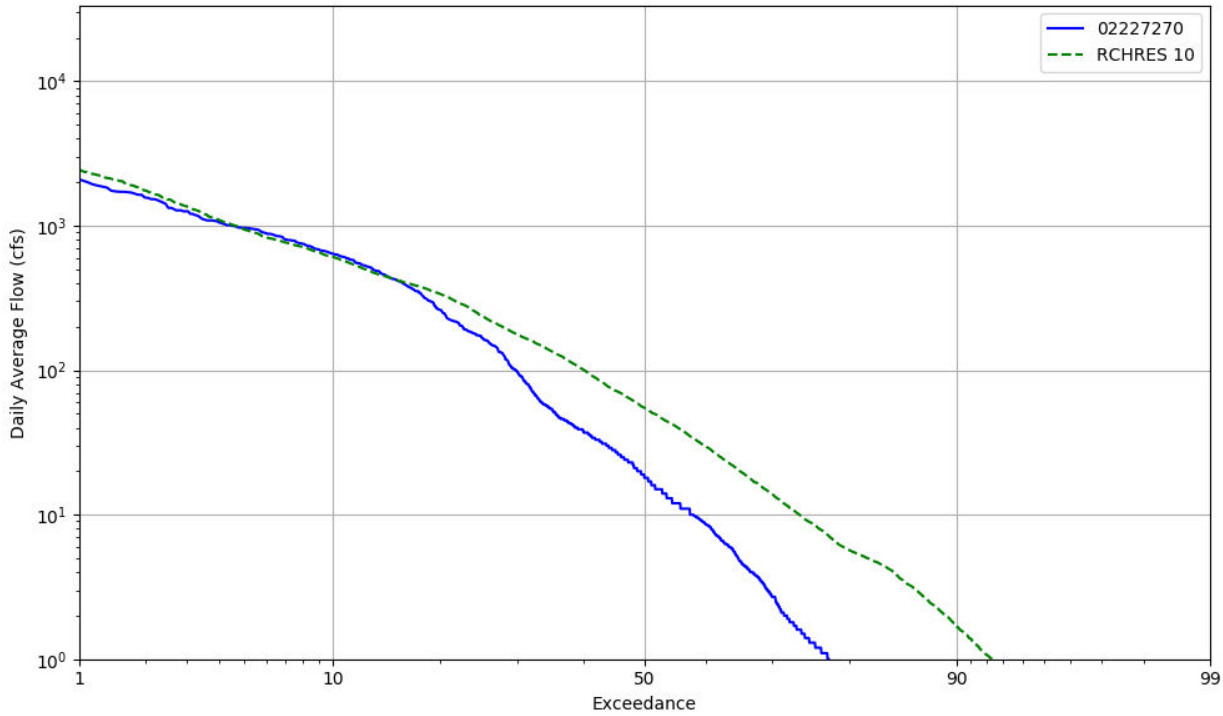


Figure T-03070201-5: Daily exceedance for HSFP reach 10 and USGS station 02227270.

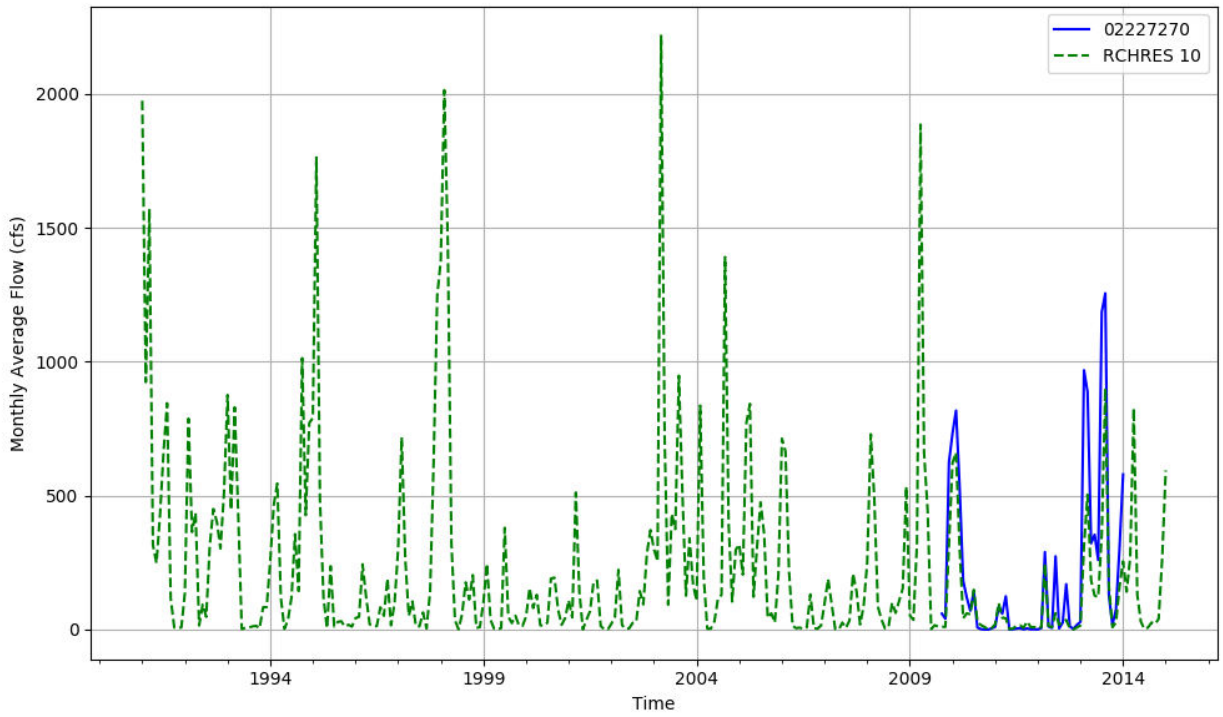


Figure T-03070201-6: Monthly flow for HSFP reach 10 and USGS station 02227270.

HSPF REACH 13, USGS GAUGE 02226362

Water-Data Report 2012
02226362 SATILLA RIVER AT GA 158, NEAR WAYCROSS, GA
St. Marys-Satilla Basin Satilla Subbasin

LOCATION.--Lat 311809, long 823341 referenced to North American Datum of 1927, Ware County, GA, Hydrologic Unit 03070201, at GA 158.

DRAINAGE AREA.--980.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 2009 to current year.
GAGE-HEIGHT: June 2009 to current year.

REVISED RECORDS.--WDR-GA-2012: 2010-2011.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 89.2 feet above the North American Vertical Datum (NAVD) of 1988 (leveling by Global Positioning System equipment).

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage height records good.

Table T-03070201-3: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02226362.

Statistic	Value
Bias	0.63
Standard error	189.17
Relative bias	0.00
Relative standard error	0.30
Nash-Sutcliffe coefficient	0.91
Kling-Gupta coefficient	0.95
Coefficient of efficiency	0.75
Index of agreement	0.88

Table T-03070201-4: Hydrologic Indices Between USGS Gauge 02226362 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02226362	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	398.70	402.36	0.92
MA2: Median, all daily flows	59.00	76.44	29.55
MA3: CV, all daily flows	143.02	133.40	-6.72

MA4: CV, log of all daily flows	175.08	174.50	-0.33
MA5: Mean daily flow / median daily flow	6.76	5.26	-22.10
MA9: (Q10 - Q90) / median daily flow	17.72	14.37	-18.86
MA10: (Q20 - Q80) / median daily flow	8.40	6.36	-24.27
MA11: (Q25 - Q75) / median daily flow	5.80	3.86	-33.36
MA12: Mean monthly flow, January	485.41	493.00	1.56
MA13: Mean monthly flow, February	711.38	797.87	12.16
MA14: Mean monthly flow, March	709.39	719.72	1.46
MA15: Mean monthly flow, April	241.64	261.78	8.33
MA16: Mean monthly flow, May	159.71	184.54	15.55
MA17: Mean monthly flow, June	178.81	135.71	-24.10
MA18: Mean monthly flow, July	473.35	348.64	-26.35
MA19: Mean monthly flow, August	348.90	346.32	-0.74
MA20: Mean monthly flow, September	138.21	86.78	-37.21
MA21: Mean monthly flow, October	39.22	32.97	-15.95
MA22: Mean monthly flow, November	21.35	26.38	23.52
MA23: Mean monthly flow, December	241.27	320.80	32.96
ML1: Mean minimum monthly flow, January	245.18	204.70	-16.51
ML2: Mean minimum monthly flow, February	290.75	257.05	-11.59
ML3: Mean minimum monthly flow, March	290.00	349.07	20.37
ML4: Mean minimum monthly flow, April	127.95	145.58	13.78
ML5: Mean minimum monthly flow, May	28.00	62.00	121.41
ML6: Mean minimum monthly flow, June	27.62	38.60	39.77
ML7: Mean minimum monthly flow, July	95.20	118.28	24.25
ML8: Mean minimum monthly flow, August	26.12	45.97	76.01
ML9: Mean minimum monthly flow, September	28.92	22.88	-20.89
ML10: Mean minimum monthly flow, October	8.20	10.83	32.09
ML11: Mean minimum monthly flow, November	7.70	11.34	47.23
ML12: Mean minimum monthly flow, December	41.98	53.33	27.04
ML13: CV of minimum monthly flows	204.07	181.81	-10.91
ML14: Mean minimum daily flow / mean median annual flow	0.17	0.07	-55.77
ML15: Mean minimum annual flow / mean annual flow	0.05	0.03	-34.57
ML16: Median minimum annual flow / median annual flow	0.14	0.03	-76.14
ML20: Ratio of baseflow volume to total flow volume	0.29	0.35	20.83
ML22: Mean annual minimum flow divided by catchment area	0.07	0.04	-38.37
RA1: Mean of positive changes from one day to next (rise rate)	130.34	124.24	
RA2: CV, mean of positive changes from one day to next (rise rate)	324.34	412.75	
RA3: Mean of negative changes from one day to next (fall rate)	66.56	54.32	
RA4: CV, mean of negative changes from one day to next (fall rate)	359.33	356.07	
RA5: Ratio of days that are higher than previous day	0.31	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.14	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.11	
RA8: Number of flow reversals from one day to the next	47.17	49.50	
RA9: CV, number of flow reversals from one day to the next	43.04	52.49	

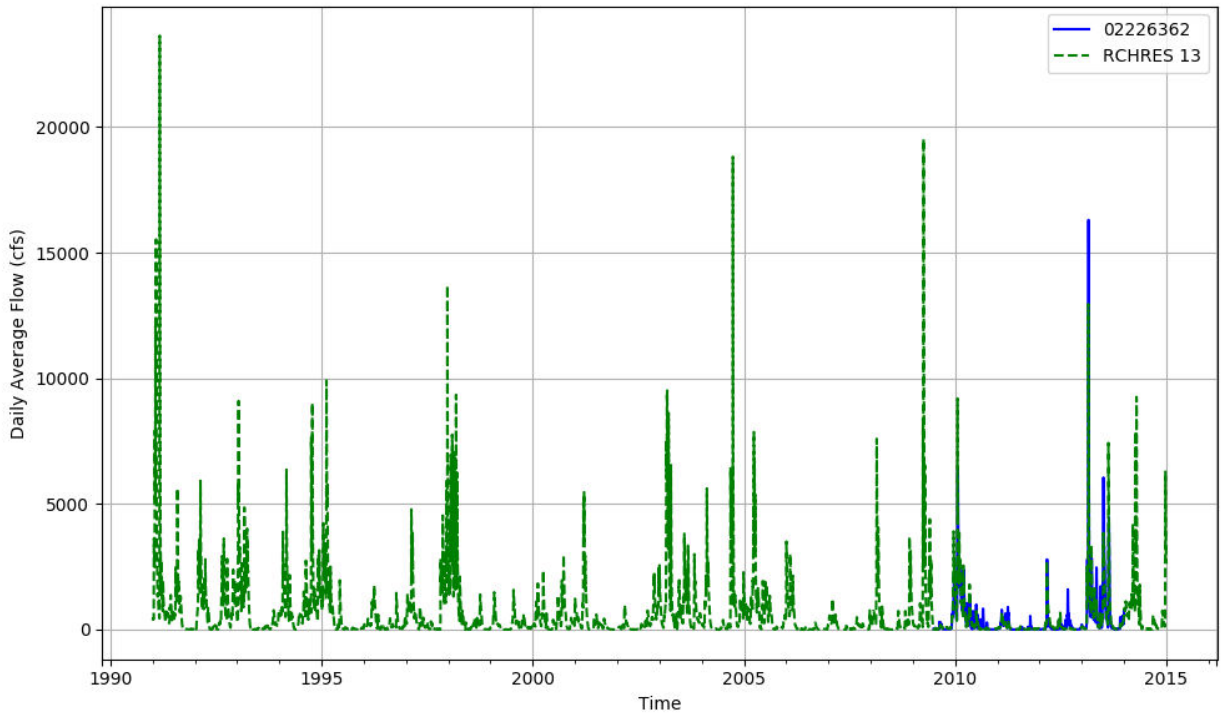


Figure T-03070201-7: Daily flow for HSFP reach 13 and USGS station 02226362.

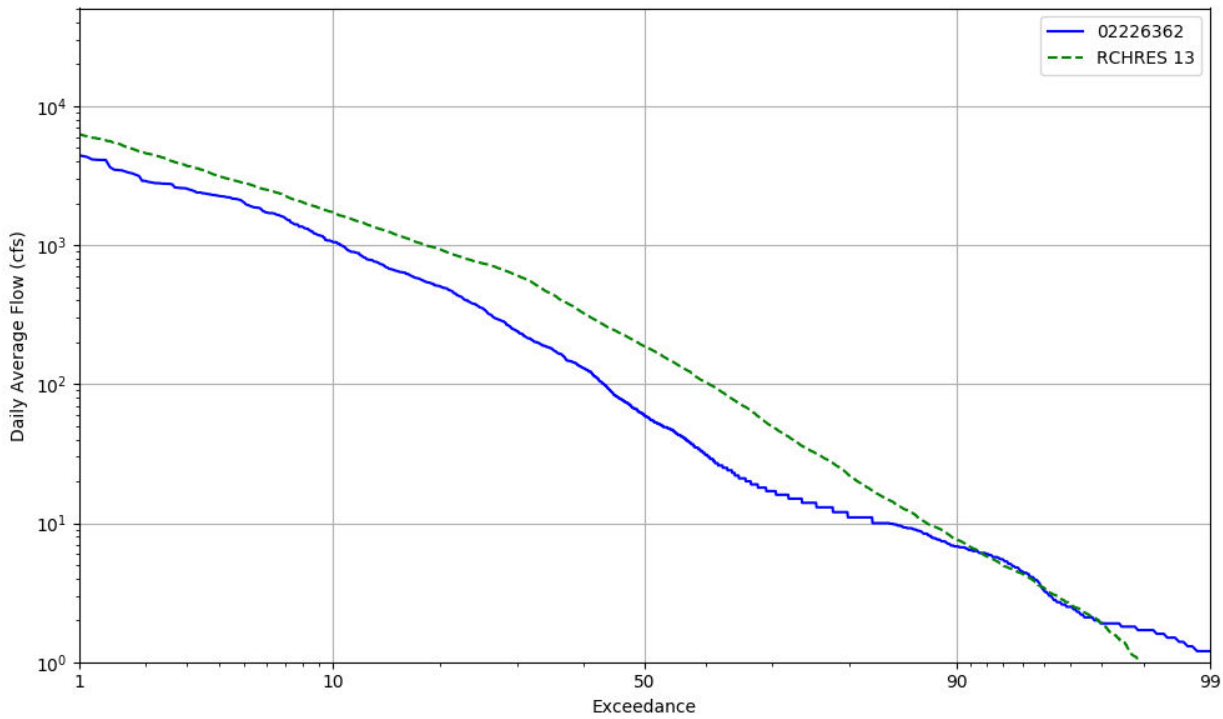


Figure T-03070201-8: Daily exceedance for HSFP reach 13 and USGS station 02226362.

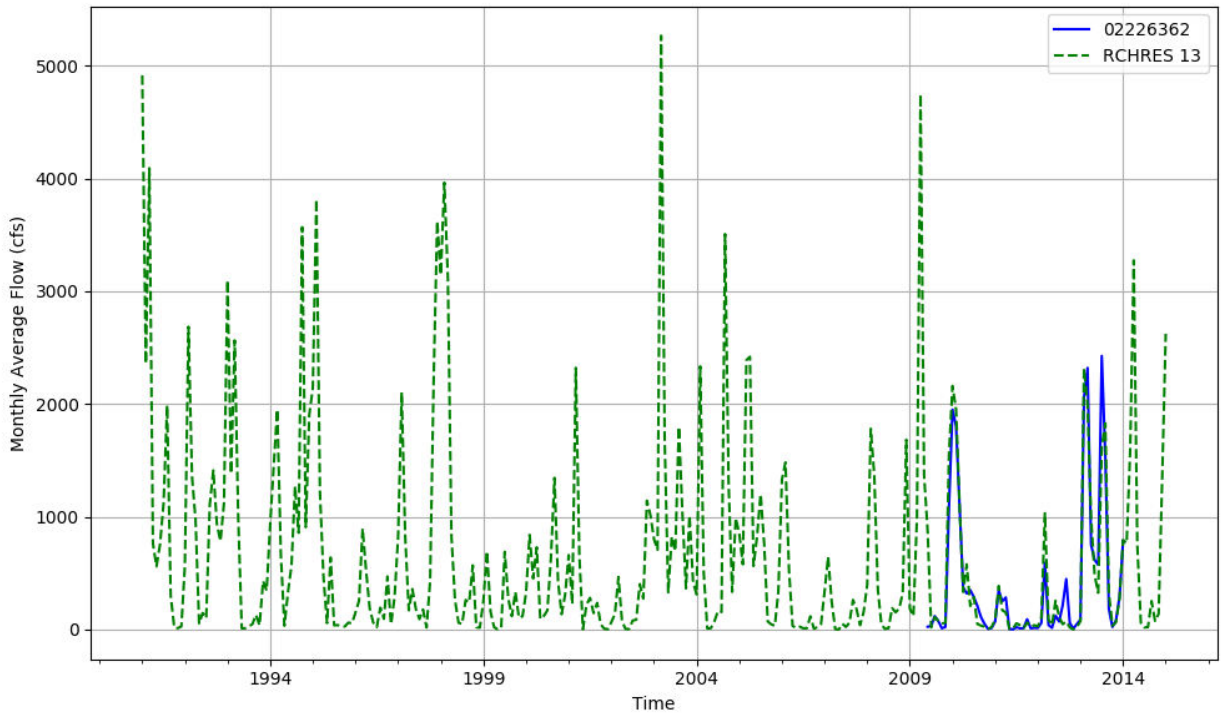


Figure T-03070201-9: Monthly flow for HSFP reach 13 and USGS station 02226362.

HSPF REACH 15, USGS GAUGE 02226500

Water-Data Report 2009
02226500 SATILLA RIVER NEAR WAYCROSS, GA
St. Marys-Satilla Basin Satilla Subbasin

LOCATION.--Lat 311417, long 821929 referenced to North American Datum of 1927, Ware County, GA, Hydrologic Unit 03070201, on downstream side of pier near center span of bridge on GA 38, 3.0 miles northeast of Waycross, and 16.0 miles upstream from Alabaha River.

DRAINAGE AREA.--1,200 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 952: 1939. WSP 1624: Drainage area. WDR GA-87-1: 1986.

GAGE.--Satelitte telemetry with a water-stage recorder. Datum of gage is 66.43 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to November 22, 1952, a non-recording gage was located at site 300 feet downstream at same datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Divison.

REMARKS.-- Discharge records good, except for periods of estimated discharge, which are poor. Gage-height records good.

Table T-03070201-5: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02226500.

Statistic	Value
Bias	-51.07
Standard error	450.97
Relative bias	-0.05
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.91
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.78
Index of agreement	0.88

Table T-03070201-6: Hydrologic Indices Between USGS Gauge 02226500 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02226500	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	925.63	875.60	-5.40
MA2: Median, all daily flows	196.00	261.67	33.51
MA3: CV, all daily flows	159.02	149.42	-6.04
MA4: CV, log of all daily flows	159.15	141.15	-11.31
MA5: Mean daily flow / median daily flow	4.72	3.35	-29.15
MA9: (Q10 - Q90) / median daily flow	13.51	8.66	-35.89
MA10: (Q20 - Q80) / median daily flow	6.05	4.56	-24.54
MA11: (Q25 - Q75) / median daily flow	4.31	3.53	-18.15
MA12: Mean monthly flow, January	1251.79	1338.14	6.90
MA13: Mean monthly flow, February	1950.94	1782.23	-8.65
MA14: Mean monthly flow, March	2183.07	1933.78	-11.42
MA15: Mean monthly flow, April	1314.07	991.48	-24.55
MA16: Mean monthly flow, May	315.09	283.05	-10.17
MA17: Mean monthly flow, June	396.40	346.38	-12.62
MA18: Mean monthly flow, July	534.43	438.27	-17.99
MA19: Mean monthly flow, August	656.34	664.43	1.23
MA20: Mean monthly flow, September	548.32	632.64	15.38
MA21: Mean monthly flow, October	500.62	537.46	7.36
MA22: Mean monthly flow, November	407.80	428.34	5.04
MA23: Mean monthly flow, December	686.17	779.40	13.59
ML1: Mean minimum monthly flow, January	392.46	390.69	-0.45
ML2: Mean minimum monthly flow, February	750.35	622.80	-17.00
ML3: Mean minimum monthly flow, March	648.65	551.58	-14.97
ML4: Mean minimum monthly flow, April	289.61	243.64	-15.87
ML5: Mean minimum monthly flow, May	81.53	50.07	-38.59
ML6: Mean minimum monthly flow, June	58.97	61.97	5.09
ML7: Mean minimum monthly flow, July	141.29	156.96	11.09
ML8: Mean minimum monthly flow, August	173.45	218.62	26.04
ML9: Mean minimum monthly flow, September	87.17	127.56	46.32
ML10: Mean minimum monthly flow, October	89.98	110.53	22.83
ML11: Mean minimum monthly flow, November	152.64	176.51	15.64
ML12: Mean minimum monthly flow, December	236.21	314.42	33.11
ML13: CV of minimum monthly flows	176.40	152.94	-13.30
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.03	-78.86
ML15: Mean minimum annual flow / mean annual flow	0.04	0.01	-74.74
ML16: Median minimum annual flow / median annual flow	0.06	0.00	-95.54
ML20: Ratio of baseflow volume to total flow volume	0.42	0.45	7.41
ML22: Mean annual minimum flow divided by catchment area	0.19	0.06	-66.63
RA1: Mean of positive changes from one day to next (rise rate)	214.18	236.99	
RA2: CV, mean of positive changes from one day to next (rise rate)	313.00	409.85	
RA3: Mean of negative changes from one day to next (fall rate)	113.87	117.99	
RA4: CV, mean of negative changes from one day to next (fall rate)	320.96	317.10	
RA5: Ratio of days that are higher than previous day	0.33	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.12	

RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.09	
RA8: Number of flow reversals from one day to the next	66.42	52.25	
RA9: CV, number of flow reversals from one day to the next	22.91	20.59	

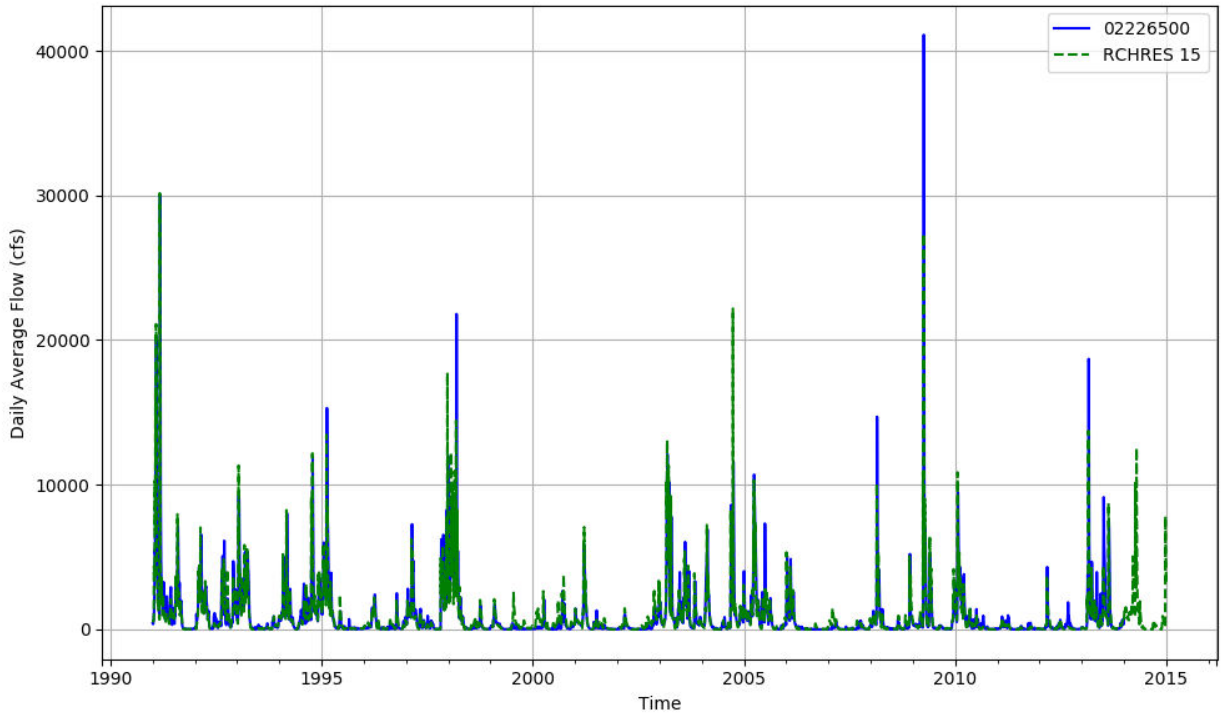


Figure T-03070201-10: Daily flow for HSFP reach 15 and USGS station 02226500.

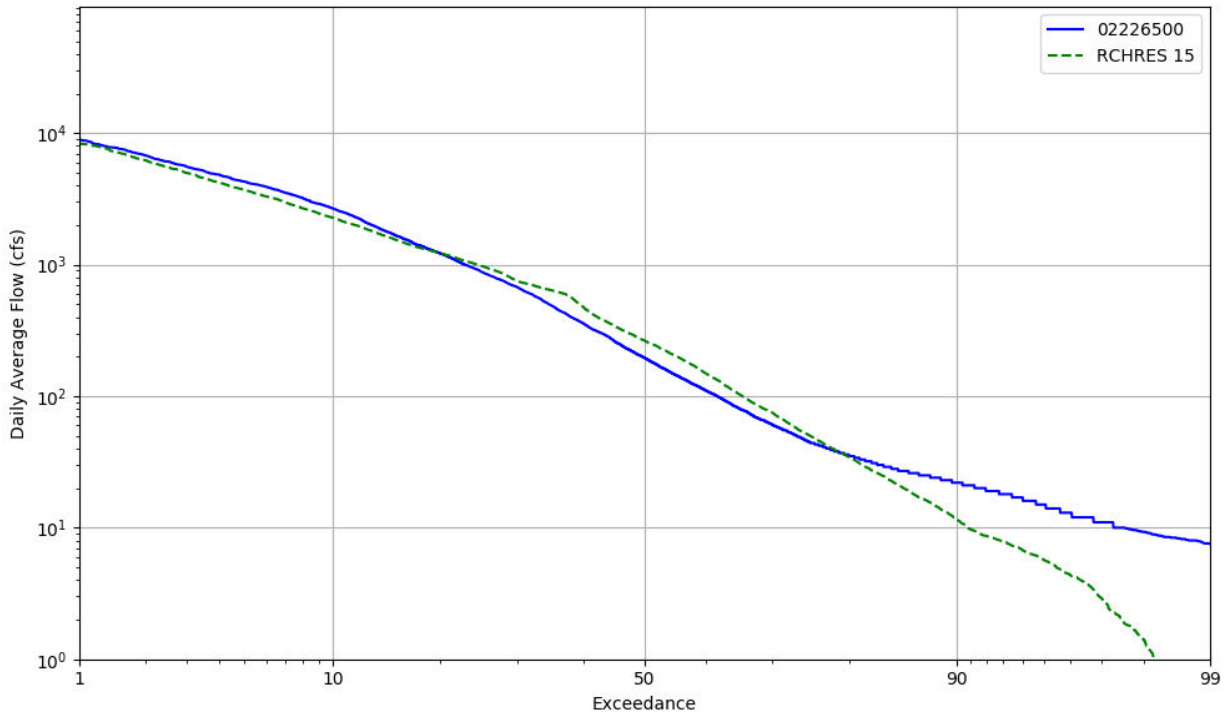


Figure T-03070201-11: Daily exceedance for HSFP reach 15 and USGS station 02226500.

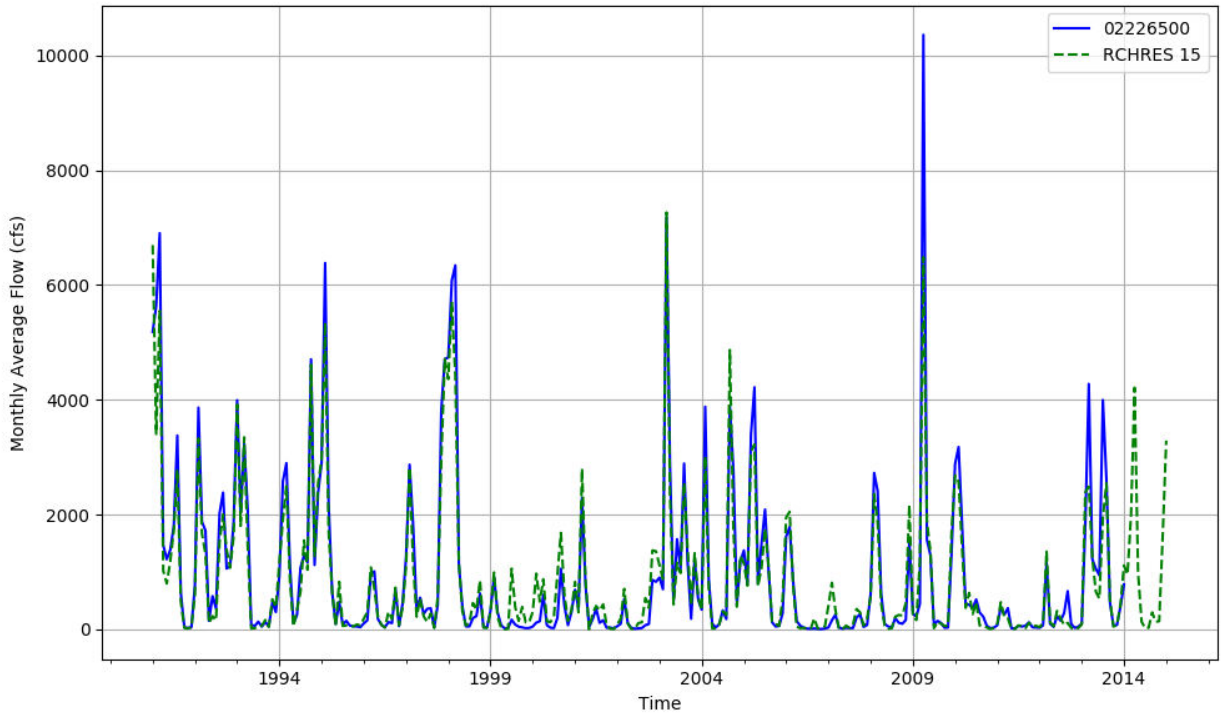


Figure T-03070201-12: Monthly flow for HSFP reach 15 and USGS station 02226500.

HSPF REACH 21, USGS GAUGE 02228000

Water-Data Report 2009
02228000 SATILLA RIVER AT ATKINSON, GA
St. Marys-Satilla Basin Satilla Subbasin

LOCATION.--Lat 3113'13.5", long 8151'56.99" referenced to North American Datum of 1927, Brantley County, GA, Hydrologic Unit 03070201, on left bank piling 25.0 feet upstream from bridge on U.S. 82, 400.0 feet downstream from Seaboard Coast Line Railroad bridge, and 1.0 mile west of Atkinson.

DRAINAGE AREA.--2,790 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: March 1930 to current year. Monthly discharge only for March 1930, published in WSP 1304.
GAGE-HEIGHT: August 1998 to current year.

REVISED RECORDS.--WSP 1504: 1932. WSP 1624: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 14.79 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to December 6, 1933, and from November 21, 1961, to September 30, 1964, a non-recording gage was located at same site and datum.

COOPERATION.--USGS National Streamflow Information Program (NSIP).

REMARKS.--Discharge record good except for estimated periods which are fair. Gage-height records good.

Table T-03070201-7: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02228000.

Statistic	Value
Bias	-110.97
Standard error	1075.18
Relative bias	-0.06
Relative standard error	0.36
Nash-Sutcliffe coefficient	0.87
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.74
Index of agreement	0.86

Table T-03070201-8: Hydrologic Indices Between USGS Gauge 02228000 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02228000	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	1998.96	1888.72	-5.51
MA2: Median, all daily flows	590.00	845.19	43.25
MA3: CV, all daily flows	137.54	131.84	-4.15
MA4: CV, log of all daily flows	141.02	120.94	-14.24
MA5: Mean daily flow / median daily flow	3.39	2.23	-34.04
MA9: (Q10 - Q90) / median daily flow	9.09	5.30	-41.68
MA10: (Q20 - Q80) / median daily flow	4.64	2.90	-37.48
MA11: (Q25 - Q75) / median daily flow	3.46	2.21	-36.06
MA12: Mean monthly flow, January	2510.05	2713.44	8.10
MA13: Mean monthly flow, February	3924.78	3638.59	-7.29
MA14: Mean monthly flow, March	4339.66	3890.70	-10.35
MA15: Mean monthly flow, April	2944.09	2178.74	-26.00
MA16: Mean monthly flow, May	680.50	757.88	11.37
MA17: Mean monthly flow, June	1033.09	808.27	-21.76
MA18: Mean monthly flow, July	1204.49	1032.77	-14.26
MA19: Mean monthly flow, August	1541.03	1564.32	1.51
MA20: Mean monthly flow, September	1466.37	1591.06	8.50
MA21: Mean monthly flow, October	1346.69	1255.91	-6.74
MA22: Mean monthly flow, November	841.04	929.16	10.48
MA23: Mean monthly flow, December	1351.40	1541.60	14.07
ML1: Mean minimum monthly flow, January	1046.92	1006.85	-3.83
ML2: Mean minimum monthly flow, February	1859.22	1452.34	-21.88
ML3: Mean minimum monthly flow, March	1659.39	1414.81	-14.74
ML4: Mean minimum monthly flow, April	782.83	863.86	10.35
ML5: Mean minimum monthly flow, May	261.09	326.93	25.22
ML6: Mean minimum monthly flow, June	246.35	312.26	26.76
ML7: Mean minimum monthly flow, July	451.22	521.68	15.62
ML8: Mean minimum monthly flow, August	683.78	725.63	6.12
ML9: Mean minimum monthly flow, September	324.30	576.01	77.61
ML10: Mean minimum monthly flow, October	310.09	448.51	44.64
ML11: Mean minimum monthly flow, November	540.91	513.52	-5.06
ML12: Mean minimum monthly flow, December	614.26	748.51	21.86
ML13: CV of minimum monthly flows	164.45	116.56	-29.12
ML14: Mean minimum daily flow / mean median annual flow	0.15	0.09	-39.60
ML15: Mean minimum annual flow / mean annual flow	0.07	0.05	-21.77
ML16: Median minimum annual flow / median annual flow	0.12	0.07	-45.17
ML20: Ratio of baseflow volume to total flow volume	0.52	0.54	3.00
ML22: Mean annual minimum flow divided by catchment area	0.93	1.05	12.71
RA1: Mean of positive changes from one day to next (rise rate)	290.22	446.54	
RA2: CV, mean of positive changes from one day to next (rise rate)	344.78	451.65	
RA3: Mean of negative changes from one day to next (fall rate)	175.92	212.88	
RA4: CV, mean of negative changes from one day to next (fall rate)	296.01	370.73	
RA5: Ratio of days that are higher than previous day	0.37	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.07	

RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	46.46	36.04	
RA9: CV, number of flow reversals from one day to the next	26.03	30.62	

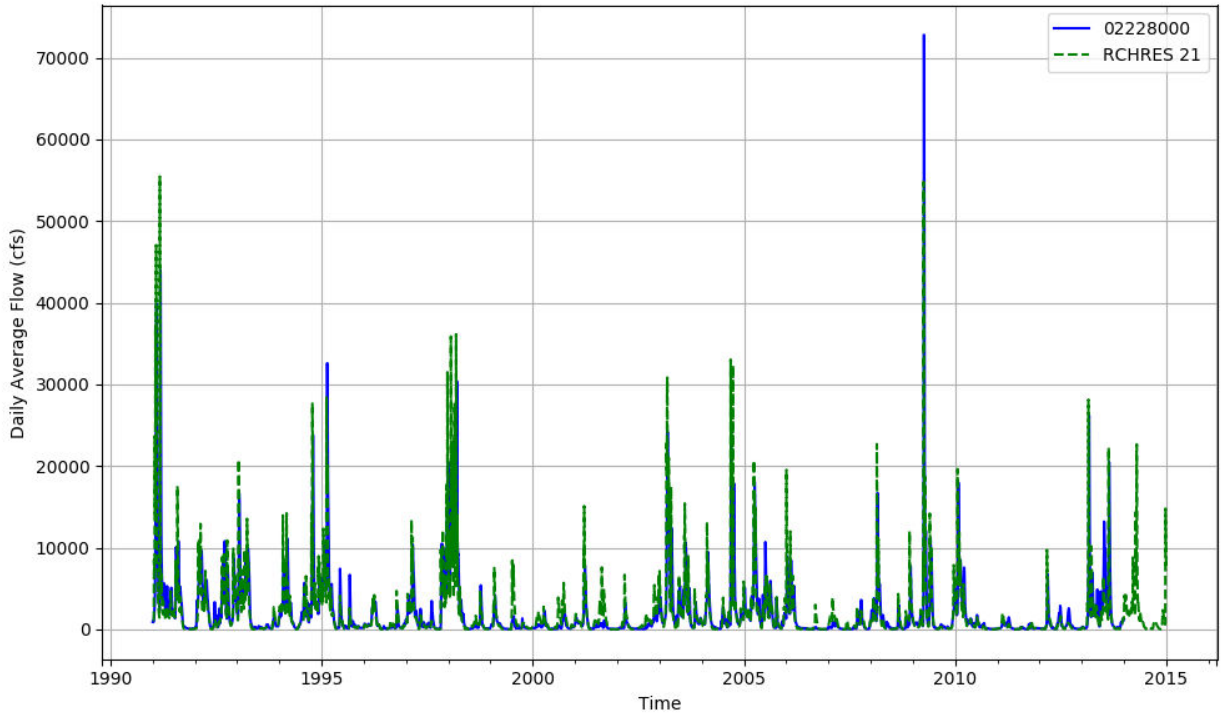


Figure T-03070201-13: Daily flow for HSFP reach 21 and USGS station 02228000.

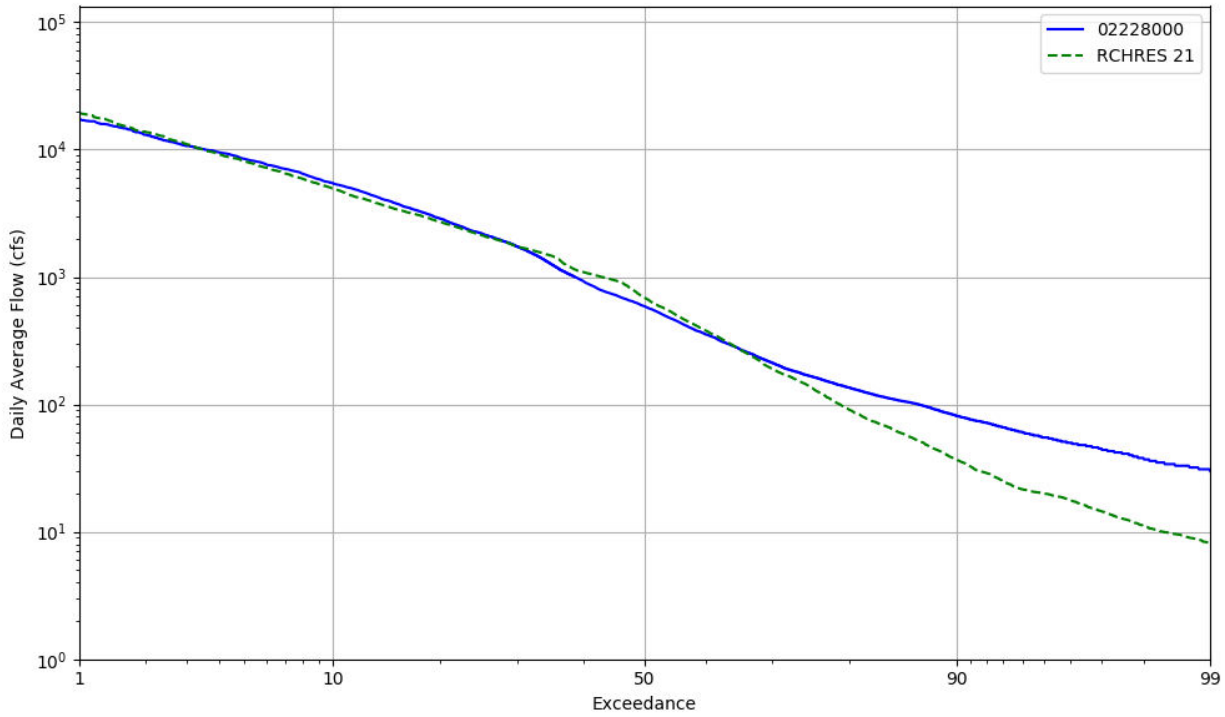


Figure T-03070201-14: Daily exceedance for HSFP reach 21 and USGS station 02228000.

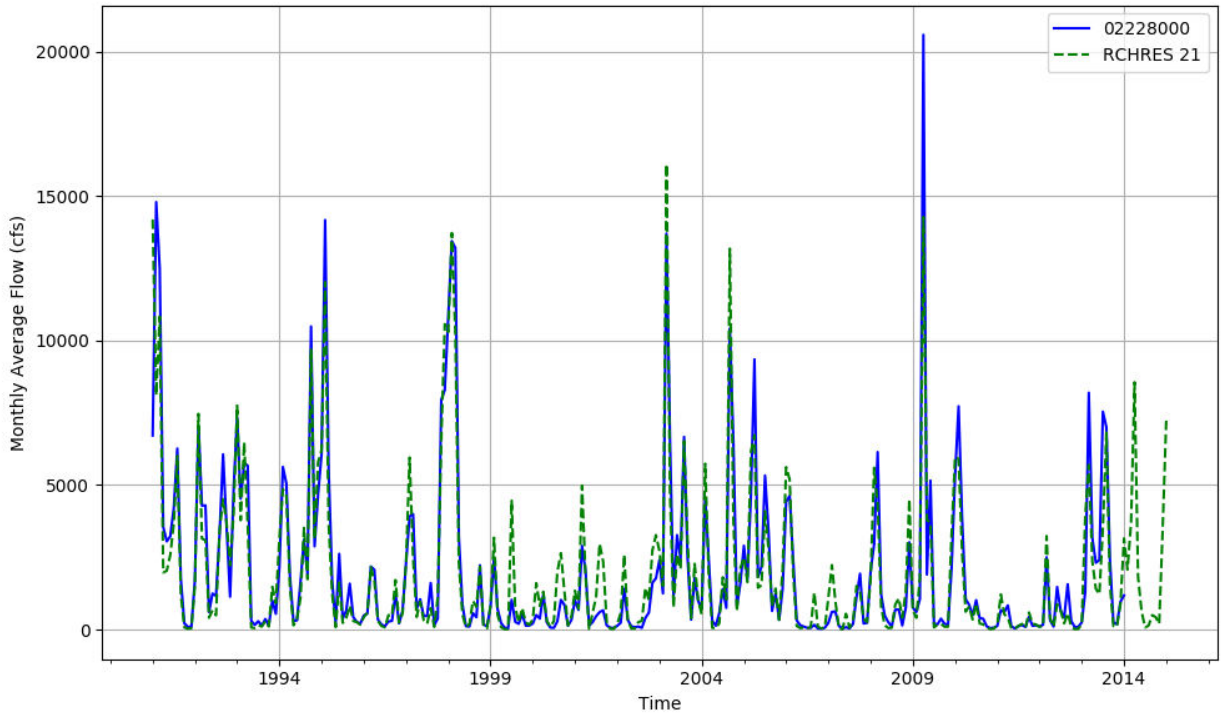


Figure T-03070201-15: Monthly flow for HSFP reach 21 and USGS station 02228000.

Table T-03070201-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	9491	67510	20584	3172	877	890	605280	170581	72683	66459	185911	382104	728	56571	5166	1648008
AREA(%)	0.6	4.1	1.2	0.2	0.1	0.1	36.6	10.3	4.4	4.0	11.2	23.1	0.0	3.4	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		3627	2349	844	912											7732
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	41.0	40.1	39.7	39.5	39.6	41.8	40.2	40.2	40.3	39.4	38.6	40.7	65.7	46.1	39.2	40.1
SURLI			4.5	5.3	6.5									0.0	7.5	0.1
UZLI																0.0
LZLI			1.0	1.0	1.1									0.0	3.6	0.0
SURO: PERVIOUS	0.7	0.5	1.2	1.3	0.9	0.1	0.0	0.7	0.5	0.5	0.1	0.6	6.2	0.8	0.3	0.4
SURO: IMPERVIOUS		29.9	29.7	29.5	29.6											0.1
SURO: COMBINED	0.7	2.0	4.1	7.2	15.6	0.1	0.0	0.7	0.5	0.5	0.1	0.6	6.2	0.8	0.3	0.5
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.8	7.6	10.4	10.7	11.3	13.4	4.2	10.3	7.0	7.3	5.1	0.7	21.9	10.4	11.2	4.8
AGWI	2.2	11.3	14.8	15.2	15.5	18.1	6.9	14.3	10.3	10.9	7.4	2.1	25.7	14.6	15.9	7.5
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		8.9	8.8	8.7	12.3	6.3	13.2	9.0	12.5	8.6	16.5	19.5	23.5	13.0	17.0	14.0
UZET	1.3	3.1	3.4	3.4	2.9	2.2	1.1	3.9	2.7	3.1	1.8	0.5	3.4	3.7	2.5	1.7
LZET	0.5	20.0	20.4	20.5	18.6	17.5	24.1	15.3	18.2	20.4	17.9	0.3	10.6	18.1	17.6	15.9
AGWET	0.6	2.1	2.4	2.5	2.3	2.7	1.7	2.2	1.8	2.2	1.5	0.6	1.1	2.3	2.3	1.5
BASET	1.0	2.3	2.8	2.9	2.9	2.8	1.5	2.7	2.2	2.2	1.5	1.0	3.4	2.8	3.2	1.7
SURET	40.4											22.0				5.3
PERO	1.5	8.2	11.6	12.0	12.2	13.5	4.2	11.0	7.4	7.8	5.2	1.4	28.1	11.2	11.5	5.2
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	43.9	36.5	37.9	38.0	39.0	31.6	41.6	33.0	37.5	36.6	39.2	44.0	42.0	39.8	42.6	40.1
IMPEV: IMPERVIOUS		10.2	10.1	10.0	9.9											0.0
ET: COMBINED	43.9	35.2	35.0	32.1	24.2	31.6	41.6	33.0	37.5	36.6	39.2	44.0	42.0	39.8	42.6	40.1
PET	46.0	46.2	46.4	46.3	46.3	46.4	46.2	46.3	46.2	46.0	45.9	46.2	46.3	45.8	46.2	45.9

Table T-03070201-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	9491	67510	20584	3172	877	890	605280	170581	72683	66459	185911	382104	728	56571	5166	1648008
AREA(%)	0.6	4.1	1.2	0.2	0.1	0.1	36.6	10.3	4.4	4.0	11.2	23.1	0.0	3.4	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		3627	2349	844	912											7732
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	58.3	57.2	56.3	56.6	56.8	57.4	57.4	56.8	57.2	57.6	57.6	57.4	68.7	61.7	56.6	57.2
SURLI			4.2	4.8	5.8									0.0	2.2	0.1
UZLI																0.0
LZLI			1.1	1.1	1.2									0.0	1.0	0.0
SURO: PERVIOUS	4.4	2.0	3.1	3.5	3.0	0.3	0.1	2.1	1.8	2.4	1.1	4.3	4.5	3.1	1.2	1.8
SURO: IMPERVIOUS		44.9	44.1	44.4	44.7											0.2
SURO: COMBINED	4.4	4.2	7.3	12.1	24.3	0.3	0.1	2.1	1.8	2.4	1.1	4.3	4.5	3.1	1.2	2.0
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.8	12.2	14.6	15.1	16.1	19.4	9.8	15.4	11.6	12.6	11.7	0.7	18.3	14.1	12.9	8.9
AGWI	2.2	18.0	21.0	21.5	22.1	27.4	13.7	22.3	16.8	18.2	15.5	2.1	24.1	20.1	17.4	12.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		11.0	10.9	10.8	14.6	7.6	15.6	11.0	14.9	10.7	19.0	23.0	18.9	13.3	19.3	16.5
UZET	0.8	3.3	3.5	3.5	2.9	2.5	1.4	4.3	2.9	3.3	2.1	0.6	3.5	3.6	2.2	1.9
LZET	0.3	22.4	22.7	22.8	20.8	19.2	26.8	16.6	20.4	22.6	19.8	0.3	17.6	21.3	19.9	17.7
AGWET	0.3	2.9	3.2	3.2	2.9	3.8	1.9	3.2	2.5	2.8	1.6	0.4	2.2	2.9	2.0	1.8
BASET	1.2	2.3	2.6	2.7	2.6	3.7	1.7	3.1	2.2	2.2	1.7	1.1	3.0	2.5	2.0	1.8
SURET	49.8											26.7				6.5
PERO	5.2	14.2	17.7	18.6	19.1	19.7	9.9	17.6	13.4	14.9	12.7	5.0	22.8	17.2	14.0	10.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	52.3	42.0	43.0	43.0	43.8	36.7	47.5	38.3	42.9	41.7	44.2	52.1	45.2	43.5	45.3	46.2
IMPEV: IMPERVIOUS		12.3	12.2	12.2	12.1											0.1
ET: COMBINED	52.3	40.5	39.8	36.5	27.6	36.7	47.5	38.3	42.9	41.7	44.2	52.1	45.2	43.5	45.3	46.2
PET	53.6	54.3	54.7	54.7	54.7	53.8	54.1	54.3	54.2	54.3	54.4	54.0	54.7	54.3	54.6	53.9

Table T-03070201-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	9491	67510	20584	3172	877	890	605280	170581	72683	66459	185911	382104	728	56571	5166	1648008
AREA(%)	0.6	4.1	1.2	0.2	0.1	0.1	36.6	10.3	4.4	4.0	11.2	23.1	0.0	3.4	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		3627	2349	844	912											7732
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	41.9	42.5	42.4	42.5	42.6	42.3	42.5	42.4	42.5	42.7	42.8	42.3	64.1	45.0	42.2	42.4
SURLI			4.2	4.8	5.8									0.0	2.4	0.1
UZLI																0.0
LZLI			1.1	1.1	1.2									0.0	1.1	0.0
SURO: PERVIOUS	3.5	0.9	1.4	1.5	1.3	0.3	0.0	0.9	0.9	0.9	0.3	2.9	2.5	1.1	0.3	1.0
SURO: IMPERVIOUS		33.0	33.1	33.3	33.4											0.2
SURO: COMBINED	3.5	2.6	4.6	8.2	17.6	0.3	0.0	0.9	0.9	0.9	0.3	2.9	2.5	1.1	0.3	1.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
AGWO	0.5	7.4	9.5	10.0	10.4	11.5	5.3	9.6	6.8	7.8	6.7	0.5	17.8	8.9	7.1	5.2
AGWI	2.1	11.6	14.8	15.4	15.5	17.8	7.6	15.2	10.5	12.1	9.6	2.0	22.8	13.4	10.7	8.1
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		8.5	8.2	8.2	11.9	5.9	13.1	8.5	12.3	8.3	16.8	20.7	23.2	9.9	17.0	14.1
UZET	2.1	3.0	3.3	3.4	2.9	1.9	0.9	4.0	2.6	3.1	1.8	1.1	3.7	3.4	1.9	1.7
LZET	0.9	22.4	23.2	23.2	21.2	19.0	26.2	16.8	20.4	22.5	19.5	0.6	13.7	21.6	20.3	17.5
AGWET	1.0	2.9	3.3	3.3	3.0	3.7	1.8	3.2	2.5	2.9	1.9	0.8	1.8	2.8	2.3	1.9
BASET	0.8	1.9	2.6	2.6	2.7	3.0	1.1	2.9	1.8	2.0	1.6	0.8	3.4	2.4	1.9	1.4
SURET	40.2											21.2				5.1
PERO	4.0	8.4	10.9	11.5	11.7	11.8	5.3	10.5	7.7	8.7	7.1	3.4	20.3	9.9	7.4	6.2
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	45.0	38.7	40.6	40.7	41.6	33.6	43.0	35.4	39.6	38.9	41.6	45.2	45.8	40.1	43.4	41.7
IMPEV: IMPERVIOUS		9.6	9.4	9.3	9.4											0.0
ET: COMBINED	45.0	37.2	37.4	34.1	25.2	33.6	43.0	35.4	39.6	38.9	41.6	45.2	45.8	40.1	43.4	41.8
PET	51.3	51.7	52.0	51.9	51.9	51.8	51.6	51.8	51.6	51.5	51.3	51.6	51.8	51.1	51.7	51.3

Table T-03070201-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	9491	67510	20584	3172	877	890	605280	170581	72683	66459	185911	382104	728	56571	5166	1648008
AREA(%)	0.6	4.1	1.2	0.2	0.1	0.1	36.6	10.3	4.4	4.0	11.2	23.1	0.0	3.4	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		3627	2349	844	912											7732
AREA(%)		0.2	0.1	0.1	0.1											0.5
SUPY	50.3	49.5	49.1	49.0	49.1	50.5	49.6	49.5	49.6	49.1	48.6	49.9	71.2	53.7	48.7	49.5
SURLI			3.8	4.5	5.4									0.0	4.8	0.1
UZLI																0.0
LZLI			0.9	0.9	1.0									0.0	2.0	0.0
SURO: PERVIOUS	5.4	1.1	1.8	1.9	1.5	0.2	0.0	1.2	1.0	1.1	0.4	5.0	4.4	1.3	0.6	1.6
SURO: IMPERVIOUS		38.5	38.2	38.2	38.4											0.2
SURO: COMBINED	5.4	3.0	5.5	9.6	20.3	0.2	0.0	1.2	1.0	1.1	0.4	5.0	4.4	1.3	0.6	1.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.7	10.8	13.2	13.6	14.3	17.1	7.9	13.8	10.2	10.6	8.8	0.7	24.3	12.5	12.4	7.4
AGWI	2.3	15.5	18.6	19.0	19.4	23.4	11.2	19.3	14.5	15.2	12.0	2.1	29.1	17.7	17.3	10.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		9.7	9.6	9.5	12.9	6.9	13.9	9.8	13.2	9.5	17.1	20.7	21.3	12.2	17.4	14.8
UZET	1.7	3.3	3.5	3.5	3.1	2.3	1.2	4.2	2.9	3.2	1.9	0.7	3.2	3.5	2.3	1.8
LZET	0.6	19.9	20.4	20.4	18.5	17.5	23.3	15.1	18.0	20.0	17.2	0.4	13.0	18.9	17.8	15.5
AGWET	0.6	2.4	2.7	2.7	2.4	3.2	1.7	2.6	2.0	2.4	1.5	0.6	1.6	2.5	2.1	1.6
BASET	1.0	2.3	2.7	2.7	2.7	3.2	1.6	2.9	2.2	2.2	1.8	0.9	3.2	2.7	2.8	1.7
SURET	40.4											21.0				5.1
PERO	6.1	11.9	15.0	15.5	15.8	17.3	7.9	14.9	11.2	11.7	9.2	5.7	28.7	13.8	12.9	9.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	44.2	37.5	38.8	38.8	39.7	33.0	41.7	34.5	38.4	37.3	39.4	44.3	42.4	39.9	42.4	40.5
IMPEV: IMPERVIOUS		11.0	10.8	10.8	10.8											0.1
ET: COMBINED	44.2	36.2	35.9	32.9	24.9	33.0	41.7	34.5	38.4	37.3	39.4	44.3	42.4	39.9	42.4	40.6
PET	48.4	48.7	48.9	48.8	48.8	48.7	48.7	48.8	48.7	48.6	48.6	48.6	48.9	48.5	48.8	48.4

Table T-03070201-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
2	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
3	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
4	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
5	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
6	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
7	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
8	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
9	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
10	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
11	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
12	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
13	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
14	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
15	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
16	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
17	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
18	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
19	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
20	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
21	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
22	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
23	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
24	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990
25	0.990	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.970	0.990

Table T-03070201-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
2	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
3	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
4	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
5	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
6	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
7	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
8	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
9	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
10	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
11	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
12	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
13	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
14	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
15	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
16	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
17	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
18	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
19	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
20	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
21	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
22	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
23	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
24	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102
25	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102

Table T-03070201-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
2	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
3	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
4	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
5	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
6	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
7	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
8	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
9	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
10	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
11	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
12	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
13	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
14	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
15	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
16	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
17	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
18	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
19	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
20	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
21	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
22	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
23	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
24	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300
25	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.100	0.050	0.200	0.300

Table T-03070201-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070201-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
2	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
3	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
4	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
5	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
6	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
7	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
8	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
9	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
10	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
11	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
12	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
13	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
14	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
15	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
16	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
17	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
18	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
19	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
20	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
21	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
22	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
23	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
24	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001
25	0.001	0.333	0.333	0.333	0.333	1.000	1.000	0.333	0.333	0.333	0.466	0.001

Table T-03070201-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
2		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
3		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
4		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
5		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
6		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
7		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
8		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
9		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
10		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
11		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
12		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
13		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
14		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
15		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
16		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
17		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
18		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
19		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
20		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
21		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
22		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
23		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
24		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
25		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	

Table T-03070201-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
2	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
3	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
4	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
5	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
6	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
7	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
8	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
9	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
10	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
11	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
12	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
13	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
14	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
15	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
16	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
17	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
18	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
19	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
20	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
21	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
22	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
23	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
24	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617
25	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617

Table T-03070201-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
2	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
3	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
4	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
5	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
6	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
7	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
8	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
9	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
10	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
11	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
12	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
13	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
14	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
15	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
16	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
17	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
18	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
19	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
20	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
21	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
22	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
23	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
24	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211
25	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211	1.211

Table T-03070201-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
2	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
3	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
4	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
5	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
6	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
7	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
8	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
9	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
10	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
11	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
12	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
13	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
14	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
15	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
16	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
17	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
18	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
19	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
20	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
21	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
22	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
23	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
24	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
25	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900

Table T-03070201-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
2	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
3	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
4	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
5	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
6	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
7	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
8	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
9	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
10	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
11	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
12	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
13	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
14	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
15	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
16	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
17	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
18	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
19	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
20	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
21	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
22	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
23	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
24	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100
25	0.130	5.480	5.480	5.480	5.480	5.938	7.308	5.938	5.938	5.938	6.395	0.100

Table T-03070201-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
2	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
3	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
4	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
5	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
6	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
7	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
8	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
9	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
10	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
11	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
12	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
13	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
14	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
15	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
16	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
17	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
18	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
19	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
20	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
21	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
22	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
23	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
24	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050
25	0.050	0.138	0.138	0.138	0.138	0.138	0.197	0.158	0.158	0.138	0.197	0.050

APPENDIX T-03070202

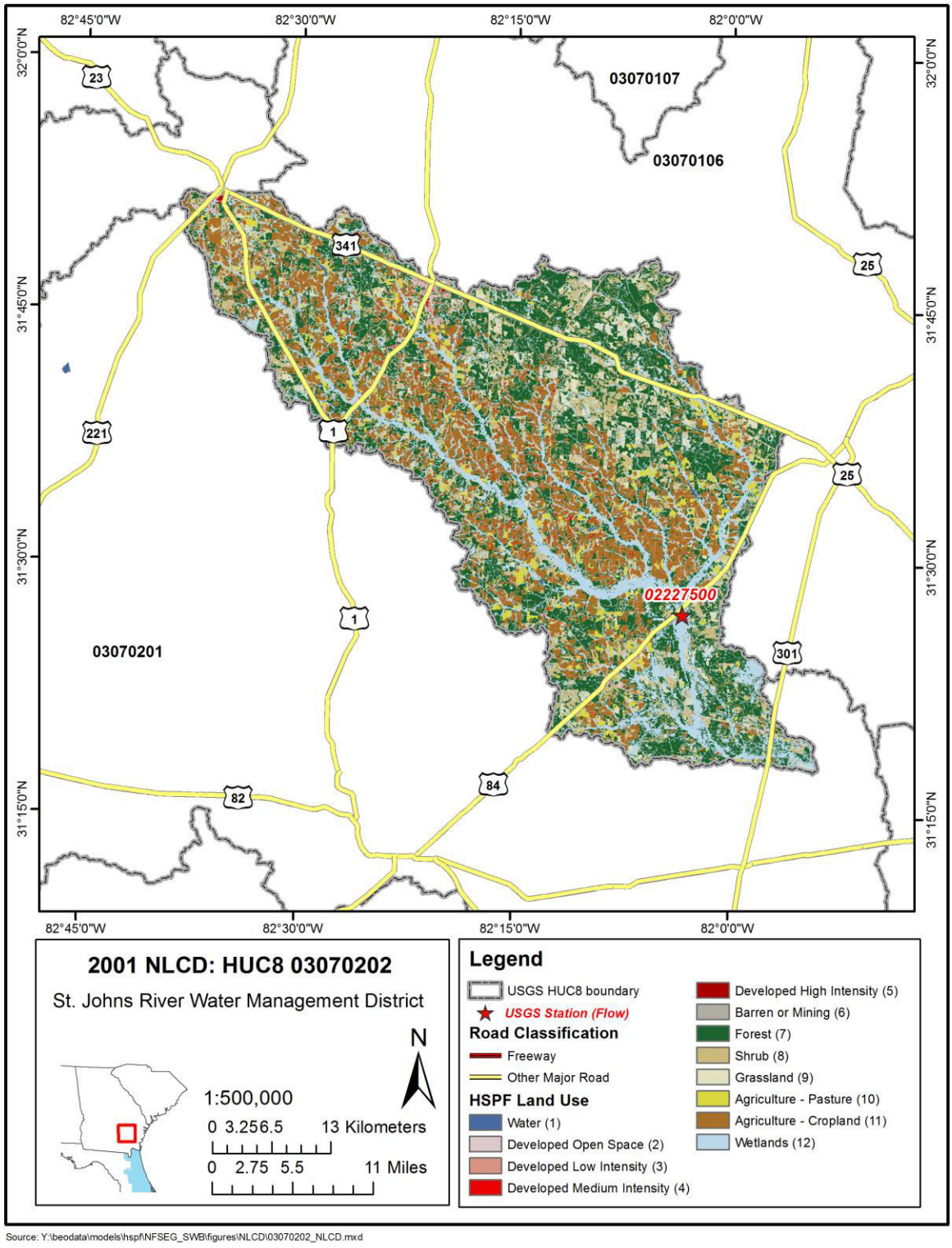


Figure T-03070202-1: Land Cover from the National Land Cover Database.

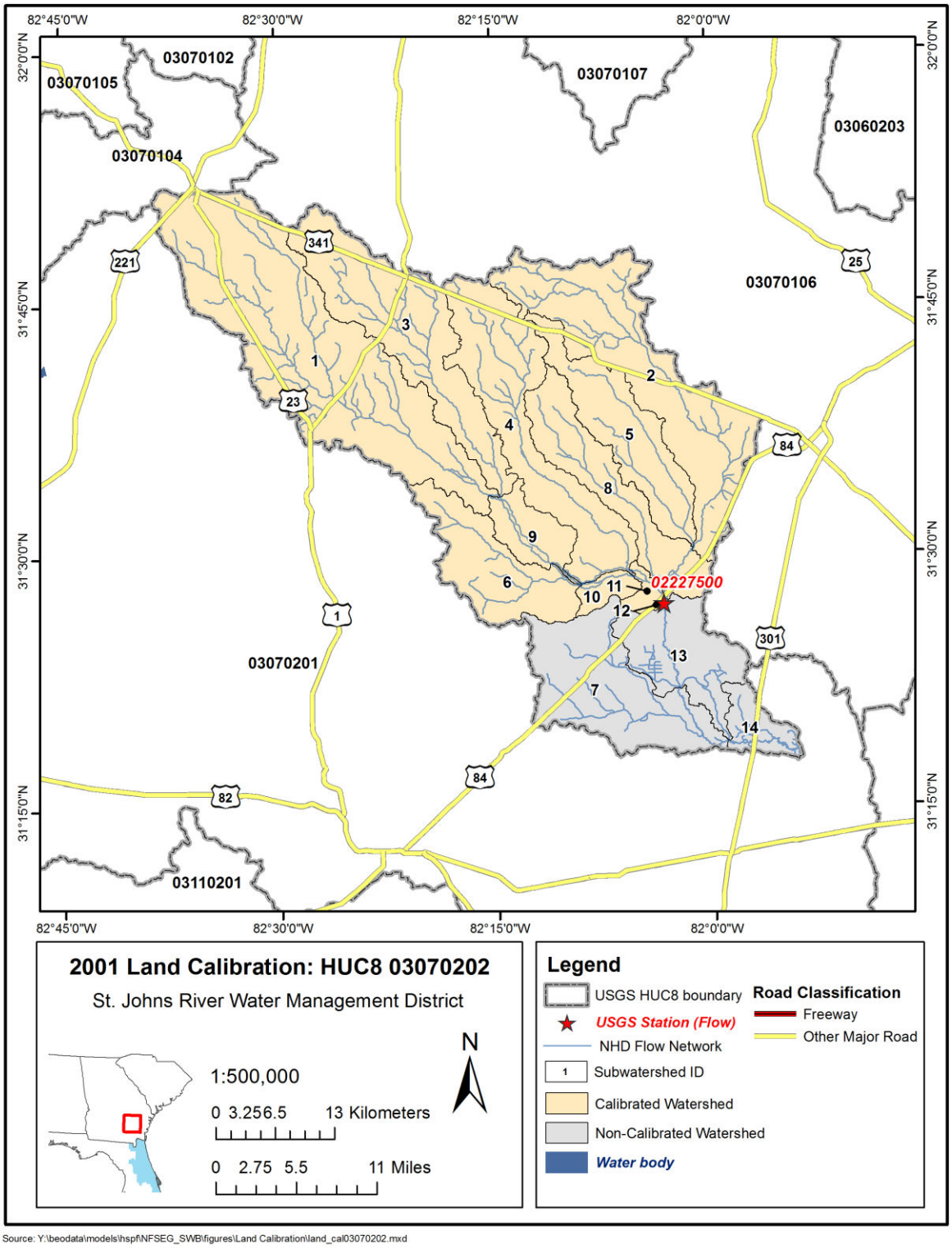


Figure T-03070202-2: Calibrated sub-watersheds.

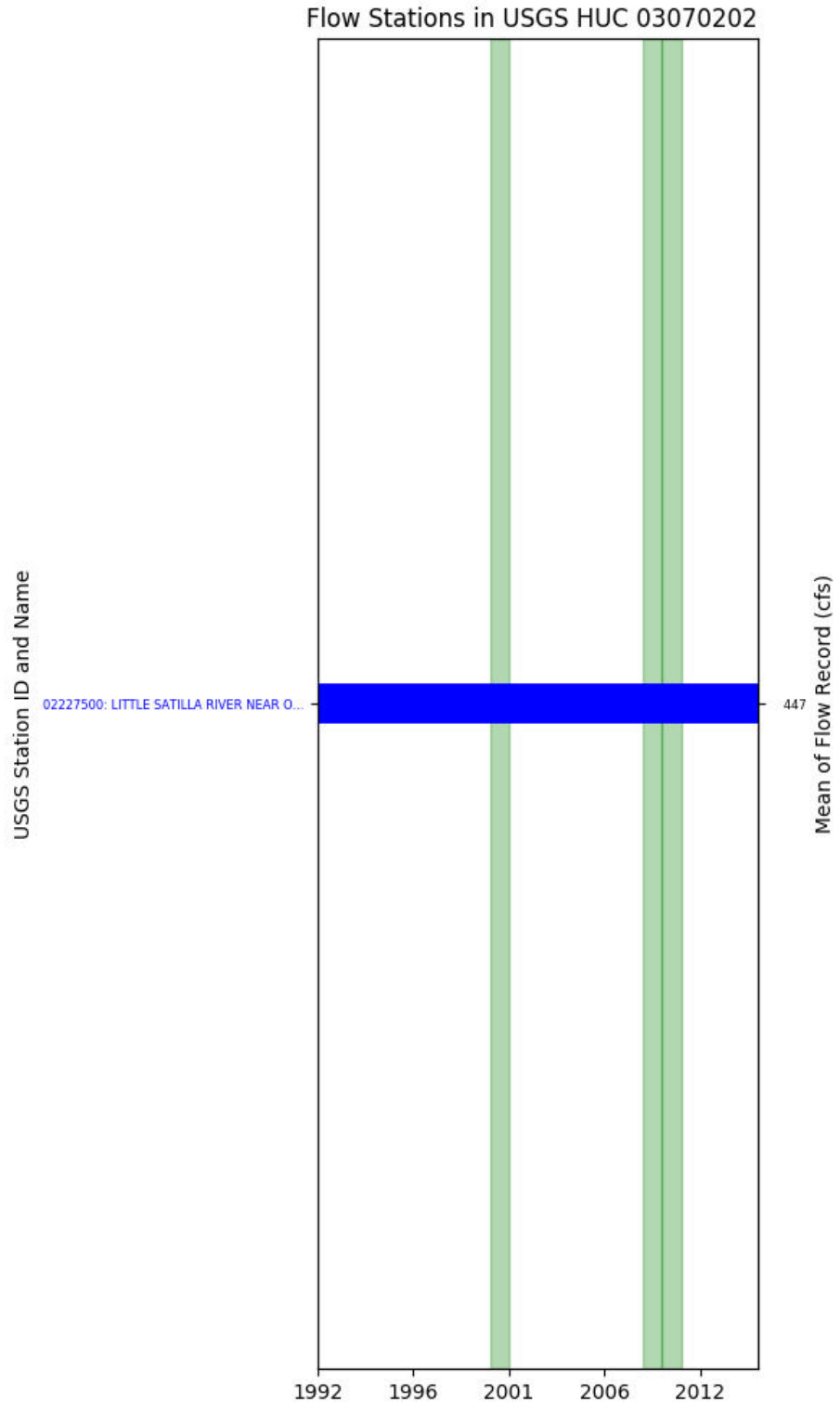


Figure T-03070202-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 12, USGS GAUGE 02227500

Water-Data Report 2009
02227500 LITTLE SATILLA RIVER NEAR OFFERMAN, GA
St. Marys-Satilla Basin Little Satilla Subbasin

LOCATION.--Lat 312704, long 820317 referenced to North American Datum of 1927, Pierce County, GA, Hydrologic Unit 03070202, on downstream end of right bank pier of steel truss span of Seaboard Coast Line Railroad bridge, 1,500 feet downstream from bridge on GA 38, 4.0 miles northeast of Offerman, and 16.0 miles upstream from mouth.

DRAINAGE AREA.--646 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1951 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 58.00 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to November 8, 1952, a water-stage recorder was installed at a site 1,500 feet upstream, and from November 8, 1952, to September 30, 1975, a waterstage recorder was located at present site at a datum 1.00 feet higher.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for discharges below 10.0 cfs, which are fair; and days of estimated discharge, which are poor. Gage-height record good.

Table T-03070202-1: Comparison Statistics Between HSPF Reach 12 and USGS Gauge 02227500.

Statistic	Value
Bias	4.95
Standard error	291.44
Relative bias	0.01
Relative standard error	0.41
Nash-Sutcliffe coefficient	0.83
Kling-Gupta coefficient	0.91
Coefficient of efficiency	0.65
Index of agreement	0.83

Table T-03070202-2: Hydrologic Indices Between USGS Gauge 02227500 and HSPF Reach 12.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02227500	Simulated Reach 12	Percent Difference
MA1: Mean, all daily flows	469.96	474.41	0.95
MA2: Median, all daily flows	100.00	105.47	5.47
MA3: CV, all daily flows	161.76	173.37	7.18
MA4: CV, log of all daily flows	161.95	157.84	-2.53
MA5: Mean daily flow / median daily flow	4.70	4.50	-4.29
MA9: (Q10 - Q90) / median daily flow	12.99	12.47	-4.00
MA10: (Q20 - Q80) / median daily flow	6.46	6.24	-3.40
MA11: (Q25 - Q75) / median daily flow	4.61	4.56	-1.02
MA12: Mean monthly flow, January	729.56	808.15	10.77
MA13: Mean monthly flow, February	911.88	1038.98	13.94
MA14: Mean monthly flow, March	941.08	897.22	-4.66
MA15: Mean monthly flow, April	520.34	378.55	-27.25
MA16: Mean monthly flow, May	125.36	58.94	-52.98
MA17: Mean monthly flow, June	271.83	147.24	-45.83
MA18: Mean monthly flow, July	277.29	268.61	-3.13
MA19: Mean monthly flow, August	416.16	474.07	13.92
MA20: Mean monthly flow, September	328.38	434.63	32.36
MA21: Mean monthly flow, October	289.57	315.37	8.91
MA22: Mean monthly flow, November	206.49	240.30	16.37
MA23: Mean monthly flow, December	442.84	455.89	2.95
ML1: Mean minimum monthly flow, January	229.13	208.60	-8.96
ML2: Mean minimum monthly flow, February	286.88	247.65	-13.67
ML3: Mean minimum monthly flow, March	237.04	158.18	-33.27
ML4: Mean minimum monthly flow, April	80.16	46.75	-41.68
ML5: Mean minimum monthly flow, May	15.38	6.45	-58.10
ML6: Mean minimum monthly flow, June	15.37	12.81	-16.70
ML7: Mean minimum monthly flow, July	51.92	61.42	18.30
ML8: Mean minimum monthly flow, August	46.15	110.54	139.52
ML9: Mean minimum monthly flow, September	21.44	82.29	283.86
ML10: Mean minimum monthly flow, October	25.12	40.46	61.08
ML11: Mean minimum monthly flow, November	71.64	91.88	28.25
ML12: Mean minimum monthly flow, December	138.43	129.64	-6.35
ML13: CV of minimum monthly flows	191.46	168.91	-11.78
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.01	-9.02
ML15: Mean minimum annual flow / mean annual flow	0.00	0.00	-60.99
ML16: Median minimum annual flow / median annual flow	0.00	0.00	-92.31
ML20: Ratio of baseflow volume to total flow volume	0.36	0.38	5.35
ML22: Mean annual minimum flow divided by catchment area	0.02	0.01	-72.33
RA1: Mean of positive changes from one day to next (rise rate)	151.97	188.09	
RA2: CV, mean of positive changes from one day to next (rise rate)	273.56	360.55	
RA3: Mean of negative changes from one day to next (fall rate)	74.99	69.15	
RA4: CV, mean of negative changes from one day to next (fall rate)	272.09	363.55	
RA5: Ratio of days that are higher than previous day	0.32	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.19	

RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.12	
RA8: Number of flow reversals from one day to the next	72.88	61.00	
RA9: CV, number of flow reversals from one day to the next	20.21	21.58	

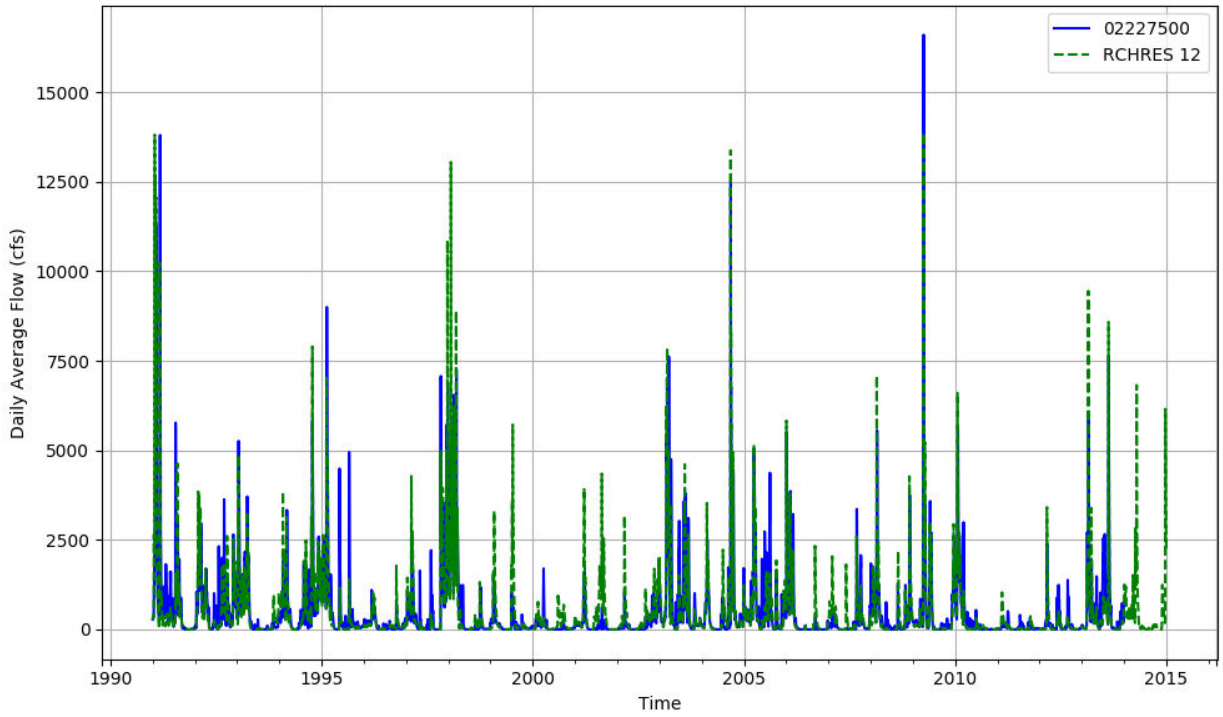


Figure T-03070202-4: Daily flow for HSFP reach 12 and USGS station 02227500.

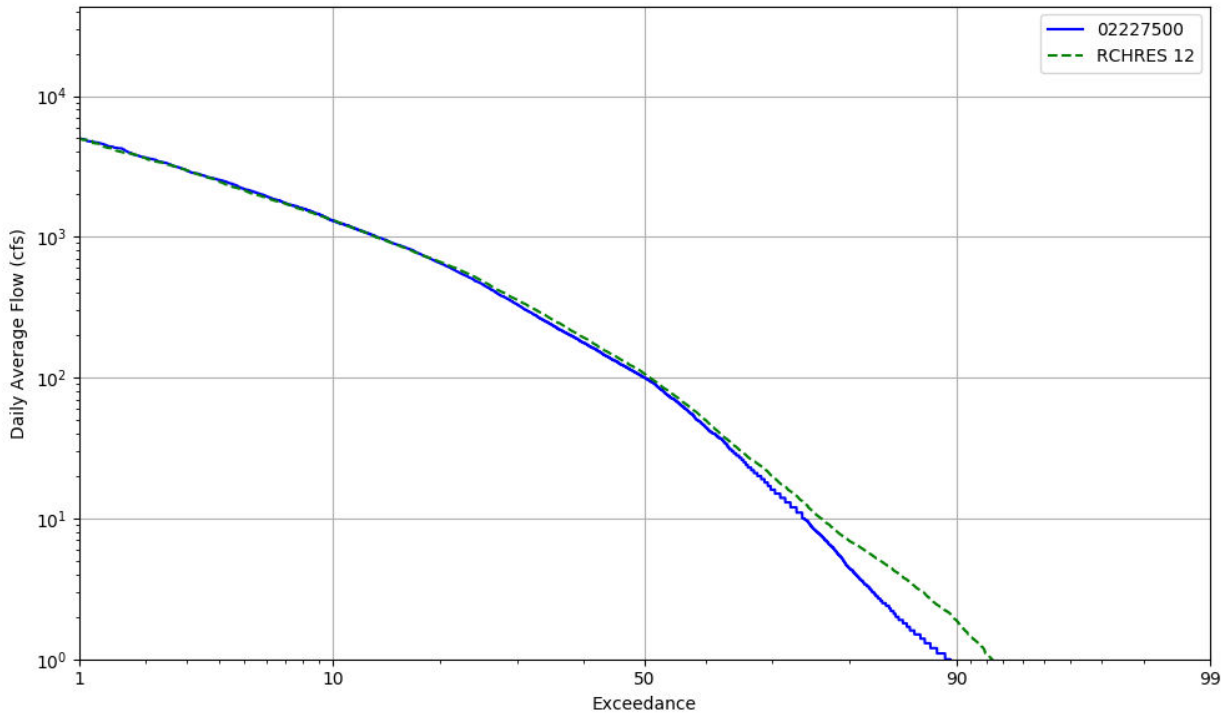


Figure T-03070202-5: Daily exceedance for HSFP reach 12 and USGS station 02227500.

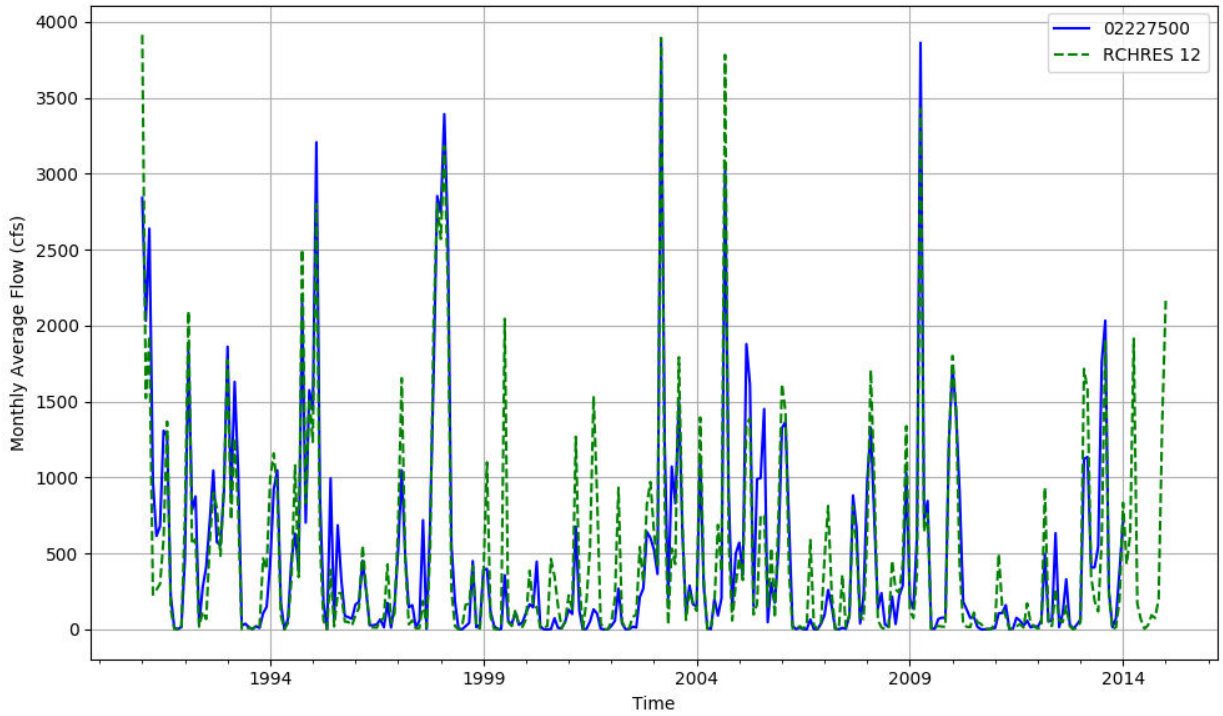


Figure T-03070202-6: Monthly flow for HSFP reach 12 and USGS station 02227500.

Table T-03070202-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	891	19733	8454	1593	239	247	161124	62123	25058	17335	89100	101540	102	16732	2524	506794
AREA(%)	0.2	3.9	1.7	0.3	0.0	0.0	31.6	12.2	4.9	3.4	17.5	19.9	0.0	3.3	0.5	99.5
IMPERVIOUS																
AREA(ACRES)		1059	975	441	289											2763
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	42.9	43.2	42.4	41.9	41.7	42.5	43.4	43.4	43.8	43.1	42.5	43.1	55.7	48.1	44.1	43.1
SURLI		0.0	1.8	1.7	1.9									0.0	2.8	0.1
UZLI																0.0
LZLI		0.0	0.6	0.5	0.5									0.0	6.3	0.0
SURO: PERVIOUS	10.1	1.1	1.5	1.1	1.2	0.7	0.1	1.1	0.4	0.4	0.2	7.0	1.7	0.5	0.3	1.7
SURO: IMPERVIOUS		22.8	22.2	21.8	21.5											0.1
SURO: COMBINED	10.1	2.2	3.7	5.6	12.3	0.7	0.1	1.1	0.4	0.4	0.2	7.0	1.7	0.5	0.3	1.9
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.4	10.1	10.3	10.2	9.9	12.3	7.5	11.0	10.8	10.3	7.8	0.7	14.1	11.6	11.8	7.1
AGWI	1.8	14.1	14.4	14.3	14.0	16.8	11.1	14.7	14.9	14.4	11.3	2.3	17.4	15.8	15.8	10.4
IGWI	0.3	2.8	2.8	2.8	2.7	3.3	2.2	2.9	2.9	2.8	2.2	0.5	3.4	3.1	3.1	2.0
CEPE		9.1	9.0	9.0	8.9	5.7	16.2	13.5	9.2	9.1	17.2	18.2	20.8	12.7	18.6	15.2
UZET	3.1	2.8	2.8	2.8	2.8	2.9	1.4	2.0	2.6	2.4	1.6	5.2	3.0	2.5	1.7	2.5
LZET	1.5	15.6	16.5	16.5	16.6	15.2	15.5	11.7	16.1	16.3	12.8	0.6	11.6	15.8	15.7	11.6
AGWET	1.0	2.0	2.0	2.0	2.0	2.4	1.6	1.7	2.0	2.0	1.5	0.8	1.4	1.9	1.8	1.5
BASET	0.7	3.1	3.1	3.1	3.2	3.2	2.6	3.1	3.1	3.1	2.7	1.0	3.4	3.2	3.4	2.4
SURET	28.9											12.7				2.6
PERO	10.5	11.1	11.9	11.3	11.1	13.0	7.6	12.0	11.3	10.8	8.1	7.7	15.8	12.2	12.1	8.9
IGWI	0.3	2.8	2.8	2.8	2.7	3.3	2.2	2.9	2.9	2.8	2.2	0.5	3.4	3.1	3.1	2.0
TAET: PERVIOUS	35.2	32.5	33.4	33.4	33.5	29.5	37.2	31.9	32.9	32.9	35.7	38.5	40.1	36.1	41.2	35.7
IMPEV: IMPERVIOUS		20.5	20.4	20.4	20.4											0.1
ET: COMBINED	35.2	31.9	32.1	30.5	26.3	29.5	37.2	31.9	32.9	32.9	35.7	38.5	40.1	36.1	41.2	35.8
PET	46.4	46.4	46.4	46.3	46.3	46.4	46.4	46.4	46.3	46.4	46.4	46.4	46.3	46.4	46.4	46.1

Table T-03070202-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	891	19733	8454	1593	239	247	161124	62123	25058	17335	89100	101540	102	16732	2524	506794
AREA(%)	0.2	3.9	1.7	0.3	0.0	0.0	31.6	12.2	4.9	3.4	17.5	19.9	0.0	3.3	0.5	99.5
IMPERVIOUS																
AREA(ACRES)		1059	975	441	289											2763
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	56.0	56.3	56.3	56.3	56.5	56.5	56.2	56.2	56.3	56.3	56.2	56.2	56.6	59.6	57.1	56.0
SURLI		0.0	1.9	1.7	1.8									0.0	1.0	0.0
UZLI																0.0
LZLI		0.0	0.7	0.6	0.6									0.0	3.0	0.0
SURO: PERVIOUS	13.5	1.9	2.9	2.7	3.3	1.5	0.1	1.3	0.7	0.8	0.5	10.5	2.4	0.9	0.6	2.6
SURO: IMPERVIOUS		33.6	34.0	34.0	34.4											0.2
SURO: COMBINED	13.5	3.5	6.1	9.5	20.3	1.5	0.1	1.3	0.7	0.8	0.5	10.5	2.4	0.9	0.6	2.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.3	11.2	12.0	12.1	12.0	14.8	9.5	13.1	11.8	11.9	10.6	0.6	11.4	12.7	12.7	8.7
AGWI	2.2	17.2	18.3	18.4	18.3	22.4	13.6	19.2	17.8	17.8	15.0	1.8	17.4	18.8	17.6	12.9
IGWI	0.4	3.4	3.6	3.6	3.6	4.4	2.7	3.8	3.5	3.5	2.9	0.3	3.4	3.7	3.5	2.5
CEPE		10.5	10.2	10.1	9.9	6.9	17.8	15.1	10.6	10.5	18.8	19.9	9.7	13.4	19.5	16.8
UZET	5.3	2.3	2.4	2.4	2.5	2.8	1.2	1.9	2.1	2.0	1.3	10.8	2.5	2.1	1.4	3.4
LZET	2.3	20.3	20.7	20.7	20.7	18.0	20.1	14.2	20.8	20.9	17.0	0.9	20.5	20.2	17.9	15.0
AGWET	1.5	2.9	3.0	3.0	3.0	3.6	1.6	2.8	3.0	2.9	1.7	0.6	2.9	2.9	2.0	1.8
BASET	0.5	2.3	2.5	2.5	2.5	3.2	2.0	2.6	2.3	2.3	1.9	0.7	2.3	2.5	2.3	1.8
SURET	31.2											10.9				2.2
PERO	13.8	13.1	14.9	14.8	15.3	16.2	9.6	14.3	12.5	12.7	11.0	11.1	13.9	13.6	13.3	11.3
IGWI	0.4	3.4	3.6	3.6	3.6	4.4	2.7	3.8	3.5	3.5	2.9	0.3	3.4	3.7	3.5	2.5
TAET: PERVIOUS	40.8	38.4	39.0	38.8	38.7	34.5	42.6	36.7	38.8	38.6	40.8	43.8	37.8	41.0	43.1	41.0
IMPEV: IMPERVIOUS		22.3	22.0	21.9	21.7											0.1
ET: COMBINED	40.8	37.6	37.2	35.1	29.4	34.5	42.6	36.7	38.8	38.6	40.8	43.8	37.8	41.0	43.1	41.1
PET	54.2	54.1	54.2	54.3	54.3	54.2	54.0	54.0	53.9	54.1	54.2	54.1	54.2	54.3	54.3	53.8

Table T-03070202-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	891	19733	8454	1593	239	247	161124	62123	25058	17335	89100	101540	102	16732	2524	506794
AREA(%)	0.2	3.9	1.7	0.3	0.0	0.0	31.6	12.2	4.9	3.4	17.5	19.9	0.0	3.3	0.5	99.5
IMPERVIOUS																
AREA(ACRES)		1059	975	441	289											2763
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	41.7	41.6	41.4	41.3	41.0	41.7	41.7	41.7	41.6	41.6	41.5	41.7	40.7	44.0	42.5	41.5
SURLI		0.0	1.9	1.8	1.9									0.0	1.1	0.0
UZLI																0.0
LZLI		0.0	0.7	0.6	0.6									0.0	3.4	0.0
SURO: PERVIOUS	6.5	0.9	1.3	1.1	1.2	0.6	0.2	0.8	0.5	0.5	0.3	6.0	0.8	0.5	0.3	1.5
SURO: IMPERVIOUS		21.6	21.7	21.7	21.7											0.1
SURO: COMBINED	6.5	2.0	3.4	5.6	12.4	0.6	0.2	0.8	0.5	0.5	0.3	6.0	0.8	0.5	0.3	1.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.3	6.3	6.7	6.7	6.4	8.6	5.6	7.1	6.6	6.6	5.7	0.5	5.9	7.2	6.2	4.9
AGWI	2.2	10.0	11.0	11.0	10.8	14.4	6.6	11.6	10.3	10.4	7.6	1.4	9.6	11.3	9.4	7.0
IGWI	0.4	2.0	2.2	2.2	2.1	2.8	1.3	2.3	2.0	2.0	1.5	0.3	1.9	2.2	1.8	1.4
CEPE		8.6	8.4	8.4	8.3	5.5	15.8	12.8	8.8	8.6	16.9	17.8	8.2	10.4	17.6	14.7
UZET	5.9	2.0	2.1	2.1	2.1	2.4	0.7	1.7	1.6	1.6	0.9	13.6	2.0	1.7	1.0	3.6
LZET	2.6	19.7	20.5	20.4	20.5	17.5	19.9	14.2	20.2	20.3	16.9	1.3	19.8	19.8	19.0	14.9
AGWET	1.6	3.1	3.4	3.4	3.5	3.7	1.2	3.1	3.1	3.1	1.9	0.7	3.2	3.1	2.6	1.8
BASET	0.4	1.6	1.9	1.8	1.8	2.8	0.7	2.3	1.6	1.6	1.0	0.5	1.5	2.0	1.4	1.1
SURET	25.9											4.6				1.0
PERO	6.7	7.2	7.9	7.7	7.7	9.3	5.8	7.9	7.1	7.1	6.0	6.5	6.7	7.7	6.5	6.5
IGWI	0.4	2.0	2.2	2.2	2.1	2.8	1.3	2.3	2.0	2.0	1.5	0.3	1.9	2.2	1.8	1.4
TAET: PERVIOUS	36.5	35.0	36.2	36.1	36.1	31.9	38.4	34.1	35.3	35.3	37.5	38.5	34.7	37.0	41.7	37.0
IMPEV: IMPERVIOUS		20.2	19.9	19.8	19.6											0.1
ET: COMBINED	36.5	34.2	34.6	32.6	27.1	31.9	38.4	34.1	35.3	35.3	37.5	38.5	34.7	37.0	41.7	37.1
PET	51.5	51.4	51.5	51.5	51.5	51.5	51.4	51.4	51.3	51.4	51.5	51.4	51.4	51.5	51.6	51.2

Table T-03070202-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	891	19733	8454	1593	239	247	161124	62123	25058	17335	89100	101540	102	16732	2524	506794
AREA(%)	0.2	3.9	1.7	0.3	0.0	0.0	31.6	12.2	4.9	3.4	17.5	19.9	0.0	3.3	0.5	99.5
IMPERVIOUS																
AREA(ACRES)		1059	975	441	289											2763
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	48.6	48.6	48.2	47.9	47.5	48.7	48.9	48.9	48.8	48.7	48.3	48.9	57.7	52.8	49.6	48.6
SURLI		0.0	1.6	1.5	1.6									0.0	2.0	0.0
UZLI																0.0
LZLI		0.0	0.6	0.5	0.5									0.0	3.7	0.0
SURO: PERVIOUS	11.3	1.3	1.9	1.6	1.9	1.0	0.2	1.0	0.6	0.6	0.4	8.7	2.2	0.7	0.5	2.2
SURO: IMPERVIOUS		28.0	27.8	27.6	27.4											0.2
SURO: COMBINED	11.3	2.7	4.6	7.3	15.9	1.0	0.2	1.0	0.6	0.6	0.4	8.7	2.2	0.7	0.5	2.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.4	10.1	10.5	10.5	10.2	12.9	8.1	11.4	10.5	10.4	8.8	0.7	13.6	11.4	11.0	7.5
AGWI	2.2	15.0	15.7	15.6	15.2	19.0	11.6	16.5	15.5	15.4	12.5	2.1	18.4	16.7	15.8	11.1
IGWI	0.4	2.9	3.1	3.1	3.0	3.7	2.3	3.2	3.0	3.0	2.5	0.4	3.6	3.3	3.1	2.2
CEPE		9.6	9.4	9.3	9.2	6.4	16.3	13.6	9.6	9.6	17.3	18.2	17.2	12.1	18.1	15.3
UZET	4.3	2.2	2.3	2.3	2.2	2.5	1.1	1.9	2.0	1.9	1.3	8.4	2.2	2.0	1.5	2.9
LZET	1.9	17.5	18.0	18.0	18.0	16.1	17.4	12.6	18.1	18.1	14.4	0.8	14.1	18.0	16.3	12.9
AGWET	1.1	2.4	2.5	2.5	2.5	3.0	1.6	2.3	2.5	2.5	1.7	0.7	2.0	2.5	2.0	1.7
BASET	0.6	2.5	2.6	2.5	2.5	3.1	1.9	2.8	2.5	2.5	2.1	0.8	2.9	2.7	2.7	1.9
SURET	28.5											10.2				2.1
PERO	11.7	11.4	12.4	12.2	12.1	13.9	8.3	12.4	11.1	11.1	9.2	9.4	15.8	12.1	11.5	9.7
IGWI	0.4	2.9	3.1	3.1	3.0	3.7	2.3	3.2	3.0	3.0	2.5	0.4	3.6	3.3	3.1	2.2
TAET: PERVIOUS	36.5	34.2	34.8	34.6	34.5	31.0	38.2	33.2	34.6	34.5	36.6	39.1	38.2	37.4	40.5	36.8
IMPEV: IMPERVIOUS		20.6	20.4	20.3	20.2											0.1
ET: COMBINED	36.5	33.5	33.3	31.5	26.7	31.0	38.2	33.2	34.6	34.5	36.6	39.1	38.2	37.4	40.5	36.9
PET	48.9	48.8	48.9	48.9	49.0	48.9	48.8	48.8	48.8	48.9	48.9	48.9	48.9	48.9	48.9	48.6

Table T-03070202-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
2	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
3	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
4	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
5	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
6	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
7	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
8	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
9	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
10	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
11	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
12	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
13	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990
14	0.990	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.990

Table T-03070202-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
2	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
3	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
4	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
5	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
6	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
7	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
8	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
9	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
10	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
11	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
12	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
13	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
14	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120

Table T-03070202-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
2	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
3	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
4	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
5	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
6	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
7	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
8	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
9	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
10	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
11	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
12	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
13	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217
14	0.000	0.050	0.050	0.050	0.050	0.020	0.166	0.110	0.050	0.050	0.200	0.217

Table T-03070202-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
2	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
3	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
4	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
5	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
6	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
7	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
8	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
9	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
10	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
11	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
12	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
13	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164
14	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164	0.164

Table T-03070202-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
2	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
3	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
4	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
5	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
6	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
7	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
8	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
9	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
10	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
11	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
12	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
13	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
14	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001

Table T-03070202-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
2		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
3		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
4		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
5		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
6		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
7		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
8		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
9		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
10		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
11		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
12		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
13		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
14		0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	

Table T-03070202-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
2	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
3	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
4	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
5	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
6	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
7	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
8	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
9	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
10	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
11	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
12	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
13	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
14	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695

Table T-03070202-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03070202-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
2	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
3	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
4	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
5	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
6	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
7	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
8	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
9	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
10	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
11	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
12	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
13	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
14	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900

Table T-03070202-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
2	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
3	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
4	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
5	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
6	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
7	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
8	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
9	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
10	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
11	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
12	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
13	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100
14	0.200	1.729	1.729	1.729	1.729	1.944	2.593	1.944	1.944	1.944	2.161	0.100

Table T-03070202-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.495

APPENDIX T-03070203

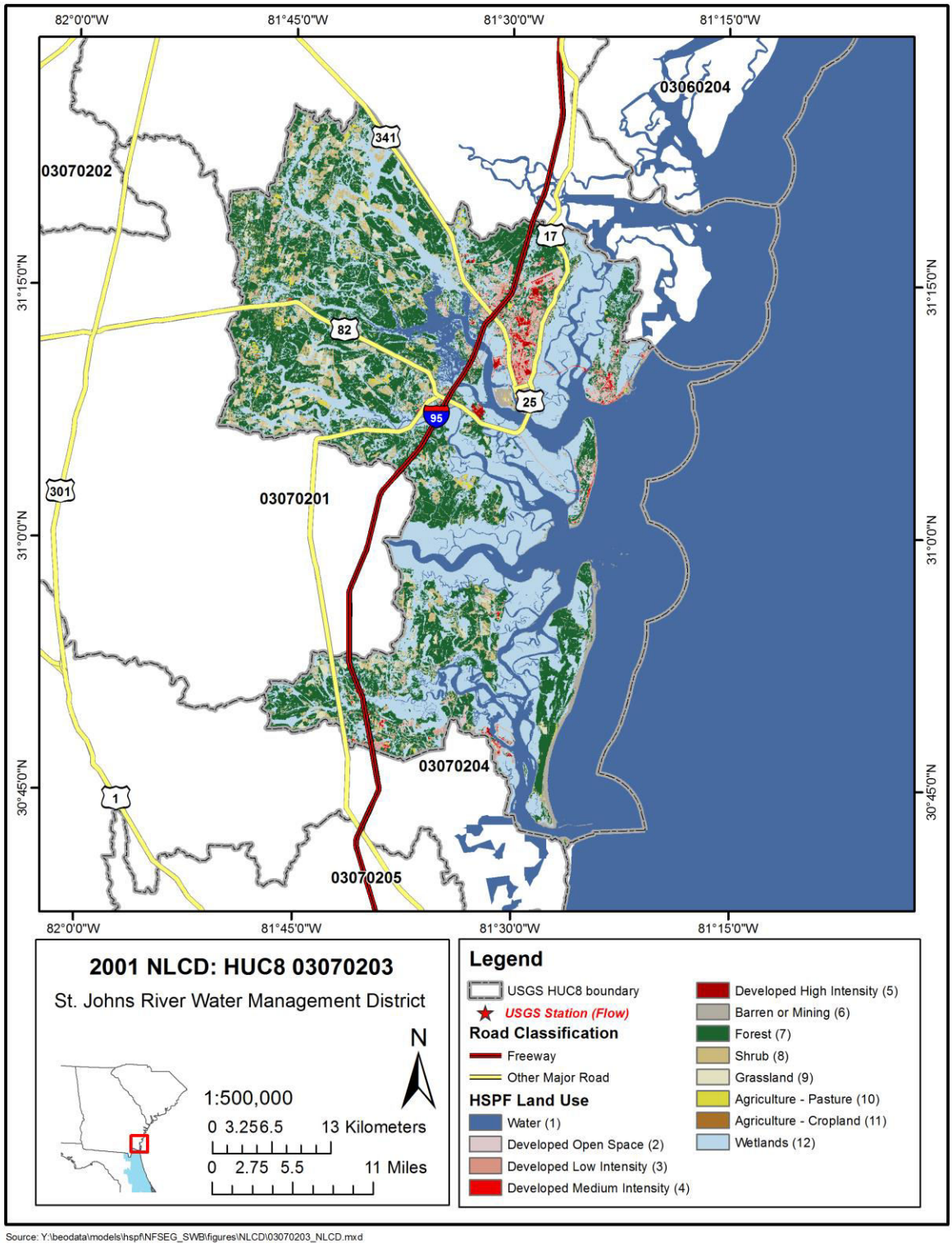


Figure T-03070203-1: Land Cover from the National Land Cover Database.

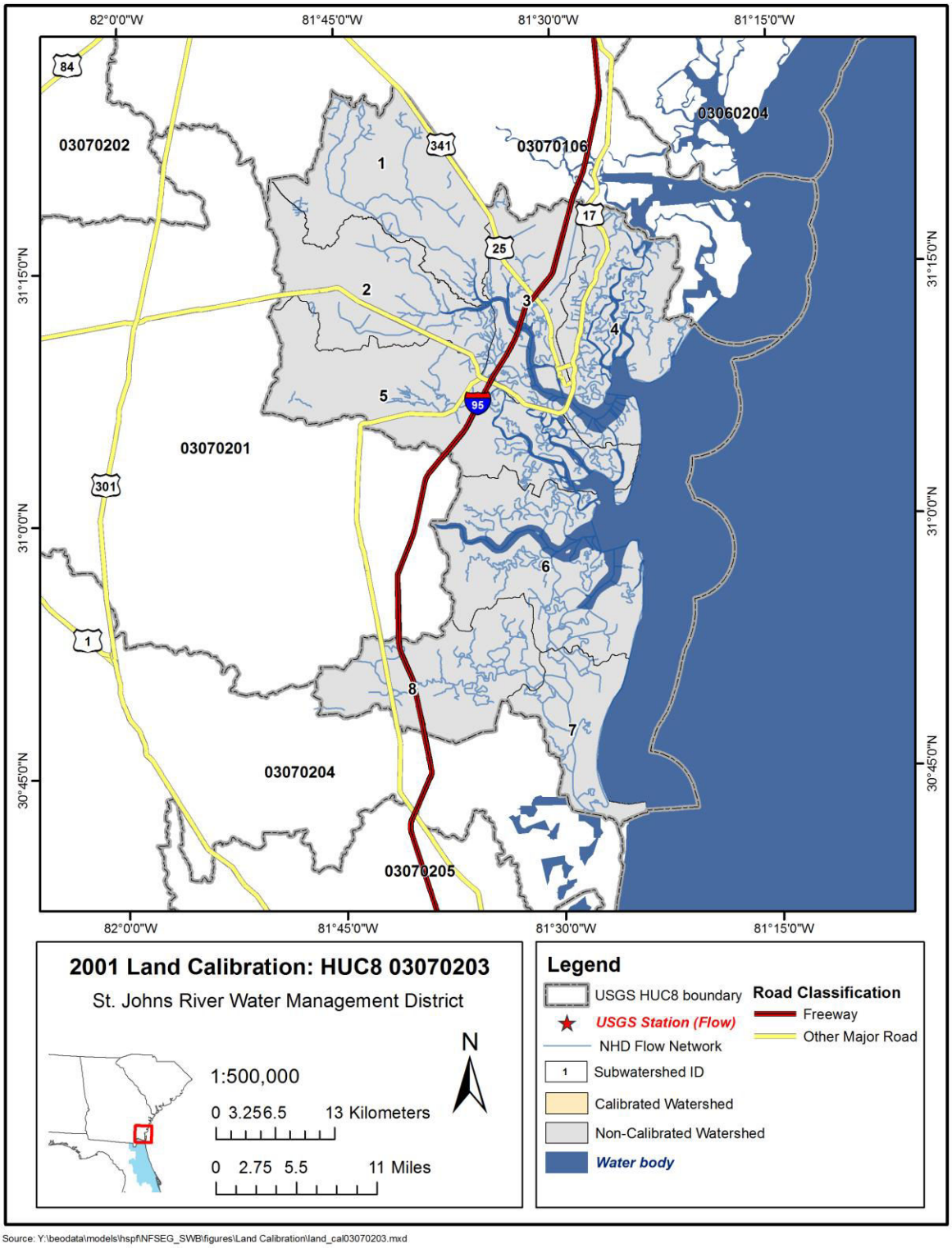


Figure T-03070203-2: Calibrated sub-watersheds.

APPENDIX T-03070204

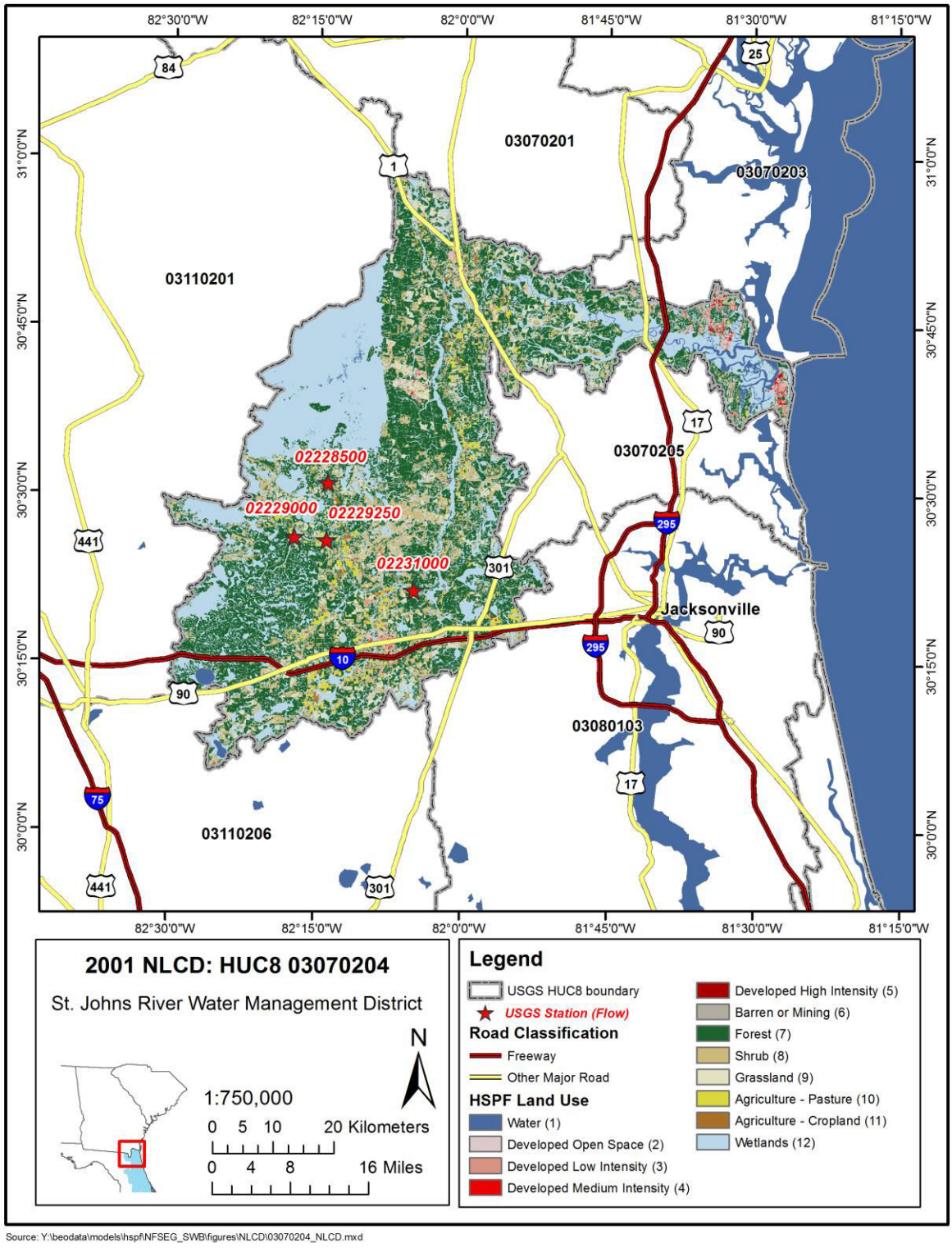


Figure T-03070204-1: Land Cover from the National Land Cover Database.

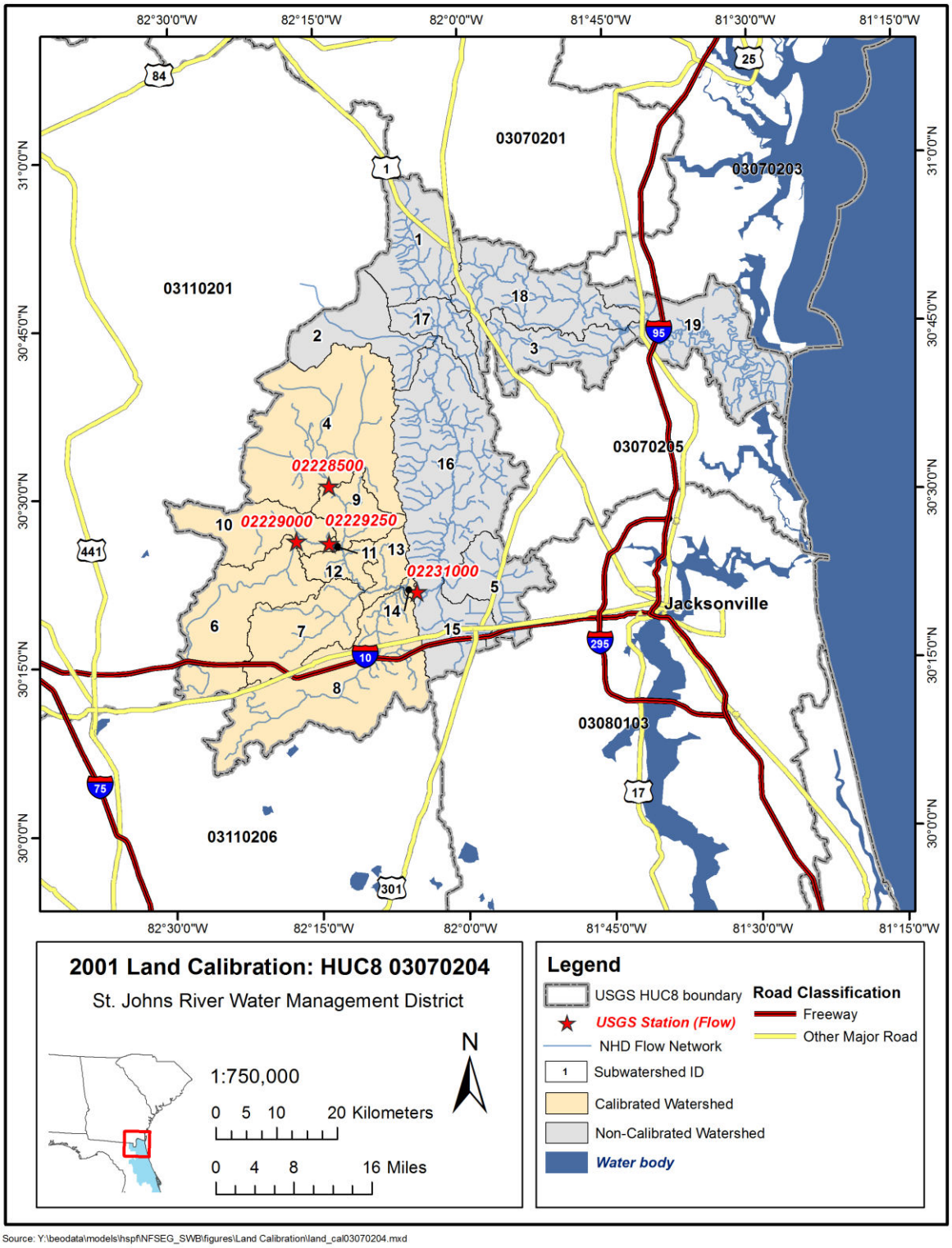


Figure T-03070204-2: Calibrated sub-watersheds.

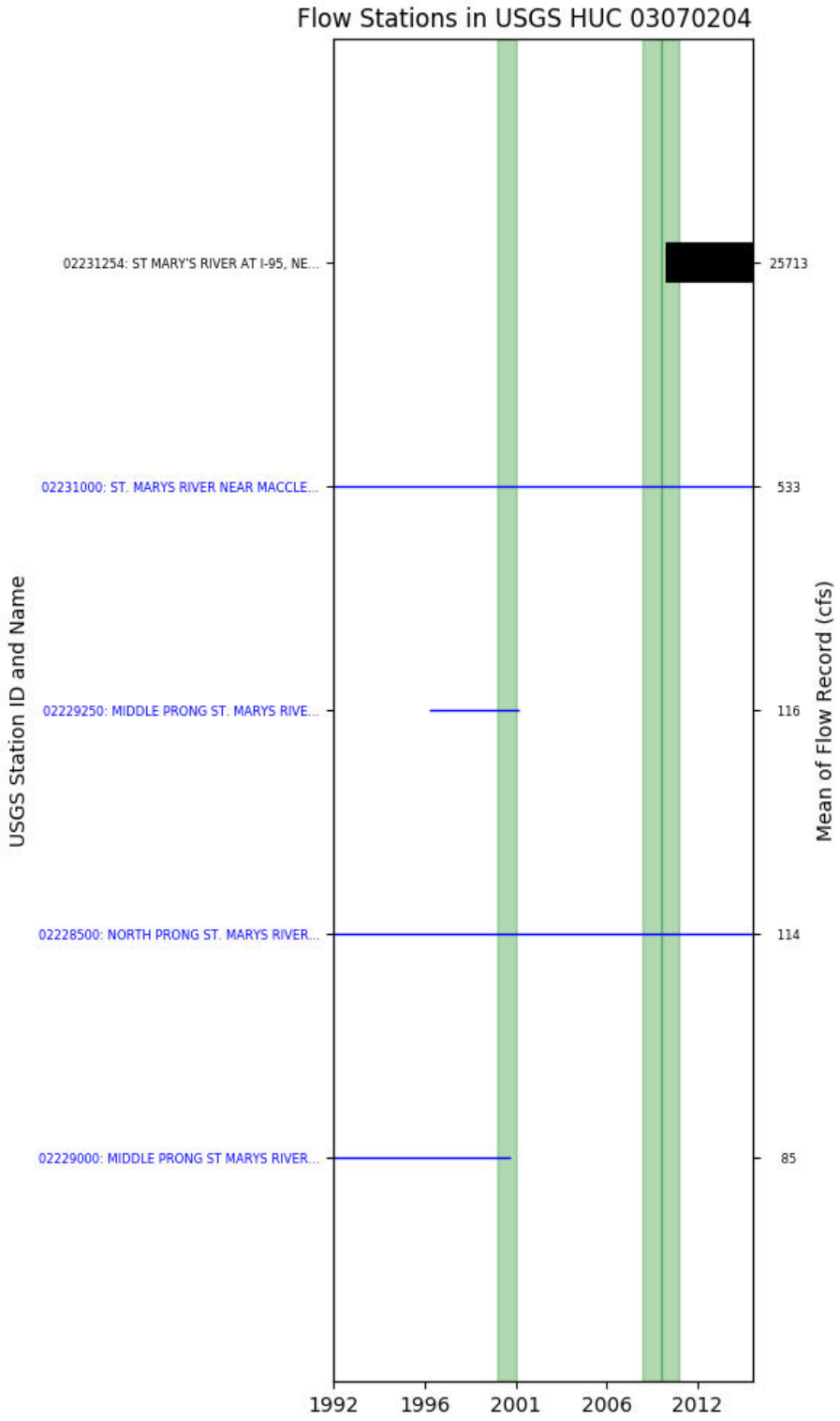


Figure T-03070204-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 04, USGS GAUGE 02228500

Water-Data Report 2009
02228500 NORTH PRONG ST. MARYS RIVER AT MONIAC, GA
St. Marys-Satilla Basin St. Marys Subbasin

LOCATION.--Lat 303103, long 821350 referenced to North American Datum of 1927, in NW 1/4 sec.8, T.1 N., R.21 E., Baker County, FL, Hydrologic Unit 03070204, Baker County, FL, at middle of channel at downstream side of bridge on State Highways 2 and 94, 950 ft upstream from Georgia Southern & Florida Railway bridge, 0.5 mi west of Moniac, and 1.0 mi downstream from Moccasin Creek.

DRAINAGE AREA.--160 mi, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1921 to December 1923 (published as St. Marys River at Moniac), January 1927 to June 1930, July 1932 to June 1934, October 1950 to September 1989. October 1989 to July 1990 (discharge measurements only), August 1990 to September 2004, October 2006 to current year.

REVISED RECORDS.--WSP 1234; Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 89.40 ft above NGVD of 1929. Prior to June 30, 1934, nonrecording gage at site 800 ft downstream at datum 3.22 ft higher. Oct. 3, 1950 to Oct. 17, 1988, water-stage recorder, Oct. 17, 1988 to Aug. 10, 1990, non-recording gage, at present site and datum.

REMARKS.--Records fair.

Table T-03070204-1: Comparison Statistics Between HSPF Reach 04 and USGS Gauge 02228500.

Statistic	Value
Bias	2.71
Standard error	95.30
Relative bias	0.02
Relative standard error	0.46
Nash-Sutcliffe coefficient	0.79
Kling-Gupta coefficient	0.89
Coefficient of efficiency	0.60
Index of agreement	0.81

Table T-03070204-2: Hydrologic Indices Between USGS Gauge 02228500 and HSPF Reach 04.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02228500	Simulated Reach 04	Percent Difference
MA1: Mean, all daily flows	115.87	117.76	1.63
MA2: Median, all daily flows	28.00	28.92	3.30
MA3: CV, all daily flows	184.65	180.64	-2.17
MA4: CV, log of all daily flows	158.60	169.41	6.82
MA5: Mean daily flow / median daily flow	4.14	4.07	-1.61
MA9: (Q10 - Q90) / median daily flow	10.70	10.51	-1.82
MA10: (Q20 - Q80) / median daily flow	4.42	4.16	-5.95
MA11: (Q25 - Q75) / median daily flow	3.10	3.11	0.29
MA12: Mean monthly flow, January	106.63	148.59	39.35
MA13: Mean monthly flow, February	165.42	208.17	25.84
MA14: Mean monthly flow, March	177.52	194.55	9.60
MA15: Mean monthly flow, April	92.05	75.54	-17.93
MA16: Mean monthly flow, May	38.25	28.13	-26.46
MA17: Mean monthly flow, June	79.63	78.08	-1.95
MA18: Mean monthly flow, July	75.58	76.45	1.15
MA19: Mean monthly flow, August	172.34	113.75	-34.00
MA20: Mean monthly flow, September	141.55	138.13	-2.42
MA21: Mean monthly flow, October	121.83	107.35	-11.89
MA22: Mean monthly flow, November	38.72	46.53	20.18
MA23: Mean monthly flow, December	40.26	58.18	44.50
ML1: Mean minimum monthly flow, January	34.21	48.29	41.18
ML2: Mean minimum monthly flow, February	65.73	89.13	35.60
ML3: Mean minimum monthly flow, March	59.72	61.44	2.87
ML4: Mean minimum monthly flow, April	26.88	23.73	-11.72
ML5: Mean minimum monthly flow, May	6.82	6.03	-11.58
ML6: Mean minimum monthly flow, June	7.56	13.92	83.99
ML7: Mean minimum monthly flow, July	22.43	29.47	31.39
ML8: Mean minimum monthly flow, August	24.32	26.94	10.80
ML9: Mean minimum monthly flow, September	38.98	32.46	-16.73
ML10: Mean minimum monthly flow, October	21.90	21.84	-0.27
ML11: Mean minimum monthly flow, November	21.43	24.23	13.04
ML12: Mean minimum monthly flow, December	19.06	24.87	30.44
ML13: CV of minimum monthly flows	169.57	172.00	1.43
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.01	-11.66
ML15: Mean minimum annual flow / mean annual flow	0.01	0.00	-26.89
ML16: Median minimum annual flow / median annual flow	0.00	0.01	
ML20: Ratio of baseflow volume to total flow volume	0.38	0.43	13.85
ML22: Mean annual minimum flow divided by catchment area	9090.92	9090.91	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	50.11	32.40	
RA2: CV, mean of positive changes from one day to next (rise rate)	361.37	578.00	
RA3: Mean of negative changes from one day to next (fall rate)	16.46	13.75	
RA4: CV, mean of negative changes from one day to next (fall rate)	391.87	465.63	
RA5: Ratio of days that are higher than previous day	0.22	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.10	

RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.07	
RA8: Number of flow reversals from one day to the next	58.64	48.64	
RA9: CV, number of flow reversals from one day to the next	35.24	34.82	

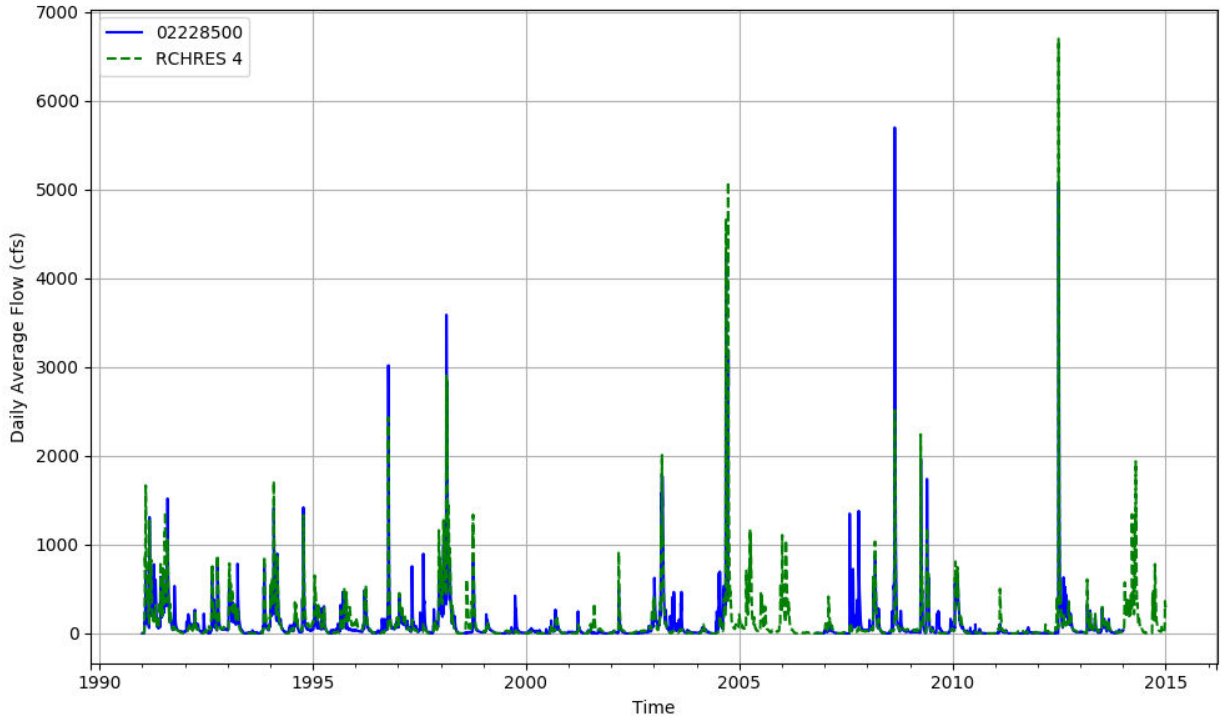


Figure T-03070204-4: Daily flow for HSFP reach 04 and USGS station 02228500.

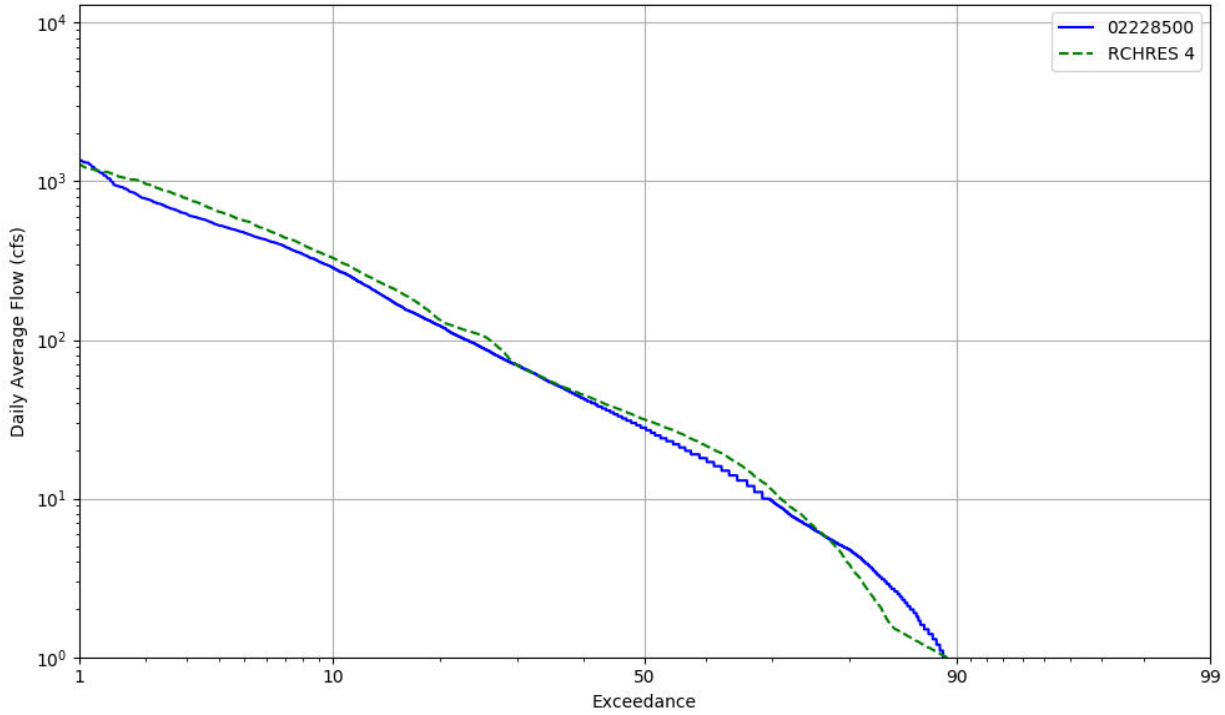


Figure T-03070204-5: Daily exceedance for HSFP reach 04 and USGS station 02228500.

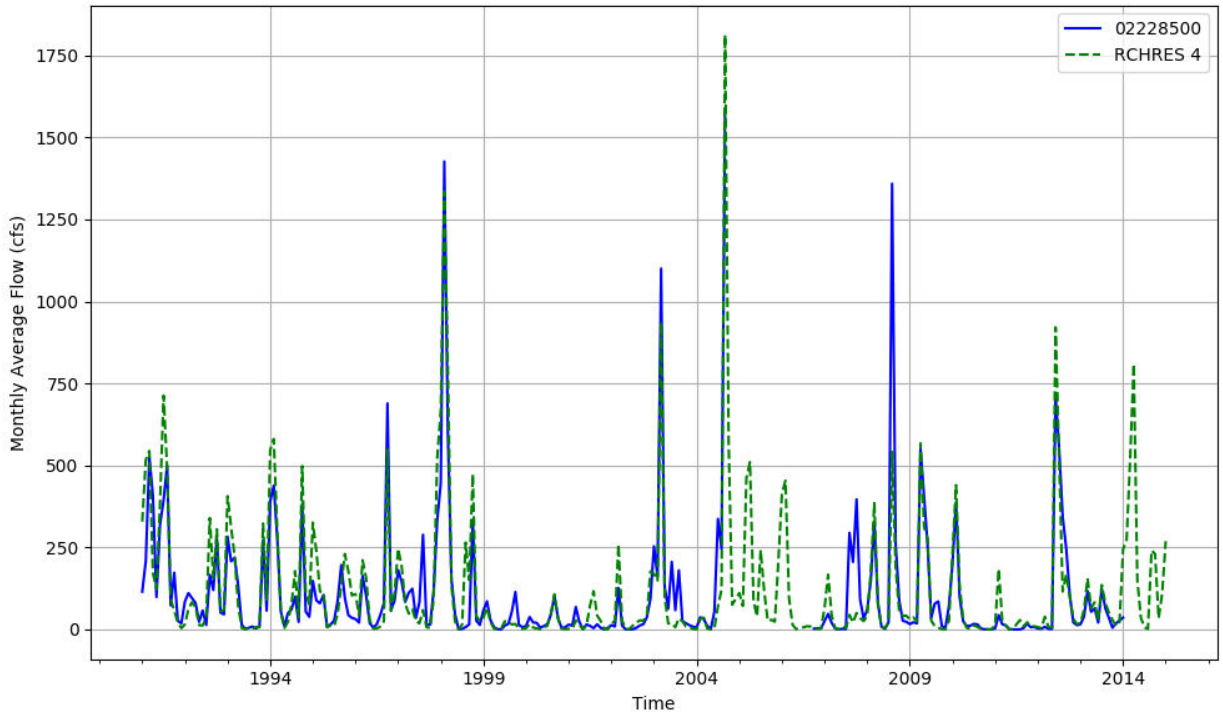


Figure T-03070204-6: Monthly flow for HSFP reach 04 and USGS station 02228500.

HSPF REACH 06, USGS GAUGE 02229000

Water-Data Report 2009
02228500 NORTH PRONG ST. MARYS RIVER AT MONIAC, GA
St. Marys-Satilla Basin St. Marys Subbasin

LOCATION.--Lat 303103, long 821350 referenced to North American Datum of 1927, in NW 1/4 sec.8, T.1 N., R.21 E., Baker County, FL, Hydrologic Unit 03070204, Baker County, FL, at middle of channel at downstream side of bridge on State Highways 2 and 94, 950 ft upstream from Georgia Southern & Florida Railway bridge, 0.5 mi west of Moniac, and 1.0 mi downstream from Moccasin Creek.

DRAINAGE AREA.--160 mi, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1921 to December 1923 (published as St. Marys River at Moniac), January 1927 to June 1930, July 1932 to June 1934, October 1950 to September 1989. October 1989 to July 1990 (discharge measurements only), August 1990 to September 2004, October 2006 to current year.

REVISED RECORDS.--WSP 1234; Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 89.40 ft above NGVD of 1929. Prior to June 30, 1934, nonrecording gage at site 800 ft downstream at datum 3.22 ft higher. Oct. 3, 1950 to Oct. 17, 1988, water-stage recorder, Oct. 17, 1988 to Aug. 10, 1990, non-recording gage, at present site and datum.

REMARKS.--Records fair.

Table T-03070204-3: Comparison Statistics Between HSPF Reach 06 and USGS Gauge 02229000.

Statistic	Value
Bias	-32.61
Standard error	106.77
Relative bias	-0.34
Relative standard error	0.64
Nash-Sutcliffe coefficient	0.58
Kling-Gupta coefficient	0.42
Coefficient of efficiency	0.53
Index of agreement	0.73

Table T-03070204-4: Hydrologic Indices Between USGS Gauge 02229000 and HSPF Reach 06.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02229000	Simulated Reach 06	Percent Difference
MA1: Mean, all daily flows	94.99	62.29	-34.43
MA2: Median, all daily flows	16.00	19.67	22.91
MA3: CV, all daily flows	179.12	127.28	-28.94
MA4: CV, log of all daily flows	171.07	138.78	-18.87
MA5: Mean daily flow / median daily flow	5.94	3.17	-46.65
MA9: (Q10 - Q90) / median daily flow	16.27	8.64	-46.93
MA10: (Q20 - Q80) / median daily flow	7.97	4.93	-38.21
MA11: (Q25 - Q75) / median daily flow	5.60	3.38	-39.55
MA12: Mean monthly flow, January	105.53	98.23	-6.92
MA13: Mean monthly flow, February	175.31	136.82	-21.96
MA14: Mean monthly flow, March	153.01	113.45	-25.85
MA15: Mean monthly flow, April	75.69	46.38	-38.73
MA16: Mean monthly flow, May	41.29	18.34	-55.59
MA17: Mean monthly flow, June	52.37	26.32	-49.74
MA18: Mean monthly flow, July	66.34	38.41	-42.10
MA19: Mean monthly flow, August	88.56	51.93	-41.36
MA20: Mean monthly flow, September	59.08	43.42	-26.51
MA21: Mean monthly flow, October	229.11	85.12	-62.85
MA22: Mean monthly flow, November	25.48	33.12	29.96
MA23: Mean monthly flow, December	45.58	43.38	-4.83
ML1: Mean minimum monthly flow, January	24.49	32.08	30.98
ML2: Mean minimum monthly flow, February	65.41	58.22	-11.00
ML3: Mean minimum monthly flow, March	58.19	41.79	-28.19
ML4: Mean minimum monthly flow, April	18.17	16.93	-6.83
ML5: Mean minimum monthly flow, May	15.11	10.62	-29.70
ML6: Mean minimum monthly flow, June	16.89	11.01	-34.79
ML7: Mean minimum monthly flow, July	23.05	19.79	-14.15
ML8: Mean minimum monthly flow, August	15.30	11.97	-21.77
ML9: Mean minimum monthly flow, September	11.99	15.46	28.95
ML10: Mean minimum monthly flow, October	24.40	16.70	-31.53
ML11: Mean minimum monthly flow, November	9.52	16.27	70.91
ML12: Mean minimum monthly flow, December	9.73	18.72	92.26
ML13: CV of minimum monthly flows	187.79	168.65	-10.19
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.01	-86.26
ML15: Mean minimum annual flow / mean annual flow	0.01	0.00	-76.43
ML16: Median minimum annual flow / median annual flow	0.03	0.00	-94.31
ML20: Ratio of baseflow volume to total flow volume	0.43	0.53	21.40
ML22: Mean annual minimum flow divided by catchment area	0.01	0.00	-89.55
RA1: Mean of positive changes from one day to next (rise rate)	31.36	13.79	
RA2: CV, mean of positive changes from one day to next (rise rate)	347.31	317.52	
RA3: Mean of negative changes from one day to next (fall rate)	11.41	5.20	
RA4: CV, mean of negative changes from one day to next (fall rate)	236.72	226.98	
RA5: Ratio of days that are higher than previous day	0.24	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.14	

RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.09	
RA8: Number of flow reversals from one day to the next	67.27	62.27	
RA9: CV, number of flow reversals from one day to the next	12.79	9.80	

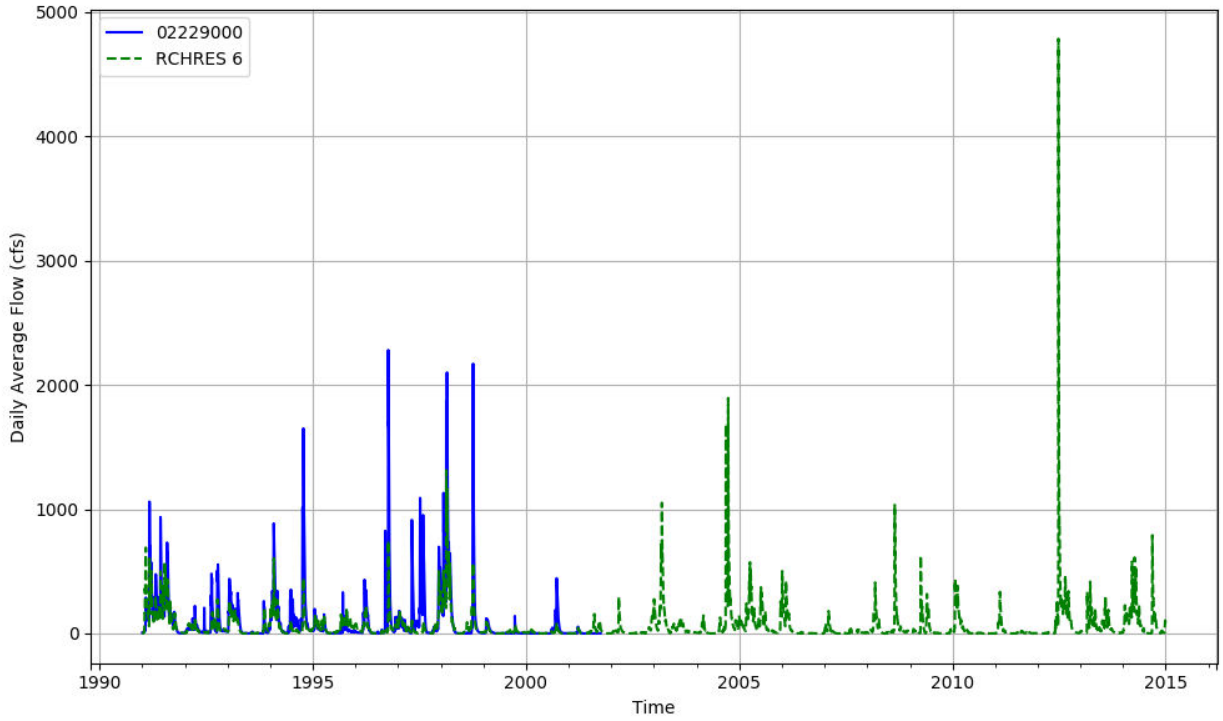


Figure T-03070204-7: Daily flow for HSFP reach 06 and USGS station 02229000.

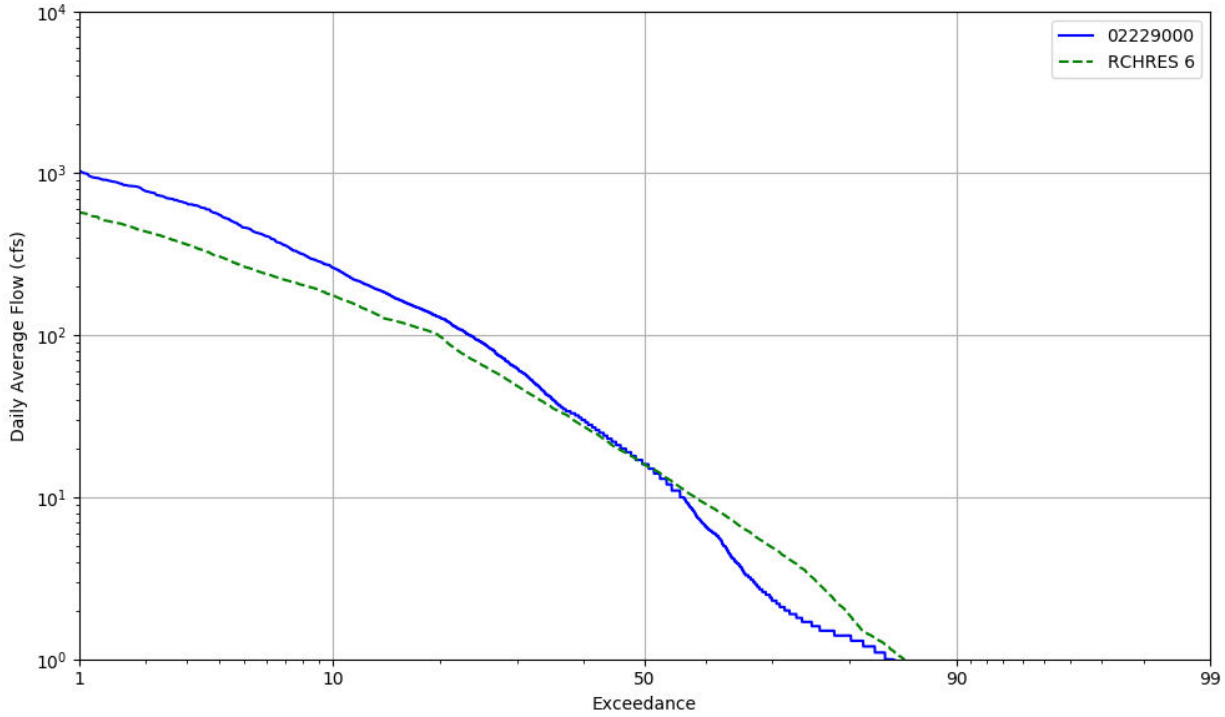


Figure T-03070204-8: Daily exceedance for HSFP reach 06 and USGS station 02229000.

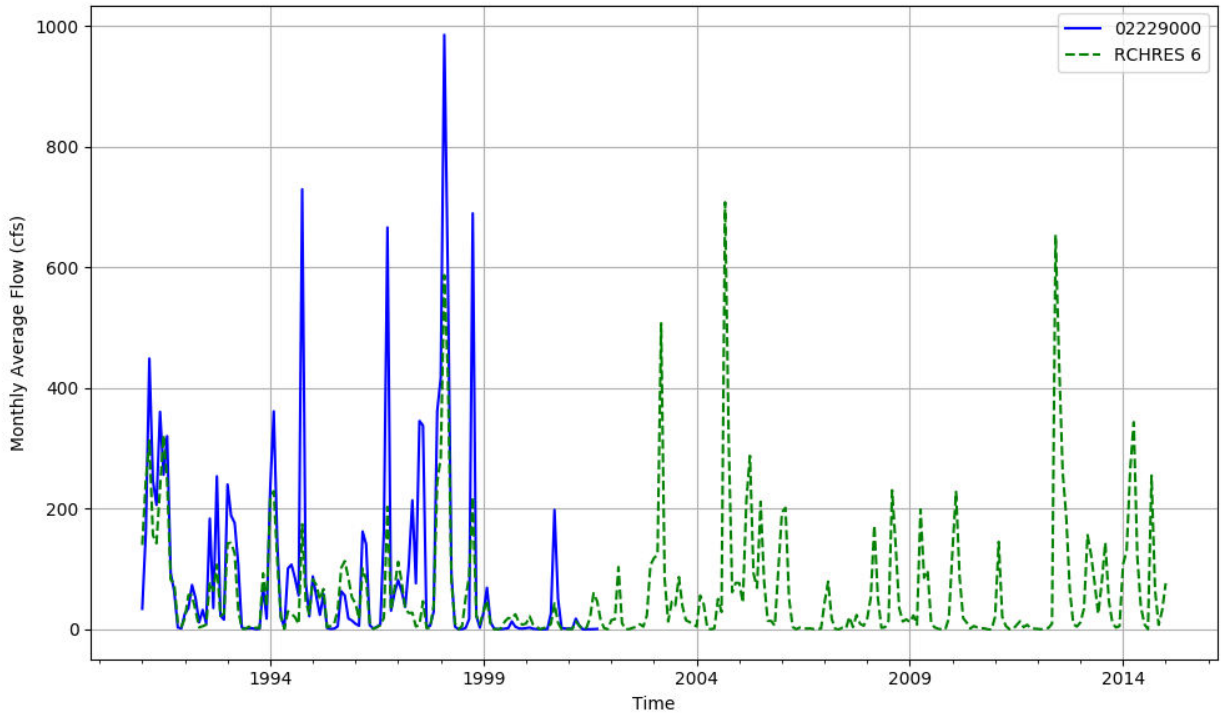


Figure T-03070204-9: Monthly flow for HSFP reach 06 and USGS station 02229000.

HSPF REACH 10, USGS GAUGE 02229250

Water-Data Report 2009
02228500 NORTH PRONG ST. MARYS RIVER AT MONIAC, GA
St. Marys-Satilla Basin St. Marys Subbasin

LOCATION.--Lat 303103, long 821350 referenced to North American Datum of 1927, in NW 1/4 sec.8, T.1 N., R.21 E., Baker County, FL, Hydrologic Unit 03070204, Baker County, FL, at middle of channel at downstream side of bridge on State Highways 2 and 94, 950 ft upstream from Georgia Southern & Florida Railway bridge, 0.5 mi west of Moniac, and 1.0 mi downstream from Moccasin Creek.

DRAINAGE AREA.--160 mi, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1921 to December 1923 (published as St. Marys River at Moniac), January 1927 to June 1930, July 1932 to June 1934, October 1950 to September 1989. October 1989 to July 1990 (discharge measurements only), August 1990 to September 2004, October 2006 to current year.

REVISED RECORDS.--WSP 1234; Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 89.40 ft above NGVD of 1929. Prior to June 30, 1934, nonrecording gage at site 800 ft downstream at datum 3.22 ft higher. Oct. 3, 1950 to Oct. 17, 1988, water-stage recorder, Oct. 17, 1988 to Aug. 10, 1990, non-recording gage, at present site and datum.

REMARKS.--Records fair.

Table T-03070204-5: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02229250.

Statistic	Value
Bias	-40.30
Standard error	154.62
Relative bias	-0.34
Relative standard error	0.55
Nash-Sutcliffe coefficient	0.69
Kling-Gupta coefficient	0.47
Coefficient of efficiency	0.61
Index of agreement	0.77

Table T-03070204-6: Hydrologic Indices Between USGS Gauge 02229250 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02229250	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	116.47	75.54	-35.14
MA2: Median, all daily flows	5.20	18.76	260.68
MA3: CV, all daily flows	217.46	147.20	-32.31
MA4: CV, log of all daily flows	228.95	190.94	-16.60
MA5: Mean daily flow / median daily flow	22.40	4.03	-82.02
MA9: (Q10 - Q90) / median daily flow	57.77	7.85	-86.41
MA10: (Q20 - Q80) / median daily flow	15.88	3.31	-79.19
MA11: (Q25 - Q75) / median daily flow	8.36	2.40	-71.24
MA12: Mean monthly flow, January	113.94	90.15	-20.88
MA13: Mean monthly flow, February	288.33	184.99	-35.84
MA14: Mean monthly flow, March	171.72	171.52	-0.12
MA15: Mean monthly flow, April	54.22	31.14	-42.58
MA16: Mean monthly flow, May	55.50	10.22	-81.59
MA17: Mean monthly flow, June	18.98	4.37	-76.99
MA18: Mean monthly flow, July	69.87	17.40	-75.10
MA19: Mean monthly flow, August	100.63	54.83	-45.51
MA20: Mean monthly flow, September	43.18	58.24	34.87
MA21: Mean monthly flow, October	180.13	75.16	-58.27
MA22: Mean monthly flow, November	19.61	20.32	3.60
MA23: Mean monthly flow, December	74.40	69.18	-7.02
ML1: Mean minimum monthly flow, January	45.46	58.66	29.02
ML2: Mean minimum monthly flow, February	74.08	79.50	7.32
ML3: Mean minimum monthly flow, March	71.74	61.64	-14.08
ML4: Mean minimum monthly flow, April	8.76	11.92	36.02
ML5: Mean minimum monthly flow, May	15.70	2.88	-81.69
ML6: Mean minimum monthly flow, June	16.99	0.65	-96.19
ML7: Mean minimum monthly flow, July	20.26	9.55	-52.87
ML8: Mean minimum monthly flow, August	14.14	15.85	12.08
ML9: Mean minimum monthly flow, September	8.94	17.94	100.76
ML10: Mean minimum monthly flow, October	21.99	16.78	-23.72
ML11: Mean minimum monthly flow, November	11.11	12.34	11.05
ML12: Mean minimum monthly flow, December	16.14	21.64	34.09
ML13: CV of minimum monthly flows	247.37	250.08	1.10
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.01	-95.82
ML15: Mean minimum annual flow / mean annual flow	0.02	0.00	-85.95
ML16: Median minimum annual flow / median annual flow	0.12	0.01	-95.44
ML20: Ratio of baseflow volume to total flow volume	0.39	0.56	42.72
ML22: Mean annual minimum flow divided by catchment area	0.01	0.00	-91.86
RA1: Mean of positive changes from one day to next (rise rate)	44.45	20.11	
RA2: CV, mean of positive changes from one day to next (rise rate)	414.70	397.02	
RA3: Mean of negative changes from one day to next (fall rate)	15.61	6.92	
RA4: CV, mean of negative changes from one day to next (fall rate)	334.28	353.56	
RA5: Ratio of days that are higher than previous day	0.24	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.17	

RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.10	
RA8: Number of flow reversals from one day to the next	54.83	61.17	
RA9: CV, number of flow reversals from one day to the next	28.52	38.61	

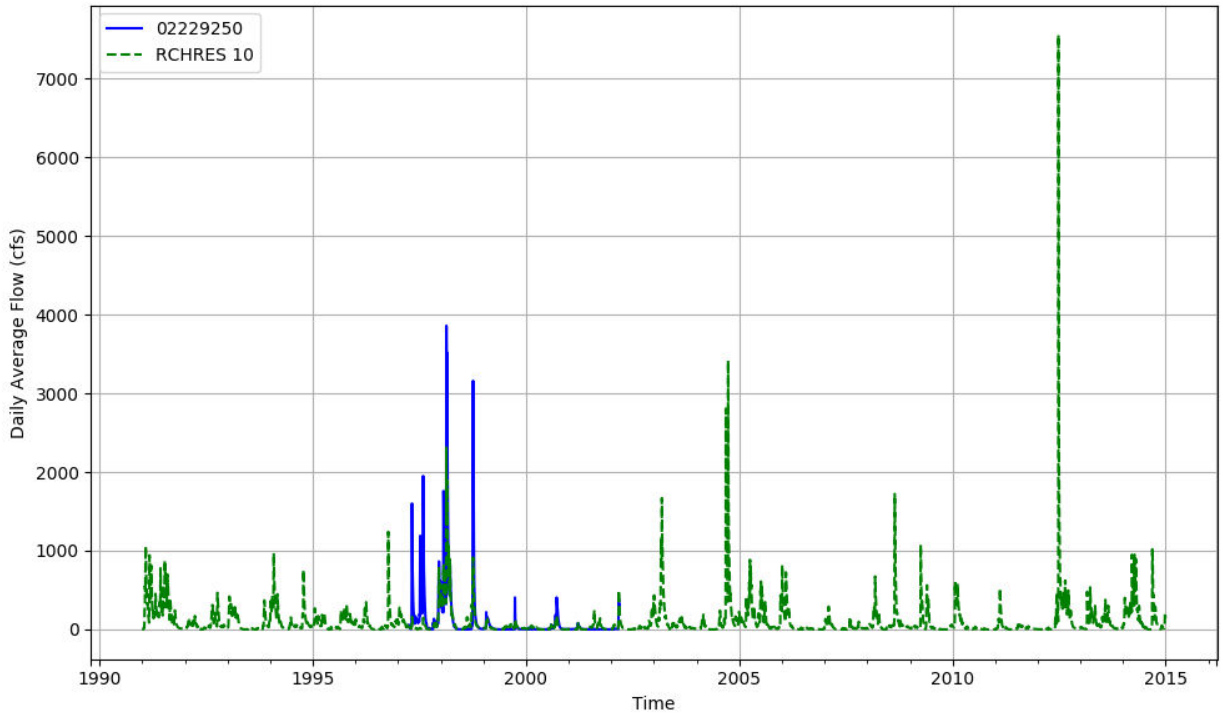


Figure T-03070204-10: Daily flow for HSFP reach 10 and USGS station 02229250.

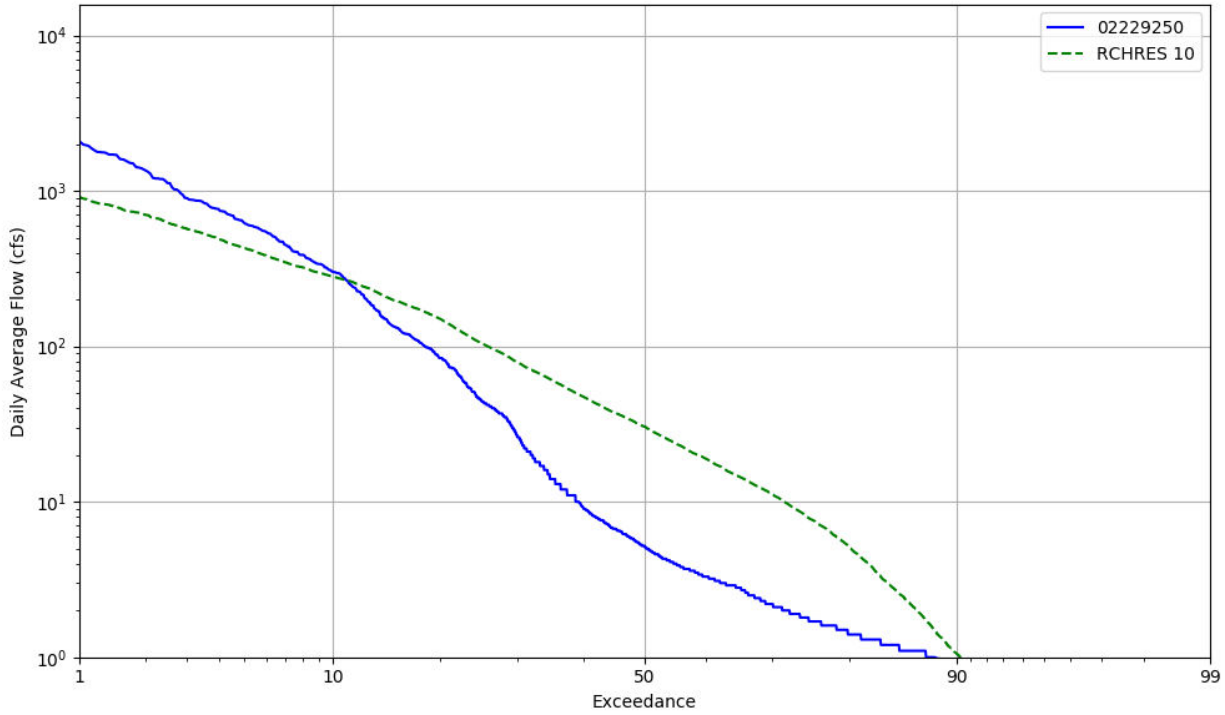


Figure T-03070204-11: Daily exceedance for HSFP reach 10 and USGS station 02229250.

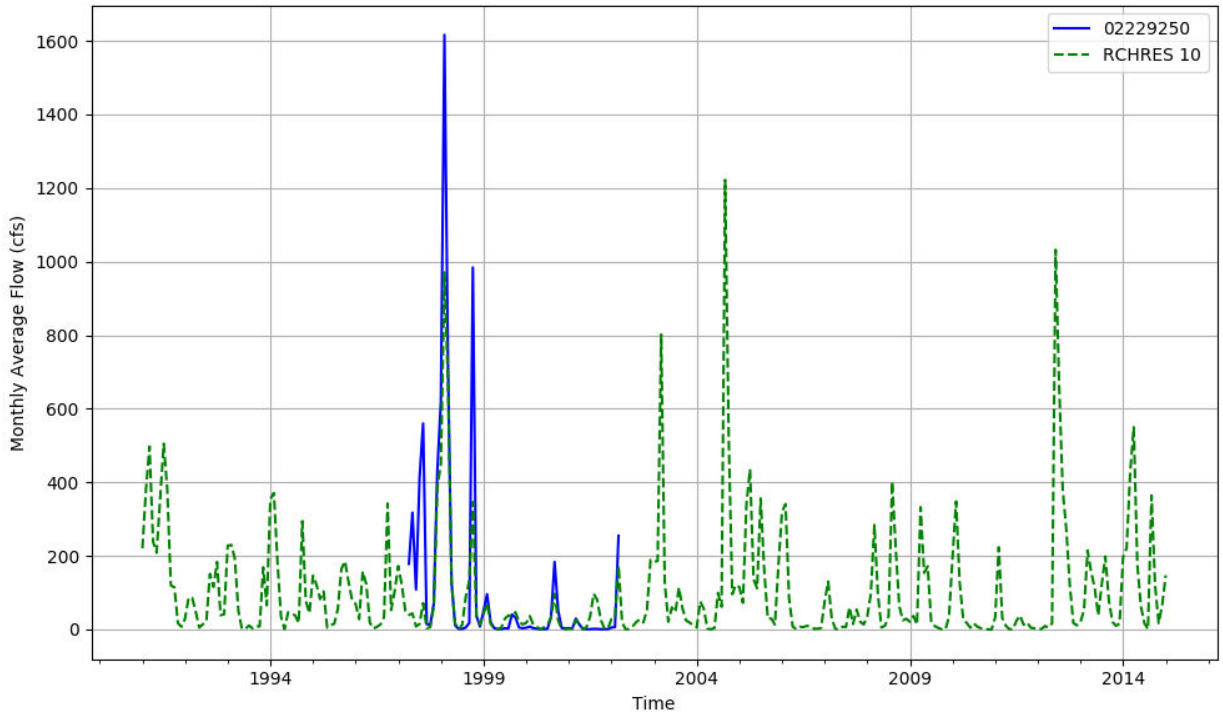


Figure T-03070204-12: Monthly flow for HSFP reach 10 and USGS station 02229250.

HSPF REACH 14, USGS GAUGE 02231000

Water-Data Report 2009
02231000 ST. MARYS RIVER NEAR MACCLENNY, FL
St. Marys-Satilla Basin St. Marys Subbasin

LOCATION.--Lat 302131, long 820454 referenced to North American Datum of 1927, in NW 1/4 sec.2, T.2 S., R.22 E., Baker County, FL, Hydrologic Unit 03070204, on right bank 200 ft downstream from site of former Stokes Bridge, 1 mi downstream from confluence of North and South Prongs, 6 mi northeast of Macclenny, and 100 mi upstream from mouth.

DRAINAGE AREA.--700 mi, approximately, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1926 to current year.

REVISED RECORDS.--WSP 1082: 1928(M), 1945(M). WSP 1142: 1928, 1945. WSP 1434: 1927. WSP 1905: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 40.00 ft above NGVD of 1929 (levels by Mees and Mees). Prior to Feb. 21, 1939, nonrecording gage and Feb. 21, 1939 to Aug. 15, 1948, water-stage recorder, at site of former bridge 200 ft upstream, at same datum.

REMARKS.--Records fair.

Table T-03070204-7: Comparison Statistics Between HSPF Reach 14 and USGS Gauge 02231000.

Statistic	Value
Bias	-50.20
Standard error	336.23
Relative bias	-0.09
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.86
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.65
Index of agreement	0.81

Table T-03070204-8: Hydrologic Indices Between USGS Gauge 02231000 and HSPF Reach 14.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02231000	Reach 14	Difference
MA1: Mean, all daily flows	534.54	483.44	-9.56
MA2: Median, all daily flows	155.00	150.55	-2.87
MA3: CV, all daily flows	186.89	183.10	-2.02
MA4: CV, log of all daily flows	135.75	134.11	-1.21
MA5: Mean daily flow / median daily flow	3.45	3.21	-6.89
MA9: (Q10 - Q90) / median daily flow	7.93	7.44	-6.12
MA10: (Q20 - Q80) / median daily flow	3.95	3.88	-1.82
MA11: (Q25 - Q75) / median daily flow	2.88	2.93	1.86
MA12: Mean monthly flow, January	424.14	575.41	35.67
MA13: Mean monthly flow, February	695.41	725.82	4.37
MA14: Mean monthly flow, March	805.60	708.09	-12.10
MA15: Mean monthly flow, April	451.66	342.08	-24.26
MA16: Mean monthly flow, May	245.31	174.43	-28.89
MA17: Mean monthly flow, June	456.84	498.67	9.16
MA18: Mean monthly flow, July	519.73	465.18	-10.50
MA19: Mean monthly flow, August	737.34	566.65	-23.15
MA20: Mean monthly flow, September	623.18	583.37	-6.39
MA21: Mean monthly flow, October	752.72	501.81	-33.33
MA22: Mean monthly flow, November	175.60	177.84	1.28
MA23: Mean monthly flow, December	274.40	263.18	-4.09
ML1: Mean minimum monthly flow, January	150.12	134.52	-10.39
ML2: Mean minimum monthly flow, February	255.30	225.20	-11.79
ML3: Mean minimum monthly flow, March	262.22	192.97	-26.41
ML4: Mean minimum monthly flow, April	133.26	85.05	-36.18
ML5: Mean minimum monthly flow, May	74.47	38.73	-48.00
ML6: Mean minimum monthly flow, June	82.75	66.06	-20.17
ML7: Mean minimum monthly flow, July	169.22	138.91	-17.91
ML8: Mean minimum monthly flow, August	162.78	128.87	-20.83
ML9: Mean minimum monthly flow, September	174.22	120.11	-31.06
ML10: Mean minimum monthly flow, October	120.43	88.43	-26.58
ML11: Mean minimum monthly flow, November	95.22	76.93	-19.21
ML12: Mean minimum monthly flow, December	100.30	87.07	-13.19
ML13: CV of minimum monthly flows	129.41	142.87	10.40
ML14: Mean minimum daily flow / mean median annual flow	0.20	0.12	-40.31
ML15: Mean minimum annual flow / mean annual flow	0.08	0.05	-37.24
ML16: Median minimum annual flow / median annual flow	0.15	0.10	-34.66
ML20: Ratio of baseflow volume to total flow volume	0.40	0.36	-12.14
ML22: Mean annual minimum flow divided by catchment area	0.28	0.17	-40.31
RA1: Mean of positive changes from one day to next (rise rate)	184.27	236.57	
RA2: CV, mean of positive changes from one day to next (rise rate)	417.84	426.74	
RA3: Mean of negative changes from one day to next (fall rate)	69.00	68.34	
RA4: CV, mean of negative changes from one day to next (fall rate)	333.43	389.96	
RA5: Ratio of days that are higher than previous day	0.25	0.22	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.17	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.09	
RA8: Number of flow reversals from one day to the next	58.96	59.33	

RA9: CV, number of flow reversals from one day to the next	21.27	18.41	

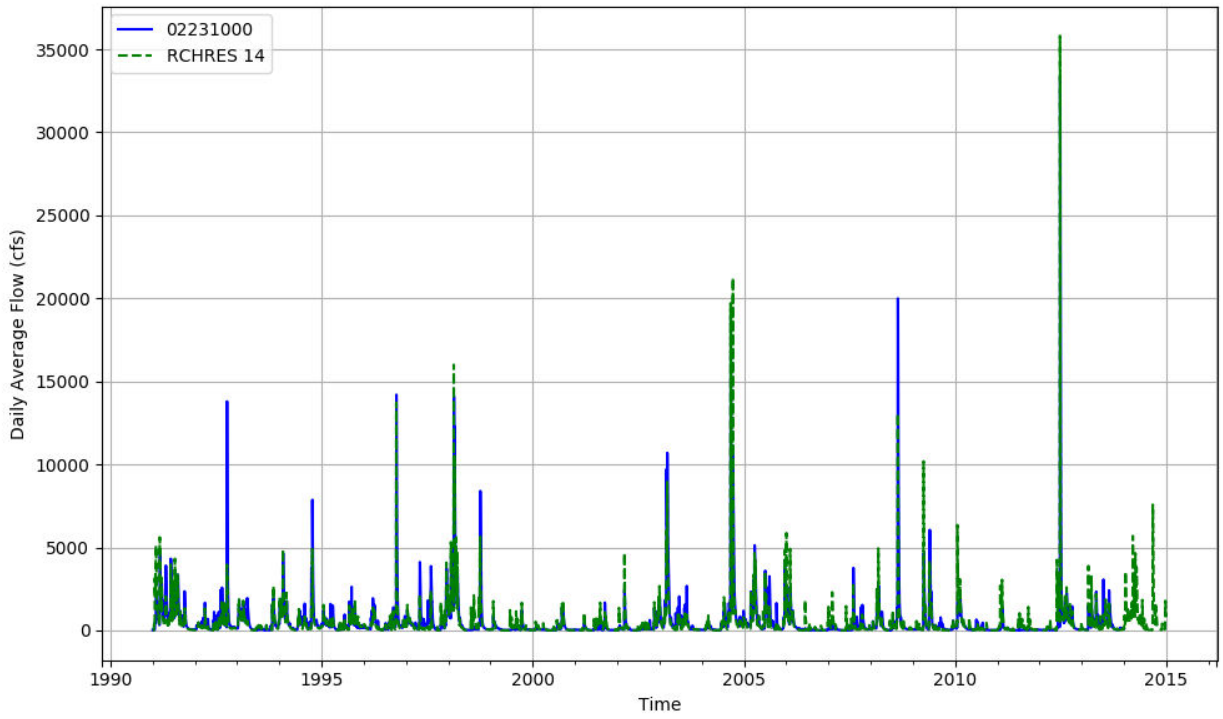


Figure T-03070204-13: Daily flow for HSFP reach 14 and USGS station 02231000.

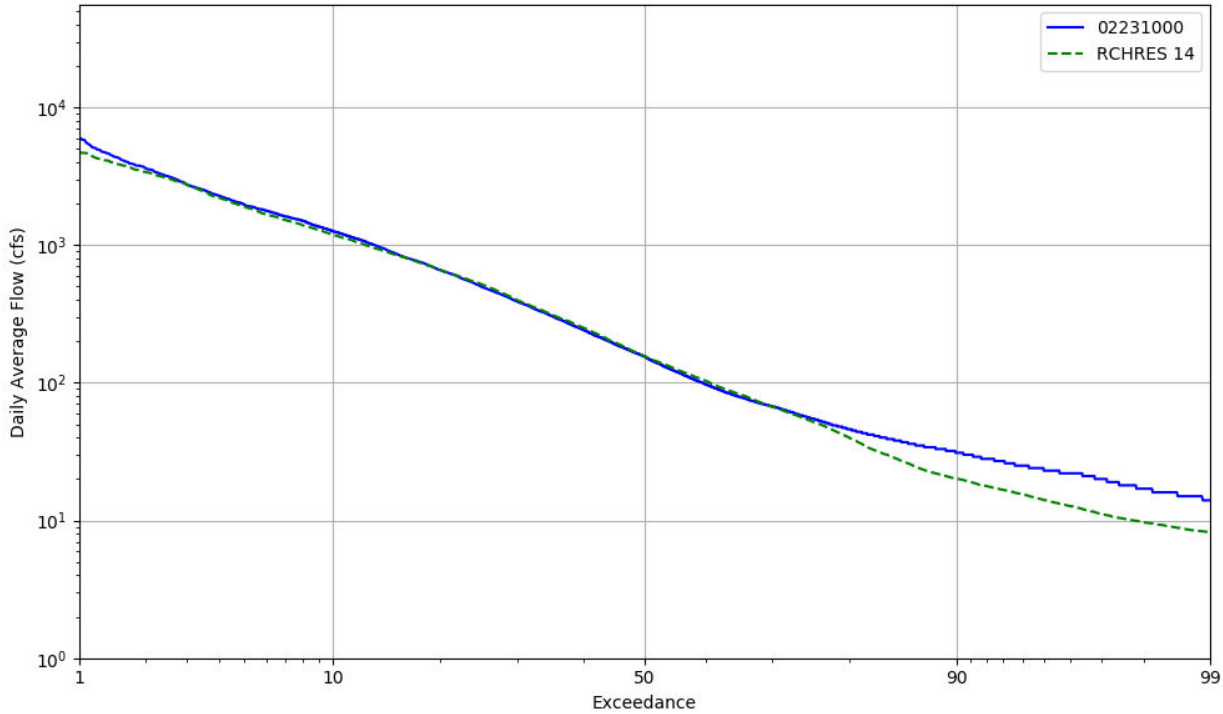


Figure T-03070204-14: Daily exceedance for HSFP reach 14 and USGS station 02231000.

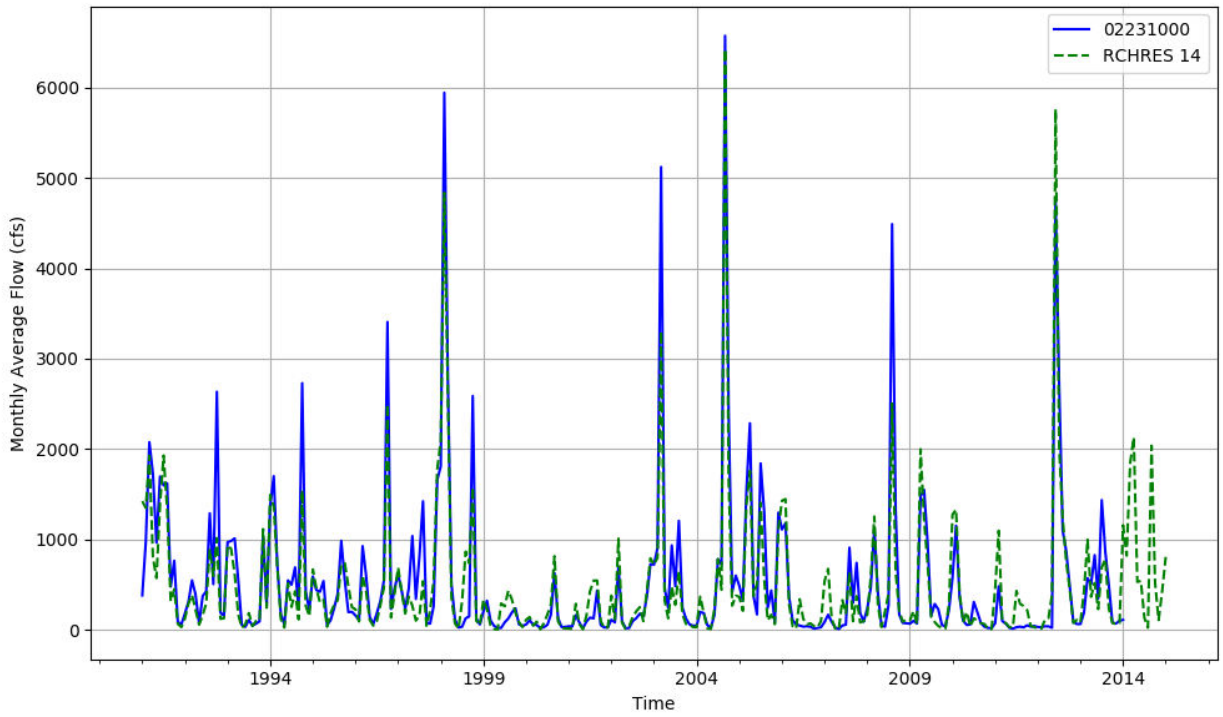


Figure T-03070204-15: Monthly flow for HSFP reach 14 and USGS station 02231000.

Table T-03070204-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	13276	43334	9853	1904	386	1981	390157	115153	58375	16775	3803	352991	485	13	296	1008782
AREA(%)	1.3	4.3	1.0	0.2	0.0	0.2	38.5	11.4	5.8	1.7	0.4	34.8	0.0	0.0	0.0	99.6
IMPERVIOUS																
AREA(ACRES)		2303	1098	476	386											4264
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	43.0	43.3	43.3	43.5	43.8	43.2	43.2	43.2	43.4	43.3	43.3	42.4	65.7	42.6	65.7	42.8
SURLI			7.6	7.7	8.0										14.0	0.1
UZLI																0.0
LZLI			3.7	3.3	2.7										0.5	0.0
SURO: PERVIOUS	2.0	0.1	0.3	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.0	1.2	0.2	0.1	0.2	0.5
SURO: IMPERVIOUS		28.1	28.4	28.7	29.1											0.1
SURO: COMBINED	2.0	1.5	3.1	5.9	14.6	0.1	0.0	0.1	0.0	0.1	0.0	1.2	0.2	0.1	0.2	0.6
IFWO		2.4	3.1	2.2	1.6	1.5	0.6	2.8	2.1	3.0	2.2		3.1	5.6	8.5	0.9
AGWO	4.1	9.1	16.8	19.3	19.9	15.0	5.5	11.3	8.8	7.0	6.1	1.9	24.8	2.8	3.9	5.4
AGWI	10.2	9.4	16.9	19.4	19.9	15.7	5.9	11.6	9.1	7.2	6.2	3.6	24.3	2.9	3.9	6.3
IGWI	0.4	2.3	3.6	2.1	1.0	2.8	2.0	3.8	3.2	4.3	4.9	0.9	0.1	6.4	27.7	2.0
CEPE		10.5	10.3	10.2	13.5	7.3	14.6	10.7	10.8	10.8	9.0	20.5	26.3	10.1	15.7	15.4
UZET	4.5	2.8	3.2	2.9	2.3	3.0	1.3	3.1	2.6	2.8	3.2	7.6	2.4	3.8	8.4	4.0
LZET	2.8	16.0	17.4	17.6	16.1	13.3	19.0	11.2	16.0	15.3	18.2	1.1	9.8	13.8	16.3	11.2
AGWET	5.4	0.3	0.1	0.1	0.0	0.7	0.4	0.4	0.3	0.2	0.1	1.5	0.0	0.0	0.0	0.8
BASET	0.1	0.1	0.1	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.2
SURET	23.7											7.7				3.0
PERO	6.1	11.6	20.2	21.7	21.6	16.5	6.1	14.2	11.0	10.1	8.3	3.1	28.0	8.5	12.6	6.7
IGWI	0.4	2.3	3.6	2.1	1.0	2.8	2.0	3.8	3.2	4.3	4.9	0.9	0.1	6.4	27.7	2.0
TAET: PERVIOUS	36.4	29.7	31.1	30.9	32.0	24.5	35.4	25.6	29.7	29.2	30.5	38.7	38.6	27.8	40.4	34.6
IMPEV: IMPERVIOUS		15.2	14.9	14.8	14.7											0.1
ET: COMBINED	36.4	29.0	29.5	27.7	23.4	24.5	35.4	25.6	29.7	29.2	30.5	38.7	38.6	27.8	40.4	34.6
PET	46.5	46.8	46.6	46.6	46.6	46.9	46.9	46.9	46.8	46.9	46.9	46.9	46.4	46.9	46.9	46.6

Table T-03070204-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	13276	43334	9853	1904	386	1981	390157	115153	58375	16775	3803	352991	485	13	296	1008782
AREA(%)	1.3	4.3	1.0	0.2	0.0	0.2	38.5	11.4	5.8	1.7	0.4	34.8	0.0	0.0	0.0	99.6
IMPERVIOUS																
AREA(ACRES)		2303	1098	476	386											4264
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	55.7	56.8	56.2	56.3	56.5	57.4	57.1	57.1	57.2	56.6	57.1	57.2	77.0	64.6	55.1	56.9
SURLI			8.0	7.6	7.5									0.1	39.0	0.1
UZLI																0.0
LZLI			3.8	3.1	2.4										2.4	0.0
SURO: PERVIOUS	4.7	0.4	0.6	0.4	0.2	0.3	0.0	0.4	0.2	0.3	0.2	4.5	0.2	0.9	0.6	1.7
SURO: IMPERVIOUS		38.8	38.5	38.6	38.8											0.2
SURO: COMBINED	4.7	2.4	4.4	8.1	19.5	0.3	0.0	0.4	0.2	0.3	0.2	4.5	0.2	0.9	0.6	1.9
IFWO		4.3	5.2	4.0	3.4	2.9	1.5	4.8	3.9	5.4	4.8		4.3	13.1	19.7	1.7
AGWO	4.0	13.6	21.3	24.2	24.7	21.3	10.4	16.4	13.6	10.9	9.6	2.7	28.9	5.9	5.3	8.8
AGWI	11.7	14.5	21.9	24.8	25.1	23.1	11.2	17.5	14.5	11.5	10.0	4.5	29.8	6.1	5.3	10.0
IGWI	0.4	3.0	5.0	2.8	1.3	4.0	2.9	5.3	4.2	5.6	6.5	0.9	0.1	9.9	29.8	2.6
CEPE		12.4	12.1	12.0	16.2	8.5	17.3	12.5	12.5	12.5	10.3	24.3	26.7	12.6	10.1	18.2
UZET	6.7	3.3	3.6	3.3	2.5	3.8	1.6	3.7	3.0	3.0	3.3	10.5	2.8	4.3	8.5	5.2
LZET	3.4	18.0	19.0	19.1	17.3	14.5	22.1	12.4	18.1	17.5	21.1	1.7	12.2	16.8	22.2	13.0
AGWET	7.7	0.5	0.2	0.1	0.0	1.0	0.5	0.5	0.4	0.3	0.1	1.9	0.0	0.0	0.0	1.1
BASET	0.1	0.2	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.2
SURET	26.8											9.3				3.6
PERO	8.7	18.3	27.1	28.5	28.2	24.5	11.9	21.6	17.7	16.5	14.5	7.2	33.5	19.9	25.6	12.2
IGWI	0.4	3.0	5.0	2.8	1.3	4.0	2.9	5.3	4.2	5.6	6.5	0.9	0.1	9.9	29.8	2.6
TAET: PERVIOUS	44.8	34.3	35.0	34.7	36.1	28.1	41.7	29.3	34.2	33.5	34.9	47.8	41.8	33.8	41.0	41.3
IMPEV: IMPERVIOUS		17.9	17.6	17.6	17.6											0.1
ET: COMBINED	44.8	33.5	33.2	31.3	26.8	28.1	41.7	29.3	34.2	33.5	34.9	47.8	41.8	33.8	41.0	41.3
PET	52.9	53.2	53.0	52.9	52.8	53.1	53.2	53.2	53.2	53.3	53.2	53.3	52.8	53.4	53.6	53.0

Table T-03070204-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	13276	43334	9853	1904	386	1981	390157	115153	58375	16775	3803	352991	485	13	296	1008782
AREA(%)	1.3	4.3	1.0	0.2	0.0	0.2	38.5	11.4	5.8	1.7	0.4	34.8	0.0	0.0	0.0	99.6
IMPERVIOUS																
AREA(ACRES)		2303	1098	476	386											4264
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	36.0	39.7	37.5	36.1	35.1	39.1	40.5	40.5	40.8	41.0	40.9	40.4	49.4	58.3	45.8	40.2
SURLI			8.0	8.1	8.5									0.1	49.1	0.1
UZLI																0.0
LZLI			3.3	2.8	2.2										2.5	0.0
SURO: PERVIOUS	2.2	0.6	0.8	0.5	0.3	0.3	0.2	0.6	0.4	0.6	0.4	3.2	0.2	1.6	1.6	1.3
SURO: IMPERVIOUS		24.1	22.5	21.3	20.5											0.1
SURO: COMBINED	2.2	1.8	2.9	4.6	10.4	0.3	0.2	0.6	0.4	0.6	0.4	3.2	0.2	1.6	1.6	1.4
IFWO		2.5	3.0	2.2	1.8	1.5	1.0	2.8	2.4	3.2	2.3		1.7	9.3	22.8	1.0
AGWO	2.6	7.0	12.5	13.8	13.4	12.5	4.6	9.7	7.3	5.8	5.2	1.5	14.1	4.8	4.4	4.5
AGWI	7.4	7.1	12.2	13.5	13.0	13.1	4.8	9.9	7.4	5.8	5.1	2.7	13.3	4.9	4.6	5.0
IGWI	0.4	2.1	3.6	2.0	1.0	2.6	1.9	3.7	2.9	3.9	4.3	0.7	0.0	10.0	29.1	1.8
CEPE		10.3	10.0	9.8	13.4	6.9	15.1	10.5	10.5	10.5	8.5	21.9	21.8	11.5	8.9	16.0
UZET	7.1	2.6	2.8	2.4	1.7	2.8	1.4	3.2	2.6	2.8	2.9	8.9	1.7	5.2	9.1	4.4
LZET	4.5	17.1	18.6	18.7	17.0	14.1	20.3	12.0	17.3	16.7	20.1	2.0	13.6	16.4	20.3	12.3
AGWET	6.2	0.4	0.1	0.1	0.0	0.9	0.3	0.5	0.3	0.2	0.1	1.7	0.0	0.0	0.0	0.9
BASET	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.1
SURET	16.3											4.1				1.7
PERO	4.8	10.0	16.2	16.5	15.5	14.3	5.8	13.1	10.1	9.6	7.9	4.7	15.9	15.7	28.8	6.8
IGWI	0.4	2.1	3.6	2.0	1.0	2.6	1.9	3.7	2.9	3.9	4.3	0.7	0.0	10.0	29.1	1.8
TAET: PERVIOUS	34.2	30.6	31.5	31.1	32.1	24.9	37.2	26.3	30.8	30.3	31.7	38.8	37.1	33.2	38.4	35.4
IMPEV: IMPERVIOUS		15.6	15.2	14.9	14.6											0.1
ET: COMBINED	34.2	29.8	29.9	27.8	23.4	24.9	37.2	26.3	30.8	30.3	31.7	38.8	37.1	33.2	38.4	35.5
PET	51.3	50.3	50.9	51.3	51.3	51.0	50.2	50.2	50.3	49.7	50.1	50.6	52.0	48.7	48.5	50.1

Table T-03070204-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	13276	43334	9853	1904	386	1981	390157	115153	58375	16775	3803	352991	485	13	296	1008782
AREA(%)	1.3	4.3	1.0	0.2	0.0	0.2	38.5	11.4	5.8	1.7	0.4	34.8	0.0	0.0	0.0	99.6
IMPERVIOUS																
AREA(ACRES)		2303	1098	476	386											4264
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	50.6	51.7	51.1	50.8	50.8	51.6	52.0	52.0	52.0	52.1	52.2	51.8	62.6	54.5	56.8	51.7
SURLI			6.5	6.5	7.0					0.0				0.1	15.2	0.1
UZLI																0.0
LZLI			2.9	2.4	2.0										1.1	0.0
SURO: PERVIOUS	5.6	0.5	0.7	0.5	0.2	0.3	0.1	0.5	0.2	0.3	0.2	5.6	0.2	0.6	0.5	2.2
SURO: IMPERVIOUS		35.6	35.1	34.8	34.7											0.1
SURO: COMBINED	5.6	2.2	4.1	7.3	17.5	0.3	0.1	0.5	0.2	0.3	0.2	5.6	0.2	0.6	0.5	2.3
IFWO		4.3	4.9	3.7	3.2	2.6	1.6	4.6	3.9	5.4	4.4		3.2	9.6	11.6	1.7
AGWO	5.4	12.4	18.5	21.2	22.1	19.1	9.5	14.7	12.2	9.8	8.6	3.1	23.1	4.4	3.8	8.2
AGWI	10.9	12.9	18.8	21.4	22.2	20.2	10.0	15.3	12.6	10.1	8.7	4.8	23.2	4.5	3.8	9.2
IGWI	0.4	3.1	4.2	2.4	1.1	3.7	3.2	5.1	4.2	5.6	6.4	1.3	0.1	9.2	20.4	2.8
CEPE		11.3	11.2	11.2	14.8	7.9	15.5	11.3	11.3	11.4	9.3	22.1	20.4	11.3	10.6	16.5
UZET	5.0	3.2	3.3	3.0	2.3	3.5	1.8	3.6	3.0	3.1	3.5	7.8	2.5	4.0	6.8	4.3
LZET	2.7	16.5	17.4	17.5	15.9	13.4	19.8	11.5	16.7	16.2	19.5	1.1	13.1	15.4	19.4	11.6
AGWET	5.3	0.4	0.1	0.1	0.0	0.8	0.4	0.4	0.3	0.2	0.1	1.4	0.0	0.0	0.0	0.8
BASET	0.1	0.2	0.1	0.1	0.0	0.3	0.2	0.2	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.2
SURET	26.2											9.4				3.6
PERO	11.0	17.1	24.1	25.4	25.5	22.0	11.1	19.9	16.3	15.5	13.2	8.7	26.5	14.6	16.0	12.1
IGWI	0.4	3.1	4.2	2.4	1.1	3.7	3.2	5.1	4.2	5.6	6.4	1.3	0.1	9.2	20.4	2.8
TAET: PERVIOUS	39.2	31.5	32.2	32.0	33.1	25.8	37.6	27.0	31.5	31.0	32.5	42.1	36.0	30.8	36.9	37.0
IMPEV: IMPERVIOUS		16.2	16.1	16.1	16.1											0.1
ET: COMBINED	39.2	30.7	30.6	28.8	24.6	25.8	37.6	27.0	31.5	31.0	32.5	42.1	36.0	30.8	36.9	37.1
PET	48.6	48.5	48.5	48.6	48.6	48.6	48.4	48.4	48.4	48.4	48.4	48.5	48.6	48.2	48.2	48.3

Table T-03070204-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
2	0.990	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.990
3	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
4	0.990	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.990
5	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
6	0.990	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.990
7	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
8	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
9	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
10	0.990	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.990
11	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
12	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
13	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
14	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
15	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
16	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
17	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
18	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990
19	0.990	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.990

Table T-03070204-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03070204-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
2	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
3	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
4	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
5	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
6	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
7	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
8	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
9	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
10	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
11	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
12	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
13	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
14	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
15	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
16	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
17	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
18	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300
19	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.050	0.050	0.050	0.030	0.300

Table T-03070204-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
2	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
3	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
4	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
5	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
6	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
7	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
8	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
9	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
10	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327	0.327
11	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
12	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
13	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
14	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
15	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
16	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
17	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
18	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
19	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Table T-03070204-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
2	0.002	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.002
3	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
4	0.002	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.002
5	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
6	0.002	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.002
7	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
8	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
9	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
10	0.002	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.002
11	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
12	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
13	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
14	0.001	0.081	0.081	0.081	0.081	0.116	0.174	0.116	0.116	0.116	0.139	0.001
15	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
16	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
17	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
18	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
19	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010

Table T-03070204-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
12		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
13		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
14		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
15		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
16		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
17		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
18		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	
19		2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	2.975	

Table T-03070204-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
2	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
3	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
4	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
5	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
6	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
16	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
17	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
18	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
19	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700

Table T-03070204-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
2	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
3	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
4	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
5	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
6	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
7	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
8	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
10	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
11	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
12	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
13	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
14	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
15	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
16	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
17	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
18	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
19	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009

Table T-03070204-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
3	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
4	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
5	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
6	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
7	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
10	0.262	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
11	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
12	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
16	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
17	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
18	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
19	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03070204-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
2	0.200	3.792	3.792	3.792	3.792	4.266	5.689	4.266	4.266	4.266	4.740	0.200
3	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
4	0.200	3.792	3.792	3.792	3.792	4.266	5.689	4.266	4.266	4.266	4.740	0.200
5	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
6	0.200	3.792	3.792	3.792	3.792	4.266	5.689	4.266	4.266	4.266	4.740	0.200
7	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
8	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
9	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
10	0.200	3.792	3.792	3.792	3.792	4.266	5.689	4.266	4.266	4.266	4.740	0.200
11	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
12	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
13	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
14	0.054	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
15	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
16	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
17	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
18	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
19	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100

Table T-03070204-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.673	0.673	0.673	0.673	0.673	0.961	0.769	0.769	0.673	0.961	0.449
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.673	0.673	0.673	0.673	0.673	0.961	0.769	0.769	0.673	0.961	0.449
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.673	0.673	0.673	0.673	0.673	0.961	0.769	0.769	0.673	0.961	0.449
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.673	0.673	0.673	0.673	0.673	0.961	0.769	0.769	0.673	0.961	0.449
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03070205

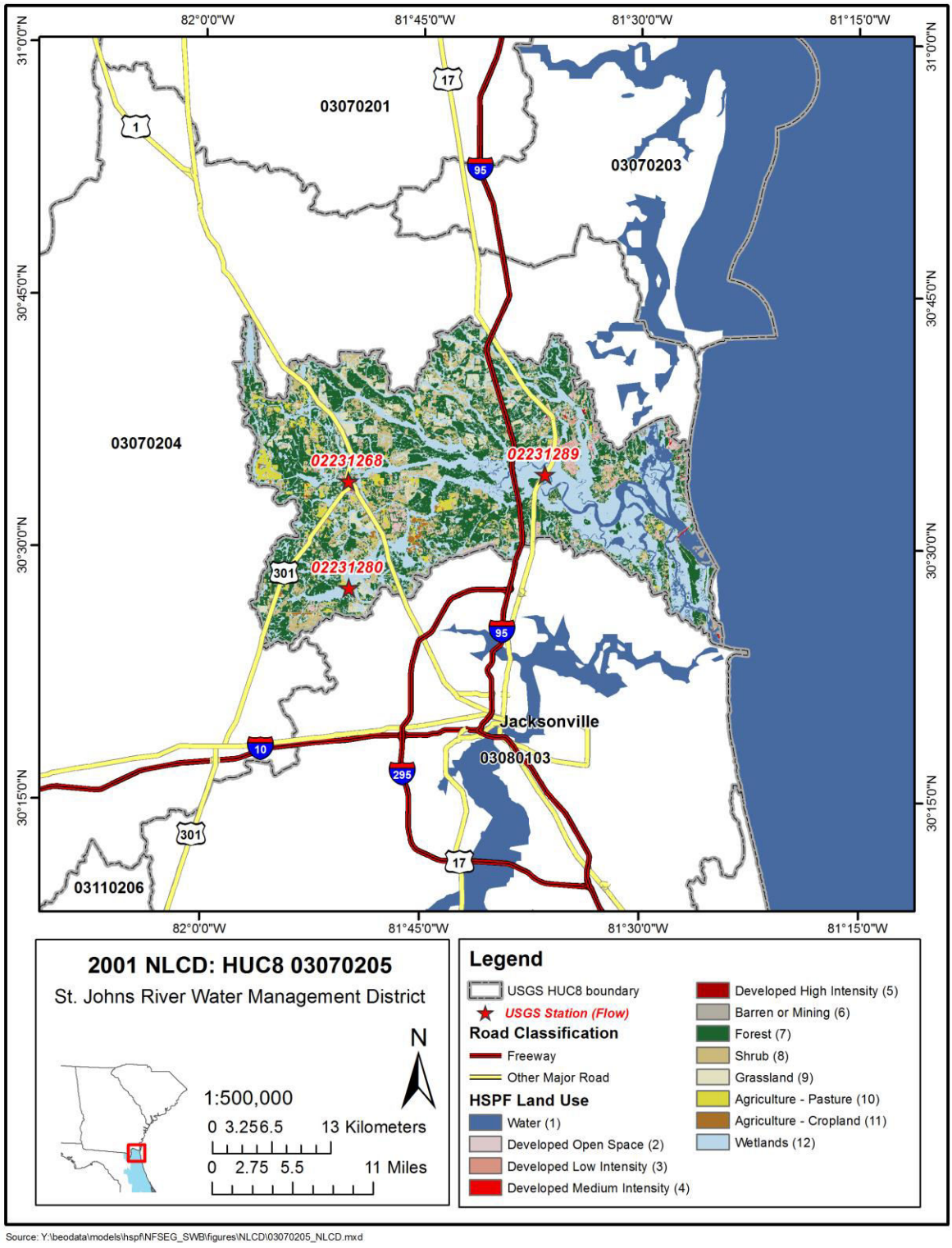


Figure T-03070205-1: Land Cover from the National Land Cover Database.

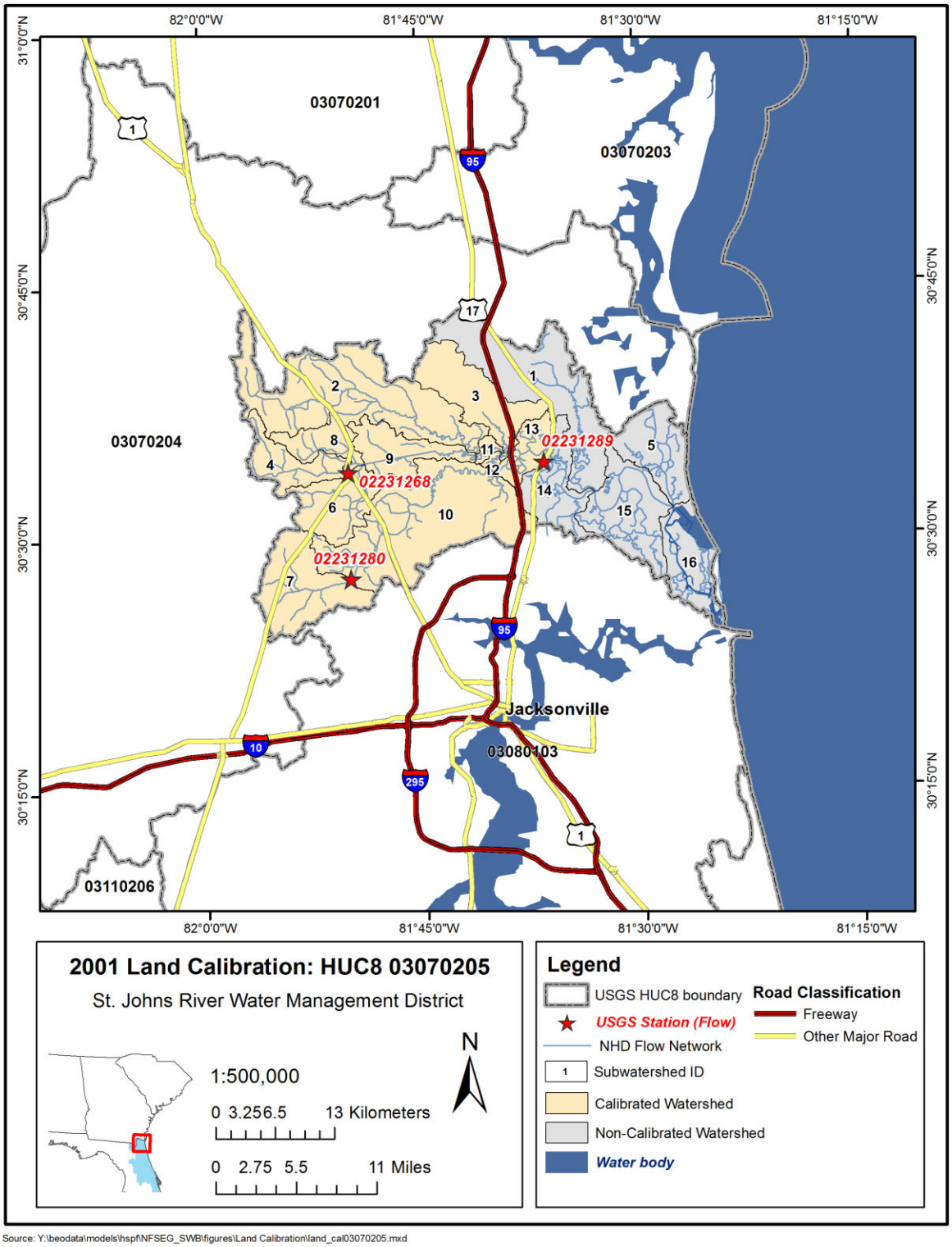


Figure T-03070205-2: Calibrated sub-watersheds.

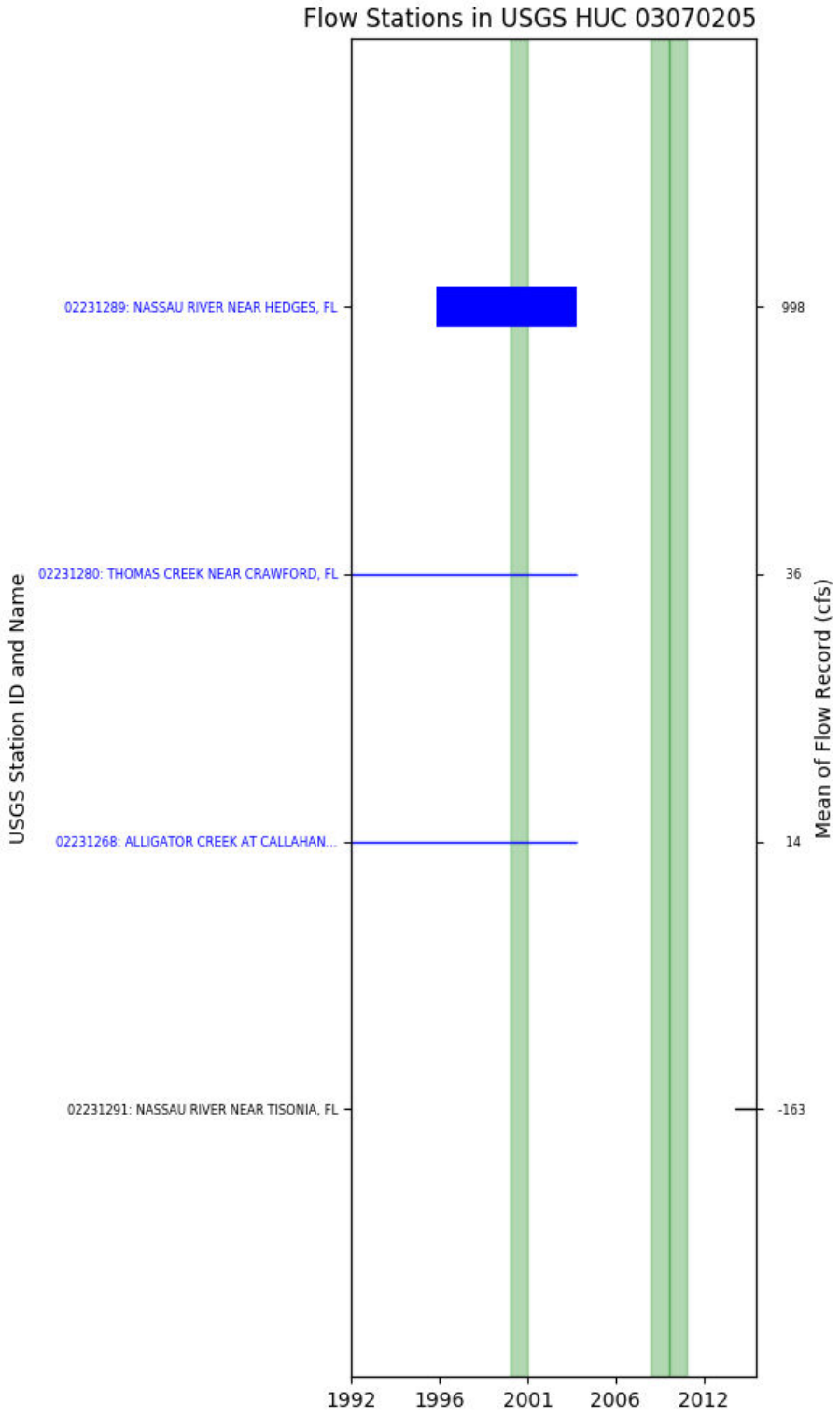


Figure T-03070205-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 04, USGS GAUGE 02231268

Water-Data Report 2009
02216180 TURNPIKE CREEK NEAR MCRAE, GA
Altamaha Basin Little Ocmulgee Subbasin

LOCATION.--Lat 315929, long 825519 referenced to North American Datum of 1983, Telfair County, GA, Hydrologic Unit 03070105, on downstream side of bridge pier on US 319 and 441, 4.8 miles south of McRae and 13.8 miles upstream from mouth.

DRAINAGE AREA.--49.2 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1983 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 173.17 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor; and days with discharge less than 1 cfs, which are poor. Gage-height records good.

Table T-03070205-1: Comparison Statistics Between HSPF Reach 04 and USGS Gauge 02231268.

Statistic	Value
Bias	3.06
Standard error	10.90
Relative bias	0.21
Relative standard error	0.45
Nash-Sutcliffe coefficient	0.80
Kling-Gupta coefficient	0.77
Coefficient of efficiency	0.53
Index of agreement	0.76

Table T-03070205-2: Hydrologic Indices Between USGS Gauge 02231268 and HSPF Reach 04.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02231268	Simulated Reach 04	Percent Difference
MA1: Mean, all daily flows	14.80	17.87	20.78

MA2: Median, all daily flows	3.10	4.50	45.28
MA3: CV, all daily flows	263.74	262.80	-0.36
MA4: CV, log of all daily flows	164.71	146.46	-11.08
MA5: Mean daily flow / median daily flow	4.77	3.97	-16.87
MA9: (Q10 - Q90) / median daily flow	9.65	8.12	-15.77
MA10: (Q20 - Q80) / median daily flow	3.98	3.89	-2.16
MA11: (Q25 - Q75) / median daily flow	2.90	2.88	-0.78
MA12: Mean monthly flow, January	16.25	20.36	25.24
MA13: Mean monthly flow, February	19.63	19.96	1.65
MA14: Mean monthly flow, March	22.99	23.03	0.17
MA15: Mean monthly flow, April	9.17	8.62	-6.09
MA16: Mean monthly flow, May	2.27	3.36	47.76
MA17: Mean monthly flow, June	8.30	15.02	80.93
MA18: Mean monthly flow, July	10.09	19.89	97.01
MA19: Mean monthly flow, August	23.51	21.89	-6.89
MA20: Mean monthly flow, September	25.98	31.66	21.89
MA21: Mean monthly flow, October	21.55	26.70	23.92
MA22: Mean monthly flow, November	4.68	8.83	88.56
MA23: Mean monthly flow, December	10.17	11.41	12.27
ML1: Mean minimum monthly flow, January	3.46	2.17	-37.33
ML2: Mean minimum monthly flow, February	4.09	3.11	-23.92
ML3: Mean minimum monthly flow, March	3.81	2.21	-42.13
ML4: Mean minimum monthly flow, April	0.82	1.40	69.72
ML5: Mean minimum monthly flow, May	0.09	0.61	616.66
ML6: Mean minimum monthly flow, June	0.45	0.59	32.16
ML7: Mean minimum monthly flow, July	0.71	1.68	135.79
ML8: Mean minimum monthly flow, August	1.15	1.89	64.04
ML9: Mean minimum monthly flow, September	1.50	1.97	31.41
ML10: Mean minimum monthly flow, October	0.99	2.13	114.98
ML11: Mean minimum monthly flow, November	1.53	2.31	50.70
ML12: Mean minimum monthly flow, December	2.39	2.60	9.02
ML13: CV of minimum monthly flows	129.68	90.72	-30.04
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.04	413.71
ML15: Mean minimum annual flow / mean annual flow	0.00	0.01	318.83
ML16: Median minimum annual flow / median annual flow	0.00	0.03	
ML20: Ratio of baseflow volume to total flow volume	0.16	0.16	-1.32
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	279.39
RA1: Mean of positive changes from one day to next (rise rate)	13.62	18.88	
RA2: CV, mean of positive changes from one day to next (rise rate)	340.32	349.26	
RA3: Mean of negative changes from one day to next (fall rate)	6.34	7.47	
RA4: CV, mean of negative changes from one day to next (fall rate)	344.63	485.45	
RA5: Ratio of days that are higher than previous day	0.28	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.41	0.34	
RA7: Median of difference in log of flows over two consecutive days of falling	0.24	0.20	
RA8: Number of flow reversals from one day to the next	82.86	90.50	
RA9: CV, number of flow reversals from one day to the next	9.65	10.77	

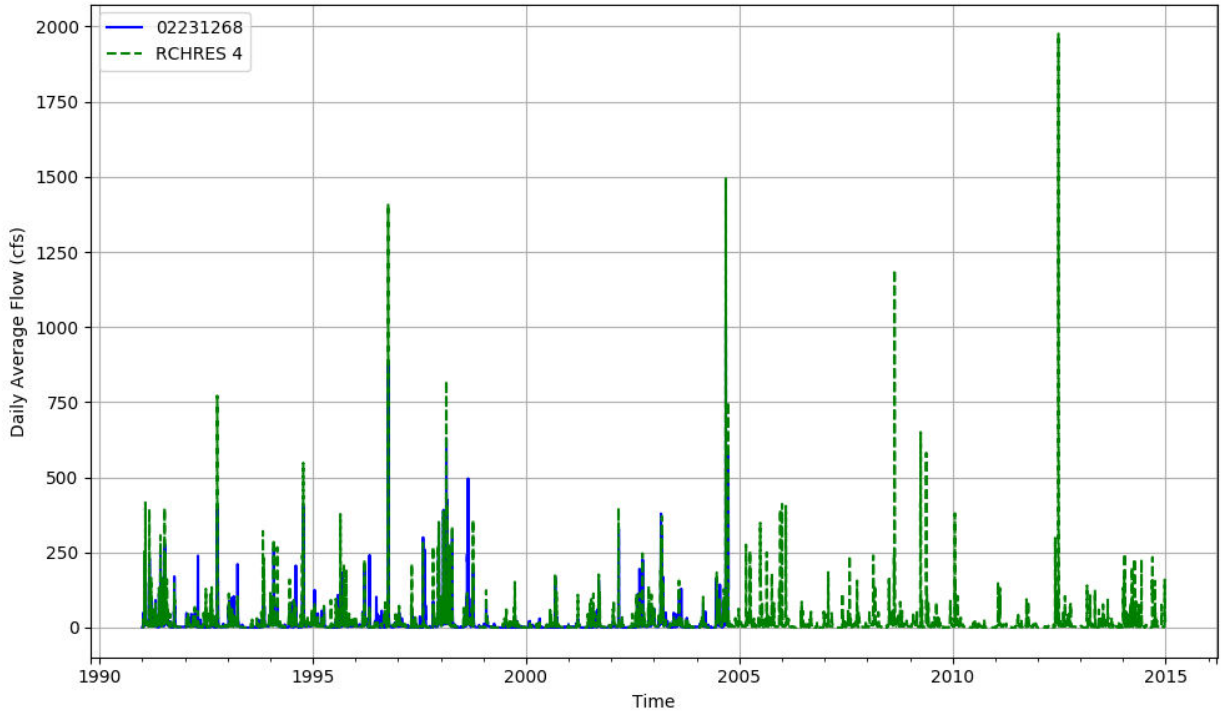


Figure T-03070205-4: Daily flow for HSFP reach 04 and USGS station 02231268.

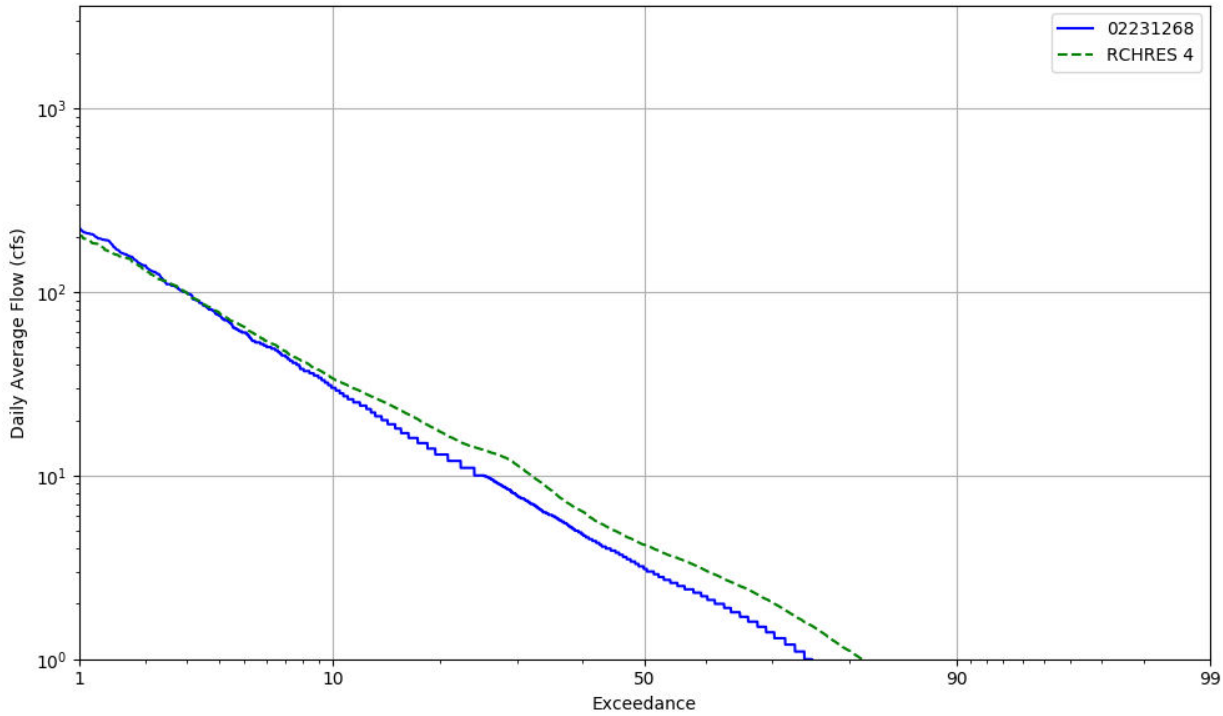


Figure T-03070205-5: Daily exceedance for HSFP reach 04 and USGS station 02231268.

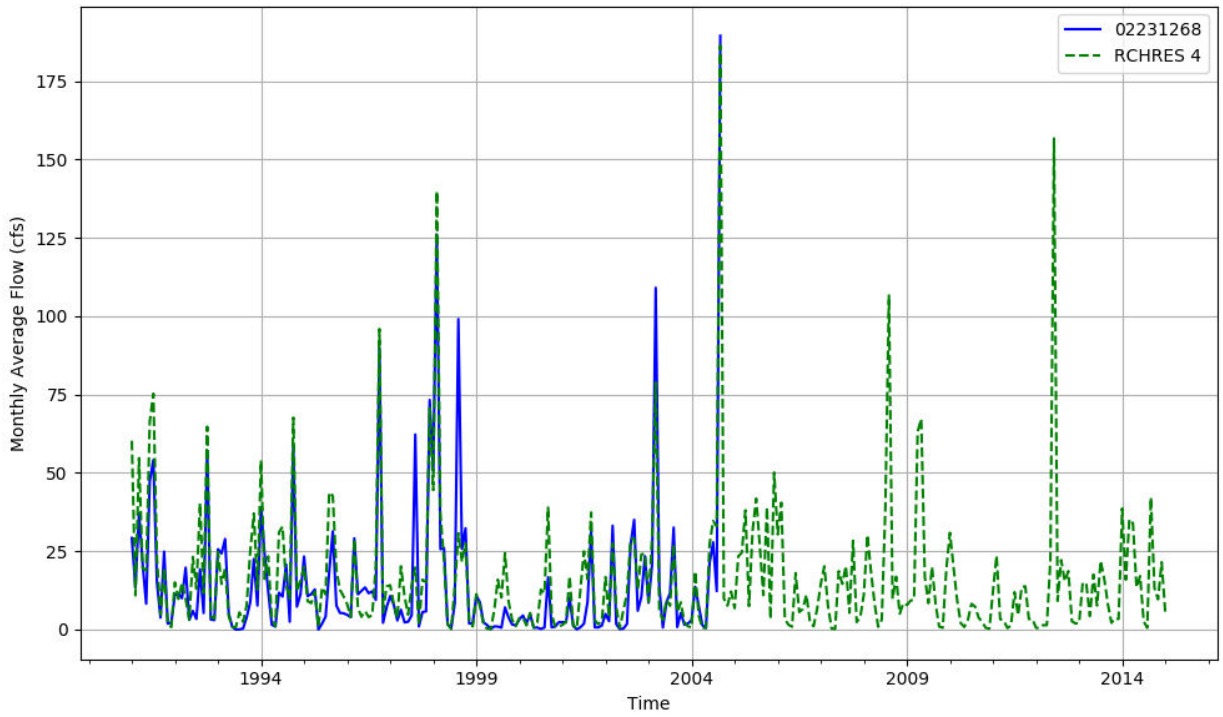


Figure T-03070205-6: Monthly flow for HSFP reach 04 and USGS station 02231268.

HSPF REACH 07, USGS GAUGE 02231280

Water-Data Report 2009
02216180 TURNPIKE CREEK NEAR MCRAE, GA
Altamaha Basin Little Ocmulgee Subbasin

LOCATION.--Lat 315929, long 825519 referenced to North American Datum of 1983, Telfair County, GA, Hydrologic Unit 03070105, on downstream side of bridge pier on US 319 and 441, 4.8 miles south of McRae and 13.8 miles upstream from mouth.

DRAINAGE AREA.--49.2 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1983 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 173.17 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor; and days with discharge less than 1 cfs, which are poor. Gage-height records good.

Table T-03070205-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02231280.

Statistic	Value
Bias	-3.02
Standard error	28.12
Relative bias	-0.08
Relative standard error	0.47
Nash-Sutcliffe coefficient	0.77
Kling-Gupta coefficient	0.76
Coefficient of efficiency	0.53
Index of agreement	0.75

Table T-03070205-4: Hydrologic Indices Between USGS Gauge 02231280 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02231280	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	38.08	35.04	-7.99

MA2: Median, all daily flows	10.00	8.11	-18.91
MA3: CV, all daily flows	299.49	267.78	-10.59
MA4: CV, log of all daily flows	148.96	146.79	-1.46
MA5: Mean daily flow / median daily flow	3.81	4.32	13.47
MA9: (Q10 - Q90) / median daily flow	7.91	9.18	16.04
MA10: (Q20 - Q80) / median daily flow	3.19	4.50	40.93
MA11: (Q25 - Q75) / median daily flow	2.11	3.64	72.46
MA12: Mean monthly flow, January	32.91	38.99	18.47
MA13: Mean monthly flow, February	43.30	40.75	-5.89
MA14: Mean monthly flow, March	56.65	45.45	-19.78
MA15: Mean monthly flow, April	22.82	16.26	-28.75
MA16: Mean monthly flow, May	8.09	6.26	-22.64
MA17: Mean monthly flow, June	19.26	28.19	46.33
MA18: Mean monthly flow, July	30.65	36.24	18.24
MA19: Mean monthly flow, August	50.86	40.88	-19.63
MA20: Mean monthly flow, September	73.76	68.76	-6.78
MA21: Mean monthly flow, October	66.40	52.32	-21.21
MA22: Mean monthly flow, November	17.46	16.58	-5.03
MA23: Mean monthly flow, December	26.88	22.76	-15.30
ML1: Mean minimum monthly flow, January	10.08	3.53	-65.00
ML2: Mean minimum monthly flow, February	10.59	5.00	-52.82
ML3: Mean minimum monthly flow, March	10.75	3.74	-65.17
ML4: Mean minimum monthly flow, April	4.35	2.14	-50.82
ML5: Mean minimum monthly flow, May	2.34	0.89	-61.85
ML6: Mean minimum monthly flow, June	2.50	0.79	-68.33
ML7: Mean minimum monthly flow, July	3.55	2.78	-21.56
ML8: Mean minimum monthly flow, August	4.66	2.82	-39.56
ML9: Mean minimum monthly flow, September	6.24	3.03	-51.41
ML10: Mean minimum monthly flow, October	5.66	3.63	-35.85
ML11: Mean minimum monthly flow, November	7.01	3.94	-43.81
ML12: Mean minimum monthly flow, December	8.25	4.47	-45.83
ML13: CV of minimum monthly flows	80.91	91.57	13.17
ML14: Mean minimum daily flow / mean median annual flow	0.13	0.02	-86.98
ML15: Mean minimum annual flow / mean annual flow	0.04	0.01	-87.32
ML16: Median minimum annual flow / median annual flow	0.11	0.01	-94.21
ML20: Ratio of baseflow volume to total flow volume	0.24	0.14	-42.03
ML22: Mean annual minimum flow divided by catchment area	0.02	0.00	-89.03
RA1: Mean of positive changes from one day to next (rise rate)	34.32	37.45	
RA2: CV, mean of positive changes from one day to next (rise rate)	526.15	358.45	
RA3: Mean of negative changes from one day to next (fall rate)	14.35	15.09	
RA4: CV, mean of negative changes from one day to next (fall rate)	572.58	480.66	
RA5: Ratio of days that are higher than previous day	0.27	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.38	
RA7: Median of difference in log of flows over two consecutive days of falling	0.14	0.24	
RA8: Number of flow reversals from one day to the next	87.79	91.07	
RA9: CV, number of flow reversals from one day to the next	9.96	9.63	

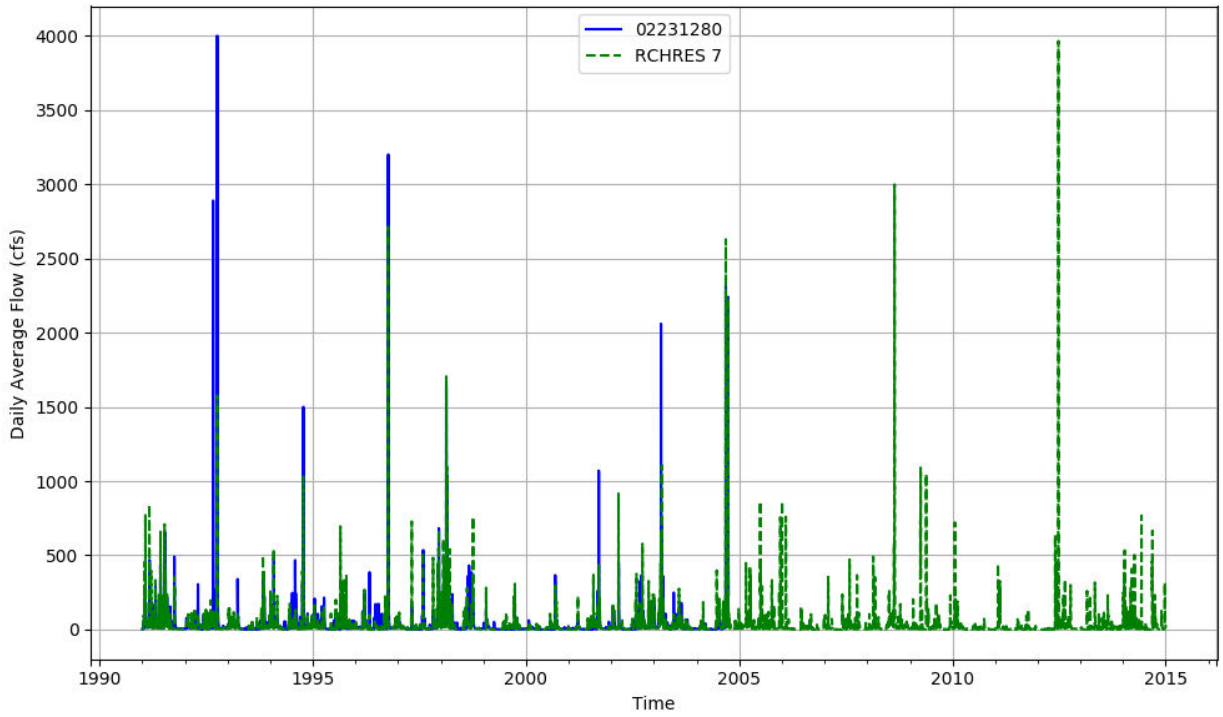


Figure T-03070205-7: Daily flow for HSFP reach 07 and USGS station 02231280.

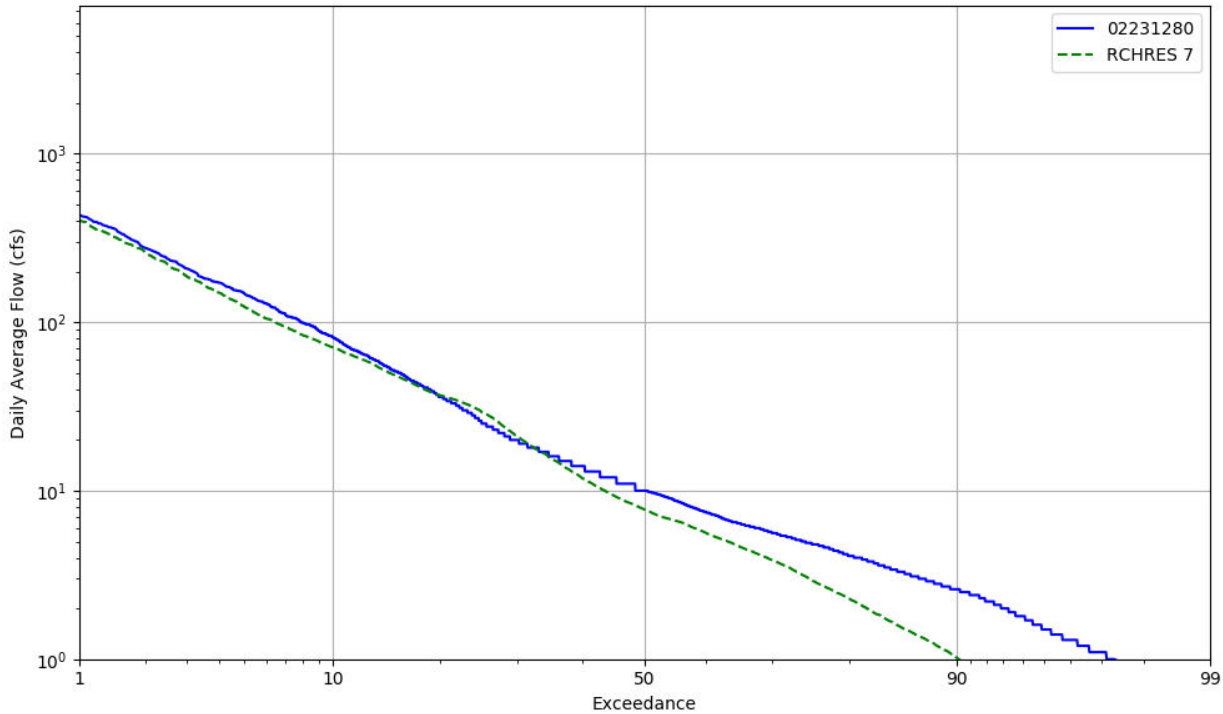


Figure T-03070205-8: Daily exceedance for HSFP reach 07 and USGS station 02231280.

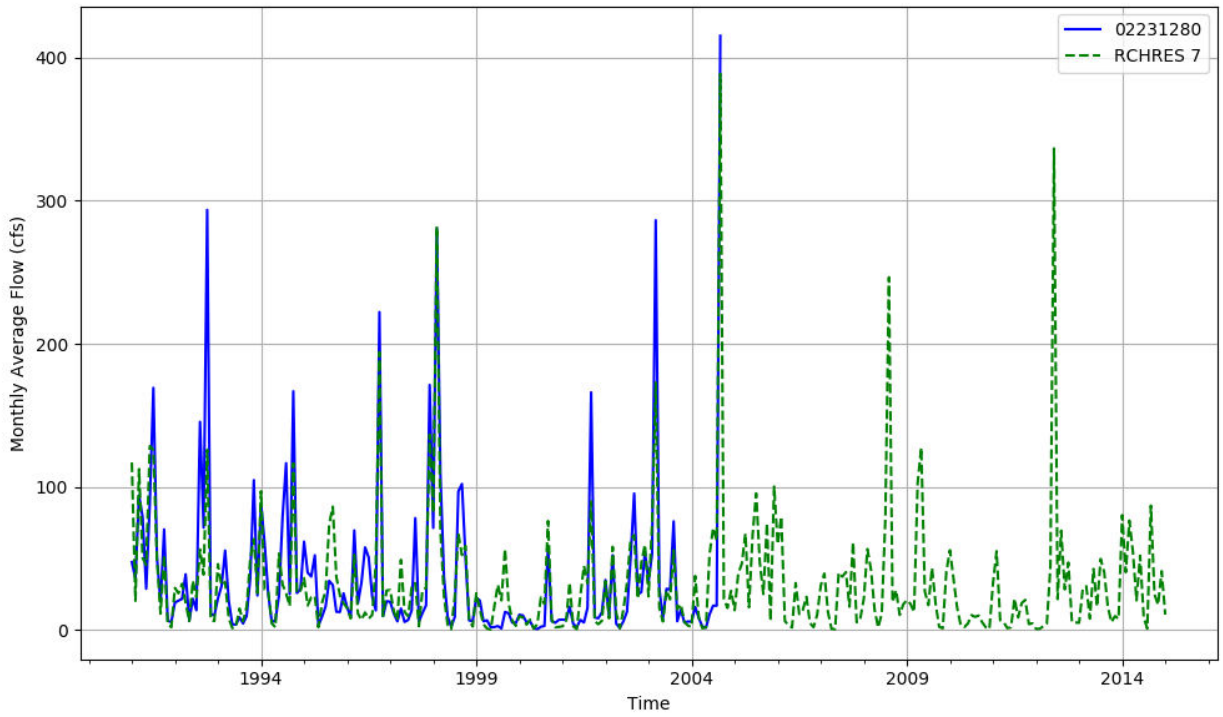


Figure T-03070205-9: Monthly flow for HSFP reach 07 and USGS station 02231280.

HSPF REACH 13, USGS GAUGE 02231289

Water-Data Report 2009
02216180 TURNPIKE CREEK NEAR MCRAE, GA
Altamaha Basin Little Ocmulgee Subbasin

LOCATION.--Lat 315929, long 825519 referenced to North American Datum of 1983, Telfair County, GA, Hydrologic Unit 03070105, on downstream side of bridge pier on US 319 and 441, 4.8 miles south of McRae and 13.8 miles upstream from mouth.

DRAINAGE AREA.--49.2 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1983 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 173.17 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor; and days with discharge less than 1 cfs, which are poor. Gage-height records good.

Table T-03070205-5: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02231289.

Statistic	Value
Bias	-781.82
Standard error	1794.79
Relative bias	-0.72
Relative standard error	1.14
Nash-Sutcliffe coefficient	-0.30
Kling-Gupta coefficient	-0.38
Coefficient of efficiency	0.12
Index of agreement	0.51

Table T-03070205-6: Hydrologic Indices Between USGS Gauge 02231289 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02231289	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	1468.97	328.43	-77.64

MA2: Median, all daily flows	859.00	126.97	-85.22
MA3: CV, all daily flows	62.08	212.07	241.59
MA4: CV, log of all daily flows	100.45	132.62	32.02
MA5: Mean daily flow / median daily flow	1.71	2.59	51.26
MA9: (Q10 - Q90) / median daily flow	3.99	5.15	29.02
MA10: (Q20 - Q80) / median daily flow	2.44	2.38	-2.40
MA11: (Q25 - Q75) / median daily flow	1.76	1.77	0.83
MA12: Mean monthly flow, January	123.62	27.04	-78.13
MA13: Mean monthly flow, February	431.95	111.54	-74.18
MA14: Mean monthly flow, March	719.84	232.30	-67.73
MA15: Mean monthly flow, April	861.61	88.73	-89.70
MA16: Mean monthly flow, May	348.16	14.26	-95.90
MA17: Mean monthly flow, June	939.33	95.42	-89.84
MA18: Mean monthly flow, July	1221.51	240.78	-80.29
MA19: Mean monthly flow, August	1428.01	333.64	-76.64
MA20: Mean monthly flow, September	1879.63	742.38	-60.50
MA21: Mean monthly flow, October	745.09	222.08	-70.19
MA22: Mean monthly flow, November	915.29	115.64	-87.37
MA23: Mean monthly flow, December	983.05	141.15	-85.64
ML1: Mean minimum monthly flow, January	36.75	39.02	6.18
ML2: Mean minimum monthly flow, February	174.00	63.95	-63.25
ML3: Mean minimum monthly flow, March	521.33	93.50	-82.07
ML4: Mean minimum monthly flow, April	428.67	41.53	-90.31
ML5: Mean minimum monthly flow, May	117.50	7.21	-93.87
ML6: Mean minimum monthly flow, June	399.54	10.00	-97.50
ML7: Mean minimum monthly flow, July	727.43	73.38	-89.91
ML8: Mean minimum monthly flow, August	840.17	84.85	-89.90
ML9: Mean minimum monthly flow, September	1031.86	68.62	-93.35
ML10: Mean minimum monthly flow, October	55.12	60.32	9.44
ML11: Mean minimum monthly flow, November	424.37	53.99	-87.28
ML12: Mean minimum monthly flow, December	567.50	94.40	-83.37
ML13: CV of minimum monthly flows	250.24	96.66	-61.37
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.09	330.84
ML15: Mean minimum annual flow / mean annual flow	0.02	0.05	177.57
ML16: Median minimum annual flow / median annual flow	0.02	0.06	161.94
ML20: Ratio of baseflow volume to total flow volume	0.42	0.25	-41.46
ML22: Mean annual minimum flow divided by catchment area	0.38	0.11	-70.77
RA1: Mean of positive changes from one day to next (rise rate)	456.01	296.95	
RA2: CV, mean of positive changes from one day to next (rise rate)	142.96	392.08	
RA3: Mean of negative changes from one day to next (fall rate)	436.33	120.63	
RA4: CV, mean of negative changes from one day to next (fall rate)	112.53	562.85	
RA5: Ratio of days that are higher than previous day	0.49	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.37	0.21	
RA7: Median of difference in log of flows over two consecutive days of falling	0.34	0.13	
RA8: Number of flow reversals from one day to the next	81.75	35.12	
RA9: CV, number of flow reversals from one day to the next	44.88	62.64	

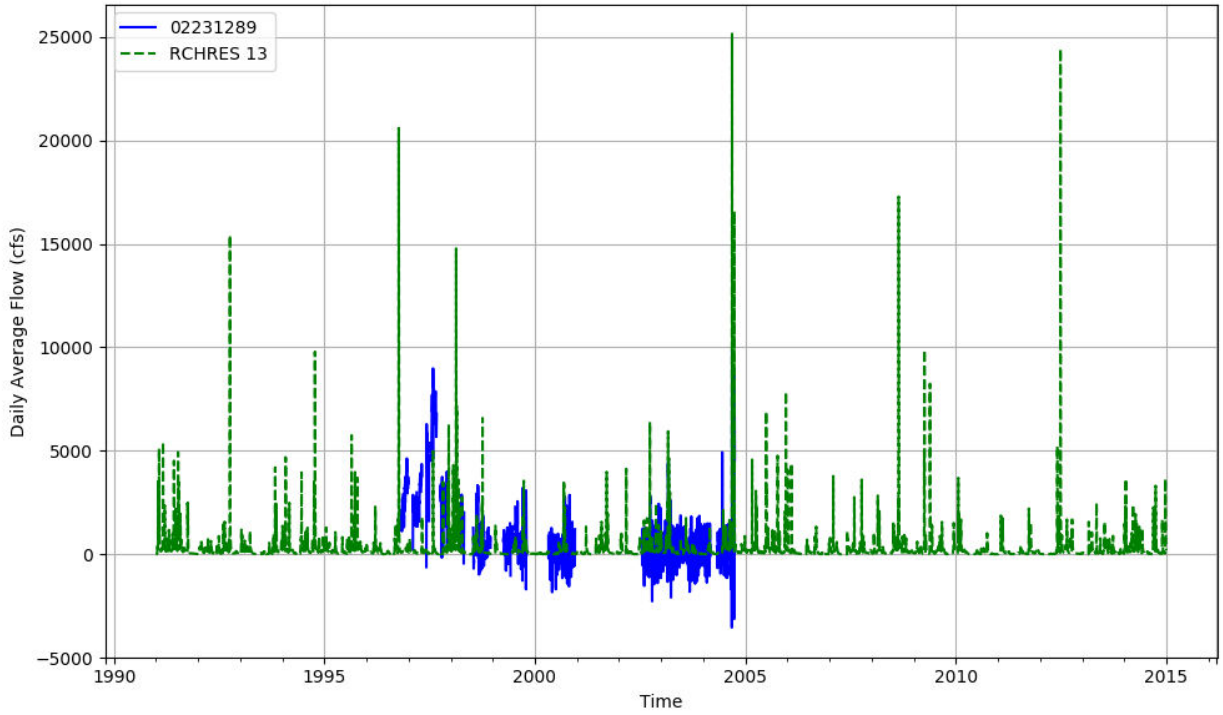


Figure T-03070205-10: Daily flow for HSFP reach 13 and USGS station 02231289.

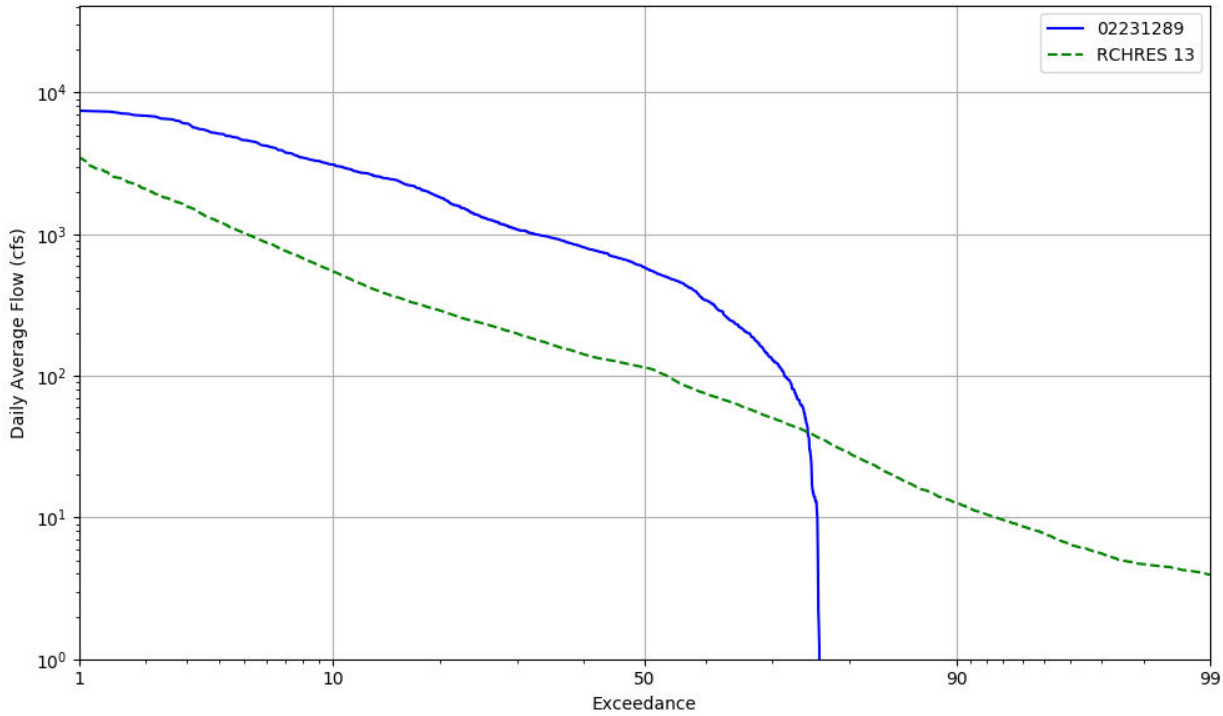


Figure T-03070205-11: Daily exceedance for HSFP reach 13 and USGS station 02231289.

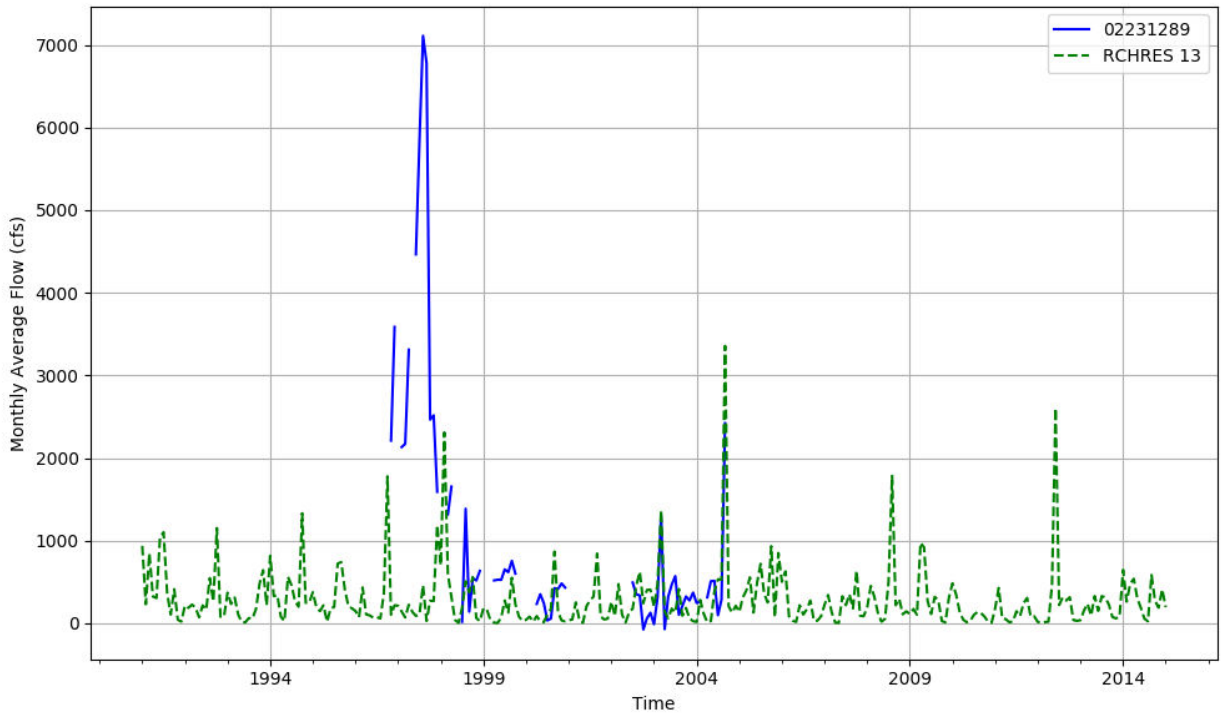


Figure T-03070205-12: Monthly flow for HSFP reach 13 and USGS station 02231289.

Table T-03070205-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12504	13046	2762	534	117	1603	95858	31945	14459	6022	832	90509	1231	711	880	273013
AREA(%)	4.6	4.8	1.0	0.2	0.0	0.6	34.9	11.6	5.3	2.2	0.3	33.0	0.4	0.3	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		728	318	137	117											1300
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	47.7	45.3	45.5	45.6	45.6	46.1	44.8	44.6	44.2	44.8	45.0	45.4	77.6	46.4	43.8	45.0
SURLI			19.4	19.3	22.4										7.2	0.3
UZLI																0.0
LZLI			11.1	11.9	13.5											0.1
SURO: PERVIOUS	6.1	6.0	10.4	10.4	9.1	5.8	1.3	5.0	3.4	4.0	2.4	1.1	18.3	5.2	2.3	2.5
SURO: IMPERVIOUS		36.3	36.6	36.6	36.7											0.2
SURO: COMBINED	6.1	7.6	13.1	15.8	22.9	5.8	1.3	5.0	3.4	4.0	2.4	1.1	18.3	5.2	2.3	2.7
IFWO		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
AGWO	2.9	7.7	26.5	27.2	31.2	12.9	7.2	11.5	9.1	9.5	9.4	2.6	15.8	9.6	12.6	6.5
AGWI	7.6	9.2	29.2	29.9	33.9	14.7	8.5	13.1	10.6	11.0	11.0	5.1	17.8	11.2	14.8	8.4
IGWI	1.6	1.9	6.2	6.3	7.2	3.1	1.8	2.8	2.2	2.3	2.3	1.1	3.8	2.4	3.1	1.8
CEPE		13.0	9.4	9.4	12.7	7.7	17.2	9.8	11.5	10.1	7.8	19.2	32.1	9.9	8.1	15.3
UZET	3.2	3.0	4.9	4.9	4.0	4.2	1.9	4.4	3.4	3.5	4.1	11.7	2.0	3.7	4.5	5.7
LZET	1.6	12.1	15.8	15.7	14.4	10.2	13.9	9.6	13.1	13.8	17.3	0.6	3.5	14.0	18.4	8.3
AGWET	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.4
BASET	1.7	1.5	2.7	2.7	2.7	1.8	1.3	1.7	1.6	1.6	1.6	1.4	2.1	1.6	2.2	1.5
SURET	25.8											5.8				3.1
PERO	9.0	13.7	36.9	37.6	40.3	18.8	8.5	16.5	12.5	13.5	11.8	3.7	34.1	14.7	14.9	9.0
IGWI	1.6	1.9	6.2	6.3	7.2	3.1	1.8	2.8	2.2	2.3	2.3	1.1	3.8	2.4	3.1	1.8
TAET: PERVIOUS	34.8	29.6	32.8	32.7	33.8	24.0	34.3	25.6	29.6	29.1	30.8	39.6	39.6	29.2	33.2	34.2
IMPEV: IMPERVIOUS		9.1	8.9	9.0	8.8											0.0
ET: COMBINED	34.8	28.5	30.4	27.8	21.3	24.0	34.3	25.6	29.6	29.1	30.8	39.6	39.6	29.2	33.2	34.3
PET	41.3	45.8	45.2	44.1	44.0	40.7	46.0	46.4	46.3	46.7	46.8	45.5	42.1	46.6	46.6	45.4

Table T-03070205-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12504	13046	2762	534	117	1603	95858	31945	14459	6022	832	90509	1231	711	880	273013
AREA(%)	4.6	4.8	1.0	0.2	0.0	0.6	34.9	11.6	5.3	2.2	0.3	33.0	0.4	0.3	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		728	318	137	117											1300
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	57.9	58.9	58.6	58.6	58.6	57.9	59.0	59.0	58.8	59.7	59.6	58.8	89.5	59.5	59.0	58.7
SURLI			15.6	15.4	17.5										9.0	0.2
UZLI																0.0
LZLI			8.9	9.7	11.0											0.1
SURO: PERVIOUS	7.3	10.9	15.0	15.1	13.8	9.6	3.6	9.7	7.5	8.7	6.0	3.2	23.4	9.4	6.2	5.3
SURO: IMPERVIOUS		47.5	47.5	47.5	47.5											0.2
SURO: COMBINED	7.3	12.8	18.4	21.7	30.7	9.6	3.6	9.7	7.5	8.7	6.0	3.2	23.4	9.4	6.2	5.5
IFWO		0.0					0.0		0.0	0.0	0.0			0.0	0.0	0.0
AGWO	3.4	9.8	24.9	25.5	28.1	16.3	10.5	15.1	12.5	12.9	13.1	3.3	17.2	12.1	18.0	8.7
AGWI	7.6	11.7	28.0	28.6	31.3	18.5	12.1	17.4	14.5	15.0	15.2	6.1	19.7	14.3	20.8	11.0
IGWI	1.6	2.5	5.9	6.1	6.6	3.9	2.6	3.7	3.1	3.2	3.2	1.3	4.2	3.0	4.4	2.3
CEPE		16.1	11.6	11.5	15.7	9.1	21.3	12.2	14.5	12.5	10.1	23.3	35.1	12.6	10.0	18.8
UZET	2.1	3.3	5.5	5.5	4.3	5.3	2.2	5.0	3.7	3.9	4.5	8.4	2.6	4.0	5.3	4.8
LZET	0.7	13.4	16.6	16.5	14.9	10.8	16.0	10.3	14.6	15.5	19.5	0.3	3.9	15.5	20.3	9.1
AGWET	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.3
BASET	2.1	1.9	3.1	3.1	3.1	2.1	1.6	2.2	2.0	2.0	2.0	2.3	2.4	2.1	2.7	2.0
SURET	37.2											16.1				7.0
PERO	10.7	20.7	39.9	40.6	41.9	25.9	14.1	24.9	19.9	21.6	19.1	6.4	40.6	21.5	24.2	14.0
IGWI	1.6	2.5	5.9	6.1	6.6	3.9	2.6	3.7	3.1	3.2	3.2	1.3	4.2	3.0	4.4	2.3
TAET: PERVIOUS	44.3	34.7	36.8	36.5	38.0	27.4	41.2	29.8	34.8	34.0	36.2	50.9	44.0	34.1	38.4	42.0
IMPEV: IMPERVIOUS		11.3	11.1	11.0	11.0											0.1
ET: COMBINED	44.3	33.5	34.2	31.3	24.5	27.4	41.2	29.8	34.8	34.0	36.2	50.9	44.0	34.1	38.4	42.1
PET	45.5	51.5	50.9	49.3	49.2	44.7	51.9	52.3	52.3	52.7	52.8	51.1	46.8	52.7	52.6	51.1

Table T-03070205-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12504	13046	2762	534	117	1603	95858	31945	14459	6022	832	90509	1231	711	880	273013
AREA(%)	4.6	4.8	1.0	0.2	0.0	0.6	34.9	11.6	5.3	2.2	0.3	33.0	0.4	0.3	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		728	318	137	117											1300
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	32.8	36.6	36.2	36.0	36.1	33.4	37.0	37.2	37.3	37.8	37.6	36.3	52.8	38.5	37.7	36.5
SURLI			19.7	18.7	21.5										10.5	0.3
UZLI																0.0
LZLI			9.2	9.7	11.1											0.1
SURO: PERVIOUS	0.2	4.0	6.3	6.1	5.5	2.5	1.5	4.0	3.0	3.3	2.1		6.6	3.8	2.7	1.6
SURO: IMPERVIOUS		27.3	27.1	27.0	27.0											0.1
SURO: COMBINED	0.2	5.2	8.4	10.4	16.3	2.5	1.5	4.0	3.0	3.3	2.1		6.6	3.8	2.7	1.7
IFWO		0.0				0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
AGWO	1.9	3.7	20.1	19.9	22.8	6.6	3.2	7.0	5.1	5.6	5.6	2.4	6.2	5.4	10.1	3.8
AGWI	6.3	5.0	23.2	23.0	25.8	8.4	4.2	8.9	6.6	7.2	7.0	3.3	8.0	7.0	12.5	5.1
IGWI	1.3	1.1	4.9	4.9	5.5	1.8	0.9	1.9	1.4	1.5	1.5	0.7	1.7	1.5	2.6	1.1
CEPE		13.6	9.5	9.5	13.1	7.4	18.6	10.1	12.1	10.5	8.2	20.3	27.3	10.7	8.2	16.2
UZET	6.3	2.3	4.4	4.3	3.5	3.2	1.2	3.7	2.6	2.8	3.1	11.3	2.5	2.9	4.1	5.3
LZET	3.8	12.5	17.6	17.7	16.3	11.7	13.7	10.2	13.7	14.5	17.9	1.9	8.5	14.5	19.8	8.9
AGWET	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.5
BASET	1.0	1.3	3.0	3.0	3.0	1.9	0.9	1.9	1.4	1.5	1.5	0.7	1.9	1.5	2.4	1.0
SURET	18.0											2.5				1.6
PERO	2.1	7.7	26.4	26.1	28.3	9.1	4.8	11.0	8.1	8.9	7.6	2.4	12.8	9.2	12.8	5.4
IGWI	1.3	1.1	4.9	4.9	5.5	1.8	0.9	1.9	1.4	1.5	1.5	0.7	1.7	1.5	2.6	1.1
TAET: PERVIOUS	33.3	29.8	34.6	34.4	35.9	24.2	34.3	25.9	29.9	29.4	30.7	37.6	40.2	29.7	34.5	33.6
IMPEV: IMPERVIOUS		9.2	9.0	9.0	9.1											0.0
ET: COMBINED	33.3	28.7	31.9	29.2	22.5	24.2	34.3	25.9	29.9	29.4	30.7	37.6	40.2	29.7	34.5	33.7
PET	46.2	50.3	50.1	48.7	48.7	45.5	50.5	50.7	50.8	50.7	50.6	50.1	47.3	51.2	50.9	49.9

Table T-03070205-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12504	13046	2762	534	117	1603	95858	31945	14459	6022	832	90509	1231	711	880	273013
AREA(%)	4.6	4.8	1.0	0.2	0.0	0.6	34.9	11.6	5.3	2.2	0.3	33.0	0.4	0.3	0.3	99.5
IMPERVIOUS																
AREA(ACRES)		728	318	137	117											1300
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	51.0	51.4	51.3	51.3	51.2	50.7	51.4	51.4	51.3	51.7	51.8	51.3	64.5	52.7	51.3	51.2
SURLI			17.9	16.6	20.2										6.5	0.2
UZLI																0.0
LZLI			7.8	8.2	9.4											0.1
SURO: PERVIOUS	8.0	8.4	11.8	11.7	10.6	6.9	3.1	7.6	5.9	6.5	4.4	3.9	13.0	7.2	4.5	4.7
SURO: IMPERVIOUS		40.9	40.8	40.9	40.9											0.2
SURO: COMBINED	8.0	10.1	14.8	17.7	25.8	6.9	3.1	7.6	5.9	6.5	4.4	3.9	13.0	7.2	4.5	4.9
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	3.7	9.2	25.1	24.7	28.4	14.7	9.7	13.4	11.2	11.6	11.8	4.2	12.2	11.4	15.0	8.4
AGWI	7.7	10.8	27.9	27.4	31.2	16.6	11.1	15.4	12.9	13.3	13.5	6.6	14.1	13.2	17.3	10.3
IGWI	1.6	2.3	5.9	5.8	6.6	3.5	2.3	3.3	2.7	2.8	2.9	1.4	3.0	2.8	3.7	2.2
CEPE		14.4	10.8	10.7	14.1	9.0	18.9	11.1	12.9	11.3	9.2	21.0	23.2	12.1	9.2	16.8
UZET	2.7	3.2	4.9	4.8	4.1	4.3	2.1	4.5	3.5	3.6	4.2	9.0	2.9	3.7	4.6	4.9
LZET	1.4	12.3	15.5	15.5	14.2	10.3	13.9	9.6	13.3	14.1	17.6	0.8	8.4	13.8	18.5	8.3
AGWET	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4
BASET	1.9	1.6	2.8	2.8	2.8	1.9	1.4	1.9	1.7	1.8	1.7	1.7	1.9	1.8	2.3	1.6
SURET	29.5											8.9				4.3
PERO	11.6	17.6	36.9	36.4	39.1	21.6	12.8	21.0	17.1	18.0	16.2	8.0	25.1	18.6	19.5	13.1
IGWI	1.6	2.3	5.9	5.8	6.6	3.5	2.3	3.3	2.7	2.8	2.9	1.4	3.0	2.8	3.7	2.2
TAET: PERVIOUS	37.7	31.5	34.1	33.9	35.1	25.6	36.3	27.1	31.5	30.8	32.8	42.0	36.4	31.4	34.6	36.3
IMPEV: IMPERVIOUS		10.5	10.4	10.4	10.4											0.0
ET: COMBINED	37.7	30.4	31.7	29.1	22.8	25.6	36.3	27.1	31.5	30.8	32.8	42.0	36.4	31.4	34.6	36.3
PET	43.2	47.7	47.3	46.0	46.0	42.5	48.0	48.3	48.2	48.5	48.6	47.4	44.1	48.7	48.4	47.3

Table T-03070205-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
2	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
3	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
4	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
5	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
6	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
7	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
8	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
9	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
10	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
11	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
12	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
13	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
14	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
15	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
16	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990

Table T-03070205-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
2	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
3	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
4	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
5	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
6	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
7	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
8	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
9	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
10	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
11	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
12	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
13	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
14	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
15	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
16	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070

Table T-03070205-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
2	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
3	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
4	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
5	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
6	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
7	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
8	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
9	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
10	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
11	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
12	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
13	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
14	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
15	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278
16	0.000	0.099	0.050	0.050	0.100	0.036	0.200	0.050	0.072	0.051	0.030	0.278

Table T-03070205-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
2	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
3	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
4	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
5	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
6	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
7	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
8	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
9	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
10	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
11	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
12	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
13	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
14	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
15	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175
16	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175	0.175

Table T-03070205-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
2	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
3	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
4	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
5	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
6	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
7	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
8	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
9	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
10	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
11	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
12	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
13	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
14	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
15	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006
16	0.006	0.126	0.126	0.126	0.126	0.180	0.271	0.180	0.180	0.180	0.217	0.006

Table T-03070205-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
2		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
3		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
4		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
5		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
6		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
7		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
8		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
9		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
10		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
11		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
12		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
13		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
14		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
15		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
16		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	

Table T-03070205-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03070205-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
2	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
3	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
4	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
5	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
6	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
7	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
8	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
9	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
10	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
11	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
12	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
13	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
14	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
15	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437
16	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437	2.437

Table T-03070205-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
3	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
4	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
5	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
6	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
7	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
9	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
10	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
11	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
12	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
13	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
14	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
15	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
16	0.240	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03070205-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
2	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
3	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
4	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
5	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
6	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
7	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
8	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
9	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
10	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
11	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
12	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
13	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
14	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
15	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100
16	0.200	1.700	1.700	1.700	1.700	1.913	2.550	1.913	1.913	1.913	2.126	0.100

Table T-03070205-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.914

APPENDIX T-03080101

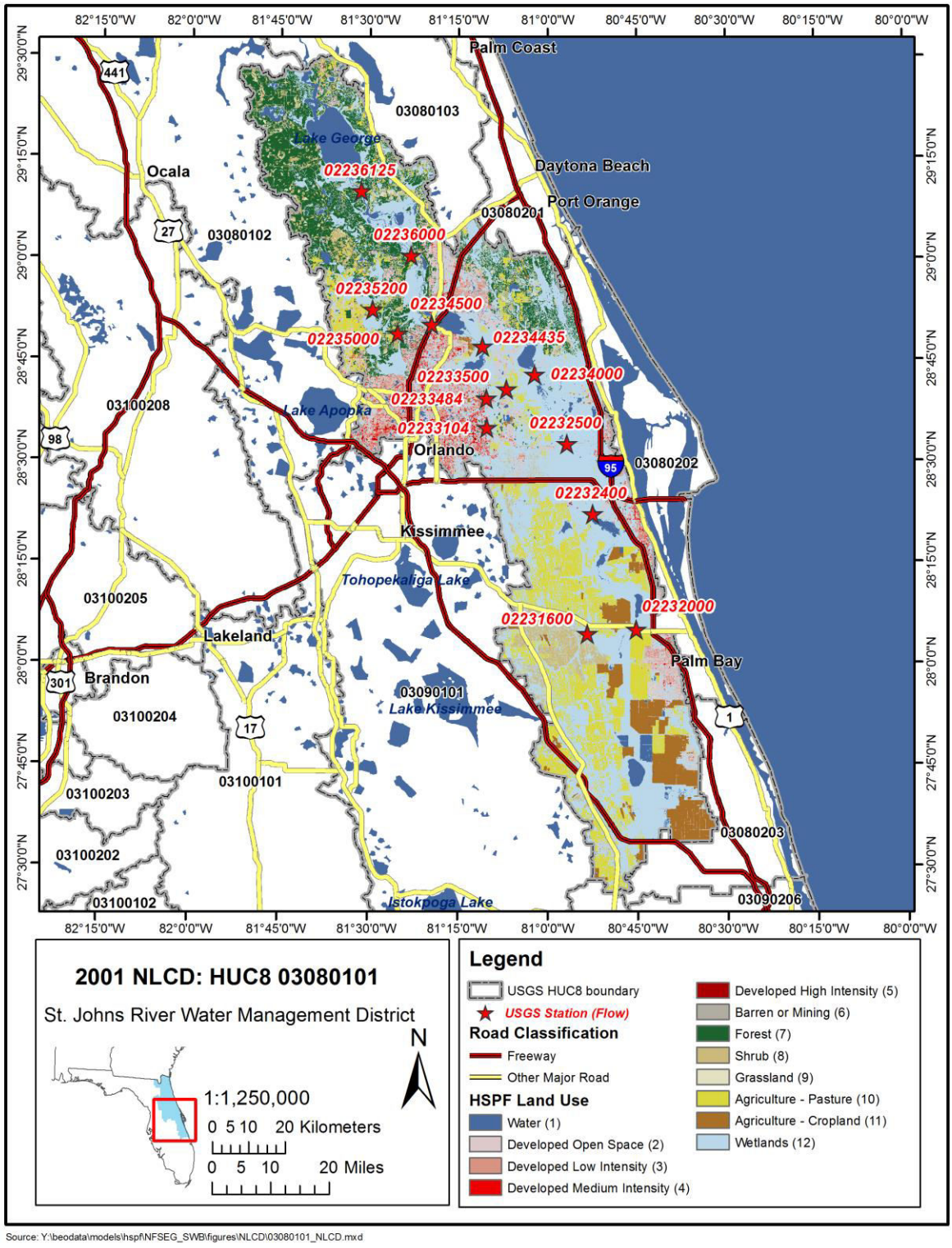


Figure T-03080101-1: Land Cover from the National Land Cover Database.

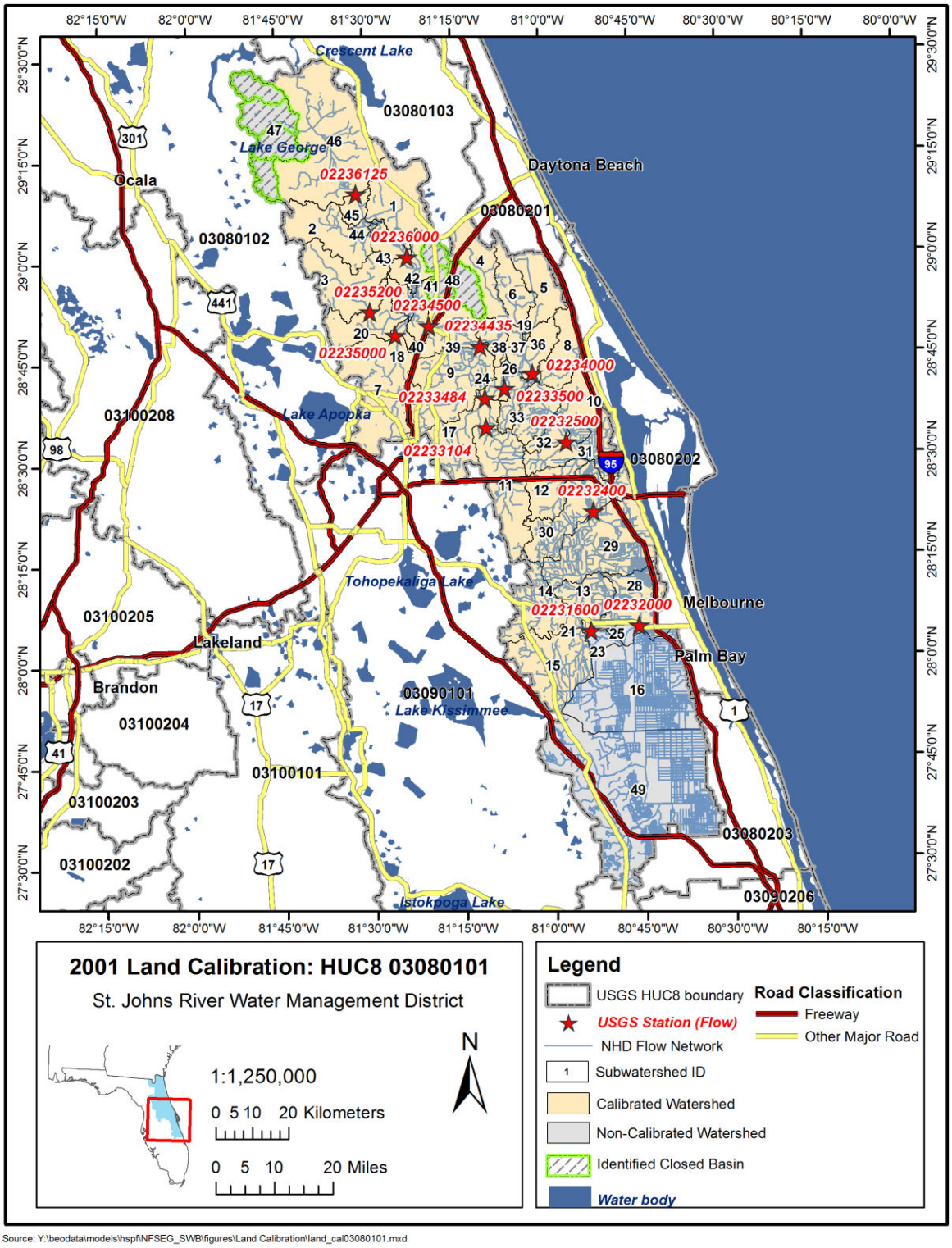


Figure T-03080101-2: Calibrated sub-watersheds.

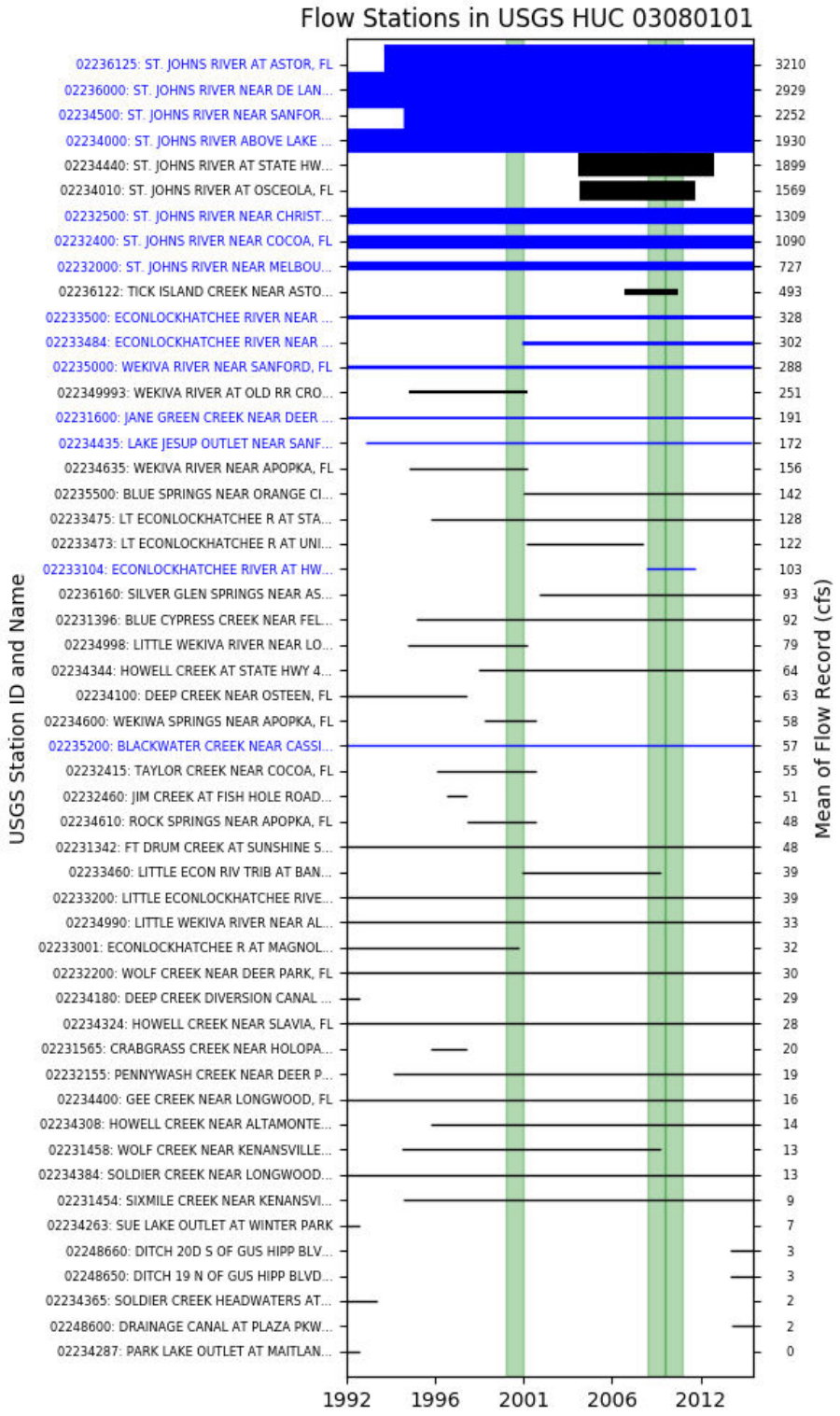


Figure T-03080101-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 03, USGS GAUGE 02235200

Water-Data Report 2009
02235200 BLACK WATER CREEK NEAR CASSIA, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 285228, long 812923 referenced to North American Datum of 1983, in SW 1/4 sec.35, T.18 S., R.28 E., Lake County, FL, Hydrologic Unit 03080101, at bridge on State Highway 44, 1.5 mi southwest of Cassia, and 13 mi upstream from mouth.

DRAINAGE AREA.--126 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Water years 1962-67, 1970-80 (annual maximum), August 1967 to September 1969; March 1981 to September 1985 (fragmentary), October 1985 to current year.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 18.55 ft above NGVD of 1929 (Florida Department of Transportation bench mark). Sept. 20, 1962 to Aug. 7, 1967, and Oct. 1, 1969 to Mar. 23, 1981, crest-stage gage; Aug. 7, 1967 to Sept. 30, 1969 and Mar. 23, 1981 to June 10, 1983, water-stage recorder; June 10, 1983 to June 10, 1985, nonrecording gage at site 1,000 ft upstream at same datum.

REMARKS.--Records fair.

Table T-03080101-1: Comparison Statistics Between HSPF Reach 03 and USGS Gauge 02235200.

Statistic	Value
Bias	22.84
Standard error	56.71
Relative bias	0.40
Relative standard error	0.80
Nash-Sutcliffe coefficient	0.36
Kling-Gupta coefficient	0.47
Coefficient of efficiency	0.32
Index of agreement	0.70

Table T-03080101-2: Hydrologic Indices Between USGS Gauge 02235200 and HSPF Reach 03.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02235200	Simulated Reach 03	Percent Difference
MA1: Mean, all daily flows	57.06	80.15	40.45
MA2: Median, all daily flows	26.00	40.67	56.43
MA3: CV, all daily flows	108.78	100.00	-8.07

MA4: CV, log of all daily flows	111.63	112.61	0.88
MA5: Mean daily flow / median daily flow	2.19	1.97	-10.22
MA9: (Q10 - Q90) / median daily flow	5.18	5.09	-1.79
MA10: (Q20 - Q80) / median daily flow	2.96	2.92	-1.36
MA11: (Q25 - Q75) / median daily flow	2.31	2.22	-3.75
MA12: Mean monthly flow, January	55.85	66.65	19.33
MA13: Mean monthly flow, February	51.63	59.42	15.10
MA14: Mean monthly flow, March	56.24	70.34	25.08
MA15: Mean monthly flow, April	40.10	48.89	21.91
MA16: Mean monthly flow, May	27.91	26.57	-4.81
MA17: Mean monthly flow, June	39.47	52.07	31.93
MA18: Mean monthly flow, July	45.97	84.26	83.29
MA19: Mean monthly flow, August	60.63	109.37	80.38
MA20: Mean monthly flow, September	97.94	131.25	34.01
MA21: Mean monthly flow, October	86.77	130.54	50.44
MA22: Mean monthly flow, November	49.32	77.85	57.85
MA23: Mean monthly flow, December	45.22	63.51	40.45
ML1: Mean minimum monthly flow, January	38.83	38.42	-1.07
ML2: Mean minimum monthly flow, February	37.30	37.02	-0.74
ML3: Mean minimum monthly flow, March	38.68	42.14	8.94
ML4: Mean minimum monthly flow, April	21.75	26.40	21.37
ML5: Mean minimum monthly flow, May	12.17	13.04	7.14
ML6: Mean minimum monthly flow, June	20.50	23.87	16.42
ML7: Mean minimum monthly flow, July	29.92	56.63	89.25
ML8: Mean minimum monthly flow, August	32.30	68.56	112.26
ML9: Mean minimum monthly flow, September	46.18	74.31	60.91
ML10: Mean minimum monthly flow, October	47.77	72.36	51.46
ML11: Mean minimum monthly flow, November	32.72	50.47	54.25
ML12: Mean minimum monthly flow, December	30.79	35.93	16.71
ML13: CV of minimum monthly flows	112.25	128.04	14.07
ML14: Mean minimum daily flow / mean median annual flow	0.28	0.16	-44.20
ML15: Mean minimum annual flow / mean annual flow	0.17	0.09	-49.92
ML16: Median minimum annual flow / median annual flow	0.23	0.15	-35.03
ML20: Ratio of baseflow volume to total flow volume	0.73	0.78	6.57
ML22: Mean annual minimum flow divided by catchment area	0.08	0.07	-14.87
RA1: Mean of positive changes from one day to next (rise rate)	8.66	9.11	
RA2: CV, mean of positive changes from one day to next (rise rate)	251.85	247.82	
RA3: Mean of negative changes from one day to next (fall rate)	3.18	3.52	
RA4: CV, mean of negative changes from one day to next (fall rate)	176.31	148.39	
RA5: Ratio of days that are higher than previous day	0.21	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.04	
RA8: Number of flow reversals from one day to the next	56.46	63.79	
RA9: CV, number of flow reversals from one day to the next	21.56	22.77	

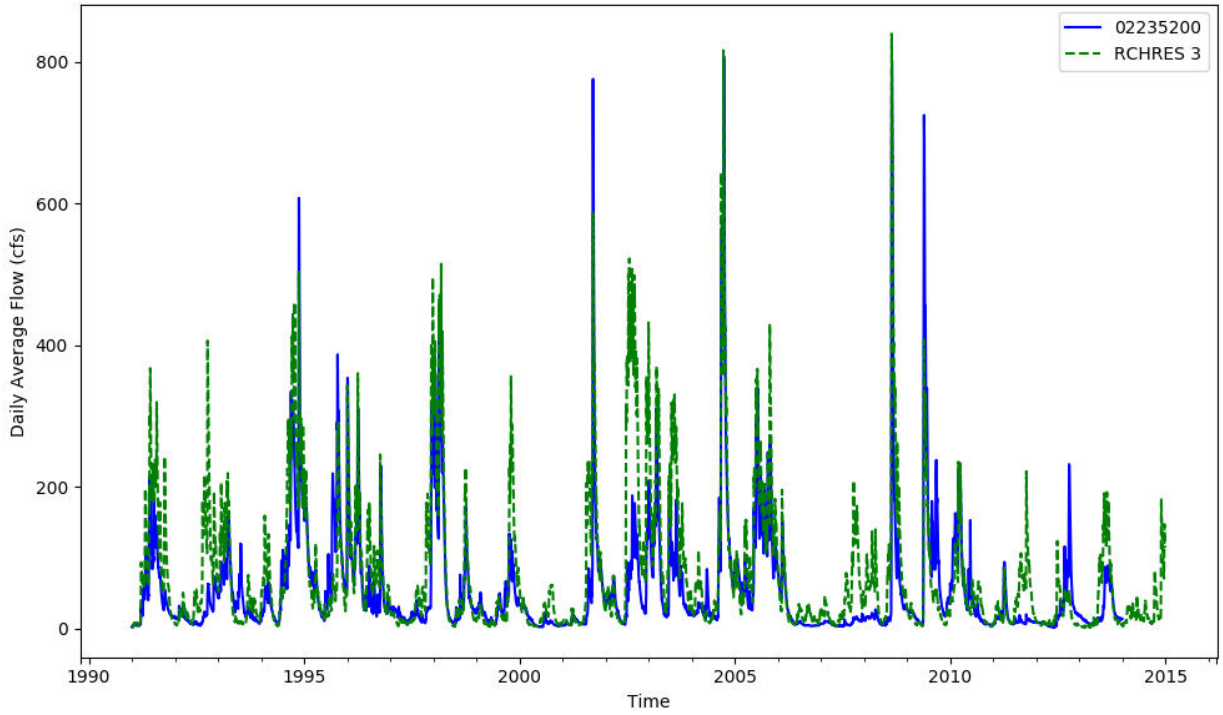


Figure T-03080101-4: Daily flow for HSFP reach 03 and USGS station 02235200.

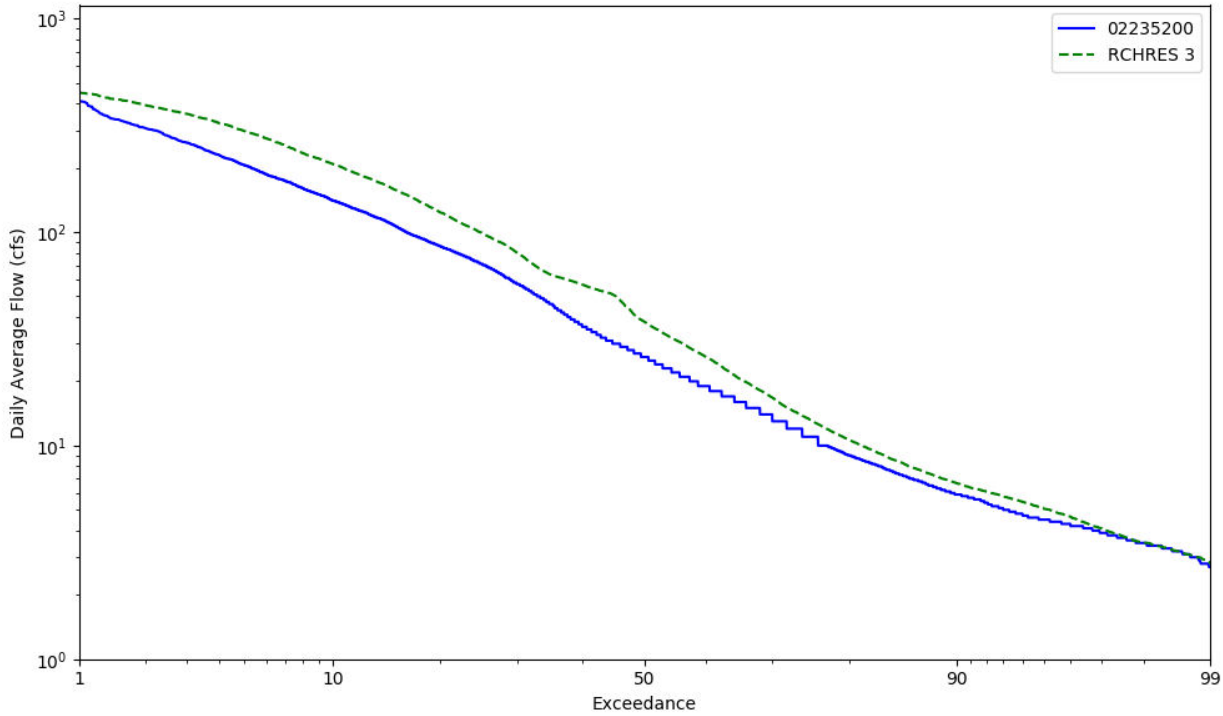


Figure T-03080101-5: Daily exceedance for HSFP reach 03 and USGS station 02235200.

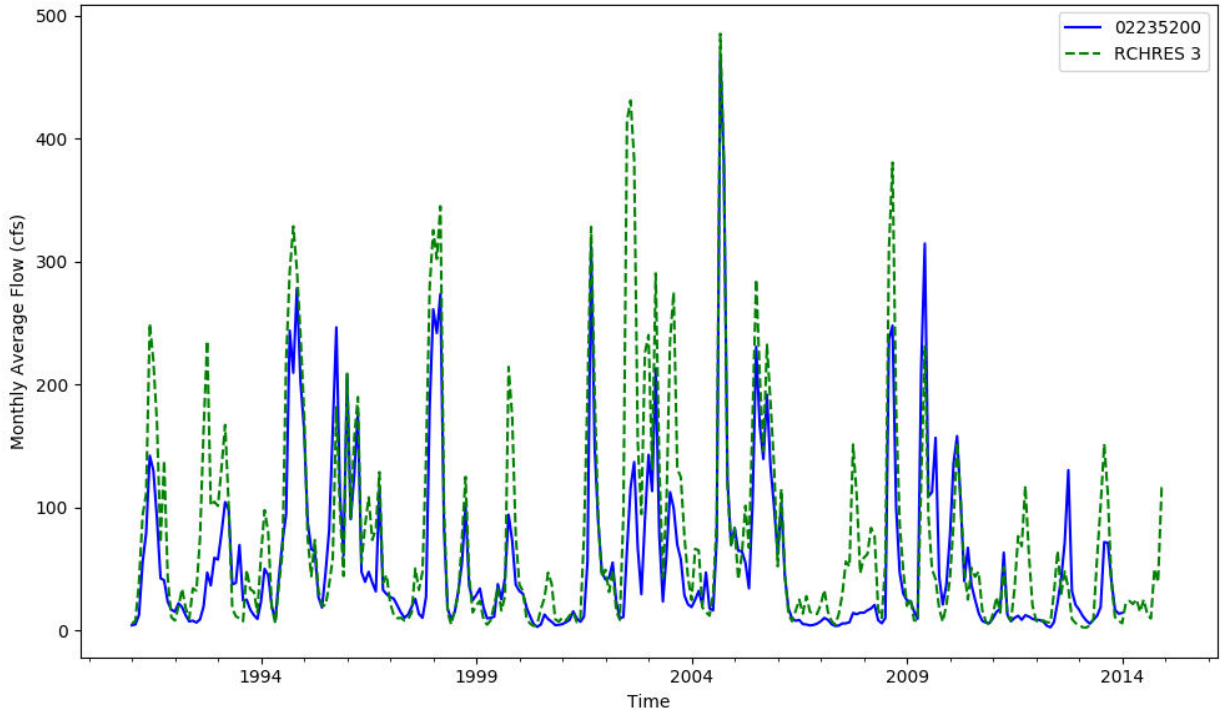


Figure T-03080101-6: Monthly flow for HSFP reach 03 and USGS station 02235200.

HSPF REACH 07, USGS GAUGE 02235000

Water-Data Report 2009
02235000 WEKIVA RIVER NEAR SANFORD, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 284854, long 812510 referenced to North American Datum of 1927, in SE 1/4 sec.21, T.19 S., R.29 E., Seminole County, FL, Hydrologic Unit 03080101, near center of bridge at downstream side of bridge on State Highway 46, 4.5 mi downstream from Little Wekiva River, 6.7 mi upstream from mouth, and 8.9 mi west of Sanford.

DRAINAGE AREA.--189 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1931 to September 1935 (discharge measurements only), October 1935 to current year.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 4.96 ft above NGVD of 1929. Prior to Jan. 19, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow includes large groundwater inflow.

Table T-03080101-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02235000.

Statistic	Value
Bias	-0.64
Standard error	62.59
Relative bias	-0.00
Relative standard error	0.58
Nash-Sutcliffe coefficient	0.66
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.46
Index of agreement	0.73

Table T-03080101-4: Hydrologic Indices Between USGS Gauge 02235000 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02235000	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	289.61	289.15	-0.16
MA2: Median, all daily flows	253.00	249.52	-1.38
MA3: CV, all daily flows	39.87	47.31	18.65
MA4: CV, log of all daily flows	34.60	35.04	1.26
MA5: Mean daily flow / median daily flow	1.14	1.16	1.23
MA9: (Q10 - Q90) / median daily flow	1.02	1.04	2.20

MA10: (Q20 - Q80) / median daily flow	0.58	0.64	10.86
MA11: (Q25 - Q75) / median daily flow	0.44	0.50	13.59
MA12: Mean monthly flow, January	275.66	255.40	-7.35
MA13: Mean monthly flow, February	258.50	238.19	-7.86
MA14: Mean monthly flow, March	265.67	257.44	-3.10
MA15: Mean monthly flow, April	231.14	230.92	-0.09
MA16: Mean monthly flow, May	214.25	208.83	-2.53
MA17: Mean monthly flow, June	262.18	272.02	3.75
MA18: Mean monthly flow, July	302.12	311.64	3.15
MA19: Mean monthly flow, August	338.23	343.34	1.51
MA20: Mean monthly flow, September	342.98	360.23	5.03
MA21: Mean monthly flow, October	316.25	338.10	6.91
MA22: Mean monthly flow, November	264.04	262.97	-0.40
MA23: Mean monthly flow, December	265.78	250.30	-5.82
ML1: Mean minimum monthly flow, January	233.92	210.53	-10.00
ML2: Mean minimum monthly flow, February	230.83	210.19	-8.94
ML3: Mean minimum monthly flow, March	223.74	212.05	-5.22
ML4: Mean minimum monthly flow, April	202.70	197.76	-2.43
ML5: Mean minimum monthly flow, May	192.30	184.16	-4.24
ML6: Mean minimum monthly flow, June	206.09	202.17	-1.90
ML7: Mean minimum monthly flow, July	244.00	252.98	3.68
ML8: Mean minimum monthly flow, August	255.17	267.66	4.89
ML9: Mean minimum monthly flow, September	257.57	271.33	5.35
ML10: Mean minimum monthly flow, October	247.26	261.71	5.84
ML11: Mean minimum monthly flow, November	234.52	229.81	-2.01
ML12: Mean minimum monthly flow, December	235.35	213.26	-9.39
ML13: CV of minimum monthly flows	24.26	28.23	16.34
ML14: Mean minimum daily flow / mean median annual flow	0.73	0.70	-3.95
ML15: Mean minimum annual flow / mean annual flow	0.64	0.61	-4.31
ML16: Median minimum annual flow / median annual flow	0.73	0.70	-3.85
ML20: Ratio of baseflow volume to total flow volume	0.87	0.87	0.86
ML22: Mean annual minimum flow divided by catchment area	1.80	1.72	-4.85
RA1: Mean of positive changes from one day to next (rise rate)	20.81	59.75	
RA2: CV, mean of positive changes from one day to next (rise rate)	224.28	325.30	
RA3: Mean of negative changes from one day to next (fall rate)	10.01	21.19	
RA4: CV, mean of negative changes from one day to next (fall rate)	153.61	447.59	
RA5: Ratio of days that are higher than previous day	0.29	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.02	
RA8: Number of flow reversals from one day to the next	79.08	122.33	
RA9: CV, number of flow reversals from one day to the next	21.75	20.21	

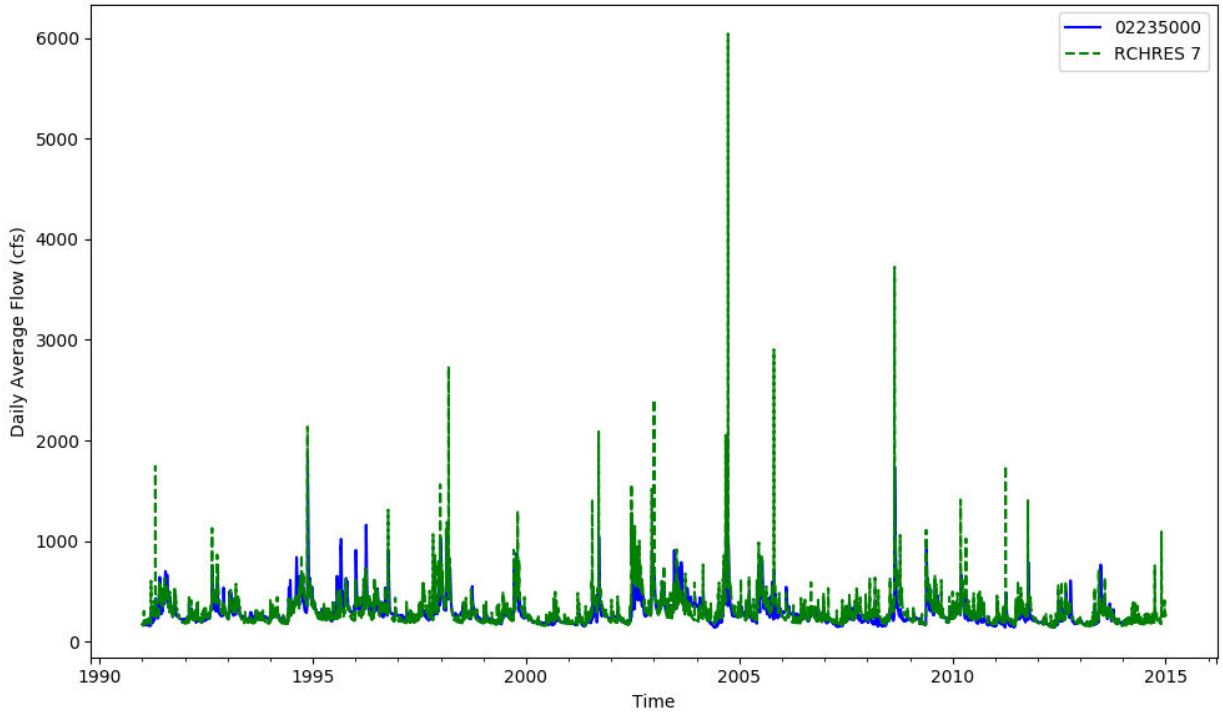


Figure T-03080101-7: Daily flow for HSFP reach 07 and USGS station 02235000.

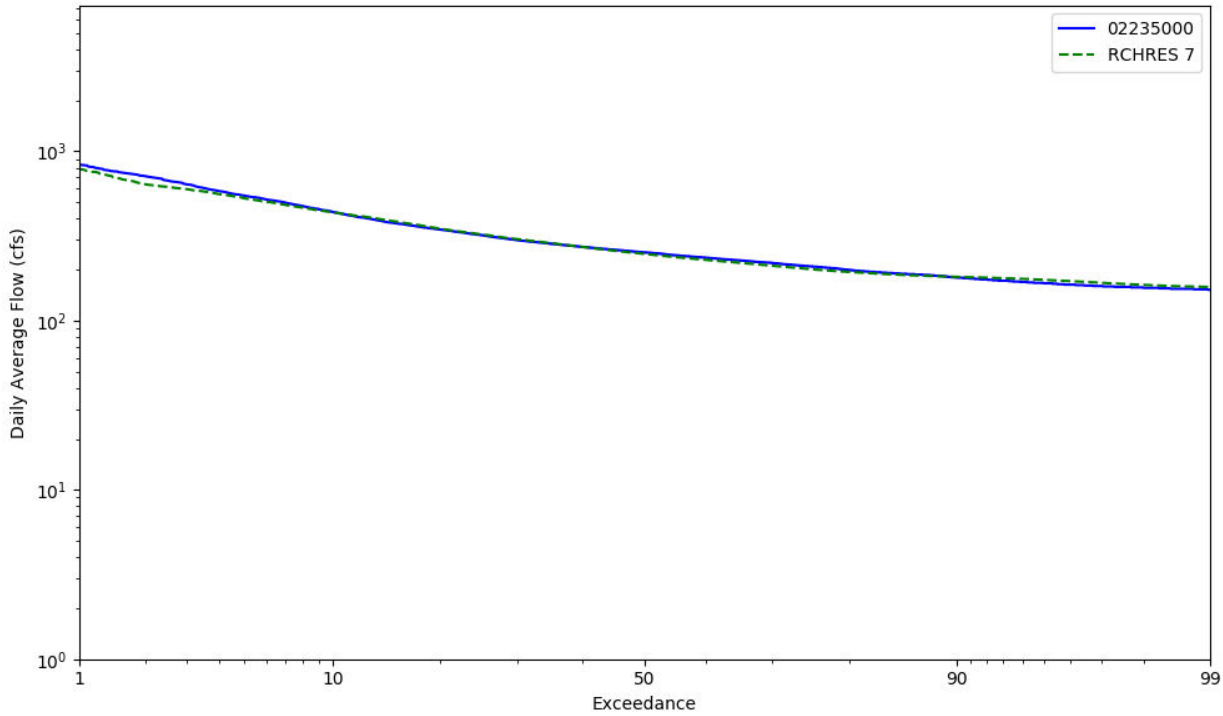


Figure T-03080101-8: Daily exceedance for HSFP reach 07 and USGS station 02235000.

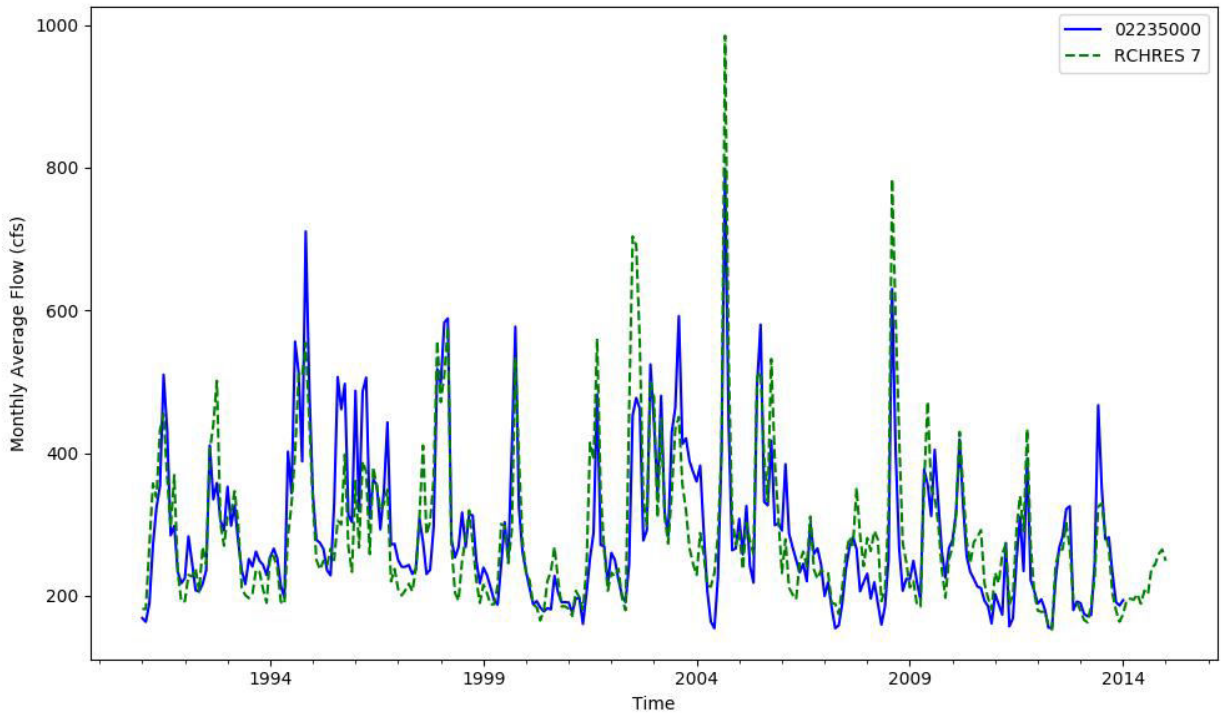


Figure T-03080101-9: Monthly flow for HSFP reach 07 and USGS station 02235000.

HSPF REACH 09, USGS GAUGE 02234435

Water-Data Report 2009
02234435 LAKE JESUP OUTLET NEAR SANFORD, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 284702, long 811053 referenced to North American Datum of 1927, in NW 1/4 sec.1, T.20 S., R.31 E., Seminole County, FL, Hydrologic Unit 03080101, near center of channel of outlet, 1,300 ft upstream from bridge on State Highway 46, and 5.4 mi east of Sanford.

DRAINAGE AREA.--156 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1941 to July 1948 (gage heights and discharge measurements only), January 1993 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929. August 1941 to April 1943, nonrecording gage and September 1943 to July 1948, water-stage recorder at same site and datum, operated as daily stage for station 02234434, Lake Jesup near Sanford. January 1993 to June 2002, at site 1500 ft downstream at same datum.

REMARKS.--Records fair. A maximum stage, 6.95 ft, occurred on Oct. 1, stage falling, peak occurred on Sept. 2, 2008.

Table T-03080101-5: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02234435.

Statistic	Value
Bias	10.71
Standard error	227.19
Relative bias	0.06
Relative standard error	1.13
Nash-Sutcliffe coefficient	-0.27
Kling-Gupta coefficient	0.19
Coefficient of efficiency	0.01
Index of agreement	0.43

Table T-03080101-6: Hydrologic Indices Between USGS Gauge 02234435 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02234435	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	292.09	177.07	-39.38

MA2: Median, all daily flows	261.00	117.09	-55.14
MA3: CV, all daily flows	60.20	92.99	54.47
MA4: CV, log of all daily flows	59.52	85.80	44.16
MA5: Mean daily flow / median daily flow	1.12	1.51	35.12
MA9: (Q10 - Q90) / median daily flow	1.85	3.10	67.87
MA10: (Q20 - Q80) / median daily flow	1.20	1.87	55.67
MA11: (Q25 - Q75) / median daily flow	0.96	1.49	54.78
MA12: Mean monthly flow, January	284.68	144.90	-49.10
MA13: Mean monthly flow, February	246.82	122.66	-50.30
MA14: Mean monthly flow, March	233.44	140.65	-39.75
MA15: Mean monthly flow, April	226.22	96.19	-57.48
MA16: Mean monthly flow, May	186.80	67.74	-63.74
MA17: Mean monthly flow, June	254.90	159.56	-37.40
MA18: Mean monthly flow, July	263.22	218.81	-16.87
MA19: Mean monthly flow, August	186.34	251.42	34.93
MA20: Mean monthly flow, September	251.10	244.08	-2.79
MA21: Mean monthly flow, October	245.78	216.54	-11.90
MA22: Mean monthly flow, November	271.51	144.39	-46.82
MA23: Mean monthly flow, December	288.44	132.97	-53.90
ML1: Mean minimum monthly flow, January	52.32	88.41	68.98
ML2: Mean minimum monthly flow, February	51.12	78.83	54.23
ML3: Mean minimum monthly flow, March	31.49	78.00	147.72
ML4: Mean minimum monthly flow, April	57.92	47.69	-17.66
ML5: Mean minimum monthly flow, May	30.50	30.94	1.46
ML6: Mean minimum monthly flow, June	54.07	53.57	-0.93
ML7: Mean minimum monthly flow, July	74.16	125.08	68.65
ML8: Mean minimum monthly flow, August	40.56	162.81	301.40
ML9: Mean minimum monthly flow, September	81.68	160.95	97.05
ML10: Mean minimum monthly flow, October	80.20	131.26	63.67
ML11: Mean minimum monthly flow, November	78.08	99.24	27.11
ML12: Mean minimum monthly flow, December	90.09	77.05	-14.48
ML13: CV of minimum monthly flows	149.57	104.75	-29.97
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.15	1598.41
ML15: Mean minimum annual flow / mean annual flow	0.01	0.11	1252.23
ML16: Median minimum annual flow / median annual flow	0.00	0.13	2643.20
ML20: Ratio of baseflow volume to total flow volume	0.34	0.68	99.61
ML22: Mean annual minimum flow divided by catchment area	0.03	0.21	670.49
RA1: Mean of positive changes from one day to next (rise rate)	102.37	63.29	
RA2: CV, mean of positive changes from one day to next (rise rate)	102.64	285.87	
RA3: Mean of negative changes from one day to next (fall rate)	102.86	21.01	
RA4: CV, mean of negative changes from one day to next (fall rate)	103.57	374.70	
RA5: Ratio of days that are higher than previous day	0.50	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.30	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.29	0.06	
RA8: Number of flow reversals from one day to the next	142.23	87.73	
RA9: CV, number of flow reversals from one day to the next	28.65	26.40	

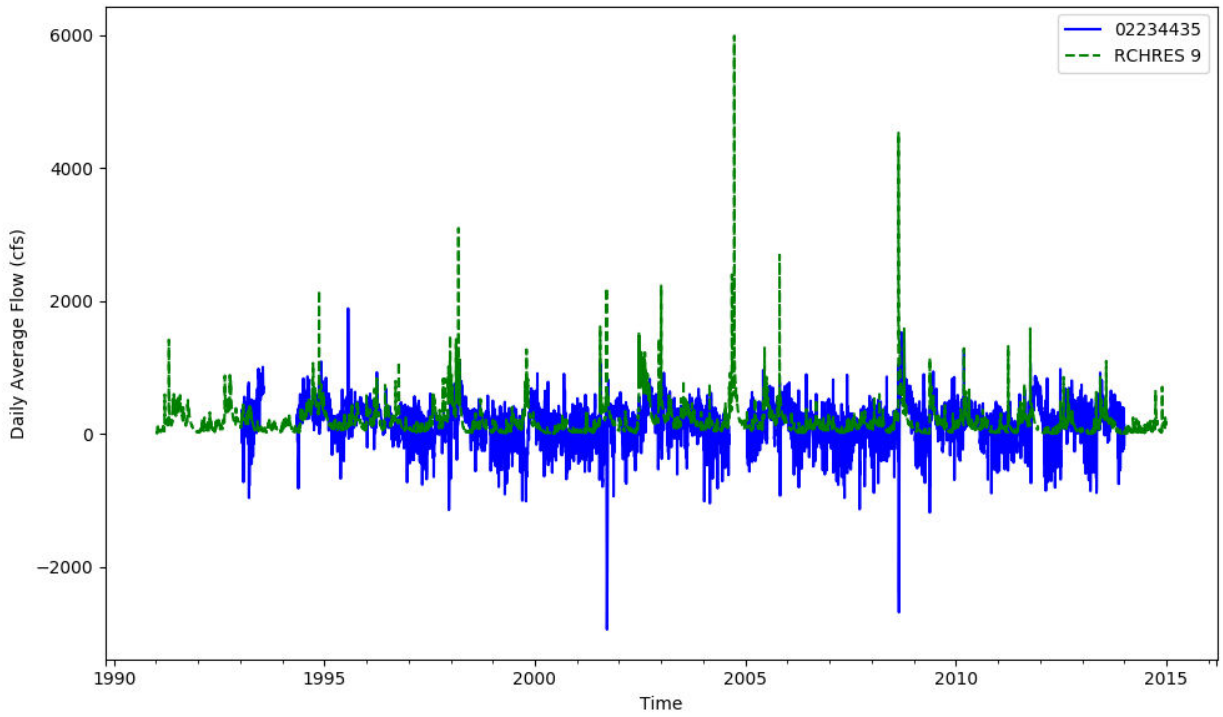


Figure T-03080101-10: Daily flow for HSFP reach 09 and USGS station 02234435.

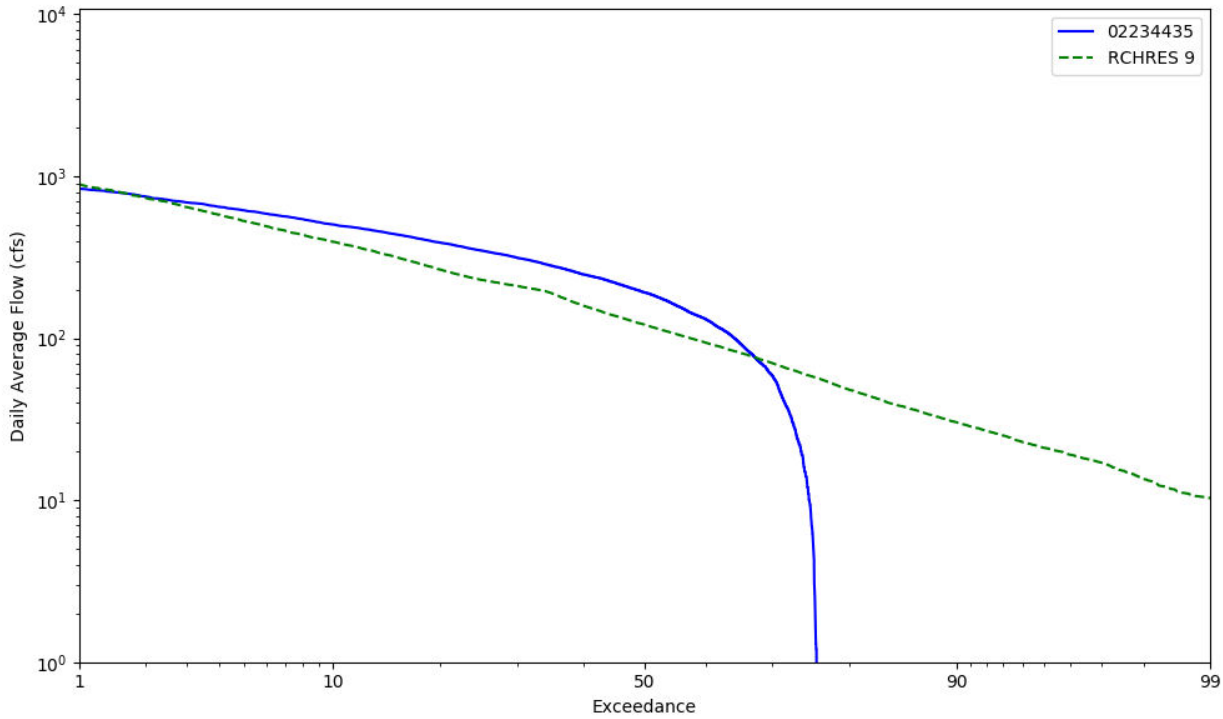


Figure T-03080101-11: Daily exceedance for HSFP reach 09 and USGS station 02234435.

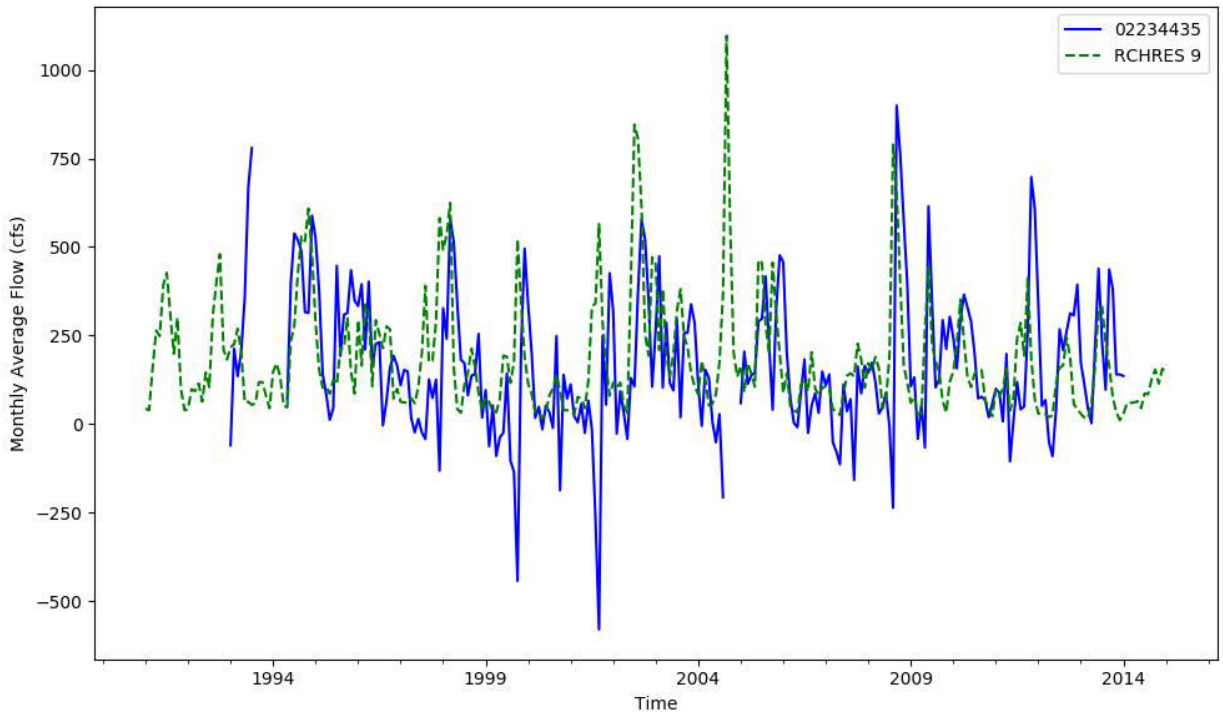


Figure T-03080101-12: Monthly flow for HSFP reach 09 and USGS station 02234435.

HSPF REACH 11, USGS GAUGE 02233104

Water-Data Report 2009
02233104 ECONLOCKHATCHEE RIVER AT HWY 420 NR BITHLO
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 283459, long 811007 referenced to North American Datum of 1983, in NE 1/4 sec.13, T.22 S., R.31 E., Orange County, FL, Hydrologic Unit 03080101, on upstream side of bridge on State Highway 420, 6.7 mi upstream from Little Econlockhatchee River, 2.8 mi upstream of the Orange and Seminole countys line, 5 mi west of Bithlo, and 23.1 mi upstream from mouth.

DRAINAGE AREA.--130 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1954 (miscellaneous measurements); December 2008 to September 2009.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is NAVD of 1988 (Department of Transportation bench mark).

REMARKS.--Records good.

Table T-03080101-7: Comparison Statistics Between HSPF Reach 11 and USGS Gauge 02233104.

Statistic	Value
Bias	-14.65
Standard error	67.14
Relative bias	-0.14
Relative standard error	0.65
Nash-Sutcliffe coefficient	0.57
Kling-Gupta coefficient	0.65
Coefficient of efficiency	0.48
Index of agreement	0.72

Table T-03080101-8: Hydrologic Indices Between USGS Gauge 02233104 and HSPF Reach 11.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02233104	Simulated Reach 11	Percent Difference
MA1: Mean, all daily flows	103.56	88.09	-14.94
MA2: Median, all daily flows	39.00	56.81	45.68
MA3: CV, all daily flows	145.41	101.98	-29.87
MA4: CV, log of all daily flows	118.88	95.73	-19.47
MA5: Mean daily flow / median daily flow	2.66	1.55	-41.61
MA9: (Q10 - Q90) / median daily flow	6.70	3.51	-47.60

MA10: (Q20 - Q80) / median daily flow	3.56	2.46	-31.01
MA11: (Q25 - Q75) / median daily flow	2.78	2.13	-23.32
MA12: Mean monthly flow, January	52.59	53.61	1.94
MA13: Mean monthly flow, February	92.81	86.83	-6.44
MA14: Mean monthly flow, March	146.01	94.91	-35.00
MA15: Mean monthly flow, April	110.40	98.47	-10.80
MA16: Mean monthly flow, May	93.95	79.98	-14.88
MA17: Mean monthly flow, June	97.90	124.24	26.90
MA18: Mean monthly flow, July	167.36	119.99	-28.30
MA19: Mean monthly flow, August	188.47	134.72	-28.52
MA20: Mean monthly flow, September	140.24	111.50	-20.50
MA21: Mean monthly flow, October	26.68	28.34	6.22
MA22: Mean monthly flow, November	11.67	9.52	-18.45
MA23: Mean monthly flow, December	37.05	57.03	53.94
ML1: Mean minimum monthly flow, January	18.00	28.58	58.80
ML2: Mean minimum monthly flow, February	37.67	51.26	36.10
ML3: Mean minimum monthly flow, March	30.33	39.80	31.21
ML4: Mean minimum monthly flow, April	31.63	55.91	76.74
ML5: Mean minimum monthly flow, May	7.27	23.17	218.79
ML6: Mean minimum monthly flow, June	19.61	69.13	252.54
ML7: Mean minimum monthly flow, July	45.07	83.25	84.73
ML8: Mean minimum monthly flow, August	63.67	82.46	29.52
ML9: Mean minimum monthly flow, September	37.33	77.00	106.24
ML10: Mean minimum monthly flow, October	20.00	20.35	1.76
ML11: Mean minimum monthly flow, November	12.70	8.84	-30.37
ML12: Mean minimum monthly flow, December	21.33	29.57	38.59
ML13: CV of minimum monthly flows	95.11	104.88	10.27
ML14: Mean minimum daily flow / mean median annual flow	0.09	0.13	42.84
ML15: Mean minimum annual flow / mean annual flow	0.03	0.07	92.85
ML16: Median minimum annual flow / median annual flow	0.11	0.14	29.55
ML20: Ratio of baseflow volume to total flow volume	0.44	0.75	70.07
ML22: Mean annual minimum flow divided by catchment area	0.04	0.06	45.88
RA1: Mean of positive changes from one day to next (rise rate)	49.41	15.45	
RA2: CV, mean of positive changes from one day to next (rise rate)	237.00	167.81	
RA3: Mean of negative changes from one day to next (fall rate)	20.62	4.99	
RA4: CV, mean of negative changes from one day to next (fall rate)	227.96	155.01	
RA5: Ratio of days that are higher than previous day	0.26	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.10	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.05	
RA8: Number of flow reversals from one day to the next	69.33	72.67	
RA9: CV, number of flow reversals from one day to the next	5.46	21.95	

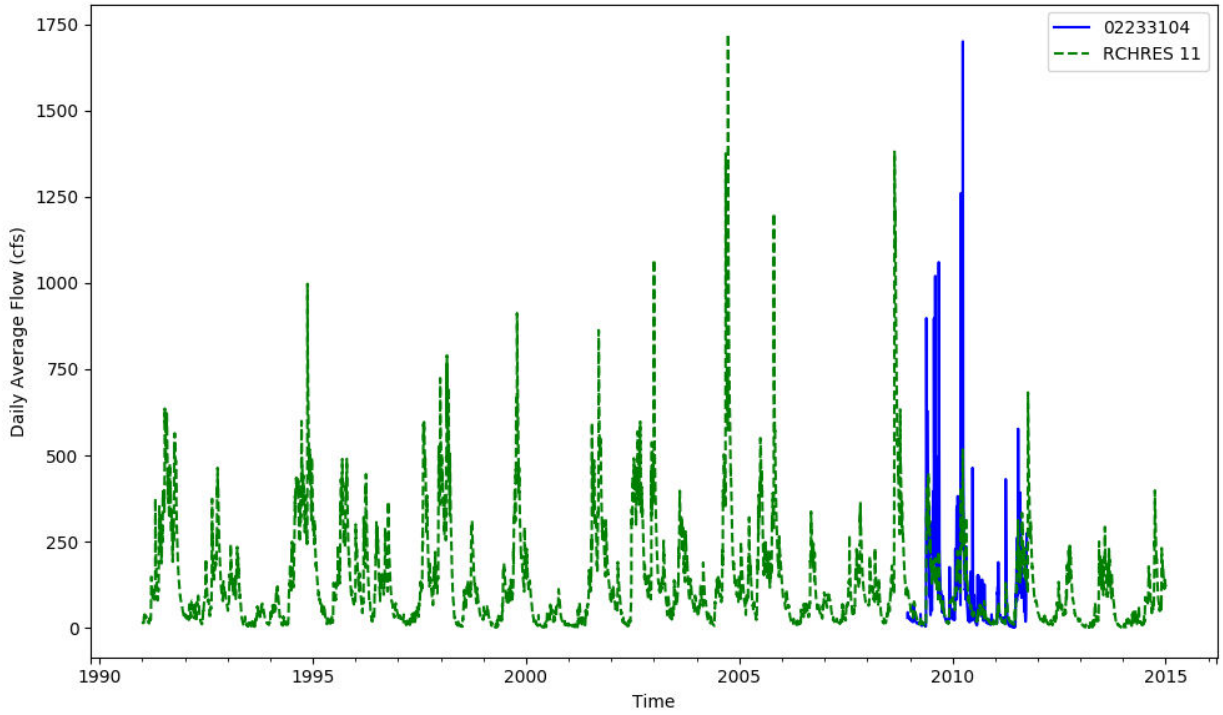


Figure T-03080101-13: Daily flow for HSFP reach 11 and USGS station 02233104.

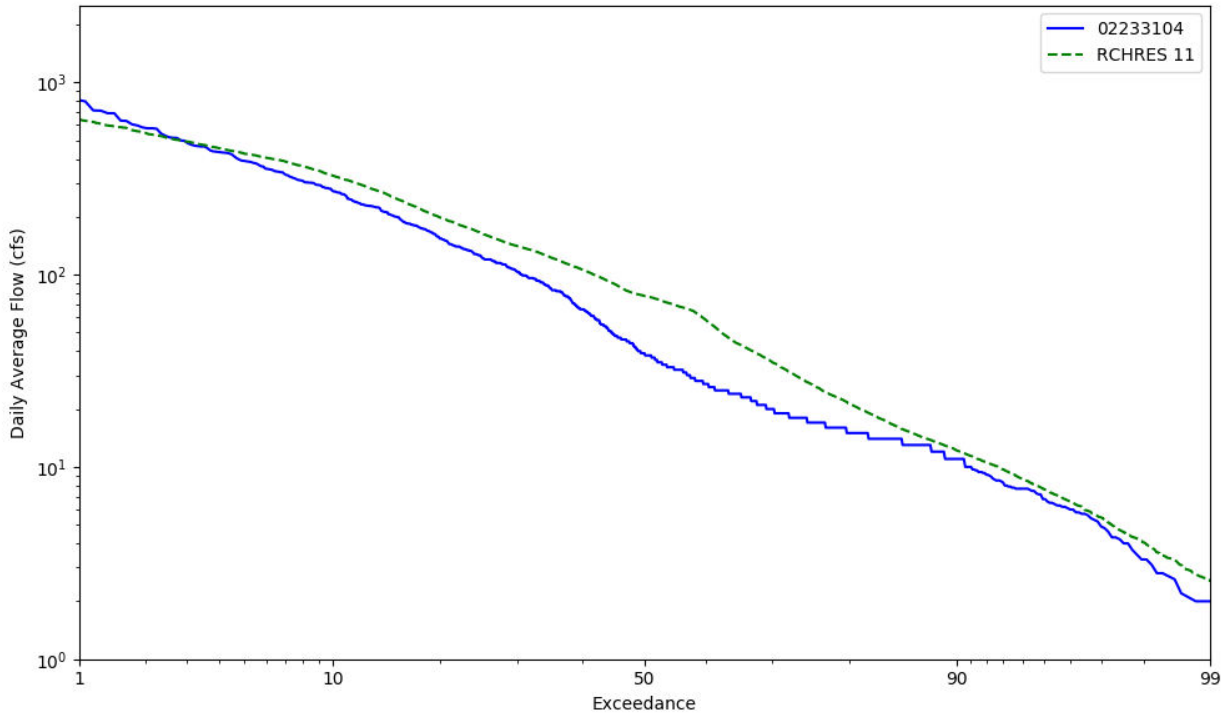


Figure T-03080101-14: Daily exceedance for HSFP reach 11 and USGS station 02233104.

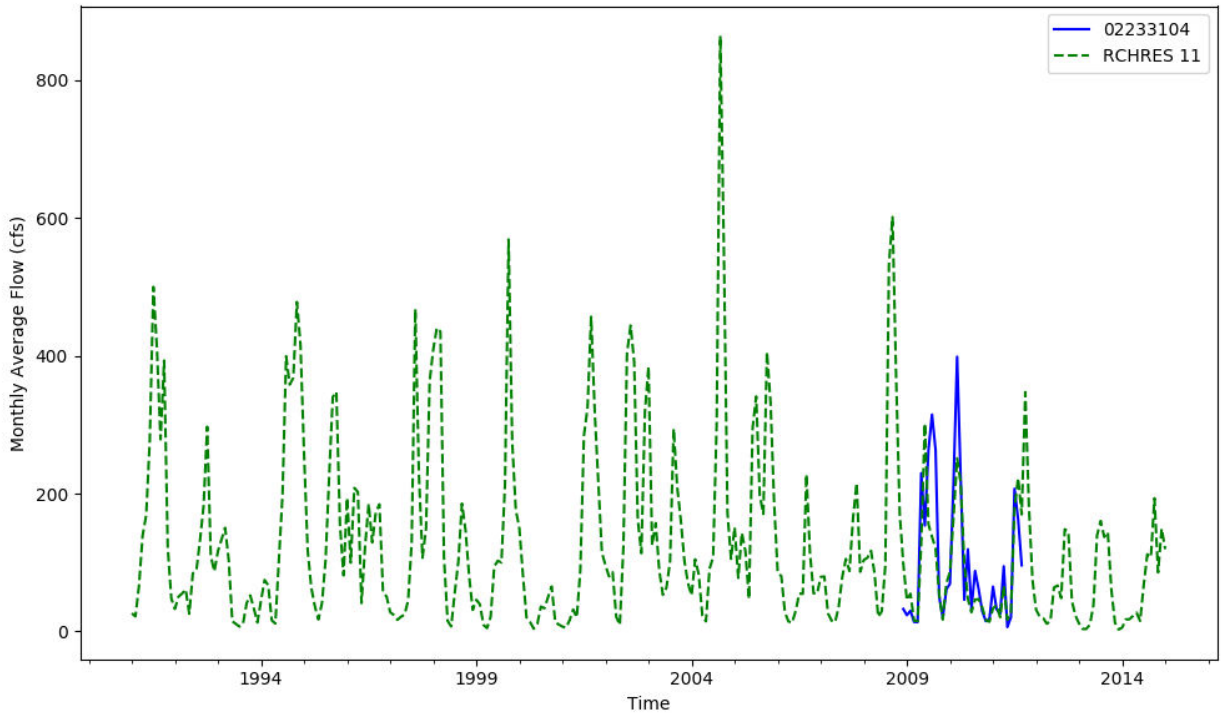


Figure T-03080101-15: Monthly flow for HSFP reach 11 and USGS station 02233104.

HSPF REACH 17, USGS GAUGE 02233484

Water-Data Report 2009
02233484 ECONLOCKHATCHEE RIVER NEAR OVIEDO, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 283919, long 811012 referenced to North American Datum of 1927, in NE 1/4 sec.24, T.21 S., R.31 E., Seminole County, FL, Hydrologic Unit 03080101, on downstream side of westbound bridge on State Highway 419, 0.1 mi downstream from Little Econlockhatchee River, 2.5 mi east of Oviedo, and 16.3 mi upstream from mouth.

DRAINAGE AREA.--228 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 2001 to current year.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (Seminole County bench mark).

REMARKS.--Records fair except for period of estimated daily discharge, which is poor.

Table T-03080101-9: Comparison Statistics Between HSPF Reach 17 and USGS Gauge 02233484.

Statistic	Value
Bias	-65.40
Standard error	167.53
Relative bias	-0.22
Relative standard error	0.51
Nash-Sutcliffe coefficient	0.74
Kling-Gupta coefficient	0.64
Coefficient of efficiency	0.56
Index of agreement	0.76

Table T-03080101-10: Hydrologic Indices Between USGS Gauge 02233484 and HSPF Reach 17.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02233484	Simulated Reach 17	Percent Difference
MA1: Mean, all daily flows	301.05	234.91	-21.97
MA2: Median, all daily flows	152.00	151.05	-0.62
MA3: CV, all daily flows	128.94	104.12	-19.26
MA4: CV, log of all daily flows	105.48	93.80	-11.08
MA5: Mean daily flow / median daily flow	1.98	1.56	-21.48
MA9: (Q10 - Q90) / median daily flow	4.22	3.42	-18.76
MA10: (Q20 - Q80) / median daily flow	2.29	1.92	-16.20

MA11: (Q25 - Q75) / median daily flow	1.66	1.50	-9.62
MA12: Mean monthly flow, January	177.59	154.85	-12.80
MA13: Mean monthly flow, February	145.22	129.19	-11.04
MA14: Mean monthly flow, March	188.13	135.56	-27.95
MA15: Mean monthly flow, April	126.08	95.52	-24.24
MA16: Mean monthly flow, May	108.37	74.62	-31.14
MA17: Mean monthly flow, June	273.30	206.01	-24.62
MA18: Mean monthly flow, July	421.87	287.10	-31.95
MA19: Mean monthly flow, August	654.63	379.91	-41.97
MA20: Mean monthly flow, September	537.40	451.98	-15.89
MA21: Mean monthly flow, October	399.34	351.46	-11.99
MA22: Mean monthly flow, November	158.30	186.57	17.86
MA23: Mean monthly flow, December	159.46	162.47	1.88
ML1: Mean minimum monthly flow, January	79.92	81.32	1.75
ML2: Mean minimum monthly flow, February	88.08	83.79	-4.88
ML3: Mean minimum monthly flow, March	81.58	70.90	-13.09
ML4: Mean minimum monthly flow, April	58.25	49.27	-15.41
ML5: Mean minimum monthly flow, May	37.92	29.18	-23.03
ML6: Mean minimum monthly flow, June	72.67	68.65	-5.52
ML7: Mean minimum monthly flow, July	174.83	182.51	4.39
ML8: Mean minimum monthly flow, August	238.08	212.74	-10.64
ML9: Mean minimum monthly flow, September	242.58	274.59	13.19
ML10: Mean minimum monthly flow, October	155.25	189.55	22.09
ML11: Mean minimum monthly flow, November	93.58	118.96	27.12
ML12: Mean minimum monthly flow, December	76.54	82.53	7.83
ML13: CV of minimum monthly flows	97.64	107.39	9.99
ML14: Mean minimum daily flow / mean median annual flow	0.25	0.10	-59.77
ML15: Mean minimum annual flow / mean annual flow	0.14	0.06	-52.49
ML16: Median minimum annual flow / median annual flow	0.23	0.08	-63.40
ML20: Ratio of baseflow volume to total flow volume	0.53	0.69	31.12
ML22: Mean annual minimum flow divided by catchment area	0.33	0.15	-52.86
RA1: Mean of positive changes from one day to next (rise rate)	86.48	75.85	
RA2: CV, mean of positive changes from one day to next (rise rate)	277.51	341.72	
RA3: Mean of negative changes from one day to next (fall rate)	37.83	22.77	
RA4: CV, mean of negative changes from one day to next (fall rate)	262.91	428.10	
RA5: Ratio of days that are higher than previous day	0.29	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.06	
RA8: Number of flow reversals from one day to the next	73.46	88.92	
RA9: CV, number of flow reversals from one day to the next	22.14	24.74	

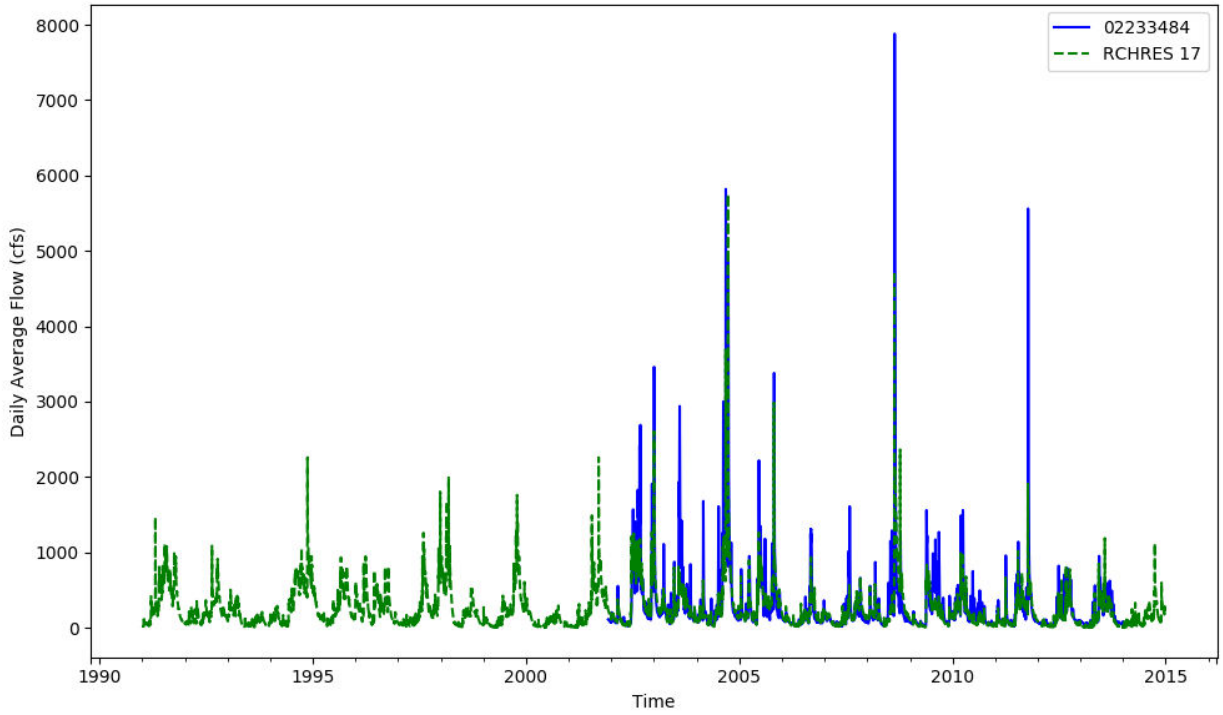


Figure T-03080101-16: Daily flow for HSFP reach 17 and USGS station 02233484.

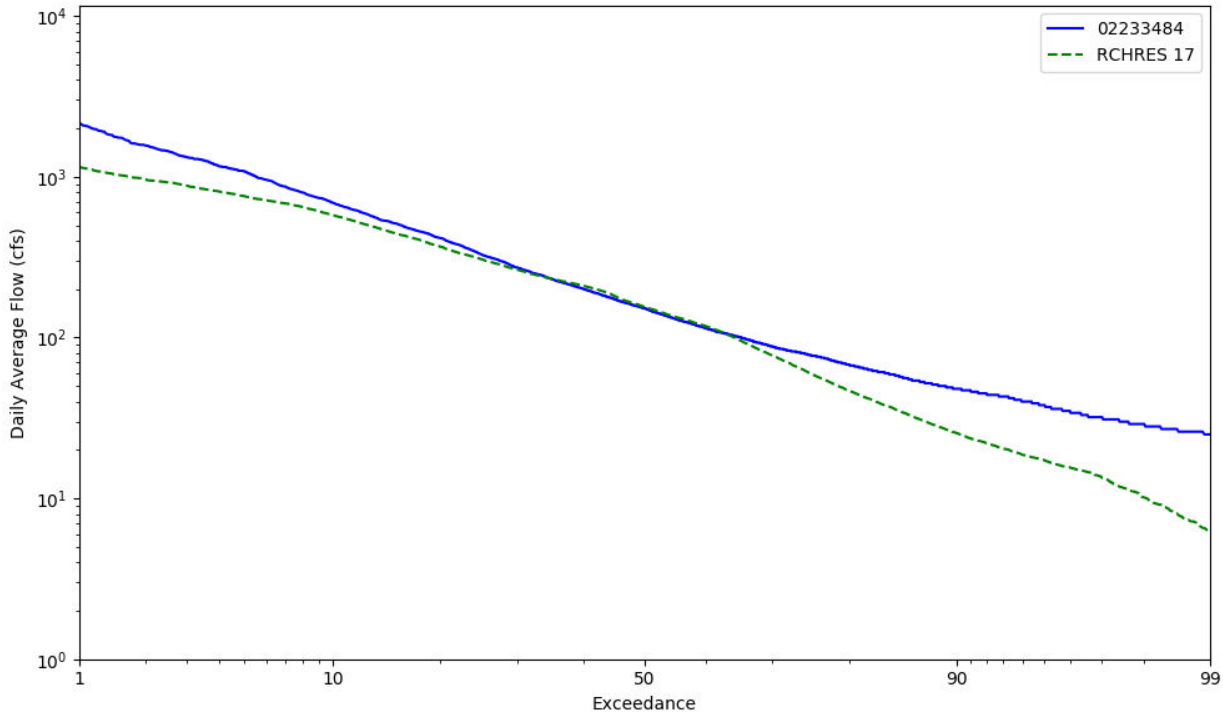


Figure T-03080101-17: Daily exceedance for HSFP reach 17 and USGS station 02233484.

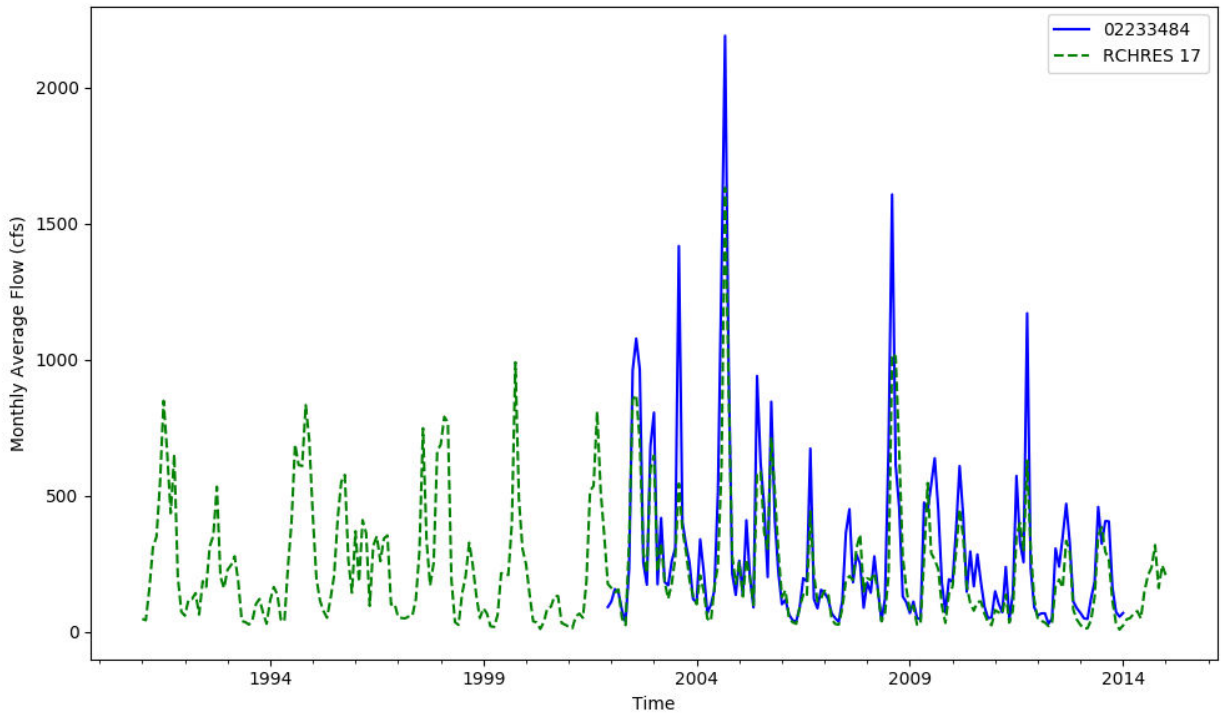


Figure T-03080101-18: Monthly flow for HSFP reach 17 and USGS station 02233484.

HSPF REACH 21, USGS GAUGE 02231600

Water-Data Report 2009
02231600 JANE GREEN CREEK NEAR DEER PARK, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 280427, long 805318 referenced to North American Datum of 1927, in SE 1/4 sec.2, T.28 S., R.34 E., Osceola County, FL, Hydrologic Unit 03080101, near right bank on upstream side of bridge on county road, 1.2 mi southeast of Deer Park, 2 mi downstream from confluence of Crabgrass and Bull Creeks, and 5.8 mi upstream from mouth.

DRAINAGE AREA.--248 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 18.55 ft above NGVD of 1929.

REMARKS.--Records fair. Since April 1990, flow regulated to some extent by flood control lift gates (S161A), approximately 1.5 mi upstream from the gage.

Table T-03080101-11: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02231600.

Statistic	Value
Bias	45.47
Standard error	188.67
Relative bias	0.24
Relative standard error	0.59
Nash-Sutcliffe coefficient	0.65
Kling-Gupta coefficient	0.62
Coefficient of efficiency	0.44
Index of agreement	0.69

Table T-03080101-12: Hydrologic Indices Between USGS Gauge 02231600 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02231600	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	191.01	236.39	23.76
MA2: Median, all daily flows	35.00	144.95	314.15
MA3: CV, all daily flows	189.16	99.43	-47.43
MA4: CV, log of all daily flows	171.59	99.79	-41.85
MA5: Mean daily flow / median daily flow	5.46	1.63	-70.12
MA9: (Q10 - Q90) / median daily flow	16.46	4.01	-75.66

MA10: (Q20 - Q80) / median daily flow	6.58	2.47	-62.43
MA11: (Q25 - Q75) / median daily flow	4.51	1.96	-56.46
MA12: Mean monthly flow, January	74.04	148.94	101.15
MA13: Mean monthly flow, February	68.38	120.50	76.23
MA14: Mean monthly flow, March	119.35	130.86	9.65
MA15: Mean monthly flow, April	65.58	104.59	59.49
MA16: Mean monthly flow, May	18.20	55.96	207.44
MA17: Mean monthly flow, June	79.83	134.11	67.99
MA18: Mean monthly flow, July	278.65	275.05	-1.29
MA19: Mean monthly flow, August	408.40	352.16	-13.77
MA20: Mean monthly flow, September	367.37	419.06	14.07
MA21: Mean monthly flow, October	426.61	496.42	16.36
MA22: Mean monthly flow, November	178.28	294.83	65.38
MA23: Mean monthly flow, December	101.79	178.82	75.68
ML1: Mean minimum monthly flow, January	37.12	91.38	146.17
ML2: Mean minimum monthly flow, February	28.64	75.59	163.92
ML3: Mean minimum monthly flow, March	32.45	70.42	116.98
ML4: Mean minimum monthly flow, April	15.74	53.41	239.26
ML5: Mean minimum monthly flow, May	3.81	27.33	616.40
ML6: Mean minimum monthly flow, June	12.78	53.47	318.24
ML7: Mean minimum monthly flow, July	84.03	152.54	81.54
ML8: Mean minimum monthly flow, August	150.90	224.79	48.96
ML9: Mean minimum monthly flow, September	88.86	256.28	188.40
ML10: Mean minimum monthly flow, October	91.61	278.66	204.20
ML11: Mean minimum monthly flow, November	31.72	181.22	471.32
ML12: Mean minimum monthly flow, December	29.22	107.30	267.20
ML13: CV of minimum monthly flows	206.63	112.36	-45.62
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.10	326.11
ML15: Mean minimum annual flow / mean annual flow	0.01	0.06	791.90
ML16: Median minimum annual flow / median annual flow	0.00	0.07	
ML20: Ratio of baseflow volume to total flow volume	0.41	0.76	84.15
ML22: Mean annual minimum flow divided by catchment area	0.01	0.14	1268.28
RA1: Mean of positive changes from one day to next (rise rate)	45.84	24.18	
RA2: CV, mean of positive changes from one day to next (rise rate)	354.11	261.64	
RA3: Mean of negative changes from one day to next (fall rate)	21.08	10.25	
RA4: CV, mean of negative changes from one day to next (fall rate)	355.36	130.03	
RA5: Ratio of days that are higher than previous day	0.28	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.05	
RA8: Number of flow reversals from one day to the next	46.83	68.00	
RA9: CV, number of flow reversals from one day to the next	24.87	20.57	

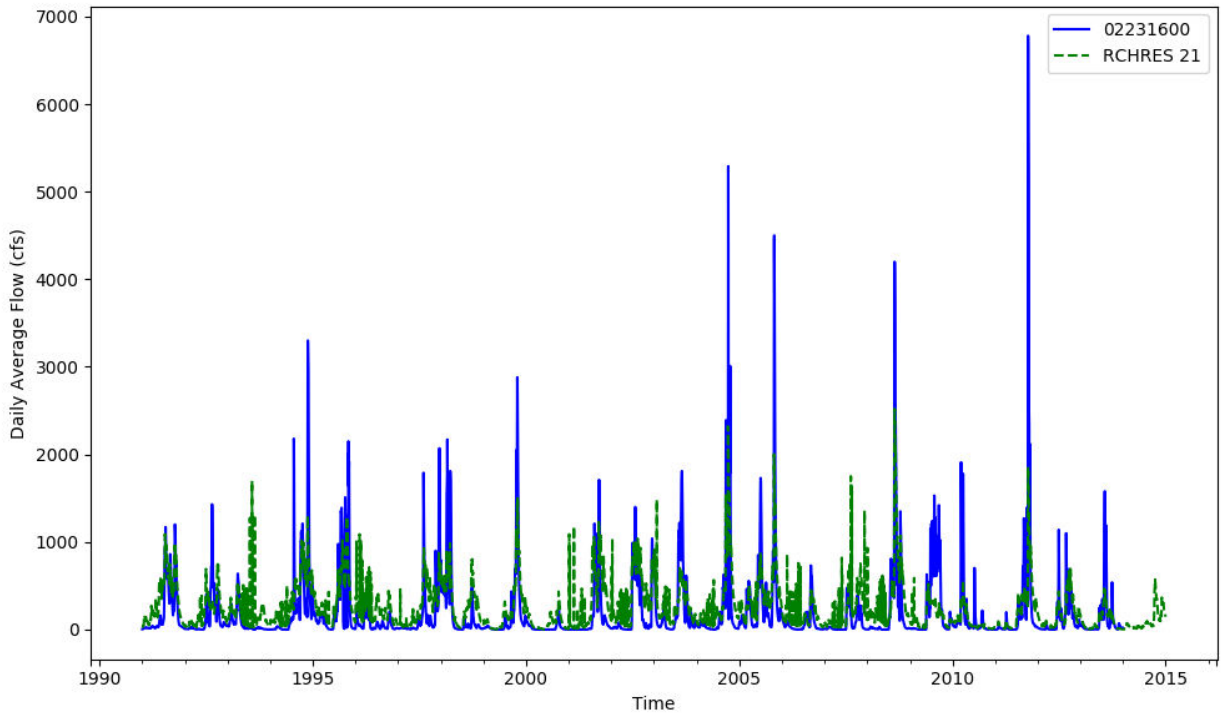


Figure T-03080101-19: Daily flow for HSFP reach 21 and USGS station 02231600.

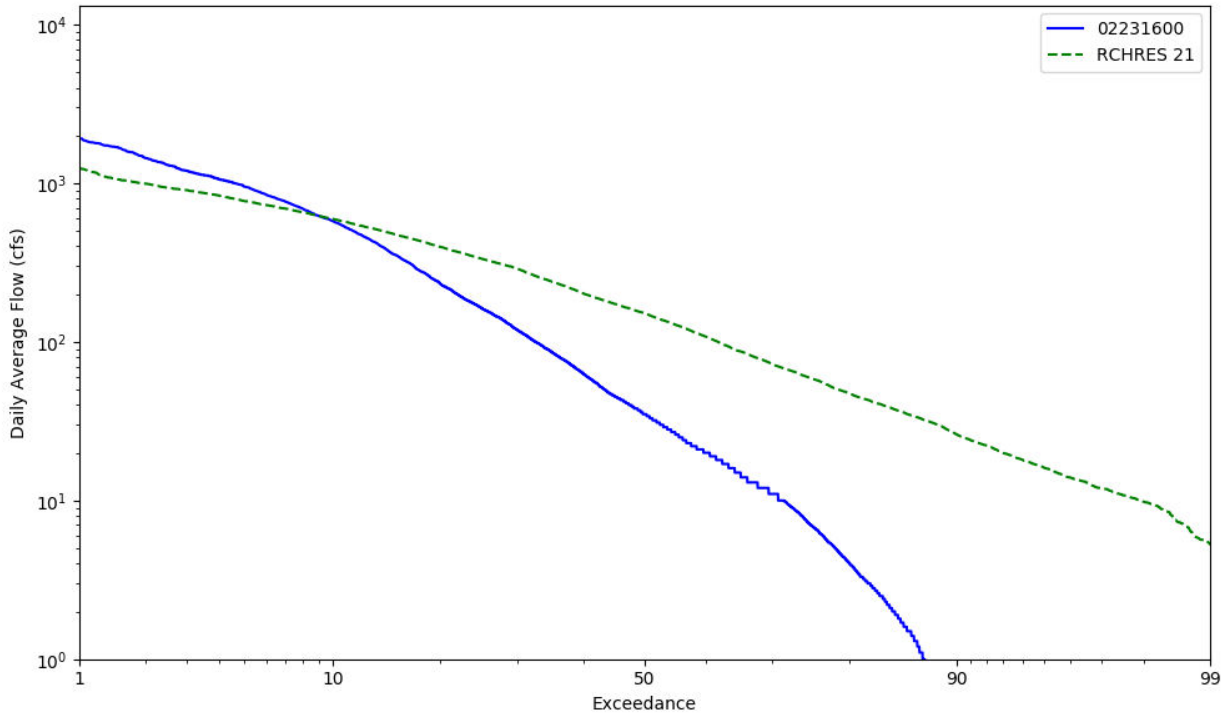


Figure T-03080101-20: Daily exceedance for HSFP reach 21 and USGS station 02231600.

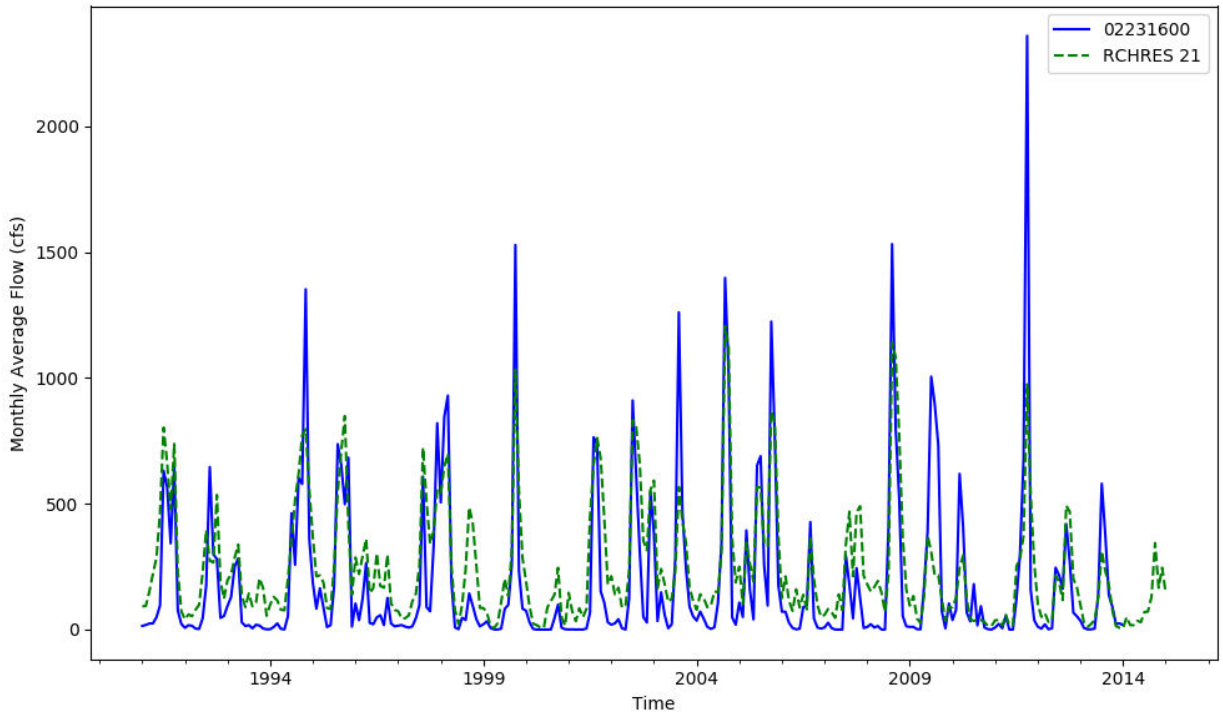


Figure T-03080101-21: Monthly flow for HSFP reach 21 and USGS station 02231600.

HSPF REACH 24, USGS GAUGE 02233500

Water-Data Report 2009
02233500 ECONLOCKHATCHEE RIVER NEAR CHULUOTA, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 284040, long 810651 referenced to North American Datum of 1983, in SW 1/4 sec.10, T.21 S., R.32 E., Seminole County, FL, Hydrologic Unit 03080101, near right bank on downstream side of bridge on State Highway 13, 2.6 mi northeast of Chuluota, and 10 mi upstream from mouth.

DRAINAGE AREA.--241 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for October 1935, published in WSP 1304.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 2.14 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Nov. 6, 1935, to May 17, 1939, and June 17, 1969, to July 21, 1971, nonrecording gage at same site and datum. Since Sept. 3, 1943, water-stage recorder for St. Johns River above Lake Harney near Geneva (station 02234000) used as auxiliary gage for this station.

REMARKS.--Records fair. Records include some flow diverted from Lake Mary Jane in the Kissimmee River Basin through Disston Canal.

Table T-03080101-13: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02233500.

Statistic	Value
Bias	-75.07
Standard error	193.13
Relative bias	-0.23
Relative standard error	0.56
Nash-Sutcliffe coefficient	0.68
Kling-Gupta coefficient	0.62
Coefficient of efficiency	0.55
Index of agreement	0.76

Table T-03080101-14: Hydrologic Indices Between USGS Gauge 02233500 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02233500	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	331.06	255.55	-22.81

MA2: Median, all daily flows	156.00	163.34	4.71
MA3: CV, all daily flows	127.83	99.20	-22.40
MA4: CV, log of all daily flows	107.51	93.97	-12.59
MA5: Mean daily flow / median daily flow	2.12	1.56	-26.28
MA9: (Q10 - Q90) / median daily flow	4.93	3.67	-25.57
MA10: (Q20 - Q80) / median daily flow	2.61	2.15	-17.47
MA11: (Q25 - Q75) / median daily flow	1.92	1.64	-14.44
MA12: Mean monthly flow, January	209.55	193.25	-7.78
MA13: Mean monthly flow, February	191.11	163.68	-14.35
MA14: Mean monthly flow, March	231.18	173.02	-25.16
MA15: Mean monthly flow, April	168.70	121.72	-27.85
MA16: Mean monthly flow, May	109.02	79.34	-27.22
MA17: Mean monthly flow, June	271.04	202.66	-25.23
MA18: Mean monthly flow, July	451.87	304.98	-32.51
MA19: Mean monthly flow, August	666.92	397.93	-40.33
MA20: Mean monthly flow, September	607.44	448.77	-26.12
MA21: Mean monthly flow, October	469.22	417.00	-11.13
MA22: Mean monthly flow, November	219.18	237.95	8.56
MA23: Mean monthly flow, December	204.54	193.09	-5.60
ML1: Mean minimum monthly flow, January	99.54	111.17	11.68
ML2: Mean minimum monthly flow, February	98.96	97.23	-1.75
ML3: Mean minimum monthly flow, March	96.91	85.55	-11.73
ML4: Mean minimum monthly flow, April	66.30	55.33	-16.56
ML5: Mean minimum monthly flow, May	47.17	32.86	-30.35
ML6: Mean minimum monthly flow, June	77.43	71.60	-7.53
ML7: Mean minimum monthly flow, July	196.65	180.67	-8.13
ML8: Mean minimum monthly flow, August	224.17	234.61	4.66
ML9: Mean minimum monthly flow, September	233.96	264.03	12.85
ML10: Mean minimum monthly flow, October	179.52	239.66	33.50
ML11: Mean minimum monthly flow, November	111.70	145.66	30.41
ML12: Mean minimum monthly flow, December	89.87	107.56	19.69
ML13: CV of minimum monthly flows	98.25	108.09	10.01
ML14: Mean minimum daily flow / mean median annual flow	0.29	0.10	-66.42
ML15: Mean minimum annual flow / mean annual flow	0.14	0.06	-56.21
ML16: Median minimum annual flow / median annual flow	0.24	0.08	-67.44
ML20: Ratio of baseflow volume to total flow volume	0.54	0.72	32.57
ML22: Mean annual minimum flow divided by catchment area	0.41	0.17	-59.77
RA1: Mean of positive changes from one day to next (rise rate)	83.03	65.89	
RA2: CV, mean of positive changes from one day to next (rise rate)	245.82	307.82	
RA3: Mean of negative changes from one day to next (fall rate)	39.26	20.94	
RA4: CV, mean of negative changes from one day to next (fall rate)	231.15	370.34	
RA5: Ratio of days that are higher than previous day	0.30	0.24	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.06	
RA8: Number of flow reversals from one day to the next	69.17	89.96	
RA9: CV, number of flow reversals from one day to the next	19.82	18.85	

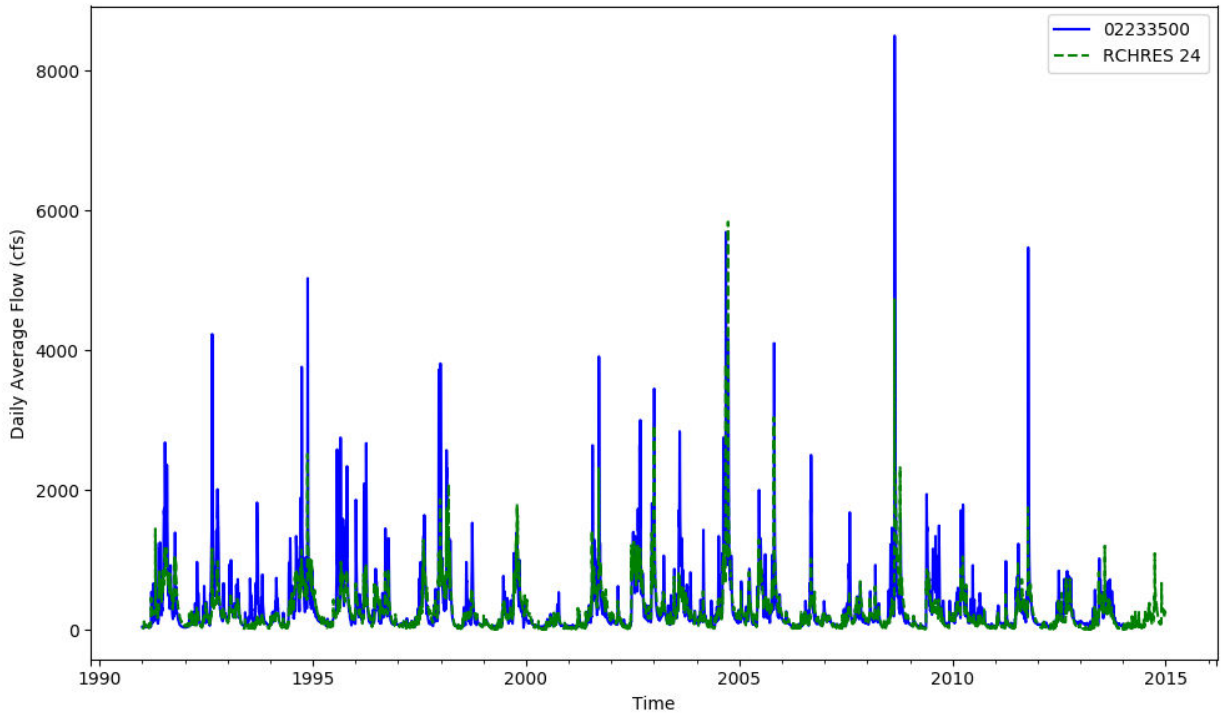


Figure T-03080101-22: Daily flow for HSFP reach 24 and USGS station 02233500.

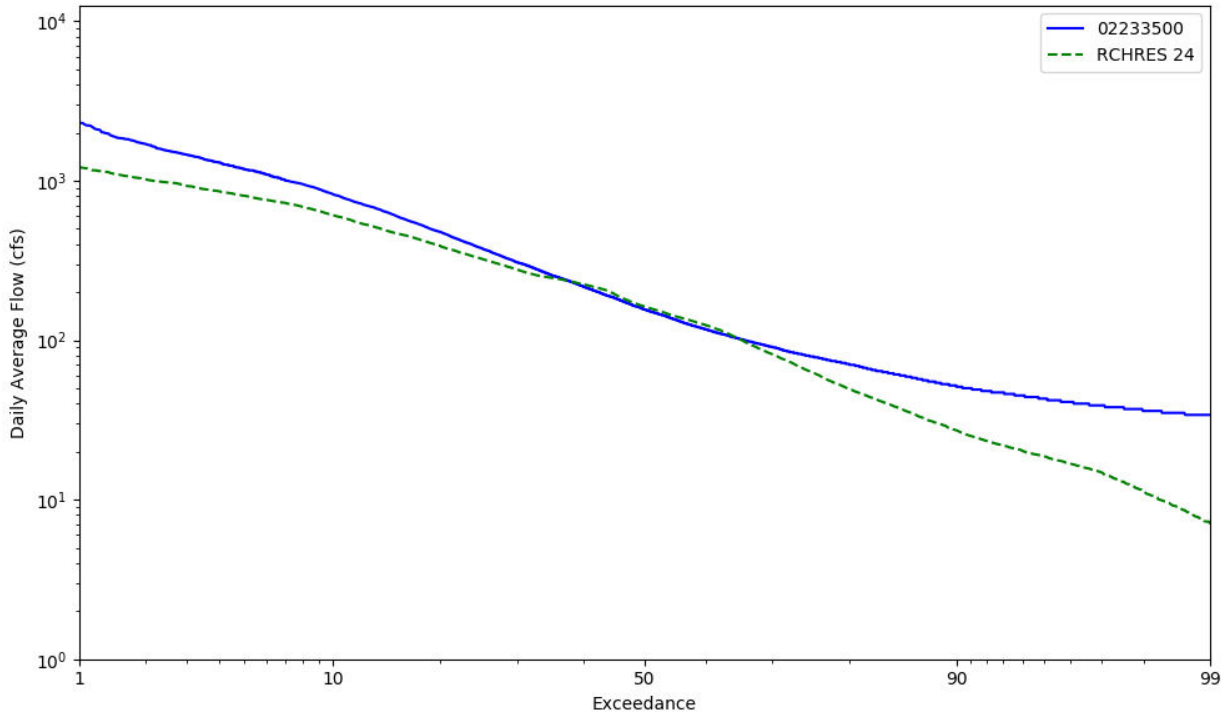


Figure T-03080101-23: Daily exceedance for HSFP reach 24 and USGS station 02233500.

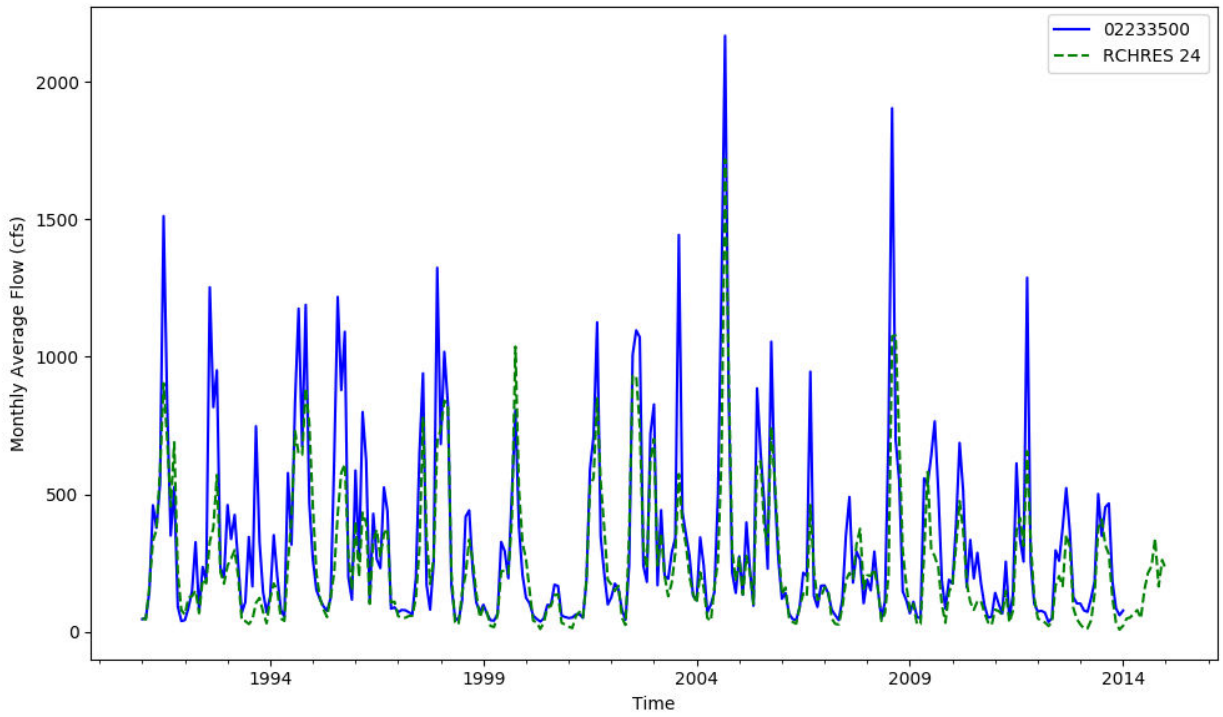


Figure T-03080101-24: Monthly flow for HSFP reach 24 and USGS station 02233500.

HSPF REACH 25, USGS GAUGE 02232000

Water-Data Report 2009
02232000 ST. JOHNS RIVER NEAR MELBOURNE, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 280504, long 804508 referenced to North American Datum of 1927, in NW 1/4 sec.5, T.28 S., R.36 E., Brevard County, FL, Hydrologic Unit 03080101, near center of span on downstream side of eastbound bridge on U.S. Highway 192, 1.1 mi downstream from Sawgrass Lake, 1.7 mi upstream from Lake Washington, 9.2 mi west of Melbourne, and 262 mi upstream from mouth.

DRAINAGE AREA.--968 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October 1939, published in WSP 1304.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 11.22 ft above NGVD of 1929. Prior to July 26, 1940, nonrecording gage, and July 26, 1940 to Jan. 11, 1973, water-stage recorder at site 200 ft upstream at same datum. Oct. 1, 1969 to Oct. 5, 1972, and Oct. 1, 1982 to Sept. 30, 1983, water-stage recorder for Lake Washington near Eau Gallie (station 02232100) used as auxiliary gage for this station.

REMARKS.--Records fair, except for period of estimated daily discharge, which is poor. A maximum stage, 5.49 ft, occurred Oct. 1, stage falling, peak occurred on Aug. 31, 2008.

Table T-03080101-15: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02232000.

Statistic	Value
Bias	-108.46
Standard error	512.97
Relative bias	-0.15
Relative standard error	0.54
Nash-Sutcliffe coefficient	0.70
Kling-Gupta coefficient	0.61
Coefficient of efficiency	0.55
Index of agreement	0.74

Table T-03080101-16: Hydrologic Indices Between USGS Gauge 02232000 and HSPF Reach 25.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02232000	Reach 25	Difference
MA1: Mean, all daily flows	755.07	620.97	-17.76
MA2: Median, all daily flows	317.00	383.77	21.06
MA3: CV, all daily flows	114.74	96.14	-16.21
MA4: CV, log of all daily flows	120.57	95.27	-20.99
MA5: Mean daily flow / median daily flow	2.38	1.62	-32.07
MA9: (Q10 - Q90) / median daily flow	6.51	3.81	-41.44
MA10: (Q20 - Q80) / median daily flow	3.51	2.44	-30.43
MA11: (Q25 - Q75) / median daily flow	2.70	1.92	-28.73
MA12: Mean monthly flow, January	370.00	359.52	-2.83
MA13: Mean monthly flow, February	331.24	290.58	-12.27
MA14: Mean monthly flow, March	355.95	318.33	-10.57
MA15: Mean monthly flow, April	392.20	279.04	-28.85
MA16: Mean monthly flow, May	226.72	170.01	-25.02
MA17: Mean monthly flow, June	325.14	392.93	20.85
MA18: Mean monthly flow, July	786.31	756.02	-3.85
MA19: Mean monthly flow, August	1182.75	949.29	-19.74
MA20: Mean monthly flow, September	1472.09	1103.82	-25.02
MA21: Mean monthly flow, October	1541.07	1297.06	-15.83
MA22: Mean monthly flow, November	925.43	762.48	-17.61
MA23: Mean monthly flow, December	490.37	442.90	-9.68
ML1: Mean minimum monthly flow, January	261.16	224.59	-14.01
ML2: Mean minimum monthly flow, February	254.80	185.87	-27.05
ML3: Mean minimum monthly flow, March	230.47	177.85	-22.83
ML4: Mean minimum monthly flow, April	265.47	151.66	-42.87
ML5: Mean minimum monthly flow, May	121.37	89.14	-26.56
ML6: Mean minimum monthly flow, June	127.21	164.94	29.66
ML7: Mean minimum monthly flow, July	466.24	428.98	-7.99
ML8: Mean minimum monthly flow, August	659.43	602.93	-8.57
ML9: Mean minimum monthly flow, September	885.13	698.11	-21.13
ML10: Mean minimum monthly flow, October	792.09	728.92	-7.97
ML11: Mean minimum monthly flow, November	447.93	469.37	4.79
ML12: Mean minimum monthly flow, December	308.45	272.77	-11.57
ML13: CV of minimum monthly flows	140.04	106.48	-23.96
ML14: Mean minimum daily flow / mean median annual flow	0.11	0.12	1.52
ML15: Mean minimum annual flow / mean annual flow	0.06	0.07	23.07
ML16: Median minimum annual flow / median annual flow	0.06	0.10	49.27
ML20: Ratio of baseflow volume to total flow volume	0.77	0.76	-1.65
ML22: Mean annual minimum flow divided by catchment area	0.39	0.45	15.81
RA1: Mean of positive changes from one day to next (rise rate)	50.46	64.03	
RA2: CV, mean of positive changes from one day to next (rise rate)	241.64	306.82	
RA3: Mean of negative changes from one day to next (fall rate)	39.42	26.73	
RA4: CV, mean of negative changes from one day to next (fall rate)	145.07	183.17	
RA5: Ratio of days that are higher than previous day	0.42	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	123.83	67.42	

RA9: CV, number of flow reversals from one day to the next	32.63	21.19	

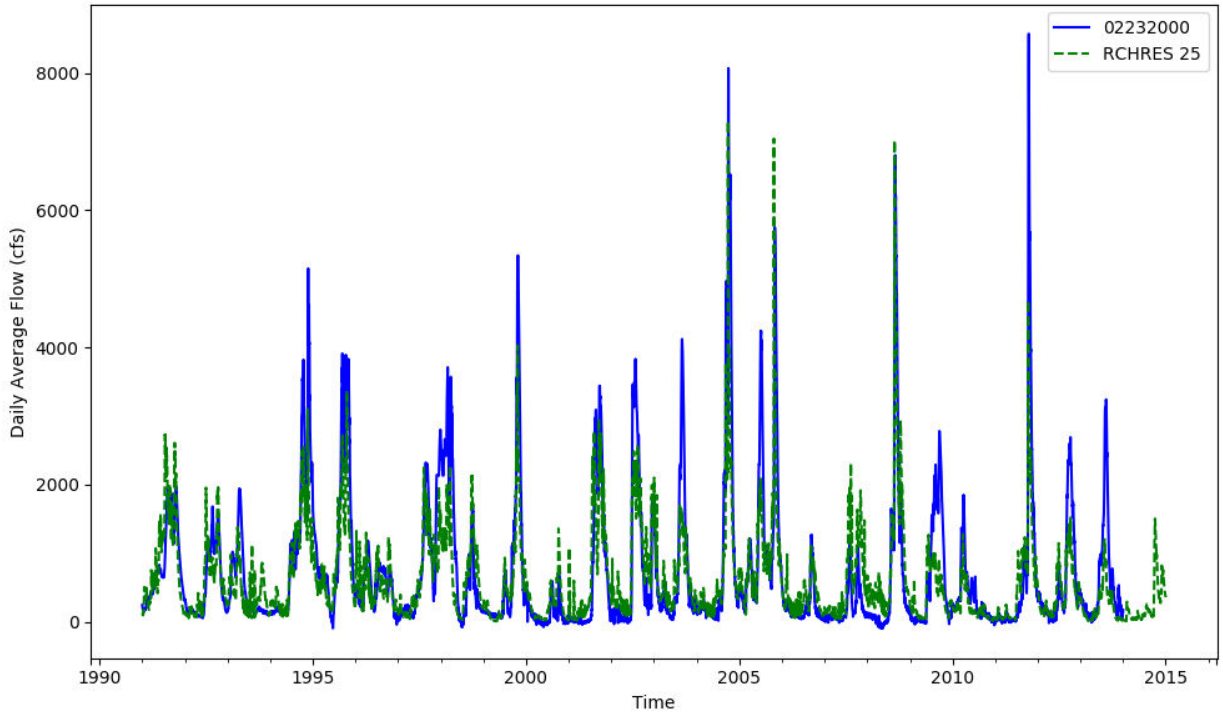


Figure T-03080101-25: Daily flow for HSFP reach 25 and USGS station 02232000.

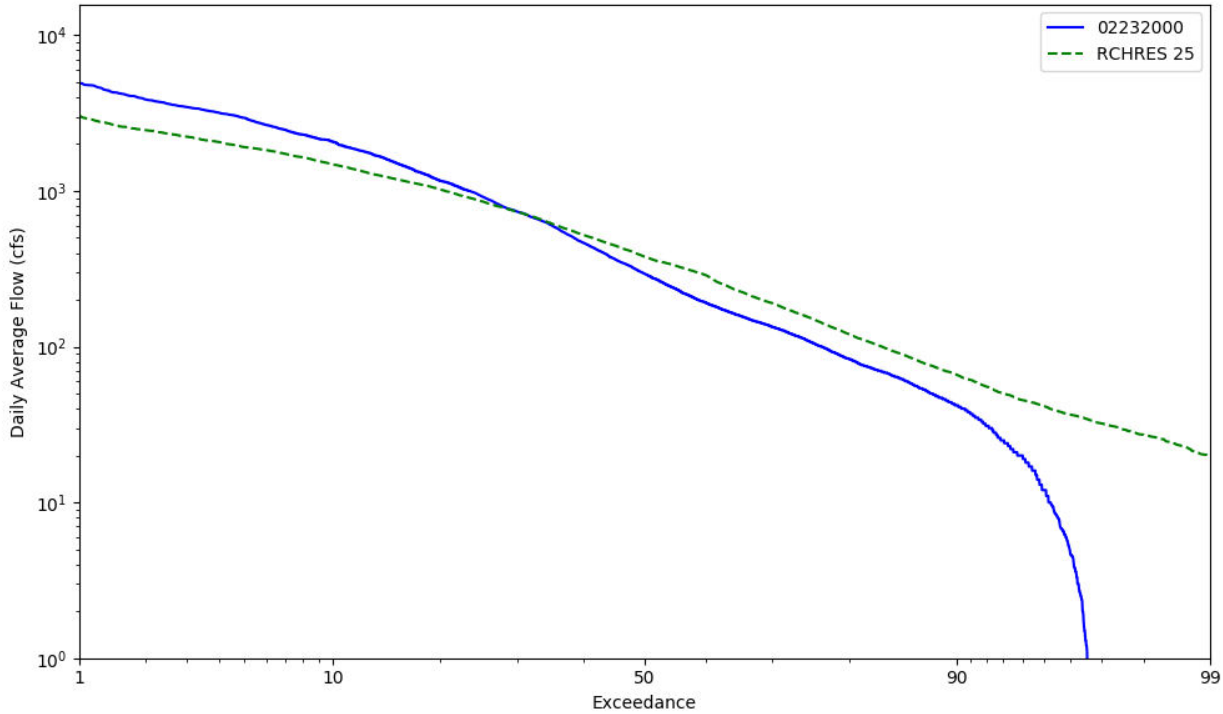


Figure T-03080101-26: Daily exceedance for HSFP reach 25 and USGS station 02232000.

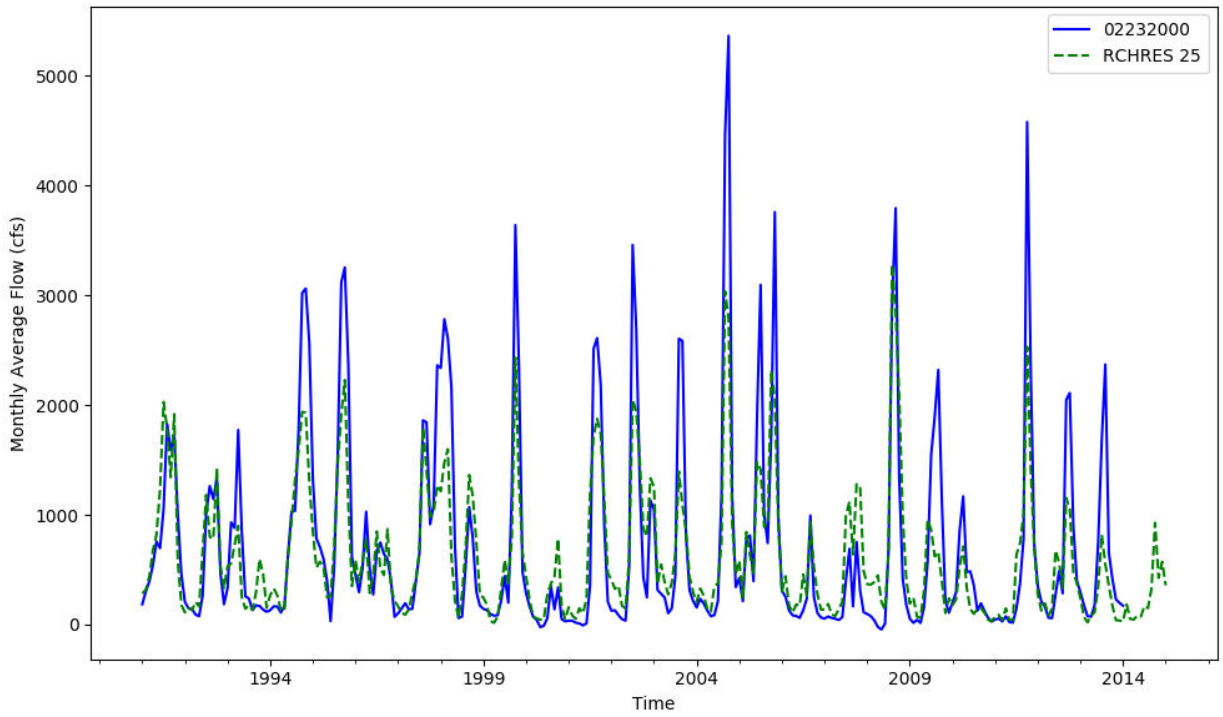


Figure T-03080101-27: Monthly flow for HSFP reach 25 and USGS station 02232000.

HSPF REACH 29, USGS GAUGE 02232400

Water-Data Report 2009
02232400 ST. JOHNS RIVER NEAR COCOA, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 282210, long 805222 referenced to North American Datum of 1927, in SE 1/4 sec.25, T.24 S., R.34 E., Brevard County, FL, Hydrologic Unit 03080101, on the downstream side of bridge on State Highway 520, 0.6 mi upstream from Taylor Creek, 0.7 mi downstream from outlet of Lake Poinsett, 8.8 mi west of Cocoa, and 232 mi upstream from mouth.

DRAINAGE AREA.--1,331 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Oct. 1, 1959, nonrecording gage at site 3.7 mi east on north shore of Lake Poinsett at datum 5.06 ft higher.

REMARKS.--Records fair. Records include inflow from Taylor Creek. A maximum stage, 15.58 ft, occurred Oct. 1, stage falling, peak occurred Sept. 2, 2008.

Table T-03080101-17: Comparison Statistics Between HSPF Reach 29 and USGS Gauge 02232400.

Statistic	Value
Bias	-143.68
Standard error	667.45
Relative bias	-0.13
Relative standard error	0.54
Nash-Sutcliffe coefficient	0.71
Kling-Gupta coefficient	0.70
Coefficient of efficiency	0.53
Index of agreement	0.74

Table T-03080101-18: Hydrologic Indices Between USGS Gauge 02232400 and HSPF Reach 29.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02232400	Simulated Reach 29	Percent Difference
MA1: Mean, all daily flows	1111.12	948.66	-14.62
MA2: Median, all daily flows	602.00	601.71	-0.05
MA3: CV, all daily flows	97.75	95.56	-2.24
MA4: CV, log of all daily flows	107.11	95.00	-11.31

MA5: Mean daily flow / median daily flow	1.85	1.58	-14.58
MA9: (Q10 - Q90) / median daily flow	4.63	3.71	-19.92
MA10: (Q20 - Q80) / median daily flow	2.77	2.24	-18.88
MA11: (Q25 - Q75) / median daily flow	2.05	1.72	-15.93
MA12: Mean monthly flow, January	729.56	608.30	-16.62
MA13: Mean monthly flow, February	530.10	491.85	-7.22
MA14: Mean monthly flow, March	540.94	514.86	-4.82
MA15: Mean monthly flow, April	551.77	439.47	-20.35
MA16: Mean monthly flow, May	365.34	256.84	-29.70
MA17: Mean monthly flow, June	402.00	569.53	41.68
MA18: Mean monthly flow, July	900.32	1078.61	19.80
MA19: Mean monthly flow, August	1440.28	1421.47	-1.31
MA20: Mean monthly flow, September	1984.82	1672.31	-15.75
MA21: Mean monthly flow, October	2417.70	1927.81	-20.26
MA22: Mean monthly flow, November	1704.28	1180.05	-30.76
MA23: Mean monthly flow, December	999.89	723.93	-27.60
ML1: Mean minimum monthly flow, January	528.34	393.94	-25.44
ML2: Mean minimum monthly flow, February	390.78	325.97	-16.59
ML3: Mean minimum monthly flow, March	364.47	294.76	-19.13
ML4: Mean minimum monthly flow, April	423.74	235.22	-44.49
ML5: Mean minimum monthly flow, May	258.95	136.73	-47.20
ML6: Mean minimum monthly flow, June	224.90	247.82	10.19
ML7: Mean minimum monthly flow, July	590.16	642.26	8.83
ML8: Mean minimum monthly flow, August	991.12	908.20	-8.37
ML9: Mean minimum monthly flow, September	1401.39	1079.64	-22.96
ML10: Mean minimum monthly flow, October	1776.91	1122.63	-36.82
ML11: Mean minimum monthly flow, November	1126.22	746.05	-33.76
ML12: Mean minimum monthly flow, December	676.35	451.38	-33.26
ML13: CV of minimum monthly flows	123.60	105.96	-14.27
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.12	2.81
ML15: Mean minimum annual flow / mean annual flow	0.08	0.08	5.86
ML16: Median minimum annual flow / median annual flow	0.04	0.09	114.68
ML20: Ratio of baseflow volume to total flow volume	0.91	0.79	-13.58
ML22: Mean annual minimum flow divided by catchment area	0.88	0.73	-17.45
RA1: Mean of positive changes from one day to next (rise rate)	57.63	88.06	
RA2: CV, mean of positive changes from one day to next (rise rate)	205.06	345.76	
RA3: Mean of negative changes from one day to next (fall rate)	44.41	39.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	141.19	191.37	
RA5: Ratio of days that are higher than previous day	0.42	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.04	
RA8: Number of flow reversals from one day to the next	132.21	55.96	
RA9: CV, number of flow reversals from one day to the next	38.60	21.56	

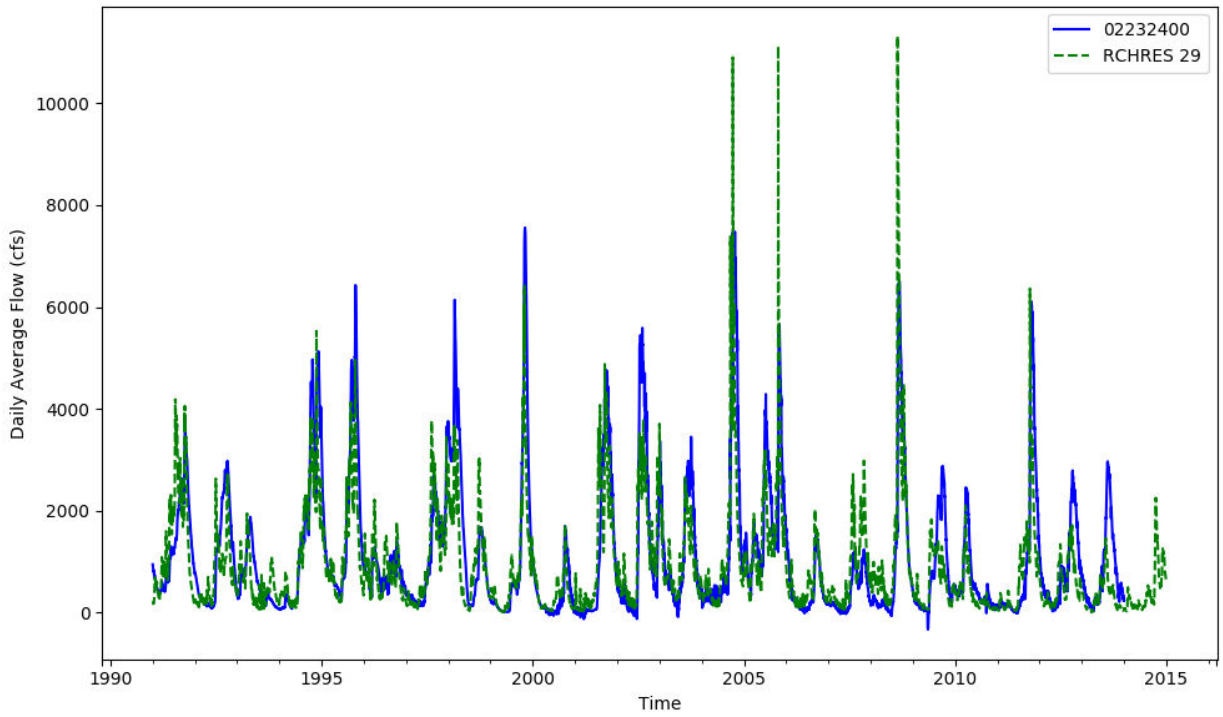


Figure T-03080101-28: Daily flow for HSFP reach 29 and USGS station 02232400.

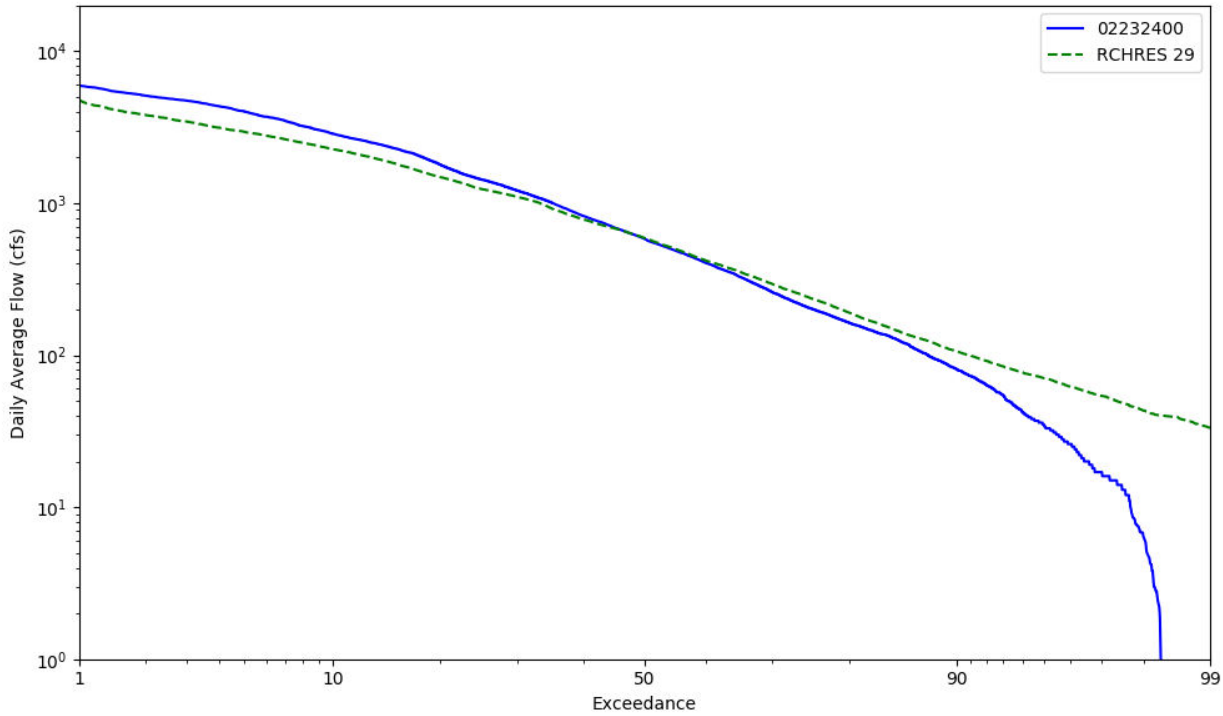


Figure T-03080101-29: Daily exceedance for HSFP reach 29 and USGS station 02232400.

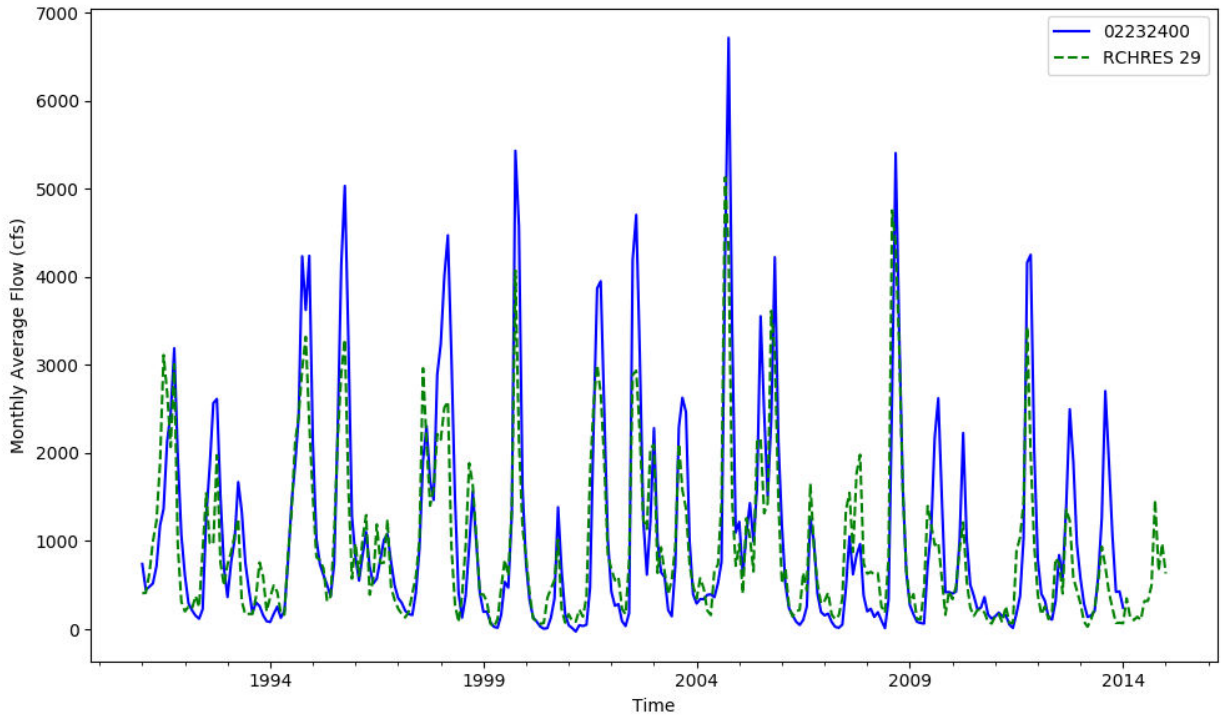


Figure T-03080101-30: Monthly flow for HSFP reach 29 and USGS station 02232400.

HSPF REACH 31, USGS GAUGE 02232500

Water-Data Report 2009
02232500 ST. JOHNS RIVER NEAR CHRISTMAS, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 283234, long 805637 referenced to North American Datum of 1927, in SW 1/4 sec.29, T.22 S., R.34 E., Orange County, FL, Hydrologic Unit 03080101, on downstream side of bridge on State Highway 50, 0.3 mi upstream from Tootoosahatchee Creek, 2 mi upstream from Lake Cone, 4.5 mi east of Christmas, and 209 mi upstream from mouth.

DRAINAGE AREA.--1,539 mi, includes that of Tootoosahatchee Creek.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1933 to current year. Prior to January 1934, monthly discharge only, published in WSP 1304.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 1.62 ft above NGVD of 1929. Prior to July 23, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. A maximum stage, 8.73 ft, occurred on Oct. 1, stage falling, peak occurred Aug. 31, 2008.

Table T-03080101-19: Comparison Statistics Between HSPF Reach 31 and USGS Gauge 02232500.

Statistic	Value
Bias	-110.41
Standard error	729.43
Relative bias	-0.08
Relative standard error	0.53
Nash-Sutcliffe coefficient	0.72
Kling-Gupta coefficient	0.80
Coefficient of efficiency	0.55
Index of agreement	0.76

Table T-03080101-20: Hydrologic Indices Between USGS Gauge 02232500 and HSPF Reach 31.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02232500	Simulated Reach 31	Percent Difference
MA1: Mean, all daily flows	1335.29	1210.84	-9.32
MA2: Median, all daily flows	803.00	760.35	-5.31
MA3: CV, all daily flows	91.07	95.84	5.23

MA4: CV, log of all daily flows	100.68	95.66	-4.99
MA5: Mean daily flow / median daily flow	1.66	1.59	-4.23
MA9: (Q10 - Q90) / median daily flow	4.31	3.80	-11.88
MA10: (Q20 - Q80) / median daily flow	2.47	2.23	-9.82
MA11: (Q25 - Q75) / median daily flow	1.90	1.71	-10.01
MA12: Mean monthly flow, January	969.71	843.31	-13.04
MA13: Mean monthly flow, February	725.34	680.71	-6.15
MA14: Mean monthly flow, March	680.27	685.49	0.77
MA15: Mean monthly flow, April	655.01	558.60	-14.72
MA16: Mean monthly flow, May	423.91	326.30	-23.03
MA17: Mean monthly flow, June	540.15	687.74	27.32
MA18: Mean monthly flow, July	1073.67	1308.41	21.86
MA19: Mean monthly flow, August	1716.24	1773.72	3.35
MA20: Mean monthly flow, September	2336.29	2111.86	-9.61
MA21: Mean monthly flow, October	2778.09	2423.39	-12.77
MA22: Mean monthly flow, November	2023.48	1522.24	-24.77
MA23: Mean monthly flow, December	1259.05	974.07	-22.63
ML1: Mean minimum monthly flow, January	699.92	549.15	-21.54
ML2: Mean minimum monthly flow, February	560.74	459.64	-18.03
ML3: Mean minimum monthly flow, March	488.57	390.42	-20.09
ML4: Mean minimum monthly flow, April	506.13	300.94	-40.54
ML5: Mean minimum monthly flow, May	297.08	170.72	-42.53
ML6: Mean minimum monthly flow, June	288.82	298.94	3.50
ML7: Mean minimum monthly flow, July	761.48	796.22	4.56
ML8: Mean minimum monthly flow, August	1189.39	1124.55	-5.45
ML9: Mean minimum monthly flow, September	1819.57	1347.99	-25.92
ML10: Mean minimum monthly flow, October	2069.83	1427.03	-31.06
ML11: Mean minimum monthly flow, November	1502.87	973.60	-35.22
ML12: Mean minimum monthly flow, December	843.00	620.54	-26.39
ML13: CV of minimum monthly flows	117.67	106.06	-9.87
ML14: Mean minimum daily flow / mean median annual flow	0.15	0.12	-18.76
ML15: Mean minimum annual flow / mean annual flow	0.10	0.08	-19.69
ML16: Median minimum annual flow / median annual flow	0.10	0.09	-11.19
ML20: Ratio of baseflow volume to total flow volume	0.93	0.78	-16.42
ML22: Mean annual minimum flow divided by catchment area	1.47	0.93	-36.62
RA1: Mean of positive changes from one day to next (rise rate)	63.90	104.99	
RA2: CV, mean of positive changes from one day to next (rise rate)	234.90	343.45	
RA3: Mean of negative changes from one day to next (fall rate)	37.47	48.58	
RA4: CV, mean of negative changes from one day to next (fall rate)	123.26	158.53	
RA5: Ratio of days that are higher than previous day	0.36	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.04	
RA8: Number of flow reversals from one day to the next	100.58	50.54	
RA9: CV, number of flow reversals from one day to the next	39.73	19.94	

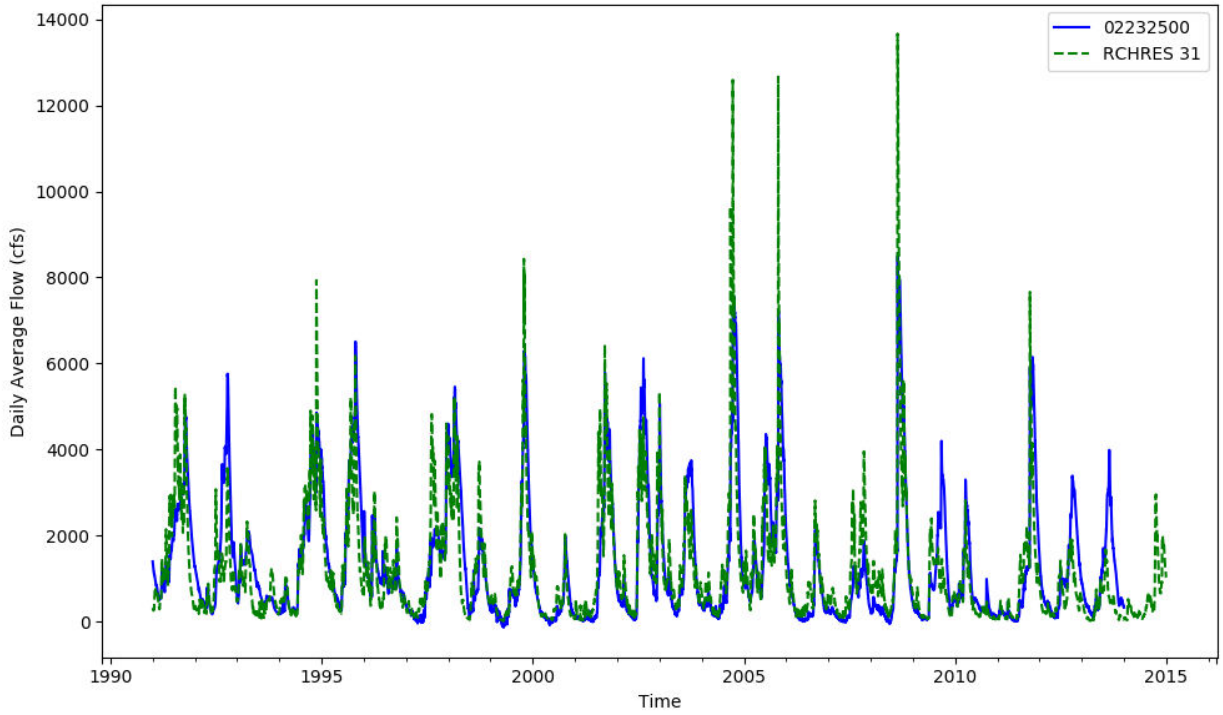


Figure T-03080101-31: Daily flow for HSFP reach 31 and USGS station 02232500.

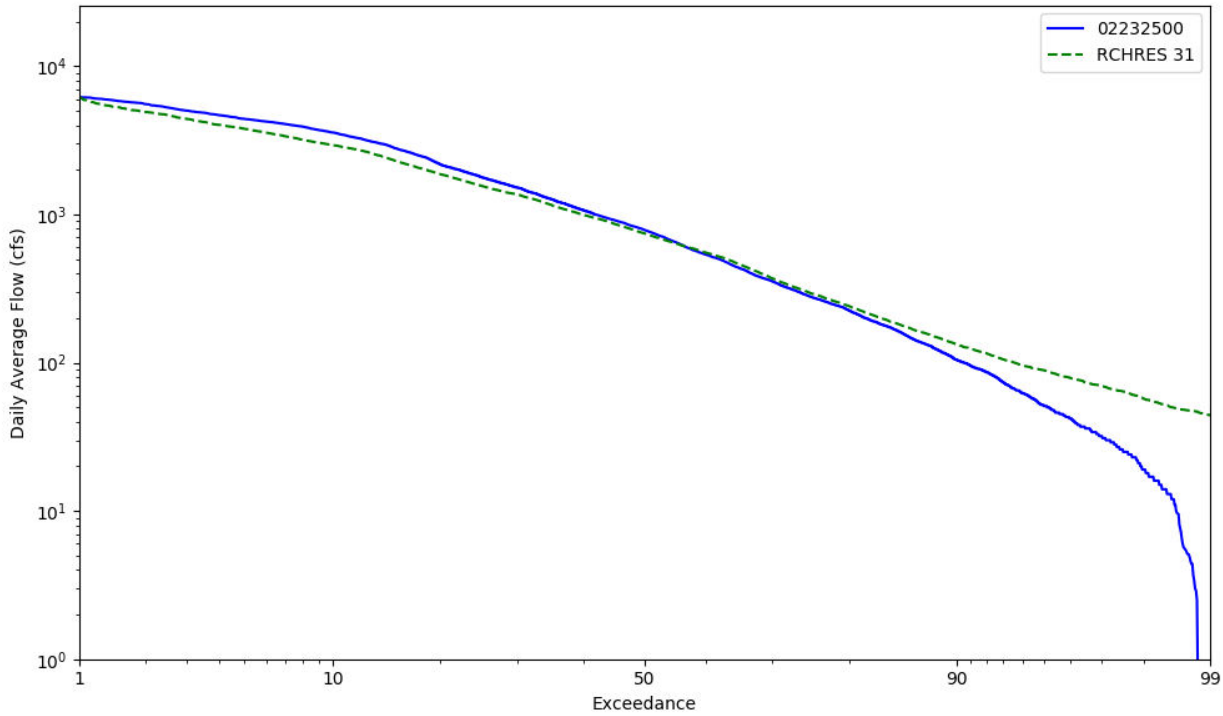


Figure T-03080101-32: Daily exceedance for HSFP reach 31 and USGS station 02232500.

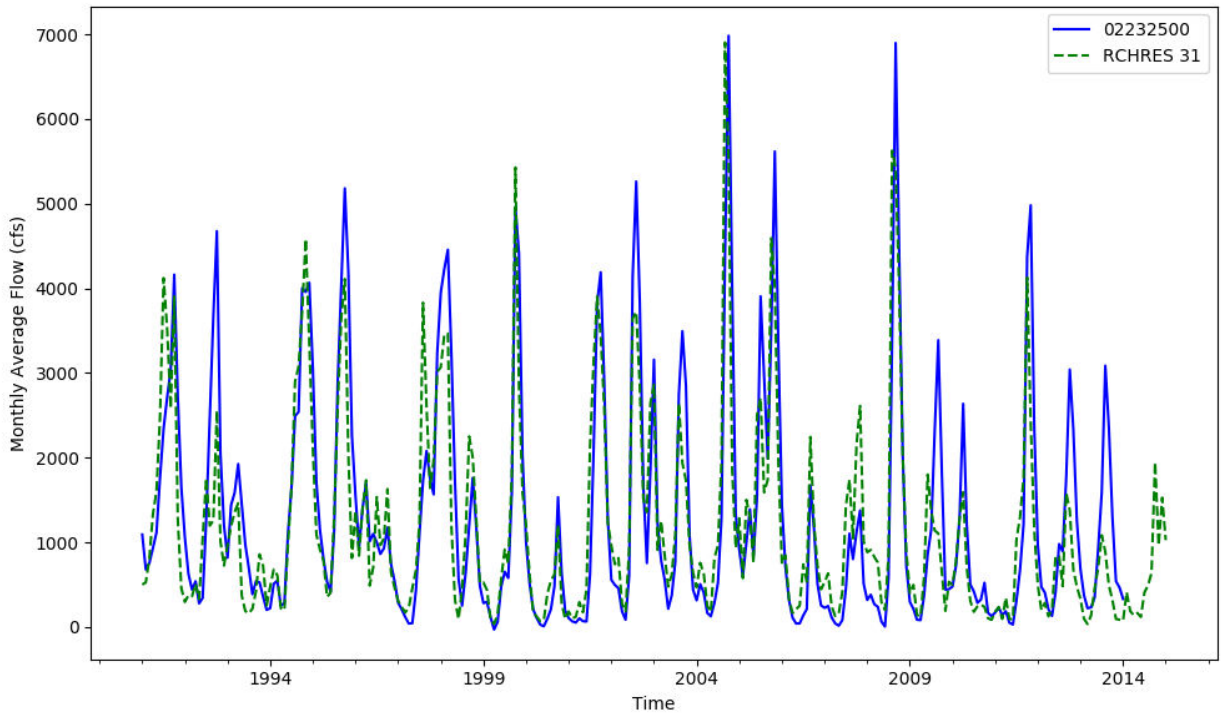


Figure T-03080101-33: Monthly flow for HSFP reach 31 and USGS station 02232500.

HSPF REACH 35, USGS GAUGE 02234000

Water-Data Report 2009
02234000 ST. JOHNS RIVER ABOVE LAKE HARNEY, NEAR GENEVA, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 284250, long 810208 referenced to North American Datum of 1927, in NE 1/4 sec.32, T.20 S., R.33 E., Seminole County, FL, Hydrologic Unit 03080101, near center of channel on downstream side of bridge on State Highway 46, 0.9 mi downstream from Econlockhatchee River, 1 mi upstream from Lake Harney, 5.5 mi southeast of Geneva, and 190 mi upstream from mouth.

DRAINAGE AREA.--2,043 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1941 to September 1981 (gage heights and miscellaneous discharge measurements only). October 1981 to current year.

REVISED RECORDS.--WRD FL 66-1: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Sept. 3, 1943, nonrecording gage, and Sept.3, 1943 to Oct. 8, 1959, water-stage recorder at site 50 ft downstream at same datum.

REMARKS.--Records fair. A maximum stage, 8.56 ft, occurred on Oct. 1, stage falling, peak occurred Aug. 30, 2000.

Table T-03080101-21: Comparison Statistics Between HSPF Reach 35 and USGS Gauge 02234000.

Statistic	Value
Bias	-253.42
Standard error	903.31
Relative bias	-0.13
Relative standard error	0.48
Nash-Sutcliffe coefficient	0.77
Kling-Gupta coefficient	0.80
Coefficient of efficiency	0.60
Index of agreement	0.79

Table T-03080101-22: Hydrologic Indices Between USGS Gauge 02234000 and HSPF Reach 35.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02234000	Reach 35	Difference
MA1: Mean, all daily flows	1958.19	1695.94	-13.39
MA2: Median, all daily flows	1200.00	1086.57	-9.45
MA3: CV, all daily flows	85.98	95.49	11.06
MA4: CV, log of all daily flows	93.76	95.35	1.70
MA5: Mean daily flow / median daily flow	1.63	1.56	-4.35
MA9: (Q10 - Q90) / median daily flow	3.91	3.78	-3.53
MA10: (Q20 - Q80) / median daily flow	2.39	2.14	-10.30
MA11: (Q25 - Q75) / median daily flow	1.88	1.65	-12.60
MA12: Mean monthly flow, January	1505.08	1246.93	-17.15
MA13: Mean monthly flow, February	1111.43	1016.78	-8.52
MA14: Mean monthly flow, March	1032.98	1020.13	-1.24
MA15: Mean monthly flow, April	972.25	792.23	-18.52
MA16: Mean monthly flow, May	626.77	466.60	-25.55
MA17: Mean monthly flow, June	967.23	1013.46	4.78
MA18: Mean monthly flow, July	1735.07	1844.99	6.33
MA19: Mean monthly flow, August	2680.93	2482.05	-7.42
MA20: Mean monthly flow, September	3315.38	2926.02	-11.74
MA21: Mean monthly flow, October	3729.66	3245.34	-12.99
MA22: Mean monthly flow, November	2827.81	2033.78	-28.08
MA23: Mean monthly flow, December	1893.53	1377.10	-27.27
ML1: Mean minimum monthly flow, January	979.04	801.71	-18.11
ML2: Mean minimum monthly flow, February	737.78	684.78	-7.18
ML3: Mean minimum monthly flow, March	633.34	573.76	-9.41
ML4: Mean minimum monthly flow, April	612.65	419.99	-31.45
ML5: Mean minimum monthly flow, May	377.16	239.97	-36.37
ML6: Mean minimum monthly flow, June	475.21	422.95	-11.00
ML7: Mean minimum monthly flow, July	1183.83	1156.06	-2.35
ML8: Mean minimum monthly flow, August	1751.91	1579.28	-9.85
ML9: Mean minimum monthly flow, September	2529.61	1847.37	-26.97
ML10: Mean minimum monthly flow, October	2802.96	1926.95	-31.25
ML11: Mean minimum monthly flow, November	2088.70	1310.44	-37.26
ML12: Mean minimum monthly flow, December	1295.78	871.32	-32.76
ML13: CV of minimum monthly flows	113.80	105.77	-7.05
ML14: Mean minimum daily flow / mean median annual flow	0.15	0.12	-20.43
ML15: Mean minimum annual flow / mean annual flow	0.11	0.08	-25.74
ML16: Median minimum annual flow / median annual flow	0.11	0.08	-26.37
ML20: Ratio of baseflow volume to total flow volume	0.86	0.77	-10.42
ML22: Mean annual minimum flow divided by catchment area	2.15	1.29	-39.80
RA1: Mean of positive changes from one day to next (rise rate)	132.22	162.89	
RA2: CV, mean of positive changes from one day to next (rise rate)	201.27	332.90	
RA3: Mean of negative changes from one day to next (fall rate)	88.71	70.60	
RA4: CV, mean of negative changes from one day to next (fall rate)	162.47	176.78	
RA5: Ratio of days that are higher than previous day	0.39	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.04	
RA8: Number of flow reversals from one day to the next	114.92	61.12	

RA9: CV, number of flow reversals from one day to the next	33.85	18.96	

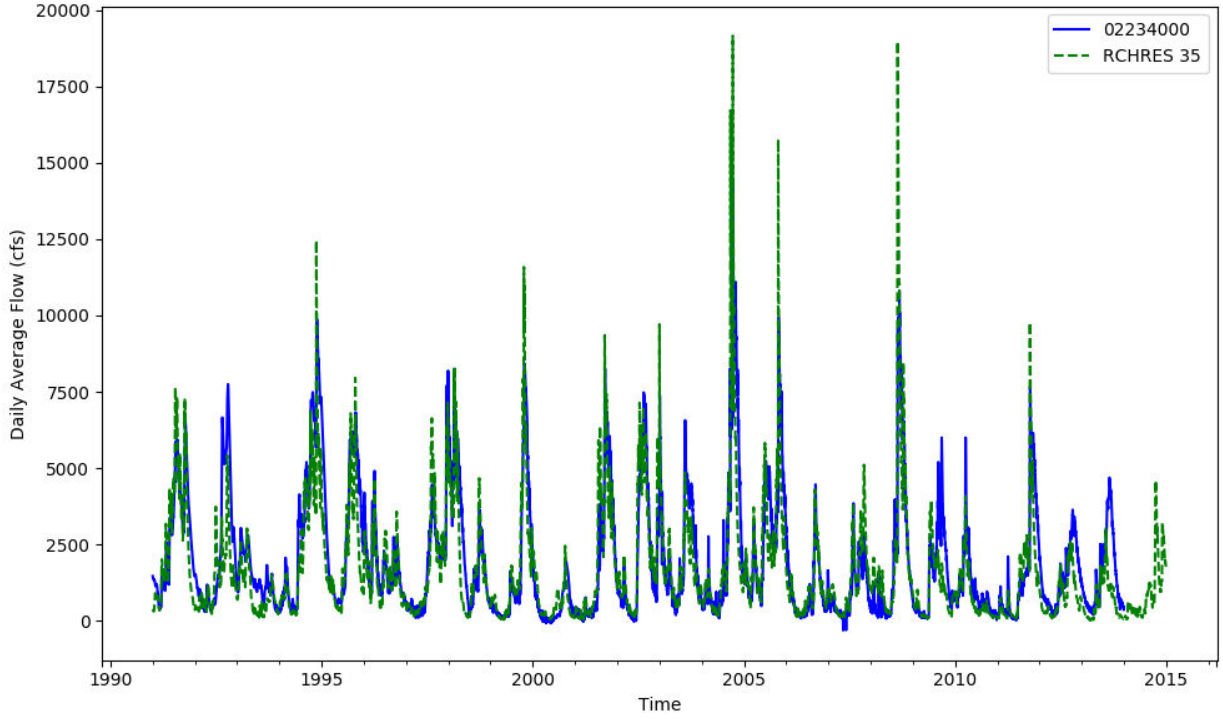


Figure T-03080101-34: Daily flow for HSFP reach 35 and USGS station 02234000.

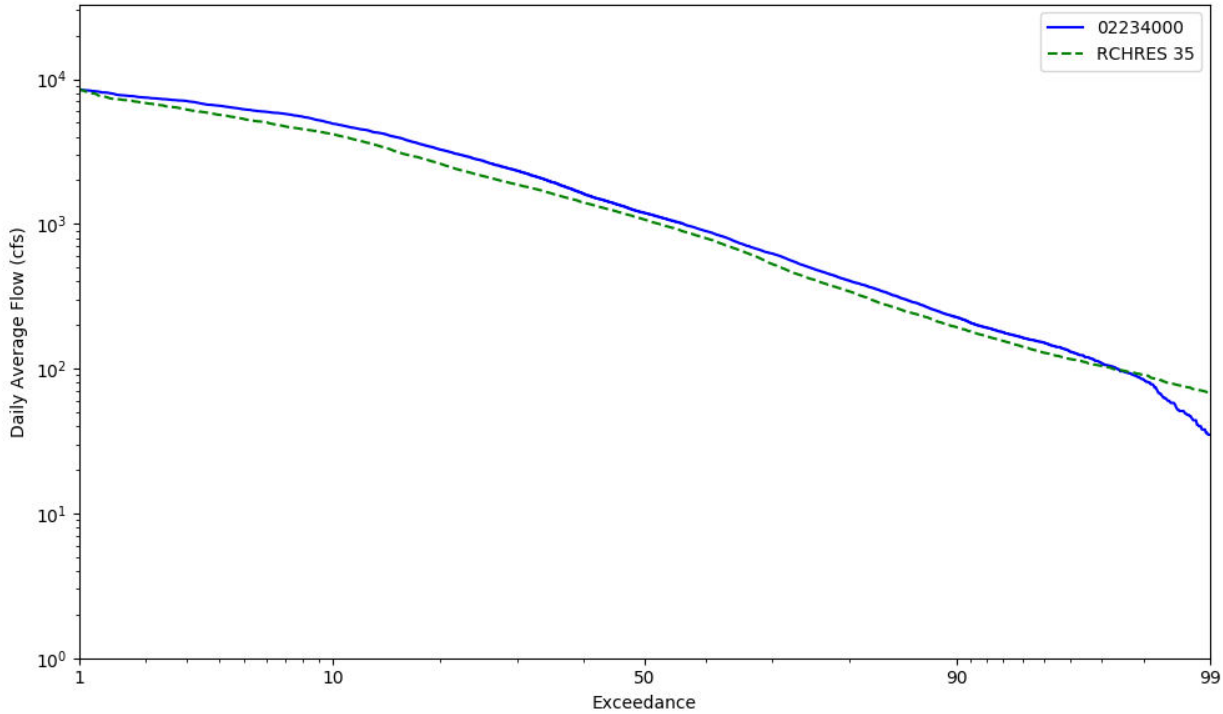


Figure T-03080101-35: Daily exceedance for HSFP reach 35 and USGS station 02234000.

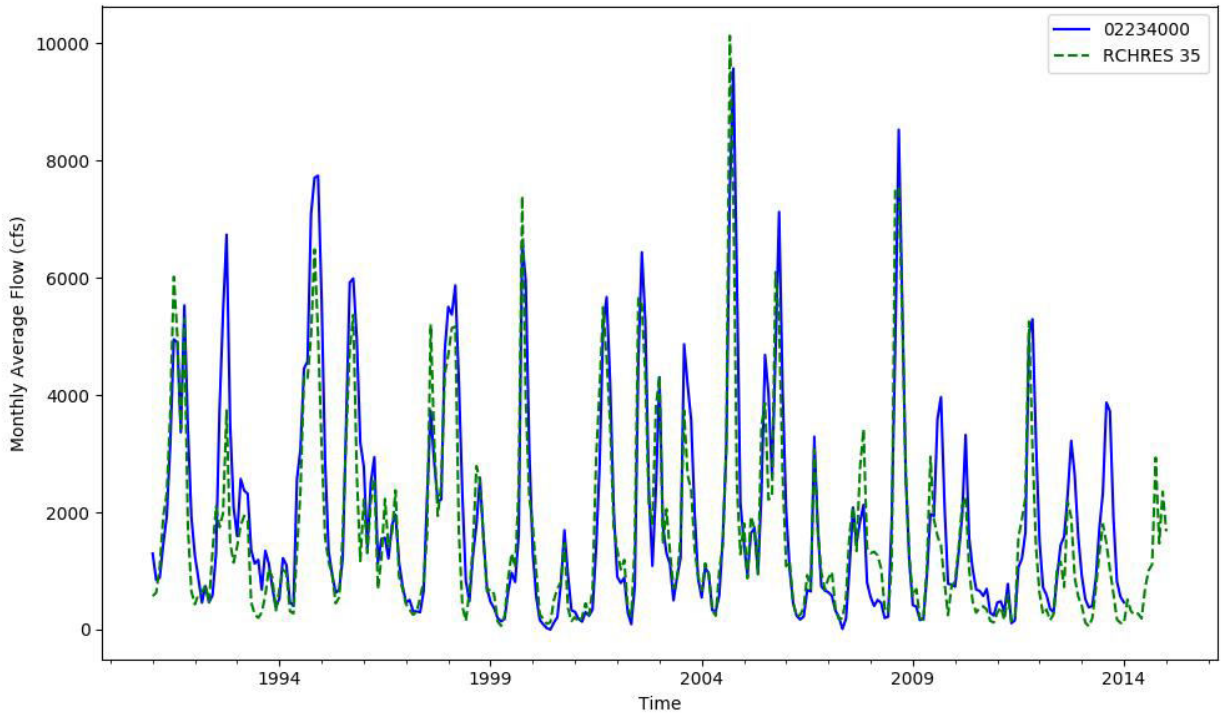


Figure T-03080101-36: Monthly flow for HSFP reach 35 and USGS station 02234000.

HSPF REACH 39, USGS GAUGE 02234500

Water-Data Report 2009
02234500 ST. JOHNS RIVER NEAR SANFORD, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 285016, long 811928 referenced to North American Datum of 1927, in SW 1/4 sec.16, T.19 S., R.30 E., Seminole County, FL, Hydrologic Unit 03080101, near center of channel on bridge pile under U.S. Highways 17 and 92, at outlet of Lake Monroe, 4 mi northwest of Sanford, and 161 mi upstream from mouth.

DRAINAGE AREA.--2,582 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1941 to June 1956 (discharge measurements only), October 1964 to September 1968 (gage heights and miscellaneous discharge measurements only), May 1987 to September 1989, March 1995 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929, prior to October 2005 datum of gage was .09 ft below NGVD of 1929.

REMARKS.--Records fair. A maximum stage, 6.35 ft, occurred Oct. 1, stage falling, peak occurred Sept. 3, 2008.

Table T-03080101-23: Comparison Statistics Between HSPF Reach 39 and USGS Gauge 02234500.

Statistic	Value
Bias	-101.24
Standard error	1222.90
Relative bias	-0.05
Relative standard error	0.55
Nash-Sutcliffe coefficient	0.70
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.51
Index of agreement	0.75

Table T-03080101-24: Hydrologic Indices Between USGS Gauge 02234500 and HSPF Reach 39.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02234500	Simulated Reach 39	Percent Difference
MA1: Mean, all daily flows	2534.46	2128.87	-16.00
MA2: Median, all daily flows	1790.00	1367.42	-23.61
MA3: CV, all daily flows	73.15	95.35	30.36

MA4: CV, log of all daily flows	81.84	94.79	15.83
MA5: Mean daily flow / median daily flow	1.42	1.56	9.95
MA9: (Q10 - Q90) / median daily flow	2.99	3.62	21.15
MA10: (Q20 - Q80) / median daily flow	1.76	2.02	15.11
MA11: (Q25 - Q75) / median daily flow	1.38	1.55	12.26
MA12: Mean monthly flow, January	1978.97	1586.08	-19.85
MA13: Mean monthly flow, February	1353.90	1292.43	-4.54
MA14: Mean monthly flow, March	1494.30	1394.02	-6.71
MA15: Mean monthly flow, April	1425.70	986.02	-30.84
MA16: Mean monthly flow, May	965.77	561.73	-41.84
MA17: Mean monthly flow, June	1152.23	1205.97	4.66
MA18: Mean monthly flow, July	1845.39	2213.30	19.94
MA19: Mean monthly flow, August	2627.41	3075.35	17.05
MA20: Mean monthly flow, September	3754.32	3757.38	0.08
MA21: Mean monthly flow, October	4108.63	3878.35	-5.60
MA22: Mean monthly flow, November	3451.77	2369.02	-31.37
MA23: Mean monthly flow, December	2394.62	1663.32	-30.54
ML1: Mean minimum monthly flow, January	1111.32	1103.22	-0.73
ML2: Mean minimum monthly flow, February	590.28	937.55	58.83
ML3: Mean minimum monthly flow, March	714.05	817.68	14.51
ML4: Mean minimum monthly flow, April	790.94	545.00	-31.09
ML5: Mean minimum monthly flow, May	275.38	310.17	12.64
ML6: Mean minimum monthly flow, June	407.99	492.53	20.72
ML7: Mean minimum monthly flow, July	1012.21	1398.32	38.15
ML8: Mean minimum monthly flow, August	1618.66	1908.57	17.91
ML9: Mean minimum monthly flow, September	2725.16	2298.99	-15.64
ML10: Mean minimum monthly flow, October	3056.22	2295.58	-24.89
ML11: Mean minimum monthly flow, November	2575.79	1610.94	-37.46
ML12: Mean minimum monthly flow, December	1393.37	1026.09	-26.36
ML13: CV of minimum monthly flows	139.69	101.81	-27.12
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.15	302.83
ML15: Mean minimum annual flow / mean annual flow	0.03	0.09	221.80
ML16: Median minimum annual flow / median annual flow	0.01	0.09	969.87
ML20: Ratio of baseflow volume to total flow volume	0.78	0.78	-0.03
ML22: Mean annual minimum flow divided by catchment area	0.76	1.91	153.18
RA1: Mean of positive changes from one day to next (rise rate)	198.84	200.87	
RA2: CV, mean of positive changes from one day to next (rise rate)	95.18	357.09	
RA3: Mean of negative changes from one day to next (fall rate)	196.64	92.34	
RA4: CV, mean of negative changes from one day to next (fall rate)	96.11	223.75	
RA5: Ratio of days that are higher than previous day	0.49	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	129.65	56.15	
RA9: CV, number of flow reversals from one day to the next	20.47	22.28	

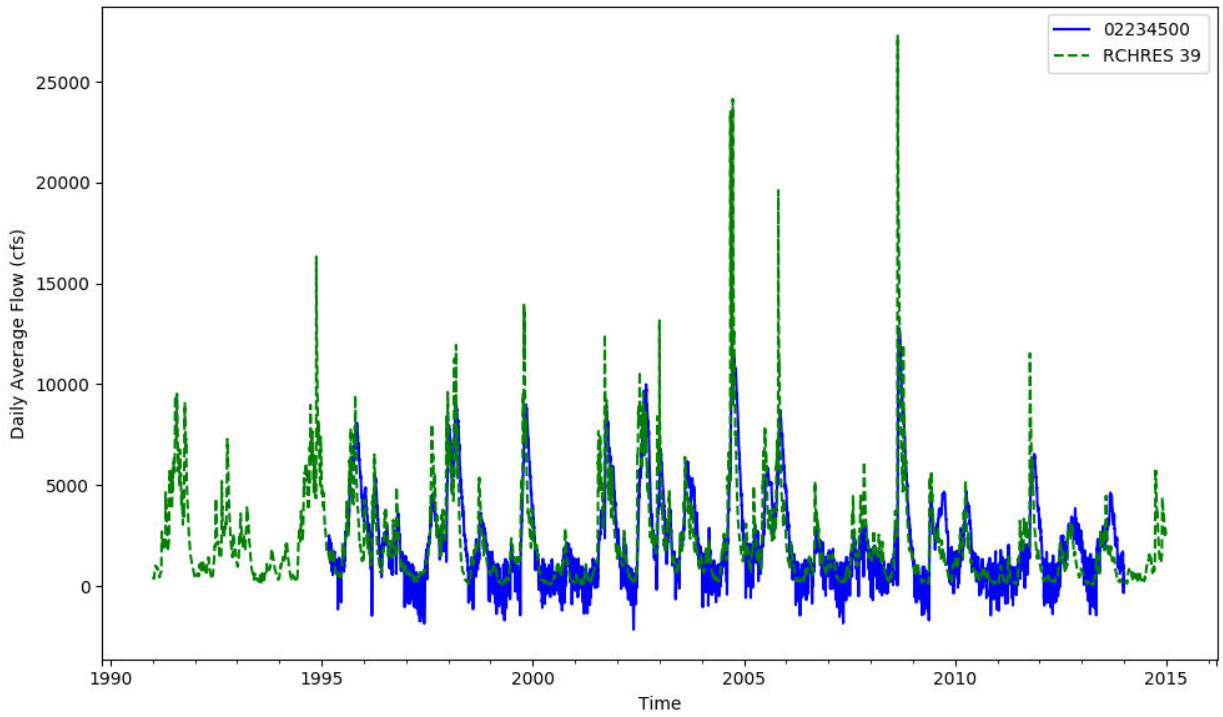


Figure T-03080101-37: Daily flow for HSFP reach 39 and USGS station 02234500.

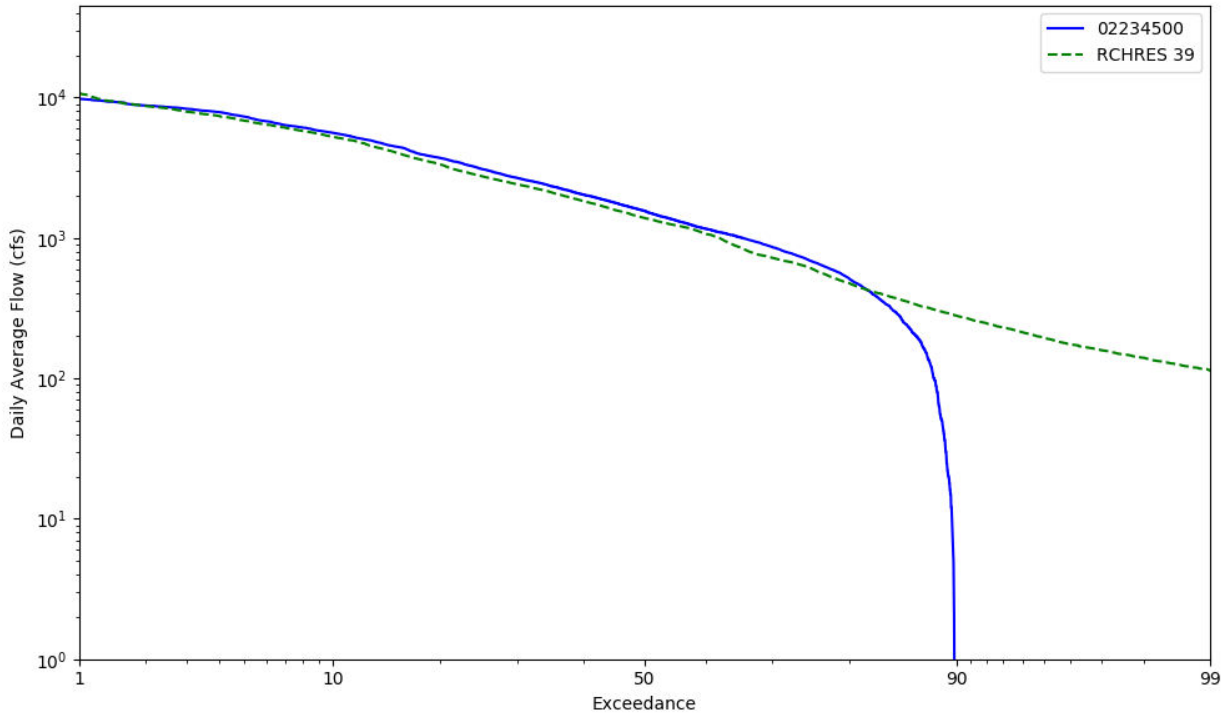


Figure T-03080101-38: Daily exceedance for HSFP reach 39 and USGS station 02234500.

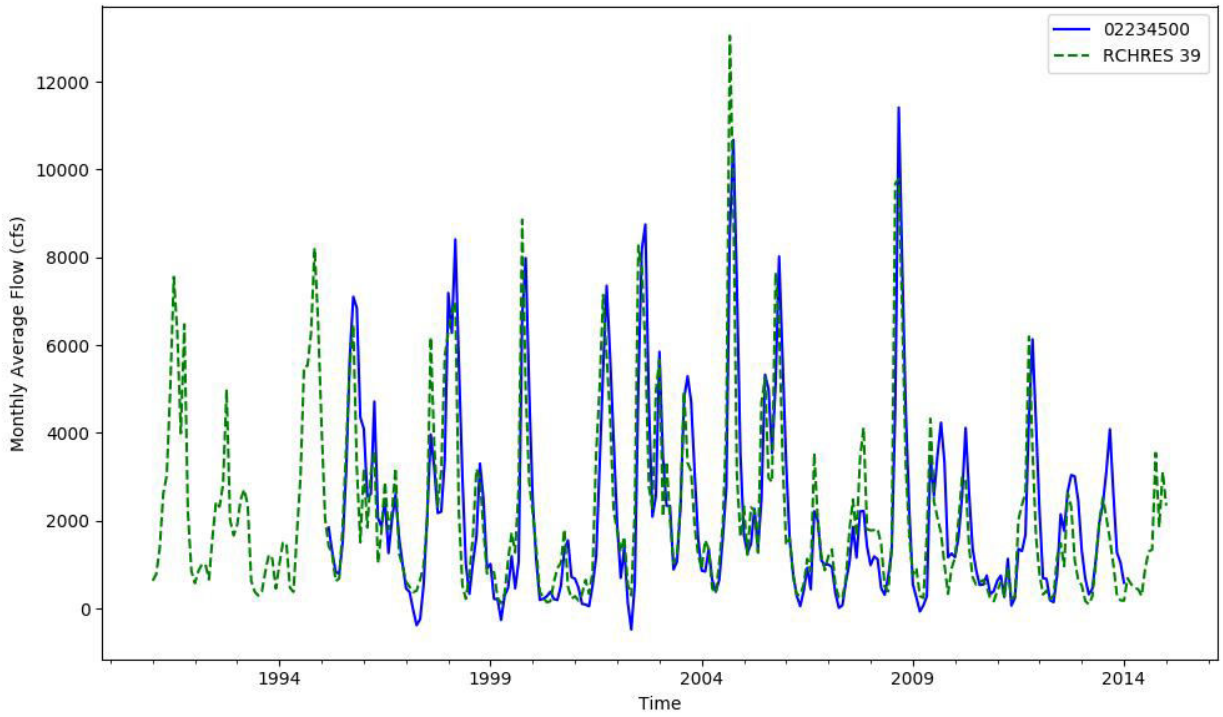


Figure T-03080101-39: Monthly flow for HSFP reach 39 and USGS station 02234500.

HSPF REACH 42, USGS GAUGE 02236000

Water-Data Report 2009
02236000 ST. JOHNS RIVER NEAR DE LAND, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 290029, long 812258 referenced to North American Datum of 1927, in land grant 38, T.17 S., R.29 E., Lake County, FL, Hydrologic Unit 03080101, attached to fender pilings near center of channel under Francis P. Whitehair Bridge on State Highway 44 , 5 mi west of De Land, and 142 mi upstream from mouth.

DRAINAGE AREA.--3,066 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1933 to current year. Monthly discharge only prior to February 1934, published in WSP 1304.

REVISED RECORDS.--WDR FL-75-1: Drainage area, WDR FL-96-1A: 1995.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 0.09 ft below NGVD of 1929. Prior to May 28, 1936, nonrecording gage at site of former Crows Bluff Bridge about 1,000 ft downstream and May 28, 1936 to July 21, 1970, water-stage recorder at site 0.4 mi downstream at datum 1.11 ft lower. July 22, 1970 to Sept. 30, 1993, water-stage recorder at present site and datum. Oct. 1, 1993 to April 4, 2000, water-stage recorder near right bank 100 ft upstream. Oct. 1, 1959 to Sept. 30, 1975, Oct. 1, 1984 to Mar. 21, 1986, June 16 to Sept. 23, 1991, and Oct. 1, 1992 to Sept. 30, 1993, water-stage recorder for St. Johns River near Sanford (station 02234500) used as auxiliary gage for this station.

REMARKS.--Records good. A maximum stage, 4.66 ft, occurred on Oct. 1, stage falling peak occurred Sept. 4, 2008.

Table T-03080101-25: Comparison Statistics Between HSPF Reach 42 and USGS Gauge 02236000.

Statistic	Value
Bias	-32.29
Standard error	1343.13
Relative bias	-0.01
Relative standard error	0.57
Nash-Sutcliffe coefficient	0.67
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.50
Index of agreement	0.75

Table T-03080101-26: Hydrologic Indices Between USGS Gauge 02236000 and HSPF Reach 42.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02236000	Simulated Reach 42	Percent Difference
MA1: Mean, all daily flows	3125.54	2912.26	-6.82
MA2: Median, all daily flows	2400.00	2025.62	-15.60
MA3: CV, all daily flows	64.21	80.77	25.79
MA4: CV, log of all daily flows	69.66	80.13	15.03
MA5: Mean daily flow / median daily flow	1.30	1.44	10.40
MA9: (Q10 - Q90) / median daily flow	2.44	2.92	20.04
MA10: (Q20 - Q80) / median daily flow	1.48	1.68	13.71
MA11: (Q25 - Q75) / median daily flow	1.18	1.28	7.89
MA12: Mean monthly flow, January	2743.58	2306.10	-15.95
MA13: Mean monthly flow, February	2091.24	1996.92	-4.51
MA14: Mean monthly flow, March	2074.32	2073.49	-0.04
MA15: Mean monthly flow, April	1995.58	1660.23	-16.80
MA16: Mean monthly flow, May	1431.50	1140.12	-20.35
MA17: Mean monthly flow, June	1822.60	1946.77	6.81
MA18: Mean monthly flow, July	2704.05	3135.49	15.96
MA19: Mean monthly flow, August	3292.34	4012.37	21.87
MA20: Mean monthly flow, September	4360.47	4597.97	5.45
MA21: Mean monthly flow, October	4836.31	4935.01	2.04
MA22: Mean monthly flow, November	4228.45	3241.02	-23.35
MA23: Mean monthly flow, December	3258.13	2411.13	-26.00
ML1: Mean minimum monthly flow, January	1540.54	1628.95	5.74
ML2: Mean minimum monthly flow, February	1014.20	1536.22	51.47
ML3: Mean minimum monthly flow, March	957.48	1384.63	44.61
ML4: Mean minimum monthly flow, April	1042.57	1120.51	7.48
ML5: Mean minimum monthly flow, May	487.81	803.68	64.75
ML6: Mean minimum monthly flow, June	734.30	1101.47	50.00
ML7: Mean minimum monthly flow, July	1773.48	2215.23	24.91
ML8: Mean minimum monthly flow, August	2221.04	2775.94	24.98
ML9: Mean minimum monthly flow, September	3051.57	3039.63	-0.39
ML10: Mean minimum monthly flow, October	3394.96	3144.91	-7.37
ML11: Mean minimum monthly flow, November	3080.75	2285.59	-25.81
ML12: Mean minimum monthly flow, December	1993.70	1686.72	-15.40
ML13: CV of minimum monthly flows	120.28	80.99	-32.66
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.32	742.22
ML15: Mean minimum annual flow / mean annual flow	0.03	0.23	616.08
ML16: Median minimum annual flow / median annual flow	0.02	0.29	1533.77
ML20: Ratio of baseflow volume to total flow volume	0.77	0.82	5.28
ML22: Mean annual minimum flow divided by catchment area	1.21	6.08	404.02
RA1: Mean of positive changes from one day to next (rise rate)	239.72	250.40	
RA2: CV, mean of positive changes from one day to next (rise rate)	104.72	346.12	
RA3: Mean of negative changes from one day to next (fall rate)	234.10	110.73	
RA4: CV, mean of negative changes from one day to next (fall rate)	106.33	240.48	
RA5: Ratio of days that are higher than previous day	0.48	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.03	

RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.03	
RA8: Number of flow reversals from one day to the next	122.12	65.46	
RA9: CV, number of flow reversals from one day to the next	18.73	20.84	

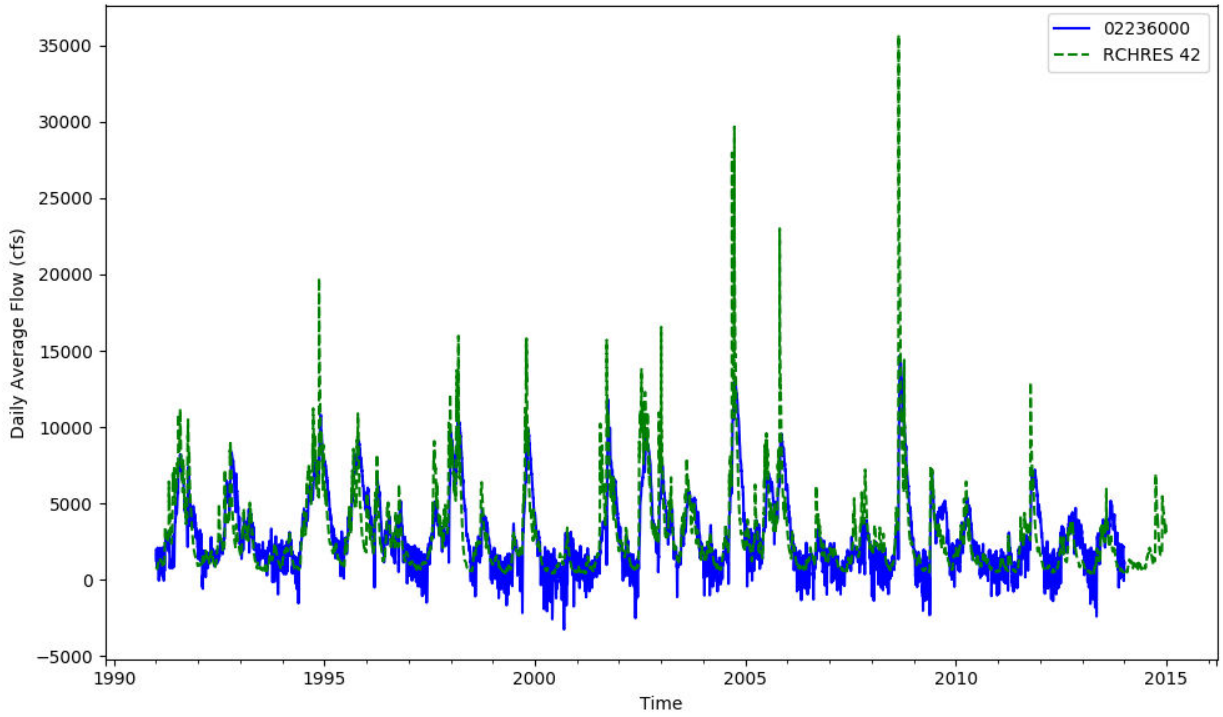


Figure T-03080101-40: Daily flow for HSFP reach 42 and USGS station 02236000.

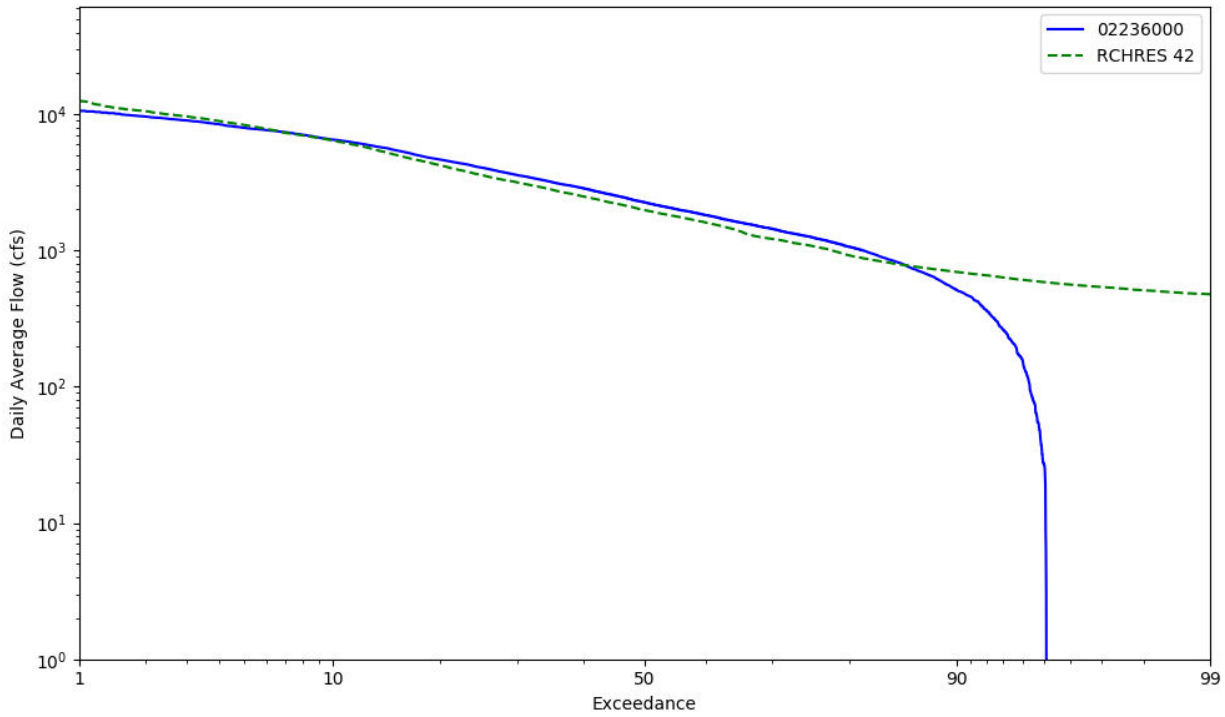


Figure T-03080101-41: Daily exceedance for HSFP reach 42 and USGS station 02236000.

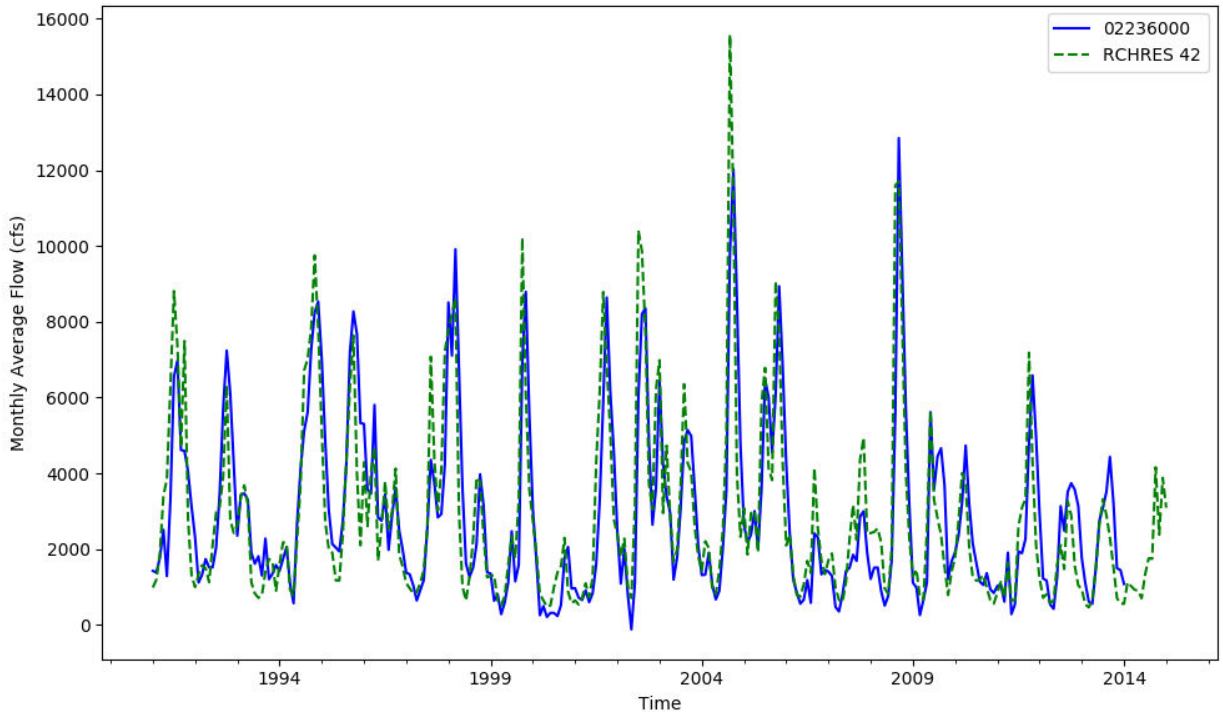


Figure T-03080101-42: Monthly flow for HSFP reach 42 and USGS station 02236000.

HSPF REACH 45, USGS GAUGE 02236125

Water-Data Report 2009
02236125 ST. JOHNS RIVER AT ASTOR, FL
St. Johns Basin Upper St. Johns Subbasin

LOCATION.--Lat 291000, long 813120 referenced to North American Datum of 1927, in NW 1/4 sec.29, T.15 S., R.28 E., Volusia County, FL, Hydrologic Unit 03080101, near center of channel on bridge pile under bridge on State Highway 40, 0.4 mi northeast of Astor, 6.6 mi west of U.S. Highway 17, and 127 mi upstream from mouth.

DRAINAGE AREA.--3,330 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1931 to July 1934 (daily gage heights and miscellaneous discharge measurements only), February 1994 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929.

REMARKS.--Records good. A maximum stage 3.32 ft, occurred Oct. 1, stage falling, peak occurred Sept. 25, 2008.

Table T-03080101-27: Comparison Statistics Between HSPF Reach 45 and USGS Gauge 02236125.

Statistic	Value
Bias	129.21
Standard error	1539.18
Relative bias	0.04
Relative standard error	0.61
Nash-Sutcliffe coefficient	0.63
Kling-Gupta coefficient	0.81
Coefficient of efficiency	0.47
Index of agreement	0.74

Table T-03080101-28: Hydrologic Indices Between USGS Gauge 02236125 and HSPF Reach 45.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02236125	Simulated Reach 45	Percent Difference
MA1: Mean, all daily flows	3547.81	3305.72	-6.82
MA2: Median, all daily flows	2810.00	2336.66	-16.84
MA3: CV, all daily flows	63.01	78.58	24.71
MA4: CV, log of all daily flows	68.52	78.22	14.15

MA5: Mean daily flow / median daily flow	1.26	1.41	12.05
MA9: (Q10 - Q90) / median daily flow	2.36	2.79	18.30
MA10: (Q20 - Q80) / median daily flow	1.44	1.63	13.21
MA11: (Q25 - Q75) / median daily flow	1.11	1.21	8.82
MA12: Mean monthly flow, January	3116.75	2643.55	-15.18
MA13: Mean monthly flow, February	2293.32	2270.36	-1.00
MA14: Mean monthly flow, March	2299.43	2302.40	0.13
MA15: Mean monthly flow, April	2195.40	1692.35	-22.91
MA16: Mean monthly flow, May	1642.02	1157.43	-29.51
MA17: Mean monthly flow, June	2043.69	1921.81	-5.96
MA18: Mean monthly flow, July	2875.52	3442.49	19.72
MA19: Mean monthly flow, August	3385.92	4425.48	30.70
MA20: Mean monthly flow, September	4587.52	5219.30	13.77
MA21: Mean monthly flow, October	5193.73	5327.04	2.57
MA22: Mean monthly flow, November	4615.38	3683.49	-20.19
MA23: Mean monthly flow, December	3593.07	2819.73	-21.52
ML1: Mean minimum monthly flow, January	1641.80	1997.06	21.64
ML2: Mean minimum monthly flow, February	824.21	1864.71	126.24
ML3: Mean minimum monthly flow, March	999.37	1669.50	67.06
ML4: Mean minimum monthly flow, April	894.11	1247.93	39.57
ML5: Mean minimum monthly flow, May	378.95	908.31	139.69
ML6: Mean minimum monthly flow, June	694.00	1141.32	64.46
ML7: Mean minimum monthly flow, July	1629.75	2549.74	56.45
ML8: Mean minimum monthly flow, August	1627.95	3091.55	89.90
ML9: Mean minimum monthly flow, September	2133.30	3401.81	59.46
ML10: Mean minimum monthly flow, October	2557.90	3480.27	36.06
ML11: Mean minimum monthly flow, November	2442.90	2645.17	8.28
ML12: Mean minimum monthly flow, December	1522.70	2014.53	32.30
ML13: CV of minimum monthly flows	133.23	76.99	-42.21
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.35	1783.25
ML15: Mean minimum annual flow / mean annual flow	0.02	0.26	1478.69
ML16: Median minimum annual flow / median annual flow	0.01	0.34	2192.61
ML20: Ratio of baseflow volume to total flow volume	0.61	0.83	34.70
ML22: Mean annual minimum flow divided by catchment area	0.52	7.60	1350.86
RA1: Mean of positive changes from one day to next (rise rate)	494.68	276.59	
RA2: CV, mean of positive changes from one day to next (rise rate)	99.00	351.63	
RA3: Mean of negative changes from one day to next (fall rate)	488.02	123.83	
RA4: CV, mean of negative changes from one day to next (fall rate)	98.26	242.72	
RA5: Ratio of days that are higher than previous day	0.49	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.03	
RA8: Number of flow reversals from one day to the next	135.24	55.14	
RA9: CV, number of flow reversals from one day to the next	22.96	25.06	

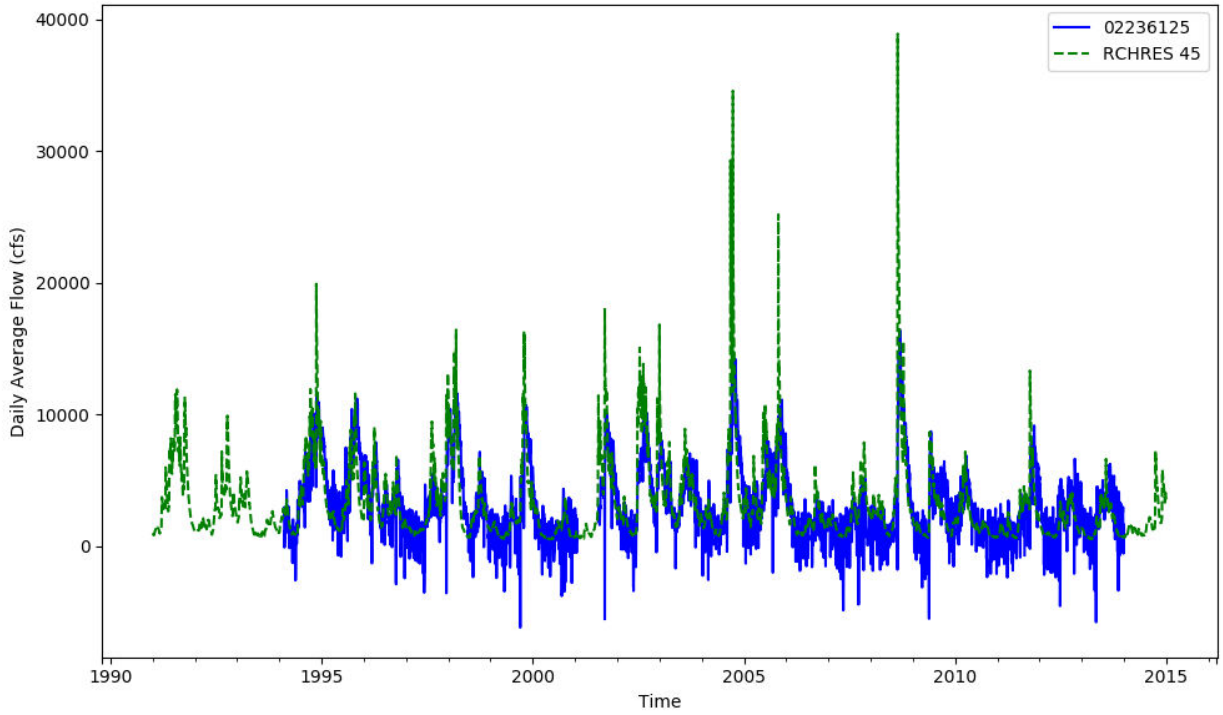


Figure T-03080101-43: Daily flow for HSFP reach 45 and USGS station 02236125.

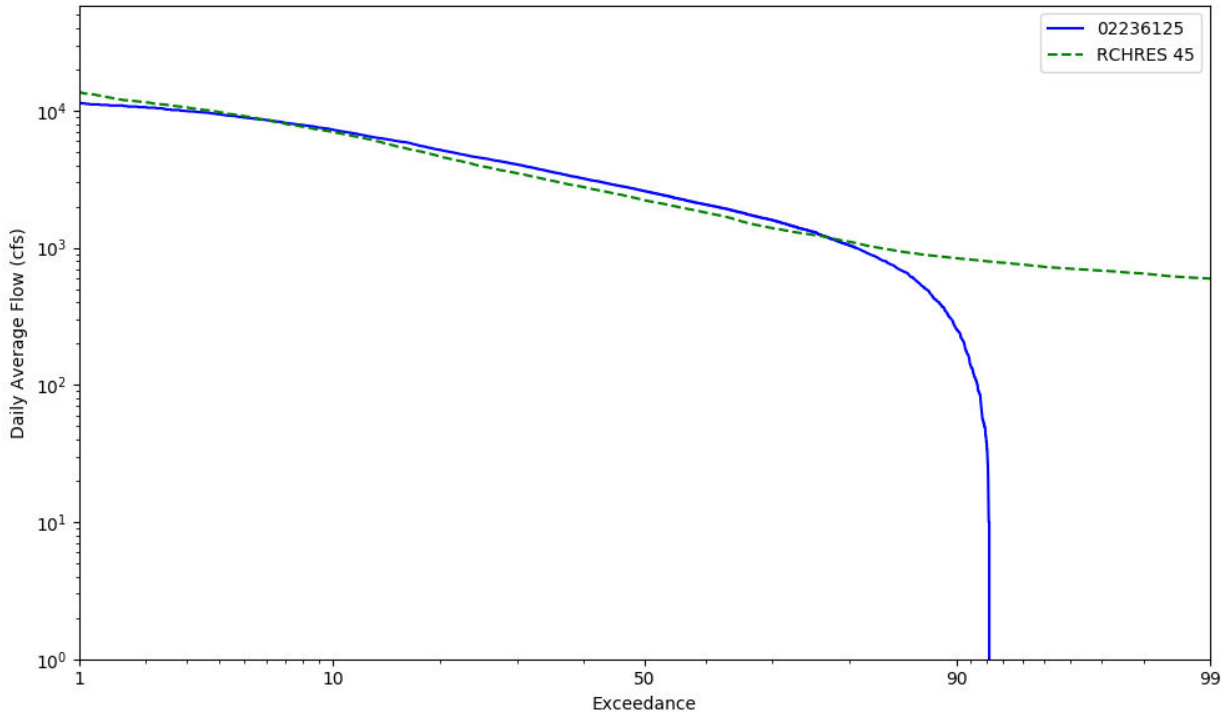


Figure T-03080101-44: Daily exceedance for HSFP reach 45 and USGS station 02236125.

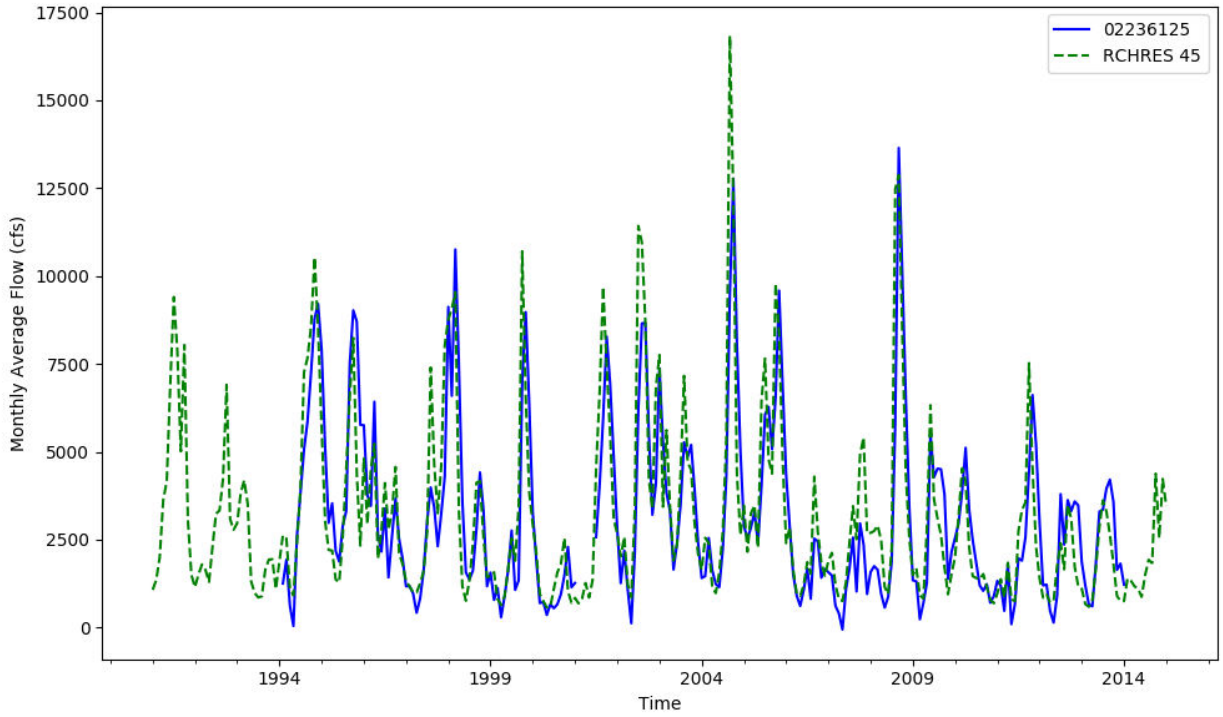


Figure T-03080101-45: Monthly flow for HSFP reach 45 and USGS station 02236125.

Table T-03080101-29: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	141163	206281	99209	25042	3614	1678	308669	136345	29514	286608	51168	1044409	7299	81411	68512	2490923
AREA(%)	5.6	8.2	3.9	1.0	0.1	0.1	12.2	5.4	1.2	11.4	2.0	41.4	0.3	3.2	2.7	98.7
IMPERVIOUS																
AREA(ACRES)		11276	11117	6337	3770											32500
AREA(%)		0.4	0.4	0.3	0.1											1.3
SUPY	54.0	56.0	55.6	54.6	53.6	54.0	52.8	55.6	54.5	57.2	57.8	57.5	73.1	60.7	60.6	55.8
SURLI		3.2	4.0	4.5	4.9									0.0	10.3	0.7
UZLI																0.0
LZLI			2.1	1.6	1.7									4.1	0.1	0.2
SURO: PERVIOUS	8.7	0.6	3.6	3.4	0.4	2.0	0.1	0.2	0.4	0.5	0.2	11.1	0.9	0.8	1.1	5.5
SURO: IMPERVIOUS		45.7	45.5	44.7	43.7											0.6
SURO: COMBINED	8.7	2.9	7.8	11.7	22.5	2.0	0.1	0.2	0.4	0.5	0.2	11.1	0.9	0.8	1.1	6.0
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	13.5	18.7	20.7	15.9	22.1	5.0	12.5	12.1	11.8	13.5	0.4	21.8	13.9	14.5	6.2
AGWI	2.1	16.0	21.6	23.9	18.8	25.3	6.4	14.7	14.2	13.8	15.6	1.9	24.6	16.0	15.5	8.0
IGWI	0.0	3.0	2.4	1.2	1.0	1.0	2.4	2.1	4.1	4.2	5.3	0.2	2.6	7.1	17.5	2.2
CEPE		12.4	15.8	12.0	13.3	8.5	21.4	13.5	12.4	12.5	9.9	16.9	24.6	14.1	10.7	14.7
UZET	2.9	5.3	2.5	3.1	5.1	3.0	0.9	3.6	3.7	3.7	4.2	1.5	6.4	4.3	4.8	2.5
LZET	1.1	18.4	14.1	15.7	19.2	12.6	16.6	17.7	17.0	18.4	18.9	0.7	10.7	18.2	21.4	9.5
AGWET	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.3
BASET	0.6	2.2	2.8	3.1	2.7	3.1	1.2	2.0	2.0	1.7	1.8	0.5	2.8	1.8	1.1	1.2
SURET	36.5											22.0				11.1
PERO	9.2	14.1	22.3	24.1	16.3	24.1	5.2	12.6	12.4	12.2	13.8	11.5	22.8	14.7	15.6	11.7
IGWI	0.0	3.0	2.4	1.2	1.0	1.0	2.4	2.1	4.1	4.2	5.3	0.2	2.6	7.1	17.5	2.2
TAET: PERVIOUS	41.8	38.3	35.2	33.9	40.3	27.1	40.2	36.8	35.0	36.4	34.8	42.1	44.5	38.4	38.0	39.2
IMPEV: IMPERVIOUS		10.2	10.1	9.9	9.8											0.1
ET: COMBINED	41.8	36.9	32.7	29.1	24.8	27.1	40.2	36.8	35.0	36.4	34.8	42.1	44.5	38.4	38.0	39.4
PET	48.7	49.0	49.2	49.5	49.6	49.2	48.6	48.9	48.8	49.1	48.3	49.0	49.3	49.0	49.6	48.3

Table T-03080101-30: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	141163	206281	99209	25042	3614	1678	308669	136345	29514	286608	51168	1044409	7299	81411	68512	2490923
AREA(%)	5.6	8.2	3.9	1.0	0.1	0.1	12.2	5.4	1.2	11.4	2.0	41.4	0.3	3.2	2.7	98.7
IMPERVIOUS																
AREA(ACRES)		11276	11117	6337	3770											32500
AREA(%)		0.4	0.4	0.3	0.1											1.3
SUPY	49.6	49.7	49.7	49.6	49.5	49.3	49.6	50.2	49.7	49.9	50.5	49.8	60.3	53.5	53.2	49.4
SURLI		3.3	4.0	4.6	4.9									0.0	6.7	0.7
UZLI																0.0
LZLI			2.0	1.6	1.7									4.6	0.0	0.2
SURO: PERVIOUS	4.6	0.4	1.4	1.2	0.2	0.8	0.0	0.1	0.2	0.1	0.0	4.5	0.4	0.1	0.1	2.2
SURO: IMPERVIOUS		39.7	39.6	39.6	39.6											0.5
SURO: COMBINED	4.6	2.4	5.2	9.0	20.3	0.8	0.0	0.1	0.2	0.1	0.0	4.5	0.4	0.1	0.1	2.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0
AGWO	0.4	10.1	15.2	17.7	12.0	19.2	3.6	8.4	9.0	6.9	9.4	0.4	12.8	10.8	9.9	4.4
AGWI	1.9	12.9	18.7	21.4	15.3	23.1	5.3	11.2	11.5	9.3	11.8	1.7	16.1	13.3	11.2	6.3
IGWI	0.0	2.3	1.7	0.9	0.7	0.9	2.4	2.1	4.0	3.6	4.3	0.2	2.0	5.7	12.3	1.8
CEPE		12.3	16.1	12.1	13.4	8.2	20.7	13.6	12.3	13.1	10.4	17.6	21.3	16.1	11.4	15.1
UZET	2.7	4.3	2.2	2.7	3.8	2.7	1.2	2.9	2.9	2.7	2.9	1.5	5.9	3.4	3.3	2.2
LZET	1.5	23.0	16.0	17.6	23.8	14.2	24.1	22.8	20.4	23.2	22.9	0.7	18.1	21.3	22.0	12.0
AGWET	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.5
BASET	0.5	2.8	3.2	3.4	3.2	3.5	1.8	2.8	2.4	2.4	2.4	0.5	3.1	2.4	1.3	1.5
SURET	40.5											25.5				12.8
PERO	5.1	10.5	16.5	18.9	12.2	20.0	3.7	8.5	9.1	7.0	9.4	4.9	13.2	10.9	10.0	6.7
IGWI	0.0	2.3	1.7	0.9	0.7	0.9	2.4	2.1	4.0	3.6	4.3	0.2	2.0	5.7	12.3	1.8
TAET: PERVIOUS	46.4	42.5	37.4	35.9	44.4	28.6	47.9	42.1	38.1	41.4	38.6	46.8	48.5	43.3	38.0	44.0
IMPEV: IMPERVIOUS		10.1	10.1	10.0	9.9											0.1
ET: COMBINED	46.4	40.8	34.7	30.7	26.8	28.6	47.9	42.1	38.1	41.4	38.6	46.8	48.5	43.3	38.0	44.1
PET	55.9	56.5	56.9	57.3	57.4	56.7	55.3	56.4	55.9	56.9	55.3	56.6	57.1	56.7	57.7	55.7

Table T-03080101-31: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	141163	206281	99209	25042	3614	1678	308669	136345	29514	286608	51168	1044409	7299	81411	68512	2490923
AREA(%)	5.6	8.2	3.9	1.0	0.1	0.1	12.2	5.4	1.2	11.4	2.0	41.4	0.3	3.2	2.7	98.7
IMPERVIOUS																
AREA(ACRES)		11276	11117	6337	3770											32500
AREA(%)		0.4	0.4	0.3	0.1											1.3
SUPY	42.9	44.1	44.7	45.2	45.7	44.9	43.3	43.0	43.3	42.8	42.5	43.0	56.7	45.9	47.4	42.9
SURLI		3.4	4.2	4.7	5.0									0.0	8.4	0.7
UZLI																0.0
LZLI			2.1	1.7	1.7									3.7	0.0	0.2
SURO: PERVIOUS	4.0	0.2	1.5	1.5	0.1	0.8	0.0	0.1	0.1	0.1	0.0	3.6	0.2	0.1	0.1	1.8
SURO: IMPERVIOUS		36.2	36.7	37.3	37.8											0.5
SURO: COMBINED	4.0	2.0	5.0	8.7	19.4	0.8	0.0	0.1	0.1	0.1	0.0	3.6	0.2	0.1	0.1	2.3
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0			0.0		0.0	0.0
AGWO	0.4	9.4	15.8	18.4	13.0	18.9	3.0	6.8	7.9	5.5	6.2	0.3	12.7	7.9	9.9	3.9
AGWI	2.0	11.8	18.5	21.2	15.8	21.7	4.4	9.1	10.1	7.4	8.3	1.8	15.2	9.8	11.3	5.6
IGWI	0.0	2.0	1.6	0.8	0.7	0.8	2.4	1.8	3.4	2.6	2.9	0.2	1.8	4.4	9.9	1.5
CEPE		9.6	12.7	9.6	10.8	6.8	17.6	10.5	9.6	9.8	7.7	13.4	19.9	12.7	8.8	11.8
UZET	3.8	3.7	2.4	2.9	4.5	2.8	0.9	2.1	2.5	1.9	1.8	2.1	5.3	2.2	2.6	2.2
LZET	1.7	23.0	16.1	17.4	23.1	13.6	22.1	22.6	20.3	24.0	24.4	1.0	16.2	22.5	23.3	12.0
AGWET	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.6
BASET	0.5	2.7	3.2	3.4	3.3	3.4	1.4	2.5	2.4	2.1	2.3	0.5	3.0	2.3	1.2	1.3
SURET	35.0											25.2				12.4
PERO	4.4	9.5	17.3	19.9	13.0	19.7	3.0	6.9	8.0	5.6	6.3	3.9	13.0	8.0	9.9	5.7
IGWI	0.0	2.0	1.6	0.8	0.7	0.8	2.4	1.8	3.4	2.6	2.9	0.2	1.8	4.4	9.9	1.5
TAET: PERVIOUS	42.4	39.1	34.4	33.3	41.7	26.7	42.0	37.7	34.8	37.8	36.3	43.4	44.5	39.7	36.0	40.3
IMPEV: IMPERVIOUS		7.9	7.9	7.9	7.9											0.1
ET: COMBINED	42.4	37.5	31.8	28.1	24.4	26.7	42.0	37.7	34.8	37.8	36.3	43.4	44.5	39.7	36.0	40.4
PET	50.8	51.1	51.2	51.2	51.2	51.0	50.3	51.2	50.8	51.7	51.2	51.5	51.2	51.9	52.7	50.6

Table T-03080101-32: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	141163	206281	99209	25042	3614	1678	308669	136345	29514	286608	51168	1044409	7299	81411	68512	2490923
AREA(%)	5.6	8.2	3.9	1.0	0.1	0.1	12.2	5.4	1.2	11.4	2.0	41.4	0.3	3.2	2.7	98.7
IMPERVIOUS																
AREA(ACRES)		11276	11117	6337	3770											32500
AREA(%)		0.4	0.4	0.3	0.1											1.3
SUPY	51.6	52.3	52.1	51.7	51.4	51.1	51.0	52.2	51.7	52.7	53.7	52.7	63.1	55.5	54.8	51.8
SURLI		3.0	3.6	4.1	4.4									0.0	5.5	0.6
UZLI																0.0
LZLI			2.0	1.5	1.5									2.3	0.0	0.2
SURO: PERVIOUS	7.9	0.4	2.2	2.1	0.4	1.2	0.1	0.1	0.2	0.3	0.1	8.8	0.7	0.4	0.4	4.3
SURO: IMPERVIOUS		42.0	41.8	41.4	41.1											0.5
SURO: COMBINED	7.9	2.6	6.2	10.0	21.1	1.2	0.1	0.1	0.2	0.3	0.1	8.8	0.7	0.4	0.4	4.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.6	13.1	18.2	20.3	15.5	21.5	5.9	11.7	11.5	10.6	12.7	0.5	17.0	11.8	10.2	5.9
AGWI	2.2	15.6	21.1	23.4	18.4	24.7	7.4	14.2	13.7	12.7	14.8	1.9	19.7	13.8	11.3	7.7
IGWI	0.1	2.7	2.2	1.1	0.9	1.0	2.8	2.2	4.3	3.9	4.7	0.2	2.3	6.7	13.7	2.1
CEPE		12.3	15.6	12.2	13.5	8.6	20.2	13.2	12.2	12.5	10.2	16.5	20.7	14.3	10.9	14.4
UZET	2.3	4.5	2.3	2.8	4.3	2.8	1.3	3.1	3.2	3.0	3.1	1.3	5.4	3.4	3.2	2.1
LZET	1.0	19.7	14.2	15.7	19.9	12.7	19.4	19.4	18.1	20.3	20.8	0.6	14.3	19.3	20.9	10.3
AGWET	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.4
BASET	0.7	2.5	2.9	3.1	2.9	3.1	1.5	2.4	2.2	2.1	2.1	0.6	2.7	2.0	1.1	1.4
SURET	38.4											23.6				11.9
PERO	8.5	13.6	20.4	22.3	15.9	22.7	5.9	11.9	11.7	10.8	12.8	9.3	17.6	12.2	10.5	10.2
IGWI	0.1	2.7	2.2	1.1	0.9	1.0	2.8	2.2	4.3	3.9	4.7	0.2	2.3	6.7	13.7	2.1
TAET: PERVIOUS	43.3	39.0	35.1	33.8	40.6	27.3	42.5	38.2	35.7	38.0	36.3	43.4	43.2	39.0	36.1	40.5
IMPEV: IMPERVIOUS		10.3	10.3	10.3	10.2											0.1
ET: COMBINED	43.3	37.5	32.6	29.0	25.1	27.3	42.5	38.2	35.7	38.0	36.3	43.4	43.2	39.0	36.1	40.6
PET	49.5	49.6	49.8	50.0	50.1	49.8	49.4	49.5	49.4	49.5	48.4	49.5	49.9	49.2	49.9	48.9

Table T-03080101-33: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
2	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
3	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
4	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
5	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
6	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
7	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
8	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
9	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
10	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
11	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
12	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
13	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
14	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
15	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
16	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
17	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
18	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
19	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
20	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
21	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
22	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
23	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
24	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
25	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
26	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
27	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
28	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
29	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
30	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
31	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
32	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
33	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
34	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
35	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
36	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
37	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
38	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990

39	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
40	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
41	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
42	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
43	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
44	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
45	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
46	0.990	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.955	0.990
47	0.999	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.999
48	0.999	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.999
49	0.999	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.999

Table T-03080101-34: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
2	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
3	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
4	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
5	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
6	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
7	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
8	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
9	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
10	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
11	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
12	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
13	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
14	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
15	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
16	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
17	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
18	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
19	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
20	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
21	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
22	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
23	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
24	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
25	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
26	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
27	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
28	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
29	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
30	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
31	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
32	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
33	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
34	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
35	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
36	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
37	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
38	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070

39	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
40	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
41	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
42	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
43	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
44	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
45	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
46	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
47	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
48	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
49	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03080101-35: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
2	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
3	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
4	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
5	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
6	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
7	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
8	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
9	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
10	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
11	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
12	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
13	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
14	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
15	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
16	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
17	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
18	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
19	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
20	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
21	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
22	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
23	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
24	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
25	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
26	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
27	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
28	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
29	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
30	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
31	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
32	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
33	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
34	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
35	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
36	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
37	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
38	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100

39	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
40	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
41	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
42	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
43	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
44	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
45	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
46	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
47	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
48	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100
49	0.000	0.050	0.094	0.050	0.065	0.020	0.200	0.059	0.050	0.050	0.030	0.100

Table T-03080101-36: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
44	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
45	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
46	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
47	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
48	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
49	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900

Table T-03080101-37: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
12	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
13	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
14	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
15	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
16	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
17	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
18	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
19	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
20	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
21	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
22	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
23	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
24	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
25	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
26	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
27	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
28	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
29	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
30	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
31	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
32	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
33	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
34	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
35	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
36	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
37	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
38	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001

39	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
40	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
41	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
42	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
43	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
44	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
45	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
46	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
47	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
48	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
49	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001

Table T-03080101-38: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
2		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
3		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
4		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
5		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
6		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
7		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
8		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
9		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
10		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
11		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
12		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
13		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
14		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
15		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
16		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
17		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
18		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
19		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
20		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
21		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
22		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
23		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
24		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
25		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
26		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
27		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
28		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
29		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	

30		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
31		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
32		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
33		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
34		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
35		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
36		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
37		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
38		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
39		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
40		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
41		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
42		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
43		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
44		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
45		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
46		0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
47		0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	
48		0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	
49		0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	

Table T-03080101-39: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
2	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
3	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
4	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
5	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
6	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
7	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
8	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
9	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
10	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
11	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
12	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
13	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
14	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
15	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
16	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
17	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
18	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
19	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
20	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
21	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
22	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
23	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
24	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
25	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
26	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
27	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
28	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
29	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
30	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
31	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
32	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
33	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
34	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
35	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
36	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
37	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
38	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629

39	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
40	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
41	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
42	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
43	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
44	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
45	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
46	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
47	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
48	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
49	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635

Table T-03080101-40: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
44	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
45	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
46	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
47	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666
48	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666
49	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666	1.666

Table T-03080101-41: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
2	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
3	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
4	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
5	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
6	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
7	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
8	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
9	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
10	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
11	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
12	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
13	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
14	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
15	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
16	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
17	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
18	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
19	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
20	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
21	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
22	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
23	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
24	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
25	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
26	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
27	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
28	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
29	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
30	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
31	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
32	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
33	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
34	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
35	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
36	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
37	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
38	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900

39	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
40	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
41	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
42	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
43	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
44	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
45	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
46	0.262	0.635	0.402	0.400	0.635	0.300	0.900	0.650	0.500	0.700	0.550	0.900
47	0.119	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
48	0.119	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
49	0.119	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03080101-42: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
2	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
3	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
4	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
5	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
6	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
7	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
8	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
9	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
10	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
11	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
12	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
13	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
14	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
15	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
16	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
17	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
18	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
19	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
20	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
21	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
22	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
23	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
24	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
25	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
26	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
27	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
28	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
29	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
30	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
31	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
32	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
33	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
34	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
35	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
36	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
37	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
38	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100

39	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
40	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
41	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
42	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
43	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
44	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
45	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
46	0.200	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.333	0.100
47	0.094	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
48	0.094	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
49	0.094	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100

Table T-03080101-43: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
2	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
3	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
4	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
5	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
6	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
7	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
8	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
9	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
10	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
11	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
12	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
13	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
14	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
15	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
16	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
17	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
18	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
19	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
20	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
21	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
22	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
23	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
24	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
25	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
26	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
27	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
28	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
29	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
30	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
31	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
32	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
33	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
34	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
35	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
36	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
37	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
38	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050

39	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
40	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
41	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
42	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
43	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
44	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
45	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
46	0.050	2.000	0.070	0.070	1.000	0.070	2.000	2.000	1.689	2.000	1.828	0.050
47	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.095
48	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.095
49	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.095

APPENDIX T-03080102

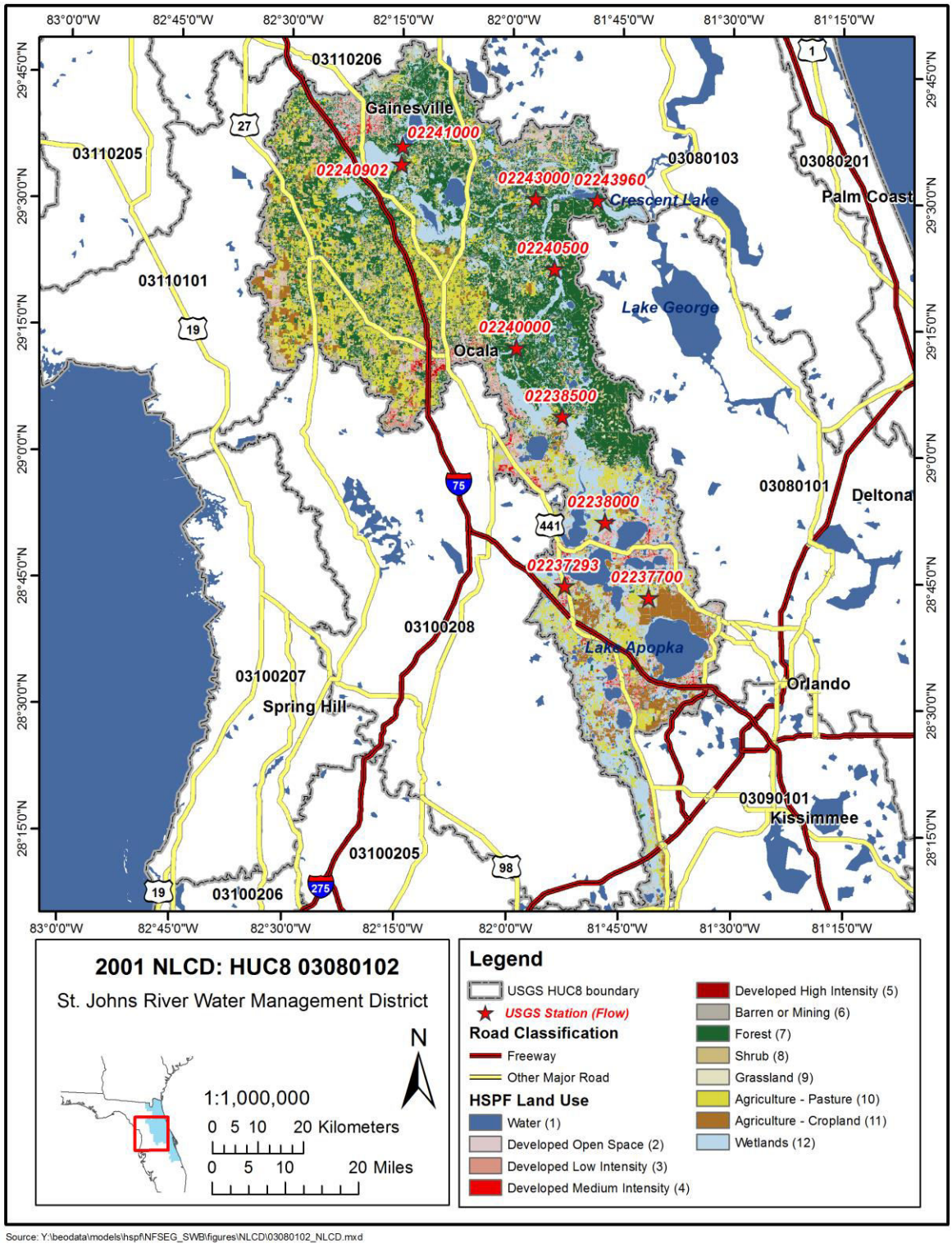
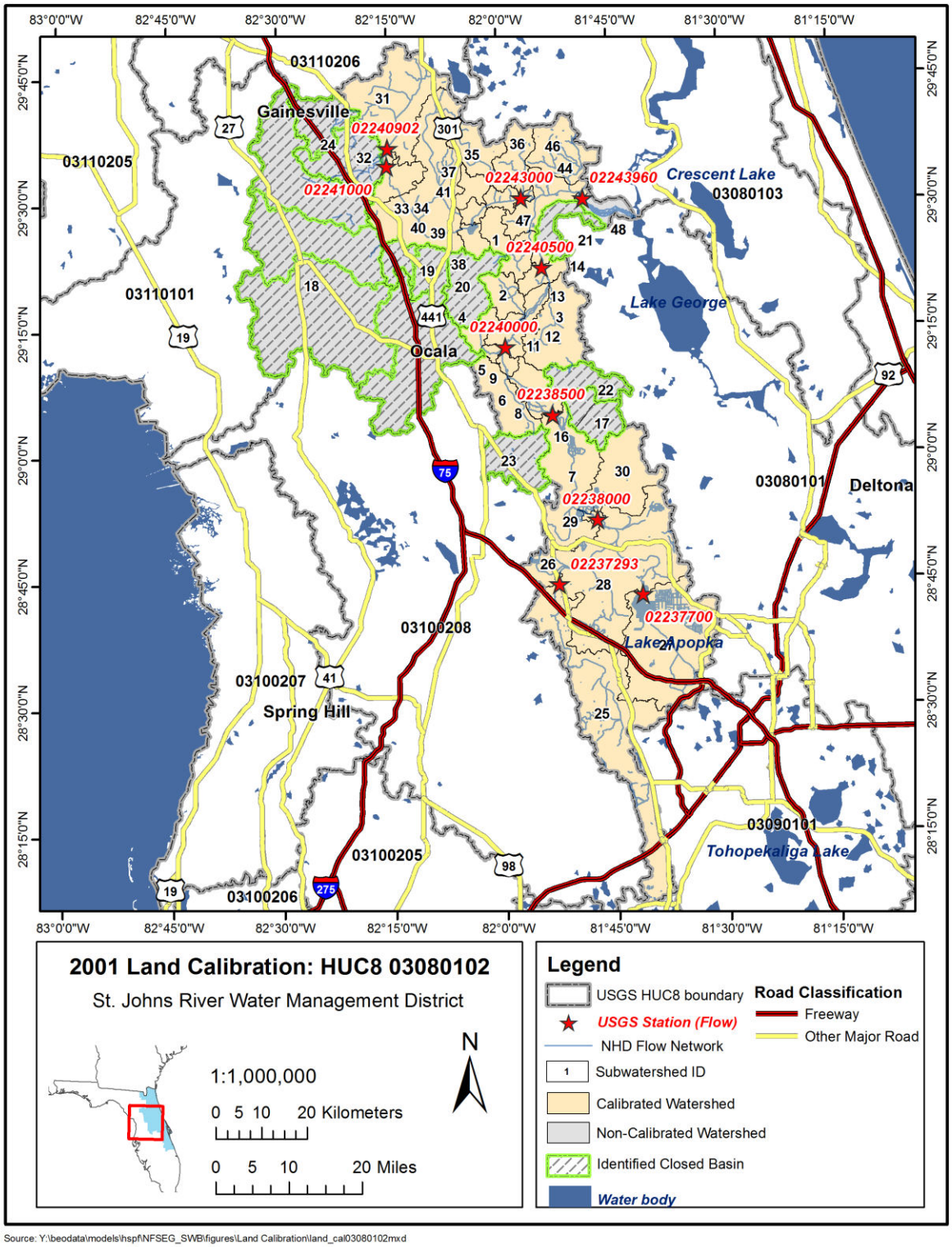


Figure T-03080102-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03080102mxd

Figure T-03080102-2: Calibrated sub-watersheds.

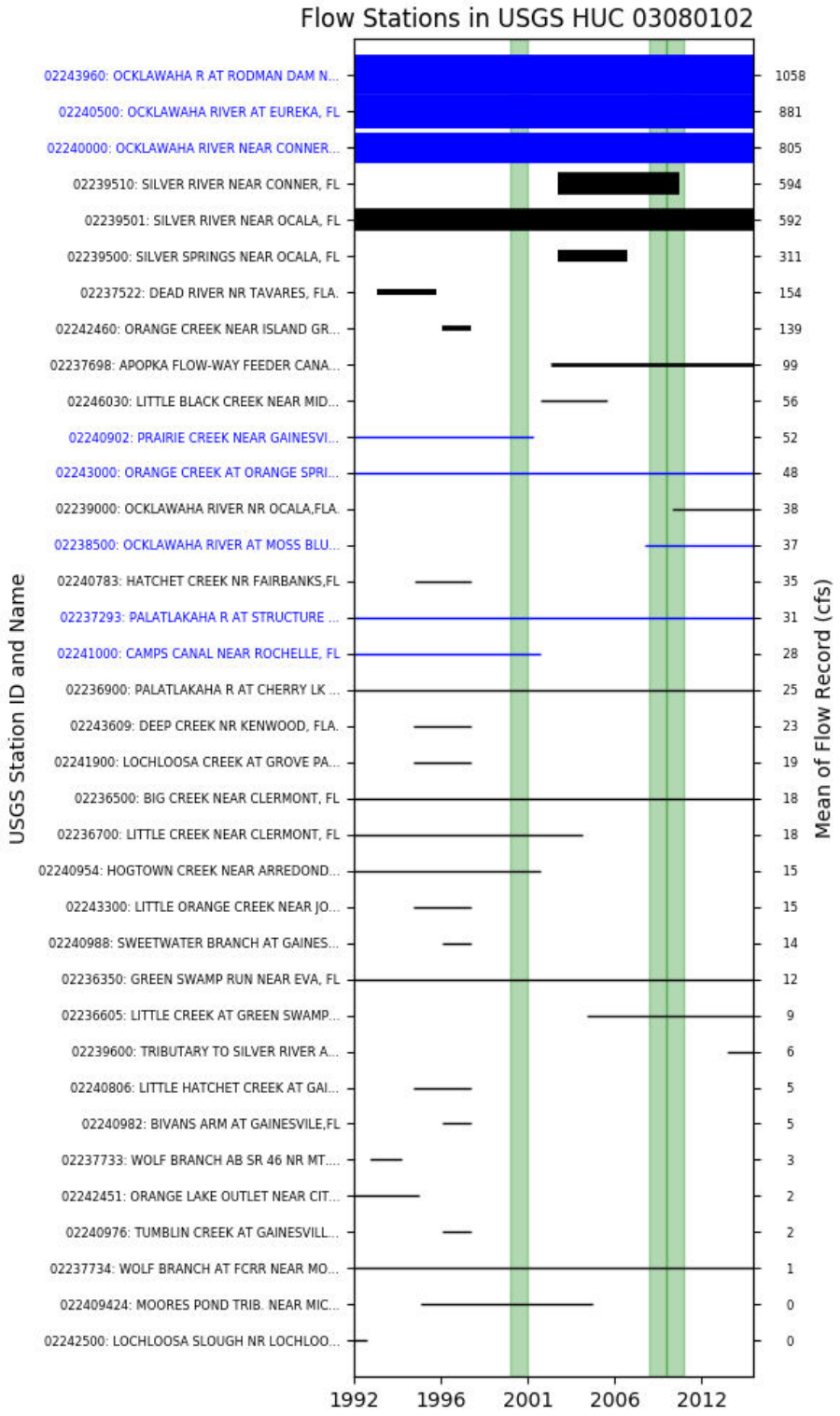


Figure T-03080102-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 04, USGS GAUGE 02239501

Water-Data Report 2009
02239501 SILVER RIVER NEAR OCALA, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 291253, long 820229 referenced to North American Datum of 1927, in SE 1/4 sec.6, T.15 S., R.23 E., Marion County, FL, Hydrologic Unit 03080102, on south right bank 50 ft below excavated pool (Lost River Outpost), 800 ft downstream from Paradise Park, 3,900 ft downstream from head of Silver Springs, 4.0 mi upstream from mouth, and 6.2 mi northeast of Ocala.

DRAINAGE AREA.--Indeterminate. (Springs basin)

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1932 to current year. Discharges for the period October 1932 to September 2005 published as station 02239500 Silver Springs near Ocala have been moved to this station number which is at the location where the majority of discharge measurements were made to define the discharge relationship with Sharpes Ferry Well through September 2002 and CE-76 Well from October 2002 to current year. Gage height record for periods February 1967 to June 1972 (datum of NGVD of 1929) and November 2003 to current year (datum 38.21 ft NGVD of 1929).

REVISED RECORDS.--WDR FL-07-1A: 2002-05.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 38.21 ft above NGVD of 1929 (levels by St. Johns River Water Management District). Gage height record for February 1967 to June 1972 is at NGVD of 1929 datum. Gage for artesian pressure is collected at CE-76 Well (291100082010003) and published in Water Resources Data for Florida, Volume 1B, Ground Water Records.

REMARKS.--Records fair. Discharge computed from relation between artesian pressure at CE-76 Well (291100082010003) and Silver Springs pool elevation (02239500) and discharge measurements made at gage location. The well at Sharpes Ferry was used for artesian pressure until August 2002. The artesian pressures for CE-76 Well (291100082010003) are published as water levels in Water Resources Data for Florida, Volume 1B, Ground Water.

Because of tail-water effects the spring pool elevation rose approximately a foot after 2001. This effect is not modeled explcitly, and is the reason for the over simulation after 2001.

The major contribution to this reach is from the Inactive Groundwater Inflow storage mechanism. This new approach to representing springs is very simple and does not account for changes in springshed boundaries, which are known to shift from year to year.

Table T-03080102-1: Comparison Statistics Between HSPF Reach 04 and USGS Gauge 02239501.

Statistic	Value
Bias	-40.11
Standard error	116.44
Relative bias	-0.07
Relative standard error	0.81
Nash-Sutcliffe coefficient	0.35
Kling-Gupta coefficient	0.68
Coefficient of efficiency	0.14
Index of agreement	0.57

Table T-03080102-2: Hydrologic Indices Between USGS Gauge 02239501 and HSPF Reach 04.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02239501	Simulated Reach 04	Percent Difference
MA1: Mean, all daily flows	591.24	550.99	-6.81
MA2: Median, all daily flows	582.00	534.07	-8.24
MA3: CV, all daily flows	10.59	11.77	11.13
MA4: CV, log of all daily flows	21.93	22.58	2.98
MA5: Mean daily flow / median daily flow	1.02	1.03	1.56
MA9: (Q10 - Q90) / median daily flow	0.62	0.69	11.17
MA10: (Q20 - Q80) / median daily flow	0.40	0.40	0.27
MA11: (Q25 - Q75) / median daily flow	0.31	0.32	3.20
MA12: Mean monthly flow, January	596.01	545.48	-8.48
MA13: Mean monthly flow, February	572.10	525.14	-8.21
MA14: Mean monthly flow, March	569.82	529.32	-7.11
MA15: Mean monthly flow, April	567.56	518.33	-8.67
MA16: Mean monthly flow, May	543.18	491.52	-9.51
MA17: Mean monthly flow, June	526.85	488.59	-7.26
MA18: Mean monthly flow, July	538.97	512.75	-4.86
MA19: Mean monthly flow, August	553.04	537.00	-2.90
MA20: Mean monthly flow, September	579.70	558.66	-3.63
MA21: Mean monthly flow, October	602.41	571.43	-5.14
MA22: Mean monthly flow, November	593.42	548.25	-7.61
MA23: Mean monthly flow, December	578.89	532.51	-8.01
ML1: Mean minimum monthly flow, January	579.96	526.64	-9.19
ML2: Mean minimum monthly flow, February	572.35	521.86	-8.82
ML3: Mean minimum monthly flow, March	570.43	530.23	-7.05
ML4: Mean minimum monthly flow, April	575.39	522.57	-9.18
ML5: Mean minimum monthly flow, May	546.87	491.26	-10.17
ML6: Mean minimum monthly flow, June	530.17	489.05	-7.76
ML7: Mean minimum monthly flow, July	544.22	514.11	-5.53
ML8: Mean minimum monthly flow, August	555.35	535.86	-3.51
ML9: Mean minimum monthly flow, September	572.57	549.82	-3.97
ML10: Mean minimum monthly flow, October	603.22	567.32	-5.95
ML11: Mean minimum monthly flow, November	605.48	553.07	-8.66
ML12: Mean minimum monthly flow, December	589.70	531.18	-9.92
ML13: CV of minimum monthly flows	25.61	24.57	-4.05

ML14: Mean minimum daily flow / mean median annual flow	0.80	0.81	2.11
ML15: Mean minimum annual flow / mean annual flow	0.80	0.81	1.21
ML16: Median minimum annual flow / median annual flow	0.80	0.81	0.48
ML20: Ratio of baseflow volume to total flow volume	0.99	0.99	-0.35
ML22: Mean annual minimum flow divided by catchment area	4.73	4.44	-6.06
RA1: Mean of positive changes from one day to next (rise rate)	3.50	8.77	
RA2: CV, mean of positive changes from one day to next (rise rate)	123.98	212.67	
RA3: Mean of negative changes from one day to next (fall rate)	3.44	2.25	
RA4: CV, mean of negative changes from one day to next (fall rate)	133.71	135.39	
RA5: Ratio of days that are higher than previous day	0.42	0.20	
RA6: Median of difference in log of flows over two consecutive days of rising	0.00	0.01	
RA7: Median of difference in log of flows over two consecutive days of falling	0.00	0.00	
RA8: Number of flow reversals from one day to the next	111.17	64.96	
RA9: CV, number of flow reversals from one day to the next	20.14	21.16	

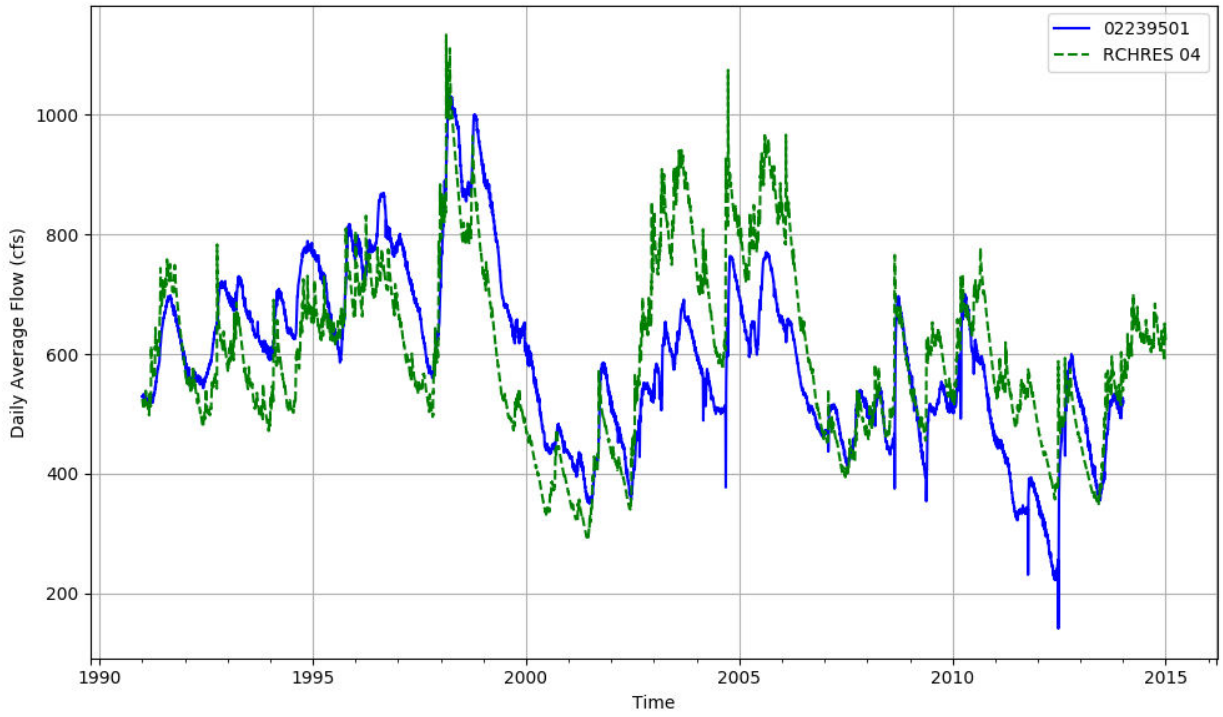


Figure T-03080102-4: Daily flow for HSFP reach 04 and USGS station 02239501.

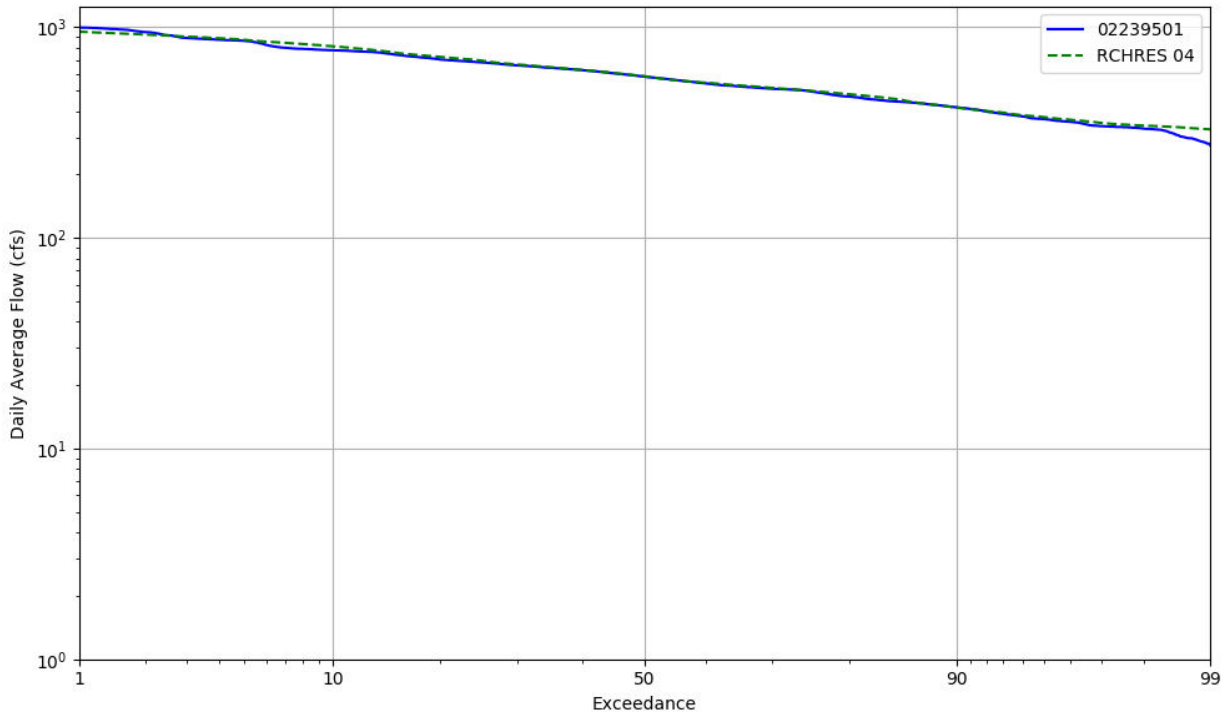


Figure T-03080102-5: Daily exceedance for HSFP reach 04 and USGS station 02239501.

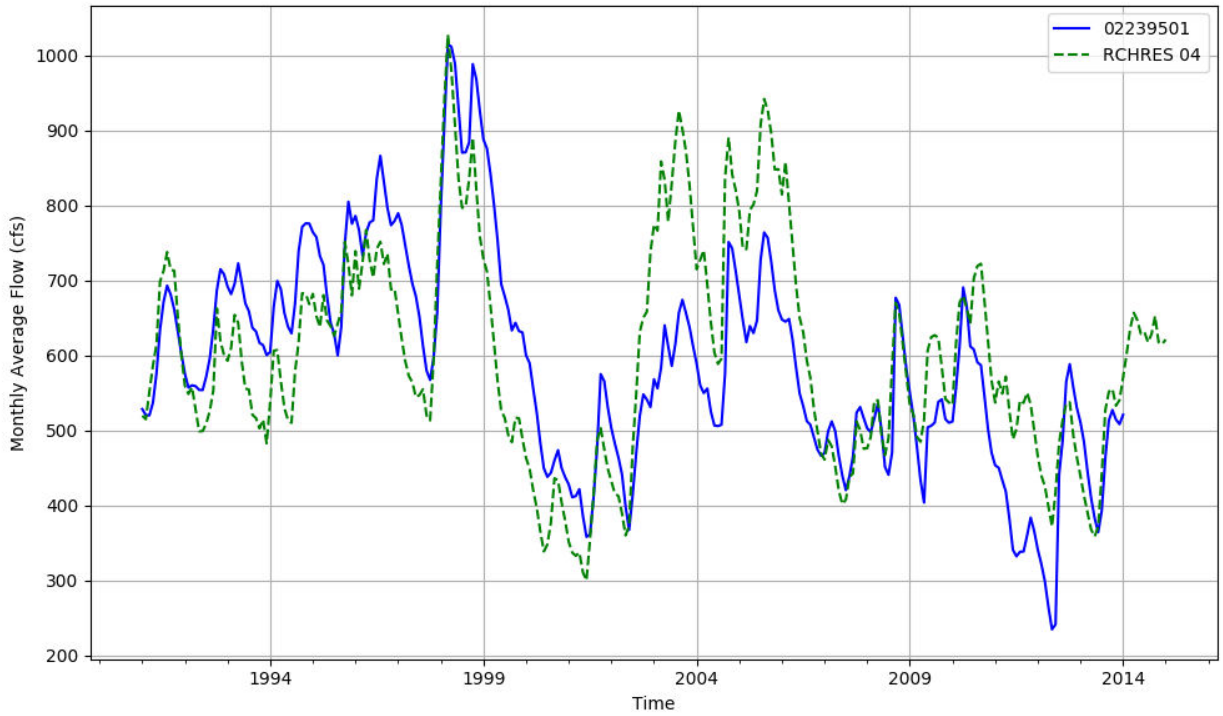


Figure T-03080102-6: Monthly flow for HSFP reach 04 and USGS station 02239501.

HSPF REACH 07, USGS GAUGE 02238500

Water-Data Report 2010
02238500 OCKLAWAHA RIVER AT MOSS BLUFF, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 290452, long 815251 referenced to North American Datum of 1983, in SW 1/4 sec.23, T.16 S., R.24 E., Marion County, FL, Hydrologic Unit 03080102, at downstream side of spillway structure of Moss Bluff Dam, 0.3 mi upstream from bridge on State Highway 464, 0.4 mi southwest of Moss Bluff, 3.9 mi northeast of Ocklawaha, and 64.3 mi upstream from mouth.

DRAINAGE AREA.--879 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1943 to September 1943 (discharge measurements only); October 1943 to September 1955; April 1956, and March 1958 to July 1967 (discharge measurements only), August 1967 to current year.

REVISED RECORDS.--WDR FL-74-1: Drainage area.

GAGE.--Water-stage recorder, gate-opening recorder, and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Aug. 12, 1943, nonrecording gage, and Aug. 12, 1943 to Sept. 30, 1955, water-stage recorder at site 0.3 mi downstream at datum 0.12 ft lower; Nov. 1, 1963 to Aug. 10, 1967, nonrecording gage at site 0.3 mi downstream at present datum; Aug. 11, 1967 to Sept. 30, 1969, water-stage recorder at site 0.3 mi downstream at present datum. Auxiliary gage at upstream side of spillway structure.

COOPERATION.--Gate-opening record provided by St. Johns River Water Management District.

REMARKS.--Records fair. Flow regulated by manipulation of gates in spillway. Discharge computed from relation between discharge, gate openings, and lockages. Discharge from a combination of two main gates and two minimum flow gates, which were installed in 2008.

Table T-03080102-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02238500.

Statistic	Value
Bias	0.86
Standard error	169.01
Relative bias	0.01

Relative standard error	0.60
Nash-Sutcliffe coefficient	0.64
Kling-Gupta coefficient	0.73
Coefficient of efficiency	0.48
Index of agreement	0.71

Table T-03080102-4: Hydrologic Indices Between USGS Gauge 02238500 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02238500	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	151.95	152.88	0.61
MA2: Median, all daily flows	34.00	52.79	55.26
MA3: CV, all daily flows	131.31	111.91	-14.77
MA4: CV, log of all daily flows	214.17	138.23	-35.46
MA5: Mean daily flow / median daily flow	4.47	2.90	-35.20
MA9: (Q10 - Q90) / median daily flow	15.43	7.05	-54.31
MA10: (Q20 - Q80) / median daily flow	1.32	2.53	90.94
MA11: (Q25 - Q75) / median daily flow	0.88	1.83	107.61
MA12: Mean monthly flow, January	148.88	176.17	18.33
MA13: Mean monthly flow, February	166.56	143.58	-13.80
MA14: Mean monthly flow, March	269.93	187.11	-30.68
MA15: Mean monthly flow, April	196.52	127.55	-35.10
MA16: Mean monthly flow, May	57.72	51.94	-10.01
MA17: Mean monthly flow, June	141.93	80.12	-43.55
MA18: Mean monthly flow, July	174.04	148.13	-14.89
MA19: Mean monthly flow, August	172.95	153.44	-11.28
MA20: Mean monthly flow, September	162.88	190.42	16.91
MA21: Mean monthly flow, October	111.97	203.95	82.15
MA22: Mean monthly flow, November	62.56	145.50	132.59
MA23: Mean monthly flow, December	83.75	151.72	81.16
ML1: Mean minimum monthly flow, January	52.25	99.98	91.35
ML2: Mean minimum monthly flow, February	85.25	96.03	12.65
ML3: Mean minimum monthly flow, March	96.95	105.87	9.20
ML4: Mean minimum monthly flow, April	51.36	60.80	18.37
ML5: Mean minimum monthly flow, May	33.98	38.70	13.90
ML6: Mean minimum monthly flow, June	49.18	39.34	-20.01
ML7: Mean minimum monthly flow, July	50.17	85.33	70.07
ML8: Mean minimum monthly flow, August	63.04	93.58	48.44
ML9: Mean minimum monthly flow, September	39.91	80.69	102.16
ML10: Mean minimum monthly flow, October	51.87	96.08	85.24
ML11: Mean minimum monthly flow, November	33.13	76.80	131.83
ML12: Mean minimum monthly flow, December	33.20	74.73	125.11
ML13: CV of minimum monthly flows	271.44	137.33	-49.41
ML14: Mean minimum daily flow / mean median annual flow	0.29	0.59	102.18
ML15: Mean minimum annual flow / mean annual flow	0.18	0.37	113.31
ML16: Median minimum annual flow / median annual flow	0.23	0.63	176.51
ML20: Ratio of baseflow volume to total flow volume	0.56	0.69	23.12
ML22: Mean annual minimum flow divided by catchment area	0.12	0.34	183.87
RA1: Mean of positive changes from one day to next (rise rate)	27.16	22.52	
RA2: CV, mean of positive changes from one day to next (rise rate)	341.15	276.27	
RA3: Mean of negative changes from one day to next	27.01	10.67	

(fall rate)			
RA4: CV, mean of negative changes from one day to next (fall rate)	278.91	207.73	
RA5: Ratio of days that are higher than previous day	0.39	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.14	0.02	
RA8: Number of flow reversals from one day to the next	157.75	28.38	
RA9: CV, number of flow reversals from one day to the next	20.84	62.27	

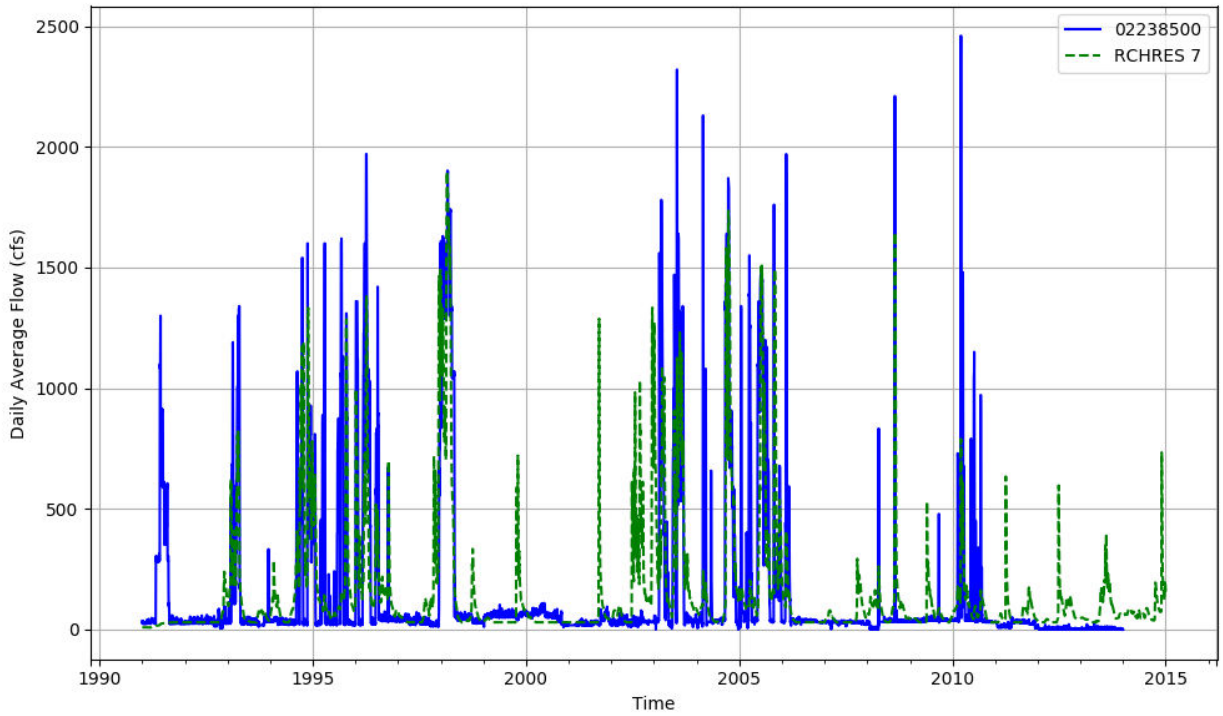


Figure T-03080102-7: Daily flow for HSFP reach 07 and USGS station 02238500.

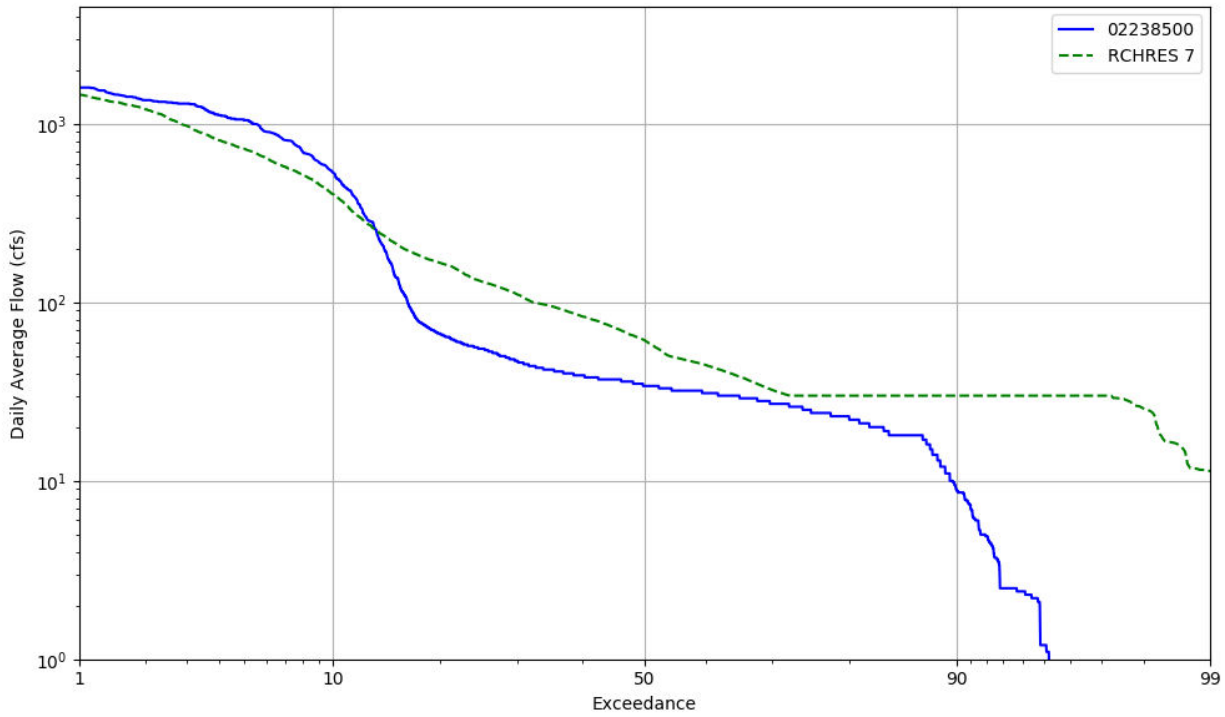


Figure T-03080102-8: Daily exceedance for HSFP reach 07 and USGS station 02238500.

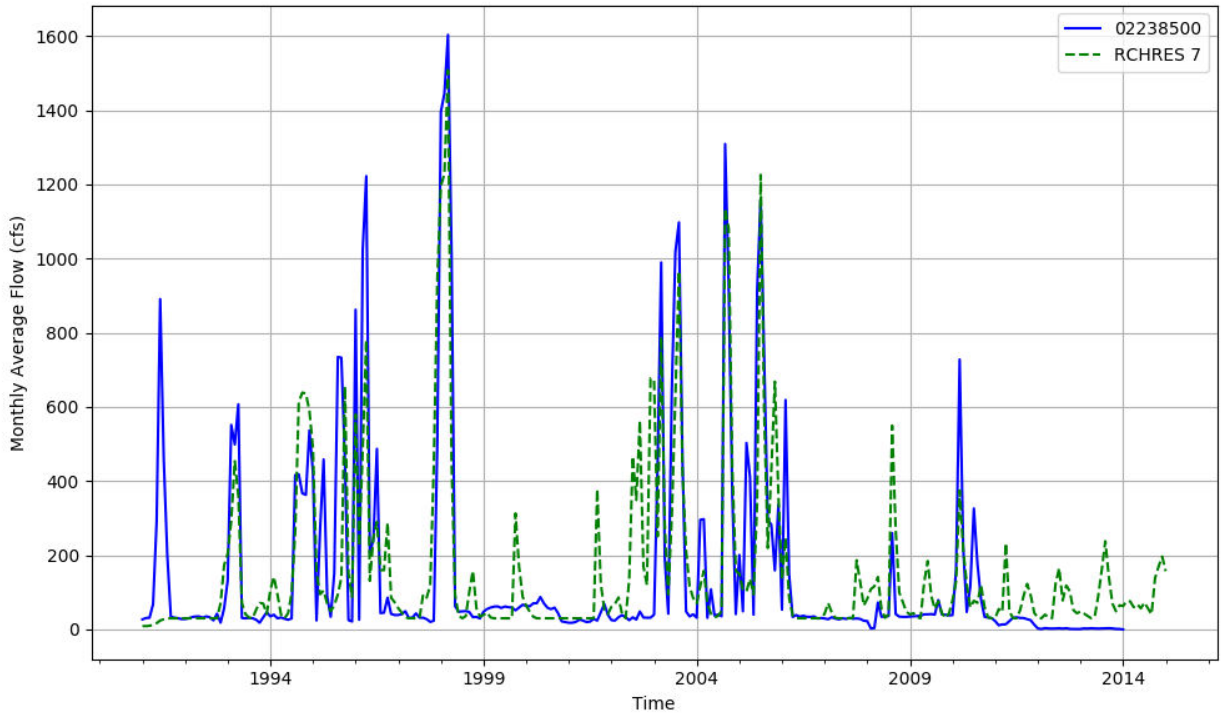


Figure T-03080102-9: Monthly flow for HSFP reach 07 and USGS station 02238500.

HSPF REACH 10, USGS GAUGE 02240000

Water-Data Report 2009
02240000 OCKLAWAHA RIVER NEAR CONNER, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 291252, long 815910 referenced to North American Datum of 1927, in SW 1/4 sec.2, T.15 S., R.23 E., Marion County, FL, Hydrologic Unit 03080102, on right bridge fender 75 ft upstream from bridge on State Highway 40, 0.2 mi downstream from Silver River, 1.5 mi southwest of Conner, 8 mi east of Ocala, and 51.0 mi upstream from mouth.

DRAINAGE AREA.--1,196 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1930 to September 1946, March 1963 to September 1977 (gage heights only), October 1977 to current year.

REVISED RECORDS.--WDR FL-74-1: Drainage area.

GAGE.--Water-stage recorder, acoustic-velocity meter, and data-collection platform. Datum of gage is 31.79 ft above NGVD of 1929.

REMARKS.--Records good.

Table T-03080102-5: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02240000.

Statistic	Value
Bias	-76.28
Standard error	221.23
Relative bias	-0.09
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.73
Kling-Gupta coefficient	0.78
Coefficient of efficiency	0.48
Index of agreement	0.73

Table T-03080102-6: Hydrologic Indices Between USGS Gauge 02240000 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02240000	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	812.55	736.05	-9.42
MA2: Median, all daily flows	669.00	622.58	-6.94
MA3: CV, all daily flows	32.24	34.10	5.77

MA4: CV, log of all daily flows	45.92	40.45	-11.91
MA5: Mean daily flow / median daily flow	1.21	1.18	-2.66
MA9: (Q10 - Q90) / median daily flow	1.31	1.17	-10.53
MA10: (Q20 - Q80) / median daily flow	0.61	0.58	-6.10
MA11: (Q25 - Q75) / median daily flow	0.49	0.45	-7.57
MA12: Mean monthly flow, January	803.12	751.73	-6.40
MA13: Mean monthly flow, February	804.18	707.46	-12.03
MA14: Mean monthly flow, March	915.05	750.16	-18.02
MA15: Mean monthly flow, April	822.75	665.72	-19.09
MA16: Mean monthly flow, May	642.78	553.85	-13.83
MA17: Mean monthly flow, June	712.01	597.96	-16.02
MA18: Mean monthly flow, July	776.34	703.92	-9.33
MA19: Mean monthly flow, August	810.12	738.01	-8.90
MA20: Mean monthly flow, September	855.95	792.99	-7.35
MA21: Mean monthly flow, October	810.13	809.14	-0.12
MA22: Mean monthly flow, November	706.67	709.87	0.45
MA23: Mean monthly flow, December	710.55	708.47	-0.29
ML1: Mean minimum monthly flow, January	696.17	641.33	-7.88
ML2: Mean minimum monthly flow, February	726.52	630.14	-13.27
ML3: Mean minimum monthly flow, March	774.04	650.07	-16.02
ML4: Mean minimum monthly flow, April	715.35	587.58	-17.86
ML5: Mean minimum monthly flow, May	617.87	532.48	-13.82
ML6: Mean minimum monthly flow, June	627.96	536.79	-14.52
ML7: Mean minimum monthly flow, July	662.43	616.99	-6.86
ML8: Mean minimum monthly flow, August	707.43	652.62	-7.75
ML9: Mean minimum monthly flow, September	680.57	642.08	-5.65
ML10: Mean minimum monthly flow, October	727.78	673.71	-7.43
ML11: Mean minimum monthly flow, November	684.91	636.76	-7.03
ML12: Mean minimum monthly flow, December	667.13	619.02	-7.21
ML13: CV of minimum monthly flows	42.36	35.38	-16.48
ML14: Mean minimum daily flow / mean median annual flow	0.78	0.77	-1.23
ML15: Mean minimum annual flow / mean annual flow	0.70	0.69	-1.86
ML16: Median minimum annual flow / median annual flow	0.78	0.77	-2.19
ML20: Ratio of baseflow volume to total flow volume	0.92	0.91	-1.16
ML22: Mean annual minimum flow divided by catchment area	5.43	4.89	-9.86
RA1: Mean of positive changes from one day to next (rise rate)	30.91	39.40	
RA2: CV, mean of positive changes from one day to next (rise rate)	259.83	266.40	
RA3: Mean of negative changes from one day to next (fall rate)	18.34	12.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	225.03	198.06	
RA5: Ratio of days that are higher than previous day	0.34	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.01	
RA8: Number of flow reversals from one day to the next	110.54	64.79	
RA9: CV, number of flow reversals from one day to the next	39.85	20.33	

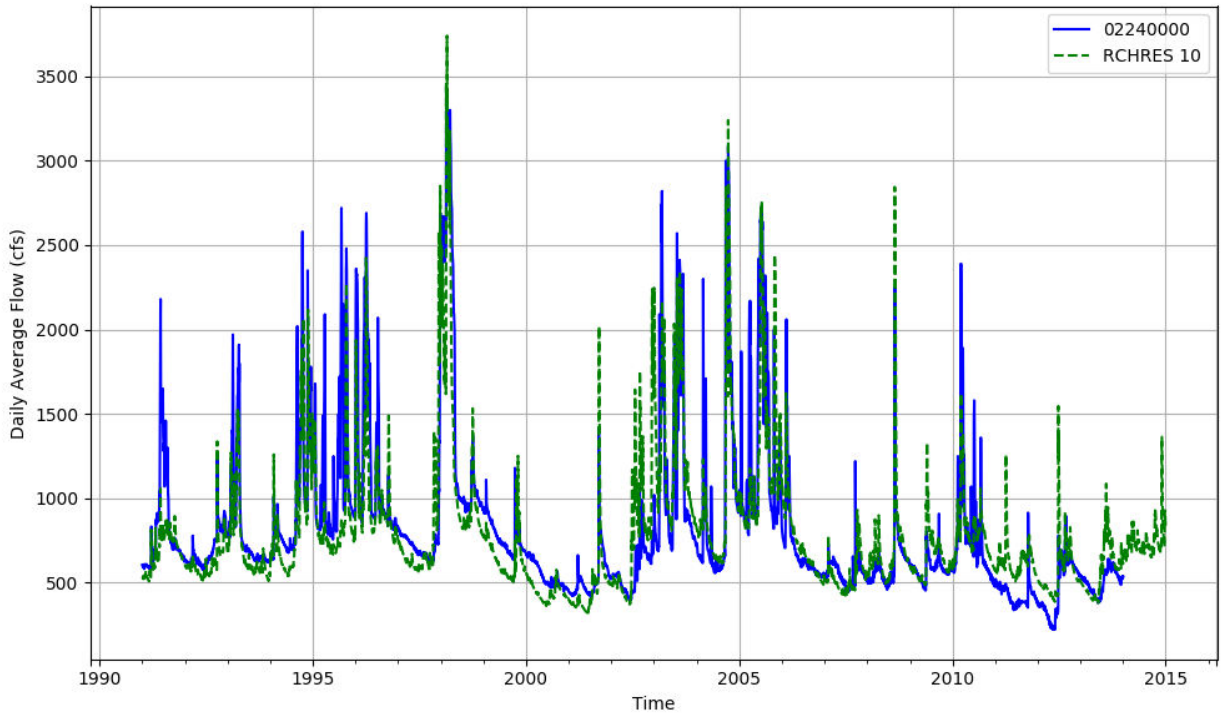


Figure T-03080102-10: Daily flow for HSFP reach 10 and USGS station 02240000.

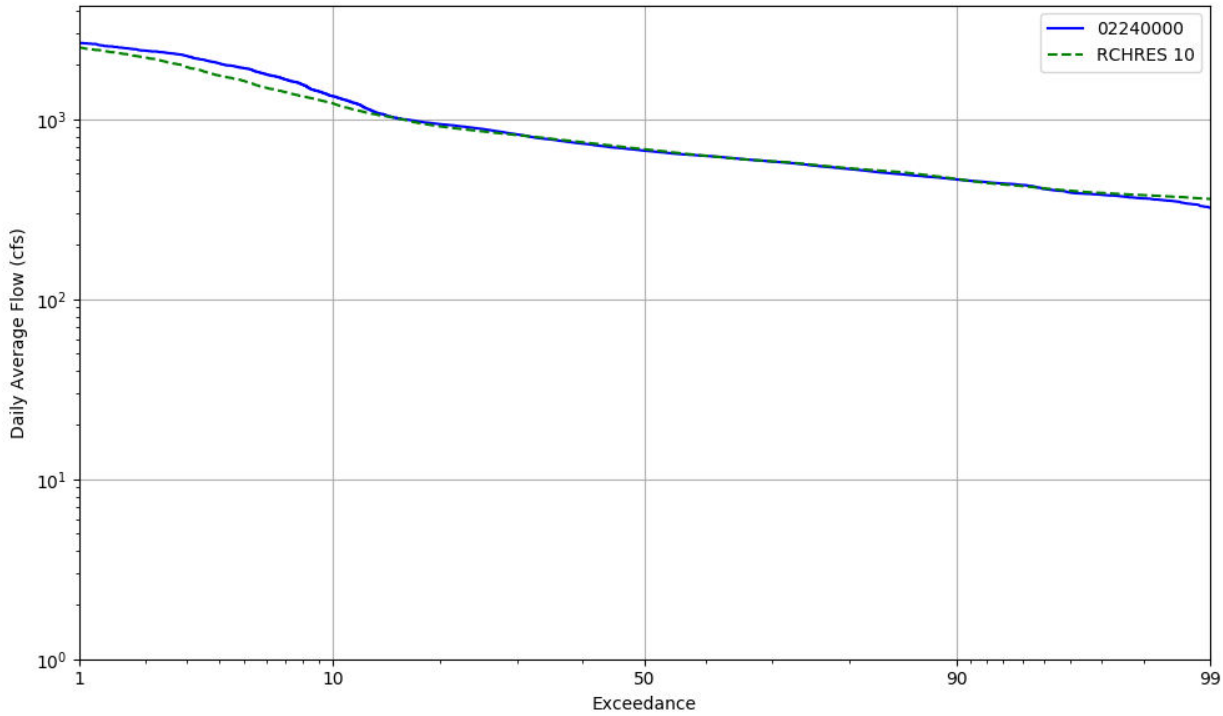


Figure T-03080102-11: Daily exceedance for HSFP reach 10 and USGS station 02240000.

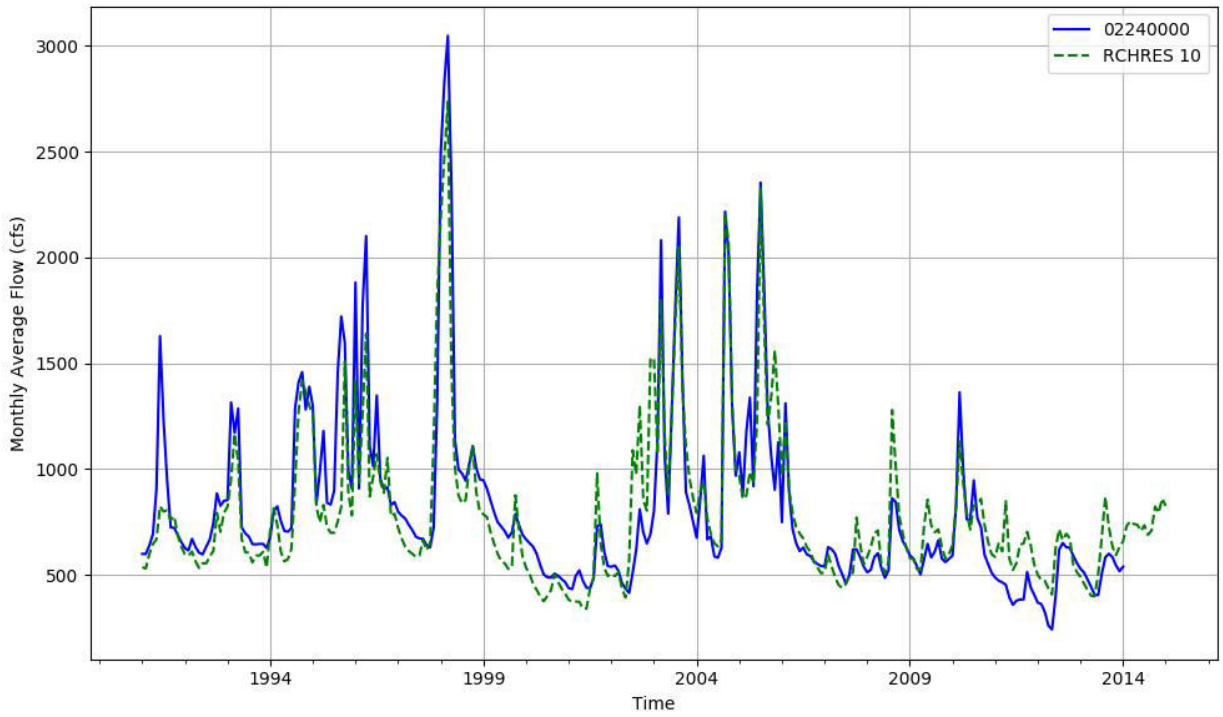


Figure T-03080102-12: Monthly flow for HSFP reach 10 and USGS station 02240000.

HSPF REACH 13, USGS GAUGE 02240500

Water-Data Report 2009
02240500 OCKLAWAHA RIVER AT EUREKA, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 292218, long 815407 referenced to North American Datum of 1983, in SW 1/4 sec.9, T.13 S., R.24 E., Marion County, FL, Hydrologic Unit 03080102, near right bank on upstream end of bridge pier on County Road 316 in Eureka, 3.1 mi downstream from Eaton Creek, and 33.1 mi upstream from mouth.

DRAINAGE AREA.--1,367 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1930 to June 1934, September 1943 to December 1952, January 1981 to current year.

REVISED RECORDS.--WDR FL-81-1: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Feb. 13, 1930 to June 30, 1934, nonrecording gage, and Sept. 16, 1943 to Dec. 31, 1952, water-stage recorder near present site at datum 15.44 ft higher.

REMARKS.--Records fair except for periods of estimated daily discharge, which are poor.

Table T-03080102-7: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02240500.

Statistic	Value
Bias	-95.25
Standard error	223.81
Relative bias	-0.11
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.51
Index of agreement	0.76

Table T-03080102-8: Hydrologic Indices Between USGS Gauge 02240500 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02240500	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	885.76	790.30	-10.78

MA2: Median, all daily flows	720.00	651.59	-9.50
MA3: CV, all daily flows	35.87	40.16	11.98
MA4: CV, log of all daily flows	44.47	43.90	-1.28
MA5: Mean daily flow / median daily flow	1.23	1.21	-1.41
MA9: (Q10 - Q90) / median daily flow	1.33	1.32	-0.76
MA10: (Q20 - Q80) / median daily flow	0.68	0.65	-4.33
MA11: (Q25 - Q75) / median daily flow	0.53	0.49	-6.50
MA12: Mean monthly flow, January	855.92	803.02	-6.18
MA13: Mean monthly flow, February	853.65	773.98	-9.33
MA14: Mean monthly flow, March	976.55	809.90	-17.07
MA15: Mean monthly flow, April	881.62	694.23	-21.26
MA16: Mean monthly flow, May	681.70	573.14	-15.92
MA17: Mean monthly flow, June	760.66	640.13	-15.85
MA18: Mean monthly flow, July	852.72	763.03	-10.52
MA19: Mean monthly flow, August	885.25	805.82	-8.97
MA20: Mean monthly flow, September	973.30	875.56	-10.04
MA21: Mean monthly flow, October	919.79	882.09	-4.10
MA22: Mean monthly flow, November	795.30	740.43	-6.90
MA23: Mean monthly flow, December	778.25	753.98	-3.12
ML1: Mean minimum monthly flow, January	754.96	655.78	-13.14
ML2: Mean minimum monthly flow, February	736.83	646.90	-12.20
ML3: Mean minimum monthly flow, March	817.13	671.12	-17.87
ML4: Mean minimum monthly flow, April	745.22	593.33	-20.38
ML5: Mean minimum monthly flow, May	623.04	536.14	-13.95
ML6: Mean minimum monthly flow, June	661.13	547.51	-17.19
ML7: Mean minimum monthly flow, July	730.83	636.06	-12.97
ML8: Mean minimum monthly flow, August	760.87	674.69	-11.33
ML9: Mean minimum monthly flow, September	742.22	659.80	-11.10
ML10: Mean minimum monthly flow, October	805.52	690.13	-14.32
ML11: Mean minimum monthly flow, November	752.96	646.00	-14.21
ML12: Mean minimum monthly flow, December	711.48	630.63	-11.36
ML13: CV of minimum monthly flows	42.31	36.57	-13.55
ML14: Mean minimum daily flow / mean median annual flow	0.73	0.74	1.86
ML15: Mean minimum annual flow / mean annual flow	0.66	0.65	-0.43
ML16: Median minimum annual flow / median annual flow	0.73	0.75	3.59
ML20: Ratio of baseflow volume to total flow volume	0.91	0.88	-3.25
ML22: Mean annual minimum flow divided by catchment area	5.52	4.94	-10.47
RA1: Mean of positive changes from one day to next (rise rate)	37.57	52.51	
RA2: CV, mean of positive changes from one day to next (rise rate)	260.34	289.06	
RA3: Mean of negative changes from one day to next (fall rate)	22.63	18.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	185.88	187.86	
RA5: Ratio of days that are higher than previous day	0.35	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.01	
RA8: Number of flow reversals from one day to the next	88.54	55.50	
RA9: CV, number of flow reversals from one day to the next	42.31	18.66	

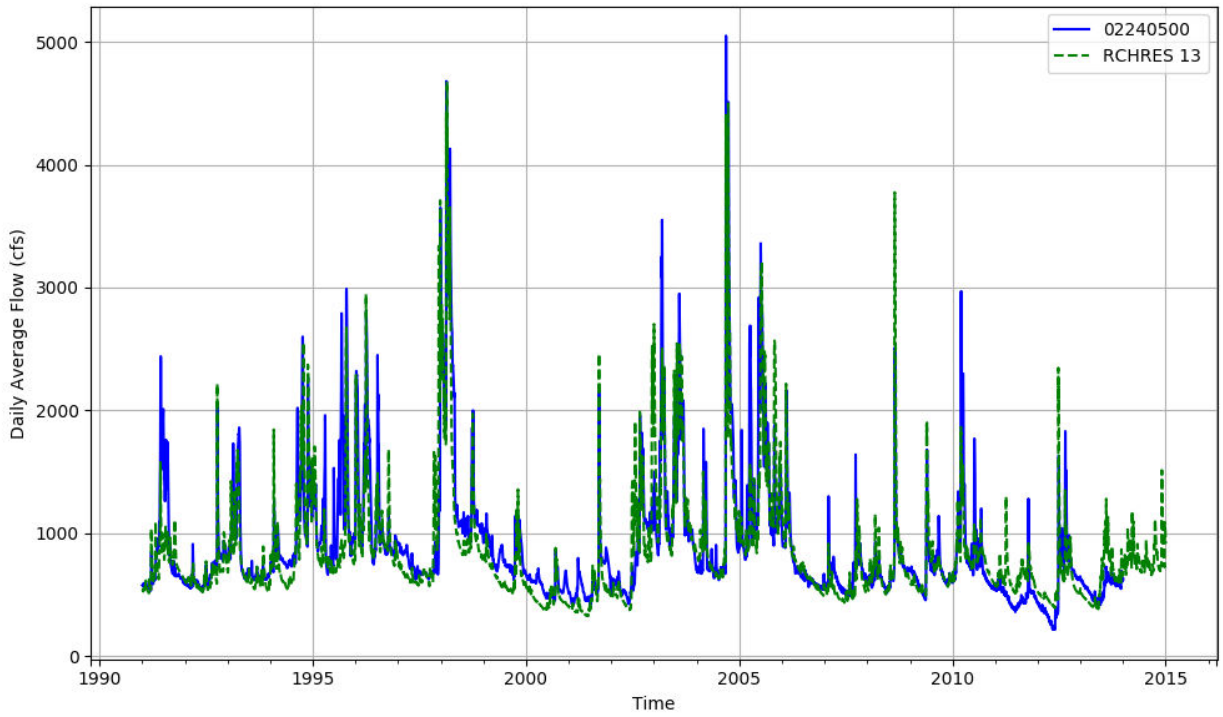


Figure T-03080102-13: Daily flow for HSFP reach 13 and USGS station 02240500.

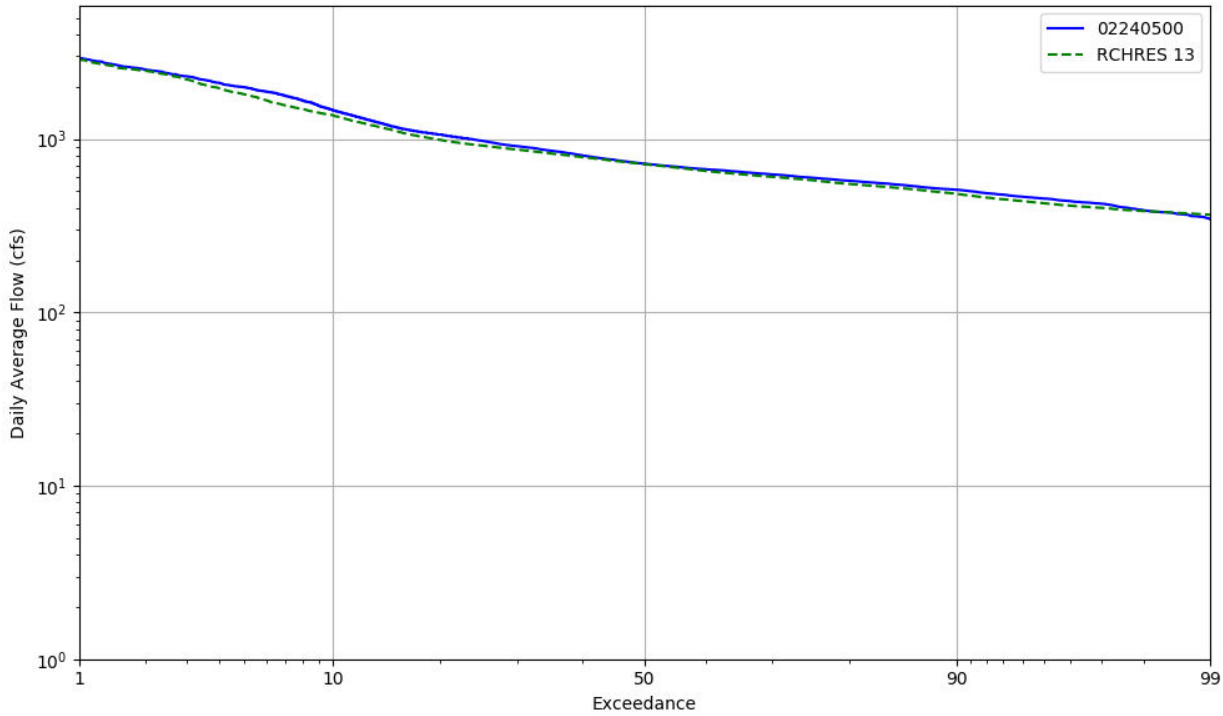


Figure T-03080102-14: Daily exceedance for HSFP reach 13 and USGS station 02240500.

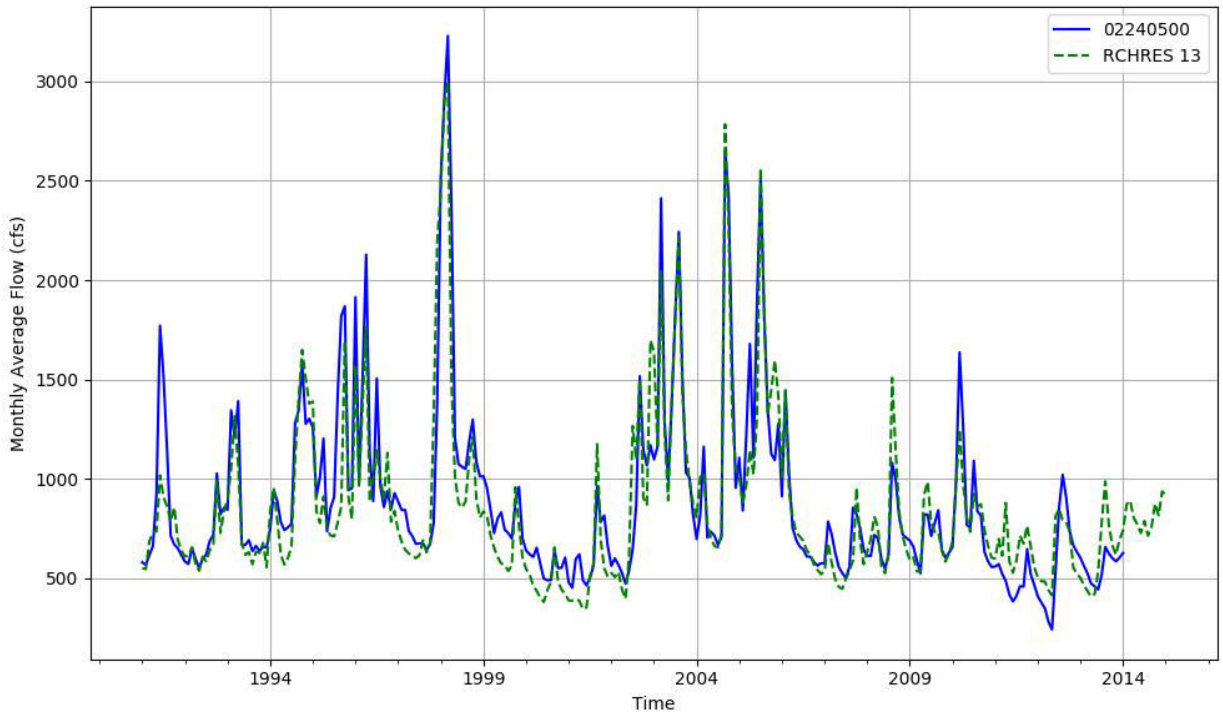


Figure T-03080102-15: Monthly flow for HSFP reach 13 and USGS station 02240500.

HSPF REACH 25, USGS GAUGE 02237293

Water-Data Report 2009
02237293 PALATLAKAHA RIVER AT STRUCTURE M-1, NEAR OKAHUMPKA, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 284439, long 815222 referenced to North American Datum of 1927, in SE 1/4 sec.14, T.20 S., R.24 E., Lake County, FL, Hydrologic Unit 03080102, on left bank 150 ft upstream from structure M-1, 270 ft downstream from CSX Railroad bridge, 0.3 mi upstream from bridge on State Highway 48, and 1.4 mi east of Okahumpka.

DRAINAGE AREA.--221 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1970 to July 1976, October 1976 to current year.

REVISED RECORDS.--WDR FL-72-1: Drainage area. WRD FL-06-1A: 2005.

GAGE.--Water-stage recorder, gate-opening recorder, and data-collection platform. Datum of gage is at NGVD of 1929.

COOPERATION.--Gate-opening record provided by the Lake County Water Authority.

REMARKS.--Records fair. Flow regulated by manipulation of gates in spillway. Discharge computed from relation between discharge, head, and gate openings.

Table T-03080102-9: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02237293.

Statistic	Value
Bias	15.80
Standard error	58.55
Relative bias	0.50
Relative standard error	0.62
Nash-Sutcliffe coefficient	0.61
Kling-Gupta coefficient	0.37
Coefficient of efficiency	0.25
Index of agreement	0.57

Table T-03080102-10: Hydrologic Indices Between USGS Gauge 02237293 and HSPF Reach 25.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02237293	Simulated Reach 25	Percent Difference
MA1: Mean, all daily flows	31.41	47.29	50.55

MA2: Median, all daily flows	1.20	24.99	1982.14
MA3: CV, all daily flows	133.34	73.25	-45.07
MA4: CV, log of all daily flows	306.31	111.36	-63.64
MA5: Mean daily flow / median daily flow	26.17	1.89	-92.77
MA9: (Q10 - Q90) / median daily flow	66.67	4.69	-92.97
MA10: (Q20 - Q80) / median daily flow	4.08	2.47	-39.55
MA11: (Q25 - Q75) / median daily flow	2.92	1.76	-39.79
MA12: Mean monthly flow, January	34.63	40.22	16.14
MA13: Mean monthly flow, February	34.93	40.44	15.78
MA14: Mean monthly flow, March	44.05	44.69	1.43
MA15: Mean monthly flow, April	31.22	46.34	48.42
MA16: Mean monthly flow, May	3.15	27.49	772.35
MA17: Mean monthly flow, June	7.01	26.02	271.29
MA18: Mean monthly flow, July	33.48	45.24	35.15
MA19: Mean monthly flow, August	36.36	52.97	45.68
MA20: Mean monthly flow, September	53.15	67.48	26.96
MA21: Mean monthly flow, October	50.31	67.66	34.48
MA22: Mean monthly flow, November	20.33	47.30	132.69
MA23: Mean monthly flow, December	12.89	38.01	194.95
ML1: Mean minimum monthly flow, January	15.14	33.15	119.01
ML2: Mean minimum monthly flow, February	22.21	33.08	48.95
ML3: Mean minimum monthly flow, March	33.68	39.65	17.73
ML4: Mean minimum monthly flow, April	4.90	34.91	612.43
ML5: Mean minimum monthly flow, May	1.16	20.78	1691.69
ML6: Mean minimum monthly flow, June	1.00	17.52	1648.95
ML7: Mean minimum monthly flow, July	14.86	36.76	147.28
ML8: Mean minimum monthly flow, August	22.40	44.43	98.34
ML9: Mean minimum monthly flow, September	31.41	47.97	52.72
ML10: Mean minimum monthly flow, October	30.98	51.15	65.10
ML11: Mean minimum monthly flow, November	6.40	37.71	489.13
ML12: Mean minimum monthly flow, December	1.89	28.21	1396.04
ML13: CV of minimum monthly flows	427.41	142.21	-66.73
ML14: Mean minimum daily flow / mean median annual flow	0.05	0.28	469.58
ML15: Mean minimum annual flow / mean annual flow	0.02	0.20	969.11
ML16: Median minimum annual flow / median annual flow	0.00	0.28	
ML20: Ratio of baseflow volume to total flow volume	0.74	0.94	26.93
ML22: Mean annual minimum flow divided by catchment area	0.00	0.10	1946.50
RA1: Mean of positive changes from one day to next (rise rate)	5.59	1.86	
RA2: CV, mean of positive changes from one day to next (rise rate)	319.00	348.98	
RA3: Mean of negative changes from one day to next (fall rate)	2.79	0.76	
RA4: CV, mean of negative changes from one day to next (fall rate)	364.84	202.50	
RA5: Ratio of days that are higher than previous day	0.20	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.09	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.02	
RA8: Number of flow reversals from one day to the next	54.88	33.75	
RA9: CV, number of flow reversals from one day to the next	39.95	43.08	

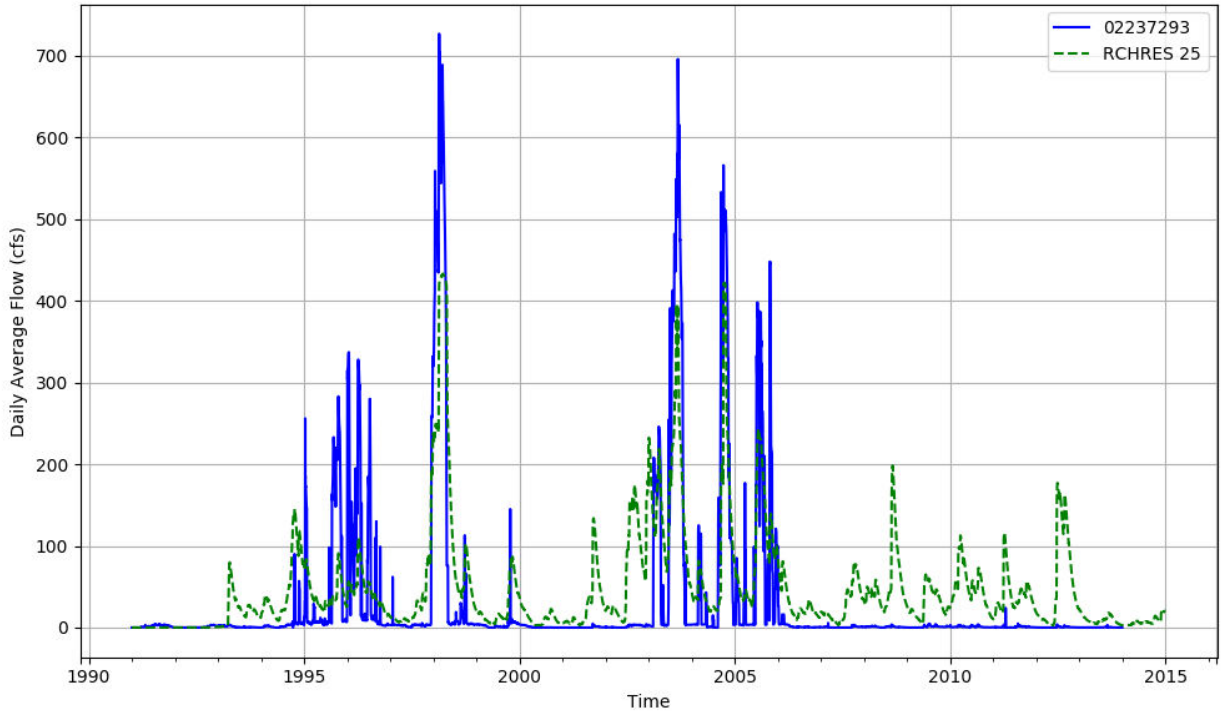


Figure T-03080102-16: Daily flow for HSFP reach 25 and USGS station 02237293.

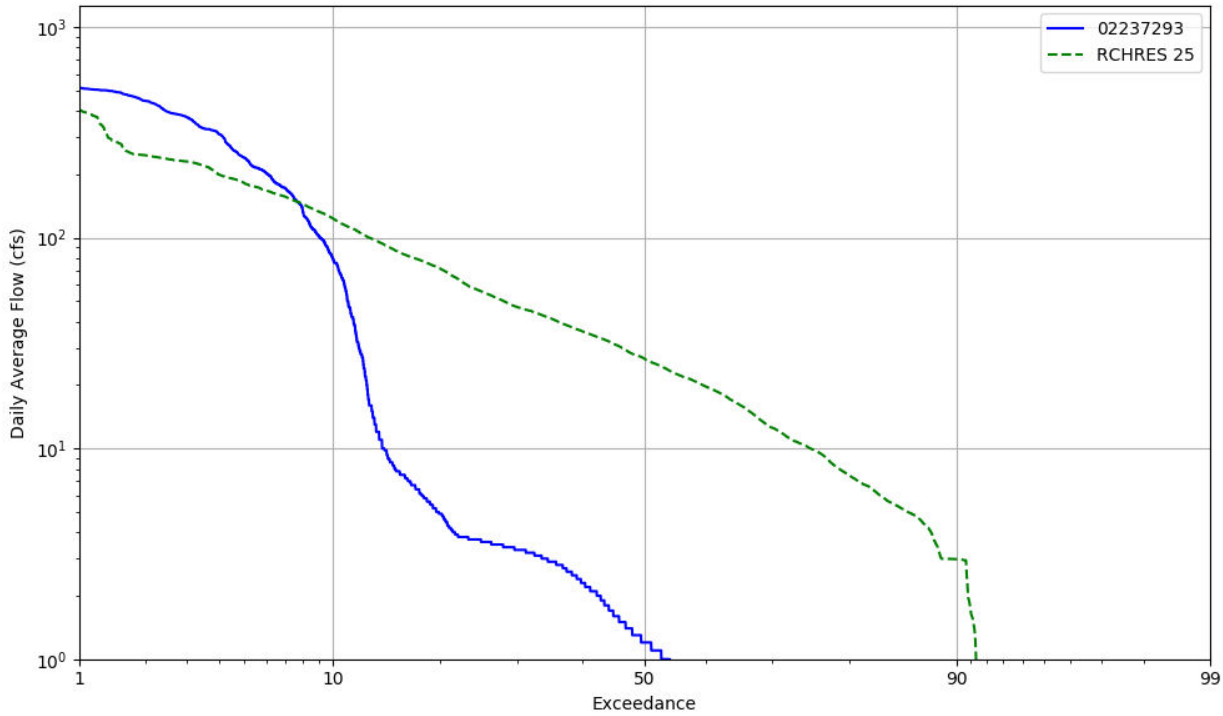


Figure T-03080102-17: Daily exceedance for HSFP reach 25 and USGS station 02237293.

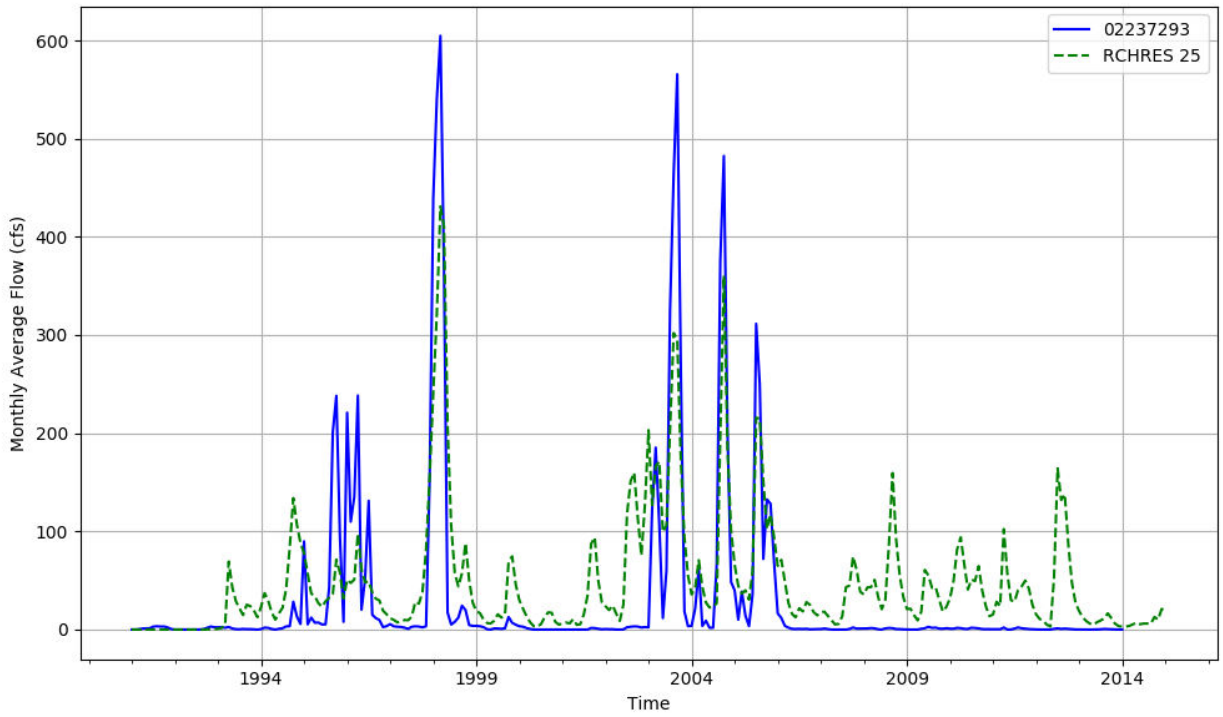


Figure T-03080102-18: Monthly flow for HSFP reach 25 and USGS station 02237293.

HSPF REACH 27, USGS GAUGE 02237700

Water-Data Report 2010
02237700 APOPKA-BEAUCLAIR CANAL NEAR ASTATULA, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 284320, long 814106 referenced to North American Datum of 1927, in NW 1/4 sec.26, T.20 S., R.26 E., Lake County, FL, Hydrologic Unit 03080102, near left bank 80 ft upstream from lock and dam, 500 ft upstream from bridge on County Road 48, and 3.0 mi east of Astatula.

DRAINAGE AREA.--184 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1942 to June 1948 (discharge measurements only at site 1.5 mi downstream), July 1958 to current year.

REVISED RECORDS.--WSP 1905: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929. Prior to June 1948, nonrecording gage at site 1.5 mi downstream at datum 60.68 ft higher. March to June 1958, nonrecording gage at present site and datum. Since July 1958, auxiliary water-stage recorder at downstream side of lock and dam at same datum.

COOPERATION.--Gate-opening record provided by St. Johns River Water Management District.

REMARKS.--Records poor. Since May 1956, flow regulated at station by manipulation of gates in spillway. Discharge computed from relation between discharge, head, and gate openings. Starting, March 2, 2009, flow regulated by Nutrient Reduction Facility (NURF) which bypasses the lock and dam structure. Discharge is computed by the index velocity and stage in the NURF outlet channel and added to any structure discharge.

Table T-03080102-11: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02237700.

Statistic	Value
Bias	3.55
Standard error	72.62
Relative bias	0.07
Relative standard error	0.78
Nash-Sutcliffe coefficient	0.40
Kling-Gupta coefficient	0.70

Coefficient of efficiency	0.40
Index of agreement	0.71

Table T-03080102-12: Hydrologic Indices Between USGS Gauge 02237700 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02237700	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	52.79	56.30	6.65
MA2: Median, all daily flows	15.00	13.67	-8.90
MA3: CV, all daily flows	119.13	101.85	-14.50
MA4: CV, log of all daily flows	206.22	189.49	-8.11
MA5: Mean daily flow / median daily flow	3.52	4.12	17.06
MA9: (Q10 - Q90) / median daily flow	10.37	10.33	-0.41
MA10: (Q20 - Q80) / median daily flow	1.51	2.11	39.96
MA11: (Q25 - Q75) / median daily flow	1.27	1.01	-20.48
MA12: Mean monthly flow, January	55.42	71.66	29.30
MA13: Mean monthly flow, February	44.11	49.73	12.72
MA14: Mean monthly flow, March	62.38	66.70	6.91
MA15: Mean monthly flow, April	53.46	55.72	4.24
MA16: Mean monthly flow, May	17.08	15.17	-11.16
MA17: Mean monthly flow, June	41.85	28.95	-30.82
MA18: Mean monthly flow, July	65.81	48.50	-26.30
MA19: Mean monthly flow, August	86.58	44.62	-48.47
MA20: Mean monthly flow, September	62.61	65.17	4.09
MA21: Mean monthly flow, October	45.72	73.74	61.29
MA22: Mean monthly flow, November	26.18	59.55	127.48
MA23: Mean monthly flow, December	40.60	62.84	54.80
ML1: Mean minimum monthly flow, January	32.70	51.60	57.78
ML2: Mean minimum monthly flow, February	36.26	40.22	10.91
ML3: Mean minimum monthly flow, March	37.15	46.36	24.79
ML4: Mean minimum monthly flow, April	15.61	20.54	31.60
ML5: Mean minimum monthly flow, May	11.79	12.28	4.17
ML6: Mean minimum monthly flow, June	12.48	12.31	-1.39
ML7: Mean minimum monthly flow, July	19.32	33.40	72.85
ML8: Mean minimum monthly flow, August	25.98	32.55	25.28
ML9: Mean minimum monthly flow, September	28.47	25.97	-8.79
ML10: Mean minimum monthly flow, October	27.86	48.80	75.15
ML11: Mean minimum monthly flow, November	14.24	32.14	125.76
ML12: Mean minimum monthly flow, December	18.00	32.70	81.62
ML13: CV of minimum monthly flows	224.58	228.00	1.52
ML14: Mean minimum daily flow / mean median annual flow	0.48	0.67	40.72
ML15: Mean minimum annual flow / mean annual flow	0.22	0.51	127.17
ML16: Median minimum annual flow / median annual flow	0.49	0.88	81.80
ML20: Ratio of baseflow volume to total flow volume	0.70	0.79	12.54
ML22: Mean annual minimum flow divided by catchment area	0.08	0.12	45.87
RA1: Mean of positive changes from one day to next (rise rate)	10.48	5.39	
RA2: CV, mean of positive changes from one day to next (rise rate)	303.99	413.31	
RA3: Mean of negative changes from one day to next (fall rate)	9.33	2.10	
RA4: CV, mean of negative changes from one day to next (fall rate)	295.74	274.25	

RA5: Ratio of days that are higher than previous day	0.21	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.00	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.00	
RA8: Number of flow reversals from one day to the next	84.50	66.88	
RA9: CV, number of flow reversals from one day to the next	47.21	29.63	

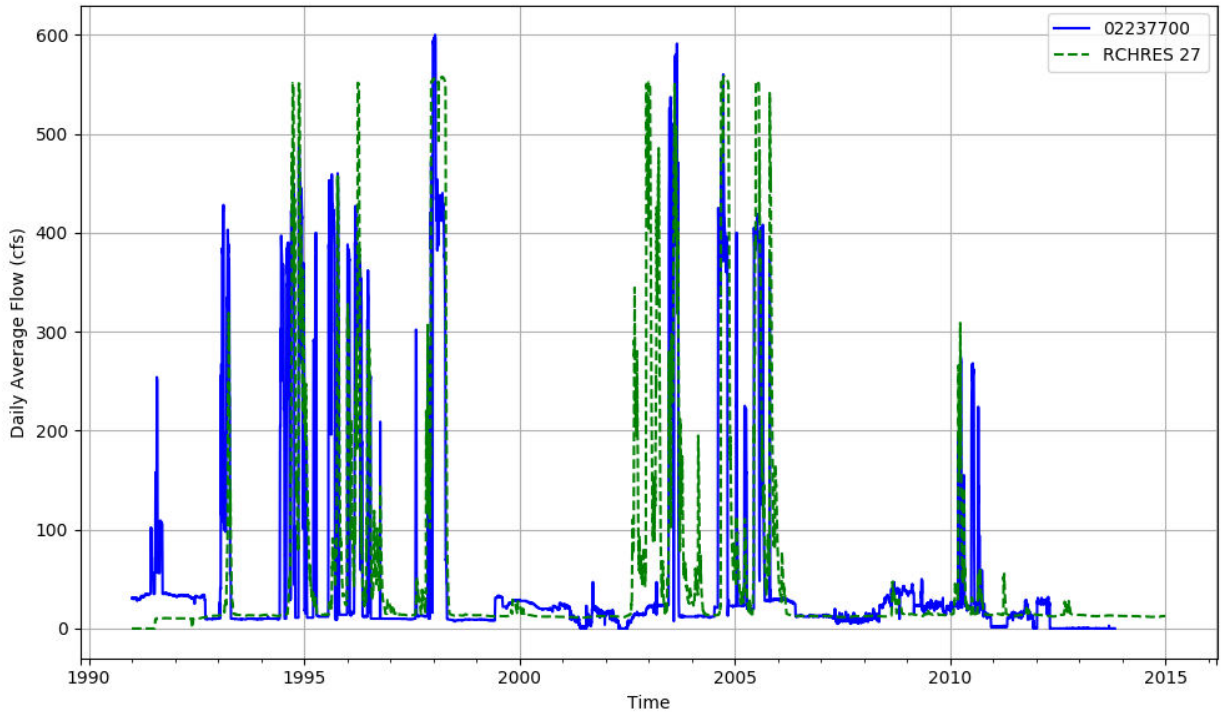


Figure T-03080102-19: Daily flow for HSFP reach 27 and USGS station 02237700.

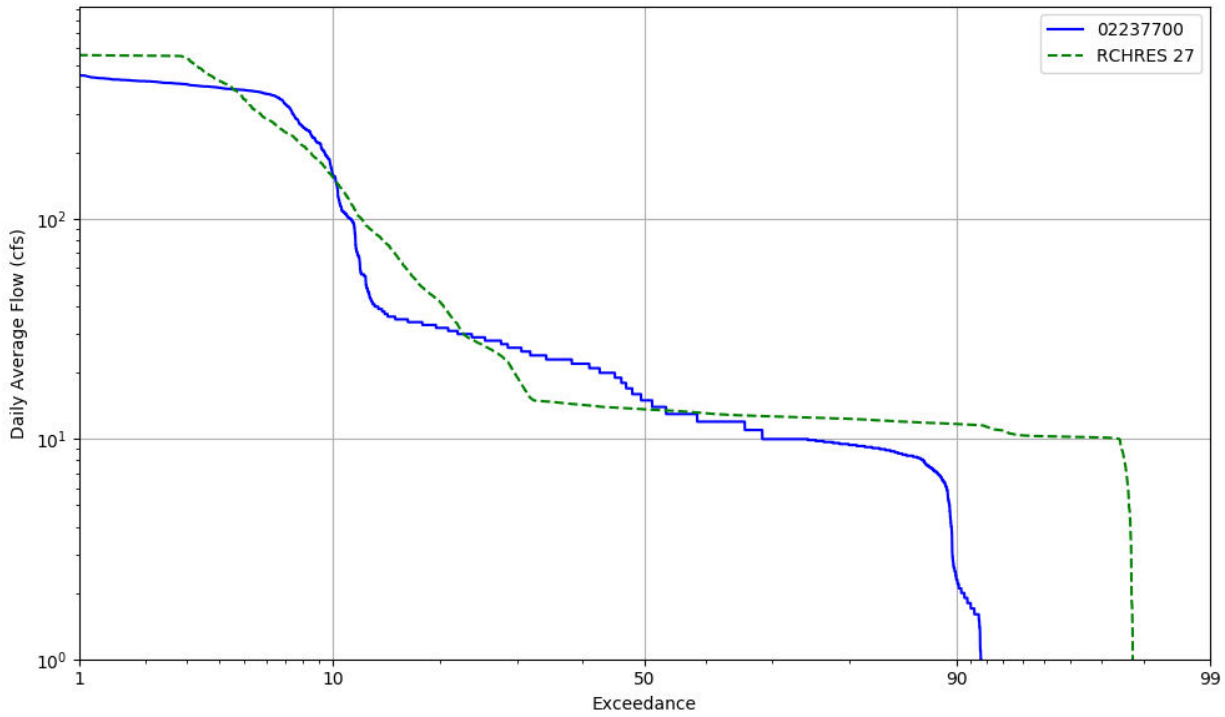


Figure T-03080102-20: Daily exceedance for HSFP reach 27 and USGS station 02237700.

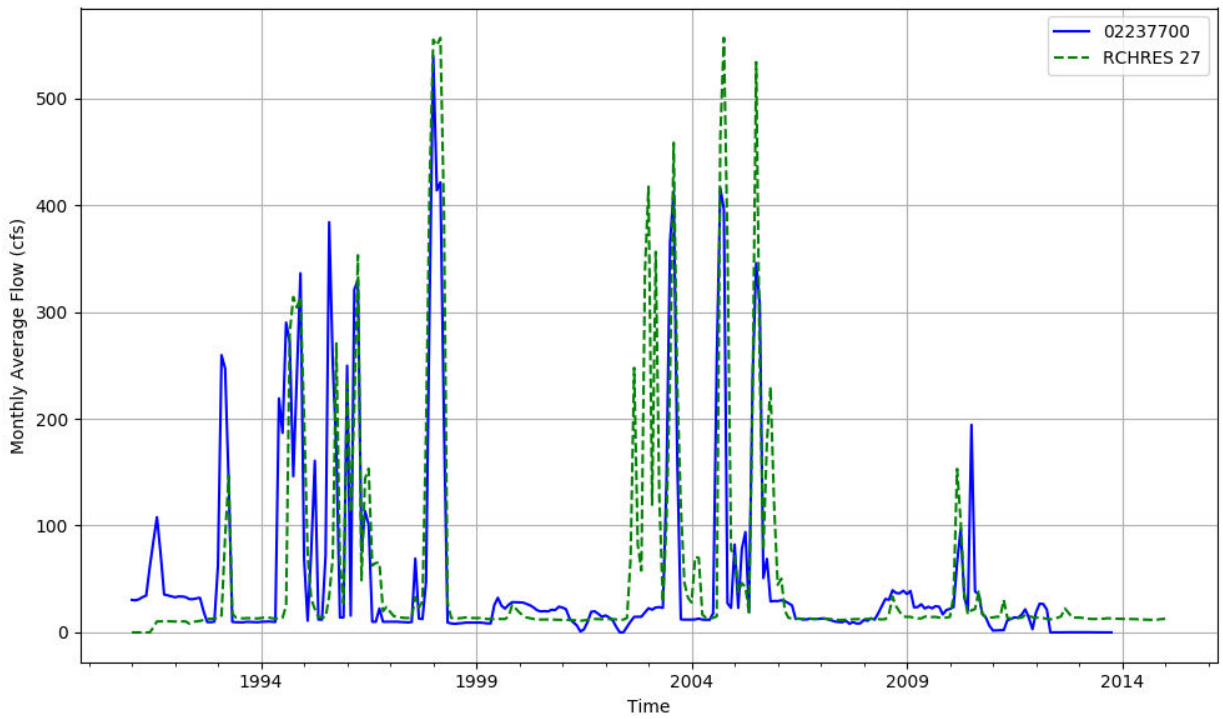


Figure T-03080102-21: Monthly flow for HSFP reach 27 and USGS station 02237700.

HSPF REACH 28, USGS GAUGE 02238000

Water-Data Report 2010
02238000 HAYNES CREEK AT LISBON, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 285214, long 814702 referenced to North American Datum of 1927, in NW 1/4 sec.2, T.19 S., R.25 E., Lake County, FL, Hydrologic Unit 03080102, near left bank at upstream side of Burrell lock and dam, 900 ft upstream from bridge on State Highway 44, 0.2 mi south of Lisbon, and 7 mi northeast of Leesburg.

DRAINAGE AREA.--648 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1942 to September 1978, October 1978 to September 1985 (gage heights only), October 1985 to current year. Prior to October 2005, published as "Haines Creek at Lisbon, FL".

REVISED RECORDS.--WDR FL-72-1: Drainage area: WDR FL-10-1A: 2004-07.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Aug. 22, 1956, nonrecording gage at site 1,000 ft downstream at datum 58.93 ft higher, and Aug. 22, 1956 to Mar. 5, 1957, at present datum. Mar. 6 to Oct. 8, 1957, nonrecording gage at present site at datum 0.30 ft higher. Oct. 9, 1957 to Sept. 30, 1996, water-stage recorder at present site at present datum. Oct. 1, 1996 to Mar. 16, 1998 at present site at datum 0.30 ft lower. Mar. 6 to Oct. 8, 1957, auxiliary nonrecording gage and Oct. 9, 1957 to Sept. 30, 1996, Mar. 16, 1998, auxiliary waterstage recorder at downstream side of lock and dam at present datum. Oct. 1, 1996 to Mar. 16, 1998, auxiliary water-stage recorder at downstream side of lock and dam at datum, 0.30 ft lower.

COOPERATION.--Gate-opening record provided by St. Johns River Water Management District.

REMARKS.--Records fair. Since Dec. 23, 1956, flow regulated at station by manipulation of gates in spillway. Discharge computed from relation between discharge, head, gate openings, and lockages. See WDR FL-91 for history of low flows and minimum gage heights.

Table T-03080102-13: Comparison Statistics Between HSPF Reach 28 and USGS Gauge 02238000.

Statistic	Value
Bias	-9.22
Standard error	149.21

Relative bias	-0.07
Relative standard error	0.58
Nash-Sutcliffe coefficient	0.66
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.45
Index of agreement	0.70

Table T-03080102-14: Hydrologic Indices Between USGS Gauge 02238000 and HSPF Reach 28.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02238000	Simulated Reach 28	Percent Difference
MA1: Mean, all daily flows	142.07	133.03	-6.36
MA2: Median, all daily flows	38.00	55.41	45.81
MA3: CV, all daily flows	118.80	127.89	7.65
MA4: CV, log of all daily flows	195.47	146.22	-25.20
MA5: Mean daily flow / median daily flow	3.74	2.40	-35.78
MA9: (Q10 - Q90) / median daily flow	12.03	5.33	-55.64
MA10: (Q20 - Q80) / median daily flow	1.87	2.46	31.71
MA11: (Q25 - Q75) / median daily flow	1.26	1.81	43.64
MA12: Mean monthly flow, January	150.05	157.62	5.05
MA13: Mean monthly flow, February	160.84	118.50	-26.33
MA14: Mean monthly flow, March	218.80	159.19	-27.24
MA15: Mean monthly flow, April	183.38	98.96	-46.04
MA16: Mean monthly flow, May	41.66	34.86	-16.32
MA17: Mean monthly flow, June	131.42	74.15	-43.58
MA18: Mean monthly flow, July	172.89	118.52	-31.45
MA19: Mean monthly flow, August	158.65	136.58	-13.91
MA20: Mean monthly flow, September	144.33	174.97	21.23
MA21: Mean monthly flow, October	106.68	197.31	84.95
MA22: Mean monthly flow, November	79.22	123.00	55.25
MA23: Mean monthly flow, December	88.93	136.77	53.79
ML1: Mean minimum monthly flow, January	82.44	82.20	-0.29
ML2: Mean minimum monthly flow, February	97.71	76.10	-22.12
ML3: Mean minimum monthly flow, March	98.40	71.58	-27.26
ML4: Mean minimum monthly flow, April	56.41	41.38	-26.64
ML5: Mean minimum monthly flow, May	27.11	18.71	-30.99
ML6: Mean minimum monthly flow, June	44.10	23.96	-45.68
ML7: Mean minimum monthly flow, July	64.00	60.04	-6.19
ML8: Mean minimum monthly flow, August	83.91	71.69	-14.56
ML9: Mean minimum monthly flow, September	52.99	65.92	24.41
ML10: Mean minimum monthly flow, October	57.00	83.22	46.01
ML11: Mean minimum monthly flow, November	38.33	57.54	50.11
ML12: Mean minimum monthly flow, December	33.88	57.04	68.38
ML13: CV of minimum monthly flows	267.63	157.59	-41.12
ML14: Mean minimum daily flow / mean median annual flow	0.36	0.41	14.91
ML15: Mean minimum annual flow / mean annual flow	0.22	0.20	-7.55
ML16: Median minimum annual flow / median annual flow	0.27	0.30	13.16
ML20: Ratio of baseflow volume to total flow volume	0.63	0.62	-1.79
ML22: Mean annual minimum flow divided by catchment area	0.17	0.16	-7.67
RA1: Mean of positive changes from one day to next (rise rate)	17.50	47.53	
RA2: CV, mean of positive changes from one day to next (rise rate)	356.22	266.20	

RA3: Mean of negative changes from one day to next (fall rate)	16.25	17.26	
RA4: CV, mean of negative changes from one day to next (fall rate)	316.83	282.78	
RA5: Ratio of days that are higher than previous day	0.39	0.18	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	138.17	51.62	
RA9: CV, number of flow reversals from one day to the next	23.29	47.09	

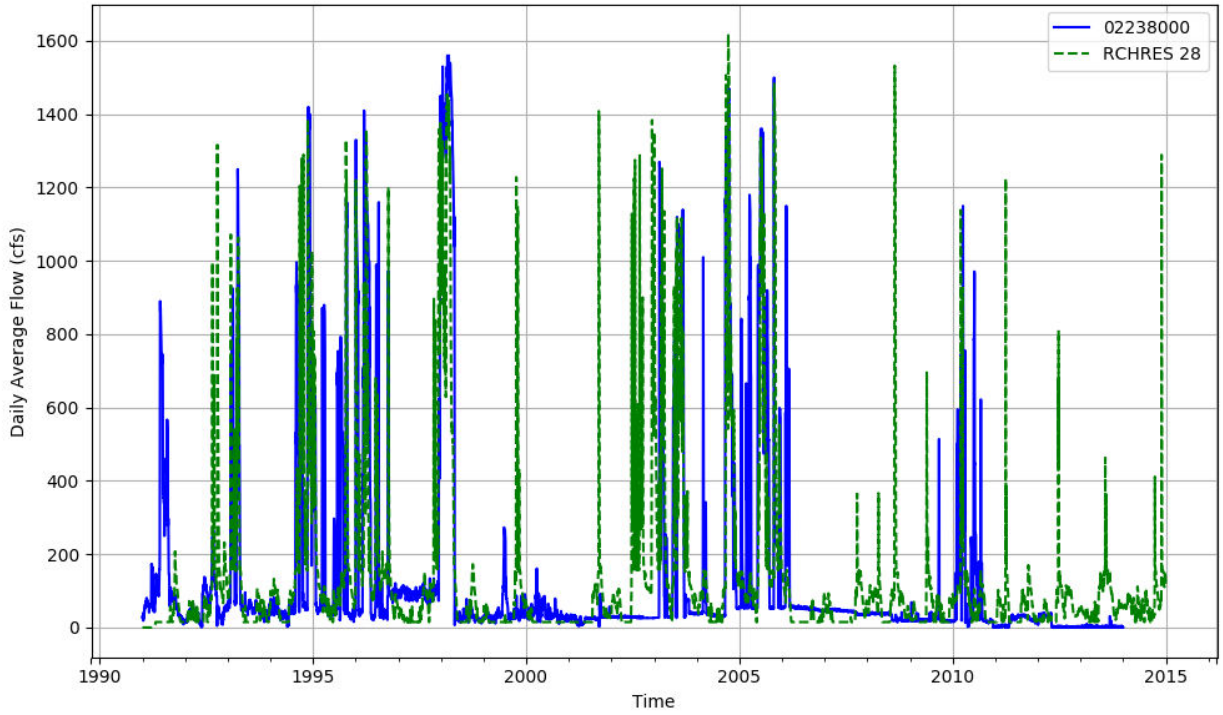


Figure T-03080102-22: Daily flow for HSFP reach 28 and USGS station 02238000.

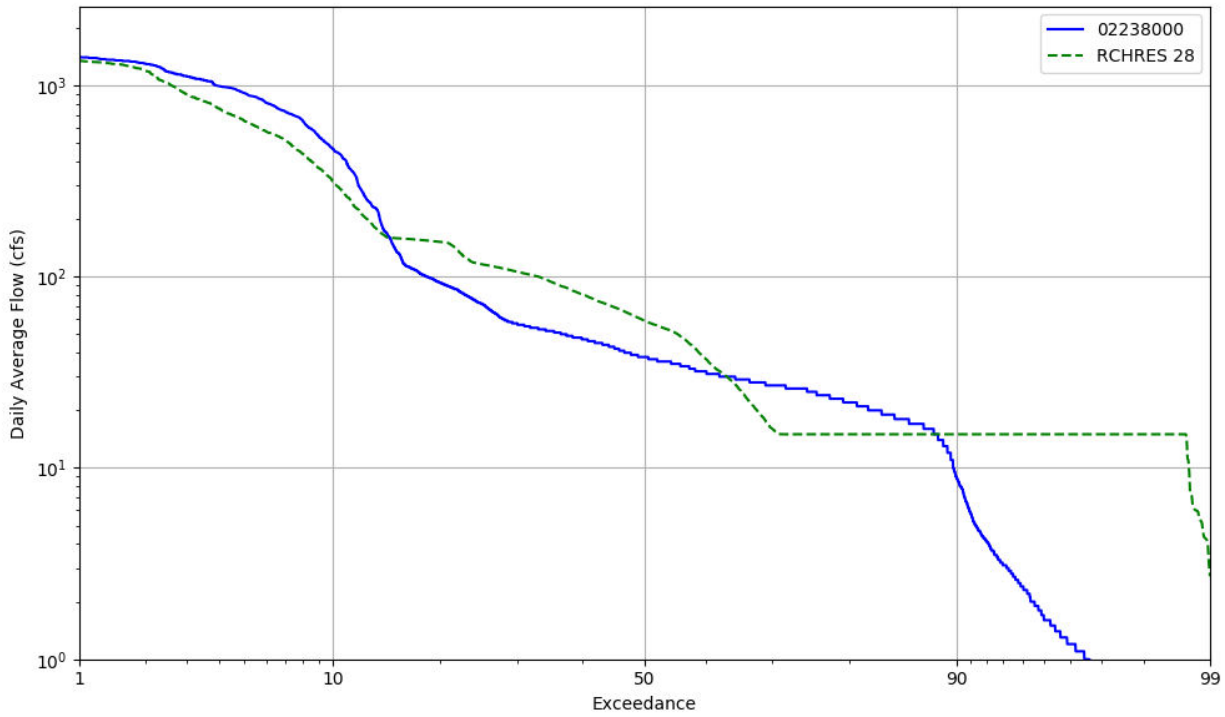


Figure T-03080102-23: Daily exceedance for HSFP reach 28 and USGS station 02238000.

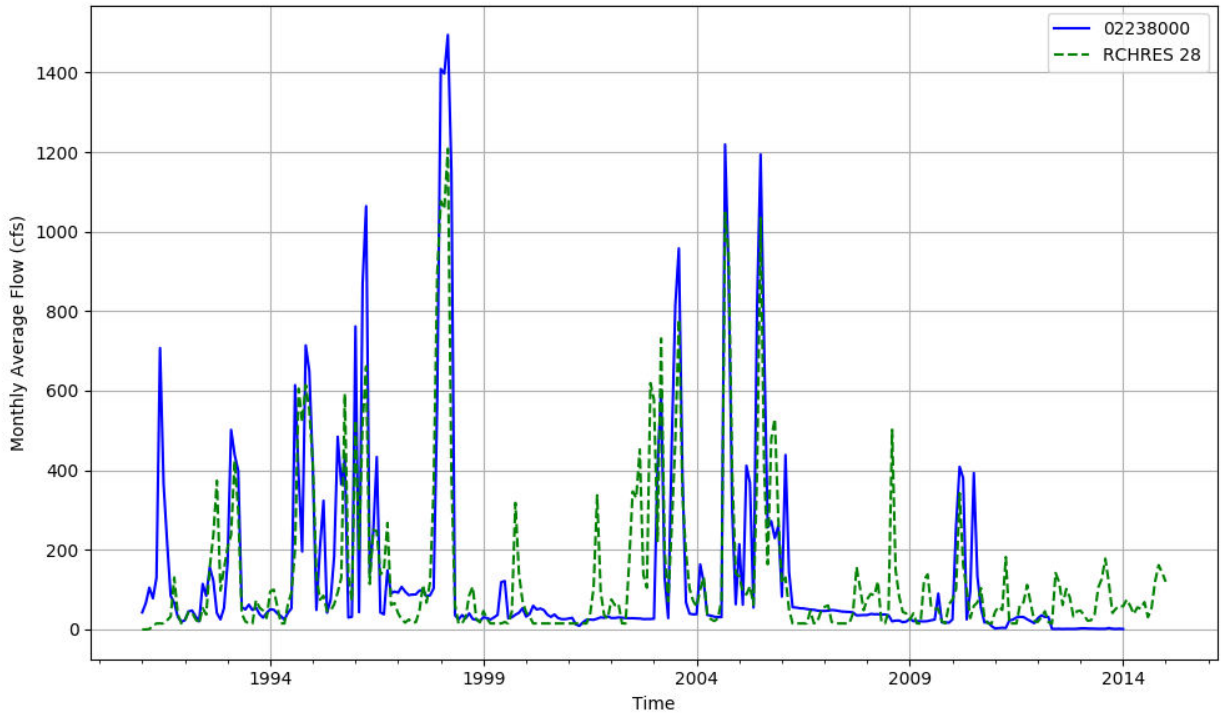


Figure T-03080102-24: Monthly flow for HSFP reach 28 and USGS station 02238000.

HSPF REACH 31, USGS GAUGE 02240902

Water-Data Report 2010
02238000 HAYNES CREEK AT LISBON, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 285214, long 814702 referenced to North American Datum of 1927, in NW 1/4 sec.2, T.19 S., R.25 E., Lake County, FL, Hydrologic Unit 03080102, near left bank at upstream side of Burrell lock and dam, 900 ft upstream from bridge on State Highway 44, 0.2 mi south of Lisbon, and 7 mi northeast of Leesburg.

DRAINAGE AREA.--648 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1942 to September 1978, October 1978 to September 1985 (gage heights only), October 1985 to current year. Prior to October 2005, published as "Haines Creek at Lisbon, FL".

REVISED RECORDS.--WDR FL-72-1: Drainage area: WDR FL-10-1A: 2004-07.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Aug. 22, 1956, nonrecording gage at site 1,000 ft downstream at datum 58.93 ft higher, and Aug. 22, 1956 to Mar. 5, 1957, at present datum. Mar. 6 to Oct. 8, 1957, nonrecording gage at present site at datum 0.30 ft higher. Oct. 9, 1957 to Sept. 30, 1996, water-stage recorder at present site at present datum. Oct. 1, 1996 to Mar. 16, 1998 at present site at datum 0.30 ft lower. Mar. 6 to Oct. 8, 1957, auxiliary nonrecording gage and Oct. 9, 1957 to Sept. 30, 1996, Mar. 16, 1998, auxiliary waterstage recorder at downstream side of lock and dam at present datum. Oct. 1, 1996 to Mar. 16, 1998, auxiliary water-stage recorder at downstream side of lock and dam at datum, 0.30 ft lower.

COOPERATION.--Gate-opening record provided by St. Johns River Water Management District.

REMARKS.--Records fair. Since Dec. 23, 1956, flow regulated at station by manipulation of gates in spillway. Discharge computed from relation between discharge, head, gate openings, and lockages. See WDR FL-91 for history of low flows and minimum gage heights.

Table T-03080102-15: Comparison Statistics Between HSPF Reach 31 and USGS Gauge 02240902.

Statistic	Value
Bias	-21.51
Standard error	49.03

Relative bias	-0.43
Relative standard error	0.64
Nash-Sutcliffe coefficient	0.59
Kling-Gupta coefficient	0.37
Coefficient of efficiency	0.42
Index of agreement	0.68

Table T-03080102-16: Hydrologic Indices Between USGS Gauge 02240902 and HSPF Reach 31.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02240902	Simulated Reach 31	Percent Difference
MA1: Mean, all daily flows	50.51	28.71	-43.15
MA2: Median, all daily flows	32.00	18.64	-41.75
MA3: CV, all daily flows	92.16	81.53	-11.53
MA4: CV, log of all daily flows	101.97	99.80	-2.13
MA5: Mean daily flow / median daily flow	1.58	1.54	-2.42
MA9: (Q10 - Q90) / median daily flow	3.34	3.40	1.81
MA10: (Q20 - Q80) / median daily flow	2.29	2.15	-6.03
MA11: (Q25 - Q75) / median daily flow	1.87	1.80	-3.66
MA12: Mean monthly flow, January	40.75	26.32	-35.41
MA13: Mean monthly flow, February	59.28	40.26	-32.09
MA14: Mean monthly flow, March	66.66	47.79	-28.31
MA15: Mean monthly flow, April	55.37	33.77	-39.00
MA16: Mean monthly flow, May	36.39	19.81	-45.57
MA17: Mean monthly flow, June	29.73	15.82	-46.79
MA18: Mean monthly flow, July	36.61	18.07	-50.63
MA19: Mean monthly flow, August	39.00	20.02	-48.66
MA20: Mean monthly flow, September	64.29	27.82	-56.73
MA21: Mean monthly flow, October	66.55	31.72	-52.33
MA22: Mean monthly flow, November	36.21	21.67	-40.16
MA23: Mean monthly flow, December	32.06	20.40	-36.37
ML1: Mean minimum monthly flow, January	35.01	23.06	-34.12
ML2: Mean minimum monthly flow, February	39.92	29.78	-25.41
ML3: Mean minimum monthly flow, March	44.12	34.60	-21.58
ML4: Mean minimum monthly flow, April	40.40	24.87	-38.44
ML5: Mean minimum monthly flow, May	28.35	14.95	-47.27
ML6: Mean minimum monthly flow, June	26.28	13.36	-49.16
ML7: Mean minimum monthly flow, July	29.28	16.07	-45.12
ML8: Mean minimum monthly flow, August	33.86	17.31	-48.88
ML9: Mean minimum monthly flow, September	37.01	18.34	-50.44
ML10: Mean minimum monthly flow, October	42.72	24.12	-43.55
ML11: Mean minimum monthly flow, November	30.24	19.37	-35.93
ML12: Mean minimum monthly flow, December	24.20	15.92	-34.23
ML13: CV of minimum monthly flows	128.29	133.87	4.35
ML14: Mean minimum daily flow / mean median annual flow	0.18	0.20	12.16
ML15: Mean minimum annual flow / mean annual flow	0.14	0.17	23.92
ML16: Median minimum annual flow / median annual flow	0.09	0.08	-11.29
ML20: Ratio of baseflow volume to total flow volume	0.89	0.92	4.00
ML22: Mean annual minimum flow divided by catchment area	0.10	0.07	-23.05
RA1: Mean of positive changes from one day to next (rise rate)	3.55	1.80	
RA2: CV, mean of positive changes from one day to next (rise rate)	380.66	390.63	

RA3: Mean of negative changes from one day to next (fall rate)	1.85	0.70	
RA4: CV, mean of negative changes from one day to next (fall rate)	242.23	232.64	
RA5: Ratio of days that are higher than previous day	0.25	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.02	
RA8: Number of flow reversals from one day to the next	69.09	50.04	
RA9: CV, number of flow reversals from one day to the next	48.36	44.26	

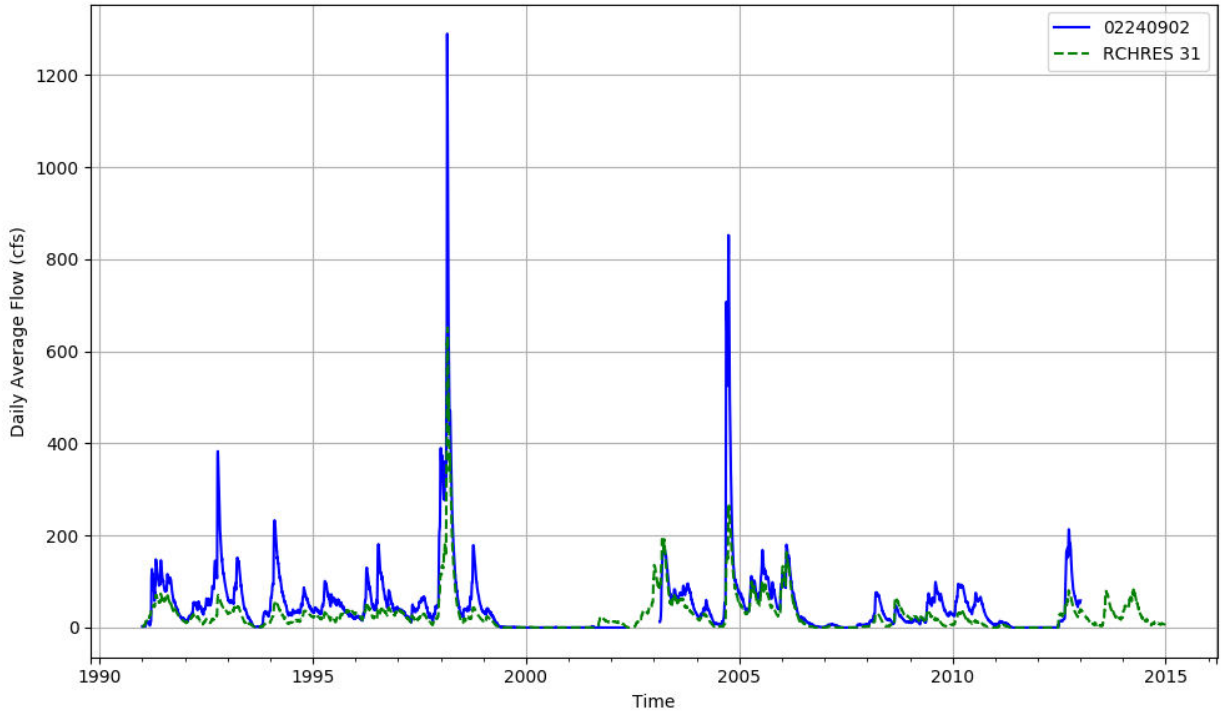


Figure T-03080102-25: Daily flow for HSFP reach 31 and USGS station 02240902.

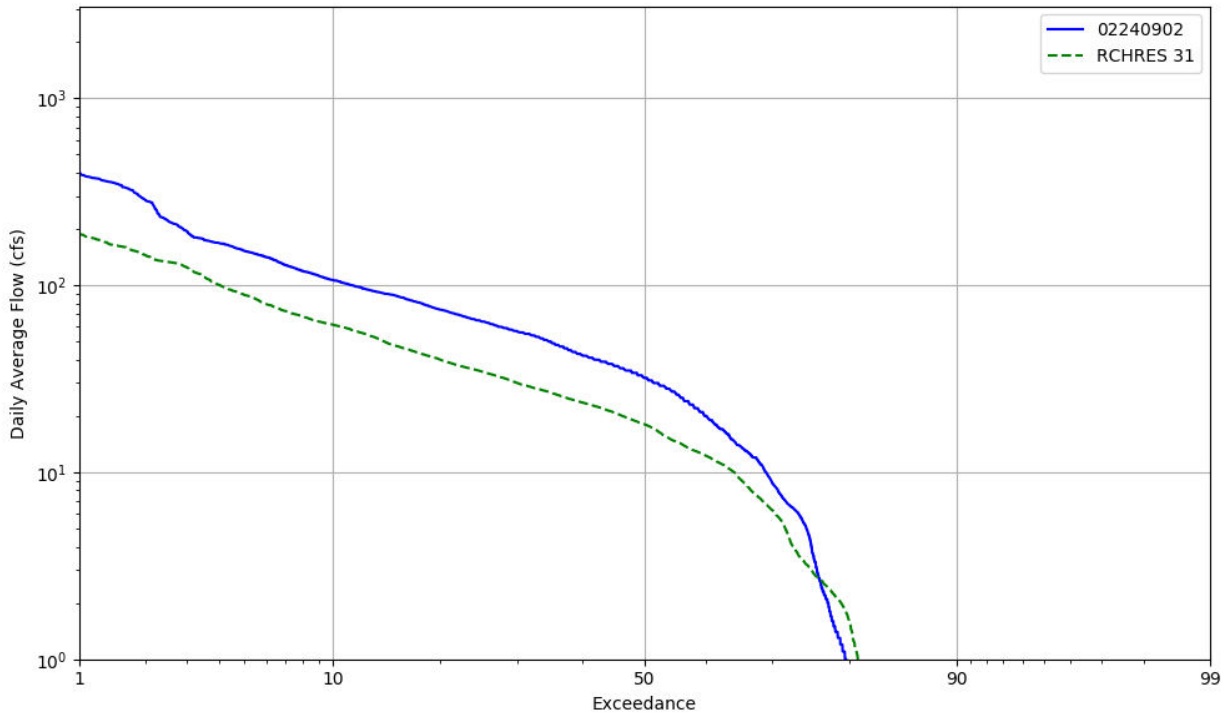


Figure T-03080102-26: Daily exceedance for HSFP reach 31 and USGS station 02240902.

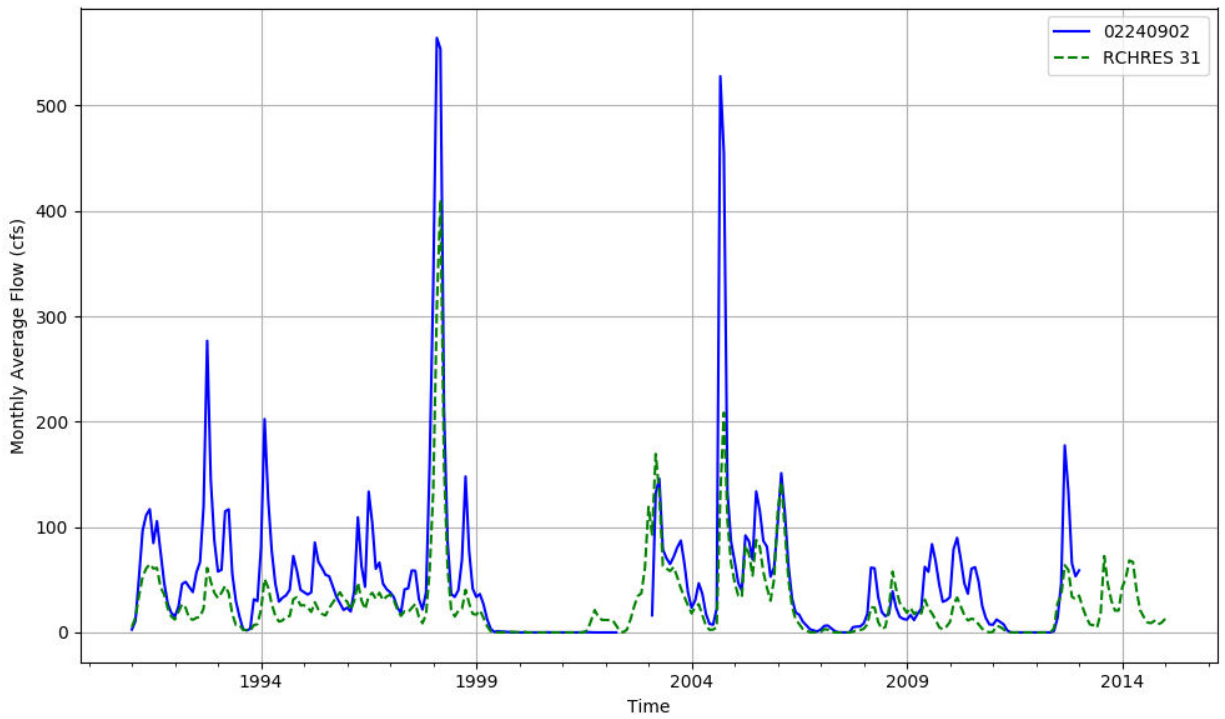


Figure T-03080102-27: Monthly flow for HSFP reach 31 and USGS station 02240902.

HSPF REACH 32, USGS GAUGE 02241000

Water-Data Report 2010
02238000 HAYNES CREEK AT LISBON, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 285214, long 814702 referenced to North American Datum of 1927, in NW 1/4 sec.2, T.19 S., R.25 E., Lake County, FL, Hydrologic Unit 03080102, near left bank at upstream side of Burrell lock and dam, 900 ft upstream from bridge on State Highway 44, 0.2 mi south of Lisbon, and 7 mi northeast of Leesburg.

DRAINAGE AREA.--648 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1942 to September 1978, October 1978 to September 1985 (gage heights only), October 1985 to current year. Prior to October 2005, published as "Haines Creek at Lisbon, FL".

REVISED RECORDS.--WDR FL-72-1: Drainage area: WDR FL-10-1A: 2004-07.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Aug. 22, 1956, nonrecording gage at site 1,000 ft downstream at datum 58.93 ft higher, and Aug. 22, 1956 to Mar. 5, 1957, at present datum. Mar. 6 to Oct. 8, 1957, nonrecording gage at present site at datum 0.30 ft higher. Oct. 9, 1957 to Sept. 30, 1996, water-stage recorder at present site at present datum. Oct. 1, 1996 to Mar. 16, 1998 at present site at datum 0.30 ft lower. Mar. 6 to Oct. 8, 1957, auxiliary nonrecording gage and Oct. 9, 1957 to Sept. 30, 1996, Mar. 16, 1998, auxiliary waterstage recorder at downstream side of lock and dam at present datum. Oct. 1, 1996 to Mar. 16, 1998, auxiliary water-stage recorder at downstream side of lock and dam at datum, 0.30 ft lower.

COOPERATION.--Gate-opening record provided by St. Johns River Water Management District.

REMARKS.--Records fair. Since Dec. 23, 1956, flow regulated at station by manipulation of gates in spillway. Discharge computed from relation between discharge, head, gate openings, and lockages. See WDR FL-91 for history of low flows and minimum gage heights.

Table T-03080102-17: Comparison Statistics Between HSPF Reach 32 and USGS Gauge 02241000.

Statistic	Value
Bias	7.04
Standard error	28.65

Relative bias	0.31
Relative standard error	0.70
Nash-Sutcliffe coefficient	0.51
Kling-Gupta coefficient	0.62
Coefficient of efficiency	0.28
Index of agreement	0.66

Table T-03080102-18: Hydrologic Indices Between USGS Gauge 02241000 and HSPF Reach 32.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02241000	Simulated Reach 32	Percent Difference
MA1: Mean, all daily flows	22.61	29.26	29.39
MA2: Median, all daily flows	11.39	18.78	64.79
MA3: CV, all daily flows	99.67	83.37	-16.36
MA4: CV, log of all daily flows	120.35	99.78	-17.10
MA5: Mean daily flow / median daily flow	1.98	1.56	-21.48
MA9: (Q10 - Q90) / median daily flow	3.86	3.44	-10.84
MA10: (Q20 - Q80) / median daily flow	2.54	2.16	-15.31
MA11: (Q25 - Q75) / median daily flow	2.04	1.82	-10.70
MA12: Mean monthly flow, January	15.09	27.24	80.47
MA13: Mean monthly flow, February	25.07	42.05	67.73
MA14: Mean monthly flow, March	30.73	49.11	59.80
MA15: Mean monthly flow, April	22.70	34.34	51.28
MA16: Mean monthly flow, May	18.62	20.10	7.96
MA17: Mean monthly flow, June	15.89	16.50	3.84
MA18: Mean monthly flow, July	19.79	18.90	-4.52
MA19: Mean monthly flow, August	20.14	21.57	7.14
MA20: Mean monthly flow, September	28.14	30.49	8.36
MA21: Mean monthly flow, October	30.67	32.64	6.45
MA22: Mean monthly flow, November	16.53	22.02	33.26
MA23: Mean monthly flow, December	12.88	21.18	64.40
ML1: Mean minimum monthly flow, January	13.20	23.53	78.30
ML2: Mean minimum monthly flow, February	14.90	30.45	104.38
ML3: Mean minimum monthly flow, March	23.63	35.27	49.26
ML4: Mean minimum monthly flow, April	16.61	25.13	51.34
ML5: Mean minimum monthly flow, May	15.22	14.30	-5.99
ML6: Mean minimum monthly flow, June	13.39	12.90	-3.69
ML7: Mean minimum monthly flow, July	13.92	15.70	12.76
ML8: Mean minimum monthly flow, August	15.37	17.43	13.44
ML9: Mean minimum monthly flow, September	14.59	18.89	29.51
ML10: Mean minimum monthly flow, October	18.06	24.41	35.18
ML11: Mean minimum monthly flow, November	11.63	19.69	69.33
ML12: Mean minimum monthly flow, December	10.75	16.17	50.40
ML13: CV of minimum monthly flows	163.00	134.18	-17.68
ML14: Mean minimum daily flow / mean median annual flow	0.23	0.19	-16.68
ML15: Mean minimum annual flow / mean annual flow	0.17	0.16	-3.48
ML16: Median minimum annual flow / median annual flow	0.20	0.06	-69.42
ML20: Ratio of baseflow volume to total flow volume	0.84	0.92	9.74
ML22: Mean annual minimum flow divided by catchment area	0.04	0.07	77.16
RA1: Mean of positive changes from one day to next (rise rate)	2.47	1.80	
RA2: CV, mean of positive changes from one day to next (rise rate)	356.28	417.96	

RA3: Mean of negative changes from one day to next (fall rate)	1.18	0.70	
RA4: CV, mean of negative changes from one day to next (fall rate)	312.05	248.04	
RA5: Ratio of days that are higher than previous day	0.20	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.02	
RA8: Number of flow reversals from one day to the next	52.00	89.52	
RA9: CV, number of flow reversals from one day to the next	52.91	38.96	

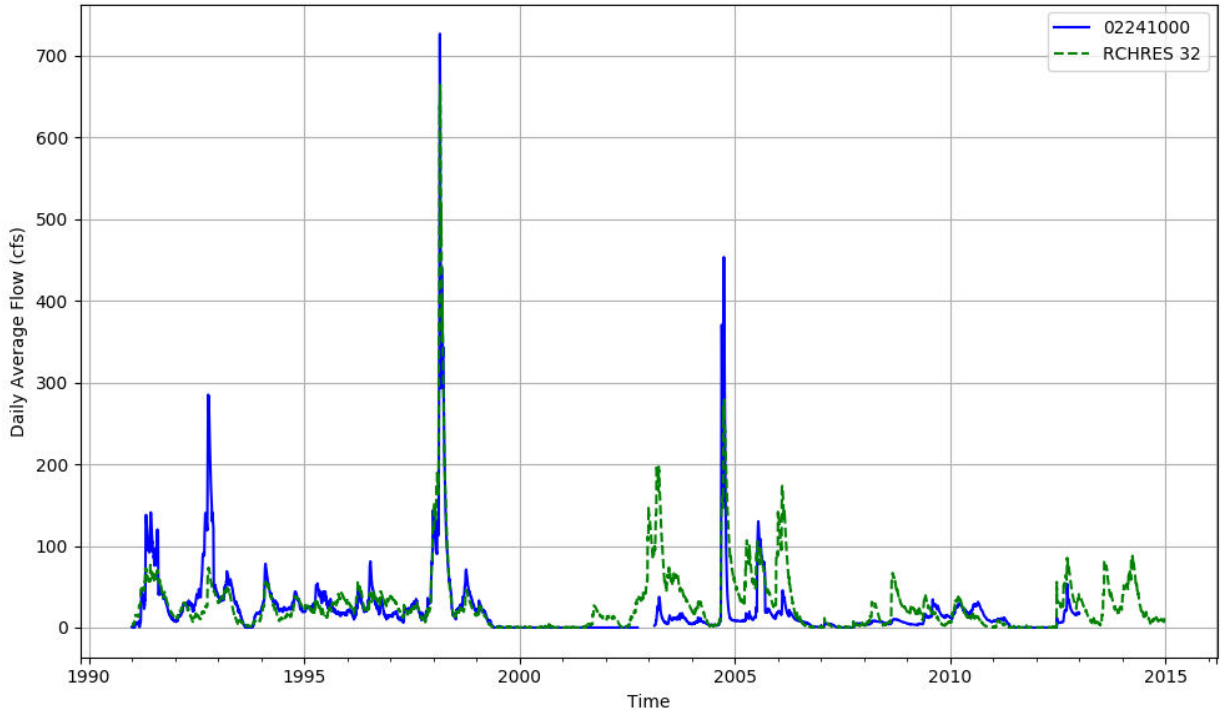


Figure T-03080102-28: Daily flow for HSFP reach 32 and USGS station 02241000.

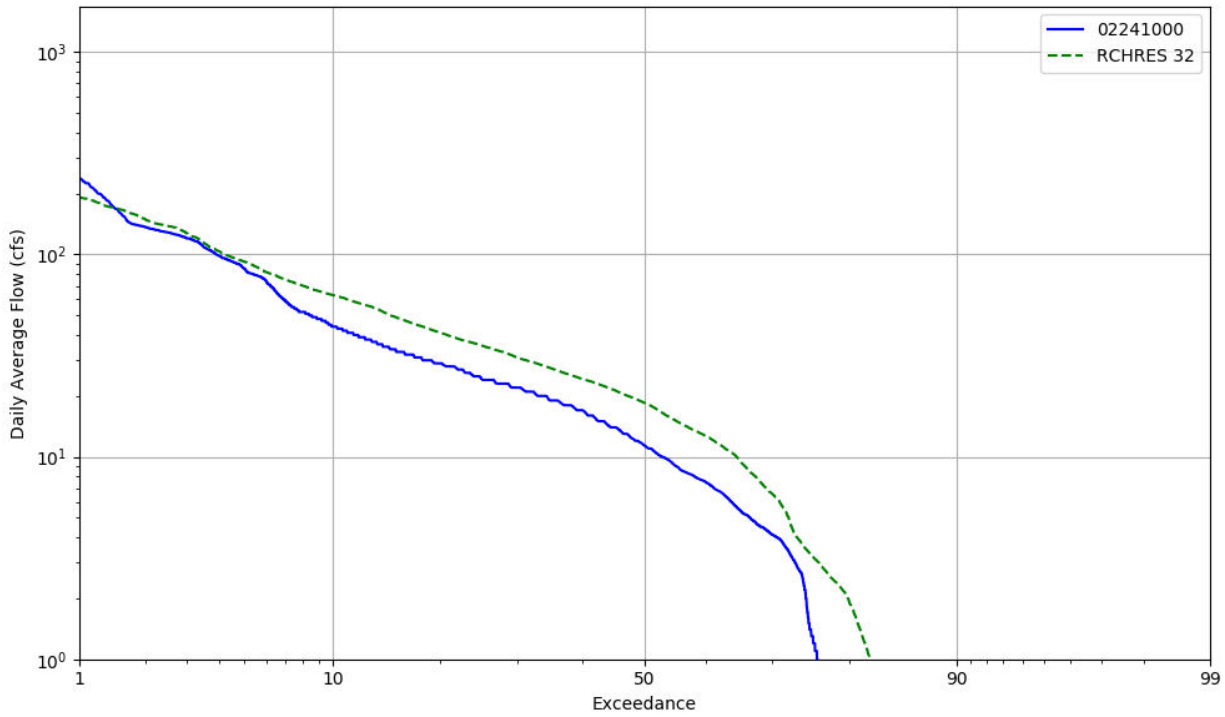


Figure T-03080102-29: Daily exceedance for HSFP reach 32 and USGS station 02241000.

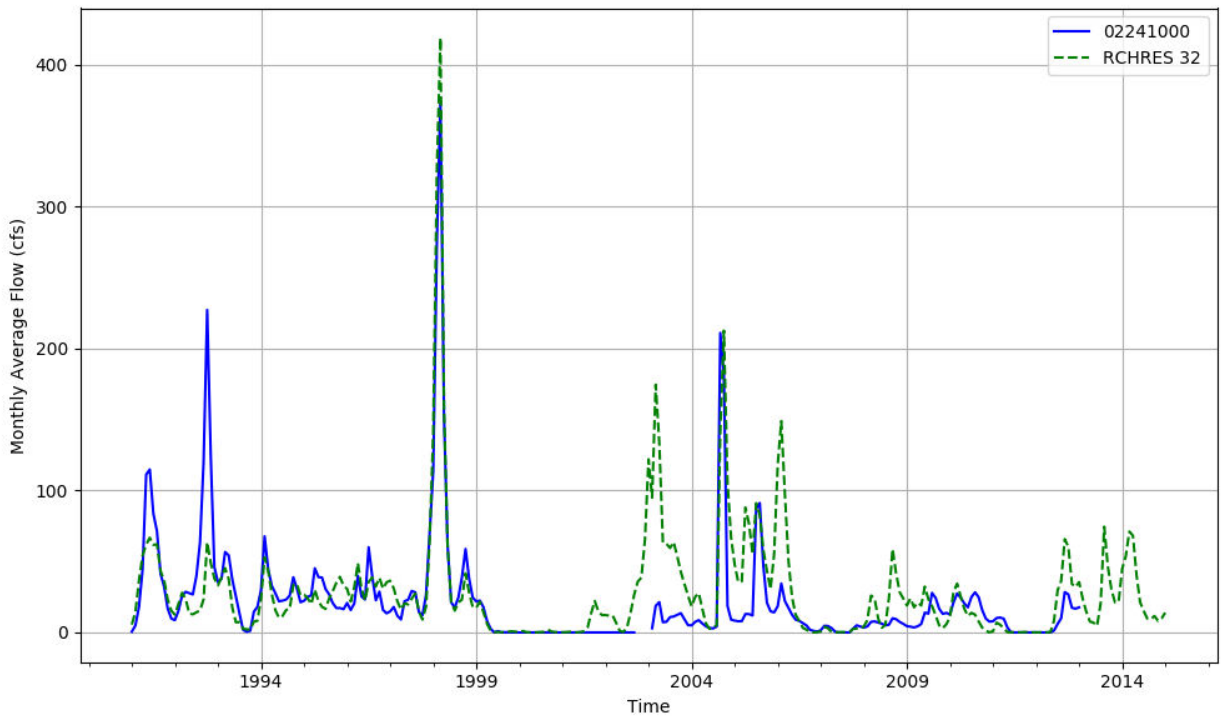


Figure T-03080102-30: Monthly flow for HSFP reach 32 and USGS station 02241000.

HSPF REACH 41, USGS GAUGE 02243000

Water-Data Report 2009
02243000 ORANGE CREEK AT ORANGE SPRINGS, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 293034, long 815647 referenced to North American Datum of 1927, in NE 1/4 sec.25, T.11 S., R.23 E., Marion County, FL, Hydrologic Unit 03080102, near right bank at downstream side of bridge on State Highway 21, 0.2 mi northwest of Orange Springs, and 0.45 mi upstream from Little Orange Creek.

DRAINAGE AREA.--1,119 mi, includes Paynes Prairie, a diked sinkhole area of approximately 650 mi, which is noncontributory except by pumpage.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1941 to June 1942 (discharge measurements only), July 1942 to December 1952, October 1955 to September 1971, October 1971 to April 1975 (discharge measurements only), May 1975 to current year.

REVISED RECORDS.--WDR FL-80-1: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 19.81 ft above NGVD of 1929. Prior to Oct. 18, 1955, and Oct. 13, 1971 to May 6, 1975, nonrecording gage at same site and datum. Feb. 4, 1980 to May 7, 1981, temporary gage 125 ft downstream at same datum.

REMARKS.--Records good. Records include some flow diverted, during periods of high stages, from Santa Fe Lake in Suwannee River basin through Lochloosa Creek. Since April 1963, concrete dam at outlet of Orange Lake, 11 mi upstream from station.

Table T-03080102-19: Comparison Statistics Between HSPF Reach 41 and USGS Gauge 02243000.

Statistic	Value
Bias	6.47
Standard error	50.47
Relative bias	0.14
Relative standard error	0.45
Nash-Sutcliffe coefficient	0.80
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.51
Index of agreement	0.76

Table T-03080102-20: Hydrologic Indices Between USGS Gauge 02243000 and HSPF Reach 41.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02243000	Simulated Reach 41	Percent Difference
MA1: Mean, all daily flows	45.68	52.11	14.08
MA2: Median, all daily flows	12.00	13.44	12.03
MA3: CV, all daily flows	119.81	135.69	13.25
MA4: CV, log of all daily flows	144.37	149.27	3.40
MA5: Mean daily flow / median daily flow	3.81	3.88	1.83
MA9: (Q10 - Q90) / median daily flow	7.52	8.57	13.96
MA10: (Q20 - Q80) / median daily flow	3.57	3.92	9.89
MA11: (Q25 - Q75) / median daily flow	2.51	2.82	12.36
MA12: Mean monthly flow, January	48.40	72.16	49.09
MA13: Mean monthly flow, February	64.21	85.52	33.19
MA14: Mean monthly flow, March	76.54	85.74	12.01
MA15: Mean monthly flow, April	44.20	47.02	6.40
MA16: Mean monthly flow, May	20.65	22.56	9.26
MA17: Mean monthly flow, June	23.78	32.91	38.41
MA18: Mean monthly flow, July	35.17	37.93	7.83
MA19: Mean monthly flow, August	37.10	40.01	7.84
MA20: Mean monthly flow, September	44.52	51.98	16.76
MA21: Mean monthly flow, October	68.39	55.75	-18.49
MA22: Mean monthly flow, November	30.08	24.02	-20.14
MA23: Mean monthly flow, December	35.58	47.67	33.97
ML1: Mean minimum monthly flow, January	33.37	39.05	17.00
ML2: Mean minimum monthly flow, February	30.37	34.94	15.07
ML3: Mean minimum monthly flow, March	53.78	42.05	-21.82
ML4: Mean minimum monthly flow, April	24.08	20.02	-16.89
ML5: Mean minimum monthly flow, May	9.83	6.57	-33.14
ML6: Mean minimum monthly flow, June	8.11	7.69	-5.14
ML7: Mean minimum monthly flow, July	18.29	14.25	-22.08
ML8: Mean minimum monthly flow, August	16.68	14.39	-13.71
ML9: Mean minimum monthly flow, September	13.41	8.02	-40.19
ML10: Mean minimum monthly flow, October	32.00	20.08	-37.23
ML11: Mean minimum monthly flow, November	19.90	11.60	-41.68
ML12: Mean minimum monthly flow, December	18.94	11.30	-40.34
ML13: CV of minimum monthly flows	313.24	313.87	0.20
ML14: Mean minimum daily flow / mean median annual flow	0.23	0.15	-33.39
ML15: Mean minimum annual flow / mean annual flow	0.13	0.07	-46.49
ML16: Median minimum annual flow / median annual flow	0.19	0.14	-27.23
ML20: Ratio of baseflow volume to total flow volume	0.72	0.61	-14.20
ML22: Mean annual minimum flow divided by catchment area	0.04	0.03	-24.67
RA1: Mean of positive changes from one day to next (rise rate)	11.74	16.39	
RA2: CV, mean of positive changes from one day to next (rise rate)	315.44	315.57	
RA3: Mean of negative changes from one day to next (fall rate)	4.48	6.58	
RA4: CV, mean of negative changes from one day to next (fall rate)	264.06	263.02	
RA5: Ratio of days that are higher than previous day	0.25	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.20	

RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.11	
RA8: Number of flow reversals from one day to the next	86.50	77.33	
RA9: CV, number of flow reversals from one day to the next	24.81	22.23	

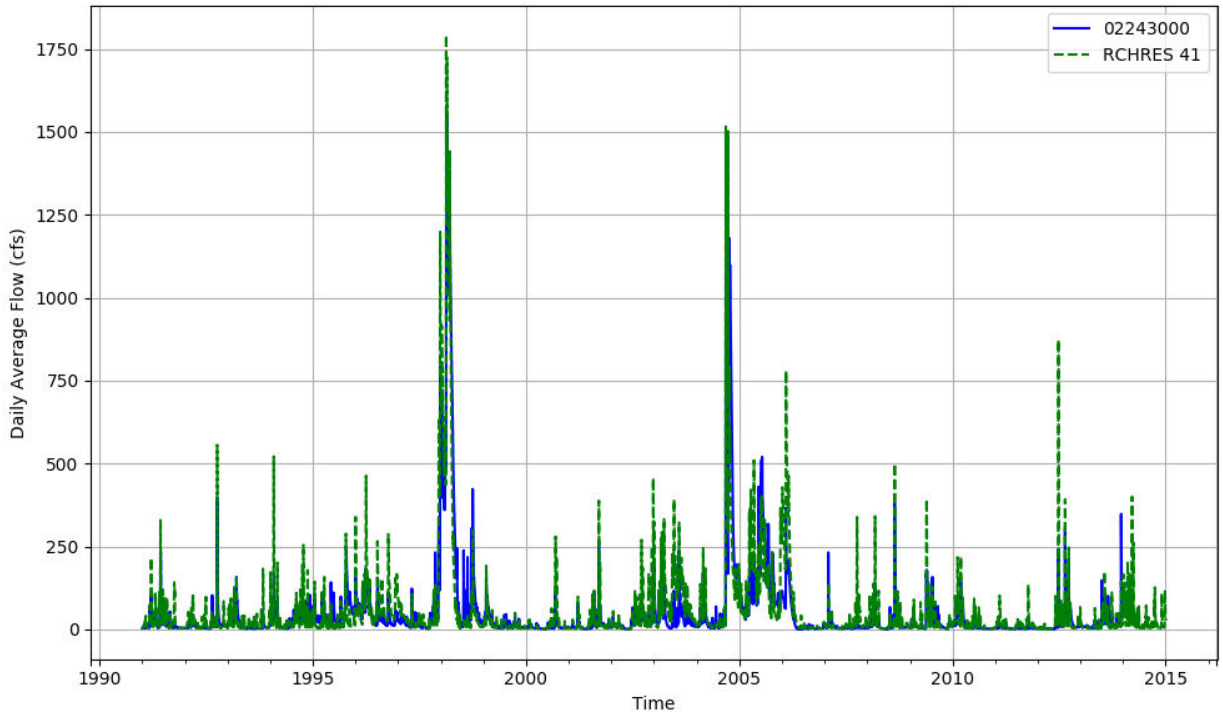


Figure T-03080102-31: Daily flow for HSFP reach 41 and USGS station 02243000.

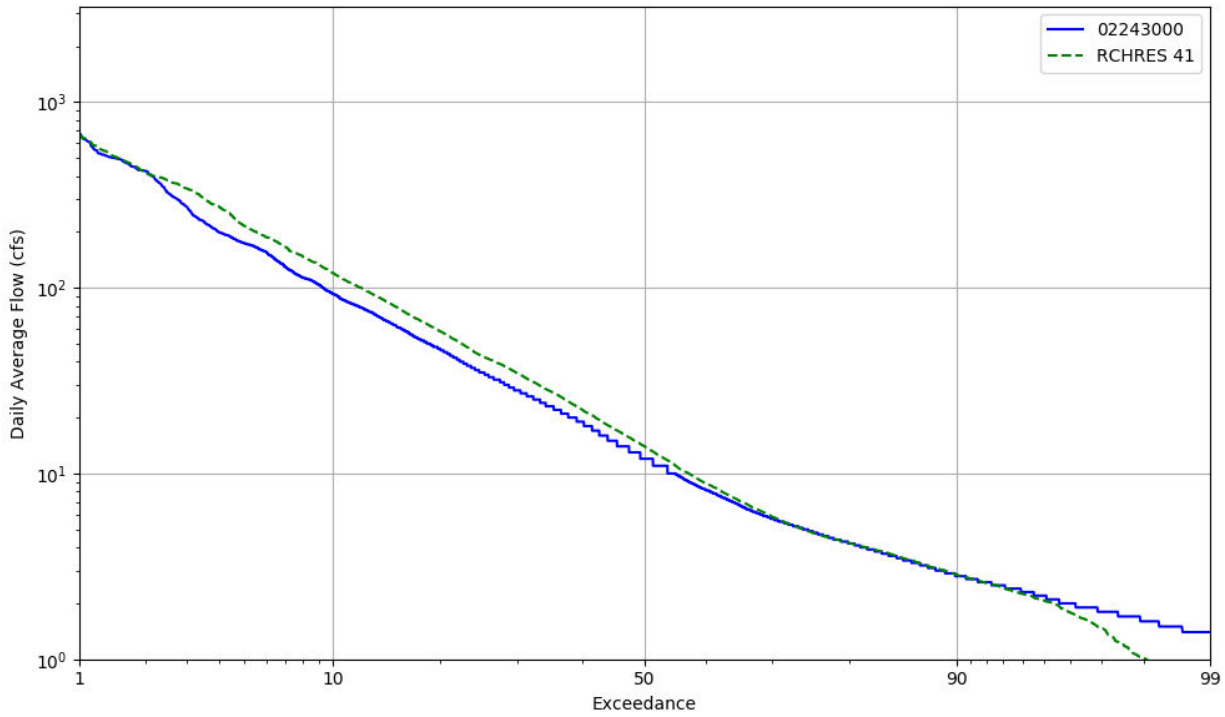


Figure T-03080102-32: Daily exceedance for HSFP reach 41 and USGS station 02243000.

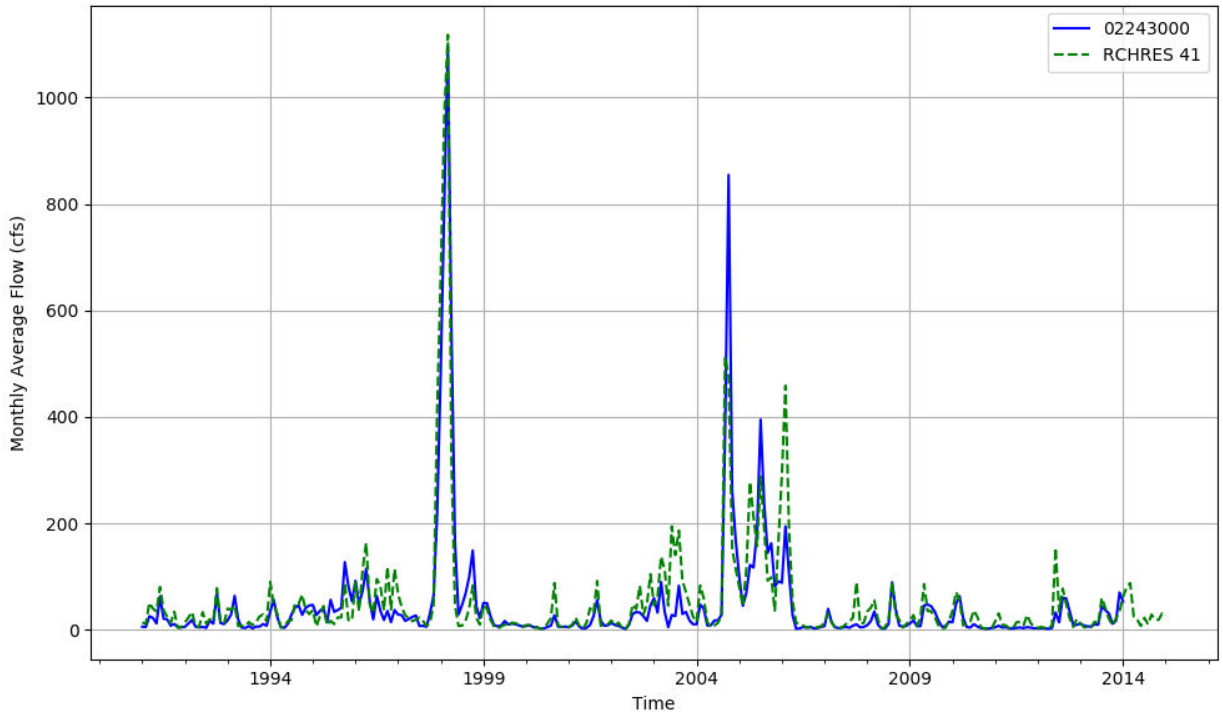


Figure T-03080102-33: Monthly flow for HSFP reach 41 and USGS station 02243000.

HSPF REACH 47, USGS GAUGE 02243960

Water-Data Report 2009
02243960 OCKLAWAHA RIVER AT RODMAN DAM, NEAR ORANGE SPRINGS, FL
St. Johns Basin Oklawaha Subbasin

LOCATION.--Lat 293030, long 814815 referenced to North American Datum of 1983, in NW 1/4 sec.28, T.11 S., R.25 E., Putnam County, FL, Hydrologic Unit 03080102, at downstream side of control structure of Rodman Dam, 8.4 mi east of Orange Springs, and 11.6 mi upstream from mouth.

DRAINAGE AREA.--2,747 mi, includes Paynes Prairie, a diked sinkhole area of 650 mi, approximately, which is noncontributing, except for pumpage.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR FL-77-1: Drainage area.

GAGE.--Water-stage recorder, gate-opening recorder, and data-collection platform. Datum of gage is at NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Auxiliary gage at upstream side of control structure at same datum.

COOPERATION.--Gate-opening record provided by Cross Florida Greenways and Trails.

REMARKS.--Records fair. Flow regulated by manipulation of gates in spillway; dam completed and flow through spillway began on Sept. 30, 1968. Discharge computed from relation between head and gate openings. Since November 1969, diversion above station from Lake Ocklawaha for boat lockages, through Cross-Florida Barge Canal (see station 02244032) to St. Johns River.

Table T-03080102-21: Comparison Statistics Between HSPF Reach 47 and USGS Gauge 02243960.

Statistic	Value
Bias	-108.28
Standard error	365.27
Relative bias	-0.10
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.77
Coefficient of efficiency	0.51
Index of agreement	0.74

Table T-03080102-22: Hydrologic Indices Between USGS Gauge 02243960 and HSPF Reach 47.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02243960	Simulated Reach 47	Percent Difference
MA1: Mean, all daily flows	1049.25	943.19	-10.11
MA2: Median, all daily flows	811.50	720.76	-11.18
MA3: CV, all daily flows	58.23	52.35	-10.10
MA4: CV, log of all daily flows	64.03	52.25	-18.40
MA5: Mean daily flow / median daily flow	1.29	1.31	1.21
MA9: (Q10 - Q90) / median daily flow	2.00	1.58	-20.98
MA10: (Q20 - Q80) / median daily flow	1.18	0.83	-29.97
MA11: (Q25 - Q75) / median daily flow	0.89	0.62	-30.27
MA12: Mean monthly flow, January	1205.61	974.39	-19.18
MA13: Mean monthly flow, February	1127.56	987.11	-12.46
MA14: Mean monthly flow, March	1046.04	1009.20	-3.52
MA15: Mean monthly flow, April	891.78	801.04	-10.18
MA16: Mean monthly flow, May	658.44	638.39	-3.05
MA17: Mean monthly flow, June	789.88	755.62	-4.34
MA18: Mean monthly flow, July	955.69	905.59	-5.24
MA19: Mean monthly flow, August	1058.89	958.77	-9.46
MA20: Mean monthly flow, September	1152.23	1074.68	-6.73
MA21: Mean monthly flow, October	1082.49	1072.97	-0.88
MA22: Mean monthly flow, November	1012.46	817.96	-19.21
MA23: Mean monthly flow, December	1152.15	887.82	-22.94
ML1: Mean minimum monthly flow, January	798.04	729.97	-8.53
ML2: Mean minimum monthly flow, February	729.70	715.10	-2.00
ML3: Mean minimum monthly flow, March	663.17	753.80	13.67
ML4: Mean minimum monthly flow, April	560.00	628.31	12.20
ML5: Mean minimum monthly flow, May	427.26	553.42	29.53
ML6: Mean minimum monthly flow, June	490.13	577.89	17.91
ML7: Mean minimum monthly flow, July	629.22	689.06	9.51
ML8: Mean minimum monthly flow, August	698.87	723.64	3.54
ML9: Mean minimum monthly flow, September	601.35	707.44	17.64
ML10: Mean minimum monthly flow, October	668.61	748.97	12.02
ML11: Mean minimum monthly flow, November	689.39	678.53	-1.58
ML12: Mean minimum monthly flow, December	662.96	667.61	0.70
ML13: CV of minimum monthly flows	70.52	44.24	-37.27
ML14: Mean minimum daily flow / mean median annual flow	0.40	0.68	69.36
ML15: Mean minimum annual flow / mean annual flow	0.34	0.58	70.18
ML16: Median minimum annual flow / median annual flow	0.38	0.70	82.05
ML20: Ratio of baseflow volume to total flow volume	0.72	0.81	11.96
ML22: Mean annual minimum flow divided by catchment area	3.13	5.10	63.00
RA1: Mean of positive changes from one day to next (rise rate)	114.03	95.44	
RA2: CV, mean of positive changes from one day to next (rise rate)	216.03	310.90	
RA3: Mean of negative changes from one day to next (fall rate)	118.86	35.04	
RA4: CV, mean of negative changes from one day to next (fall rate)	197.01	204.46	
RA5: Ratio of days that are higher than previous day	0.39	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.03	

RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.02	
RA8: Number of flow reversals from one day to the next	80.04	61.25	
RA9: CV, number of flow reversals from one day to the next	22.74	18.81	

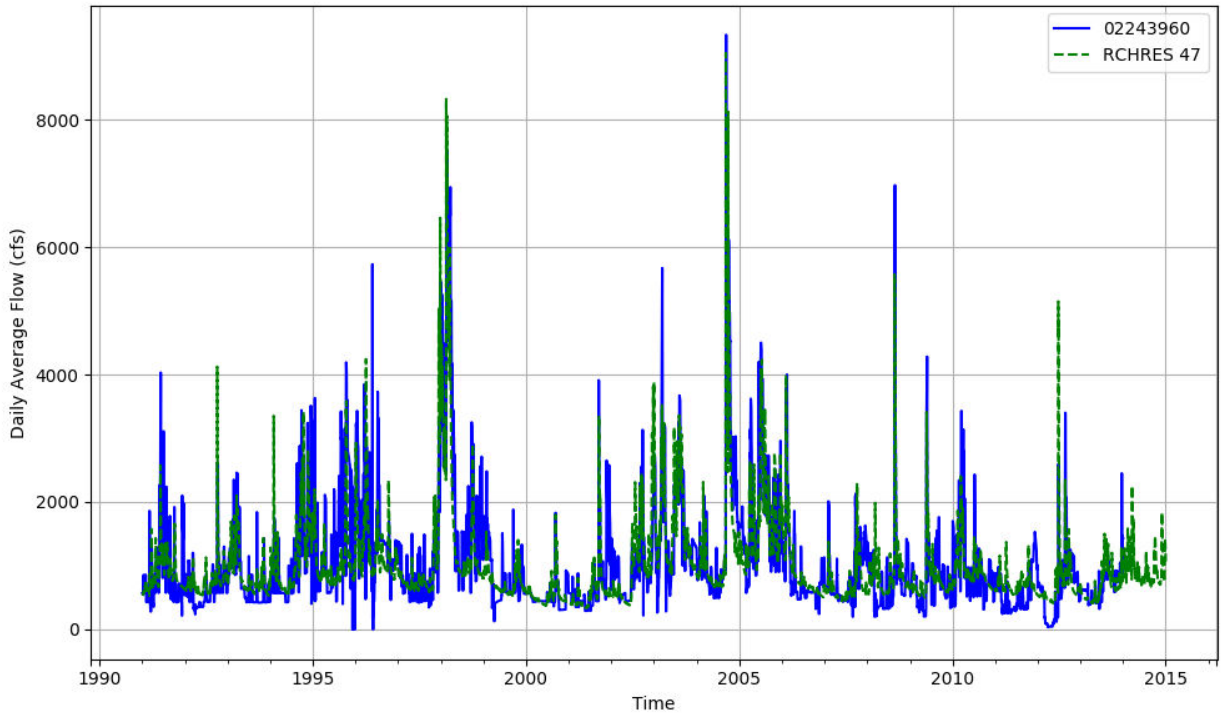


Figure T-03080102-34: Daily flow for HSFP reach 47 and USGS station 02243960.

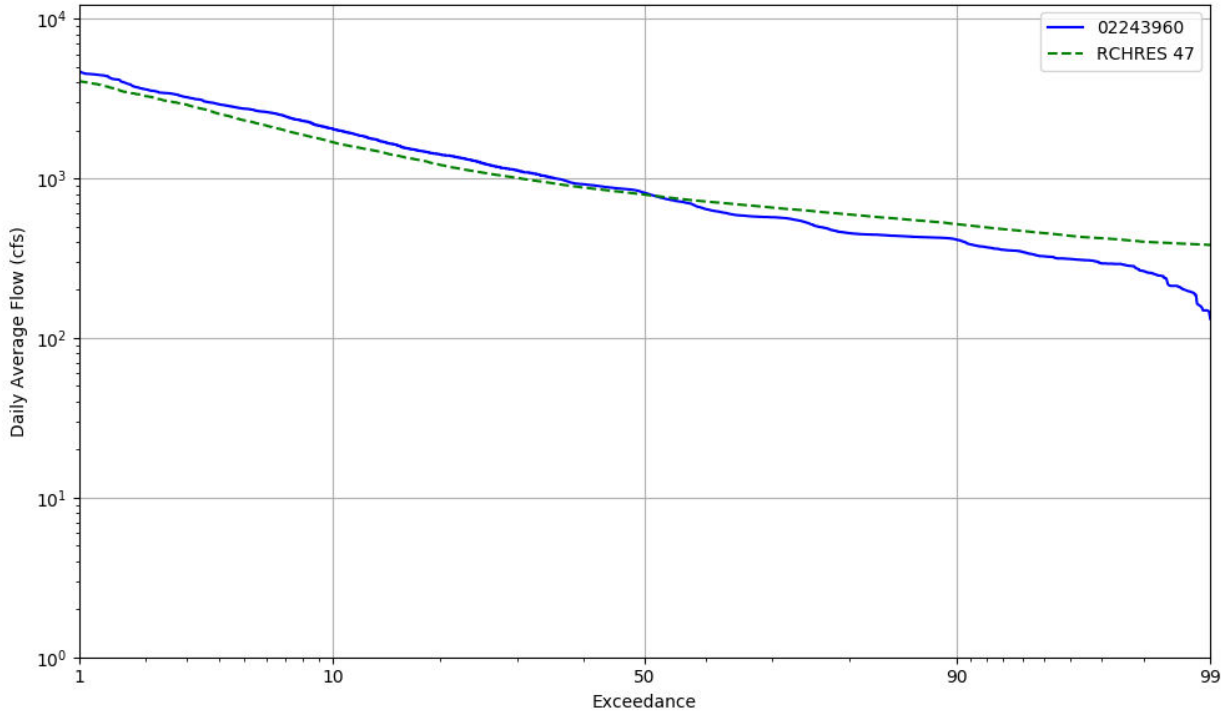


Figure T-03080102-35: Daily exceedance for HSFP reach 47 and USGS station 02243960.

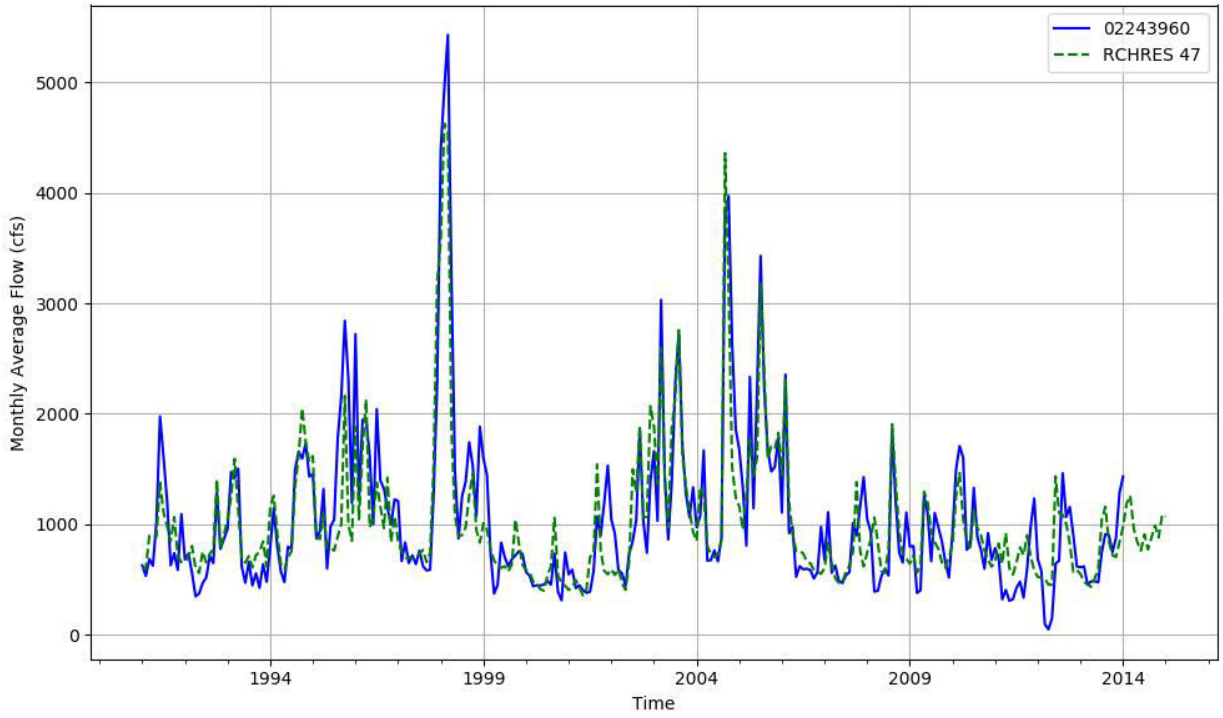


Figure T-03080102-36: Monthly flow for HSFP reach 47 and USGS station 02243960.

Table T-03080102-23: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	129861	143949	47465	14775	1946	4658	481557	173303	51858	235269	76270	338542	8857	11029	29569	1748908
AREA(%)	7.3	8.1	2.7	0.8	0.1	0.3	27.2	9.8	2.9	13.3	4.3	19.1	0.5	0.6	1.7	98.9
IMPERVIOUS																
AREA(ACRES)		8006	5383	3794	2077											19260
AREA(%)		0.5	0.3	0.2	0.1											1.1
SUPY	44.8	45.0	44.3	44.2	44.3	44.9	46.1	45.6	45.3	44.9	44.6	44.8	72.7	55.2	52.0	45.1
SURLI		0.0	9.6	8.9	8.6										14.2	0.6
UZLI																0.0
LZLI		0.0	3.7	3.3	3.7									0.0	0.5	0.1
SURO: PERVIOUS	0.6	0.6	3.3	0.4	0.3	0.2	0.0	0.1	0.1	0.9	0.0	0.1	2.1	3.3	1.1	0.4
SURO: IMPERVIOUS		30.4	29.8	29.7	29.9											0.3
SURO: COMBINED	0.6	2.2	6.0	6.4	15.6	0.2	0.0	0.1	0.1	0.9	0.0	0.1	2.1	3.3	1.1	0.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.1	2.6	1.5	4.1	3.7	4.3	1.7	2.8	2.5	0.2	0.9	0.3	6.8	0.9	4.6	1.4
AGWI	0.9	4.2	2.9	6.3	6.0	6.9	3.0	4.4	4.3	0.6	1.6	1.1	8.5	1.7	6.8	2.4
IGWI	1.3	10.4	13.4	18.0	16.8	13.9	7.2	15.2	10.0	10.1	4.9	2.1	20.0	11.6	15.8	7.6
CEPE		10.7	10.7	10.6	10.5	7.5	16.5	10.6	10.7	10.6	18.9	21.3	31.5	12.5	22.5	14.0
UZET	3.3	2.2	10.8	3.0	2.8	2.8	1.4	3.0	2.6	5.5	1.8	2.6	2.6	9.5	4.7	3.0
LZET	0.5	16.5	15.6	17.8	19.7	12.9	17.5	12.1	17.2	16.1	14.7	0.7	8.0	15.5	15.2	11.8
AGWET	0.2	0.9	0.6	1.3	1.3	1.6	0.6	0.9	1.0	0.2	0.3	0.2	0.6	0.4	1.1	0.5
BASET	0.3	0.7	0.7	0.9	0.9	1.0	0.6	0.8	0.8	0.2	0.4	0.4	1.3	0.5	1.1	0.5
SURET	33.9											14.4				5.2
PERO	0.7	3.2	4.9	4.5	4.1	4.5	1.7	2.9	2.6	1.1	0.9	0.4	9.0	4.2	5.7	1.8
IGWI	1.3	10.4	13.4	18.0	16.8	13.9	7.2	15.2	10.0	10.1	4.9	2.1	20.0	11.6	15.8	7.6
TAET: PERVIOUS	38.2	31.0	38.4	33.5	35.3	25.8	36.7	27.2	32.3	32.6	36.1	39.6	43.9	38.4	44.5	35.0
IMPEV: IMPERVIOUS		14.5	14.5	14.5	14.4											0.2
ET: COMBINED	38.2	30.1	36.0	29.6	24.5	25.8	36.7	27.2	32.3	32.6	36.1	39.6	43.9	38.4	44.5	35.2
PET	49.6	48.3	48.7	48.7	48.6	49.2	47.6	47.5	48.1	48.2	49.3	48.7	49.2	48.1	49.1	47.7

Table T-03080102-24: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	129861	143949	47465	14775	1946	4658	481557	173303	51858	235269	76270	338542	8857	11029	29569	1748908
AREA(%)	7.3	8.1	2.7	0.8	0.1	0.3	27.2	9.8	2.9	13.3	4.3	19.1	0.5	0.6	1.7	98.9
IMPERVIOUS																
AREA(ACRES)		8006	5383	3794	2077											19260
AREA(%)		0.5	0.3	0.2	0.1											1.1
SUPY	49.1	50.6	49.9	49.8	49.8	50.2	51.9	52.1	51.2	51.1	50.2	50.3	65.5	56.3	53.9	50.6
SURLI		0.0	9.8	9.0	8.8									0.0	10.6	0.5
UZLI																0.0
LZLI		0.0	3.6	3.4	3.7									0.0	0.4	0.1
SURO: PERVIOUS	0.5	0.3	2.3	0.3	0.2	0.1	0.0	0.1	0.0	0.4	0.0	0.1	0.7	1.3	0.3	0.2
SURO: IMPERVIOUS		34.3	33.4	33.2	33.3											0.4
SURO: COMBINED	0.5	2.1	5.4	7.0	17.3	0.1	0.0	0.1	0.0	0.4	0.0	0.1	0.7	1.3	0.3	0.6
IFWO		0.0	0.0	0.0	0.0	0.0		0.0					0.0		0.0	0.0
AGWO	0.2	2.5	1.5	4.2	3.6	4.8	1.7	3.1	2.5	0.2	0.8	0.3	4.3	0.8	2.9	1.4
AGWI	0.8	4.8	3.2	7.0	6.3	8.2	3.3	5.2	5.0	0.7	2.0	1.0	6.6	1.8	5.3	2.7
IGWI	1.3	11.5	14.4	19.5	18.2	16.0	7.3	17.7	11.1	11.0	5.2	1.8	16.4	11.3	13.0	8.1
CEPE		11.9	12.2	12.2	12.1	8.5	18.1	11.7	11.8	12.1	21.8	23.9	25.7	13.3	24.0	15.6
UZET	1.6	2.5	13.6	3.0	2.9	2.9	1.6	3.4	2.8	7.5	2.2	3.1	2.5	10.8	3.9	3.4
LZET	0.5	18.7	17.7	19.7	22.1	14.4	21.1	13.7	19.8	18.9	19.8	0.9	13.8	18.1	19.5	14.0
AGWET	0.3	1.3	0.8	1.6	1.7	2.1	0.9	1.2	1.5	0.3	0.7	0.3	1.2	0.5	1.4	0.7
BASET	0.4	0.9	0.9	1.1	1.1	1.3	0.7	0.9	1.0	0.2	0.5	0.5	1.2	0.4	1.0	0.6
SURET	47.7											21.9				7.7
PERO	0.7	2.8	3.7	4.5	3.7	4.9	1.7	3.1	2.5	0.6	0.8	0.4	4.9	2.1	3.2	1.6
IGWI	1.3	11.5	14.4	19.5	18.2	16.0	7.3	17.7	11.1	11.0	5.2	1.8	16.4	11.3	13.0	8.1
TAET: PERVIOUS	50.4	35.4	45.1	37.7	39.9	29.0	42.4	30.9	36.9	39.0	45.0	50.6	44.3	43.1	49.8	42.0
IMPEV: IMPERVIOUS		16.3	16.5	16.6	16.5											0.2
ET: COMBINED	50.4	34.4	42.2	33.4	27.8	29.0	42.4	30.9	36.9	39.0	45.0	50.6	44.3	43.1	49.8	42.2
PET	57.1	55.8	56.3	56.3	56.2	56.7	54.9	55.1	55.6	55.8	57.2	56.1	56.9	55.6	56.9	55.1

Table T-03080102-25: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	129861	143949	47465	14775	1946	4658	481557	173303	51858	235269	76270	338542	8857	11029	29569	1748908
AREA(%)	7.3	8.1	2.7	0.8	0.1	0.3	27.2	9.8	2.9	13.3	4.3	19.1	0.5	0.6	1.7	98.9
IMPERVIOUS																
AREA(ACRES)		8006	5383	3794	2077											19260
AREA(%)		0.5	0.3	0.2	0.1											1.1
SUPY	46.2	47.9	48.0	48.2	48.3	47.3	47.5	49.1	48.0	50.0	48.9	46.5	65.3	54.5	52.8	47.5
SURLI		0.0	9.8	8.9	8.7										15.0	0.6
UZLI																0.0
LZLI		0.0	3.6	3.4	3.6									0.0	0.6	0.1
SURO: PERVIOUS	0.4	0.8	4.0	0.8	0.7	0.3	0.0	0.3	0.1	0.8	0.1	0.1	1.9	1.3	0.4	0.4
SURO: IMPERVIOUS		33.6	33.5	33.7	33.7											0.4
SURO: COMBINED	0.4	2.5	7.0	7.5	17.7	0.3	0.0	0.3	0.1	0.8	0.1	0.1	1.9	1.3	0.4	0.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.2	2.8	2.0	4.8	4.2	4.9	1.9	2.8	2.7	0.3	1.2	0.3	5.0	0.8	4.4	1.5
AGWI	0.7	4.9	3.7	7.4	6.9	8.1	3.3	4.6	5.0	0.8	2.6	0.9	7.3	1.8	7.0	2.7
IGWI	1.2	13.6	15.9	21.3	20.3	16.6	9.7	19.1	13.2	14.5	8.0	2.2	18.5	13.7	17.5	9.9
CEPE		10.3	10.4	10.4	10.4	7.1	16.2	10.3	10.2	10.7	19.5	21.7	24.3	11.9	22.0	13.9
UZET	1.5	2.9	14.4	3.6	3.4	3.4	1.9	3.7	3.3	8.4	3.3	2.8	2.8	11.2	5.3	3.7
LZET	0.4	17.9	15.3	18.5	20.8	13.6	19.6	12.8	18.8	17.5	18.6	0.6	11.9	16.1	15.8	12.9
AGWET	0.2	1.4	0.7	1.5	1.6	2.0	0.8	1.1	1.4	0.3	0.8	0.2	1.1	0.5	1.2	0.7
BASET	0.4	0.8	1.0	1.1	1.1	1.3	0.6	0.8	0.9	0.2	0.6	0.5	1.2	0.5	1.2	0.6
SURET	45.0											21.5				7.4
PERO	0.6	3.6	6.0	5.6	4.9	5.2	1.9	3.1	2.8	1.1	1.2	0.5	6.9	2.2	4.7	1.9
IGWI	1.2	13.6	15.9	21.3	20.3	16.6	9.7	19.1	13.2	14.5	8.0	2.2	18.5	13.7	17.5	9.9
TAET: PERVIOUS	47.4	33.2	41.7	35.1	37.3	27.3	39.1	28.7	34.7	37.0	42.8	47.2	41.3	40.2	45.6	39.2
IMPEV: IMPERVIOUS		14.3	14.5	14.5	14.5											0.2
ET: COMBINED	47.4	32.2	38.9	30.9	25.5	27.3	39.1	28.7	34.7	37.0	42.8	47.2	41.3	40.2	45.6	39.4
PET	50.6	49.4	49.7	49.7	49.6	50.2	49.0	48.8	49.3	49.1	50.1	50.0	50.0	49.3	50.0	48.9

Table T-03080102-26: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	129861	143949	47465	14775	1946	4658	481557	173303	51858	235269	76270	338542	8857	11029	29569	1748908
AREA(%)	7.3	8.1	2.7	0.8	0.1	0.3	27.2	9.8	2.9	13.3	4.3	19.1	0.5	0.6	1.7	98.9
IMPERVIOUS																
AREA(ACRES)		8006	5383	3794	2077											19260
AREA(%)		0.5	0.3	0.2	0.1											1.1
SUPY	48.2	48.8	48.3	48.2	48.2	48.6	49.5	49.4	49.0	48.8	48.6	48.5	62.9	54.5	51.7	48.5
SURLI		0.0	8.8	8.1	7.9					0.0	0.0	0.0		0.0	8.4	0.5
UZLI																0.0
LZLI		0.0	3.8	3.3	3.7									0.0	0.2	0.1
SURO: PERVIOUS	2.0	0.9	4.1	0.8	0.7	0.3	0.0	0.4	0.3	1.2	0.2	1.3	1.6	2.5	0.4	0.9
SURO: IMPERVIOUS		33.5	33.1	32.9	33.0											0.4
SURO: COMBINED	2.0	2.6	7.0	7.4	17.4	0.3	0.0	0.4	0.3	1.2	0.2	1.3	1.6	2.5	0.4	1.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.2	3.1	2.1	4.7	4.4	5.3	2.3	3.2	3.1	0.5	1.7	0.4	5.2	1.2	3.4	1.7
AGWI	0.7	5.0	3.5	7.0	6.7	8.1	3.7	5.0	5.2	0.9	2.8	1.0	7.1	2.1	5.4	2.9
IGWI	1.3	12.4	15.0	19.9	18.7	16.0	9.1	17.5	12.0	12.2	7.0	2.2	16.8	11.9	13.0	9.0
CEPE		11.4	11.4	11.4	11.3	8.2	17.2	11.2	11.3	11.4	19.7	22.3	22.8	12.7	21.9	14.7
UZET	1.4	2.4	12.2	3.0	2.9	3.0	1.8	3.3	2.9	6.8	2.7	2.4	2.4	10.0	4.0	3.2
LZET	0.3	16.6	14.7	17.5	19.5	12.8	17.7	12.0	17.3	16.2	16.3	0.6	12.1	15.3	15.6	11.9
AGWET	0.2	1.1	0.6	1.3	1.4	1.7	0.7	0.9	1.2	0.2	0.6	0.1	0.9	0.4	1.0	0.6
BASET	0.4	0.8	0.9	1.0	1.0	1.2	0.7	0.8	0.9	0.3	0.6	0.5	1.1	0.6	1.0	0.6
SURET	42.9											19.3				6.8
PERO	2.2	4.1	6.2	5.6	5.1	5.6	2.4	3.7	3.4	1.7	1.9	1.7	6.8	3.7	3.8	2.6
IGWI	1.3	12.4	15.0	19.9	18.7	16.0	9.1	17.5	12.0	12.2	7.0	2.2	16.8	11.9	13.0	9.0
TAET: PERVIOUS	45.3	32.3	39.8	34.1	36.0	26.9	38.1	28.2	33.7	34.9	39.8	45.2	39.3	38.9	43.6	37.7
IMPEV: IMPERVIOUS		15.2	15.3	15.3	15.2											0.2
ET: COMBINED	45.3	31.4	37.3	30.3	25.3	26.9	38.1	28.2	33.7	34.9	39.8	45.2	39.3	38.9	43.6	37.9
PET	49.9	48.8	49.1	49.1	49.0	49.5	48.4	48.2	48.7	48.6	49.6	49.3	49.5	48.7	49.5	48.3

Table T-03080102-27: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
2	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
3	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
4	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
5	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
6	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
7	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
8	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
9	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
10	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
11	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
12	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
13	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
14	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
15	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
16	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
17	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
18	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
19	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
20	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
21	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
22	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
23	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
24	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
25	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
26	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
27	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
28	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
29	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
30	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
31	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
32	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
33	0.990	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.990
34	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
35	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
36	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
37	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
38	0.990	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.990

39	0.990	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.990
40	0.990	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.990
41	0.990	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.990
42	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
43	0.990	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.990
44	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
45	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
46	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
47	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
48	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990

Table T-03080102-28: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
2	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
3	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
4	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
5	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
6	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
7	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
8	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
9	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
10	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
11	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
12	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
13	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
14	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
15	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
16	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
18	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
19	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
20	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
21	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
22	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
23	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
24	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
25	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
26	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
27	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
28	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
29	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
30	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
31	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
32	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
33	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
34	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
35	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
36	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
37	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
38	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150

39	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
40	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
41	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
42	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
43	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
44	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
45	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
46	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
47	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
48	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058

Table T-03080102-29: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
2	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
3	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
4	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
5	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
6	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
7	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
8	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
9	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
10	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
11	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
12	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
13	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
14	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
15	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
16	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
17	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
18	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
19	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
20	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
21	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
22	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
23	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
24	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
25	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
26	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
27	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
28	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
29	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
30	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
31	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
32	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
33	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
34	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
35	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
36	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
37	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
38	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300

39	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
40	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
41	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
42	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
43	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
44	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
45	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
46	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
47	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300
48	0.000	0.050	0.050	0.050	0.050	0.020	0.144	0.050	0.050	0.050	0.200	0.300

Table T-03080102-30: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
2	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
3	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
4	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
5	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
6	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
7	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
8	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
9	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
10	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
11	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
12	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
13	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
14	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
15	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
16	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
21	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
22	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
23	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
24	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
25	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
26	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
27	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
28	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
29	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
30	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
31	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438
32	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438
33	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289
34	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
35	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
36	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
37	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
38	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289

39	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289
40	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289
41	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289
42	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
43	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289	0.289
44	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
45	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
46	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
47	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
48	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477

Table T-03080102-31: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
2	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
3	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
4	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
5	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
6	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
7	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
8	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
9	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
10	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
11	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
12	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
13	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
14	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
15	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
16	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
17	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
18	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
19	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
20	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
21	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
22	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
23	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
24	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
25	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
26	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
27	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
28	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
29	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
30	0.003	0.560	0.560	0.560	0.560	0.800	1.200	0.800	0.800	0.800	0.960	0.006
31	0.001	0.159	0.159	0.159	0.159	0.227	1.200	0.227	0.227	0.227	0.272	0.001
32	0.001	0.159	0.159	0.159	0.159	0.227	1.200	0.227	0.227	0.227	0.272	0.001
33	0.004	0.328	0.328	0.328	0.328	0.469	0.703	0.469	0.469	0.469	0.563	0.009
34	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
35	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
36	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
37	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
38	0.004	0.328	0.328	0.328	0.328	0.469	0.703	0.469	0.469	0.469	0.563	0.009

39	0.004	0.328	0.328	0.328	0.328	0.469	0.703	0.469	0.469	0.469	0.563	0.009
40	0.004	0.328	0.328	0.328	0.328	0.469	0.703	0.469	0.469	0.469	0.563	0.009
41	0.004	0.328	0.328	0.328	0.328	0.469	0.703	0.469	0.469	0.469	0.563	0.009
42	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
43	0.004	0.328	0.328	0.328	0.328	0.469	0.703	0.469	0.469	0.469	0.563	0.009
44	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
45	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
46	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
47	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001
48	0.001	0.690	0.010	1.000	1.000	1.000	0.719	0.940	1.000	0.015	0.311	0.001

Table T-03080102-32: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
31		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
32		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
33		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
34		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
35		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
36		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
37		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
38		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
39		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
40		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
41		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
42		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
43		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
44		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
45		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
46		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
47		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
48		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03080102-33: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
2	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
3	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
4	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
5	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
6	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
7	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
8	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
9	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
10	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
11	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
12	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
13	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
14	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
15	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
16	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
17	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
18	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
19	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
20	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
21	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
22	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
23	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
24	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
25	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
26	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
27	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
28	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
29	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
30	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
31	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
32	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
33	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
34	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
35	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
36	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
37	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
38	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700

39	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
40	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
41	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
42	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
43	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
44	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
45	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
46	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
47	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
48	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697

Table T-03080102-34: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
2	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
3	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
4	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
5	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
6	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
7	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
8	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
9	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
10	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
11	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
12	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
13	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
14	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
15	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
16	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
17	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
18	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
19	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
20	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
21	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
22	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
23	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
24	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
25	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
26	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
27	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
28	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
29	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
30	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
31	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996
32	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996	2.996
33	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
34	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
35	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
36	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
37	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
38	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

39	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
40	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
41	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
42	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
43	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
44	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
45	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
46	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
47	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
48	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214

Table T-03080102-35: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
2	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
3	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
4	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
5	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
6	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
7	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
8	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
9	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
10	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
11	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
12	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
13	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
14	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
15	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
16	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
21	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
22	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
23	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
24	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
25	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
26	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
27	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
28	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
29	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
30	0.246	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
31	0.774	0.600	0.440	0.440	0.440	0.293	0.623	0.650	0.440	0.440	0.513	0.696
32	0.774	0.600	0.440	0.440	0.440	0.293	0.623	0.650	0.440	0.440	0.513	0.696
33	0.246	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.900
34	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
35	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
36	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
37	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
38	0.246	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.900

39	0.246	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.900
40	0.246	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.900
41	0.246	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.900
42	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
43	0.246	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.900
44	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
45	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
46	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
47	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065
48	0.027	0.414	0.635	0.400	0.504	0.300	0.660	0.306	0.459	0.635	0.745	1.065

Table T-03080102-36: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
2	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
3	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
4	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
5	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
6	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
7	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
8	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
9	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
10	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
11	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
12	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
13	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
14	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
15	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
16	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
17	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
18	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
19	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
20	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
21	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
22	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
23	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
24	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
25	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
26	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
27	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
28	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
29	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
30	0.200	4.702	4.702	4.702	4.702	4.995	5.877	4.995	4.995	4.995	5.290	0.200
31	0.100	1.178	1.178	1.178	1.178	1.325	12.000	1.325	1.325	1.325	1.472	0.100
32	0.100	1.178	1.178	1.178	1.178	1.325	12.000	1.325	1.325	1.325	1.472	0.100
33	0.200	9.024	9.074	9.004	6.445	7.467	9.189	7.467	7.467	7.467	8.041	0.108
34	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
35	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
36	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
37	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
38	0.200	9.024	9.074	9.004	6.445	7.467	9.189	7.467	7.467	7.467	8.041	0.108

39	0.200	9.024	9.074	9.004	6.445	7.467	9.189	7.467	7.467	7.467	8.041	0.108
40	0.200	9.024	9.074	9.004	6.445	7.467	9.189	7.467	7.467	7.467	8.041	0.108
41	0.200	9.024	9.074	9.004	6.445	7.467	9.189	7.467	7.467	7.467	8.041	0.108
42	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
43	0.200	9.024	9.074	9.004	6.445	7.467	9.189	7.467	7.467	7.467	8.041	0.108
44	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
45	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
46	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
47	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100
48	0.050	6.744	6.856	6.599	6.627	7.482	4.200	7.686	7.554	9.245	9.611	0.100

Table T-03080102-37: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
2	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
3	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
4	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
5	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
6	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
7	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
8	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
9	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
10	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
11	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
12	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
13	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
14	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
15	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
26	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
27	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
28	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
29	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.495	1.719	1.719	1.719	1.719	2.456	1.391	1.965	1.719	2.456	0.174
32	0.050	0.495	1.719	1.719	1.719	1.719	2.456	1.391	1.965	1.719	2.456	0.174
33	0.050	0.691	0.691	0.691	0.691	0.691	0.987	0.790	0.790	0.691	0.987	0.063
34	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
35	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
36	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
37	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
38	0.050	0.691	0.691	0.691	0.691	0.691	0.987	0.790	0.790	0.691	0.987	0.063

39	0.050	0.691	0.691	0.691	0.691	0.691	0.987	0.790	0.790	0.691	0.987	0.063
40	0.050	0.691	0.691	0.691	0.691	0.691	0.987	0.790	0.790	0.691	0.987	0.063
41	0.050	0.691	0.691	0.691	0.691	0.691	0.987	0.790	0.790	0.691	0.987	0.063
42	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
43	0.050	0.691	0.691	0.691	0.691	0.691	0.987	0.790	0.790	0.691	0.987	0.063
44	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
45	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
46	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
47	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050
48	0.050	0.100	1.883	1.145	1.372	1.145	1.768	1.421	1.512	2.000	2.000	0.050

APPENDIX T-03080103

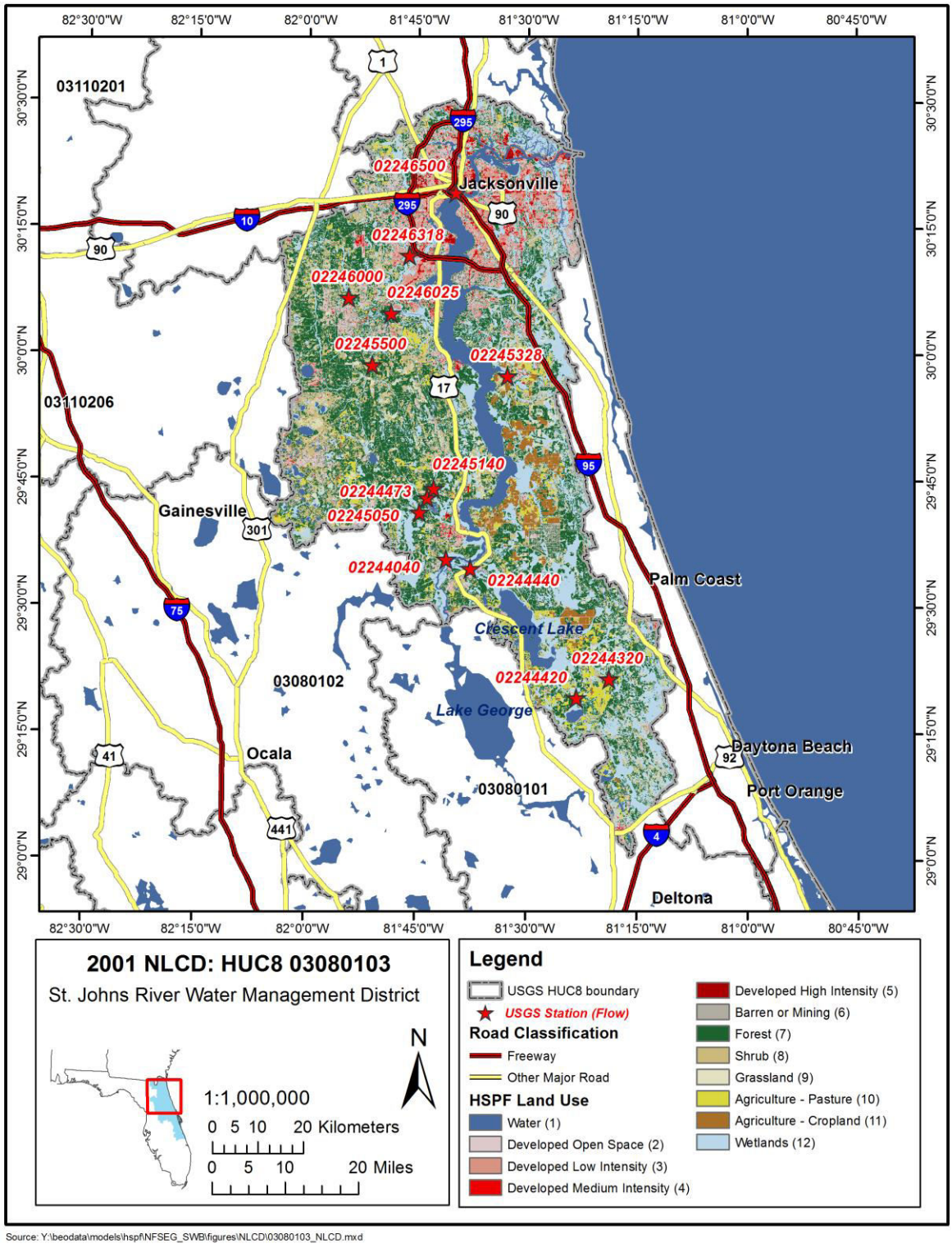


Figure T-03080103-1: Land Cover from the National Land Cover Database.

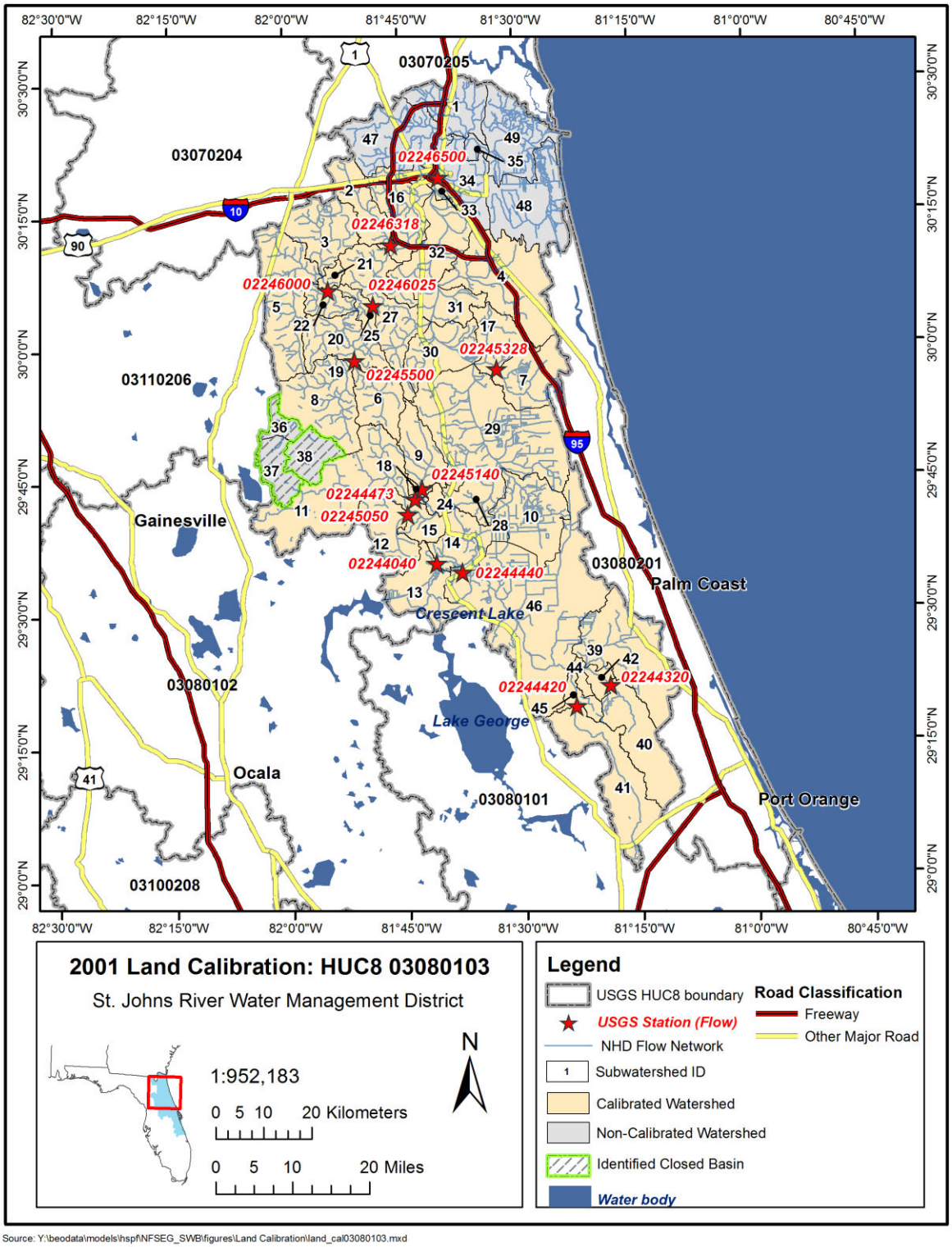


Figure T-03080103-2: Calibrated sub-watersheds.

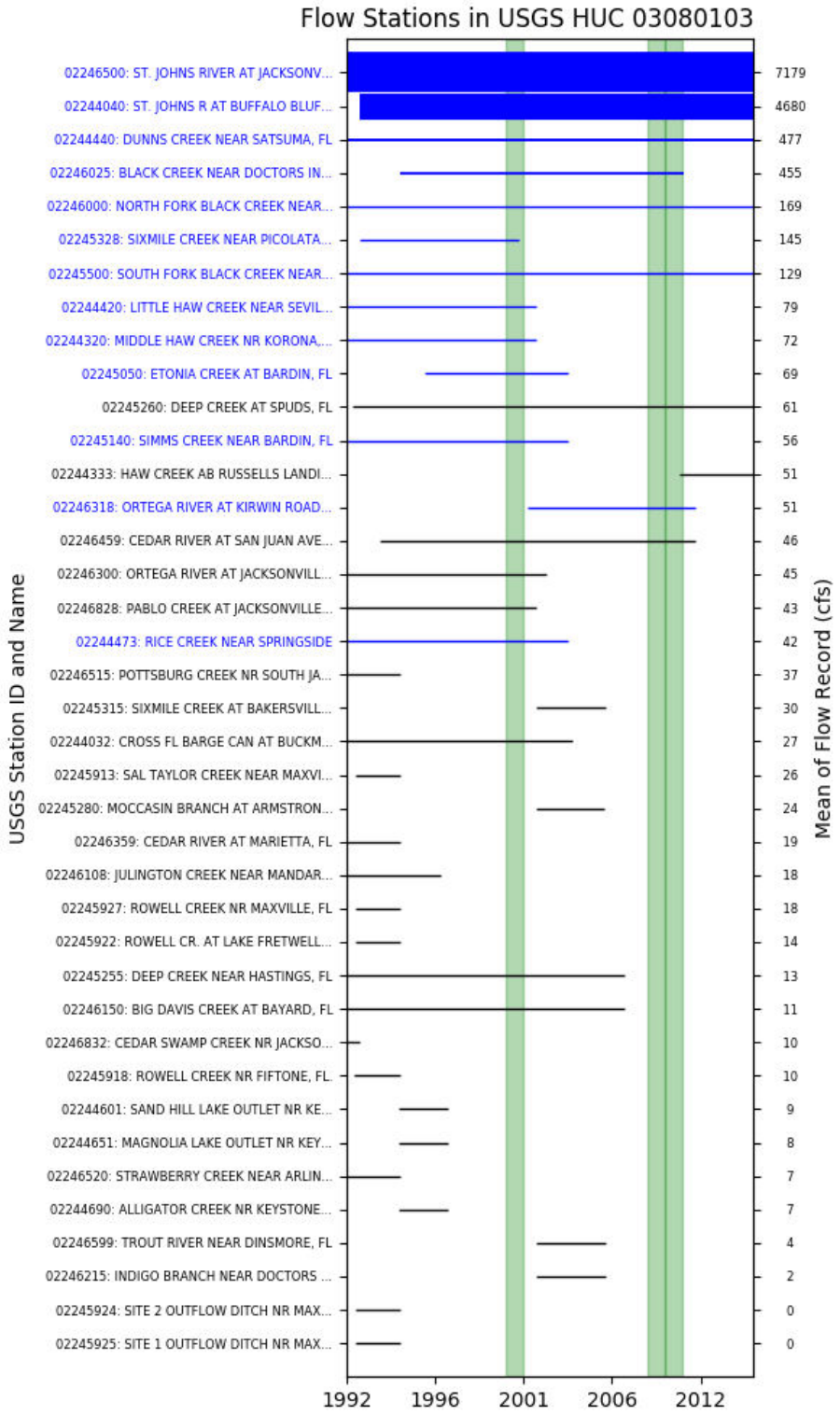


Figure T-03080103-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 02, USGS GAUGE 02246318

Water-Data Report 2009
02246318 ORTEGA RIVER AT KIRWIN ROAD NEAR JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301146, long 814607 referenced to North American Datum of 1927, in SE 1/4 sec.35, T.3 S., R.25 E., Duval County, FL, Hydrologic Unit 03080103, on right bank, 100 ft upstream from Argyle Forest Boulevard, 1.8 mi west of intersection of Interstate Highway 295 and State Highway 21, 11 mi upstream from mouth, and 11.5 mi southwest of Jacksonville.

DRAINAGE AREA.--45.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1982 to May 1985 (miscellaneous discharge measurements), March 2002 to current year.

REVISED RECORDS.--WDR FL-06-1: 2005, 2005 (M).

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (levels by De Grove Surveyors, Inc., from St. Johns River Water Management District bench mark).

REMARKS.--Records fair.

Table T-03080103-1: Comparison Statistics Between HSPF Reach 02 and USGS Gauge 02246318.

Statistic	Value
Bias	3.39
Standard error	35.43
Relative bias	0.07
Relative standard error	0.54
Nash-Sutcliffe coefficient	0.71
Coefficient of efficiency	0.53
Index of agreement	0.76

Table T-03080103-2: Hydrologic Indices Between USGS Gauge 02246318 and HSPF Reach 02.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02246318	Simulated Reach 02	Percent Difference
MA1: Mean, all daily flows	51.23	54.56	6.49
MA2: Median, all daily flows	20.00	22.30	11.52
MA3: CV, all daily flows	188.08	186.71	-0.73

MA4: CV, log of all daily flows	119.25	117.16	-1.76
MA5: Mean daily flow / median daily flow	2.56	2.45	-4.51
MA9: (Q10 - Q90) / median daily flow	5.12	5.27	2.90
MA10: (Q20 - Q80) / median daily flow	2.79	2.94	5.14
MA11: (Q25 - Q75) / median daily flow	2.12	2.19	3.07
MA12: Mean monthly flow, January	35.94	38.20	6.29
MA13: Mean monthly flow, February	48.28	62.74	29.95
MA14: Mean monthly flow, March	49.54	57.20	15.46
MA15: Mean monthly flow, April	33.64	35.63	5.93
MA16: Mean monthly flow, May	26.42	28.38	7.45
MA17: Mean monthly flow, June	38.31	36.60	-4.45
MA18: Mean monthly flow, July	71.40	60.66	-15.04
MA19: Mean monthly flow, August	97.89	92.64	-5.36
MA20: Mean monthly flow, September	85.51	99.96	16.91
MA21: Mean monthly flow, October	46.09	52.48	13.86
MA22: Mean monthly flow, November	14.28	18.30	28.13
MA23: Mean monthly flow, December	39.83	43.26	8.61
ML1: Mean minimum monthly flow, January	16.63	7.94	-52.29
ML2: Mean minimum monthly flow, February	19.53	15.80	-19.11
ML3: Mean minimum monthly flow, March	17.24	12.79	-25.79
ML4: Mean minimum monthly flow, April	7.67	3.89	-49.32
ML5: Mean minimum monthly flow, May	3.23	1.66	-48.44
ML6: Mean minimum monthly flow, June	3.96	3.60	-9.08
ML7: Mean minimum monthly flow, July	15.64	15.14	-3.19
ML8: Mean minimum monthly flow, August	17.35	19.70	13.52
ML9: Mean minimum monthly flow, September	11.33	10.02	-11.56
ML10: Mean minimum monthly flow, October	13.54	11.34	-16.26
ML11: Mean minimum monthly flow, November	8.08	5.26	-34.85
ML12: Mean minimum monthly flow, December	12.31	8.27	-32.85
ML13: CV of minimum monthly flows	89.59	101.02	12.75
ML14: Mean minimum daily flow / mean median annual flow	0.16	0.05	-71.30
ML15: Mean minimum annual flow / mean annual flow	0.08	0.02	-71.84
ML16: Median minimum annual flow / median annual flow	0.13	0.03	-72.69
ML20: Ratio of baseflow volume to total flow volume	0.34	0.32	-3.96
ML22: Mean annual minimum flow divided by catchment area	0.03	0.01	-66.70
RA1: Mean of positive changes from one day to next (rise rate)	30.04	32.39	
RA2: CV, mean of positive changes from one day to next (rise rate)	354.50	398.25	
RA3: Mean of negative changes from one day to next (fall rate)	11.75	10.80	
RA4: CV, mean of negative changes from one day to next (fall rate)	408.59	406.45	
RA5: Ratio of days that are higher than previous day	0.26	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.27	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.14	
RA8: Number of flow reversals from one day to the next	85.10	82.10	
RA9: CV, number of flow reversals from one day to the next	15.76	21.57	

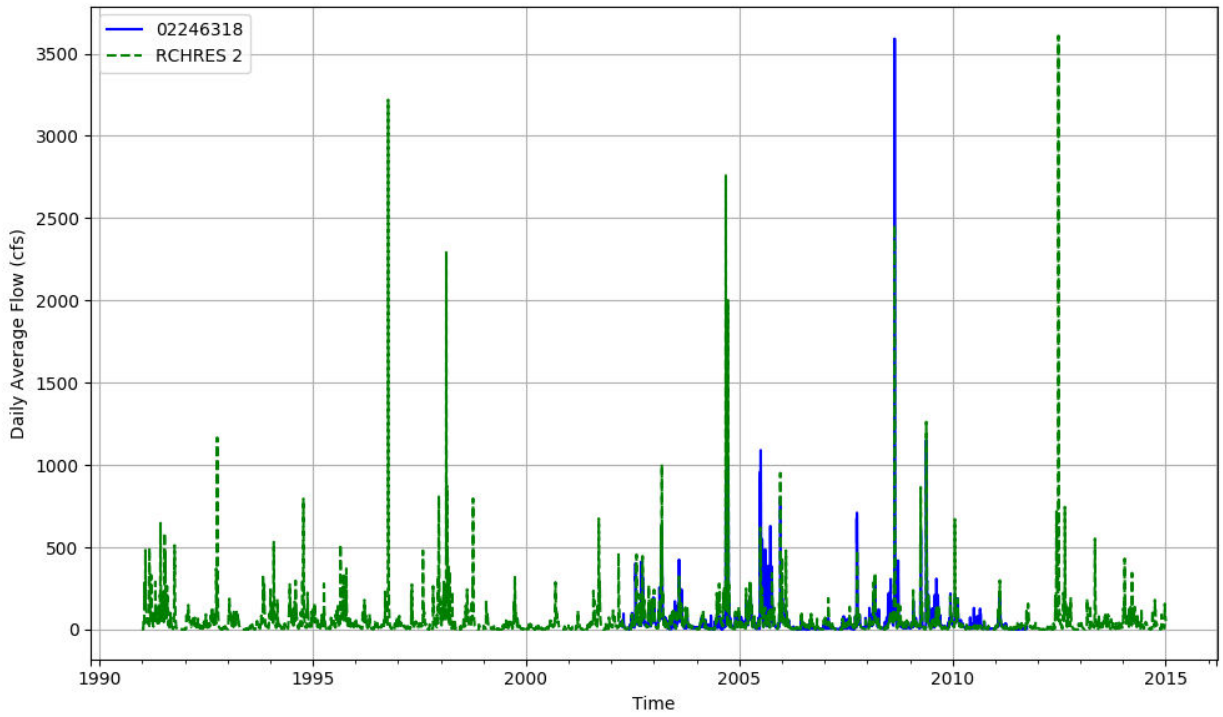


Figure T-03080103-4: Daily flow for HSFP reach 02 and USGS station 02246318.

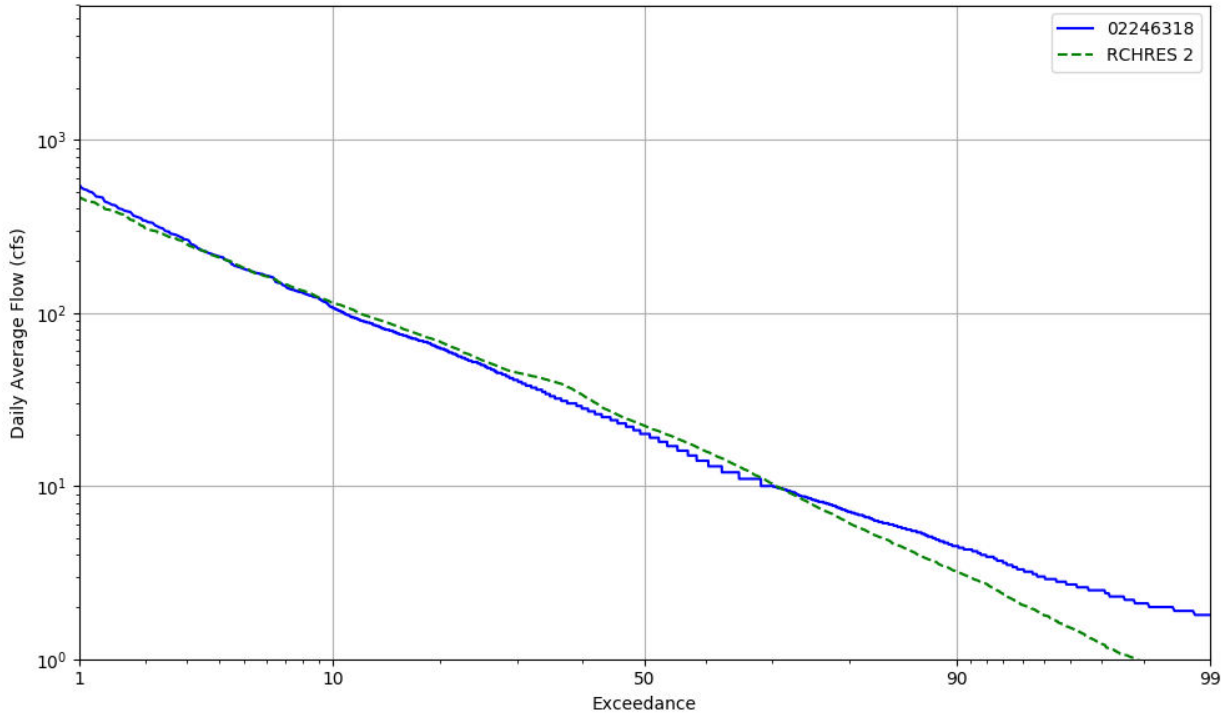


Figure T-03080103-5: Daily exceedance for HSFP reach 02 and USGS station 02246318.

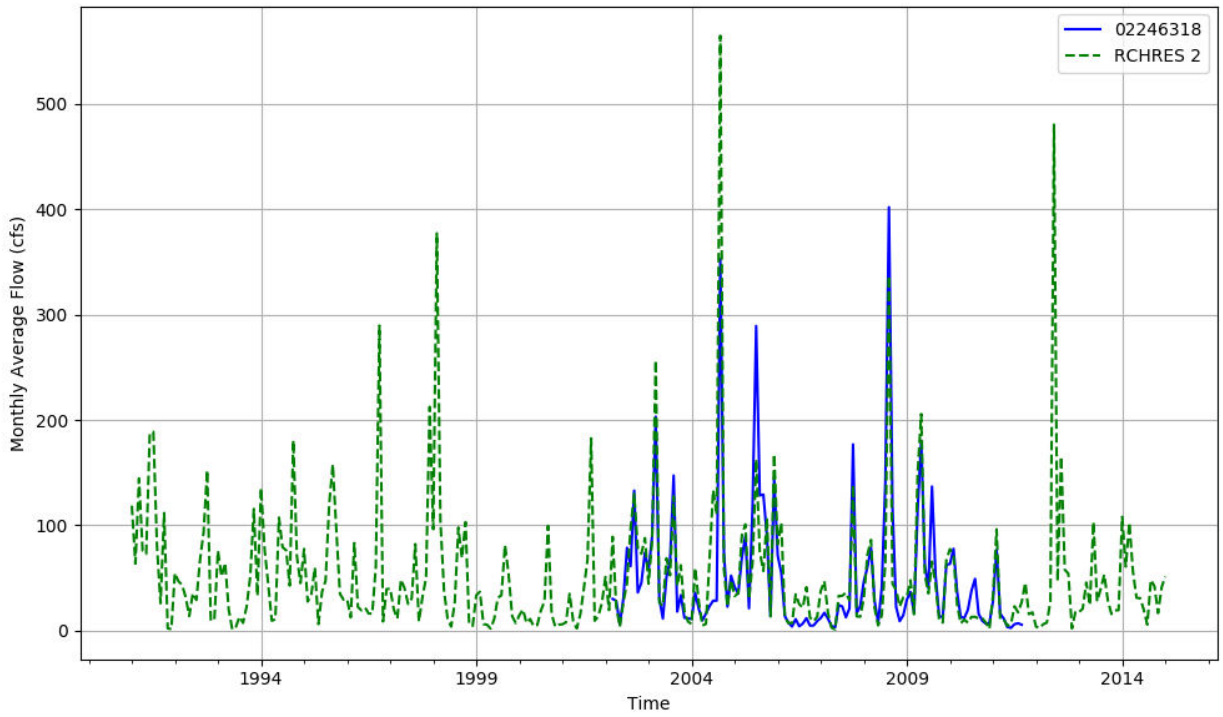


Figure T-03080103-6: Monthly flow for HSFP reach 02 and USGS station 02246318.

HSPF REACH 07, USGS GAUGE 02245328

Water-Data Report 2009
02246318 ORTEGA RIVER AT KIRWIN ROAD NEAR JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301146, long 814607 referenced to North American Datum of 1927, in SE 1/4 sec.35, T.3 S., R.25 E., Duval County, FL, Hydrologic Unit 03080103, on right bank, 100 ft upstream from Argyle Forest Boulevard, 1.8 mi west of intersection of Interstate Highway 295 and State Highway 21, 11 mi upstream from mouth, and 11.5 mi southwest of Jacksonville.

DRAINAGE AREA.--45.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1982 to May 1985 (miscellaneous discharge measurements), March 2002 to current year.

REVISED RECORDS.--WDR FL-06-1: 2005, 2005 (M).

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (levels by De Grove Surveyors, Inc., from St. Johns River Water Management District bench mark).

REMARKS.--Records fair.

Table T-03080103-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02245328.

Statistic	Value
Bias	-83.21
Standard error	185.17
Relative bias	-0.53
Relative standard error	0.78
Nash-Sutcliffe coefficient	0.39
Coefficient of efficiency	0.22
Index of agreement	0.57

Table T-03080103-4: Hydrologic Indices Between USGS Gauge 02245328 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02245328	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	216.45	66.51	-69.27
MA2: Median, all daily flows	120.00	10.50	-91.25
MA3: CV, all daily flows	146.63	229.82	56.73

MA4: CV, log of all daily flows	96.04	166.25	73.11
MA5: Mean daily flow / median daily flow	1.80	6.33	251.08
MA9: (Q10 - Q90) / median daily flow	3.40	16.83	395.71
MA10: (Q20 - Q80) / median daily flow	2.10	8.36	299.12
MA11: (Q25 - Q75) / median daily flow	1.50	5.24	249.14
MA12: Mean monthly flow, January	191.96	75.86	-60.48
MA13: Mean monthly flow, February	155.89	62.76	-59.74
MA14: Mean monthly flow, March	131.81	47.58	-63.90
MA15: Mean monthly flow, April	227.05	33.71	-85.15
MA16: Mean monthly flow, May	126.28	11.44	-90.94
MA17: Mean monthly flow, June	160.13	31.11	-80.57
MA18: Mean monthly flow, July	113.45	42.00	-62.98
MA19: Mean monthly flow, August	158.82	88.64	-44.19
MA20: Mean monthly flow, September	438.34	144.25	-67.09
MA21: Mean monthly flow, October	494.91	176.25	-64.39
MA22: Mean monthly flow, November	125.30	31.87	-74.56
MA23: Mean monthly flow, December	237.36	62.59	-73.63
ML1: Mean minimum monthly flow, January	68.56	17.74	-74.12
ML2: Mean minimum monthly flow, February	18.69	3.89	-79.19
ML3: Mean minimum monthly flow, March	28.35	3.52	-87.60
ML4: Mean minimum monthly flow, April	25.45	0.97	-96.17
ML5: Mean minimum monthly flow, May	25.81	1.33	-94.86
ML6: Mean minimum monthly flow, June	7.69	2.89	-62.42
ML7: Mean minimum monthly flow, July	9.05	7.05	-22.08
ML8: Mean minimum monthly flow, August	5.66	4.26	-24.73
ML9: Mean minimum monthly flow, September	213.39	19.35	-90.93
ML10: Mean minimum monthly flow, October	33.33	4.39	-86.84
ML11: Mean minimum monthly flow, November	33.27	2.15	-93.54
ML12: Mean minimum monthly flow, December	43.48	5.51	-87.32
ML13: CV of minimum monthly flows	296.14	208.38	-29.64
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.03	-12.78
ML15: Mean minimum annual flow / mean annual flow	0.03	0.01	-75.21
ML16: Median minimum annual flow / median annual flow	0.00	0.02	413.61
ML20: Ratio of baseflow volume to total flow volume	0.22	0.16	-27.73
ML22: Mean annual minimum flow divided by catchment area	0.12	0.01	-95.08
RA1: Mean of positive changes from one day to next (rise rate)	99.31	53.48	
RA2: CV, mean of positive changes from one day to next (rise rate)	254.39	262.59	
RA3: Mean of negative changes from one day to next (fall rate)	89.86	19.01	
RA4: CV, mean of negative changes from one day to next (fall rate)	184.33	298.04	
RA5: Ratio of days that are higher than previous day	0.47	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.44	0.45	
RA7: Median of difference in log of flows over two consecutive days of falling	0.41	0.25	
RA8: Number of flow reversals from one day to the next	125.44	68.22	
RA9: CV, number of flow reversals from one day to the next	20.58	19.19	

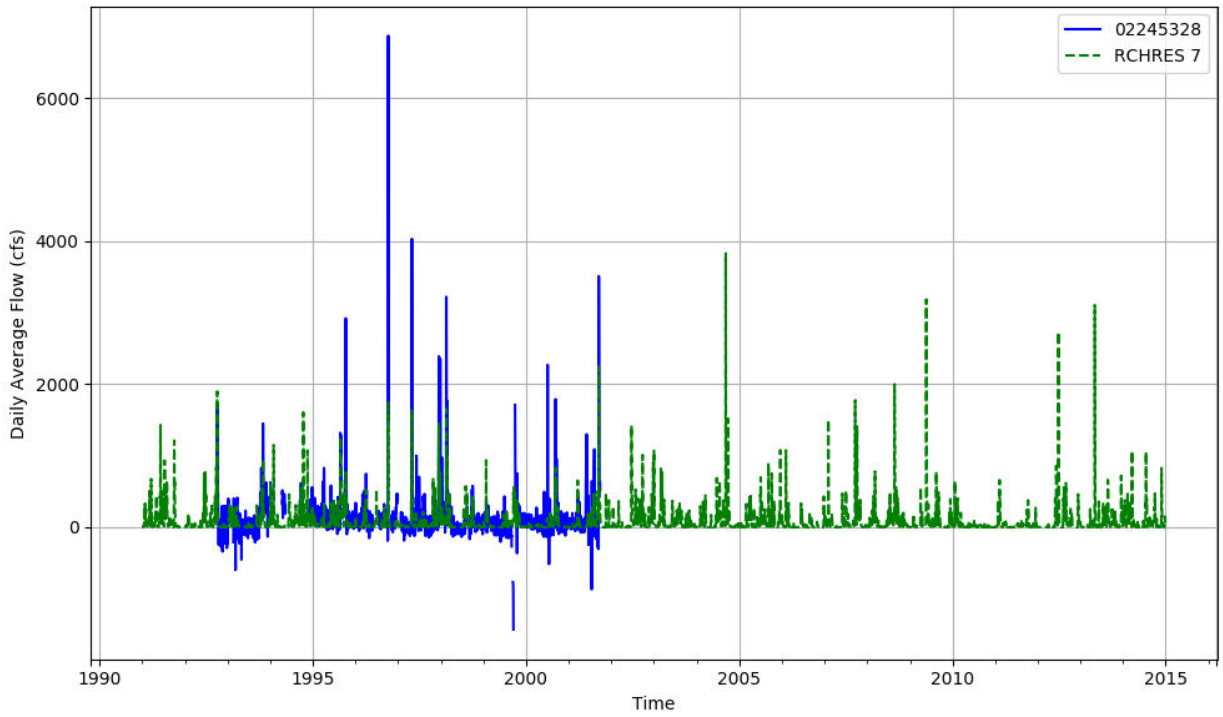


Figure T-03080103-7: Daily flow for HSFP reach 07 and USGS station 02245328.

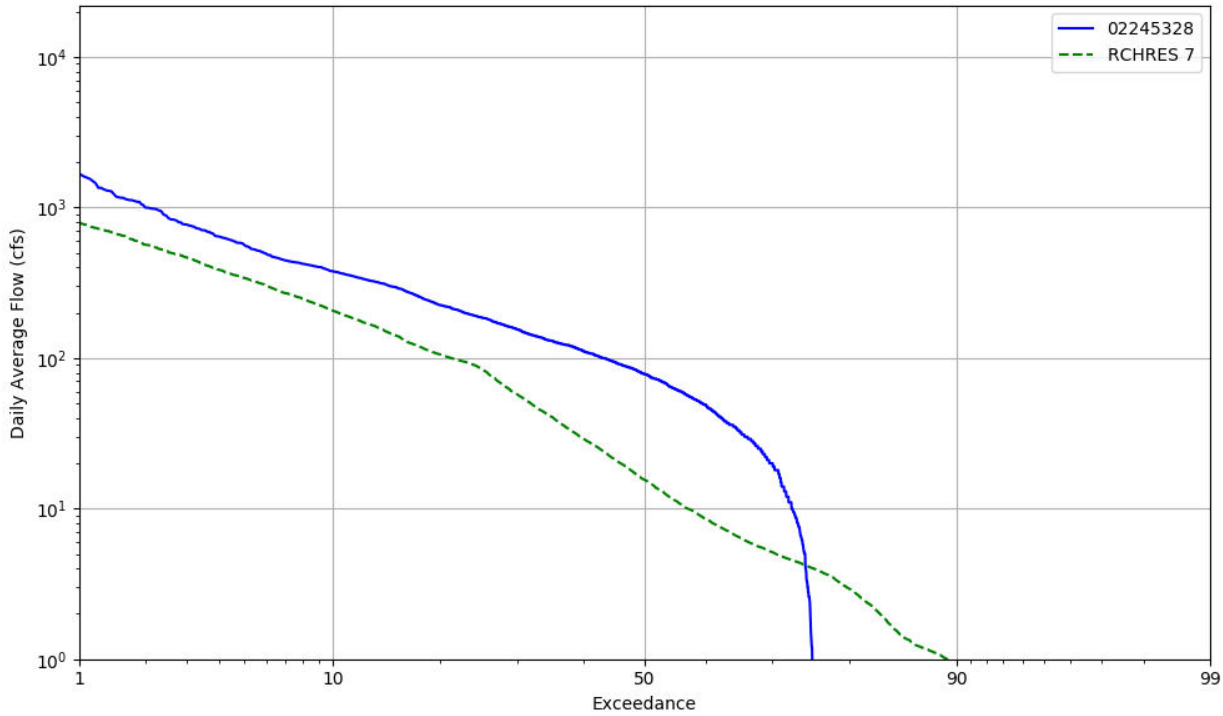


Figure T-03080103-8: Daily exceedance for HSFP reach 07 and USGS station 02245328.

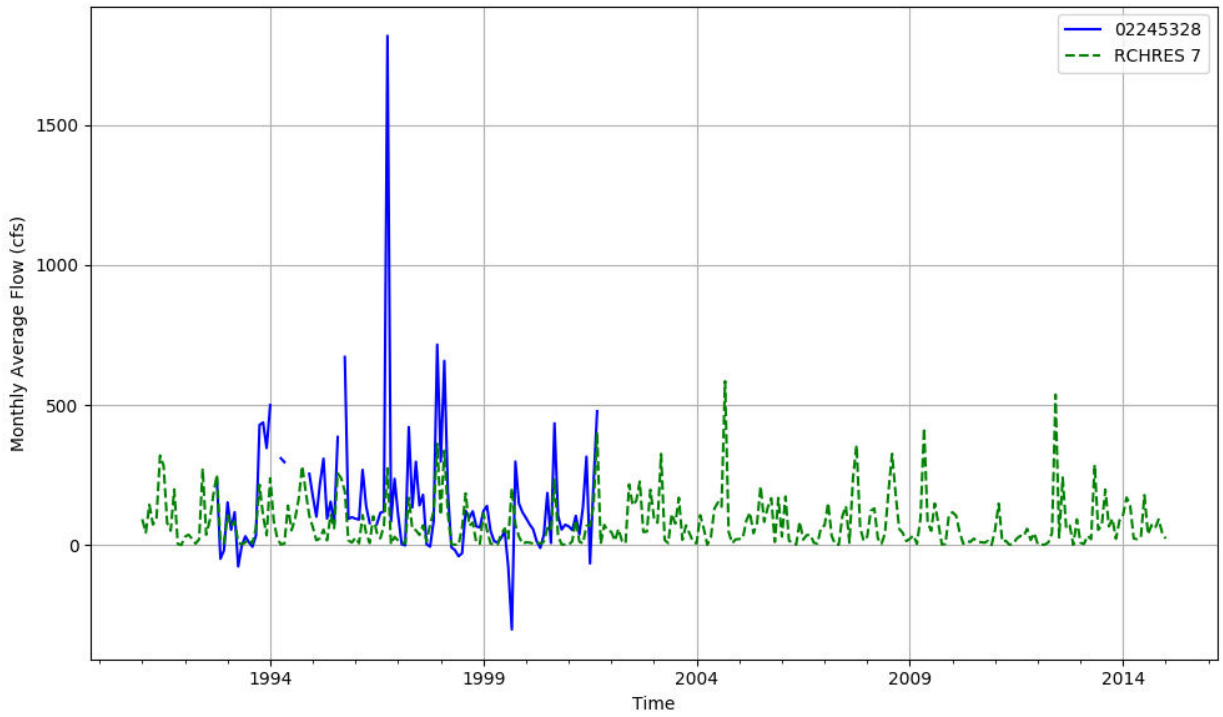


Figure T-03080103-9: Monthly flow for HSFP reach 07 and USGS station 02245328.

HSPF REACH 09, USGS GAUGE 02245140

Water-Data Report 2009
02246318 ORTEGA RIVER AT KIRWIN ROAD NEAR JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301146, long 814607 referenced to North American Datum of 1927, in SE 1/4 sec.35, T.3 S., R.25 E., Duval County, FL, Hydrologic Unit 03080103, on right bank, 100 ft upstream from Argyle Forest Boulevard, 1.8 mi west of intersection of Interstate Highway 295 and State Highway 21, 11 mi upstream from mouth, and 11.5 mi southwest of Jacksonville.

DRAINAGE AREA.--45.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1982 to May 1985 (miscellaneous discharge measurements), March 2002 to current year.

REVISED RECORDS.--WDR FL-06-1: 2005, 2005 (M).

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (levels by De Grove Surveyors, Inc., from St. Johns River Water Management District bench mark).

REMARKS.--Records fair.

Table T-03080103-5: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02245140.

Statistic	Value
Bias	-12.52
Standard error	33.42
Relative bias	-0.22
Relative standard error	0.57
Nash-Sutcliffe coefficient	0.67
Coefficient of efficiency	0.51
Index of agreement	0.74

Table T-03080103-6: Hydrologic Indices Between USGS Gauge 02245140 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02245140	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	56.14	43.57	-22.38
MA2: Median, all daily flows	22.00	17.52	-20.39
MA3: CV, all daily flows	165.20	166.83	0.99

MA4: CV, log of all daily flows	120.17	121.94	1.48
MA5: Mean daily flow / median daily flow	2.55	2.49	-2.51
MA9: (Q10 - Q90) / median daily flow	5.95	5.92	-0.42
MA10: (Q20 - Q80) / median daily flow	2.55	3.28	28.77
MA11: (Q25 - Q75) / median daily flow	1.68	2.46	46.08
MA12: Mean monthly flow, January	51.12	37.87	-25.92
MA13: Mean monthly flow, February	63.75	46.43	-27.16
MA14: Mean monthly flow, March	63.40	48.98	-22.74
MA15: Mean monthly flow, April	35.04	21.61	-38.34
MA16: Mean monthly flow, May	15.54	11.20	-27.94
MA17: Mean monthly flow, June	44.50	38.38	-13.76
MA18: Mean monthly flow, July	56.77	38.79	-31.68
MA19: Mean monthly flow, August	72.51	48.01	-33.79
MA20: Mean monthly flow, September	77.30	67.71	-12.40
MA21: Mean monthly flow, October	82.54	81.41	-1.37
MA22: Mean monthly flow, November	38.70	29.91	-22.69
MA23: Mean monthly flow, December	49.95	35.12	-29.69
ML1: Mean minimum monthly flow, January	20.52	8.92	-56.55
ML2: Mean minimum monthly flow, February	19.74	8.80	-55.42
ML3: Mean minimum monthly flow, March	18.50	8.66	-53.20
ML4: Mean minimum monthly flow, April	11.51	4.03	-64.99
ML5: Mean minimum monthly flow, May	8.89	2.73	-69.30
ML6: Mean minimum monthly flow, June	9.23	6.37	-30.95
ML7: Mean minimum monthly flow, July	13.25	10.93	-17.48
ML8: Mean minimum monthly flow, August	18.05	13.07	-27.58
ML9: Mean minimum monthly flow, September	16.58	13.63	-17.82
ML10: Mean minimum monthly flow, October	18.51	7.20	-61.12
ML11: Mean minimum monthly flow, November	19.31	7.39	-61.70
ML12: Mean minimum monthly flow, December	18.92	7.31	-61.35
ML13: CV of minimum monthly flows	57.04	113.13	98.32
ML14: Mean minimum daily flow / mean median annual flow	0.32	0.05	-85.91
ML15: Mean minimum annual flow / mean annual flow	0.15	0.02	-86.71
ML16: Median minimum annual flow / median annual flow	0.31	0.04	-86.47
ML20: Ratio of baseflow volume to total flow volume	0.39	0.37	-5.43
ML22: Mean annual minimum flow divided by catchment area	0.08	0.01	-88.39
RA1: Mean of positive changes from one day to next (rise rate)	38.20	19.62	
RA2: CV, mean of positive changes from one day to next (rise rate)	315.71	324.64	
RA3: Mean of negative changes from one day to next (fall rate)	16.30	7.54	
RA4: CV, mean of negative changes from one day to next (fall rate)	331.07	304.53	
RA5: Ratio of days that are higher than previous day	0.25	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.21	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.12	
RA8: Number of flow reversals from one day to the next	74.86	70.57	
RA9: CV, number of flow reversals from one day to the next	12.94	14.89	

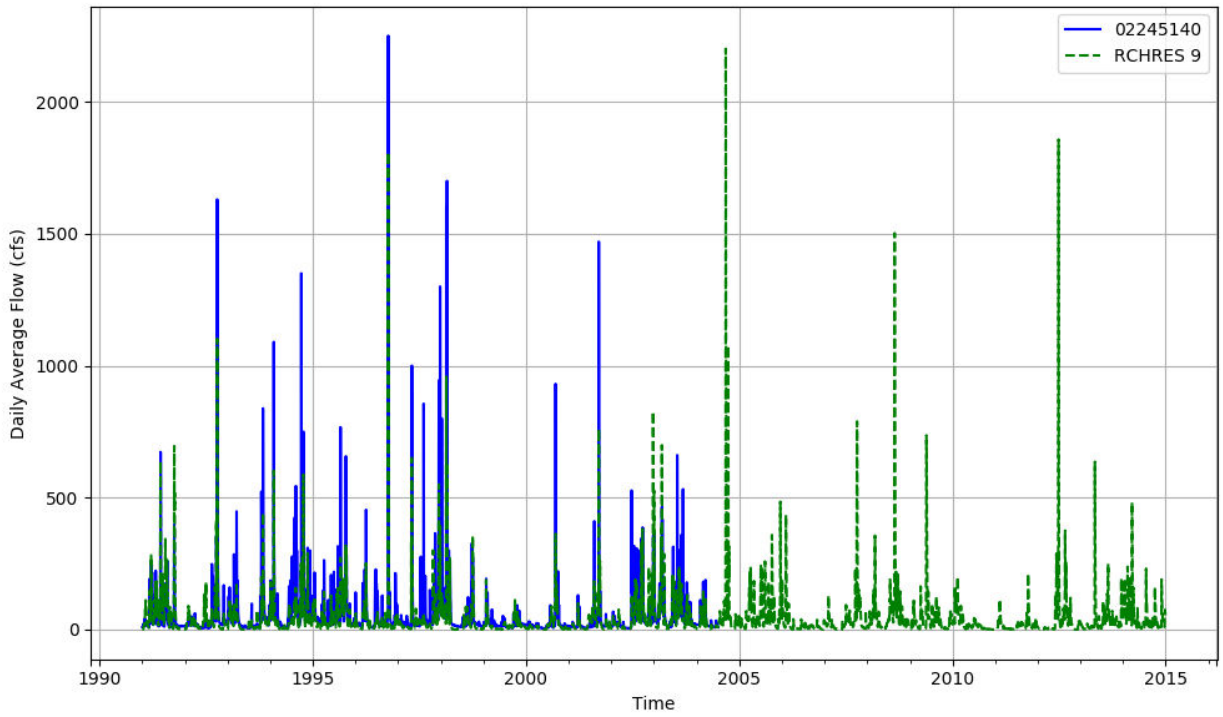


Figure T-03080103-10: Daily flow for HSFP reach 09 and USGS station 02245140.

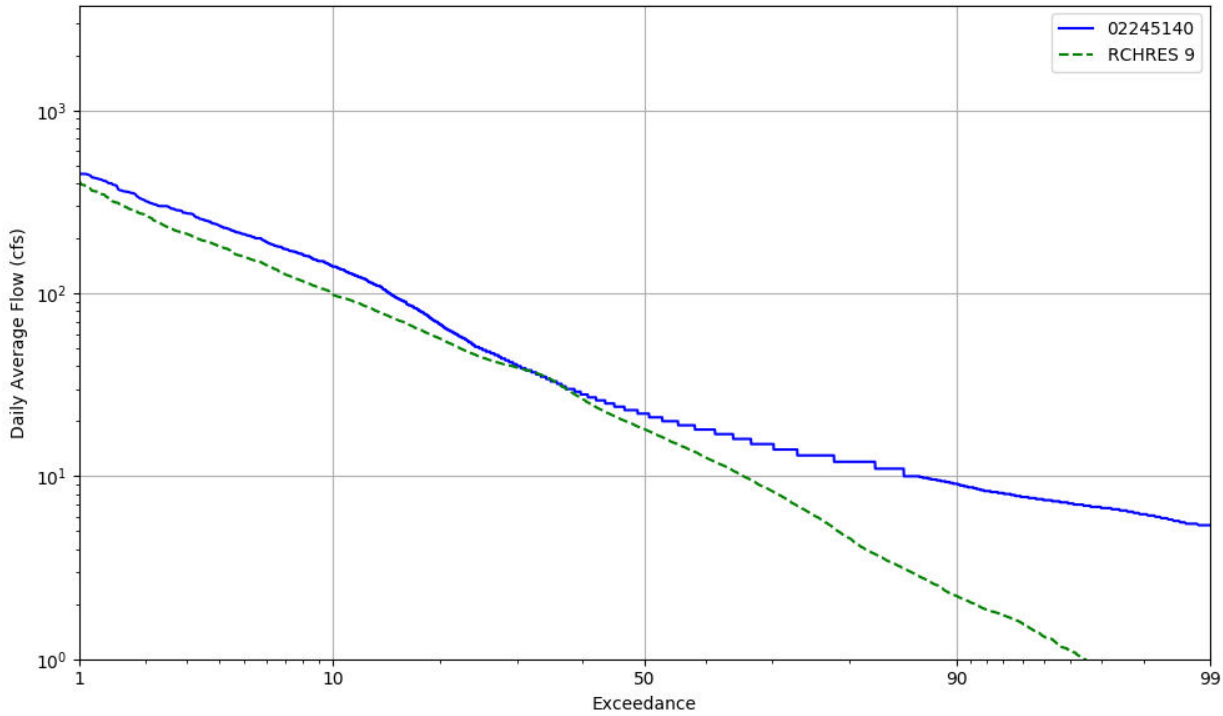


Figure T-03080103-11: Daily exceedance for HSFP reach 09 and USGS station 02245140.

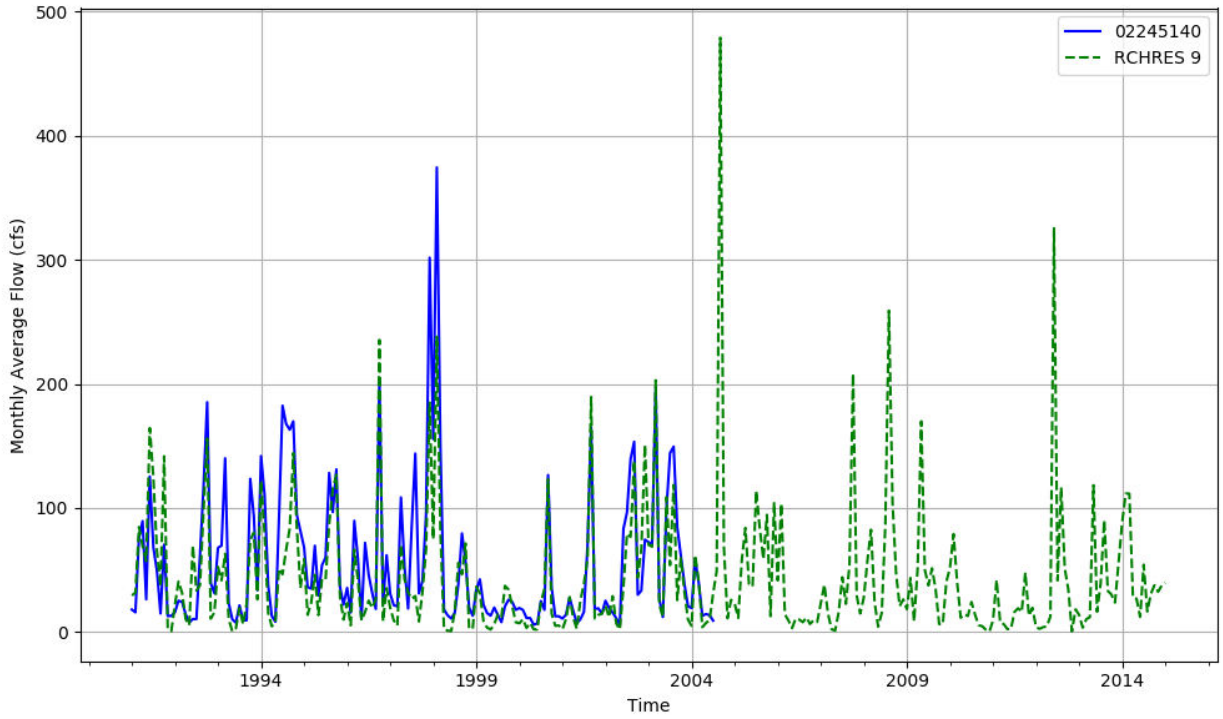


Figure T-03080103-12: Monthly flow for HSFP reach 09 and USGS station 02245140.

HSPF REACH 11, USGS GAUGE 02245050

Water-Data Report 2009
02246318 ORTEGA RIVER AT KIRWIN ROAD NEAR JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301146, long 814607 referenced to North American Datum of 1927, in SE 1/4 sec.35, T.3 S., R.25 E., Duval County, FL, Hydrologic Unit 03080103, on right bank, 100 ft upstream from Argyle Forest Boulevard, 1.8 mi west of intersection of Interstate Highway 295 and State Highway 21, 11 mi upstream from mouth, and 11.5 mi southwest of Jacksonville.

DRAINAGE AREA.--45.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1982 to May 1985 (miscellaneous discharge measurements), March 2002 to current year.

REVISED RECORDS.--WDR FL-06-1: 2005, 2005 (M).

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (levels by De Grove Surveyors, Inc., from St. Johns River Water Management District bench mark).

REMARKS.--Records fair.

Table T-03080103-7: Comparison Statistics Between HSPF Reach 11 and USGS Gauge 02245050.

Statistic	Value
Bias	79.20
Standard error	153.23
Relative bias	1.14
Relative standard error	2.29
Nash-Sutcliffe coefficient	-4.23
Coefficient of efficiency	-1.16
Index of agreement	0.40

Table T-03080103-8: Hydrologic Indices Between USGS Gauge 02245050 and HSPF Reach 11.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02245050	Simulated Reach 11	Percent Difference
MA1: Mean, all daily flows	69.76	149.46	114.24
MA2: Median, all daily flows	47.00	63.00	34.05
MA3: CV, all daily flows	110.01	139.90	27.17

MA4: CV, log of all daily flows	79.09	117.45	48.50
MA5: Mean daily flow / median daily flow	1.48	2.37	59.82
MA9: (Q10 - Q90) / median daily flow	2.06	5.51	166.98
MA10: (Q20 - Q80) / median daily flow	1.02	3.05	199.04
MA11: (Q25 - Q75) / median daily flow	0.83	2.53	204.95
MA12: Mean monthly flow, January	63.07	108.08	71.37
MA13: Mean monthly flow, February	77.29	211.76	173.98
MA14: Mean monthly flow, March	69.77	165.46	137.13
MA15: Mean monthly flow, April	52.90	55.13	4.22
MA16: Mean monthly flow, May	40.14	33.04	-17.68
MA17: Mean monthly flow, June	53.23	103.16	93.80
MA18: Mean monthly flow, July	66.65	153.22	129.89
MA19: Mean monthly flow, August	73.89	179.72	143.25
MA20: Mean monthly flow, September	71.52	217.80	204.53
MA21: Mean monthly flow, October	66.70	131.63	97.35
MA22: Mean monthly flow, November	44.30	82.92	87.20
MA23: Mean monthly flow, December	78.19	178.09	127.76
ML1: Mean minimum monthly flow, January	42.50	41.01	-3.50
ML2: Mean minimum monthly flow, February	37.38	45.77	22.47
ML3: Mean minimum monthly flow, March	38.75	32.69	-15.63
ML4: Mean minimum monthly flow, April	32.25	12.44	-61.42
ML5: Mean minimum monthly flow, May	33.38	10.53	-68.46
ML6: Mean minimum monthly flow, June	37.44	23.82	-36.39
ML7: Mean minimum monthly flow, July	32.89	49.57	50.72
ML8: Mean minimum monthly flow, August	41.00	65.33	59.35
ML9: Mean minimum monthly flow, September	37.88	58.18	53.60
ML10: Mean minimum monthly flow, October	32.75	31.79	-2.95
ML11: Mean minimum monthly flow, November	31.25	33.41	6.92
ML12: Mean minimum monthly flow, December	35.38	38.99	10.22
ML13: CV of minimum monthly flows	48.13	95.64	98.71
ML14: Mean minimum daily flow / mean median annual flow	0.60	0.14	-76.34
ML15: Mean minimum annual flow / mean annual flow	0.42	0.07	-83.22
ML16: Median minimum annual flow / median annual flow	0.61	0.17	-72.65
ML20: Ratio of baseflow volume to total flow volume	0.59	0.40	-33.00
ML22: Mean annual minimum flow divided by catchment area	0.28	0.09	-67.88
RA1: Mean of positive changes from one day to next (rise rate)	29.83	59.98	
RA2: CV, mean of positive changes from one day to next (rise rate)	330.22	353.55	
RA3: Mean of negative changes from one day to next (fall rate)	14.63	24.61	
RA4: CV, mean of negative changes from one day to next (fall rate)	299.17	296.22	
RA5: Ratio of days that are higher than previous day	0.26	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.10	
RA8: Number of flow reversals from one day to the next	88.44	75.44	
RA9: CV, number of flow reversals from one day to the next	41.11	31.84	

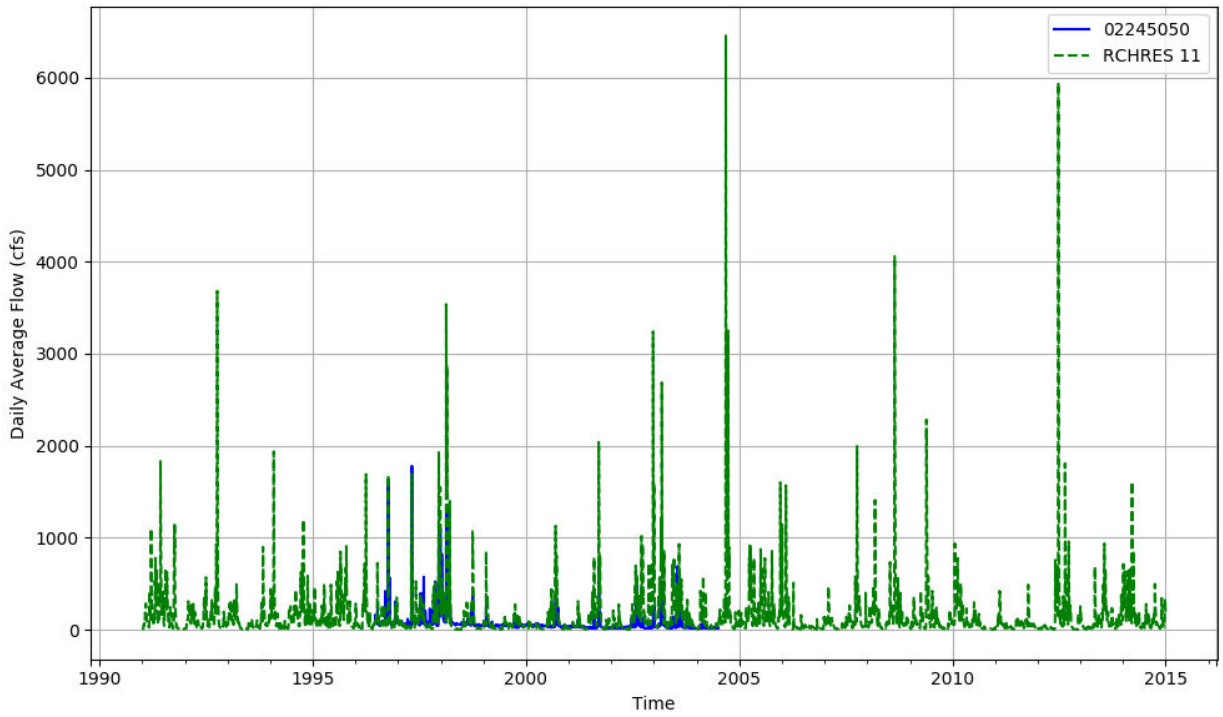


Figure T-03080103-13: Daily flow for HSFP reach 11 and USGS station 02245050.

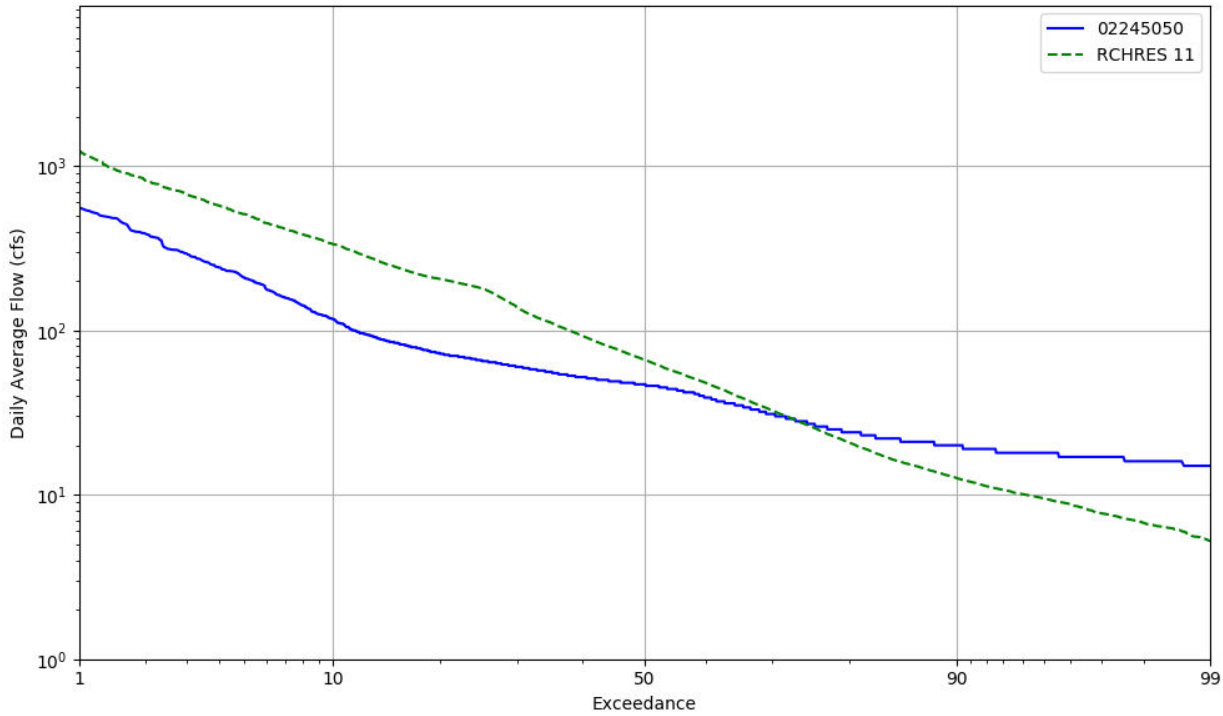


Figure T-03080103-14: Daily exceedance for HSFP reach 11 and USGS station 02245050.

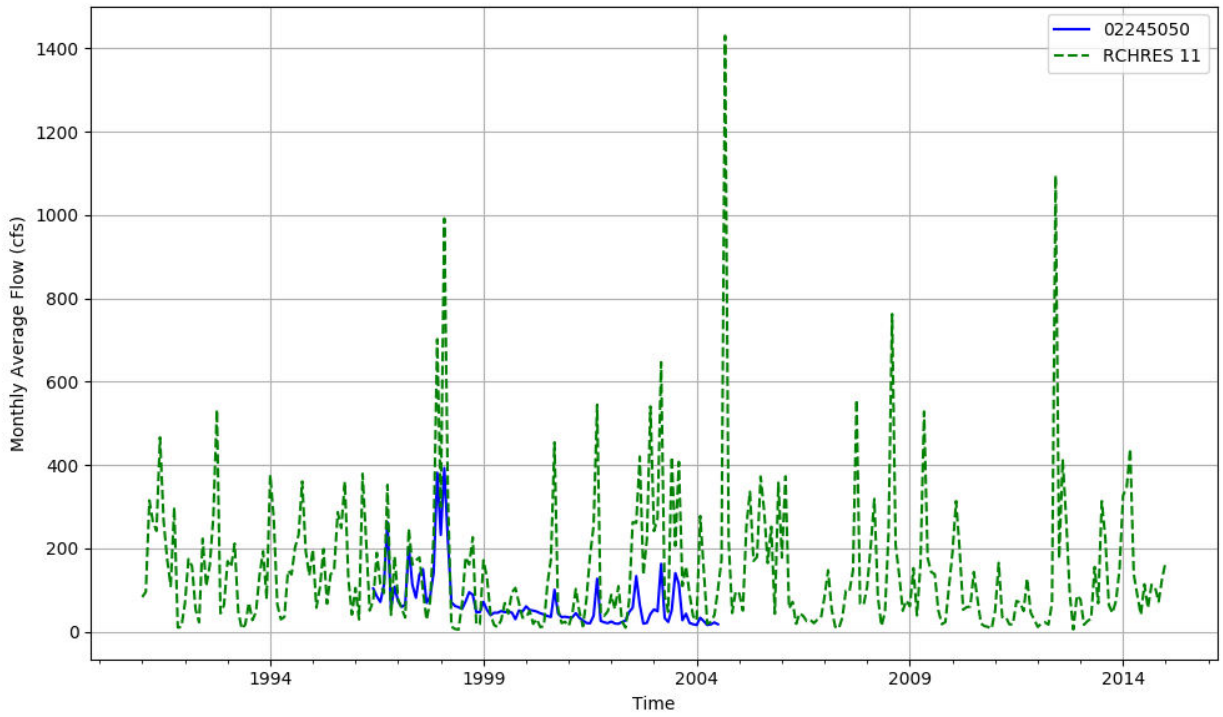


Figure T-03080103-15: Monthly flow for HSFP reach 11 and USGS station 02245050.

HSPF REACH 12, USGS GAUGE 02244473

Water-Data Report 2009
02246318 ORTEGA RIVER AT KIRWIN ROAD NEAR JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301146, long 814607 referenced to North American Datum of 1927, in SE 1/4 sec.35, T.3 S., R.25 E., Duval County, FL, Hydrologic Unit 03080103, on right bank, 100 ft upstream from Argyle Forest Boulevard, 1.8 mi west of intersection of Interstate Highway 295 and State Highway 21, 11 mi upstream from mouth, and 11.5 mi southwest of Jacksonville.

DRAINAGE AREA.--45.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1982 to May 1985 (miscellaneous discharge measurements), March 2002 to current year.

REVISED RECORDS.--WDR FL-06-1: 2005, 2005 (M).

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (levels by De Grove Surveyors, Inc., from St. Johns River Water Management District bench mark).

REMARKS.--Records fair.

Table T-03080103-9: Comparison Statistics Between HSPF Reach 12 and USGS Gauge 02244473.

Statistic	Value
Bias	1.95
Standard error	30.36
Relative bias	0.05
Relative standard error	0.55
Nash-Sutcliffe coefficient	0.70
Coefficient of efficiency	0.50
Index of agreement	0.74

Table T-03080103-10: Hydrologic Indices Between USGS Gauge 02244473 and HSPF Reach 12.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02244473	Simulated Reach 12	Percent Difference
MA1: Mean, all daily flows	43.31	45.33	4.66
MA2: Median, all daily flows	12.00	19.18	59.85
MA3: CV, all daily flows	180.08	163.37	-9.28

MA4: CV, log of all daily flows	145.50	124.58	-14.38
MA5: Mean daily flow / median daily flow	3.61	2.36	-34.52
MA9: (Q10 - Q90) / median daily flow	9.11	5.78	-36.55
MA10: (Q20 - Q80) / median daily flow	3.96	2.92	-26.35
MA11: (Q25 - Q75) / median daily flow	2.73	2.22	-18.95
MA12: Mean monthly flow, January	46.21	39.16	-15.25
MA13: Mean monthly flow, February	59.74	52.97	-11.33
MA14: Mean monthly flow, March	64.69	52.14	-19.40
MA15: Mean monthly flow, April	27.19	25.67	-5.57
MA16: Mean monthly flow, May	7.78	13.48	73.14
MA17: Mean monthly flow, June	35.90	37.95	5.71
MA18: Mean monthly flow, July	31.52	40.33	27.95
MA19: Mean monthly flow, August	46.51	47.27	1.63
MA20: Mean monthly flow, September	53.70	66.95	24.67
MA21: Mean monthly flow, October	53.41	79.39	48.64
MA22: Mean monthly flow, November	29.99	30.98	3.29
MA23: Mean monthly flow, December	46.66	39.75	-14.80
ML1: Mean minimum monthly flow, January	13.94	10.43	-25.14
ML2: Mean minimum monthly flow, February	12.99	10.88	-16.26
ML3: Mean minimum monthly flow, March	13.13	10.53	-19.82
ML4: Mean minimum monthly flow, April	5.00	4.87	-2.59
ML5: Mean minimum monthly flow, May	3.42	3.49	2.14
ML6: Mean minimum monthly flow, June	5.14	6.09	18.58
ML7: Mean minimum monthly flow, July	8.65	13.15	52.08
ML8: Mean minimum monthly flow, August	6.45	13.03	101.93
ML9: Mean minimum monthly flow, September	6.52	13.79	111.42
ML10: Mean minimum monthly flow, October	7.85	10.30	31.18
ML11: Mean minimum monthly flow, November	9.75	10.65	9.23
ML12: Mean minimum monthly flow, December	11.21	9.33	-16.72
ML13: CV of minimum monthly flows	93.68	104.80	11.87
ML14: Mean minimum daily flow / mean median annual flow	0.22	0.06	-73.27
ML15: Mean minimum annual flow / mean annual flow	0.08	0.03	-68.13
ML16: Median minimum annual flow / median annual flow	0.22	0.05	-77.51
ML20: Ratio of baseflow volume to total flow volume	0.31	0.38	20.34
ML22: Mean annual minimum flow divided by catchment area	0.03	0.01	-61.79
RA1: Mean of positive changes from one day to next (rise rate)	26.18	19.30	
RA2: CV, mean of positive changes from one day to next (rise rate)	354.06	285.94	
RA3: Mean of negative changes from one day to next (fall rate)	11.16	7.60	
RA4: CV, mean of negative changes from one day to next (fall rate)	334.07	266.62	
RA5: Ratio of days that are higher than previous day	0.28	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.17	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.10	
RA8: Number of flow reversals from one day to the next	81.36	62.43	
RA9: CV, number of flow reversals from one day to the next	10.30	14.10	

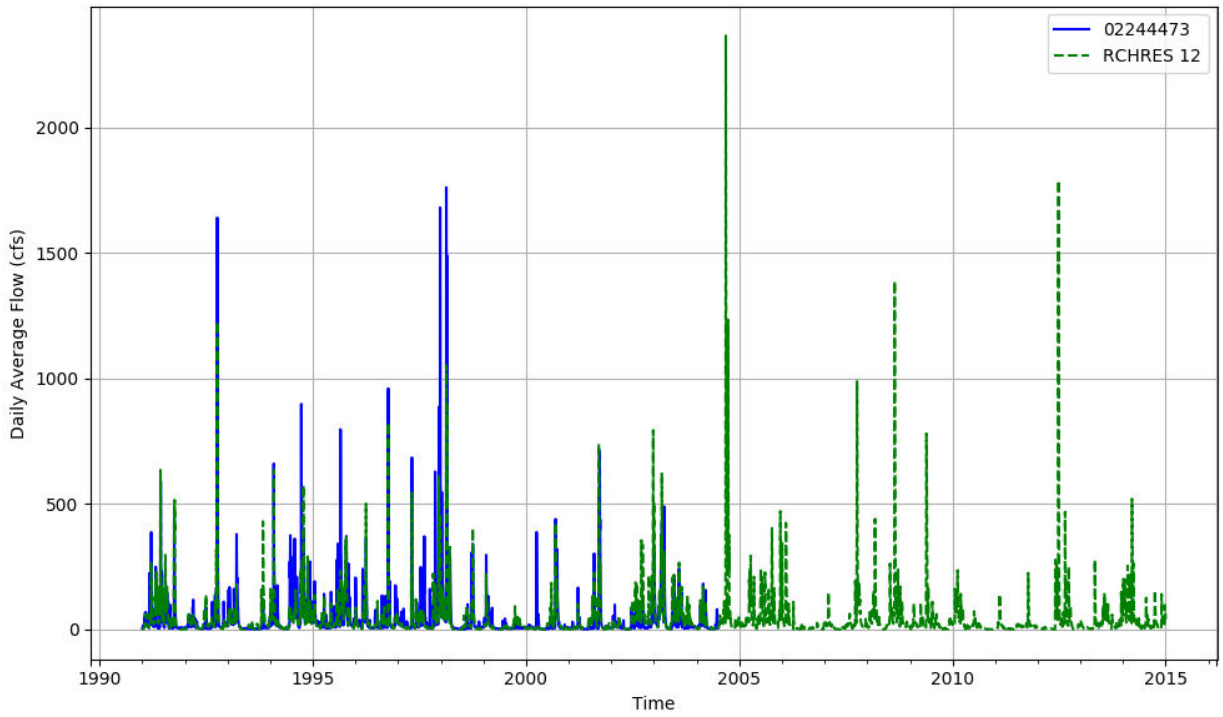


Figure T-03080103-16: Daily flow for HSFP reach 12 and USGS station 02244473.

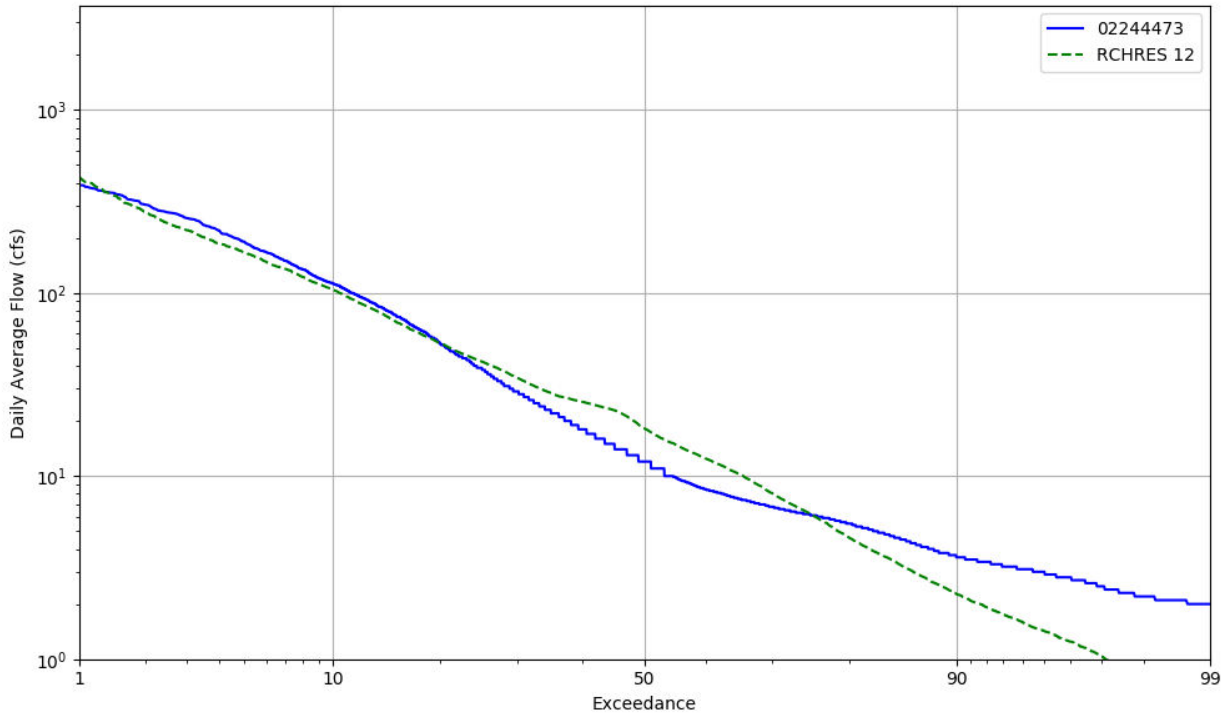


Figure T-03080103-17: Daily exceedance for HSFP reach 12 and USGS station 02244473.

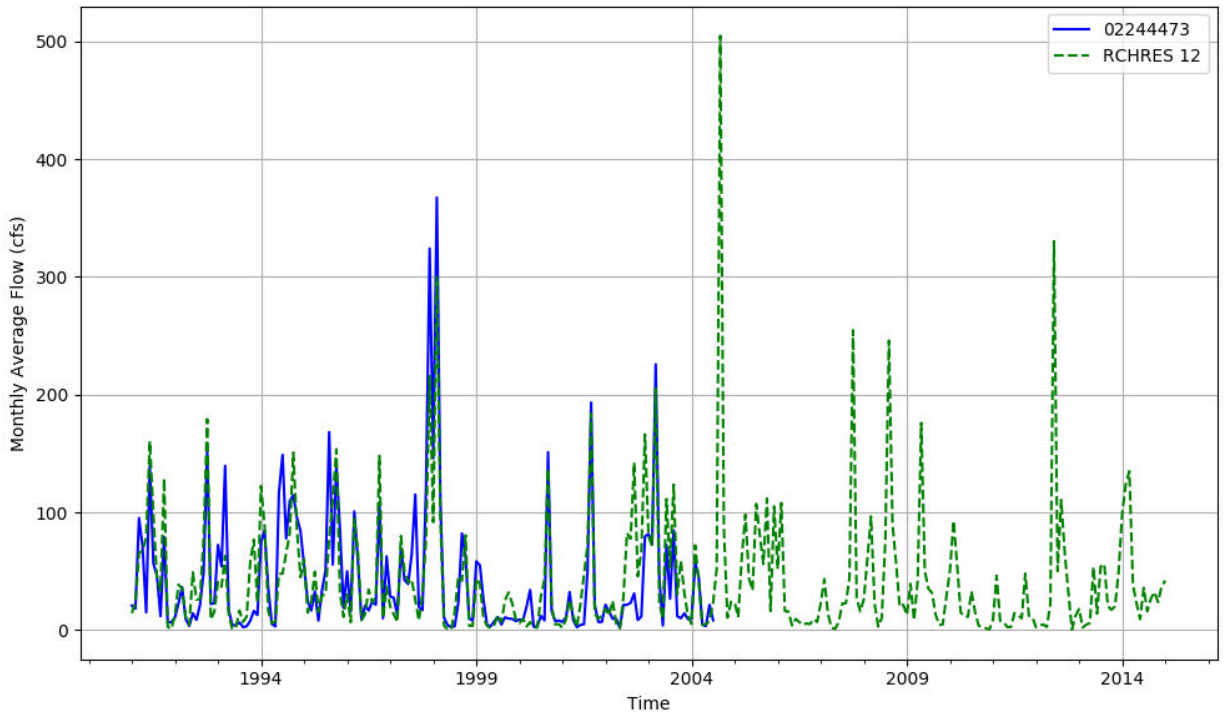


Figure T-03080103-18: Monthly flow for HSFP reach 12 and USGS station 02244473.

HSPF REACH 13, USGS GAUGE 02244040

Water-Data Report 2009
02244040 ST. JOHNS RIVER AT BUFFALO BLUFF NEAR SATSUMA, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 293546, long 814100 referenced to North American Datum of 1927, in SE 1/4 sec.27, T.10 S., R.26 E., Putnam County, FL, Hydrologic Unit 03080103, near left bank, 400 ft upstream from CSX Transportation bridge, 2.4 mi downstream from Cross-Florida Barge Canal, 3.2 mi northwest of Satsuma, and 89 mi upstream from mouth.

DRAINAGE AREA.--6,580 mi, approximately. Includes Paynes Prairie, a diked sinkhole area about 650 mi, which is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1943 to July 1948 (gage heights only), October 1992 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 10.00 ft below NGVD of 1929. Prior to Oct. 1, 1996 at datum 1.00 ft lower.

REMARKS.--Records fair. Discharge represents net of much larger upstream and downstream discharges.

Table T-03080103-11: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02244040.

Statistic	Value
Bias	392.63
Standard error	3369.34
Relative bias	0.08
Relative standard error	0.97
Nash-Sutcliffe coefficient	0.06
Coefficient of efficiency	0.25
Index of agreement	0.61

Table T-03080103-12: Hydrologic Indices Between USGS Gauge 02244040 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02244040	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	6162.90	5035.64	-18.29
MA2: Median, all daily flows	5300.00	3711.34	-29.97
MA3: CV, all daily flows	60.01	99.04	65.03
MA4: CV, log of all daily flows	62.54	58.61	-6.30

MA5: Mean daily flow / median daily flow	1.16	1.36	16.68
MA9: (Q10 - Q90) / median daily flow	2.01	1.78	-11.83
MA10: (Q20 - Q80) / median daily flow	1.31	0.96	-27.00
MA11: (Q25 - Q75) / median daily flow	1.04	0.74	-28.26
MA12: Mean monthly flow, January	5800.31	4504.39	-22.34
MA13: Mean monthly flow, February	4977.96	4519.74	-9.20
MA14: Mean monthly flow, March	5326.78	4581.33	-13.99
MA15: Mean monthly flow, April	4875.36	3343.07	-31.43
MA16: Mean monthly flow, May	3610.13	2550.60	-29.35
MA17: Mean monthly flow, June	4394.01	3398.31	-22.66
MA18: Mean monthly flow, July	5193.74	4699.57	-9.51
MA19: Mean monthly flow, August	5417.55	6318.21	16.62
MA20: Mean monthly flow, September	7006.79	7382.23	5.36
MA21: Mean monthly flow, October	7947.76	7645.44	-3.80
MA22: Mean monthly flow, November	7444.15	4714.09	-36.67
MA23: Mean monthly flow, December	6123.02	4583.23	-25.15
ML1: Mean minimum monthly flow, January	1591.89	3260.44	104.81
ML2: Mean minimum monthly flow, February	864.78	3277.45	278.99
ML3: Mean minimum monthly flow, March	1278.19	3319.92	159.74
ML4: Mean minimum monthly flow, April	993.14	2721.81	174.06
ML5: Mean minimum monthly flow, May	340.54	2103.35	517.66
ML6: Mean minimum monthly flow, June	550.90	2240.45	306.68
ML7: Mean minimum monthly flow, July	1387.95	3444.28	148.16
ML8: Mean minimum monthly flow, August	837.33	4133.27	393.62
ML9: Mean minimum monthly flow, September	1560.71	4346.87	178.52
ML10: Mean minimum monthly flow, October	1369.98	4371.73	219.11
ML11: Mean minimum monthly flow, November	1655.48	3504.65	111.70
ML12: Mean minimum monthly flow, December	1294.49	3093.63	138.99
ML13: CV of minimum monthly flows	137.20	44.98	-67.21
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.51	6223.30
ML15: Mean minimum annual flow / mean annual flow	0.01	0.39	5259.91
ML16: Median minimum annual flow / median annual flow	0.00	0.51	13572.18
ML20: Ratio of baseflow volume to total flow volume	0.32	0.77	140.23
ML22: Mean annual minimum flow divided by catchment area	0.48	18.64	3812.86
RA1: Mean of positive changes from one day to next (rise rate)	1816.39	1210.80	
RA2: CV, mean of positive changes from one day to next (rise rate)	90.53	548.70	
RA3: Mean of negative changes from one day to next (fall rate)	1906.93	466.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	92.04	689.82	
RA5: Ratio of days that are higher than previous day	0.51	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.28	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.29	0.02	
RA8: Number of flow reversals from one day to the next	132.45	66.32	
RA9: CV, number of flow reversals from one day to the next	19.11	21.70	

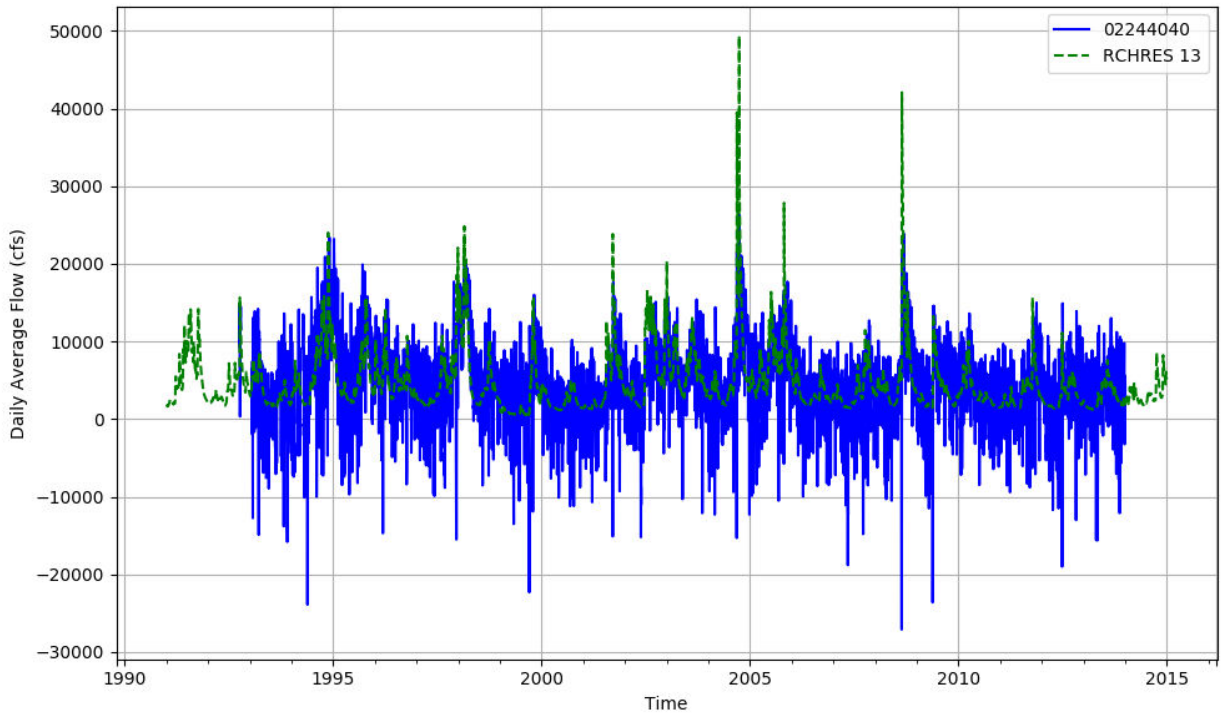


Figure T-03080103-19: Daily flow for HSFP reach 13 and USGS station 02244040.

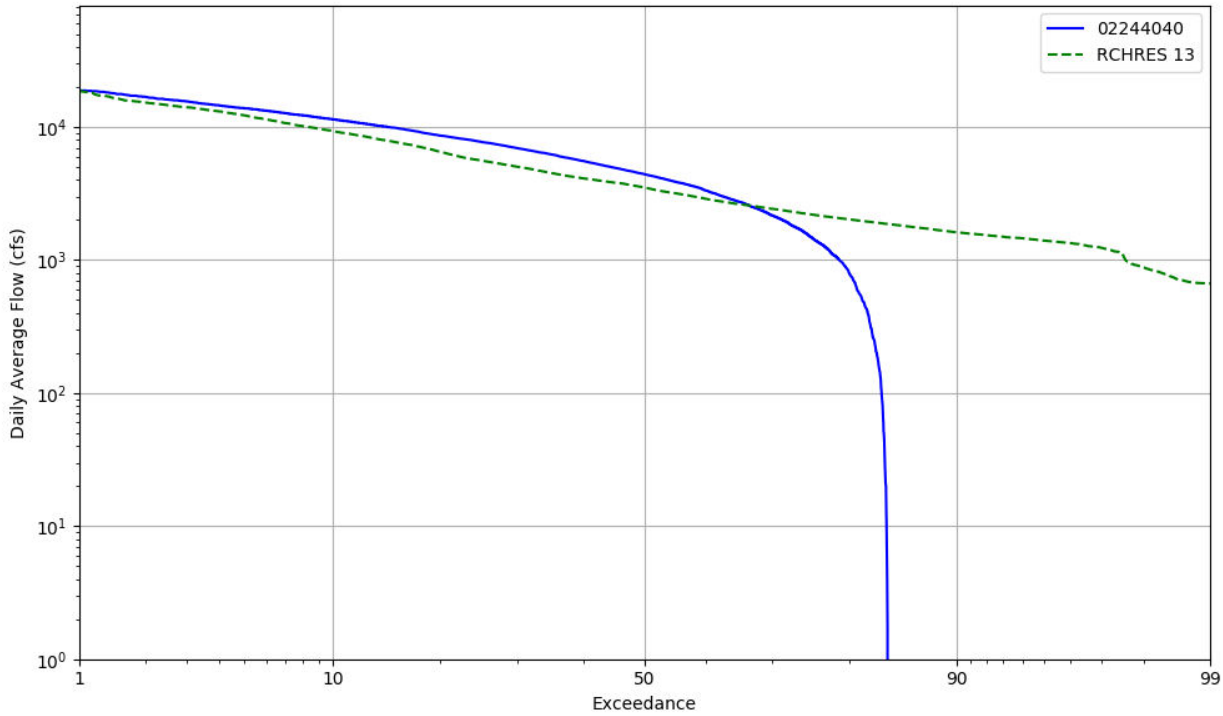


Figure T-03080103-20: Daily exceedance for HSFP reach 13 and USGS station 02244040.

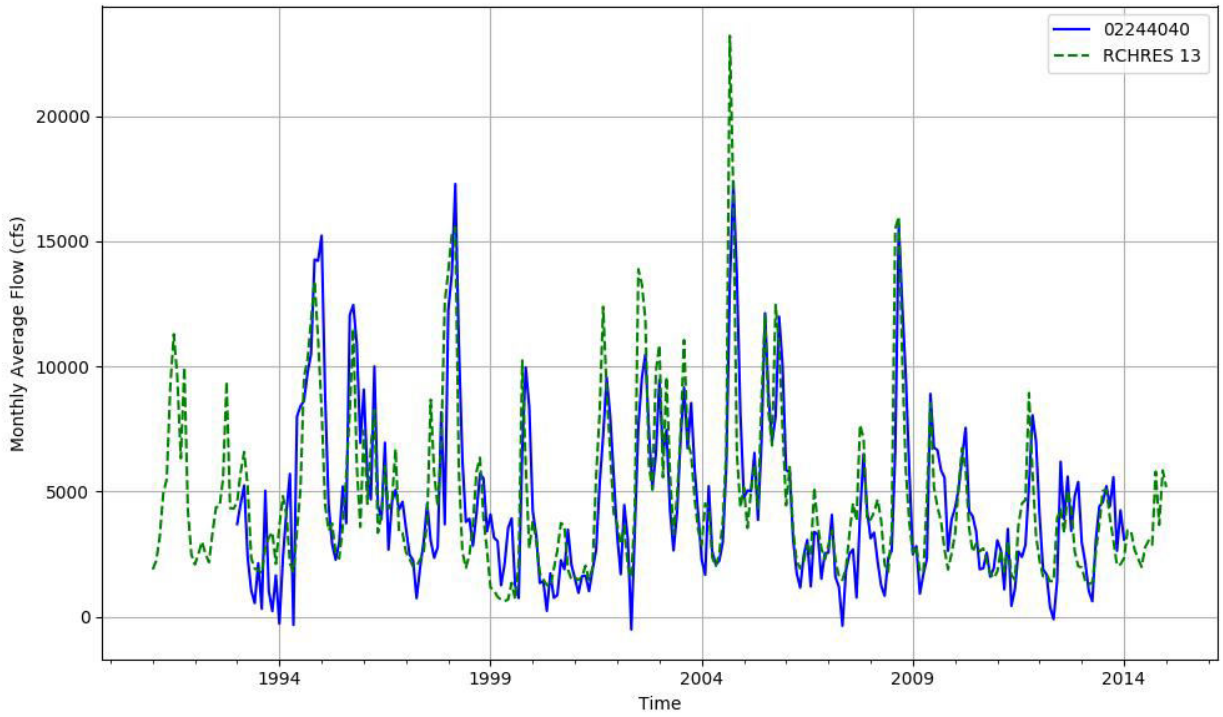


Figure T-03080103-21: Monthly flow for HSFP reach 13 and USGS station 02244040.

HSPF REACH 19, USGS GAUGE 02245500

Water-Data Report 2009
02245500 SOUTH FORK BLACK CREEK NEAR PENNEY FARMS, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 295845, long 815108 referenced to North American Datum of 1927, in NE 1/4 sec.13, T.6 S., R.24 E., Clay County, FL, Hydrologic Unit 03080103, on right bank at upstream side of bridge on State Highway 16, 0.7 mi downstream from Greens Creek, 2.5 mi west of Penney Farms, 9.5 mi west of Green Cove Springs, and 24 mi upstream from mouth of Black Creek.

DRAINAGE AREA.--134 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1304.

REVISED RECORDS.--WSP 1234: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 9.82 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 18, 1940, nonrecording gage at same site and datum.

REMARKS.--Records poor.

Table T-03080103-13: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02245500.

Statistic	Value
Bias	1.65
Standard error	101.83
Relative bias	0.01
Relative standard error	0.68
Nash-Sutcliffe coefficient	0.54
Coefficient of efficiency	0.46
Index of agreement	0.74

Table T-03080103-14: Hydrologic Indices Between USGS Gauge 02245500 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02245500	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	128.10	129.64	1.20
MA2: Median, all daily flows	55.00	53.06	-3.52

MA3: CV, all daily flows	194.28	179.00	-7.87
MA4: CV, log of all daily flows	114.81	119.27	3.89
MA5: Mean daily flow / median daily flow	2.33	2.44	4.90
MA9: (Q10 - Q90) / median daily flow	4.49	5.30	18.19
MA10: (Q20 - Q80) / median daily flow	2.20	2.98	35.37
MA11: (Q25 - Q75) / median daily flow	1.60	2.29	43.15
MA12: Mean monthly flow, January	106.55	107.80	1.17
MA13: Mean monthly flow, February	132.24	144.39	9.19
MA14: Mean monthly flow, March	121.57	133.69	9.97
MA15: Mean monthly flow, April	93.99	73.85	-21.43
MA16: Mean monthly flow, May	84.97	69.27	-18.48
MA17: Mean monthly flow, June	121.98	157.60	29.20
MA18: Mean monthly flow, July	136.62	143.41	4.97
MA19: Mean monthly flow, August	191.34	187.09	-2.22
MA20: Mean monthly flow, September	181.88	182.49	0.33
MA21: Mean monthly flow, October	144.60	145.30	0.48
MA22: Mean monthly flow, November	61.07	48.97	-19.81
MA23: Mean monthly flow, December	101.32	103.32	1.97
ML1: Mean minimum monthly flow, January	48.17	28.20	-41.46
ML2: Mean minimum monthly flow, February	50.35	34.40	-31.67
ML3: Mean minimum monthly flow, March	46.22	29.00	-37.25
ML4: Mean minimum monthly flow, April	26.63	12.92	-51.47
ML5: Mean minimum monthly flow, May	19.86	9.45	-52.43
ML6: Mean minimum monthly flow, June	23.41	22.59	-3.51
ML7: Mean minimum monthly flow, July	34.84	38.80	11.36
ML8: Mean minimum monthly flow, August	40.02	51.17	27.87
ML9: Mean minimum monthly flow, September	39.04	37.71	-3.41
ML10: Mean minimum monthly flow, October	38.48	19.13	-50.29
ML11: Mean minimum monthly flow, November	35.13	12.90	-63.29
ML12: Mean minimum monthly flow, December	39.26	20.86	-46.87
ML13: CV of minimum monthly flows	67.34	115.45	71.45
ML14: Mean minimum daily flow / mean median annual flow	0.29	0.04	-85.02
ML15: Mean minimum annual flow / mean annual flow	0.15	0.02	-85.12
ML16: Median minimum annual flow / median annual flow	0.29	0.04	-87.59
ML20: Ratio of baseflow volume to total flow volume	0.37	0.34	-7.65
ML22: Mean annual minimum flow divided by catchment area	0.16	0.02	-85.06
RA1: Mean of positive changes from one day to next (rise rate)	98.83	59.14	
RA2: CV, mean of positive changes from one day to next (rise rate)	331.65	424.25	
RA3: Mean of negative changes from one day to next (fall rate)	37.88	22.62	
RA4: CV, mean of negative changes from one day to next (fall rate)	395.10	436.91	
RA5: Ratio of days that are higher than previous day	0.25	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.19	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.12	
RA8: Number of flow reversals from one day to the next	83.54	70.12	
RA9: CV, number of flow reversals from one day to the next	18.09	21.50	

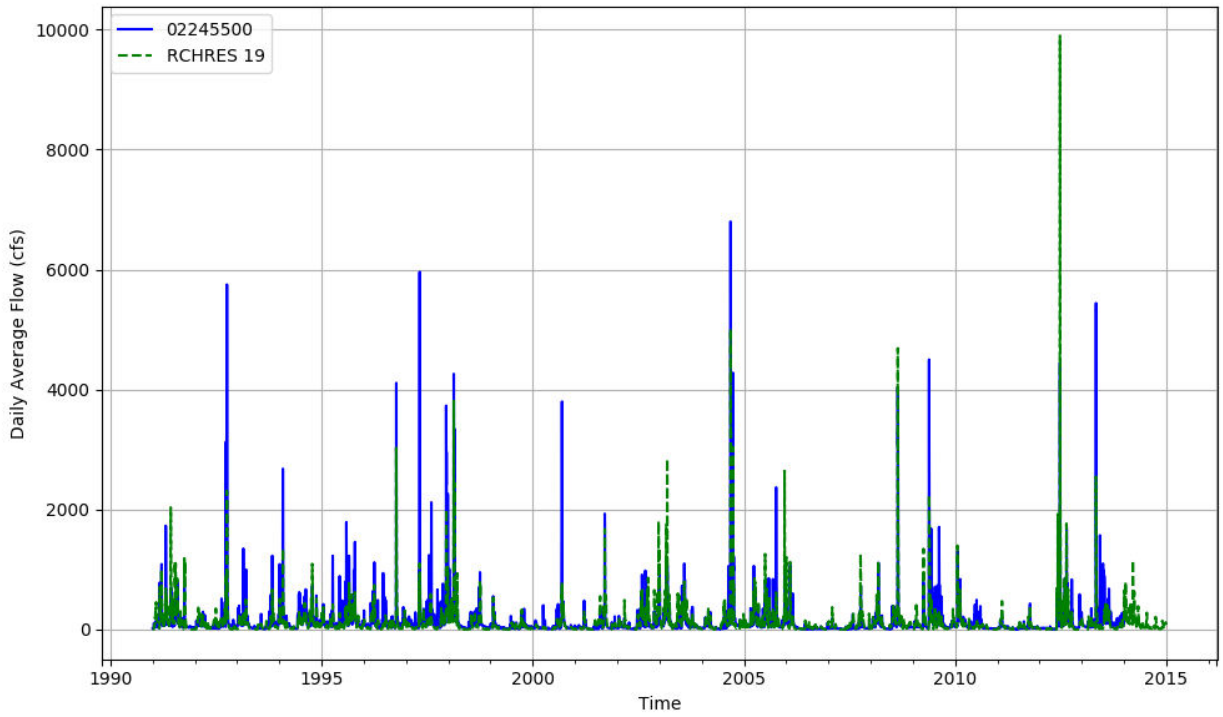


Figure T-03080103-22: Daily flow for HSFP reach 19 and USGS station 02245500.

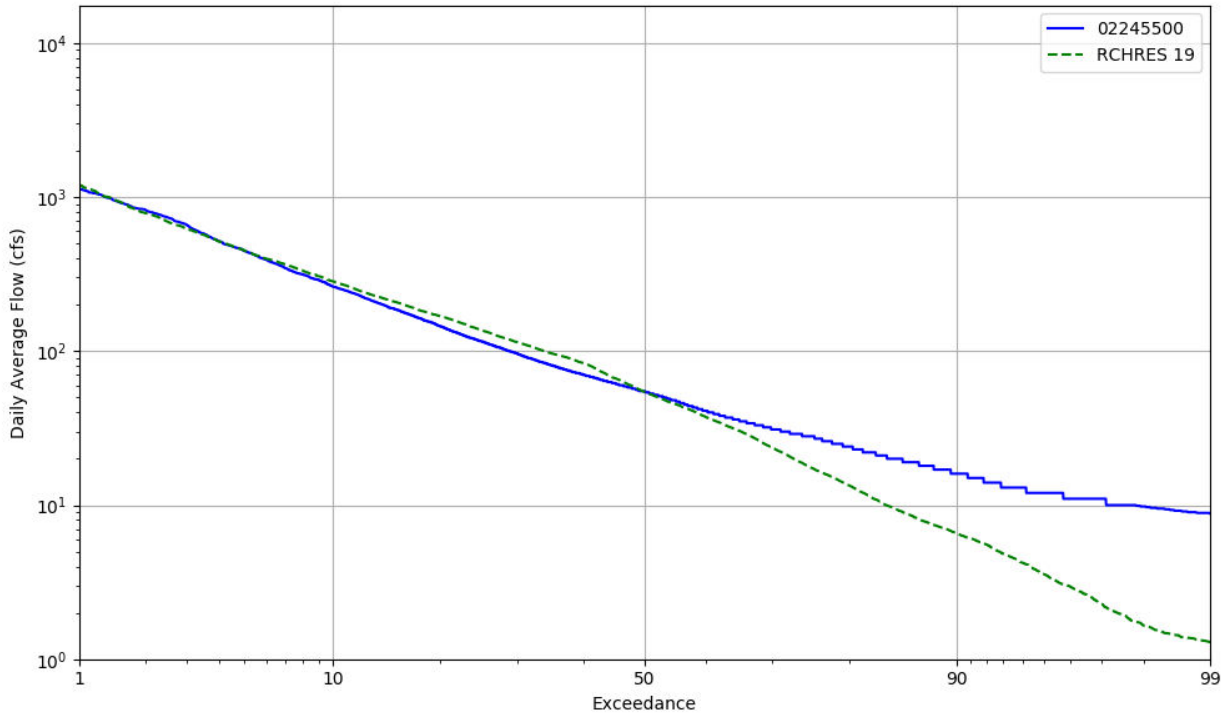


Figure T-03080103-23: Daily exceedance for HSFP reach 19 and USGS station 02245500.

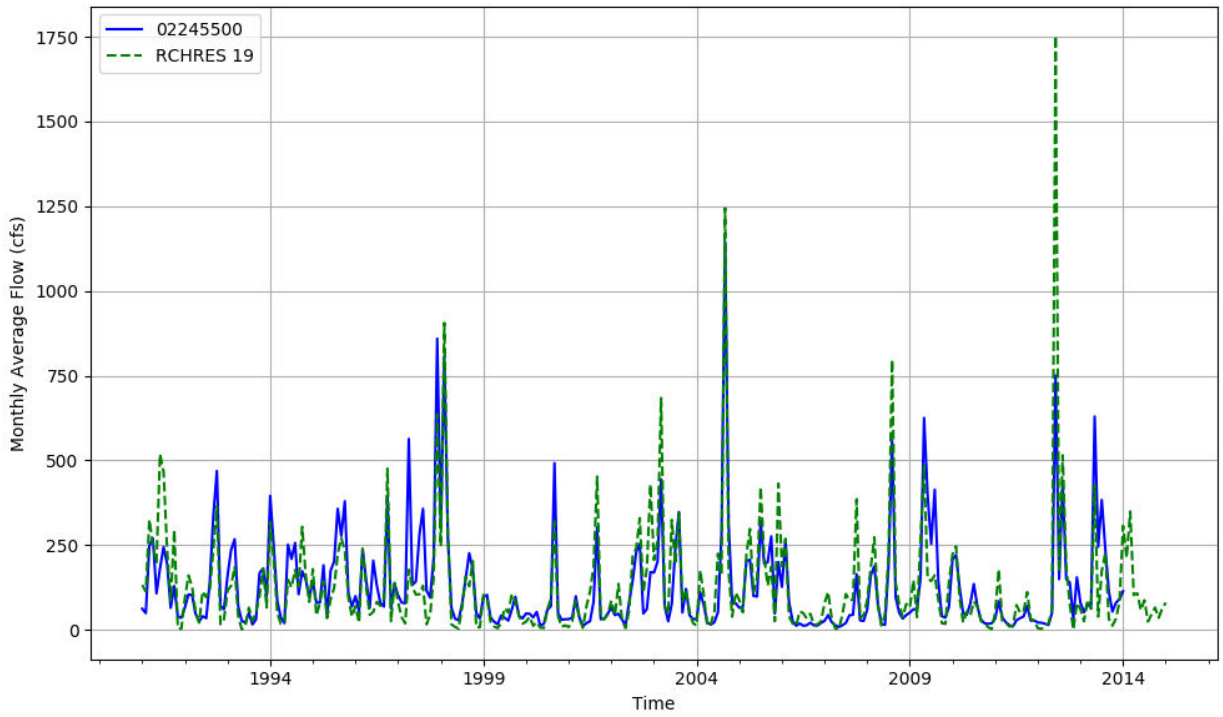


Figure T-03080103-24: Monthly flow for HSFP reach 19 and USGS station 02245500.

HSPF REACH 21, USGS GAUGE 02246000

Water-Data Report 2009
02246000 NORTH FORK BLACK CREEK NEAR MIDDLEBURG, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 300647, long 815424 referenced to North American Datum of 1927, in NE 1/4 sec.33, T.4 S., R.24 E., Clay County, FL, Hydrologic Unit 03080103, on left bank 0.3 mi upstream from Big Branch, 4 mi northwest of Middleburg, and 7.5 mi upstream from confluence with South Fork.

DRAINAGE AREA.--177 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1931 to current year.

REVISED RECORDS.--WSP 852: 1933 (m). WDR FL-75-1: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 1.02 ft above NGVD of 1929 (levels by St. Johns River Water Management District). Prior to Mar. 31, 1933, nonrecording gage at site 0.4 mi downstream at different datum. Mar. 31, 1933 to Apr. 28, 1955, nonrecording gage at present site at datum, 0.40 ft lower. Apr. 29, 1955 to Sept. 30, 2006, water-stage recorder at present site at datum 0.40 ft lower.

REMARKS.--Records fair. Flow affected by tide on many days.

Table T-03080103-15: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02246000.

Statistic	Value
Bias	2.31
Standard error	92.25
Relative bias	0.01
Relative standard error	0.40
Nash-Sutcliffe coefficient	0.84
Coefficient of efficiency	0.58
Index of agreement	0.79

Table T-03080103-16: Hydrologic Indices Between USGS Gauge 02246000 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02246000	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	173.97	176.42	1.41
MA2: Median, all daily flows	71.00	69.79	-1.70
MA3: CV, all daily flows	224.22	182.20	-18.74

MA4: CV, log of all daily flows	115.45	119.91	3.86
MA5: Mean daily flow / median daily flow	2.45	2.53	3.16
MA9: (Q10 - Q90) / median daily flow	4.68	5.62	20.15
MA10: (Q20 - Q80) / median daily flow	2.27	3.14	38.25
MA11: (Q25 - Q75) / median daily flow	1.68	2.56	52.63
MA12: Mean monthly flow, January	131.64	160.02	21.56
MA13: Mean monthly flow, February	174.40	210.52	20.71
MA14: Mean monthly flow, March	166.72	200.87	20.49
MA15: Mean monthly flow, April	111.87	116.12	3.80
MA16: Mean monthly flow, May	92.05	89.29	-3.00
MA17: Mean monthly flow, June	186.80	203.38	8.88
MA18: Mean monthly flow, July	174.53	202.30	15.91
MA19: Mean monthly flow, August	239.31	248.63	3.89
MA20: Mean monthly flow, September	282.34	233.02	-17.47
MA21: Mean monthly flow, October	245.66	190.72	-22.37
MA22: Mean monthly flow, November	82.02	60.45	-26.29
MA23: Mean monthly flow, December	120.62	119.29	-1.10
ML1: Mean minimum monthly flow, January	56.50	34.12	-39.62
ML2: Mean minimum monthly flow, February	59.43	47.34	-20.36
ML3: Mean minimum monthly flow, March	54.48	39.11	-28.20
ML4: Mean minimum monthly flow, April	33.11	16.19	-51.10
ML5: Mean minimum monthly flow, May	19.50	13.00	-33.33
ML6: Mean minimum monthly flow, June	29.48	29.37	-0.37
ML7: Mean minimum monthly flow, July	41.42	50.40	21.67
ML8: Mean minimum monthly flow, August	53.30	57.95	8.72
ML9: Mean minimum monthly flow, September	55.82	40.15	-28.07
ML10: Mean minimum monthly flow, October	49.57	21.27	-57.08
ML11: Mean minimum monthly flow, November	41.39	14.74	-64.39
ML12: Mean minimum monthly flow, December	47.92	28.78	-39.95
ML13: CV of minimum monthly flows	69.80	120.38	72.45
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.04	-76.70
ML15: Mean minimum annual flow / mean annual flow	0.10	0.02	-77.50
ML16: Median minimum annual flow / median annual flow	0.18	0.03	-80.33
ML20: Ratio of baseflow volume to total flow volume	0.34	0.34	-1.91
ML22: Mean annual minimum flow divided by catchment area	0.16	0.03	-82.08
RA1: Mean of positive changes from one day to next (rise rate)	106.36	92.97	
RA2: CV, mean of positive changes from one day to next (rise rate)	415.21	421.85	
RA3: Mean of negative changes from one day to next (fall rate)	49.43	32.15	
RA4: CV, mean of negative changes from one day to next (fall rate)	486.59	461.34	
RA5: Ratio of days that are higher than previous day	0.30	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.23	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.12	
RA8: Number of flow reversals from one day to the next	89.12	74.08	
RA9: CV, number of flow reversals from one day to the next	20.48	19.31	

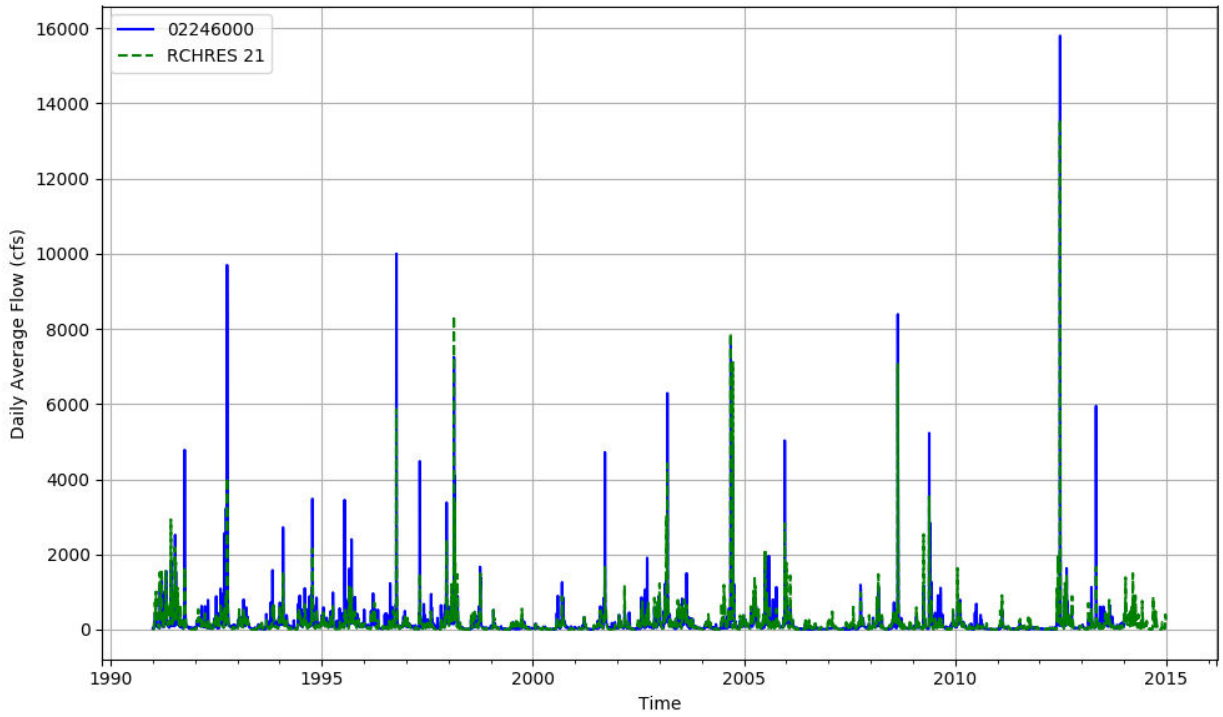


Figure T-03080103-25: Daily flow for HSFP reach 21 and USGS station 02246000.

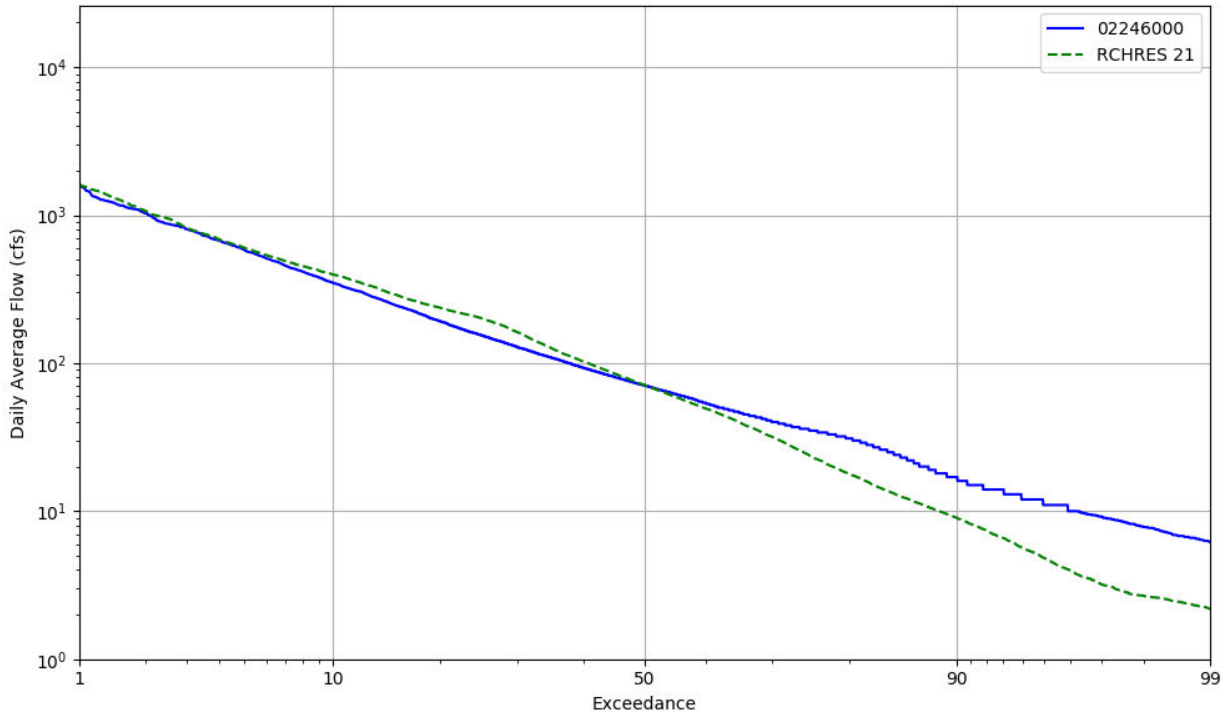


Figure T-03080103-26: Daily exceedance for HSFP reach 21 and USGS station 02246000.

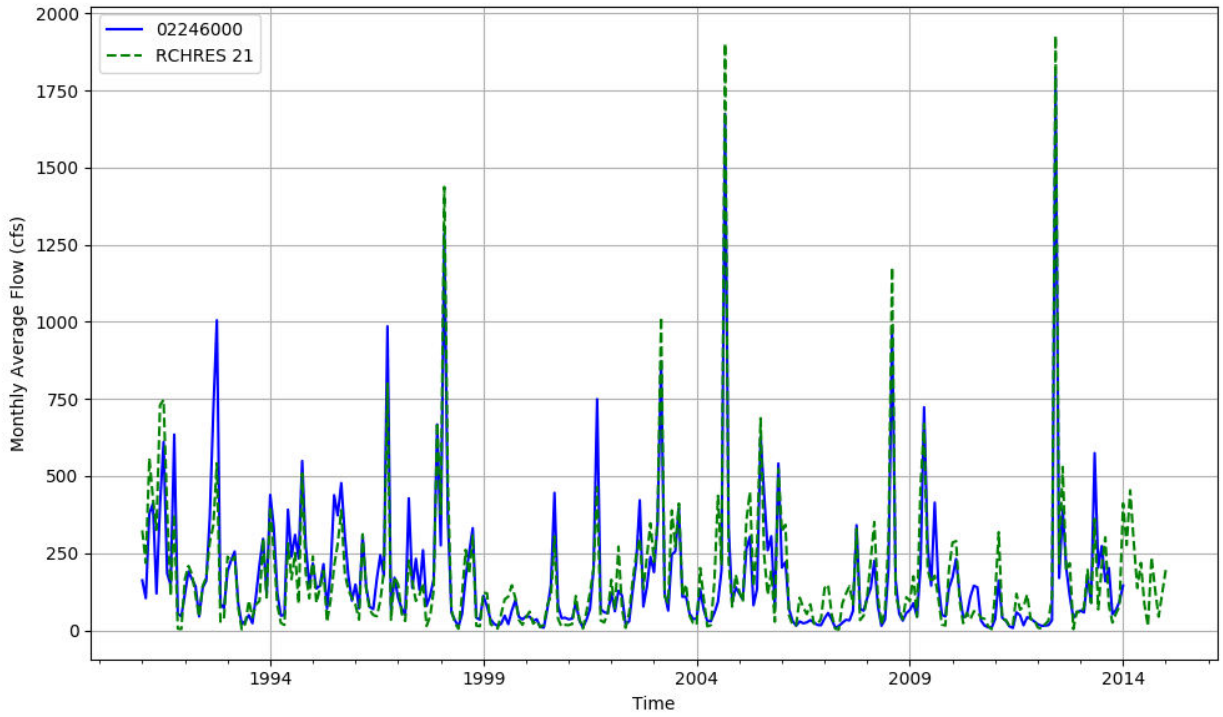


Figure T-03080103-27: Monthly flow for HSFP reach 21 and USGS station 02246000.

HSPF REACH 25, USGS GAUGE 02246025

Water-Data Report 2009
02246025 BLACK CREEK NEAR DOCTORS INLET, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 300457, long 814834 referenced to North American Datum of 1983, in NW 1/4 sec.9, T.5 S., R.25 E., Clay County, FL, Hydrologic Unit 03080103, on downstream side of bridge on State Highway 209, 1.7 mi upstream from Little Black Creek, 3.4 mi southwest of Doctors Inlet, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--403 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April to September 1981 (gage-heights only); October 1981 to September 1987; October 1987 to October 1990 (gage-heights only); January 1995 to May 1997; October 2000 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 10.00 ft below NGVD of 1929.

REMARKS.--Records poor. Discharge not published, Jan. 29-Feb. 4, due to bad or missing velocity record. Discharge represents the net of much larger upstream and downstream discharges.

Table T-03080103-17: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02246025.

Statistic	Value
Bias	-7.35
Standard error	236.99
Relative bias	-0.02
Relative standard error	0.61
Nash-Sutcliffe coefficient	0.63
Coefficient of efficiency	0.43
Index of agreement	0.73

Table T-03080103-18: Hydrologic Indices Between USGS Gauge 02246025 and HSPF Reach 25.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02246025	Simulated Reach 25	Percent Difference
MA1: Mean, all daily flows	465.79	476.64	2.33
MA2: Median, all daily flows	282.00	244.94	-13.14
MA3: CV, all daily flows	106.04	116.53	9.89

MA4: CV, log of all daily flows	83.27	99.79	19.84
MA5: Mean daily flow / median daily flow	1.65	1.95	17.81
MA9: (Q10 - Q90) / median daily flow	2.82	3.96	40.39
MA10: (Q20 - Q80) / median daily flow	1.52	2.18	43.24
MA11: (Q25 - Q75) / median daily flow	1.11	1.71	54.11
MA12: Mean monthly flow, January	301.22	285.57	-5.19
MA13: Mean monthly flow, February	292.43	309.93	5.98
MA14: Mean monthly flow, March	401.26	482.34	20.21
MA15: Mean monthly flow, April	347.89	284.55	-18.21
MA16: Mean monthly flow, May	187.12	151.39	-19.09
MA17: Mean monthly flow, June	193.85	214.76	10.79
MA18: Mean monthly flow, July	342.74	423.52	23.57
MA19: Mean monthly flow, August	539.72	554.92	2.82
MA20: Mean monthly flow, September	614.08	654.36	6.56
MA21: Mean monthly flow, October	406.24	363.75	-10.46
MA22: Mean monthly flow, November	208.93	138.27	-33.82
MA23: Mean monthly flow, December	271.60	293.18	7.95
ML1: Mean minimum monthly flow, January	167.03	135.80	-18.70
ML2: Mean minimum monthly flow, February	155.18	132.53	-14.60
ML3: Mean minimum monthly flow, March	136.64	139.23	1.90
ML4: Mean minimum monthly flow, April	100.82	88.24	-12.48
ML5: Mean minimum monthly flow, May	137.87	136.34	-1.11
ML6: Mean minimum monthly flow, June	89.00	83.29	-6.42
ML7: Mean minimum monthly flow, July	115.50	183.43	58.82
ML8: Mean minimum monthly flow, August	191.80	204.75	6.75
ML9: Mean minimum monthly flow, September	205.90	223.89	8.74
ML10: Mean minimum monthly flow, October	124.00	137.19	10.64
ML11: Mean minimum monthly flow, November	69.77	77.82	11.54
ML12: Mean minimum monthly flow, December	111.20	109.97	-1.11
ML13: CV of minimum monthly flows	97.03	86.12	-11.24
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.15	256.80
ML15: Mean minimum annual flow / mean annual flow	0.03	0.08	190.05
ML16: Median minimum annual flow / median annual flow	0.02	0.17	907.17
ML20: Ratio of baseflow volume to total flow volume	0.37	0.39	6.44
ML22: Mean annual minimum flow divided by catchment area	21428.73	21428.92	0.00
RA1: Mean of positive changes from one day to next (rise rate)	157.56	192.87	
RA2: CV, mean of positive changes from one day to next (rise rate)	277.67	363.46	
RA3: Mean of negative changes from one day to next (fall rate)	129.22	77.72	
RA4: CV, mean of negative changes from one day to next (fall rate)	226.04	357.61	
RA5: Ratio of days that are higher than previous day	0.45	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.23	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.22	0.08	
RA8: Number of flow reversals from one day to the next	114.86	46.43	
RA9: CV, number of flow reversals from one day to the next	63.76	61.42	

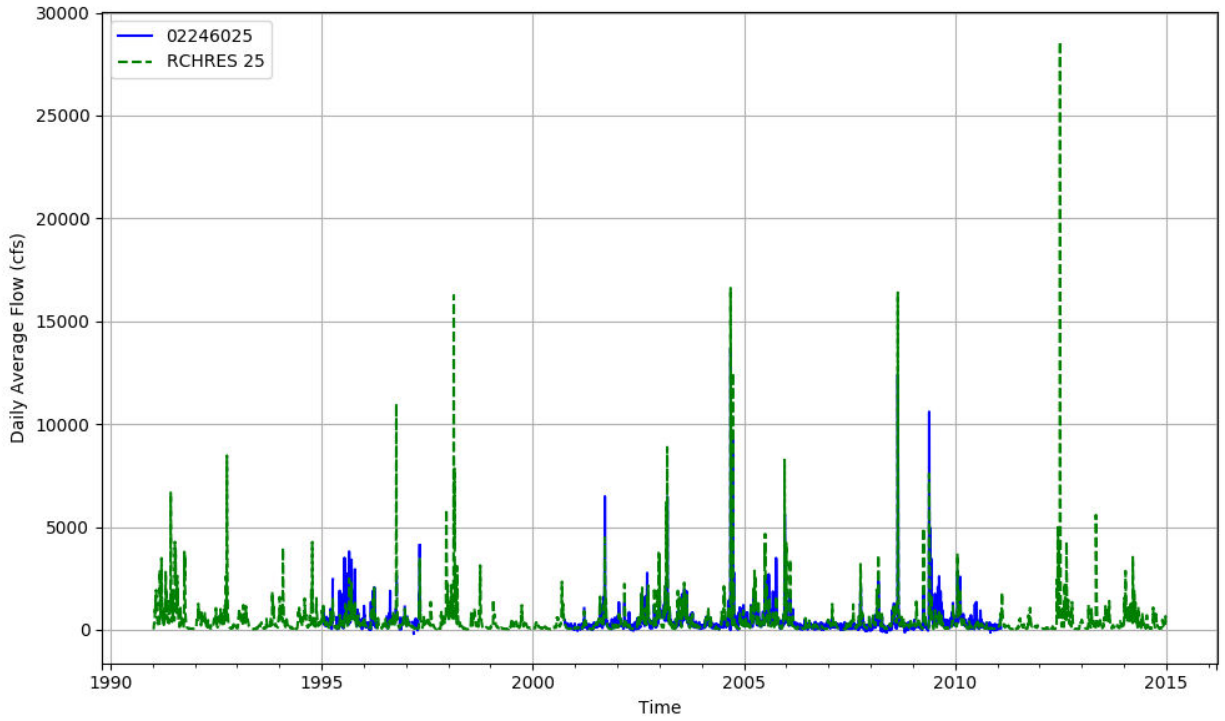


Figure T-03080103-28: Daily flow for HSFP reach 25 and USGS station 02246025.

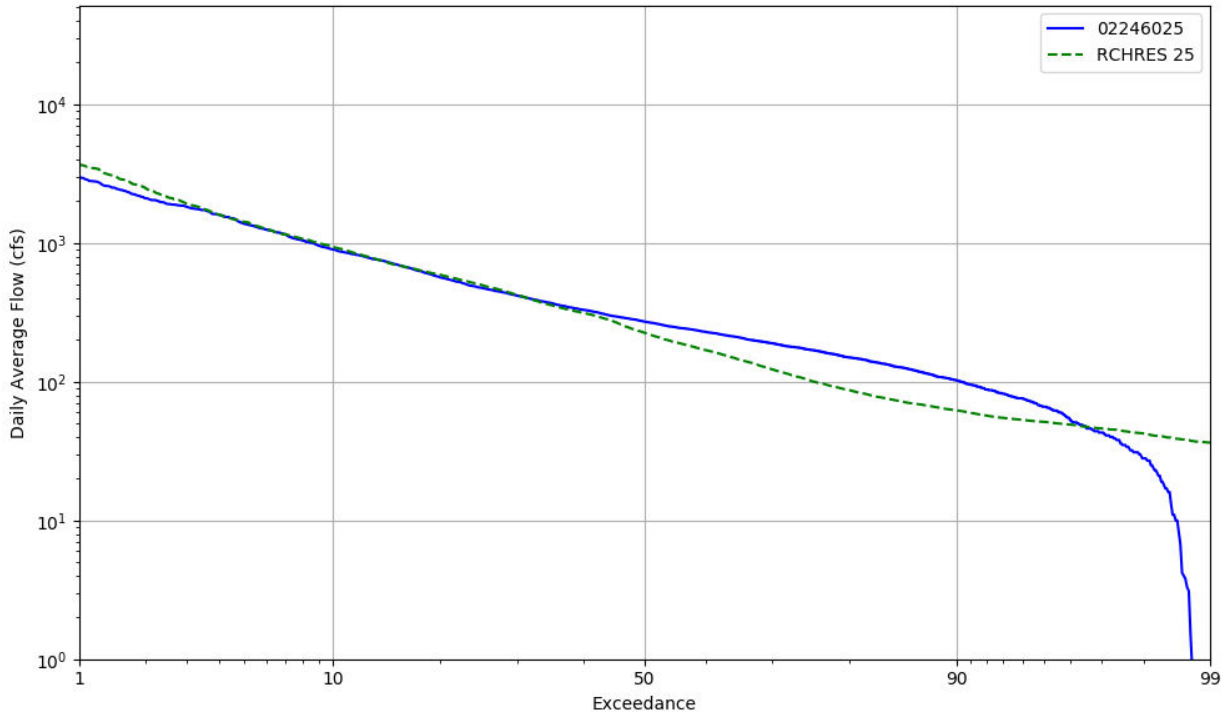


Figure T-03080103-29: Daily exceedance for HSFP reach 25 and USGS station 02246025.

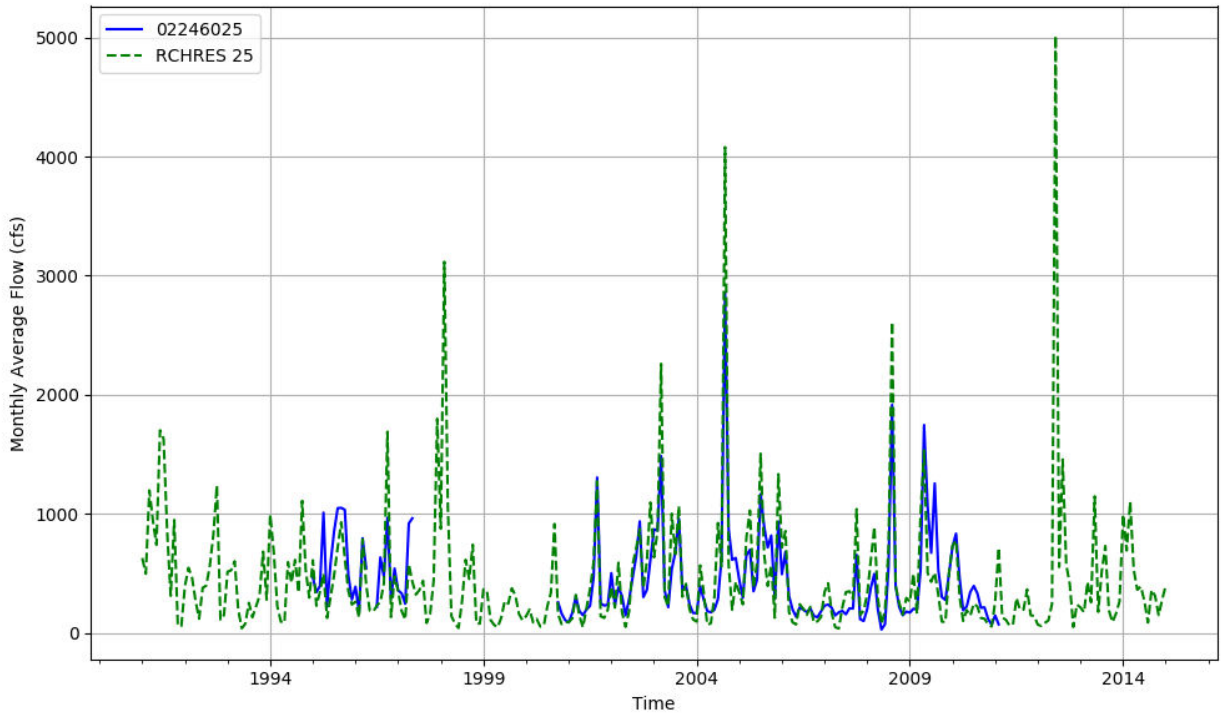


Figure T-03080103-30: Monthly flow for HSFP reach 25 and USGS station 02246025.

HSPF REACH 33, USGS GAUGE 02246500

Water-Data Report 2009
02246500 ST. JOHNS RIVER AT JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301920, long 813956 referenced to North American Datum of 1927, in land grant 44, T.2 S., R.26 E., Duval County, FL, Hydrologic Unit 03080103, near center of channel under the Acosta Bridge at Jacksonville, 2.6 mi upstream from Arlington River, and 23.0 mi upstream from mouth.

DRAINAGE AREA.--8,850 mi, includes Paynes Prairie, a diked sinkhole area of about 650 mi, which is noncontributing except for pumpage.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1954 to September 1970 (volume of flow), October 1970 to September 1971 (gage heights only), October 1971 to September 1974, October 1974 to September 1980 (gage heights only), October 1980 to September 1981, October 1981 to June 1987 (gage heights only), July 1987 to September 1993, October 1993 to July 1996 (gage heights only), August 1996 to current year.

REVISED RECORDS.--WDR FL-92-1A: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 9.99 ft below NGVD of 1929. Apr. 13, 1966 to Sept. 30, 1971, at site 0.6 mi downstream at same datum. October 1971 to September 1986, water-stage and deflection meter recorder at site 200 ft upstream at same datum. October 1986 to July 1996, water-stage recorder 0.3 mi downstream at same datum. July 24, 1984 to Mar. 13, 1996, auxiliary water-stage recorder about 5.4 mi downstream.

REMARKS.--Records fair. Discharge not published, Oct. 1-20, 2008, due to bad velocity or gage height record. Discharge represents the net of much larger upstream and downstream discharges. The stage record published is the maximum and minimum tide event for each calendar day.

Table T-03080103-19: Comparison Statistics Between HSPF Reach 33 and USGS Gauge 02246500.

Statistic	Value
Bias	-608.67
Standard error	6536.28
Relative bias	-0.08

Relative standard error	0.98
Nash-Sutcliffe coefficient	0.05
Coefficient of efficiency	0.11
Index of agreement	0.52

Table T-03080103-20: Hydrologic Indices Between USGS Gauge 02246500 and HSPF Reach 33.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02246500	Simulated Reach 33	Percent Difference
MA1: Mean, all daily flows	14691.89	7533.39	-48.72
MA2: Median, all daily flows	13000.00	4861.63	-62.60
MA3: CV, all daily flows	61.13	101.61	66.23
MA4: CV, log of all daily flows	62.42	73.26	17.36
MA5: Mean daily flow / median daily flow	1.13	1.55	37.11
MA9: (Q10 - Q90) / median daily flow	1.93	2.47	28.24
MA10: (Q20 - Q80) / median daily flow	1.26	1.33	5.09
MA11: (Q25 - Q75) / median daily flow	1.02	0.98	-4.10
MA12: Mean monthly flow, January	11887.27	5228.38	-56.02
MA13: Mean monthly flow, February	12264.96	6707.61	-45.31
MA14: Mean monthly flow, March	12445.62	6154.28	-50.55
MA15: Mean monthly flow, April	11746.03	4121.23	-64.91
MA16: Mean monthly flow, May	11163.44	3480.91	-68.82
MA17: Mean monthly flow, June	11529.34	6305.88	-45.31
MA18: Mean monthly flow, July	11831.54	7150.99	-39.56
MA19: Mean monthly flow, August	12439.67	8861.82	-28.76
MA20: Mean monthly flow, September	15663.93	10714.35	-31.60
MA21: Mean monthly flow, October	11943.63	8313.68	-30.39
MA22: Mean monthly flow, November	11067.94	3974.64	-64.09
MA23: Mean monthly flow, December	11540.33	5503.04	-52.31
ML1: Mean minimum monthly flow, January	1794.74	3716.14	107.06
ML2: Mean minimum monthly flow, February	1497.11	4238.61	183.12
ML3: Mean minimum monthly flow, March	1823.26	4148.94	127.56
ML4: Mean minimum monthly flow, April	2103.58	3141.92	49.36
ML5: Mean minimum monthly flow, May	1988.00	2531.52	27.34
ML6: Mean minimum monthly flow, June	2456.32	3920.28	59.60
ML7: Mean minimum monthly flow, July	2435.42	4886.30	100.63
ML8: Mean minimum monthly flow, August	2403.15	5394.21	124.46
ML9: Mean minimum monthly flow, September	2269.60	5571.88	145.50
ML10: Mean minimum monthly flow, October	2397.35	5523.82	130.41
ML11: Mean minimum monthly flow, November	2358.62	3901.78	65.43
ML12: Mean minimum monthly flow, December	1406.11	3584.50	154.92
ML13: CV of minimum monthly flows	131.60	56.06	-57.41
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.38	3292.64
ML15: Mean minimum annual flow / mean annual flow	0.01	0.28	2586.61
ML16: Median minimum annual flow / median annual flow	0.01	0.40	7521.68
ML20: Ratio of baseflow volume to total flow volume	0.20	0.65	228.91
ML22: Mean annual minimum flow divided by catchment area	9092.31	9110.53	0.20
RA1: Mean of positive changes from one day to next (rise rate)	7535.77	2133.85	
RA2: CV, mean of positive changes from one day to next (rise rate)	103.67	510.77	
RA3: Mean of negative changes from one day to next (fall rate)	7587.37	848.60	

RA4: CV, mean of negative changes from one day to next (fall rate)	93.11	524.24	
RA5: Ratio of days that are higher than previous day	0.50	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.49	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.47	0.03	
RA8: Number of flow reversals from one day to the next	113.77	48.82	
RA9: CV, number of flow reversals from one day to the next	43.04	43.64	

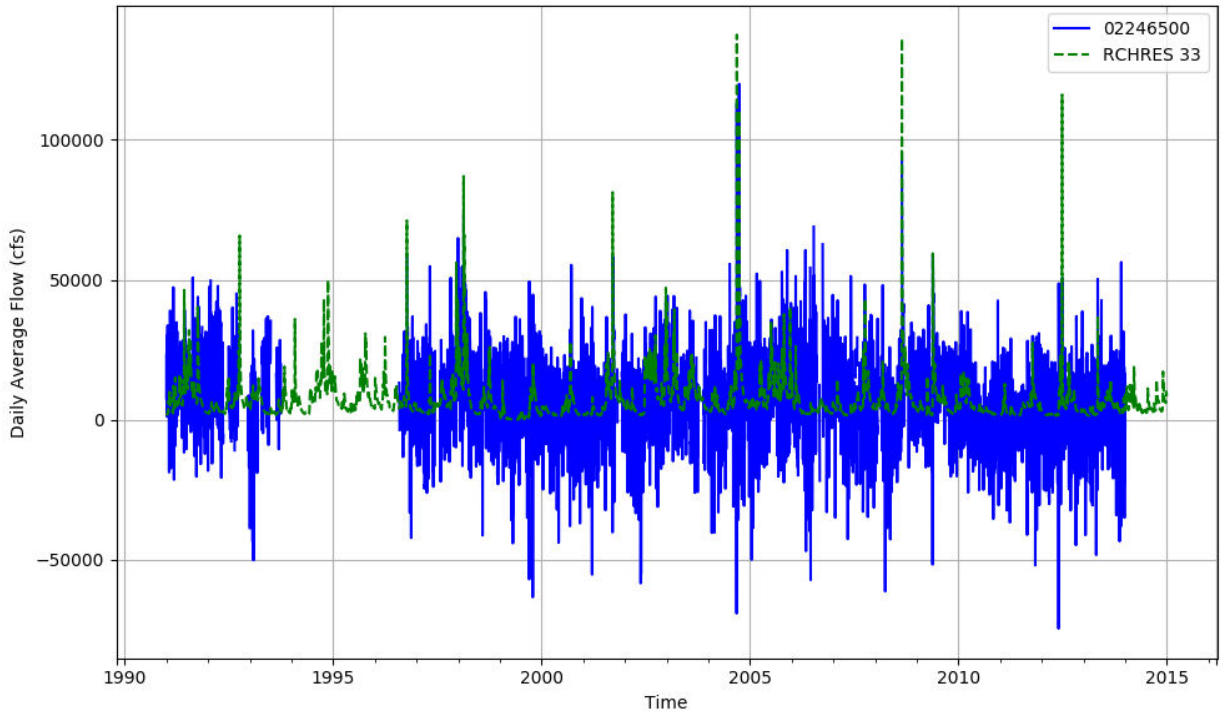


Figure T-03080103-31: Daily flow for HSFP reach 33 and USGS station 02246500.

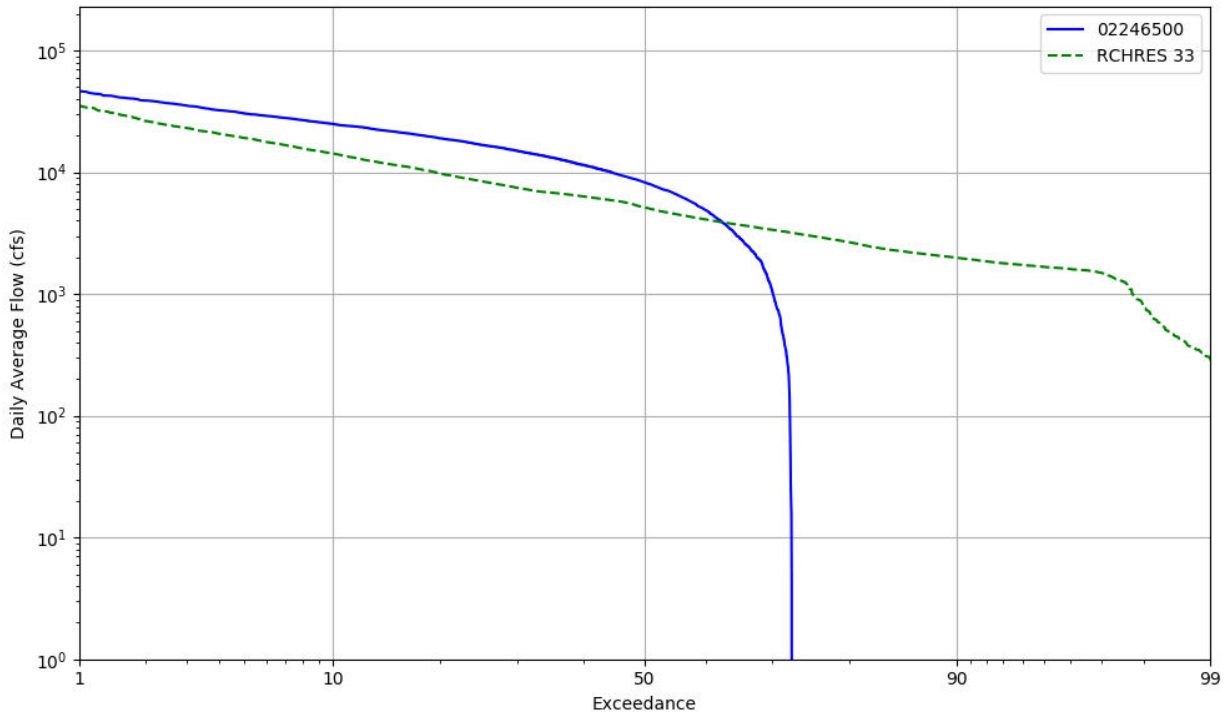


Figure T-03080103-32: Daily exceedance for HSFP reach 33 and USGS station 02246500.

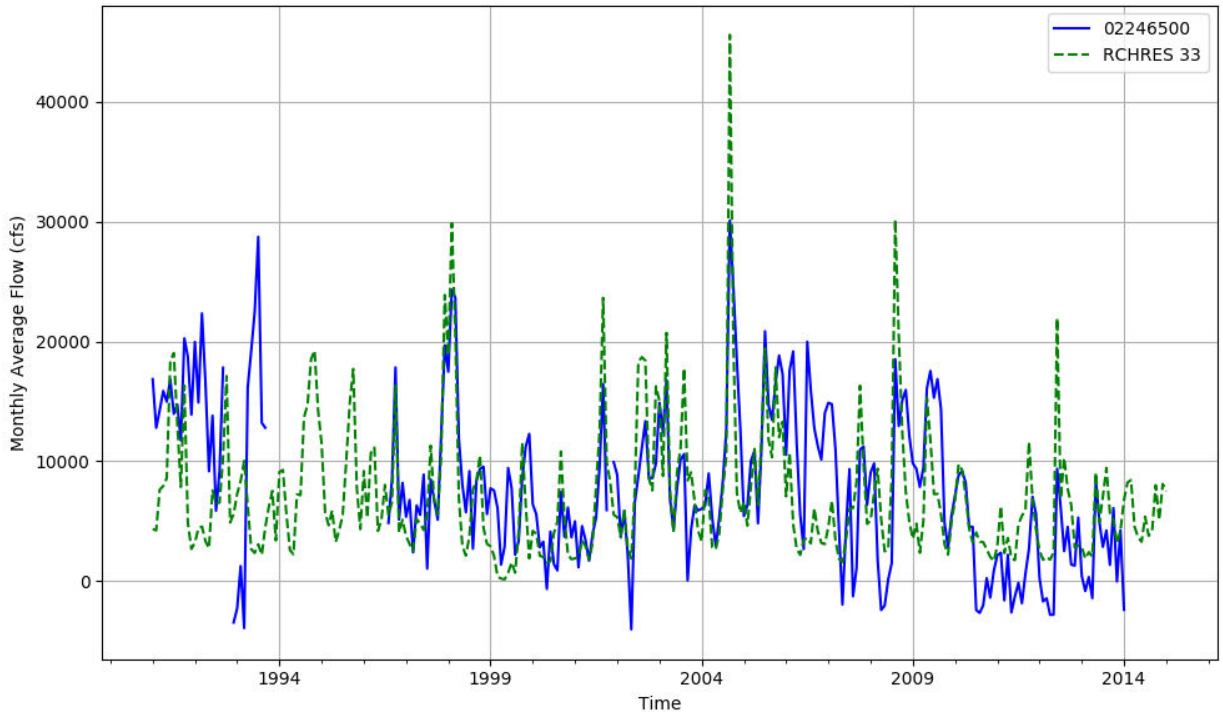


Figure T-03080103-33: Monthly flow for HSFP reach 33 and USGS station 02246500.

HSPF REACH 40, USGS GAUGE 02244320

Water-Data Report 2009
02246500 ST. JOHNS RIVER AT JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301920, long 813956 referenced to North American Datum of 1927, in land grant 44, T.2 S., R.26 E., Duval County, FL, Hydrologic Unit 03080103, near center of channel under the Acosta Bridge at Jacksonville, 2.6 mi upstream from Arlington River, and 23.0 mi upstream from mouth.

DRAINAGE AREA.--8,850 mi, includes Paynes Prairie, a diked sinkhole area of about 650 mi, which is noncontributing except for pumpage.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1954 to September 1970 (volume of flow), October 1970 to September 1971 (gage heights only), October 1971 to September 1974, October 1974 to September 1980 (gage heights only), October 1980 to September 1981, October 1981 to June 1987 (gage heights only), July 1987 to September 1993, October 1993 to July 1996 (gage heights only), August 1996 to current year.

REVISED RECORDS.--WDR FL-92-1A: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 9.99 ft below NGVD of 1929. Apr. 13, 1966 to Sept. 30, 1971, at site 0.6 mi downstream at same datum. October 1971 to September 1986, water-stage and deflection meter recorder at site 200 ft upstream at same datum. October 1986 to July 1996, water-stage recorder 0.3 mi downstream at same datum. July 24, 1984 to Mar. 13, 1996, auxiliary water-stage recorder about 5.4 mi downstream.

REMARKS.--Records fair. Discharge not published, Oct. 1-20, 2008, due to bad velocity or gage height record. Discharge represents the net of much larger upstream and downstream discharges. The stage record published is the maximum and minimum tide event for each calendar day.

Table T-03080103-21: Comparison Statistics Between HSPF Reach 40 and USGS Gauge 02244320.

Statistic	Value
Bias	-4.65
Standard error	73.91
Relative bias	-0.06

Relative standard error	0.59
Nash-Sutcliffe coefficient	0.65
Coefficient of efficiency	0.52
Index of agreement	0.73

Table T-03080103-22: Hydrologic Indices Between USGS Gauge 02244320 and HSPF Reach 40.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02244320	Simulated Reach 40	Percent Difference
MA1: Mean, all daily flows	75.30	70.57	-6.28
MA2: Median, all daily flows	9.00	22.40	148.91
MA3: CV, all daily flows	194.55	184.53	-5.15
MA4: CV, log of all daily flows	168.95	139.79	-17.26
MA5: Mean daily flow / median daily flow	8.37	3.15	-62.35
MA9: (Q10 - Q90) / median daily flow	25.33	8.26	-67.40
MA10: (Q20 - Q80) / median daily flow	13.43	3.87	-71.17
MA11: (Q25 - Q75) / median daily flow	8.95	2.83	-68.32
MA12: Mean monthly flow, January	48.79	61.31	25.66
MA13: Mean monthly flow, February	33.38	56.12	68.15
MA14: Mean monthly flow, March	50.01	57.55	15.08
MA15: Mean monthly flow, April	26.65	20.94	-21.45
MA16: Mean monthly flow, May	2.95	13.73	365.95
MA17: Mean monthly flow, June	56.37	77.94	38.27
MA18: Mean monthly flow, July	86.20	78.08	-9.42
MA19: Mean monthly flow, August	81.70	87.80	7.46
MA20: Mean monthly flow, September	195.14	124.62	-36.14
MA21: Mean monthly flow, October	180.14	126.24	-29.92
MA22: Mean monthly flow, November	82.34	69.31	-15.83
MA23: Mean monthly flow, December	39.62	55.06	38.95
ML1: Mean minimum monthly flow, January	17.58	11.07	-37.02
ML2: Mean minimum monthly flow, February	9.68	12.48	29.03
ML3: Mean minimum monthly flow, March	8.23	10.96	33.20
ML4: Mean minimum monthly flow, April	2.91	5.59	91.99
ML5: Mean minimum monthly flow, May	0.09	4.80	5282.82
ML6: Mean minimum monthly flow, June	13.36	10.00	-25.18
ML7: Mean minimum monthly flow, July	37.43	20.95	-44.04
ML8: Mean minimum monthly flow, August	27.96	20.73	-25.83
ML9: Mean minimum monthly flow, September	38.33	16.54	-56.85
ML10: Mean minimum monthly flow, October	53.28	21.56	-59.54
ML11: Mean minimum monthly flow, November	21.59	15.17	-29.74
ML12: Mean minimum monthly flow, December	12.04	10.77	-10.55
ML13: CV of minimum monthly flows	194.89	121.44	-37.69
ML14: Mean minimum daily flow / mean median annual flow	0.00	0.05	3389.55
ML15: Mean minimum annual flow / mean annual flow	0.00	0.02	10977.34
ML16: Median minimum annual flow / median annual flow	0.00	0.05	
ML20: Ratio of baseflow volume to total flow volume	0.43	0.34	-21.45
ML22: Mean annual minimum flow divided by catchment area	0.00	0.01	11391.76
RA1: Mean of positive changes from one day to next (rise rate)	27.15	30.70	
RA2: CV, mean of positive changes from one day to next (rise rate)	348.29	348.80	
RA3: Mean of negative changes from one day to next (fall rate)	9.51	12.14	

RA4: CV, mean of negative changes from one day to next (fall rate)	312.30	312.82	
RA5: Ratio of days that are higher than previous day	0.22	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.21	0.18	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.11	
RA8: Number of flow reversals from one day to the next	53.25	71.17	
RA9: CV, number of flow reversals from one day to the next	17.56	9.95	

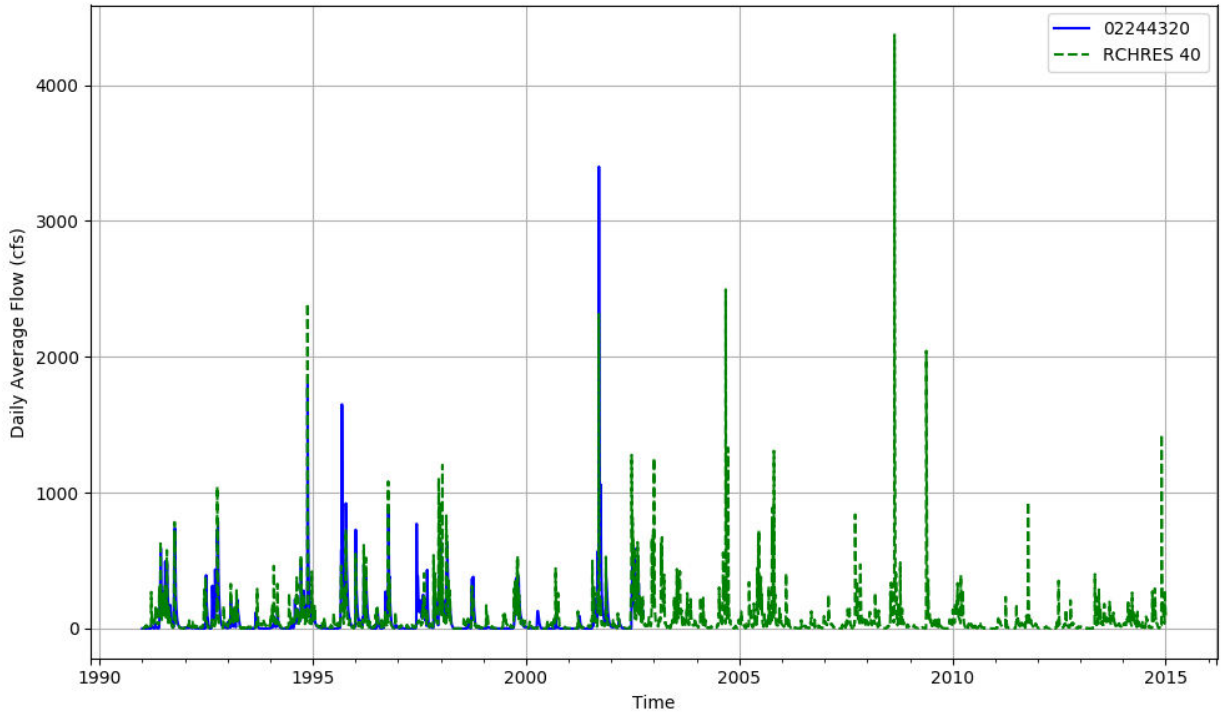


Figure T-03080103-34: Daily flow for HSFP reach 40 and USGS station 02244320.

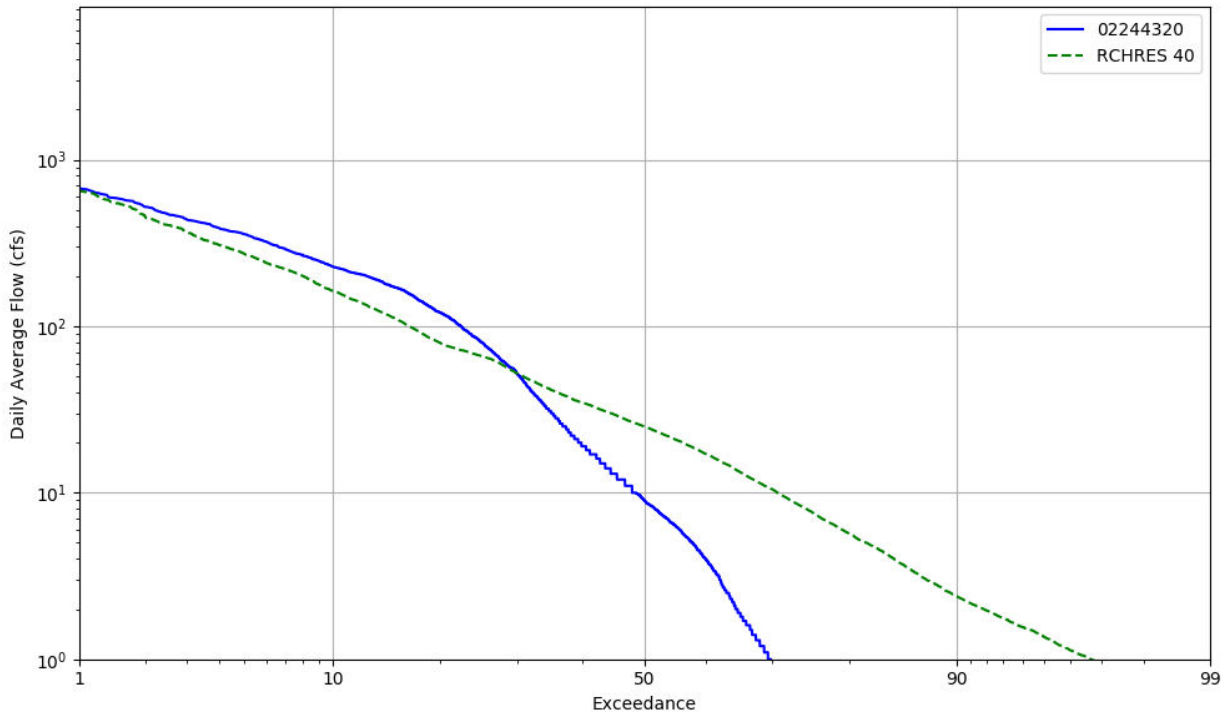


Figure T-03080103-35: Daily exceedance for HSFP reach 40 and USGS station 02244320.

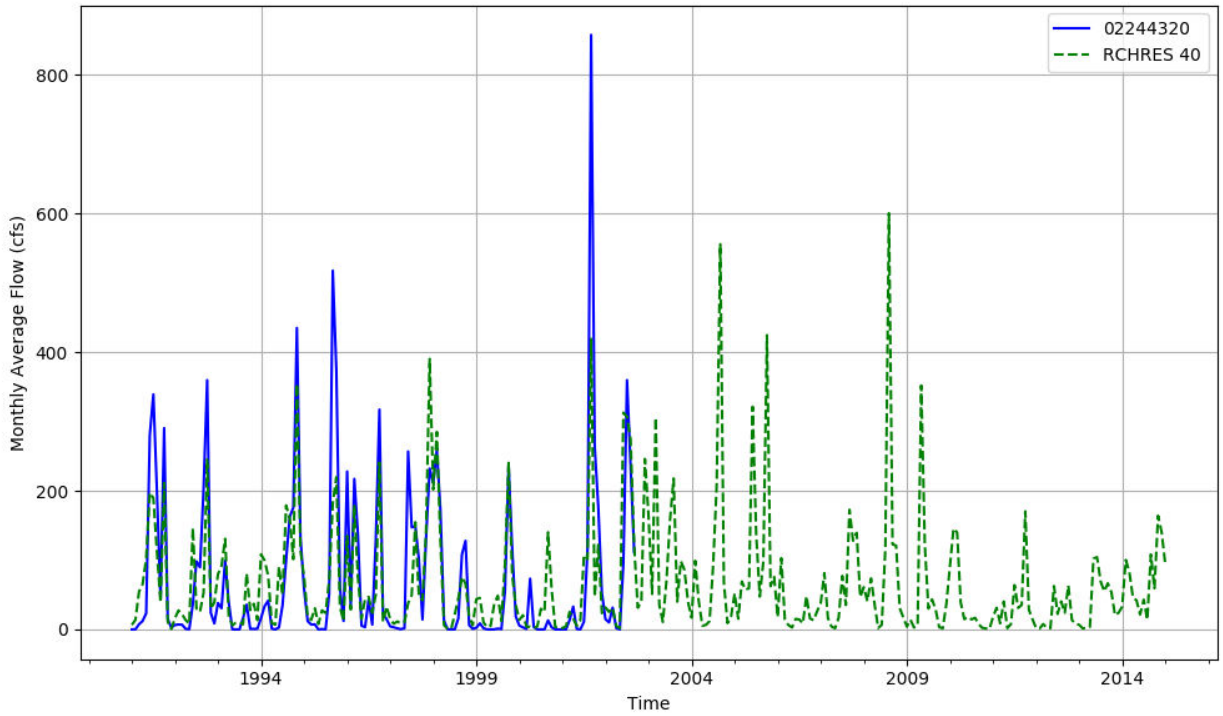


Figure T-03080103-36: Monthly flow for HSFP reach 40 and USGS station 02244320.

HSPF REACH 41, USGS GAUGE 02244420

Water-Data Report 2009
02246500 ST. JOHNS RIVER AT JACKSONVILLE, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 301920, long 813956 referenced to North American Datum of 1927, in land grant 44, T.2 S., R.26 E., Duval County, FL, Hydrologic Unit 03080103, near center of channel under the Acosta Bridge at Jacksonville, 2.6 mi upstream from Arlington River, and 23.0 mi upstream from mouth.

DRAINAGE AREA.--8,850 mi, includes Paynes Prairie, a diked sinkhole area of about 650 mi, which is noncontributing except for pumpage.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1954 to September 1970 (volume of flow), October 1970 to September 1971 (gage heights only), October 1971 to September 1974, October 1974 to September 1980 (gage heights only), October 1980 to September 1981, October 1981 to June 1987 (gage heights only), July 1987 to September 1993, October 1993 to July 1996 (gage heights only), August 1996 to current year.

REVISED RECORDS.--WDR FL-92-1A: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 9.99 ft below NGVD of 1929. Apr. 13, 1966 to Sept. 30, 1971, at site 0.6 mi downstream at same datum. October 1971 to September 1986, water-stage and deflection meter recorder at site 200 ft upstream at same datum. October 1986 to July 1996, water-stage recorder 0.3 mi downstream at same datum. July 24, 1984 to Mar. 13, 1996, auxiliary water-stage recorder about 5.4 mi downstream.

REMARKS.--Records fair. Discharge not published, Oct. 1-20, 2008, due to bad velocity or gage height record. Discharge represents the net of much larger upstream and downstream discharges. The stage record published is the maximum and minimum tide event for each calendar day.

Table T-03080103-23: Comparison Statistics Between HSPF Reach 41 and USGS Gauge 02244420.

Statistic	Value
Bias	27.01
Standard error	88.39
Relative bias	0.33

Relative standard error	0.73
Nash-Sutcliffe coefficient	0.46
Coefficient of efficiency	0.38
Index of agreement	0.69

Table T-03080103-24: Hydrologic Indices Between USGS Gauge 02244420 and HSPF Reach 41.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02244420	Simulated Reach 41	Percent Difference
MA1: Mean, all daily flows	81.32	108.27	33.14
MA2: Median, all daily flows	21.00	38.20	81.89
MA3: CV, all daily flows	154.97	171.18	10.46
MA4: CV, log of all daily flows	148.87	135.23	-9.17
MA5: Mean daily flow / median daily flow	3.87	2.83	-26.80
MA9: (Q10 - Q90) / median daily flow	11.89	7.32	-38.47
MA10: (Q20 - Q80) / median daily flow	5.74	3.40	-40.83
MA11: (Q25 - Q75) / median daily flow	4.21	2.54	-39.64
MA12: Mean monthly flow, January	74.29	98.78	32.97
MA13: Mean monthly flow, February	55.62	86.09	54.79
MA14: Mean monthly flow, March	74.96	82.55	10.13
MA15: Mean monthly flow, April	44.50	34.06	-23.46
MA16: Mean monthly flow, May	7.41	23.05	210.88
MA17: Mean monthly flow, June	39.64	124.99	215.33
MA18: Mean monthly flow, July	78.44	120.37	53.45
MA19: Mean monthly flow, August	77.63	140.48	80.97
MA20: Mean monthly flow, September	172.86	205.39	18.82
MA21: Mean monthly flow, October	174.18	177.08	1.66
MA22: Mean monthly flow, November	92.71	96.74	4.35
MA23: Mean monthly flow, December	62.15	82.17	32.20
ML1: Mean minimum monthly flow, January	37.47	20.17	-46.16
ML2: Mean minimum monthly flow, February	28.02	21.44	-23.50
ML3: Mean minimum monthly flow, March	27.45	18.01	-34.39
ML4: Mean minimum monthly flow, April	13.19	8.74	-33.72
ML5: Mean minimum monthly flow, May	3.48	7.62	119.34
ML6: Mean minimum monthly flow, June	9.60	16.25	69.36
ML7: Mean minimum monthly flow, July	19.20	34.91	81.81
ML8: Mean minimum monthly flow, August	36.70	35.39	-3.56
ML9: Mean minimum monthly flow, September	43.74	34.45	-21.24
ML10: Mean minimum monthly flow, October	66.09	29.07	-56.02
ML11: Mean minimum monthly flow, November	38.28	21.04	-45.03
ML12: Mean minimum monthly flow, December	28.71	18.47	-35.67
ML13: CV of minimum monthly flows	148.48	112.64	-24.14
ML14: Mean minimum daily flow / mean median annual flow	0.06	0.06	-1.91
ML15: Mean minimum annual flow / mean annual flow	0.02	0.02	42.16
ML16: Median minimum annual flow / median annual flow	0.05	0.05	11.68
ML20: Ratio of baseflow volume to total flow volume	0.59	0.33	-44.28
ML22: Mean annual minimum flow divided by catchment area	0.01	0.03	89.46
RA1: Mean of positive changes from one day to next (rise rate)	17.13	44.71	
RA2: CV, mean of positive changes from one day to next (rise rate)	274.08	302.80	
RA3: Mean of negative changes from one day to next (fall rate)	6.20	18.52	

RA4: CV, mean of negative changes from one day to next (fall rate)	172.45	281.70	
RA5: Ratio of days that are higher than previous day	0.24	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.17	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.11	
RA8: Number of flow reversals from one day to the next	74.67	66.83	
RA9: CV, number of flow reversals from one day to the next	14.57	15.36	

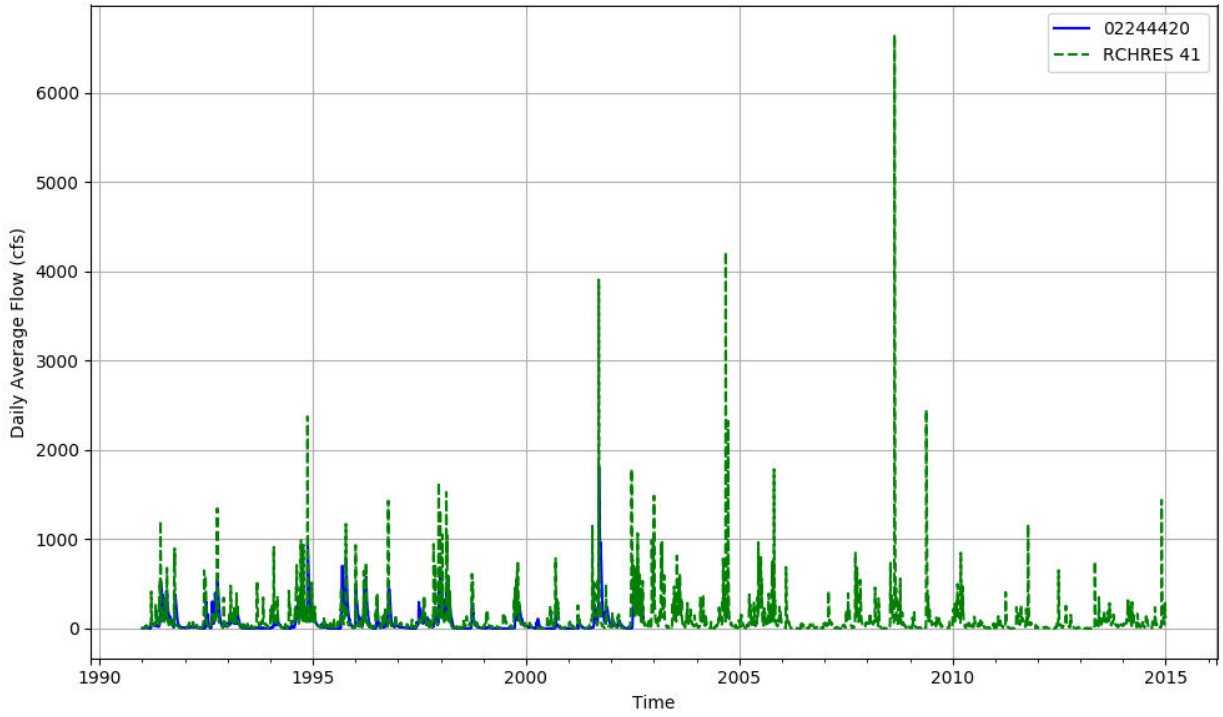


Figure T-03080103-37: Daily flow for HSFP reach 41 and USGS station 02244420.

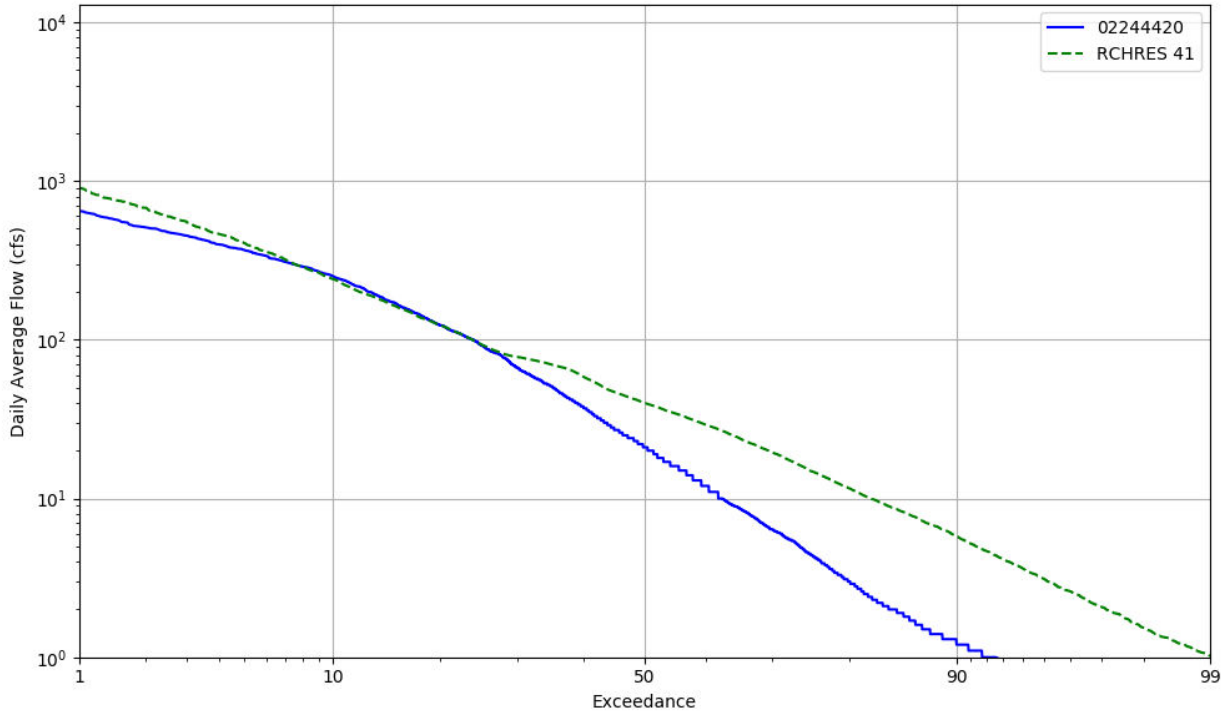


Figure T-03080103-38: Daily exceedance for HSFP reach 41 and USGS station 02244420.

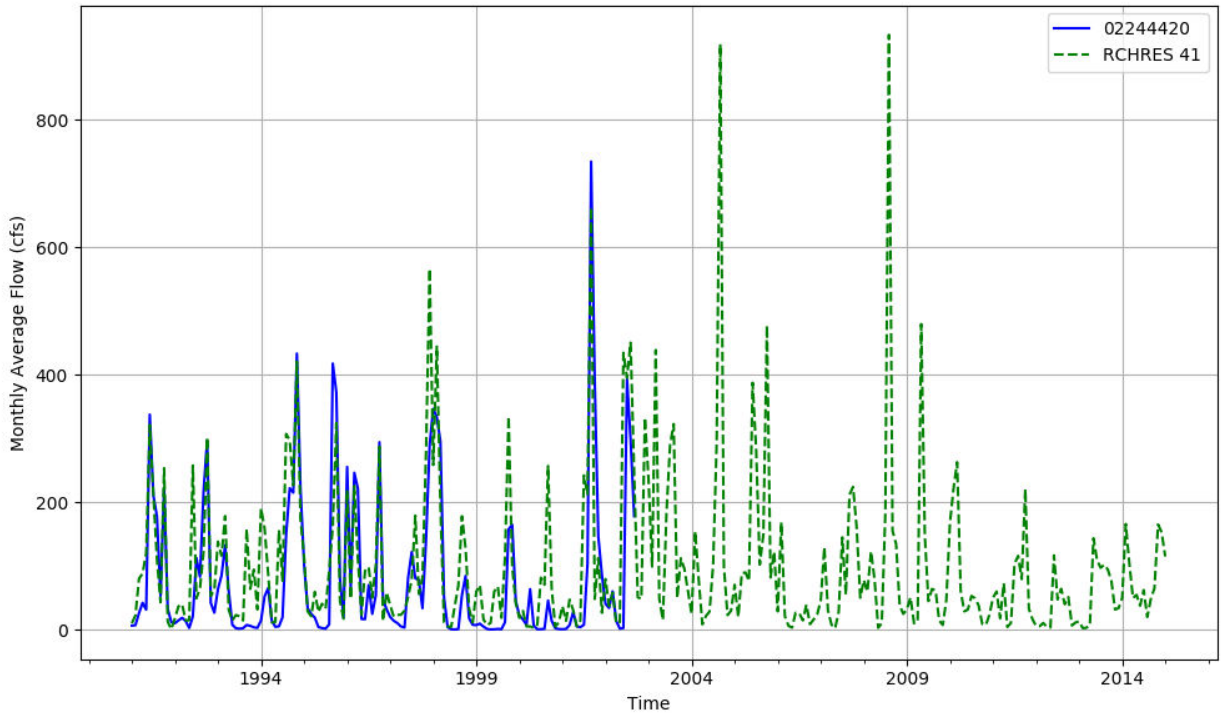


Figure T-03080103-39: Monthly flow for HSFP reach 41 and USGS station 02244420.

HSPF REACH 46, USGS GAUGE 02244440

Water-Data Report 2009
02244440 DUNNS CREEK NEAR SATSUMA, FL
St. Johns Basin Lower St. Johns Subbasin

LOCATION.--Lat 293439, long 813735 referenced to North American Datum of 1927, in NE 1/4 sec.1, T.11 S., R.27 E., Putnam County, FL, Hydrologic Unit 03080103, on bridge pile near left bank of the bridge on U.S. Highway 17, 0.3 mi upstream from Murphy Creek, 0.8 mi upstream from mouth, 2.4 mi northeast of Satsuma, and 3.1 mi southwest of San Mateo.

DRAINAGE AREA.--585 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1978 to current year.

REVISED RECORDS.--WDR FL-93-1A: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is 10.00 ft below NGVD of 1929. Prior to July 21, 1987, at site 200 ft downstream at present datum.

REMARKS.--Records fair. Discharge represents net of much larger upstream and downstream discharges.

Table T-03080103-25: Comparison Statistics Between HSPF Reach 46 and USGS Gauge 02244440.

Statistic	Value
Bias	88.70
Standard error	579.47
Relative bias	0.18
Relative standard error	0.80
Nash-Sutcliffe coefficient	0.36
Coefficient of efficiency	0.24
Index of agreement	0.61

Table T-03080103-26: Hydrologic Indices Between USGS Gauge 02244440 and HSPF Reach 46.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02244440	Simulated Reach 46	Percent Difference
MA1: Mean, all daily flows	1212.64	579.56	-52.21
MA2: Median, all daily flows	912.00	219.67	-75.91
MA3: CV, all daily flows	86.44	173.03	100.18

MA4: CV, log of all daily flows	78.08	130.00	66.49
MA5: Mean daily flow / median daily flow	1.33	2.64	98.42
MA9: (Q10 - Q90) / median daily flow	2.57	6.35	147.14
MA10: (Q20 - Q80) / median daily flow	1.58	3.14	98.93
MA11: (Q25 - Q75) / median daily flow	1.24	2.50	100.81
MA12: Mean monthly flow, January	878.93	426.85	-51.44
MA13: Mean monthly flow, February	937.27	521.27	-44.38
MA14: Mean monthly flow, March	1092.28	565.46	-48.23
MA15: Mean monthly flow, April	818.97	203.58	-75.14
MA16: Mean monthly flow, May	894.23	302.79	-66.14
MA17: Mean monthly flow, June	918.20	549.89	-40.11
MA18: Mean monthly flow, July	912.68	628.47	-31.14
MA19: Mean monthly flow, August	1106.74	862.28	-22.09
MA20: Mean monthly flow, September	1663.00	964.00	-42.03
MA21: Mean monthly flow, October	1335.25	644.55	-51.73
MA22: Mean monthly flow, November	1182.89	383.02	-67.62
MA23: Mean monthly flow, December	999.98	424.77	-57.52
ML1: Mean minimum monthly flow, January	104.28	122.97	17.93
ML2: Mean minimum monthly flow, February	131.11	149.47	14.01
ML3: Mean minimum monthly flow, March	75.72	143.83	89.95
ML4: Mean minimum monthly flow, April	94.74	47.20	-50.17
ML5: Mean minimum monthly flow, May	142.48	71.52	-49.80
ML6: Mean minimum monthly flow, June	124.00	149.01	20.17
ML7: Mean minimum monthly flow, July	165.41	182.37	10.25
ML8: Mean minimum monthly flow, August	163.30	211.47	29.49
ML9: Mean minimum monthly flow, September	91.18	172.87	89.59
ML10: Mean minimum monthly flow, October	191.65	160.23	-16.39
ML11: Mean minimum monthly flow, November	156.74	109.18	-30.34
ML12: Mean minimum monthly flow, December	87.28	103.66	18.77
ML13: CV of minimum monthly flows	142.74	112.62	-21.10
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.08	701.93
ML15: Mean minimum annual flow / mean annual flow	0.01	0.04	409.30
ML16: Median minimum annual flow / median annual flow	0.00	0.06	1122.36
ML20: Ratio of baseflow volume to total flow volume	0.16	0.35	118.55
ML22: Mean annual minimum flow divided by catchment area	0.09	0.21	131.08
RA1: Mean of positive changes from one day to next (rise rate)	509.34	230.54	
RA2: CV, mean of positive changes from one day to next (rise rate)	104.13	373.08	
RA3: Mean of negative changes from one day to next (fall rate)	496.82	99.38	
RA4: CV, mean of negative changes from one day to next (fall rate)	95.74	329.69	
RA5: Ratio of days that are higher than previous day	0.49	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.44	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.43	0.10	
RA8: Number of flow reversals from one day to the next	97.92	59.46	
RA9: CV, number of flow reversals from one day to the next	28.17	28.94	

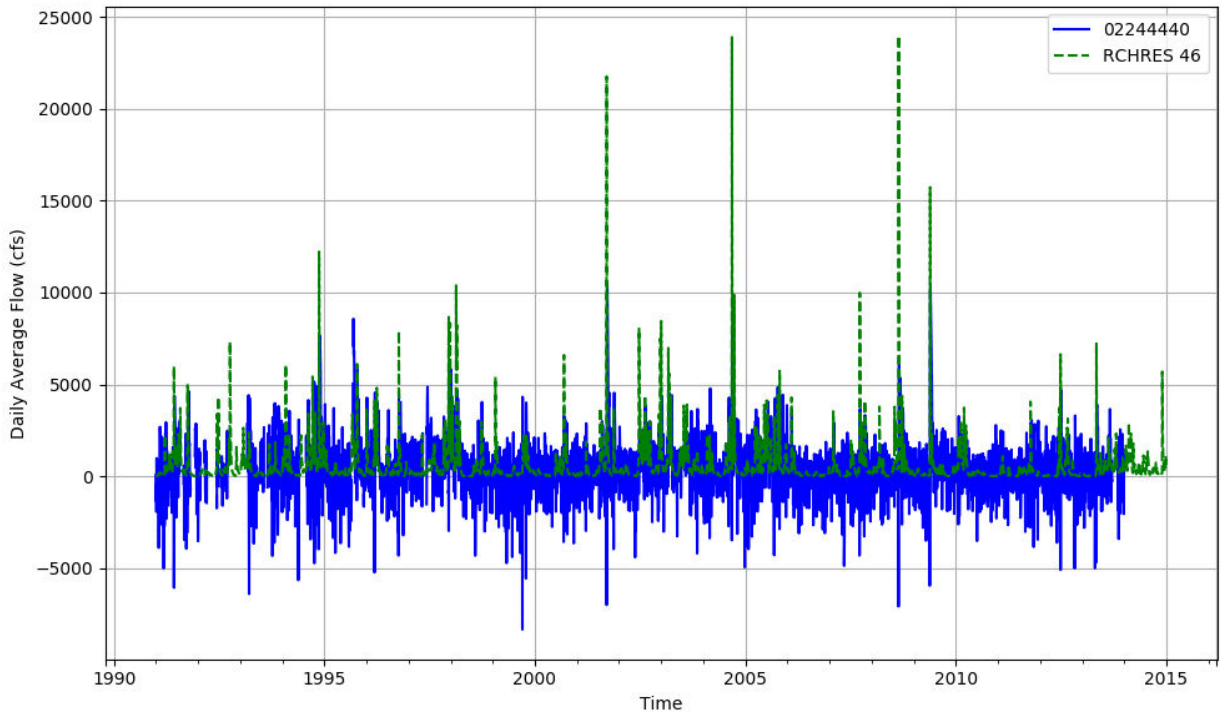


Figure T-03080103-40: Daily flow for HSFP reach 46 and USGS station 02244440.

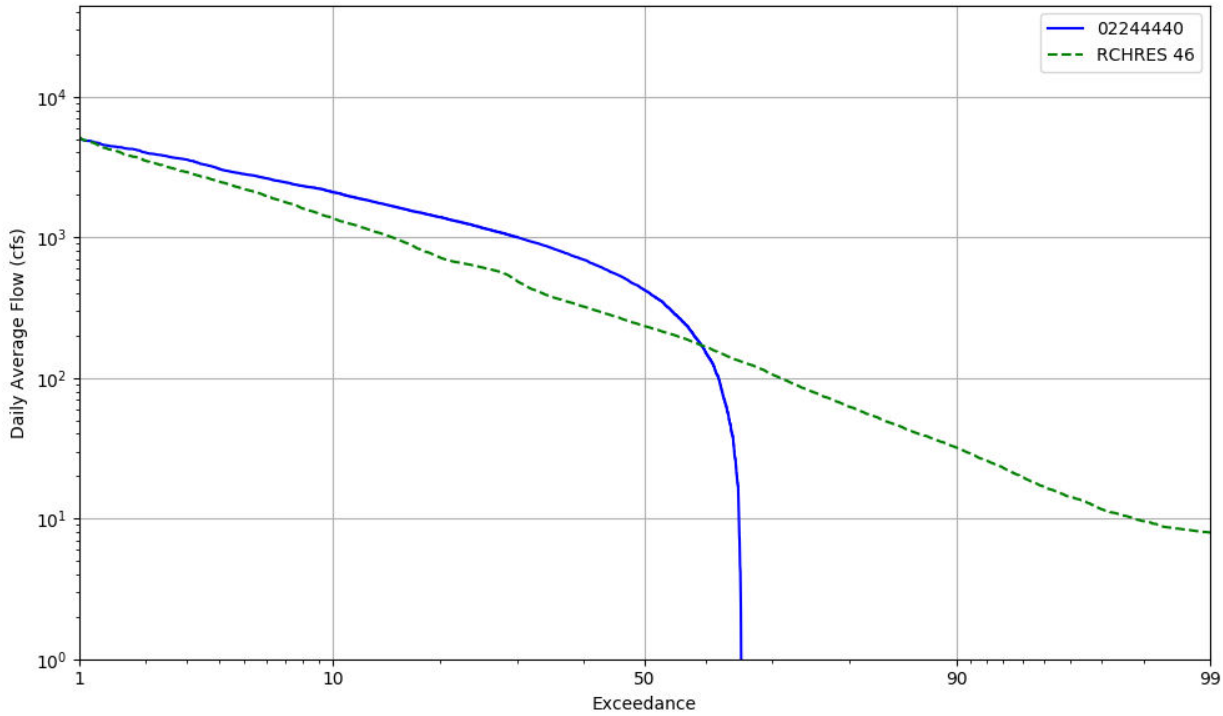


Figure T-03080103-41: Daily exceedance for HSFP reach 46 and USGS station 02244440.

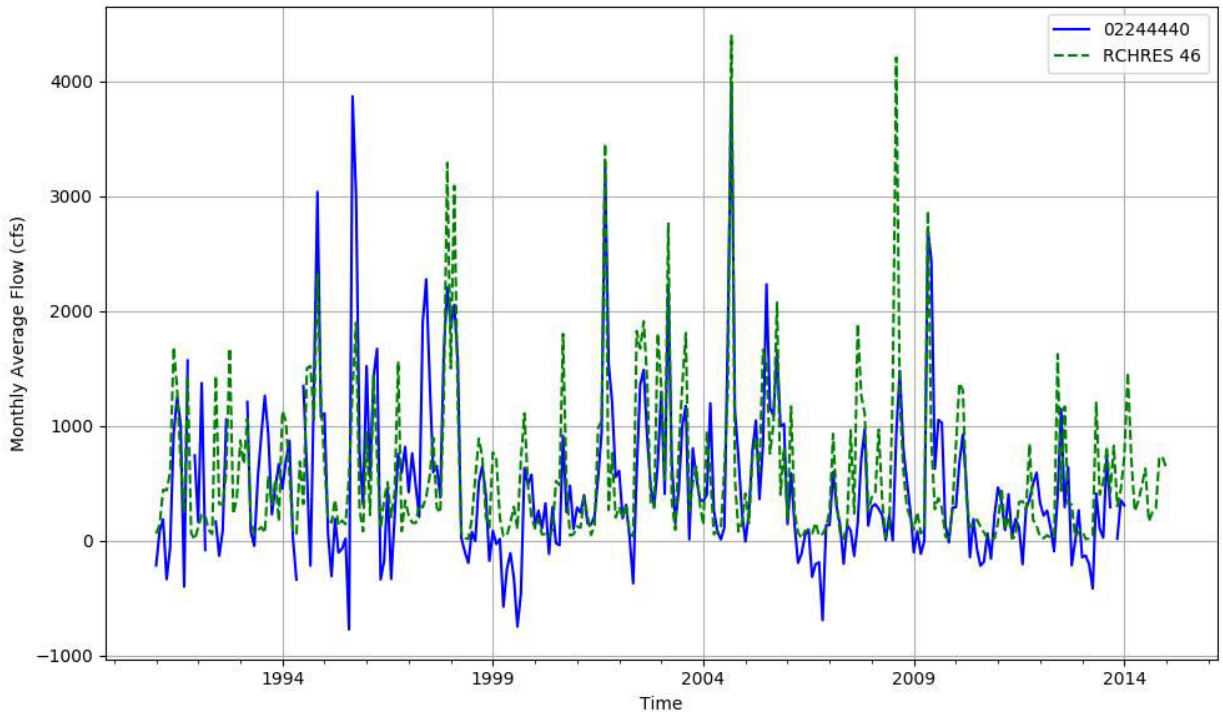


Figure T-03080103-42: Monthly flow for HSFP reach 46 and USGS station 02244440.

Table T-03080103-27: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	137550	170737	89989	24359	7171	8857	506665	174353	66616	51402	9201	440380	7561	18027	33902	1746770
AREA(%)	7.7	9.6	5.1	1.4	0.4	0.5	28.5	9.8	3.7	2.9	0.5	24.7	0.4	1.0	1.9	98.2
IMPERVIOUS																
AREA(ACRES)		9321	10143	6154	7247											32865
AREA(%)		0.5	0.6	0.3	0.4											1.8
SUPY	49.9	48.7	48.1	48.0	47.8	47.6	49.6	49.2	49.8	50.8	51.1	50.6	72.0	53.6	56.6	49.0
SURLI		0.0	4.6	4.4	4.4										4.0	0.4
UZLI																0.0
LZLI		0.0	1.7	1.2	0.9									8.9	14.1	0.5
SURO: PERVIOUS	10.6	2.6	2.6	2.8	1.6	5.1	0.4	2.6	1.8	1.4	0.9	10.9	8.5	1.6	1.4	4.5
SURO: IMPERVIOUS		36.7	36.6	36.7	36.6											0.7
SURO: COMBINED	10.6	4.4	6.1	9.6	19.2	5.1	0.4	2.6	1.8	1.4	0.9	10.9	8.5	1.6	1.4	5.2
IFWO		1.8	3.2	3.3	2.5	2.2	1.7	2.3	2.8	1.7	3.1		8.2	5.4	4.7	1.5
AGWO	1.7	9.7	13.7	12.8	12.7	12.8	6.3	14.3	10.6	12.1	8.8	1.7	17.4	18.1	26.3	7.2
AGWI	6.4	10.6	15.0	14.3	14.4	14.0	7.2	15.4	11.8	13.5	9.8	5.9	18.4	19.7	28.0	9.3
IGWI	0.1	0.1	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.1
CEPE		12.8	9.9	9.8	13.2	7.1	19.1	11.5	10.8	10.9	18.7	16.6	27.2	10.8	20.8	14.0
UZET	4.4	2.3	3.0	3.0	2.2	4.3	1.2	3.2	2.9	2.5	1.9	2.0	2.7	3.8	2.8	2.2
LZET	1.7	17.4	19.4	19.3	17.8	14.1	18.1	13.4	18.6	19.6	15.5	2.0	7.2	19.9	16.3	12.0
AGWET	3.4	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.1	0.0	1.0
BASET	0.9	1.5	1.6	1.6	1.7	1.4	1.2	1.7	1.5	1.7	1.2	0.9	1.1	1.7	1.8	1.2
SURET	26.3											12.7				5.2
PERO	12.3	14.1	19.6	18.9	16.8	20.0	8.5	19.2	15.2	15.2	12.9	12.7	34.0	25.1	32.3	13.2
IGWI	0.1	0.1	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.1
TAET: PERVIOUS	36.8	34.1	34.0	33.7	35.0	26.9	39.6	29.8	33.8	34.6	37.4	37.2	38.2	36.3	41.7	35.8
IMPEV: IMPERVIOUS		12.0	11.5	11.4	11.2											0.2
ET: COMBINED	36.8	32.9	31.7	29.2	23.0	26.9	39.6	29.8	33.8	34.6	37.4	37.2	38.2	36.3	41.7	36.0
PET	46.2	45.9	44.4	43.9	44.0	46.0	46.6	46.7	46.6	46.9	46.8	46.1	43.0	46.8	46.9	45.3

Table T-03080103-28: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	137550	170737	89989	24359	7171	8857	506665	174353	66616	51402	9201	440380	7561	18027	33902	1746770
AREA(%)	7.7	9.6	5.1	1.4	0.4	0.5	28.5	9.8	3.7	2.9	0.5	24.7	0.4	1.0	1.9	98.2
IMPERVIOUS																
AREA(ACRES)		9321	10143	6154	7247											32865
AREA(%)		0.5	0.6	0.3	0.4											1.8
SUPY	56.9	57.2	58.7	58.9	59.2	56.6	56.0	56.2	55.7	54.3	55.4	55.4	67.6	55.9	58.9	55.2
SURLI		0.0	4.5	4.2	4.2										3.8	0.4
UZLI																0.0
LZLI		0.0	1.5	1.1	0.8									4.7	10.5	0.3
SURO: PERVIOUS	11.3	3.2	3.7	3.9	2.5	6.6	0.5	2.9	1.9	1.2	0.9	10.9	6.2	1.1	1.2	4.7
SURO: IMPERVIOUS		44.0	45.7	46.0	46.2											0.8
SURO: COMBINED	11.3	5.3	7.9	12.4	24.5	6.6	0.5	2.9	1.9	1.2	0.9	10.9	6.2	1.1	1.2	5.6
IFWO		2.2	4.1	4.2	3.2	2.8	1.9	2.8	3.3	2.0	3.4		8.9	5.9	4.8	1.7
AGWO	1.5	12.9	18.2	17.4	18.2	16.5	9.3	17.7	12.6	12.8	9.9	1.3	13.5	15.3	22.8	8.9
AGWI	7.0	14.4	20.1	19.5	20.5	18.2	10.8	19.4	14.3	14.7	11.3	6.0	14.9	17.2	24.9	11.6
IGWI	0.1	0.2	0.2	0.2	0.2	0.4	0.1	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.2
CEPE		14.0	11.2	11.2	15.0	7.9	20.4	12.4	11.6	11.6	20.1	17.7	20.6	11.8	22.0	15.1
UZET	5.4	2.8	3.6	3.6	2.8	5.1	1.5	3.7	3.2	2.6	2.2	2.9	3.6	3.5	2.8	2.8
LZET	2.0	20.2	21.6	21.5	20.1	15.4	22.5	15.0	21.3	22.4	18.5	2.7	13.5	21.2	18.5	14.4
AGWET	4.7	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	4.1	0.1	0.1	0.1	1.4
BASET	0.8	2.0	2.0	2.0	2.2	1.7	1.8	2.1	1.9	2.1	1.6	0.7	1.3	1.9	2.0	1.5
SURET	30.0											14.2				5.8
PERO	12.9	18.4	26.0	25.5	23.9	25.9	11.7	23.4	17.7	16.0	14.2	12.1	28.6	22.2	28.7	15.4
IGWI	0.1	0.2	0.2	0.2	0.2	0.4	0.1	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.2
TAET: PERVIOUS	42.9	39.1	38.6	38.3	40.0	30.2	46.3	33.1	38.1	38.8	42.4	42.3	39.1	38.5	45.3	40.9
IMPEV: IMPERVIOUS		13.2	12.9	12.8	12.9											0.2
ET: COMBINED	42.9	37.8	36.0	33.2	26.4	30.2	46.3	33.1	38.1	38.8	42.4	42.3	39.1	38.5	45.3	41.2
PET	51.7	51.4	49.1	48.4	48.5	51.7	52.4	52.6	52.4	52.9	52.7	51.6	47.1	52.5	52.6	50.8

Table T-03080103-29: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	137550	170737	89989	24359	7171	8857	506665	174353	66616	51402	9201	440380	7561	18027	33902	1746770
AREA(%)	7.7	9.6	5.1	1.4	0.4	0.5	28.5	9.8	3.7	2.9	0.5	24.7	0.4	1.0	1.9	98.2
IMPERVIOUS																
AREA(ACRES)		9321	10143	6154	7247											32865
AREA(%)		0.5	0.6	0.3	0.4											1.8
SUPY	37.3	37.2	34.7	34.1	34.0	38.7	38.6	38.9	38.6	39.2	38.7	37.6	44.6	40.2	43.6	37.3
SURLI		0.0	5.2	4.9	4.9										5.1	0.4
UZLI																0.0
LZLI		0.0	1.6	1.1	0.9									6.4	10.1	0.4
SURO: PERVIOUS	3.9	1.6	1.4	1.3	0.8	4.3	0.3	1.9	1.2	0.8	0.6	4.2	1.9	0.6	1.0	2.0
SURO: IMPERVIOUS		26.4	24.2	23.7	23.5											0.5
SURO: COMBINED	3.9	2.9	3.7	5.8	12.2	4.3	0.3	1.9	1.2	0.8	0.6	4.2	1.9	0.6	1.0	2.4
IFWO		0.6	1.2	1.2	0.9	0.8	0.5	1.0	1.0	0.7	1.1		2.7	2.2	1.8	0.5
AGWO	1.9	5.7	7.7	6.6	5.7	9.0	4.1	10.1	6.9	7.9	5.4	1.9	5.4	11.0	17.1	4.9
AGWI	5.6	6.4	9.0	8.0	7.2	10.4	4.7	11.4	8.1	9.2	6.1	4.6	6.5	12.6	18.9	6.4
IGWI	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
CEPE		11.6	9.2	9.1	12.4	6.3	17.3	10.0	9.3	9.3	16.6	14.5	20.1	9.9	18.7	12.5
UZET	6.6	1.9	2.3	2.2	1.6	4.0	0.9	2.9	2.4	2.1	1.6	3.2	2.4	2.9	2.3	2.5
LZET	2.9	18.6	21.1	21.1	19.8	14.9	20.4	14.4	19.9	20.8	16.8	3.2	13.0	20.5	18.3	13.6
AGWET	4.1	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	3.2	0.1	0.1	0.1	1.1
BASET	0.5	1.4	1.7	1.6	1.7	1.5	1.0	1.8	1.5	1.7	1.1	0.5	1.1	1.8	1.8	1.1
SURET	19.7											9.3				3.8
PERO	5.7	8.0	10.3	9.1	7.5	14.2	5.0	13.0	9.1	9.4	7.1	6.1	10.0	13.8	19.9	7.4
IGWI	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
TAET: PERVIOUS	33.9	33.6	34.3	34.1	35.5	26.7	39.6	29.2	33.2	33.9	36.2	33.9	36.7	35.1	41.1	34.6
IMPEV: IMPERVIOUS		10.8	10.6	10.5	10.5											0.2
ET: COMBINED	33.9	32.4	31.9	29.3	23.0	26.7	39.6	29.2	33.2	33.9	36.2	33.9	36.7	35.1	41.1	34.8
PET	49.3	49.0	47.8	47.4	47.6	48.7	49.4	49.4	49.4	49.7	49.7	49.1	46.5	49.8	49.8	48.2

Table T-03080103-30: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	137550	170737	89989	24359	7171	8857	506665	174353	66616	51402	9201	440380	7561	18027	33902	1746770
AREA(%)	7.7	9.6	5.1	1.4	0.4	0.5	28.5	9.8	3.7	2.9	0.5	24.7	0.4	1.0	1.9	98.2
IMPERVIOUS																
AREA(ACRES)		9321	10143	6154	7247											32865
AREA(%)		0.5	0.6	0.3	0.4											1.8
SUPY	51.7	51.5	51.4	51.3	51.3	51.3	51.7	51.6	51.6	51.5	51.9	51.5	61.6	53.1	54.6	50.8
SURLI		0.0	4.4	4.2	4.2										2.4	0.3
UZLI																0.0
LZLI		0.0	1.9	1.3	1.0									5.6	9.7	0.4
SURO: PERVIOUS	10.9	3.0	3.0	3.1	2.0	6.1	0.6	2.9	2.0	1.3	1.0	10.7	5.0	1.2	0.9	4.6
SURO: IMPERVIOUS		38.6	38.7	38.8	38.8											0.7
SURO: COMBINED	10.9	4.9	6.6	10.3	20.5	6.1	0.6	2.9	2.0	1.3	1.0	10.7	5.0	1.2	0.9	5.3
IFWO		1.8	3.2	3.3	2.5	2.1	1.6	2.2	2.6	1.6	2.9		7.1	4.7	4.0	1.4
AGWO	2.4	11.8	16.1	15.2	15.2	14.8	8.9	16.1	12.3	13.2	10.1	2.4	12.8	16.3	20.0	8.7
AGWI	6.7	12.8	17.5	16.8	17.1	16.2	9.9	17.4	13.6	14.7	11.1	6.1	13.9	17.9	21.7	10.7
IGWI	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1
CEPE		13.6	11.1	11.0	14.4	7.9	19.4	12.1	11.5	11.5	19.0	16.9	20.5	11.8	20.4	14.5
UZET	4.4	2.5	3.2	3.1	2.4	4.5	1.4	3.3	2.9	2.5	2.0	2.3	3.0	3.4	2.6	2.4
LZET	1.6	17.7	19.5	19.4	18.0	14.1	18.8	13.5	18.9	19.7	15.8	1.9	11.8	19.4	16.9	12.3
AGWET	3.5	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.1	0.1	1.0
BASET	0.9	1.7	1.8	1.7	1.9	1.5	1.4	1.8	1.6	1.8	1.3	1.0	1.1	1.7	1.8	1.3
SURET	27.9											13.6				5.5
PERO	13.3	16.6	22.3	21.5	19.7	23.0	11.1	21.2	16.8	16.1	14.0	13.1	24.9	22.3	24.9	14.7
IGWI	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1
TAET: PERVIOUS	38.4	35.5	35.5	35.3	36.6	28.1	41.0	30.8	34.9	35.6	38.2	38.6	36.6	36.3	41.7	37.0
IMPEV: IMPERVIOUS		12.9	12.6	12.6	12.5											0.2
ET: COMBINED	38.4	34.4	33.2	30.7	24.5	28.1	41.0	30.8	34.9	35.6	38.2	38.6	36.6	36.3	41.7	37.3
PET	47.9	47.6	46.1	45.5	45.7	47.5	48.2	48.3	48.2	48.5	48.5	47.7	44.6	48.5	48.7	47.0

Table T-03080103-31: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
2	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
3	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
4	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
5	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
6	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
7	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
8	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
9	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
10	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
11	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
12	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
13	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
14	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
15	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
16	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
17	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
18	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
19	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
20	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
21	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
22	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
23	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
24	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
25	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
26	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
27	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
28	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
29	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
30	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
31	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
32	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
33	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
34	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
35	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
36	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
37	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
38	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998

39	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
40	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
41	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
42	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
43	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
44	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
45	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
46	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
47	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990
48	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
49	0.990	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.990

Table T-03080103-32: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
2	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
3	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
6	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
9	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
10	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
11	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
12	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
13	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
14	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
15	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
16	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
19	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
20	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
21	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
22	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
23	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
24	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
25	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
26	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
27	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
28	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
32	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
33	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
34	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
35	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
40	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
41	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
42	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
43	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
44	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
45	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
46	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
47	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
48	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
49	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059

Table T-03080103-33: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
2	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
3	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
4	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
5	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
6	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
7	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
8	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
9	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
10	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
11	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
12	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
13	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
14	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
15	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
16	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
17	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
18	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
19	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
20	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
21	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
22	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
23	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
24	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
25	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
26	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
27	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
28	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
29	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
30	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
31	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
32	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
33	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
34	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
35	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
36	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
37	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
38	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137

39	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
40	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
41	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
42	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
43	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
44	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
45	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
46	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
47	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
48	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137
49	0.000	0.080	0.050	0.050	0.100	0.020	0.200	0.057	0.050	0.050	0.187	0.137

Table T-03080103-34: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
2	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
3	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
4	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
5	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
6	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
7	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
8	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
9	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
10	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
11	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
12	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
13	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
14	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
15	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
16	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
17	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
18	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
19	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
20	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
21	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
22	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
23	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
24	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
25	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
26	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
27	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
28	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
29	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
30	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
31	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
32	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
33	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
34	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
35	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
36	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142
37	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142
38	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142

39	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
40	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
41	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
42	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
43	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
44	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
45	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
46	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
47	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
48	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
49	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011

Table T-03080103-35: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
2	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
3	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
4	0.001	0.035	0.035	0.035	0.035	0.050	0.075	0.050	0.050	0.050	0.060	0.001
5	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
6	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
7	0.001	0.035	0.035	0.035	0.035	0.050	0.075	0.050	0.050	0.050	0.060	0.001
8	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
9	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
10	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
11	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
12	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
13	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
14	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
15	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
16	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
17	0.001	0.035	0.035	0.035	0.035	0.050	0.075	0.050	0.050	0.050	0.060	0.001
18	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
19	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
20	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
21	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
22	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
23	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
24	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
25	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
26	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
27	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
28	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
29	0.001	0.035	0.035	0.035	0.035	0.050	0.075	0.050	0.050	0.050	0.060	0.001
30	0.001	0.035	0.035	0.035	0.035	0.050	0.075	0.050	0.050	0.050	0.060	0.001
31	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
32	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
33	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
34	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
35	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
36	0.010	0.014	0.014	0.014	0.014	0.020	0.030	0.020	0.020	0.020	0.024	0.010
37	0.010	0.014	0.014	0.014	0.014	0.020	0.030	0.020	0.020	0.020	0.024	0.010
38	0.010	0.014	0.014	0.014	0.014	0.020	0.030	0.020	0.020	0.020	0.024	0.010

39	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
40	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
41	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
42	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
43	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
44	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
45	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
46	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
47	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005
48	0.001	0.035	0.035	0.035	0.035	0.050	0.075	0.050	0.050	0.050	0.060	0.001
49	0.005	0.419	0.419	0.419	0.419	0.598	0.896	0.598	0.598	0.598	0.718	0.005

Table T-03080103-36: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
2		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
3		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
6		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
9		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
10		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
11		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
12		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
13		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
14		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
15		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
16		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
17		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
18		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
19		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
20		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
21		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
22		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
23		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
24		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
25		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
26		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
27		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
28		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
29		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

30		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
31		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
32		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
33		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
34		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
35		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
36		0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	
37		0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	
38		0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	
39		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
40		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
41		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
42		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
43		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
44		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
45		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
46		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
47		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
48		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
49		0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	

Table T-03080103-37: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
2	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
3	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
4	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
5	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
6	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
7	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
8	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
9	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
10	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
11	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
12	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
13	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
14	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
15	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
16	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
17	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
18	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
19	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
20	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
21	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
22	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
23	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
24	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
25	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
26	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
27	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
28	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
29	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
30	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
31	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
32	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
33	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
34	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
35	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
36	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
37	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
38	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697

39	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
40	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
41	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
42	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
43	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
44	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
45	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
46	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
47	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
48	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603	0.603
49	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659

Table T-03080103-38: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
2	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
3	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
6	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
9	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
10	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
11	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
12	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
13	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
14	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
15	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
16	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
19	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
20	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
21	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
22	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
23	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
24	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
25	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
26	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
27	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
28	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
29	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
30	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
31	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
32	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
33	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
34	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
35	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
40	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
41	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
42	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
43	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
44	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
45	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
46	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
47	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
48	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
49	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352

Table T-03080103-39: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
2	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
3	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
4	0.062	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
5	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
6	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
7	0.062	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
9	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
10	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
11	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
12	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
13	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
14	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
15	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
16	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
17	0.062	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
18	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
19	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
20	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
21	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
22	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
23	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
24	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
25	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
26	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
27	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
28	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
29	0.062	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
30	0.062	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
31	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
32	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
33	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
34	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
35	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
36	0.052	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	1.193
37	0.052	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	1.193
38	0.052	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	1.193

39	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
40	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
41	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
42	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
43	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
44	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
45	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
46	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
47	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944
48	0.062	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
49	0.262	0.594	0.594	0.594	0.594	0.396	0.841	0.396	0.594	0.594	0.693	0.944

Table T-03080103-40: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
4	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
6	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
7	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
8	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
10	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
11	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
12	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
13	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
14	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
15	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
16	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
17	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
18	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
19	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
20	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
21	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
22	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
23	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
24	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
25	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
26	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
27	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
28	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
29	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
30	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
31	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
32	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
33	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
34	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
35	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
36	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
37	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
38	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100

39	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
40	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
41	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
42	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
43	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
44	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
45	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
46	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
47	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
48	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.100
49	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200

Table T-03080103-41: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
33	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
34	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
35	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
36	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
37	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
38	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

39	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
40	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
41	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
42	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
43	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
44	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
45	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
46	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
47	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
48	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
49	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03080201

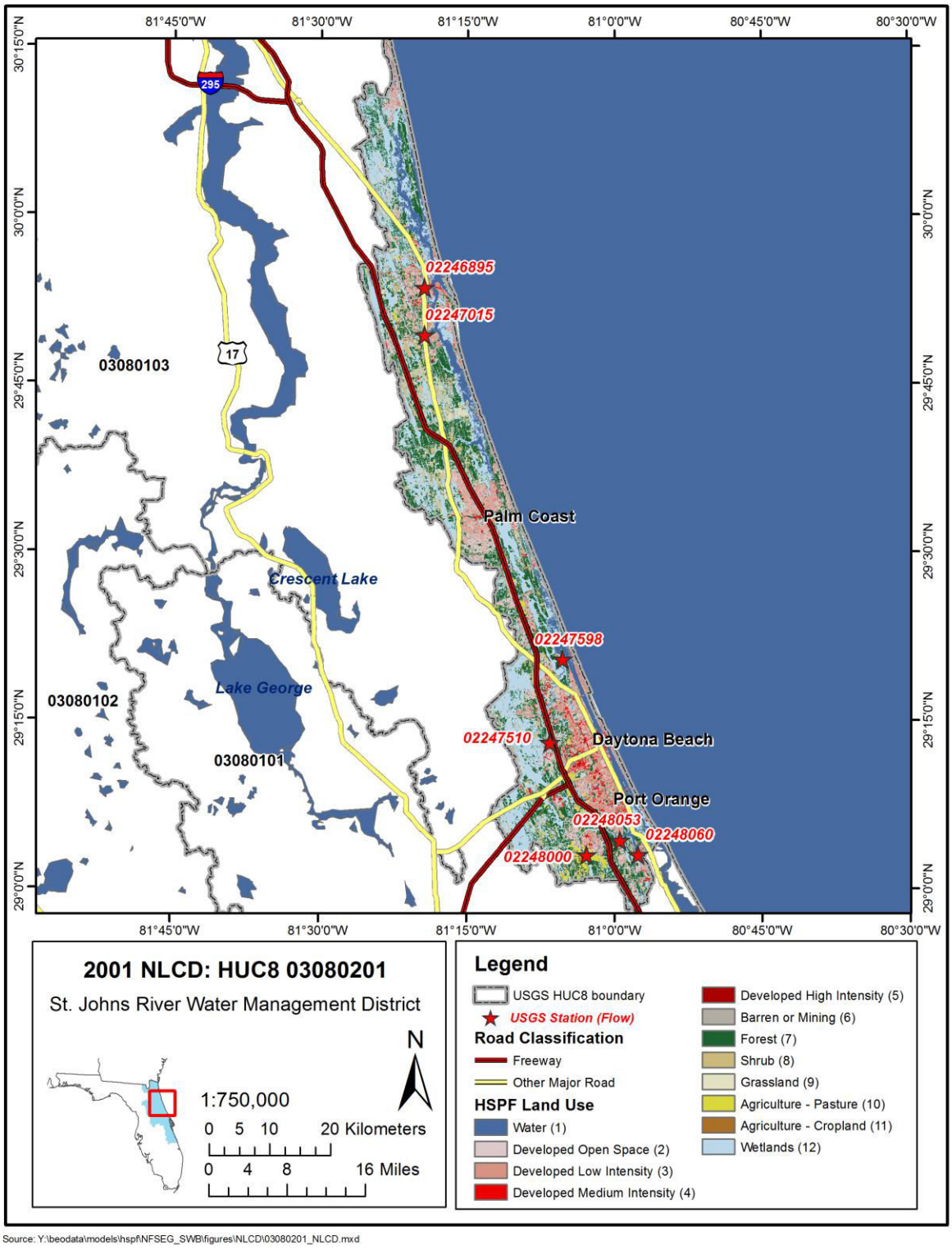


Figure T-03080201-1: Land Cover from the National Land Cover Database.

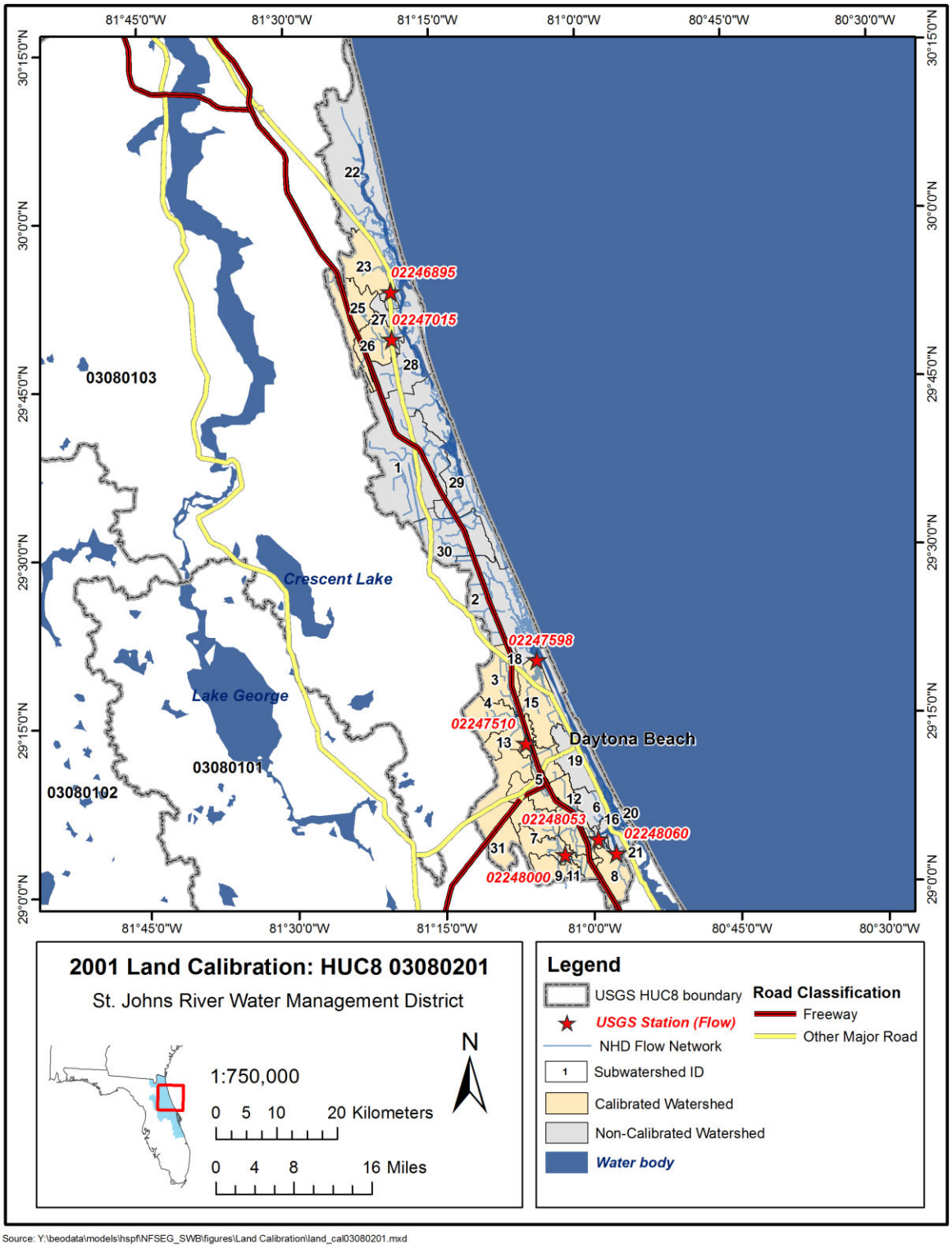


Figure T-03080201-2: Calibrated sub-watersheds.

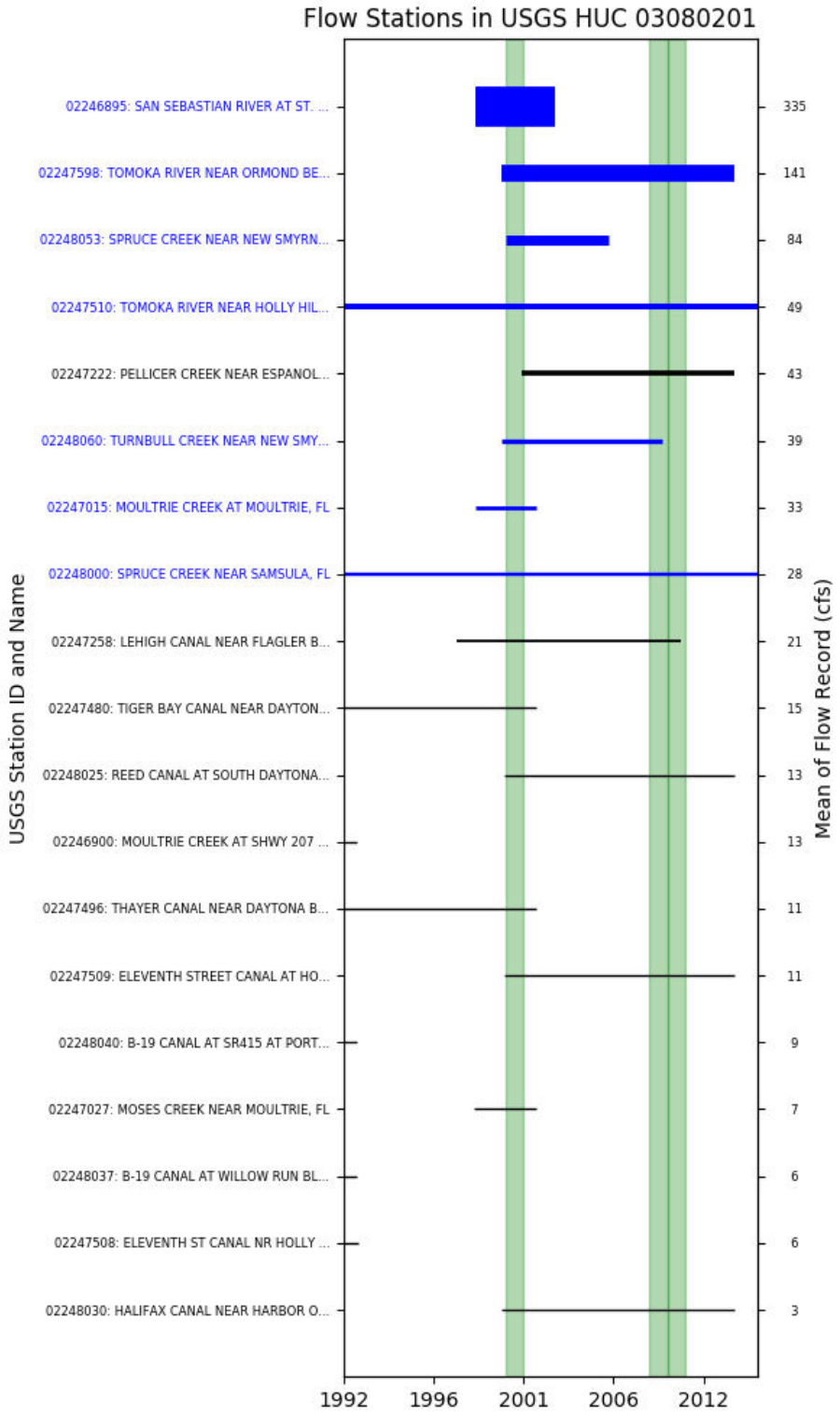


Figure T-03080201-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 05, USGS GAUGE 02247510

Water-Data Report 2009
02247510 TOMOKA RIVER NEAR HOLLY HILL, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 291302, long 810632 referenced to North American Datum of 1927, in NW 1/4 sec.9, T.15 S., R.32 E., Volusia County, FL, Hydrologic Unit 03080201, near center of span on downstream side of bridge on LPGA Blvd., 0.3 mi southwest of Interstate Highway 95, 2 mi upstream from Priest Branch, 4.5 mi southwest of Holly Hill, and 12 mi upstream from mouth.

DRAINAGE AREA.--76.8 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (Florida Department of Transportation bench mark).

REMARKS.--Records fair.

Table T-03080201-1: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02247510.

Statistic	Value
Bias	5.13
Standard error	50.29
Relative bias	0.10
Relative standard error	0.59
Nash-Sutcliffe coefficient	0.66
Kling-Gupta coefficient	0.68
Coefficient of efficiency	0.46
Index of agreement	0.71

Table T-03080201-2: Hydrologic Indices Between USGS Gauge 02247510 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02247510	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	49.89	55.00	10.24
MA2: Median, all daily flows	13.00	17.80	36.89
MA3: CV, all daily flows	183.73	186.14	1.31
MA4: CV, log of all daily flows	155.48	134.95	-13.21
MA5: Mean daily flow / median daily flow	3.84	3.09	-19.47
MA9: (Q10 - Q90) / median daily flow	9.82	7.56	-23.00
MA10: (Q20 - Q80) / median daily flow	4.18	3.76	-10.13

MA11: (Q25 - Q75) / median daily flow	3.03	2.75	-9.29
MA12: Mean monthly flow, January	34.28	44.56	30.01
MA13: Mean monthly flow, February	27.16	40.72	49.96
MA14: Mean monthly flow, March	48.76	49.31	1.12
MA15: Mean monthly flow, April	20.11	18.93	-5.86
MA16: Mean monthly flow, May	18.04	23.60	30.81
MA17: Mean monthly flow, June	42.37	61.92	46.12
MA18: Mean monthly flow, July	41.24	63.64	54.32
MA19: Mean monthly flow, August	68.70	75.30	9.60
MA20: Mean monthly flow, September	112.84	87.53	-22.43
MA21: Mean monthly flow, October	88.94	82.76	-6.95
MA22: Mean monthly flow, November	40.03	40.99	2.39
MA23: Mean monthly flow, December	30.72	43.14	40.45
ML1: Mean minimum monthly flow, January	13.19	8.91	-32.47
ML2: Mean minimum monthly flow, February	11.65	7.61	-34.72
ML3: Mean minimum monthly flow, March	14.28	9.98	-30.12
ML4: Mean minimum monthly flow, April	4.72	3.91	-17.20
ML5: Mean minimum monthly flow, May	2.58	2.77	7.35
ML6: Mean minimum monthly flow, June	9.08	6.71	-26.15
ML7: Mean minimum monthly flow, July	11.86	8.15	-31.31
ML8: Mean minimum monthly flow, August	15.47	7.26	-53.06
ML9: Mean minimum monthly flow, September	31.86	8.34	-73.82
ML10: Mean minimum monthly flow, October	23.34	8.01	-65.68
ML11: Mean minimum monthly flow, November	12.67	6.29	-50.34
ML12: Mean minimum monthly flow, December	10.87	7.33	-32.58
ML13: CV of minimum monthly flows	175.74	141.38	-19.55
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.08	-30.80
ML15: Mean minimum annual flow / mean annual flow	0.05	0.04	-21.17
ML16: Median minimum annual flow / median annual flow	0.08	0.06	-19.71
ML20: Ratio of baseflow volume to total flow volume	0.42	0.24	-42.65
ML22: Mean annual minimum flow divided by catchment area	0.02	0.02	0.59
RA1: Mean of positive changes from one day to next (rise rate)	25.05	38.52	
RA2: CV, mean of positive changes from one day to next (rise rate)	434.62	293.91	
RA3: Mean of negative changes from one day to next (fall rate)	9.57	15.82	
RA4: CV, mean of negative changes from one day to next (fall rate)	413.84	308.50	
RA5: Ratio of days that are higher than previous day	0.26	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.24	0.34	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.21	
RA8: Number of flow reversals from one day to the next	87.00	88.38	
RA9: CV, number of flow reversals from one day to the next	19.01	18.19	

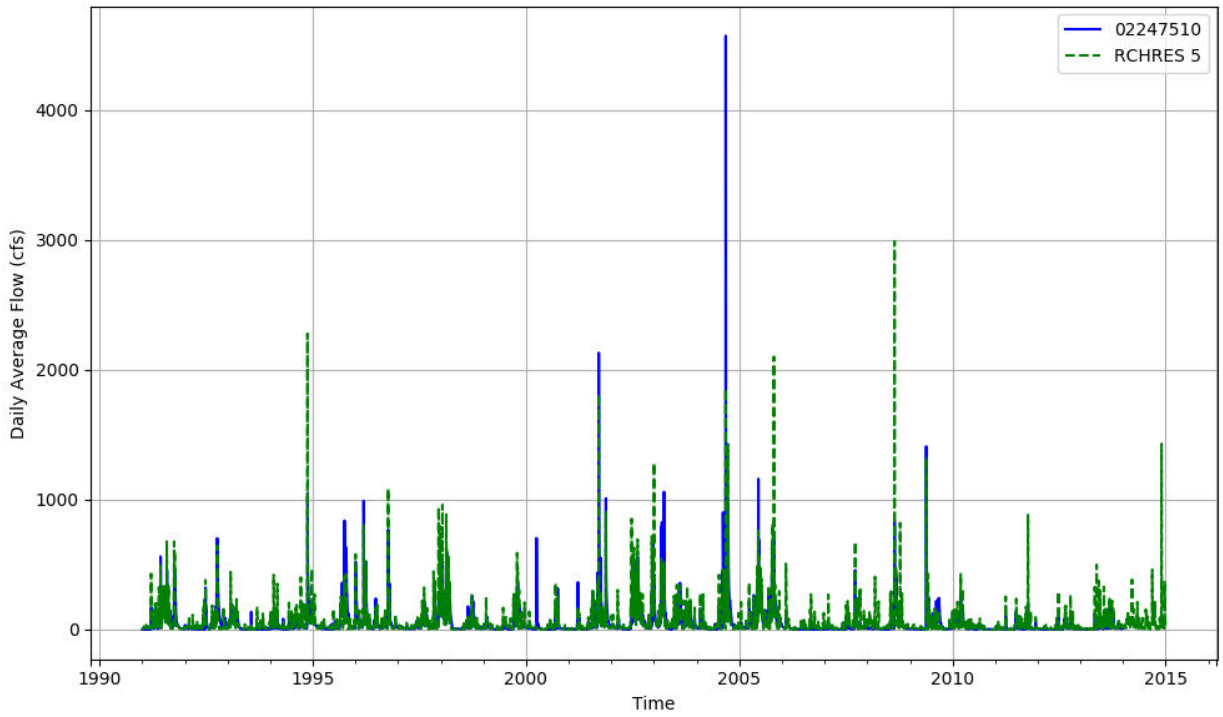


Figure T-03080201-4: Daily flow for HSFP reach 05 and USGS station 02247510.

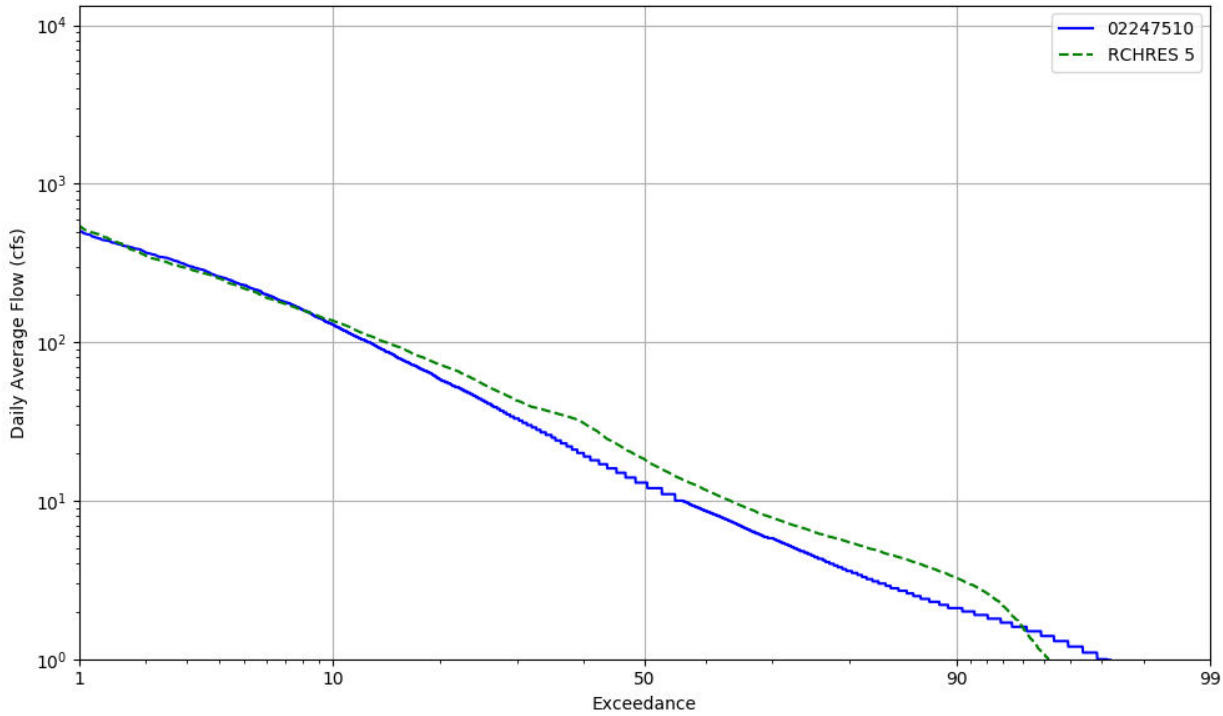


Figure T-03080201-5: Daily exceedance for HSFP reach 05 and USGS station 02247510.

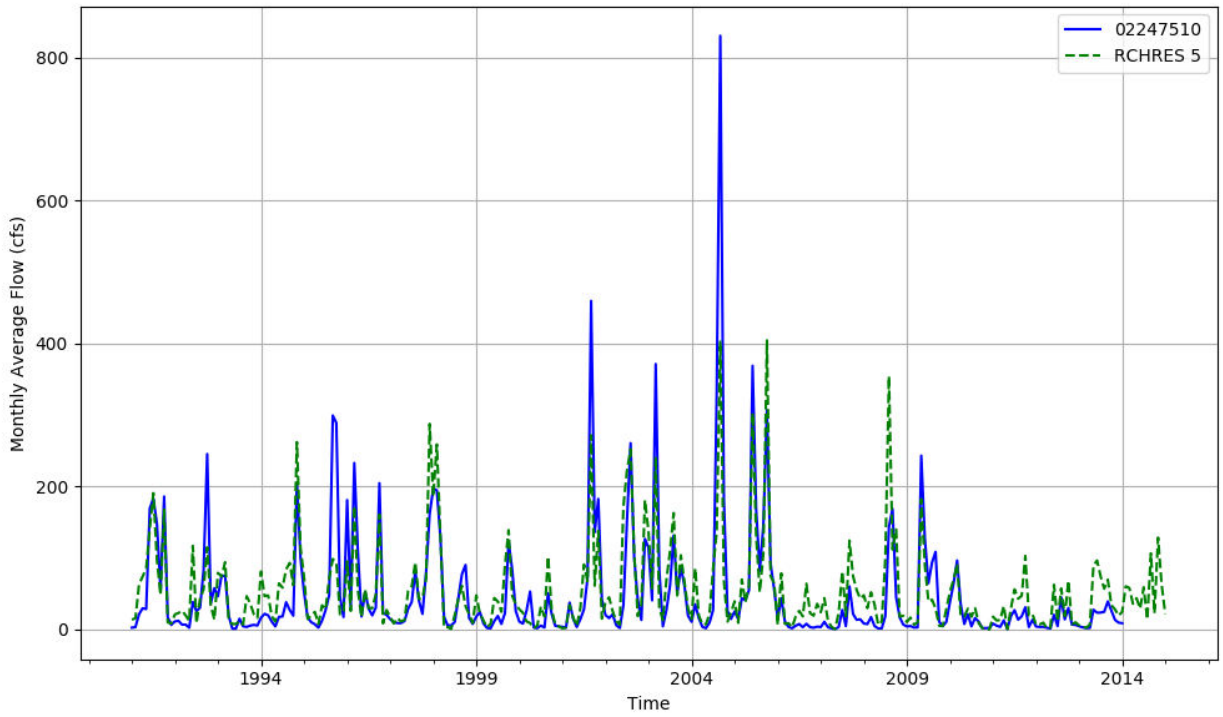


Figure T-03080201-6: Monthly flow for HSFP reach 05 and USGS station 02247510.

HSPF REACH 08, USGS GAUGE 02248060

Water-Data Report 2009
02248060 TURNBULL CREEK NEAR NEW SMYRNA BEACH, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 290303, long 805735 referenced to North American Datum of 1927, in SW 1/4 sec.40, T.17 S., R.33 E., Volusia County, FL, Hydrologic Unit 03080201, near left bank, 75 ft upstream from Turnbull Bay Road, 1.9 mi northwest of the intersection of Turnbull Bay Road and U.S. Highway 1, 2.0 mi upstream from mouth, and 2.8 mi northwest of the City Hall in New Smyrna Beach.

DRAINAGE AREA.--11.3 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2000 to September 2009, (discontinued).

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Oct. 1, 2004, datum of gage was 10.30 ft above NGVD of 1929.

REMARKS.--Records poor. Discharge not published some days, due to bad velocity record. Flow affected by tides in the Intracoastal Waterway.

Table T-03080201-3: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02248060.

Statistic	Value
Bias	-19.49
Standard error	44.67
Relative bias	-0.51
Relative standard error	0.87
Nash-Sutcliffe coefficient	0.24
Kling-Gupta coefficient	0.16
Coefficient of efficiency	0.21
Index of agreement	0.56

Table T-03080201-4: Hydrologic Indices Between USGS Gauge 02248060 and HSPF Reach 08.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02248060	Simulated Reach 08	Percent Difference
MA1: Mean, all daily flows	53.03	19.25	-63.70
MA2: Median, all daily flows	29.00	5.04	-82.62
MA3: CV, all daily flows	150.99	232.76	54.15

MA4: CV, log of all daily flows	98.57	143.27	45.35
MA5: Mean daily flow / median daily flow	1.83	3.82	108.90
MA9: (Q10 - Q90) / median daily flow	3.75	9.66	157.56
MA10: (Q20 - Q80) / median daily flow	2.14	5.13	140.18
MA11: (Q25 - Q75) / median daily flow	1.61	3.52	118.18
MA12: Mean monthly flow, January	24.75	10.27	-58.50
MA13: Mean monthly flow, February	25.16	11.59	-53.92
MA14: Mean monthly flow, March	37.40	14.95	-60.02
MA15: Mean monthly flow, April	25.08	5.65	-77.46
MA16: Mean monthly flow, May	38.38	10.59	-72.41
MA17: Mean monthly flow, June	31.27	25.04	-19.94
MA18: Mean monthly flow, July	29.38	23.14	-21.24
MA19: Mean monthly flow, August	47.51	29.07	-38.81
MA20: Mean monthly flow, September	114.25	37.46	-67.21
MA21: Mean monthly flow, October	97.96	30.66	-68.71
MA22: Mean monthly flow, November	63.04	13.46	-78.66
MA23: Mean monthly flow, December	30.93	13.93	-54.96
ML1: Mean minimum monthly flow, January	2.31	1.18	-49.01
ML2: Mean minimum monthly flow, February	3.87	1.06	-72.69
ML3: Mean minimum monthly flow, March	1.10	3.54	221.50
ML4: Mean minimum monthly flow, April	3.33	0.50	-84.86
ML5: Mean minimum monthly flow, May	2.13	0.32	-84.79
ML6: Mean minimum monthly flow, June	4.85	2.56	-47.29
ML7: Mean minimum monthly flow, July	2.76	1.35	-51.04
ML8: Mean minimum monthly flow, August	4.17	1.63	-60.92
ML9: Mean minimum monthly flow, September	5.37	2.80	-47.85
ML10: Mean minimum monthly flow, October	22.67	2.08	-90.82
ML11: Mean minimum monthly flow, November	6.53	1.05	-83.89
ML12: Mean minimum monthly flow, December	2.83	1.01	-64.30
ML13: CV of minimum monthly flows	178.62	184.34	3.21
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.03	272.23
ML15: Mean minimum annual flow / mean annual flow	0.01	0.01	102.56
ML16: Median minimum annual flow / median annual flow	0.00	0.02	275.69
ML20: Ratio of baseflow volume to total flow volume	0.19	0.15	-23.07
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	-0.46
RA1: Mean of positive changes from one day to next (rise rate)	28.80	17.21	
RA2: CV, mean of positive changes from one day to next (rise rate)	235.24	314.95	
RA3: Mean of negative changes from one day to next (fall rate)	21.61	6.56	
RA4: CV, mean of negative changes from one day to next (fall rate)	180.74	347.34	
RA5: Ratio of days that are higher than previous day	0.42	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.54	0.49	
RA7: Median of difference in log of flows over two consecutive days of falling	0.43	0.28	
RA8: Number of flow reversals from one day to the next	134.11	95.56	
RA9: CV, number of flow reversals from one day to the next	16.71	14.57	

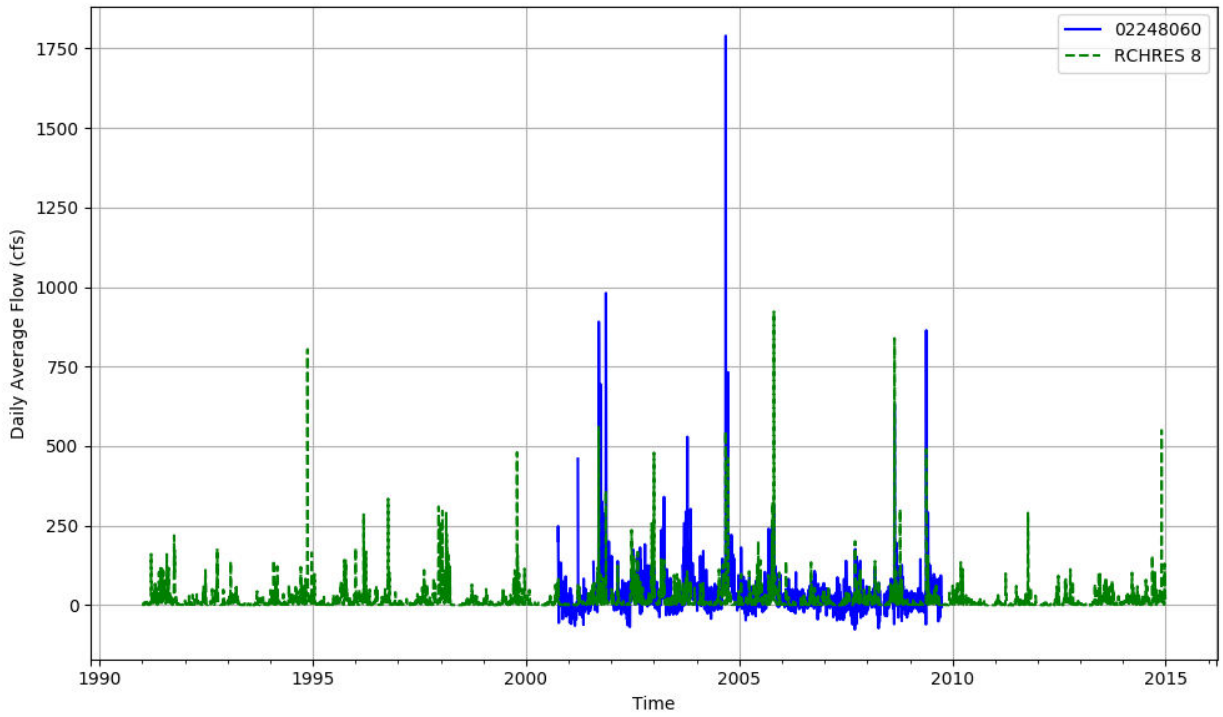


Figure T-03080201-7: Daily flow for HSFP reach 08 and USGS station 02248060.

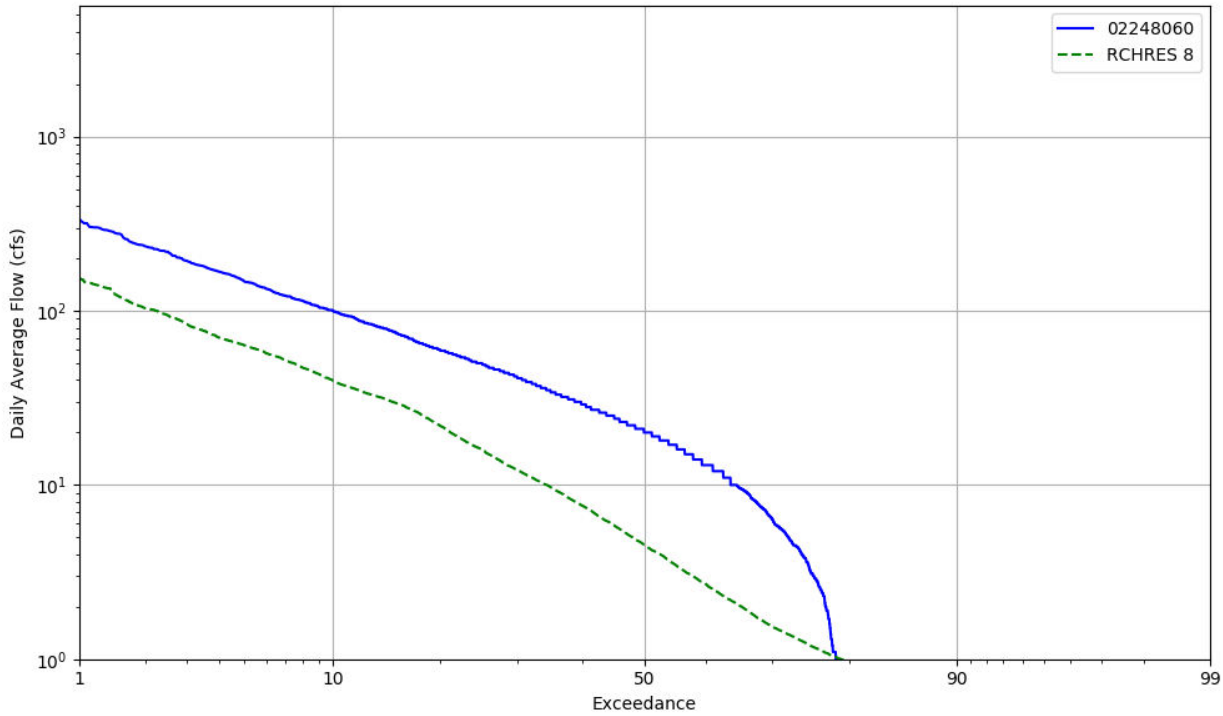


Figure T-03080201-8: Daily exceedance for HSFP reach 08 and USGS station 02248060.

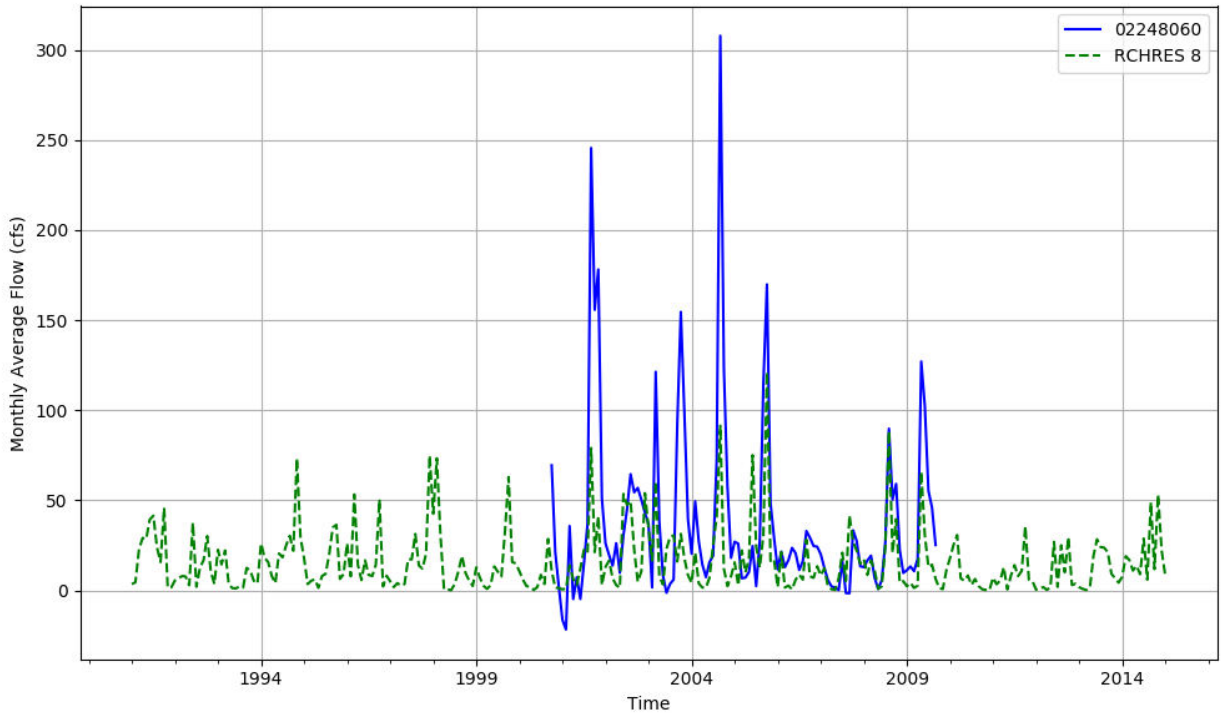


Figure T-03080201-9: Monthly flow for HSFP reach 08 and USGS station 02248060.

HSPF REACH 09, USGS GAUGE 02248000

Water-Data Report 2009
02248000 SPRUCE CREEK NEAR SAMSULA, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 290302, long 810248 referenced to North American Datum of 1927, in SE 1/4 sec.1, T.17 S., R.32 E., Volusia County, FL, Hydrologic Unit 03080201, on downstream side of bridge on County Road 4118, 1.8 mi north of Samsula, 8 mi west of New Smyrna Beach, 10 mi upstream from Turnbull Bay, and 13 mi upstream from mouth.

DRAINAGE AREA.--33.4 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1624: 1958. WDR FL-75-1: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 6.25 ft above NGVD of 1929 (Florida Department of Transportation bench mark). Prior to Nov. 13, 1971, at sites within 100 ft at same datum.

REMARKS.--Records fair. Some diversions for irrigation above station.

Table T-03080201-5: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02248000.

Statistic	Value
Bias	-18.22
Standard error	41.85
Relative bias	-0.62
Relative standard error	0.89
Nash-Sutcliffe coefficient	0.21
Kling-Gupta coefficient	0.02
Coefficient of efficiency	0.37
Index of agreement	0.62

Table T-03080201-6: Hydrologic Indices Between USGS Gauge 02248000 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02248000	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	29.63	11.28	-61.94
MA2: Median, all daily flows	5.70	3.22	-43.46
MA3: CV, all daily flows	209.40	203.35	-2.89

MA4: CV, log of all daily flows	172.03	137.43	-20.11
MA5: Mean daily flow / median daily flow	5.20	3.50	-32.69
MA9: (Q10 - Q90) / median daily flow	12.64	8.60	-31.92
MA10: (Q20 - Q80) / median daily flow	5.16	4.72	-8.49
MA11: (Q25 - Q75) / median daily flow	3.68	3.36	-8.84
MA12: Mean monthly flow, January	16.00	8.86	-44.59
MA13: Mean monthly flow, February	14.15	8.35	-40.96
MA14: Mean monthly flow, March	28.57	10.22	-64.23
MA15: Mean monthly flow, April	9.44	4.30	-54.43
MA16: Mean monthly flow, May	8.36	5.45	-34.79
MA17: Mean monthly flow, June	26.08	13.29	-49.05
MA18: Mean monthly flow, July	24.42	11.93	-51.14
MA19: Mean monthly flow, August	50.71	14.95	-70.52
MA20: Mean monthly flow, September	65.82	17.88	-72.84
MA21: Mean monthly flow, October	62.19	17.82	-71.35
MA22: Mean monthly flow, November	22.16	8.12	-63.33
MA23: Mean monthly flow, December	12.16	8.53	-29.82
ML1: Mean minimum monthly flow, January	4.17	1.00	-75.95
ML2: Mean minimum monthly flow, February	4.13	0.61	-85.18
ML3: Mean minimum monthly flow, March	6.34	1.28	-79.84
ML4: Mean minimum monthly flow, April	2.08	0.47	-77.20
ML5: Mean minimum monthly flow, May	1.08	0.32	-70.51
ML6: Mean minimum monthly flow, June	3.82	1.15	-69.90
ML7: Mean minimum monthly flow, July	4.69	0.70	-84.97
ML8: Mean minimum monthly flow, August	5.58	0.88	-84.18
ML9: Mean minimum monthly flow, September	7.90	1.17	-85.16
ML10: Mean minimum monthly flow, October	10.96	0.81	-92.59
ML11: Mean minimum monthly flow, November	5.51	0.60	-89.18
ML12: Mean minimum monthly flow, December	3.46	0.71	-79.64
ML13: CV of minimum monthly flows	150.91	175.93	16.58
ML14: Mean minimum daily flow / mean median annual flow	0.13	0.06	-55.54
ML15: Mean minimum annual flow / mean annual flow	0.03	0.02	-42.99
ML16: Median minimum annual flow / median annual flow	0.08	0.05	-36.13
ML20: Ratio of baseflow volume to total flow volume	0.28	0.16	-45.57
ML22: Mean annual minimum flow divided by catchment area	0.01	0.00	-75.53
RA1: Mean of positive changes from one day to next (rise rate)	19.47	7.98	
RA2: CV, mean of positive changes from one day to next (rise rate)	277.58	314.03	
RA3: Mean of negative changes from one day to next (fall rate)	6.73	3.81	
RA4: CV, mean of negative changes from one day to next (fall rate)	240.55	321.53	
RA5: Ratio of days that are higher than previous day	0.23	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.24	0.53	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.29	
RA8: Number of flow reversals from one day to the next	80.29	108.08	
RA9: CV, number of flow reversals from one day to the next	18.94	19.94	

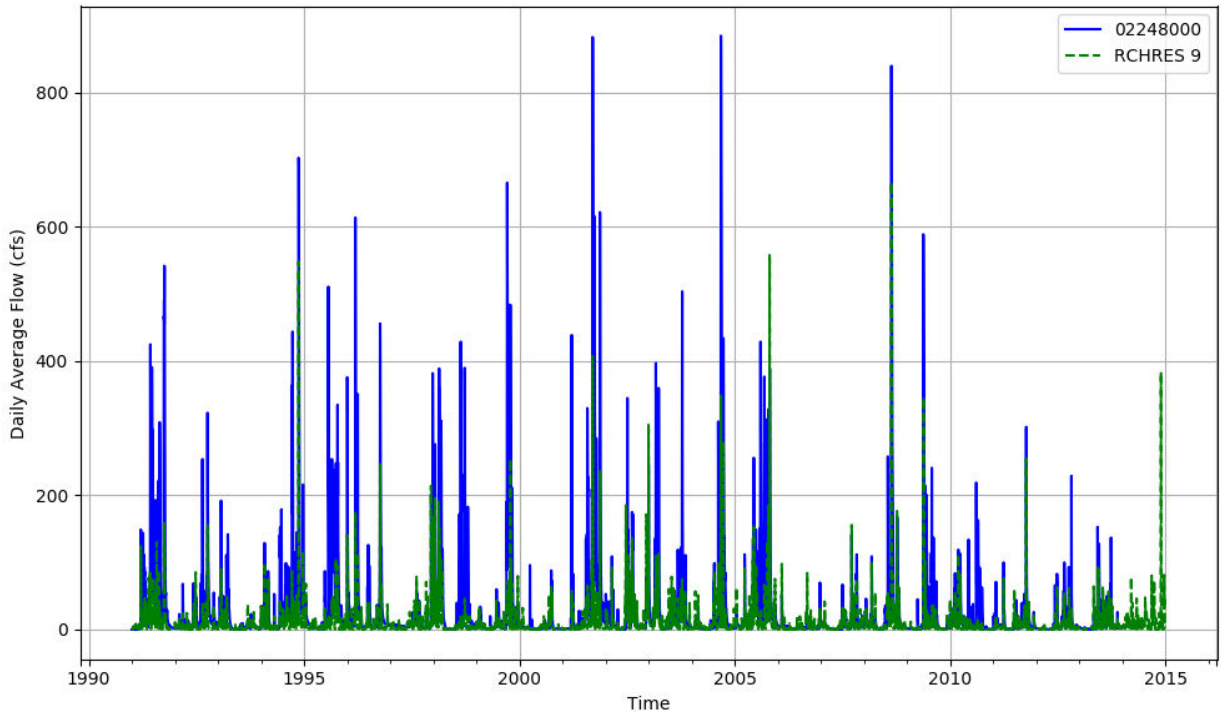


Figure T-03080201-10: Daily flow for HSFP reach 09 and USGS station 02248000.

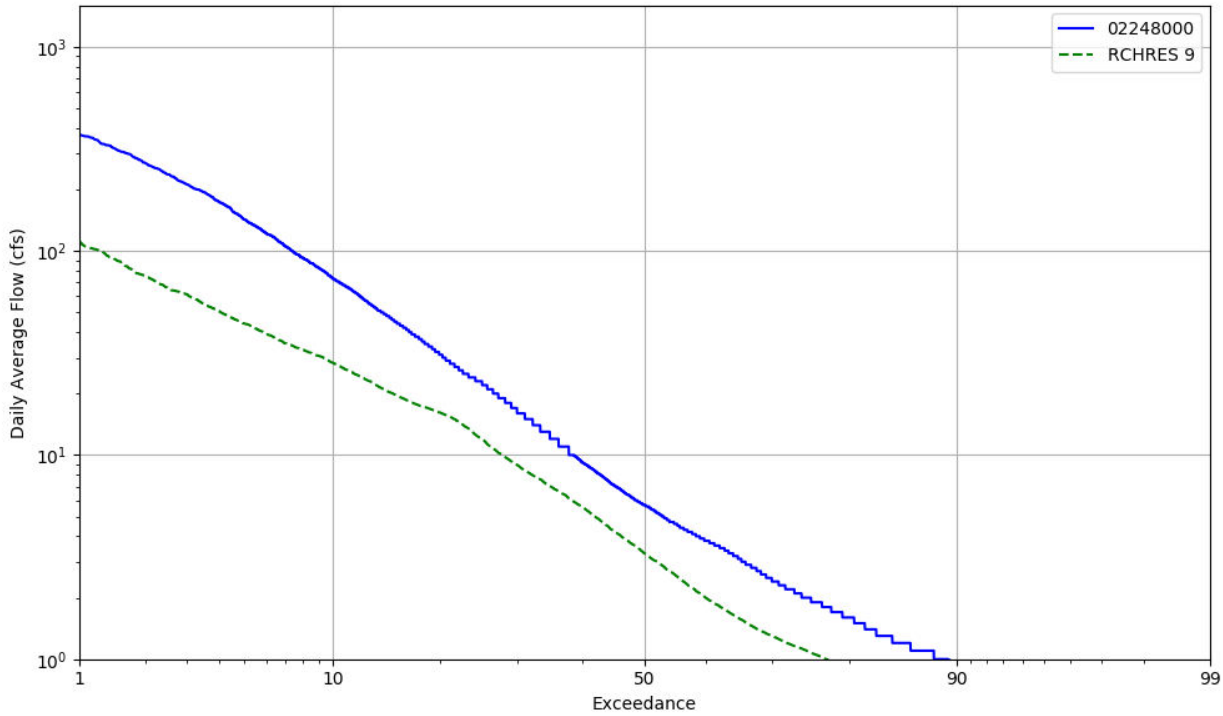


Figure T-03080201-11: Daily exceedance for HSFP reach 09 and USGS station 02248000.

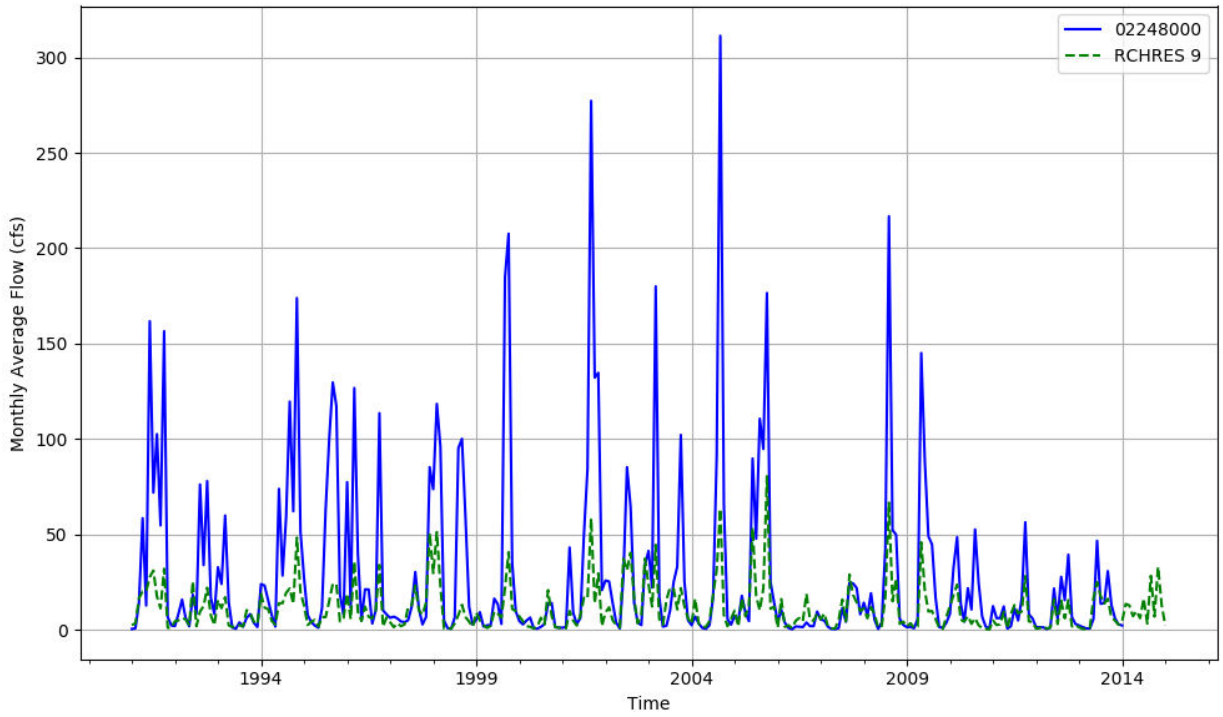


Figure T-03080201-12: Monthly flow for HSFP reach 09 and USGS station 02248000.

HSPF REACH 12, USGS GAUGE 02248053

Water-Data Report 2006
02248053 SPRUCE CREEK NEAR NEW SMYRNA BEACH, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 290421, long 805925 referenced to North American Datum of 1927, in NW 1/4 sec.34, T.16 S., R.33 E., Volusia County, FL, Hydrologic Unit 03080201, near left bank, 0.5 mi upstream from railroad crossing at Strickland Bay, 2.5 mi upstream from mouth, and 4.6 mi northwest of the City Hall in New Smyrna Beach.

DRAINAGE AREA.--60.7 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 2000 to September 2006, (discontinued).

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is undetermined.

REMARKS.--Records poor. Flow affected by tides in the Intracoastal Waterway.

Table T-03080201-7: Comparison Statistics Between HSPF Reach 12 and USGS Gauge 02248053.

Statistic	Value
Bias	0.30
Standard error	84.88
Relative bias	0.00
Relative standard error	0.62
Nash-Sutcliffe coefficient	0.61
Kling-Gupta coefficient	0.62
Coefficient of efficiency	0.33
Index of agreement	0.61

Table T-03080201-8: Hydrologic Indices Between USGS Gauge 02248053 and HSPF Reach 12.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02248053	Simulated Reach 12	Percent Difference
MA1: Mean, all daily flows	155.96	86.03	-44.84
MA2: Median, all daily flows	82.00	27.23	-66.79
MA3: CV, all daily flows	150.50	207.10	37.60
MA4: CV, log of all daily flows	108.00	136.39	26.29
MA5: Mean daily flow / median daily flow	1.90	3.16	66.10
MA9: (Q10 - Q90) / median daily flow	3.98	8.14	104.57
MA10: (Q20 - Q80) / median daily flow	2.18	4.35	99.63

MA11: (Q25 - Q75) / median daily flow	1.72	3.14	82.79
MA12: Mean monthly flow, January	85.53	45.47	-46.83
MA13: Mean monthly flow, February	81.64	54.87	-32.79
MA14: Mean monthly flow, March	146.31	77.02	-47.36
MA15: Mean monthly flow, April	74.00	22.23	-69.96
MA16: Mean monthly flow, May	75.80	19.05	-74.87
MA17: Mean monthly flow, June	142.75	120.66	-15.47
MA18: Mean monthly flow, July	145.26	111.01	-23.58
MA19: Mean monthly flow, August	148.70	118.44	-20.35
MA20: Mean monthly flow, September	281.31	181.79	-35.38
MA21: Mean monthly flow, October	173.71	120.92	-30.39
MA22: Mean monthly flow, November	127.36	58.55	-54.03
MA23: Mean monthly flow, December	88.43	61.25	-30.74
ML1: Mean minimum monthly flow, January	8.20	3.83	-53.32
ML2: Mean minimum monthly flow, February	6.43	3.72	-42.13
ML3: Mean minimum monthly flow, March	8.60	20.16	134.35
ML4: Mean minimum monthly flow, April	6.17	2.16	-64.95
ML5: Mean minimum monthly flow, May	15.47	2.22	-85.66
ML6: Mean minimum monthly flow, June	13.02	12.04	-7.52
ML7: Mean minimum monthly flow, July	12.83	5.36	-58.26
ML8: Mean minimum monthly flow, August	10.10	6.29	-37.74
ML9: Mean minimum monthly flow, September	22.89	14.62	-36.12
ML10: Mean minimum monthly flow, October	7.17	11.54	60.87
ML11: Mean minimum monthly flow, November	11.52	5.07	-55.98
ML12: Mean minimum monthly flow, December	19.38	3.98	-79.44
ML13: CV of minimum monthly flows	126.57	193.63	52.98
ML14: Mean minimum daily flow / mean median annual flow	0.00	0.06	2270.74
ML15: Mean minimum annual flow / mean annual flow	0.00	0.02	1256.02
ML16: Median minimum annual flow / median annual flow	0.00	0.06	2482.96
ML20: Ratio of baseflow volume to total flow volume	0.13	0.20	54.21
ML22: Mean annual minimum flow divided by catchment area	0.00	0.02	642.21
RA1: Mean of positive changes from one day to next (rise rate)	82.74	68.01	
RA2: CV, mean of positive changes from one day to next (rise rate)	203.25	309.38	
RA3: Mean of negative changes from one day to next (fall rate)	68.19	28.74	
RA4: CV, mean of negative changes from one day to next (fall rate)	128.40	313.92	
RA5: Ratio of days that are higher than previous day	0.45	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.58	0.39	
RA7: Median of difference in log of flows over two consecutive days of falling	0.44	0.26	
RA8: Number of flow reversals from one day to the next	118.00	96.17	
RA9: CV, number of flow reversals from one day to the next	18.58	9.40	

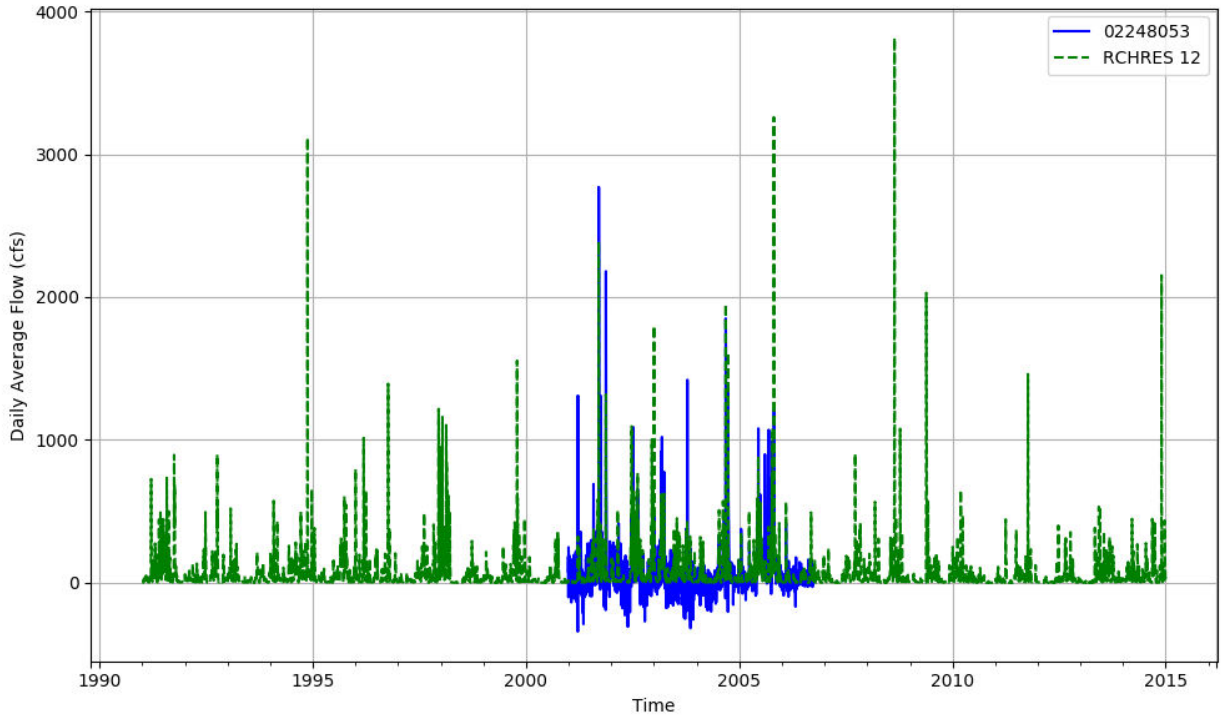


Figure T-03080201-13: Daily flow for HSFP reach 12 and USGS station 02248053.

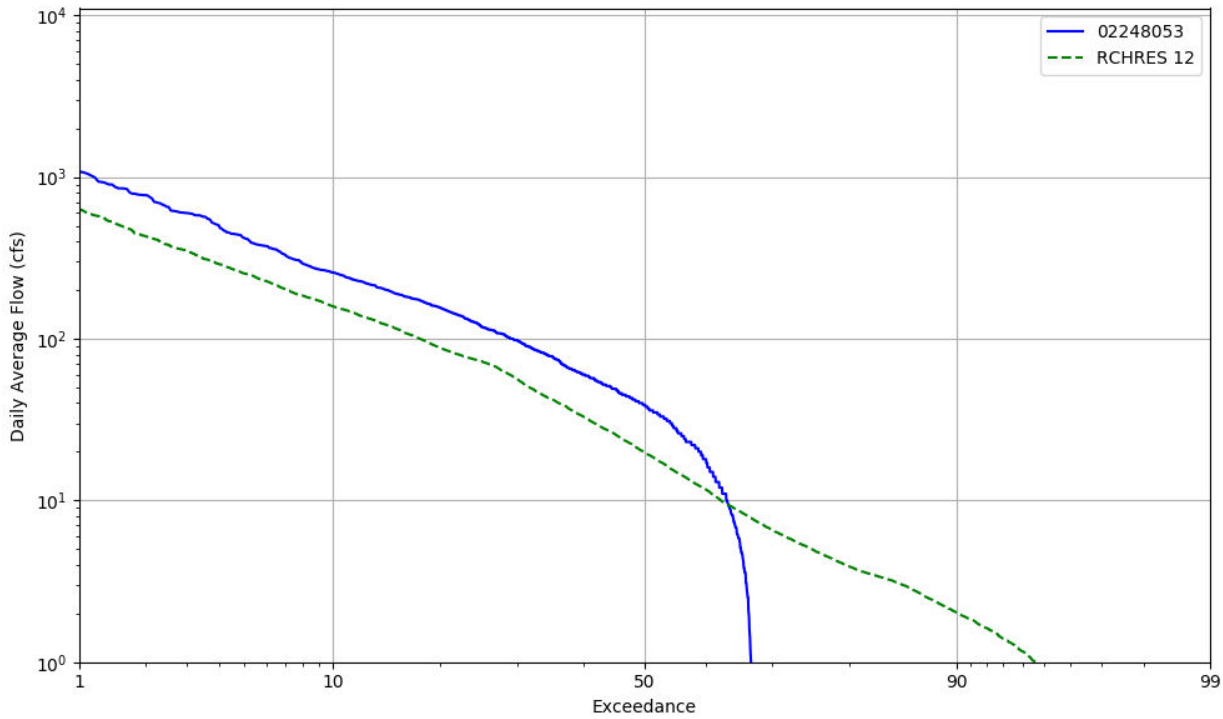


Figure T-03080201-14: Daily exceedance for HSFP reach 12 and USGS station 02248053.

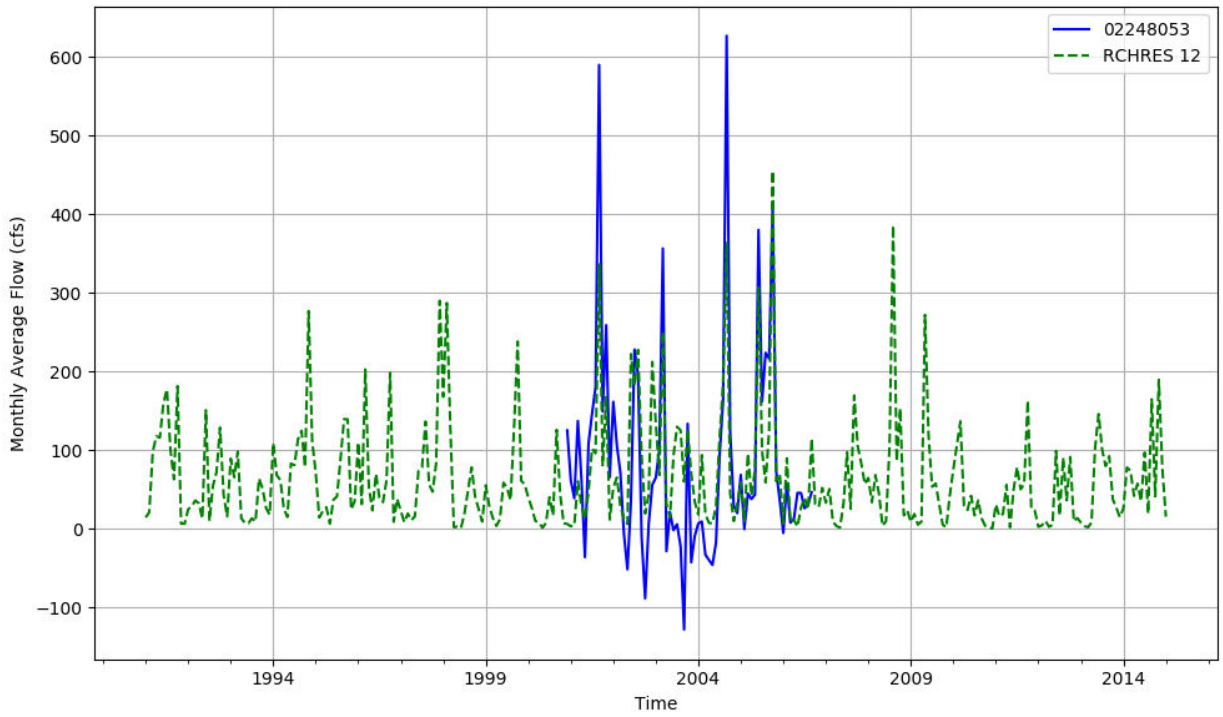


Figure T-03080201-15: Monthly flow for HSFP reach 12 and USGS station 02248053.

HSPF REACH 15, USGS GAUGE 02247598

Water-Data Report 2009
02247598 TOMOKA RIVER NEAR ORMOND BEACH, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 292026, long 810511 referenced to North American Datum of 1927, in NW 1/4 sec.42, T.13 S., R.32 E., Volusia County, FL, Hydrologic Unit 03080201, attached to pier on right bank in the south picnic area of Tomoka State Park, 1.0 mi upstream from mouth, and 4.8 mi north of the City Hall in Ormond Beach.

DRAINAGE AREA.--101 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Oct. 1, 2003 datum of gage was 1.26 ft below NGVD of 1929.

REMARKS.--Records poor. Flow affected by tides in the Intracoastal Waterway.

Table T-03080201-9: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02247598.

Statistic	Value
Bias	-3.53
Standard error	138.98
Relative bias	-0.03
Relative standard error	0.85
Nash-Sutcliffe coefficient	0.27
Kling-Gupta coefficient	0.59
Coefficient of efficiency	0.18
Index of agreement	0.57

Table T-03080201-10: Hydrologic Indices Between USGS Gauge 02247598 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02247598	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	214.56	123.41	-42.48
MA2: Median, all daily flows	134.00	41.81	-68.80
MA3: CV, all daily flows	120.15	194.66	62.02
MA4: CV, log of all daily flows	90.50	136.84	51.20
MA5: Mean daily flow / median daily flow	1.60	2.95	84.33
MA9: (Q10 - Q90) / median daily flow	3.18	7.01	120.40

MA10: (Q20 - Q80) / median daily flow	1.82	3.48	90.96
MA11: (Q25 - Q75) / median daily flow	1.43	2.57	79.87
MA12: Mean monthly flow, January	106.81	69.73	-34.71
MA13: Mean monthly flow, February	118.26	80.08	-32.28
MA14: Mean monthly flow, March	169.13	113.44	-32.93
MA15: Mean monthly flow, April	121.39	41.95	-65.44
MA16: Mean monthly flow, May	224.87	59.33	-73.62
MA17: Mean monthly flow, June	210.39	149.56	-28.91
MA18: Mean monthly flow, July	150.15	169.25	12.73
MA19: Mean monthly flow, August	226.18	188.36	-16.72
MA20: Mean monthly flow, September	260.34	177.70	-31.74
MA21: Mean monthly flow, October	249.39	156.14	-37.39
MA22: Mean monthly flow, November	193.20	85.25	-55.87
MA23: Mean monthly flow, December	141.03	87.48	-37.97
ML1: Mean minimum monthly flow, January	11.58	13.51	16.66
ML2: Mean minimum monthly flow, February	17.45	13.00	-25.51
ML3: Mean minimum monthly flow, March	15.92	27.80	74.62
ML4: Mean minimum monthly flow, April	13.58	6.76	-50.19
ML5: Mean minimum monthly flow, May	15.27	5.36	-64.88
ML6: Mean minimum monthly flow, June	16.81	17.15	2.01
ML7: Mean minimum monthly flow, July	12.26	35.05	185.82
ML8: Mean minimum monthly flow, August	32.58	28.23	-13.35
ML9: Mean minimum monthly flow, September	24.77	24.47	-1.21
ML10: Mean minimum monthly flow, October	18.57	22.32	20.16
ML11: Mean minimum monthly flow, November	16.81	14.65	-12.86
ML12: Mean minimum monthly flow, December	21.04	15.32	-27.21
ML13: CV of minimum monthly flows	116.37	149.58	28.54
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.07	382.06
ML15: Mean minimum annual flow / mean annual flow	0.01	0.03	206.24
ML16: Median minimum annual flow / median annual flow	0.01	0.07	508.17
ML20: Ratio of baseflow volume to total flow volume	0.20	0.25	29.65
ML22: Mean annual minimum flow divided by catchment area	0.02	0.05	142.88
RA1: Mean of positive changes from one day to next (rise rate)	113.41	82.55	
RA2: CV, mean of positive changes from one day to next (rise rate)	179.02	305.65	
RA3: Mean of negative changes from one day to next (fall rate)	99.98	34.04	
RA4: CV, mean of negative changes from one day to next (fall rate)	122.65	319.52	
RA5: Ratio of days that are higher than previous day	0.47	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.57	0.30	
RA7: Median of difference in log of flows over two consecutive days of falling	0.47	0.20	
RA8: Number of flow reversals from one day to the next	124.75	75.67	
RA9: CV, number of flow reversals from one day to the next	29.37	26.20	

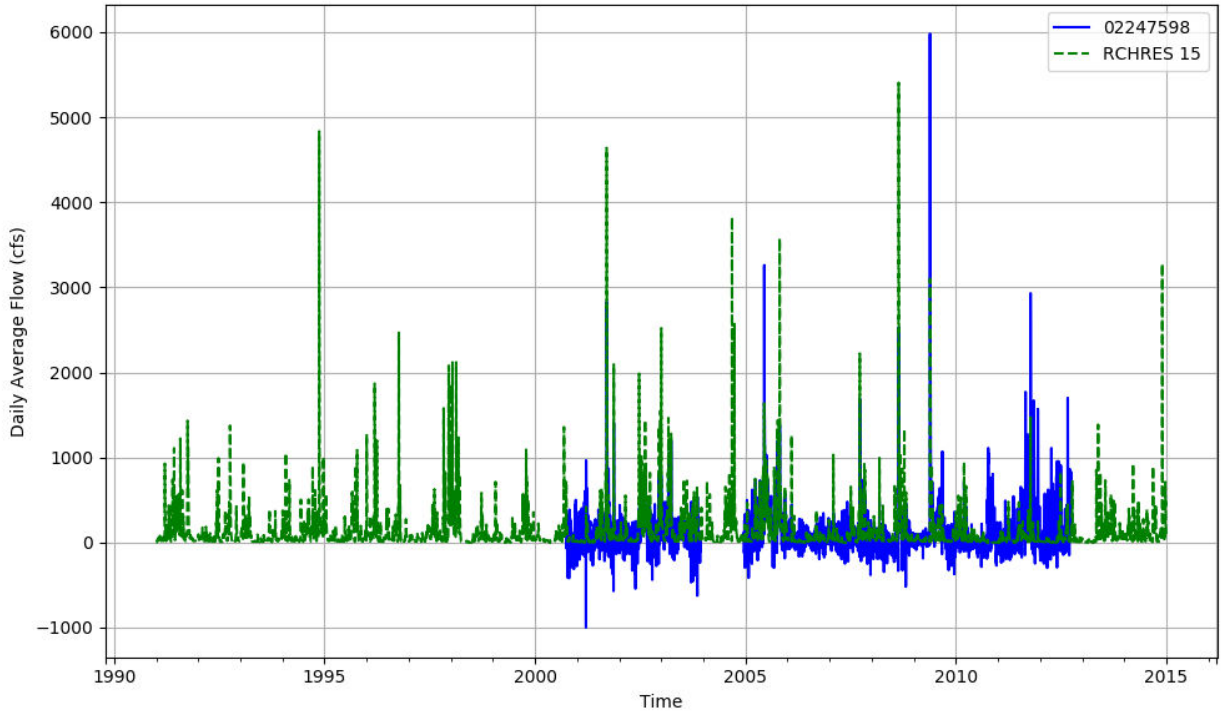


Figure T-03080201-16: Daily flow for HSFP reach 15 and USGS station 02247598.

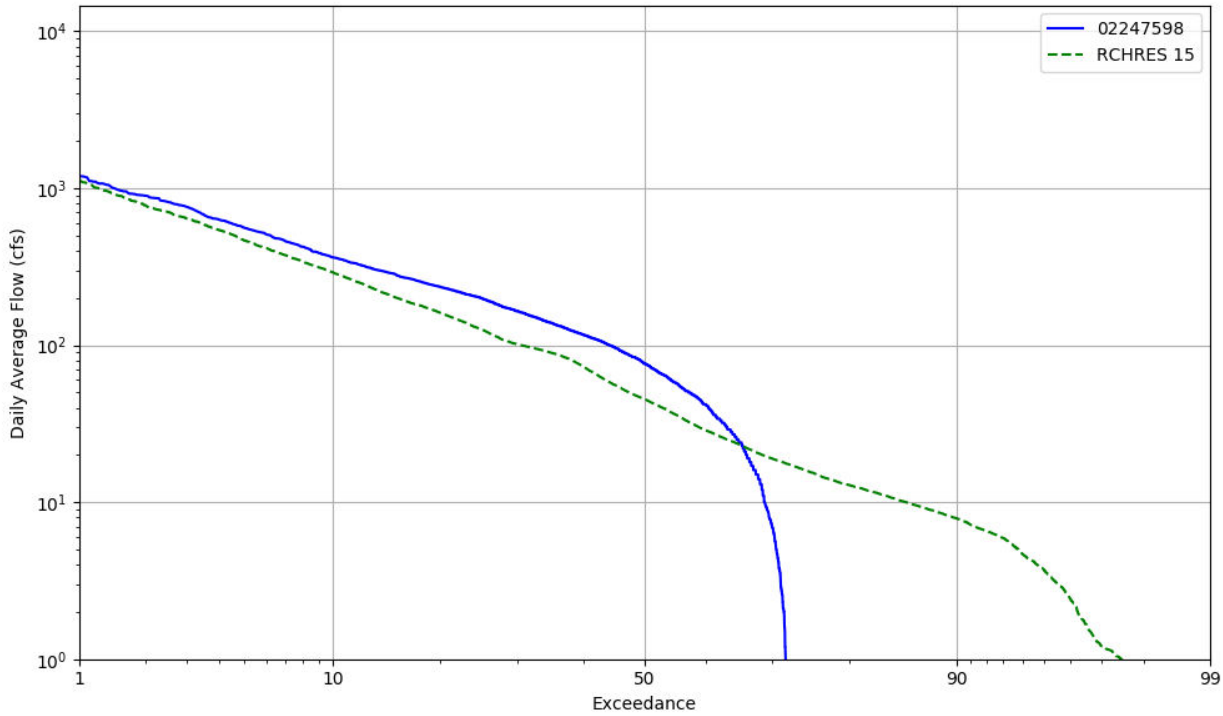


Figure T-03080201-17: Daily exceedance for HSFP reach 15 and USGS station 02247598.

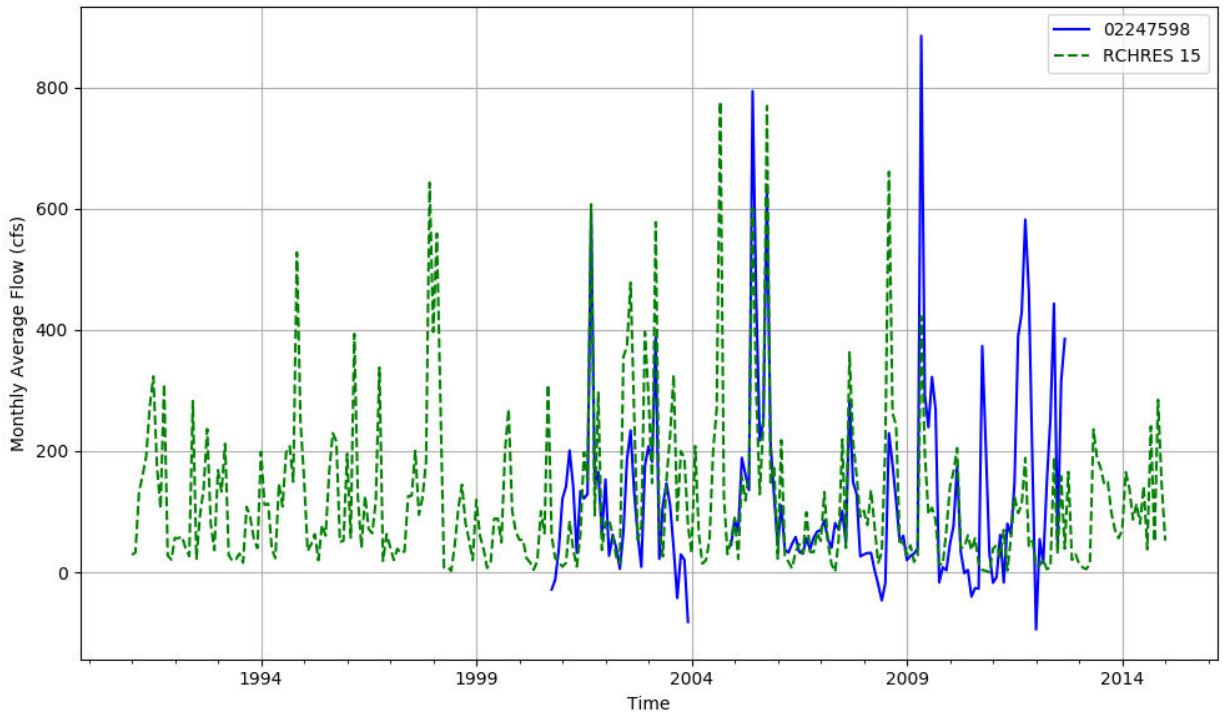


Figure T-03080201-18: Monthly flow for HSFP reach 15 and USGS station 02247598.

HSPF REACH 23, USGS GAUGE 02246895

Water-Data Report 2009
02247598 TOMOKA RIVER NEAR ORMOND BEACH, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 292026, long 810511 referenced to North American Datum of 1927, in NW 1/4 sec.42, T.13 S., R.32 E., Volusia County, FL, Hydrologic Unit 03080201, attached to pier on right bank in the south picnic area of Tomoka State Park, 1.0 mi upstream from mouth, and 4.8 mi north of the City Hall in Ormond Beach.

DRAINAGE AREA.--101 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Oct. 1, 2003 datum of gage was 1.26 ft below NGVD of 1929.

REMARKS.--Records poor. Flow affected by tides in the Intracoastal Waterway.

Table T-03080201-11: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02246895.

Statistic	Value
Bias	-299.07
Standard error	352.02
Relative bias	-0.94
Relative standard error	1.90
Nash-Sutcliffe coefficient	-2.62
Kling-Gupta coefficient	-0.49
Coefficient of efficiency	-1.47
Index of agreement	0.25

Table T-03080201-12: Hydrologic Indices Between USGS Gauge 02246895 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02246895	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	373.39	20.30	-94.56
MA2: Median, all daily flows	361.00	6.45	-98.21
MA3: CV, all daily flows	50.83	163.26	221.16
MA4: CV, log of all daily flows	46.28	139.74	201.92
MA5: Mean daily flow / median daily flow	1.03	3.15	204.36
MA9: (Q10 - Q90) / median daily flow	1.37	8.67	531.21

MA10: (Q20 - Q80) / median daily flow	0.91	3.99	338.69
MA11: (Q25 - Q75) / median daily flow	0.73	2.93	302.92
MA12: Mean monthly flow, January	353.47	10.53	-97.02
MA13: Mean monthly flow, February	311.98	8.17	-97.38
MA14: Mean monthly flow, March	330.10	27.77	-91.59
MA15: Mean monthly flow, April	298.33	8.95	-97.00
MA16: Mean monthly flow, May	264.58	2.86	-98.92
MA17: Mean monthly flow, June	230.41	16.77	-92.72
MA18: Mean monthly flow, July	223.63	20.85	-90.68
MA19: Mean monthly flow, August	312.42	32.41	-89.63
MA20: Mean monthly flow, September	419.48	48.36	-88.47
MA21: Mean monthly flow, October	316.99	11.63	-96.33
MA22: Mean monthly flow, November	310.58	10.52	-96.61
MA23: Mean monthly flow, December	352.35	14.82	-95.79
ML1: Mean minimum monthly flow, January	194.00	1.67	-99.14
ML2: Mean minimum monthly flow, February	98.45	1.57	-98.40
ML3: Mean minimum monthly flow, March	145.50	7.50	-94.85
ML4: Mean minimum monthly flow, April	100.30	3.49	-96.52
ML5: Mean minimum monthly flow, May	59.08	0.79	-98.66
ML6: Mean minimum monthly flow, June	42.60	1.28	-97.00
ML7: Mean minimum monthly flow, July	44.02	2.84	-93.55
ML8: Mean minimum monthly flow, August	83.80	5.00	-94.04
ML9: Mean minimum monthly flow, September	111.80	4.73	-95.77
ML10: Mean minimum monthly flow, October	116.75	2.31	-98.02
ML11: Mean minimum monthly flow, November	144.50	1.90	-98.68
ML12: Mean minimum monthly flow, December	153.25	1.73	-98.87
ML13: CV of minimum monthly flows	100.22	144.10	43.78
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.08	113.92
ML15: Mean minimum annual flow / mean annual flow	0.04	0.03	-13.78
ML16: Median minimum annual flow / median annual flow	0.03	0.06	146.50
ML20: Ratio of baseflow volume to total flow volume	0.43	0.27	-36.14
ML22: Mean annual minimum flow divided by catchment area	0.13	0.01	-94.27
RA1: Mean of positive changes from one day to next (rise rate)	108.05	12.19	
RA2: CV, mean of positive changes from one day to next (rise rate)	104.74	258.51	
RA3: Mean of negative changes from one day to next (fall rate)	91.89	5.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	95.36	267.01	
RA5: Ratio of days that are higher than previous day	0.46	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.21	0.28	
RA7: Median of difference in log of flows over two consecutive days of falling	0.21	0.22	
RA8: Number of flow reversals from one day to the next	153.20	81.80	
RA9: CV, number of flow reversals from one day to the next	45.49	27.82	

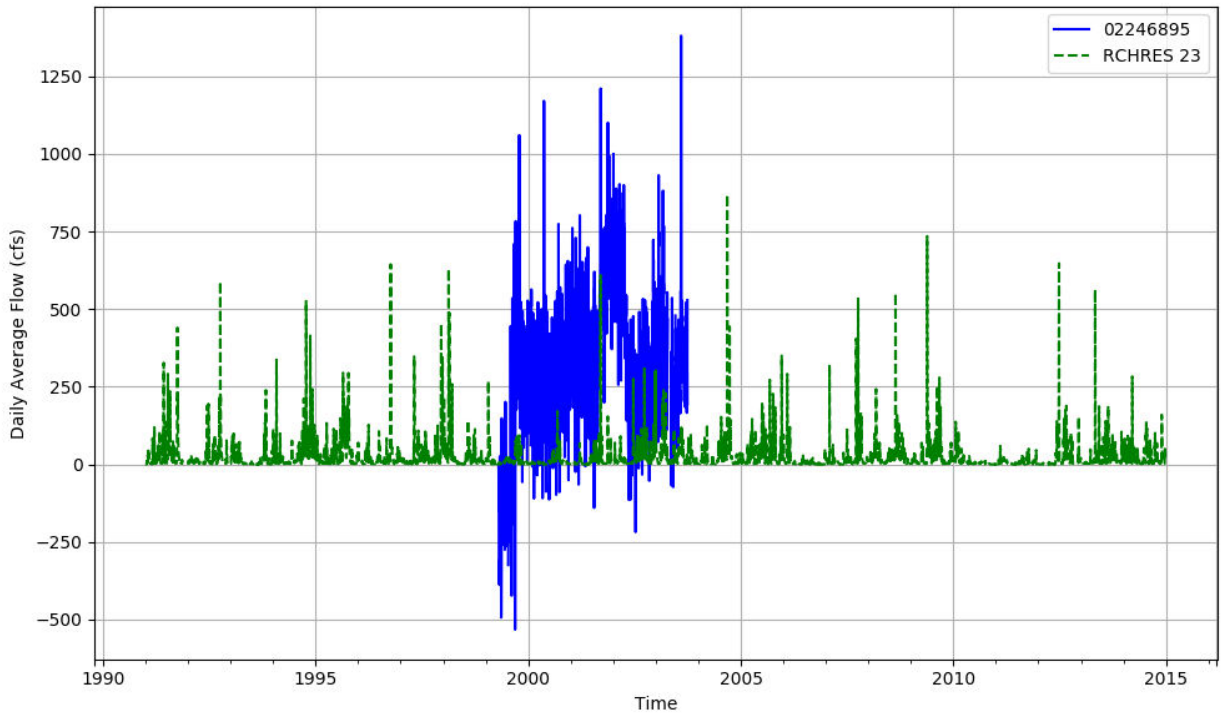


Figure T-03080201-19: Daily flow for HSFP reach 23 and USGS station 02246895.

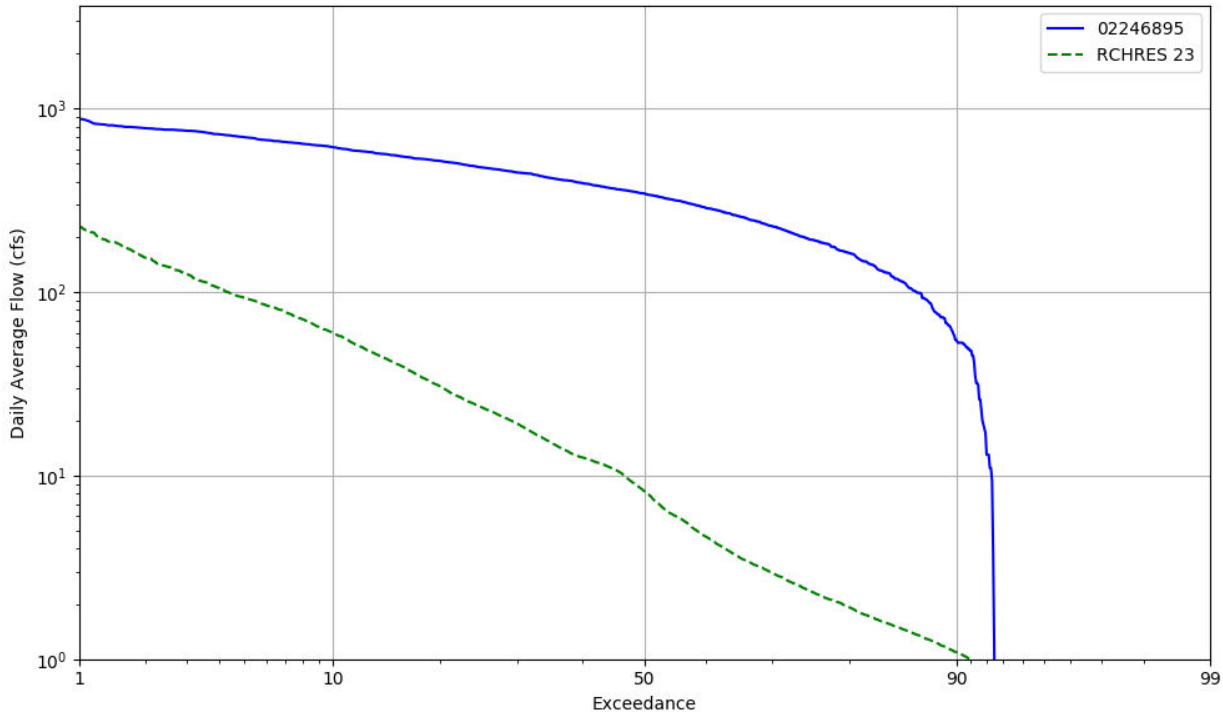


Figure T-03080201-20: Daily exceedance for HSFP reach 23 and USGS station 02246895.

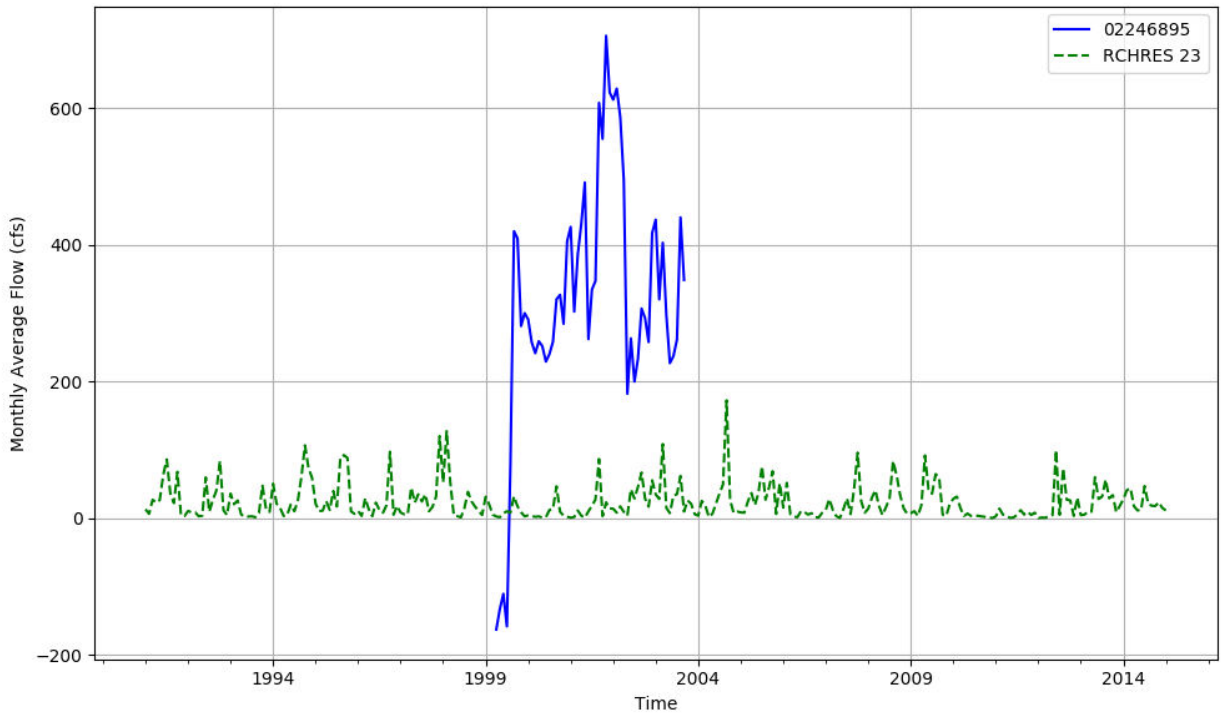


Figure T-03080201-21: Monthly flow for HSFP reach 23 and USGS station 02246895.

HSPF REACH 26, USGS GAUGE 02247015

Water-Data Report 2009
02247598 TOMOKA RIVER NEAR ORMOND BEACH, FL
East Florida Coastal Basin Daytona-St. Augustine Subbasin

LOCATION.--Lat 292026, long 810511 referenced to North American Datum of 1927, in NW 1/4 sec.42, T.13 S., R.32 E., Volusia County, FL, Hydrologic Unit 03080201, attached to pier on right bank in the south picnic area of Tomoka State Park, 1.0 mi upstream from mouth, and 4.8 mi north of the City Hall in Ormond Beach.

DRAINAGE AREA.--101 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2000 to current year.

GAGE.--Water-stage recorder, acoustic velocity meter, and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Oct. 1, 2003 datum of gage was 1.26 ft below NGVD of 1929.

REMARKS.--Records poor. Flow affected by tides in the Intracoastal Waterway.

Table T-03080201-13: Comparison Statistics Between HSPF Reach 26 and USGS Gauge 02247015.

Statistic	Value
Bias	-0.68
Standard error	40.59
Relative bias	-0.02
Relative standard error	0.78
Nash-Sutcliffe coefficient	0.39
Kling-Gupta coefficient	0.64
Coefficient of efficiency	0.15
Index of agreement	0.53

Table T-03080201-14: Hydrologic Indices Between USGS Gauge 02247015 and HSPF Reach 26.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02247015	Simulated Reach 26	Percent Difference
MA1: Mean, all daily flows	55.92	31.65	-43.40
MA2: Median, all daily flows	43.00	9.73	-77.38
MA3: CV, all daily flows	85.42	180.77	111.61
MA4: CV, log of all daily flows	72.02	137.04	90.26
MA5: Mean daily flow / median daily flow	1.30	3.25	150.26
MA9: (Q10 - Q90) / median daily flow	2.33	7.95	241.54

MA10: (Q20 - Q80) / median daily flow	1.49	4.26	186.54
MA11: (Q25 - Q75) / median daily flow	1.20	2.86	138.99
MA12: Mean monthly flow, January	33.15	10.78	-67.49
MA13: Mean monthly flow, February	23.85	10.00	-58.07
MA14: Mean monthly flow, March	27.75	17.28	-37.74
MA15: Mean monthly flow, April	19.77	9.33	-52.83
MA16: Mean monthly flow, May	42.99	3.25	-92.44
MA17: Mean monthly flow, June	45.65	22.92	-49.80
MA18: Mean monthly flow, July	57.62	40.83	-29.14
MA19: Mean monthly flow, August	55.40	58.39	5.41
MA20: Mean monthly flow, September	103.80	122.06	17.59
MA21: Mean monthly flow, October	19.26	15.12	-21.51
MA22: Mean monthly flow, November	23.14	11.66	-49.61
MA23: Mean monthly flow, December	36.63	7.69	-79.01
ML1: Mean minimum monthly flow, January	12.80	4.08	-68.15
ML2: Mean minimum monthly flow, February	2.43	3.49	43.97
ML3: Mean minimum monthly flow, March	4.07	3.69	-9.38
ML4: Mean minimum monthly flow, April	4.21	2.07	-50.85
ML5: Mean minimum monthly flow, May	6.97	1.01	-85.57
ML6: Mean minimum monthly flow, June	13.13	0.99	-92.44
ML7: Mean minimum monthly flow, July	19.40	8.90	-54.14
ML8: Mean minimum monthly flow, August	6.40	6.75	5.54
ML9: Mean minimum monthly flow, September	10.56	9.21	-12.80
ML10: Mean minimum monthly flow, October	1.16	3.12	169.74
ML11: Mean minimum monthly flow, November	12.77	4.15	-67.53
ML12: Mean minimum monthly flow, December	19.50	4.45	-77.16
ML13: CV of minimum monthly flows	113.92	105.61	-7.29
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.05	411.19
ML15: Mean minimum annual flow / mean annual flow	0.01	0.02	103.62
ML16: Median minimum annual flow / median annual flow	0.01	0.03	314.38
ML20: Ratio of baseflow volume to total flow volume	0.22	0.17	-24.40
ML22: Mean annual minimum flow divided by catchment area	0.00	0.01	29.44
RA1: Mean of positive changes from one day to next (rise rate)	29.49	22.66	
RA2: CV, mean of positive changes from one day to next (rise rate)	202.89	250.53	
RA3: Mean of negative changes from one day to next (fall rate)	27.81	10.00	
RA4: CV, mean of negative changes from one day to next (fall rate)	188.62	335.06	
RA5: Ratio of days that are higher than previous day	0.48	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.51	0.37	
RA7: Median of difference in log of flows over two consecutive days of falling	0.43	0.22	
RA8: Number of flow reversals from one day to the next	115.75	66.75	
RA9: CV, number of flow reversals from one day to the next	72.43	54.52	

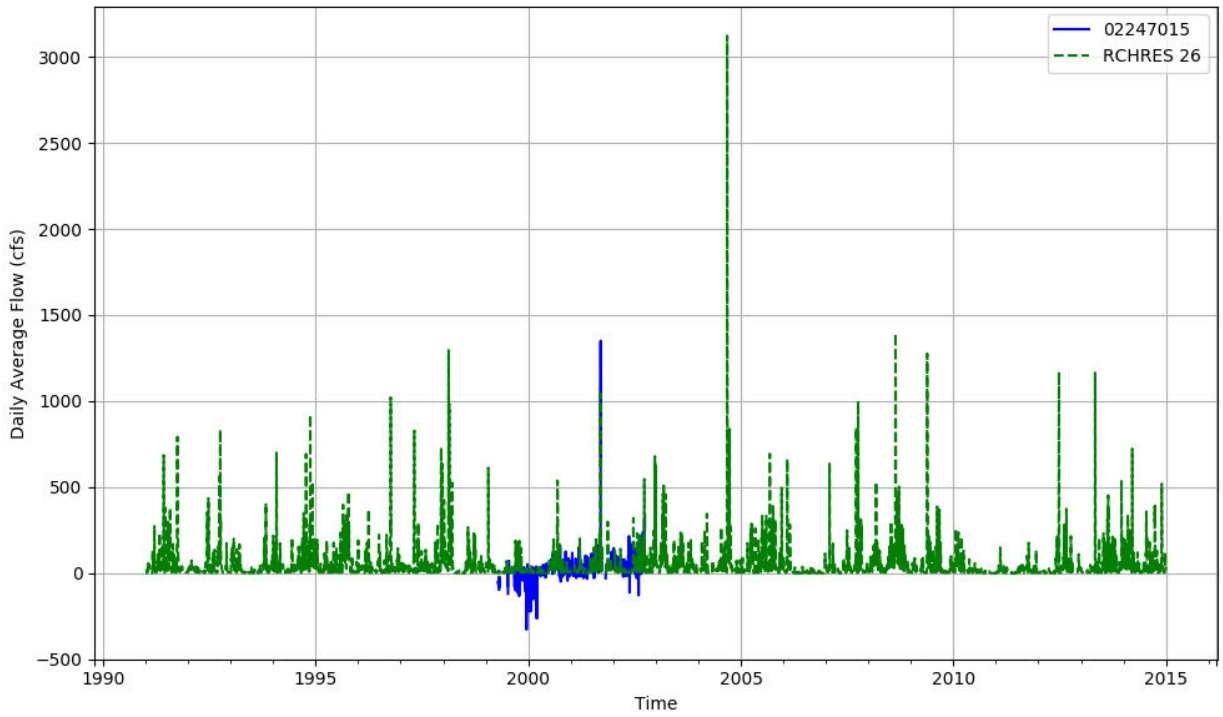


Figure T-03080201-22: Daily flow for HSFP reach 26 and USGS station 02247015.

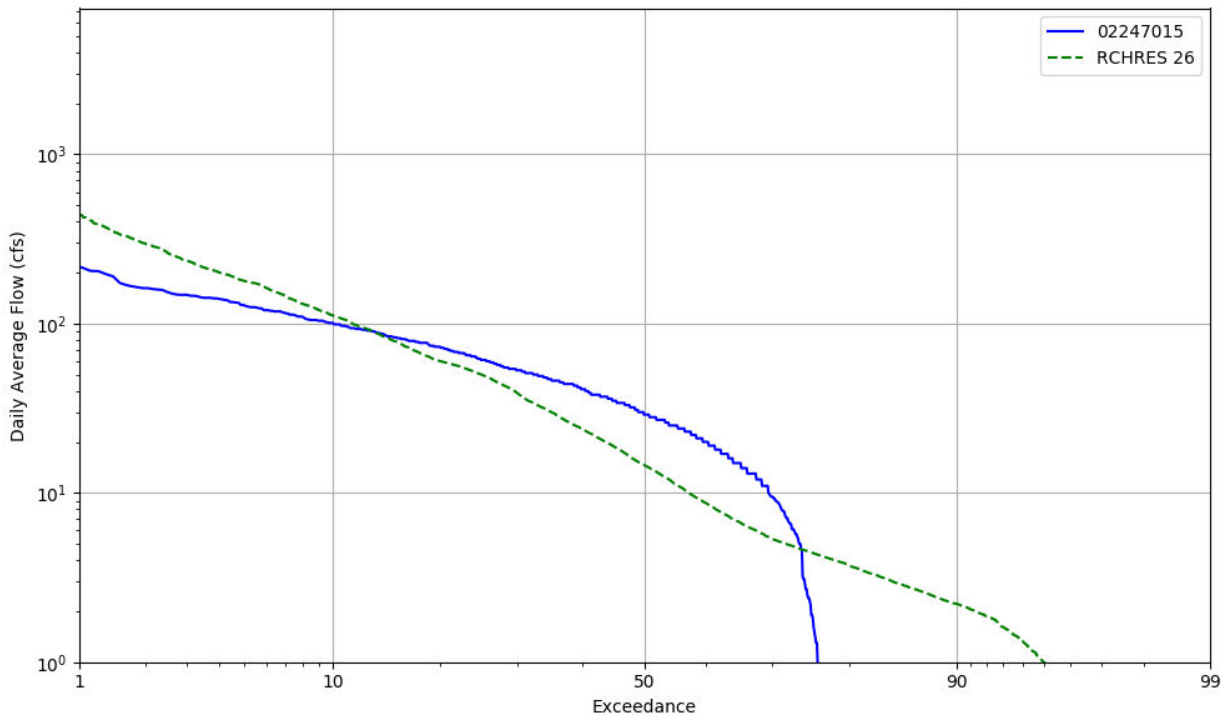


Figure T-03080201-23: Daily exceedance for HSFP reach 26 and USGS station 02247015.

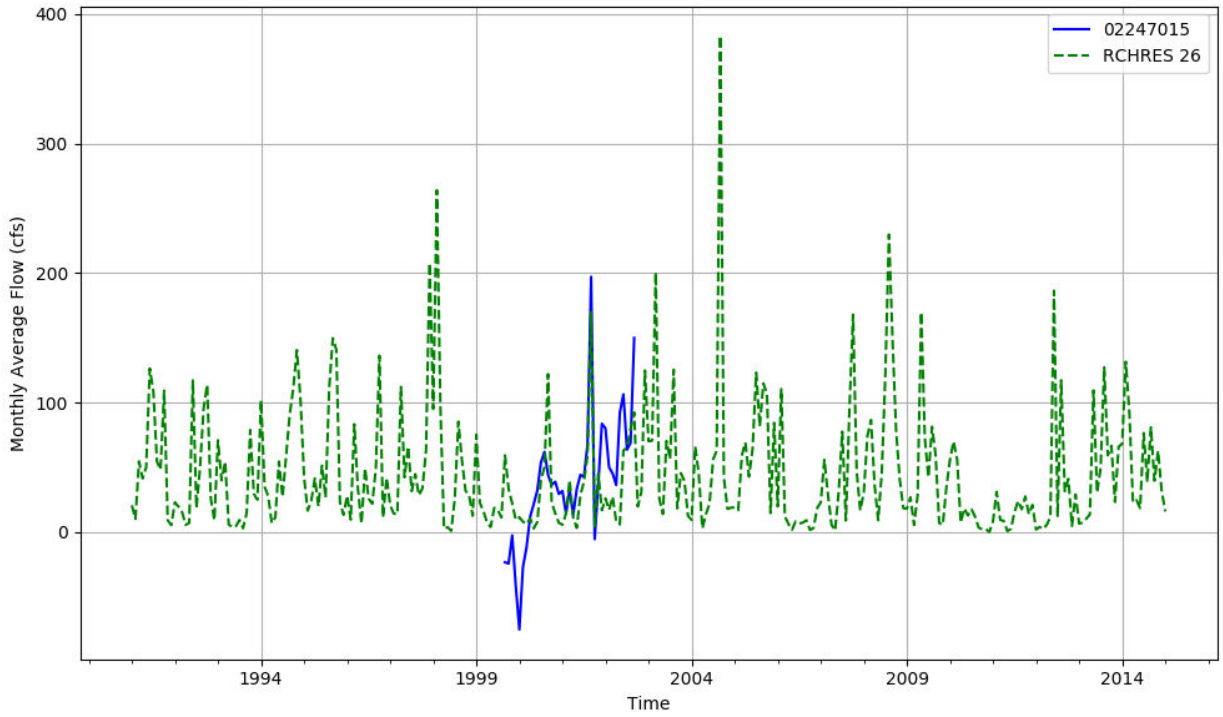


Figure T-03080201-24: Monthly flow for HSFP reach 26 and USGS station 02247015.

Table T-03080201-15: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	30569	43558	43500	8129	1149	3889	99424	30199	9074	5057	354	143634	7749	740	104	427130
AREA(%)	7.0	10.0	9.9	1.9	0.3	0.9	22.7	6.9	2.1	1.2	0.1	32.8	1.8	0.2	0.0	97.6
IMPERVIOUS																
AREA(ACRES)		2539	4881	2048	1158											10626
AREA(%)		0.6	1.1	0.5	0.3											2.4
SUPY	52.9	54.2	54.1	54.3	54.4	52.8	53.6	53.0	53.1	55.7	55.3	53.4	58.1	65.1	56.8	52.4
SURLI		0.0	3.0	2.9	2.9										10.3	0.4
UZLI																0.0
LZLI		0.0	0.8	0.7	0.7									0.3		0.1
SURO: PERVIOUS	4.6	2.0	2.2	2.3	2.3	1.2	0.1	1.0	0.5	0.6	0.3	0.9	2.3	0.6	0.8	1.3
SURO: IMPERVIOUS		38.6	38.4	38.2	38.2											0.9
SURO: COMBINED	4.6	4.0	5.9	9.5	20.3	1.2	0.1	1.0	0.5	0.6	0.3	0.9	2.3	0.6	0.8	2.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.7	18.2	20.8	20.7	19.5	25.1	13.6	23.9	18.6	20.0	18.3	2.0	20.2	26.6	28.2	11.0
AGWI	1.8	19.3	22.2	22.1	20.8	26.3	14.6	25.1	19.7	21.2	19.6	3.6	21.3	28.0	29.5	12.3
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		10.9	11.0	11.3	15.4	7.5	15.4	10.6	10.6	11.8	9.4	16.3	14.0	14.3	9.6	12.7
UZET	1.8	2.6	2.7	2.7	2.1	3.2	1.4	3.1	2.4	2.2	2.3	9.8	2.7	2.6	2.9	4.6
LZET	0.0	17.7	18.2	18.1	15.8	13.3	19.5	12.1	18.2	18.0	21.7	0.6	16.2	18.1	22.1	10.5
AGWET	0.5	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.6	0.2	0.3	0.3	0.4
BASET	0.6	0.9	1.1	1.1	1.1	1.0	0.8	1.0	0.9	1.0	1.0	0.7	0.9	1.3	1.1	0.8
SURET	39.1											14.4				7.4
PERO	5.2	20.2	23.0	23.0	21.7	26.3	13.7	24.9	19.1	20.6	18.6	2.9	22.5	27.2	29.0	12.3
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	42.0	32.3	33.4	33.4	34.6	25.3	37.2	27.0	32.4	33.2	34.6	42.3	34.0	36.4	35.9	36.4
IMPEV: IMPERVIOUS		15.6	15.7	16.0	16.2											0.4
ET: COMBINED	42.0	31.4	31.6	29.9	25.4	25.3	37.2	27.0	32.4	33.2	34.6	42.3	34.0	36.4	35.9	36.8
PET	45.1	45.7	45.6	45.8	45.9	45.0	46.0	45.8	45.6	46.9	47.0	45.9	45.5	47.8	46.0	44.7

Table T-03080201-16: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	30569	43558	43500	8129	1149	3889	99424	30199	9074	5057	354	143634	7749	740	104	427130
AREA(%)	7.0	10.0	9.9	1.9	0.3	0.9	22.7	6.9	2.1	1.2	0.1	32.8	1.8	0.2	0.0	97.6
IMPERVIOUS																
AREA(ACRES)		2539	4881	2048	1158											10626
AREA(%)		0.6	1.1	0.5	0.3											2.4
SUPY	52.4	50.8	50.5	49.8	49.5	52.8	52.1	52.8	52.9	49.4	50.3	52.9	58.5	53.6	53.2	50.9
SURLI		0.0	2.8	2.7	2.6										38.0	0.3
UZLI																0.0
LZLI		0.0	0.7	0.6	0.6									4.0	1.4	0.1
SURO: PERVIOUS	4.8	1.1	1.2	1.1	1.1	0.8	0.0	0.6	0.3	0.2	0.1	3.0	1.5	0.2	1.0	1.7
SURO: IMPERVIOUS		35.3	34.9	33.9	33.6											0.8
SURO: COMBINED	4.8	3.0	4.6	7.7	17.4	0.8	0.0	0.6	0.3	0.2	0.1	3.0	1.5	0.2	1.0	2.5
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.7	15.8	17.9	17.2	15.7	25.4	12.7	24.0	18.1	15.5	14.7	2.4	19.4	20.5	50.2	10.3
AGWI	1.5	17.0	19.4	18.7	17.0	26.9	13.9	25.4	19.4	16.8	16.1	3.6	20.8	22.2	51.9	11.5
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
CEPE		10.8	10.9	11.1	15.2	7.8	15.5	10.9	10.8	11.3	9.1	16.5	17.1	12.8	9.2	12.8
UZET	0.3	2.2	2.3	2.2	1.7	2.9	1.2	2.7	2.1	1.6	1.6	1.6	2.5	1.9	3.9	1.6
LZET	0.0	19.0	19.7	19.4	17.3	14.5	22.8	13.3	20.0	19.2	23.4	0.0	16.8	20.0	26.4	11.5
AGWET	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2
BASET	0.7	1.0	1.1	1.1	1.1	1.1	0.9	1.1	1.0	1.0	1.0	1.2	1.1	1.3	1.4	1.0
SURET	48.0											31.2				13.6
PERO	5.5	16.9	19.1	18.4	16.8	26.2	12.7	24.6	18.4	15.7	14.8	5.3	21.0	20.7	51.1	11.9
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TAET: PERVIOUS	49.1	33.3	34.3	34.2	35.5	26.6	40.6	28.4	34.2	33.4	35.4	50.8	37.7	36.3	41.2	40.8
IMPEV: IMPERVIOUS		15.5	15.6	15.8	15.9											0.4
ET: COMBINED	49.1	32.3	32.5	30.5	25.7	26.6	40.6	28.4	34.2	33.4	35.4	50.8	37.7	36.3	41.2	41.2
PET	49.6	50.4	50.3	50.5	50.6	49.4	50.9	50.8	50.5	52.2	52.4	50.8	50.2	53.5	50.7	49.4

Table T-03080201-17: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	30569	43558	43500	8129	1149	3889	99424	30199	9074	5057	354	143634	7749	740	104	427130
AREA(%)	7.0	10.0	9.9	1.9	0.3	0.9	22.7	6.9	2.1	1.2	0.1	32.8	1.8	0.2	0.0	97.6
IMPERVIOUS																
AREA(ACRES)		2539	4881	2048	1158											10626
AREA(%)		0.6	1.1	0.5	0.3											2.4
SUPY	34.9	36.2	36.0	36.0	36.2	35.2	36.1	36.0	36.2	37.7	38.2	35.9	54.4	46.1	41.9	35.4
SURLI		0.0	3.6	3.2	3.1										54.3	0.4
UZLI																0.0
LZLI		0.0	0.9	0.8	0.8									4.3	1.6	0.1
SURO: PERVIOUS	2.3	0.4	0.5	0.4	0.4	0.5	0.0	0.4	0.2	0.1	0.0	1.6	1.4	0.1	2.9	0.8
SURO: IMPERVIOUS		24.0	23.9	23.8	24.0											0.6
SURO: COMBINED	2.3	1.7	2.9	5.1	12.2	0.5	0.0	0.4	0.2	0.1	0.0	1.6	1.4	0.1	2.9	1.4
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.4	9.1	11.4	11.0	10.2	13.9	6.3	13.6	9.4	10.2	9.3	1.3	16.4	17.8	54.1	5.8
AGWI	1.2	10.2	12.7	12.4	11.5	15.3	7.2	14.8	10.6	11.4	10.5	1.9	17.6	19.5	56.1	6.8
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
CEPE		8.4	8.4	8.5	11.7	5.9	12.2	8.4	8.4	8.9	7.1	13.1	21.8	10.4	7.6	10.2
UZET	3.2	1.7	1.9	1.9	1.7	1.8	0.8	1.9	1.4	1.5	1.3	7.7	2.0	2.1	4.1	3.6
LZET	0.1	18.3	19.6	19.5	17.7	14.2	20.8	13.1	18.9	19.0	22.5	0.6	13.2	20.3	25.9	11.0
AGWET	0.8	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.6	0.2	0.3	0.3	0.4
BASET	0.5	0.9	1.1	1.1	1.0	1.0	0.7	1.0	0.9	0.9	0.9	0.8	1.0	1.4	1.4	0.8
SURET	34.6											20.3				9.1
PERO	2.7	9.5	11.9	11.5	10.6	14.4	6.3	14.0	9.6	10.3	9.4	2.8	17.8	17.9	57.0	6.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TAET: PERVIOUS	39.1	29.6	31.3	31.3	32.4	23.3	34.7	24.7	29.9	30.6	32.3	42.9	38.2	34.5	39.3	35.1
IMPEV: IMPERVIOUS		12.2	12.2	12.2	12.3											0.3
ET: COMBINED	39.1	28.6	29.4	27.5	22.3	23.3	34.7	24.7	29.9	30.6	32.3	42.9	38.2	34.5	39.3	35.4
PET	48.1	48.6	48.5	48.6	48.7	48.0	48.9	48.8	48.6	49.6	49.7	48.9	48.4	50.3	48.7	47.5

Table T-03080201-18: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	30569	43558	43500	8129	1149	3889	99424	30199	9074	5057	354	143634	7749	740	104	427130
AREA(%)	7.0	10.0	9.9	1.9	0.3	0.9	22.7	6.9	2.1	1.2	0.1	32.8	1.8	0.2	0.0	97.6
IMPERVIOUS																
AREA(ACRES)		2539	4881	2048	1158											10626
AREA(%)		0.6	1.1	0.5	0.3											2.4
SUPY	49.8	49.8	49.6	49.3	49.2	50.1	50.3	50.5	50.6	50.0	50.5	50.5	57.3	55.5	51.7	49.1
SURLI		0.0	2.8	2.7	2.6										17.5	0.3
UZLI																0.0
LZLI		0.0	0.7	0.7	0.6									1.1	0.7	0.1
SURO: PERVIOUS	5.9	1.0	1.1	1.1	1.1	0.6	0.1	0.6	0.3	0.3	0.2	4.0	1.5	0.3	0.5	2.0
SURO: IMPERVIOUS		34.5	34.4	34.1	34.1											0.8
SURO: COMBINED	5.9	2.8	4.4	7.8	17.7	0.6	0.1	0.6	0.3	0.3	0.2	4.0	1.5	0.3	0.5	2.9
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.7	16.6	18.9	18.5	17.2	23.9	12.8	22.7	17.7	17.1	16.1	2.1	20.2	21.4	32.4	10.3
AGWI	1.7	17.7	20.2	19.8	18.5	25.2	13.8	23.9	18.8	18.3	17.3	3.4	21.3	22.8	33.8	11.5
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		11.1	11.1	11.0	14.5	8.3	15.2	11.1	11.1	11.4	9.4	16.2	16.7	12.8	9.6	12.7
UZET	1.2	2.3	2.5	2.4	2.0	2.8	1.2	2.7	2.1	1.9	2.0	5.8	2.4	2.3	2.9	3.1
LZET	0.0	17.7	18.2	18.2	16.3	13.3	19.9	12.1	18.2	18.0	21.7	0.3	15.3	18.4	23.1	10.4
AGWET	0.4	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.2	0.3	0.3	0.3
BASET	0.7	0.9	1.1	1.1	1.0	1.0	0.8	1.0	0.9	0.9	1.0	0.9	1.0	1.2	1.2	0.9
SURET	41.0											21.0				9.8
PERO	6.6	17.5	20.0	19.6	18.4	24.5	12.9	23.3	18.0	17.4	16.3	6.0	21.7	21.7	32.8	12.3
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	43.2	32.3	33.1	33.0	34.1	25.6	37.4	27.2	32.6	32.6	34.2	44.6	35.6	34.9	37.0	37.2
IMPEV: IMPERVIOUS		15.3	15.2	15.2	15.2											0.4
ET: COMBINED	43.2	31.3	31.3	29.4	24.6	25.6	37.4	27.2	32.6	32.6	34.2	44.6	35.6	34.9	37.0	37.6
PET	46.5	46.9	46.8	46.9	47.1	46.4	47.4	47.3	47.1	48.1	48.3	47.3	46.8	48.8	47.1	46.0

Table T-03080201-19: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
2	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
3	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
4	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
5	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
6	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
7	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
8	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
9	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
10	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
11	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
12	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
13	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
14	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
15	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
16	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
17	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
18	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
19	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
20	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
21	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
22	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
23	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
24	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
25	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
26	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
27	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
28	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
29	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
30	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991
31	0.991	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.991

Table T-03080201-20: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
2	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
3	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
4	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
5	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
6	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
7	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
8	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
9	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
10	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
11	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
12	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
13	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
14	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
15	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
16	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
17	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
18	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
19	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
20	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
21	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
22	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
23	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
24	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
25	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
26	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
27	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
28	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
29	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
30	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
31	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029

Table T-03080201-21: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
2	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
3	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
4	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
5	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
6	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
7	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
8	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
9	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
10	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
11	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
12	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
13	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
14	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
15	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
16	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
17	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
18	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
19	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
20	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
21	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
22	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
23	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
24	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
25	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
26	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
27	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
28	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
29	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
30	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127
31	0.000	0.050	0.050	0.050	0.100	0.023	0.110	0.050	0.050	0.050	0.030	0.127

Table T-03080201-22: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03080201-23: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
2	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
3	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
4	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
5	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
6	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
7	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
8	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
9	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
10	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
11	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
12	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
13	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
14	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
15	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
16	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
17	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
18	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
19	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
20	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
21	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
22	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
23	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
24	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
25	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
26	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
27	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
28	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
29	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
30	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001
31	0.001	0.466	0.466	0.466	0.466	0.667	1.000	0.667	0.667	0.667	0.799	0.001

Table T-03080201-24: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
31		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03080201-25: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
2	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
3	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
4	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
5	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
6	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
7	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
8	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
9	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
10	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
11	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
12	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
13	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
14	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
15	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
16	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
17	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
18	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
19	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
20	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
21	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
22	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
23	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
24	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
25	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
26	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
27	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
28	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
29	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
30	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
31	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689

Table T-03080201-26: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
2	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
3	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
4	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
5	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
6	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
7	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
8	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
9	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
10	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
11	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
12	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
13	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
14	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
15	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
16	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
17	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
18	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
19	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
20	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
21	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
22	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
23	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
24	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
25	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
26	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
27	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
28	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
29	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
30	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170
31	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170	1.170

Table T-03080201-27: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
2	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
3	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
4	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
5	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
6	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
7	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
8	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
9	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
10	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
11	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
12	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
13	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
14	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
15	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
16	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
17	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
18	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
19	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
20	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
21	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
22	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
23	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
24	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
25	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
26	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
27	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
28	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
29	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
30	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950
31	0.010	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.950

Table T-03080201-28: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
2	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
3	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
4	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
5	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
6	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
7	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
8	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
9	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
10	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
11	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
12	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
13	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
14	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
15	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
16	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
17	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
18	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
19	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
20	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
21	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
22	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
23	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
24	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
25	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
26	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
27	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
28	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
29	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
30	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101
31	0.050	3.629	3.629	3.629	3.629	4.536	7.259	4.536	4.536	4.536	5.445	0.101

Table T-03080201-29: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03100207

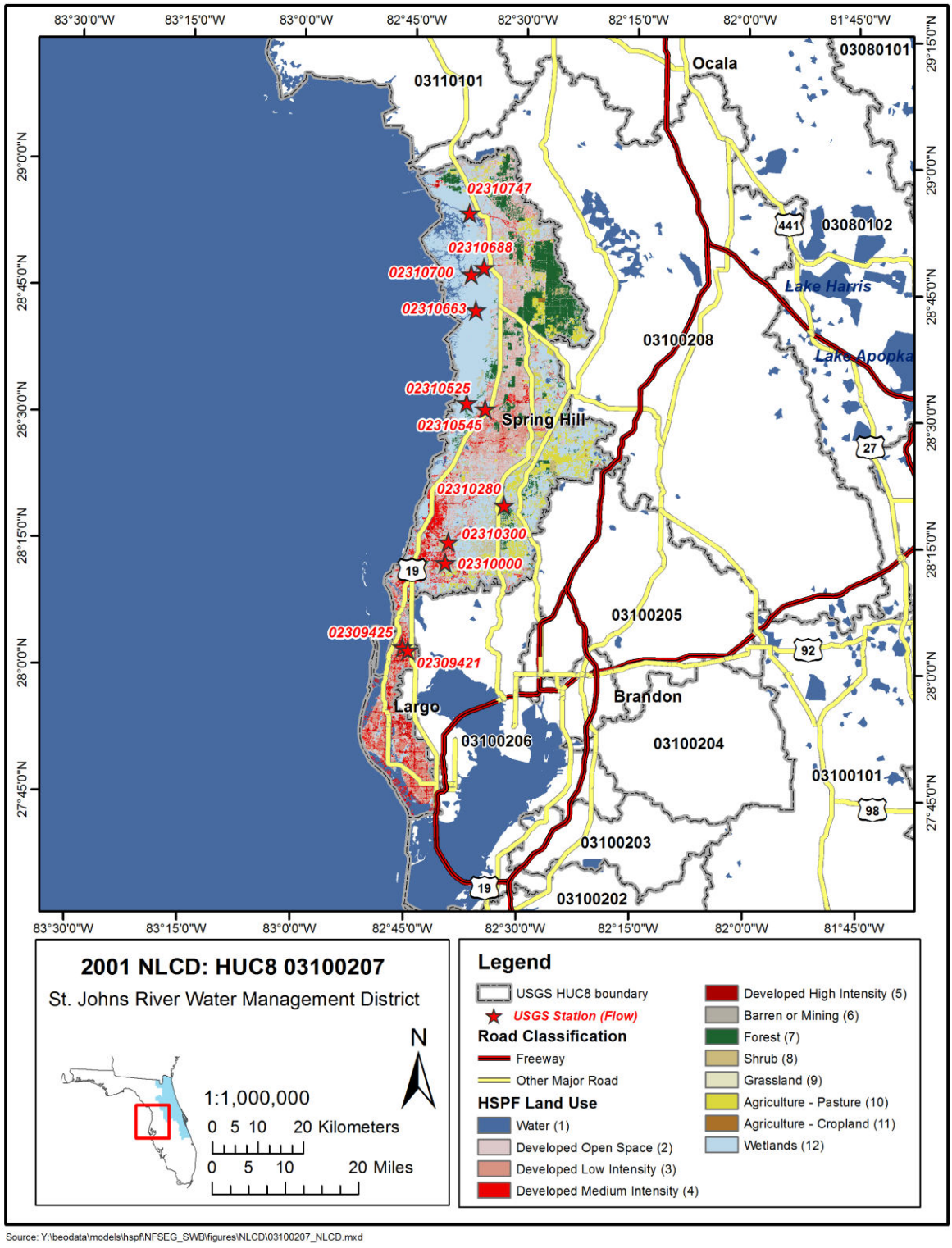


Figure T-03100207-1: Land Cover from the National Land Cover Database.

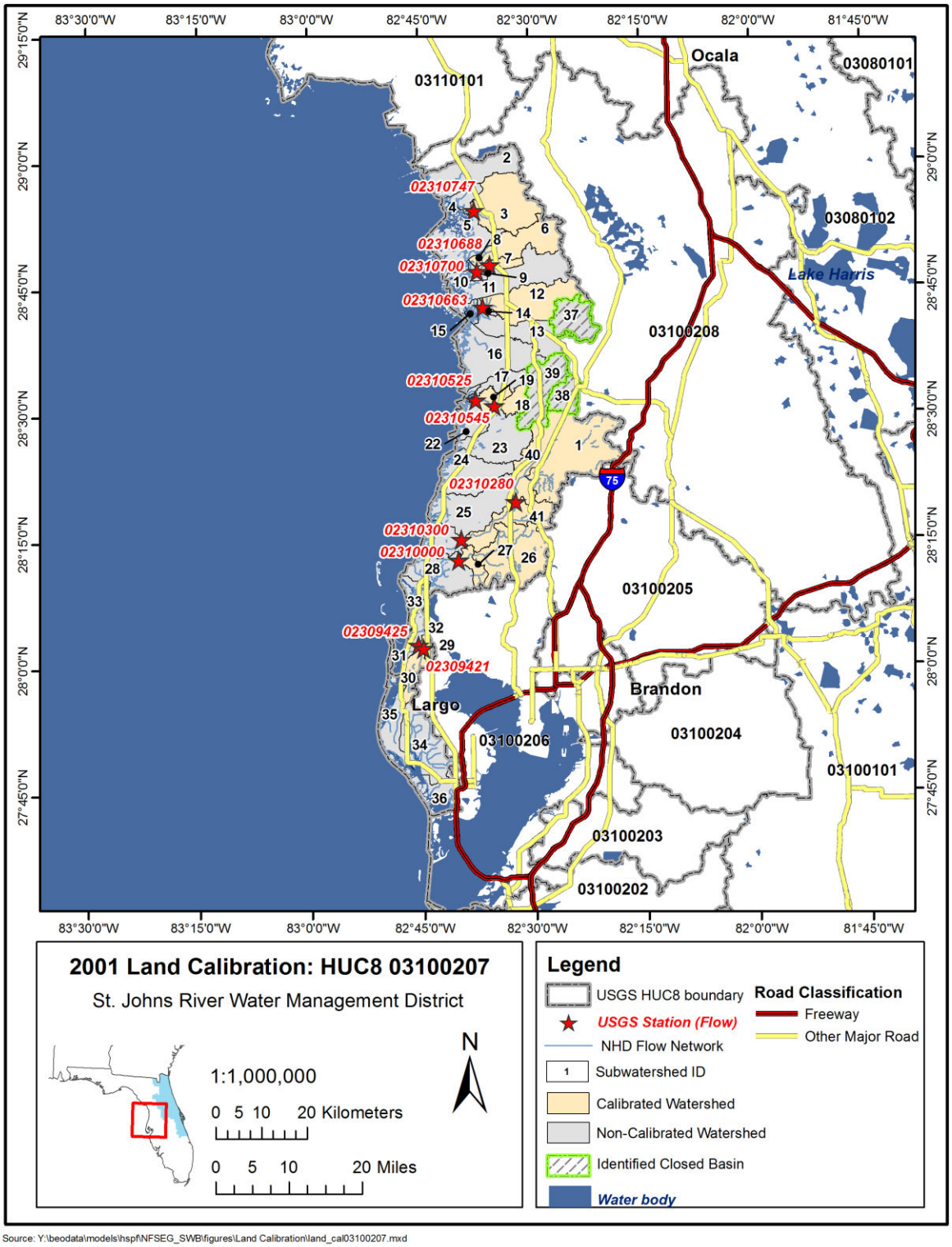


Figure T-03100207-2: Calibrated sub-watersheds.

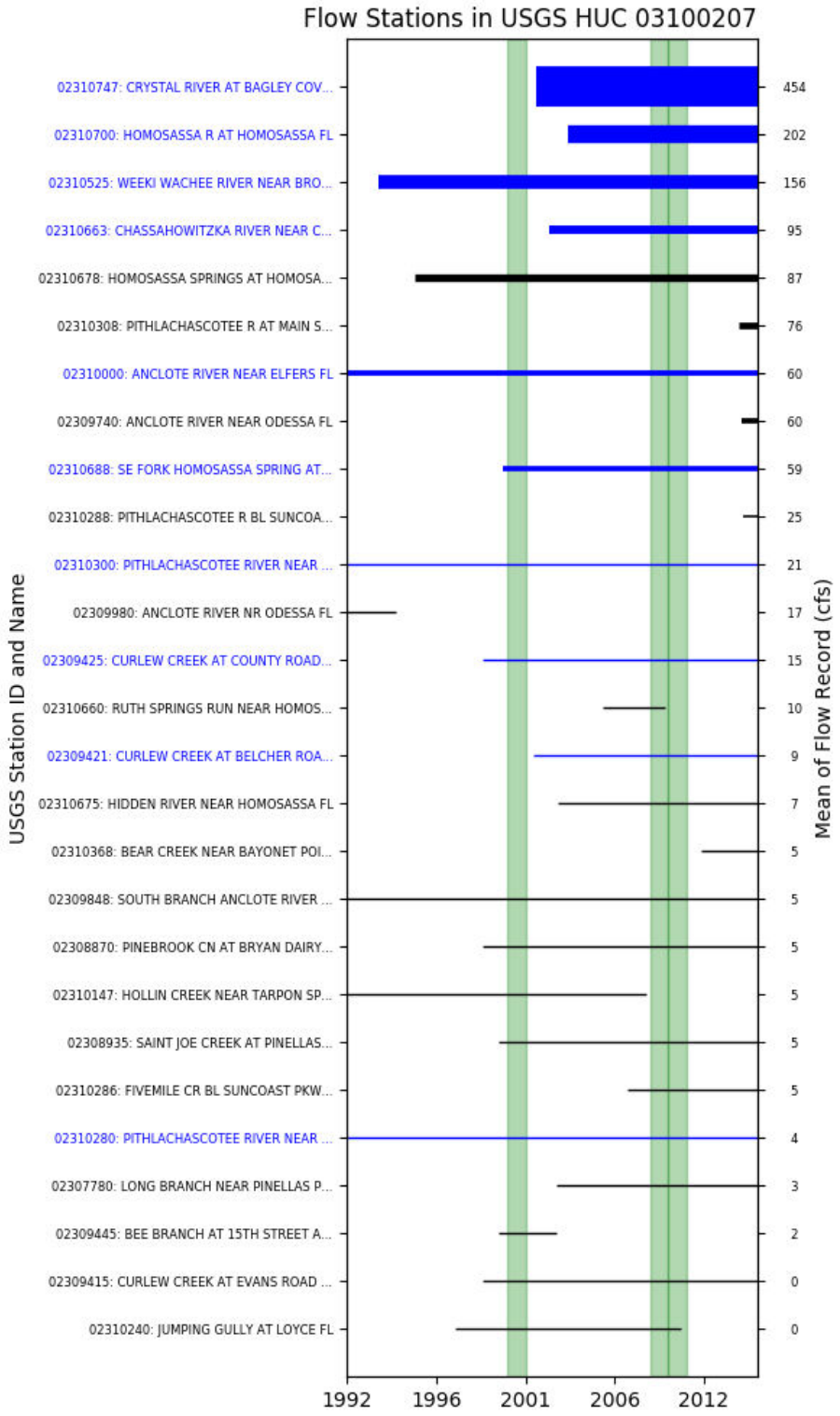


Figure T-03100207-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 03, USGS GAUGE 02310747

Water-Data Report 2009
02310747 CRYSTAL RIVER AT BAGLEY COVE NEAR CRYSTAL RIVER, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 285423, long 823726 referenced to North American Datum of 1983, in NE 1/4 SW 1/4 SE 1/4 sec.18, T.18 S., R.17 E., Citrus County, FL, Hydrologic Unit 03100207, on right bank of private boat dock, 1.0 mi upstream from the Salt Creek-Crystal River bifurcation, 1.5 mi southwest of Crystal River, and 3.6 mi upstream mouth.

DRAINAGE AREA.--Undetermined.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 2002 to September 2003 (maximum and minimum residual discharge); October 2003 to current year (daily mean residual discharge).

GAGE.--Water-stage and velocity recorder. Datum of gage is 12.177 ft below North American Vertical Datum of 1988.

COOPERATION.--This gage is monitored in cooperation with Florida Department of Environmental Protection.

REMARKS.--Residual discharge records fair. Instantaneous discharge computed from index-velocity to mean channel velocity linear regression relation and gage height-to-area quadratic equation relation. A Godin filter is used to yield the residual discharge for the Crystal River station. The residual discharges are not total "freshwater" flow, but are a combination of freshwater flow and water storage caused by higher or lower Gulf of Mexico mean water levels. The residual discharge is used to estimate mean daily discharge values.

Table T-03100207-1: Comparison Statistics Between HSPF Reach 03 and USGS Gauge 02310747.

Statistic	Value
Bias	-429.47
Standard error	480.83
Relative bias	-0.93
Relative standard error	2.26
Nash-Sutcliffe coefficient	-4.13
Kling-Gupta coefficient	-0.55
Coefficient of efficiency	-1.59
Index of agreement	0.27

Table T-03100207-2: Hydrologic Indices Between USGS Gauge 02310747 and HSPF Reach 03.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310747	Simulated Reach 03	Percent Difference
MA1: Mean, all daily flows	540.61	33.34	-93.83
MA2: Median, all daily flows	492.00	15.56	-96.84
MA3: CV, all daily flows	59.87	138.78	131.81
MA4: CV, log of all daily flows	56.22	114.25	103.21
MA5: Mean daily flow / median daily flow	1.10	2.14	94.96
MA9: (Q10 - Q90) / median daily flow	1.71	5.31	209.54
MA10: (Q20 - Q80) / median daily flow	1.11	2.92	162.41
MA11: (Q25 - Q75) / median daily flow	0.87	2.19	152.24
MA12: Mean monthly flow, January	637.94	15.75	-97.53
MA13: Mean monthly flow, February	560.80	33.26	-94.07
MA14: Mean monthly flow, March	527.82	35.92	-93.20
MA15: Mean monthly flow, April	477.80	18.82	-96.06
MA16: Mean monthly flow, May	385.74	12.52	-96.76
MA17: Mean monthly flow, June	356.12	28.51	-92.00
MA18: Mean monthly flow, July	340.53	48.01	-85.90
MA19: Mean monthly flow, August	384.96	70.91	-81.58
MA20: Mean monthly flow, September	433.13	57.31	-86.77
MA21: Mean monthly flow, October	476.79	22.53	-95.27
MA22: Mean monthly flow, November	572.23	8.25	-98.56
MA23: Mean monthly flow, December	658.25	19.53	-97.03
ML1: Mean minimum monthly flow, January	107.89	5.18	-95.20
ML2: Mean minimum monthly flow, February	136.52	11.25	-91.76
ML3: Mean minimum monthly flow, March	115.92	11.59	-90.00
ML4: Mean minimum monthly flow, April	112.80	5.45	-95.17
ML5: Mean minimum monthly flow, May	67.23	2.85	-95.76
ML6: Mean minimum monthly flow, June	64.11	7.38	-88.49
ML7: Mean minimum monthly flow, July	58.86	19.11	-67.53
ML8: Mean minimum monthly flow, August	70.83	23.61	-66.66
ML9: Mean minimum monthly flow, September	76.67	13.28	-82.68
ML10: Mean minimum monthly flow, October	74.04	7.26	-90.19
ML11: Mean minimum monthly flow, November	51.61	3.63	-92.97
ML12: Mean minimum monthly flow, December	118.75	4.98	-95.81
ML13: CV of minimum monthly flows	112.13	104.39	-6.91
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.10	412.20
ML15: Mean minimum annual flow / mean annual flow	0.02	0.07	257.48
ML16: Median minimum annual flow / median annual flow	0.02	0.08	278.10
ML20: Ratio of baseflow volume to total flow volume	0.26	0.40	55.92
ML22: Mean annual minimum flow divided by catchment area	0.10	0.03	-68.86
RA1: Mean of positive changes from one day to next (rise rate)	284.59	19.89	
RA2: CV, mean of positive changes from one day to next (rise rate)	102.99	250.31	
RA3: Mean of negative changes from one day to next (fall rate)	263.49	4.95	
RA4: CV, mean of negative changes from one day to next (fall rate)	94.63	275.83	
RA5: Ratio of days that are higher than previous day	0.48	0.20	
RA6: Median of difference in log of flows over two consecutive days of rising	0.45	0.27	

RA7: Median of difference in log of flows over two consecutive days of falling	0.44	0.10	
RA8: Number of flow reversals from one day to the next	171.00	67.38	
RA9: CV, number of flow reversals from one day to the next	29.29	27.93	

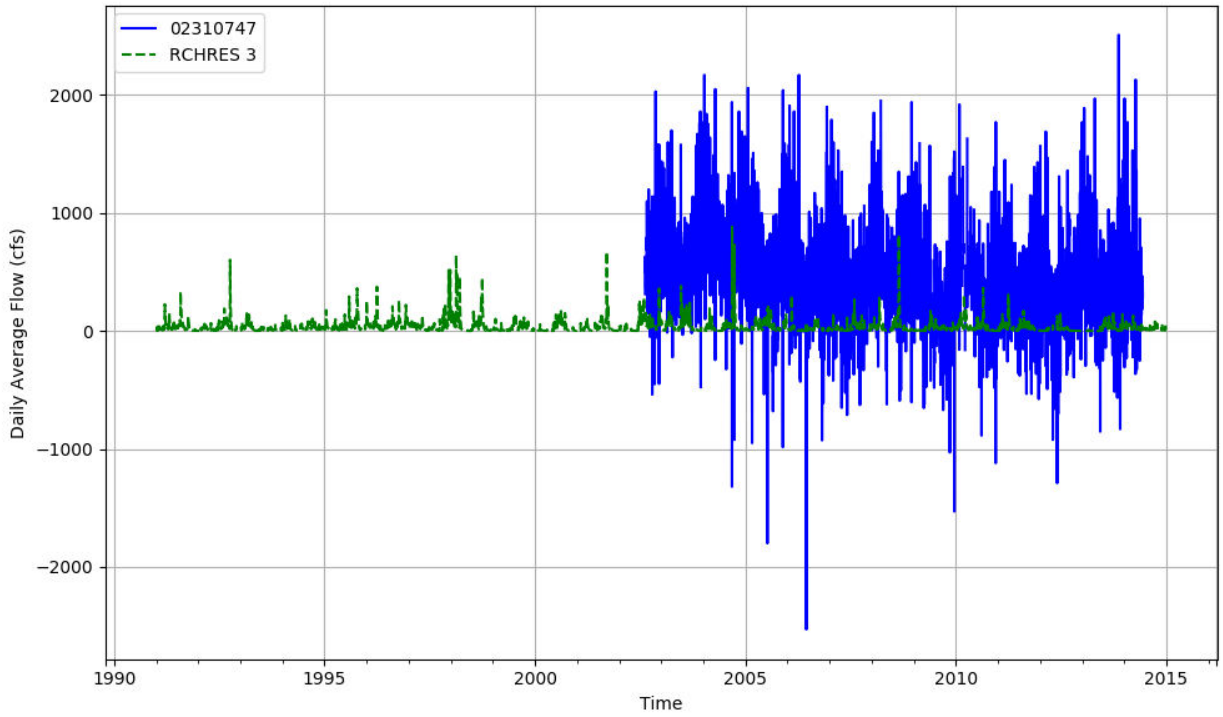


Figure T-03100207-4: Daily flow for HSFP reach 03 and USGS station 02310747.

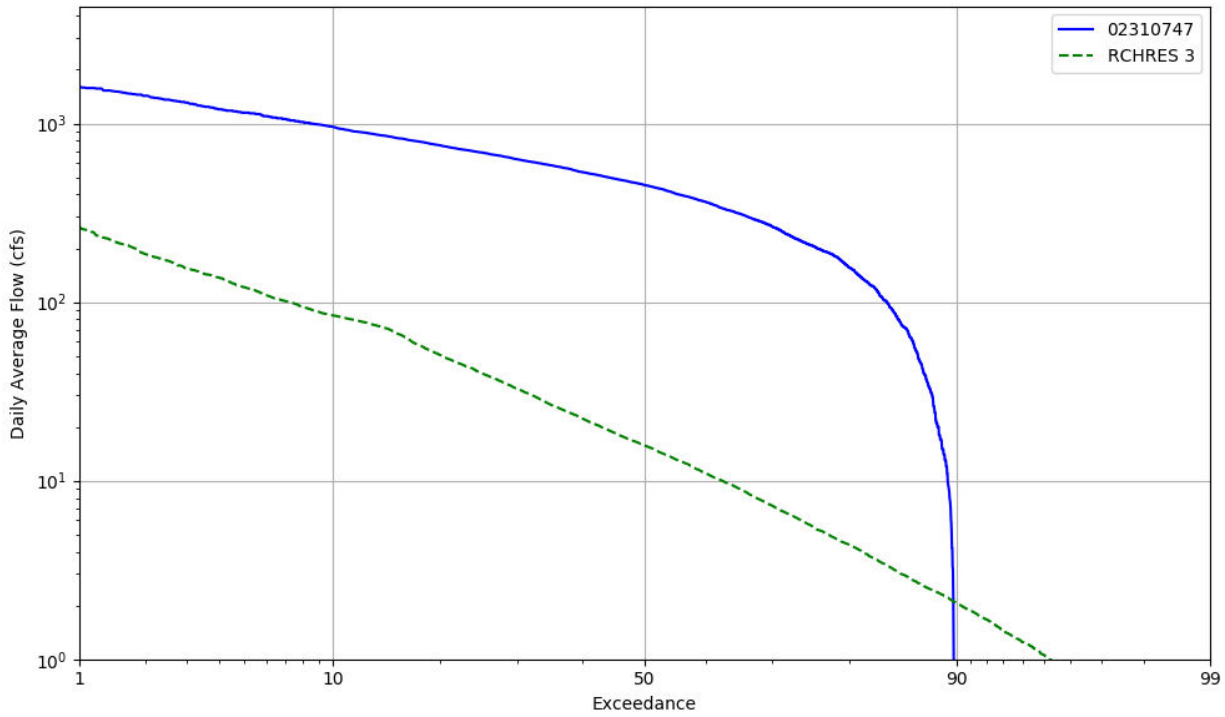


Figure T-03100207-5: Daily exceedance for HSFP reach 03 and USGS station 02310747.

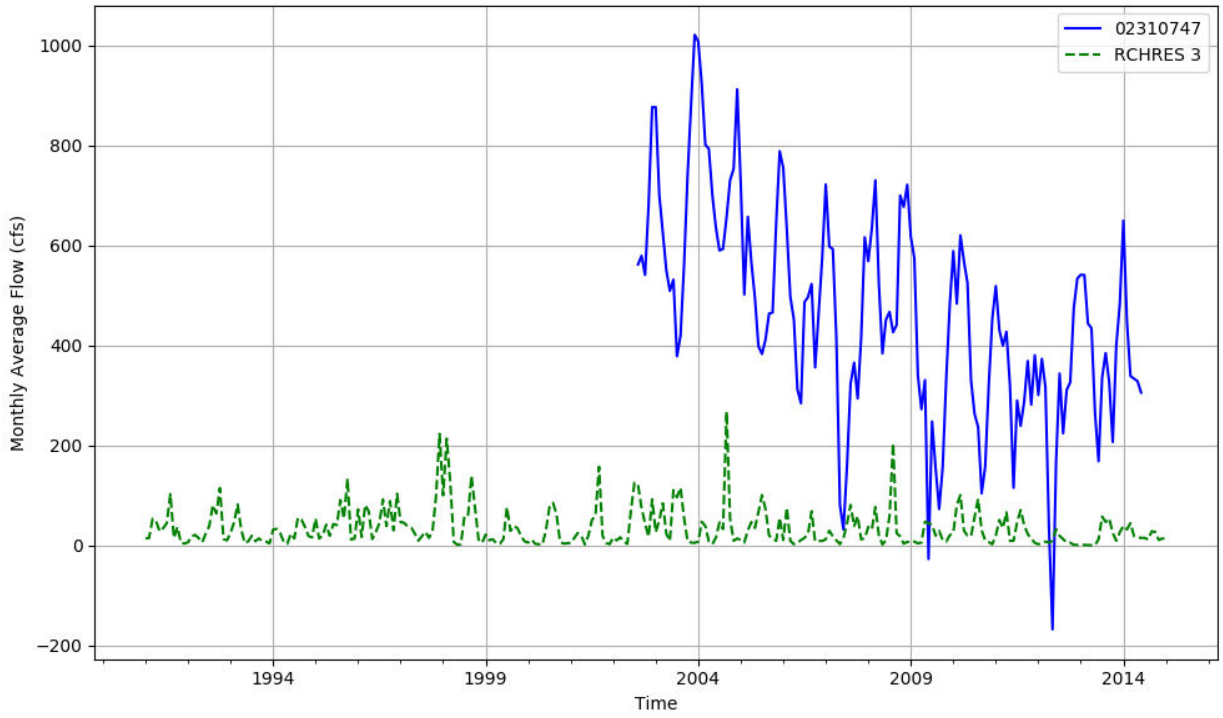


Figure T-03100207-6: Monthly flow for HSFP reach 03 and USGS station 02310747.

HSPF REACH 07, USGS GAUGE 02310688

Water-Data Report 2009
02310688 SE FORK HOMOSASSA SPRING AT HOMOSASSA SPRINGS, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 284750, long 823524 referenced to North American Datum of 1927, in NE 1/4 sec.28, T.19 S., R.17 E., Citrus County, FL, Hydrologic Unit 03100207, at bridge on Fishbowl Drive, 0.6 mi west of town of Homosassa Springs, and 3.1 mi northeast of Homosassa.

DRAINAGE AREA.--Indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--1932, 1933, 1936, 1946, 1956, 1963-65, 1976-86, 1997-2000 (discharge measurements only); October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage not determined.

COOPERATION.--This gage is monitored in cooperation with Southwest Florida Water Management District.

REMARKS.--Records poor. Missing discharge data is not estimated because the missing rate of change data can not be estimated. Discharge computed from relation between artesian pressure at Weeki Wachee Well near Weeki Wachee, gage-heights in the spring run, rate of change in stage, and field measurements. See WRIR 01-4230 for computation techniques.

Table T-03100207-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02310688.

Statistic	Value
Bias	1.25
Standard error	5.02
Relative bias	0.02
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.72
Kling-Gupta coefficient	0.85
Coefficient of efficiency	0.53
Index of agreement	0.75

Table T-03100207-4: Hydrologic Indices Between USGS Gauge 02310688 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310688	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	59.53	60.73	2.01
MA2: Median, all daily flows	58.00	57.35	-1.12

MA3: CV, all daily flows	12.82	8.53	-33.50
MA4: CV, log of all daily flows	16.25	13.85	-14.74
MA5: Mean daily flow / median daily flow	1.03	1.06	3.17
MA9: (Q10 - Q90) / median daily flow	0.48	0.41	-14.44
MA10: (Q20 - Q80) / median daily flow	0.31	0.23	-25.27
MA11: (Q25 - Q75) / median daily flow	0.24	0.18	-24.75
MA12: Mean monthly flow, January	61.42	62.15	1.19
MA13: Mean monthly flow, February	55.51	57.14	2.93
MA14: Mean monthly flow, March	53.36	54.72	2.54
MA15: Mean monthly flow, April	52.21	53.57	2.59
MA16: Mean monthly flow, May	49.54	53.37	7.74
MA17: Mean monthly flow, June	49.94	52.35	4.82
MA18: Mean monthly flow, July	54.11	55.70	2.93
MA19: Mean monthly flow, August	56.30	57.78	2.63
MA20: Mean monthly flow, September	58.70	59.21	0.87
MA21: Mean monthly flow, October	63.34	63.32	-0.03
MA22: Mean monthly flow, November	61.67	61.36	-0.52
MA23: Mean monthly flow, December	62.15	61.92	-0.37
ML1: Mean minimum monthly flow, January	52.57	59.27	12.74
ML2: Mean minimum monthly flow, February	49.54	56.66	14.37
ML3: Mean minimum monthly flow, March	45.85	54.66	19.22
ML4: Mean minimum monthly flow, April	47.15	54.70	16.01
ML5: Mean minimum monthly flow, May	46.38	54.74	18.01
ML6: Mean minimum monthly flow, June	43.92	51.93	18.24
ML7: Mean minimum monthly flow, July	49.54	55.22	11.48
ML8: Mean minimum monthly flow, August	51.85	58.23	12.31
ML9: Mean minimum monthly flow, September	53.00	58.78	10.90
ML10: Mean minimum monthly flow, October	53.93	60.21	11.64
ML11: Mean minimum monthly flow, November	51.64	58.94	14.14
ML12: Mean minimum monthly flow, December	51.14	58.47	14.33
ML13: CV of minimum monthly flows	19.00	15.27	-19.64
ML14: Mean minimum daily flow / mean median annual flow	0.66	0.82	24.09
ML15: Mean minimum annual flow / mean annual flow	0.66	0.82	24.48
ML16: Median minimum annual flow / median annual flow	0.68	0.82	21.10
ML20: Ratio of baseflow volume to total flow volume	0.90	0.98	8.45
ML22: Mean annual minimum flow divided by catchment area	0.39	0.49	25.89
RA1: Mean of positive changes from one day to next (rise rate)	4.12	1.41	
RA2: CV, mean of positive changes from one day to next (rise rate)	99.11	273.91	
RA3: Mean of negative changes from one day to next (fall rate)	3.64	1.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	89.03	227.89	
RA5: Ratio of days that are higher than previous day	0.40	0.40	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.01	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.01	
RA8: Number of flow reversals from one day to the next	139.93	81.36	
RA9: CV, number of flow reversals from one day to the next	21.20	29.59	

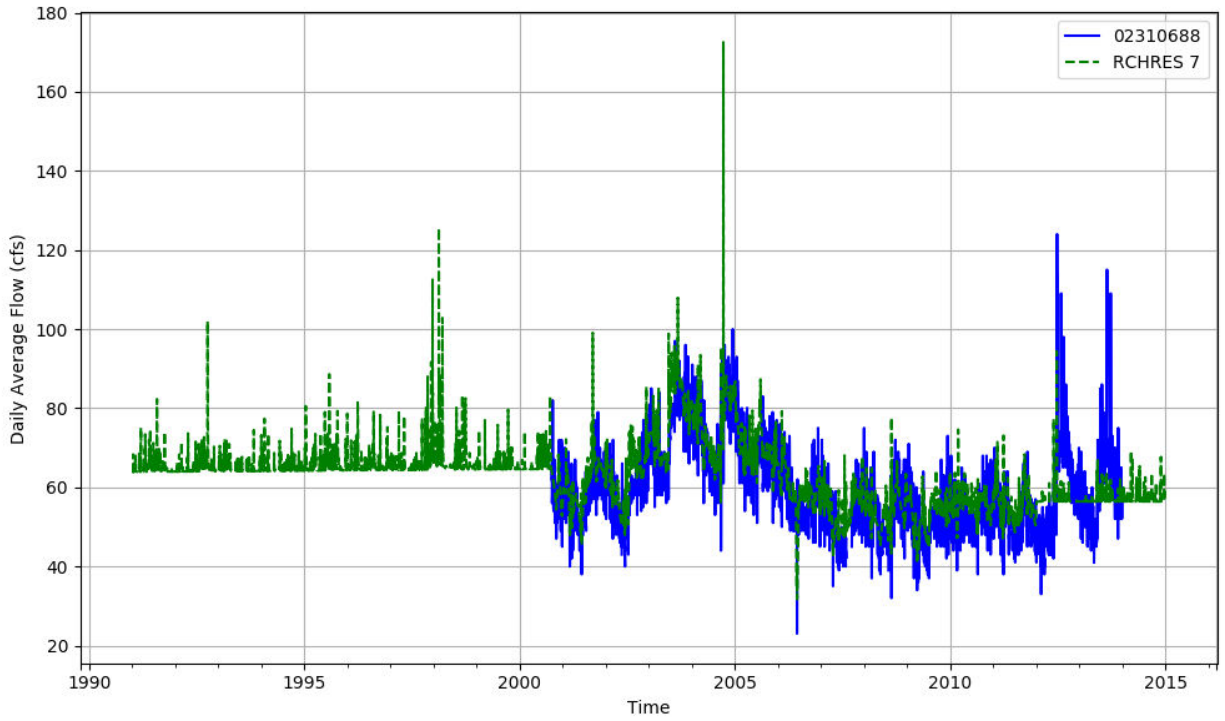


Figure T-03100207-7: Daily flow for HSFP reach 07 and USGS station 02310688.

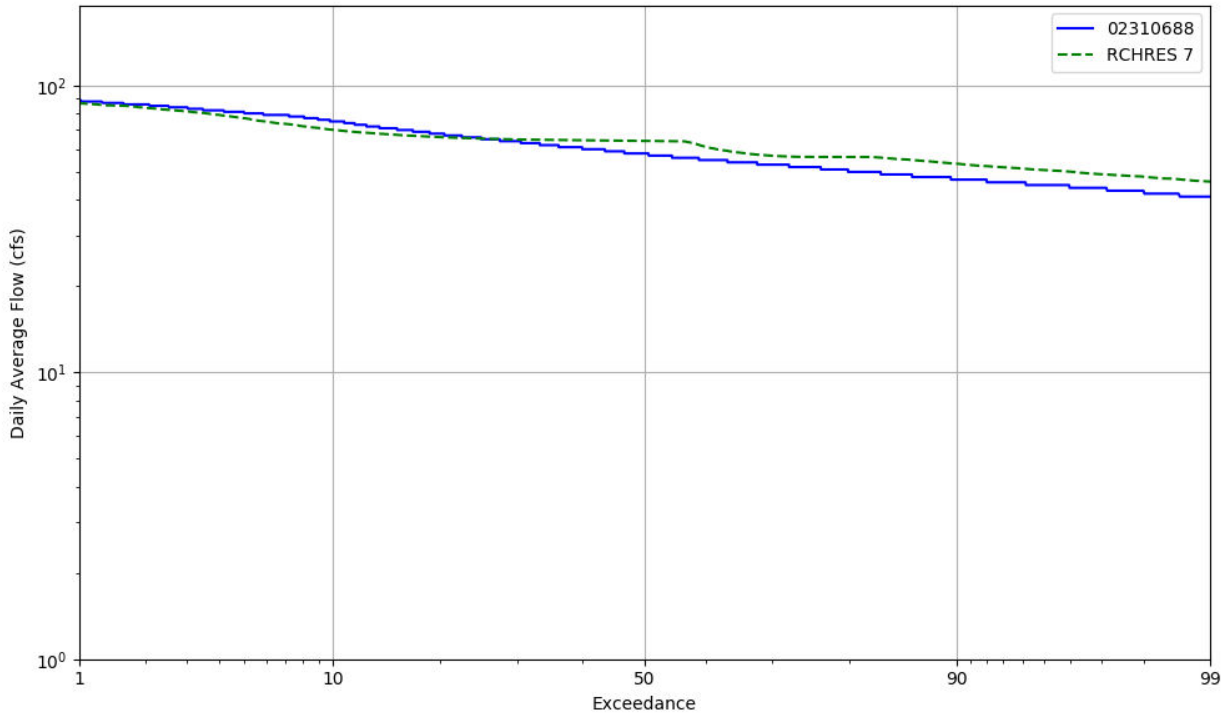


Figure T-03100207-8: Daily exceedance for HSFP reach 07 and USGS station 02310688.

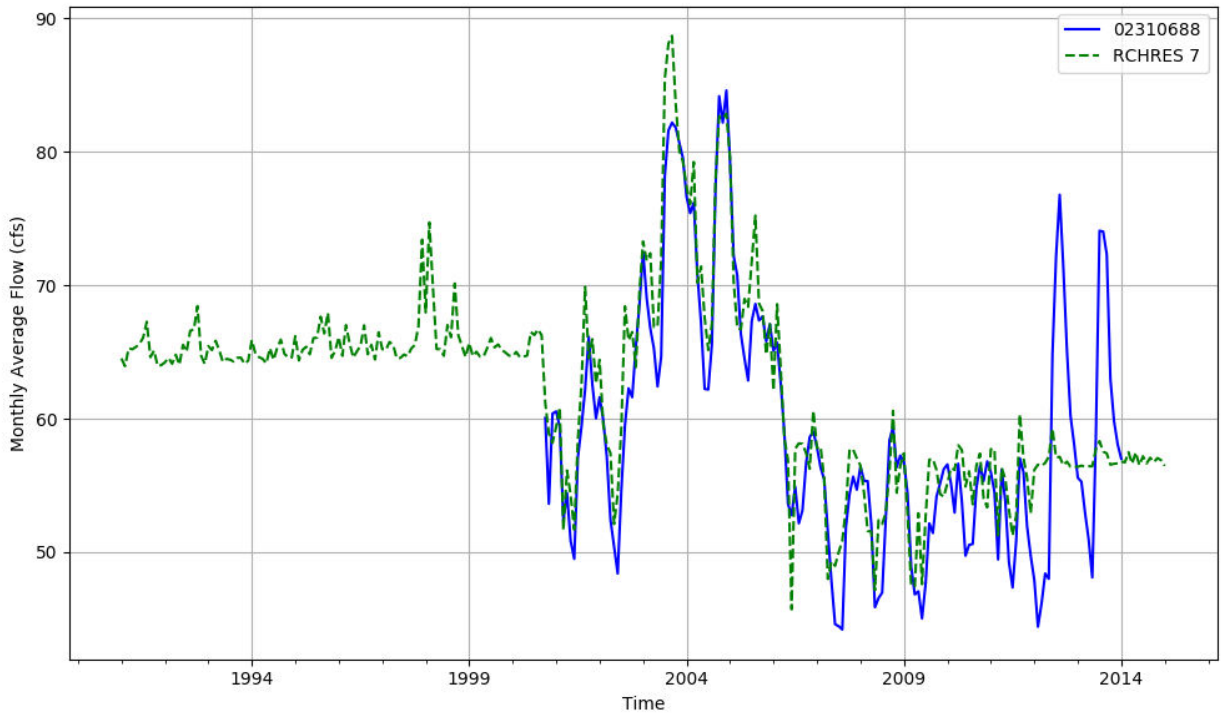


Figure T-03100207-9: Monthly flow for HSFP reach 07 and USGS station 02310688.

HSPF REACH 09, USGS GAUGE 02310700

Water-Data Report 2009
02310700 HOMOSASSA RIVER AT HOMOSASSA, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 284706, long 823705 referenced to North American Datum of 1927, in sec.31, T.19 S., R.17 E., Citrus County, FL, Hydrologic Unit 03100207, on left bank, on private dock, 0.3 mi northwest of Homosassa, and 5.3 mi upstream from mouth.

DRAINAGE AREA.--Undetermined.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1964 to September 1965 (gage heights and periodic discharge measurements only); October 1965 to September 1969 (periodic discharge measurements and maximum and minimum gage heights only); October 1969 to September 1976 (maximum and minimum gage heights only); October 1976 to September 1978 (maximum and minimum elevations only); March 1984 to May 1984 (gage heights only); June 1984 to November 1985; December 1985 to February 1986 (gage heights only); July 1997 to February 1999 (gage heights only); May 2004 to current year.

REVISED RECORDS.--WDR FL-05-3A:Residual discharge 2004 water year.

GAGE.--Water-stage and velocity recorder. Datum of gage is 1.49 ft above National Geodetic Vertical Datum of 1929 (corrected). Prior to July 1997 to February 1999, at site 500 ft upstream at same site at same datum.

COOPERATION.--This gage is monitored in cooperation with Southwest Florida Water Management District.

REMARKS.--Residual discharge records poor. Affected by tide. Instantaneous discharge computed from index-velocity gage height multiple linear regression relation and gage height-to-area quadratic equation relation. The Godin filter is used to yield the residual discharge for the Homosassa River station. The residual discharges are not total "freshwater" flow, but are a combination of freshwater flow and water storage caused by higher or lower Gulf of Mexico mean water levels. The residual discharge is used to estimate mean discharge values. Residual discharge was published in error for the 2004 water year and republished in the 2005 water year.

Table T-03100207-5: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02310700.

Statistic	Value
Bias	-114.59

Standard error	132.03
Relative bias	-0.57
Relative standard error	1.92
Nash-Sutcliffe coefficient	-2.70
Kling-Gupta coefficient	0.03
Coefficient of efficiency	-1.25
Index of agreement	0.31

Table T-03100207-6: Hydrologic Indices Between USGS Gauge 02310700 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310700	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	225.53	88.84	-60.61
MA2: Median, all daily flows	206.00	74.44	-63.86
MA3: CV, all daily flows	61.56	50.49	-17.98
MA4: CV, log of all daily flows	50.65	31.91	-36.99
MA5: Mean daily flow / median daily flow	1.09	1.19	9.00
MA9: (Q10 - Q90) / median daily flow	1.53	0.90	-41.37
MA10: (Q20 - Q80) / median daily flow	0.96	0.48	-50.11
MA11: (Q25 - Q75) / median daily flow	0.77	0.37	-52.30
MA12: Mean monthly flow, January	240.12	65.51	-72.72
MA13: Mean monthly flow, February	164.09	63.34	-61.40
MA14: Mean monthly flow, March	182.02	69.62	-61.75
MA15: Mean monthly flow, April	174.20	63.48	-63.56
MA16: Mean monthly flow, May	156.33	67.55	-56.79
MA17: Mean monthly flow, June	193.81	76.53	-60.51
MA18: Mean monthly flow, July	197.06	96.82	-50.87
MA19: Mean monthly flow, August	216.31	112.62	-47.94
MA20: Mean monthly flow, September	230.22	103.66	-54.97
MA21: Mean monthly flow, October	208.11	76.05	-63.46
MA22: Mean monthly flow, November	182.88	56.90	-68.89
MA23: Mean monthly flow, December	227.28	66.07	-70.93
ML1: Mean minimum monthly flow, January	105.90	65.40	-38.25
ML2: Mean minimum monthly flow, February	45.12	68.43	51.65
ML3: Mean minimum monthly flow, March	32.26	64.61	100.31
ML4: Mean minimum monthly flow, April	9.24	63.86	591.34
ML5: Mean minimum monthly flow, May	24.46	63.44	159.37
ML6: Mean minimum monthly flow, June	55.64	64.75	16.36
ML7: Mean minimum monthly flow, July	61.47	75.83	23.36
ML8: Mean minimum monthly flow, August	44.88	75.94	69.22
ML9: Mean minimum monthly flow, September	55.00	72.55	31.92
ML10: Mean minimum monthly flow, October	52.12	70.65	35.56
ML11: Mean minimum monthly flow, November	47.00	64.79	37.86
ML12: Mean minimum monthly flow, December	66.23	65.21	-1.53
ML13: CV of minimum monthly flows	127.58	15.33	-87.99
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.78	3529.43
ML15: Mean minimum annual flow / mean annual flow	0.02	0.66	3359.08
ML16: Median minimum annual flow / median annual flow	0.01	0.77	9701.89
ML20: Ratio of baseflow volume to total flow volume	0.28	0.83	194.23
ML22: Mean annual minimum flow divided by catchment area	0.04	0.58	1207.11
RA1: Mean of positive changes from one day to next (rise rate)	117.45	12.05	
RA2: CV, mean of positive changes from one day to	120.33	328.57	

next (rise rate)			
RA3: Mean of negative changes from one day to next (fall rate)	101.96	4.37	
RA4: CV, mean of negative changes from one day to next (fall rate)	100.67	275.54	
RA5: Ratio of days that are higher than previous day	0.46	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.40	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.38	0.02	
RA8: Number of flow reversals from one day to the next	157.00	69.64	
RA9: CV, number of flow reversals from one day to the next	32.84	35.20	

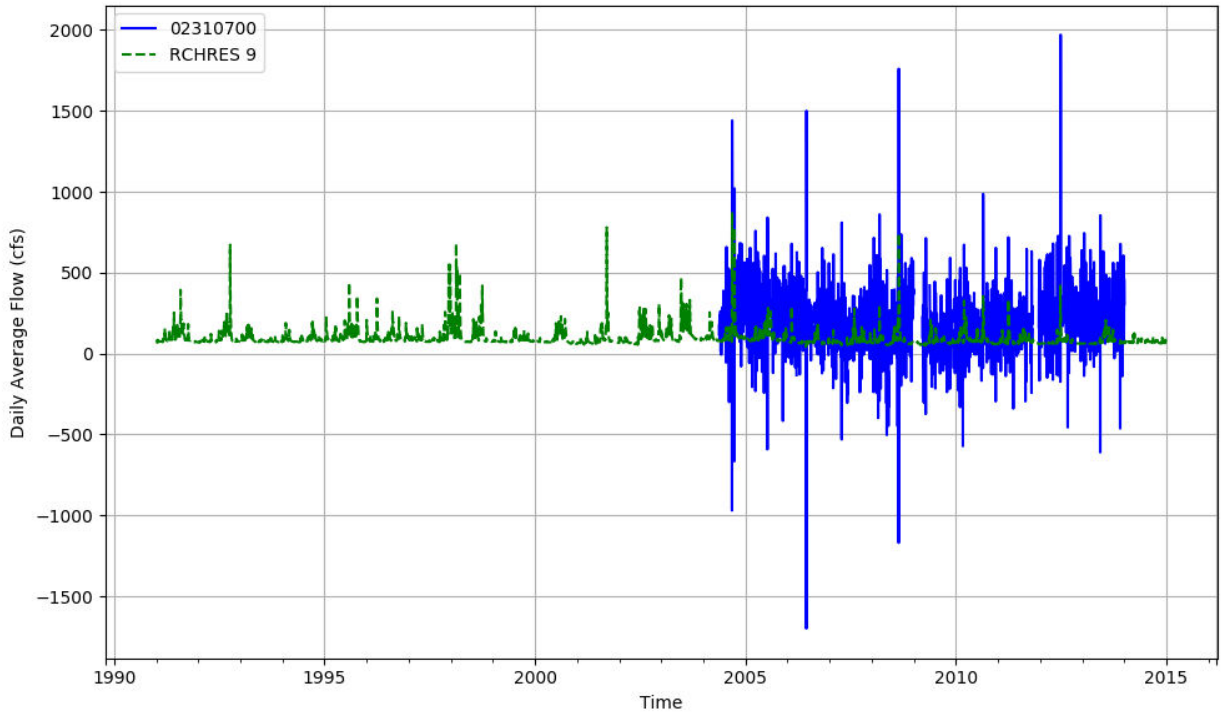


Figure T-03100207-10: Daily flow for HSFP reach 09 and USGS station 02310700.

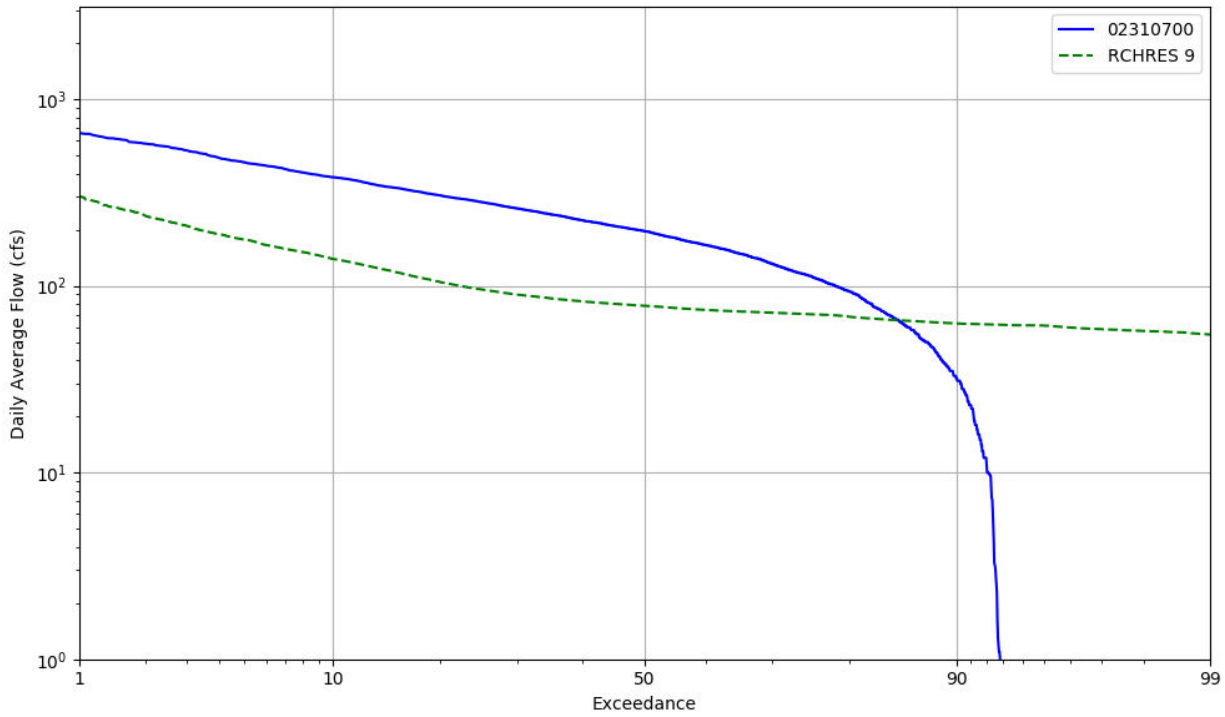


Figure T-03100207-11: Daily exceedance for HSFP reach 09 and USGS station 02310700.

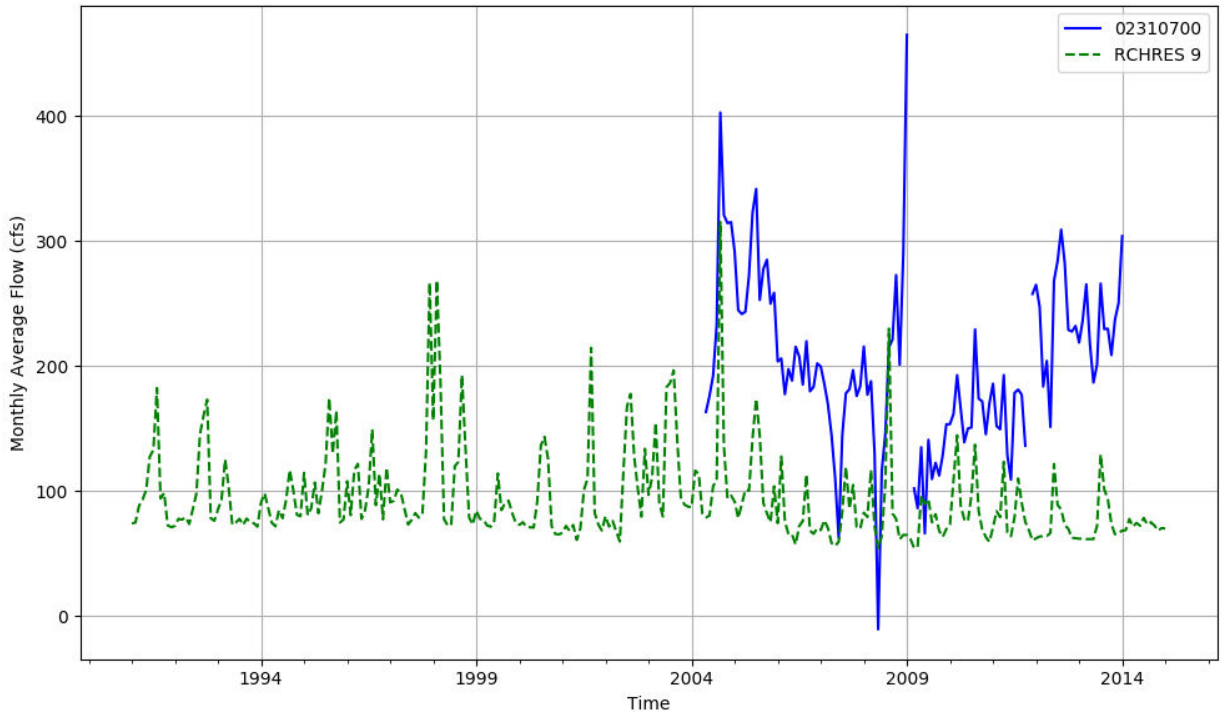


Figure T-03100207-12: Monthly flow for HSFP reach 09 and USGS station 02310700.

HSPF REACH 12, USGS GAUGE 02310663

Water-Data Report 2009
02310663 CHASSAHOWITZKA RIVER NEAR CHASSSAHOWITZKA, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 284254, long 823623 referenced to North American Datum of 1927, in SE 1/4 sec.28, T.20 S., R.17 E., Citrus County, FL, Hydrologic Unit 03100207, on private dock, on right edge of water, 0.3 mi upstream from confluence with Johnson Creek, and 2.0 mi west of Chassahowitzka.

DRAINAGE AREA.--76 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1984 to November 1985 (gage heights only); May 1997 to September 1998 (gage-heights only); May 2003 to current year.

REVISED RECORDS.--WDR-04-3A:2003, 2004 (M and daily).

GAGE.--Water stage and velocity sensors. Datum of gage is National Geodetic Vertical Datum of 1929.

COOPERATION.--This gage is monitored in cooperation with Southwest Florida Water Management District.

REMARKS.--Residual and instanteneous discharge records poor. Site is tidally affected. Instantaneous discharge computed from index-velocity to mean channel velocity linear regression relation and gage height-to-area quadratic equation relation. A Godin filter is used to yield the residual discharge for this station. The residual discharges are not total "freshwater" flow but a combination of freshwater and water storage caused by higher or lower Gulf of Mexico mean water levels. The residual discharge is used to estimate mean daily discharge values. Previously published as 274254082362300 Chassahowitzka River above Johnson Creek near Chassahowitzka.

Table T-03100207-7: Comparison Statistics Between HSPF Reach 12 and USGS Gauge 02310663.

Statistic	Value
Bias	49.97
Standard error	87.08
Relative bias	0.50
Relative standard error	0.99
Nash-Sutcliffe coefficient	0.02
Kling-Gupta coefficient	0.15

Coefficient of efficiency	-0.01
Index of agreement	0.40

Table T-03100207-8: Hydrologic Indices Between USGS Gauge 02310663 and HSPF Reach 12.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310663	Simulated Reach 12	Percent Difference
MA1: Mean, all daily flows	135.58	148.78	9.74
MA2: Median, all daily flows	117.00	132.52	13.27
MA3: CV, all daily flows	67.78	31.40	-53.68
MA4: CV, log of all daily flows	65.20	23.04	-64.67
MA5: Mean daily flow / median daily flow	1.16	1.12	-3.11
MA9: (Q10 - Q90) / median daily flow	2.09	0.69	-66.95
MA10: (Q20 - Q80) / median daily flow	1.35	0.35	-73.77
MA11: (Q25 - Q75) / median daily flow	1.06	0.26	-75.97
MA12: Mean monthly flow, January	104.00	119.24	14.65
MA13: Mean monthly flow, February	114.90	129.18	12.43
MA14: Mean monthly flow, March	117.22	130.19	11.07
MA15: Mean monthly flow, April	108.15	124.42	15.04
MA16: Mean monthly flow, May	106.93	134.21	25.52
MA17: Mean monthly flow, June	131.43	158.43	20.55
MA18: Mean monthly flow, July	132.01	172.44	30.63
MA19: Mean monthly flow, August	147.56	178.15	20.73
MA20: Mean monthly flow, September	138.08	149.03	7.93
MA21: Mean monthly flow, October	109.99	135.18	22.90
MA22: Mean monthly flow, November	106.92	118.52	10.84
MA23: Mean monthly flow, December	111.19	116.61	4.88
ML1: Mean minimum monthly flow, January	17.47	122.54	601.23
ML2: Mean minimum monthly flow, February	38.47	120.23	212.54
ML3: Mean minimum monthly flow, March	22.39	111.02	395.82
ML4: Mean minimum monthly flow, April	9.33	106.18	1037.73
ML5: Mean minimum monthly flow, May	20.21	113.00	459.20
ML6: Mean minimum monthly flow, June	33.40	120.88	261.91
ML7: Mean minimum monthly flow, July	54.29	146.00	168.91
ML8: Mean minimum monthly flow, August	42.60	130.71	206.82
ML9: Mean minimum monthly flow, September	47.49	128.01	169.53
ML10: Mean minimum monthly flow, October	15.91	126.82	697.18
ML11: Mean minimum monthly flow, November	17.55	119.27	579.78
ML12: Mean minimum monthly flow, December	26.84	116.42	333.77
ML13: CV of minimum monthly flows	144.43	22.18	-84.65
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.55	3769.23
ML15: Mean minimum annual flow / mean annual flow	0.01	0.50	3768.15
ML16: Median minimum annual flow / median annual flow	0.01	0.66	5316.16
ML20: Ratio of baseflow volume to total flow volume	0.30	0.88	189.25
ML22: Mean annual minimum flow divided by catchment area	0.02	0.78	4244.10
RA1: Mean of positive changes from one day to next (rise rate)	67.55	12.45	
RA2: CV, mean of positive changes from one day to next (rise rate)	135.38	264.10	
RA3: Mean of negative changes from one day to next (fall rate)	57.08	5.67	
RA4: CV, mean of negative changes from one day to next (fall rate)	120.89	217.17	

RA5: Ratio of days that are higher than previous day	0.45	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.42	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.36	0.01	
RA8: Number of flow reversals from one day to the next	140.17	90.58	
RA9: CV, number of flow reversals from one day to the next	25.26	32.31	

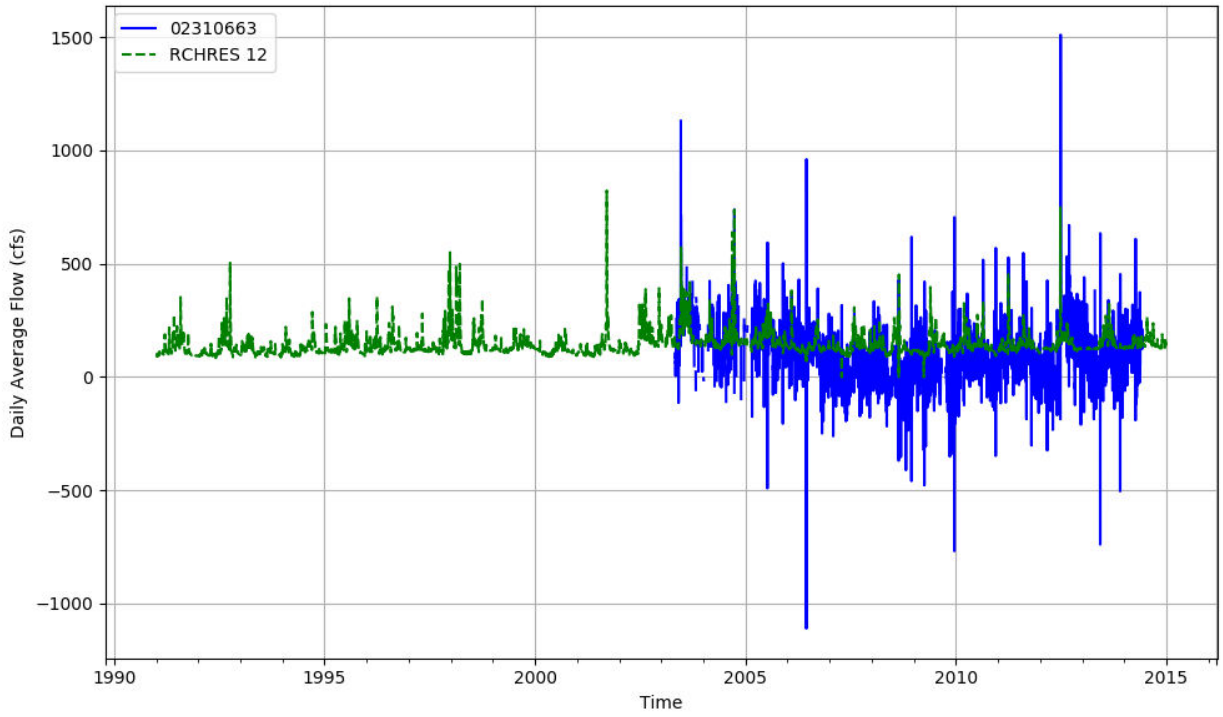


Figure T-03100207-13: Daily flow for HSFP reach 12 and USGS station 02310663.

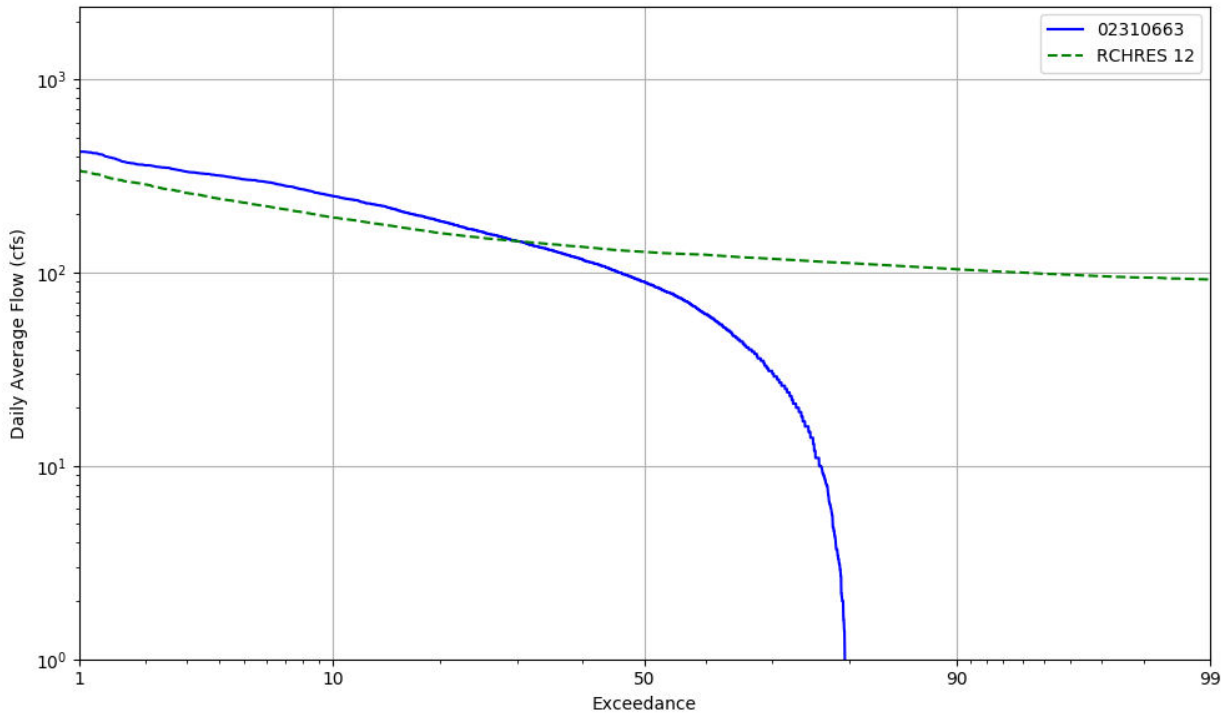


Figure T-03100207-14: Daily exceedance for HSFP reach 12 and USGS station 02310663.

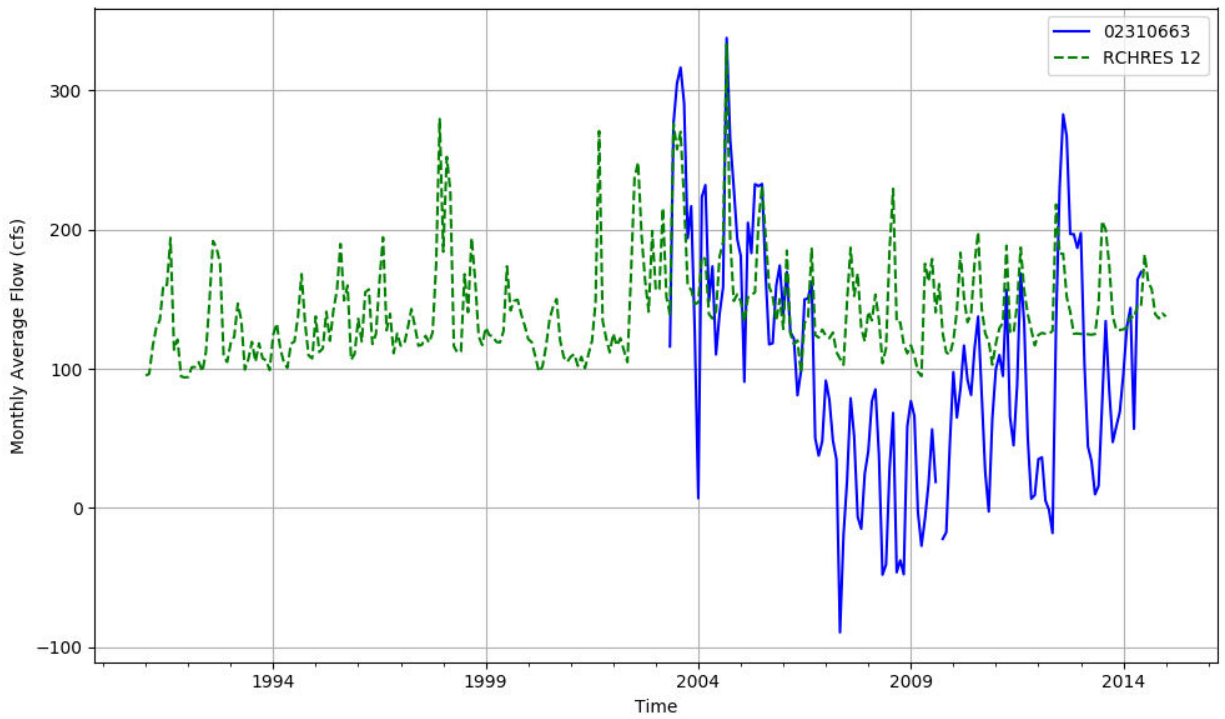


Figure T-03100207-15: Monthly flow for HSFP reach 12 and USGS station 02310663.

HSPF REACH 18, USGS GAUGE 02310525

Water-Data Report 2009
02310525 WEEKI WACHEE RIVER NEAR BROOKSVILLE, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 283107, long 823457 referenced to North American Datum of 1927, in NE 1/4 sec.2, T.23 S., R.17 E., Hernando County, FL, Hydrologic Unit 03100207, located on the right bank of river at Weeki Wachees SpringsPelican Orphanage, off of Hernando County Rd 550 .62 mi west from the intersection of U.S. Hwy 19 and State Road 50, 12 miles southwest of Brooksville.

DRAINAGE AREA.--Undetermined.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Nonrecording gage. Datum of staff gage is North American Vertical Datum of 1988.

COOPERATION.--This gage is monitored in cooperation with Southwest Florida Water Management District.

REMARKS.--Records fair. Discharge measurements made about 1.0 mi downstream from head of springs. Discharge computed from relation between artesian pressure at Weeki Wachee Well near Weeki Wachee using maximum daily water level elevation and discharge at measuring site. See WRIR 01-4230 for computation techniques.

Table T-03100207-9: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02310525.

Statistic	Value
Bias	4.98
Standard error	21.76
Relative bias	0.03
Relative standard error	0.70
Nash-Sutcliffe coefficient	0.52
Kling-Gupta coefficient	0.68
Coefficient of efficiency	0.38
Index of agreement	0.64

Table T-03100207-10: Hydrologic Indices Between USGS Gauge 02310525 and HSPF Reach 18.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02310525	Reach 18	Difference
MA1: Mean, all daily flows	155.65	160.80	3.31
MA2: Median, all daily flows	148.00	156.21	5.55
MA3: CV, all daily flows	11.23	10.12	-9.85
MA4: CV, log of all daily flows	18.26	13.62	-25.43
MA5: Mean daily flow / median daily flow	1.05	1.03	-2.12
MA9: (Q10 - Q90) / median daily flow	0.55	0.41	-25.56
MA10: (Q20 - Q80) / median daily flow	0.35	0.21	-39.70
MA11: (Q25 - Q75) / median daily flow	0.28	0.16	-42.22
MA12: Mean monthly flow, January	157.04	156.37	-0.43
MA13: Mean monthly flow, February	145.94	149.21	2.25
MA14: Mean monthly flow, March	142.64	149.25	4.64
MA15: Mean monthly flow, April	139.28	145.23	4.27
MA16: Mean monthly flow, May	132.91	139.83	5.21
MA17: Mean monthly flow, June	131.38	145.26	10.56
MA18: Mean monthly flow, July	142.54	157.38	10.41
MA19: Mean monthly flow, August	152.58	164.99	8.13
MA20: Mean monthly flow, September	163.08	170.08	4.30
MA21: Mean monthly flow, October	172.95	168.70	-2.46
MA22: Mean monthly flow, November	168.03	161.22	-4.06
MA23: Mean monthly flow, December	161.19	159.97	-0.76
ML1: Mean minimum monthly flow, January	152.67	151.33	-0.87
ML2: Mean minimum monthly flow, February	149.45	150.46	0.68
ML3: Mean minimum monthly flow, March	146.50	149.79	2.24
ML4: Mean minimum monthly flow, April	142.25	146.99	3.33
ML5: Mean minimum monthly flow, May	135.40	142.24	5.05
ML6: Mean minimum monthly flow, June	133.05	142.62	7.20
ML7: Mean minimum monthly flow, July	143.75	152.18	5.86
ML8: Mean minimum monthly flow, August	153.95	160.15	4.03
ML9: Mean minimum monthly flow, September	164.55	165.60	0.64
ML10: Mean minimum monthly flow, October	168.71	161.70	-4.16
ML11: Mean minimum monthly flow, November	163.86	156.91	-4.24
ML12: Mean minimum monthly flow, December	156.76	153.92	-1.81
ML13: CV of minimum monthly flows	20.13	15.05	-25.26
ML14: Mean minimum daily flow / mean median annual flow	0.85	0.90	5.77
ML15: Mean minimum annual flow / mean annual flow	0.83	0.88	5.11
ML16: Median minimum annual flow / median annual flow	0.85	0.93	10.06
ML20: Ratio of baseflow volume to total flow volume	1.00	0.98	-1.96
ML22: Mean annual minimum flow divided by catchment area	1.31	1.41	7.46
RA1: Mean of positive changes from one day to next (rise rate)	1.31	8.21	
RA2: CV, mean of positive changes from one day to next (rise rate)	85.04	182.08	
RA3: Mean of negative changes from one day to next (fall rate)	1.02	2.08	
RA4: CV, mean of negative changes from one day to next (fall rate)	36.93	251.15	
RA5: Ratio of days that are higher than previous day	0.15	0.20	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.00	
RA8: Number of flow reversals from one day to the next	16.81	87.19	

RA9: CV, number of flow reversals from one day to the next	37.37	28.59	

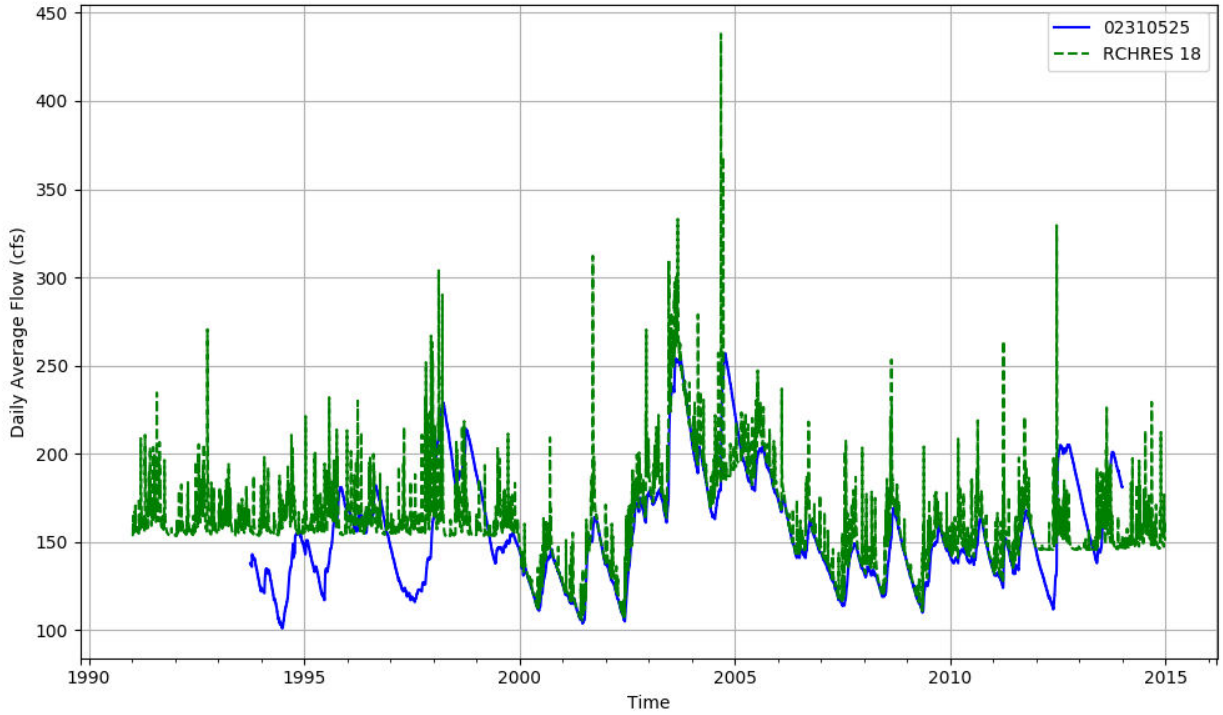


Figure T-03100207-16: Daily flow for HSFP reach 18 and USGS station 02310525.

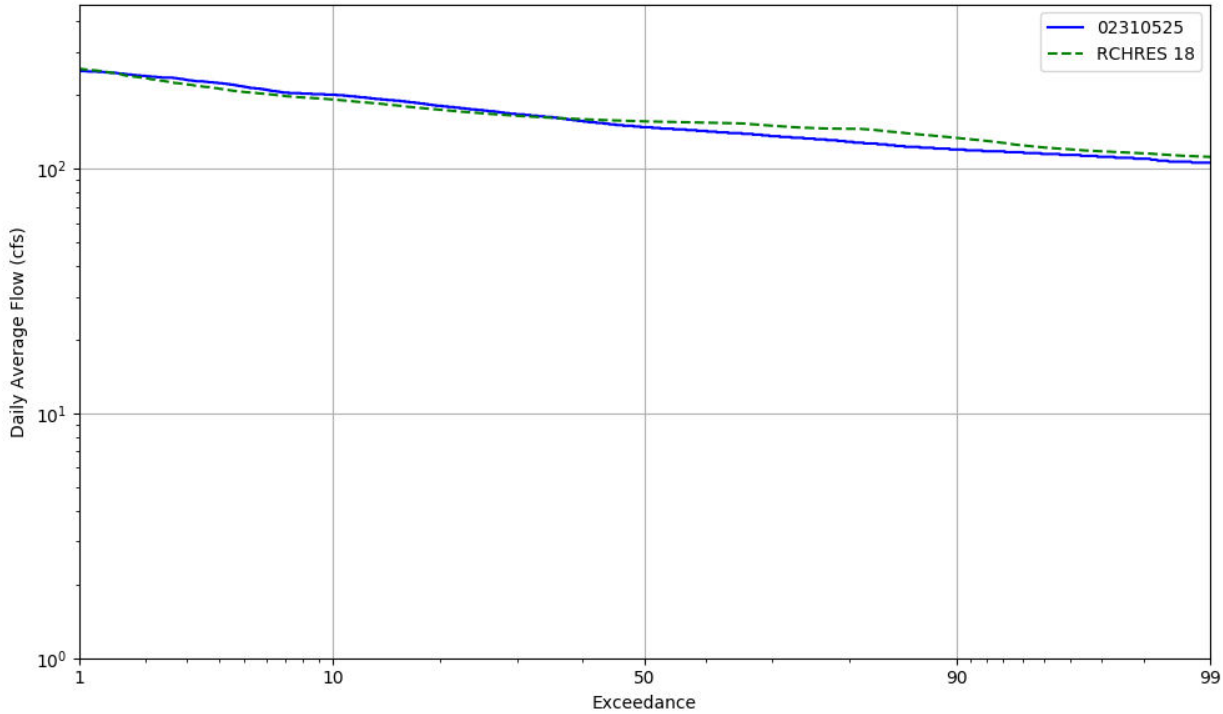


Figure T-03100207-17: Daily exceedance for HSFP reach 18 and USGS station 02310525.

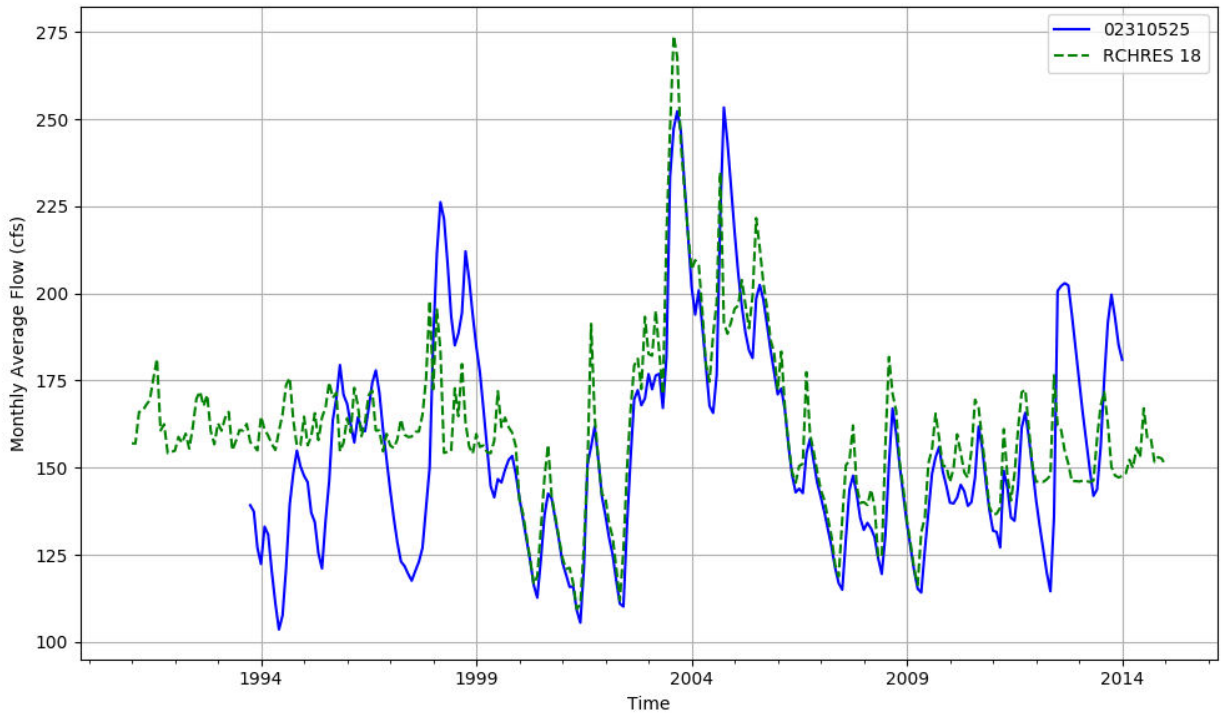


Figure T-03100207-18: Monthly flow for HSFP reach 18 and USGS station 02310525.

HSPF REACH 19, USGS GAUGE 02310545

Water-Data Report 2009
02310545 WEEKI WACHEE RIVER NEAR WEEKI WACHEE SPRINGS, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 283151, long 823724 referenced to North American Datum of 1927, in NW 1/4 sec.32, T.22 S., R.17 E., Hernando County, FL, Hydrologic Unit 03100207, on right bank of river bend, at private residence on Darlene Street off County Road 595, 2.3 mi south of intersection County Road 550 and 695, and 4.0 mi west of Weeki Wachee.

DRAINAGE AREA.--Indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1984 to September 1985 (discharge measurements and minimum and maximum gage heights only); November 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1.46 ft below National Geodetic Vertical datum of 1929.

COOPERATION.--This gage is monitored in cooperation with Southwest Florida Water Management District and Florida Department of Environmental Protection.

REMARKS.--Residual discharge records poor. Site is tidally affected. Instantaneous discharge computed from a regression equation and gage height-toarea quadratic equation. A ninth-order Butterworth low-pass filter is used to yield the residual discharge for this station. The residual discharges are not total "freshwater" flow, but a combination of freshwater and water storage caused by higher or lower Gulf of Mexico mean water levels. The residual discharge is used to estimate mean daily discharge values.

Table T-03100207-11: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02310545.

Statistic	Value
Bias	-3.44
Standard error	28.36
Relative bias	-0.02
Relative standard error	0.67
Nash-Sutcliffe coefficient	0.55
Kling-Gupta coefficient	0.73
Coefficient of efficiency	0.35
Index of agreement	0.65

Table T-03100207-12: Hydrologic Indices Between USGS Gauge 02310545 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310545	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	173.45	170.20	-1.87
MA2: Median, all daily flows	165.00	159.49	-3.34
MA3: CV, all daily flows	14.26	18.36	28.77
MA4: CV, log of all daily flows	23.66	19.77	-16.44
MA5: Mean daily flow / median daily flow	1.05	1.07	1.52
MA9: (Q10 - Q90) / median daily flow	0.68	0.58	-15.00
MA10: (Q20 - Q80) / median daily flow	0.48	0.35	-25.51
MA11: (Q25 - Q75) / median daily flow	0.39	0.29	-27.07
MA12: Mean monthly flow, January	169.31	156.99	-7.28
MA13: Mean monthly flow, February	166.00	158.68	-4.41
MA14: Mean monthly flow, March	164.43	161.50	-1.78
MA15: Mean monthly flow, April	161.43	155.51	-3.66
MA16: Mean monthly flow, May	143.04	136.14	-4.82
MA17: Mean monthly flow, June	149.77	150.55	0.52
MA18: Mean monthly flow, July	151.23	160.71	6.27
MA19: Mean monthly flow, August	170.68	183.78	7.68
MA20: Mean monthly flow, September	179.25	190.30	6.17
MA21: Mean monthly flow, October	176.22	166.19	-5.69
MA22: Mean monthly flow, November	180.28	164.81	-8.58
MA23: Mean monthly flow, December	175.63	162.62	-7.41
ML1: Mean minimum monthly flow, January	146.69	151.48	3.26
ML2: Mean minimum monthly flow, February	140.23	150.37	7.23
ML3: Mean minimum monthly flow, March	140.62	150.63	7.12
ML4: Mean minimum monthly flow, April	140.00	146.25	4.46
ML5: Mean minimum monthly flow, May	137.00	138.67	1.22
ML6: Mean minimum monthly flow, June	137.75	139.93	1.58
ML7: Mean minimum monthly flow, July	160.09	158.96	-0.71
ML8: Mean minimum monthly flow, August	164.67	170.54	3.57
ML9: Mean minimum monthly flow, September	166.25	175.99	5.86
ML10: Mean minimum monthly flow, October	168.33	169.75	0.84
ML11: Mean minimum monthly flow, November	152.38	159.80	4.87
ML12: Mean minimum monthly flow, December	140.08	154.14	10.04
ML13: CV of minimum monthly flows	27.61	19.19	-30.50
ML14: Mean minimum daily flow / mean median annual flow	0.69	0.85	23.71
ML15: Mean minimum annual flow / mean annual flow	0.67	0.81	20.50
ML16: Median minimum annual flow / median annual flow	0.72	0.81	13.36
ML20: Ratio of baseflow volume to total flow volume	0.92	0.95	3.07
ML22: Mean annual minimum flow divided by catchment area	1.19	1.37	15.35
RA1: Mean of positive changes from one day to next (rise rate)	11.13	14.76	
RA2: CV, mean of positive changes from one day to next (rise rate)	159.94	210.30	
RA3: Mean of negative changes from one day to next (fall rate)	9.32	3.50	
RA4: CV, mean of negative changes from one day to next (fall rate)	134.71	266.07	
RA5: Ratio of days that are higher than previous day	0.43	0.19	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.03	

RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.00	
RA8: Number of flow reversals from one day to the next	165.85	78.23	
RA9: CV, number of flow reversals from one day to the next	14.63	25.29	

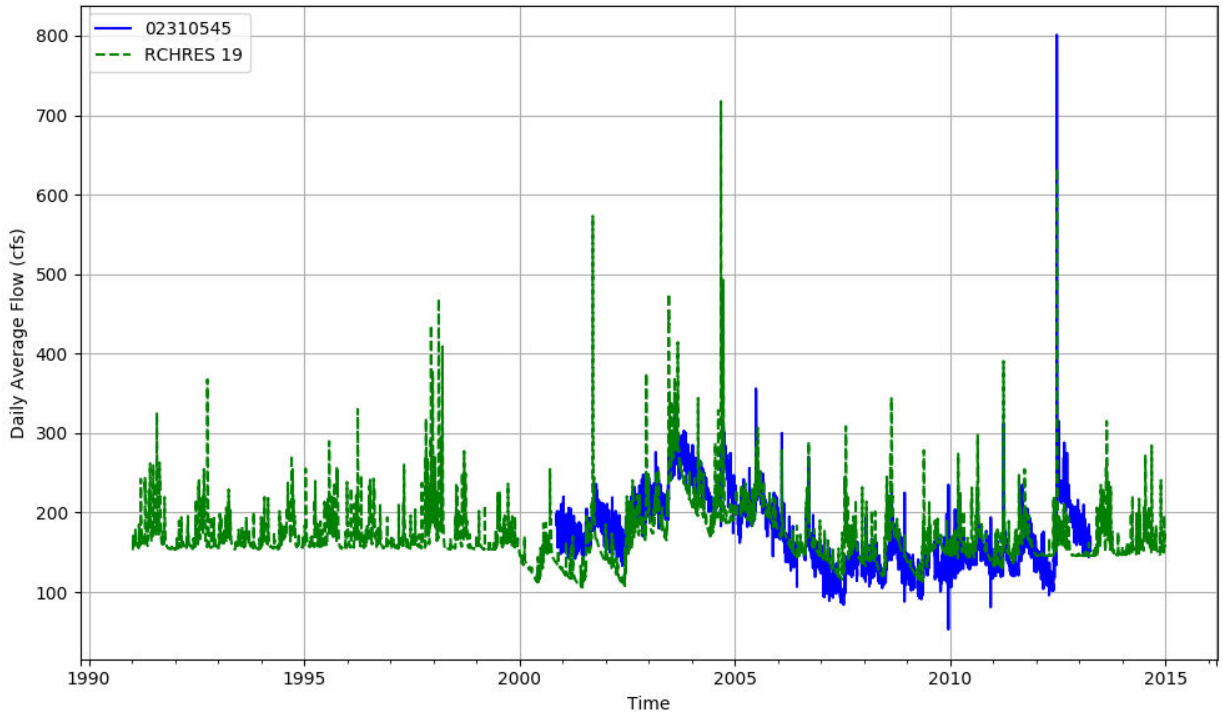


Figure T-03100207-19: Daily flow for HSFP reach 19 and USGS station 02310545.

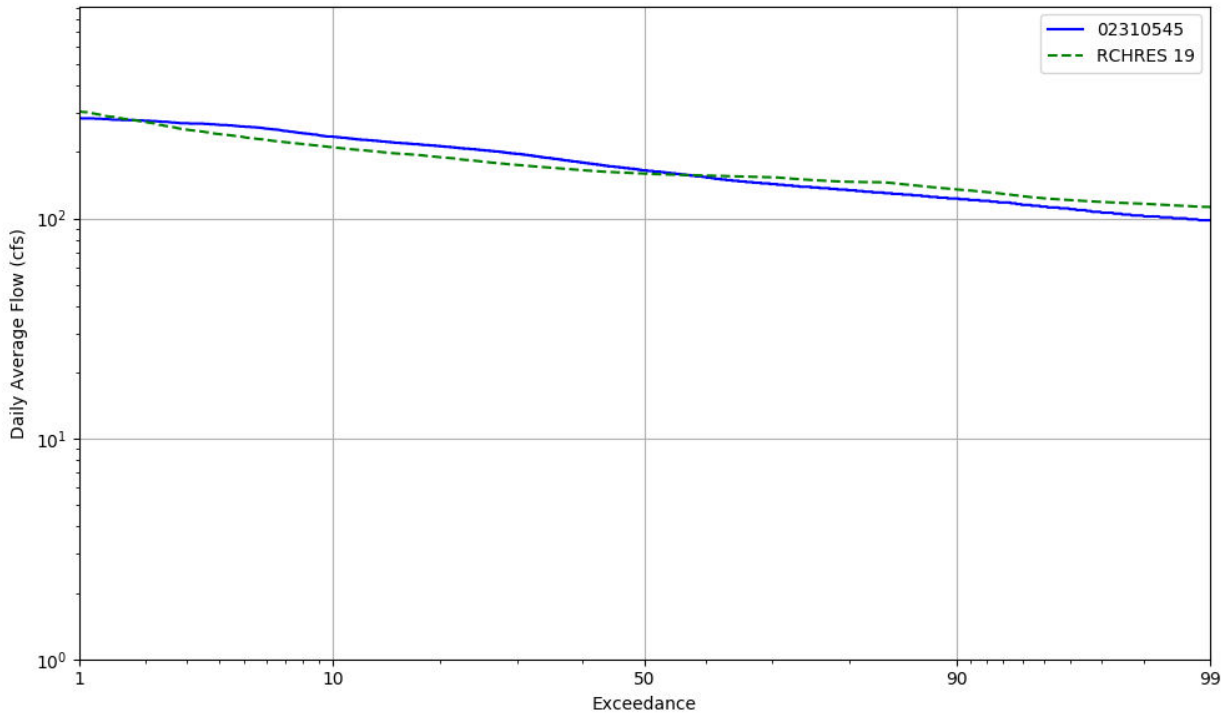


Figure T-03100207-20: Daily exceedance for HSFP reach 19 and USGS station 02310545.

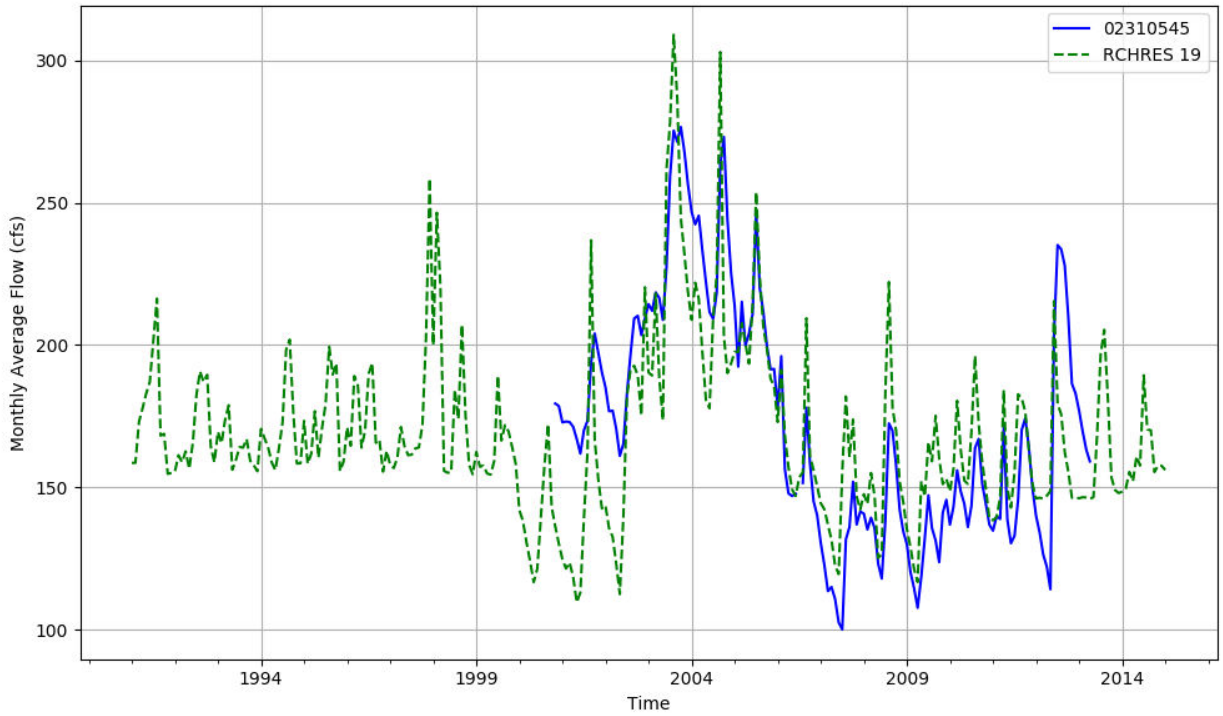


Figure T-03100207-21: Monthly flow for HSFP reach 19 and USGS station 02310545.

HSPF REACH 27, USGS GAUGE 02310000

Water-Data Report 2009
02310000 ANCLOTE RIVER NEAR ELFERS, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 281250, long 824000 referenced to North American Datum of 1927, in NE 1/4 sec.23, T.26 S., R.16 E., Pasco County, FL, Hydrologic Unit 03100207, on left bank, 500 ft upstream from bridge on State Highway 54, 3.5 mi east of Elfers, and 16 mi upstream from mouth.

DRAINAGE AREA.--72.5 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1946 to current year.

REVISED RECORDS.--WSP 1434: Drainage area. WSP 1905: 1950-65 (P).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 19, 2002, at site 140 ft downstream at same datum.

REMARKS.--Records fair.

Table T-03100207-13: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02310000.

Statistic	Value
Bias	-5.22
Standard error	68.01
Relative bias	-0.09
Relative standard error	0.60
Nash-Sutcliffe coefficient	0.65
Kling-Gupta coefficient	0.59
Coefficient of efficiency	0.53
Index of agreement	0.73

Table T-03100207-14: Hydrologic Indices Between USGS Gauge 02310000 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310000	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	58.36	53.07	-9.06
MA2: Median, all daily flows	6.90	19.76	186.33
MA3: CV, all daily flows	199.56	152.61	-23.52
MA4: CV, log of all daily flows	188.63	129.66	-31.26
MA5: Mean daily flow / median daily flow	8.46	2.69	-68.24
MA9: (Q10 - Q90) / median daily flow	18.80	6.03	-67.90

MA10: (Q20 - Q80) / median daily flow	7.39	3.04	-58.82
MA11: (Q25 - Q75) / median daily flow	4.88	2.35	-51.93
MA12: Mean monthly flow, January	33.89	35.89	5.90
MA13: Mean monthly flow, February	37.72	43.54	15.41
MA14: Mean monthly flow, March	47.11	36.79	-21.92
MA15: Mean monthly flow, April	32.09	27.28	-14.96
MA16: Mean monthly flow, May	6.61	13.96	111.21
MA17: Mean monthly flow, June	44.35	45.98	3.68
MA18: Mean monthly flow, July	84.00	86.78	3.30
MA19: Mean monthly flow, August	132.97	101.89	-23.37
MA20: Mean monthly flow, September	139.42	106.18	-23.84
MA21: Mean monthly flow, October	49.78	42.41	-14.81
MA22: Mean monthly flow, November	13.74	22.36	62.72
MA23: Mean monthly flow, December	48.58	46.97	-3.31
ML1: Mean minimum monthly flow, January	10.92	10.43	-4.48
ML2: Mean minimum monthly flow, February	11.33	13.96	23.23
ML3: Mean minimum monthly flow, March	14.45	13.42	-7.11
ML4: Mean minimum monthly flow, April	5.23	7.45	42.62
ML5: Mean minimum monthly flow, May	2.95	5.09	72.67
ML6: Mean minimum monthly flow, June	3.08	8.22	166.93
ML7: Mean minimum monthly flow, July	19.70	34.09	73.03
ML8: Mean minimum monthly flow, August	32.62	34.07	4.46
ML9: Mean minimum monthly flow, September	27.12	28.69	5.82
ML10: Mean minimum monthly flow, October	10.87	11.25	3.48
ML11: Mean minimum monthly flow, November	6.16	8.41	36.47
ML12: Mean minimum monthly flow, December	6.00	10.33	72.23
ML13: CV of minimum monthly flows	185.09	118.00	-36.25
ML14: Mean minimum daily flow / mean median annual flow	0.31	0.15	-50.99
ML15: Mean minimum annual flow / mean annual flow	0.09	0.07	-28.20
ML16: Median minimum annual flow / median annual flow	0.30	0.13	-55.47
ML20: Ratio of baseflow volume to total flow volume	0.34	0.41	20.84
ML22: Mean annual minimum flow divided by catchment area	0.03	0.03	23.14
RA1: Mean of positive changes from one day to next (rise rate)	29.00	25.29	
RA2: CV, mean of positive changes from one day to next (rise rate)	362.84	339.71	
RA3: Mean of negative changes from one day to next (fall rate)	13.07	7.31	
RA4: CV, mean of negative changes from one day to next (fall rate)	356.24	366.78	
RA5: Ratio of days that are higher than previous day	0.26	0.22	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.08	
RA8: Number of flow reversals from one day to the next	81.54	69.83	
RA9: CV, number of flow reversals from one day to the next	25.12	20.88	

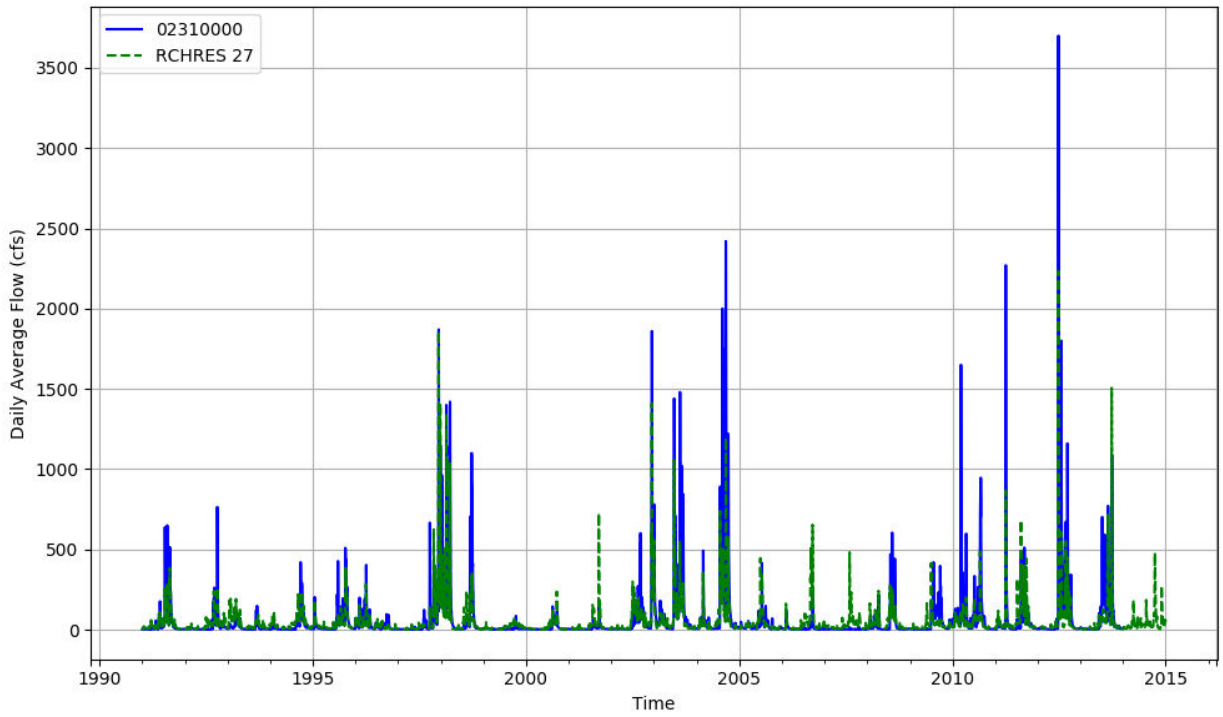


Figure T-03100207-22: Daily flow for HSFP reach 27 and USGS station 02310000.

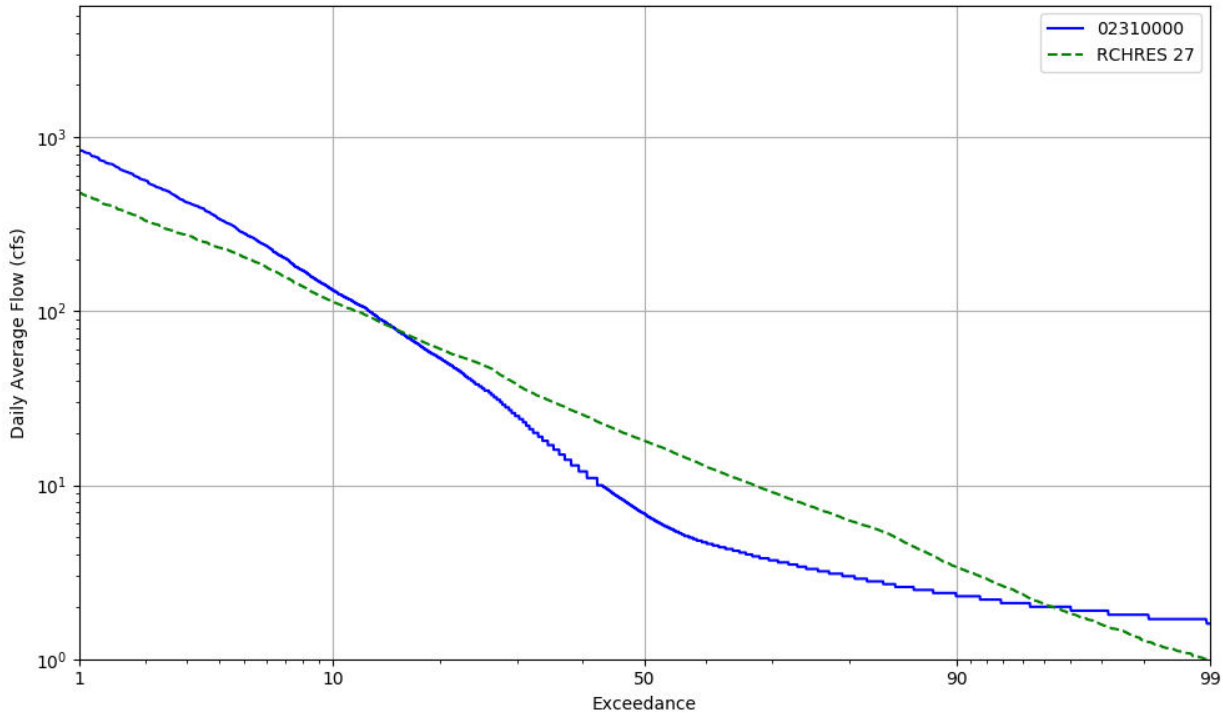


Figure T-03100207-23: Daily exceedance for HSFP reach 27 and USGS station 02310000.

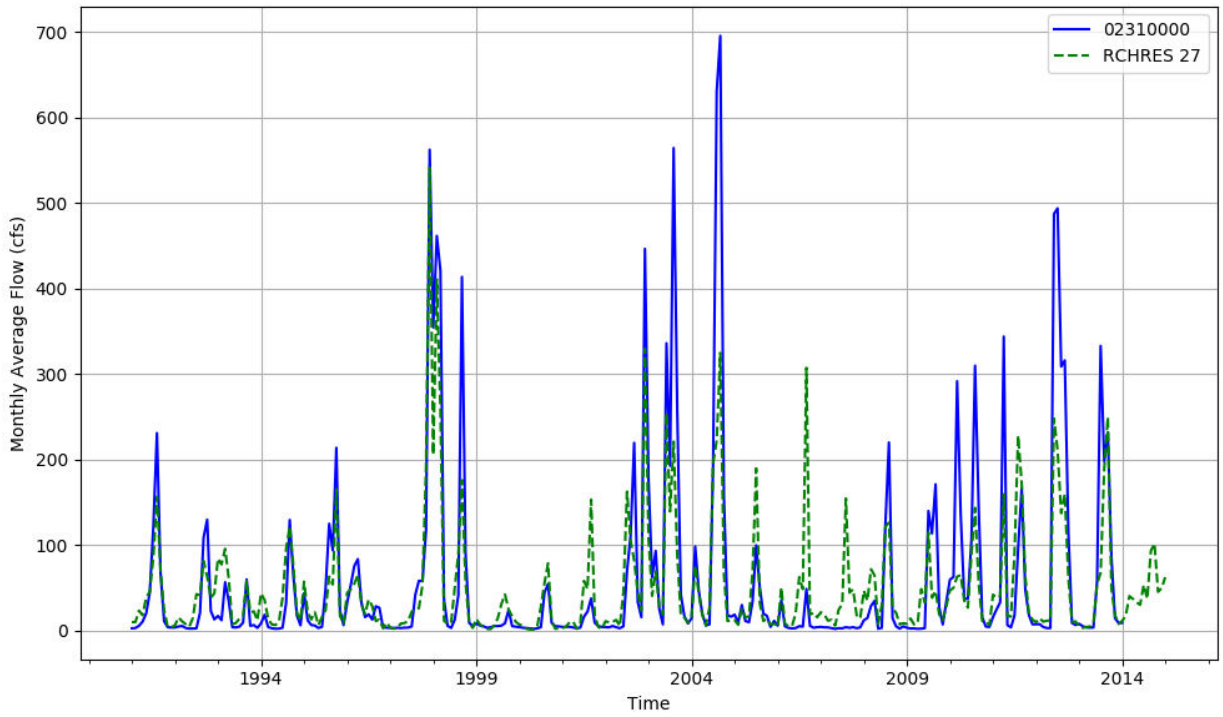


Figure T-03100207-24: Monthly flow for HSFP reach 27 and USGS station 02310000.

HSPF REACH 29, USGS GAUGE 02309421

Water-Data Report 2009
02309421 CURLEW CREEK AT BELCHER ROAD NEAR OZONA, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 280224, long 824451 referenced to North American Datum of 1983, in NW 1/4 sec.19, T.28 S., R.16 E., Pinellas County, FL, Hydrologic Unit 03100207, on left bank, 100 ft upstream from bridge, and 2.0 mi southeast of Ozona.

DRAINAGE AREA.--3.4 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 21.81 ft National Geodetic Vertical Datum of 1929 and 20.96 ft above North American Vertical Datum of 1988 from differential GPS.

COOPERATION.--This gage is monitored in cooperation with Pinellas County.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

Table T-03100207-15: Comparison Statistics Between HSPF Reach 29 and USGS Gauge 02309421.

Statistic	Value
Bias	-6.37
Standard error	7.45
Relative bias	-0.67
Relative standard error	1.16
Nash-Sutcliffe coefficient	-0.35
Kling-Gupta coefficient	0.14
Coefficient of efficiency	-0.28
Index of agreement	0.45

Table T-03100207-16: Hydrologic Indices Between USGS Gauge 02309421 and HSPF Reach 29.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02309421	Simulated Reach 29	Percent Difference
MA1: Mean, all daily flows	9.51	3.12	-67.24
MA2: Median, all daily flows	5.40	1.09	-79.83
MA3: CV, all daily flows	141.04	171.14	21.34
MA4: CV, log of all daily flows	86.60	130.89	51.14
MA5: Mean daily flow / median daily flow	1.76	2.86	62.39
MA9: (Q10 - Q90) / median daily flow	2.98	6.84	129.30

MA10: (Q20 - Q80) / median daily flow	1.41	3.80	170.34
MA11: (Q25 - Q75) / median daily flow	1.08	2.86	164.09
MA12: Mean monthly flow, January	5.75	1.63	-71.73
MA13: Mean monthly flow, February	5.50	1.69	-69.33
MA14: Mean monthly flow, March	5.43	1.64	-69.85
MA15: Mean monthly flow, April	5.09	1.72	-66.18
MA16: Mean monthly flow, May	4.55	1.08	-76.32
MA17: Mean monthly flow, June	11.55	4.55	-60.57
MA18: Mean monthly flow, July	15.68	6.01	-61.69
MA19: Mean monthly flow, August	16.98	6.04	-64.44
MA20: Mean monthly flow, September	13.56	4.77	-64.80
MA21: Mean monthly flow, October	7.48	1.63	-78.15
MA22: Mean monthly flow, November	4.64	0.75	-83.75
MA23: Mean monthly flow, December	5.76	1.85	-67.96
ML1: Mean minimum monthly flow, January	3.39	0.18	-94.61
ML2: Mean minimum monthly flow, February	3.89	0.40	-89.71
ML3: Mean minimum monthly flow, March	3.48	0.42	-87.89
ML4: Mean minimum monthly flow, April	2.82	0.21	-92.49
ML5: Mean minimum monthly flow, May	2.86	0.17	-94.14
ML6: Mean minimum monthly flow, June	3.17	0.43	-86.40
ML7: Mean minimum monthly flow, July	5.62	1.88	-66.62
ML8: Mean minimum monthly flow, August	6.89	1.93	-72.04
ML9: Mean minimum monthly flow, September	5.74	1.02	-82.15
ML10: Mean minimum monthly flow, October	4.47	0.29	-93.54
ML11: Mean minimum monthly flow, November	3.52	0.17	-95.09
ML12: Mean minimum monthly flow, December	3.16	0.15	-95.11
ML13: CV of minimum monthly flows	44.59	127.52	185.98
ML14: Mean minimum daily flow / mean median annual flow	0.41	0.04	-89.58
ML15: Mean minimum annual flow / mean annual flow	0.25	0.01	-94.41
ML16: Median minimum annual flow / median annual flow	0.41	0.00	-99.48
ML20: Ratio of baseflow volume to total flow volume	0.49	0.27	-45.17
ML22: Mean annual minimum flow divided by catchment area	0.02	0.00	-98.55
RA1: Mean of positive changes from one day to next (rise rate)	8.98	4.53	
RA2: CV, mean of positive changes from one day to next (rise rate)	236.46	198.08	
RA3: Mean of negative changes from one day to next (fall rate)	3.86	1.17	
RA4: CV, mean of negative changes from one day to next (fall rate)	313.89	342.92	
RA5: Ratio of days that are higher than previous day	0.26	0.20	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.46	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.13	
RA8: Number of flow reversals from one day to the next	110.15	82.92	
RA9: CV, number of flow reversals from one day to the next	29.51	30.94	

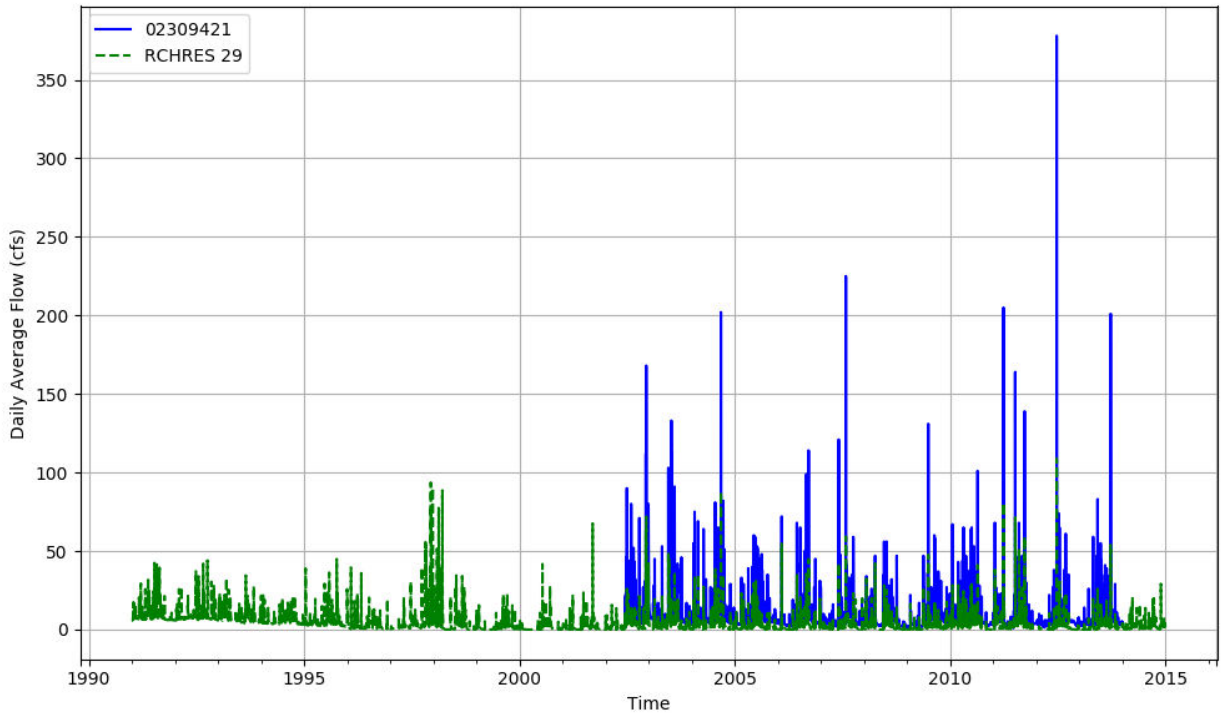


Figure T-03100207-25: Daily flow for HSFP reach 29 and USGS station 02309421.

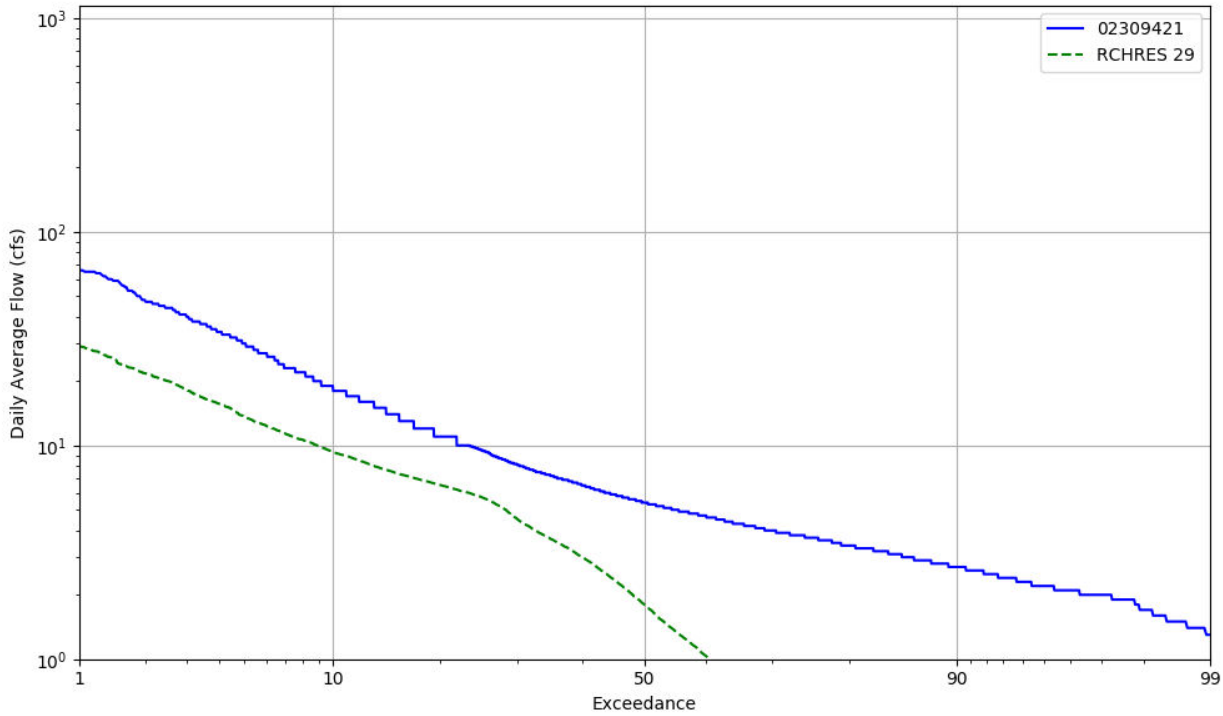


Figure T-03100207-26: Daily exceedance for HSFP reach 29 and USGS station 02309421.

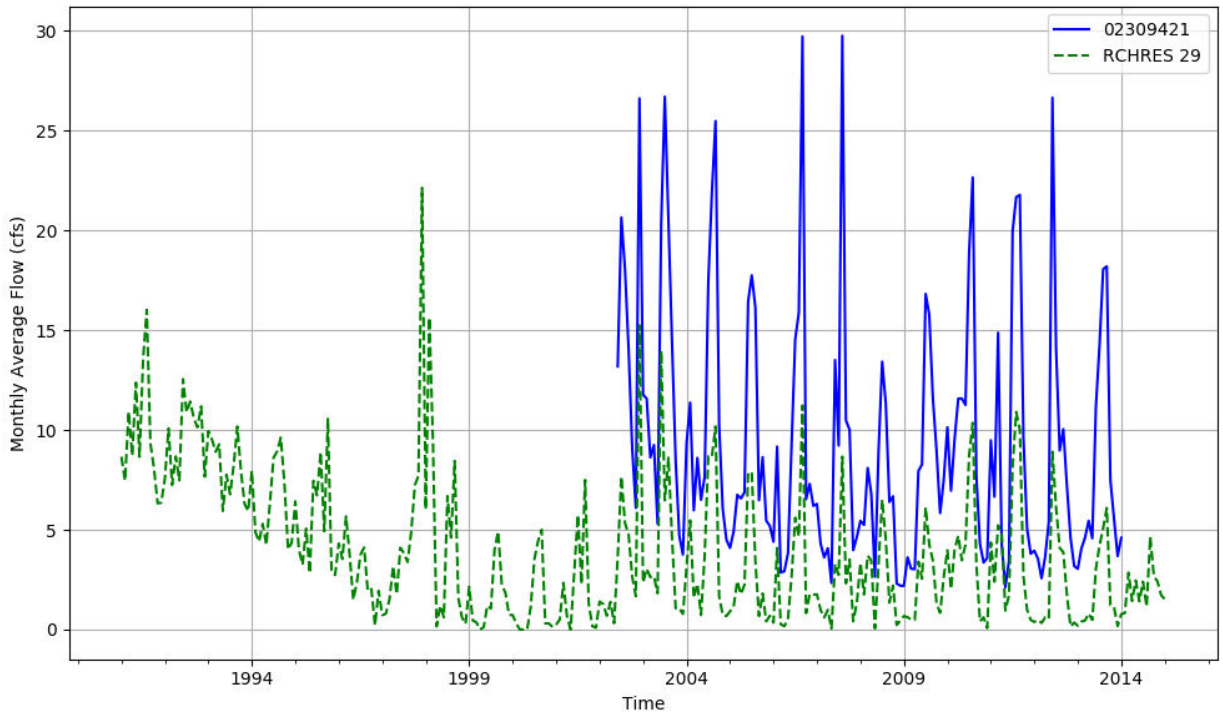


Figure T-03100207-27: Monthly flow for HSFP reach 29 and USGS station 02309421.

HSPF REACH 32, USGS GAUGE 02309425

Water-Data Report 2009
02309425 CURLEW CREEK AT COUNTY ROAD 1 NEAR OZONA, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 280248, long 824532 referenced to North American Datum of 1927, in SW 1/4 sec.13, T.28 S., R.15 E., Pinellas County, FL, Hydrologic Unit 03100207, on right bank, 200 ft upstream from bridge on County Road 1, and 1.9 mi southeast of Ozona.

DRAINAGE AREA.--4.09 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1999 to current year.

GAGE.--Water-stage recorder. Datum of Gage is 4.65 ft. above NGVD of 1929 and 3.80 ft. above NAVD of 1988.

COOPERATION.--This gage is monitored in cooperation with Pinellas County.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

Table T-03100207-17: Comparison Statistics Between HSPF Reach 32 and USGS Gauge 02309425.

Statistic	Value
Bias	3.85
Standard error	11.85
Relative bias	0.24
Relative standard error	0.87
Nash-Sutcliffe coefficient	0.24
Kling-Gupta coefficient	0.36
Coefficient of efficiency	0.30
Index of agreement	0.71

Table T-03100207-18: Hydrologic Indices Between USGS Gauge 02309425 and HSPF Reach 32.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02309425	Simulated Reach 32	Percent Difference
MA1: Mean, all daily flows	16.03	19.97	24.53
MA2: Median, all daily flows	7.70	6.90	-10.44
MA3: CV, all daily flows	165.93	157.94	-4.81
MA4: CV, log of all daily flows	96.76	132.48	36.91
MA5: Mean daily flow / median daily flow	2.08	2.90	39.04
MA9: (Q10 - Q90) / median daily flow	3.87	7.58	95.80

MA10: (Q20 - Q80) / median daily flow	2.18	4.10	87.70
MA11: (Q25 - Q75) / median daily flow	1.61	3.09	91.63
MA12: Mean monthly flow, January	9.64	7.61	-20.99
MA13: Mean monthly flow, February	8.76	9.05	3.27
MA14: Mean monthly flow, March	8.88	9.51	7.14
MA15: Mean monthly flow, April	9.14	11.16	21.99
MA16: Mean monthly flow, May	5.59	6.14	9.74
MA17: Mean monthly flow, June	18.44	25.43	37.95
MA18: Mean monthly flow, July	28.54	43.13	51.10
MA19: Mean monthly flow, August	30.76	44.85	45.79
MA20: Mean monthly flow, September	26.18	32.67	24.80
MA21: Mean monthly flow, October	11.74	11.02	-6.14
MA22: Mean monthly flow, November	6.67	5.07	-23.96
MA23: Mean monthly flow, December	9.45	9.98	5.63
ML1: Mean minimum monthly flow, January	4.66	1.04	-77.69
ML2: Mean minimum monthly flow, February	5.28	2.22	-57.96
ML3: Mean minimum monthly flow, March	4.91	2.73	-44.39
ML4: Mean minimum monthly flow, April	3.81	1.92	-49.52
ML5: Mean minimum monthly flow, May	2.74	1.51	-45.10
ML6: Mean minimum monthly flow, June	3.71	3.53	-4.68
ML7: Mean minimum monthly flow, July	8.76	15.24	73.94
ML8: Mean minimum monthly flow, August	9.99	15.66	56.70
ML9: Mean minimum monthly flow, September	8.59	7.73	-10.09
ML10: Mean minimum monthly flow, October	5.33	2.13	-60.04
ML11: Mean minimum monthly flow, November	4.50	1.26	-72.00
ML12: Mean minimum monthly flow, December	4.14	1.23	-70.28
ML13: CV of minimum monthly flows	63.31	135.46	113.98
ML14: Mean minimum daily flow / mean median annual flow	0.34	0.08	-75.95
ML15: Mean minimum annual flow / mean annual flow	0.17	0.04	-75.32
ML16: Median minimum annual flow / median annual flow	0.32	0.05	-85.22
ML20: Ratio of baseflow volume to total flow volume	0.43	0.33	-23.46
ML22: Mean annual minimum flow divided by catchment area	0.03	0.01	-55.39
RA1: Mean of positive changes from one day to next (rise rate)	15.93	22.16	
RA2: CV, mean of positive changes from one day to next (rise rate)	253.34	210.32	
RA3: Mean of negative changes from one day to next (fall rate)	5.68	6.71	
RA4: CV, mean of negative changes from one day to next (fall rate)	337.31	315.66	
RA5: Ratio of days that are higher than previous day	0.24	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.31	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.12	
RA8: Number of flow reversals from one day to the next	106.81	92.56	
RA9: CV, number of flow reversals from one day to the next	34.94	33.00	

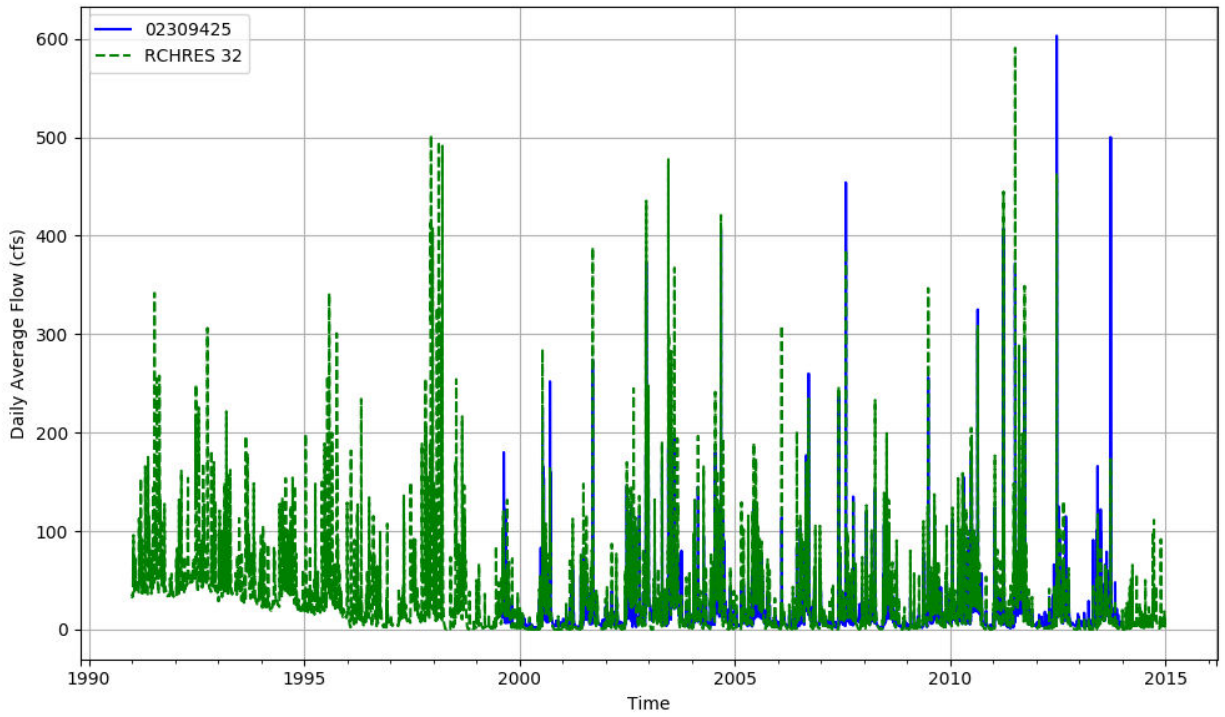


Figure T-03100207-28: Daily flow for HSFP reach 32 and USGS station 02309425.

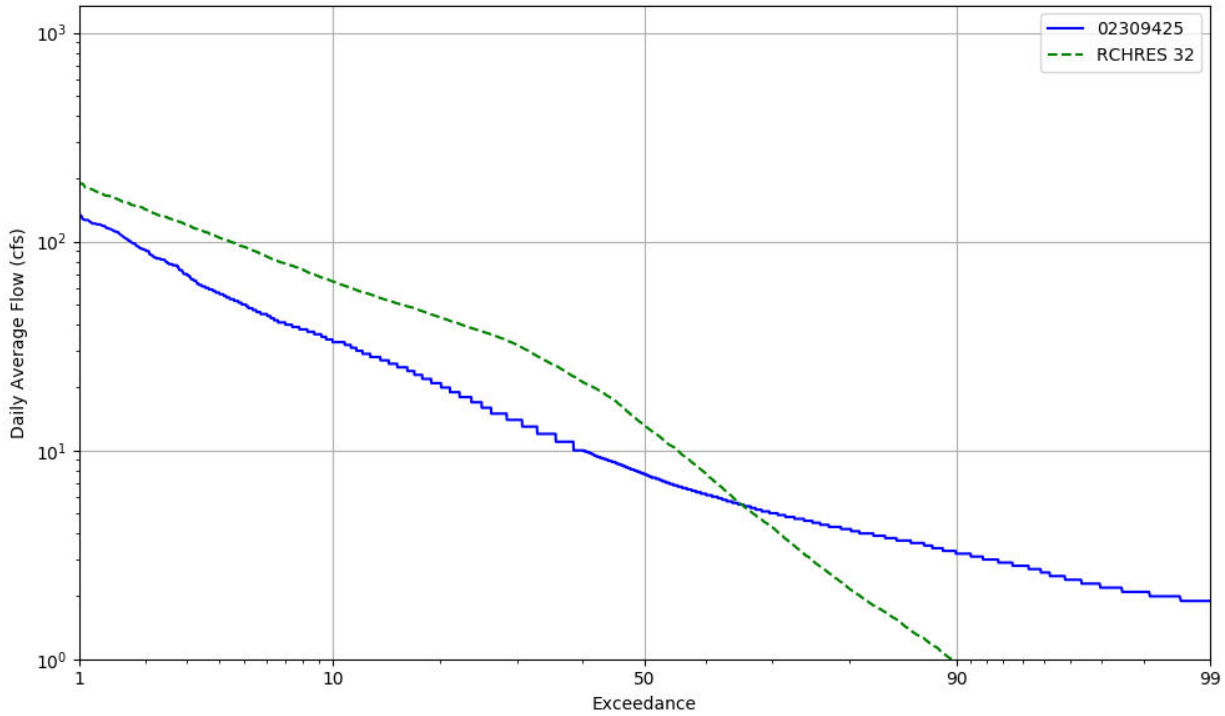


Figure T-03100207-29: Daily exceedance for HSFP reach 32 and USGS station 02309425.

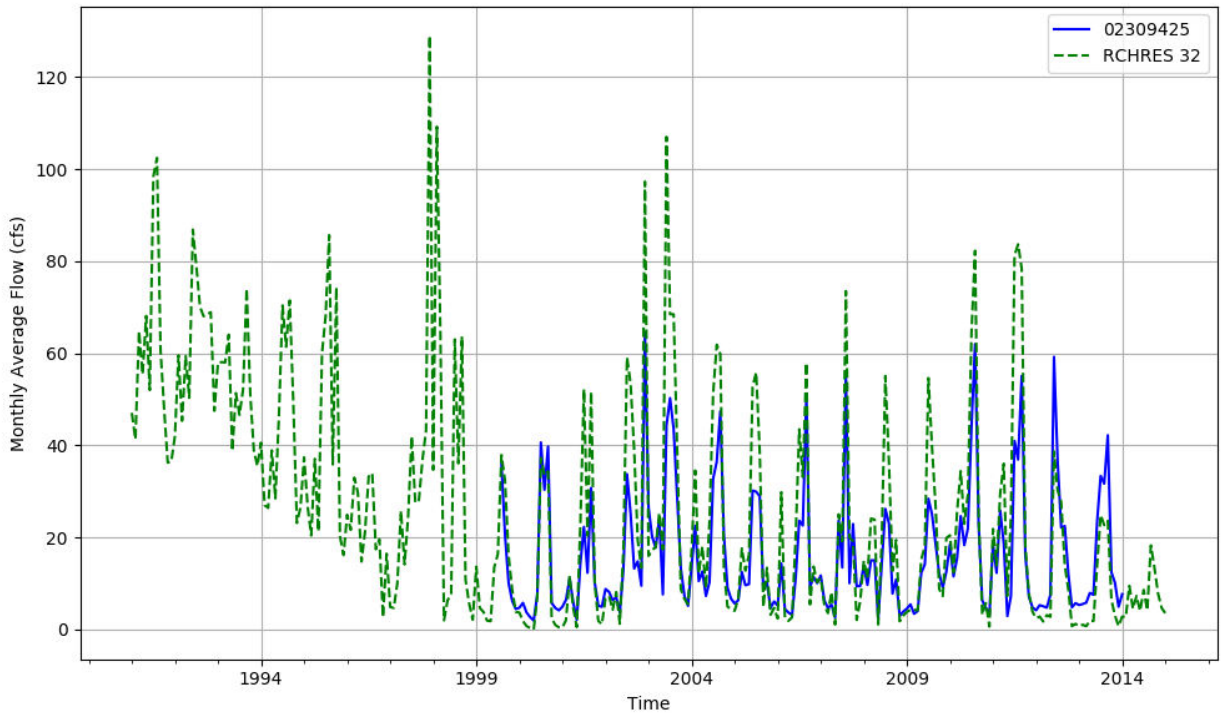


Figure T-03100207-30: Monthly flow for HSFP reach 32 and USGS station 02309425.

HSPF REACH 40, USGS GAUGE 02310280

Water-Data Report 2009
02310280 PITHLACHASCOTEE RIVER NEAR FIVAY JUNCTION, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 281944, long 823213 referenced to North American Datum of 1927, in NE 1/4 sec.7, T.25 S., R.18 E., Pasco County, FL, Hydrologic Unit 03100207, at bridge on State Highway 52, 1.2 mi west of Fivay Junction, 3.5 mi above Fivemile Creek, and 21 mi upstream from mouth.

DRAINAGE AREA.--150 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1964 to October 1966 (discharge measurements and crest-stage partial records); November 1966 to September 1972 (discharge measurements only); October 1972 to September 1978 (gage heights and periodic discharge measurements only); October 1978 to September 1983 (discharge measurements only); October 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Feb. 12, 1968, nonrecording gage 20 ft downstream and Feb. 12, 1968, to Sept. 30, 1972, nonrecording gage at present site and datum; Oct. 1, 1972, to Sept. 30, 1978, water-stage recorder at present site at datum 40.00 ft higher; Oct. 1, 1978, to Sept. 30, 1983, nonrecording gage at present site and datum.

COOPERATION.--This gage is monitored in cooperation with the Southwest Florida Management District.

REMARKS.--Records fair. Period of record gage height at present datum.

Table T-03100207-19: Comparison Statistics Between HSPF Reach 40 and USGS Gauge 02310280.

Statistic	Value
Bias	9.55
Standard error	20.55
Relative bias	2.10
Relative standard error	2.40
Nash-Sutcliffe coefficient	-4.75
Kling-Gupta coefficient	-1.80
Coefficient of efficiency	-0.99
Index of agreement	0.41

Table T-03100207-20: Hydrologic Indices Between USGS Gauge 02310280 and HSPF Reach 40.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310280	Simulated Reach 40	Percent Difference
MA1: Mean, all daily flows	4.56	14.13	209.53
MA2: Median, all daily flows	1.10	2.57	133.61
MA3: CV, all daily flows	148.07	187.81	26.84
MA4: CV, log of all daily flows	163.22	164.03	0.50
MA5: Mean daily flow / median daily flow	4.15	5.50	32.50
MA9: (Q10 - Q90) / median daily flow	10.91	13.94	27.82
MA10: (Q20 - Q80) / median daily flow	4.85	6.69	37.80
MA11: (Q25 - Q75) / median daily flow	3.50	4.71	34.53
MA12: Mean monthly flow, January	4.61	12.39	168.63
MA13: Mean monthly flow, February	4.26	14.35	236.78
MA14: Mean monthly flow, March	4.60	11.46	149.32
MA15: Mean monthly flow, April	2.13	6.60	209.31
MA16: Mean monthly flow, May	0.47	3.02	547.02
MA17: Mean monthly flow, June	2.04	15.63	665.52
MA18: Mean monthly flow, July	6.34	19.07	200.66
MA19: Mean monthly flow, August	9.06	23.88	163.58
MA20: Mean monthly flow, September	9.01	26.49	194.21
MA21: Mean monthly flow, October	4.93	11.26	128.38
MA22: Mean monthly flow, November	1.42	5.41	279.86
MA23: Mean monthly flow, December	3.58	13.15	267.12
ML1: Mean minimum monthly flow, January	1.96	2.13	8.69
ML2: Mean minimum monthly flow, February	1.99	2.20	10.80
ML3: Mean minimum monthly flow, March	2.06	2.76	33.70
ML4: Mean minimum monthly flow, April	0.35	0.67	90.11
ML5: Mean minimum monthly flow, May	0.02	0.37	2215.57
ML6: Mean minimum monthly flow, June	0.04	0.51	1203.41
ML7: Mean minimum monthly flow, July	1.62	4.75	193.17
ML8: Mean minimum monthly flow, August	3.47	4.11	18.60
ML9: Mean minimum monthly flow, September	2.17	3.03	39.53
ML10: Mean minimum monthly flow, October	1.15	1.60	39.41
ML11: Mean minimum monthly flow, November	0.62	1.54	147.82
ML12: Mean minimum monthly flow, December	0.88	2.90	230.41
ML13: CV of minimum monthly flows	258.05	238.28	-7.66
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.06	180.43
ML15: Mean minimum annual flow / mean annual flow	0.01	0.02	165.50
ML16: Median minimum annual flow / median annual flow	0.00	0.02	
ML20: Ratio of baseflow volume to total flow volume	0.47	0.24	-48.88
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	717.14
RA1: Mean of positive changes from one day to next (rise rate)	2.22	8.68	
RA2: CV, mean of positive changes from one day to next (rise rate)	254.64	362.46	
RA3: Mean of negative changes from one day to next (fall rate)	0.76	3.24	
RA4: CV, mean of negative changes from one day to next (fall rate)	217.61	388.86	
RA5: Ratio of days that are higher than previous day	0.20	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.33	0.27	

RA7: Median of difference in log of flows over two consecutive days of falling	0.14	0.17	
RA8: Number of flow reversals from one day to the next	68.25	85.75	
RA9: CV, number of flow reversals from one day to the next	23.26	18.07	

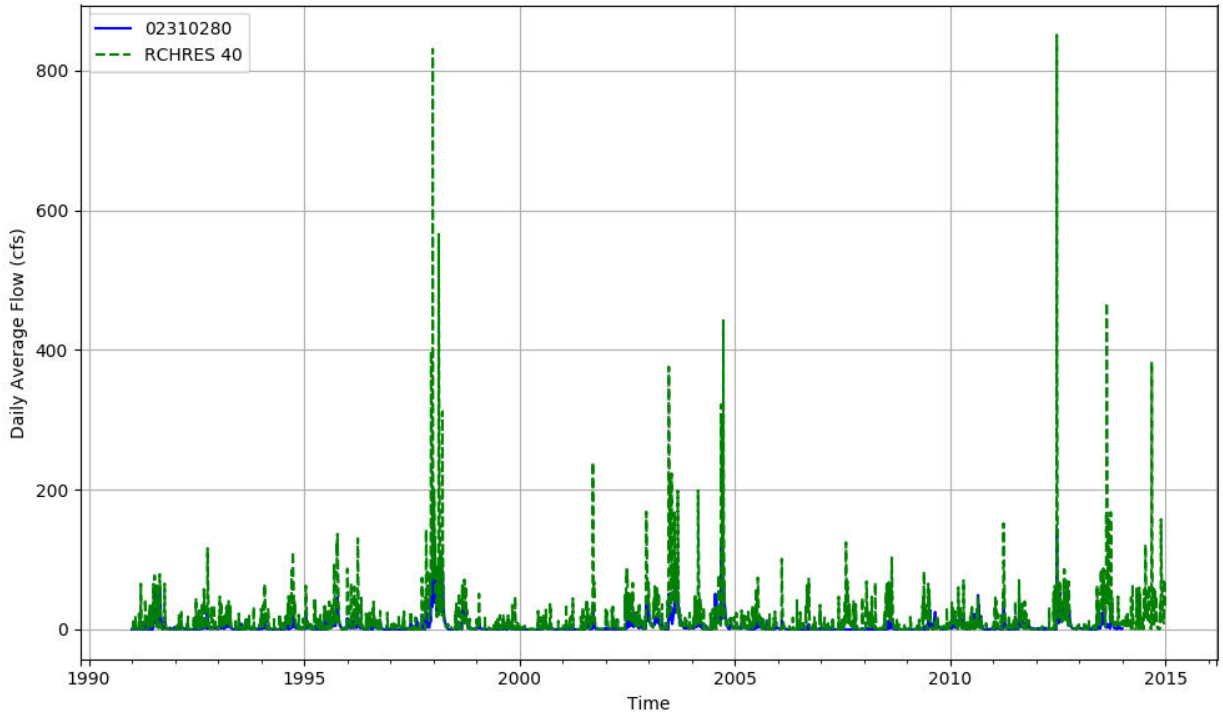


Figure T-03100207-31: Daily flow for HSFP reach 40 and USGS station 02310280.

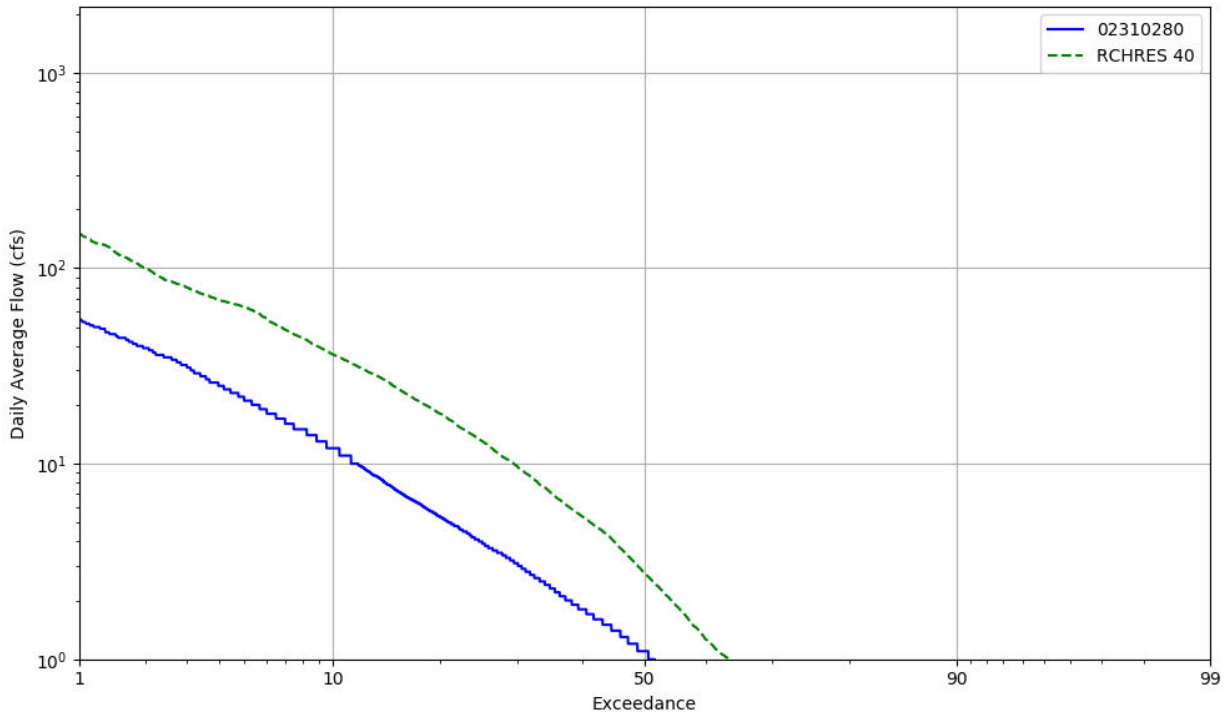


Figure T-03100207-32: Daily exceedance for HSFP reach 40 and USGS station 02310280.

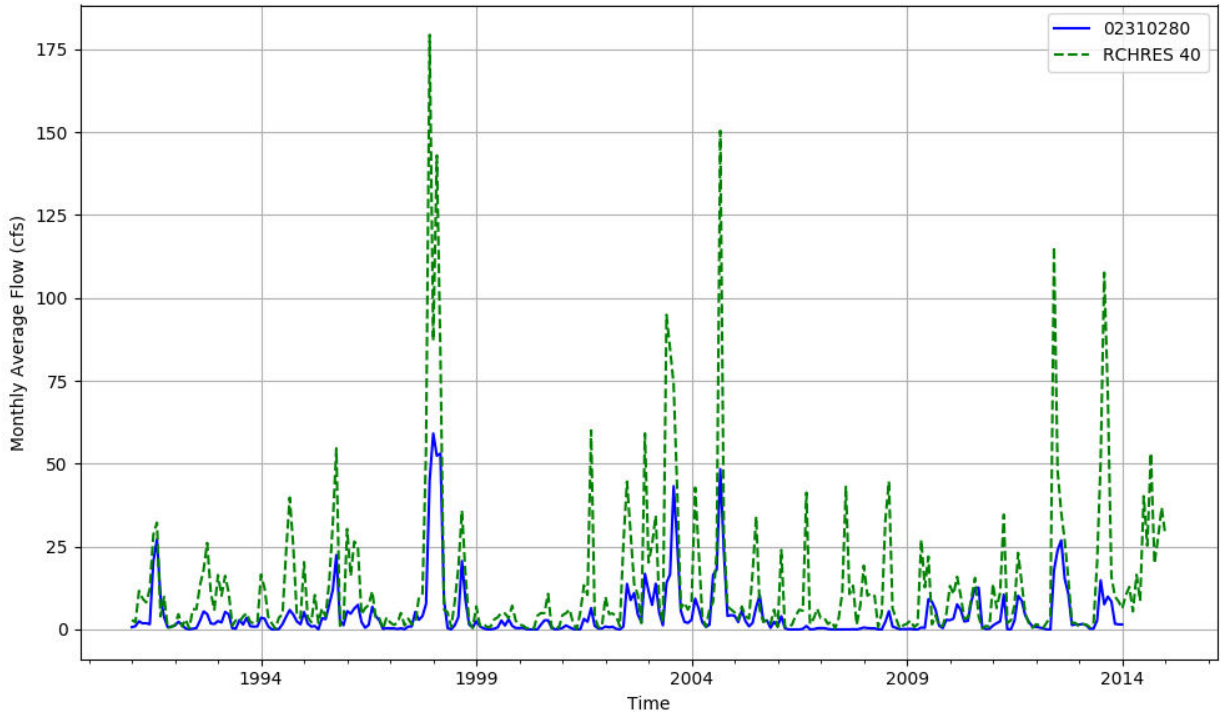


Figure T-03100207-33: Monthly flow for HSFP reach 40 and USGS station 02310280.

HSPF REACH 41, USGS GAUGE 02310300

Water-Data Report 2009
02310300 PITHLACHASCOTEE RIVER NEAR NEW PORT RICHEY, FL.
Tampa Bay Basin Crystal-Pithlachascotee Subbasin

LOCATION.--Lat 281523, long 823833 referenced to North American Datum of 1927, in NW 1/4 sec.6, T.26 S., R.17 E., Pasco County, FL, Hydrologic Unit 03100207, near left bank on upstream side of bridge on private road, 4.9 mi east of New Port Richey, and 10.5 mi upstream from mouth. Prior to May 27, 1981, at site 1.1 mi downstream.

DRAINAGE AREA.--180 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1963 to current year. March 1963 to May 1981, at site 1.1 mi downstream not equivalent due to differences in base flow characteristics of the different drainage areas.

REVISED RECORDS.--WRD FL 1966: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Southwest Florida Water Management District bench mark). Prior to May 27, 1981, at site 1.1 mi downstream at datum 7.06 ft higher.

COOPERATION.--This gage is monitored in cooperation with the Southwest Florida Water Management District.

REMARKS.--Records fair. WDR 1992 through WDR 2002 period of record gage height at present datum.

Table T-03100207-21: Comparison Statistics Between HSPF Reach 41 and USGS Gauge 02310300.

Statistic	Value
Bias	17.71
Standard error	35.49
Relative bias	0.86
Relative standard error	0.88
Nash-Sutcliffe coefficient	0.23
Kling-Gupta coefficient	0.03
Coefficient of efficiency	0.21
Index of agreement	0.66

Table T-03100207-22: Hydrologic Indices Between USGS Gauge 02310300 and HSPF Reach 41.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02310300	Simulated Reach 41	Percent Difference
MA1: Mean, all daily flows	20.76	38.51	85.52
MA2: Median, all daily flows	3.60	10.33	187.06
MA3: CV, all daily flows	182.67	170.87	-6.46
MA4: CV, log of all daily flows	183.13	148.03	-19.17
MA5: Mean daily flow / median daily flow	5.77	3.73	-35.37
MA9: (Q10 - Q90) / median daily flow	15.55	10.54	-32.19
MA10: (Q20 - Q80) / median daily flow	6.33	4.34	-31.52
MA11: (Q25 - Q75) / median daily flow	4.35	2.99	-31.20
MA12: Mean monthly flow, January	16.14	28.25	75.05
MA13: Mean monthly flow, February	15.76	33.68	113.74
MA14: Mean monthly flow, March	18.73	29.80	59.12
MA15: Mean monthly flow, April	9.81	21.70	121.27
MA16: Mean monthly flow, May	1.63	8.55	423.74
MA17: Mean monthly flow, June	14.54	35.65	145.09
MA18: Mean monthly flow, July	28.64	62.83	119.37
MA19: Mean monthly flow, August	43.66	72.97	67.13
MA20: Mean monthly flow, September	44.40	75.20	69.37
MA21: Mean monthly flow, October	19.52	27.69	41.83
MA22: Mean monthly flow, November	6.67	13.81	107.13
MA23: Mean monthly flow, December	19.10	32.84	71.93
ML1: Mean minimum monthly flow, January	5.48	6.86	25.19
ML2: Mean minimum monthly flow, February	5.66	8.10	43.01
ML3: Mean minimum monthly flow, March	6.88	9.94	44.39
ML4: Mean minimum monthly flow, April	1.44	3.53	145.27
ML5: Mean minimum monthly flow, May	0.09	2.19	2358.92
ML6: Mean minimum monthly flow, June	0.10	3.48	3368.79
ML7: Mean minimum monthly flow, July	5.03	20.76	312.79
ML8: Mean minimum monthly flow, August	14.31	21.82	52.40
ML9: Mean minimum monthly flow, September	10.59	14.74	39.20
ML10: Mean minimum monthly flow, October	3.82	5.98	56.43
ML11: Mean minimum monthly flow, November	2.23	4.80	115.44
ML12: Mean minimum monthly flow, December	4.34	7.67	76.67
ML13: CV of minimum monthly flows	251.90	164.42	-34.73
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.14	550.76
ML15: Mean minimum annual flow / mean annual flow	0.01	0.05	472.93
ML16: Median minimum annual flow / median annual flow	0.00	0.13	
ML20: Ratio of baseflow volume to total flow volume	0.39	0.36	-6.99
ML22: Mean annual minimum flow divided by catchment area	0.00	0.02	971.37
RA1: Mean of positive changes from one day to next (rise rate)	9.90	19.27	
RA2: CV, mean of positive changes from one day to next (rise rate)	482.54	367.54	
RA3: Mean of negative changes from one day to next (fall rate)	4.06	5.89	
RA4: CV, mean of negative changes from one day to next (fall rate)	454.01	425.18	
RA5: Ratio of days that are higher than previous day	0.25	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.26	0.22	

RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.09	
RA8: Number of flow reversals from one day to the next	74.04	66.00	
RA9: CV, number of flow reversals from one day to the next	19.44	20.35	

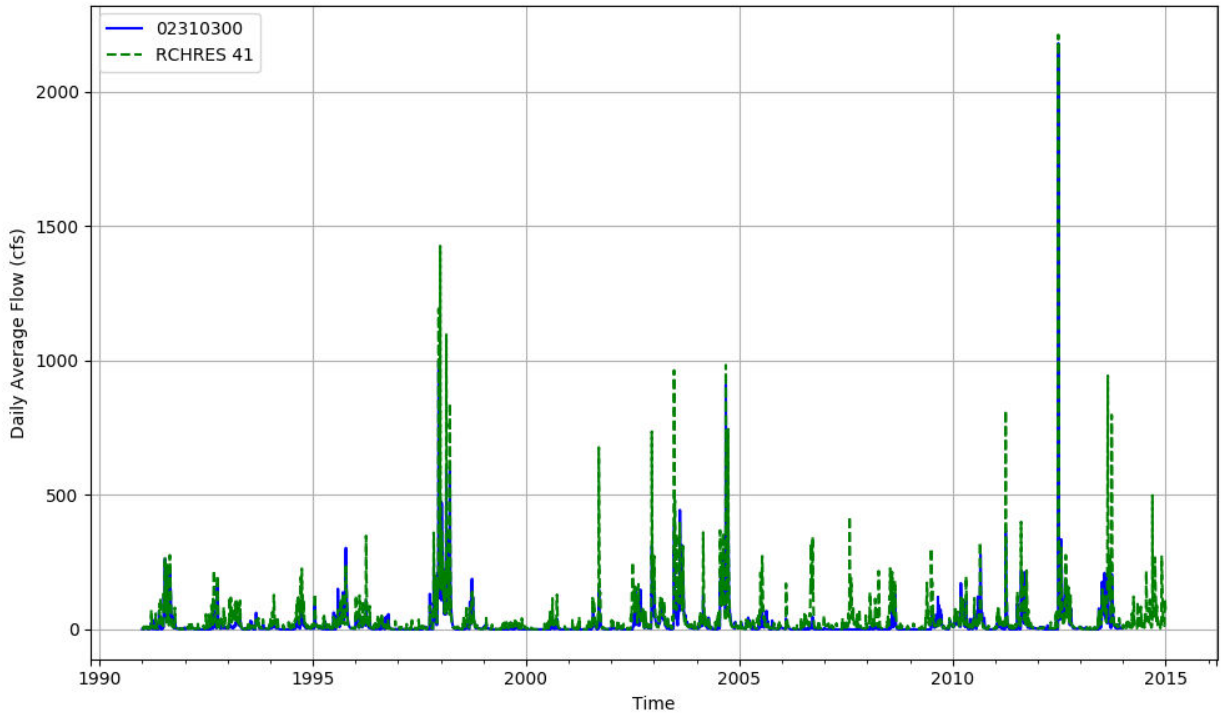


Figure T-03100207-34: Daily flow for HSFP reach 41 and USGS station 02310300.

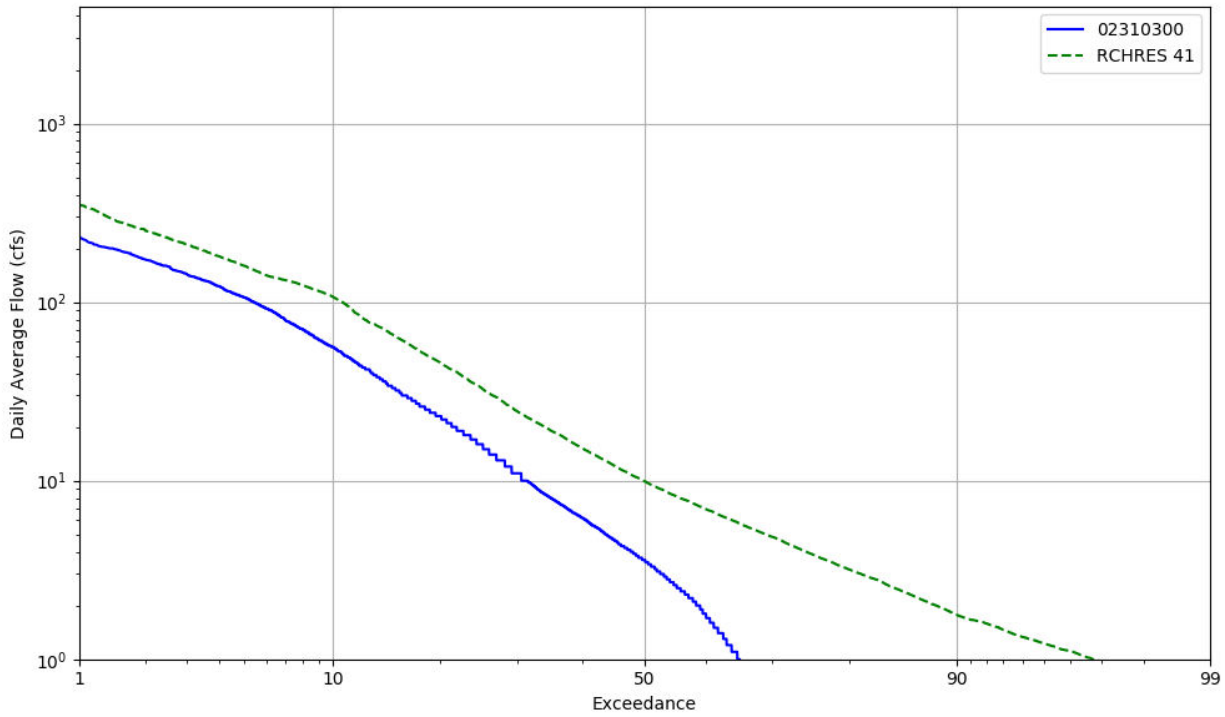


Figure T-03100207-35: Daily exceedance for HSFP reach 41 and USGS station 02310300.

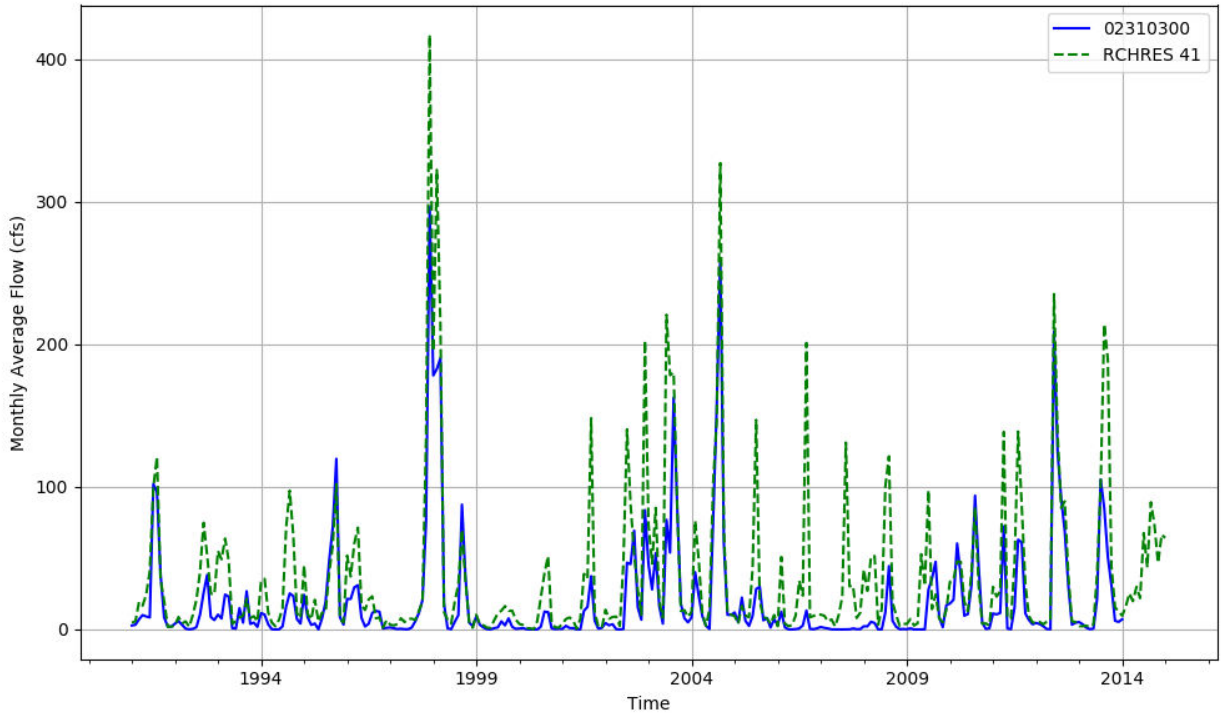


Figure T-03100207-36: Monthly flow for HSFP reach 41 and USGS station 02310300.

Table T-03100207-23: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	36839	103205	90004	36743	5232	2669	67671	23731	8187	51131	950	279956	9796	1687	2974	720773
AREA(%)	4.9	13.7	12.0	4.9	0.7	0.4	9.0	3.2	1.1	6.8	0.1	37.3	1.3	0.2	0.4	96.0
IMPERVIOUS																
AREA(ACRES)		5833	10097	9240	5249											30420
AREA(%)		0.8	1.3	1.2	0.7											4.0
SUPY	43.6	43.5	43.4	42.6	43.3	43.6	44.0	42.7	43.7	43.2	43.3	43.1	63.9	59.0	56.2	41.9
SURLI			2.6	3.9	3.4										15.9	0.6
UZLI																0.0
LZLI			2.6	3.7	3.0									0.8		0.5
SURO: PERVIOUS	14.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.4	1.0	0.0	0.0	2.8
SURO: IMPERVIOUS		25.8	26.4	26.0	26.8											1.1
SURO: COMBINED	14.7	1.4	2.7	5.3	13.5	0.0	0.0	0.0	0.0	0.0	0.0	5.4	1.0	0.0	0.0	3.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.3	6.4	8.7	9.6	8.9	11.8	3.8	7.7	5.9	4.9	2.1	0.4	12.5	10.2	7.1	3.9
AGWI	1.1	6.9	9.2	10.0	9.3	12.1	4.2	8.6	6.9	6.1	3.9	1.2	12.9	11.6	13.4	4.5
IGWI	0.9	6.3	8.7	9.6	9.0	6.6	3.2	8.2	5.6	5.7	5.5	1.2	11.6	12.8	20.7	4.2
CEPE		8.8	8.6	8.3	11.2	8.5	15.4	9.0	9.0	9.2	7.5	17.5	25.1	9.8	11.2	12.1
UZET	2.8	2.8	3.7	3.9	3.9	3.2	1.0	3.0	2.1	2.0	1.6	8.8	4.8	4.5	4.7	4.9
LZET	0.3	17.4	16.7	16.4	14.0	11.7	18.2	12.8	19.0	19.3	23.7	2.2	6.7	19.5	22.3	10.0
AGWET	0.6	0.2	0.1	0.1	0.0	0.2	0.1	0.5	0.5	0.7	1.3	0.5	0.1	0.7	4.3	0.4
BASET	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.5	0.6	0.2	0.4	0.6	2.3	0.3
SURET	23.9											6.2				3.5
PERO	15.1	6.4	8.7	9.7	9.0	11.8	3.8	7.7	5.9	5.0	2.1	5.9	13.5	10.3	7.2	6.7
IGWI	0.9	6.3	8.7	9.6	9.0	6.6	3.2	8.2	5.6	5.7	5.5	1.2	11.6	12.8	20.7	4.2
TAET: PERVIOUS	27.8	29.6	29.4	29.0	29.4	23.9	34.9	25.9	31.0	31.6	34.7	35.4	37.0	35.2	44.8	31.1
IMPEV: IMPERVIOUS		17.7	17.0	16.7	16.5											0.7
ET: COMBINED	27.8	28.9	28.2	26.5	23.0	23.9	34.9	25.9	31.0	31.6	34.7	35.4	37.0	35.2	44.8	31.8
PET	37.1	42.0	38.9	37.1	36.2	41.3	43.7	45.0	45.8	47.2	49.2	42.7	40.1	45.3	49.5	40.3

Table T-03100207-24: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	36839	103205	90004	36743	5232	2669	67671	23731	8187	51131	950	279956	9796	1687	2974	720773
AREA(%)	4.9	13.7	12.0	4.9	0.7	0.4	9.0	3.2	1.1	6.8	0.1	37.3	1.3	0.2	0.4	96.0
IMPERVIOUS																
AREA(ACRES)		5833	10097	9240	5249											30420
AREA(%)		0.8	1.3	1.2	0.7											4.0
SUPY	46.2	47.9	48.2	48.3	48.2	47.8	47.9	48.6	48.1	48.7	49.3	47.4	62.9	56.8	59.7	46.1
SURLI			4.3	6.2	4.8										12.6	0.9
UZLI																0.0
LZLI			4.7	7.0	5.3									0.6		0.9
SURO: PERVIOUS	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.4	0.0	0.0	2.1
SURO: IMPERVIOUS		25.5	26.9	27.7	28.0											1.1
SURO: COMBINED	12.2	1.4	2.7	5.6	14.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.4	0.0	0.0	3.2
IFWO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.4	6.8	11.6	14.2	12.3	12.6	3.9	8.8	6.1	5.3	2.2	0.5	12.4	8.4	5.3	4.6
AGWI	1.4	7.5	12.3	14.7	12.8	13.4	4.4	10.1	7.3	6.8	4.3	1.2	13.0	9.8	11.5	5.4
IGWI	1.1	6.9	11.7	14.2	12.5	7.6	3.2	9.6	5.9	6.2	5.9	1.1	11.5	10.9	17.5	5.0
CEPE		11.3	10.7	10.2	13.4	10.6	19.9	11.7	11.8	12.0	10.0	22.2	22.6	12.4	13.4	15.2
UZET	3.4	2.6	3.7	4.1	3.9	3.2	1.0	2.9	1.9	1.9	1.6	7.4	4.8	3.6	3.8	4.4
LZET	0.3	18.1	17.3	16.8	14.0	12.1	18.5	13.3	19.9	20.4	26.0	2.1	10.5	20.6	26.0	10.3
AGWET	0.7	0.2	0.1	0.1	0.1	0.2	0.1	0.6	0.7	0.9	1.7	0.4	0.1	0.7	4.4	0.4
BASET	0.2	0.4	0.4	0.3	0.3	0.3	0.3	0.6	0.4	0.5	0.5	0.2	0.4	0.6	1.7	0.3
SURET	27.3											8.6				4.5
PERO	12.6	6.9	11.7	14.2	12.4	12.7	3.9	8.9	6.1	5.3	2.2	4.6	12.8	8.5	5.3	6.8
IGWI	1.1	6.9	11.7	14.2	12.5	7.6	3.2	9.6	5.9	6.2	5.9	1.1	11.5	10.9	17.5	5.0
TAET: PERVIOUS	31.9	32.5	32.2	31.4	31.7	26.4	39.8	29.1	34.7	35.6	39.7	40.9	38.4	37.9	49.3	35.1
IMPEV: IMPERVIOUS		22.4	21.2	20.6	20.2											0.9
ET: COMBINED	31.9	32.0	31.1	29.2	25.9	26.4	39.8	29.1	34.7	35.6	39.7	40.9	38.4	37.9	49.3	36.0
PET	39.8	46.4	41.8	39.2	38.1	45.3	49.0	50.0	51.4	53.0	55.5	47.2	43.5	50.9	55.9	44.4

Table T-03100207-25: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	36839	103205	90004	36743	5232	2669	67671	23731	8187	51131	950	279956	9796	1687	2974	720773
AREA(%)	4.9	13.7	12.0	4.9	0.7	0.4	9.0	3.2	1.1	6.8	0.1	37.3	1.3	0.2	0.4	96.0
IMPERVIOUS																
AREA(ACRES)		5833	10097	9240	5249											30420
AREA(%)		0.8	1.3	1.2	0.7											4.0
SUPY	49.9	50.4	51.2	52.4	52.0	49.7	49.0	49.5	48.7	48.1	46.7	49.3	64.6	59.5	61.6	48.0
SURLI			4.9	7.2	5.8										19.4	1.1
UZLI																0.0
LZLI			5.1	7.6	5.9									0.6		1.0
SURO: PERVIOUS	18.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.5	0.0	0.1	4.2
SURO: IMPERVIOUS		30.5	32.2	34.0	33.8											1.3
SURO: COMBINED	18.2	1.6	3.3	6.9	17.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.5	0.0	0.1	5.6
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	10.2	15.4	18.5	16.5	15.9	7.0	11.1	8.8	7.4	2.9	1.0	15.0	10.9	8.5	6.6
AGWI	1.1	10.7	15.9	18.8	16.8	16.1	7.3	12.2	9.9	9.0	5.5	1.7	15.3	12.5	16.1	7.2
IGWI	0.8	9.9	15.2	18.3	16.4	9.6	5.7	11.8	8.3	8.3	7.4	1.4	13.7	13.7	24.5	6.7
CEPE		9.2	8.7	8.3	11.6	8.7	17.3	9.2	9.4	9.4	7.5	19.8	19.9	10.3	11.1	13.1
UZET	2.2	4.5	6.4	7.6	7.2	4.6	1.7	4.6	2.9	2.7	2.0	6.9	7.2	4.3	5.1	5.1
LZET	0.3	18.8	17.3	16.4	14.0	12.3	19.8	13.5	20.9	21.5	27.5	2.1	10.2	20.3	22.1	10.6
AGWET	0.5	0.2	0.2	0.1	0.1	0.2	0.1	0.7	0.9	1.2	2.1	0.6	0.1	1.0	4.8	0.5
BASET	0.2	0.4	0.4	0.3	0.3	0.3	0.3	0.5	0.4	0.5	0.5	0.3	0.4	0.6	2.3	0.3
SURET	28.1											11.3				5.6
PERO	18.6	10.3	15.5	18.6	16.6	16.0	7.0	11.1	8.8	7.5	2.9	9.9	15.5	11.0	8.5	10.8
IGWI	0.8	9.9	15.2	18.3	16.4	9.6	5.7	11.8	8.3	8.3	7.4	1.4	13.7	13.7	24.5	6.7
TAET: PERVIOUS	31.4	33.1	32.9	32.7	33.1	26.2	39.2	28.6	34.5	35.3	39.6	40.9	37.7	36.4	45.3	35.2
IMPEV: IMPERVIOUS		20.0	19.1	18.6	18.3											0.8
ET: COMBINED	31.4	32.4	31.5	29.9	25.7	26.2	39.2	28.6	34.5	35.3	39.6	40.9	37.7	36.4	45.3	36.0
PET	39.1	43.1	40.5	39.0	38.3	42.5	44.5	45.4	46.2	47.2	48.8	43.6	41.5	45.8	49.1	41.3

Table T-03100207-26: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	36839	103205	90004	36743	5232	2669	67671	23731	8187	51131	950	279956	9796	1687	2974	720773
AREA(%)	4.9	13.7	12.0	4.9	0.7	0.4	9.0	3.2	1.1	6.8	0.1	37.3	1.3	0.2	0.4	96.0
IMPERVIOUS																
AREA(ACRES)		5833	10097	9240	5249											30420
AREA(%)		0.8	1.3	1.2	0.7											4.0
SUPY	46.1	48.1	48.2	47.8	47.8	48.8	48.4	49.2	49.1	49.8	50.8	47.8	63.4	58.0	58.5	46.4
SURLI			7.2	10.4	10.6					0.0					9.5	1.5
UZLI																0.0
LZLI			5.5	8.1	7.7									0.5		1.1
SURO: PERVIOUS	15.4	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.0	0.1	0.0	7.3	1.2	0.1	0.1	3.6
SURO: IMPERVIOUS		28.1	28.8	28.8	29.0											1.2
SURO: COMBINED	15.4	1.6	3.0	6.0	14.7	0.1	0.0	0.1	0.0	0.1	0.0	7.3	1.2	0.1	0.1	4.7
IFWO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AGWO	0.5	8.6	15.1	17.9	17.5	14.7	6.3	10.1	8.1	7.1	3.6	1.1	13.8	9.9	5.8	6.2
AGWI	1.2	9.2	15.5	18.3	17.9	15.1	6.7	11.3	9.4	8.7	6.3	1.9	14.3	11.4	11.6	6.9
IGWI	0.9	8.4	14.9	17.7	17.4	8.4	5.1	10.9	7.8	8.3	8.9	1.6	12.6	12.8	18.1	6.3
CEPE		10.2	9.9	9.6	12.6	10.0	17.6	10.5	10.5	10.7	8.9	19.7	21.6	11.1	11.3	13.7
UZET	2.5	3.6	4.9	5.3	5.2	3.9	1.7	4.1	2.9	2.9	2.7	7.1	5.3	4.5	4.3	4.8
LZET	0.3	16.7	15.6	15.1	12.7	11.2	17.4	12.2	18.4	19.0	24.0	1.9	8.5	18.6	22.5	9.5
AGWET	0.6	0.2	0.1	0.1	0.1	0.2	0.1	0.6	0.7	1.0	1.9	0.5	0.1	0.8	3.9	0.4
BASET	0.2	0.4	0.4	0.3	0.3	0.3	0.3	0.6	0.6	0.7	0.9	0.3	0.4	0.7	2.0	0.3
SURET	25.7											8.6				4.5
PERO	15.9	8.7	15.2	18.2	17.8	14.7	6.3	10.2	8.2	7.2	3.6	8.5	15.0	10.0	5.9	9.7
IGWI	0.9	8.4	14.9	17.7	17.4	8.4	5.1	10.9	7.8	8.3	8.9	1.6	12.6	12.8	18.1	6.3
TAET: PERVIOUS	29.3	31.1	30.9	30.5	30.9	25.6	37.1	28.1	33.1	34.2	38.3	38.0	35.9	35.7	44.1	33.1
IMPEV: IMPERVIOUS		20.0	19.4	19.0	18.8											0.8
ET: COMBINED	29.3	30.5	29.8	28.2	24.8	25.6	37.1	28.1	33.1	34.2	38.3	38.0	35.9	35.7	44.1	33.9
PET	37.6	42.2	39.1	37.5	36.6	41.4	43.8	44.9	45.7	47.0	48.8	42.8	40.3	45.3	49.1	40.4

Table T-03100207-27: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
2	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
3	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
4	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
5	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
6	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
7	0.990	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.990
8	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
9	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
10	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
11	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
12	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
13	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
14	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
15	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
16	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
17	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
18	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
19	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
20	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
21	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
22	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
23	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
24	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
25	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
26	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
27	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
28	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
29	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
30	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
31	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
32	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
33	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
34	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
35	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
36	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
37	0.990	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.990
38	0.990	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.990

39	0.990	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.983	0.990
40	0.990	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.916	0.990
41	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990
42	0.990	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.967	0.990

Table T-03100207-28: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
2	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
3	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
4	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
5	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
6	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
7	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
8	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
9	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
10	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
11	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
12	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
13	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
14	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
15	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
16	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
17	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
18	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
19	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
20	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
21	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
22	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
23	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
24	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
25	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
26	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
27	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
28	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
29	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
30	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
31	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
32	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
33	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
34	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
35	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
36	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
41	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
42	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009

Table T-03100207-29: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
2	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
3	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
4	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
5	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
6	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
7	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
8	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
9	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
10	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
11	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
12	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
13	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
14	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
15	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
16	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
17	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
18	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
19	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
20	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
21	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
22	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
23	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
24	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
25	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
26	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
27	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
28	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
29	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
30	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
31	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
32	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
33	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
34	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
35	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
36	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
37	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
38	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288

39	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
40	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
41	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288
42	0.000	0.051	0.052	0.050	0.100	0.050	0.196	0.050	0.050	0.050	0.030	0.288

Table T-03100207-30: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650
2	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
3	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
4	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
5	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
6	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
7	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650
8	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
9	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
10	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
11	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
12	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
13	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
14	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
15	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
16	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
17	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
18	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
19	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
20	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
21	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
22	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
23	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
24	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
25	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
26	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
27	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
28	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
29	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
30	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
31	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
32	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
33	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
34	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
35	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
36	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
37	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
38	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070

39	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
40	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650
41	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
42	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500

Table T-03100207-31: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
2	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
3	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
4	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
5	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
6	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
7	0.009	0.945	0.945	0.945	0.945	0.945	1.000	0.945	0.945	0.945	0.945	0.009
8	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
9	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
10	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
11	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
12	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
13	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
14	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
15	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
16	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
17	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
18	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
19	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
20	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
21	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
22	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
23	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
24	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
25	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
26	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
27	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
28	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
29	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
30	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
31	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
32	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
33	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
34	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
35	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
36	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
37	2.000	1.760	1.760	1.760	1.760	1.760	2.200	1.760	1.760	1.760	1.760	2.000
38	2.000	1.760	1.760	1.760	1.760	1.760	2.200	1.760	1.760	1.760	1.760	2.000

39	2.000	1.760	1.760	1.760	1.760	1.760	2.200	1.760	1.760	1.760	1.760	2.000
40	0.009	0.945	0.945	0.945	0.945	0.945	1.000	0.945	0.945	0.945	0.945	0.009
41	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001
42	0.001	0.680	0.680	0.680	0.680	0.800	1.000	0.800	0.800	0.800	0.880	0.001

Table T-03100207-32: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
31		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
32		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
33		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
34		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
35		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
36		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
37		0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	
38		0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	
39		0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	
40		0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	0.190	
41		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
42		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03100207-33: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
2	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
3	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
4	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
5	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
6	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
7	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
8	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
9	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
10	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
11	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
12	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
13	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
14	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
15	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
16	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
17	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
18	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
19	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
20	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
21	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
22	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
23	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
24	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
25	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
26	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
27	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
28	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
29	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
30	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
31	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
32	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
33	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
34	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
35	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
36	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
37	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607
38	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607

39	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607	0.607
40	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
41	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614
42	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614	0.614

Table T-03100207-34: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
2	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
3	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
4	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
5	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
6	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
7	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279
8	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
9	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
10	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
11	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
12	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
13	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
14	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
15	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
16	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
17	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
18	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
19	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
20	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
21	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
22	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
23	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
24	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
25	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
26	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
27	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
28	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
29	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
30	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
31	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
32	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
33	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
34	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
35	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
36	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
37	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235
38	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235

39	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235
40	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279	2.279
41	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780
42	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780

Table T-03100207-35: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.327	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	1.194
2	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
3	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
4	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
5	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
6	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
7	0.327	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	1.194
8	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
9	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
10	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
11	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
12	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
13	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
14	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
15	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
16	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
17	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
18	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
19	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
20	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
21	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
22	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
23	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
24	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
25	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
26	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
27	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
28	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
29	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
30	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
31	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
32	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
33	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
34	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
35	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
36	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
37	0.246	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
38	0.246	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

39	0.246	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
40	0.327	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	1.194
41	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921
42	0.013	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.921

Table T-03100207-36: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
2	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
3	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
4	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
5	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
6	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
7	3.793	7.500	7.500	7.500	7.500	8.125	10.000	8.125	8.125	8.125	8.749	3.793
8	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
9	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
10	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
11	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
12	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
13	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
14	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
15	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
16	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
17	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
18	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
19	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
20	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
21	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
22	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
23	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
24	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
25	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
26	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
27	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
28	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
29	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
30	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
31	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
32	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
33	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
34	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
35	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
36	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
37	10.000	9.601	9.601	9.601	9.601	10.200	12.000	10.200	10.200	10.200	10.800	10.000
38	10.000	9.601	9.601	9.601	9.601	10.200	12.000	10.200	10.200	10.200	10.800	10.000

39	10.000	9.601	9.601	9.601	9.601	10.200	12.000	10.200	10.200	10.200	10.800	10.000
40	3.793	7.500	7.500	7.500	7.500	8.125	10.000	8.125	8.125	8.125	8.749	3.793
41	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100
42	0.050	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.335	0.100

Table T-03100207-37: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.700	0.700	0.700	0.700	0.700	1.000	0.800	0.800	0.700	1.000	0.050
2	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
3	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
4	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
5	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
6	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
7	0.050	0.700	0.700	0.700	0.700	0.700	1.000	0.800	0.800	0.700	1.000	0.050
8	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
9	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
10	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
11	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
12	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
13	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
14	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
15	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
16	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
17	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
18	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
19	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
20	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
21	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
22	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
23	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
24	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
25	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
26	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
27	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
28	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
29	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
30	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
31	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
32	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
33	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
34	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
35	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
36	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
37	0.100	0.768	0.768	0.768	0.768	0.768	1.152	0.864	0.864	0.768	1.152	3.716
38	0.100	0.768	0.768	0.768	0.768	0.768	1.152	0.864	0.864	0.768	1.152	3.716

39	0.100	0.768	0.768	0.768	0.768	0.768	1.152	0.864	0.864	0.768	1.152	3.716
40	0.050	0.700	0.700	0.700	0.700	0.700	1.000	0.800	0.800	0.700	1.000	0.050
41	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
42	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000

APPENDIX T-03100208

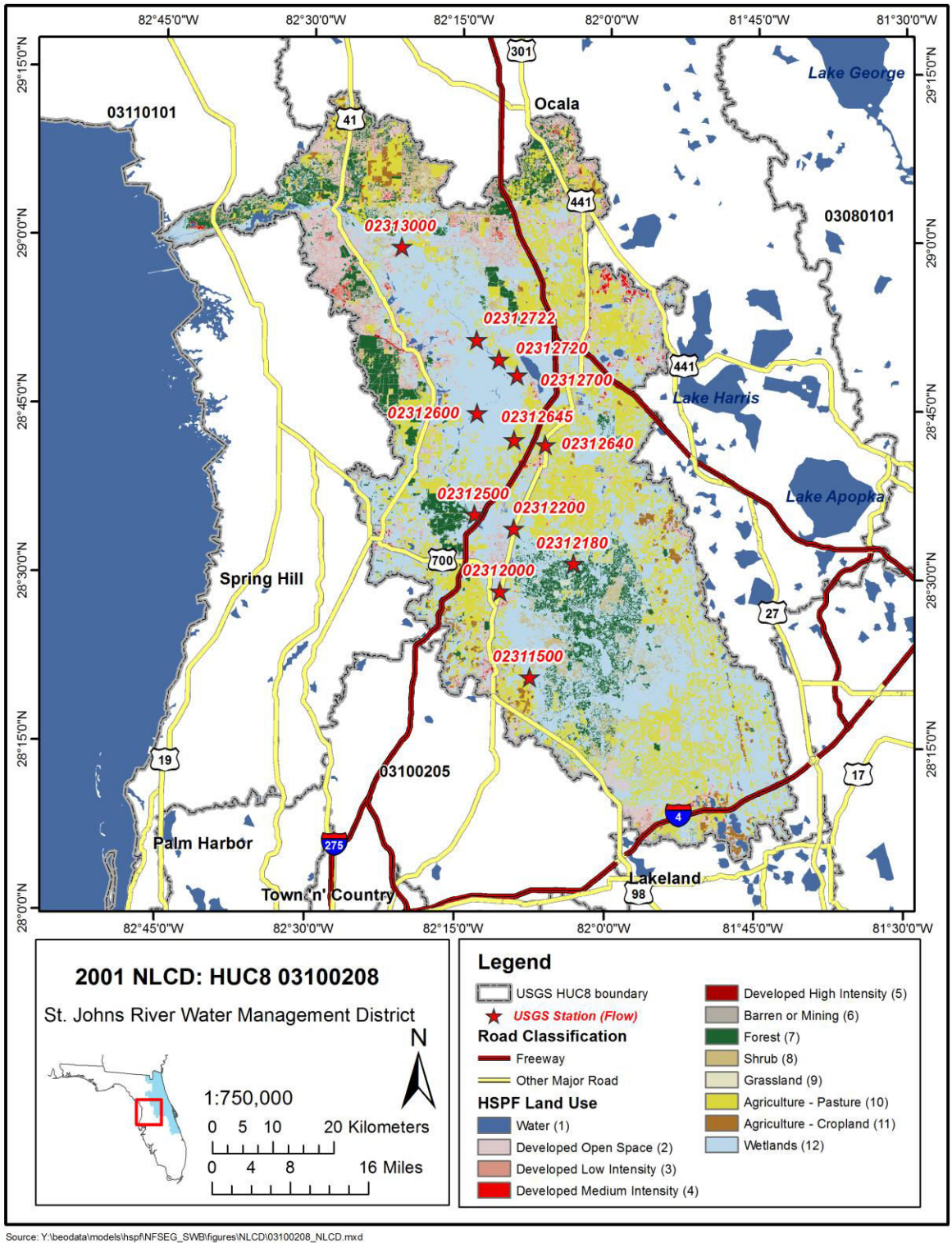


Figure T-03100208-1: Land Cover from the National Land Cover Database.

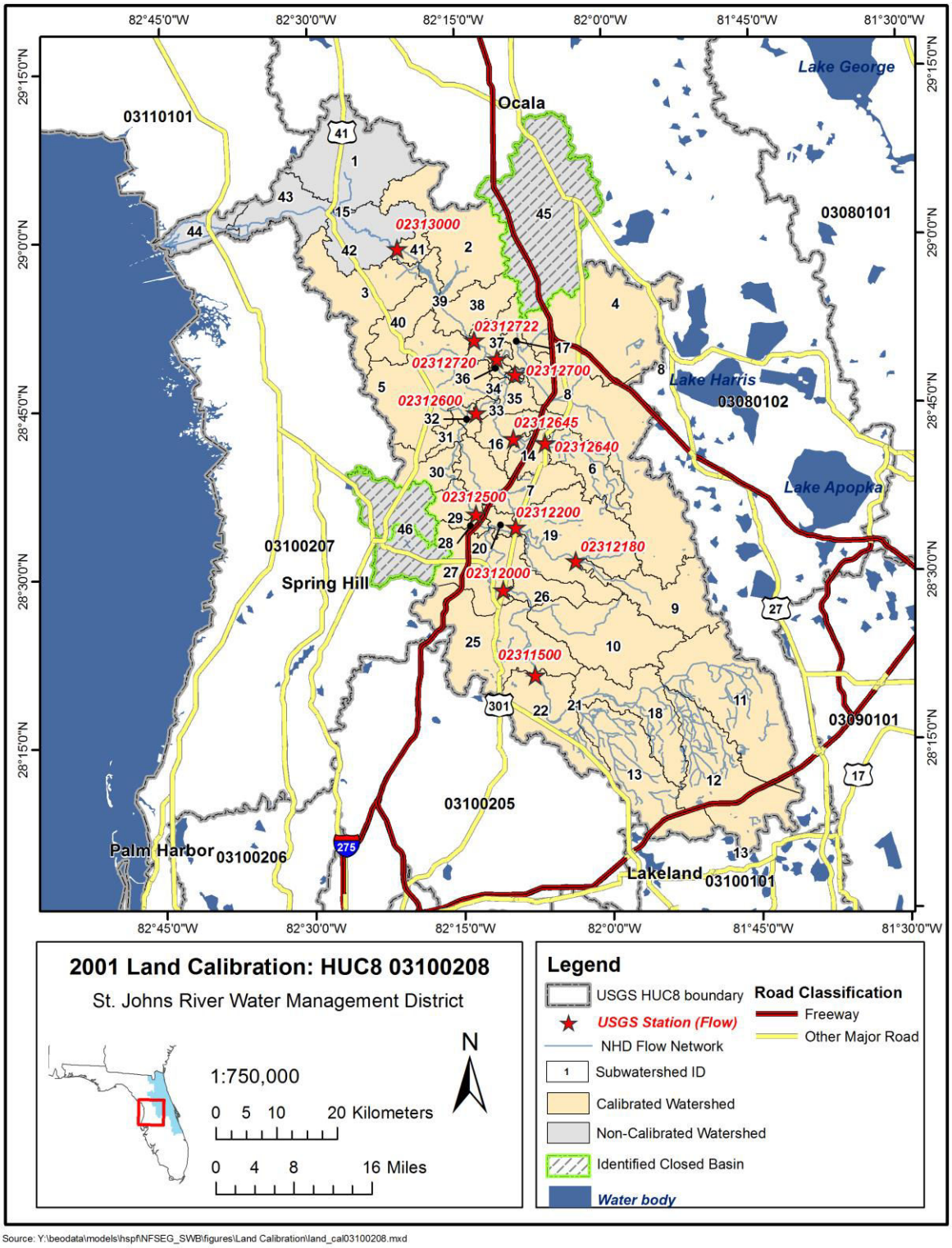


Figure T-03100208-2: Calibrated sub-watersheds.

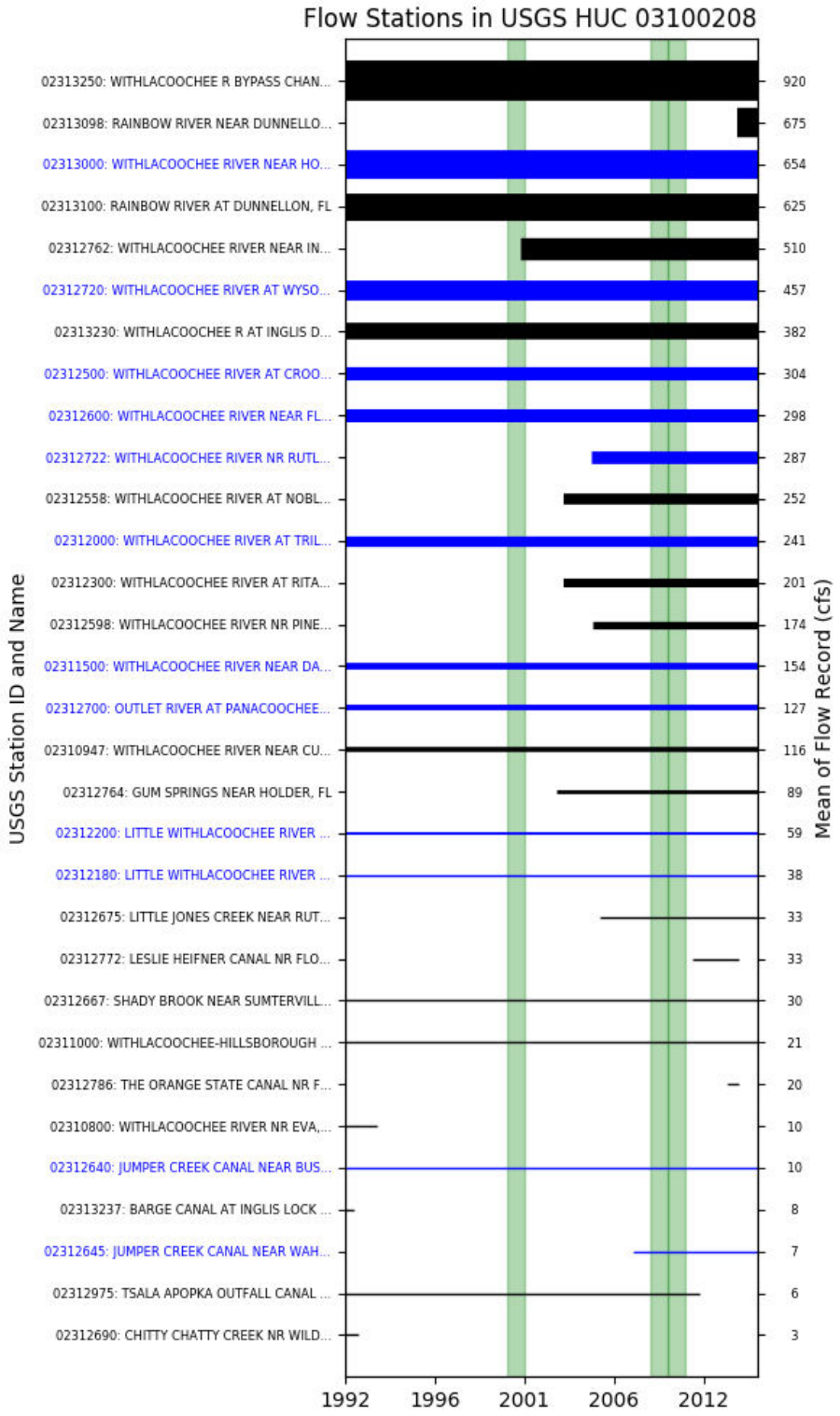


Figure T-03100208-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 01, USGS GAUGE 02313100

Water-Data Report 2009
02313100 RAINBOW RIVER AT DUNNELLON, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 290257, long 822652 referenced to North American Datum of 1927, in NW 1/4 sec.36, T.16 S., R.18 E., Marion County, FL, Hydrologic Unit 03100208, at bridge on State Highway 484, 5.0 mi downstream of Rainbow Springs head, 1 mi east of Dunnellon, and 0.9 mi upstream from mouth.

DRAINAGE AREA.--Indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--1899, 1905, 1907, 1917, 1929-30 (one discharge measurement each water year), October 1930 to November 1964 (discharge measurements only made at various intervals from monthly, bi-monthly, or quarterly), January 1965 to current year. Prior to October 1940, published as "Blue Springs near Dunnellon". October 1940 to September 2007, published as "Rainbow Springs near Dunnellon". Continuous discharges for this station have always been determined from discharge measurements made 0.25 mi upstream of CR 484 bridge although record published prior to September 2007 referenced the spring pool and well both of which are at a different datum from the current bridge site datum.

GAGE.--Water-stage recorder, acoustic-velocity meter, and data collection platform. Gage at CR 484 highway bridge established March 10, 2005. Datum of gage at CR 484 highway bridge is is 24.42 ft above NGVD of 1929 (from "Dunnellon G-21 benchmark). Nonrecording gage at spring pool. Datum of spring pool gage is 28.34 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 19, 1948, spring pool gage at datum 1.63 ft higher. No gage prior to Oct. 8, 1930. July 22, 1931 to Apr. 1, 1933, water-stage recorder at present spring pool site. (April 1933 to March 1969, and since April 1971, nonrecording gage read at spring pool at time of discharge measurements only). See station 290814082270701 for description of Rainbow Springs Well used in the determination of discharge for this station.

REMARKS.--Records fair. Discharge measurements made approximately 0.25 mi upstream from bridge on State Highway 484 and about 5 mi downstream from head of springs; surface inflow between springs and measuring site is negligible except after heavy rains. Discharge computed from relation between artesian pressure at Rainbow Springs well and discharge at measuring site. Artesian pressures are published as water levels for Rainbow Springs Well (290514082270701) in Water Resources Data for Florida annual data report.
CORRECTIONS.--Continuous discharges for this station have always been determined from discharge measurements made 0.25 mi upstream of CR 484 bridge although record published

prior to September 2007 referenced the spring pool and Rainbow Springs Well (290514082270701) both of which are at a different datum from the bridge site. Beginning in the 2008 water year annual data report (ADR) a clarification of discharge computation and site locations are included in the manuscript page.

Table T-03100208-1: Comparison Statistics Between HSPF Reach 01 and USGS Gauge 02313100.

Statistic	Value
Bias	-201.72
Standard error	236.95
Relative bias	-0.32
Relative standard error	2.48
Nash-Sutcliffe coefficient	-5.16
Kling-Gupta coefficient	0.16
Coefficient of efficiency	-1.83
Index of agreement	0.26

Table T-03100208-2: Hydrologic Indices Between USGS Gauge 02313100 and HSPF Reach 01.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02313100	Simulated Reach 01	Percent Difference
MA1: Mean, all daily flows	622.03	420.24	-32.44
MA2: Median, all daily flows	612.00	444.26	-27.41
MA3: CV, all daily flows	8.09	7.36	-9.05
MA4: CV, log of all daily flows	12.90	22.10	71.22
MA5: Mean daily flow / median daily flow	1.02	0.95	-6.93
MA9: (Q10 - Q90) / median daily flow	0.38	0.62	64.25
MA10: (Q20 - Q80) / median daily flow	0.22	0.31	36.56
MA11: (Q25 - Q75) / median daily flow	0.18	0.21	15.21
MA12: Mean monthly flow, January	624.61	412.85	-33.90
MA13: Mean monthly flow, February	588.76	400.09	-32.04
MA14: Mean monthly flow, March	587.29	406.31	-30.82
MA15: Mean monthly flow, April	582.02	398.57	-31.52
MA16: Mean monthly flow, May	564.40	383.25	-32.10
MA17: Mean monthly flow, June	559.42	382.75	-31.58
MA18: Mean monthly flow, July	577.15	393.06	-31.90
MA19: Mean monthly flow, August	598.58	412.74	-31.05
MA20: Mean monthly flow, September	623.45	423.56	-32.06
MA21: Mean monthly flow, October	633.57	423.79	-33.11
MA22: Mean monthly flow, November	626.37	408.43	-34.79
MA23: Mean monthly flow, December	614.58	406.55	-33.85
ML1: Mean minimum monthly flow, January	613.88	402.00	-34.51
ML2: Mean minimum monthly flow, February	598.87	402.74	-32.75
ML3: Mean minimum monthly flow, March	598.26	407.33	-31.91
ML4: Mean minimum monthly flow, April	593.13	403.25	-32.01
ML5: Mean minimum monthly flow, May	576.26	389.85	-32.35
ML6: Mean minimum monthly flow, June	572.61	387.62	-32.31
ML7: Mean minimum monthly flow, July	586.65	396.56	-32.40
ML8: Mean minimum monthly flow, August	606.83	411.13	-32.25
ML9: Mean minimum monthly flow, September	634.91	420.62	-33.75
ML10: Mean minimum monthly flow, October	643.61	425.45	-33.90
ML11: Mean minimum monthly flow, November	641.83	416.26	-35.14
ML12: Mean minimum monthly flow, December	627.52	410.13	-34.64

ML13: CV of minimum monthly flows	15.13	24.70	63.30
ML14: Mean minimum daily flow / mean median annual flow	0.90	0.90	-0.03
ML15: Mean minimum annual flow / mean annual flow	0.88	0.89	0.19
ML16: Median minimum annual flow / median annual flow	0.90	0.92	2.23
ML20: Ratio of baseflow volume to total flow volume	1.00	0.99	-0.86
ML22: Mean annual minimum flow divided by catchment area	5.51	3.75	-31.89
RA1: Mean of positive changes from one day to next (rise rate)	2.52	12.71	
RA2: CV, mean of positive changes from one day to next (rise rate)	100.66	203.44	
RA3: Mean of negative changes from one day to next (fall rate)	1.84	3.37	
RA4: CV, mean of negative changes from one day to next (fall rate)	69.81	309.58	
RA5: Ratio of days that are higher than previous day	0.33	0.21	
RA6: Median of difference in log of flows over two consecutive days of rising	0.00	0.01	
RA7: Median of difference in log of flows over two consecutive days of falling	0.00	0.00	
RA8: Number of flow reversals from one day to the next	85.29	99.50	
RA9: CV, number of flow reversals from one day to the next	32.02	24.17	

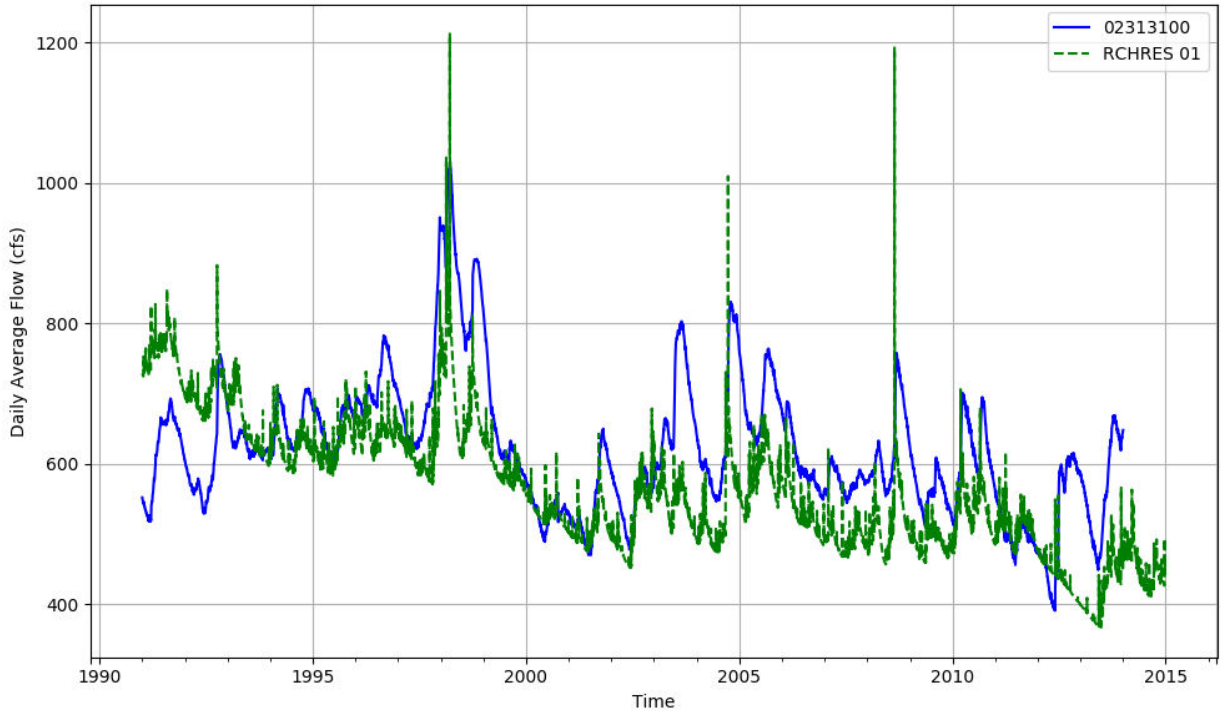


Figure T-03100208-4: Daily flow for HSFP reach 01 and USGS station 02313100.

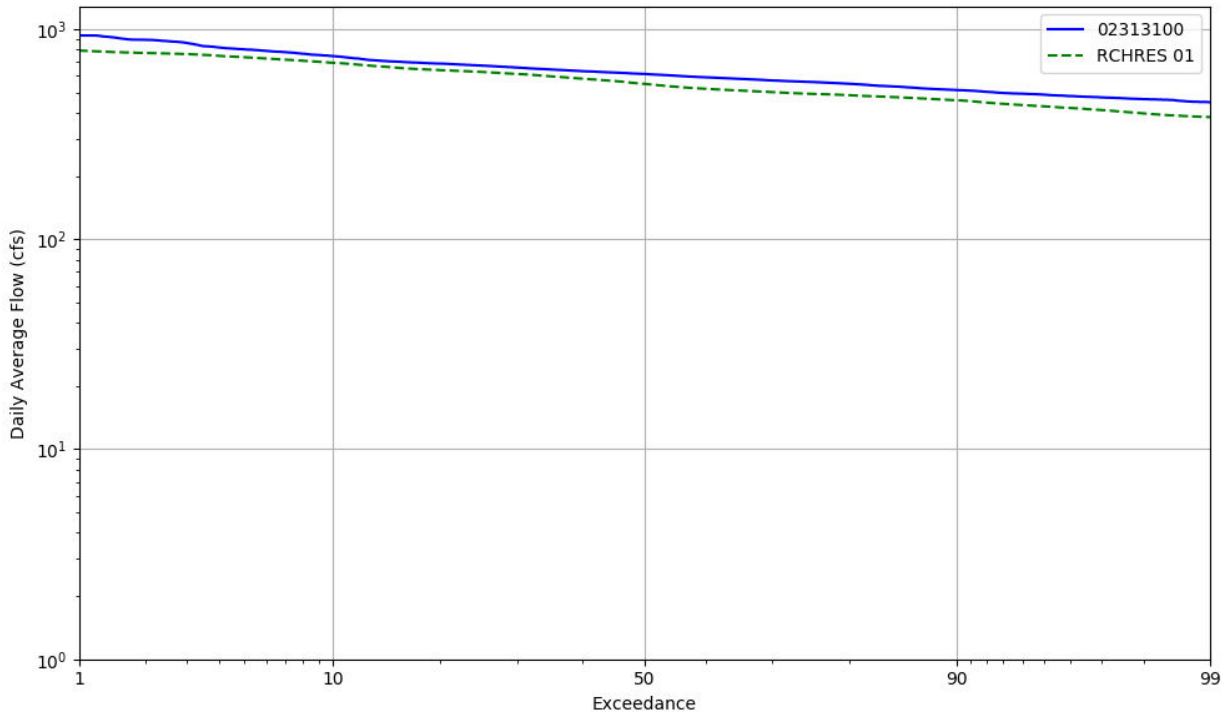


Figure T-03100208-5: Daily exceedance for HSFP reach 01 and USGS station 02313100.

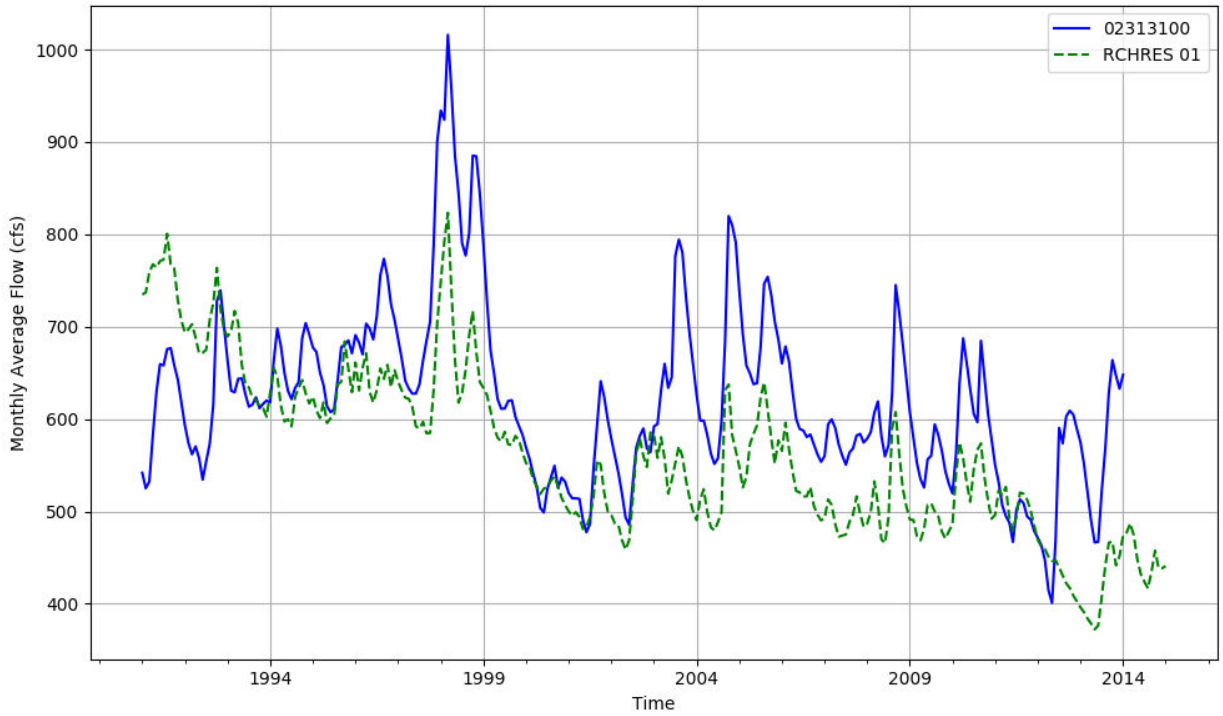


Figure T-03100208-6: Monthly flow for HSFP reach 01 and USGS station 02313100.

HSPF REACH 06, USGS GAUGE 02312640

Water-Data Report 2009
02312640 JUMPER CREEK CANAL NEAR BUSHNELL, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 284145, long 820634 referenced to North American Datum of 1927, in NE 1/4 sec.4, T.21 S., R.22 E., Sumter County, FL, Hydrologic Unit 03100208, near center of span on downstream side of bridge on State Highway 475, 2.2 mi north of Bushnell, and 10 mi upstream from mouth.

DRAINAGE AREA.--40.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WDR FL-81-3: 1980 (m).

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 55.00 ft above NGVD of 1929.

REMARKS.--Records fair. Diurnal fluctuation caused by mining operations upstream.

Table T-03100208-3: Comparison Statistics Between HSPF Reach 06 and USGS Gauge 02312640.

Statistic	Value
Bias	-1.32
Standard error	12.83
Relative bias	-0.12
Relative standard error	0.79
Nash-Sutcliffe coefficient	0.38
Kling-Gupta coefficient	0.58
Coefficient of efficiency	0.30
Index of agreement	0.62

Table T-03100208-4: Hydrologic Indices Between USGS Gauge 02312640 and HSPF Reach 06.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312640	Simulated Reach 06	Percent Difference
MA1: Mean, all daily flows	10.95	9.63	-12.02
MA2: Median, all daily flows	3.60	4.38	21.78
MA3: CV, all daily flows	80.77	88.76	9.89
MA4: CV, log of all daily flows	128.59	121.75	-5.32

MA5: Mean daily flow / median daily flow	3.04	2.20	-27.76
MA9: (Q10 - Q90) / median daily flow	8.06	4.62	-42.70
MA10: (Q20 - Q80) / median daily flow	4.80	3.08	-35.87
MA11: (Q25 - Q75) / median daily flow	3.58	2.54	-29.00
MA12: Mean monthly flow, January	10.76	9.10	-15.48
MA13: Mean monthly flow, February	11.96	9.50	-20.58
MA14: Mean monthly flow, March	13.17	10.40	-21.04
MA15: Mean monthly flow, April	10.74	6.71	-37.53
MA16: Mean monthly flow, May	6.15	3.30	-46.27
MA17: Mean monthly flow, June	5.76	4.86	-15.49
MA18: Mean monthly flow, July	10.15	9.79	-3.55
MA19: Mean monthly flow, August	13.51	12.72	-5.86
MA20: Mean monthly flow, September	14.20	14.59	2.74
MA21: Mean monthly flow, October	13.11	12.49	-4.73
MA22: Mean monthly flow, November	8.07	8.75	8.48
MA23: Mean monthly flow, December	8.44	8.56	1.44
ML1: Mean minimum monthly flow, January	7.38	5.69	-22.87
ML2: Mean minimum monthly flow, February	7.63	6.80	-10.84
ML3: Mean minimum monthly flow, March	9.37	7.72	-17.56
ML4: Mean minimum monthly flow, April	7.33	4.63	-36.83
ML5: Mean minimum monthly flow, May	4.01	1.55	-61.29
ML6: Mean minimum monthly flow, June	3.32	1.79	-45.98
ML7: Mean minimum monthly flow, July	5.56	6.61	19.02
ML8: Mean minimum monthly flow, August	9.11	8.96	-1.64
ML9: Mean minimum monthly flow, September	9.09	9.30	2.29
ML10: Mean minimum monthly flow, October	8.76	8.98	2.50
ML11: Mean minimum monthly flow, November	6.27	7.24	15.50
ML12: Mean minimum monthly flow, December	5.50	5.57	1.22
ML13: CV of minimum monthly flows	145.75	147.23	1.02
ML14: Mean minimum daily flow / mean median annual flow	0.21	0.08	-64.58
ML15: Mean minimum annual flow / mean annual flow	0.17	0.06	-67.16
ML16: Median minimum annual flow / median annual flow	0.19	0.07	-64.31
ML20: Ratio of baseflow volume to total flow volume	0.77	0.82	6.82
ML22: Mean annual minimum flow divided by catchment area	0.02	0.01	-72.90
RA1: Mean of positive changes from one day to next (rise rate)	2.31	0.87	
RA2: CV, mean of positive changes from one day to next (rise rate)	257.44	316.22	
RA3: Mean of negative changes from one day to next (fall rate)	1.17	0.46	
RA4: CV, mean of negative changes from one day to next (fall rate)	210.52	168.17	
RA5: Ratio of days that are higher than previous day	0.22	0.35	
RA6: Median of difference in log of flows over two consecutive days of rising	0.09	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	82.67	122.29	
RA9: CV, number of flow reversals from one day to the next	40.80	32.56	

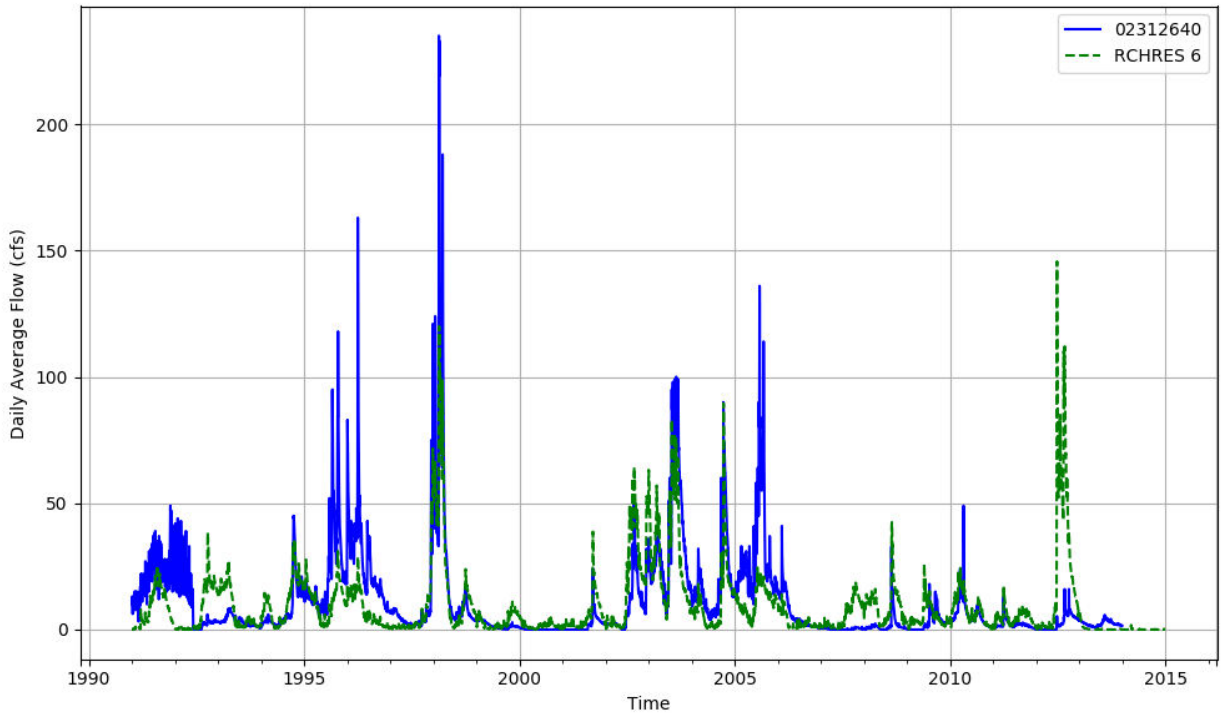


Figure T-03100208-7: Daily flow for HSFP reach 06 and USGS station 02312640.

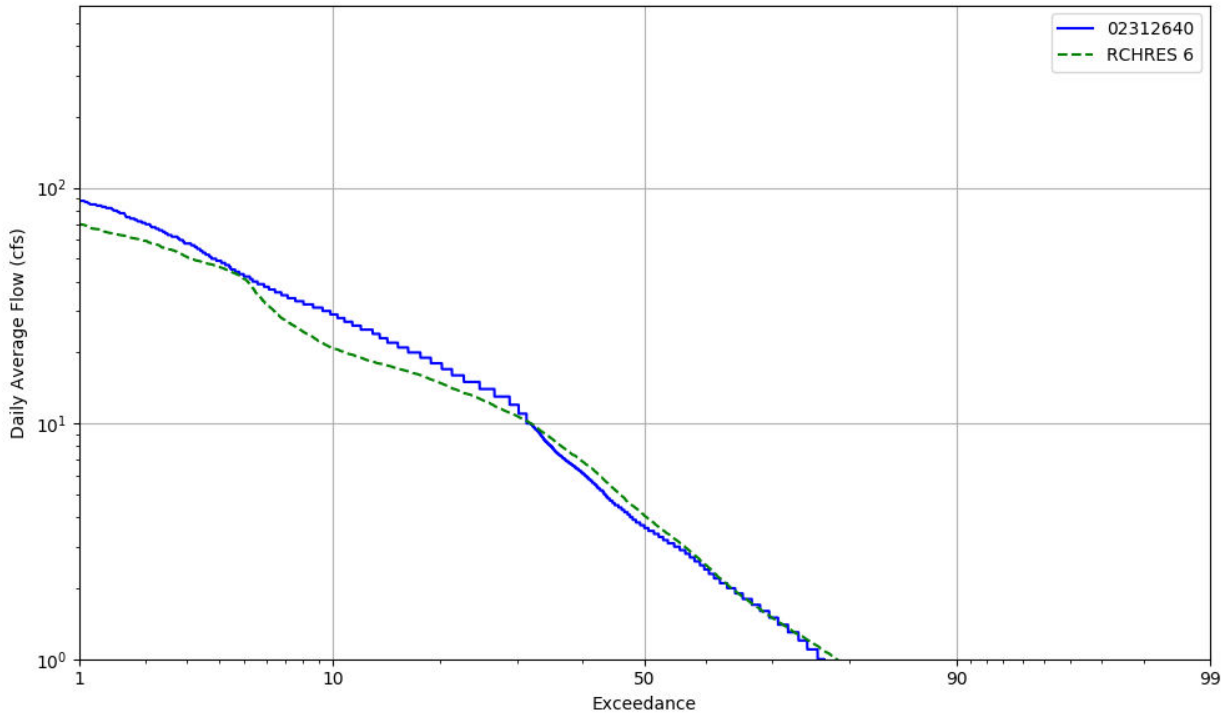


Figure T-03100208-8: Daily exceedance for HSFP reach 06 and USGS station 02312640.

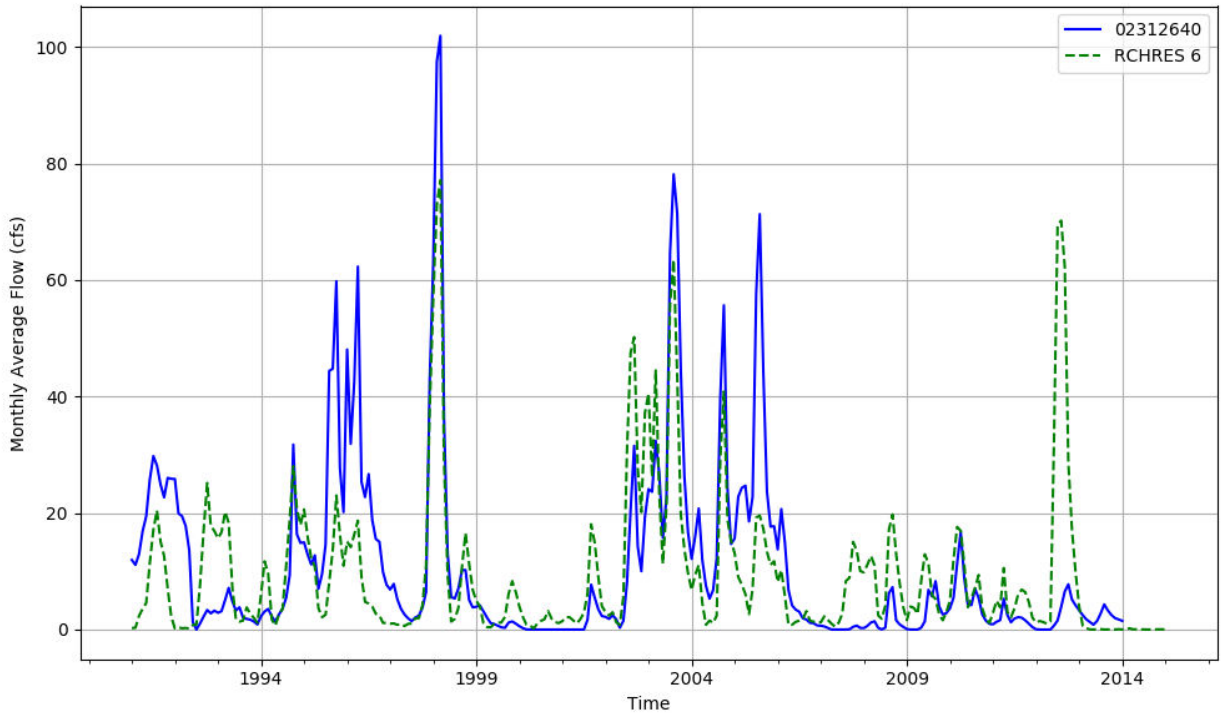


Figure T-03100208-9: Monthly flow for HSFP reach 06 and USGS station 02312640.

HSPF REACH 09, USGS GAUGE 02312180

Water-Data Report 2009
02312180 LITTLE WITHLACOOCHEE RIVER NEAR TARRYTOWN, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 283117, long 820318 referenced to North American Datum of 1927, in NE 1/4 sec.1, T.23 S., R.22 E., Sumter County, FL, Hydrologic Unit 03100208, near center of span on downstream side of bridge on State Highway 471, 2.3 mi south of Tarrytown, 3.1 mi southwest of Linden, and 14 mi upstream from mouth.

DRAINAGE AREA.--85.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR FL-72-3: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 80.00 ft above NGVD of 1929 (Florida Department of Transportation bench mark).

REMARKS.--Records fair. Above bankfull stage, discharge measurements are made along State Highway 471 and include all culvert flow from 2.3 mi north to 2.8 mi south of gaging station.

Table T-03100208-5: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02312180.

Statistic	Value
Bias	-16.93
Standard error	65.92
Relative bias	-0.43
Relative standard error	0.74
Nash-Sutcliffe coefficient	0.45
Kling-Gupta coefficient	0.29
Coefficient of efficiency	0.47
Index of agreement	0.68

Table T-03100208-6: Hydrologic Indices Between USGS Gauge 02312180 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312180	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	39.36	22.24	-43.49
MA2: Median, all daily flows	0.30	0.96	221.53
MA3: CV, all daily flows	172.52	234.32	35.82

MA4: CV, log of all daily flows	230.75	185.55	-19.59
MA5: Mean daily flow / median daily flow	131.19	23.06	-82.43
MA9: (Q10 - Q90) / median daily flow	410.00	64.89	-84.17
MA10: (Q20 - Q80) / median daily flow	123.33	29.09	-76.41
MA11: (Q25 - Q75) / median daily flow	63.33	18.22	-71.22
MA12: Mean monthly flow, January	33.75	19.57	-42.01
MA13: Mean monthly flow, February	25.11	17.95	-28.50
MA14: Mean monthly flow, March	36.59	19.87	-45.68
MA15: Mean monthly flow, April	18.14	9.05	-50.09
MA16: Mean monthly flow, May	3.75	2.84	-24.21
MA17: Mean monthly flow, June	12.17	19.74	62.22
MA18: Mean monthly flow, July	49.53	23.89	-51.76
MA19: Mean monthly flow, August	68.52	32.46	-52.63
MA20: Mean monthly flow, September	87.59	51.71	-40.97
MA21: Mean monthly flow, October	65.06	27.90	-57.11
MA22: Mean monthly flow, November	18.40	10.36	-43.67
MA23: Mean monthly flow, December	32.56	20.39	-37.38
ML1: Mean minimum monthly flow, January	15.44	7.29	-52.75
ML2: Mean minimum monthly flow, February	10.78	6.17	-42.73
ML3: Mean minimum monthly flow, March	17.30	6.71	-61.19
ML4: Mean minimum monthly flow, April	2.68	0.17	-93.60
ML5: Mean minimum monthly flow, May	0.76	0.03	-95.85
ML6: Mean minimum monthly flow, June	3.25	0.94	-71.14
ML7: Mean minimum monthly flow, July	23.12	11.34	-50.98
ML8: Mean minimum monthly flow, August	25.99	12.16	-53.20
ML9: Mean minimum monthly flow, September	29.85	12.58	-57.85
ML10: Mean minimum monthly flow, October	18.68	8.40	-55.02
ML11: Mean minimum monthly flow, November	8.41	4.15	-50.58
ML12: Mean minimum monthly flow, December	6.51	3.63	-44.27
ML13: CV of minimum monthly flows	295.87	244.19	-17.47
ML14: Mean minimum daily flow / mean median annual flow	0.00	0.00	
ML15: Mean minimum annual flow / mean annual flow	0.00	0.00	
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.59	0.43	-28.10
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	
RA1: Mean of positive changes from one day to next (rise rate)	15.62	17.48	
RA2: CV, mean of positive changes from one day to next (rise rate)	232.28	603.01	
RA3: Mean of negative changes from one day to next (fall rate)	5.63	6.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	206.84	848.06	
RA5: Ratio of days that are higher than previous day	0.14	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.19	0.23	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.16	
RA8: Number of flow reversals from one day to the next	33.75	92.21	
RA9: CV, number of flow reversals from one day to the next	56.74	26.61	

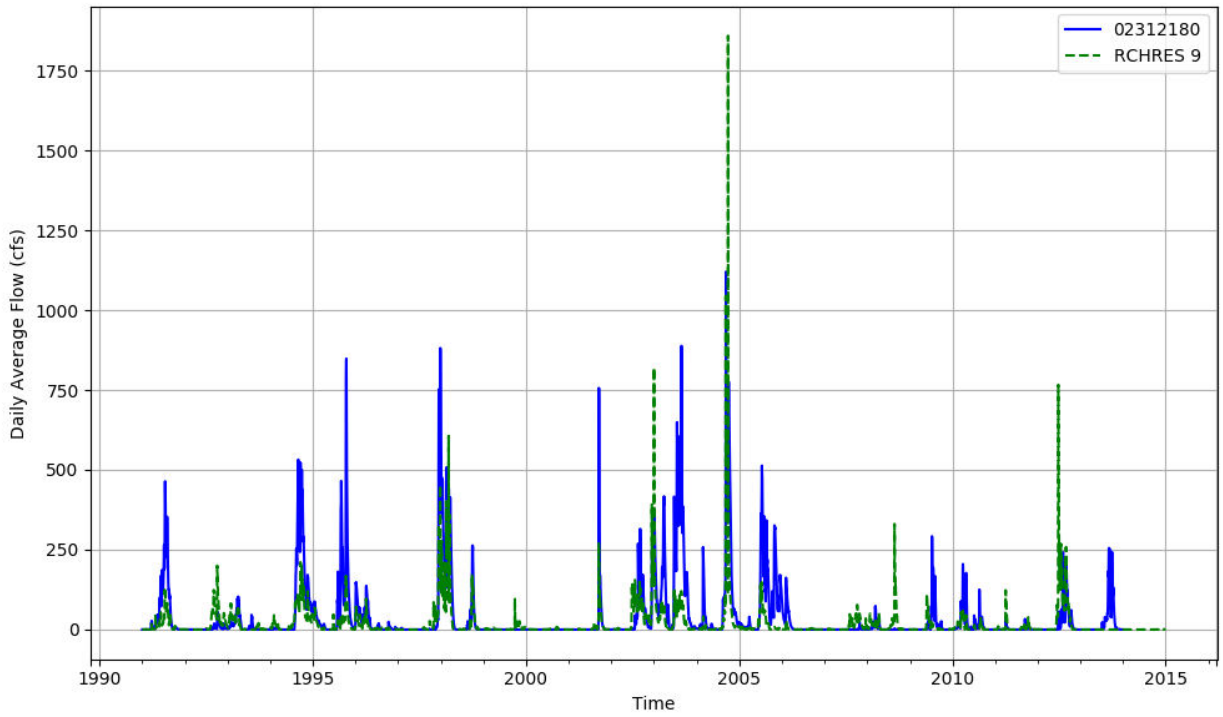


Figure T-03100208-10: Daily flow for HSFP reach 09 and USGS station 02312180.

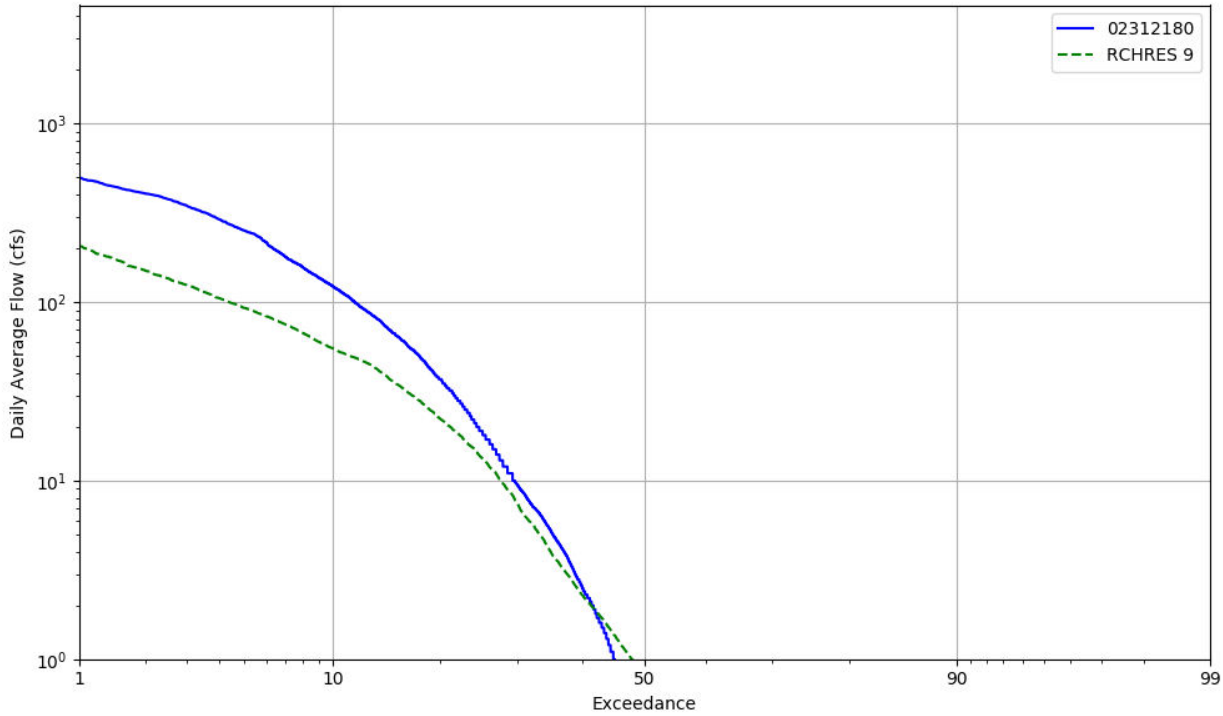


Figure T-03100208-11: Daily exceedance for HSFP reach 09 and USGS station 02312180.

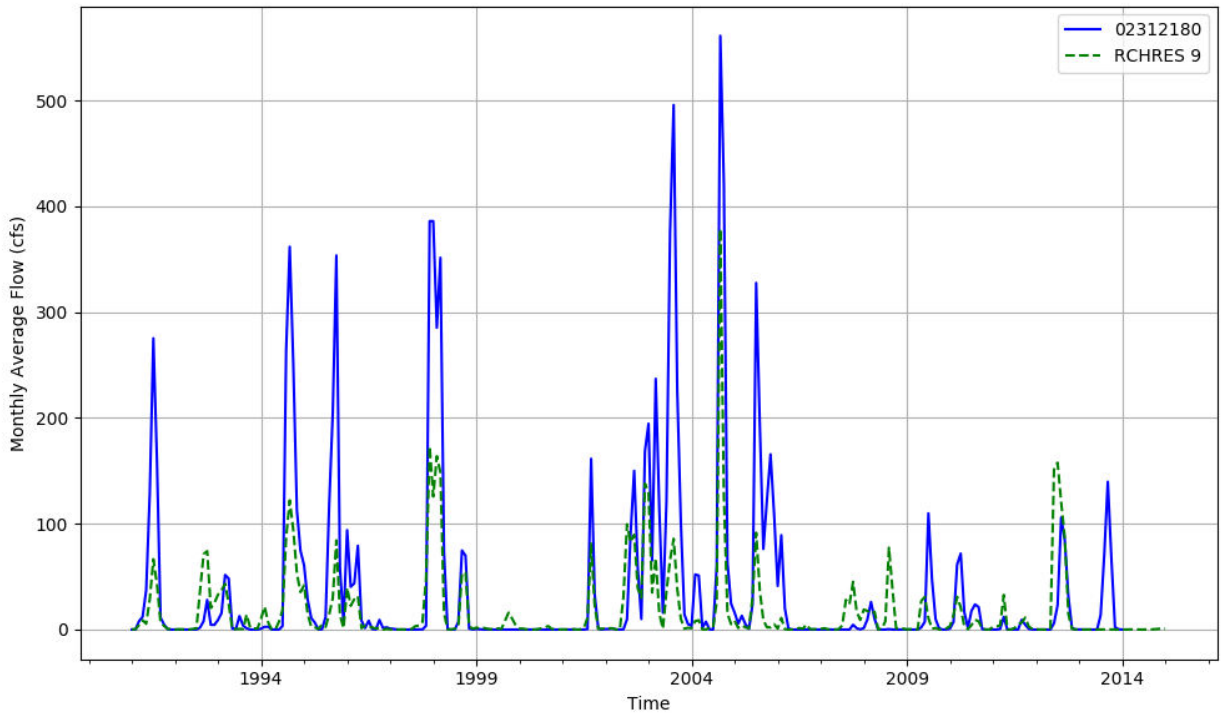


Figure T-03100208-12: Monthly flow for HSFP reach 09 and USGS station 02312180.

HSPF REACH 14, USGS GAUGE 02312645

Water-Data Report 2009
02312645 JUMPER CK CANAL NR WAHOO
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 284215, long 820926 referenced to North American Datum of 1927, in SE 1/4 sec.36, T.20., R.21 E., Sumter County, FL, Hydrologic Unit 03100208, on upstream side of Bevilles bridge, 2.5 mi northeast of Wahoo, 3.9 mi northwest of Bushnell and 5.7 mi upstream from mouth.

DRAINAGE AREA.--50.6 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1979 to October 1991, January 2008 to current year.

REVISED RECORDS.--WDR FL-81-3: 1980 (m)

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929.

REMARKS.--Records fair.

Table T-03100208-7: Comparison Statistics Between HSPF Reach 14 and USGS Gauge 02312645.

Statistic	Value
Bias	3.93
Standard error	17.37
Relative bias	0.45
Relative standard error	2.34
Nash-Sutcliffe coefficient	-4.48
Kling-Gupta coefficient	-0.71
Coefficient of efficiency	-0.56
Index of agreement	0.46

Table T-03100208-8: Hydrologic Indices Between USGS Gauge 02312645 and HSPF Reach 14.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312645	Simulated Reach 14	Percent Difference
MA1: Mean, all daily flows	23.91	12.93	-45.90
MA2: Median, all daily flows	24.00	8.77	-63.47
MA3: CV, all daily flows	4.65	10.67	129.41
MA4: CV, log of all daily flows	33.50	84.77	153.01
MA5: Mean daily flow / median daily flow	1.00	1.48	48.09
MA9: (Q10 - Q90) / median daily flow	0.94	3.16	235.61

MA10: (Q20 - Q80) / median daily flow	0.63	2.70	326.20
MA11: (Q25 - Q75) / median daily flow	0.54	2.24	312.92
MA12: Mean monthly flow, January	1.71	0.12	-93.25
MA13: Mean monthly flow, February	1.65	0.10	-94.21
MA14: Mean monthly flow, March	2.24	0.61	-72.58
MA15: Mean monthly flow, April	3.31	0.81	-75.50
MA16: Mean monthly flow, May	2.77	0.92	-66.89
MA17: Mean monthly flow, June	3.36	2.10	-37.59
MA18: Mean monthly flow, July	4.12	3.10	-24.78
MA19: Mean monthly flow, August	4.23	3.88	-8.20
MA20: Mean monthly flow, September	3.42	2.80	-18.16
MA21: Mean monthly flow, October	0.00	0.00	
MA22: Mean monthly flow, November	0.00	0.00	
MA23: Mean monthly flow, December	0.00	0.00	
ML1: Mean minimum monthly flow, January	8.40	0.04	-99.48
ML2: Mean minimum monthly flow, February	6.20	0.13	-97.94
ML3: Mean minimum monthly flow, March	8.00	0.12	-98.55
ML4: Mean minimum monthly flow, April	18.00	3.26	-81.87
ML5: Mean minimum monthly flow, May	16.00	4.71	-70.57
ML6: Mean minimum monthly flow, June	22.00	12.13	-44.88
ML7: Mean minimum monthly flow, July	26.00	18.85	-27.48
ML8: Mean minimum monthly flow, August	21.00	24.58	17.07
ML9: Mean minimum monthly flow, September	23.00	18.16	-21.06
ML10: Mean minimum monthly flow, October	0.00	0.00	
ML11: Mean minimum monthly flow, November	0.00	0.00	
ML12: Mean minimum monthly flow, December	0.00	0.00	
ML13: CV of minimum monthly flows	44.37	104.34	135.13
ML14: Mean minimum daily flow / mean median annual flow	0.03	0.00	-98.05
ML15: Mean minimum annual flow / mean annual flow	0.03	0.00	-98.69
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.79	0.82	4.43
ML22: Mean annual minimum flow divided by catchment area	87500.01	87500.00	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	3.71	2.06	
RA2: CV, mean of positive changes from one day to next (rise rate)	107.00	134.04	
RA3: Mean of negative changes from one day to next (fall rate)	3.03	0.78	
RA4: CV, mean of negative changes from one day to next (fall rate)	68.28	161.70	
RA5: Ratio of days that are higher than previous day	0.40	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.12	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.06	
RA8: Number of flow reversals from one day to the next	17.00	11.12	
RA9: CV, number of flow reversals from one day to the next	282.84	282.84	

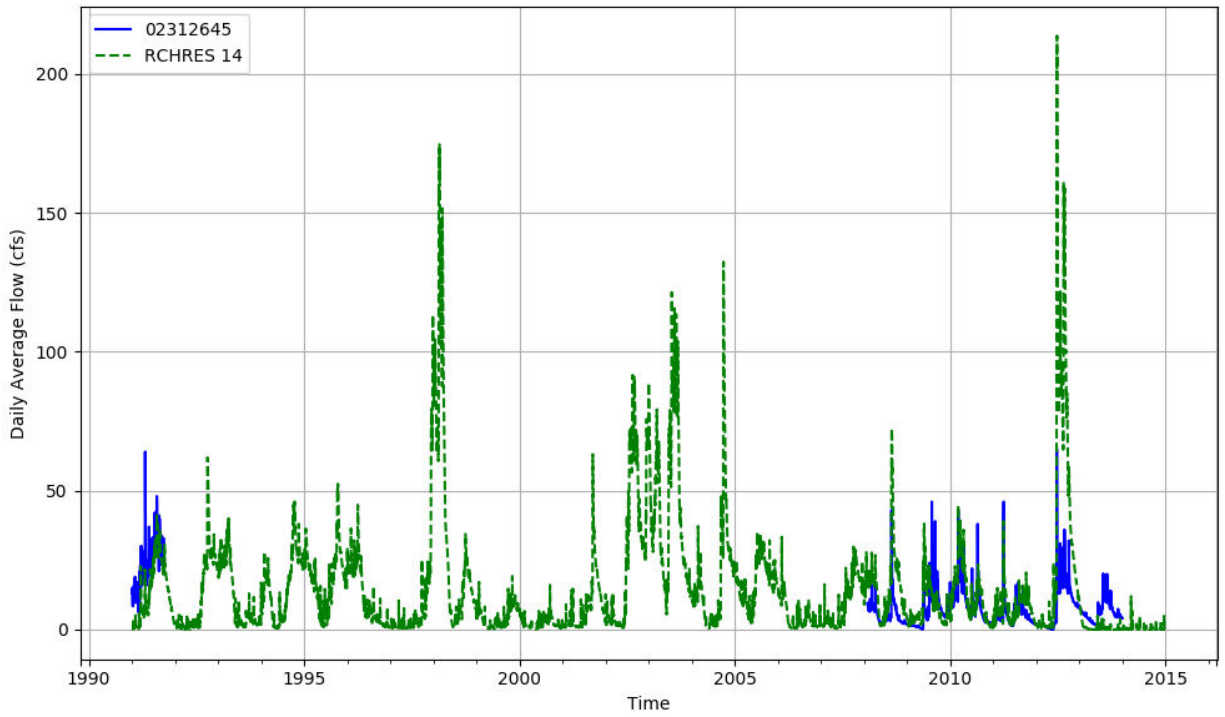


Figure T-03100208-13: Daily flow for HSFP reach 14 and USGS station 02312645.

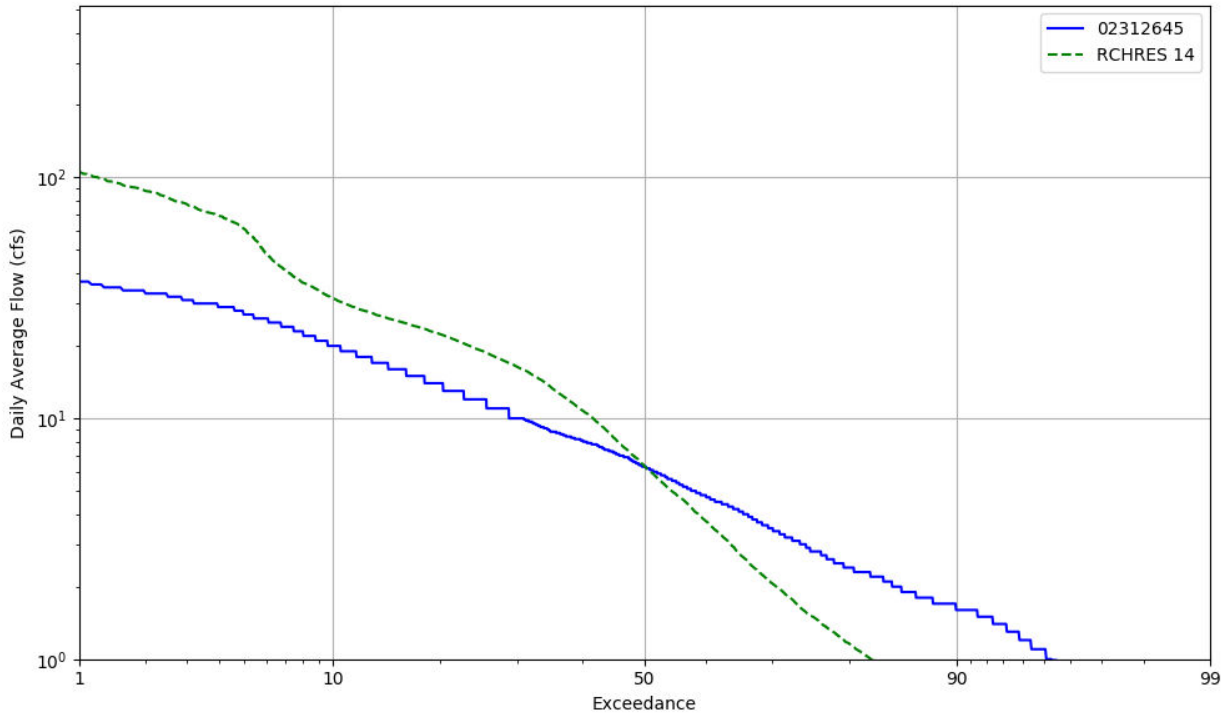


Figure T-03100208-14: Daily exceedance for HSFP reach 14 and USGS station 02312645.

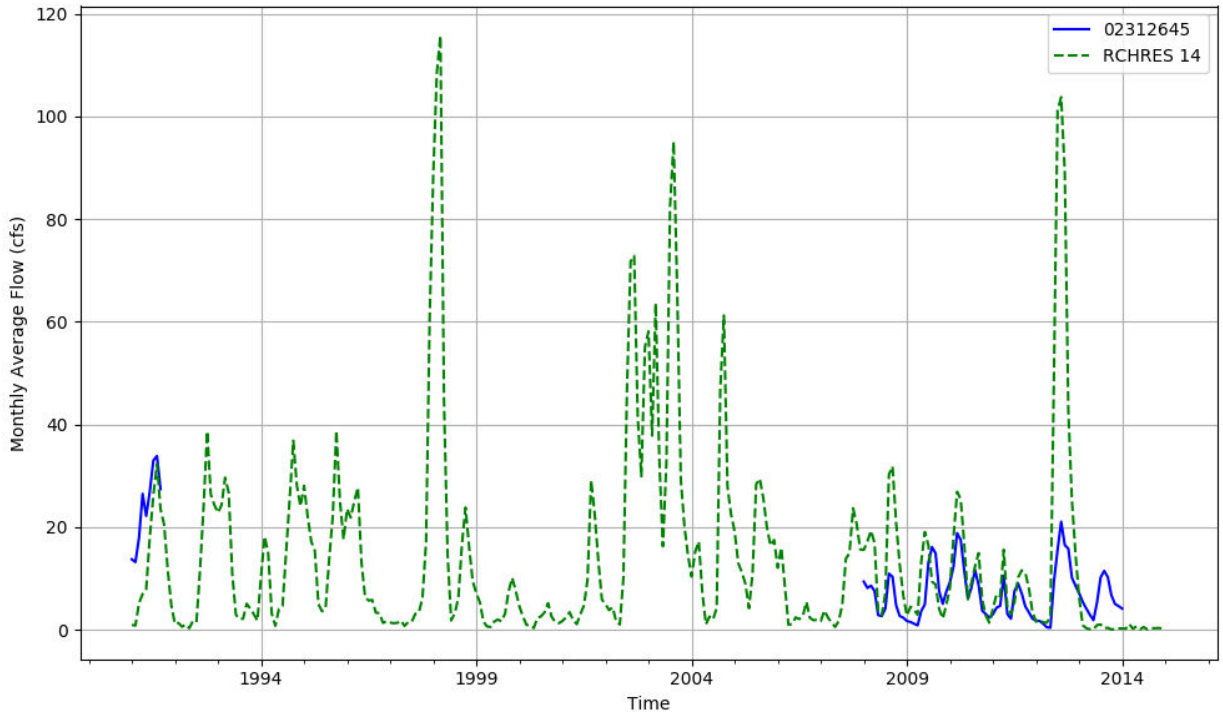


Figure T-03100208-15: Monthly flow for HSFP reach 14 and USGS station 02312645.

HSPF REACH 19, USGS GAUGE 02312200

Water-Data Report 2009
02312200 LITTLE WITHLACOOCHEE RIVER AT RERDELL, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 283421, long 820920 referenced to North American Datum of 1927, in SE 1/4 sec.13, T.22 S., R.21 E., Hernando County, FL, Hydrologic Unit 03100208, near center of span on upstream side of bridge on U.S. Highway 301, 0.2 mi north of Rerdell, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--145 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1958 to current year.

REVISED RECORDS.--WDR FL-72-3: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 59.02 ft above NGVD of 1929.

REMARKS.--Records fair. Above bankfull stage, discharge measurements are made along U.S. Highway 301 and include all flow from 3.4 mi north to 1.8 mi south of gaging station.

Table T-03100208-9: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02312200.

Statistic	Value
Bias	-14.94
Standard error	77.71
Relative bias	-0.24
Relative standard error	0.64
Nash-Sutcliffe coefficient	0.59
Kling-Gupta coefficient	0.52
Coefficient of efficiency	0.51
Index of agreement	0.72

Table T-03100208-10: Hydrologic Indices Between USGS Gauge 02312200 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312200	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	61.56	46.44	-24.56
MA2: Median, all daily flows	6.90	12.61	82.76
MA3: CV, all daily flows	138.03	146.00	5.77

MA4: CV, log of all daily flows	193.46	149.73	-22.60
MA5: Mean daily flow / median daily flow	8.92	3.68	-58.72
MA9: (Q10 - Q90) / median daily flow	25.22	9.82	-61.07
MA10: (Q20 - Q80) / median daily flow	10.99	4.98	-54.64
MA11: (Q25 - Q75) / median daily flow	6.52	3.70	-43.31
MA12: Mean monthly flow, January	63.39	43.45	-31.46
MA13: Mean monthly flow, February	49.33	42.08	-14.69
MA14: Mean monthly flow, March	62.46	45.31	-27.46
MA15: Mean monthly flow, April	34.82	25.53	-26.66
MA16: Mean monthly flow, May	9.17	9.87	7.58
MA17: Mean monthly flow, June	24.57	30.46	23.96
MA18: Mean monthly flow, July	69.42	49.65	-28.49
MA19: Mean monthly flow, August	97.51	64.74	-33.60
MA20: Mean monthly flow, September	120.94	90.32	-25.32
MA21: Mean monthly flow, October	92.29	59.03	-36.04
MA22: Mean monthly flow, November	31.21	31.70	1.55
MA23: Mean monthly flow, December	51.39	41.94	-18.40
ML1: Mean minimum monthly flow, January	31.09	24.76	-20.34
ML2: Mean minimum monthly flow, February	24.98	23.58	-5.57
ML3: Mean minimum monthly flow, March	32.69	26.80	-18.01
ML4: Mean minimum monthly flow, April	12.02	11.38	-5.31
ML5: Mean minimum monthly flow, May	2.96	3.07	3.79
ML6: Mean minimum monthly flow, June	7.63	4.61	-39.57
ML7: Mean minimum monthly flow, July	32.14	29.98	-6.72
ML8: Mean minimum monthly flow, August	51.22	35.49	-30.72
ML9: Mean minimum monthly flow, September	48.45	36.73	-24.18
ML10: Mean minimum monthly flow, October	33.10	31.44	-5.03
ML11: Mean minimum monthly flow, November	18.12	22.24	22.73
ML12: Mean minimum monthly flow, December	14.87	18.30	23.06
ML13: CV of minimum monthly flows	229.77	178.97	-22.11
ML14: Mean minimum daily flow / mean median annual flow	0.03	0.15	369.56
ML15: Mean minimum annual flow / mean annual flow	0.01	0.04	233.52
ML16: Median minimum annual flow / median annual flow	0.00	0.07	
ML20: Ratio of baseflow volume to total flow volume	0.62	0.65	3.78
ML22: Mean annual minimum flow divided by catchment area	0.01	0.01	27.23
RA1: Mean of positive changes from one day to next (rise rate)	12.25	23.16	
RA2: CV, mean of positive changes from one day to next (rise rate)	255.60	543.82	
RA3: Mean of negative changes from one day to next (fall rate)	5.03	6.16	
RA4: CV, mean of negative changes from one day to next (fall rate)	210.04	854.46	
RA5: Ratio of days that are higher than previous day	0.22	0.21	
RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.05	
RA8: Number of flow reversals from one day to the next	63.88	71.29	
RA9: CV, number of flow reversals from one day to the next	32.80	26.02	

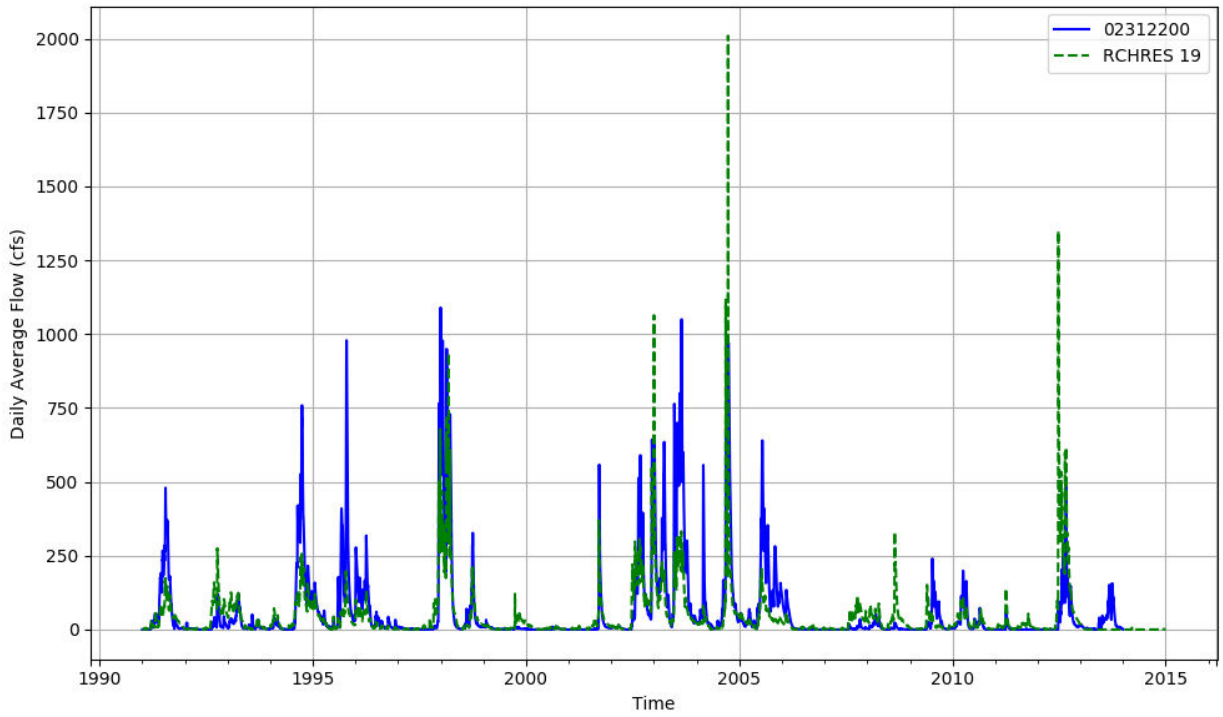


Figure T-03100208-16: Daily flow for HSFP reach 19 and USGS station 02312200.

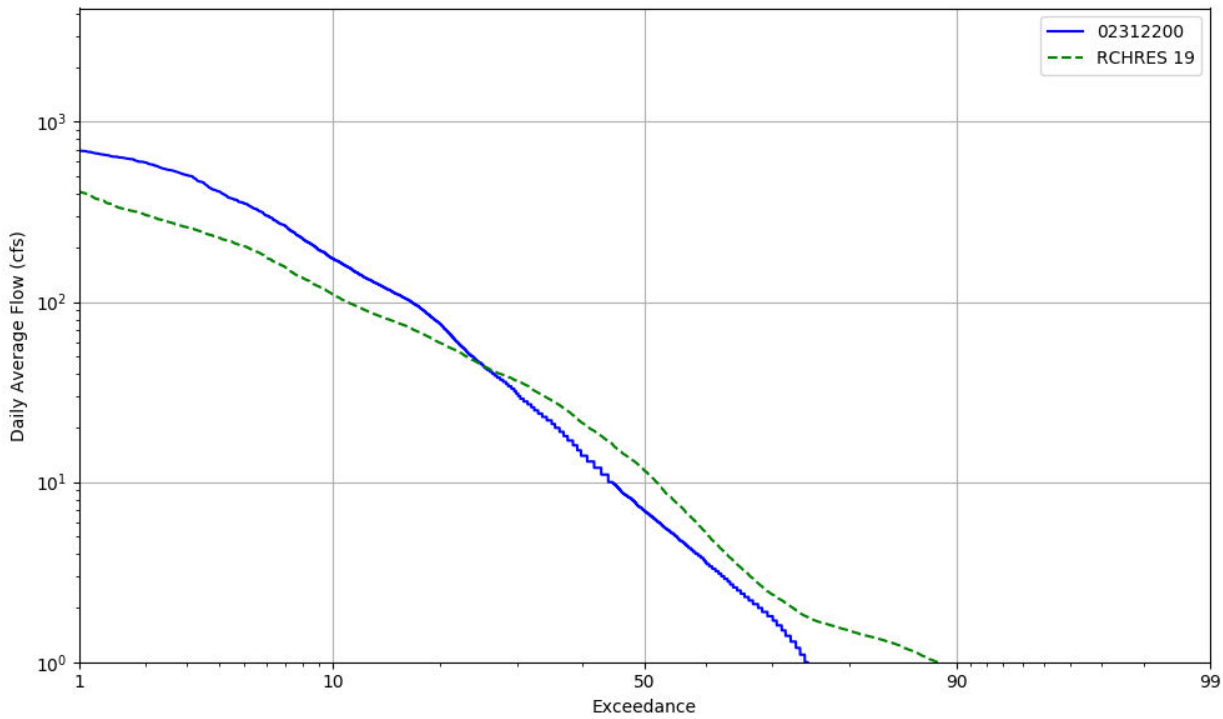


Figure T-03100208-17: Daily exceedance for HSFP reach 19 and USGS station 02312200.

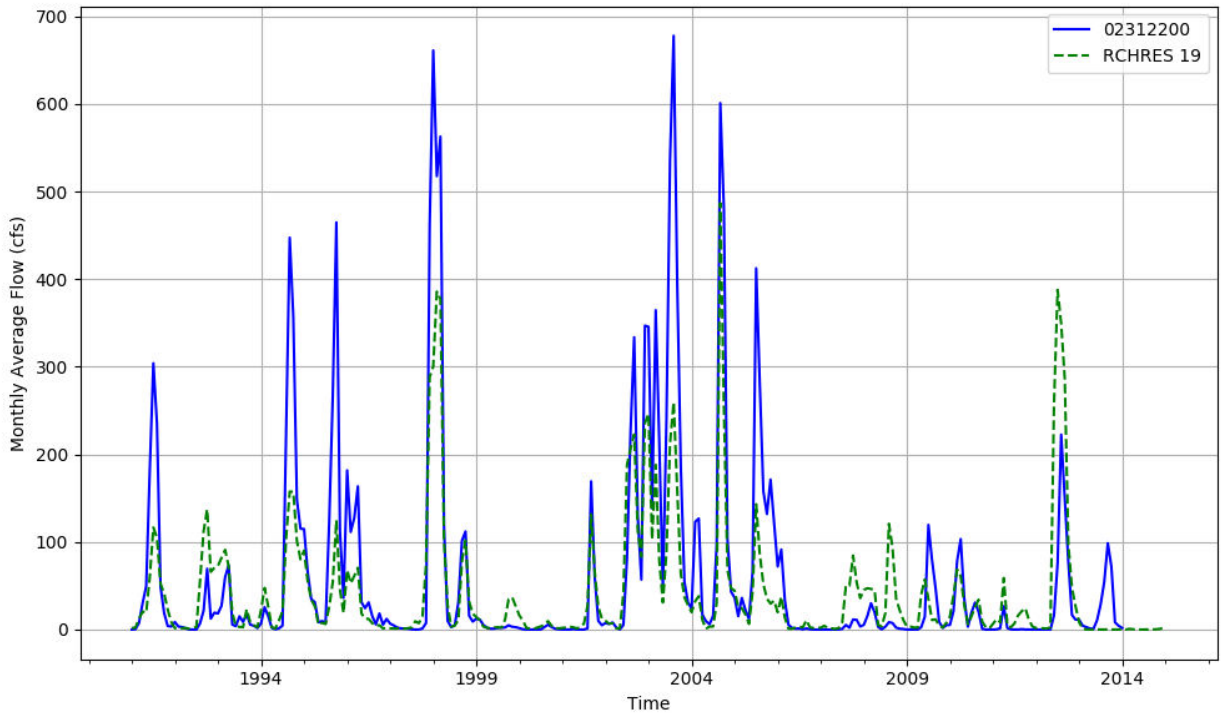


Figure T-03100208-18: Monthly flow for HSFP reach 19 and USGS station 02312200.

HSPF REACH 22, USGS GAUGE 02311500

Water-Data Report 2009
02311500 WITHLACOOCHEE RIVER NEAR DADE CITY, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 282108, long 820734 referenced to North American Datum of 1927, in SE 1/4 sec.32, T.24 S., R.22 E., Pasco County, FL, Hydrologic Unit 03100208, on left bank 50 ft downstream from Lanier Bridge on River Road, 4 mi east of Dade City, and 110 mi upstream from mouth.

DRAINAGE AREA.--390 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1930 to March 1933, July 1958 to October 1962 (discharge measurements only), water years 1959-62 (annual maximum), January 1964 to September 1983 (discharge measurements and gage heights only); October 1983 to current year.

REVISED RECORDS.--WRD FL 1962: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929. Feb. 11, 1930 to Mar. 31, 1933, and July 21 to Nov. 19, 1958, nonrecording gage, and Nov. 20, 1958 to Oct. 3, 1962, non-recording gage and crest-stage gage at same site at datum 64.29 ft higher. Jan. 21, 1964 to Oct. 8, 1987, nonrecording gage at same site and datum.

REMARKS.--Records fair except for periods of estimated daily discharge, which are poor. High water diversion above station into Hillsborough River basin through Withlacoochee-Hillsborough Overflow near Richland (station 02311000).

Table T-03100208-11: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02311500.

Statistic	Value
Bias	-2.20
Standard error	185.68
Relative bias	-0.01
Relative standard error	0.66
Nash-Sutcliffe coefficient	0.57
Kling-Gupta coefficient	0.76
Coefficient of efficiency	0.49
Index of agreement	0.72

Table T-03100208-12: Hydrologic Indices Between USGS Gauge 02311500 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02311500	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	154.83	152.26	-1.66
MA2: Median, all daily flows	19.00	38.56	102.94
MA3: CV, all daily flows	152.15	189.50	24.55
MA4: CV, log of all daily flows	176.34	144.11	-18.28
MA5: Mean daily flow / median daily flow	8.15	3.95	-51.54
MA9: (Q10 - Q90) / median daily flow	24.04	9.74	-59.47
MA10: (Q20 - Q80) / median daily flow	10.96	5.40	-50.75
MA11: (Q25 - Q75) / median daily flow	7.47	3.99	-46.53
MA12: Mean monthly flow, January	151.05	148.82	-1.47
MA13: Mean monthly flow, February	109.43	129.55	18.39
MA14: Mean monthly flow, March	135.43	131.98	-2.55
MA15: Mean monthly flow, April	94.13	69.28	-26.40
MA16: Mean monthly flow, May	16.99	25.72	51.38
MA17: Mean monthly flow, June	57.24	110.72	93.42
MA18: Mean monthly flow, July	192.07	149.49	-22.17
MA19: Mean monthly flow, August	252.05	202.48	-19.67
MA20: Mean monthly flow, September	329.93	330.93	0.30
MA21: Mean monthly flow, October	221.26	203.13	-8.19
MA22: Mean monthly flow, November	71.18	102.58	44.11
MA23: Mean monthly flow, December	145.95	146.58	0.43
ML1: Mean minimum monthly flow, January	58.63	69.90	19.22
ML2: Mean minimum monthly flow, February	63.99	64.38	0.61
ML3: Mean minimum monthly flow, March	86.23	62.66	-27.33
ML4: Mean minimum monthly flow, April	20.41	18.51	-9.32
ML5: Mean minimum monthly flow, May	3.50	6.32	80.84
ML6: Mean minimum monthly flow, June	18.71	13.09	-30.02
ML7: Mean minimum monthly flow, July	73.52	65.52	-10.88
ML8: Mean minimum monthly flow, August	106.85	82.99	-22.33
ML9: Mean minimum monthly flow, September	127.67	111.64	-12.56
ML10: Mean minimum monthly flow, October	66.86	89.31	33.58
ML11: Mean minimum monthly flow, November	35.44	53.64	51.35
ML12: Mean minimum monthly flow, December	27.84	51.51	85.03
ML13: CV of minimum monthly flows	211.70	188.81	-10.81
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.05	21.66
ML15: Mean minimum annual flow / mean annual flow	0.01	0.02	55.25
ML16: Median minimum annual flow / median annual flow	0.00	0.03	
ML20: Ratio of baseflow volume to total flow volume	0.62	0.52	-15.86
ML22: Mean annual minimum flow divided by catchment area	0.02	0.02	1.69
RA1: Mean of positive changes from one day to next (rise rate)	27.43	127.84	
RA2: CV, mean of positive changes from one day to next (rise rate)	231.66	497.81	
RA3: Mean of negative changes from one day to next (fall rate)	12.55	37.23	
RA4: CV, mean of negative changes from one day to next (fall rate)	216.80	833.17	
RA5: Ratio of days that are higher than previous day	0.25	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.18	

RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.07	
RA8: Number of flow reversals from one day to the next	41.83	63.50	
RA9: CV, number of flow reversals from one day to the next	35.40	21.62	

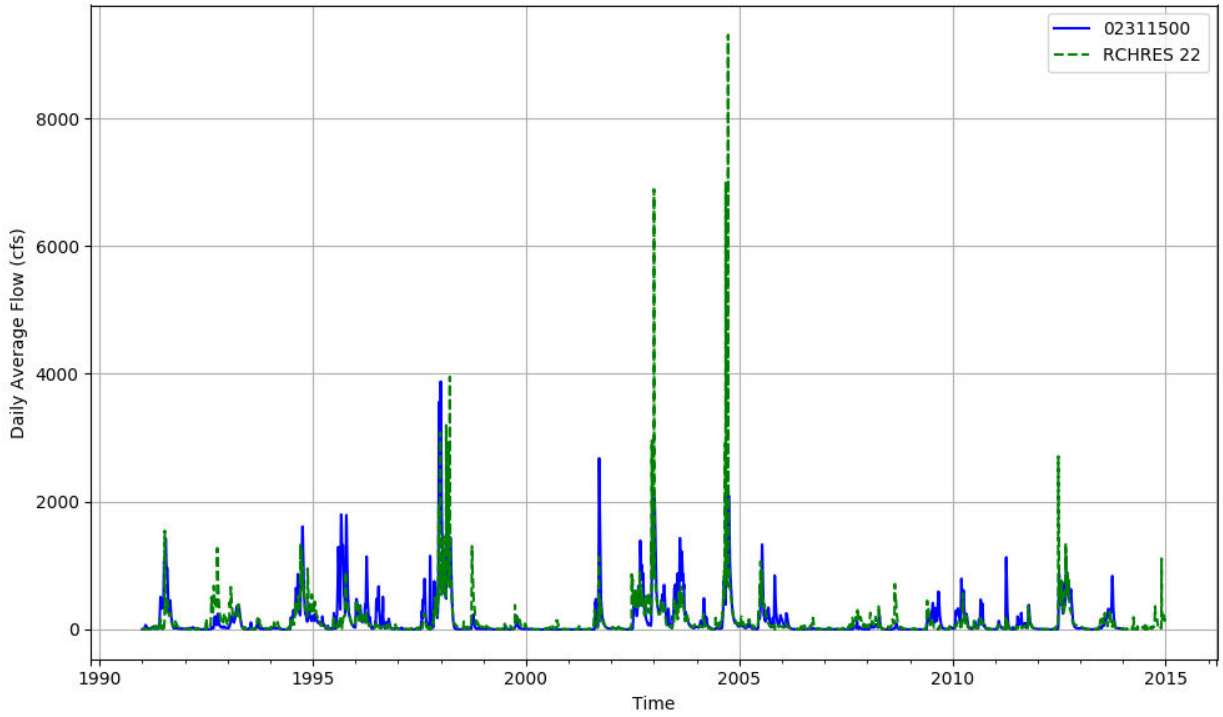


Figure T-03100208-19: Daily flow for HSFP reach 22 and USGS station 02311500.

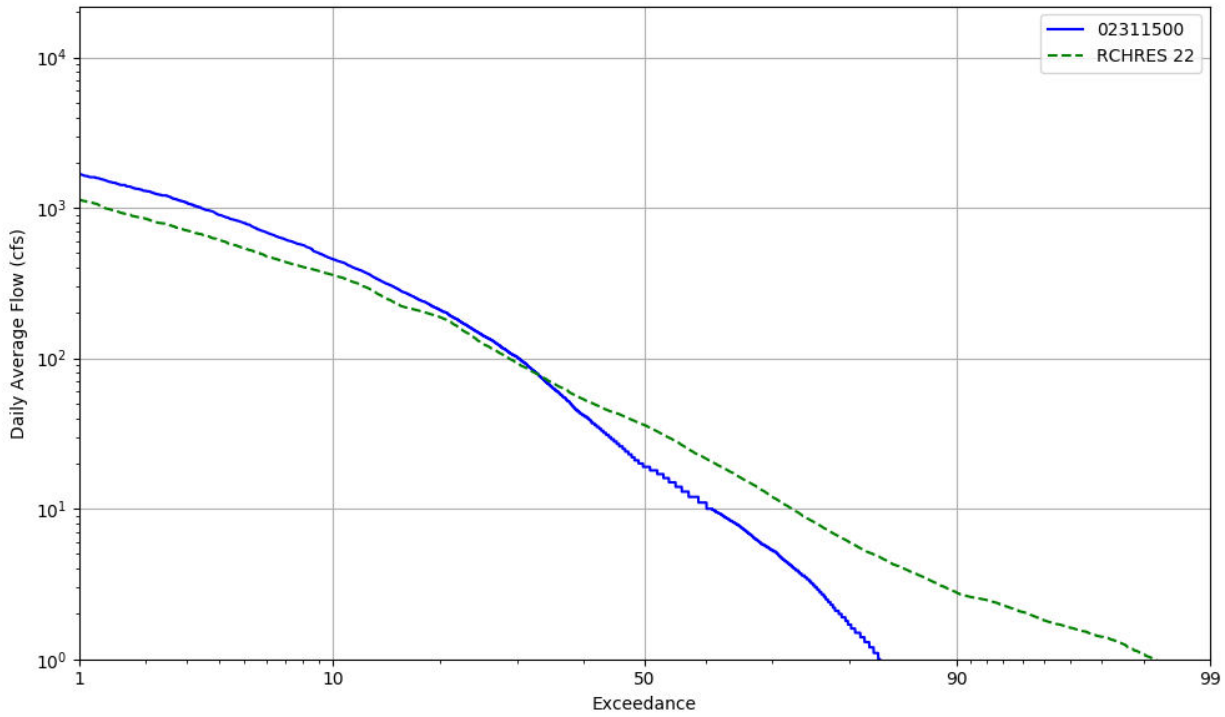


Figure T-03100208-20: Daily exceedance for HSFP reach 22 and USGS station 02311500.

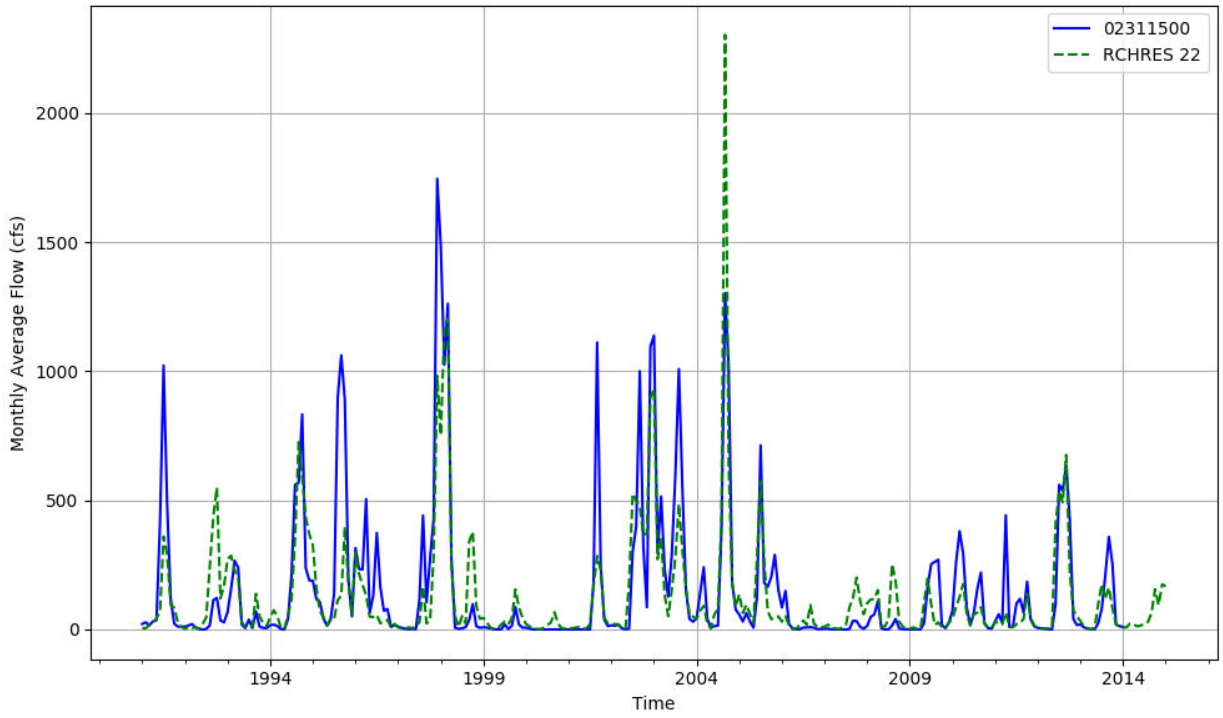


Figure T-03100208-21: Monthly flow for HSFP reach 22 and USGS station 02311500.

HSPF REACH 23, USGS GAUGE 02312700

Water-Data Report 2009
02312700 OUTLET RIVER AT PANACOOCHEE RETREATS, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 284800, long 820911 referenced to North American Datum of 1927, in NW 1/4 sec.31, T.19 S., R.22 E., Sumter County, FL, Hydrologic Unit 03100208, downstream side of wooden foot bridge, 200 ft downstream from State Highway 470, 0.5 mi west of Panacoochee Retreats, 1.0 mi upstream from mouth, and 4.4 mi northwest of town of Lake Panasoffkee.

DRAINAGE AREA.--420 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1962 to current year. Prior to October 1967, published as Panasoffkee River near Lake Panasoffkee.

REVISED RECORDS.--WDR FL-72-3: Drainage area.

GAGE.--Water-stage recorder, acoustic velocity meter and data-collection platform. Datum of gage is at NGVD of 1929 (Florida Department of Transportation bench mark). Prior to Dec. 18, 1962, nonrecording gage 0.8 mi north of the outlet to Lake Panasoffkee at the same datum, Dec. 18, 1962, to Oct. 7, 1975, water-stage recorder at sites near the outlet at same datum, and Oct. 7, 1975 to March 10, 2006, water-stage recorder 0.8 mi north of the outlet at the same datum.

REMARKS.--Records fair except for periods of estimated daily discharge, which are poor. Flow affected at times by backwater from Withlacoochee River. Prior to 1962, flow partially controlled by small rock dams and at times during 1962-64 by a temporary sheet piling dam about 400 ft downstream from bridge on County Road 470. Flow partially controlled by sandbag dam June 6-10, 1992.

Table T-03100208-13: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02312700.

Statistic	Value
Bias	-13.55
Standard error	79.59
Relative bias	-0.11
Relative standard error	0.74
Nash-Sutcliffe coefficient	0.45
Kling-Gupta coefficient	0.70
Coefficient of efficiency	0.32
Index of agreement	0.66

Table T-03100208-14: Hydrologic Indices Between USGS Gauge 02312700 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312700	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	127.37	113.39	-10.98
MA2: Median, all daily flows	96.00	78.39	-18.35
MA3: CV, all daily flows	51.05	62.36	22.16
MA4: CV, log of all daily flows	69.46	77.93	12.18
MA5: Mean daily flow / median daily flow	1.33	1.45	9.02
MA9: (Q10 - Q90) / median daily flow	2.29	2.36	3.10
MA10: (Q20 - Q80) / median daily flow	1.51	1.43	-5.00
MA11: (Q25 - Q75) / median daily flow	1.20	1.16	-3.07
MA12: Mean monthly flow, January	135.26	111.55	-17.53
MA13: Mean monthly flow, February	137.68	109.72	-20.31
MA14: Mean monthly flow, March	140.87	117.35	-16.69
MA15: Mean monthly flow, April	118.75	87.66	-26.18
MA16: Mean monthly flow, May	86.46	60.69	-29.80
MA17: Mean monthly flow, June	85.75	74.16	-13.51
MA18: Mean monthly flow, July	103.21	110.75	7.30
MA19: Mean monthly flow, August	128.11	134.38	4.89
MA20: Mean monthly flow, September	145.91	149.84	2.69
MA21: Mean monthly flow, October	157.39	137.61	-12.57
MA22: Mean monthly flow, November	120.61	105.61	-12.44
MA23: Mean monthly flow, December	104.30	106.17	1.79
ML1: Mean minimum monthly flow, January	97.96	88.16	-10.01
ML2: Mean minimum monthly flow, February	119.04	87.10	-26.84
ML3: Mean minimum monthly flow, March	118.37	92.43	-21.92
ML4: Mean minimum monthly flow, April	90.17	69.21	-23.24
ML5: Mean minimum monthly flow, May	69.65	43.90	-36.97
ML6: Mean minimum monthly flow, June	61.79	47.41	-23.26
ML7: Mean minimum monthly flow, July	79.04	83.33	5.43
ML8: Mean minimum monthly flow, August	95.71	101.60	6.16
ML9: Mean minimum monthly flow, September	106.74	104.39	-2.21
ML10: Mean minimum monthly flow, October	130.72	106.32	-18.67
ML11: Mean minimum monthly flow, November	94.37	93.52	-0.91
ML12: Mean minimum monthly flow, December	90.00	82.21	-8.66
ML13: CV of minimum monthly flows	93.10	85.58	-8.07
ML14: Mean minimum daily flow / mean median annual flow	0.30	0.49	65.48
ML15: Mean minimum annual flow / mean annual flow	0.28	0.40	43.25
ML16: Median minimum annual flow / median annual flow	0.29	0.50	71.15
ML20: Ratio of baseflow volume to total flow volume	0.90	0.86	-4.99
ML22: Mean annual minimum flow divided by catchment area	0.37	0.37	-0.20
RA1: Mean of positive changes from one day to next (rise rate)	6.60	12.92	
RA2: CV, mean of positive changes from one day to next (rise rate)	167.49	274.58	
RA3: Mean of negative changes from one day to next (fall rate)	4.45	4.27	
RA4: CV, mean of negative changes from one day to next (fall rate)	137.98	198.96	
RA5: Ratio of days that are higher than previous day	0.34	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.06	

RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.02	
RA8: Number of flow reversals from one day to the next	92.83	78.88	
RA9: CV, number of flow reversals from one day to the next	39.80	23.39	

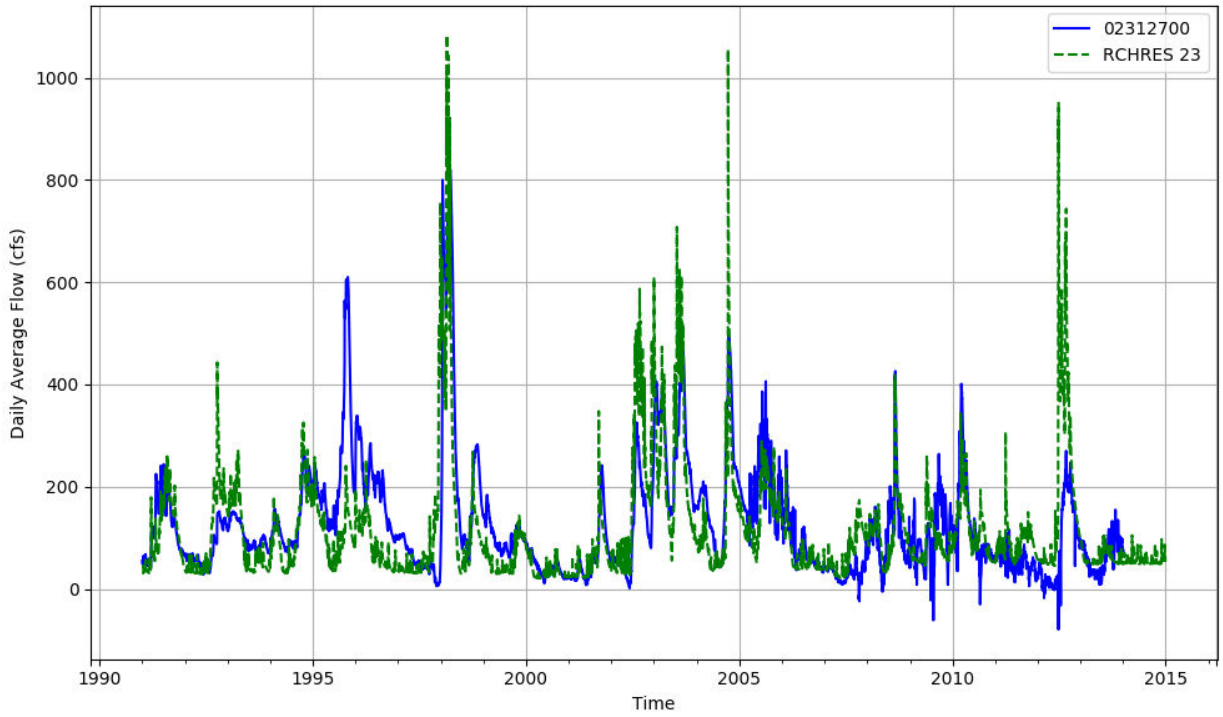


Figure T-03100208-22: Daily flow for HSFP reach 23 and USGS station 02312700.

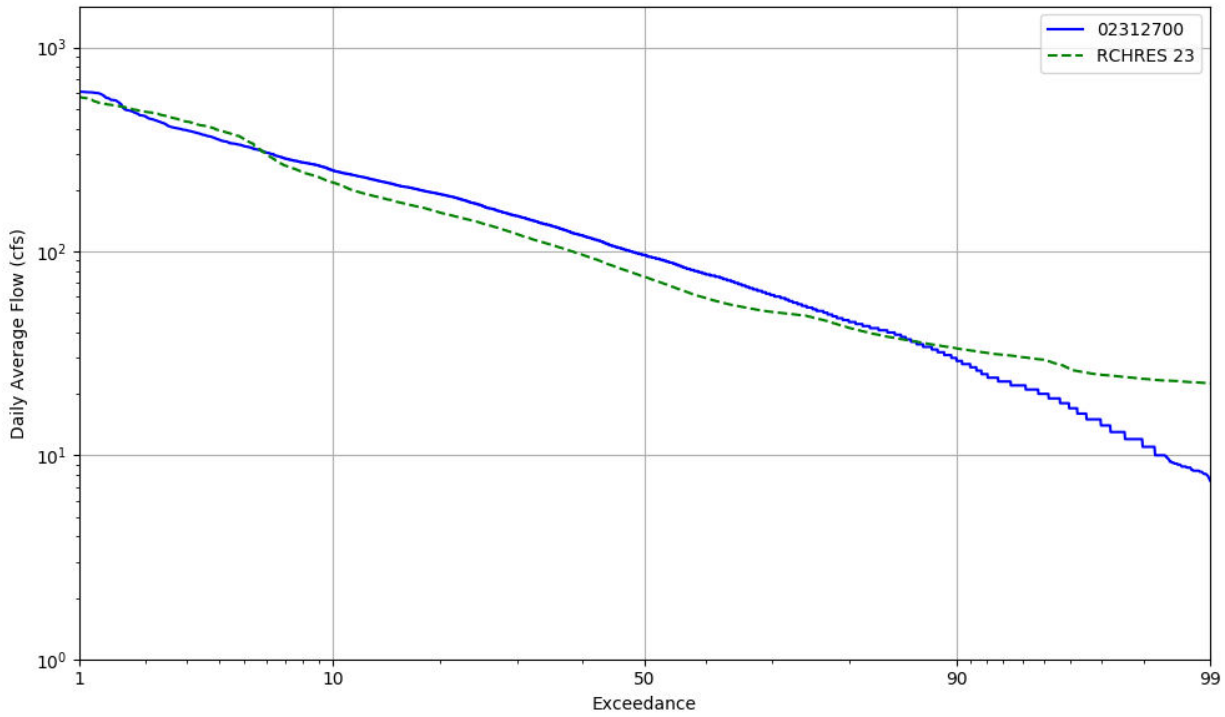


Figure T-03100208-23: Daily exceedance for HSFP reach 23 and USGS station 02312700.

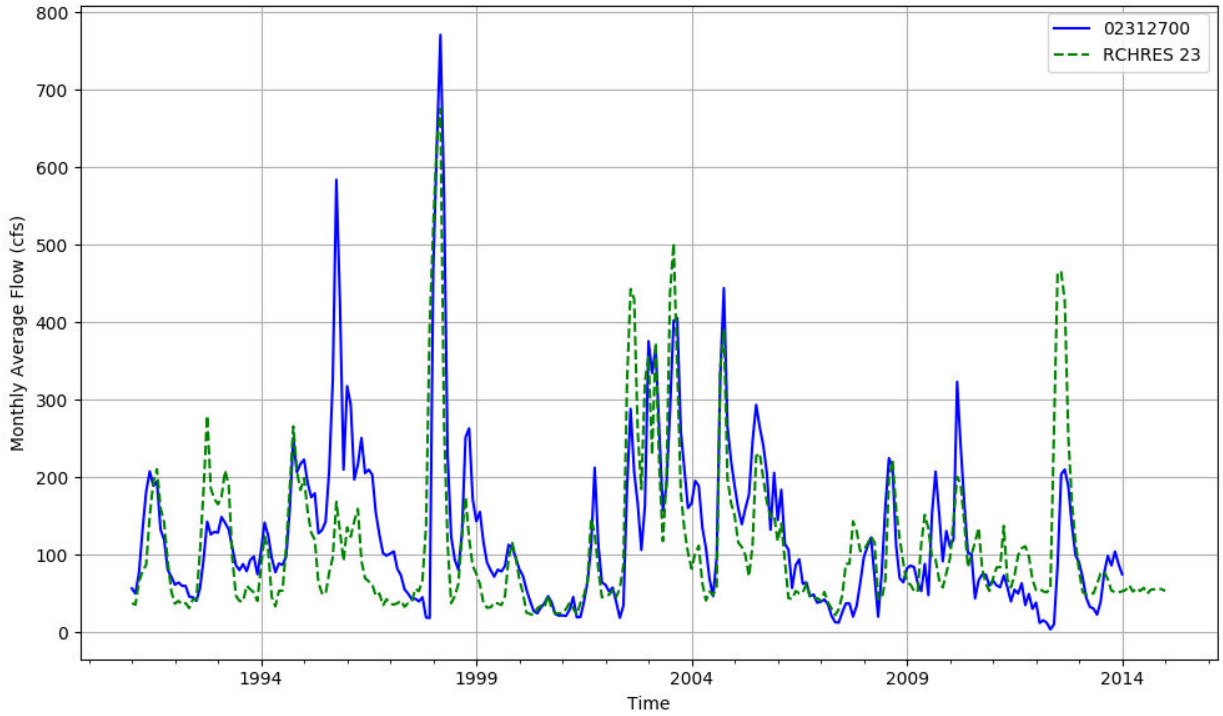


Figure T-03100208-24: Monthly flow for HSFP reach 23 and USGS station 02312700.

HSPF REACH 26, USGS GAUGE 02312000

Water-Data Report 2009
02312000 WITHLACOOCHEE RIVER AT TRILBY, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 282847, long 821040 referenced to North American Datum of 1927, in SE 1/4 sec.14, T.23 S., R.21 E., Hernando County, FL, Hydrologic Unit 03100208, on right bank at downstream side of bridge on U.S. Highway 301, 1.6 mi northeast of Trilby, 10 mi upstream from Little Withlacoochee River, and 93 mi upstream from mouth.

DRAINAGE AREA.--570 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1928 to February 1929, February 1930 to current year.

REVISED RECORDS.--WDR FL-72-3: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 49.27 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1938, nonrecording gage at site 1.5 mi downstream at datum 0.12 ft lower.

REMARKS.--Records fair. High water diversion above station into Hillsborough River basin through Withlacoochee-Hillsborough Overflow near Richland (station 02311000). Records include water diverted from ground-water supplies through Dade City Canal (station 02311700) by citrus processing plants, in SW1/4 sec. 23, T.24 S., R.21 E., 5 mi upstream from Withlacoochee River.

Table T-03100208-15: Comparison Statistics Between HSPF Reach 26 and USGS Gauge 02312000.

Statistic	Value
Bias	-23.97
Standard error	258.82
Relative bias	-0.10
Relative standard error	0.61
Nash-Sutcliffe coefficient	0.63
Kling-Gupta coefficient	0.71
Coefficient of efficiency	0.52
Index of agreement	0.73

Table T-03100208-16: Hydrologic Indices Between USGS Gauge 02312000 and HSPF Reach 26.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312000	Simulated Reach 26	Percent Difference
MA1: Mean, all daily flows	239.40	214.92	-10.23
MA2: Median, all daily flows	56.00	76.91	37.34
MA3: CV, all daily flows	133.29	149.39	12.08
MA4: CV, log of all daily flows	158.35	135.08	-14.70
MA5: Mean daily flow / median daily flow	4.28	2.79	-34.63
MA9: (Q10 - Q90) / median daily flow	11.72	6.96	-40.61
MA10: (Q20 - Q80) / median daily flow	5.29	3.72	-29.61
MA11: (Q25 - Q75) / median daily flow	3.88	2.73	-29.64
MA12: Mean monthly flow, January	257.33	214.49	-16.65
MA13: Mean monthly flow, February	154.28	190.63	23.56
MA14: Mean monthly flow, March	205.31	192.17	-6.40
MA15: Mean monthly flow, April	169.71	112.16	-33.91
MA16: Mean monthly flow, May	43.77	44.45	1.54
MA17: Mean monthly flow, June	72.63	133.31	83.55
MA18: Mean monthly flow, July	258.34	209.38	-18.95
MA19: Mean monthly flow, August	344.73	278.07	-19.34
MA20: Mean monthly flow, September	516.06	439.07	-14.92
MA21: Mean monthly flow, October	399.08	294.37	-26.24
MA22: Mean monthly flow, November	138.56	158.40	14.32
MA23: Mean monthly flow, December	188.71	205.40	8.85
ML1: Mean minimum monthly flow, January	114.17	123.82	8.45
ML2: Mean minimum monthly flow, February	108.58	112.04	3.19
ML3: Mean minimum monthly flow, March	141.15	116.71	-17.31
ML4: Mean minimum monthly flow, April	65.86	47.42	-27.99
ML5: Mean minimum monthly flow, May	21.95	15.61	-28.88
ML6: Mean minimum monthly flow, June	24.48	22.81	-6.82
ML7: Mean minimum monthly flow, July	128.60	113.37	-11.84
ML8: Mean minimum monthly flow, August	207.02	147.68	-28.66
ML9: Mean minimum monthly flow, September	240.64	180.78	-24.88
ML10: Mean minimum monthly flow, October	163.12	155.16	-4.88
ML11: Mean minimum monthly flow, November	80.41	101.17	25.81
ML12: Mean minimum monthly flow, December	62.16	89.11	43.36
ML13: CV of minimum monthly flows	189.03	167.32	-11.49
ML14: Mean minimum daily flow / mean median annual flow	0.18	0.09	-50.48
ML15: Mean minimum annual flow / mean annual flow	0.07	0.04	-45.57
ML16: Median minimum annual flow / median annual flow	0.17	0.06	-66.07
ML20: Ratio of baseflow volume to total flow volume	0.75	0.64	-14.85
ML22: Mean annual minimum flow divided by catchment area	0.15	0.08	-51.21
RA1: Mean of positive changes from one day to next (rise rate)	19.71	121.00	
RA2: CV, mean of positive changes from one day to next (rise rate)	220.84	535.45	
RA3: Mean of negative changes from one day to next (fall rate)	12.14	35.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	189.12	777.83	
RA5: Ratio of days that are higher than previous day	0.33	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.13	

RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.05	
RA8: Number of flow reversals from one day to the next	64.08	56.75	
RA9: CV, number of flow reversals from one day to the next	39.25	21.46	

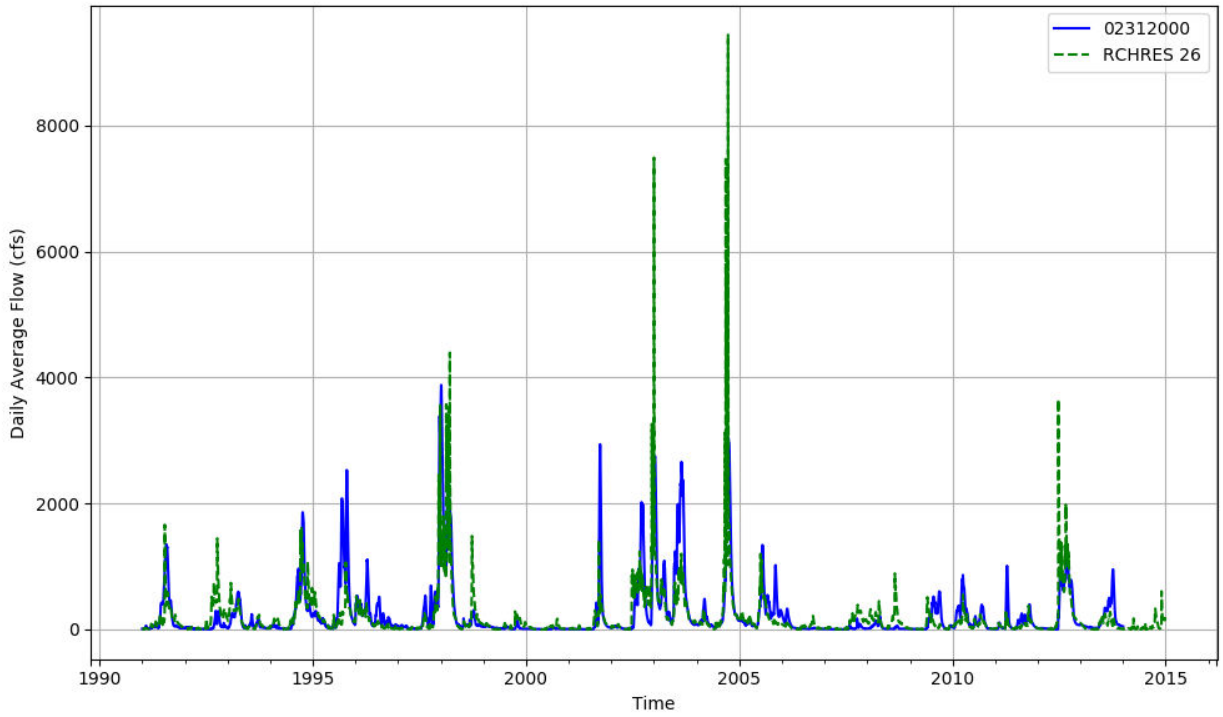


Figure T-03100208-25: Daily flow for HSFP reach 26 and USGS station 02312000.

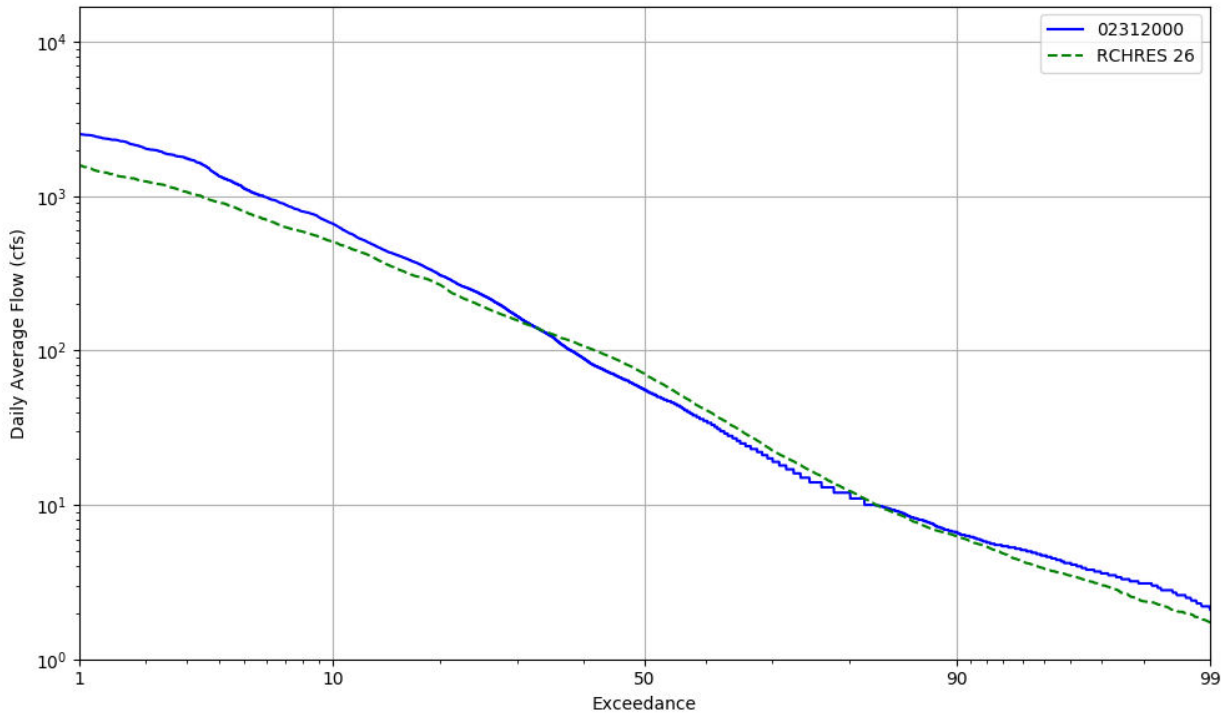


Figure T-03100208-26: Daily exceedance for HSFP reach 26 and USGS station 02312000.

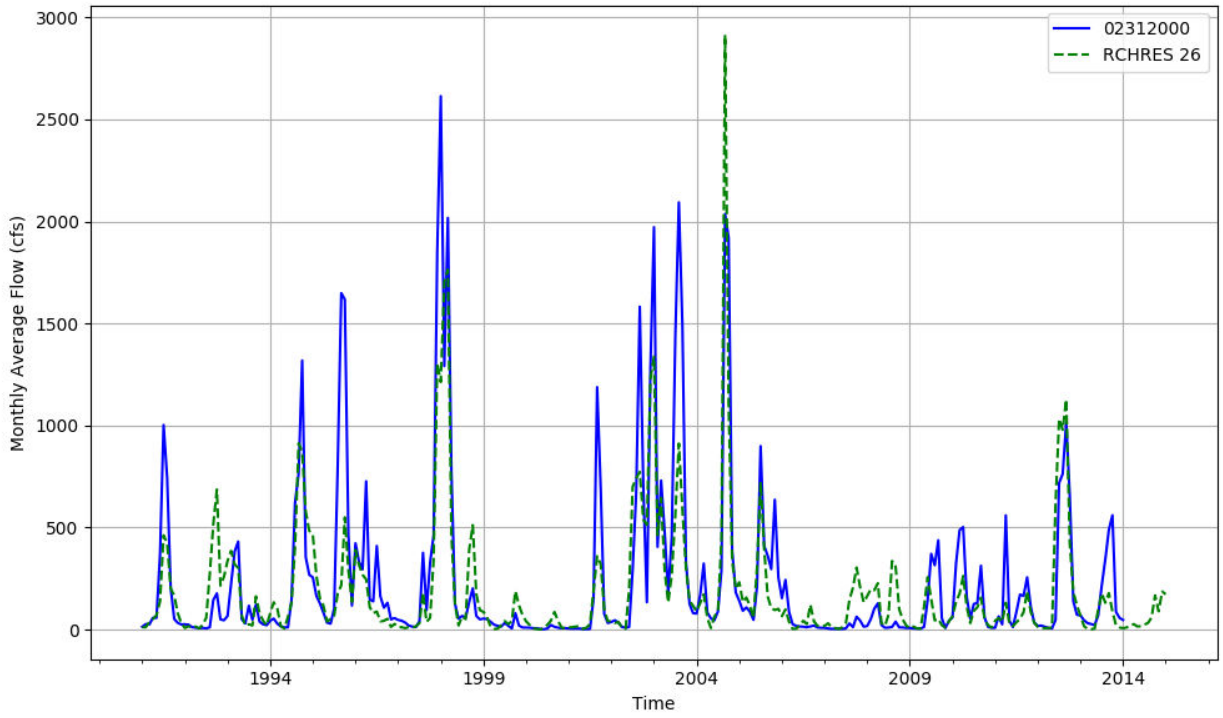


Figure T-03100208-27: Monthly flow for HSFP reach 26 and USGS station 02312000.

HSPF REACH 28, USGS GAUGE 02312500

Water-Data Report 2009
02312500 WITHLACOOCHEE RIVER AT CROOM, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 283533, long 821320 referenced to North American Datum of 1927, in NE 1/4 sec.8, T.22 S., R.21 E., Hernando County, FL, Hydrologic Unit 03100208, on left bank at upstream side of abandoned highway bridge, 0.4 mi northwest of Croom, 2.3 mi downstream from Little Withlacoochee River, 4.5 mi southeast of Nobleton, and 77 mi upstream from mouth.

DRAINAGE AREA.--810 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1304.

REVISED RECORDS.--WDR FL-72-3: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 38.94 ft above NGVD of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Feb. 2, 1940, nonrecording gage at railroad bridge 500 ft upstream at same datum.

REMARKS.--Records fair. Records include water diverted from ground-water supplies (see station 02311700). High water diversion in headwaters (station 02311000) can occur some years.

Table T-03100208-17: Comparison Statistics Between HSPF Reach 28 and USGS Gauge 02312500.

Statistic	Value
Bias	-19.03
Standard error	286.39
Relative bias	-0.06
Relative standard error	0.57
Nash-Sutcliffe coefficient	0.68
Kling-Gupta coefficient	0.79
Coefficient of efficiency	0.52
Index of agreement	0.75

Table T-03100208-18: Hydrologic Indices Between USGS Gauge 02312500 and HSPF Reach 28.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312500	Simulated Reach 28	Percent Difference
MA1: Mean, all daily flows	301.82	282.37	-6.44
MA2: Median, all daily flows	91.00	108.36	19.08

MA3: CV, all daily flows	116.71	137.00	17.38
MA4: CV, log of all daily flows	148.85	133.62	-10.23
MA5: Mean daily flow / median daily flow	3.32	2.61	-21.43
MA9: (Q10 - Q90) / median daily flow	9.13	6.53	-28.39
MA10: (Q20 - Q80) / median daily flow	4.25	3.52	-17.30
MA11: (Q25 - Q75) / median daily flow	3.24	2.50	-22.77
MA12: Mean monthly flow, January	322.50	276.87	-14.15
MA13: Mean monthly flow, February	207.89	253.56	21.96
MA14: Mean monthly flow, March	262.46	256.84	-2.14
MA15: Mean monthly flow, April	221.14	156.14	-29.39
MA16: Mean monthly flow, May	72.84	61.96	-14.94
MA17: Mean monthly flow, June	95.76	170.28	77.82
MA18: Mean monthly flow, July	297.83	281.64	-5.44
MA19: Mean monthly flow, August	407.32	368.17	-9.61
MA20: Mean monthly flow, September	592.01	561.31	-5.19
MA21: Mean monthly flow, October	526.39	385.27	-26.81
MA22: Mean monthly flow, November	213.54	210.84	-1.27
MA23: Mean monthly flow, December	247.63	264.81	6.94
ML1: Mean minimum monthly flow, January	179.61	166.50	-7.30
ML2: Mean minimum monthly flow, February	149.83	152.15	1.55
ML3: Mean minimum monthly flow, March	185.92	162.13	-12.80
ML4: Mean minimum monthly flow, April	102.31	69.51	-32.06
ML5: Mean minimum monthly flow, May	46.93	22.69	-51.65
ML6: Mean minimum monthly flow, June	46.62	34.41	-26.20
ML7: Mean minimum monthly flow, July	162.53	166.63	2.52
ML8: Mean minimum monthly flow, August	268.97	210.11	-21.88
ML9: Mean minimum monthly flow, September	334.39	246.34	-26.33
ML10: Mean minimum monthly flow, October	268.56	212.72	-20.79
ML11: Mean minimum monthly flow, November	144.11	141.49	-1.82
ML12: Mean minimum monthly flow, December	120.10	121.76	1.38
ML13: CV of minimum monthly flows	167.98	164.20	-2.25
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.10	-47.69
ML15: Mean minimum annual flow / mean annual flow	0.10	0.04	-57.62
ML16: Median minimum annual flow / median annual flow	0.18	0.06	-62.95
ML20: Ratio of baseflow volume to total flow volume	0.80	0.65	-18.36
ML22: Mean annual minimum flow divided by catchment area	0.37	0.10	-71.96
RA1: Mean of positive changes from one day to next (rise rate)	21.19	122.47	
RA2: CV, mean of positive changes from one day to next (rise rate)	199.16	576.39	
RA3: Mean of negative changes from one day to next (fall rate)	11.37	38.07	
RA4: CV, mean of negative changes from one day to next (fall rate)	190.72	769.15	
RA5: Ratio of days that are higher than previous day	0.30	0.24	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.12	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.05	
RA8: Number of flow reversals from one day to the next	45.71	56.46	
RA9: CV, number of flow reversals from one day to the next	34.05	23.38	

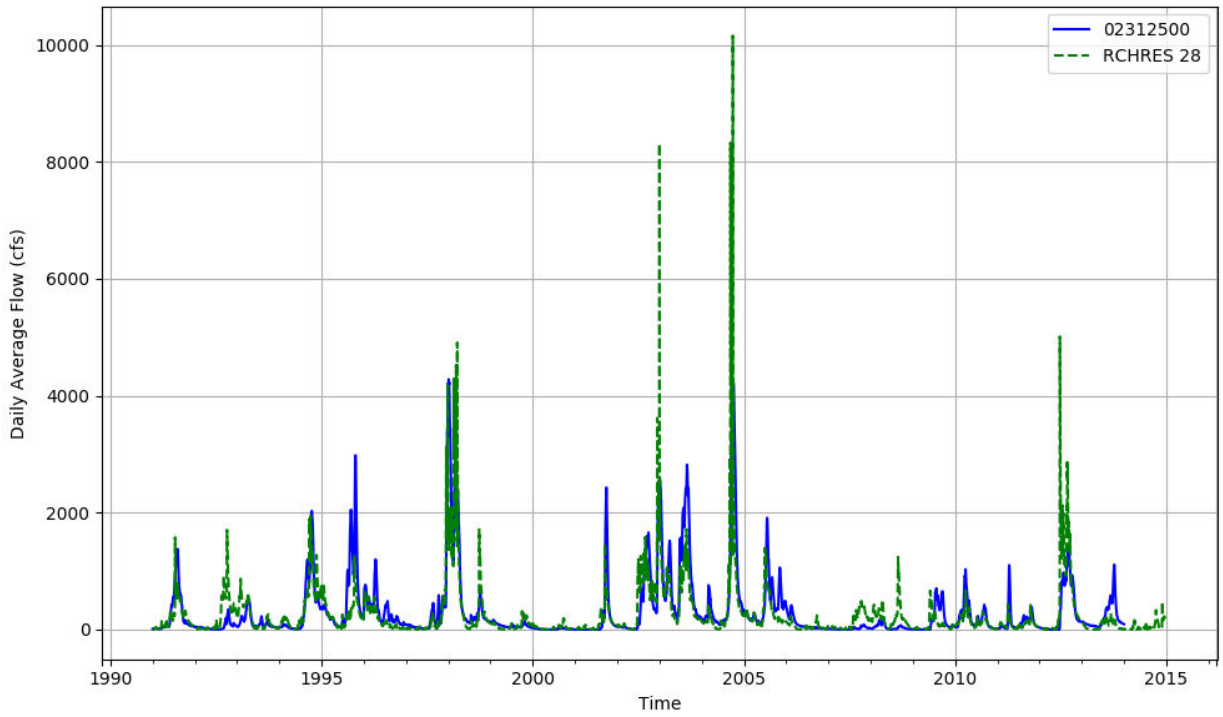


Figure T-03100208-28: Daily flow for HSFP reach 28 and USGS station 02312500.

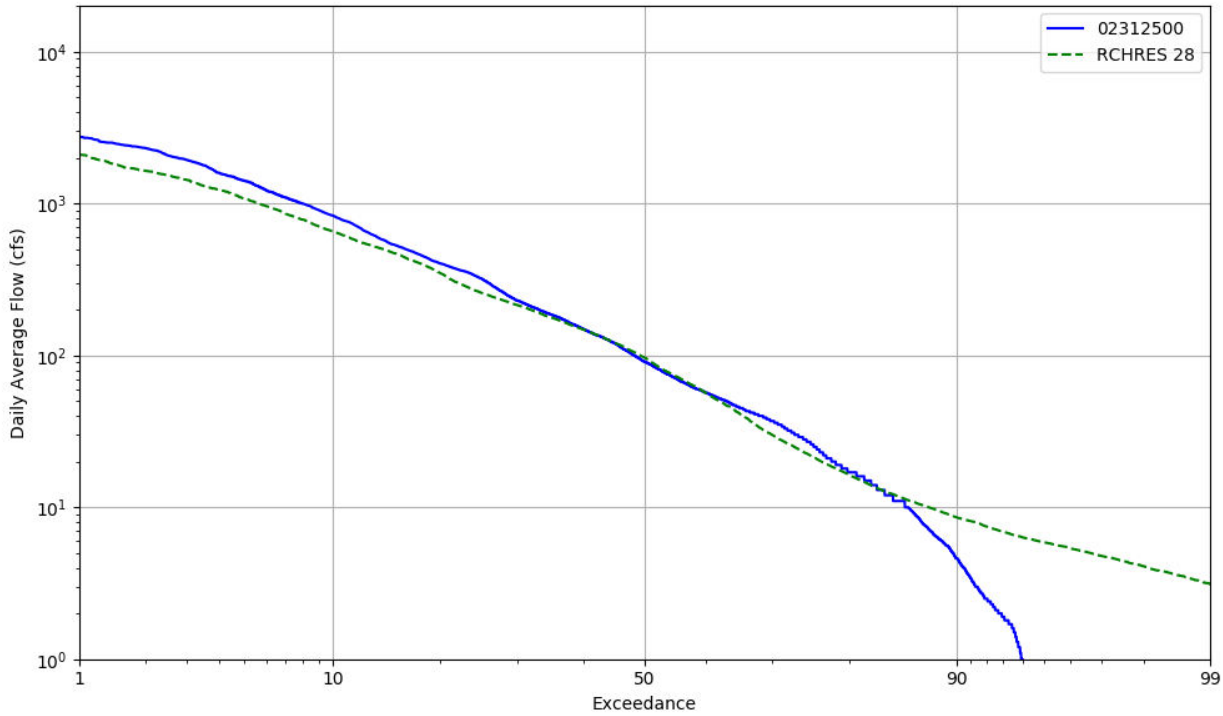


Figure T-03100208-29: Daily exceedance for HSFP reach 28 and USGS station 02312500.

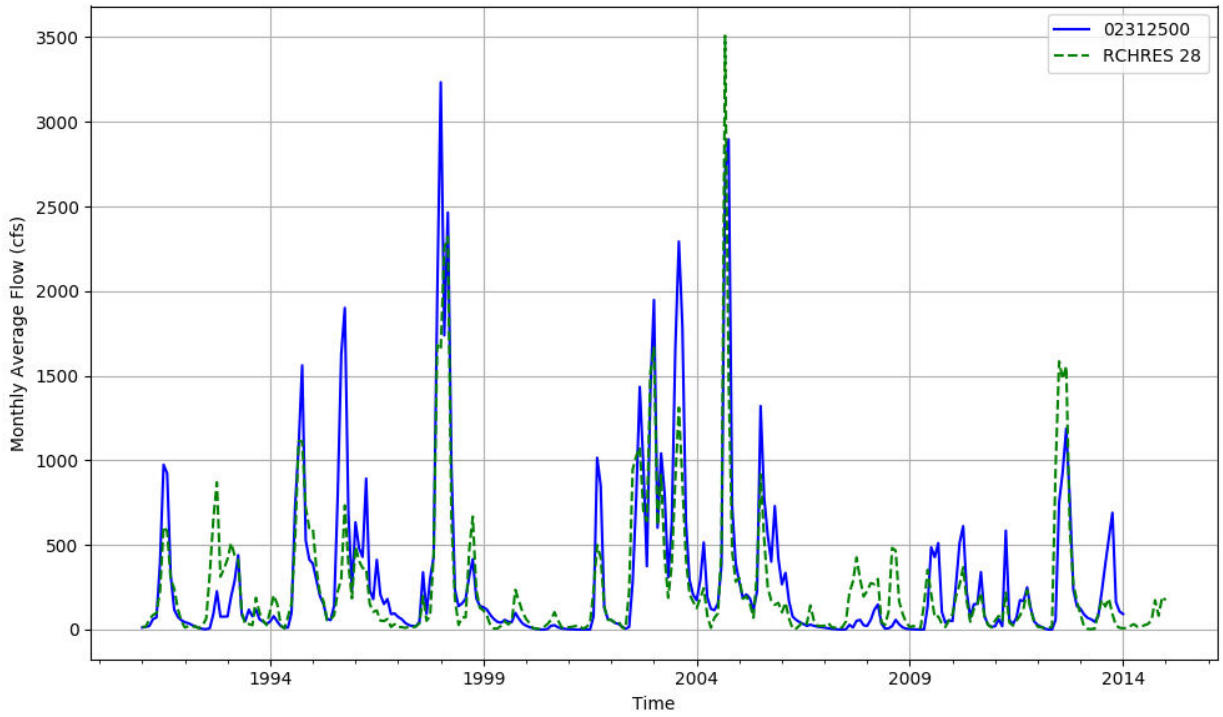


Figure T-03100208-30: Monthly flow for HSFP reach 28 and USGS station 02312500.

HSPF REACH 32, USGS GAUGE 02312600

Water-Data Report 2009
02312600 WITHLACOOCHEE RIVER NEAR FLORAL CITY, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 284436, long 821313 referenced to North American Datum of 1927, in SE 1/4 sec.17, T.20 S., R.21 E., Citrus County, FL, Hydrologic Unit 03100208, on left bank on upstream shoreward corner of pavillion at Trails End Camp, 1.1 mi downstream from diversions to Tsala Apopka Lake, 4.7 mi east of Floral City, and 62 mi upstream from mouth.

DRAINAGE AREA.--995 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1958 to January 1965 (gage heights only), February 1965 to September 1983 (discharge measurements and gage heights only); October 1983 to current year.

REVISED RECORDS.--WDR FL-72-3: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929. Prior to Oct. 1, 1983, nonrecording gage at same site and datum.

REMARKS.--Records poor. Discharge measurements made during the 2009 water year indicate reverse flows occur at this site. Reverse flow measurements range from 1.9 cfs to 42 cfs were made during the 2009 water year. The highest portion of the rating is developed from discharge measurements made at bridge on State Highway 48 about 2 mi upstream from gage and about 1 mi upstream from diversions to Tsala Apopka Lake through Leslie Heifner and Orange State Canals. High water diversion in headwaters (station 02311000) can occur some years.

Table T-03100208-19: Comparison Statistics Between HSPF Reach 32 and USGS Gauge 02312600.

Statistic	Value
Bias	9.96
Standard error	356.31
Relative bias	0.03
Relative standard error	0.66
Nash-Sutcliffe coefficient	0.56
Kling-Gupta coefficient	0.74
Coefficient of efficiency	0.44
Index of agreement	0.71

Table T-03100208-20: Hydrologic Indices Between USGS Gauge 02312600 and HSPF Reach 32.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312600	Simulated Reach 32	Percent Difference
MA1: Mean, all daily flows	301.61	311.52	3.28
MA2: Median, all daily flows	89.00	125.10	40.56
MA3: CV, all daily flows	111.05	128.30	15.54
MA4: CV, log of all daily flows	155.23	130.96	-15.63
MA5: Mean daily flow / median daily flow	3.39	2.49	-26.52
MA9: (Q10 - Q90) / median daily flow	9.02	6.11	-32.25
MA10: (Q20 - Q80) / median daily flow	4.35	3.32	-23.80
MA11: (Q25 - Q75) / median daily flow	3.16	2.46	-22.22
MA12: Mean monthly flow, January	355.57	304.29	-14.42
MA13: Mean monthly flow, February	230.99	282.93	22.49
MA14: Mean monthly flow, March	268.73	285.92	6.40
MA15: Mean monthly flow, April	239.33	180.65	-24.52
MA16: Mean monthly flow, May	87.68	72.95	-16.79
MA17: Mean monthly flow, June	81.06	176.68	117.96
MA18: Mean monthly flow, July	265.46	311.50	17.34
MA19: Mean monthly flow, August	395.58	404.34	2.21
MA20: Mean monthly flow, September	544.08	602.94	10.82
MA21: Mean monthly flow, October	530.17	429.69	-18.95
MA22: Mean monthly flow, November	247.22	239.42	-3.16
MA23: Mean monthly flow, December	222.00	291.56	31.33
ML1: Mean minimum monthly flow, January	229.86	184.37	-19.79
ML2: Mean minimum monthly flow, February	177.78	176.02	-0.99
ML3: Mean minimum monthly flow, March	218.48	188.51	-13.72
ML4: Mean minimum monthly flow, April	142.87	85.72	-40.00
ML5: Mean minimum monthly flow, May	50.62	28.76	-43.18
ML6: Mean minimum monthly flow, June	43.70	37.75	-13.60
ML7: Mean minimum monthly flow, July	159.33	189.31	18.82
ML8: Mean minimum monthly flow, August	271.58	236.62	-12.87
ML9: Mean minimum monthly flow, September	311.28	280.65	-9.84
ML10: Mean minimum monthly flow, October	325.08	248.23	-23.64
ML11: Mean minimum monthly flow, November	162.83	166.43	2.21
ML12: Mean minimum monthly flow, December	122.47	141.79	15.77
ML13: CV of minimum monthly flows	188.29	160.02	-15.01
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.11	-20.59
ML15: Mean minimum annual flow / mean annual flow	0.08	0.05	-37.63
ML16: Median minimum annual flow / median annual flow	0.08	0.08	2.38
ML20: Ratio of baseflow volume to total flow volume	0.78	0.68	-12.44
ML22: Mean annual minimum flow divided by catchment area	0.35	0.13	-61.70
RA1: Mean of positive changes from one day to next (rise rate)	20.22	102.45	
RA2: CV, mean of positive changes from one day to next (rise rate)	192.31	612.92	
RA3: Mean of negative changes from one day to next (fall rate)	10.46	36.75	
RA4: CV, mean of negative changes from one day to next (fall rate)	197.24	749.98	
RA5: Ratio of days that are higher than previous day	0.26	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.09	

RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.04	
RA8: Number of flow reversals from one day to the next	38.58	48.96	
RA9: CV, number of flow reversals from one day to the next	40.36	23.49	

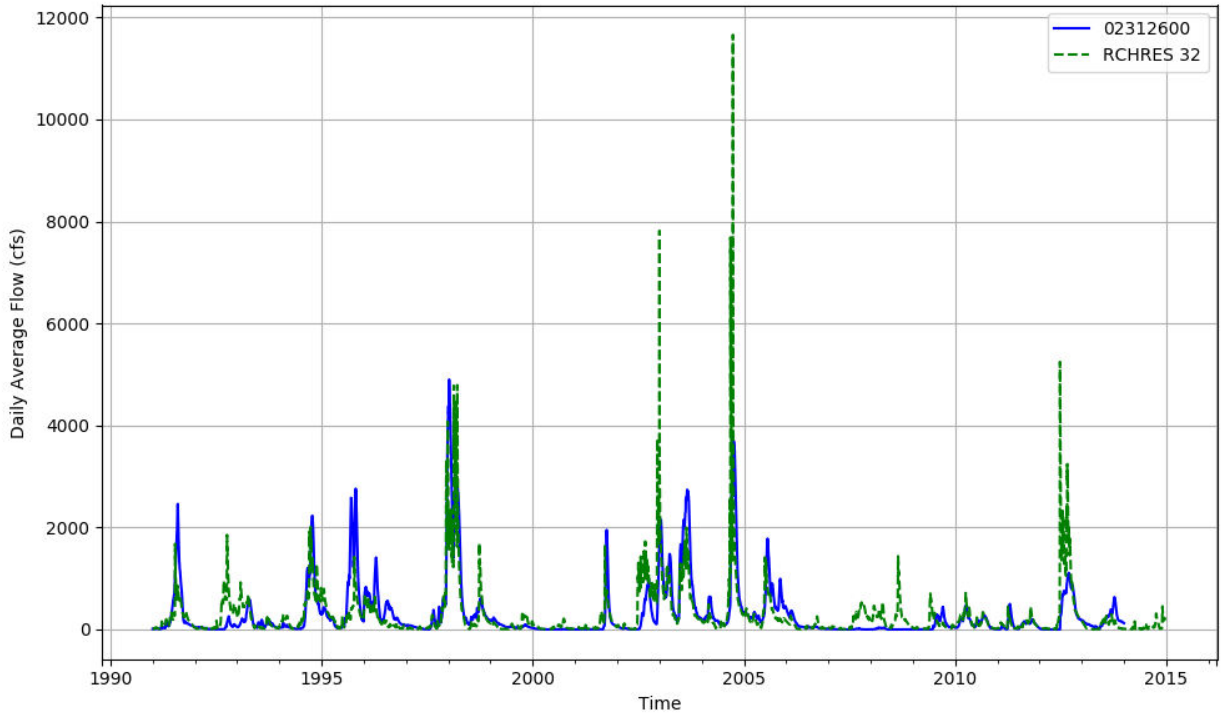


Figure T-03100208-31: Daily flow for HSFP reach 32 and USGS station 02312600.

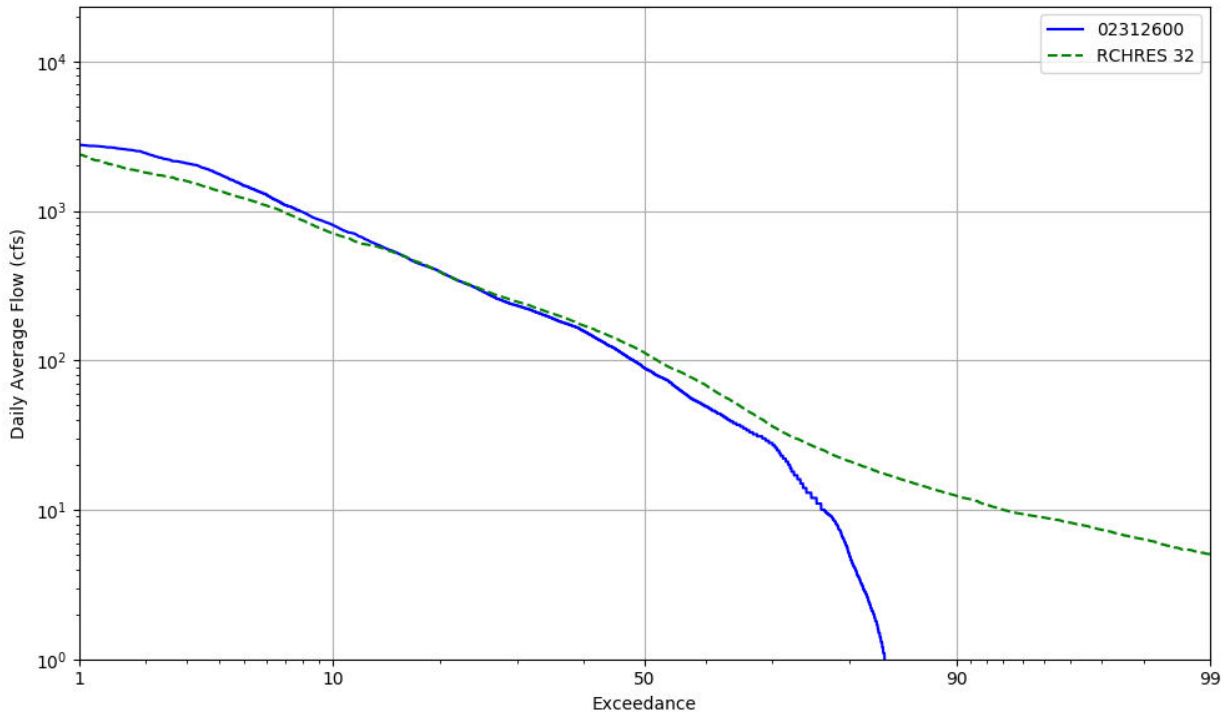


Figure T-03100208-32: Daily exceedance for HSFP reach 32 and USGS station 02312600.

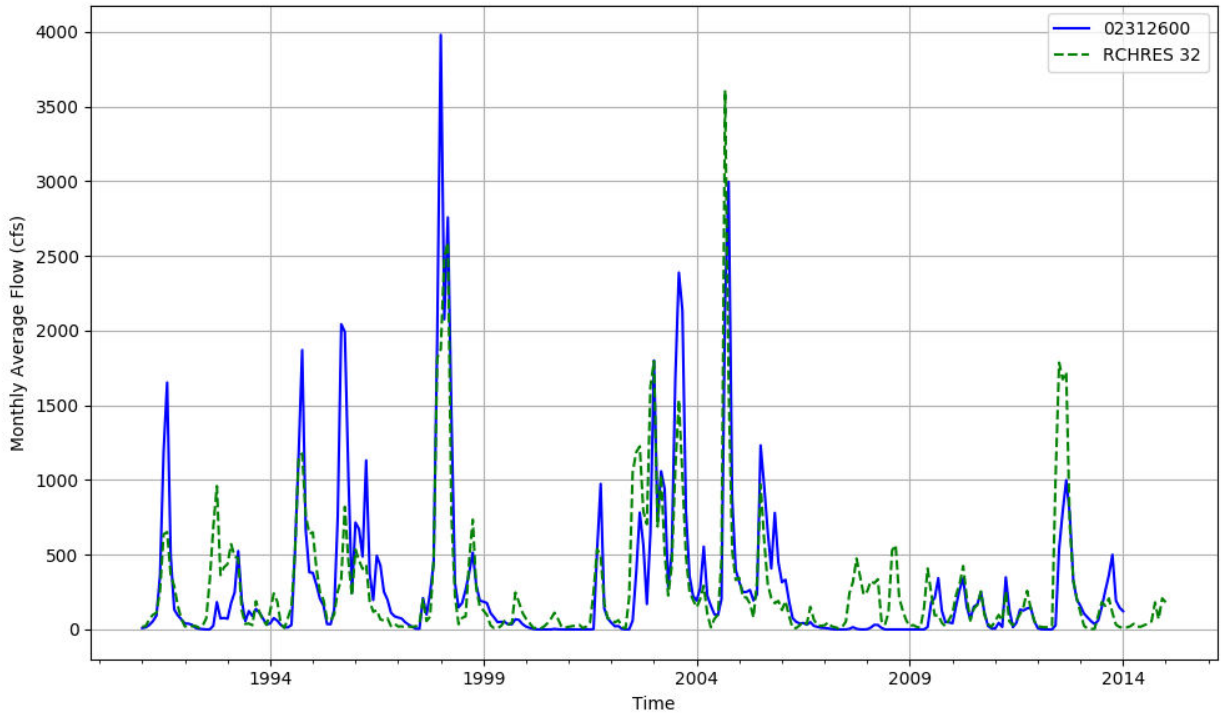


Figure T-03100208-33: Monthly flow for HSFP reach 32 and USGS station 02312600.

HSPF REACH 36, USGS GAUGE 02312720

Water-Data Report 2009
02312720 WITHLACOOCHEE RIVER AT WYSONG DAM, AT CARLSON, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 284923, long 821100 referenced to North American Datum of 1927, in NW 1/4 sec.23, T.19 S., R.21 E., Sumter County, FL, Hydrologic Unit 03100208, at downstream end of right wall of lock of Wysong Dam, at Carlson, 1.8 mi downstream from Outlet River, 2.7 mi southeast of Rutland, and 55 mi upstream from mouth.

DRAINAGE AREA.--1,520 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1965 to September 1980, October 1980 to September 1981 (monthly mean discharge only), October 1981 to current year. Prior to October 1967, published as "at Carlson's Landing, near Lake Panasoffkee."

REVISED RECORDS.--WDR FL-72-3: Drainage area. WDR FL-05-1A: 2004.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is at NGVD of 1929 (Florida Department of Transportation bench mark).

REMARKS.--Records fair. Some diversions upstream from station at times into Tsala Apopka Lake. High water diversion in headwaters (station 02311000). Inflatable fabri-dam removed June 27, 1988. New inflatable dam placed in operation during October 2002.

Table T-03100208-21: Comparison Statistics Between HSPF Reach 36 and USGS Gauge 02312720.

Statistic	Value
Bias	30.92
Standard error	421.82
Relative bias	0.07
Relative standard error	0.66
Nash-Sutcliffe coefficient	0.57
Kling-Gupta coefficient	0.78
Coefficient of efficiency	0.42
Index of agreement	0.71

Table T-03100208-22: Hydrologic Indices Between USGS Gauge 02312720 and HSPF Reach 36.

Hydrologic Index and description (Olden	Observed	Simulated	Percent

and Poff, 2003)	02312720	Reach 36	Difference
MA1: Mean, all daily flows	456.27	487.82	6.92
MA2: Median, all daily flows	218.00	243.77	11.82
MA3: CV, all daily flows	81.81	103.53	26.54
MA4: CV, log of all daily flows	112.74	114.03	1.15
MA5: Mean daily flow / median daily flow	2.09	2.00	-4.39
MA9: (Q10 - Q90) / median daily flow	4.94	4.35	-11.98
MA10: (Q20 - Q80) / median daily flow	2.52	2.43	-3.34
MA11: (Q25 - Q75) / median daily flow	1.94	1.89	-2.47
MA12: Mean monthly flow, January	518.47	476.55	-8.09
MA13: Mean monthly flow, February	435.57	454.91	4.44
MA14: Mean monthly flow, March	470.56	470.92	0.07
MA15: Mean monthly flow, April	409.25	314.86	-23.06
MA16: Mean monthly flow, May	198.24	156.68	-20.97
MA17: Mean monthly flow, June	177.84	277.57	56.08
MA18: Mean monthly flow, July	367.85	485.24	31.91
MA19: Mean monthly flow, August	529.46	624.16	17.89
MA20: Mean monthly flow, September	672.46	842.29	25.26
MA21: Mean monthly flow, October	721.50	652.41	-9.58
MA22: Mean monthly flow, November	425.00	401.73	-5.47
MA23: Mean monthly flow, December	329.67	455.38	38.13
ML1: Mean minimum monthly flow, January	386.38	319.81	-17.23
ML2: Mean minimum monthly flow, February	360.04	311.78	-13.41
ML3: Mean minimum monthly flow, March	409.43	335.37	-18.09
ML4: Mean minimum monthly flow, April	282.63	187.02	-33.83
ML5: Mean minimum monthly flow, May	131.25	85.19	-35.10
ML6: Mean minimum monthly flow, June	113.29	101.34	-10.55
ML7: Mean minimum monthly flow, July	269.13	320.81	19.20
ML8: Mean minimum monthly flow, August	396.74	410.53	3.48
ML9: Mean minimum monthly flow, September	483.04	451.29	-6.57
ML10: Mean minimum monthly flow, October	569.83	423.86	-25.62
ML11: Mean minimum monthly flow, November	305.48	310.53	1.65
ML12: Mean minimum monthly flow, December	243.83	265.12	8.74
ML13: CV of minimum monthly flows	151.28	132.06	-12.70
ML14: Mean minimum daily flow / mean median annual flow	0.23	0.26	16.11
ML15: Mean minimum annual flow / mean annual flow	0.17	0.17	0.19
ML16: Median minimum annual flow / median annual flow	0.22	0.22	0.57
ML20: Ratio of baseflow volume to total flow volume	0.93	0.74	-19.90
ML22: Mean annual minimum flow divided by catchment area	0.80	0.57	-28.63
RA1: Mean of positive changes from one day to next (rise rate)	18.89	112.61	
RA2: CV, mean of positive changes from one day to next (rise rate)	179.88	578.48	
RA3: Mean of negative changes from one day to next (fall rate)	12.02	40.22	
RA4: CV, mean of negative changes from one day to next (fall rate)	159.93	683.88	
RA5: Ratio of days that are higher than previous day	0.35	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.03	
RA8: Number of flow reversals from one day to the next	78.58	59.67	

RA9: CV, number of flow reversals from one day to the next	34.92	21.50	

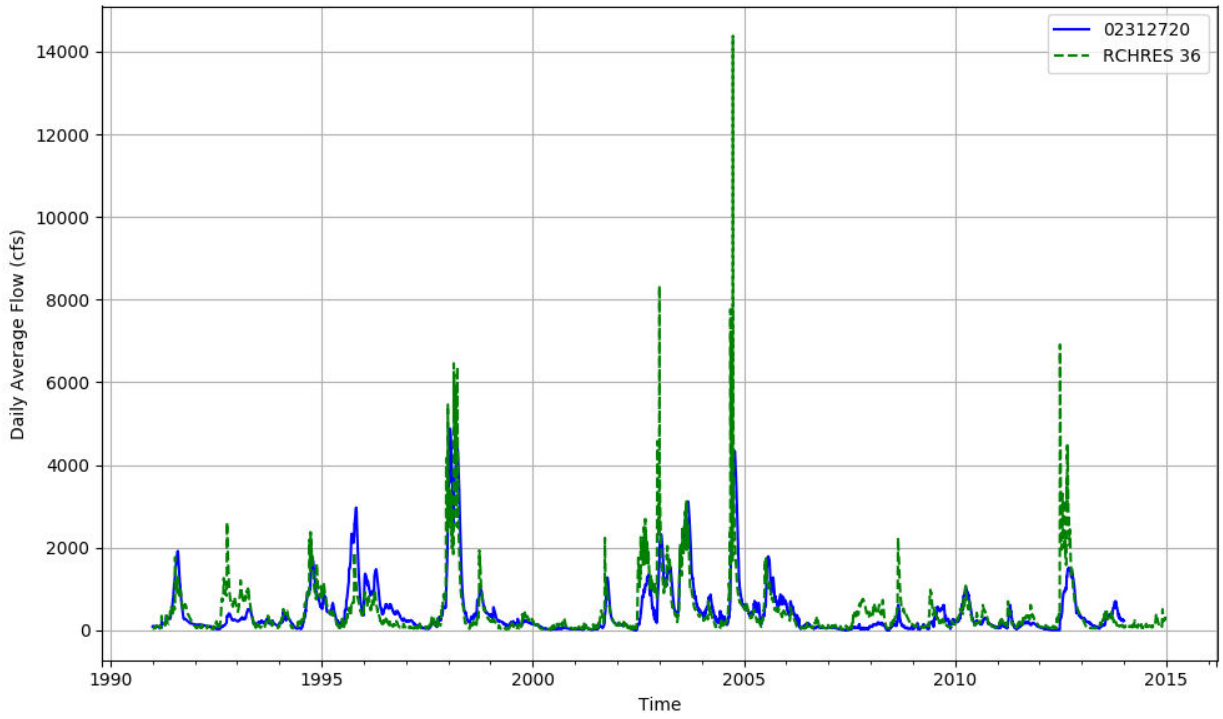


Figure T-03100208-34: Daily flow for HSFP reach 36 and USGS station 02312720.

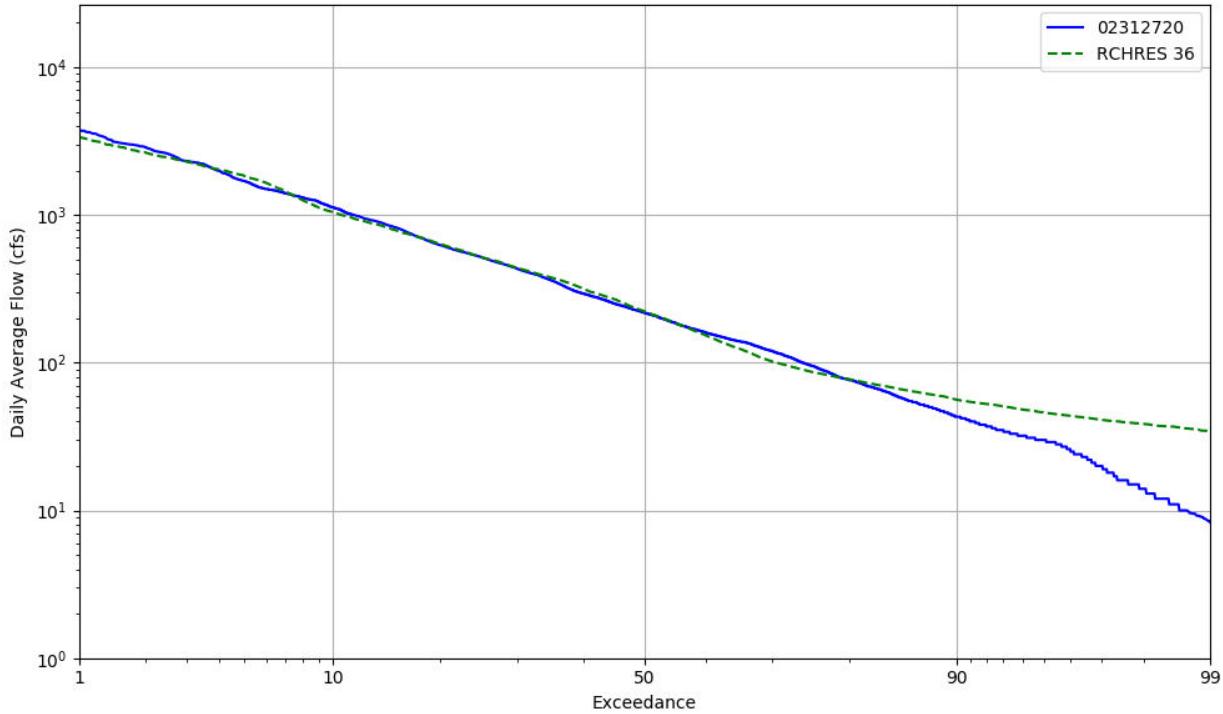


Figure T-03100208-35: Daily exceedance for HSFP reach 36 and USGS station 02312720.

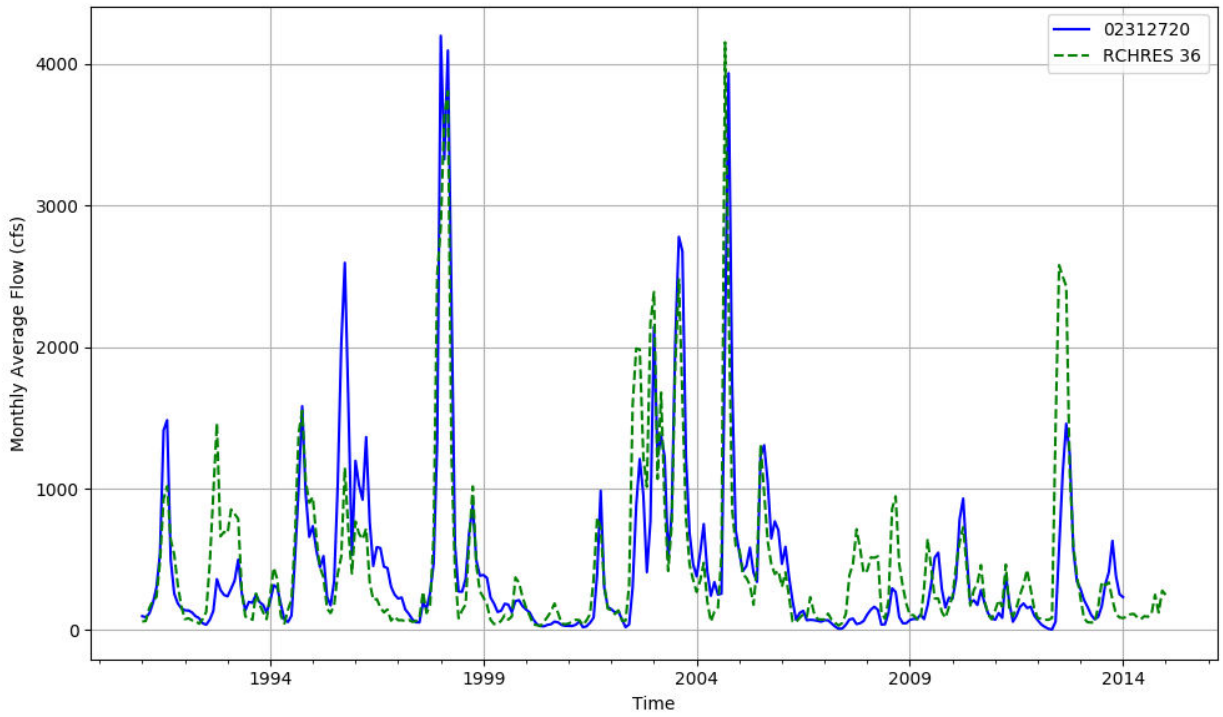


Figure T-03100208-36: Monthly flow for HSFP reach 36 and USGS station 02312720.

HSPF REACH 37, USGS GAUGE 02312722

Water-Data Report 2009
02312722 WITHLACOOCHEE RIVER NEAR RUTLAND, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 285106, long 821316 referenced to North American Datum of 1927, in NE 1/4 sec.8, T.19 S., R.21 E., Citrus County, FL, Hydrologic Unit 03100208, on left bank 0.25 mi downstream of bridge on State Highway 44, 0.5 mi west of Rutland, and 52 mi upstream from mouth.

DRAINAGE AREA.--1460 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2005 to current year.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is NGVD of 1929.

REMARKS.--Records fair.

Table T-03100208-23: Comparison Statistics Between HSPF Reach 37 and USGS Gauge 02312722.

Statistic	Value
Bias	110.03
Standard error	376.97
Relative bias	0.42
Relative standard error	1.43
Nash-Sutcliffe coefficient	-1.05
Kling-Gupta coefficient	0.06
Coefficient of efficiency	-0.05
Index of agreement	0.54

Table T-03100208-24: Hydrologic Indices Between USGS Gauge 02312722 and HSPF Reach 37.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02312722	Simulated Reach 37	Percent Difference
MA1: Mean, all daily flows	260.22	372.92	43.31
MA2: Median, all daily flows	160.00	222.71	39.20
MA3: CV, all daily flows	80.37	94.91	18.09
MA4: CV, log of all daily flows	94.08	88.13	-6.33
MA5: Mean daily flow / median daily flow	1.63	1.67	2.95
MA9: (Q10 - Q90) / median daily flow	3.98	2.68	-32.66
MA10: (Q20 - Q80) / median daily flow	2.16	1.67	-22.98
MA11: (Q25 - Q75) / median daily flow	1.50	1.42	-5.40

MA12: Mean monthly flow, January	195.43	207.06	5.95
MA13: Mean monthly flow, February	195.89	230.79	17.81
MA14: Mean monthly flow, March	210.51	226.48	7.58
MA15: Mean monthly flow, April	223.96	265.14	18.38
MA16: Mean monthly flow, May	118.67	157.15	32.43
MA17: Mean monthly flow, June	97.55	339.08	247.60
MA18: Mean monthly flow, July	207.51	497.84	139.91
MA19: Mean monthly flow, August	318.67	595.06	86.74
MA20: Mean monthly flow, September	390.81	612.87	56.82
MA21: Mean monthly flow, October	400.50	452.87	13.08
MA22: Mean monthly flow, November	296.31	290.47	-1.97
MA23: Mean monthly flow, December	229.76	233.31	1.55
ML1: Mean minimum monthly flow, January	160.11	145.87	-8.89
ML2: Mean minimum monthly flow, February	157.25	183.88	16.93
ML3: Mean minimum monthly flow, March	156.25	161.76	3.53
ML4: Mean minimum monthly flow, April	176.62	173.28	-1.89
ML5: Mean minimum monthly flow, May	72.00	90.22	25.30
ML6: Mean minimum monthly flow, June	62.65	126.32	101.63
ML7: Mean minimum monthly flow, July	138.38	382.46	176.39
ML8: Mean minimum monthly flow, August	281.62	381.87	35.60
ML9: Mean minimum monthly flow, September	378.50	439.58	16.14
ML10: Mean minimum monthly flow, October	330.56	304.65	-7.84
ML11: Mean minimum monthly flow, November	210.89	226.19	7.25
ML12: Mean minimum monthly flow, December	189.67	184.47	-2.74
ML13: CV of minimum monthly flows	119.72	124.58	4.06
ML14: Mean minimum daily flow / mean median annual flow	0.20	0.35	77.30
ML15: Mean minimum annual flow / mean annual flow	0.16	0.25	59.18
ML16: Median minimum annual flow / median annual flow	0.18	0.34	87.74
ML20: Ratio of baseflow volume to total flow volume	0.89	0.75	-15.95
ML22: Mean annual minimum flow divided by catchment area	0.48	0.69	45.75
RA1: Mean of positive changes from one day to next (rise rate)	11.48	68.37	
RA2: CV, mean of positive changes from one day to next (rise rate)	172.55	741.24	
RA3: Mean of negative changes from one day to next (fall rate)	7.37	24.77	
RA4: CV, mean of negative changes from one day to next (fall rate)	115.08	665.27	
RA5: Ratio of days that are higher than previous day	0.34	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.03	
RA8: Number of flow reversals from one day to the next	75.67	57.33	
RA9: CV, number of flow reversals from one day to the next	35.10	34.65	

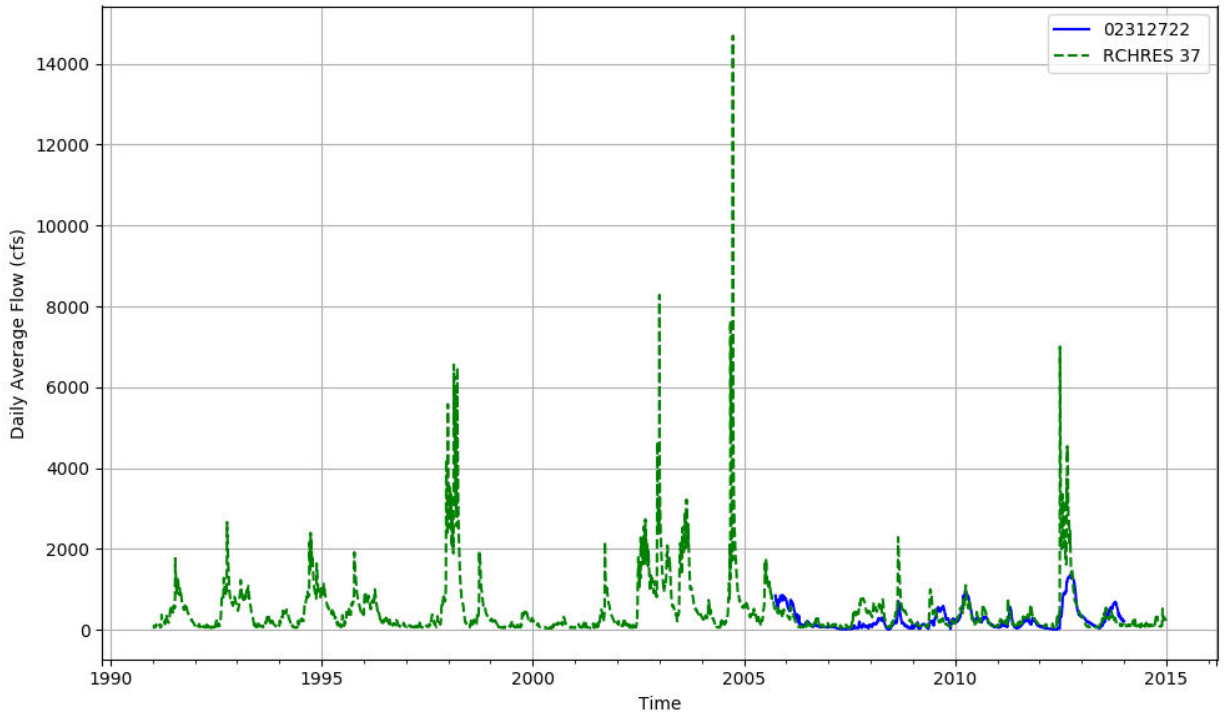


Figure T-03100208-37: Daily flow for HSFP reach 37 and USGS station 02312722.

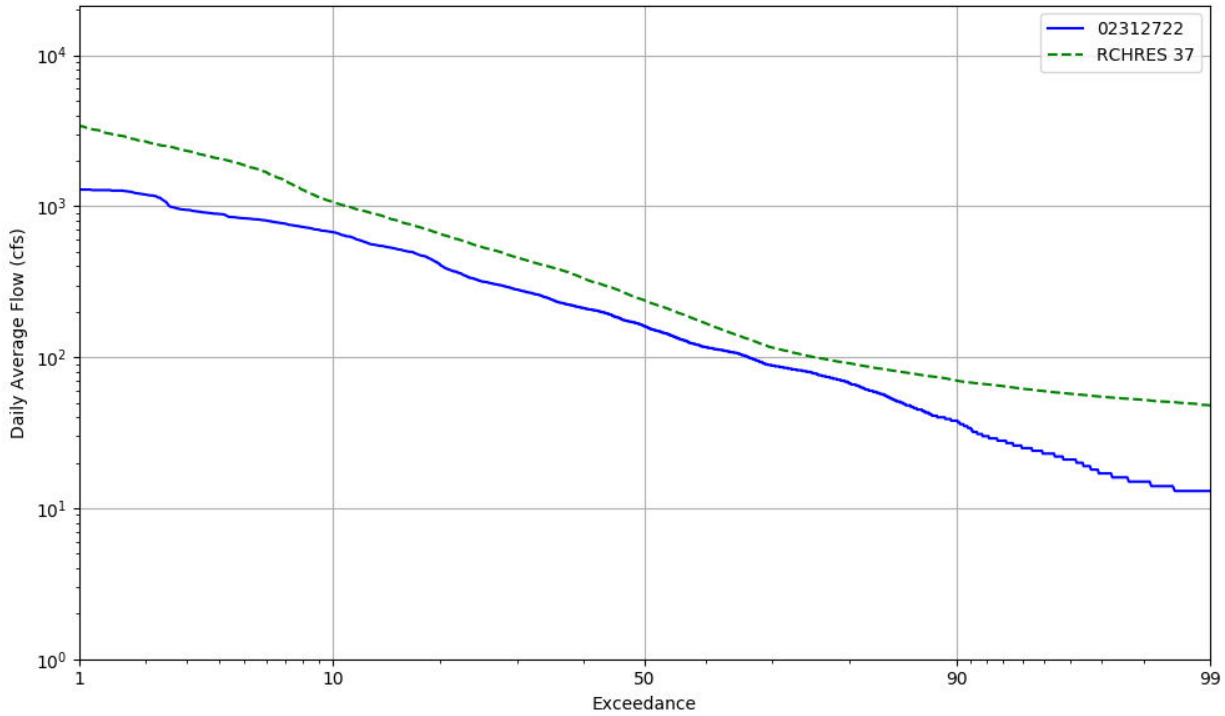


Figure T-03100208-38: Daily exceedance for HSFP reach 37 and USGS station 02312722.

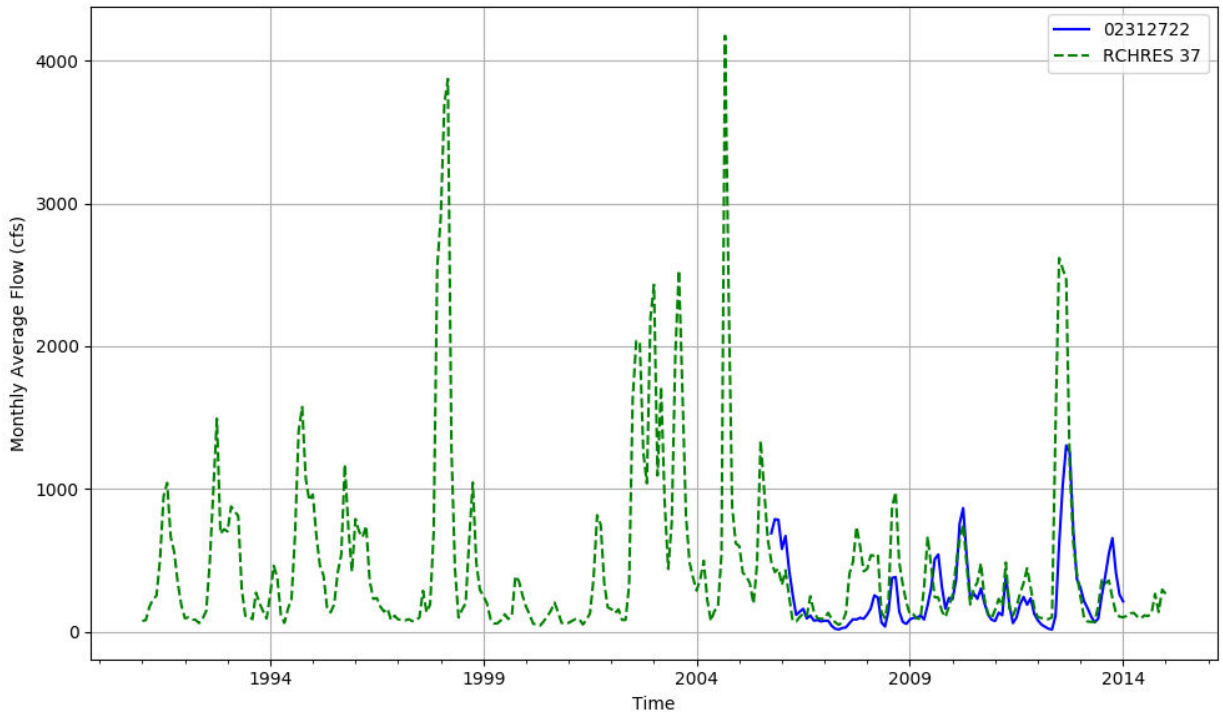


Figure T-03100208-39: Monthly flow for HSFP reach 37 and USGS station 02312722.

HSPF REACH 41, USGS GAUGE 02313000

Water-Data Report 2009
02313000 WITHLACOOCHEE RIVER NEAR HOLDER, FL
Tampa Bay Basin Withlacoochee Subbasin

LOCATION.--Lat 285919, long 822059 referenced to North American Datum of 1927, in NW 1/4 sec.30, T.17 S., R.20 E., Marion County, FL, Hydrologic Unit 03100208, near right bank on downstream side of bridge on State Highway 200, 4.5 mi northeast of Holder, and 38 mi upstream from mouth.

DRAINAGE AREA.--1,825 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1928 to February 1929, August 1931 to current year.

REVISED RECORDS.--WDR-FL-72-3: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 27.52 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Aug. 14, 1928 to Feb. 15, 1929, nonrecording gage at present site at datum 2.00 ft higher. Aug. 29, 1931, to May 19, 1961, water-stage recorder at site 100 ft downstream at present datum.

REMARKS.--Records fair. High-water diversion in headwaters (station 02311000).

Table T-03100208-25: Comparison Statistics Between HSPF Reach 41 and USGS Gauge 02313000.

Statistic	Value
Bias	11.65
Standard error	463.77
Relative bias	0.02
Relative standard error	0.60
Nash-Sutcliffe coefficient	0.65
Kling-Gupta coefficient	0.81
Coefficient of efficiency	0.47
Index of agreement	0.73

Table T-03100208-26: Hydrologic Indices Between USGS Gauge 02313000 and HSPF Reach 41.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02313000	Simulated Reach 41	Percent Difference
MA1: Mean, all daily flows	646.54	658.79	1.90
MA2: Median, all daily flows	360.00	386.02	7.23

MA3: CV, all daily flows	68.14	83.91	23.15
MA4: CV, log of all daily flows	93.64	92.99	-0.69
MA5: Mean daily flow / median daily flow	1.80	1.71	-4.97
MA9: (Q10 - Q90) / median daily flow	3.54	3.24	-8.47
MA10: (Q20 - Q80) / median daily flow	2.11	1.84	-12.56
MA11: (Q25 - Q75) / median daily flow	1.58	1.44	-8.71
MA12: Mean monthly flow, January	680.98	645.50	-5.21
MA13: Mean monthly flow, February	616.09	628.61	2.03
MA14: Mean monthly flow, March	649.91	652.13	0.34
MA15: Mean monthly flow, April	574.80	469.01	-18.40
MA16: Mean monthly flow, May	331.02	277.61	-16.14
MA17: Mean monthly flow, June	320.57	384.89	20.07
MA18: Mean monthly flow, July	529.03	639.19	20.82
MA19: Mean monthly flow, August	733.98	801.66	9.22
MA20: Mean monthly flow, September	896.10	1037.13	15.74
MA21: Mean monthly flow, October	964.22	858.36	-10.98
MA22: Mean monthly flow, November	645.23	570.48	-11.59
MA23: Mean monthly flow, December	508.67	620.50	21.99
ML1: Mean minimum monthly flow, January	526.00	474.93	-9.71
ML2: Mean minimum monthly flow, February	523.22	466.76	-10.79
ML3: Mean minimum monthly flow, March	573.43	503.32	-12.23
ML4: Mean minimum monthly flow, April	426.09	329.87	-22.58
ML5: Mean minimum monthly flow, May	242.22	194.04	-19.89
ML6: Mean minimum monthly flow, June	229.30	210.30	-8.29
ML7: Mean minimum monthly flow, July	411.43	462.54	12.42
ML8: Mean minimum monthly flow, August	571.74	574.44	0.47
ML9: Mean minimum monthly flow, September	635.26	633.80	-0.23
ML10: Mean minimum monthly flow, October	795.26	612.22	-23.02
ML11: Mean minimum monthly flow, November	492.13	476.96	-3.08
ML12: Mean minimum monthly flow, December	426.13	414.13	-2.82
ML13: CV of minimum monthly flows	125.40	102.95	-17.90
ML14: Mean minimum daily flow / mean median annual flow	0.37	0.39	7.07
ML15: Mean minimum annual flow / mean annual flow	0.29	0.30	2.37
ML16: Median minimum annual flow / median annual flow	0.36	0.33	-8.69
ML20: Ratio of baseflow volume to total flow volume	0.93	0.81	-12.83
ML22: Mean annual minimum flow divided by catchment area	1.79	1.54	-13.76
RA1: Mean of positive changes from one day to next (rise rate)	27.95	97.23	
RA2: CV, mean of positive changes from one day to next (rise rate)	179.30	571.39	
RA3: Mean of negative changes from one day to next (fall rate)	16.57	38.53	
RA4: CV, mean of negative changes from one day to next (fall rate)	118.52	672.54	
RA5: Ratio of days that are higher than previous day	0.36	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.04	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.02	
RA8: Number of flow reversals from one day to the next	82.88	55.96	
RA9: CV, number of flow reversals from one day to the next	31.16	21.67	

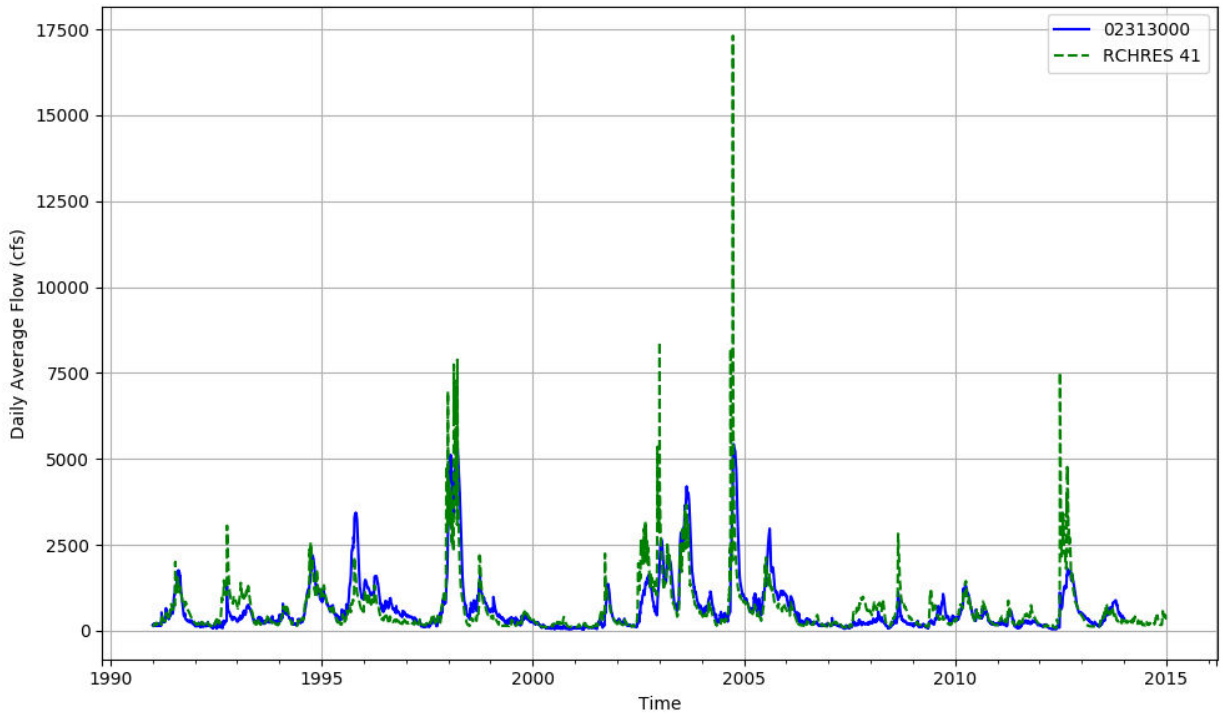


Figure T-03100208-40: Daily flow for HSFP reach 41 and USGS station 02313000.

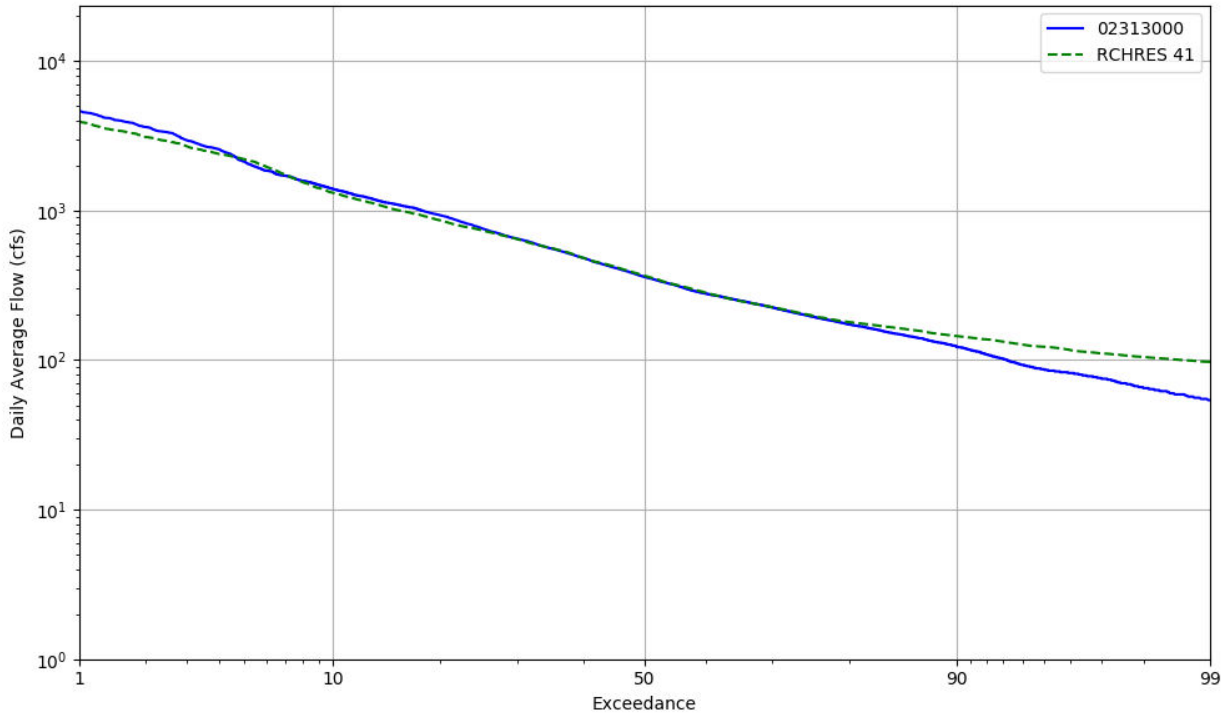


Figure T-03100208-41: Daily exceedance for HSFP reach 41 and USGS station 02313000.

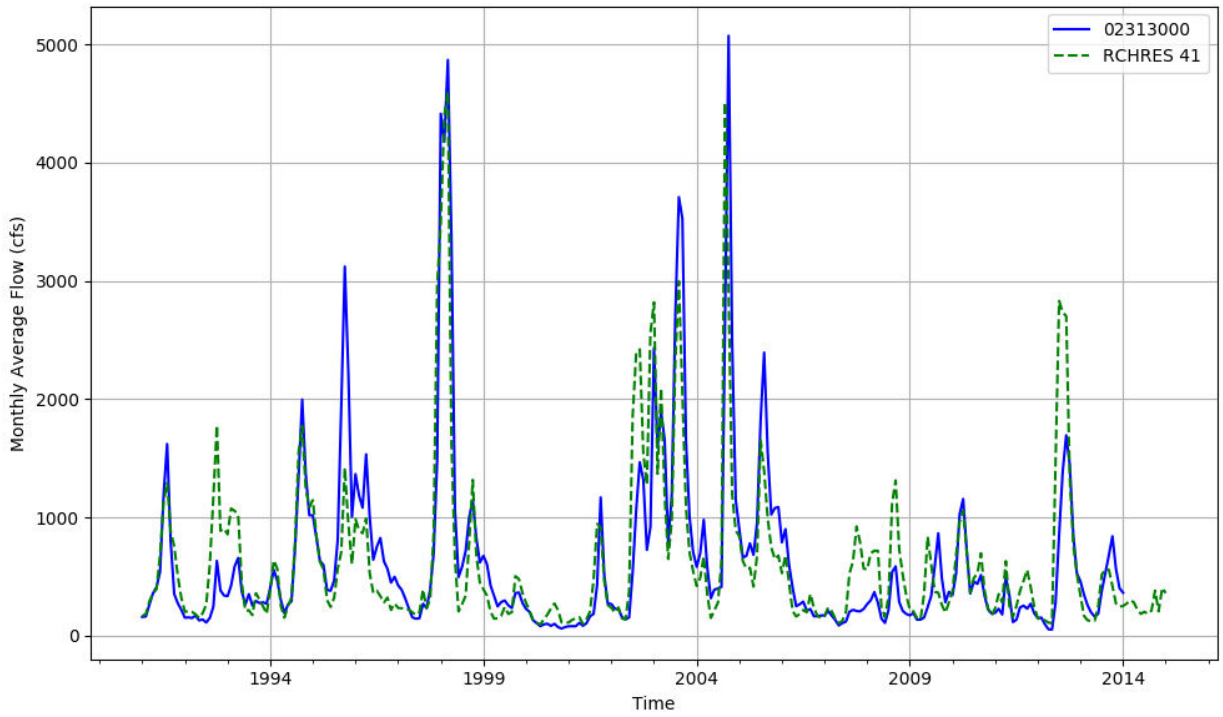


Figure T-03100208-42: Monthly flow for HSFP reach 41 and USGS station 02313000.

Table T-03100208-27: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	16336	128541	31797	6998	925	3111	118300	60879	24473	271211	16249	603171	7844	9048	19506	1318391
AREA(%)	1.2	9.7	2.4	0.5	0.1	0.2	8.9	4.6	1.8	20.4	1.2	45.3	0.6	0.7	1.5	99.0
IMPERVIOUS																
AREA(ACRES)		7053	3596	1780	938											13367
AREA(%)		0.5	0.3	0.1	0.1											1.0
SUPY	43.9	43.4	43.4	42.7	42.4	41.9	43.4	43.5	43.3	42.5	43.3	42.7	61.8	52.3	45.9	42.7
SURLI		0.0	6.0	6.1	6.7									0.0	16.4	0.4
UZLI																0.0
LZLI		0.0	5.1	4.6	5.4									1.6	0.0	0.2
SURO: PERVIOUS	2.8	0.4	0.5	0.3	0.3	1.1	0.0	0.5	0.5	0.7	0.9	1.0	0.4	1.3	1.3	0.8
SURO: IMPERVIOUS		28.9	29.0	28.6	28.3											0.3
SURO: COMBINED	2.8	1.9	3.4	6.1	14.4	1.1	0.0	0.5	0.5	0.7	0.9	1.0	0.4	1.3	1.3	1.0
IFWO		0.0		0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
AGWO	0.6	1.6	4.3	5.8	6.5	3.4	0.8	1.7	2.3	1.1	1.6	0.7	5.3	1.9	6.6	1.2
AGWI	2.2	3.6	7.3	9.2	9.9	6.6	2.3	4.1	4.8	2.6	4.1	1.8	7.8	3.8	10.2	2.7
IGWI	2.3	5.2	10.1	11.6	12.0	9.1	2.9	5.6	6.3	3.5	4.9	2.2	9.1	7.6	13.2	3.6
CEPE		10.0	9.7	9.5	9.6	6.7	13.8	9.9	9.7	17.3	8.0	19.8	25.6	22.8	9.7	16.2
UZET	3.3	2.6	3.6	4.5	4.6	3.5	0.7	2.0	2.3	1.2	1.9	9.5	4.5	1.7	3.8	5.3
LZET	1.5	20.2	22.6	17.6	17.6	14.1	20.9	19.9	18.5	15.6	22.0	1.5	12.9	14.7	24.7	10.4
AGWET	1.0	1.5	2.2	2.4	2.5	2.4	1.2	1.7	1.9	1.1	1.8	0.6	1.5	1.0	2.8	1.0
BASET	0.4	0.4	0.5	0.6	0.6	0.6	0.2	0.4	0.4	0.4	0.5	0.3	0.8	0.7	0.9	0.3
SURET	31.2											6.1				3.1
PERO	3.4	2.0	4.8	6.1	6.8	4.6	0.9	2.3	2.8	1.8	2.5	1.7	5.7	3.2	7.9	1.9
IGWI	2.3	5.2	10.1	11.6	12.0	9.1	2.9	5.6	6.3	3.5	4.9	2.2	9.1	7.6	13.2	3.6
TAET: PERVIOUS	37.5	34.7	38.6	34.7	34.9	27.3	36.8	34.0	32.8	35.5	34.2	37.8	45.2	41.0	41.8	36.4
IMPEV: IMPERVIOUS		14.4	14.4	14.1	14.2											0.1
ET: COMBINED	37.5	33.6	36.2	30.5	24.5	27.3	36.8	34.0	32.8	35.5	34.2	37.8	45.2	41.0	41.8	36.5
PET	49.5	49.8	49.7	49.9	50.1	50.3	49.7	49.6	49.9	50.4	50.1	50.4	50.0	49.8	50.6	49.7

Table T-03100208-28: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	16336	128541	31797	6998	925	3111	118300	60879	24473	271211	16249	603171	7844	9048	19506	1318391
AREA(%)	1.2	9.7	2.4	0.5	0.1	0.2	8.9	4.6	1.8	20.4	1.2	45.3	0.6	0.7	1.5	99.0
IMPERVIOUS																
AREA(ACRES)		7053	3596	1780	938											13367
AREA(%)		0.5	0.3	0.1	0.1											1.0
SUPY	48.2	49.1	49.2	48.9	48.8	48.5	48.7	48.9	48.9	48.7	48.8	48.6	64.4	58.9	51.7	48.4
SURLI		0.0	9.6	9.3	10.7									0.0	17.9	0.5
UZLI																0.0
LZLI		0.0	7.9	7.3	8.6									1.5	0.0	0.2
SURO: PERVIOUS	1.6	0.2	0.3	0.2	0.2	0.8	0.0	0.3	0.2	0.3	0.3	0.4	0.3	1.1	0.8	0.4
SURO: IMPERVIOUS		30.6	30.8	30.5	30.3											0.3
SURO: COMBINED	1.6	1.8	3.4	6.4	15.3	0.8	0.0	0.3	0.2	0.3	0.3	0.4	0.3	1.1	0.8	0.7
IFWO		0.0		0.0	0.0	0.0	0.0	0.0						0.0	0.0	0.0
AGWO	0.3	1.2	6.5	8.5	9.8	4.2	0.4	1.3	2.3	0.8	1.4	0.4	5.1	2.4	6.9	1.0
AGWI	2.2	3.8	10.2	12.4	13.9	8.0	2.4	4.4	5.4	2.8	4.6	1.5	8.0	4.5	10.9	2.8
IGWI	2.2	5.6	13.1	15.0	16.0	10.8	3.0	6.1	6.9	3.8	5.4	1.8	9.4	9.1	14.0	3.6
CEPE		13.3	12.9	12.9	13.1	9.1	17.8	13.1	12.9	22.2	10.8	25.4	25.6	25.5	12.4	20.8
UZET	4.1	2.6	3.7	4.6	4.8	3.8	0.8	2.2	2.4	1.4	2.1	9.1	4.5	2.6	4.0	5.2
LZET	1.9	22.4	25.4	19.3	19.3	15.2	24.9	22.1	19.9	17.3	24.6	1.7	17.1	17.4	27.0	11.7
AGWET	1.6	2.2	2.7	2.8	2.9	2.8	1.8	2.5	2.4	1.5	2.6	1.0	2.0	1.3	3.2	1.5
BASET	0.3	0.5	0.8	0.8	0.8	0.8	0.3	0.7	0.6	0.5	0.6	0.3	0.9	0.8	1.0	0.4
SURET	34.6											7.4				3.8
PERO	1.9	1.4	6.8	8.7	10.0	5.0	0.4	1.6	2.6	1.0	1.7	0.8	5.4	3.5	7.7	1.3
IGWI	2.2	5.6	13.1	15.0	16.0	10.8	3.0	6.1	6.9	3.8	5.4	1.8	9.4	9.1	14.0	3.6
TAET: PERVIOUS	42.4	41.0	45.4	40.5	40.8	31.7	45.6	40.5	38.3	42.9	40.8	44.9	50.1	47.6	47.6	43.4
IMPEV: IMPERVIOUS		18.5	18.4	18.3	18.5											0.2
ET: COMBINED	42.4	39.9	42.7	36.0	29.6	31.7	45.6	40.5	38.3	42.9	40.8	44.9	50.1	47.6	47.6	43.6
PET	57.3	57.6	57.5	57.6	57.8	58.1	57.5	57.5	57.7	58.3	58.1	58.3	57.8	57.5	58.5	57.5

Table T-03100208-29: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	16336	128541	31797	6998	925	3111	118300	60879	24473	271211	16249	603171	7844	9048	19506	1318391
AREA(%)	1.2	9.7	2.4	0.5	0.1	0.2	8.9	4.6	1.8	20.4	1.2	45.3	0.6	0.7	1.5	99.0
IMPERVIOUS																
AREA(ACRES)		7053	3596	1780	938											13367
AREA(%)		0.5	0.3	0.1	0.1											1.0
SUPY	51.1	51.6	51.6	51.0	50.7	49.9	51.5	52.1	51.3	50.0	50.9	49.9	66.8	59.2	53.8	50.2
SURLI		0.0	8.5	8.3	9.6									0.0	23.6	0.6
UZLI																0.0
LZLI		0.0	7.1	6.6	7.8									1.6	0.0	0.2
SURO: PERVIOUS	3.9	0.6	0.7	0.5	0.4	1.6	0.0	0.7	0.6	0.8	0.9	0.6	0.8	1.5	2.2	0.7
SURO: IMPERVIOUS		36.1	36.2	35.4	35.1											0.4
SURO: COMBINED	3.9	2.5	4.3	7.6	17.9	1.6	0.0	0.7	0.6	0.8	0.9	0.6	0.8	1.5	2.2	1.0
IFWO							0.0			0.0					0.0	0.0
AGWO	0.8	3.5	9.7	11.4	12.7	6.3	2.5	4.1	4.9	2.3	3.6	1.1	8.6	3.4	10.0	2.4
AGWI	2.4	6.4	12.4	13.9	15.2	9.5	5.5	7.6	8.0	5.0	7.1	2.9	10.8	5.5	14.8	4.7
IGWI	2.5	9.1	16.4	17.5	18.4	12.9	6.6	9.7	10.3	6.7	8.4	3.4	12.4	12.8	19.4	6.1
CEPE		10.6	10.2	10.3	10.3	7.1	14.8	10.4	10.3	19.1	8.3	22.2	22.9	22.8	9.9	17.8
UZET	2.1	5.2	6.7	7.7	7.9	5.7	1.9	4.3	4.4	2.8	3.7	10.2	7.1	3.4	5.7	6.6
LZET	1.0	22.3	22.8	17.6	17.5	14.7	24.8	21.7	20.1	18.1	25.1	1.3	14.1	15.9	24.2	11.5
AGWET	1.4	2.4	2.4	2.3	2.3	2.8	2.4	2.8	2.6	2.0	2.9	1.5	1.7	1.2	2.9	1.9
BASET	0.5	0.7	0.8	0.8	0.8	0.9	0.6	0.8	0.7	0.7	0.8	0.5	0.9	0.9	1.2	0.6
SURET	41.2											11.7				5.8
PERO	4.7	4.1	10.4	11.9	13.1	7.8	2.6	4.8	5.5	3.2	4.4	1.7	9.4	4.9	12.2	3.1
IGWI	2.5	9.1	16.4	17.5	18.4	12.9	6.6	9.7	10.3	6.7	8.4	3.4	12.4	12.8	19.4	6.1
TAET: PERVIOUS	46.1	41.1	42.9	38.7	38.8	31.1	44.5	39.9	38.1	42.7	40.7	47.3	46.6	44.2	43.8	44.2
IMPEV: IMPERVIOUS		15.5	15.4	15.6	15.6											0.2
ET: COMBINED	46.1	39.8	40.1	34.0	27.1	31.1	44.5	39.9	38.1	42.7	40.7	47.3	46.6	44.2	43.8	44.3
PET	49.8	50.1	50.0	50.2	50.3	50.5	49.9	49.9	50.2	50.6	50.3	50.6	50.3	50.3	50.7	49.9

Table T-03100208-30: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	16336	128541	31797	6998	925	3111	118300	60879	24473	271211	16249	603171	7844	9048	19506	1318391
AREA(%)	1.2	9.7	2.4	0.5	0.1	0.2	8.9	4.6	1.8	20.4	1.2	45.3	0.6	0.7	1.5	99.0
IMPERVIOUS																
AREA(ACRES)		7053	3596	1780	938											13367
AREA(%)		0.5	0.3	0.1	0.1											1.0
SUPY	48.3	48.5	48.5	47.9	47.9	47.7	48.4	48.7	48.2	47.9	48.4	48.2	60.7	55.5	50.5	47.9
SURLI		0.0	5.7	5.5	6.4					0.0				0.0	11.8	0.3
UZLI																0.0
LZLI		0.0	5.1	4.6	5.6									1.3	0.0	0.2
SURO: PERVIOUS	5.4	0.6	0.6	0.5	0.4	1.5	0.1	0.7	0.6	0.9	1.0	2.4	0.6	1.8	1.5	1.5
SURO: IMPERVIOUS		32.3	32.3	31.7	31.7											0.3
SURO: COMBINED	5.4	2.3	3.9	6.8	16.2	1.5	0.1	0.7	0.6	0.9	1.0	2.4	0.6	1.8	1.5	1.9
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.8	2.9	6.2	7.7	8.8	5.1	2.4	3.3	3.8	2.4	3.1	1.4	6.4	2.9	6.5	2.2
AGWI	2.3	5.2	9.0	10.6	11.8	8.4	4.5	6.0	6.5	4.3	5.9	2.6	8.7	4.7	10.1	4.0
IGWI	2.4	7.4	12.5	13.8	14.5	11.6	5.4	7.9	8.5	5.7	7.1	3.1	10.0	10.2	13.0	5.1
CEPE		11.6	11.3	11.4	11.4	8.1	15.4	11.4	11.3	19.4	9.3	22.3	21.9	22.7	10.6	18.2
UZET	2.8	3.6	4.4	5.1	5.3	4.2	1.5	3.1	3.2	2.0	2.8	8.2	4.8	2.6	4.0	5.1
LZET	1.3	20.1	21.5	16.7	16.6	13.9	21.7	19.6	18.2	15.7	22.3	1.4	14.7	15.0	23.3	10.4
AGWET	1.1	1.8	2.2	2.3	2.3	2.5	1.7	2.1	2.1	1.4	2.3	0.8	1.6	1.0	2.6	1.3
BASET	0.4	0.5	0.7	0.7	0.7	0.8	0.4	0.6	0.6	0.5	0.7	0.4	0.7	0.8	1.0	0.5
SURET	34.6											8.7				4.4
PERO	6.2	3.5	6.8	8.2	9.2	6.7	2.5	4.0	4.4	3.2	4.0	3.9	7.0	4.7	8.0	3.8
IGWI	2.4	7.4	12.5	13.8	14.5	11.6	5.4	7.9	8.5	5.7	7.1	3.1	10.0	10.2	13.0	5.1
TAET: PERVIOUS	40.2	37.7	40.1	36.1	36.3	29.4	40.7	36.8	35.4	39.1	37.5	41.8	43.8	42.1	41.5	39.8
IMPEV: IMPERVIOUS		16.2	16.2	16.2	16.3											0.2
ET: COMBINED	40.2	36.6	37.6	32.1	26.2	29.4	40.7	36.8	35.4	39.1	37.5	41.8	43.8	42.1	41.5	40.0
PET	49.5	49.8	49.7	49.8	49.9	50.1	49.6	49.6	49.8	50.2	50.0	50.2	50.0	49.9	50.3	49.5

Table T-03100208-31: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
2	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
3	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
4	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
5	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
6	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
7	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
8	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
9	0.990	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.990
10	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
11	0.990	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.990
12	0.990	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.990
13	0.990	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.973	0.990
14	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
15	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
16	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
17	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
18	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
19	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
20	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
21	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
22	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
23	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
24	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
25	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
26	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
27	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
28	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
29	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
30	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
31	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
32	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
33	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
34	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
35	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
36	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
37	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
38	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990

39	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
40	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
41	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
42	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
43	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
44	0.990	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.990
45	0.990	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.990
46	0.990	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.714	0.990

Table T-03100208-32: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
2	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
3	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
4	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
5	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
6	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
7	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
8	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
9	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
10	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
11	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
12	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
13	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
14	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
15	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
16	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
17	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
18	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
19	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
20	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
21	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
22	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
23	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
24	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
25	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
26	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
27	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
28	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
29	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
30	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
31	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
32	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
33	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
34	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
35	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
36	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
37	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
38	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017

39	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
40	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
41	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
42	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
43	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
44	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
45	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
46	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024

Table T-03100208-33: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
2	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
3	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
4	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
5	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
6	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
7	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
8	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
9	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
10	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
11	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
12	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
13	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
14	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
15	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
16	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
17	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
18	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
19	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
20	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
21	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
22	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
23	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
24	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
25	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
26	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
27	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
28	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
29	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
30	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
31	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
32	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
33	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
34	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
35	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
36	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
37	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
38	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300

39	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
40	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
41	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
42	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
43	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
44	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
45	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300
46	0.000	0.054	0.050	0.050	0.050	0.020	0.110	0.051	0.050	0.200	0.030	0.300

Table T-03100208-34: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
2	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
3	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
4	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
5	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
6	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
7	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
8	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
15	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
16	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
17	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
18	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
19	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
20	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
21	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
22	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
23	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
24	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
25	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
26	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
27	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
28	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
29	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
30	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
31	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
32	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
33	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
34	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
35	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
36	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
37	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
38	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481

39	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
40	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
41	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
42	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
43	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
44	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481	0.481
45	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
46	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Table T-03100208-35: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
2	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
3	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
4	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
5	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
6	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
7	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
8	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
9	0.001	0.082	0.082	0.082	0.082	0.117	0.175	0.117	0.117	0.117	0.140	0.001
10	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
11	0.001	0.082	0.082	0.082	0.082	0.117	0.175	0.117	0.117	0.117	0.140	0.001
12	0.001	0.082	0.082	0.082	0.082	0.117	0.175	0.117	0.117	0.117	0.140	0.001
13	0.001	0.082	0.082	0.082	0.082	0.117	0.175	0.117	0.117	0.117	0.140	0.001
14	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
15	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
16	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
17	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
18	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
19	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
20	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
21	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
22	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
23	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
24	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
25	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
26	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
27	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
28	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
29	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
30	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
31	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
32	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
33	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
34	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
35	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
36	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
37	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
38	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004

39	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
40	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
41	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
42	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
43	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
44	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.004
45	0.004	0.933	0.933	0.933	0.933	1.333	2.000	1.333	1.333	1.333	1.600	0.004
46	0.004	0.933	0.933	0.933	0.933	1.333	2.000	1.333	1.333	1.333	1.600	0.004

Table T-03100208-36: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
31		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
32		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
33		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
34		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
35		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
36		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
37		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
38		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
39		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
40		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
41		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
42		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
43		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
44		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
45		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
46		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03100208-37: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
2	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
3	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
4	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
5	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
6	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
7	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
8	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
9	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
10	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
11	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
12	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
13	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
14	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
15	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
16	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
17	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
18	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
19	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
20	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
21	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
22	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
23	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
24	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
25	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
26	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
27	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
28	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
29	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
30	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
31	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
32	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
33	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
34	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
35	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
36	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
37	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
38	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696

39	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
40	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
41	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
42	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
43	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
44	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
45	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
46	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696

Table T-03100208-38: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
13	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
44	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
45	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
46	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03100208-39: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
2	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
3	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
4	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
5	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
6	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
7	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
8	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
9	0.091	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
10	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
11	0.091	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
12	0.091	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
13	0.091	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.900
14	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
15	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
16	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
17	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
18	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
19	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
20	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
21	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
22	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
23	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
24	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
25	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
26	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
27	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
28	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
29	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
30	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
31	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
32	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
33	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
34	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
35	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
36	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
37	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
38	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100

39	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
40	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
41	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
42	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
43	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
44	0.233	0.635	0.635	0.400	0.400	0.300	0.783	0.650	0.459	0.635	0.596	1.100
45	0.233	0.552	0.552	0.552	0.552	0.368	0.783	0.368	0.552	0.552	0.645	1.100
46	0.233	0.552	0.552	0.552	0.552	0.368	0.783	0.368	0.552	0.552	0.645	1.100

Table T-03100208-40: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
2	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
3	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
4	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
5	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
6	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
7	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
8	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
9	0.123	8.148	5.489	6.555	6.587	6.548	8.730	6.548	6.548	6.548	7.276	0.200
10	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
11	0.123	8.148	5.489	6.555	6.587	6.548	8.730	6.548	6.548	6.548	7.276	0.200
12	0.123	8.148	5.489	6.555	6.587	6.548	8.730	6.548	6.548	6.548	7.276	0.200
13	0.123	8.148	5.489	6.555	6.587	6.548	8.730	6.548	6.548	6.548	7.276	0.200
14	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
15	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
16	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
17	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
18	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
19	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
20	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
21	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
22	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
23	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
24	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
25	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
26	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
27	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
28	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
29	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
30	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
31	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
32	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
33	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
34	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
35	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
36	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
37	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
38	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200

39	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
40	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
41	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
42	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
43	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
44	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
45	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200
46	0.200	6.667	6.667	6.667	6.667	7.499	10.000	7.499	7.499	7.499	8.333	0.200

Table T-03100208-41: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
2	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
3	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
4	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
5	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
6	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
7	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
8	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
15	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
16	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
17	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
18	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
19	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
20	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
21	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
22	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
23	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
24	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
25	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
26	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
27	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
28	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
29	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
30	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
31	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
32	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
33	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
34	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
35	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
36	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
37	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
38	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000

39	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
40	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
41	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
42	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
43	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
44	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
45	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000
46	0.050	1.400	1.400	1.400	1.400	1.400	2.000	1.600	1.600	1.400	2.000	1.000

APPENDIX T-03110101

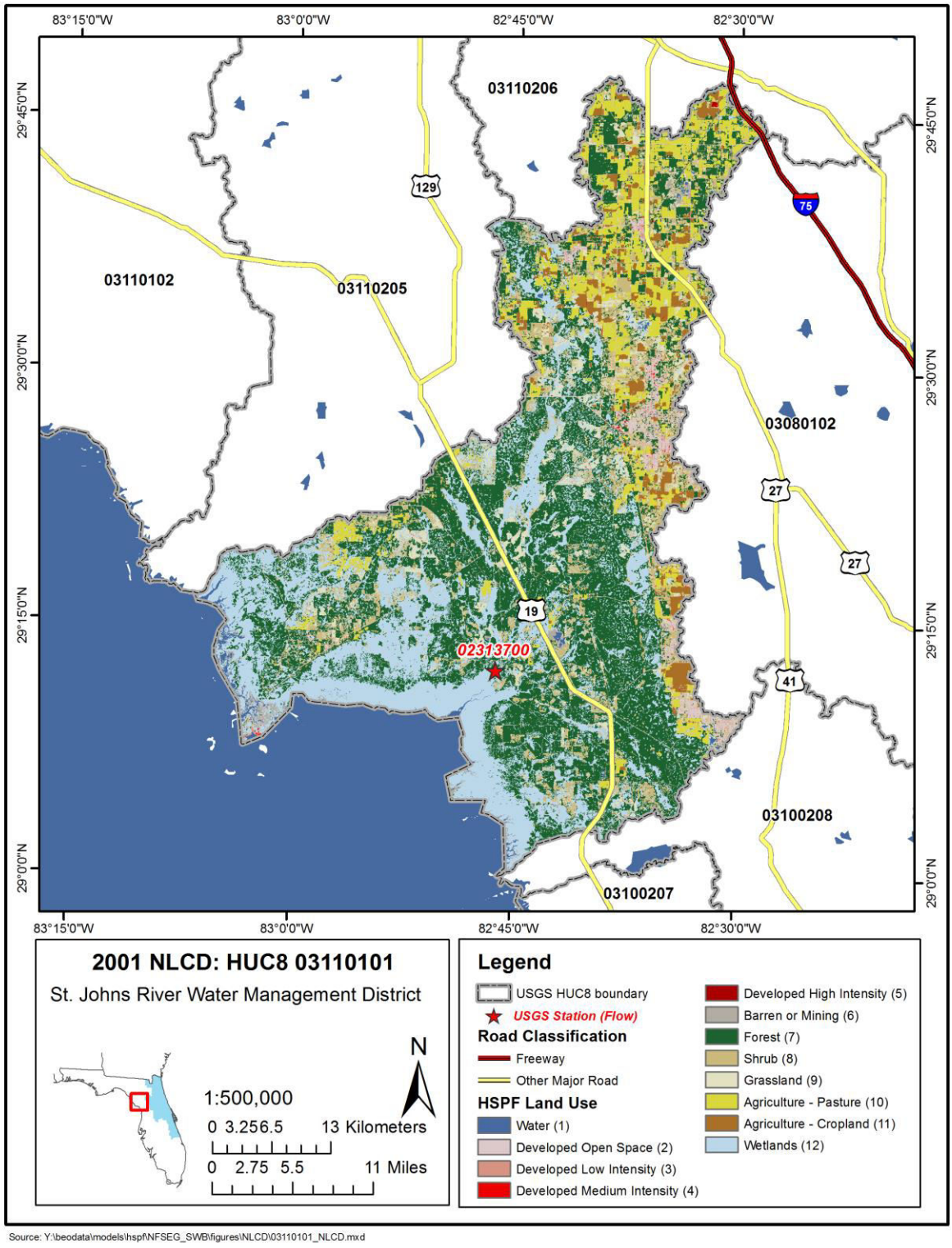
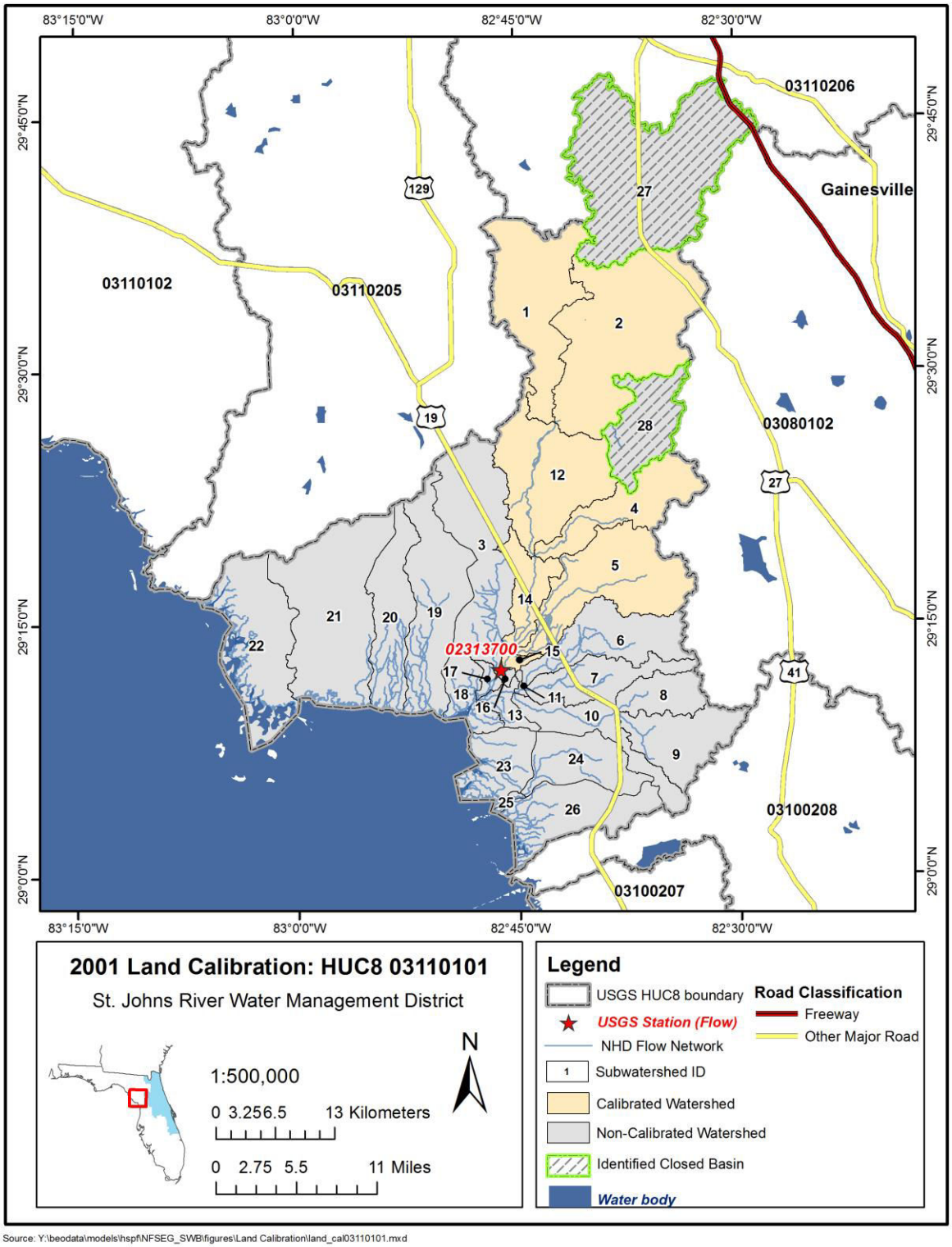


Figure T-03110101-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03110101.mxd

Figure T-03110101-2: Calibrated sub-watersheds.

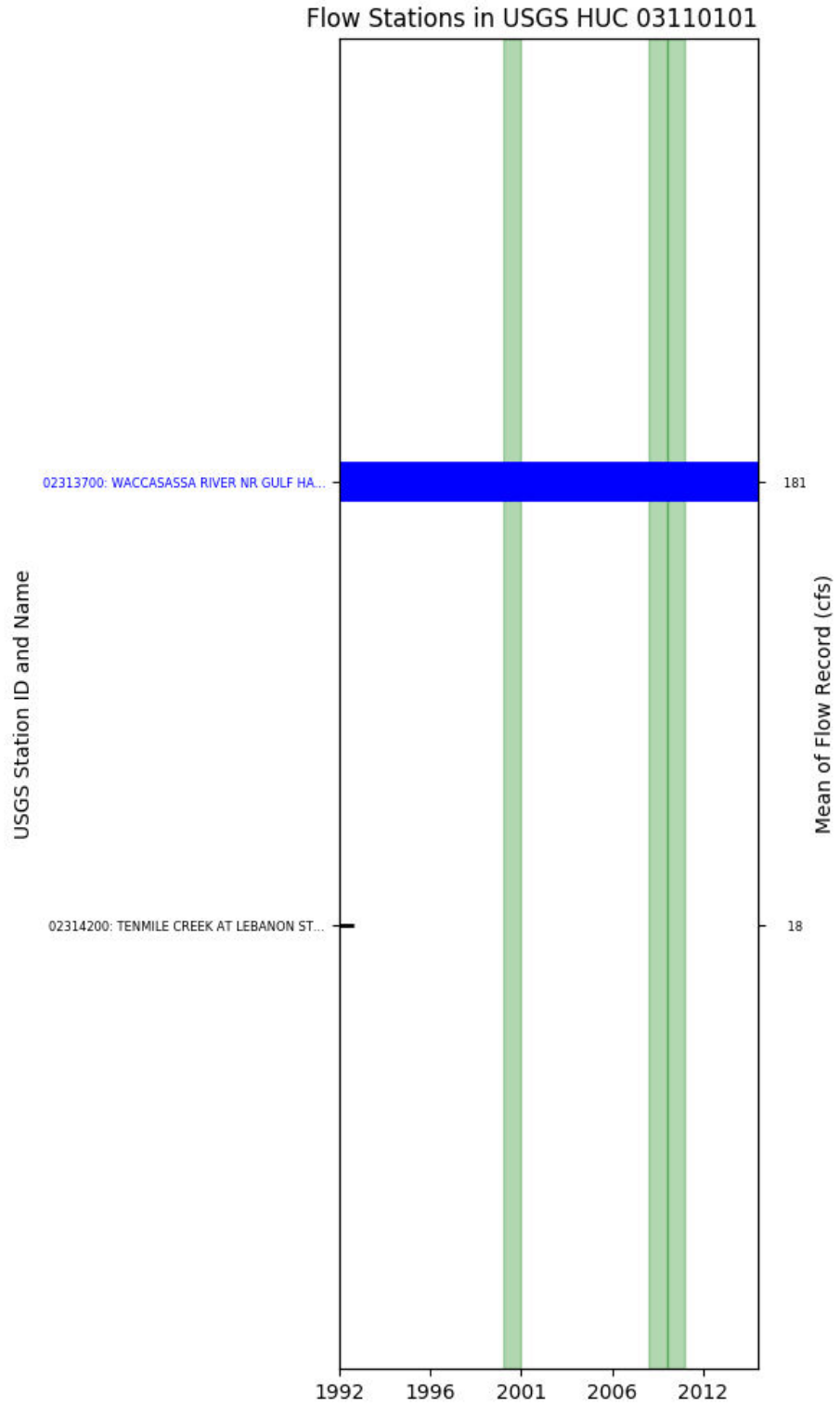


Figure T-03110101-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 15, USGS GAUGE 02313700

Water-Data Report 2009
02313700 WACCASASSA RIVER NEAR GULF HAMMOCK, FL
Aucilla-Waccasassa Basin Waccasassa Subbasin

LOCATION.--Lat 291214, long 824609 referenced to North American Datum of 1927, Levy County, FL, Hydrologic Unit 03110101, near left bank at abandoned railroad grade, 0.5 mi upstream from Otter Creek, 3.6 mi upstream from mouth, and 4 mi southwest of Gulf Hammock.

DRAINAGE AREA.--480.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1963 to September 1978, November 1980 to September 1984 (fragmentary), October 1984 to September 1992, October 1998 to September 2002, October 2002 to September 2003 (fragmentary), October 2003 to current year.

REVISED RECORDS.--WSP 2105: 1969. WRD FL-72-1: Drainage area. WRD FL-04-4:2003.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is 10.51 ft below National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1980, water-stage and deflection-meter recorders at same site at datum 10.00 ft higher.

REMARKS.--Records fair, except for estimated discharges which are poor. Flow affected by tide. Discharge computed from continuous velocity record obtained from water-current meter. Records include flow of Otter Creek. Above bankfull stage, discharge measurements are made along abandoned railroad fill and include all flow from about 1.5 mi northwest to 0.8 mi northeast of gaging station. Drainage Area: Including that of Otter Creek.

Table T-03110101-1: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02313700.

Statistic	Value
Bias	23.60
Standard error	153.22
Relative bias	0.13
Relative standard error	0.64
Nash-Sutcliffe coefficient	0.58
Kling-Gupta coefficient	0.71
Coefficient of efficiency	0.29
Index of agreement	0.62

Table T-03110101-2: Hydrologic Indices Between USGS Gauge 02313700 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02313700	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	248.96	204.86	-17.71
MA2: Median, all daily flows	174.00	103.91	-40.28
MA3: CV, all daily flows	75.16	97.36	29.54
MA4: CV, log of all daily flows	79.08	105.21	33.04
MA5: Mean daily flow / median daily flow	1.43	1.97	37.78
MA9: (Q10 - Q90) / median daily flow	2.58	4.22	63.11
MA10: (Q20 - Q80) / median daily flow	1.33	2.53	90.81
MA11: (Q25 - Q75) / median daily flow	0.97	2.09	114.82
MA12: Mean monthly flow, January	118.32	118.23	-0.07
MA13: Mean monthly flow, February	144.04	135.70	-5.79
MA14: Mean monthly flow, March	146.00	163.23	11.80
MA15: Mean monthly flow, April	92.10	78.06	-15.25
MA16: Mean monthly flow, May	82.96	46.46	-43.99
MA17: Mean monthly flow, June	140.64	107.78	-23.37
MA18: Mean monthly flow, July	164.26	163.04	-0.74
MA19: Mean monthly flow, August	239.33	266.50	11.35
MA20: Mean monthly flow, September	249.54	246.87	-1.07
MA21: Mean monthly flow, October	138.47	103.45	-25.29
MA22: Mean monthly flow, November	93.07	55.65	-40.21
MA23: Mean monthly flow, December	109.07	91.66	-15.96
ML1: Mean minimum monthly flow, January	32.12	25.77	-19.75
ML2: Mean minimum monthly flow, February	55.67	52.84	-5.09
ML3: Mean minimum monthly flow, March	43.68	44.16	1.10
ML4: Mean minimum monthly flow, April	30.66	31.20	1.76
ML5: Mean minimum monthly flow, May	40.27	20.05	-50.23
ML6: Mean minimum monthly flow, June	44.51	25.57	-42.55
ML7: Mean minimum monthly flow, July	79.28	78.67	-0.77
ML8: Mean minimum monthly flow, August	100.88	108.52	7.58
ML9: Mean minimum monthly flow, September	52.11	54.81	5.18
ML10: Mean minimum monthly flow, October	53.68	36.07	-32.81
ML11: Mean minimum monthly flow, November	36.66	23.36	-36.28
ML12: Mean minimum monthly flow, December	41.61	40.52	-2.61
ML13: CV of minimum monthly flows	131.81	112.34	-14.77
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.06	456.76
ML15: Mean minimum annual flow / mean annual flow	0.01	0.04	266.15
ML16: Median minimum annual flow / median annual flow	0.00	0.06	1319.32
ML20: Ratio of baseflow volume to total flow volume	0.35	0.36	4.40
ML22: Mean annual minimum flow divided by catchment area	33333.35	33333.41	0.00
RA1: Mean of positive changes from one day to next (rise rate)	85.22	70.21	
RA2: CV, mean of positive changes from one day to next (rise rate)	230.00	330.55	
RA3: Mean of negative changes from one day to next (fall rate)	62.95	33.04	
RA4: CV, mean of negative changes from one day to next (fall rate)	139.08	247.91	
RA5: Ratio of days that are higher than previous day	0.42	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.29	0.17	

RA7: Median of difference in log of flows over two consecutive days of falling	0.22	0.13	
RA8: Number of flow reversals from one day to the next	96.50	37.22	
RA9: CV, number of flow reversals from one day to the next	76.16	74.72	

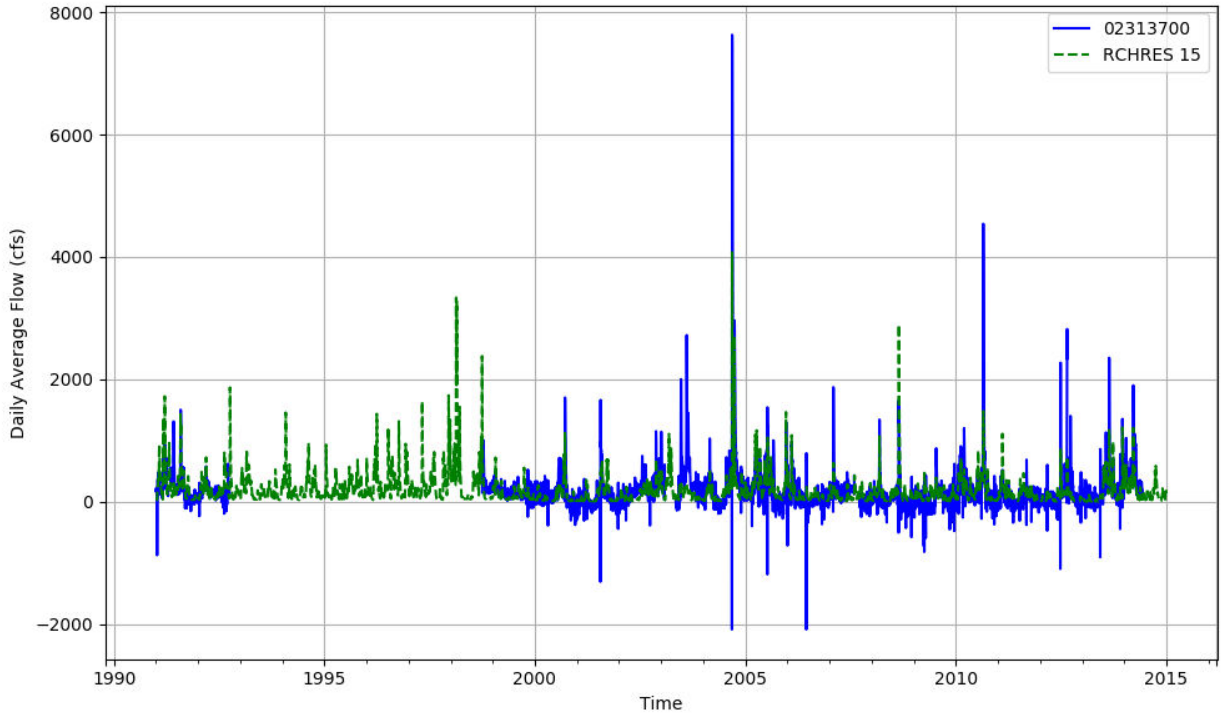


Figure T-03110101-4: Daily flow for HSFP reach 15 and USGS station 02313700.

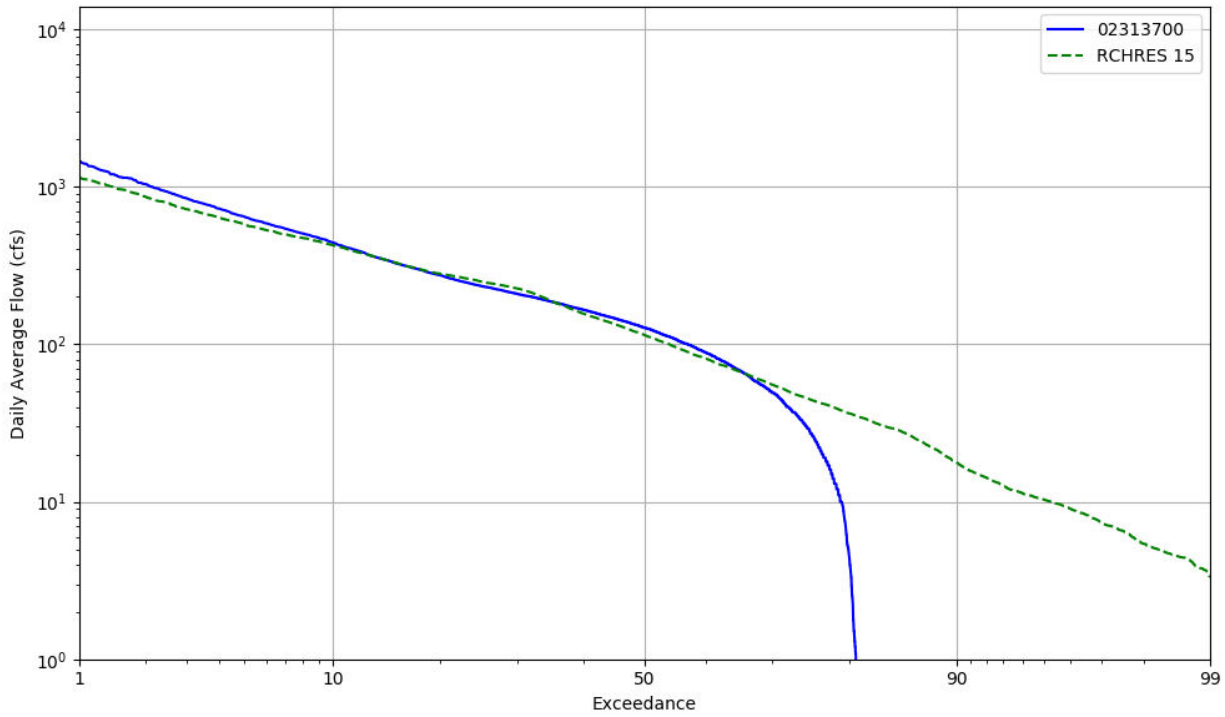


Figure T-03110101-5: Daily exceedance for HSFP reach 15 and USGS station 02313700.

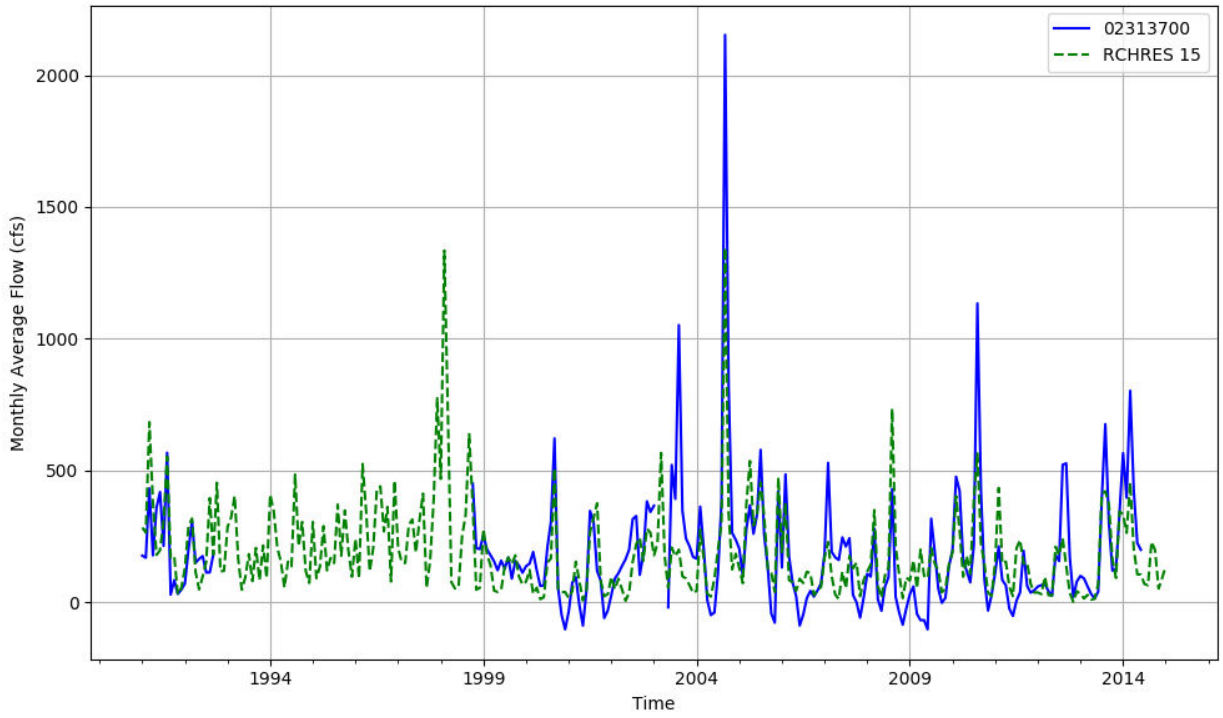


Figure T-03110101-6: Monthly flow for HSFP reach 15 and USGS station 02313700.

Table T-03110101-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4904	22276	3264	387	39	4601	210510	66373	29802	49426	16480	160092	2533	4577	575260	
AREA(%)	0.8	3.9	0.6	0.1	0.0	0.8	36.5	11.5	5.2	8.6	2.9	27.7	0.4	0.8	99.7	
IMPERVIOUS																
AREA(ACRES)		1178	364	98	39										1678	
AREA(%)		0.2	0.1	0.0	0.0										0.3	
SUPY	39.2	44.3	43.7	43.0	41.6	40.6	44.7	44.2	44.4	43.1	43.7	44.0	55.3	53.3	44.2	
SURLI		0.0	5.7	5.4	8.5									3.5	0.1	
UZLI															0.0	
LZLI		0.0	3.8	3.4	3.7										0.0	
SURO: PERVIOUS	0.1	0.4	1.0	0.9	0.2	0.2	0.0	0.5	0.3	0.2	0.1		0.1	0.2	0.1	
SURO: IMPERVIOUS		28.4	28.0	27.6	25.8										0.1	
SURO: COMBINED	0.1	1.8	3.7	6.3	13.0	0.2	0.0	0.5	0.3	0.2	0.1		0.1	0.2	0.2	
IFWO		1.0	1.9	1.7	1.4	1.5	0.0	1.5	0.9	0.6	0.2		0.5	0.6	0.4	
AGWO	0.5	5.1	6.9	7.2	1.0	6.1	3.0	8.1	6.8	5.0	5.5	1.6	6.2	7.8	3.8	
AGWI	0.7	5.8	7.8	8.4	1.2	6.6	3.6	9.1	8.0	6.0	6.8	4.3	7.3	8.8	5.1	
IGWI	1.0	8.0	13.1	11.8	19.9	8.0	3.5	8.8	6.0	8.3	6.5	4.2	15.3	12.9	5.3	
CEPE		10.0	9.9	9.7	13.4	7.5	14.3	9.9	9.9	10.2	8.4	13.7	12.7	9.9	12.4	
UZET	0.2	4.3	3.3	3.3	2.5	4.6	1.9	3.2	2.6	2.2	2.1	12.0	3.4	3.2	5.0	
LZET	0.1	14.9	16.3	16.3	15.6	11.6	21.3	11.2	16.9	16.0	19.9	1.4	16.2	21.6	13.3	
AGWET	0.0	0.5	0.7	0.8	0.1	0.4	0.4	0.7	0.8	0.7	1.0	2.8	0.7	0.7	1.2	
BASET	0.2	0.2	0.3	0.4	0.1	0.1	0.2	0.3	0.4	0.3	0.4	0.2	0.4	0.3	0.2	
SURET	38.8											10.0			3.1	
PERO	0.6	6.5	9.7	9.8	2.6	7.8	3.0	10.0	8.1	5.8	5.8	1.6	6.9	8.6	4.3	
IGWI	1.0	8.0	13.1	11.8	19.9	8.0	3.5	8.8	6.0	8.3	6.5	4.2	15.3	12.9	5.3	
TAET: PERVIOUS	39.3	29.9	30.5	30.5	31.7	24.3	38.1	25.4	30.7	29.5	31.8	40.0	33.4	35.7	35.2	
IMPEV: IMPERVIOUS		15.9	15.7	15.4	15.9										0.0	
ET: COMBINED	39.3	29.2	29.0	27.4	23.8	24.3	38.1	25.4	30.7	29.5	31.8	40.0	33.4	35.7	35.3	
PET	39.9	46.1	45.9	45.4	45.8	40.6	45.4	46.0	46.3	46.5	46.7	43.9	46.6	46.4	45.0	

Table T-03110101-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4904	22276	3264	387	39	4601	210510	66373	29802	49426	16480	160092	2533	4577	575260	
AREA(%)	0.8	3.9	0.6	0.1	0.0	0.8	36.5	11.5	5.2	8.6	2.9	27.7	0.4	0.8	99.7	
IMPERVIOUS																
AREA(ACRES)		1178	364	98	39										1678	
AREA(%)		0.2	0.1	0.0	0.0										0.3	
SUPY	46.9	51.1	50.9	50.6	49.4	47.4	51.2	51.1	51.5	50.5	50.9	50.4	57.7	61.5	50.8	
SURLI		0.0	4.9	4.7	8.5									3.1	0.1	
UZLI															0.0	
LZLI		0.0	3.2	2.8	3.5										0.0	
SURO: PERVIOUS	0.0	0.4	0.9	0.8	0.1	0.1	0.0	0.6	0.4	0.2	0.1		0.1	0.3	0.1	
SURO: IMPERVIOUS		31.4	31.3	31.3	29.8										0.1	
SURO: COMBINED	0.0	2.0	4.0	6.9	15.0	0.1	0.0	0.6	0.4	0.2	0.1		0.1	0.3	0.2	
IFWO		0.6	1.4	1.3	0.9	0.8	0.0	1.1	0.6	0.4	0.2		0.3	0.4	0.2	
AGWO	0.4	5.4	7.0	7.5	1.1	7.7	2.8	9.1	7.2	5.3	5.5	1.7	6.0	8.7	3.9	
AGWI	0.6	6.5	8.2	9.0	1.4	8.4	3.7	10.6	9.0	6.9	7.5	3.2	7.2	9.9	5.2	
IGWI	1.1	8.9	14.1	12.9	22.3	10.1	3.5	10.3	6.7	9.3	6.9	3.2	14.7	13.9	5.4	
CEPE		12.3	12.3	12.2	16.6	10.3	17.7	12.2	12.2	12.5	10.3	17.2	14.2	12.2	15.4	
UZET	0.2	4.9	3.7	3.7	2.7	5.2	2.2	3.7	2.9	2.4	2.1	19.2	3.1	3.4	7.3	
LZET	0.1	16.5	17.5	17.4	16.6	11.9	24.7	12.0	18.6	17.8	22.6	2.1	17.5	23.5	15.2	
AGWET		0.8	0.8	1.0	0.2	0.5	0.6	1.0	1.2	1.1	1.4	3.5	0.8	0.8	1.6	
BASET	0.2	0.3	0.4	0.5	0.1	0.2	0.3	0.5	0.5	0.5	0.6	0.2	0.4	0.4	0.3	
SURET	42.7											6.6			2.2	
PERO	0.5	6.4	9.3	9.6	2.2	8.7	2.8	10.8	8.2	5.9	5.7	1.7	6.4	9.4	4.3	
IGWI	1.1	8.9	14.1	12.9	22.3	10.1	3.5	10.3	6.7	9.3	6.9	3.2	14.7	13.9	5.4	
TAET: PERVIOUS	43.3	34.7	34.6	34.7	36.1	28.1	45.4	29.4	35.6	34.3	37.1	48.9	36.0	40.3	42.0	
IMPEV: IMPERVIOUS		19.7	19.6	19.3	19.6										0.1	
ET: COMBINED	43.3	34.0	33.1	31.6	27.9	28.1	45.4	29.4	35.6	34.3	37.1	48.9	36.0	40.3	42.1	
PET	44.1	53.5	53.2	52.6	53.2	45.2	52.4	53.4	53.8	54.3	54.5	50.1	54.4	54.1	52.0	

Table T-03110101-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4904	22276	3264	387	39	4601	210510	66373	29802	49426	16480	160092	2533	4577	575260	
AREA(%)	0.8	3.9	0.6	0.1	0.0	0.8	36.5	11.5	5.2	8.6	2.9	27.7	0.4	0.8	99.7	
IMPERVIOUS																
AREA(ACRES)		1178	364	98	39										1678	
AREA(%)		0.2	0.1	0.0	0.0										0.3	
SUPY	51.7	55.0	54.2	53.5	49.9	52.7	56.5	55.2	55.6	52.6	53.3	56.7	60.4	63.2	55.7	
SURLI		0.0	4.5	4.2	8.3									4.5	0.1	
UZLI															0.0	
LZLI		0.0	2.9	2.6	3.5										0.0	
SURO: PERVIOUS	12.3	1.0	1.6	1.5	0.7	0.4	0.0	0.9	0.6	0.5	0.2		0.5	0.5	0.4	
SURO: IMPERVIOUS		36.8	36.1	35.4	31.4										0.1	
SURO: COMBINED	12.3	2.8	5.1	8.4	16.1	0.4	0.0	0.9	0.6	0.5	0.2		0.5	0.5	0.5	
IFWO		2.2	3.4	3.0	2.0	3.2	0.1	2.8	1.9	1.2	0.6		1.1	1.3	0.7	
AGWO	0.4	8.4	9.0	9.6	1.5	10.4	7.8	11.9	11.5	8.1	9.5	3.2	7.5	11.9	7.2	
AGWI	0.6	9.3	10.0	10.8	1.7	11.0	8.6	13.2	13.0	9.4	11.2	7.5	8.5	12.9	9.2	
IGWI	1.0	12.1	16.5	15.1	24.6	12.8	8.1	12.6	9.7	12.1	9.9	7.3	18.2	18.1	9.2	
CEPE		11.0	11.1	11.0	15.2	9.4	16.1	10.9	11.0	11.2	9.1	15.8	12.6	10.2	14.0	
UZET	0.1	6.4	4.6	4.6	3.5	5.9	3.9	4.7	4.0	3.4	3.2	9.3	4.4	4.5	5.5	
LZET	0.1	15.0	16.1	16.0	15.1	11.4	21.1	11.2	17.4	16.7	21.3	0.5	16.1	21.6	13.1	
AGWET		0.6	0.7	0.8	0.1	0.4	0.5	0.8	1.0	0.9	1.2	1.2	0.6	0.7	0.8	
BASET	0.2	0.3	0.3	0.4	0.1	0.2	0.3	0.4	0.5	0.4	0.5	0.2	0.4	0.3	0.3	
SURET	39.9											16.8			5.0	
PERO	12.7	11.6	14.0	14.1	4.3	14.0	7.9	15.7	14.0	9.8	10.3	3.2	9.1	13.7	8.3	
IGWI	1.0	12.1	16.5	15.1	24.6	12.8	8.1	12.6	9.7	12.1	9.9	7.3	18.2	18.1	9.2	
TAET: PERVIOUS	40.3	33.3	32.7	32.9	34.0	27.3	41.9	28.1	34.0	32.6	35.4	43.8	34.1	37.2	38.7	
IMPEV: IMPERVIOUS		18.1	18.1	18.1	18.5										0.1	
ET: COMBINED	40.3	32.6	31.2	29.9	26.3	27.3	41.9	28.1	34.0	32.6	35.4	43.8	34.1	37.2	38.8	
PET	40.6	46.2	46.0	45.6	46.2	41.2	45.4	46.0	46.2	46.6	46.8	43.9	46.8	46.5	45.1	

Table T-03110101-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4904	22276	3264	387	39	4601	210510	66373	29802	49426	16480	160092	2533	4577	575260	
AREA(%)	0.8	3.9	0.6	0.1	0.0	0.8	36.5	11.5	5.2	8.6	2.9	27.7	0.4	0.8	99.7	
IMPERVIOUS																
AREA(ACRES)		1178	364	98	39										1678	
AREA(%)		0.2	0.1	0.0	0.0										0.3	
SUPY	44.6	50.8	50.4	49.8	49.5	45.8	51.0	51.1	51.5	50.8	51.0	50.0	58.7	59.3	50.6	
SURLI		0.0	5.7	5.4	11.2					0.0				2.4	0.1	
UZLI															0.0	
LZLI		0.0	3.5	3.1	4.3										0.0	
SURO: PERVIOUS	5.8	1.0	1.6	1.5	0.5	0.5	0.0	1.0	0.7	0.5	0.3	0.3	0.4	0.6	0.4	
SURO: IMPERVIOUS		33.5	33.3	32.8	32.2										0.1	
SURO: COMBINED	5.8	2.7	4.8	7.8	16.3	0.5	0.0	1.0	0.7	0.5	0.3	0.3	0.4	0.6	0.5	
IFWO		1.7	2.6	2.4	2.4	2.1	0.2	2.2	1.4	1.1	0.6		1.1	1.2	0.6	
AGWO	0.5	6.7	8.1	8.6	1.4	7.9	5.5	10.1	9.3	6.9	7.8	3.8	6.6	9.3	6.0	
AGWI	0.7	7.5	9.0	9.8	1.6	8.4	6.2	11.3	10.7	8.1	9.4	5.8	7.6	10.3	7.2	
IGWI	0.9	10.1	16.1	14.5	27.8	10.3	5.9	10.9	7.8	11.1	8.7	5.5	17.3	14.5	7.3	
CEPE		11.0	11.0	10.9	14.7	9.4	15.5	10.9	11.0	11.2	9.1	15.2	12.7	10.5	13.6	
UZET	0.4	4.9	3.6	3.7	2.9	4.5	3.0	3.7	3.2	2.8	2.7	7.6	3.6	3.4	4.4	
LZET	0.2	14.5	15.7	15.6	15.1	10.8	20.3	10.9	16.7	16.0	20.2	0.9	16.1	21.1	12.7	
AGWET	0.0	0.6	0.7	0.8	0.1	0.4	0.5	0.8	0.9	0.8	1.1	1.8	0.7	0.7	0.9	
BASET	0.2	0.3	0.3	0.4	0.1	0.2	0.2	0.4	0.4	0.4	0.5	0.2	0.4	0.3	0.3	
SURET	37.7											16.0			4.8	
PERO	6.3	9.4	12.3	12.5	4.4	10.5	5.8	13.4	11.5	8.5	8.7	4.1	8.0	11.1	7.1	
IGWI	0.9	10.1	16.1	14.5	27.8	10.3	5.9	10.9	7.8	11.1	8.7	5.5	17.3	14.5	7.3	
TAET: PERVIOUS	38.4	31.3	31.3	31.3	32.9	25.1	39.5	26.8	32.2	31.2	33.6	41.6	33.4	36.1	36.7	
IMPEV: IMPERVIOUS		17.2	17.2	17.0	17.4										0.1	
ET: COMBINED	38.4	30.6	29.9	28.5	25.2	25.1	39.5	26.8	32.2	31.2	33.6	41.6	33.4	36.1	36.8	
PET	40.3	46.5	46.4	45.9	46.4	41.0	45.8	46.5	46.7	47.1	47.2	44.3	47.2	46.9	45.5	

Table T-03110101-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.999	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.999
2	0.999	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.999
3	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
4	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
5	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
6	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
7	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
8	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
9	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
10	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
11	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
12	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
13	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
14	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
15	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
16	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
17	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
18	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
19	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
20	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
21	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
22	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
23	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
24	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
25	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
26	0.998	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.998
27	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
28	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999

Table T-03110101-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
2	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034
3	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
4	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
5	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
6	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
7	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
8	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
9	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
10	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
11	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
12	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
13	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
14	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
15	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
16	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
17	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
18	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
19	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
20	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
21	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
22	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
23	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
24	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
25	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
26	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110101-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
2	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
3	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
4	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
5	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
6	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
7	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
8	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
9	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
10	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
11	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
12	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
13	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
14	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
15	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
16	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
17	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
18	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
19	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
20	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
21	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
22	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
23	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
24	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
25	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
26	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
27	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131
28	0.000	0.050	0.050	0.050	0.100	0.048	0.126	0.050	0.050	0.050	0.030	0.131

Table T-03110101-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
2	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030
3	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
4	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
5	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
6	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
7	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
8	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
9	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
10	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
11	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
12	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
13	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
14	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
15	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
16	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
17	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
18	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
19	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
20	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
21	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
22	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
23	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
24	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
25	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
26	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
27	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
28	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Table T-03110101-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
4	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
5	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
6	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
7	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
8	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
9	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
10	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
11	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
12	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
13	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
14	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
15	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
16	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
17	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
18	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
19	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
20	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
21	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
22	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
23	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
24	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
25	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
26	0.001	0.245	0.245	0.245	0.245	0.351	0.525	0.351	0.351	0.351	0.421	0.009
27	0.010	0.467	0.467	0.467	0.467	0.669	1.000	0.669	0.669	0.669	0.802	0.010
28	0.010	0.467	0.467	0.467	0.467	0.669	1.000	0.669	0.669	0.669	0.802	0.010

Table T-03110101-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
2		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
3		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
4		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
5		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
6		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
7		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
8		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
9		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
10		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
11		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
12		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
13		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
14		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
15		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
16		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
17		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
18		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
19		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
20		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
21		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
22		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
23		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
24		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
25		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
26		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
27		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	
28		1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	

Table T-03110101-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
2	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
3	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
4	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
5	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
6	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
7	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
8	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
9	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
10	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
11	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
12	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
13	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
14	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
15	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
16	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
17	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
18	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
19	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
20	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
21	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
22	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
23	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
24	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
25	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
26	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
27	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
28	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695

Table T-03110101-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315
2	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315
3	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
4	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
5	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
6	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
7	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
8	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
9	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
10	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
11	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
12	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
13	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
14	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
15	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
16	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
17	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
18	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
19	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
20	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
21	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
22	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
23	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
24	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
25	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
26	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326	0.326
27	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
28	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180

Table T-03110101-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
3	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
4	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
5	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
6	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
7	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
8	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
9	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
10	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
11	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
12	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
13	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
14	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
15	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
16	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
17	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
18	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
19	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
20	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
21	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
22	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
23	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
24	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
25	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
26	0.099	0.400	0.400	0.400	0.600	0.300	0.850	0.306	0.459	0.447	0.535	0.900
27	0.613	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200
28	0.613	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	1.200

Table T-03110101-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
4	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
6	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
7	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
8	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
10	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
11	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
12	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
13	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
14	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
15	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
16	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
17	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
18	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
19	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
20	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
21	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
22	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
23	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
24	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
25	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
26	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
27	0.050	2.726	2.726	2.726	2.726	3.067	4.089	3.067	3.067	3.067	3.407	0.200
28	0.050	2.726	2.726	2.726	2.726	3.067	4.089	3.067	3.067	3.067	3.407	0.200

Table T-03110101-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.823	0.823	0.823	0.823	0.823	1.176	0.941	0.941	0.823	1.176	0.050
2	0.050	0.823	0.823	0.823	0.823	0.823	1.176	0.941	0.941	0.823	1.176	0.050
3	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
4	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
5	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
6	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
7	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
8	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
9	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
10	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
11	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
12	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
13	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
14	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
15	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
16	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
17	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
18	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
19	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
20	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
21	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
22	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
23	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
24	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
25	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
26	0.050	0.296	0.070	0.070	2.000	0.220	1.731	0.080	0.080	0.070	0.100	0.998
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.195
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.195

APPENDIX T-03110102

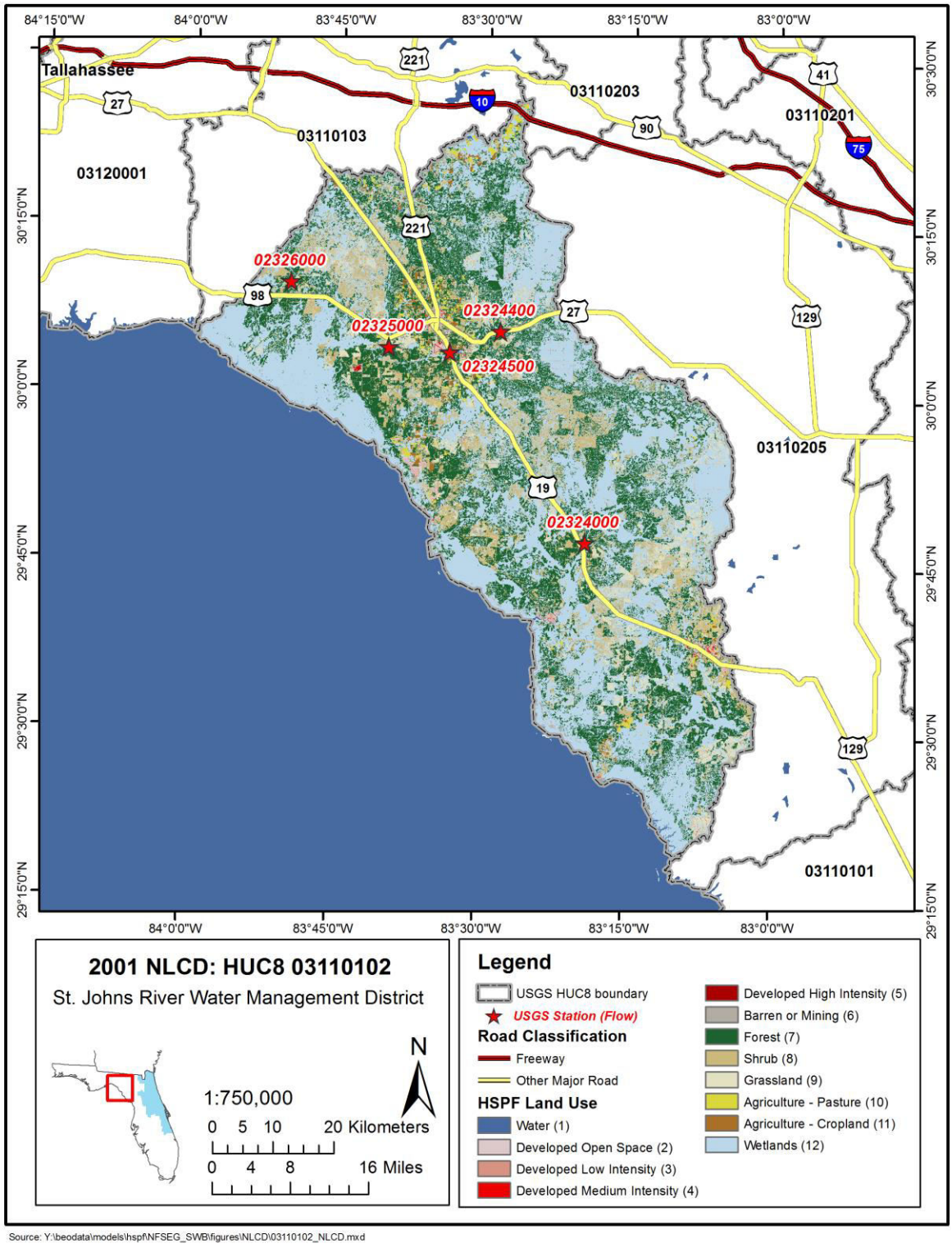


Figure T-03110102-1: Land Cover from the National Land Cover Database.

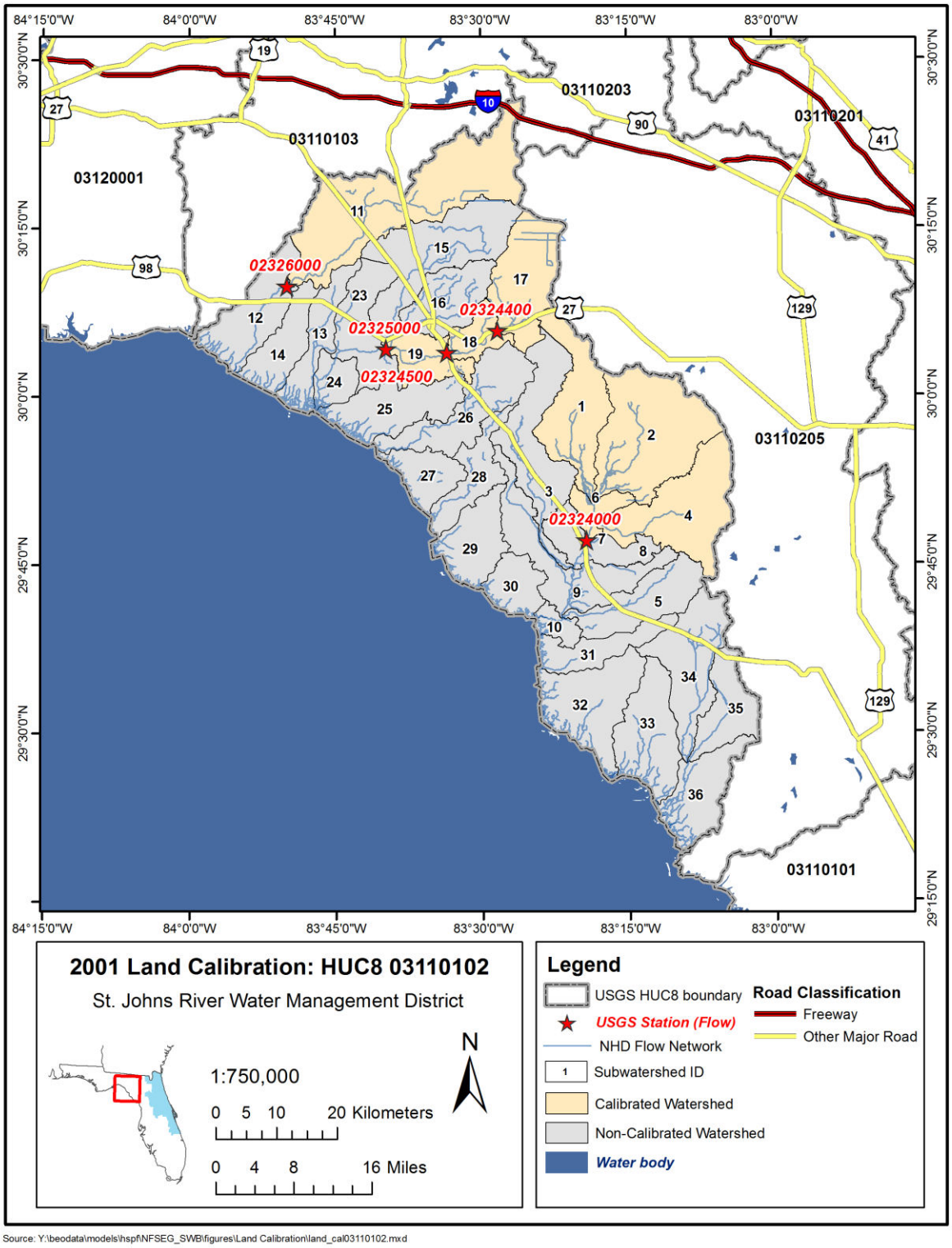


Figure T-03110102-2: Calibrated sub-watersheds.

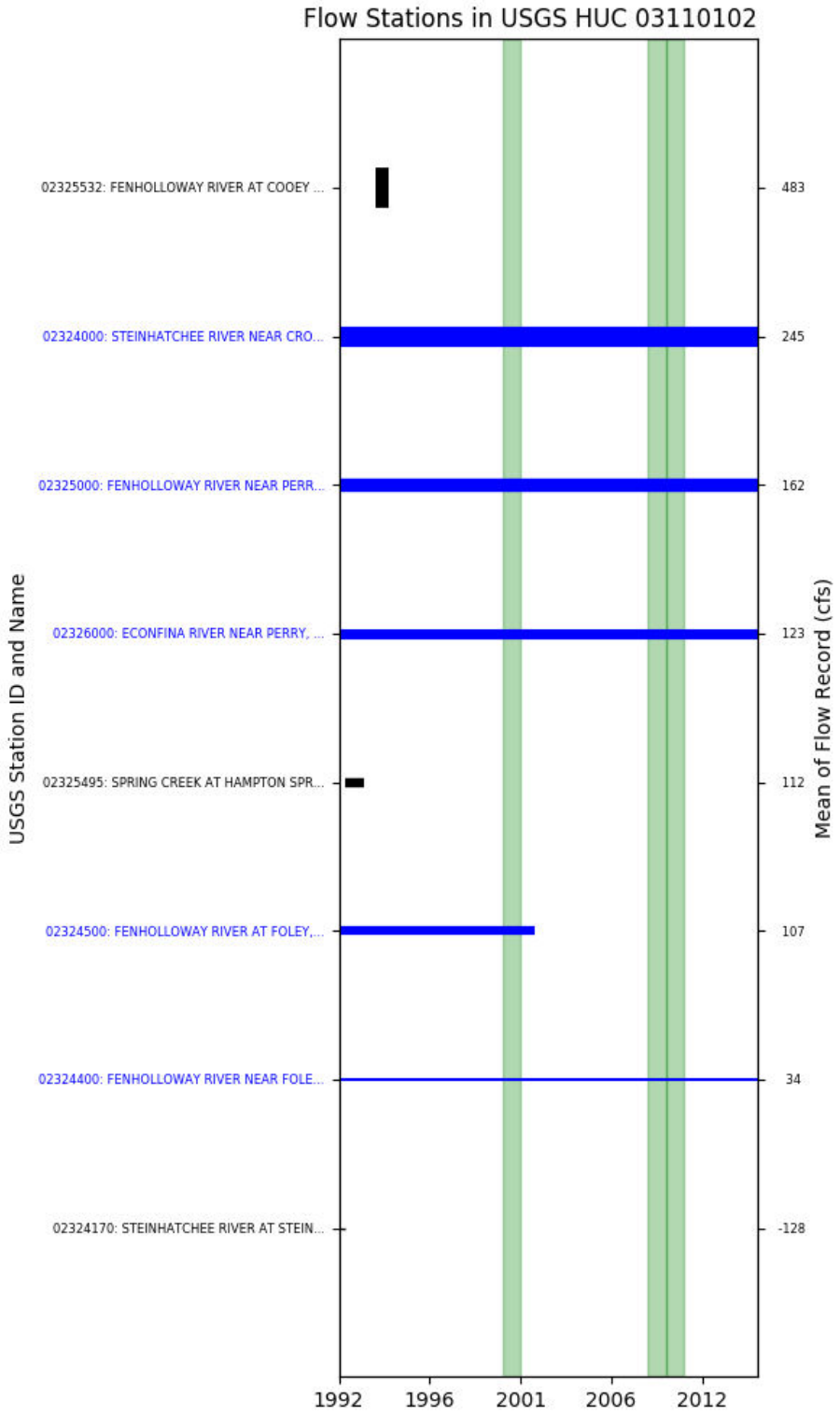


Figure T-03110102-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 07, USGS GAUGE 02324000

Water-Data Report 2009
02324000 STEINHATCHEE RIVER NEAR CROSS CITY, FL
Aucilla-Waccasassa Basin Econfina-Steinhatchee Subbasin

LOCATION.--Lat 294711, long 831918 referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110102, on right bank 0.7 mi downstream from Atlantic Coast Line Railroad bridge, 0.7 mi south of Clara, 13 mi upstream from mouth, and 16 mi northwest of Cross City.

DRAINAGE AREA.--350.00 mi, approximately. See REMARKS.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1950 to current year.

REVISED RECORDS.--WSP 1234: 1950. WSP 1724: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7.84 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Below about 500 ft/s, all flow enters sinkhole 0.5 mi downstream from gage. Above about 4,000 ft/s, discharge measurements are made along U.S. Highways 19, 98, and Alternate 27. Measurements include all flow from about 3 mi northwest to 5 mi southwest of main channel, drainage area is increased by about 30 mi.

Table T-03110102-1: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02324000.

Statistic	Value
Bias	-33.51
Standard error	207.78
Relative bias	-0.14
Relative standard error	0.54
Nash-Sutcliffe coefficient	0.71
Kling-Gupta coefficient	0.63
Coefficient of efficiency	0.56
Index of agreement	0.75

Table T-03110102-2: Hydrologic Indices Between USGS Gauge 02324000 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02324000	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	245.40	211.94	-13.63

MA2: Median, all daily flows	58.00	91.45	57.67
MA3: CV, all daily flows	144.36	106.38	-26.31
MA4: CV, log of all daily flows	153.04	122.75	-19.79
MA5: Mean daily flow / median daily flow	4.23	2.32	-45.22
MA9: (Q10 - Q90) / median daily flow	12.27	6.28	-48.80
MA10: (Q20 - Q80) / median daily flow	6.09	3.06	-49.76
MA11: (Q25 - Q75) / median daily flow	4.16	2.03	-51.26
MA12: Mean monthly flow, January	199.80	209.88	5.05
MA13: Mean monthly flow, February	331.51	286.54	-13.57
MA14: Mean monthly flow, March	386.78	306.08	-20.86
MA15: Mean monthly flow, April	181.40	180.94	-0.25
MA16: Mean monthly flow, May	92.81	85.28	-8.12
MA17: Mean monthly flow, June	113.72	89.36	-21.41
MA18: Mean monthly flow, July	340.83	228.92	-32.83
MA19: Mean monthly flow, August	466.41	366.03	-21.52
MA20: Mean monthly flow, September	307.68	237.45	-22.82
MA21: Mean monthly flow, October	240.31	218.89	-8.91
MA22: Mean monthly flow, November	74.45	89.40	20.09
MA23: Mean monthly flow, December	92.18	142.29	54.36
ML1: Mean minimum monthly flow, January	76.06	84.52	11.12
ML2: Mean minimum monthly flow, February	154.48	156.03	1.01
ML3: Mean minimum monthly flow, March	167.88	143.81	-14.33
ML4: Mean minimum monthly flow, April	64.75	72.28	11.63
ML5: Mean minimum monthly flow, May	29.91	39.61	32.42
ML6: Mean minimum monthly flow, June	32.10	32.85	2.31
ML7: Mean minimum monthly flow, July	101.65	106.48	4.75
ML8: Mean minimum monthly flow, August	212.77	189.75	-10.82
ML9: Mean minimum monthly flow, September	110.29	101.61	-7.87
ML10: Mean minimum monthly flow, October	70.70	82.60	16.83
ML11: Mean minimum monthly flow, November	37.87	47.60	25.71
ML12: Mean minimum monthly flow, December	44.04	57.24	29.97
ML13: CV of minimum monthly flows	179.72	135.33	-24.70
ML14: Mean minimum daily flow / mean median annual flow	0.16	0.13	-14.92
ML15: Mean minimum annual flow / mean annual flow	0.05	0.08	50.22
ML16: Median minimum annual flow / median annual flow	0.13	0.10	-23.34
ML20: Ratio of baseflow volume to total flow volume	0.55	0.61	10.63
ML22: Mean annual minimum flow divided by catchment area	0.09	0.15	76.45
RA1: Mean of positive changes from one day to next (rise rate)	59.75	32.30	
RA2: CV, mean of positive changes from one day to next (rise rate)	245.09	273.25	
RA3: Mean of negative changes from one day to next (fall rate)	24.04	14.28	
RA4: CV, mean of negative changes from one day to next (fall rate)	219.55	167.02	
RA5: Ratio of days that are higher than previous day	0.26	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.06	
RA8: Number of flow reversals from one day to the next	69.96	63.38	
RA9: CV, number of flow reversals from one day to the next	20.36	18.78	

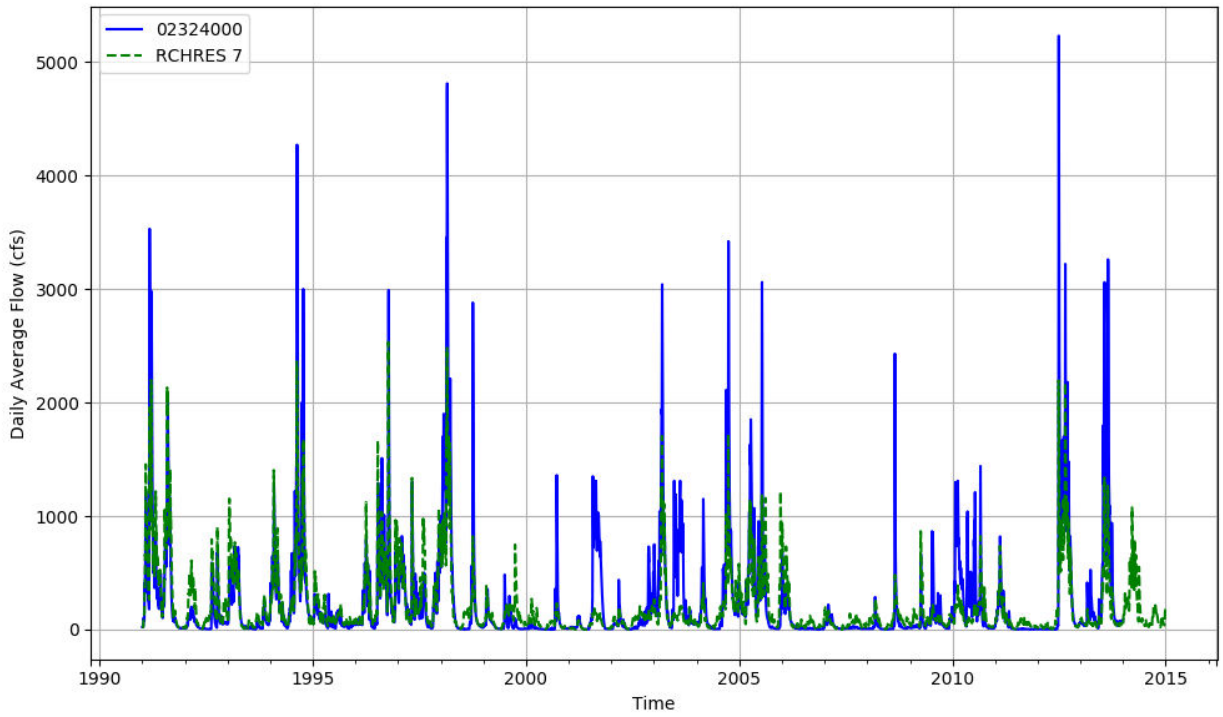


Figure T-03110102-4: Daily flow for HSFP reach 07 and USGS station 02324000.

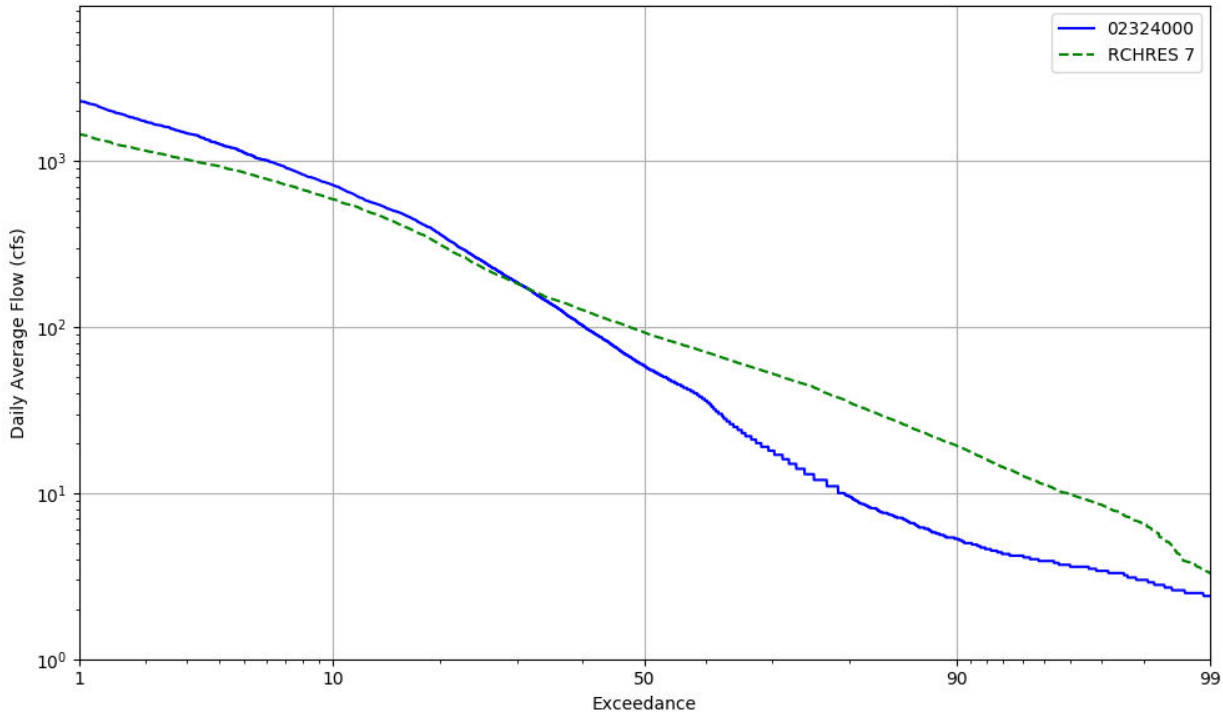


Figure T-03110102-5: Daily exceedance for HSFP reach 07 and USGS station 02324000.

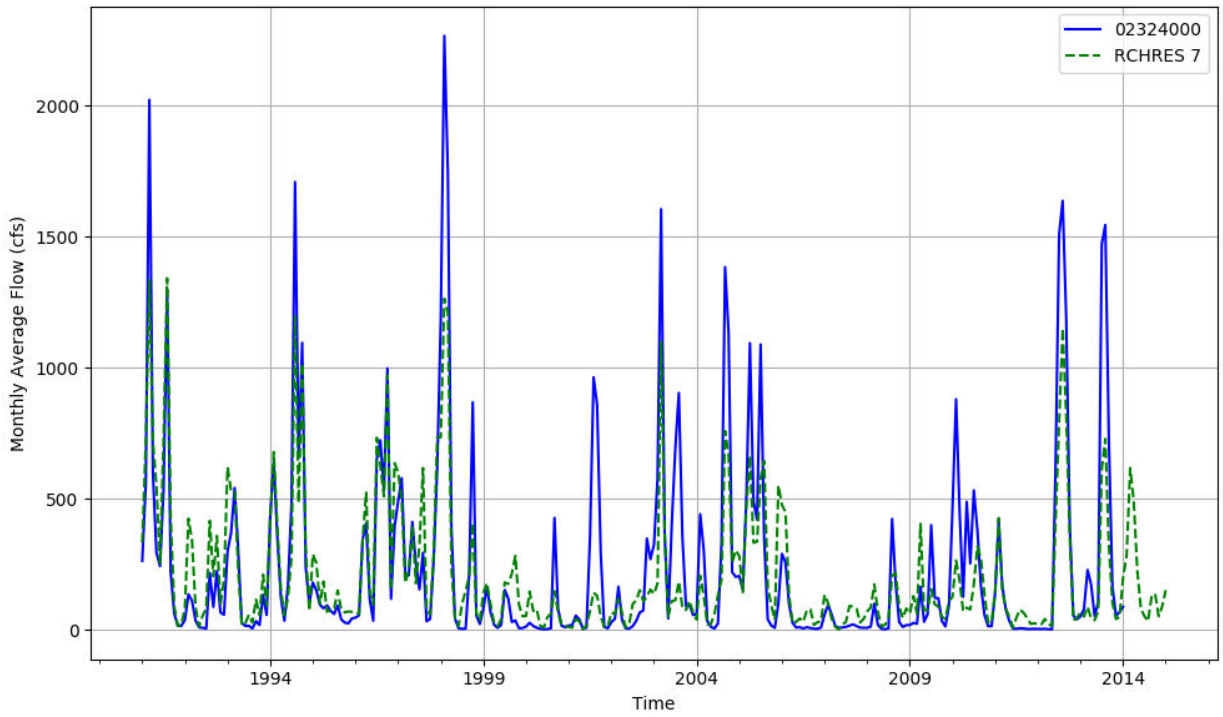


Figure T-03110102-6: Monthly flow for HSFP reach 07 and USGS station 02324000.

HSPF REACH 11, USGS GAUGE 02326000

Water-Data Report 2009
02326000 ECONFINA RIVER NEAR PERRY, FL
Aucilla-Waccasassa Basin Econfina-Steinhatchee Subbasin

LOCATION.--Lat 301014, long 834926 referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110102, on downstream side of concrete bridge, 3.0 mi downstream from Natural Well Branch, 14 mi upstream from mouth, and 14.7 mi northwest of Perry.

DRAINAGE AREA.--198.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1950 to current year.

REVISED RECORDS.--WSP 1905: Drainage area. WRD FL-02-4:2001.

GAGE.--Water-stage recorder. Datum of gage is 14.35 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

Table T-03110102-3: Comparison Statistics Between HSPF Reach 11 and USGS Gauge 02326000.

Statistic	Value
Bias	0.76
Standard error	81.26
Relative bias	0.01
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.86
Coefficient of efficiency	0.55
Index of agreement	0.76

Table T-03110102-4: Hydrologic Indices Between USGS Gauge 02326000 and HSPF Reach 11.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02326000	Simulated Reach 11	Percent Difference
MA1: Mean, all daily flows	130.33	131.49	0.89
MA2: Median, all daily flows	50.00	70.31	40.61
MA3: CV, all daily flows	106.44	98.26	-7.68
MA4: CV, log of all daily flows	122.55	105.72	-13.73

MA5: Mean daily flow / median daily flow	2.61	1.87	-28.25
MA9: (Q10 - Q90) / median daily flow	6.55	4.37	-33.37
MA10: (Q20 - Q80) / median daily flow	3.64	2.25	-38.10
MA11: (Q25 - Q75) / median daily flow	2.70	1.56	-42.33
MA12: Mean monthly flow, January	94.04	151.59	61.20
MA13: Mean monthly flow, February	162.13	195.74	20.73
MA14: Mean monthly flow, March	227.33	259.17	14.01
MA15: Mean monthly flow, April	158.37	136.33	-13.91
MA16: Mean monthly flow, May	79.66	57.06	-28.38
MA17: Mean monthly flow, June	66.13	69.96	5.78
MA18: Mean monthly flow, July	135.21	114.14	-15.58
MA19: Mean monthly flow, August	170.78	154.37	-9.61
MA20: Mean monthly flow, September	127.80	101.70	-20.42
MA21: Mean monthly flow, October	130.94	117.85	-10.00
MA22: Mean monthly flow, November	68.86	60.30	-12.42
MA23: Mean monthly flow, December	59.44	76.65	28.95
ML1: Mean minimum monthly flow, January	52.67	62.68	19.01
ML2: Mean minimum monthly flow, February	97.42	110.04	12.95
ML3: Mean minimum monthly flow, March	120.85	122.56	1.42
ML4: Mean minimum monthly flow, April	75.60	59.92	-20.74
ML5: Mean minimum monthly flow, May	46.13	25.96	-43.74
ML6: Mean minimum monthly flow, June	29.25	26.74	-8.59
ML7: Mean minimum monthly flow, July	63.75	66.39	4.14
ML8: Mean minimum monthly flow, August	82.80	84.23	1.72
ML9: Mean minimum monthly flow, September	57.81	59.24	2.47
ML10: Mean minimum monthly flow, October	57.66	44.50	-22.83
ML11: Mean minimum monthly flow, November	44.80	35.41	-20.95
ML12: Mean minimum monthly flow, December	41.83	37.99	-9.17
ML13: CV of minimum monthly flows	123.72	119.78	-3.18
ML14: Mean minimum daily flow / mean median annual flow	0.21	0.11	-48.05
ML15: Mean minimum annual flow / mean annual flow	0.13	0.07	-43.23
ML16: Median minimum annual flow / median annual flow	0.18	0.07	-63.68
ML20: Ratio of baseflow volume to total flow volume	0.64	0.63	-0.93
ML22: Mean annual minimum flow divided by catchment area	4347.97	4347.93	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	18.12	18.73	
RA2: CV, mean of positive changes from one day to next (rise rate)	247.75	317.28	
RA3: Mean of negative changes from one day to next (fall rate)	8.13	8.54	
RA4: CV, mean of negative changes from one day to next (fall rate)	161.28	204.36	
RA5: Ratio of days that are higher than previous day	0.25	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.06	
RA8: Number of flow reversals from one day to the next	48.22	58.61	
RA9: CV, number of flow reversals from one day to the next	30.01	25.63	

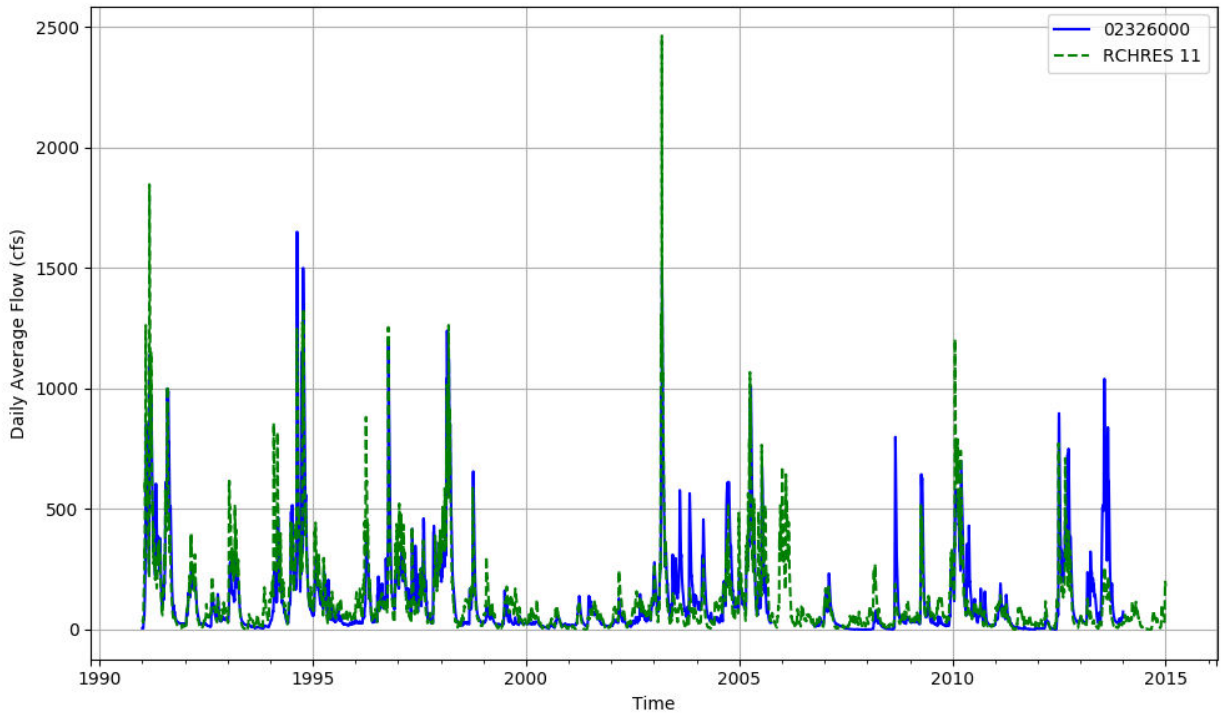


Figure T-03110102-7: Daily flow for HSFP reach 11 and USGS station 02326000.

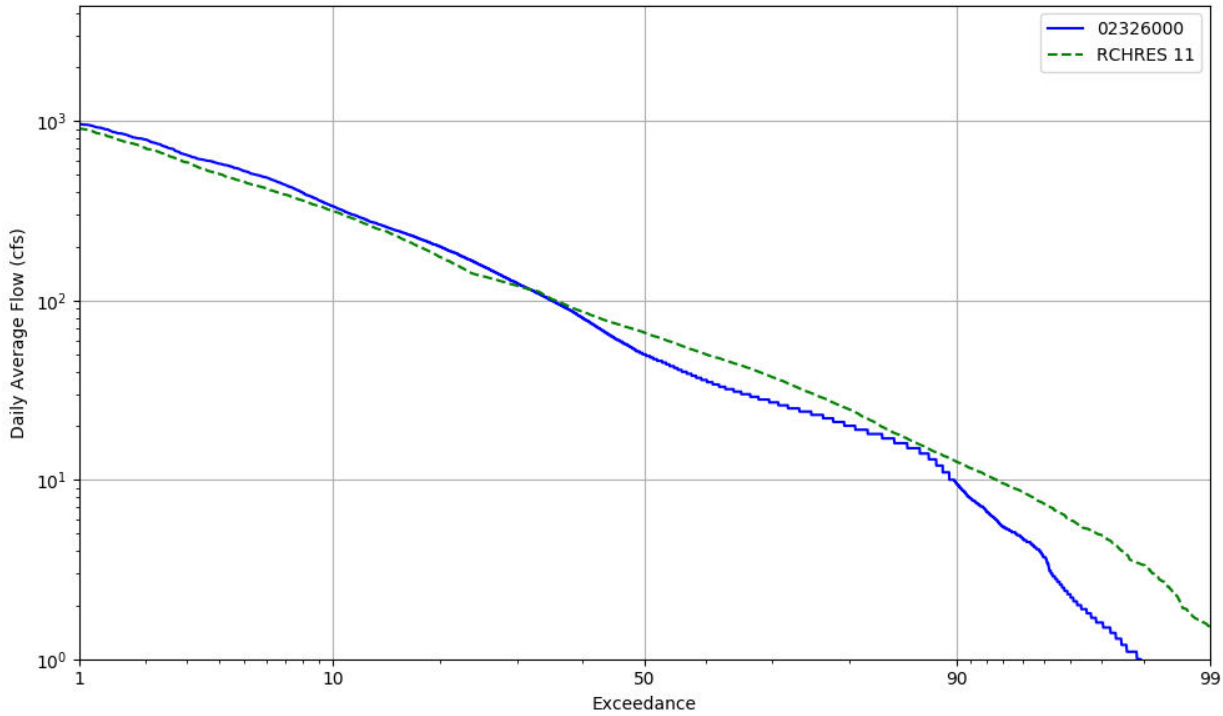


Figure T-03110102-8: Daily exceedance for HSFP reach 11 and USGS station 02326000.

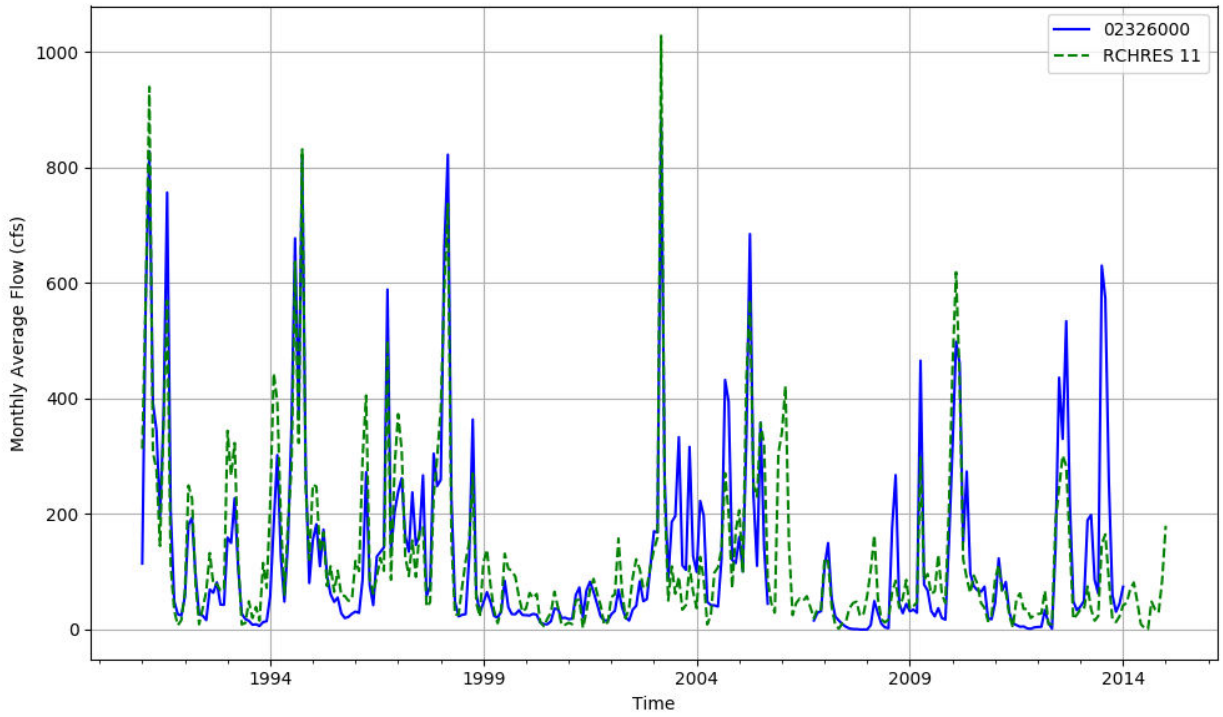


Figure T-03110102-9: Monthly flow for HSFP reach 11 and USGS station 02326000.

HSPF REACH 18, USGS GAUGE 02324400

Water-Data Report 2009
02324400 FENHOLLOWAY RIVER NEAR FOLEY, FL
Aucilla-Waccasassa Basin Econfina-Steinhatchee Subbasin

LOCATION.--Lat 300553, long 832819 referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110102, near left bank at downstream side of bridge on U.S. Highway 27, 1.8 mi upstream from small tributary, 4 mi northeast of Foley, and 32 mi upstream from mouth.

DRAINAGE AREA.--60.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February to August 1955 (discharge measurements only); September 1955 to current year.

REVISED RECORDS.--WSP 1905: Drainage area: WDR FL-92-4: 1991.

GAGE.--Water-stage recorder. Datum of gage is 53.59 ft above National Geodetic Vertical Datum of 1929 (Florida Department of Transportation bench mark).

REMARKS.--Records fair.

Table T-03110102-5: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02324400.

Statistic	Value
Bias	29.07
Standard error	59.31
Relative bias	0.82
Relative standard error	0.98
Nash-Sutcliffe coefficient	0.05
Kling-Gupta coefficient	0.09
Coefficient of efficiency	-0.01
Index of agreement	0.56

Table T-03110102-6: Hydrologic Indices Between USGS Gauge 02324400 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02324400	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	35.33	64.56	82.74
MA2: Median, all daily flows	7.10	31.05	337.37
MA3: CV, all daily flows	138.17	102.26	-25.99

MA4: CV, log of all daily flows	153.94	114.77	-25.44
MA5: Mean daily flow / median daily flow	4.98	2.08	-58.22
MA9: (Q10 - Q90) / median daily flow	13.57	5.26	-61.27
MA10: (Q20 - Q80) / median daily flow	6.76	2.77	-59.04
MA11: (Q25 - Q75) / median daily flow	5.04	1.93	-61.78
MA12: Mean monthly flow, January	27.31	70.36	157.66
MA13: Mean monthly flow, February	47.00	93.34	98.60
MA14: Mean monthly flow, March	71.69	111.89	56.08
MA15: Mean monthly flow, April	36.06	59.35	64.59
MA16: Mean monthly flow, May	16.92	25.97	53.48
MA17: Mean monthly flow, June	19.47	33.43	71.75
MA18: Mean monthly flow, July	38.18	59.57	56.04
MA19: Mean monthly flow, August	58.46	94.88	62.30
MA20: Mean monthly flow, September	39.53	58.19	47.21
MA21: Mean monthly flow, October	31.12	63.45	103.92
MA22: Mean monthly flow, November	11.21	29.51	163.19
MA23: Mean monthly flow, December	11.03	43.52	294.71
ML1: Mean minimum monthly flow, January	8.88	27.25	206.97
ML2: Mean minimum monthly flow, February	21.77	50.33	131.15
ML3: Mean minimum monthly flow, March	29.29	51.18	74.73
ML4: Mean minimum monthly flow, April	15.73	24.78	57.51
ML5: Mean minimum monthly flow, May	6.31	12.20	93.41
ML6: Mean minimum monthly flow, June	4.64	11.59	149.76
ML7: Mean minimum monthly flow, July	13.18	31.46	138.73
ML8: Mean minimum monthly flow, August	22.18	50.22	126.44
ML9: Mean minimum monthly flow, September	11.78	31.89	170.72
ML10: Mean minimum monthly flow, October	8.64	23.30	169.65
ML11: Mean minimum monthly flow, November	6.55	16.16	146.87
ML12: Mean minimum monthly flow, December	5.27	18.02	242.10
ML13: CV of minimum monthly flows	188.35	131.33	-30.27
ML14: Mean minimum daily flow / mean median annual flow	0.22	0.10	-52.00
ML15: Mean minimum annual flow / mean annual flow	0.07	0.07	4.50
ML16: Median minimum annual flow / median annual flow	0.13	0.07	-42.92
ML20: Ratio of baseflow volume to total flow volume	0.54	0.60	10.06
ML22: Mean annual minimum flow divided by catchment area	0.01	0.05	311.73
RA1: Mean of positive changes from one day to next (rise rate)	10.32	11.24	
RA2: CV, mean of positive changes from one day to next (rise rate)	320.10	268.95	
RA3: Mean of negative changes from one day to next (fall rate)	3.62	4.22	
RA4: CV, mean of negative changes from one day to next (fall rate)	242.32	171.99	
RA5: Ratio of days that are higher than previous day	0.22	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.10	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.06	
RA8: Number of flow reversals from one day to the next	68.33	68.42	
RA9: CV, number of flow reversals from one day to the next	25.49	22.28	

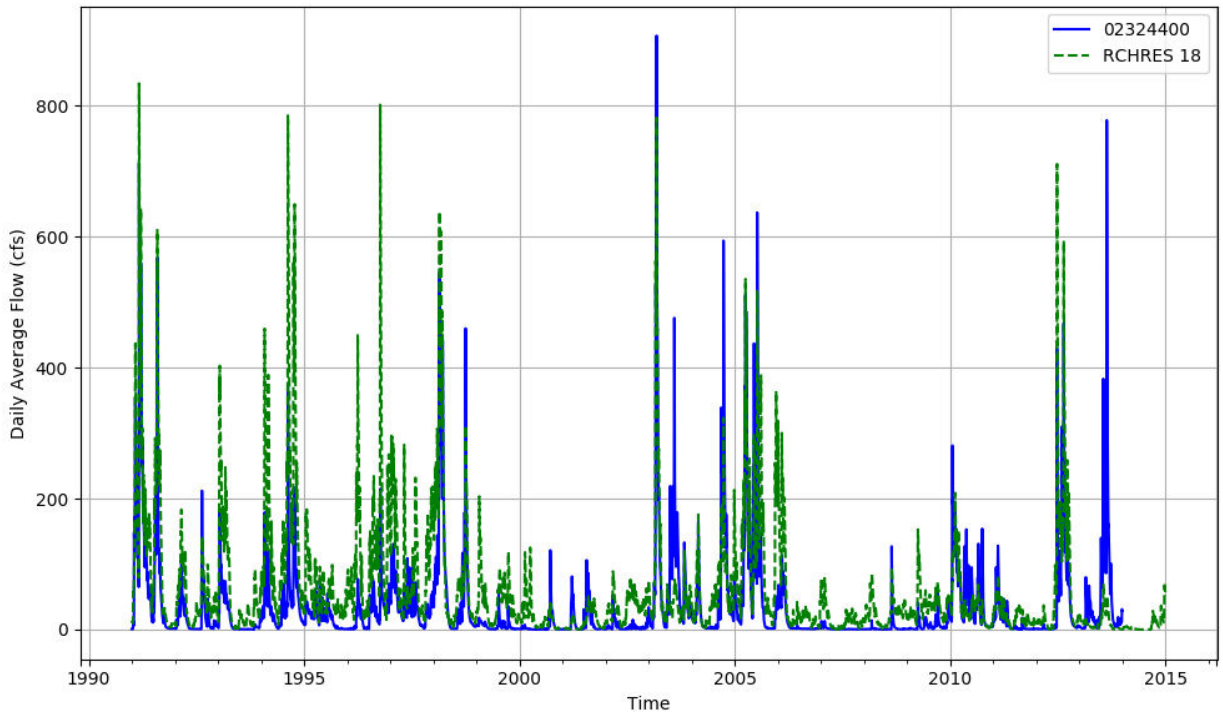


Figure T-03110102-10: Daily flow for HSFP reach 18 and USGS station 02324400.

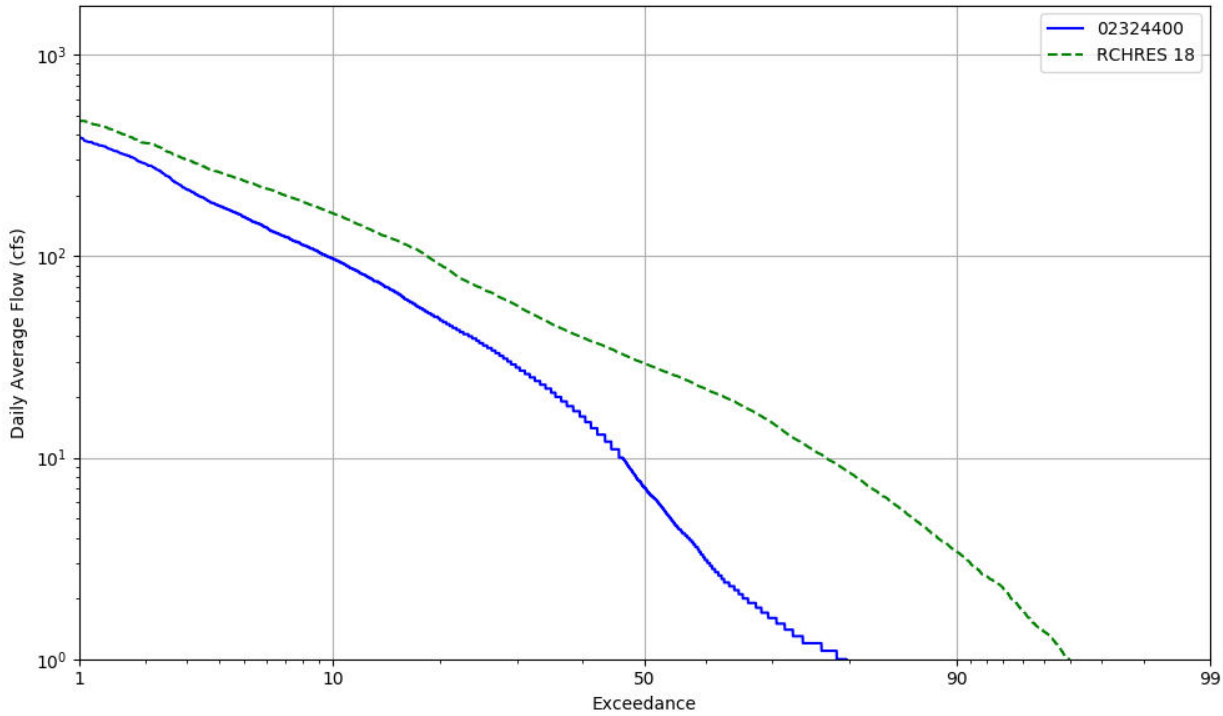


Figure T-03110102-11: Daily exceedance for HSFP reach 18 and USGS station 02324400.

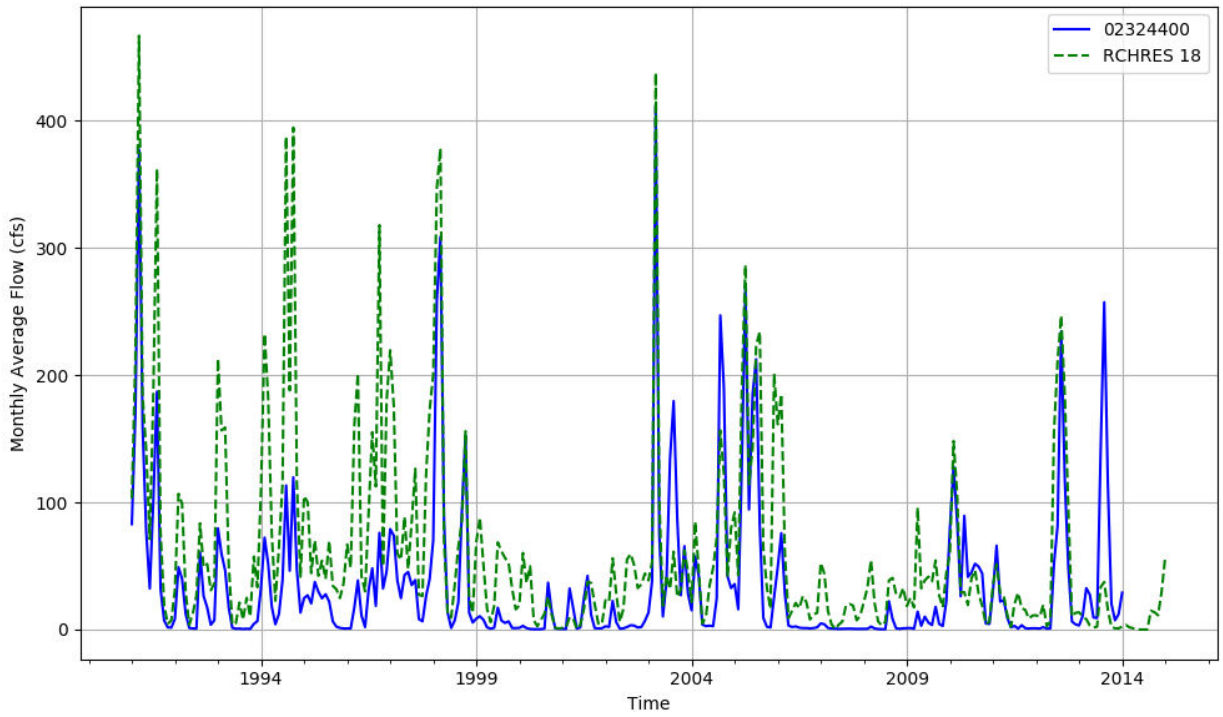


Figure T-03110102-12: Monthly flow for HSFP reach 18 and USGS station 02324400.

HSPF REACH 19, USGS GAUGE 02324500

Water-Data Report 2009
02324500 FENHOLLOWAY RIVER AT FOLEY, FLA.
Aucilla-Waccasassa Basin Econfina-Steinhatchee Subbasin

LOCATION.--Lat 300355, long 833329 referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110102, near center of span on downstream side of US Highway 19 bridge, 1.6 mi west of Foley, 2.4 mi downstream from clarifier flume of the Buckeye Florida plant, 11.4 mi upstream from Spring Creek and 24.4 mi upstream from mouth.

DRAINAGE AREA.--120.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1946 to September 1992 and October 1993 to September 1995 (daily discharge); May 1986 to current year (daily gage height only, used as auxillary gage for Fenholloway River near Perry, FLA. (02325000)).

REVISED RECORDS.--WSP 1905: Drainage area. WDR FL-77-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 24.85 ft above National Geodetic Vertical Datum of 1929. Prior to June 24, 1947, nonrecording gage and June 24, 1947 to Feb. 4, 1971, water-stage recorder, at site about 1.6 mi upstream at datum 4.51 ft higher.

REMARKS.--Records fair.

Table T-03110102-7: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02324500.

Statistic	Value
Bias	-8.41
Standard error	63.71
Relative bias	-0.07
Relative standard error	0.79
Nash-Sutcliffe coefficient	0.38
Kling-Gupta coefficient	0.54
Coefficient of efficiency	0.06
Index of agreement	0.65

Table T-03110102-8: Hydrologic Indices Between USGS Gauge 02324500 and HSPF Reach 19.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02324500	Simulated Reach 19	Percent Difference
MA1: Mean, all daily flows	117.48	108.38	-7.75

MA2: Median, all daily flows	83.00	61.44	-25.98
MA3: CV, all daily flows	50.67	95.91	89.29
MA4: CV, log of all daily flows	49.23	100.00	103.12
MA5: Mean daily flow / median daily flow	1.42	1.76	24.63
MA9: (Q10 - Q90) / median daily flow	1.58	4.14	162.39
MA10: (Q20 - Q80) / median daily flow	0.88	2.36	168.65
MA11: (Q25 - Q75) / median daily flow	0.61	1.79	191.94
MA12: Mean monthly flow, January	112.81	128.44	13.85
MA13: Mean monthly flow, February	153.59	168.41	9.65
MA14: Mean monthly flow, March	181.96	185.06	1.70
MA15: Mean monthly flow, April	122.28	97.83	-20.00
MA16: Mean monthly flow, May	94.31	46.26	-50.95
MA17: Mean monthly flow, June	85.08	44.66	-47.52
MA18: Mean monthly flow, July	103.76	96.05	-7.42
MA19: Mean monthly flow, August	136.42	172.20	26.22
MA20: Mean monthly flow, September	102.22	97.52	-4.60
MA21: Mean monthly flow, October	114.05	126.56	10.98
MA22: Mean monthly flow, November	76.60	42.83	-44.08
MA23: Mean monthly flow, December	83.82	63.01	-24.82
ML1: Mean minimum monthly flow, January	76.50	48.11	-37.11
ML2: Mean minimum monthly flow, February	103.08	93.11	-9.67
ML3: Mean minimum monthly flow, March	114.17	76.86	-32.68
ML4: Mean minimum monthly flow, April	89.17	41.56	-53.39
ML5: Mean minimum monthly flow, May	74.50	24.20	-67.51
ML6: Mean minimum monthly flow, June	71.25	20.53	-71.19
ML7: Mean minimum monthly flow, July	71.08	50.90	-28.40
ML8: Mean minimum monthly flow, August	92.17	87.06	-5.54
ML9: Mean minimum monthly flow, September	68.67	57.43	-16.36
ML10: Mean minimum monthly flow, October	78.91	46.27	-41.37
ML11: Mean minimum monthly flow, November	77.30	24.67	-68.09
ML12: Mean minimum monthly flow, December	78.00	41.29	-47.06
ML13: CV of minimum monthly flows	48.22	111.75	131.74
ML14: Mean minimum daily flow / mean median annual flow	0.55	0.10	-81.88
ML15: Mean minimum annual flow / mean annual flow	0.48	0.07	-85.53
ML16: Median minimum annual flow / median annual flow	0.55	0.06	-88.50
ML20: Ratio of baseflow volume to total flow volume	0.83	0.63	-23.97
ML22: Mean annual minimum flow divided by catchment area	0.52	0.09	-83.13
RA1: Mean of positive changes from one day to next (rise rate)	9.24	16.20	
RA2: CV, mean of positive changes from one day to next (rise rate)	222.09	249.50	
RA3: Mean of negative changes from one day to next (fall rate)	6.26	6.66	
RA4: CV, mean of negative changes from one day to next (fall rate)	132.11	148.00	
RA5: Ratio of days that are higher than previous day	0.36	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.06	
RA8: Number of flow reversals from one day to the next	126.83	65.08	
RA9: CV, number of flow reversals from one day to the next	26.65	11.17	

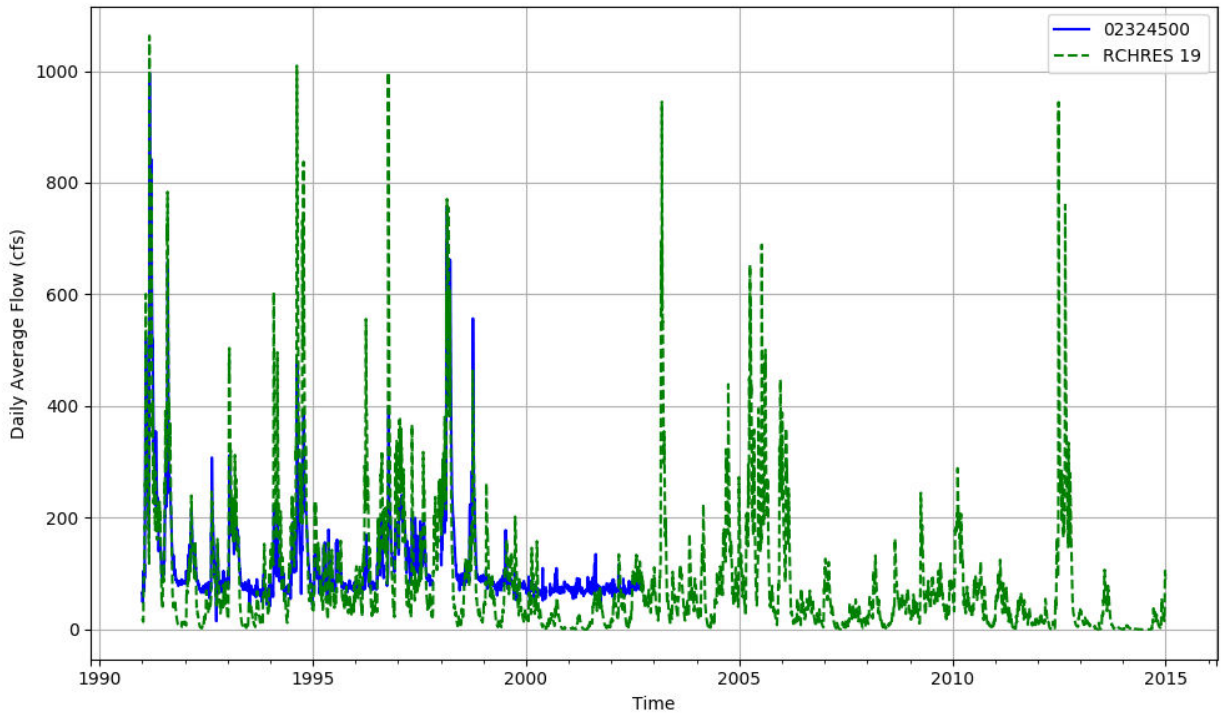


Figure T-03110102-13: Daily flow for HSFP reach 19 and USGS station 02324500.

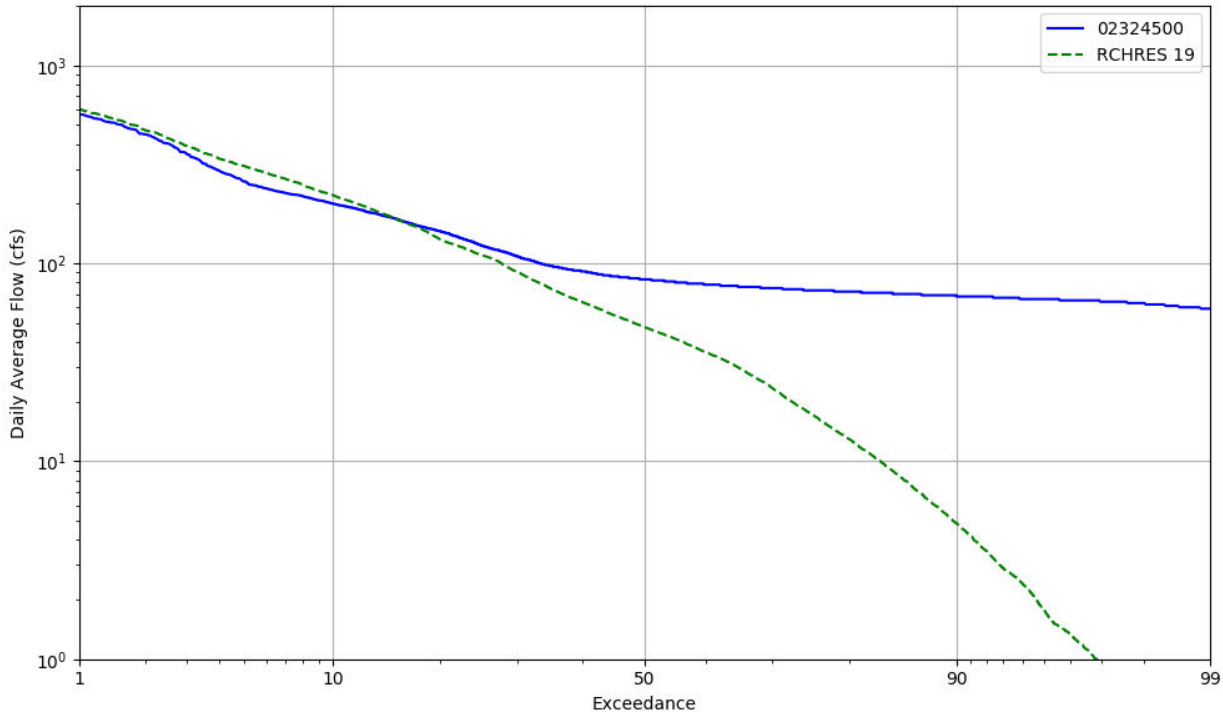


Figure T-03110102-14: Daily exceedance for HSFP reach 19 and USGS station 02324500.

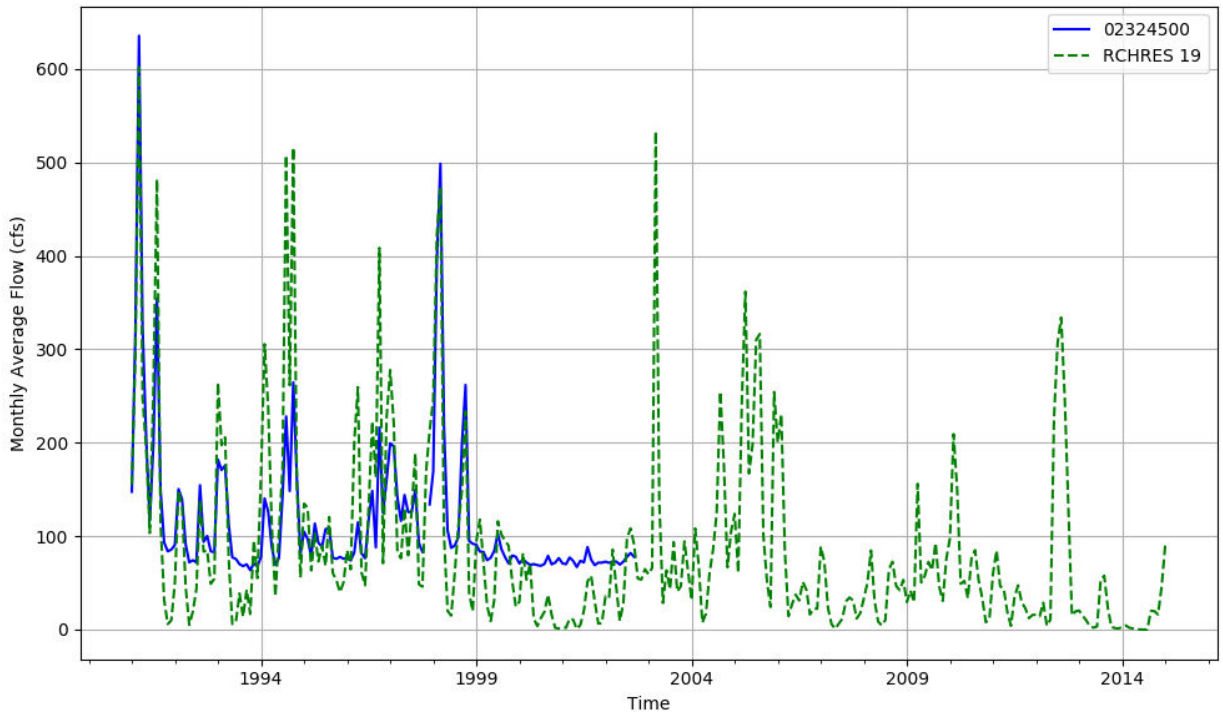


Figure T-03110102-15: Monthly flow for HSFP reach 19 and USGS station 02324500.

HSPF REACH 20, USGS GAUGE 02325000

Water-Data Report 2009
02325000 FENHOLLOWAY RIVER NEAR PERRY, FL
Aucilla-Waccasassa Basin Econfina-Steinhatchee Subbasin

LOCATION.--Lat 300416, long 833945 referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110102, near right bank on downstream side of old bridge at State Highway 356, 1.0 mi southwest of the community of Hampton Springs, 5.5 mi southwest of Perry, and 14 mi upstream from mouth.

DRAINAGE AREA.--160.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1946 to June 1952 (discharge measurements only); August 1952 to October 1954 (gage heights and discharge measurements only); November 1964 to July 1977 (crest-stage and periodic discharge measurements only); August 1977 to September 1984. May 1986 to current year.

REVISED RECORDS.--WSP 1905: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Aug. 13, 1946 to Aug. 12, 1952, nonrecording gage at same site at datum 4.00 ft higher. Aug. 13, 1952 to Oct. 18, 1954, nonrecording gage 30 ft upstream at datum 5.00 ft higher. Nov. 9, 1964 to Oct. 31, 1984, nonrecording gage at same site and datum. August 1977 to October 1984, and since April 1986 at present site and datum.

REMARKS.--Records poor. Natural flow of stream affected by large ground-water withdrawals by cellulose plant about 10 mi upstream. Flow affected by backwater from Spring Creek at times.

Table T-03110102-9: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02325000.

Statistic	Value
Bias	-49.71
Standard error	85.51
Relative bias	-0.30
Relative standard error	0.82
Nash-Sutcliffe coefficient	0.33
Kling-Gupta coefficient	0.62
Coefficient of efficiency	0.09
Index of agreement	0.63

Table T-03110102-10: Hydrologic Indices Between USGS Gauge 02325000 and HSPF Reach 20.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02325000	Simulated Reach 20	Percent Difference
MA1: Mean, all daily flows	164.99	115.70	-29.87
MA2: Median, all daily flows	124.00	70.74	-42.95
MA3: CV, all daily flows	49.09	89.45	82.23
MA4: CV, log of all daily flows	55.25	94.93	71.81
MA5: Mean daily flow / median daily flow	1.33	1.64	22.93
MA9: (Q10 - Q90) / median daily flow	1.83	3.70	101.92
MA10: (Q20 - Q80) / median daily flow	0.97	2.18	125.13
MA11: (Q25 - Q75) / median daily flow	0.73	1.70	133.69
MA12: Mean monthly flow, January	150.40	122.76	-18.38
MA13: Mean monthly flow, February	182.24	151.46	-16.89
MA14: Mean monthly flow, March	214.28	179.29	-16.33
MA15: Mean monthly flow, April	174.06	106.11	-39.04
MA16: Mean monthly flow, May	128.70	51.74	-59.79
MA17: Mean monthly flow, June	120.67	71.57	-40.69
MA18: Mean monthly flow, July	158.83	117.45	-26.06
MA19: Mean monthly flow, August	202.12	170.90	-15.44
MA20: Mean monthly flow, September	173.66	115.13	-33.70
MA21: Mean monthly flow, October	162.19	112.19	-30.83
MA22: Mean monthly flow, November	121.90	59.05	-51.56
MA23: Mean monthly flow, December	116.60	74.24	-36.33
ML1: Mean minimum monthly flow, January	109.33	47.90	-56.19
ML2: Mean minimum monthly flow, February	136.52	82.66	-39.45
ML3: Mean minimum monthly flow, March	157.39	85.31	-45.80
ML4: Mean minimum monthly flow, April	138.00	48.35	-64.96
ML5: Mean minimum monthly flow, May	105.96	23.97	-77.38
ML6: Mean minimum monthly flow, June	95.30	26.00	-72.71
ML7: Mean minimum monthly flow, July	116.26	68.28	-41.27
ML8: Mean minimum monthly flow, August	144.87	95.77	-33.89
ML9: Mean minimum monthly flow, September	121.65	65.59	-46.08
ML10: Mean minimum monthly flow, October	121.57	45.30	-62.74
ML11: Mean minimum monthly flow, November	109.96	32.69	-70.27
ML12: Mean minimum monthly flow, December	101.87	35.22	-65.43
ML13: CV of minimum monthly flows	48.81	108.63	122.56
ML14: Mean minimum daily flow / mean median annual flow	0.60	0.11	-80.82
ML15: Mean minimum annual flow / mean annual flow	0.51	0.08	-83.99
ML16: Median minimum annual flow / median annual flow	0.63	0.08	-87.23
ML20: Ratio of baseflow volume to total flow volume	0.85	0.63	-25.75
ML22: Mean annual minimum flow divided by catchment area	0.77	0.10	-87.43
RA1: Mean of positive changes from one day to next (rise rate)	11.85	20.83	
RA2: CV, mean of positive changes from one day to next (rise rate)	195.89	240.28	
RA3: Mean of negative changes from one day to next (fall rate)	6.03	7.30	
RA4: CV, mean of negative changes from one day to next (fall rate)	132.46	180.80	
RA5: Ratio of days that are higher than previous day	0.30	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.11	

RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.07	
RA8: Number of flow reversals from one day to the next	97.29	71.29	
RA9: CV, number of flow reversals from one day to the next	26.50	20.30	

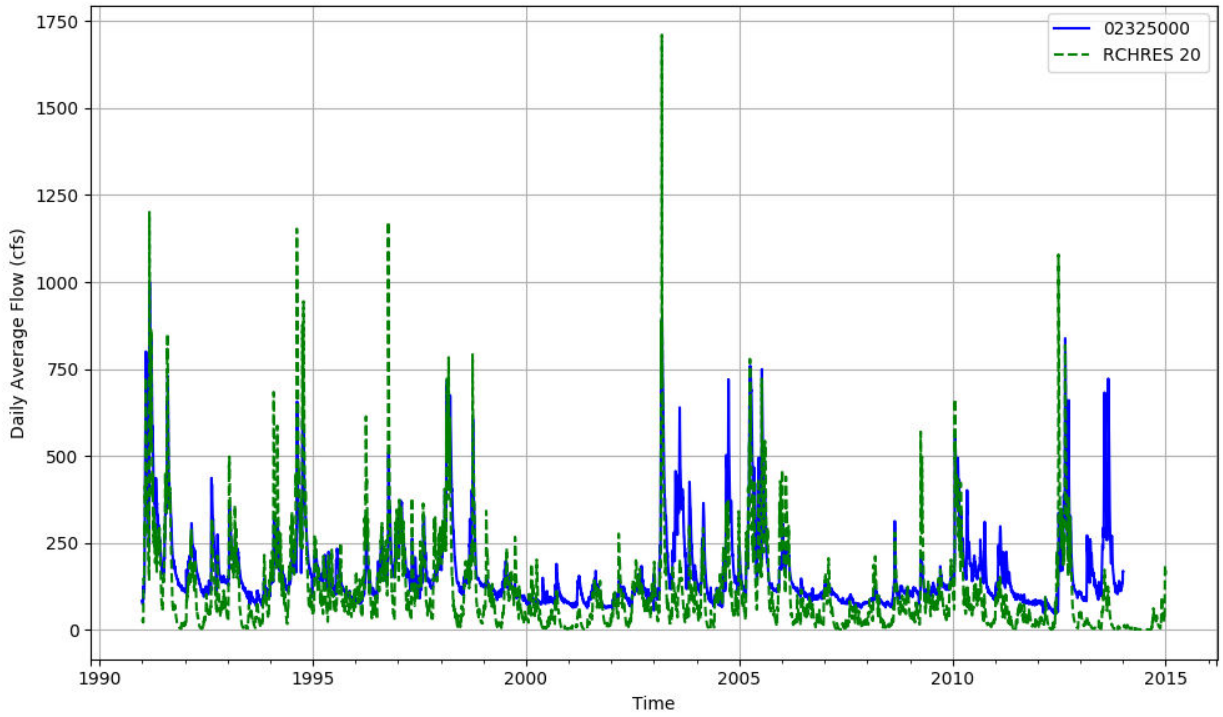


Figure T-03110102-16: Daily flow for HSFP reach 20 and USGS station 02325000.

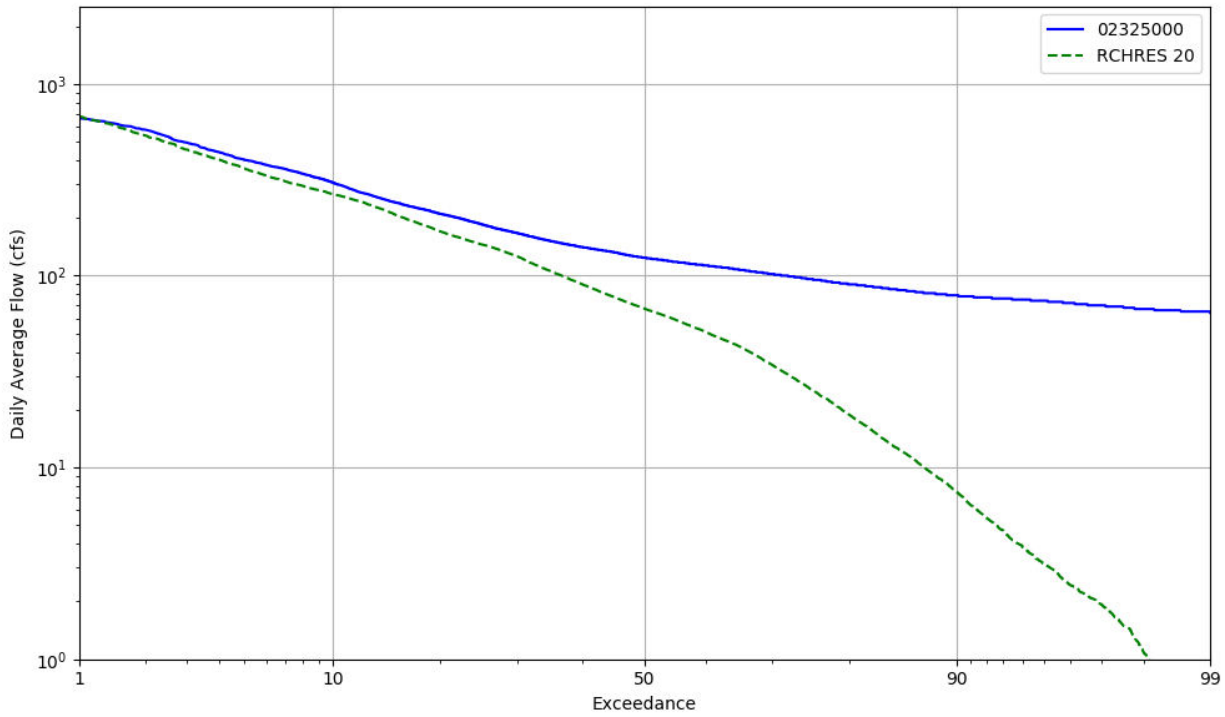


Figure T-03110102-17: Daily exceedance for HSFP reach 20 and USGS station 02325000.

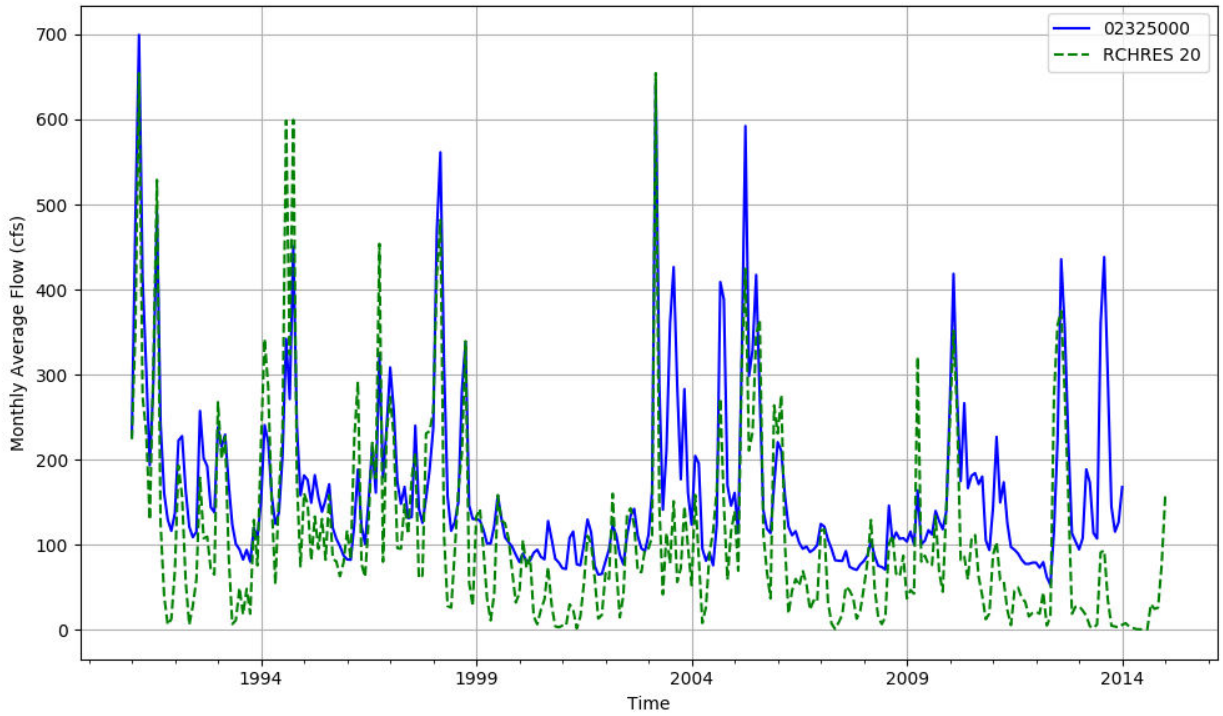


Figure T-03110102-18: Monthly flow for HSFP reach 20 and USGS station 02325000.

Table T-03110102-11: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3630	45064	6915	889	151	5504	335105	135873	58270	11661	9673	572383	64	208	18	1185408
AREA(%)	0.3	3.8	0.6	0.1	0.0	0.5	28.2	11.4	4.9	1.0	0.8	48.1	0.0	0.0	0.0	99.7
IMPERVIOUS																
AREA(ACRES)		2375	769	223	152											3518
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	35.5	35.5	34.3	36.4	37.4	32.8	35.3	34.7	34.9	36.2	35.8	35.4	51.9	42.8	39.8	35.2
SURLI			1.6	2.1	2.0										68.1	0.0
UZLI																0.0
LZLI			1.9	2.7	3.0									22.2		0.0
SURO: PERVIOUS		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	6.3	0.0
SURO: IMPERVIOUS		23.9	23.1	24.9	25.5											0.1
SURO: COMBINED		1.2	2.3	5.0	12.8	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	6.3	0.1
IFWO															0.0	0.0
AGWO	0.4	4.1	4.9	6.3	6.6	6.3	2.1	6.7	4.1	4.2	3.1	0.2	7.7	19.0	41.3	2.0
AGWI	1.5	5.4	6.4	7.9	8.3	7.8	3.2	8.3	5.4	5.6	4.3	1.2	9.3	20.8	41.6	3.1
IGWI	0.8	3.2	3.7	4.6	4.9	4.6	1.9	4.8	3.2	3.2	2.5	0.7	5.4	12.1	24.2	1.8
CEPE		4.9	4.8	4.8	4.9	3.2	6.7	5.8	4.8	6.7	6.7	11.5	18.7	6.8	7.1	8.7
UZET	2.6	2.3	2.4	2.9	2.9	2.3	0.6	2.3	1.6	1.6	1.1	2.0	3.0	3.8	7.3	1.6
LZET	1.0	19.1	19.8	20.4	20.6	14.0	22.0	12.9	19.4	18.3	20.2	0.9	13.8	21.6	23.5	10.3
AGWET	0.7	0.7	0.8	0.8	0.9	0.8	0.6	0.8	0.7	0.7	0.7	0.7	0.6	0.8	0.8	0.7
BASET	0.3	0.6	0.6	0.7	0.8	0.7	0.5	0.7	0.6	0.6	0.6	0.3	0.8	0.9	0.9	0.4
SURET	30.2											19.1				9.3
PERO	0.4	4.1	4.9	6.3	6.6	6.3	2.1	6.7	4.1	4.2	3.1	0.2	7.7	19.0	47.6	2.0
IGWI	0.8	3.2	3.7	4.6	4.9	4.6	1.9	4.8	3.2	3.2	2.5	0.7	5.4	12.1	24.2	1.8
TAET: PERVIOUS	34.8	27.6	28.3	29.7	30.0	20.9	30.4	22.5	27.1	28.0	29.2	34.4	36.9	34.0	39.6	31.0
IMPEV: IMPERVIOUS		11.5	11.2	11.5	11.9											0.0
ET: COMBINED	34.8	26.8	26.6	26.1	20.9	20.9	30.4	22.5	27.1	28.0	29.2	34.4	36.9	34.0	39.6	31.0
PET	42.8	44.4	43.7	45.2	46.1	40.9	44.1	44.0	44.3	44.7	44.7	44.1	46.0	46.4	46.9	44.0

Table T-03110102-12: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3630	45064	6915	889	151	5504	335105	135873	58270	11661	9673	572383	64	208	18	1185408
AREA(%)	0.3	3.8	0.6	0.1	0.0	0.5	28.2	11.4	4.9	1.0	0.8	48.1	0.0	0.0	0.0	99.7
IMPERVIOUS																
AREA(ACRES)		2375	769	223	152											3518
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	56.0	56.6	56.7	57.4	59.3	57.1	56.8	56.8	56.4	58.7	58.9	56.5	75.4	58.5	59.3	56.5
SURLI			1.6	2.0	1.9										54.1	0.0
UZLI																0.0
LZLI			2.2	3.2	3.7									16.9		0.0
SURO: PERVIOUS	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.2	0.0	4.6	2.2
SURO: IMPERVIOUS		41.3	41.5	42.2	44.1											0.1
SURO: COMBINED	5.9	2.1	4.2	8.5	22.2	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.2	0.0	4.6	2.3
IFWO															0.0	0.0
AGWO	0.7	11.4	13.7	14.5	15.5	17.7	9.2	16.0	11.9	12.2	10.9	0.6	18.9	21.9	42.4	6.1
AGWI	1.3	13.5	15.8	16.7	17.8	19.7	11.3	18.1	14.0	14.5	13.2	1.2	20.8	24.0	43.6	7.5
IGWI	0.7	7.9	9.2	9.7	10.4	11.5	6.6	10.6	8.2	8.5	7.7	0.7	12.1	14.0	25.4	4.4
CEPE		6.8	6.7	6.6	6.5	4.5	9.2	8.2	6.8	9.0	9.0	15.3	19.1	9.0	8.6	11.7
UZET	0.0	5.9	6.4	6.8	7.4	6.1	2.3	5.8	4.1	4.4	3.3	0.1	8.6	6.1	11.7	1.9
LZET	0.0	21.6	21.6	21.9	21.8	14.5	26.6	13.5	22.4	21.1	24.4	0.0	14.5	21.9	23.1	11.6
AGWET	0.0	0.9	0.8	0.9	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.1	0.5	0.9	0.8	0.5
BASET	0.6	1.0	0.9	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	0.6	1.0	1.0	1.0	0.8
SURET	46.7											33.0				16.0
PERO	6.5	11.4	13.7	14.5	15.5	17.7	9.2	16.0	11.9	12.2	10.9	5.1	19.0	21.9	47.0	8.3
IGWI	0.7	7.9	9.2	9.7	10.4	11.5	6.6	10.6	8.2	8.5	7.7	0.7	12.1	14.0	25.4	4.4
TAET: PERVIOUS	47.3	36.1	36.4	37.2	37.6	26.8	39.9	29.3	35.1	36.4	38.6	49.1	43.8	38.9	45.2	42.5
IMPEV: IMPERVIOUS		15.3	15.1	15.1	15.2											0.0
ET: COMBINED	47.3	35.0	34.3	32.8	26.3	26.8	39.9	29.3	35.1	36.4	38.6	49.1	43.8	38.9	45.2	42.5
PET	47.3	49.5	48.4	50.4	51.1	44.4	49.1	48.9	49.5	50.1	50.0	49.1	51.0	52.6	52.8	49.0

Table T-03110102-13: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3630	45064	6915	889	151	5504	335105	135873	58270	11661	9673	572383	64	208	18	1185408
AREA(%)	0.3	3.8	0.6	0.1	0.0	0.5	28.2	11.4	4.9	1.0	0.8	48.1	0.0	0.0	0.0	99.7
IMPERVIOUS																
AREA(ACRES)		2375	769	223	152											3518
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	55.0	51.7	52.1	52.6	51.9	52.9	51.5	51.8	52.8	50.9	50.9	52.0	67.1	53.8	49.3	51.7
SURLI			1.5	2.0	1.9										110.2	0.0
UZLI																0.0
LZLI			2.3	3.2	3.8									21.1		0.0
SURO: PERVIOUS	15.7	0.3	0.3	0.4	0.5	0.1	0.0	0.1	0.1	0.3	0.0	11.5	0.7	0.3	13.1	5.6
SURO: IMPERVIOUS		38.0	38.4	38.9	38.3											0.1
SURO: COMBINED	15.7	2.2	4.1	8.1	19.5	0.1	0.0	0.1	0.1	0.3	0.0	11.5	0.7	0.3	13.1	5.7
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0				0.0	0.0	0.0
AGWO	0.6	12.6	14.8	15.7	15.8	17.7	11.1	16.0	13.6	12.7	11.6	0.5	17.7	24.9	59.0	6.8
AGWI	1.1	13.8	15.9	16.8	16.9	18.8	12.3	17.1	14.8	13.8	12.7	1.1	18.6	26.2	65.0	7.6
IGWI	0.7	8.0	9.3	9.8	9.9	10.9	7.2	10.0	8.6	8.0	7.4	0.6	10.8	15.3	37.9	4.4
CEPE		6.0	5.9	5.9	5.7	4.1	8.0	7.1	6.1	7.6	7.6	13.8	18.0	8.1	7.5	10.4
UZET	0.0	7.5	8.2	8.2	8.3	8.1	3.7	7.5	6.0	5.8	5.3	0.1	8.8	6.7	11.1	2.7
LZET		19.1	19.1	19.3	19.3	13.0	24.0	12.1	20.1	18.9	21.6	0.0	12.4	19.5	20.7	10.4
AGWET	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.4	0.7	0.6	0.4
BASET	0.6	0.9	0.8	0.9	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.5	0.9	0.9	0.9	0.7
SURET	41.5											29.0				14.1
PERO	16.2	12.9	15.1	16.1	16.3	17.8	11.1	16.1	13.7	13.0	11.7	12.0	18.4	25.1	72.1	12.4
IGWI	0.7	8.0	9.3	9.8	9.9	10.9	7.2	10.0	8.6	8.0	7.4	0.6	10.8	15.3	37.9	4.4
TAET: PERVIOUS	42.1	34.1	34.7	35.0	34.9	26.7	37.2	28.2	33.7	33.9	36.2	43.4	40.4	36.0	40.8	38.7
IMPEV: IMPERVIOUS		13.7	13.7	13.7	13.5											0.0
ET: COMBINED	42.1	33.1	32.6	30.8	24.2	26.7	37.2	28.2	33.7	33.9	36.2	43.4	40.4	36.0	40.8	38.7
PET	42.1	43.7	43.1	44.4	45.1	40.9	43.5	43.3	43.6	44.5	44.5	43.4	45.2	45.6	46.4	43.3

Table T-03110102-14: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3630	45064	6915	889	151	5504	335105	135873	58270	11661	9673	572383	64	208	18	1185408
AREA(%)	0.3	3.8	0.6	0.1	0.0	0.5	28.2	11.4	4.9	1.0	0.8	48.1	0.0	0.0	0.0	99.7
IMPERVIOUS																
AREA(ACRES)		2375	769	223	152											3518
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	51.4	51.5	51.4	51.9	51.8	50.7	51.3	51.5	51.7	51.5	51.4	51.5	68.0	54.2	51.5	51.3
SURLI			1.7	2.2	2.2					0.1					50.6	0.0
UZLI																0.0
LZLI			2.0	2.7	3.1									16.2		0.0
SURO: PERVIOUS	9.9	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.0	0.1	0.0	9.1	0.7	0.1	3.3	4.4
SURO: IMPERVIOUS		37.9	38.0	38.4	38.4											0.1
SURO: COMBINED	9.9	2.1	4.0	7.9	19.4	0.1	0.0	0.1	0.0	0.1	0.0	9.1	0.7	0.1	3.3	4.6
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	11.5	13.4	14.2	14.4	15.8	9.7	15.0	12.0	11.6	10.5	0.5	17.8	21.5	37.3	6.1
AGWI	1.2	13.0	14.9	15.7	16.0	17.3	11.1	16.5	13.5	13.1	12.0	1.1	19.1	23.1	38.8	7.1
IGWI	0.7	7.6	8.7	9.2	9.3	10.1	6.5	9.6	7.9	7.6	7.0	0.7	11.1	13.5	22.6	4.2
CEPE		6.3	6.2	6.2	6.1	4.4	8.3	7.4	6.3	8.1	8.1	13.7	17.0	8.4	8.0	10.5
UZET	0.8	6.0	6.4	6.7	6.8	5.9	2.6	5.9	4.6	4.5	3.6	0.6	8.3	6.1	8.9	2.3
LZET	0.3	18.6	18.6	18.9	18.8	13.0	22.9	12.0	19.4	18.2	20.8	0.3	11.9	19.1	20.5	10.2
AGWET	0.2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.2	0.4	0.7	0.7	0.5
BASET	0.5	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.4	0.8	0.9	0.9	0.6
SURET	38.7											26.2				12.7
PERO	10.5	11.7	13.6	14.4	14.6	15.9	9.7	15.1	12.0	11.7	10.5	9.6	18.5	21.6	40.5	10.5
IGWI	0.7	7.6	8.7	9.2	9.3	10.1	6.5	9.6	7.9	7.6	7.0	0.7	11.1	13.5	22.6	4.2
TAET: PERVIOUS	40.5	32.3	32.8	33.3	33.2	24.8	35.3	26.8	31.9	32.3	34.0	41.4	38.4	35.2	39.0	36.8
IMPEV: IMPERVIOUS		13.6	13.4	13.5	13.4											0.0
ET: COMBINED	40.5	31.4	30.8	29.4	23.2	24.8	35.3	26.8	31.9	32.3	34.0	41.4	38.4	35.2	39.0	36.8
PET	42.7	44.2	43.5	44.9	45.6	40.6	43.9	43.8	44.2	44.7	44.6	43.9	45.4	46.4	46.7	43.8

Table T-03110102-15: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
2	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
3	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
4	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
5	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
6	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
7	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
8	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
9	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
10	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
11	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
12	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
13	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
14	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
15	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
16	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
17	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
18	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
19	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
20	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
21	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
22	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
23	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
24	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
25	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
26	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
27	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
28	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
29	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
30	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
31	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
32	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
33	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
34	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
35	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990
36	0.990	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.990

Table T-03110102-16: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
2	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
3	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
4	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
5	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
6	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
7	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
8	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
9	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
10	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
11	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
12	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
13	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
14	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
15	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
16	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
17	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
18	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
19	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
20	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
21	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
22	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
23	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
24	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
25	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
26	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
27	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
28	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
29	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
30	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
31	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
32	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
33	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
34	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
35	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
36	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020

Table T-03110102-17: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
2	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
3	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
4	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
5	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
6	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
7	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
8	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
9	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
10	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
11	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
12	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
13	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
14	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
15	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
16	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
17	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
18	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
19	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
20	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
21	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
22	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
23	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
24	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
25	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
26	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
27	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
28	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
29	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
30	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
31	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
32	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
33	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
34	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
35	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100
36	0.000	0.015	0.015	0.015	0.015	0.007	0.030	0.022	0.015	0.030	0.030	0.100

Table T-03110102-18: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
2	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
3	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
4	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
5	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
6	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
7	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
8	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
9	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
10	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
11	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
12	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
13	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
14	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
15	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
16	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
17	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
18	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
19	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
20	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
21	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
22	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
23	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
24	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
25	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
26	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
27	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
28	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
29	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
30	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
31	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
32	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
33	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
34	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
35	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368
36	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368	0.368

Table T-03110102-19: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
12	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
13	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
14	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
15	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
16	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
17	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
18	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
19	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
20	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
21	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
22	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
23	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
24	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
25	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
26	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
27	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
28	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
29	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
30	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
31	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
32	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
33	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
34	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
35	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
36	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001

Table T-03110102-20: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
31		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
32		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
33		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
34		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
35		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
36		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03110102-21: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
2	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
3	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
4	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
5	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
6	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
7	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
8	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
9	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
10	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
11	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
12	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
13	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
14	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
15	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
16	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
17	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
18	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
19	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
20	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
21	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
22	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
23	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
24	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
25	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
26	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
27	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
28	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
29	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
30	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
31	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
32	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
33	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
34	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
35	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
36	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695

Table T-03110102-22: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110102-23: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
2	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
3	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
4	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
5	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
6	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
7	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
8	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
9	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
10	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
11	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
12	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
13	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
14	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
15	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
16	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
17	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
18	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
19	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
20	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
21	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
22	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
23	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
24	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
25	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
26	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
27	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
28	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
29	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
30	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
31	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
32	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
33	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
34	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
35	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913
36	0.141	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.913

Table T-03110102-24: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
4	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
6	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
7	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
8	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
10	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
11	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
12	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
13	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
14	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
15	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
16	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
17	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
18	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
19	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
20	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
21	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
22	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
23	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
24	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
25	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
26	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
27	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
28	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
29	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
30	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
31	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
32	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
33	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
34	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
35	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100
36	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.100

Table T-03110102-25: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
2	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
3	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
4	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
5	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
6	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
7	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
8	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
9	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
10	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
11	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
12	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
13	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
14	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
15	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
16	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
17	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
18	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
19	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
20	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
21	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
22	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
23	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
24	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
25	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
26	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
27	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
28	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
29	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
30	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
31	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
32	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
33	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
34	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
35	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050
36	0.050	1.399	1.399	1.399	1.399	1.399	2.000	1.599	1.599	1.399	2.000	0.050

APPENDIX T-03110103

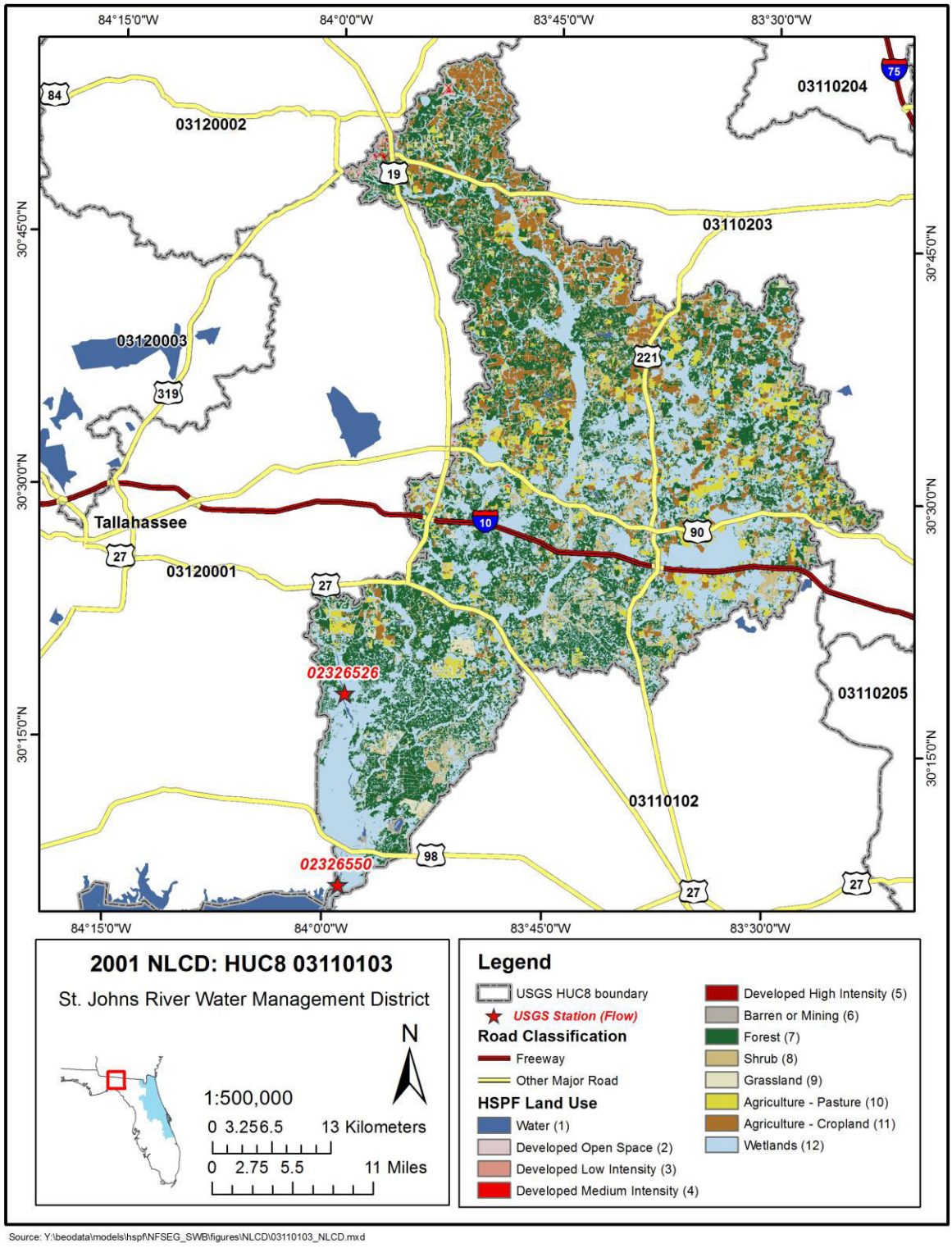


Figure T-03110103-1: Land Cover from the National Land Cover Database.

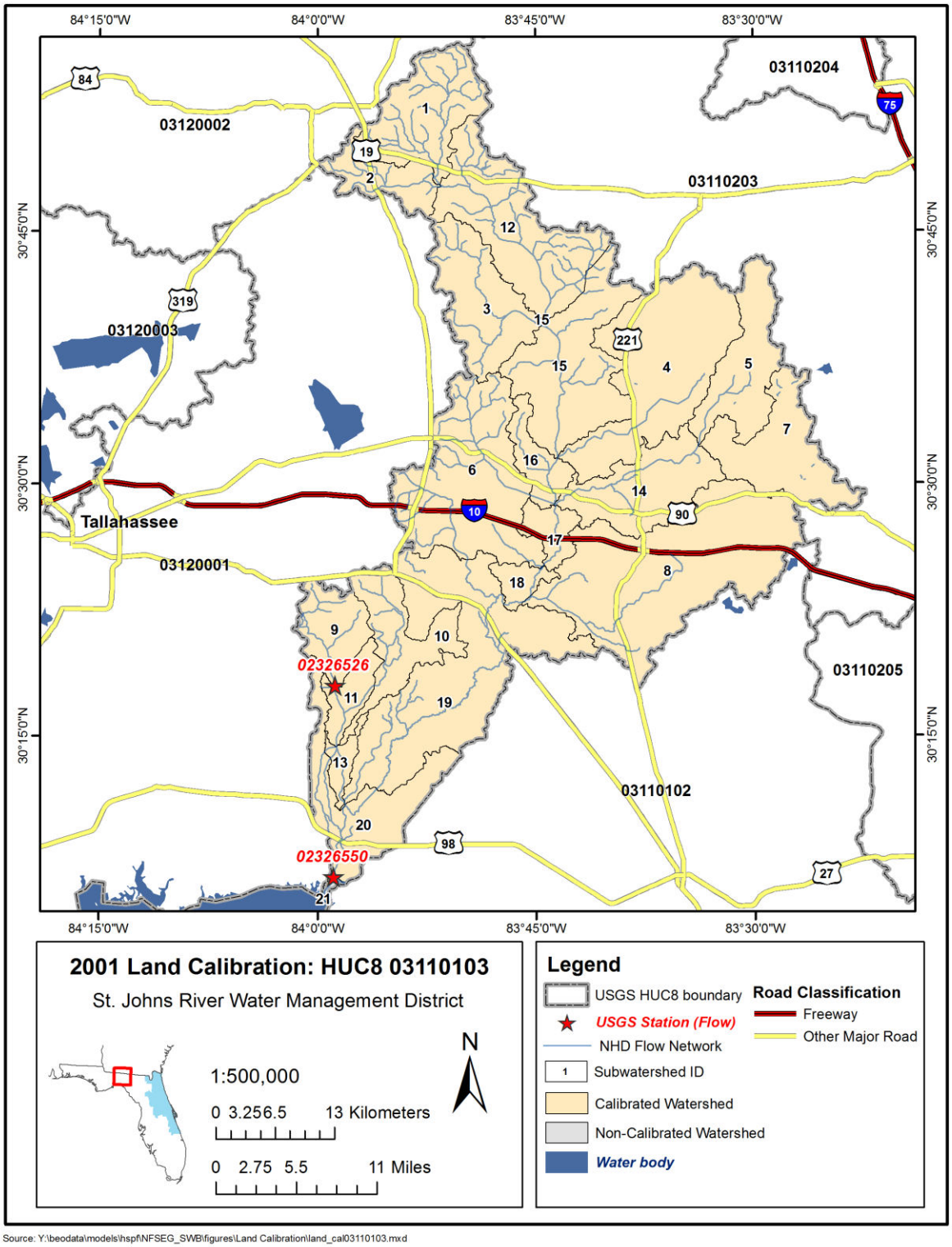


Figure T-03110103-2: Calibrated sub-watersheds.

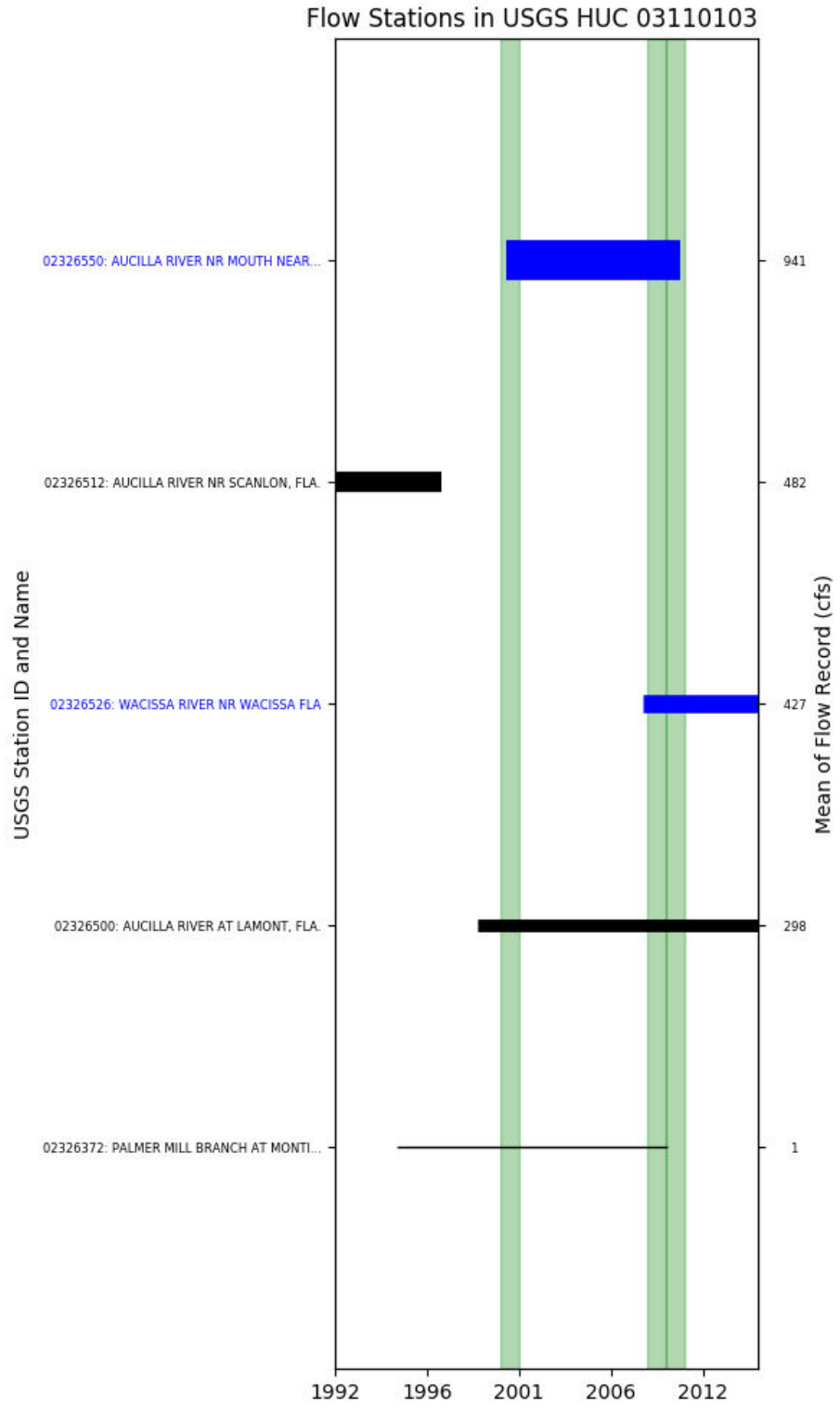


Figure T-03110103-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 09, USGS GAUGE 02326526

Water-Data Report 2009
02326526 WACISSA RIVER NR WACISSA FLA
Aucilla-Waccasassa Basin Aucilla Subbasin

LOCATION.--Lat 301804, long 835847 referenced to North American Datum of 1927, in NE 1/4 1/ 1/4 4 1/4 sec.24, T.2 S., R.3 E., Jefferson County, FL, Hydrologic Unit 03110103, near right bank 80 ft upstream from midstream island, 2.1 mi upstream from Welaunee Creek, and 4.0 mi south of Wacissa.

DRAINAGE AREA.--30 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1971 to 1976, 1990(discharge measurements only). Daily stage and discharge from October 16, 2008 to September 30, 2009.

GAGE.--Water-stage recorder. Datum of gage is undetermined.

REMARKS.--Records poor.

Table T-03110103-1: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02326526.

Statistic	Value
Bias	59.04
Standard error	164.74
Relative bias	0.14
Relative standard error	1.47
Nash-Sutcliffe coefficient	-1.16
Kling-Gupta coefficient	0.08
Coefficient of efficiency	-0.35
Index of agreement	0.37

Table T-03110103-2: Hydrologic Indices Between USGS Gauge 02326526 and HSPF Reach 09.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02326526	Simulated Reach 09	Percent Difference
MA1: Mean, all daily flows	438.35	493.29	12.53
MA2: Median, all daily flows	432.00	469.03	8.57
MA3: CV, all daily flows	15.44	12.98	-15.97
MA4: CV, log of all daily flows	22.53	22.18	-1.58
MA5: Mean daily flow / median daily flow	1.01	1.05	3.65
MA9: (Q10 - Q90) / median daily flow	0.66	0.67	2.12
MA10: (Q20 - Q80) / median daily flow	0.45	0.46	1.20

MA11: (Q25 - Q75) / median daily flow	0.35	0.38	7.96
MA12: Mean monthly flow, January	418.51	479.65	14.61
MA13: Mean monthly flow, February	377.29	387.93	2.82
MA14: Mean monthly flow, March	403.32	418.49	3.76
MA15: Mean monthly flow, April	438.91	436.23	-0.61
MA16: Mean monthly flow, May	406.26	418.64	3.05
MA17: Mean monthly flow, June	358.99	413.74	15.25
MA18: Mean monthly flow, July	323.86	430.56	32.95
MA19: Mean monthly flow, August	345.35	440.55	27.57
MA20: Mean monthly flow, September	354.07	436.38	23.25
MA21: Mean monthly flow, October	412.98	488.83	18.37
MA22: Mean monthly flow, November	397.05	463.75	16.80
MA23: Mean monthly flow, December	422.96	474.55	12.20
ML1: Mean minimum monthly flow, January	397.67	453.71	14.09
ML2: Mean minimum monthly flow, February	423.80	435.31	2.72
ML3: Mean minimum monthly flow, March	446.60	465.46	4.22
ML4: Mean minimum monthly flow, April	477.00	497.13	4.22
ML5: Mean minimum monthly flow, May	447.80	483.86	8.05
ML6: Mean minimum monthly flow, June	388.80	472.81	21.61
ML7: Mean minimum monthly flow, July	347.80	480.48	38.15
ML8: Mean minimum monthly flow, August	359.60	496.04	37.94
ML9: Mean minimum monthly flow, September	394.60	501.05	26.98
ML10: Mean minimum monthly flow, October	388.50	471.11	21.26
ML11: Mean minimum monthly flow, November	377.83	448.55	18.72
ML12: Mean minimum monthly flow, December	400.00	446.72	11.68
ML13: CV of minimum monthly flows	25.67	23.03	-10.28
ML14: Mean minimum daily flow / mean median annual flow	0.77	0.82	6.04
ML15: Mean minimum annual flow / mean annual flow	0.76	0.82	8.25
ML16: Median minimum annual flow / median annual flow	0.75	0.83	10.14
ML20: Ratio of baseflow volume to total flow volume	0.97	0.98	0.91
ML22: Mean annual minimum flow divided by catchment area	3.14	4.23	34.89
RA1: Mean of positive changes from one day to next (rise rate)	13.11	13.92	
RA2: CV, mean of positive changes from one day to next (rise rate)	199.55	195.59	
RA3: Mean of negative changes from one day to next (fall rate)	6.55	3.77	
RA4: CV, mean of negative changes from one day to next (fall rate)	154.57	154.80	
RA5: Ratio of days that are higher than previous day	0.30	0.22	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.01	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.00	
RA8: Number of flow reversals from one day to the next	90.00	70.00	
RA9: CV, number of flow reversals from one day to the next	39.15	39.33	

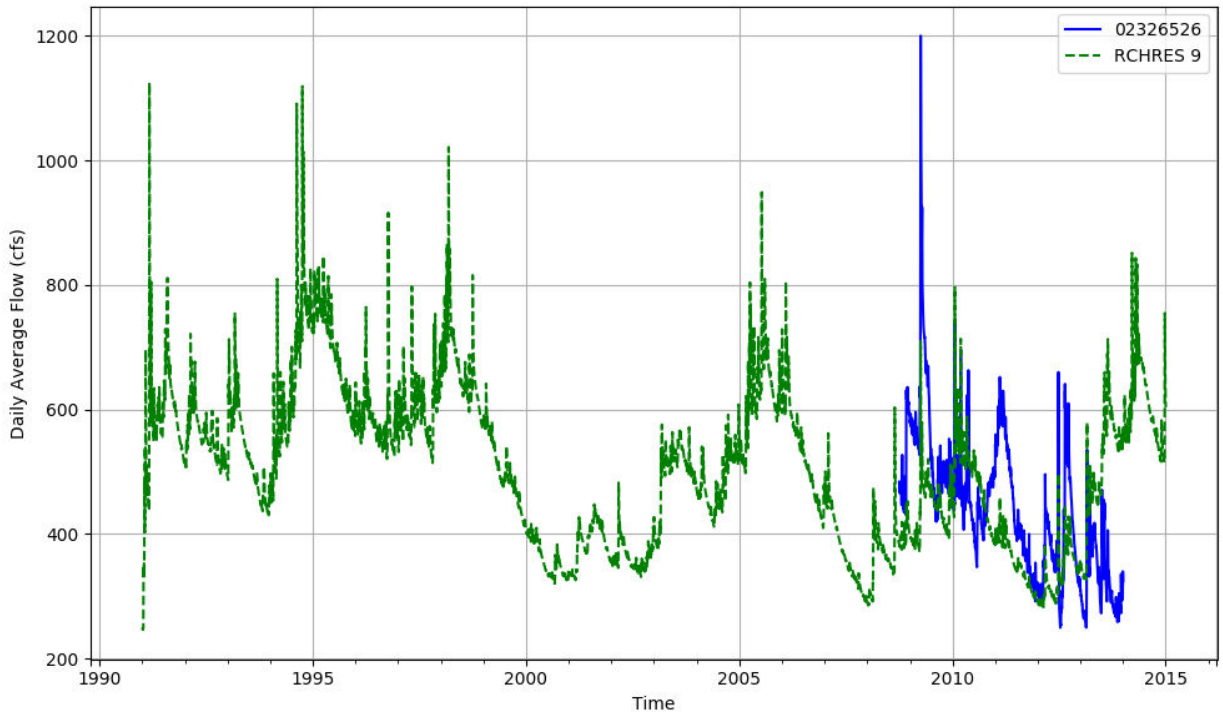


Figure T-03110103-4: Daily flow for HSFP reach 09 and USGS station 02326526.

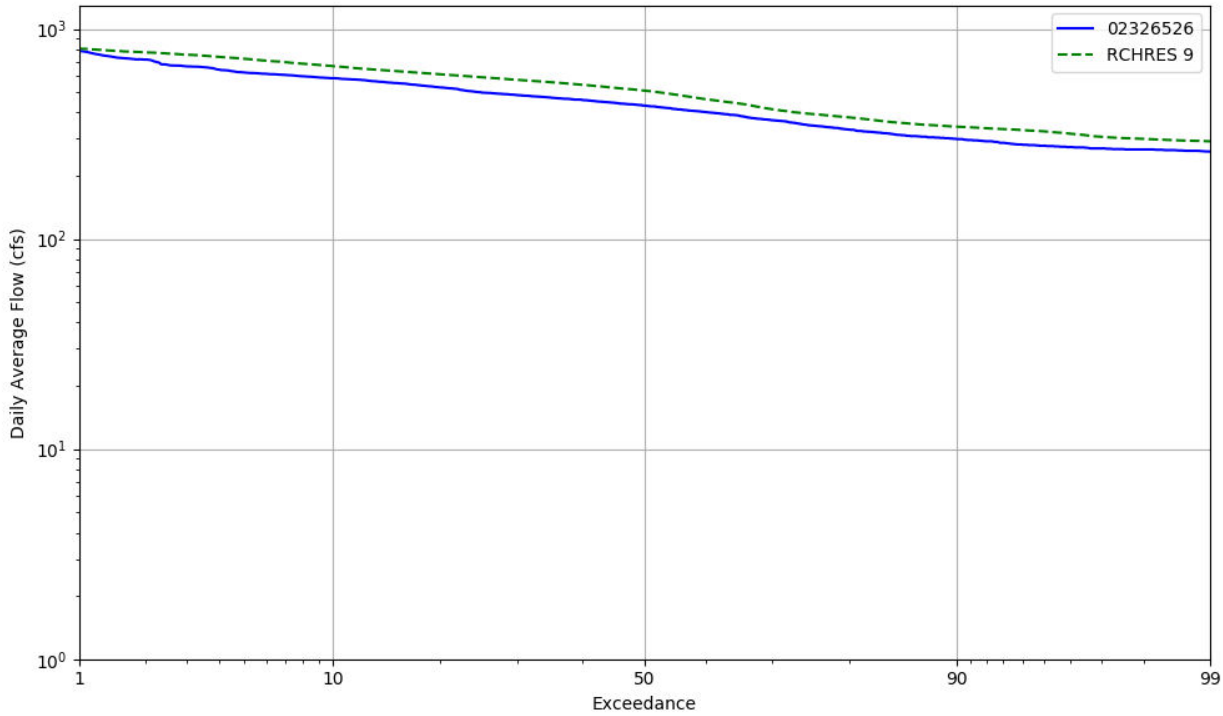


Figure T-03110103-5: Daily exceedance for HSFP reach 09 and USGS station 02326526.

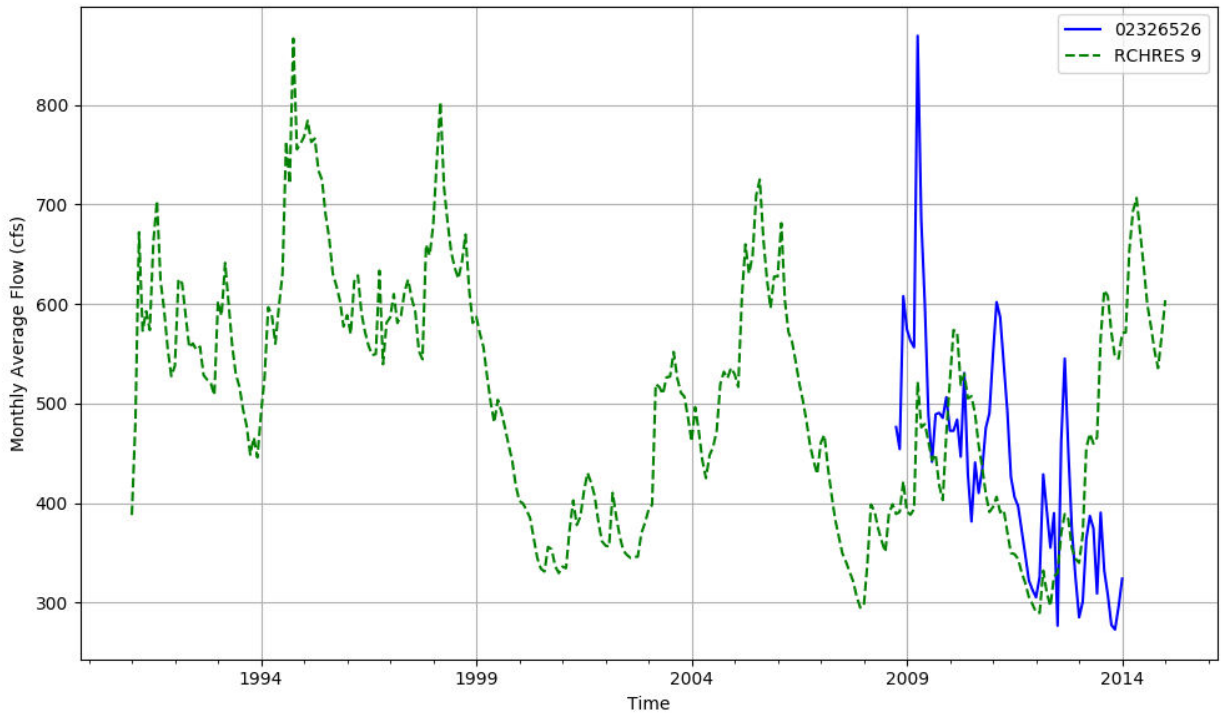


Figure T-03110103-6: Monthly flow for HSFP reach 09 and USGS station 02326526.

HSPF REACH 20, USGS GAUGE 02326550

Water-Data Report 2009
02326550 AUCILLA RIVER NEAR MOUTH NEAR NUTALL RISE, FL
Aucilla-Waccasassa Basin Aucilla Subbasin

LOCATION.--Lat 3006'43.7", long 8358'47.6" referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110103, on left bank approximately 400 ft below county boat ramp, and 2.6 mi upstream from mouth.

DRAINAGE AREA.--938.6 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 2001 to September 2002 (fragmentary). October 2002 to current year.

REVISED RECORDS.--WRD FL-06-4: 2005.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is 4.64 ft below NGVD of 1929. May 4, 2001 to February 18, 2003, at site 600 ft downstream, at same datum.

REMARKS.--Records poor. Flow affected by tide. Discharge computed from continuous velocity record obtained from water-current meter.

Table T-03110103-3: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02326550.

Statistic	Value
Bias	135.64
Standard error	628.17
Relative bias	0.14
Relative standard error	0.91
Nash-Sutcliffe coefficient	0.18
Kling-Gupta coefficient	0.57
Coefficient of efficiency	0.01
Index of agreement	0.48

Table T-03110103-4: Hydrologic Indices Between USGS Gauge 02326550 and HSPF Reach 20.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02326550	Simulated Reach 20	Percent Difference
MA1: Mean, all daily flows	996.62	1079.47	8.31
MA2: Median, all daily flows	878.00	794.15	-9.55
MA3: CV, all daily flows	53.43	60.87	13.92

MA4: CV, log of all daily flows	62.96	59.45	-5.58
MA5: Mean daily flow / median daily flow	1.14	1.36	19.75
MA9: (Q10 - Q90) / median daily flow	1.84	1.82	-1.32
MA10: (Q20 - Q80) / median daily flow	1.05	1.01	-4.07
MA11: (Q25 - Q75) / median daily flow	0.75	0.78	3.34
MA12: Mean monthly flow, January	955.62	945.25	-1.09
MA13: Mean monthly flow, February	1005.62	1197.93	19.12
MA14: Mean monthly flow, March	1083.91	1339.45	23.58
MA15: Mean monthly flow, April	911.37	1038.41	13.94
MA16: Mean monthly flow, May	666.92	725.61	8.80
MA17: Mean monthly flow, June	683.88	859.55	25.69
MA18: Mean monthly flow, July	690.78	940.34	36.13
MA19: Mean monthly flow, August	761.11	1000.20	31.41
MA20: Mean monthly flow, September	871.03	843.77	-3.13
MA21: Mean monthly flow, October	732.62	707.80	-3.39
MA22: Mean monthly flow, November	665.91	635.84	-4.52
MA23: Mean monthly flow, December	892.54	892.84	0.03
ML1: Mean minimum monthly flow, January	531.67	674.27	26.82
ML2: Mean minimum monthly flow, February	691.67	796.19	15.11
ML3: Mean minimum monthly flow, March	757.67	880.83	16.26
ML4: Mean minimum monthly flow, April	597.59	723.40	21.05
ML5: Mean minimum monthly flow, May	374.17	562.73	50.39
ML6: Mean minimum monthly flow, June	397.69	563.87	41.79
ML7: Mean minimum monthly flow, July	424.58	687.82	62.00
ML8: Mean minimum monthly flow, August	416.01	669.14	60.85
ML9: Mean minimum monthly flow, September	555.19	611.26	10.10
ML10: Mean minimum monthly flow, October	446.04	635.87	42.56
ML11: Mean minimum monthly flow, November	509.44	600.74	17.92
ML12: Mean minimum monthly flow, December	528.38	659.52	24.82
ML13: CV of minimum monthly flows	87.81	41.95	-52.22
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.64	234.20
ML15: Mean minimum annual flow / mean annual flow	0.18	0.52	191.03
ML16: Median minimum annual flow / median annual flow	0.07	0.60	706.01
ML20: Ratio of baseflow volume to total flow volume	0.66	0.73	10.33
ML22: Mean annual minimum flow divided by catchment area	1.75	5.15	193.80
RA1: Mean of positive changes from one day to next (rise rate)	162.38	132.48	
RA2: CV, mean of positive changes from one day to next (rise rate)	149.45	329.19	
RA3: Mean of negative changes from one day to next (fall rate)	143.43	67.30	
RA4: CV, mean of negative changes from one day to next (fall rate)	129.54	213.99	
RA5: Ratio of days that are higher than previous day	0.46	0.34	
RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.03	
RA8: Number of flow reversals from one day to the next	149.64	38.36	
RA9: CV, number of flow reversals from one day to the next	40.80	45.12	

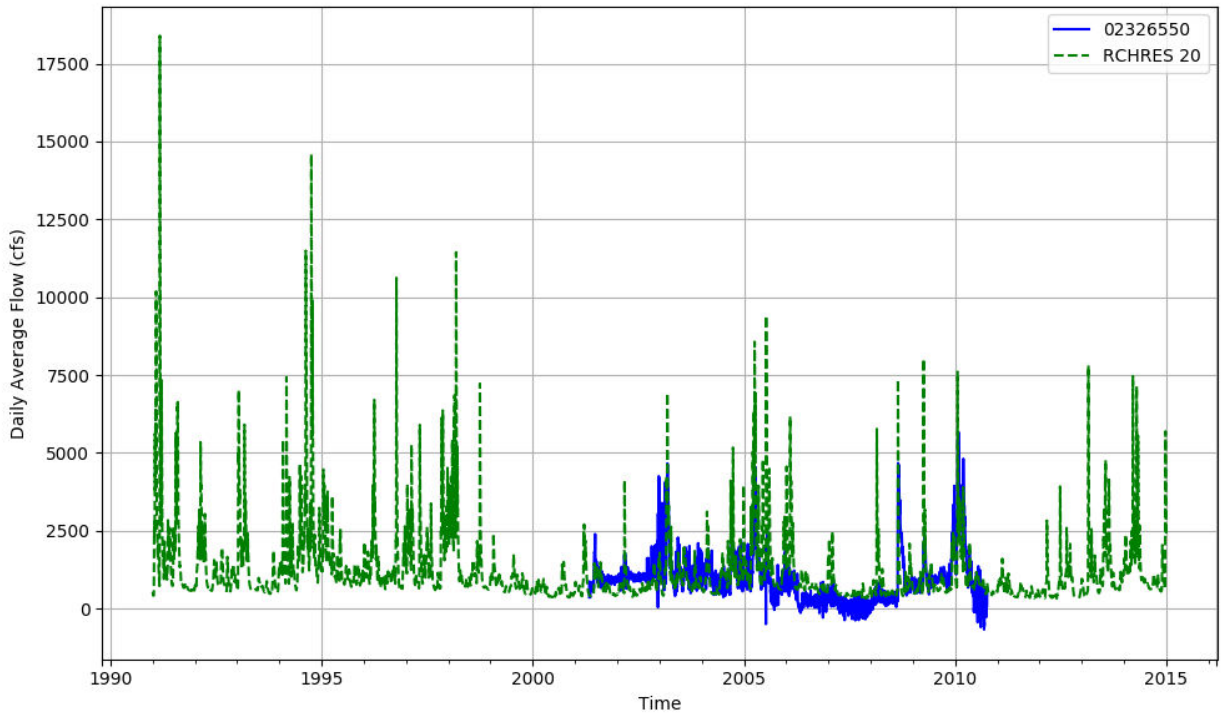


Figure T-03110103-7: Daily flow for HSFP reach 20 and USGS station 02326550.

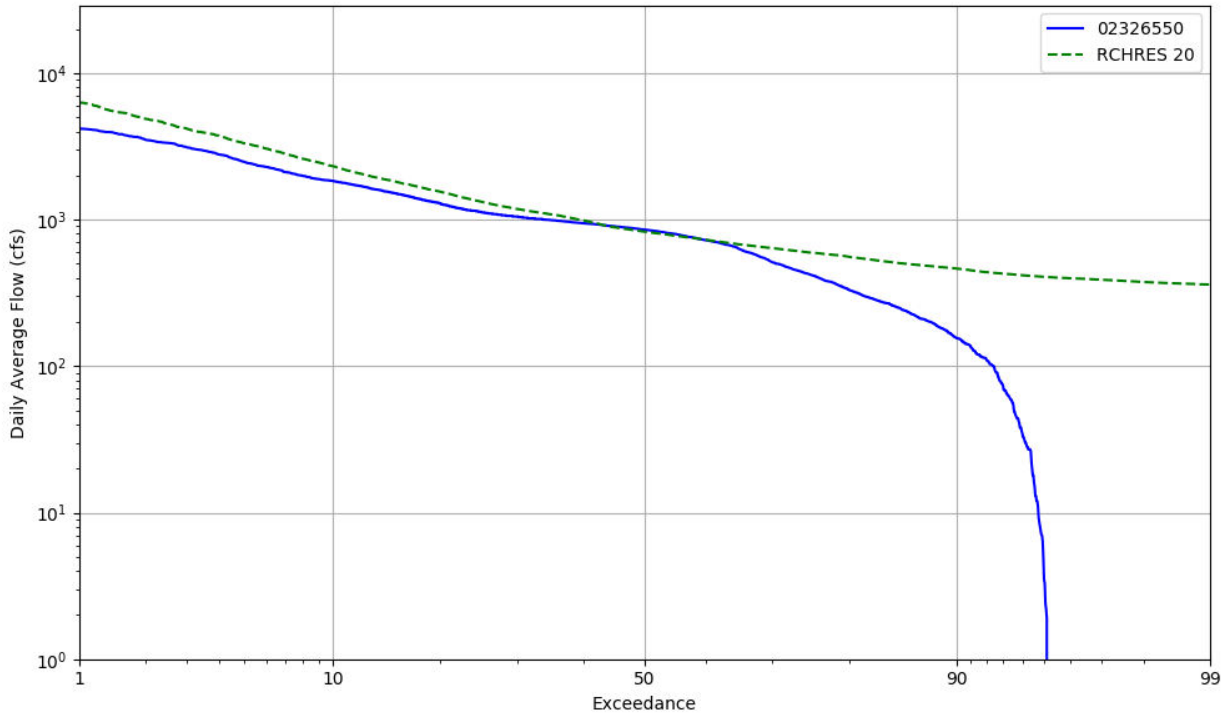


Figure T-03110103-8: Daily exceedance for HSFP reach 20 and USGS station 02326550.

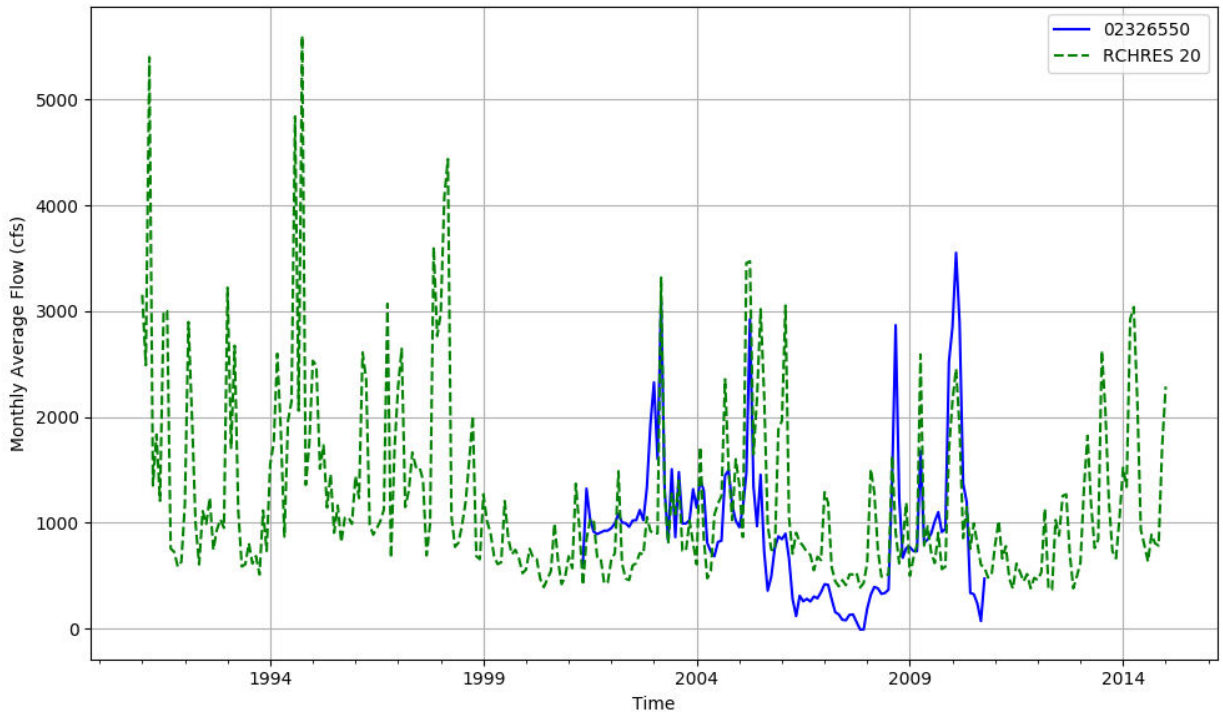


Figure T-03110103-9: Monthly flow for HSFP reach 20 and USGS station 02326550.

Table T-03110103-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2139	21575	2464	388	118	558	203740	47910	13818	30958	49715	225006	308	5530	3928	608155
AREA(%)	0.4	3.5	0.4	0.1	0.0	0.1	33.4	7.9	2.3	5.1	8.2	36.9	0.1	0.9	0.6	99.7
IMPERVIOUS																
AREA(ACRES)		1161	279	99	121											1660
AREA(%)		0.2	0.0	0.0	0.0											0.3
SUPY	42.6	44.8	44.3	44.4	44.2	37.7	44.6	45.2	43.4	45.7	45.8	43.9	79.7	53.4	53.4	44.6
SURLI		0.0	10.0	12.0	14.7									0.0	12.2	0.1
UZLI																0.0
LZLI		0.0	3.4	2.4	2.1									0.0	1.7	0.0
SURO: PERVIOUS		0.3	0.9	1.3	1.2	0.0	0.0	0.2	0.1	0.1	0.1		2.9	0.4	0.2	0.1
SURO: IMPERVIOUS		27.8	27.2	27.1	26.8											0.1
SURO: COMBINED		1.8	3.6	6.5	14.1	0.0	0.0	0.2	0.1	0.1	0.1		2.9	0.4	0.2	0.1
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	7.6	12.7	12.5	12.7	8.3	5.0	10.3	7.0	8.6	7.7	0.5	17.5	10.6	18.3	4.4
AGWI	0.8	8.2	13.3	12.9	13.0	9.6	5.6	11.0	7.7	9.4	8.3	0.7	17.5	11.1	19.2	4.9
IGWI	0.6	6.8	12.4	13.9	15.1	6.2	4.7	8.4	6.9	6.9	7.9	0.5	17.3	11.3	14.3	4.1
CEPE		10.0	10.2	10.5	14.1	6.2	16.4	12.0	9.8	10.0	8.4	18.1	31.8	12.8	9.6	15.1
UZET	0.1	4.0	4.4	4.0	3.2	2.5	1.4	4.0	2.5	3.2	2.4	0.0	5.3	3.4	4.6	1.4
LZET	0.0	17.0	17.7	17.6	15.9	13.0	18.2	10.7	17.6	17.7	21.1		5.1	16.5	21.3	10.9
AGWET	0.0	0.6	0.7	0.6	0.4	1.0	0.5	0.7	0.7	0.7	0.6	0.0	0.1	0.5	0.8	0.4
BASET	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2
SURET	44.9											26.9				10.1
PERO	0.5	7.9	13.6	13.7	13.9	8.3	5.1	10.5	7.1	8.7	7.8	0.5	20.4	11.0	18.6	4.5
IGWI	0.6	6.8	12.4	13.9	15.1	6.2	4.7	8.4	6.9	6.9	7.9	0.5	17.3	11.3	14.3	4.1
TAET: PERVIOUS	45.3	31.9	33.2	32.9	33.9	23.1	36.6	27.6	30.9	31.9	32.8	45.2	42.6	33.5	36.6	38.1
IMPEV: IMPERVIOUS		17.1	17.2	17.5	17.6											0.0
ET: COMBINED	45.3	31.2	31.6	29.7	25.7	23.1	36.6	27.6	30.9	31.9	32.8	45.2	42.6	33.5	36.6	38.2
PET	45.3	44.9	44.8	44.5	44.4	46.5	45.1	45.0	45.1	44.9	44.6	45.2	44.4	44.4	44.6	44.9

Table T-03110103-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2139	21575	2464	388	118	558	203740	47910	13818	30958	49715	225006	308	5530	3928	608155
AREA(%)	0.4	3.5	0.4	0.1	0.0	0.1	33.4	7.9	2.3	5.1	8.2	36.9	0.1	0.9	0.6	99.7
IMPERVIOUS																
AREA(ACRES)		1161	279	99	121											1660
AREA(%)		0.2	0.0	0.0	0.0											0.3
SUPY	60.8	58.9	59.0	57.7	56.7	65.8	59.6	58.4	60.5	58.4	57.2	60.0	81.2	62.3	65.0	59.3
SURLI		0.0	8.8	10.4	12.5									0.0	10.9	0.1
UZLI																0.0
LZLI		0.0	3.5	2.4	2.3									0.0	0.7	0.0
SURO: PERVIOUS	0.7	0.7	1.9	2.6	2.3	0.1	0.1	0.3	0.3	0.2	0.2	0.2	4.0	0.6	0.2	0.2
SURO: IMPERVIOUS		39.0	39.3	38.3	37.6											0.1
SURO: COMBINED	0.7	2.7	5.7	9.9	20.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	4.0	0.6	0.2	0.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	10.8	15.7	14.4	13.9	19.8	8.7	13.9	11.9	11.5	9.3	0.6	16.5	11.5	19.8	6.6
AGWI	0.8	12.1	17.0	15.5	15.0	21.3	9.8	15.2	13.2	12.9	10.7	0.9	17.3	12.7	21.3	7.4
IGWI	0.7	9.7	15.3	16.4	17.3	13.6	7.6	11.4	10.9	9.3	10.0	0.7	16.1	12.9	15.7	5.9
CEPE		11.6	11.5	11.4	15.0	7.6	19.1	14.0	11.6	11.6	9.3	21.3	28.3	13.8	10.9	17.6
UZET	0.0	5.2	5.3	4.2	3.1	8.9	2.1	5.2	4.2	4.1	2.6	0.0	5.1	3.2	4.8	1.9
LZET		18.5	19.2	19.5	18.0	13.2	19.8	11.5	19.1	19.3	23.4	0.0	10.2	18.6	23.4	11.9
AGWET	0.0	0.9	0.8	0.7	0.5	1.1	0.7	0.8	0.8	1.0	0.8	0.0	0.3	0.7	0.9	0.5
BASET	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3
SURET	51.0											30.0				11.3
PERO	1.2	11.5	17.7	17.0	16.3	19.9	8.7	14.2	12.3	11.7	9.5	0.8	20.5	12.1	20.0	6.7
IGWI	0.7	9.7	15.3	16.4	17.3	13.6	7.6	11.4	10.9	9.3	10.0	0.7	16.1	12.9	15.7	5.9
TAET: PERVIOUS	51.3	36.5	37.2	36.1	36.9	31.1	42.1	31.8	36.1	36.3	36.5	51.6	44.3	36.5	40.4	43.5
IMPEV: IMPERVIOUS		19.7	19.6	19.3	19.1											0.1
ET: COMBINED	51.3	35.6	35.4	32.6	27.9	31.1	42.1	31.8	36.1	36.3	36.5	51.6	44.3	36.5	40.4	43.6
PET	51.3	51.7	51.5	51.5	51.5	50.8	51.7	51.9	51.5	51.9	51.8	51.7	51.3	51.8	51.7	51.6

Table T-03110103-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2139	21575	2464	388	118	558	203740	47910	13818	30958	49715	225006	308	5530	3928	608155
AREA(%)	0.4	3.5	0.4	0.1	0.0	0.1	33.4	7.9	2.3	5.1	8.2	36.9	0.1	0.9	0.6	99.7
IMPERVIOUS																
AREA(ACRES)		1161	279	99	121											1660
AREA(%)		0.2	0.0	0.0	0.0											0.3
SUPY	50.0	47.7	48.2	46.9	45.9	55.8	48.7	47.0	49.8	47.0	45.8	48.9	70.0	49.7	53.6	48.2
SURLI		0.0	8.9	10.4	12.5									0.0	14.1	0.1
UZLI																0.0
LZLI		0.0	3.6	2.5	2.4									0.1	0.8	0.0
SURO: PERVIOUS	7.0	1.4	2.4	2.4	2.0	1.7	0.1	0.7	0.9	0.5	0.3	5.7	3.4	0.7	0.4	2.4
SURO: IMPERVIOUS		30.4	30.8	29.6	28.7											0.1
SURO: COMBINED	7.0	2.9	5.3	7.9	15.5	1.7	0.1	0.7	0.9	0.5	0.3	5.7	3.4	0.7	0.4	2.5
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	9.2	13.9	12.5	12.0	17.3	8.1	11.4	10.4	9.8	8.0	0.6	14.0	9.1	18.9	5.8
AGWI	0.8	10.1	14.8	13.3	12.6	18.6	8.8	12.4	11.3	10.9	8.8	0.8	14.4	9.8	20.1	6.4
IGWI	0.7	7.9	13.1	13.9	14.4	11.9	6.8	9.2	9.2	7.8	8.2	0.6	13.2	9.9	14.5	5.0
CEPE		9.6	9.6	9.5	13.3	6.7	16.9	11.7	9.8	9.6	7.6	18.7	26.3	11.6	9.0	15.4
UZET	0.0	5.4	5.6	4.6	3.5	8.6	3.2	5.4	4.9	4.7	3.2	0.0	5.1	3.1	5.2	2.4
LZET	0.0	17.0	18.0	18.5	16.9	12.0	17.8	10.7	17.4	17.5	21.5	0.0	9.3	17.4	21.7	10.8
AGWET	0.0	0.7	0.7	0.6	0.5	0.9	0.6	0.7	0.7	0.8	0.7	0.0	0.3	0.6	0.8	0.4
BASET	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
SURET	45.8											27.3				10.2
PERO	7.5	10.6	16.2	14.9	14.0	19.1	8.3	12.1	11.3	10.3	8.3	6.3	17.4	9.8	19.3	8.2
IGWI	0.7	7.9	13.1	13.9	14.4	11.9	6.8	9.2	9.2	7.8	8.2	0.6	13.2	9.9	14.5	5.0
TAET: PERVIOUS	46.1	33.0	34.3	33.4	34.5	28.6	38.7	28.9	33.1	32.9	33.2	46.3	41.3	32.9	37.1	39.5
IMPEV: IMPERVIOUS		17.4	17.5	17.4	17.4											0.0
ET: COMBINED	46.1	32.2	32.6	30.2	25.8	28.6	38.7	28.9	33.1	32.9	33.2	46.3	41.3	32.9	37.1	39.6
PET	46.2	46.6	46.7	46.9	47.1	45.5	46.5	46.6	46.5	46.6	46.8	46.4	46.9	47.1	46.7	46.4

Table T-03110103-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2139	21575	2464	388	118	558	203740	47910	13818	30958	49715	225006	308	5530	3928	608155
AREA(%)	0.4	3.5	0.4	0.1	0.0	0.1	33.4	7.9	2.3	5.1	8.2	36.9	0.1	0.9	0.6	99.7
IMPERVIOUS																
AREA(ACRES)		1161	279	99	121											1660
AREA(%)		0.2	0.0	0.0	0.0											0.3
SUPY	53.6	53.7	53.6	53.2	52.8	53.8	54.0	53.7	53.9	53.8	53.4	53.9	77.3	59.2	59.8	53.8
SURLI		0.0	9.1	10.4	12.4					0.0				0.0	9.2	0.1
UZLI																0.0
LZLI		0.0	3.6	2.4	2.2									0.0	1.3	0.0
SURO: PERVIOUS	7.1	0.8	1.9	2.4	2.2	0.2	0.1	0.4	0.4	0.2	0.2	7.1	3.7	0.6	0.2	2.8
SURO: IMPERVIOUS		36.5	36.4	36.1	35.7											0.1
SURO: COMBINED	7.1	2.6	5.4	9.3	19.1	0.2	0.1	0.4	0.4	0.2	0.2	7.1	3.7	0.6	0.2	2.9
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.6	10.8	15.7	14.5	14.2	15.9	8.9	13.6	11.1	11.7	10.0	0.6	16.9	11.9	18.5	6.6
AGWI	0.9	11.7	16.7	15.3	14.9	17.1	9.6	14.5	12.1	12.7	10.9	0.8	17.5	12.8	19.7	7.2
IGWI	0.7	9.5	14.9	16.0	17.1	10.9	7.6	11.0	10.2	9.2	10.2	0.6	16.5	13.1	14.9	5.8
CEPE		10.3	10.3	10.2	13.6	7.1	16.6	12.3	10.3	10.3	8.4	18.4	25.7	12.3	9.6	15.4
UZET	0.2	4.8	5.0	4.1	3.2	6.1	2.1	4.9	3.7	4.0	2.8	0.1	4.6	3.3	4.4	1.9
LZET	0.0	16.6	17.4	17.7	16.3	12.2	17.9	10.4	17.2	17.2	20.9	0.0	9.2	17.0	21.4	10.7
AGWET	0.0	0.7	0.7	0.6	0.5	0.9	0.5	0.7	0.7	0.8	0.7	0.0	0.3	0.6	0.8	0.4
BASET	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
SURET	44.9											27.0				10.1
PERO	7.7	11.6	17.6	16.9	16.4	16.0	8.9	14.0	11.5	11.9	10.2	7.7	20.6	12.6	18.8	9.4
IGWI	0.7	9.5	14.9	16.0	17.1	10.9	7.6	11.0	10.2	9.2	10.2	0.6	16.5	13.1	14.9	5.8
TAET: PERVIOUS	45.5	32.6	33.7	32.9	33.8	26.7	37.4	28.6	32.2	32.6	33.0	45.8	40.0	33.5	36.5	38.8
IMPEV: IMPERVIOUS		17.2	17.2	17.2	17.1											0.0
ET: COMBINED	45.5	31.8	32.0	29.7	25.4	26.7	37.4	28.6	32.2	32.6	33.0	45.8	40.0	33.5	36.5	38.8
PET	46.0	46.2	46.2	46.3	46.3	45.9	46.2	46.2	46.2	46.2	46.2	46.1	46.2	46.3	46.2	46.0

Table T-03110103-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
2	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
3	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
4	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
5	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
6	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
7	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
8	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
9	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
10	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
11	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
12	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
13	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
14	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
15	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
16	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
17	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
18	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
19	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
20	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
21	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990

Table T-03110103-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
2	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
3	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
4	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
5	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
6	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
7	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
8	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
9	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
10	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
11	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
12	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
13	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
14	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
15	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
16	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
17	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
18	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
19	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
20	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
21	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008

Table T-03110103-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
2	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
3	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
4	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
5	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
6	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
7	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
8	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
9	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
10	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
11	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
12	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
13	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
14	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
15	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
16	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
17	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
18	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
19	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
20	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212
21	0.000	0.050	0.050	0.050	0.100	0.020	0.162	0.078	0.050	0.050	0.030	0.212

Table T-03110103-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569
2	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569
3	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569
4	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
5	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
6	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
7	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
8	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
9	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
10	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
11	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
12	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569
13	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
14	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
15	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569	0.569
16	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
17	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
18	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
19	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
20	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386
21	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386	0.386

Table T-03110103-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
12	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
13	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
14	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
15	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
16	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
17	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
18	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
19	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
20	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
21	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001

Table T-03110103-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03110103-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
5	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
6	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
7	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
8	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
9	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
10	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
11	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
14	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
17	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
18	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
19	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
20	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684
21	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684	0.684

Table T-03110103-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
3	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
4	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
5	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
6	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
7	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
8	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
9	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
10	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
11	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
12	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
13	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
14	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
15	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
16	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
17	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
18	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
19	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
20	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677
21	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677	0.677

Table T-03110103-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.148	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.148	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.148	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
10	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
11	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
12	0.148	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.148	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
16	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
21	0.013	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03110103-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	3.435	3.435	3.435	3.435	3.864	5.152	3.864	3.864	3.864	4.293	0.100
2	0.200	3.435	3.435	3.435	3.435	3.864	5.152	3.864	3.864	3.864	4.293	0.100
3	0.200	3.435	3.435	3.435	3.435	3.864	5.152	3.864	3.864	3.864	4.293	0.100
4	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
5	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
6	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
7	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
8	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
9	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
10	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
11	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
12	0.200	3.435	3.435	3.435	3.435	3.864	5.152	3.864	3.864	3.864	4.293	0.100
13	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
14	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
15	0.200	3.435	3.435	3.435	3.435	3.864	5.152	3.864	3.864	3.864	4.293	0.100
16	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
17	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
18	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
19	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
20	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100
21	0.174	6.666	6.666	6.666	6.666	7.500	10.000	7.500	7.500	7.500	8.334	0.100

Table T-03110103-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
5	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
6	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
7	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
8	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
9	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
10	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
11	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
14	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
16	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
17	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
18	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
19	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
20	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050
21	0.050	1.308	1.308	1.308	1.308	1.308	1.869	1.495	1.495	1.308	1.869	0.050

APPENDIX T-03110201

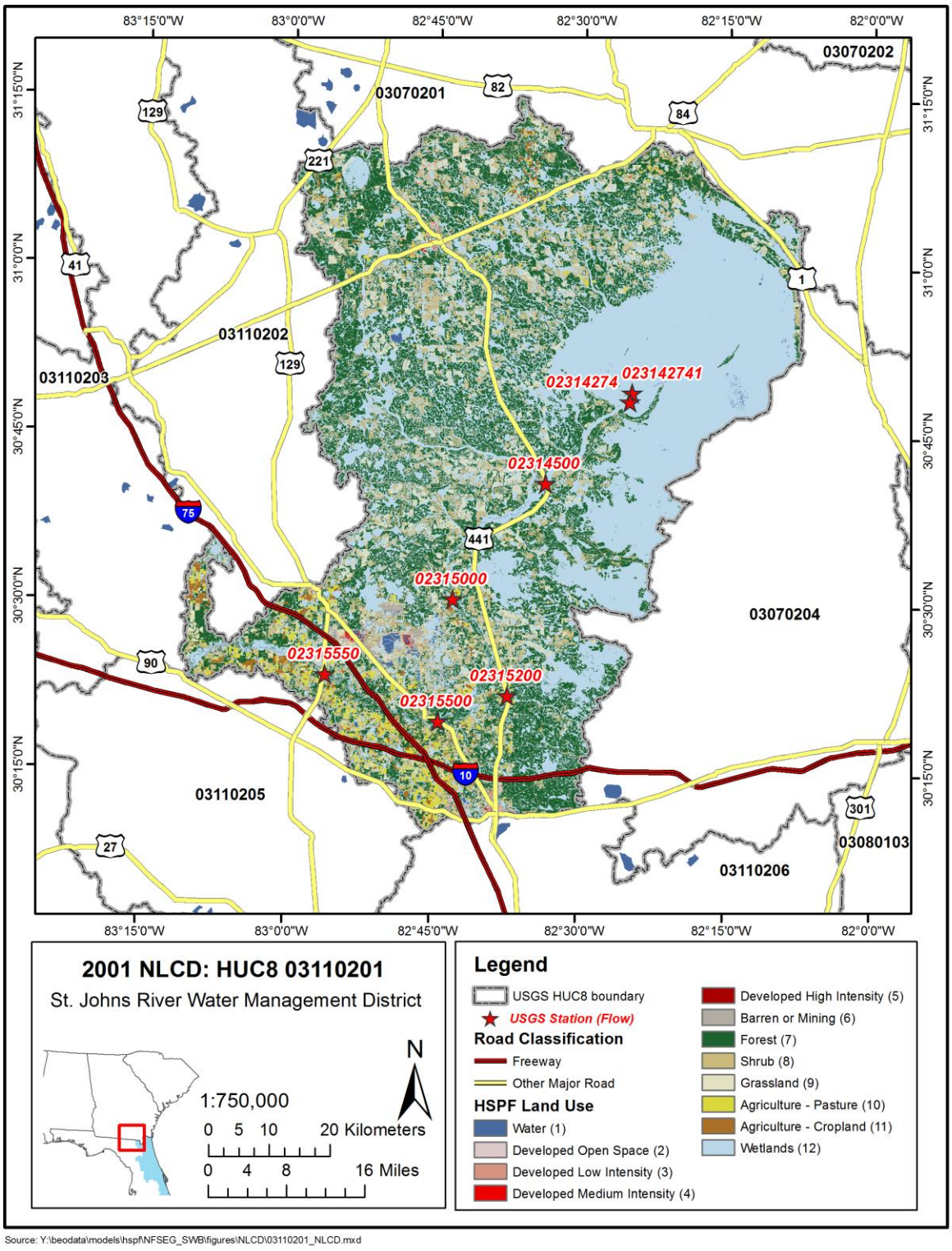


Figure T-03110201-1: Land Cover from the National Land Cover Database.

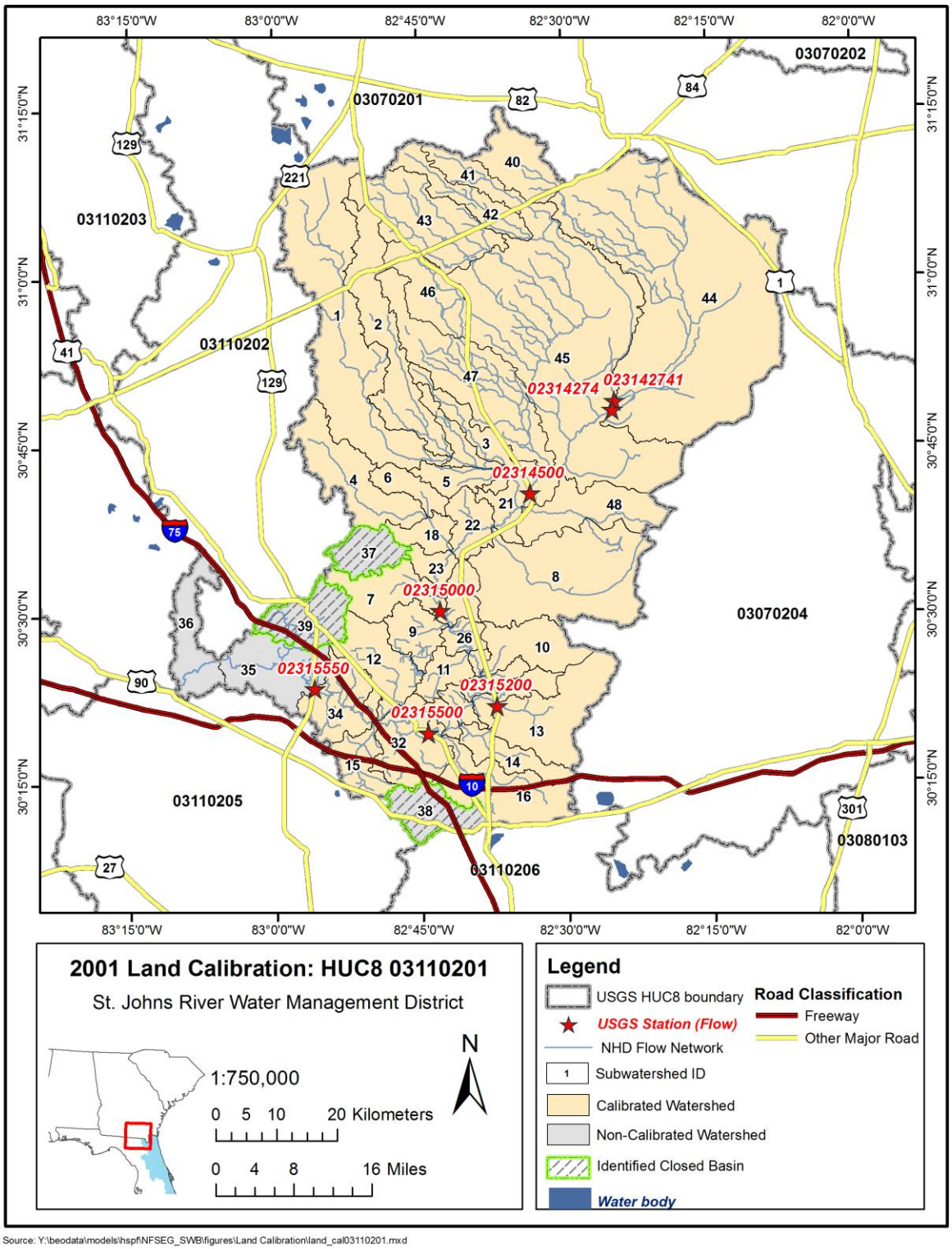


Figure T-03110201-2: Calibrated sub-watersheds.

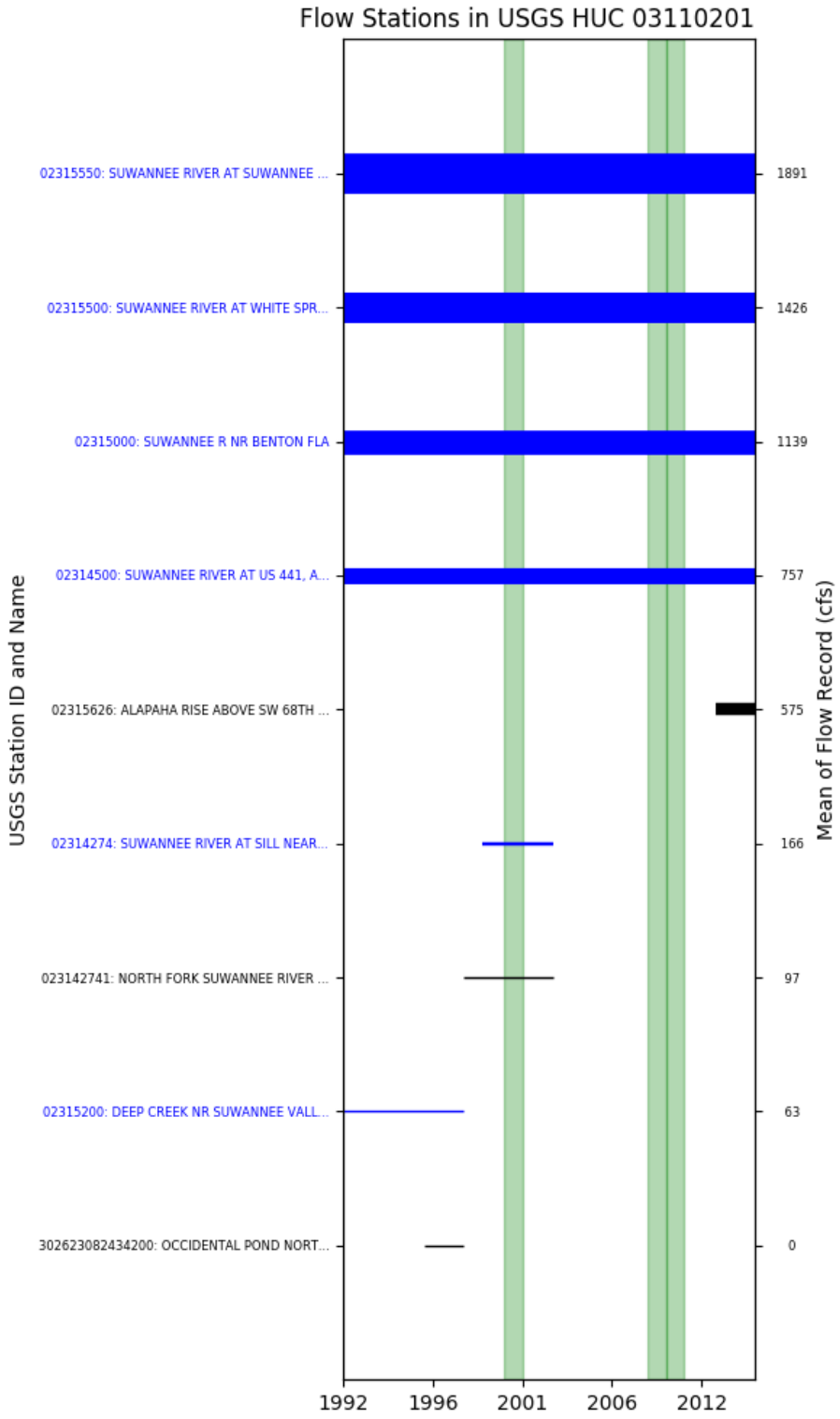


Figure T-03110201-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 13, USGS GAUGE 02315200

Water-Data Report 2009
02313700 WACCASASSA RIVER NEAR GULF HAMMOCK, FL
Aucilla-Waccasassa Basin Waccasassa Subbasin

LOCATION.--Lat 291214, long 824609 referenced to North American Datum of 1927, Levy County, FL, Hydrologic Unit 03110101, near left bank at abandoned railroad grade, 0.5 mi upstream from Otter Creek, 3.6 mi upstream from mouth, and 4 mi southwest of Gulf Hammock.

DRAINAGE AREA.--480.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1963 to September 1978, November 1980 to September 1984 (fragmentary), October 1984 to September 1992, October 1998 to September 2002, October 2002 to September 2003 (fragmentary), October 2003 to current year.

REVISED RECORDS.--WSP 2105: 1969. WRD FL-72-1: Drainage area. WRD FL-04-4:2003.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is 10.51 ft below National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1980, water-stage and deflection-meter recorders at same site at datum 10.00 ft higher.

REMARKS.--Records fair, except for estimated discharges which are poor. Flow affected by tide. Discharge computed from continuous velocity record obtained from water-current meter. Records include flow of Otter Creek. Above bankfull stage, discharge measurements are made along abandoned railroad fill and include all flow from about 1.5 mi northwest to 0.8 mi northeast of gaging station. Drainage Area: Including that of Otter Creek.

Table T-03110201-1: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02315200.

Statistic	Value
Bias	-6.55
Standard error	49.29
Relative bias	-0.09
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.70
Coefficient of efficiency	0.60
Index of agreement	0.78

Table T-03110201-2: Hydrologic Indices Between USGS Gauge 02315200 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02315200	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	69.56	63.11	-9.27
MA2: Median, all daily flows	25.00	33.86	35.44
MA3: CV, all daily flows	166.83	110.49	-33.77
MA4: CV, log of all daily flows	138.58	114.59	-17.31
MA5: Mean daily flow / median daily flow	2.78	1.86	-33.01
MA9: (Q10 - Q90) / median daily flow	6.98	4.64	-33.43
MA10: (Q20 - Q80) / median daily flow	3.68	3.04	-17.33
MA11: (Q25 - Q75) / median daily flow	2.83	2.43	-14.33
MA12: Mean monthly flow, January	92.88	101.78	9.58
MA13: Mean monthly flow, February	153.40	133.74	-12.81
MA14: Mean monthly flow, March	127.60	130.77	2.48
MA15: Mean monthly flow, April	73.99	60.21	-18.63
MA16: Mean monthly flow, May	30.77	20.84	-32.26
MA17: Mean monthly flow, June	37.05	29.20	-21.19
MA18: Mean monthly flow, July	37.13	39.52	6.44
MA19: Mean monthly flow, August	55.62	48.15	-13.42
MA20: Mean monthly flow, September	34.33	33.25	-3.14
MA21: Mean monthly flow, October	112.66	64.96	-42.34
MA22: Mean monthly flow, November	26.82	32.40	20.81
MA23: Mean monthly flow, December	31.69	42.95	35.56
ML1: Mean minimum monthly flow, January	23.93	34.77	45.31
ML2: Mean minimum monthly flow, February	48.61	63.40	30.42
ML3: Mean minimum monthly flow, March	44.00	51.70	17.49
ML4: Mean minimum monthly flow, April	17.03	16.66	-2.22
ML5: Mean minimum monthly flow, May	6.77	10.78	59.11
ML6: Mean minimum monthly flow, June	6.78	11.07	63.29
ML7: Mean minimum monthly flow, July	13.06	19.50	49.29
ML8: Mean minimum monthly flow, August	11.13	13.11	17.75
ML9: Mean minimum monthly flow, September	9.32	11.30	21.29
ML10: Mean minimum monthly flow, October	17.53	15.42	-12.01
ML11: Mean minimum monthly flow, November	12.56	17.58	39.95
ML12: Mean minimum monthly flow, December	11.82	21.15	78.96
ML13: CV of minimum monthly flows	139.17	145.86	4.81
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.01	-54.16
ML15: Mean minimum annual flow / mean annual flow	0.01	0.00	-40.32
ML16: Median minimum annual flow / median annual flow	0.02	0.01	-55.35
ML20: Ratio of baseflow volume to total flow volume	0.42	0.54	29.25
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	-47.45
RA1: Mean of positive changes from one day to next (rise rate)	30.31	14.73	
RA2: CV, mean of positive changes from one day to next (rise rate)	374.79	343.97	
RA3: Mean of negative changes from one day to next (fall rate)	9.77	5.74	
RA4: CV, mean of negative changes from one day to next (fall rate)	289.30	288.75	
RA5: Ratio of days that are higher than previous day	0.23	0.29	

RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.09	
RA8: Number of flow reversals from one day to the next	69.12	66.88	
RA9: CV, number of flow reversals from one day to the next	8.38	15.89	

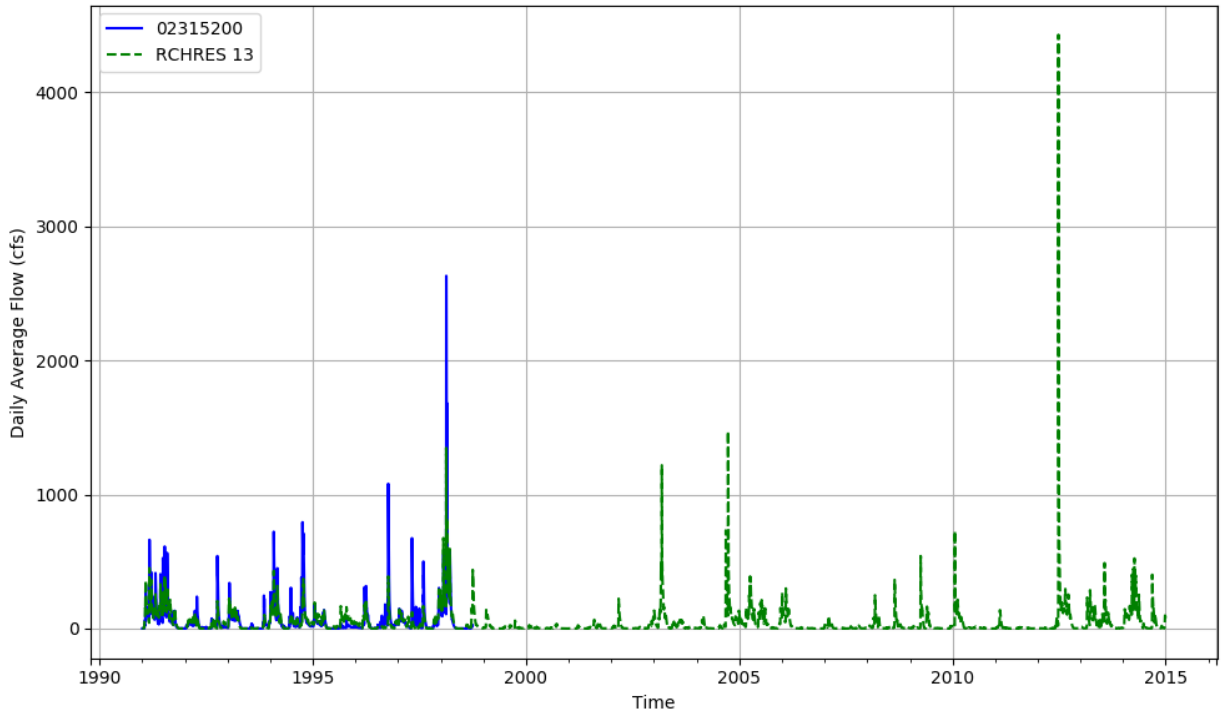


Figure T-03110201-4: Daily flow for HSFP reach 13 and USGS station 02315200.

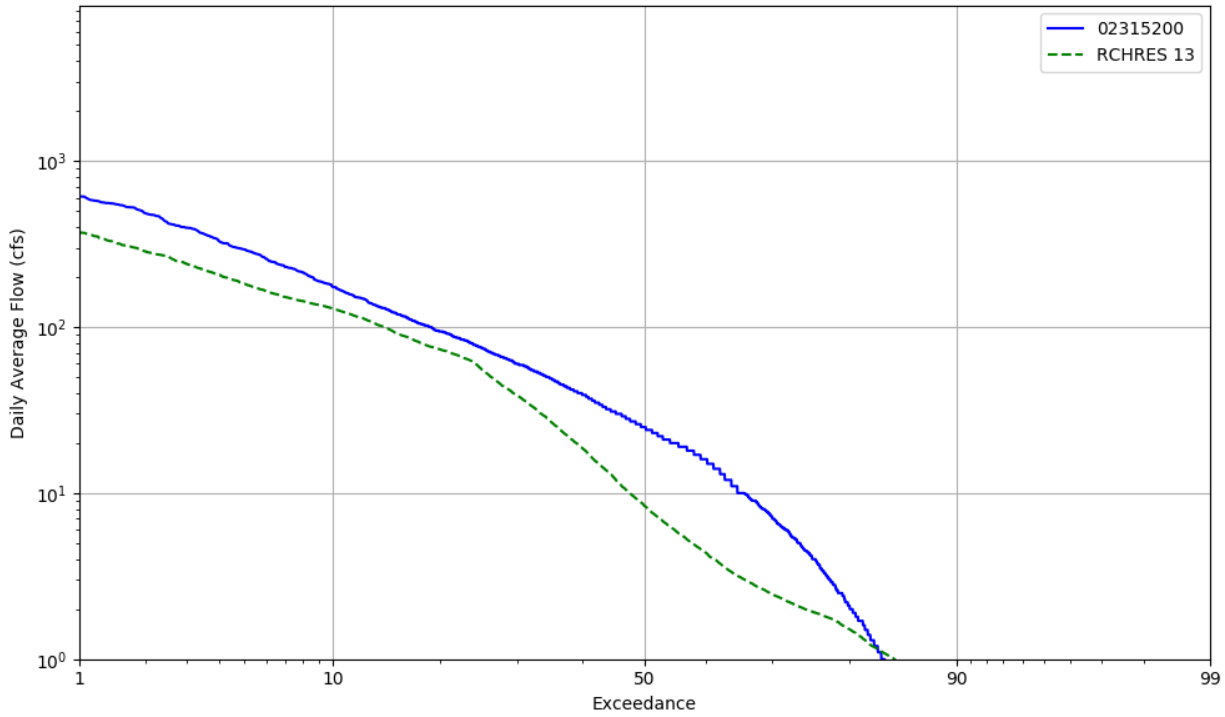


Figure T-03110201-5: Daily exceedance for HSFP reach 13 and USGS station 02315200.

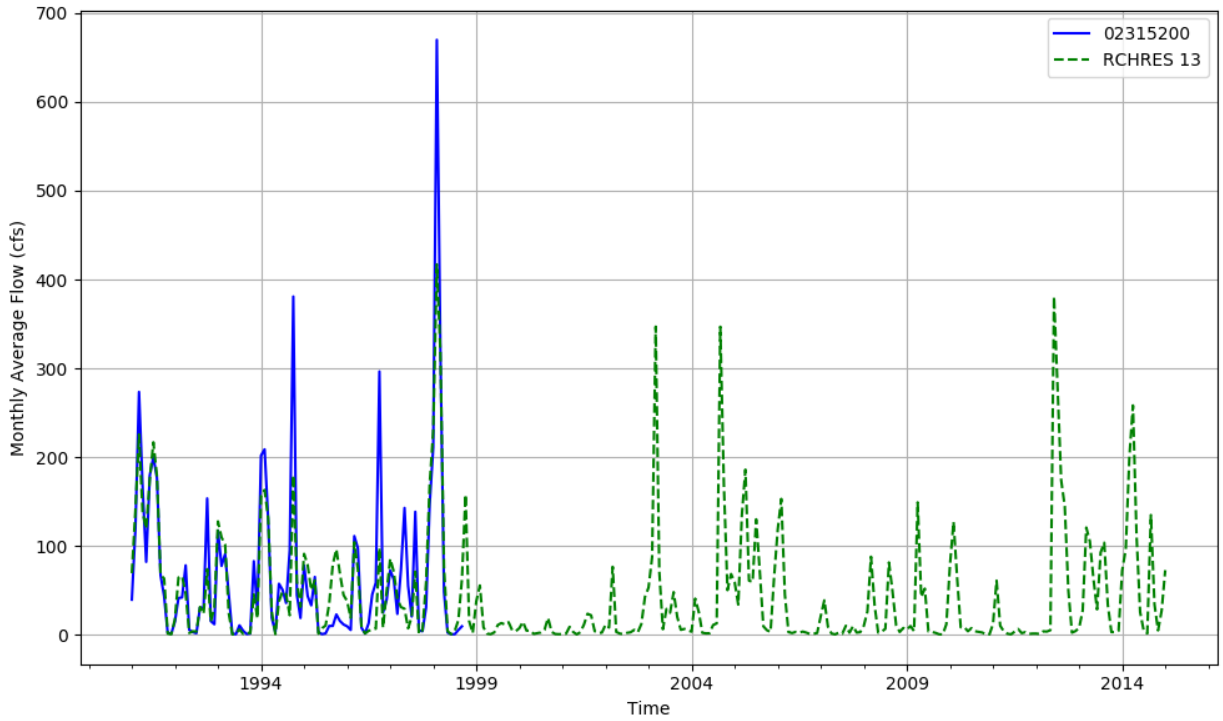


Figure T-03110201-6: Monthly flow for HSFP reach 13 and USGS station 02315200.

HSPF REACH 24, USGS GAUGE 02315000

Water-Data Report 2010
02315000 SUWANNEE RIVER NEAR BENTON, FL
Suwannee Basin Upper Suwannee Subbasin

LOCATION.--Lat 303030, long 824150 referenced to North American Datum of 1927, Columbia County, FL, Hydrologic Unit 03110201, near left bank on downstream side of bridge on State Highway 6, 3.7 mi northwest of Benton, 6.4 mi south of Florida-Georgia State Line, 13.7 mi east of Jasper, and 196 mi upstream from mouth.

DRAINAGE AREA.--2,090 mi, approximately, includes part of watershed in Okefenokee Swamp,which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Miscellaneous discharge measurements for some periods July 1934 to September 1975. Records for December 1931 to June 1934, at site 2.0 mi upstream (at Turner Bridge) not equivalent owing to difference in drainage areas. October 1975 to September 2002 and July 2009 to September 30, 2010.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Oct. 1, 1975 to Oct. 14, 1986, nonrecording gage at same site and datum. Dec. 8, 1931 to June 30, 1934, nonrecording gage at site 2.0 mi upstream, datum unknown.

REMARKS.--No estimated daily discharges. Records good. Drainage Area: Includes part of watershed in Okefenokee Swamp which is indeterminate.

Table T-03110201-3: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02315000.

Statistic	Value
Bias	-38.75
Standard error	579.47
Relative bias	-0.03
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.85
Coefficient of efficiency	0.72
Index of agreement	0.85

Table T-03110201-4: Hydrologic Indices Between USGS Gauge 02315000 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02315000	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	1305.58	1329.16	1.81
MA2: Median, all daily flows	484.50	619.47	27.86

MA3: CV, all daily flows	72.08	64.08	-11.09
MA4: CV, log of all daily flows	132.00	117.38	-11.07
MA5: Mean daily flow / median daily flow	2.69	2.15	-20.37
MA9: (Q10 - Q90) / median daily flow	7.12	5.63	-20.91
MA10: (Q20 - Q80) / median daily flow	4.38	3.30	-24.71
MA11: (Q25 - Q75) / median daily flow	3.29	2.61	-20.78
MA12: Mean monthly flow, January	936.96	1176.40	25.55
MA13: Mean monthly flow, February	2127.11	2055.28	-3.38
MA14: Mean monthly flow, March	2180.32	2037.91	-6.53
MA15: Mean monthly flow, April	1112.86	1109.85	-0.27
MA16: Mean monthly flow, May	288.91	365.45	26.49
MA17: Mean monthly flow, June	331.23	280.79	-15.23
MA18: Mean monthly flow, July	424.49	469.33	10.56
MA19: Mean monthly flow, August	768.89	741.33	-3.58
MA20: Mean monthly flow, September	380.67	518.98	36.33
MA21: Mean monthly flow, October	767.74	753.88	-1.81
MA22: Mean monthly flow, November	481.48	473.79	-1.60
MA23: Mean monthly flow, December	555.77	556.76	0.18
ML1: Mean minimum monthly flow, January	685.50	795.67	16.07
ML2: Mean minimum monthly flow, February	2073.33	1947.08	-6.09
ML3: Mean minimum monthly flow, March	1976.92	1800.56	-8.92
ML4: Mean minimum monthly flow, April	755.67	875.20	15.82
ML5: Mean minimum monthly flow, May	188.83	259.38	37.36
ML6: Mean minimum monthly flow, June	231.18	241.44	4.44
ML7: Mean minimum monthly flow, July	418.27	430.80	2.99
ML8: Mean minimum monthly flow, August	540.83	608.81	12.57
ML9: Mean minimum monthly flow, September	252.75	424.22	67.84
ML10: Mean minimum monthly flow, October	269.17	433.11	60.91
ML11: Mean minimum monthly flow, November	406.45	465.27	14.47
ML12: Mean minimum monthly flow, December	608.82	574.64	-5.61
ML13: CV of minimum monthly flows	170.03	145.15	-14.63
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.09	-25.03
ML15: Mean minimum annual flow / mean annual flow	0.07	0.07	-3.48
ML16: Median minimum annual flow / median annual flow	0.05	0.03	-35.31
ML20: Ratio of baseflow volume to total flow volume	0.73	0.75	2.78
ML22: Mean annual minimum flow divided by catchment area	27778.05	27778.22	0.00
RA1: Mean of positive changes from one day to next (rise rate)	103.42	108.65	
RA2: CV, mean of positive changes from one day to next (rise rate)	221.90	232.33	
RA3: Mean of negative changes from one day to next (fall rate)	53.61	52.93	
RA4: CV, mean of negative changes from one day to next (fall rate)	154.96	149.29	
RA5: Ratio of days that are higher than previous day	0.32	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.04	
RA8: Number of flow reversals from one day to the next	35.61	29.22	
RA9: CV, number of flow reversals from one day to the next	77.05	74.09	

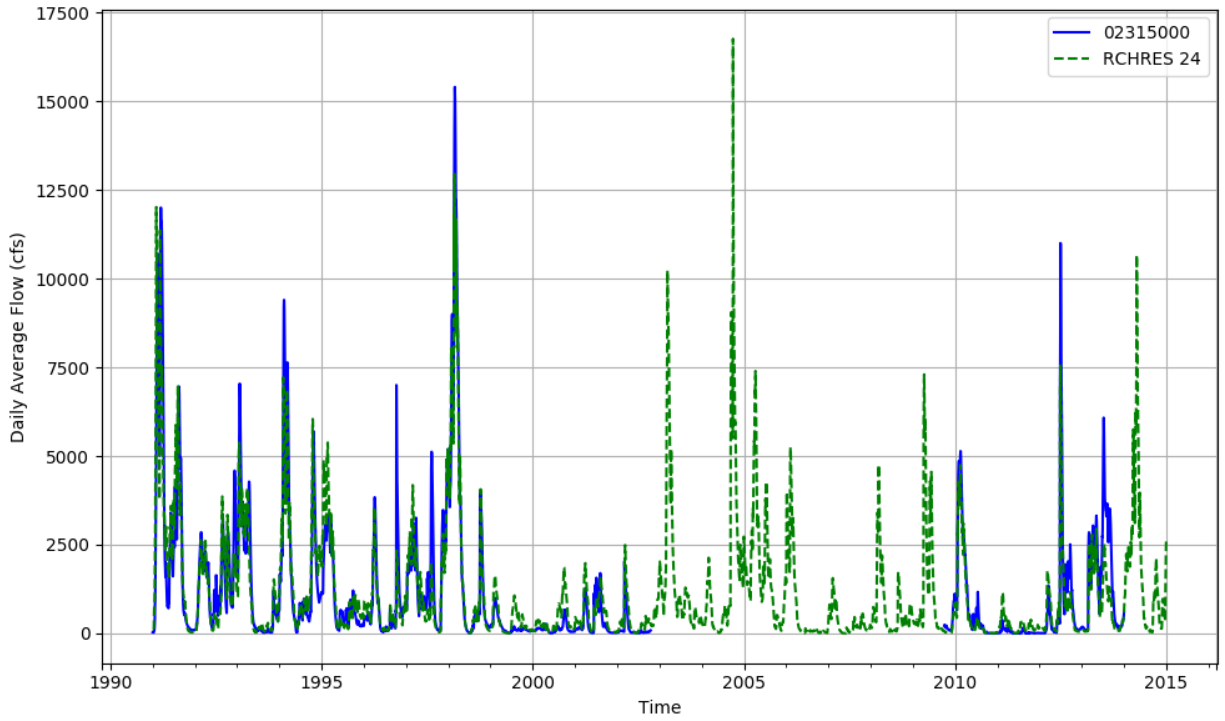


Figure T-03110201-7: Daily flow for HSFP reach 24 and USGS station 02315000.

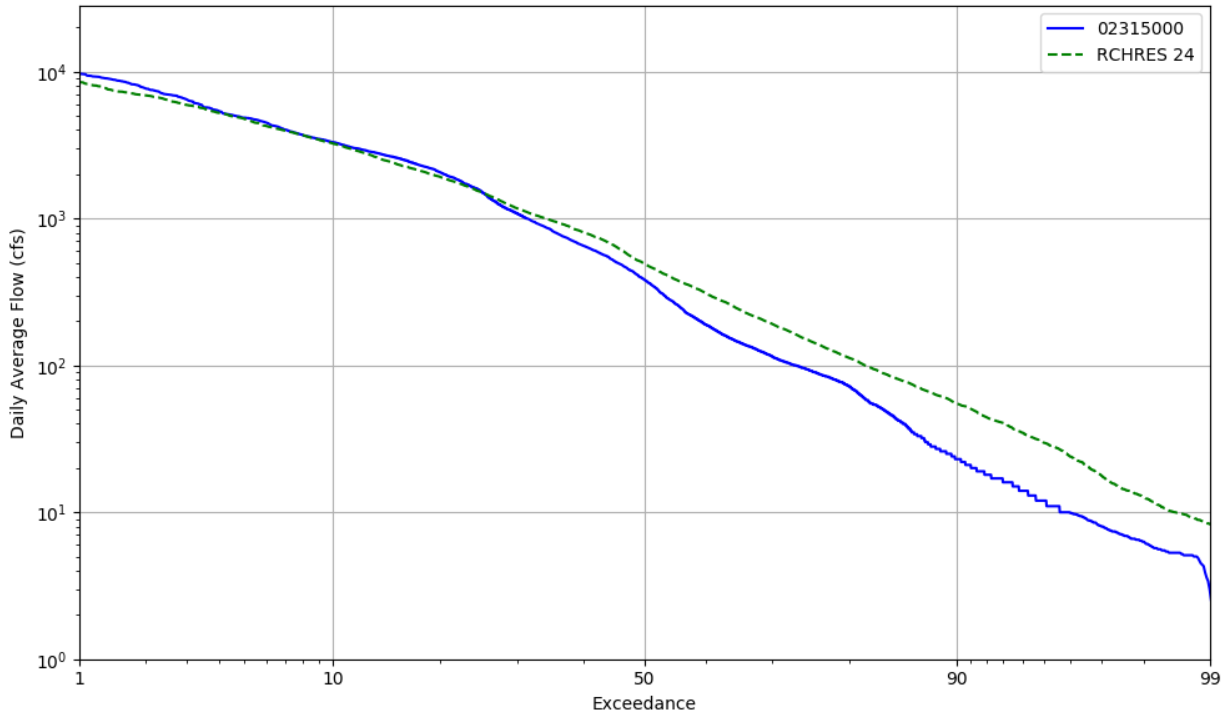


Figure T-03110201-8: Daily exceedance for HSFP reach 24 and USGS station 02315000.

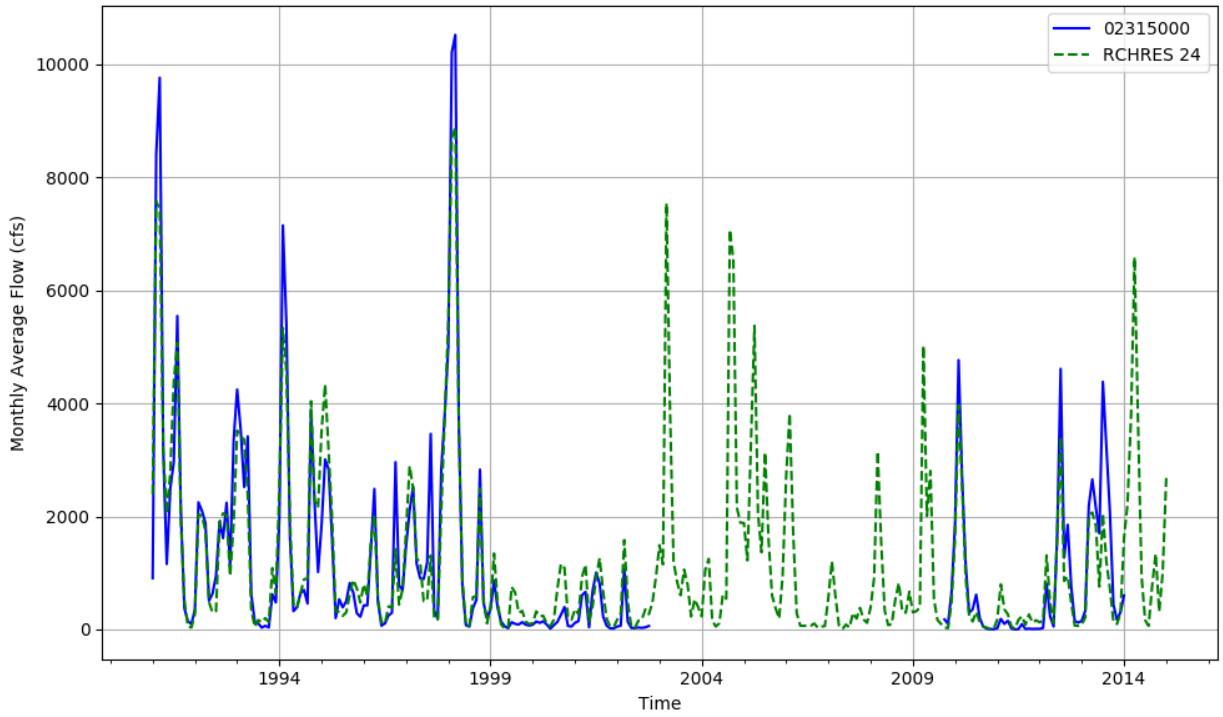


Figure T-03110201-9: Monthly flow for HSFP reach 24 and USGS station 02315000.

HSPF REACH 31, USGS GAUGE 02315500

Water-Data Report 2009
02315500 SUWANNEE RIVER AT WHITE SPRINGS, FL
Suwannee Basin Upper Suwannee Subbasin

LOCATION.--Lat 301932, long 824418 referenced to North American Datum of 1927, Columbia County, FL, Hydrologic Unit 03110201, in concrete gage house on right bank 250 feet downstream of bridge at U.S. Highway 41, 1.0 mi southeast of White Springs, and 171 mi upstream from mouth.

DRAINAGE AREA.--2,430 mi, approximately, includes part of watershed in Okefenokee Swamp which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1906 to December 1908, February 1927 to current year.

REVISED RECORDS.--WSP 1504: 1906, 1908. WSP 1905: WDR FL-75-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 31, 1932, nonrecording gage at site 1.0 mi downstream at datum 48.54 ft. Aug. 1, 1932 to Oct. 10, 1979, water-stage recorder, at present site, at datum 48.54 ft. Oct. 11, 1979 to Dec. 1, 1983, non-recording gage at site 2.2 miles downstream at NGVD. Dec. 2, 1983 to June 30, 1996, nonrecording gage, at present site and datum.

REMARKS.--No estimated daily discharges. Records good.

Table T-03110201-5: Comparison Statistics Between HSPF Reach 31 and USGS Gauge 02315500.

Statistic	Value
Bias	-47.12
Standard error	737.51
Relative bias	-0.03
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.73
Index of agreement	0.85

Table T-03110201-6: Hydrologic Indices Between USGS Gauge 02315500 and HSPF Reach 31.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02315500	Simulated Reach 31	Percent Difference
MA1: Mean, all daily flows	1465.20	1417.16	-3.28

MA2: Median, all daily flows	492.00	599.33	21.81
MA3: CV, all daily flows	119.85	104.71	-12.63
MA4: CV, log of all daily flows	138.19	120.89	-12.52
MA5: Mean daily flow / median daily flow	2.98	2.36	-20.60
MA9: (Q10 - Q90) / median daily flow	7.92	6.17	-22.10
MA10: (Q20 - Q80) / median daily flow	4.42	3.52	-20.42
MA11: (Q25 - Q75) / median daily flow	3.08	2.68	-13.09
MA12: Mean monthly flow, January	1160.62	1550.53	33.59
MA13: Mean monthly flow, February	2475.91	2560.15	3.40
MA14: Mean monthly flow, March	3148.23	3016.65	-4.18
MA15: Mean monthly flow, April	2164.66	1971.15	-8.94
MA16: Mean monthly flow, May	643.04	722.72	12.39
MA17: Mean monthly flow, June	882.23	729.42	-17.32
MA18: Mean monthly flow, July	1309.68	1069.57	-18.33
MA19: Mean monthly flow, August	1279.02	1080.82	-15.50
MA20: Mean monthly flow, September	1160.84	1084.69	-6.56
MA21: Mean monthly flow, October	1476.72	1191.00	-19.35
MA22: Mean monthly flow, November	612.07	638.29	4.29
MA23: Mean monthly flow, December	645.82	800.04	23.88
ML1: Mean minimum monthly flow, January	577.96	762.84	31.99
ML2: Mean minimum monthly flow, February	1668.66	1626.96	-2.50
ML3: Mean minimum monthly flow, March	1868.96	1779.79	-4.77
ML4: Mean minimum monthly flow, April	1003.17	997.95	-0.52
ML5: Mean minimum monthly flow, May	260.85	364.48	39.72
ML6: Mean minimum monthly flow, June	312.30	336.44	7.73
ML7: Mean minimum monthly flow, July	670.59	615.87	-8.16
ML8: Mean minimum monthly flow, August	730.17	636.19	-12.87
ML9: Mean minimum monthly flow, September	426.84	452.75	6.07
ML10: Mean minimum monthly flow, October	550.73	499.28	-9.34
ML11: Mean minimum monthly flow, November	343.07	400.97	16.88
ML12: Mean minimum monthly flow, December	415.10	476.89	14.88
ML13: CV of minimum monthly flows	180.18	148.18	-17.76
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.10	-14.31
ML15: Mean minimum annual flow / mean annual flow	0.06	0.06	-2.72
ML16: Median minimum annual flow / median annual flow	0.07	0.08	19.05
ML20: Ratio of baseflow volume to total flow volume	0.72	0.73	1.22
ML22: Mean annual minimum flow divided by catchment area	0.72	0.66	-7.67
RA1: Mean of positive changes from one day to next (rise rate)	138.03	127.93	
RA2: CV, mean of positive changes from one day to next (rise rate)	342.95	343.02	
RA3: Mean of negative changes from one day to next (fall rate)	64.86	60.85	
RA4: CV, mean of negative changes from one day to next (fall rate)	192.52	194.88	
RA5: Ratio of days that are higher than previous day	0.30	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.05	
RA8: Number of flow reversals from one day to the next	57.50	48.29	

RA9: CV, number of flow reversals from one day to the next	22.62	21.90	

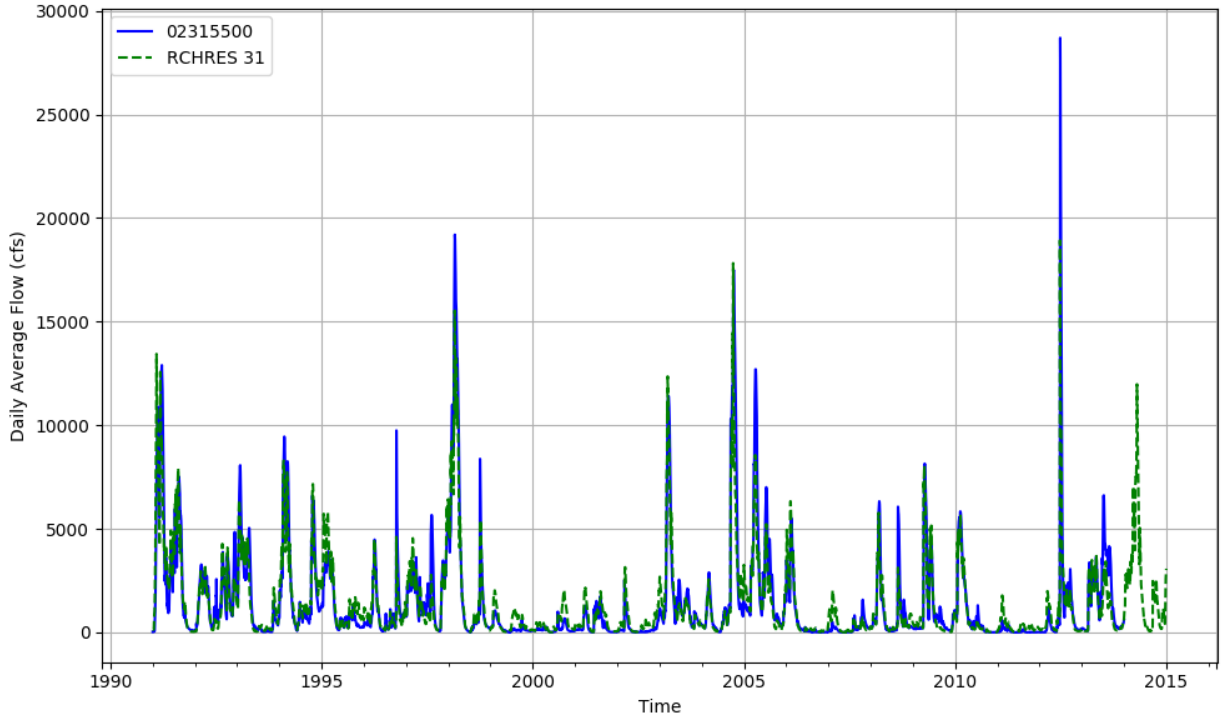


Figure T-03110201-10: Daily flow for HSFP reach 31 and USGS station 02315500.

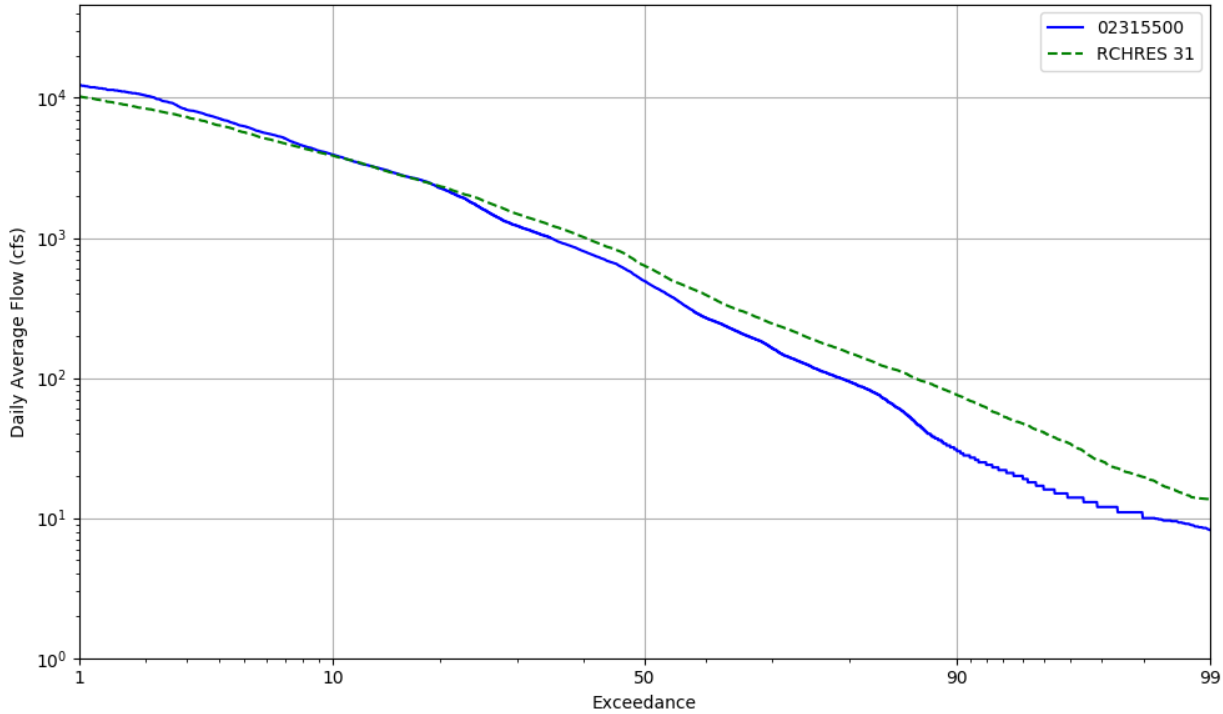


Figure T-03110201-11: Daily exceedance for HSFP reach 31 and USGS station 02315500.

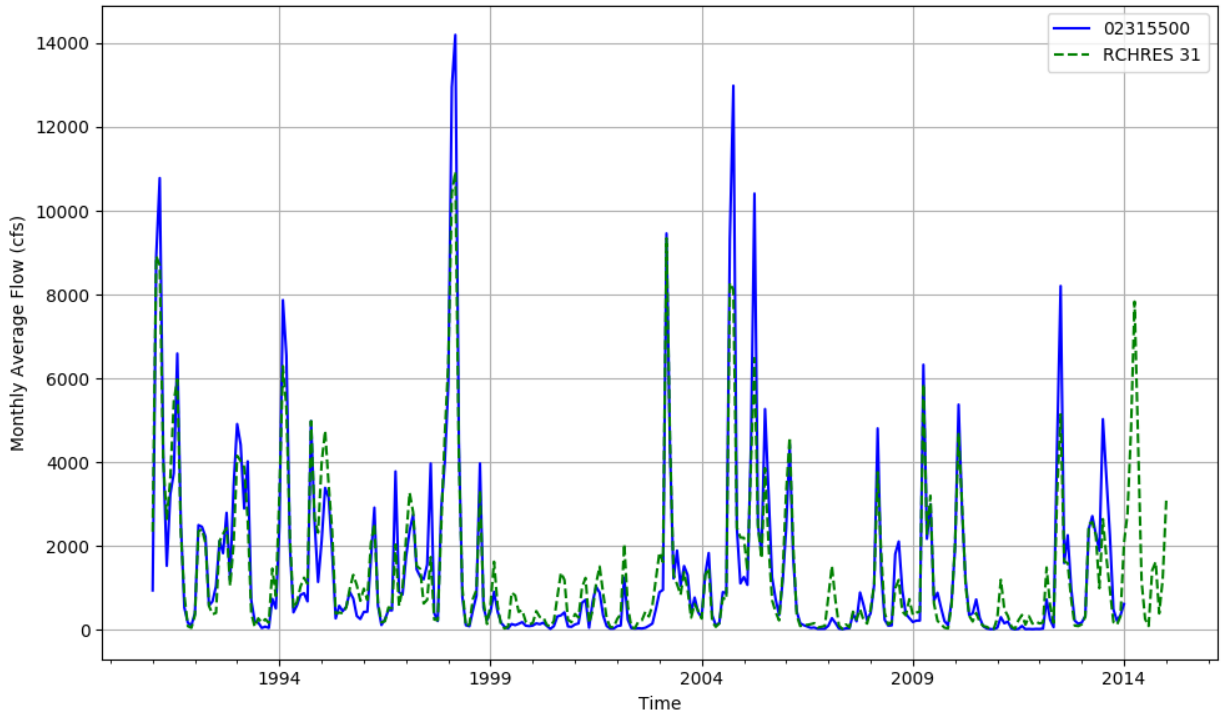


Figure T-03110201-12: Monthly flow for HSFP reach 31 and USGS station 02315500.

HSPF REACH 34, USGS GAUGE 02315550

Water-Data Report 2012
02315550 SUWANNEE RIVER AT SUWANNEE SPRINGS FLA
Suwannee Basin Upper Suwannee Subbasin

LOCATION.--Lat 302334, long 825600 referenced to North American Datum of 1927, in NE 1/4 sec.20, T.1 S., R.14 E., Suwannee County, FL, Hydrologic Unit 03110201, on left bank, at town of Suwannee Springs, 0.2 mi upstream from Suwannee Springs, 0.6 mi upstream from bridge on U.S. Highway 129, 7.5 mi North of Live Oak, and 150 mi upstream from mouth.

DRAINAGE AREA.--2,630 mi, approximately, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Prior to 1960 six miscellaneous measurements in 1906, 1951, and 1956. November 1960 to September 1974 (gage heights and discharge measurements only), October 1974 to September 1996, October 2011 to September 2012.

REVISED RECORDS.--WSP 2105: WDR FL-75-1: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is NGVD of 1929.

REMARKS.--Records fair.

Table T-03110201-7: Comparison Statistics Between HSPF Reach 34 and USGS Gauge 02315550.

Statistic	Value
Bias	14.94
Standard error	709.85
Relative bias	0.01
Relative standard error	0.34
Nash-Sutcliffe coefficient	0.88
Kling-Gupta coefficient	0.94
Coefficient of efficiency	0.69
Index of agreement	0.84

Table T-03110201-8: Hydrologic Indices Between USGS Gauge 02315550 and HSPF Reach 34.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02315550	Simulated Reach 34	Percent Difference
MA1: Mean, all daily flows	2111.18	2274.64	7.74
MA2: Median, all daily flows	1150.00	1474.38	28.21
MA3: CV, all daily flows	57.49	54.42	-5.34
MA4: CV, log of all daily flows	97.50	92.92	-4.69

MA5: Mean daily flow / median daily flow	1.84	1.54	-15.96
MA9: (Q10 - Q90) / median daily flow	4.16	3.47	-16.62
MA10: (Q20 - Q80) / median daily flow	2.64	2.42	-8.38
MA11: (Q25 - Q75) / median daily flow	2.23	1.92	-13.81
MA12: Mean monthly flow, January	1266.91	1783.62	40.78
MA13: Mean monthly flow, February	2986.70	3268.99	9.45
MA14: Mean monthly flow, March	3068.28	3128.34	1.96
MA15: Mean monthly flow, April	2130.03	1979.43	-7.07
MA16: Mean monthly flow, May	654.81	674.81	3.05
MA17: Mean monthly flow, June	772.51	692.12	-10.41
MA18: Mean monthly flow, July	880.39	1017.15	15.53
MA19: Mean monthly flow, August	1305.66	1337.48	2.44
MA20: Mean monthly flow, September	872.01	958.62	9.93
MA21: Mean monthly flow, October	1063.99	1208.07	13.54
MA22: Mean monthly flow, November	644.93	801.98	24.35
MA23: Mean monthly flow, December	664.84	717.52	7.92
ML1: Mean minimum monthly flow, January	765.50	990.22	29.36
ML2: Mean minimum monthly flow, February	3129.83	3122.00	-0.25
ML3: Mean minimum monthly flow, March	3067.17	2813.72	-8.26
ML4: Mean minimum monthly flow, April	1828.00	1727.25	-5.51
ML5: Mean minimum monthly flow, May	535.50	559.81	4.54
ML6: Mean minimum monthly flow, June	697.67	627.01	-10.13
ML7: Mean minimum monthly flow, July	939.33	1036.61	10.36
ML8: Mean minimum monthly flow, August	1394.50	1147.74	-17.69
ML9: Mean minimum monthly flow, September	608.67	813.36	33.63
ML10: Mean minimum monthly flow, October	574.20	873.35	52.10
ML11: Mean minimum monthly flow, November	673.20	872.30	29.58
ML12: Mean minimum monthly flow, December	823.60	917.45	11.40
ML13: CV of minimum monthly flows	114.83	102.41	-10.81
ML14: Mean minimum daily flow / mean median annual flow	0.11	0.05	-48.74
ML15: Mean minimum annual flow / mean annual flow	0.07	0.04	-42.74
ML16: Median minimum annual flow / median annual flow	0.09	0.06	-41.04
ML20: Ratio of baseflow volume to total flow volume	0.77	0.73	-5.41
ML22: Mean annual minimum flow divided by catchment area	33334.54	33334.15	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	143.00	158.81	
RA2: CV, mean of positive changes from one day to next (rise rate)	159.01	143.63	
RA3: Mean of negative changes from one day to next (fall rate)	74.92	85.45	
RA4: CV, mean of negative changes from one day to next (fall rate)	119.51	117.77	
RA5: Ratio of days that are higher than previous day	0.34	0.35	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.04	
RA8: Number of flow reversals from one day to the next	36.67	28.11	
RA9: CV, number of flow reversals from one day to the next	78.35	77.99	

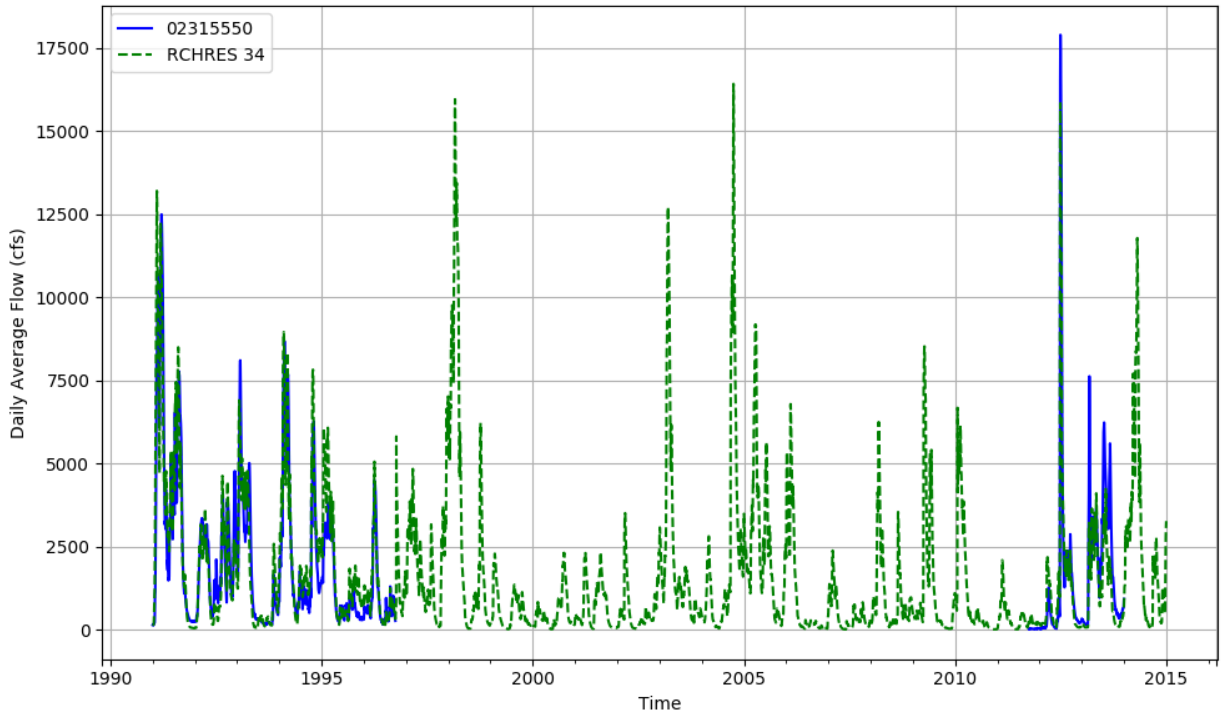


Figure T-03110201-13: Daily flow for HSFP reach 34 and USGS station 02315550.

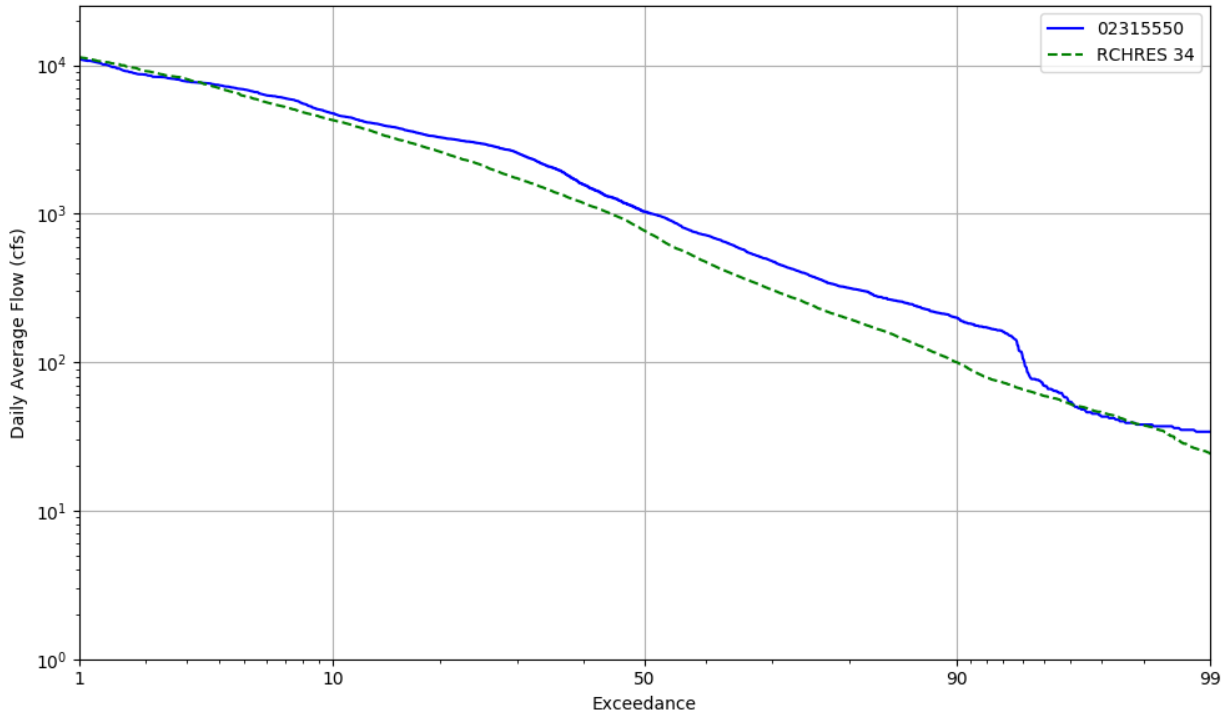


Figure T-03110201-14: Daily exceedance for HSFP reach 34 and USGS station 02315550.

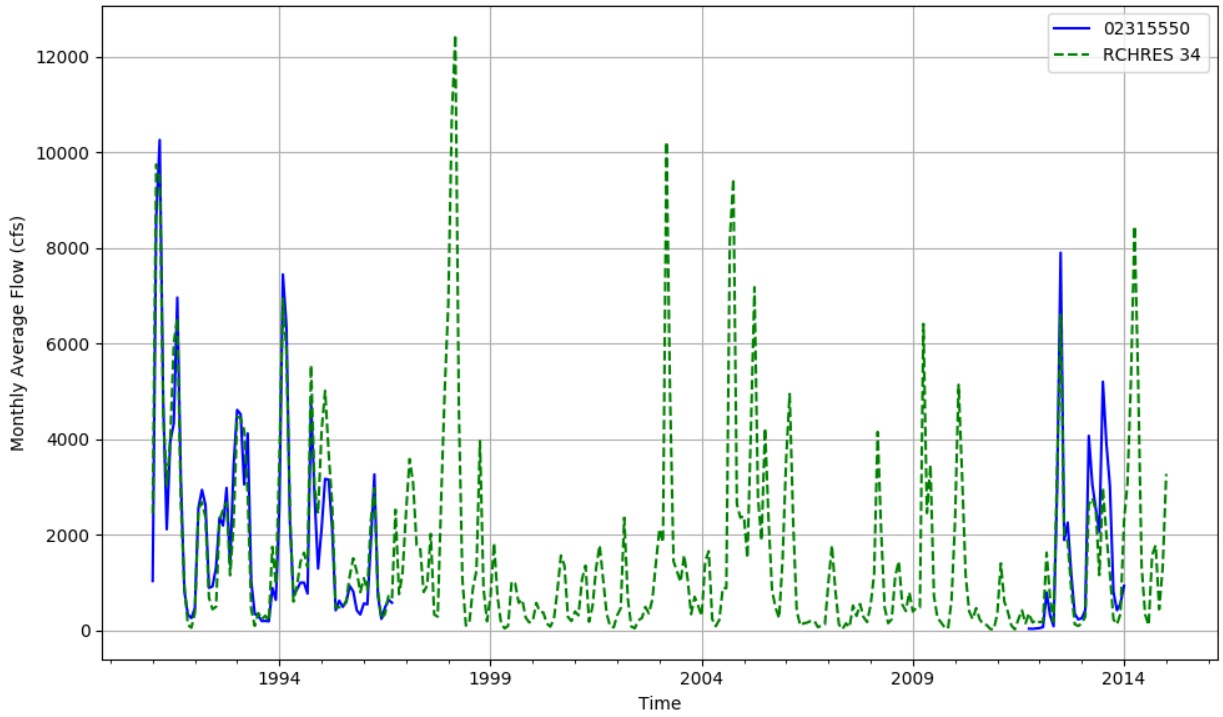


Figure T-03110201-15: Monthly flow for HSFP reach 34 and USGS station 02315550.

HSPF REACH 44, USGS GAUGE 0231427S

Water-Data Report 2012
02315550 SUWANNEE RIVER AT SUWANNEE SPRINGS FLA
Suwannee Basin Upper Suwannee Subbasin

LOCATION.--Lat 302334, long 825600 referenced to North American Datum of 1927, in NE 1/4 sec.20, T.1 S., R.14 E., Suwannee County, FL, Hydrologic Unit 03110201, on left bank, at town of Suwannee Springs, 0.2 mi upstream from Suwannee Springs, 0.6 mi upstream from bridge on U.S. Highway 129, 7.5 mi North of Live Oak, and 150 mi upstream from mouth.

DRAINAGE AREA.--2,630 mi, approximately, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Prior to 1960 six miscellaneous measurements in 1906, 1951, and 1956. November 1960 to September 1974 (gage heights and discharge measurements only), October 1974 to September 1996, October 2011 to September 2012.

REVISED RECORDS.--WSP 2105: WDR FL-75-1: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is NGVD of 1929.

REMARKS.--Records fair.

Table T-03110201-9: Comparison Statistics Between HSPF Reach 44 and USGS Gauge 0231427S.

Statistic	Value
Bias	-1.04
Standard error	108.99
Relative bias	-0.01
Relative standard error	0.53
Nash-Sutcliffe coefficient	0.72
Kling-Gupta coefficient	0.86
Coefficient of efficiency	0.48
Index of agreement	0.75

Table T-03110201-10: Hydrologic Indices Between USGS Gauge 0231427S and HSPF Reach 44.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 0231427S	Simulated Reach 44	Percent Difference
MA1: Mean, all daily flows	136.12	134.85	-0.93
MA2: Median, all daily flows	64.00	47.73	-25.42
MA3: CV, all daily flows	119.73	149.19	24.60
MA4: CV, log of all daily flows	129.78	130.53	0.58

MA5: Mean daily flow / median daily flow	2.13	2.83	32.84
MA9: (Q10 - Q90) / median daily flow	5.21	6.96	33.59
MA10: (Q20 - Q80) / median daily flow	2.09	3.25	55.62
MA11: (Q25 - Q75) / median daily flow	1.39	2.08	49.32
MA12: Mean monthly flow, January	78.86	97.29	23.38
MA13: Mean monthly flow, February	96.55	137.75	42.67
MA14: Mean monthly flow, March	444.70	435.86	-1.99
MA15: Mean monthly flow, April	230.99	159.51	-30.95
MA16: Mean monthly flow, May	101.32	24.30	-76.02
MA17: Mean monthly flow, June	36.66	32.02	-12.64
MA18: Mean monthly flow, July	102.47	94.12	-8.15
MA19: Mean monthly flow, August	195.36	178.68	-8.54
MA20: Mean monthly flow, September	135.94	153.97	13.27
MA21: Mean monthly flow, October	108.35	195.50	80.44
MA22: Mean monthly flow, November	39.91	41.02	2.77
MA23: Mean monthly flow, December	55.57	64.11	15.37
ML1: Mean minimum monthly flow, January	45.64	32.61	-28.54
ML2: Mean minimum monthly flow, February	63.20	55.54	-12.12
ML3: Mean minimum monthly flow, March	150.40	130.42	-13.28
ML4: Mean minimum monthly flow, April	135.88	48.81	-64.08
ML5: Mean minimum monthly flow, May	25.10	12.51	-50.15
ML6: Mean minimum monthly flow, June	4.70	8.18	74.08
ML7: Mean minimum monthly flow, July	49.33	39.31	-20.32
ML8: Mean minimum monthly flow, August	52.42	49.17	-6.20
ML9: Mean minimum monthly flow, September	52.38	40.75	-22.21
ML10: Mean minimum monthly flow, October	54.21	50.53	-6.78
ML11: Mean minimum monthly flow, November	26.77	20.89	-21.95
ML12: Mean minimum monthly flow, December	29.05	29.43	1.32
ML13: CV of minimum monthly flows	157.40	174.35	10.77
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.10	-0.55
ML15: Mean minimum annual flow / mean annual flow	0.04	0.04	-9.31
ML16: Median minimum annual flow / median annual flow	0.04	0.04	-7.56
ML20: Ratio of baseflow volume to total flow volume	0.52	0.58	13.24
ML22: Mean annual minimum flow divided by catchment area	0.04	0.08	115.84
RA1: Mean of positive changes from one day to next (rise rate)	15.78	17.86	
RA2: CV, mean of positive changes from one day to next (rise rate)	206.59	238.68	
RA3: Mean of negative changes from one day to next (fall rate)	8.49	9.61	
RA4: CV, mean of negative changes from one day to next (fall rate)	195.01	167.62	
RA5: Ratio of days that are higher than previous day	0.29	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.05	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.07	
RA8: Number of flow reversals from one day to the next	49.00	76.00	
RA9: CV, number of flow reversals from one day to the next	30.10	15.43	

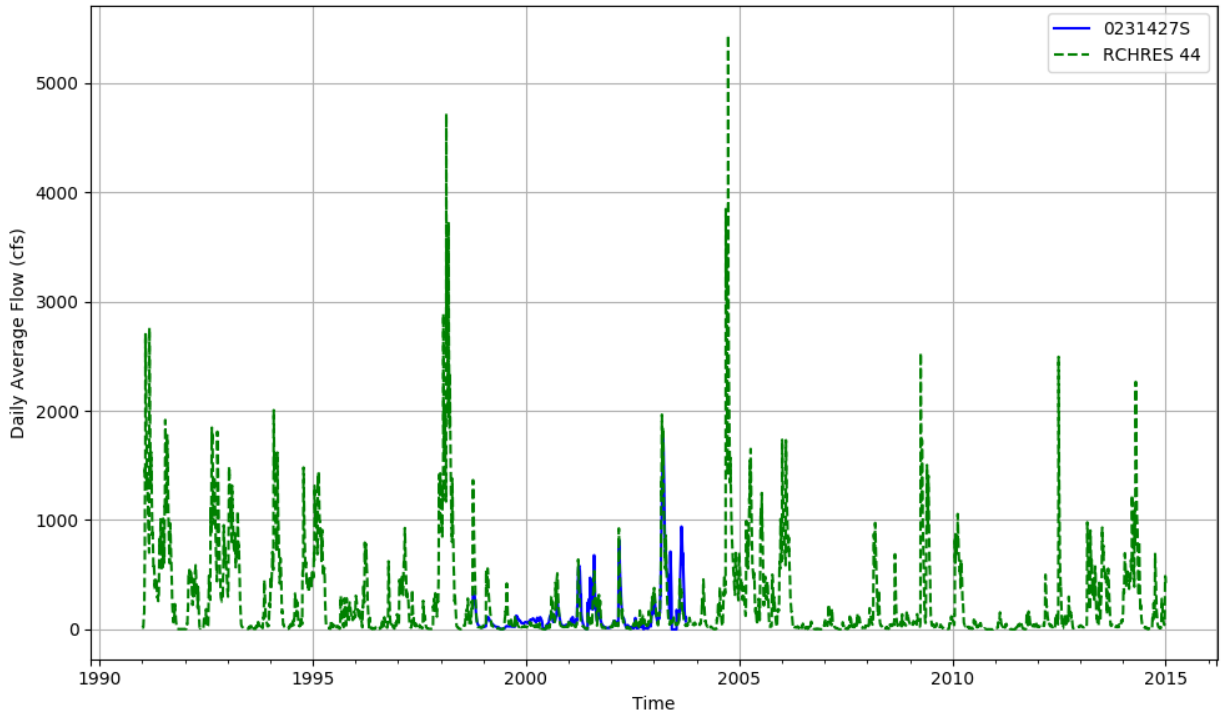


Figure T-03110201-16: Daily flow for HSFP reach 44 and USGS station 0231427S.

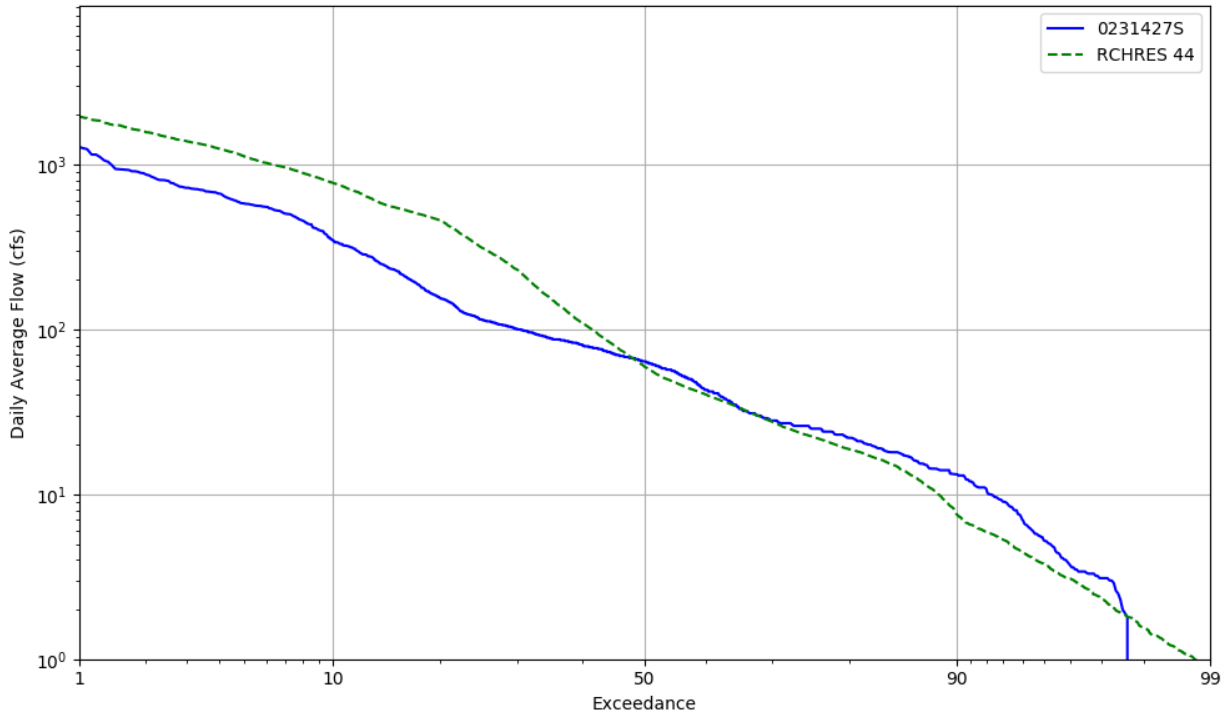


Figure T-03110201-17: Daily exceedance for HSFP reach 44 and USGS station 0231427S.

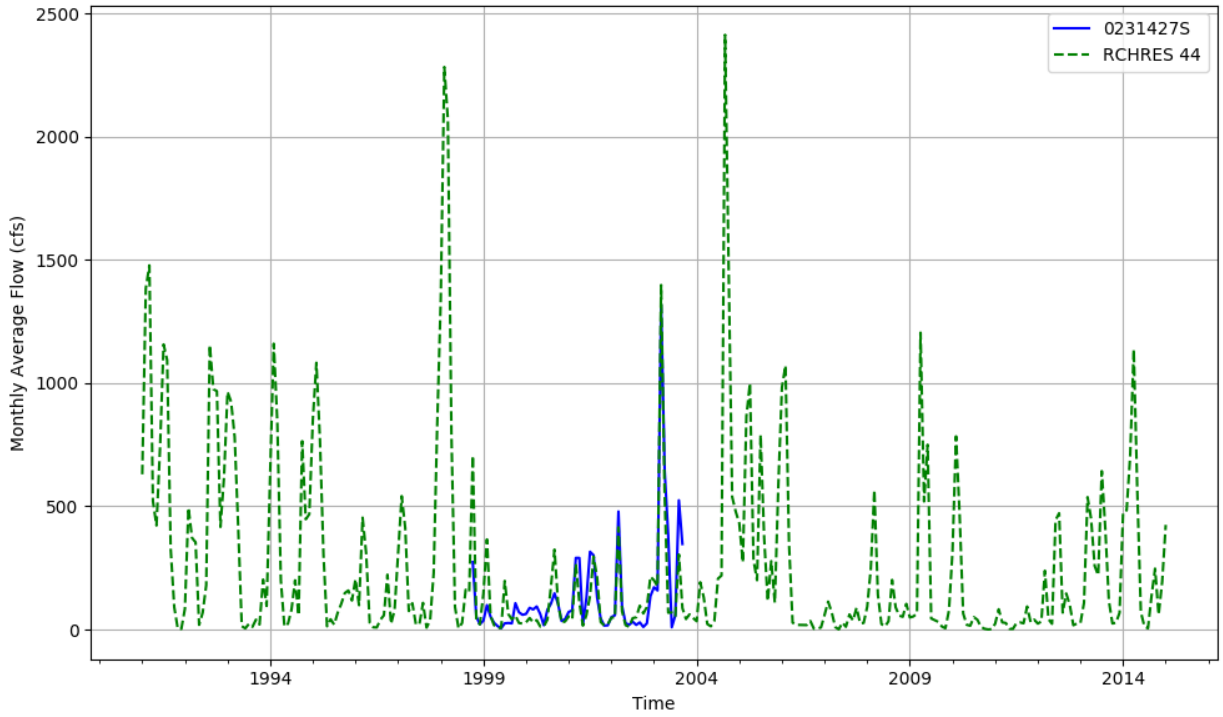


Figure T-03110201-18: Monthly flow for HSFP reach 44 and USGS station 0231427S.

HSPF REACH 45, USGS GAUGE 02314500

Water-Data Report 2009
02314500 SUWANNEE RIVER AT FARGO, GA
Suwannee Basin Upper Suwannee Subbasin

LOCATION.--Lat 304050, long 823338 referenced to North American Datum of 1983, Clinch County, GA, Hydrologic Unit 03110201, on downstream side of right bank pier of bridge on US 441, 4.0 mi upstream from Suwannoochee Creek, 12.0 mi downstream from Mixons Ferry dam site, and at Fargo.

DRAINAGE AREA.--1,130 mi, revised. (Drainage area includes part of the Okefenokee Swamp watershed, the boundaries of which are indeterminable).

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January 1927 to December 1931, April 1937 to current year. Monthly discharge only for April 1937, published in WSP 1304.
GAGE-HEIGHT: January 1921 to September 1923 (gage-heights only), October 1998 to current year.

REVISED RECORDS.--WSP 1234: Drainage area. WSP 1504: 1928-30. WDR GA-08-1: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 91.90 feet above National Geodetic Vertical Datum (NGVD) of 1929. From January 27, 1921 to September 30, 1923, a non-recording gage was located at site 1,200 feet upstream at datum 3.00 feet higher. From January 27, 1927 to December 31, 1931 and from April 20, 1937 to June 10, 1938, a non-recording gage was located at site 1,000 feet upstream at datum 1.00 feet higher. From June 11, 1938 to November 26, 1952, a non-recording gage was located at site 1,000 feet upstream at present datum. From October 14, 1960 to October 29, 1970, an auxiliary water-stage recorder was located at a site about 3.0 miles upstream, and since November 5, 1971, an auxiliary water-stage recorder was located at a site about 2.0 miles upstream.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for periods of estimated discharge, which are poor. Gage-height records good. Low flow at times affected by manipulation of water level at Mixons Ferry Dam.

Table T-03110201-11: Comparison Statistics Between HSPF Reach 45 and USGS Gauge 02314500.

Statistic	Value
Bias	-159.48
Standard error	472.81
Relative bias	-0.20
Relative standard error	0.41
Nash-Sutcliffe coefficient	0.83
Kling-Gupta coefficient	0.68
Coefficient of efficiency	0.66
Index of agreement	0.82

Table T-03110201-12: Hydrologic Indices Between USGS Gauge 02314500 and HSPF Reach 45.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02314500	Simulated Reach 45	Percent Difference
MA1: Mean, all daily flows	781.80	622.05	-20.43
MA2: Median, all daily flows	267.00	222.57	-16.64
MA3: CV, all daily flows	108.96	110.01	0.96
MA4: CV, log of all daily flows	130.93	129.30	-1.25
MA5: Mean daily flow / median daily flow	2.93	2.79	-4.55
MA9: (Q10 - Q90) / median daily flow	8.17	7.78	-4.74
MA10: (Q20 - Q80) / median daily flow	4.71	3.78	-19.83
MA11: (Q25 - Q75) / median daily flow	3.24	3.06	-5.65
MA12: Mean monthly flow, January	662.72	731.41	10.36
MA13: Mean monthly flow, February	1354.41	1193.27	-11.90
MA14: Mean monthly flow, March	1639.71	1366.45	-16.66
MA15: Mean monthly flow, April	1090.87	867.73	-20.45
MA16: Mean monthly flow, May	352.96	295.06	-16.40
MA17: Mean monthly flow, June	418.22	279.74	-33.11
MA18: Mean monthly flow, July	558.94	421.61	-24.57
MA19: Mean monthly flow, August	706.84	456.93	-35.36
MA20: Mean monthly flow, September	680.99	485.12	-28.76
MA21: Mean monthly flow, October	772.12	479.85	-37.85
MA22: Mean monthly flow, November	389.99	268.27	-31.21
MA23: Mean monthly flow, December	425.99	367.58	-13.71
ML1: Mean minimum monthly flow, January	352.26	353.67	0.40
ML2: Mean minimum monthly flow, February	885.13	746.89	-15.62
ML3: Mean minimum monthly flow, March	960.09	732.63	-23.69
ML4: Mean minimum monthly flow, April	541.72	432.21	-20.21
ML5: Mean minimum monthly flow, May	144.96	147.67	1.87
ML6: Mean minimum monthly flow, June	181.89	142.31	-21.76
ML7: Mean minimum monthly flow, July	342.02	220.11	-35.64
ML8: Mean minimum monthly flow, August	386.53	259.90	-32.76
ML9: Mean minimum monthly flow, September	253.43	172.89	-31.78
ML10: Mean minimum monthly flow, October	299.09	202.80	-32.19
ML11: Mean minimum monthly flow, November	232.77	178.42	-23.35
ML12: Mean minimum monthly flow, December	285.26	221.08	-22.50
ML13: CV of minimum monthly flows	159.14	154.09	-3.17
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.09	-12.61
ML15: Mean minimum annual flow / mean annual flow	0.06	0.05	-19.17
ML16: Median minimum annual flow / median annual flow	0.07	0.05	-26.17

ML20: Ratio of baseflow volume to total flow volume	0.67	0.70	3.87
ML22: Mean annual minimum flow divided by catchment area	0.44	0.23	-47.77
RA1: Mean of positive changes from one day to next (rise rate)	67.16	58.97	
RA2: CV, mean of positive changes from one day to next (rise rate)	202.11	338.29	
RA3: Mean of negative changes from one day to next (fall rate)	31.58	28.03	
RA4: CV, mean of negative changes from one day to next (fall rate)	156.02	194.87	
RA5: Ratio of days that are higher than previous day	0.30	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.05	
RA8: Number of flow reversals from one day to the next	51.58	53.00	
RA9: CV, number of flow reversals from one day to the next	25.03	22.08	

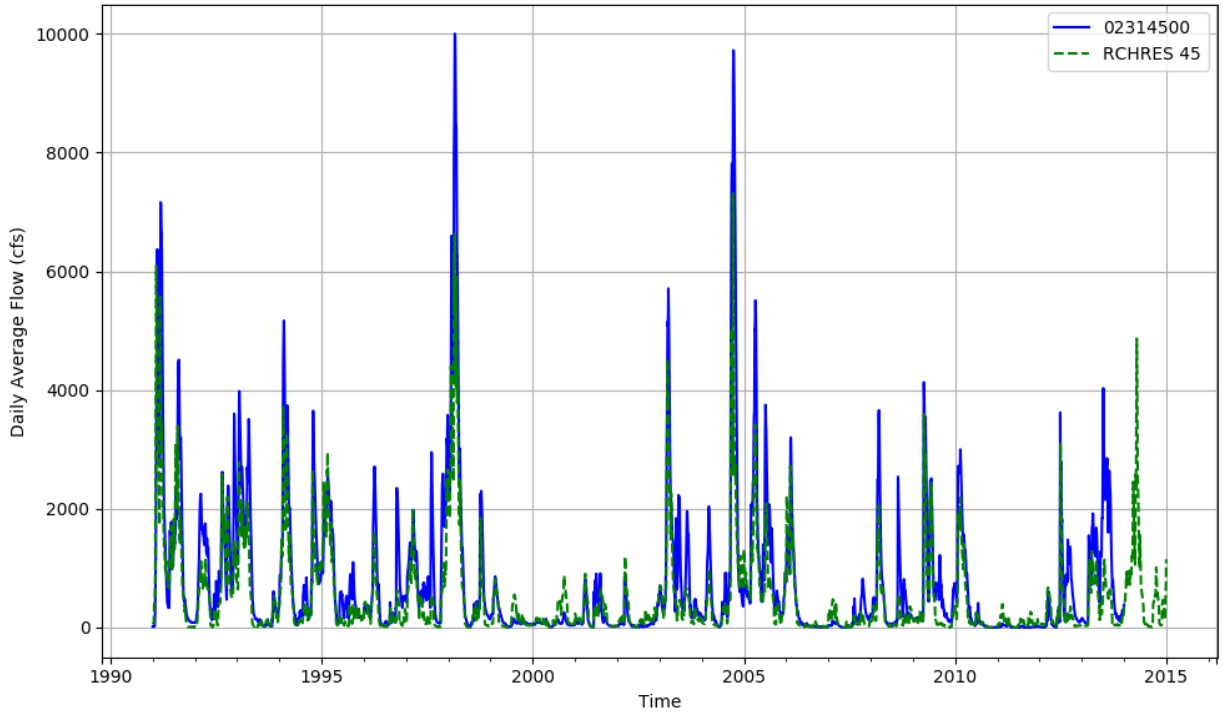


Figure T-03110201-19: Daily flow for HSFP reach 45 and USGS station 02314500.

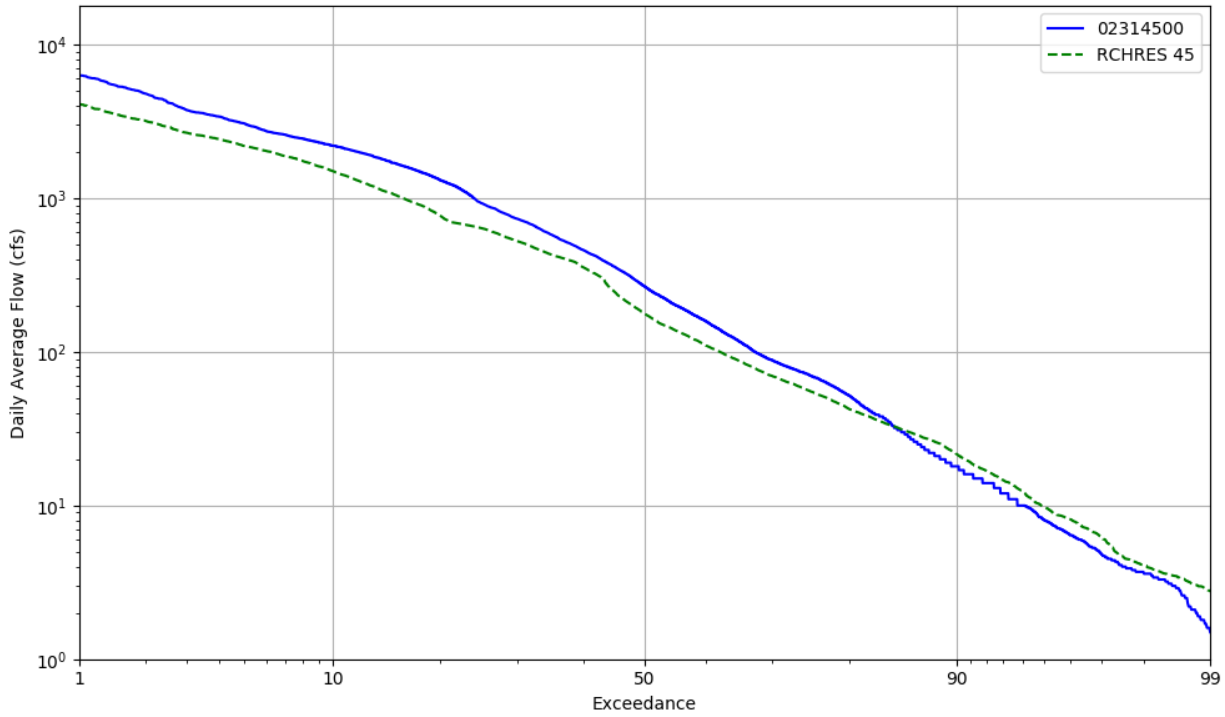


Figure T-03110201-20: Daily exceedance for HSFP reach 45 and USGS station 02314500.

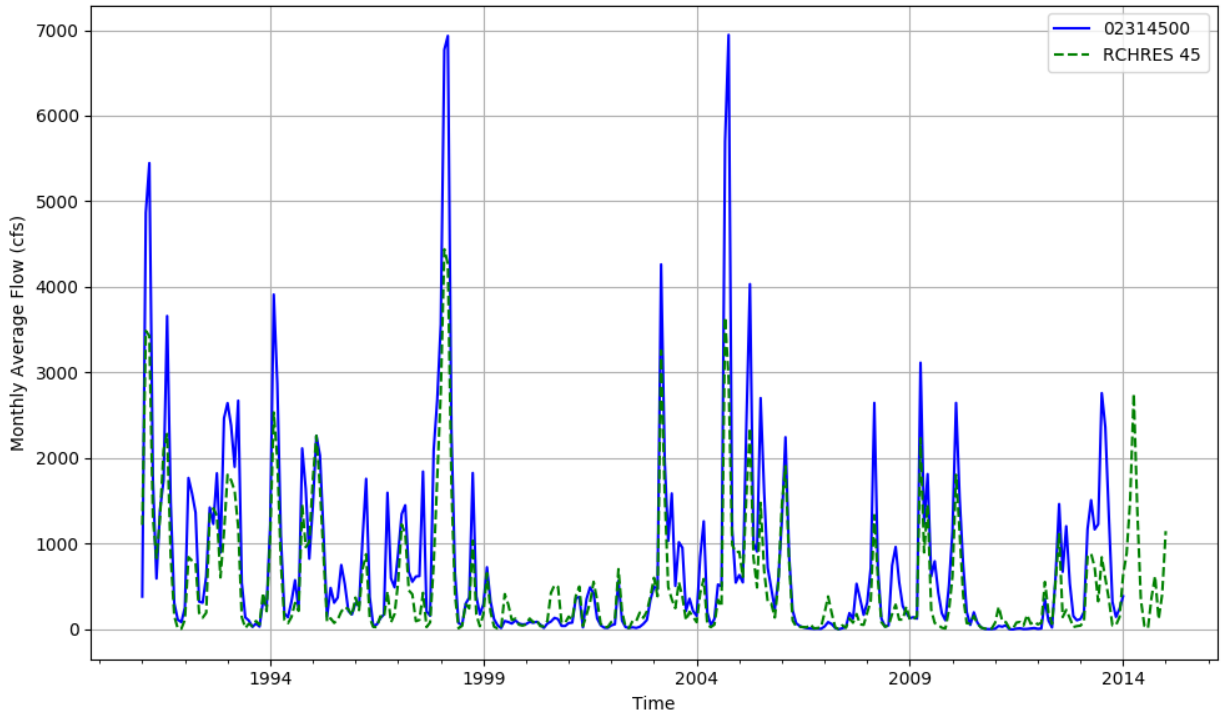


Figure T-03110201-21: Monthly flow for HSFP reach 45 and USGS station 02314500.

Table T-03110201-13: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6556	53911	12455	1499	389	6954	524522	163857	86341	32910	13475	776981	264	1336	6417	1687867
AREA(%)	0.4	3.2	0.7	0.1	0.0	0.4	31.0	9.7	5.1	1.9	0.8	45.9	0.0	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		2856	1395	376	389											5017
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	42.5	41.3	41.1	42.0	42.2	42.5	41.2	41.4	41.4	42.2	42.1	41.5	49.4	62.1	44.4	41.3
SURLI		0.0	1.5	2.1	1.9									0.6	5.6	0.0
UZLI																0.0
LZLI		0.0	4.0	16.7	19.9										0.2	0.0
SURO: PERVIOUS	0.3	0.2	0.5	0.7	0.1	0.2	0.0	0.1	0.0	0.1	0.1	1.1	0.5	0.5	0.2	0.5
SURO: IMPERVIOUS		30.7	30.6	31.5	31.4											0.1
SURO: COMBINED	0.3	1.7	3.5	6.9	15.8	0.2	0.0	0.1	0.0	0.1	0.1	1.1	0.5	0.5	0.2	0.6
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.6	9.0	17.5	29.4	27.5	19.0	3.5	9.3	8.2	13.6	11.8	0.4	14.5	30.0	16.6	3.6
AGWI	10.0	10.6	18.7	30.5	28.7	20.7	4.8	11.0	9.8	15.1	13.4	2.1	15.6	31.0	18.3	5.2
IGWI	0.1	0.5	0.4	0.2	0.4	0.1	0.3	0.7	0.6	0.2	0.1	0.3	0.0	0.1	0.5	0.3
CEPE		10.6	9.8	9.9	12.4	6.5	14.9	10.2	11.5	9.7	7.7	20.2	15.8	11.7	8.6	16.2
UZET	3.6	1.8	2.4	3.0	4.3	2.9	0.7	1.7	1.6	2.1	0.8	1.1	2.2	3.7	1.0	1.1
LZET	1.7	19.2	16.2	17.4	19.4	12.9	23.4	19.6	19.8	15.9	21.5	0.3	16.0	16.5	23.3	11.7
AGWET	9.1	1.2	1.3	1.1	0.9	1.7	1.0	1.3	1.3	1.3	1.5	1.5	0.9	1.0	1.6	1.3
BASET	0.4	0.7	0.6	0.5	0.7	0.5	0.5	0.7	0.7	0.5	0.5	0.4	0.4	0.5	0.7	0.5
SURET	27.8											18.8				8.7
PERO	1.8	9.2	18.0	30.1	27.6	19.1	3.5	9.3	8.3	13.8	12.0	1.5	15.1	30.5	16.8	4.1
IGWI	0.1	0.5	0.4	0.2	0.4	0.1	0.3	0.7	0.6	0.2	0.1	0.3	0.0	0.1	0.5	0.3
TAET: PERVIOUS	42.6	33.5	30.3	31.8	37.6	24.5	40.5	33.5	34.9	29.5	32.0	42.3	35.3	33.5	35.2	39.6
IMPEV: IMPERVIOUS		10.5	10.5	10.5	10.8											0.0
ET: COMBINED	42.6	32.4	28.3	27.5	24.2	24.5	40.5	33.5	34.9	29.5	32.0	42.3	35.3	33.5	35.2	39.6
PET	46.5	46.4	46.4	46.7	46.8	46.6	46.3	46.4	46.3	46.5	46.2	46.4	46.5	46.4	46.1	46.2

Table T-03110201-14: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6556	53911	12455	1499	389	6954	524522	163857	86341	32910	13475	776981	264	1336	6417	1687867
AREA(%)	0.4	3.2	0.7	0.1	0.0	0.4	31.0	9.7	5.1	1.9	0.8	45.9	0.0	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		2856	1395	376	389											5017
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	53.7	54.0	54.1	53.1	54.1	53.2	54.4	54.1	54.3	52.3	52.5	55.2	59.0	69.5	58.2	54.5
SURLI		0.0	1.5	2.2	1.9									0.2	7.4	0.0
UZLI																0.0
LZLI		0.0	3.6	14.5	17.0										0.3	0.0
SURO: PERVIOUS	1.6	1.5	1.9	2.5	0.9	1.5	0.2	0.7	0.6	1.3	0.7	4.1	2.1	1.7	0.7	2.1
SURO: IMPERVIOUS		41.6	41.6	40.6	41.6											0.1
SURO: COMBINED	1.6	3.5	5.9	10.1	21.2	1.5	0.2	0.7	0.6	1.3	0.7	4.1	2.1	1.7	0.7	2.3
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.7	11.0	20.4	29.7	27.1	22.8	6.7	11.9	10.8	15.7	13.4	0.4	15.6	30.3	22.2	5.1
AGWI	11.8	14.0	23.5	32.7	29.8	26.3	8.4	15.0	13.7	18.6	16.4	1.8	18.2	32.9	25.8	7.0
IGWI	0.1	0.7	0.5	0.2	0.6	0.1	0.6	1.0	0.8	0.3	0.1	0.2	0.0	0.1	0.9	0.5
CEPE		12.5	11.8	11.7	14.2	8.0	17.2	12.0	13.3	11.6	9.3	23.3	16.6	13.1	10.2	18.7
UZET	7.0	1.7	2.4	2.6	4.8	2.5	0.8	1.7	1.6	1.8	0.8	1.6	1.9	3.4	1.2	1.4
LZET	2.5	22.6	18.3	19.2	22.0	14.1	26.7	22.7	23.4	17.8	24.3	0.4	19.6	17.8	26.3	13.4
AGWET	12.1	1.6	1.6	1.3	1.2	2.0	1.1	1.8	1.7	1.5	1.8	1.5	1.1	1.3	2.0	1.4
BASET	0.5	0.7	0.7	0.6	0.8	0.6	0.5	0.9	0.7	0.6	0.6	0.5	0.5	0.6	0.8	0.6
SURET	28.3											22.9				10.6
PERO	3.4	12.5	22.3	32.2	28.0	24.3	6.8	12.6	11.4	16.9	14.2	4.5	17.7	32.0	22.9	7.3
IGWI	0.1	0.7	0.5	0.2	0.6	0.1	0.6	1.0	0.8	0.3	0.1	0.2	0.0	0.1	0.9	0.5
TAET: PERVIOUS	50.5	39.1	34.7	35.5	43.0	27.1	46.3	39.0	40.7	33.4	36.7	50.1	39.7	36.2	40.6	46.2
IMPEV: IMPERVIOUS		12.4	12.5	12.5	12.5											0.0
ET: COMBINED	50.5	37.8	32.5	30.9	27.7	27.1	46.3	39.0	40.7	33.4	36.7	50.1	39.7	36.2	40.6	46.2
PET	54.2	54.1	54.3	54.3	54.2	54.4	54.1	54.1	54.1	54.1	54.1	53.9	54.0	54.1	54.0	53.8

Table T-03110201-15: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6556	53911	12455	1499	389	6954	524522	163857	86341	32910	13475	776981	264	1336	6417	1687867
AREA(%)	0.4	3.2	0.7	0.1	0.0	0.4	31.0	9.7	5.1	1.9	0.8	45.9	0.0	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		2856	1395	376	389											5017
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	42.5	43.0	43.4	43.8	43.6	42.2	42.9	42.8	42.6	43.2	42.6	42.5	49.0	58.9	46.3	42.6
SURLI		0.0	1.4	2.1	1.8									0.1	7.8	0.0
UZLI																0.0
LZLI		0.0	3.5	14.3	16.7										0.3	0.0
SURO: PERVIOUS	2.0	1.2	1.5	2.0	0.8	1.2	0.2	0.7	0.5	1.3	0.9	4.1	2.0	1.6	0.7	2.1
SURO: IMPERVIOUS		32.8	33.2	33.0	32.8											0.1
SURO: COMBINED	2.0	2.8	4.7	8.2	16.8	1.2	0.2	0.7	0.5	1.3	0.9	4.1	2.0	1.6	0.7	2.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.2	9.2	17.6	27.5	24.7	18.8	5.1	9.5	8.5	13.8	11.5	0.2	13.8	26.2	18.0	4.0
AGWI	10.9	10.3	18.4	27.9	25.2	19.9	6.0	11.0	9.8	14.7	12.6	1.8	14.0	27.0	19.8	5.3
IGWI	0.1	0.5	0.3	0.2	0.4	0.1	0.4	0.7	0.6	0.2	0.1	0.2	0.0	0.1	0.7	0.3
CEPE		10.4	9.6	10.1	12.5	6.9	15.2	9.9	11.2	10.1	7.8	21.5	14.9	11.3	8.2	16.8
UZET	6.5	1.8	2.6	2.9	4.4	2.4	0.7	1.7	1.5	1.9	0.7	3.0	2.1	3.2	1.1	2.0
LZET	2.7	21.4	17.6	18.4	21.0	13.4	24.6	21.5	21.9	17.0	22.9	0.5	18.0	17.1	25.7	12.6
AGWET	11.1	1.4	1.5	1.2	1.0	1.8	0.8	1.6	1.5	1.4	1.6	1.5	1.0	1.2	1.9	1.3
BASET	0.4	0.6	0.6	0.5	0.6	0.5	0.3	0.7	0.6	0.6	0.5	0.3	0.5	0.5	0.8	0.4
SURET	23.4											15.6				7.2
PERO	3.3	10.4	19.1	29.5	25.4	20.0	5.3	10.2	9.1	15.1	12.4	4.3	15.8	27.8	18.8	6.1
IGWI	0.1	0.5	0.3	0.2	0.4	0.1	0.4	0.7	0.6	0.2	0.1	0.2	0.0	0.1	0.7	0.3
TAET: PERVIOUS	44.1	35.7	31.9	33.2	39.5	25.0	41.6	35.5	36.7	30.9	33.5	42.4	36.5	33.2	37.6	40.4
IMPEV: IMPERVIOUS		10.3	10.3	10.8	10.8											0.0
ET: COMBINED	44.1	34.4	29.7	28.7	25.1	25.0	41.6	35.5	36.7	30.9	33.5	42.4	36.5	33.2	37.6	40.4
PET	49.7	50.3	50.4	49.5	50.0	49.6	50.5	50.4	50.5	49.1	49.2	51.1	49.0	48.9	50.2	50.6

Table T-03110201-16: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6556	53911	12455	1499	389	6954	524522	163857	86341	32910	13475	776981	264	1336	6417	1687867
AREA(%)	0.4	3.2	0.7	0.1	0.0	0.4	31.0	9.7	5.1	1.9	0.8	45.9	0.0	0.1	0.4	99.7
IMPERVIOUS																
AREA(ACRES)		2856	1395	376	389											5017
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	52.3	51.3	51.2	52.2	52.2	52.6	51.2	51.3	51.3	52.0	51.5	51.1	57.0	64.6	54.0	51.1
SURLI		0.0	1.5	2.3	2.0									0.3	4.1	0.0
UZLI																0.0
LZLI		0.0	3.8	15.8	18.7										0.1	0.0
SURO: PERVIOUS	3.3	1.2	1.6	2.3	0.9	1.1	0.1	0.5	0.4	1.0	0.6	6.2	2.1	1.4	0.5	3.0
SURO: IMPERVIOUS		40.1	40.0	40.7	40.6											0.1
SURO: COMBINED	3.3	3.1	5.5	10.0	20.8	1.1	0.1	0.5	0.4	1.0	0.6	6.2	2.1	1.4	0.5	3.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	3.8	13.5	22.3	34.4	32.1	25.6	8.1	14.2	13.0	19.3	17.1	0.4	18.8	30.1	20.7	6.1
AGWI	12.4	15.6	24.3	36.1	33.7	27.9	9.6	16.4	15.0	21.2	19.1	1.8	20.2	31.7	23.1	7.7
IGWI	0.1	0.8	0.5	0.2	0.6	0.1	0.6	1.0	0.8	0.4	0.2	0.2	0.0	0.1	0.7	0.5
CEPE		11.3	10.5	10.8	13.2	7.5	15.7	10.9	12.2	10.8	8.6	21.3	14.8	11.9	9.1	17.1
UZET	4.0	2.1	2.8	3.1	4.9	2.9	1.0	2.1	2.0	2.2	0.9	1.5	2.3	3.3	1.1	1.5
LZET	1.6	20.3	16.7	17.6	19.4	13.0	24.0	20.4	20.8	16.3	22.1	0.3	17.5	16.5	23.6	12.1
AGWET	7.7	1.3	1.3	1.1	1.0	1.7	1.0	1.4	1.4	1.3	1.5	1.1	0.9	1.1	1.7	1.1
BASET	0.5	0.7	0.6	0.5	0.7	0.5	0.6	0.8	0.7	0.6	0.5	0.4	0.4	0.5	0.7	0.5
SURET	30.9											19.8				9.2
PERO	7.2	14.7	23.9	36.7	33.0	26.8	8.3	14.7	13.4	20.3	17.7	6.6	20.9	31.5	21.2	9.1
IGWI	0.1	0.8	0.5	0.2	0.6	0.1	0.6	1.0	0.8	0.4	0.2	0.2	0.0	0.1	0.7	0.5
TAET: PERVIOUS	44.7	35.8	32.0	33.2	39.2	25.6	42.2	35.6	37.0	31.2	33.6	44.3	35.9	33.2	36.2	41.5
IMPEV: IMPERVIOUS		11.3	11.2	11.5	11.5											0.0
ET: COMBINED	44.7	34.6	29.9	28.8	25.4	25.6	42.2	35.6	37.0	31.2	33.6	44.3	35.9	33.2	36.2	41.5
PET	48.3	48.3	48.3	48.3	48.5	48.4	48.3	48.3	48.2	48.1	47.9	48.4	48.0	47.9	48.0	48.2

Table T-03110201-17: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
2	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
3	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
4	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
5	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
6	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
7	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
8	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
9	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
10	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
11	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
12	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
13	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
14	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
15	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
16	0.999	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.999
17	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
18	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
19	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
20	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
21	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
22	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
23	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
24	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
25	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
26	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
27	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
28	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
29	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
30	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
31	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
32	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
33	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
34	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
35	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
36	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
37	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
38	0.999	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.972	0.999

39	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
40	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
41	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
42	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
43	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
44	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
45	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995
46	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
47	0.999	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.999
48	0.995	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.924	0.995

Table T-03110201-18: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
2	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
3	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
4	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
5	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
6	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
7	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
8	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
9	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
10	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
11	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
12	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
13	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
14	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
15	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
16	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
18	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
19	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
20	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
21	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
22	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
23	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
24	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
25	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
26	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
27	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
28	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
29	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
30	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
31	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
32	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
33	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
34	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
35	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
36	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
37	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
38	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010

39	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
40	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
41	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
42	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
43	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
44	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
45	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053
46	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
47	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
48	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053

Table T-03110201-19: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
2	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
3	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
4	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
5	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
6	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
7	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
8	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
9	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
10	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
11	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
12	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
13	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
14	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
15	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
16	0.000	0.080	0.050	0.050	0.080	0.020	0.157	0.080	0.080	0.080	0.030	0.102
17	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
18	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
19	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
20	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
21	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
22	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
23	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
24	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
25	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
26	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
27	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
28	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
29	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
30	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
31	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
32	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
33	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
34	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
35	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
36	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
37	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
38	0.000	0.050	0.050	0.050	0.080	0.020	0.170	0.050	0.050	0.050	0.030	0.286

39	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
40	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
41	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
42	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
43	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
44	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
45	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299
46	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
47	0.000	0.050	0.050	0.050	0.080	0.020	0.110	0.050	0.080	0.050	0.030	0.300
48	0.000	0.080	0.050	0.050	0.080	0.020	0.170	0.064	0.050	0.050	0.030	0.299

Table T-03110201-20: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
14	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
17	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
44	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
45	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
46	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
47	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
48	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182

Table T-03110201-21: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
9	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
10	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
11	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
12	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
13	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
14	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
15	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
16	0.001	0.332	0.332	0.332	0.332	0.474	0.710	0.474	0.474	0.474	0.568	0.001
17	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
18	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
19	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
20	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
21	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
22	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
23	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
24	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
25	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
26	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
27	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
28	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
29	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
30	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
31	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
32	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
33	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
34	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
35	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
36	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
37	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
38	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003

39	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
40	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
41	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
42	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
43	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
44	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
45	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001
46	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
47	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
48	0.001	0.402	0.402	0.402	0.402	0.574	0.861	0.574	0.574	0.574	0.689	0.001

Table T-03110201-22: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
2		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
3		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
4		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
5		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
6		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
7		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
8		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
9		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
10		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
11		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
12		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
13		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
14		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
15		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
16		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
17		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
18		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
19		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
20		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
21		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
22		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
23		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
24		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
25		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
26		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
27		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
28		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
29		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	

30		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
31		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
32		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
33		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
34		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
35		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
36		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
37		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
38		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
39		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
40		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
41		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
42		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
43		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
44		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
45		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
46		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
47		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
48		0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	

Table T-03110201-23: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
14	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.687	0.687	0.687	0.687	0.687	0.687	0.687	0.687	0.687	0.687	0.687	0.687
17	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
22	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
23	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
24	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
25	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
26	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
27	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
28	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
29	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
30	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
31	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
32	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
33	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
34	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
35	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
36	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
37	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
38	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693

39	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
40	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
41	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
42	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
43	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
44	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
45	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674
46	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
47	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
48	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674	0.674

Table T-03110201-24: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
14	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
17	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
44	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
45	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
46	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
47	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
48	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188

Table T-03110201-25: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
2	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
3	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
4	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
5	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
6	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
7	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
8	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
9	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
10	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
11	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
12	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
13	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
14	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
15	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
16	0.254	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.262
17	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
18	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
19	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
20	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
21	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
22	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
23	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
24	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
25	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
26	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
27	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
28	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
29	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
30	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
31	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
32	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
33	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
34	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
35	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
36	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
37	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
38	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.253

39	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
40	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
41	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
42	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
43	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
44	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
45	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010
46	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
47	0.262	0.655	0.400	0.400	0.671	0.300	0.950	0.720	0.720	0.400	0.550	0.262
48	0.084	0.671	0.671	0.671	0.671	0.447	0.950	0.447	0.671	0.671	0.782	0.010

Table T-03110201-26: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
2	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
3	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
4	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
5	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
6	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
7	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
8	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
9	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
10	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
11	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
12	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
13	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
14	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
15	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
16	0.189	3.835	3.835	3.835	3.835	4.350	7.080	4.350	4.350	4.350	4.815	0.050
17	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
18	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
19	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
20	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
21	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
22	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
23	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
24	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
25	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
26	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
27	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
28	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
29	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
30	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
31	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
32	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
33	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
34	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
35	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
36	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
37	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
38	0.200	1.083	1.083	1.083	1.083	1.229	2.000	1.229	1.229	1.229	1.360	0.056

39	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
40	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
41	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
42	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
43	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
44	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
45	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051
46	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
47	0.200	3.551	3.551	3.551	3.551	4.028	6.555	4.028	4.028	4.028	4.458	0.192
48	0.139	3.726	1.662	2.733	5.327	4.288	5.807	3.568	3.568	3.568	3.950	0.051

Table T-03110201-27: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
2	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
3	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
4	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
5	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
6	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
7	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
9	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
11	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
12	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
15	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
16	0.050	0.136	0.136	0.136	0.136	0.136	0.194	0.156	0.156	0.136	0.194	0.050
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
18	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
19	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
20	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
21	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
22	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
23	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
24	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
25	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
26	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
27	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
29	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
30	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
31	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
32	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
33	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
34	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
35	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
36	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
37	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
38	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.054

39	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
40	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
41	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
42	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
43	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
44	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
45	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157
46	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
47	0.050	0.070	0.070	0.070	2.000	0.070	0.173	0.110	0.140	0.070	0.010	0.050
48	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.157

APPENDIX T-03110202

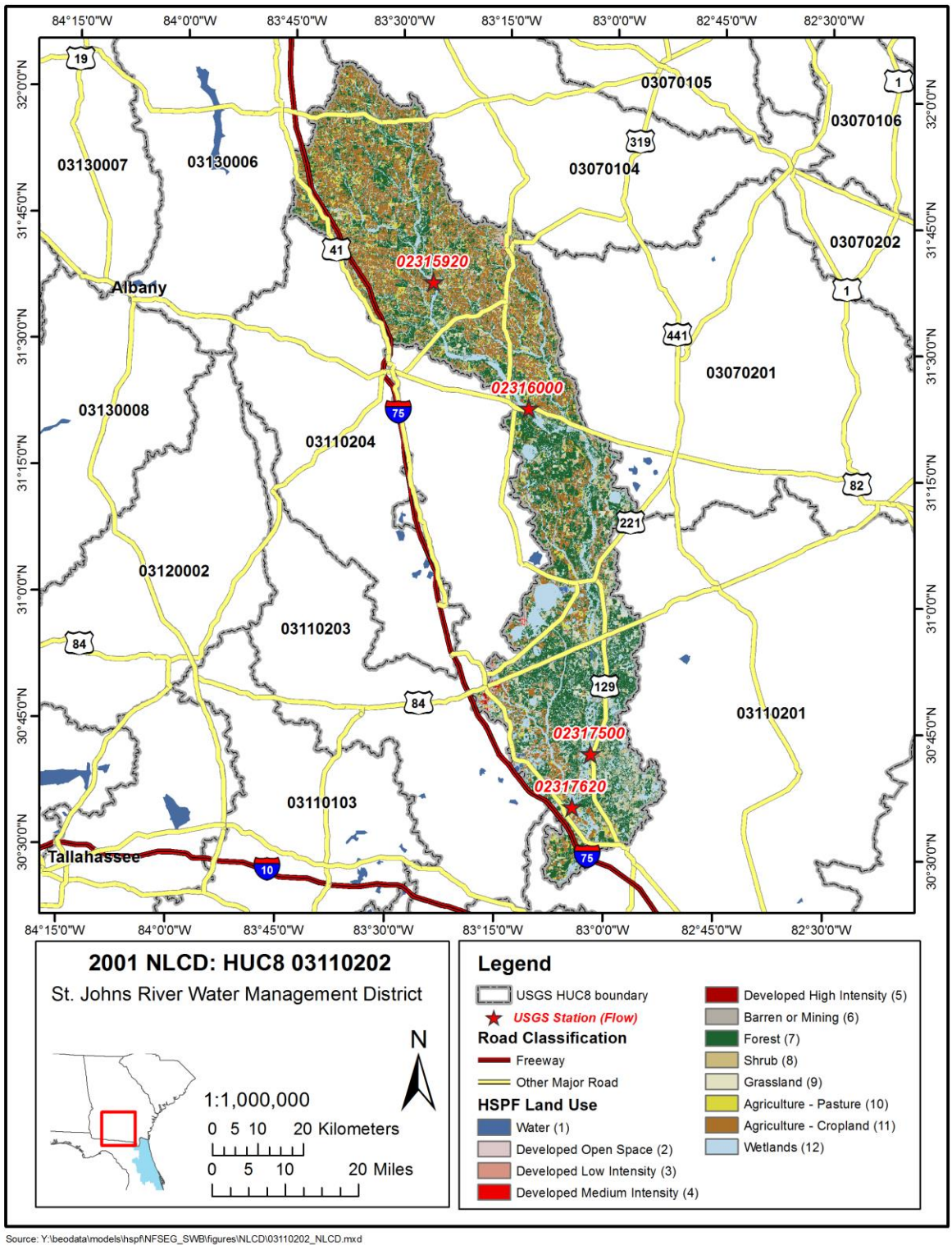
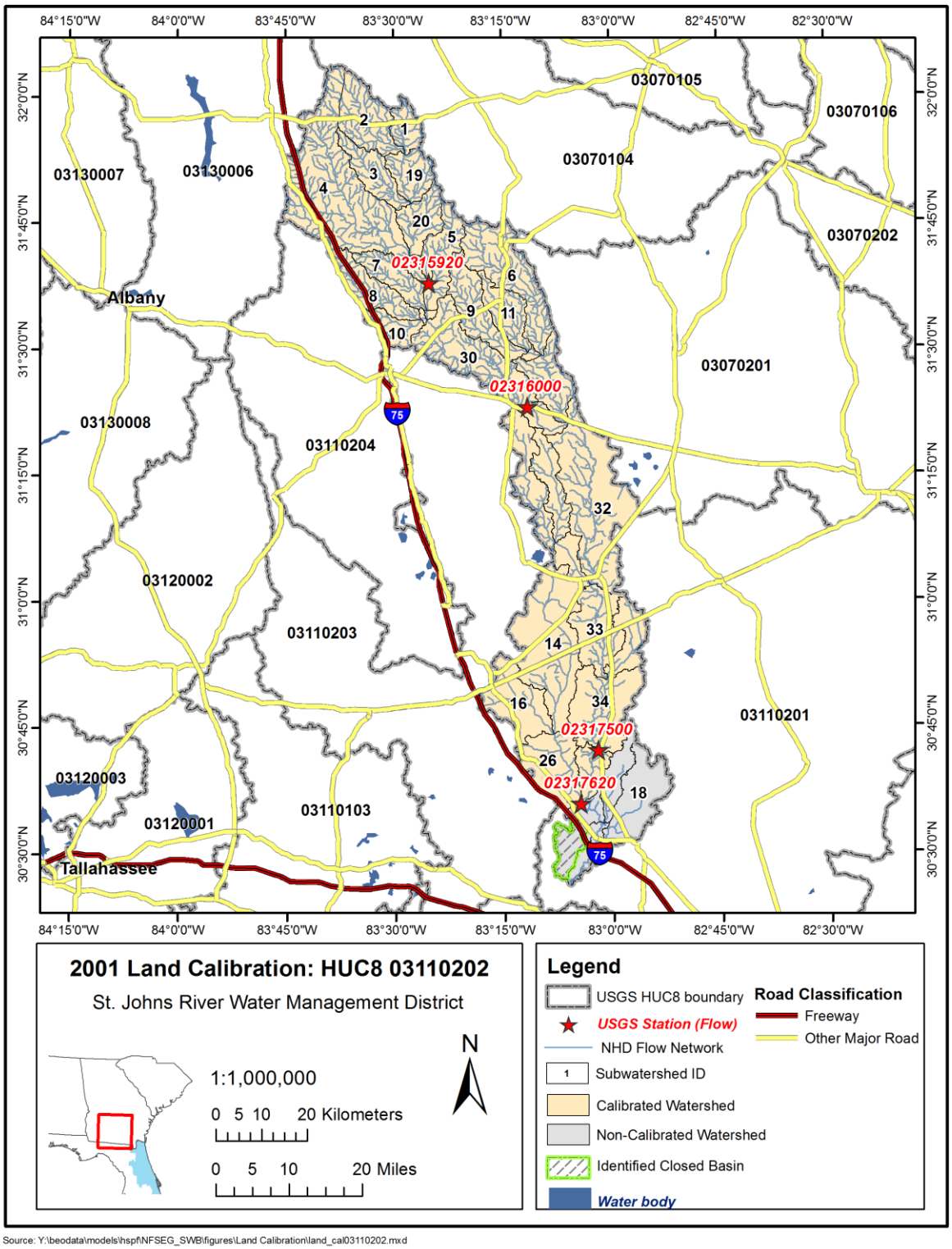


Figure T-03110202-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03110202.mxd

Figure T-03110202-2: Calibrated sub-watersheds.

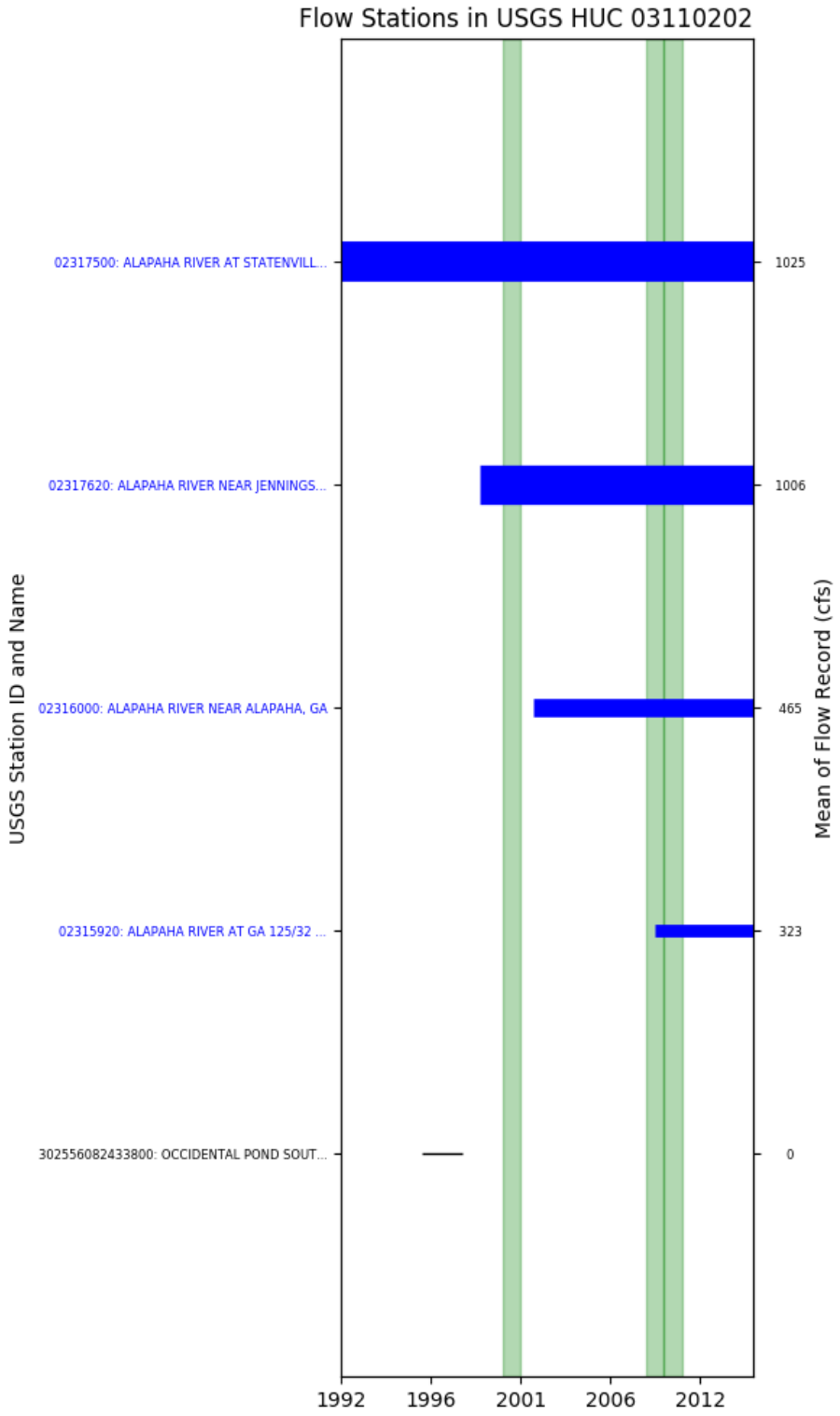


Figure T-03110202-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 27, USGS GAUGE 02315920

Water-Data Report 2009
02325000 FENHOLLOWAY RIVER NEAR PERRY, FL
Aucilla-Waccasassa Basin Econfina-Steinhatchee Subbasin

LOCATION.--Lat 300416, long 833945 referenced to North American Datum of 1927, Taylor County, FL, Hydrologic Unit 03110102, near right bank on downstream side of old bridge at State Highway 356, 1.0 mi southwest of the community of Hampton Springs, 5.5 mi southwest of Perry, and 14 mi upstream from mouth.

DRAINAGE AREA.--160.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1946 to June 1952 (discharge measurements only); August 1952 to October 1954 (gage heights and discharge measurements only); November 1964 to July 1977 (crest-stage and periodic discharge measurements only); August 1977 to September 1984. May 1986 to current year.

REVISED RECORDS.--WSP 1905: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Aug. 13, 1946 to Aug. 12, 1952, nonrecording gage at same site at datum 4.00 ft higher. Aug. 13, 1952 to Oct. 18, 1954, nonrecording gage 30 ft upstream at datum 5.00 ft higher. Nov. 9, 1964 to Oct. 31, 1984, nonrecording gage at same site and datum. August 1977 to October 1984, and since April 1986 at present site and datum.

REMARKS.--Records poor. Natural flow of stream affected by large ground-water withdrawals by cellulose plant about 10 mi upstream. Flow affected by backwater from Spring Creek at times.

Table T-03110202-1: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02315920.

Statistic	Value
Bias	-4.16
Standard error	216.63
Relative bias	-0.01
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.76
Index of agreement	0.87

Table T-03110202-2: Hydrologic Indices Between USGS Gauge 02315920 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02315920	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	280.47	274.02	-2.30
MA2: Median, all daily flows	3.70	17.36	369.14
MA3: CV, all daily flows	198.34	176.16	-11.18
MA4: CV, log of all daily flows	217.16	200.61	-7.62
MA5: Mean daily flow / median daily flow	75.80	15.79	-79.17
MA9: (Q10 - Q90) / median daily flow	180.00	40.53	-77.48
MA10: (Q20 - Q80) / median daily flow	68.65	16.69	-75.69
MA11: (Q25 - Q75) / median daily flow	30.61	11.63	-62.01
MA12: Mean monthly flow, January	555.23	542.67	-2.26
MA13: Mean monthly flow, February	658.05	899.38	36.67
MA14: Mean monthly flow, March	378.32	481.88	27.37
MA15: Mean monthly flow, April	210.21	164.95	-21.53
MA16: Mean monthly flow, May	190.04	134.88	-29.03
MA17: Mean monthly flow, June	54.95	24.72	-55.02
MA18: Mean monthly flow, July	136.57	99.53	-27.12
MA19: Mean monthly flow, August	361.49	187.27	-48.20
MA20: Mean monthly flow, September	18.92	40.61	114.63
MA21: Mean monthly flow, October	6.18	11.42	84.74
MA22: Mean monthly flow, November	13.89	23.31	67.73
MA23: Mean monthly flow, December	472.65	402.66	-14.81
ML1: Mean minimum monthly flow, January	247.14	246.11	-0.42
ML2: Mean minimum monthly flow, February	158.68	137.68	-13.24
ML3: Mean minimum monthly flow, March	151.35	197.85	30.72
ML4: Mean minimum monthly flow, April	38.63	58.97	52.65
ML5: Mean minimum monthly flow, May	17.82	9.12	-48.82
ML6: Mean minimum monthly flow, June	3.85	1.29	-66.41
ML7: Mean minimum monthly flow, July	21.25	30.16	41.93
ML8: Mean minimum monthly flow, August	30.00	16.17	-46.10
ML9: Mean minimum monthly flow, September	7.75	8.01	3.38
ML10: Mean minimum monthly flow, October	0.28	0.84	200.84
ML11: Mean minimum monthly flow, November	4.52	8.81	95.15
ML12: Mean minimum monthly flow, December	30.51	34.47	12.97
ML13: CV of minimum monthly flows	270.71	247.51	-8.57
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.02	123.37
ML15: Mean minimum annual flow / mean annual flow	0.00	0.00	23.37
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.26	0.38	46.59
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	137.29
RA1: Mean of positive changes from one day to next (rise rate)	150.93	89.57	
RA2: CV, mean of positive changes from one day to next (rise rate)	297.47	367.45	
RA3: Mean of negative changes from one day to next (fall rate)	83.41	38.47	
RA4: CV, mean of negative changes from one day to next (fall rate)	296.16	303.56	
RA5: Ratio of days that are higher than previous day	0.23	0.30	

RA6: Median of difference in log of flows over two consecutive days of rising	0.28	0.21	
RA7: Median of difference in log of flows over two consecutive days of falling	0.18	0.14	
RA8: Number of flow reversals from one day to the next	42.20	52.00	
RA9: CV, number of flow reversals from one day to the next	44.66	35.38	

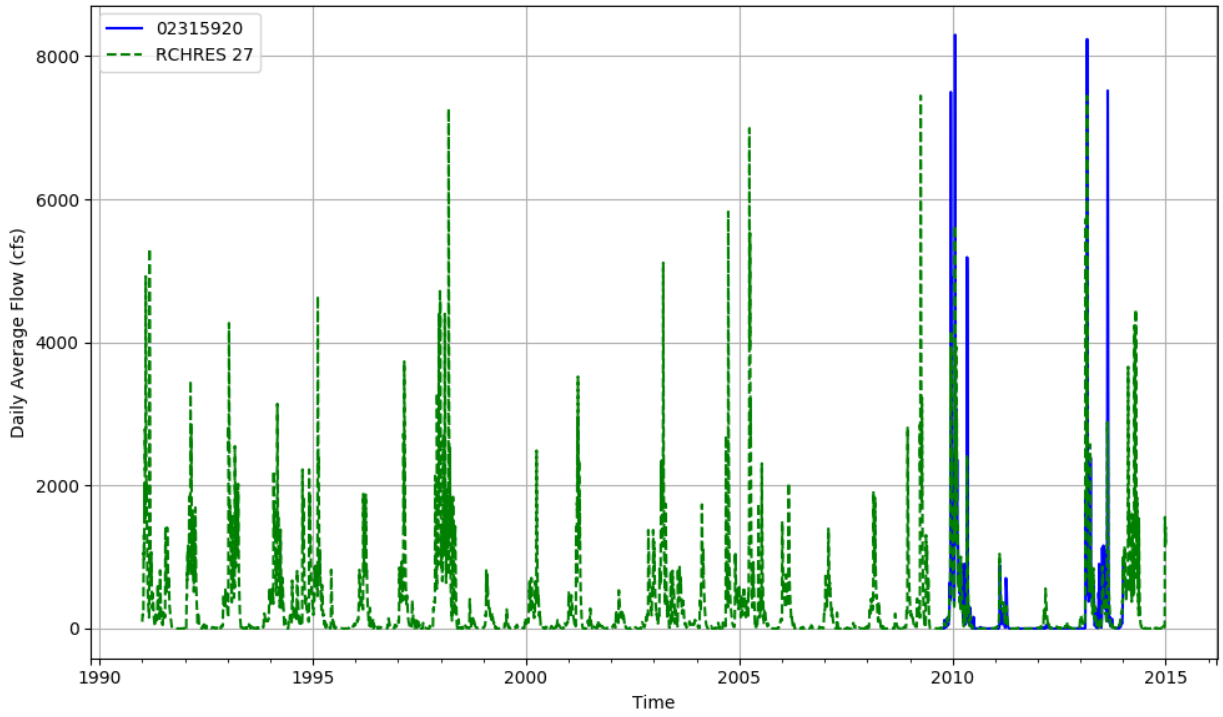


Figure T-03110202-4: Daily flow for HSFP reach 27 and USGS station 02315920.

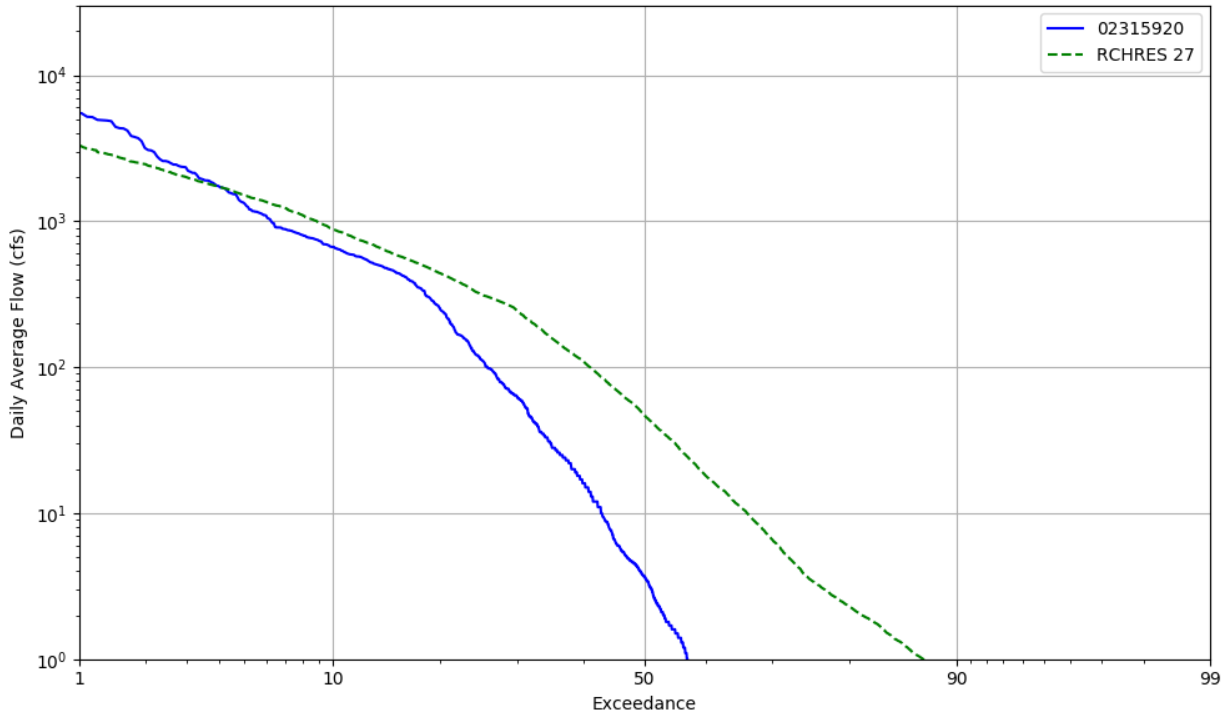


Figure T-03110202-5: Daily exceedance for HSFP reach 27 and USGS station 02315920.

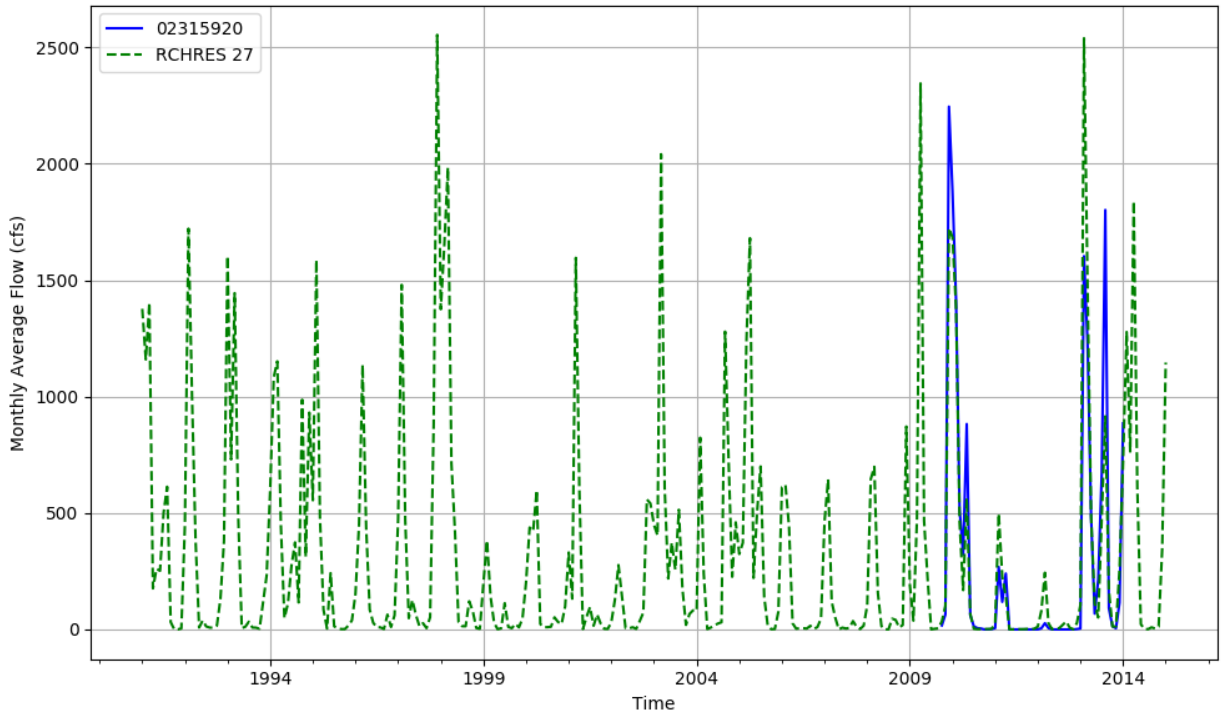


Figure T-03110202-6: Monthly flow for HSFP reach 27 and USGS station 02315920.

HSPF REACH 30, USGS GAUGE 02316000

Water-Data Report 2009
02316000 ALAPAHA RIVER NEAR ALAPAHA, GA
Suwannee Basin Alapaha Subbasin

LOCATION.--Lat 312303, long 831133 referenced to North American Datum of 1927, Berrien County, GA, Hydrologic Unit 03110202, near right bank on downstream side of bridge on GA 50, 2.0 miles east of Alapaha, and 6.0 miles upstream from the confluence with the Willacoochee River.

DRAINAGE AREA.--663 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1936 to September 1976, September 2002 to current year. Monthly discharge only for some periods, published in WSP 1304.
GAGE-HEIGHT: September 2002 to current year.

REVISED RECORDS.--WSP 872: 1937. WSP 1002: 1939(M). WSP 1624: Drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 208.34 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to September 8, 1943, a non-recording gage was installed, and from September 8, 1943 to September 30, 1975, a recording gage was installed at the same site at a datum that was 1.00 foot higher.

COOPERATION.--Suwannee River Water Management District.

REMARKS.--Discharge records good, gage-height records good in 2008 and 2009 water years.

Table T-03110202-3: Comparison Statistics Between HSPF Reach 30 and USGS Gauge 02316000.

Statistic	Value
Bias	2.50
Standard error	260.05
Relative bias	0.01
Relative standard error	0.36
Nash-Sutcliffe coefficient	0.87
Kling-Gupta coefficient	0.93
Coefficient of efficiency	0.76
Index of agreement	0.88

Table T-03110202-4: Hydrologic Indices Between USGS Gauge 02316000 and HSPF Reach 30.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02316000	Simulated Reach 30	Percent Difference
MA1: Mean, all daily flows	446.46	443.73	-0.61
MA2: Median, all daily flows	57.00	66.50	16.67
MA3: CV, all daily flows	155.27	166.90	7.49
MA4: CV, log of all daily flows	162.46	164.75	1.41
MA5: Mean daily flow / median daily flow	7.83	6.67	-14.81
MA9: (Q10 - Q90) / median daily flow	20.87	17.14	-17.85
MA10: (Q20 - Q80) / median daily flow	11.67	9.03	-22.58
MA11: (Q25 - Q75) / median daily flow	8.63	6.70	-22.36
MA12: Mean monthly flow, January	509.13	564.95	10.96
MA13: Mean monthly flow, February	776.41	940.63	21.15
MA14: Mean monthly flow, March	839.23	943.94	12.48
MA15: Mean monthly flow, April	878.56	686.40	-21.87
MA16: Mean monthly flow, May	203.09	188.02	-7.42
MA17: Mean monthly flow, June	246.62	141.59	-42.59
MA18: Mean monthly flow, July	220.51	177.50	-19.51
MA19: Mean monthly flow, August	324.51	219.03	-32.50
MA20: Mean monthly flow, September	132.75	223.77	68.57
MA21: Mean monthly flow, October	121.59	117.90	-3.03
MA22: Mean monthly flow, November	95.13	119.61	25.73
MA23: Mean monthly flow, December	395.76	446.27	12.76
ML1: Mean minimum monthly flow, January	210.39	254.31	20.87
ML2: Mean minimum monthly flow, February	330.03	279.02	-15.46
ML3: Mean minimum monthly flow, March	363.02	347.45	-4.29
ML4: Mean minimum monthly flow, April	209.25	169.76	-18.87
ML5: Mean minimum monthly flow, May	27.50	14.66	-46.69
ML6: Mean minimum monthly flow, June	26.76	19.72	-26.31
ML7: Mean minimum monthly flow, July	45.07	39.87	-11.53
ML8: Mean minimum monthly flow, August	70.54	62.90	-10.83
ML9: Mean minimum monthly flow, September	12.97	18.46	42.34
ML10: Mean minimum monthly flow, October	16.85	24.23	43.76
ML11: Mean minimum monthly flow, November	16.32	36.06	120.97
ML12: Mean minimum monthly flow, December	85.03	122.48	44.04
ML13: CV of minimum monthly flows	180.96	188.19	3.99
ML14: Mean minimum daily flow / mean median annual flow	0.08	0.01	-81.28
ML15: Mean minimum annual flow / mean annual flow	0.03	0.01	-82.39
ML16: Median minimum annual flow / median annual flow	0.00	0.00	-95.95
ML20: Ratio of baseflow volume to total flow volume	0.41	0.38	-8.89
ML22: Mean annual minimum flow divided by catchment area	0.02	0.01	-48.44
RA1: Mean of positive changes from one day to next (rise rate)	109.63	112.97	
RA2: CV, mean of positive changes from one day to next (rise rate)	302.55	397.50	
RA3: Mean of negative changes from one day to next (fall rate)	57.86	58.59	
RA4: CV, mean of negative changes from one day to next (fall rate)	280.21	283.99	
RA5: Ratio of days that are higher than previous day	0.32	0.34	

RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.09	
RA8: Number of flow reversals from one day to the next	59.46	45.08	
RA9: CV, number of flow reversals from one day to the next	38.59	40.22	

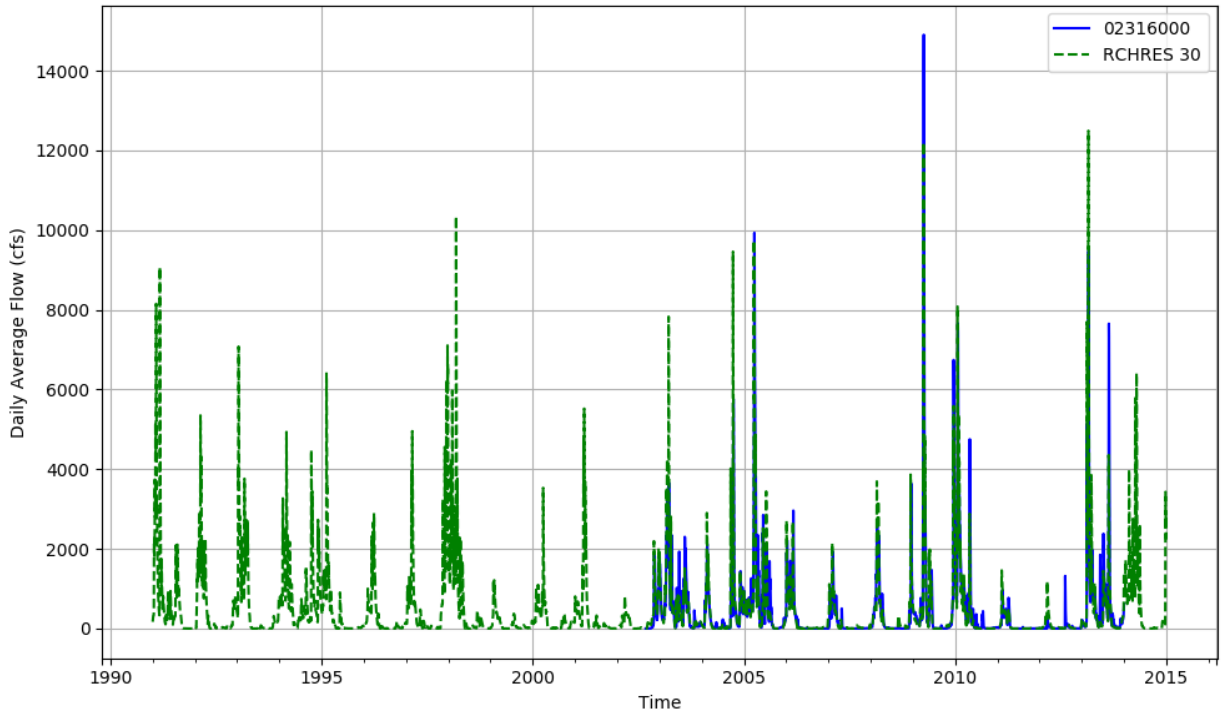


Figure T-03110202-7: Daily flow for HSFP reach 30 and USGS station 02316000.

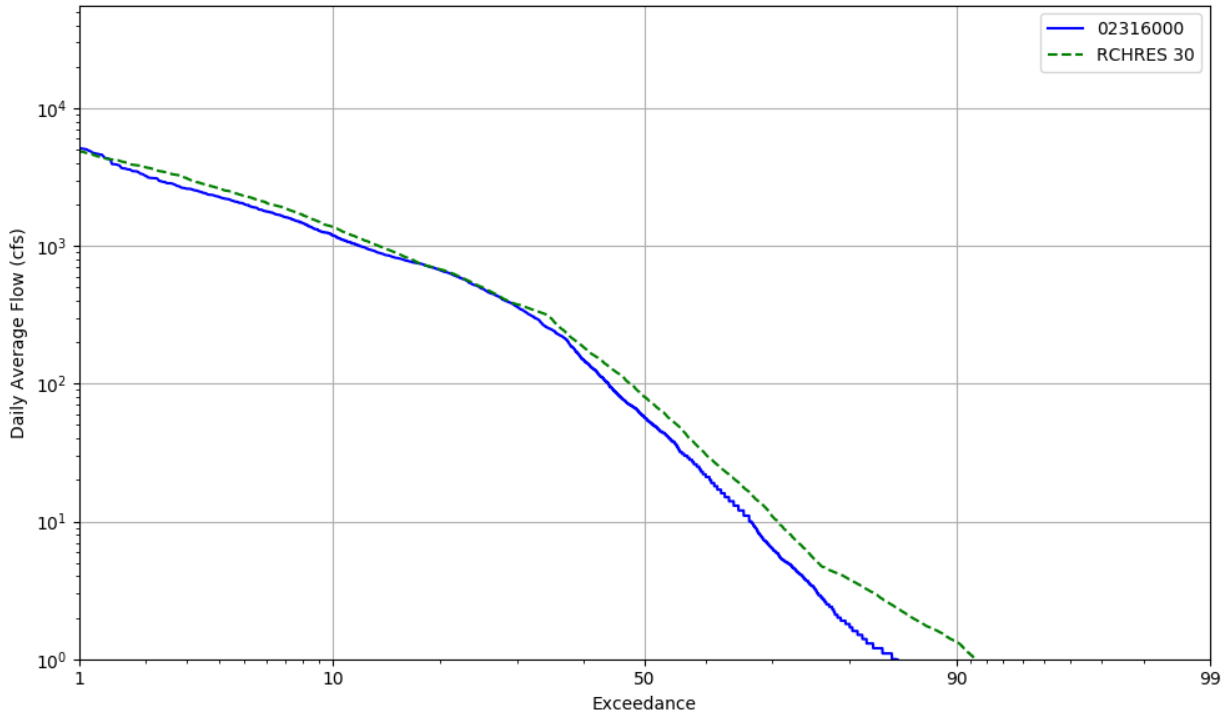


Figure T-03110202-8: Daily exceedance for HSFP reach 30 and USGS station 02316000.

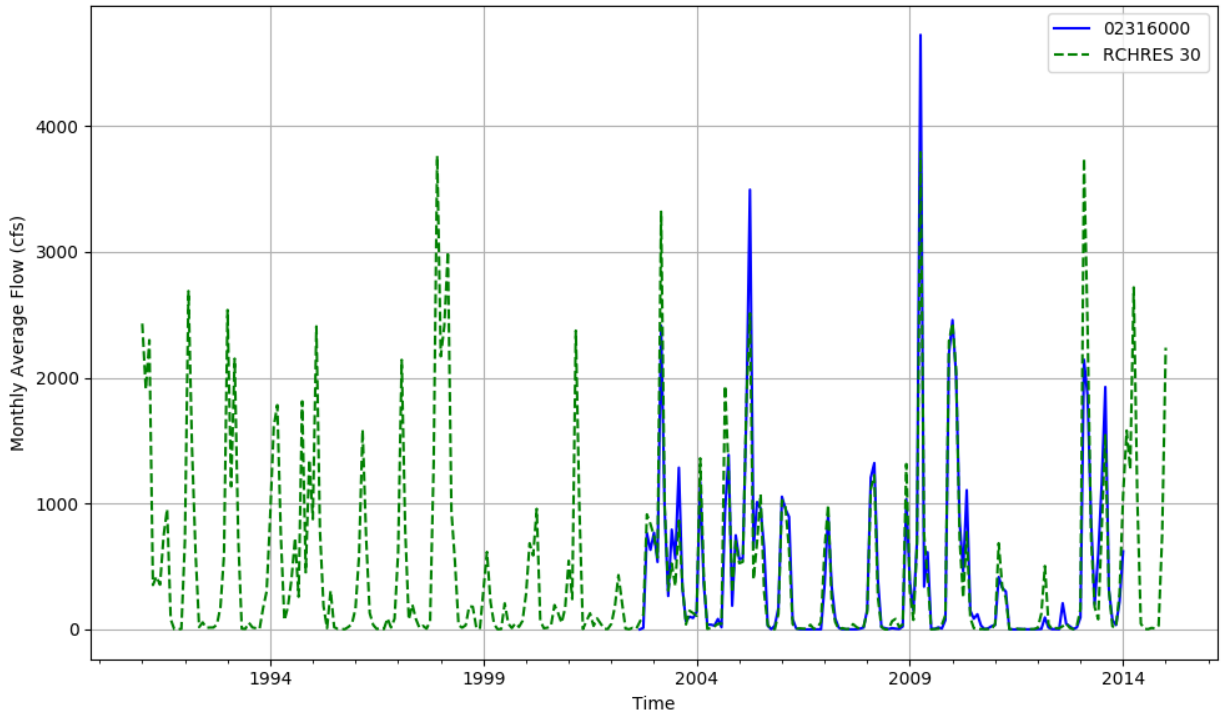


Figure T-03110202-9: Monthly flow for HSFP reach 30 and USGS station 02316000.

HSPF REACH 34, USGS GAUGE 02317500

Water-Data Report 2009
02317500 ALAPAHA RIVER AT STATENVILLE, GA
Suwannee Basin Alapaha Subbasin

LOCATION.--Lat 304214, long 830200 referenced to North American Datum of 1927, Echols County, GA, Hydrologic Unit 03110202, at downstream side of left bank pier of bridge on GA 94, 10.4 miles upstream from Alapahoochee River (Grand Bay Creek), 0.2 miles west of Statenville.

DRAINAGE AREA.--1,400 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: January to June 1921, October 1931 to current year. Monthly discharge only for October to December 1931, published in WSP 1304.
GAGE-HEIGHT: January to June 1921, October 1998 to current year.

REVISED RECORDS.--WSP 822: 1936, drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 76.77 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). From January 28 to June 30, 1921, a non-recording gage was located at site 50 feet upstream at datum 2.10 feet higher. From December 10, 1931 to November 30, 1949, a non-recording gage was located at site 200 feet upstream at present datum, and from December 1, 1949, to November 22, 1952, a non-recording gage was located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for periods of estimated discharge, which are fair. Gage-height records good.

Table T-03110202-5: Comparison Statistics Between HSPF Reach 34 and USGS Gauge 02317500.

Statistic	Value
Bias	-69.81
Standard error	560.04
Relative bias	-0.07
Relative standard error	0.34
Nash-Sutcliffe coefficient	0.88
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.75
Index of agreement	0.87

Table T-03110202-6: Hydrologic Indices Between USGS Gauge 02317500 and HSPF Reach 34.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02317500	Simulated Reach 34	Percent Difference
MA1: Mean, all daily flows	1065.28	995.13	-6.59
MA2: Median, all daily flows	277.00	316.59	14.29
MA3: CV, all daily flows	139.46	138.67	-0.57
MA4: CV, log of all daily flows	147.13	138.22	-6.05
MA5: Mean daily flow / median daily flow	3.85	3.14	-18.27
MA9: (Q10 - Q90) / median daily flow	10.36	8.56	-17.37
MA10: (Q20 - Q80) / median daily flow	5.53	4.23	-23.42
MA11: (Q25 - Q75) / median daily flow	4.00	3.24	-19.02
MA12: Mean monthly flow, January	1391.15	1411.98	1.50
MA13: Mean monthly flow, February	2196.52	2246.09	2.26
MA14: Mean monthly flow, March	2682.81	2488.68	-7.24
MA15: Mean monthly flow, April	1917.81	1496.84	-21.95
MA16: Mean monthly flow, May	473.30	450.96	-4.72
MA17: Mean monthly flow, June	459.97	334.66	-27.24
MA18: Mean monthly flow, July	496.44	388.68	-21.71
MA19: Mean monthly flow, August	643.12	495.84	-22.90
MA20: Mean monthly flow, September	470.52	479.15	1.83
MA21: Mean monthly flow, October	512.11	511.35	-0.15
MA22: Mean monthly flow, November	370.06	387.62	4.75
MA23: Mean monthly flow, December	753.08	869.29	15.43
ML1: Mean minimum monthly flow, January	531.00	535.11	0.77
ML2: Mean minimum monthly flow, February	1177.43	1023.84	-13.05
ML3: Mean minimum monthly flow, March	1107.70	1053.51	-4.89
ML4: Mean minimum monthly flow, April	644.17	645.69	0.24
ML5: Mean minimum monthly flow, May	174.35	184.03	5.55
ML6: Mean minimum monthly flow, June	131.87	143.26	8.64
ML7: Mean minimum monthly flow, July	237.74	200.17	-15.80
ML8: Mean minimum monthly flow, August	262.26	265.65	1.29
ML9: Mean minimum monthly flow, September	113.13	144.46	27.69
ML10: Mean minimum monthly flow, October	136.91	170.21	24.32
ML11: Mean minimum monthly flow, November	210.09	181.49	-13.61
ML12: Mean minimum monthly flow, December	343.87	370.42	7.72
ML13: CV of minimum monthly flows	162.67	138.41	-14.92
ML14: Mean minimum daily flow / mean median annual flow	0.20	0.15	-25.52
ML15: Mean minimum annual flow / mean annual flow	0.07	0.06	-20.21
ML16: Median minimum annual flow / median annual flow	0.15	0.12	-18.89
ML20: Ratio of baseflow volume to total flow volume	0.55	0.61	10.01
ML22: Mean annual minimum flow divided by catchment area	0.45	0.47	4.19
RA1: Mean of positive changes from one day to next (rise rate)	149.44	169.61	
RA2: CV, mean of positive changes from one day to next (rise rate)	306.88	361.44	
RA3: Mean of negative changes from one day to next (fall rate)	85.30	83.43	
RA4: CV, mean of negative changes from one day to next (fall rate)	264.52	253.78	
RA5: Ratio of days that are higher than previous day	0.34	0.33	

RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	60.17	38.50	
RA9: CV, number of flow reversals from one day to the next	23.13	27.52	

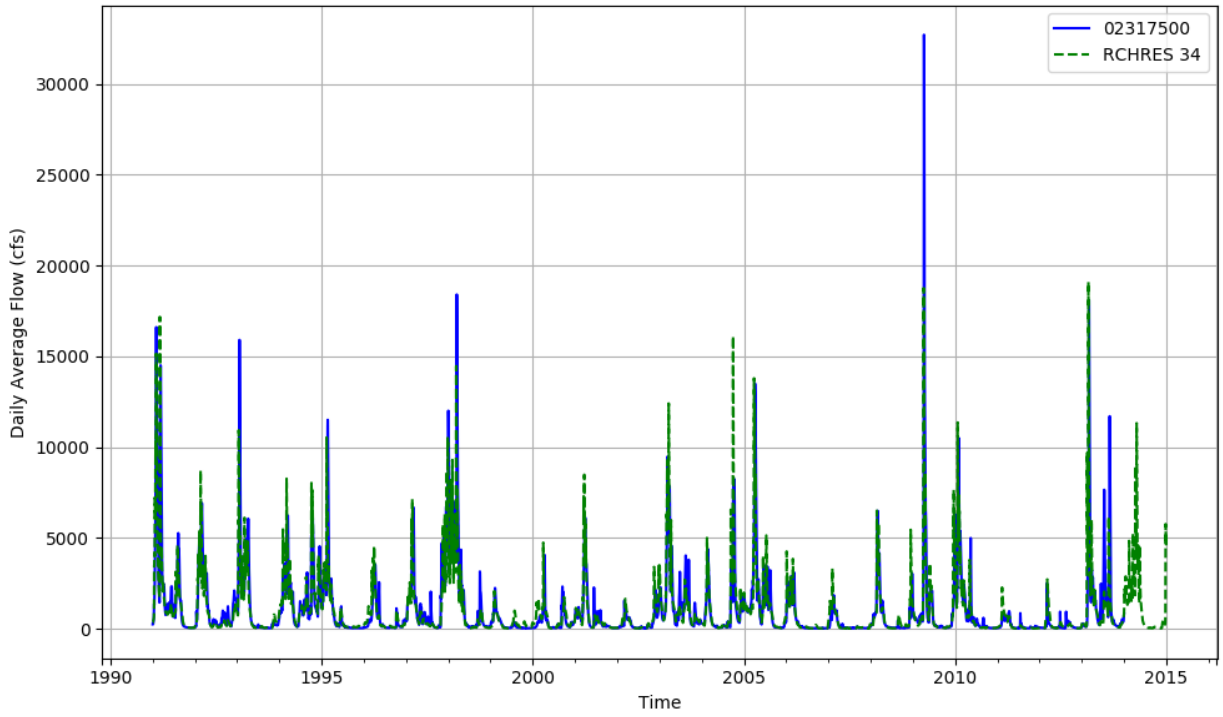


Figure T-03110202-10: Daily flow for HSFP reach 34 and USGS station 02317500.

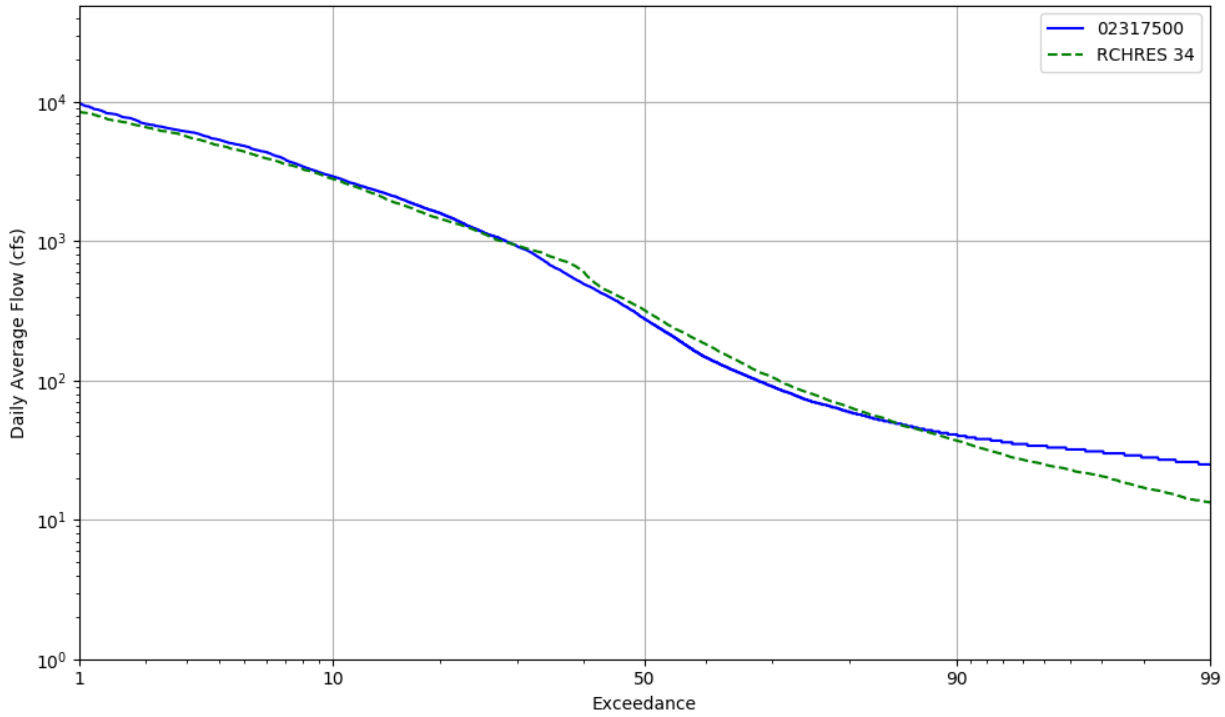


Figure T-03110202-11: Daily exceedance for HSFP reach 34 and USGS station 02317500.

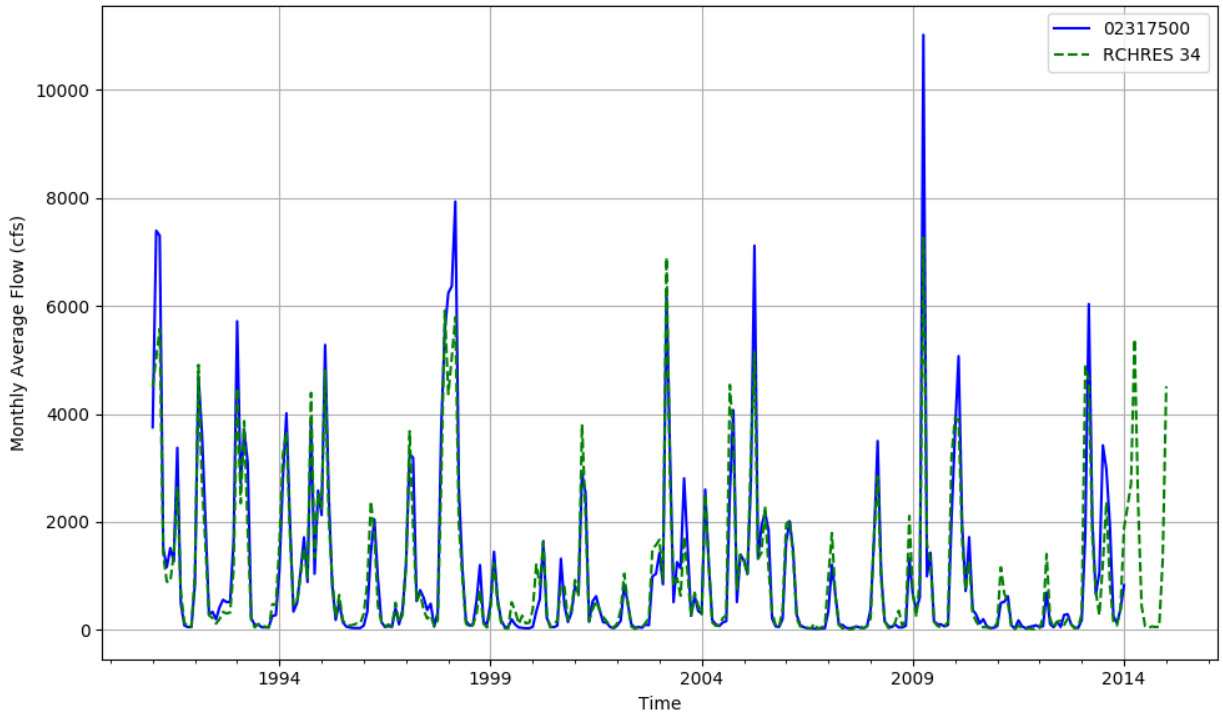


Figure T-03110202-12: Monthly flow for HSFP reach 34 and USGS station 02317500.

HSPF REACH 36, USGS GAUGE 02317620

Water-Data Report 2009
02317620 ALAPAHA RIVER NEAR JENNINGS, FL
Suwannee Basin Alapaha Subbasin

LOCATION.--Lat 303553, long 830424 referenced to North American Datum of 1927, Hamilton County, FL, Hydrologic Unit 03110202, near left bank on downstream side of bridge on State Highway 150, 150 ft upstream from Southern Railroad bridge, 1,400 ft downstream from Apalahoochee River, 1.5 mi south of Florida-Georgia State line, 1.6 mi southeast of Jennings, and 20.1 mi upstream from mouth.

DRAINAGE AREA.--1,680 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1976 to September 1984, October 1984 to September 1985 (gage height and peak discharge only), October 1985 to September 1987, September 1998 to September 2001, October 2006 to current year. Prior to July 28, 1975 (one miscellaneous discharge measurement in 1923, three in 1928, and six made by Suwannee River Water Management District in 1976).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Florida Department of Transportation bench mark). Prior to August 18, 1928, nonrecording gage at site 150 ft downstream at datum unknown. July 1976 to September 1987, at datum 58.22 ft lower.

COOPERATION.--Records from October 1999 to September 2001 and October 2006 to September 2007 were collected and computed by Suwannee River Water Management District and reviewed by U. S. Geological Survey.

REMARKS.--No estimated daily discharges. Records good.

Table T-03110202-7: Comparison Statistics Between HSPF Reach 36 and USGS Gauge 02317620.

Statistic	Value
Bias	-72.97
Standard error	649.48
Relative bias	-0.07
Relative standard error	0.40
Nash-Sutcliffe coefficient	0.84
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.68
Index of agreement	0.84

Table T-03110202-8: Hydrologic Indices Between USGS Gauge 02317620 and HSPF Reach 36.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02317620	Simulated Reach 36	Percent Difference
MA1: Mean, all daily flows	925.94	909.66	-1.76
MA2: Median, all daily flows	274.00	318.68	16.31
MA3: CV, all daily flows	81.84	75.99	-7.16
MA4: CV, log of all daily flows	141.76	136.57	-3.66
MA5: Mean daily flow / median daily flow	3.38	2.85	-15.53
MA9: (Q10 - Q90) / median daily flow	7.25	6.15	-15.16
MA10: (Q20 - Q80) / median daily flow	3.71	3.44	-7.39
MA11: (Q25 - Q75) / median daily flow	2.86	2.86	0.30
MA12: Mean monthly flow, January	302.35	371.02	22.71
MA13: Mean monthly flow, February	535.74	592.60	10.61
MA14: Mean monthly flow, March	973.58	1055.82	8.45
MA15: Mean monthly flow, April	1789.77	1375.18	-23.16
MA16: Mean monthly flow, May	195.87	265.36	35.47
MA17: Mean monthly flow, June	352.71	264.82	-24.92
MA18: Mean monthly flow, July	169.28	138.61	-18.12
MA19: Mean monthly flow, August	162.99	131.81	-19.13
MA20: Mean monthly flow, September	82.06	126.53	54.18
MA21: Mean monthly flow, October	103.62	140.88	35.95
MA22: Mean monthly flow, November	55.52	68.80	23.91
MA23: Mean monthly flow, December	243.34	341.36	40.28
ML1: Mean minimum monthly flow, January	421.75	456.57	8.26
ML2: Mean minimum monthly flow, February	586.25	593.99	1.32
ML3: Mean minimum monthly flow, March	675.00	636.11	-5.76
ML4: Mean minimum monthly flow, April	856.75	911.33	6.37
ML5: Mean minimum monthly flow, May	181.50	214.16	18.00
ML6: Mean minimum monthly flow, June	123.00	141.94	15.40
ML7: Mean minimum monthly flow, July	190.50	195.84	2.80
ML8: Mean minimum monthly flow, August	98.75	121.68	23.22
ML9: Mean minimum monthly flow, September	105.50	141.73	34.34
ML10: Mean minimum monthly flow, October	83.00	107.86	29.95
ML11: Mean minimum monthly flow, November	81.00	98.79	21.96
ML12: Mean minimum monthly flow, December	216.50	273.46	26.31
ML13: CV of minimum monthly flows	133.64	133.06	-0.44
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.08	-16.56
ML15: Mean minimum annual flow / mean annual flow	0.03	0.02	-24.85
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.43	0.69	60.18
ML22: Mean annual minimum flow divided by catchment area	55555.80	55555.77	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	157.45	167.97	
RA2: CV, mean of positive changes from one day to next (rise rate)	357.74	349.39	
RA3: Mean of negative changes from one day to next (fall rate)	75.46	69.18	
RA4: CV, mean of negative changes from one day to next (fall rate)	263.12	278.63	
RA5: Ratio of days that are higher than previous day	0.31	0.29	

RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	32.22	24.67	
RA9: CV, number of flow reversals from one day to the next	119.65	125.15	

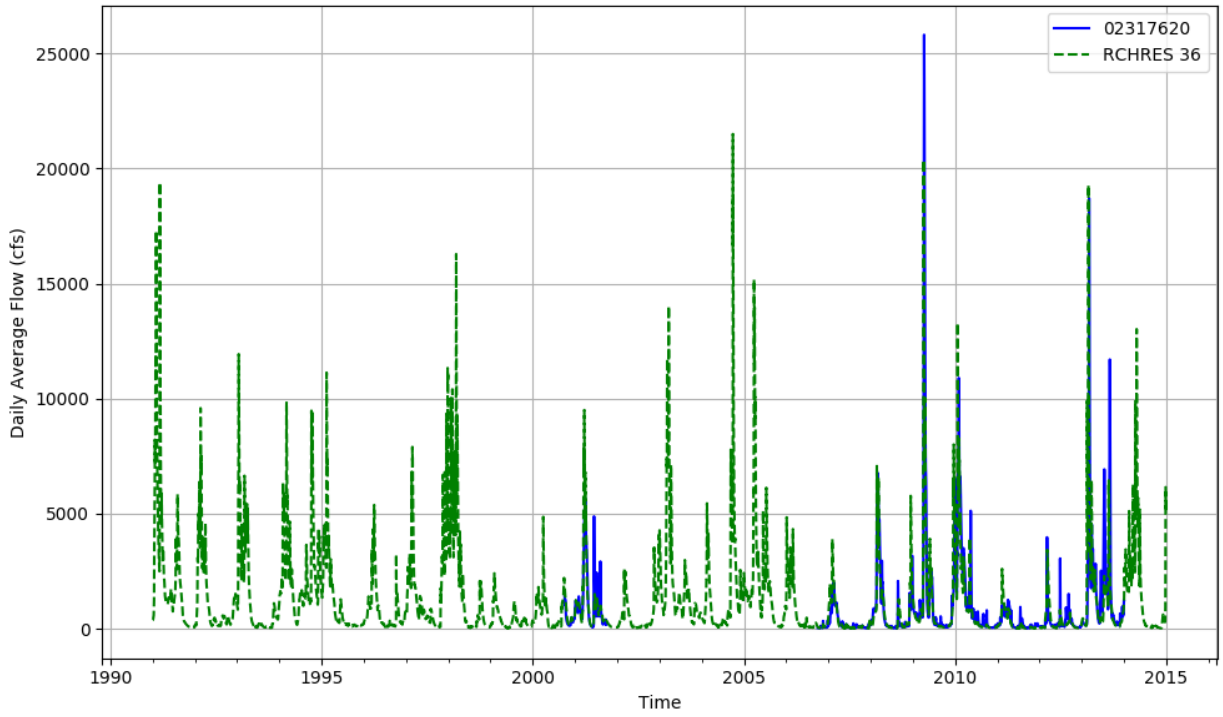


Figure T-03110202-13: Daily flow for HSFP reach 36 and USGS station 02317620.

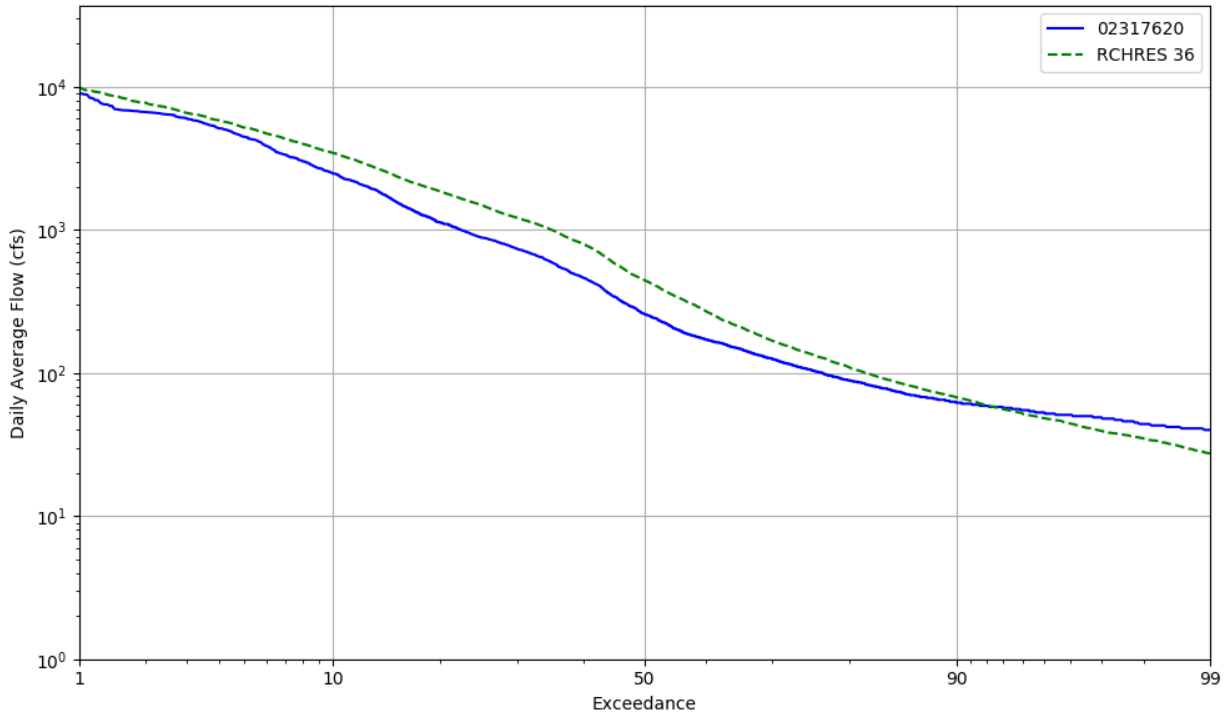


Figure T-03110202-14: Daily exceedance for HSFP reach 36 and USGS station 02317620.

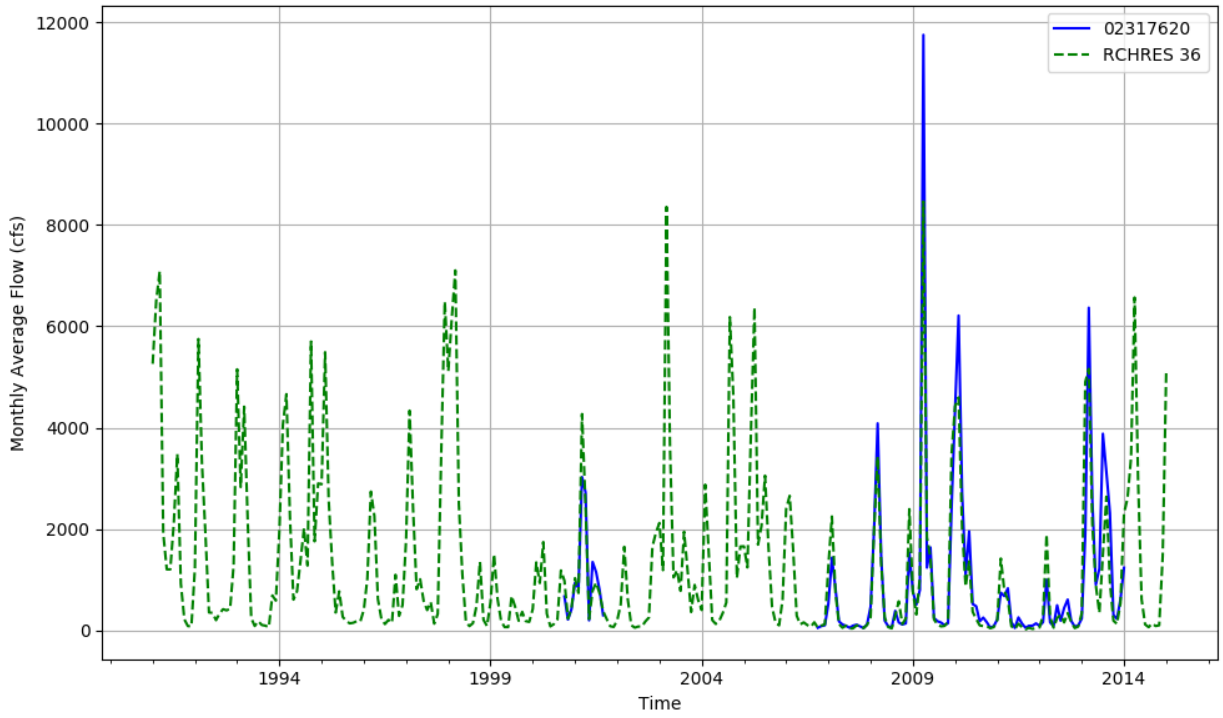


Figure T-03110202-15: Monthly flow for HSFP reach 36 and USGS station 02317620.

Table T-03110202-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6943	47768	11533	2134	866	810	397029	46191	63053	53796	175104	243973	489	86781	10631	1147102
AREA(%)	0.6	4.1	1.0	0.2	0.1	0.1	34.4	4.0	5.5	4.7	15.2	21.2	0.0	7.5	0.9	99.5
IMPERVIOUS																
AREA(ACRES)		2606	1364	565	881											5417
AREA(%)		0.2	0.1	0.0	0.1											0.5
SUPY	41.6	41.8	41.6	42.0	42.4	42.0	41.9	42.8	41.6	41.2	41.1	42.2	68.3	48.4	46.7	42.2
SURLI		0.0	5.6	7.1	8.2									0.1	5.4	0.1
UZLI																0.0
LZLI		0.0	1.8	2.7	1.3									0.0	1.3	0.0
SURO: PERVIOUS		0.9	1.2	1.6	1.4	0.8	0.0	0.1	0.3	0.1	0.1		1.6	0.2	0.2	0.1
SURO: IMPERVIOUS		22.0	22.0	22.0	22.2											0.1
SURO: COMBINED		2.0	3.4	5.9	11.9	0.8	0.0	0.1	0.3	0.1	0.1		1.6	0.2	0.2	0.2
IFWO		1.4	2.2	2.1	2.1	1.5	0.2	0.2	1.0	1.2	0.8		6.7	2.0	0.8	0.6
AGWO	5.3	9.1	13.7	17.0	17.8	14.9	5.7	9.2	8.0	7.1	6.7	8.4	19.2	10.2	14.1	7.4
AGWI	16.5	11.4	16.8	20.1	20.6	18.2	8.0	11.3	10.6	9.2	8.6	10.6	21.2	12.7	16.3	9.7
IGWI	1.6	0.5	0.9	0.8	0.6	0.8	0.3	0.1	0.6	0.7	0.6	0.4	1.4	1.1	0.6	0.5
CEPE		12.2	10.2	8.6	8.7	5.6	15.5	12.1	12.1	16.5	16.5	17.9	30.9	21.0	19.8	15.9
UZET	5.4	2.7	2.6	3.1	3.3	3.1	1.4	4.0	1.8	1.5	1.4	11.4	2.7	1.6	2.4	3.7
LZET	2.8	15.7	17.4	17.3	16.9	14.0	21.1	18.6	18.7	15.7	17.4	4.3	5.6	13.2	15.9	15.4
AGWET	12.5	2.7	2.9	3.0	3.1	3.3	2.3	2.8	2.7	2.1	2.0	2.9	0.9	1.8	2.1	2.4
BASET	0.8	0.8	1.5	1.2	1.0	1.3	0.4	0.2	1.0	1.0	0.9	0.4	2.2	1.9	1.0	0.7
SURET	16.5											0.3				0.2
PERO	5.3	11.4	17.1	20.8	21.4	17.1	6.0	9.4	9.2	8.4	7.5	8.4	27.5	12.4	15.2	8.1
IGWI	1.6	0.5	0.9	0.8	0.6	0.8	0.3	0.1	0.6	0.7	0.6	0.4	1.4	1.1	0.6	0.5
TAET: PERVIOUS	37.9	34.1	34.5	33.3	33.0	27.4	40.6	37.7	36.2	36.8	38.1	37.1	42.3	39.6	41.2	38.3
IMPEV: IMPERVIOUS		20.0	19.9	20.2	20.4											0.1
ET: COMBINED	37.9	33.3	32.9	30.5	26.6	27.4	40.6	37.7	36.2	36.8	38.1	37.1	42.3	39.6	41.2	38.4
PET	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.8	44.5	44.4	44.4	44.6	44.6	44.4	44.6	44.3

Table T-03110202-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6943	47768	11533	2134	866	810	397029	46191	63053	53796	175104	243973	489	86781	10631	1147102
AREA(%)	0.6	4.1	1.0	0.2	0.1	0.1	34.4	4.0	5.5	4.7	15.2	21.2	0.0	7.5	0.9	99.5
IMPERVIOUS																
AREA(ACRES)		2606	1364	565	881											5417
AREA(%)		0.2	0.1	0.0	0.1											0.5
SUPY	56.6	56.2	56.4	55.2	54.3	56.3	55.9	54.0	56.6	57.4	57.7	55.3	77.4	63.2	58.1	56.4
SURLI		0.0	5.7	7.6	9.3									0.0	2.3	0.1
UZLI																0.0
LZLI		0.0	1.7	2.3	1.1									0.0	0.3	0.0
SURO: PERVIOUS		1.7	2.0	2.7	2.6	1.4	0.2	0.6	0.7	0.4	0.3		1.4	0.2	0.5	0.3
SURO: IMPERVIOUS		34.3	34.7	33.4	32.3											0.2
SURO: COMBINED		3.4	5.5	9.1	17.6	1.4	0.2	0.6	0.7	0.4	0.3		1.4	0.2	0.5	0.5
IFWO		2.5	3.5	3.3	3.0	2.4	0.6	0.6	1.8	2.2	1.4		7.2	2.8	1.2	1.0
AGWO	9.5	12.0	17.8	19.9	20.1	18.9	8.7	9.6	11.9	12.2	11.9	10.7	20.5	14.2	12.8	10.7
AGWI	26.0	16.5	22.9	25.1	25.4	25.0	12.3	13.4	16.3	16.1	15.6	15.7	25.1	18.3	16.2	14.8
IGWI	2.6	0.9	1.3	1.1	0.9	1.2	0.6	0.1	1.1	1.3	1.3	0.8	1.9	1.7	0.8	0.9
CEPE		14.0	12.0	10.3	10.3	7.1	17.3	14.2	13.9	18.1	18.1	19.5	28.5	22.1	21.0	17.6
UZET	5.4	2.7	2.6	3.2	3.4	3.3	1.3	3.6	1.6	1.4	1.3	11.8	2.4	1.5	1.7	3.7
LZET	2.8	17.0	18.6	18.7	18.4	15.2	23.2	20.8	20.2	16.9	18.6	5.4	10.4	15.6	18.8	17.0
AGWET	14.1	3.0	3.1	3.5	3.6	3.9	2.7	3.5	2.9	2.2	2.1	3.3	1.9	2.1	2.5	2.8
BASET	1.2	0.9	1.4	1.1	0.9	1.3	0.7	0.2	1.1	1.3	1.3	0.7	2.2	1.7	0.8	0.9
SURET	19.6											1.3				0.4
PERO	9.5	16.1	23.2	25.9	25.7	22.8	9.5	10.8	14.4	14.8	13.6	10.7	29.1	17.2	14.5	12.0
IGWI	2.6	0.9	1.3	1.1	0.9	1.2	0.6	0.1	1.1	1.3	1.3	0.8	1.9	1.7	0.8	0.9
TAET: PERVIOUS	43.2	37.5	37.7	36.7	36.6	30.8	45.0	42.3	39.7	39.9	41.3	42.0	45.3	43.0	44.8	42.4
IMPEV: IMPERVIOUS		21.7	21.5	21.7	21.8											0.1
ET: COMBINED	43.2	36.7	36.0	33.6	29.1	30.8	45.0	42.3	39.7	39.9	41.3	42.0	45.3	43.0	44.8	42.5
PET	52.8	52.9	52.8	53.0	53.0	53.0	53.0	53.5	52.9	52.7	52.6	53.1	52.9	52.5	53.0	52.7

Table T-03110202-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6943	47768	11533	2134	866	810	397029	46191	63053	53796	175104	243973	489	86781	10631	1147102
AREA(%)	0.6	4.1	1.0	0.2	0.1	0.1	34.4	4.0	5.5	4.7	15.2	21.2	0.0	7.5	0.9	99.5
IMPERVIOUS																
AREA(ACRES)		2606	1364	565	881											5417
AREA(%)		0.2	0.1	0.0	0.1											0.5
SUPY	42.3	42.5	42.2	42.5	42.5	42.8	42.5	42.8	42.3	42.2	42.2	42.6	66.5	45.6	45.5	42.5
SURLI		0.0	5.8	7.9	9.7									0.0	3.3	0.1
UZLI																0.0
LZLI		0.0	1.7	2.3	1.1									0.0	0.5	0.0
SURO: PERVIOUS		1.2	1.5	2.2	2.2	1.2	0.1	0.4	0.5	0.3	0.2		1.0	0.2	0.4	0.2
SURO: IMPERVIOUS		23.0	23.0	22.9	22.8											0.1
SURO: COMBINED		2.3	3.8	6.5	12.6	1.2	0.1	0.4	0.5	0.3	0.2		1.0	0.2	0.4	0.3
IFWO		1.6	2.2	2.0	1.9	1.6	0.5	0.3	1.3	1.6	1.2		5.1	1.9	0.9	0.8
AGWO	7.5	9.4	13.7	16.3	17.4	14.4	6.7	8.2	8.5	8.2	8.3	9.3	17.7	9.1	9.7	8.1
AGWI	17.2	11.7	17.1	19.9	20.9	18.4	8.9	10.3	11.0	10.3	10.3	10.3	21.3	11.6	11.9	10.1
IGWI	1.7	0.6	0.9	0.8	0.6	0.8	0.5	0.1	0.7	0.8	0.8	0.4	1.7	1.0	0.5	0.6
CEPE		11.9	9.9	8.4	8.4	5.4	15.2	11.9	11.8	16.2	16.1	17.6	27.7	19.0	19.1	15.5
UZET	5.1	2.7	2.5	3.0	3.3	2.9	1.2	3.5	1.6	1.4	1.3	11.1	2.4	1.3	1.8	3.6
LZET	3.5	16.4	18.3	18.3	18.0	14.8	21.7	20.0	19.4	16.0	17.5	5.5	8.9	15.1	18.0	16.1
AGWET	11.6	2.8	3.1	3.4	3.5	3.8	2.5	3.3	2.7	2.1	2.0	2.6	1.7	1.9	2.3	2.5
BASET	0.6	0.8	1.2	1.0	0.8	1.2	0.6	0.2	0.9	1.1	1.1	0.4	2.4	1.5	0.7	0.7
SURET	16.9											0.1				0.1
PERO	7.5	12.2	17.4	20.5	21.5	17.2	7.3	8.9	10.3	10.1	9.7	9.3	23.8	11.1	10.9	9.1
IGWI	1.7	0.6	0.9	0.8	0.6	0.8	0.5	0.1	0.7	0.8	0.8	0.4	1.7	1.0	0.5	0.6
TAET: PERVIOUS	37.8	34.7	35.0	34.2	34.1	28.2	41.2	39.0	36.5	36.7	37.9	37.2	43.1	38.9	41.9	38.6
IMPEV: IMPERVIOUS		19.7	19.5	19.8	19.9											0.1
ET: COMBINED	37.8	33.9	33.3	31.1	26.9	28.2	41.2	39.0	36.5	36.7	37.9	37.2	43.1	38.9	41.9	38.7
PET	49.2	49.2	49.2	49.0	48.9	49.2	49.2	49.2	49.3	49.3	49.3	49.2	49.0	49.3	49.1	49.0

Table T-03110202-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6943	47768	11533	2134	866	810	397029	46191	63053	53796	175104	243973	489	86781	10631	1147102
AREA(%)	0.6	4.1	1.0	0.2	0.1	0.1	34.4	4.0	5.5	4.7	15.2	21.2	0.0	7.5	0.9	99.5
IMPERVIOUS																
AREA(ACRES)		2606	1364	565	881											5417
AREA(%)		0.2	0.1	0.0	0.1											0.5
SUPY	48.4	48.8	48.5	48.9	49.2	48.9	49.0	50.2	48.6	48.2	48.0	49.2	72.4	53.7	52.3	49.0
SURLI		0.0	4.8	6.3	7.3					0.0				0.0	3.6	0.1
UZLI																0.0
LZLI		0.0	1.6	2.4	1.1									0.0	0.9	0.0
SURO: PERVIOUS	1.2	1.3	1.6	2.2	2.1	1.1	0.1	0.3	0.5	0.2	0.1	0.0	1.5	0.2	0.4	0.2
SURO: IMPERVIOUS		28.8	28.7	29.0	29.1											0.1
SURO: COMBINED	1.2	2.7	4.5	7.8	15.7	1.1	0.1	0.3	0.5	0.2	0.1	0.0	1.5	0.2	0.4	0.3
IFWO		1.6	2.3	2.4	2.3	1.7	0.3	0.4	1.1	1.2	0.8		6.1	1.6	0.8	0.6
AGWO	7.9	11.0	15.6	18.5	19.0	17.1	8.0	10.9	10.1	9.5	8.9	11.8	21.4	11.2	13.6	9.7
AGWI	21.1	14.5	19.7	22.8	23.1	21.8	10.8	14.2	13.8	12.7	11.9	15.2	25.0	14.8	16.8	12.9
IGWI	2.1	0.7	1.0	0.9	0.7	1.0	0.5	0.1	0.8	0.9	0.9	0.6	1.8	1.3	0.7	0.7
CEPE		12.7	10.9	9.4	9.4	6.4	15.8	12.9	12.7	16.6	16.6	18.0	27.4	20.5	19.4	16.2
UZET	5.0	2.8	2.5	3.0	3.2	3.0	1.3	4.0	1.7	1.5	1.3	11.4	2.4	1.5	2.1	3.7
LZET	2.9	15.2	16.9	16.9	16.7	13.8	20.2	18.2	18.0	14.9	16.4	4.2	8.3	13.8	16.5	14.8
AGWET	12.2	2.6	2.8	3.1	3.2	3.5	2.3	3.0	2.5	1.9	1.8	2.8	1.4	1.8	2.2	2.4
BASET	1.0	0.9	1.3	1.0	0.8	1.2	0.6	0.1	1.0	1.2	1.1	0.5	2.1	1.8	0.9	0.8
SURET	16.9											1.1				0.3
PERO	9.1	13.9	19.4	23.1	23.4	19.9	8.3	11.6	11.7	10.9	9.8	11.8	29.0	12.9	14.9	10.5
IGWI	2.1	0.7	1.0	0.9	0.7	1.0	0.5	0.1	0.8	0.9	0.9	0.6	1.8	1.3	0.7	0.7
TAET: PERVIOUS	38.0	34.1	34.3	33.4	33.3	27.9	40.1	38.3	35.9	36.2	37.2	38.0	41.5	39.4	41.1	38.2
IMPEV: IMPERVIOUS		19.9	19.8	19.9	20.0											0.1
ET: COMBINED	38.0	33.4	32.8	30.6	26.6	27.9	40.1	38.3	35.9	36.2	37.2	38.0	41.5	39.4	41.1	38.3
PET	47.1	47.1	47.1	47.1	47.0	47.2	47.1	47.2	47.2	47.2	47.1	47.1	47.1	47.2	47.1	46.9

Table T-03110202-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
2	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
3	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
4	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
5	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
6	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
7	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
8	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
9	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
10	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
11	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
12	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
13	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
14	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
15	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
16	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
17	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
18	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
19	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
20	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
21	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
22	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
23	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
24	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
25	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
26	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
27	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
28	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
29	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
30	0.997	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.997
31	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
32	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
33	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
34	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
35	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
36	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
37	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
38	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

39	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990
40	0.990	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.990

Table T-03110202-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
2	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
3	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
4	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
5	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
6	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
7	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
8	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
9	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
10	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
11	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
20	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
21	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
22	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
25	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
28	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
29	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
30	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110202-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
2	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
3	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
4	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
5	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
6	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
7	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
8	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
9	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
10	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
11	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
12	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
13	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
14	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
15	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
16	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
17	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
18	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
19	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
20	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
21	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
22	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
23	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
24	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
25	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
26	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
27	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
28	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
29	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
30	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
31	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
32	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
33	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
34	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
35	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
36	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
37	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
38	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222

39	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222
40	0.000	0.100	0.072	0.050	0.050	0.020	0.163	0.092	0.100	0.200	0.200	0.222

Table T-03110202-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
2	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
3	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
4	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
5	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
6	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
7	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
8	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
9	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
10	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
11	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
12	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
13	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
14	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
15	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
16	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
17	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
18	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
19	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
20	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
21	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
22	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
23	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
24	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
25	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
26	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
27	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
28	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
29	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
30	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
31	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
32	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
33	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
34	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
35	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
36	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
37	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
38	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

39	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
40	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

Table T-03110202-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
2	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
3	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
4	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
5	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
6	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
7	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
8	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
9	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
10	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
11	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
12	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
13	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
14	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
15	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
16	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
17	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
18	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
19	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
20	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
21	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
22	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
23	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
24	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
25	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
26	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
27	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
28	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
29	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
30	0.146	0.458	0.458	0.458	0.458	0.655	0.983	0.655	0.655	0.655	0.786	0.146
31	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
32	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
33	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
34	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
35	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
36	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
37	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
38	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033

39	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033
40	0.001	0.253	0.253	0.253	0.253	0.362	0.543	0.362	0.362	0.362	0.435	0.033

Table T-03110202-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
2		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
12		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
13		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
14		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
15		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
16		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
17		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
18		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
19		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
20		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
21		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
22		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
23		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
24		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
25		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
26		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
27		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
28		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
29		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

30		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
31		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
32		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
33		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
34		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
35		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
36		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
37		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
38		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
39		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	
40		0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	0.591	

Table T-03110202-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
17	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
22	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
23	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
24	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
25	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
26	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
27	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
28	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
29	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
30	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
31	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
32	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
33	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
34	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
35	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
36	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
37	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
38	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

39	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
40	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03110202-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
15	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
19	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
22	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
23	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
24	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
25	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
26	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
27	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
28	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
29	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
30	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
31	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
32	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
33	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
34	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
35	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
36	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
37	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
38	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

39	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
40	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03110202-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
2	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
3	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
4	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
5	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
6	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
7	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
8	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
9	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
10	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
11	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
12	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
13	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
14	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
15	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
16	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
17	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
18	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
19	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
20	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
21	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
22	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
23	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
24	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
25	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
26	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
27	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
28	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
29	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
30	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.800
31	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
32	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
33	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
34	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
35	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
36	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
37	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
38	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860

39	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860
40	0.027	0.400	0.400	0.400	0.400	0.300	0.850	0.650	0.647	0.600	0.750	0.860

Table T-03110202-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
2	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
3	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
4	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
5	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
6	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
7	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
8	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
9	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
10	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
11	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
12	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
13	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
14	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
15	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
16	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
17	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
18	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
19	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
20	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
21	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
22	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
23	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
24	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
25	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
26	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
27	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
28	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
29	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
30	0.500	5.909	4.380	3.179	4.259	4.792	6.390	4.792	4.792	4.792	5.324	0.500
31	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
32	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
33	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
34	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
35	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
36	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
37	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
38	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365

39	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365
40	0.500	5.692	5.692	5.692	5.692	6.404	8.540	6.404	6.404	6.404	7.115	0.365

Table T-03110202-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
13	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
14	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
15	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
16	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
17	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
18	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
32	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
33	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
34	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
35	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
36	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
37	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
38	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000

39	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000
40	0.050	0.146	0.070	0.070	0.070	0.070	0.184	0.515	0.080	0.249	0.196	1.000

APPENDIX T-03110203

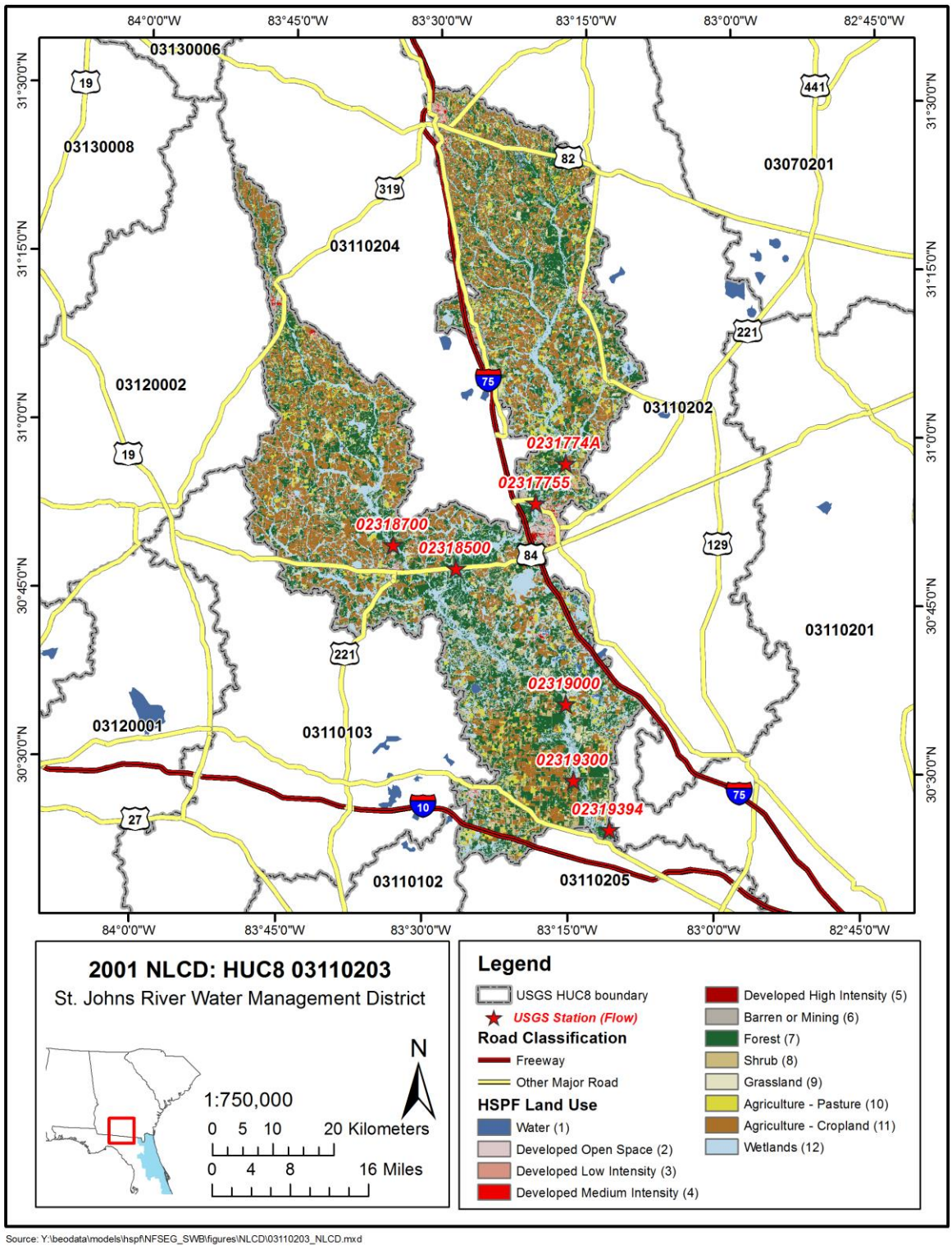


Figure T-03110203-1: Land Cover from the National Land Cover Database.

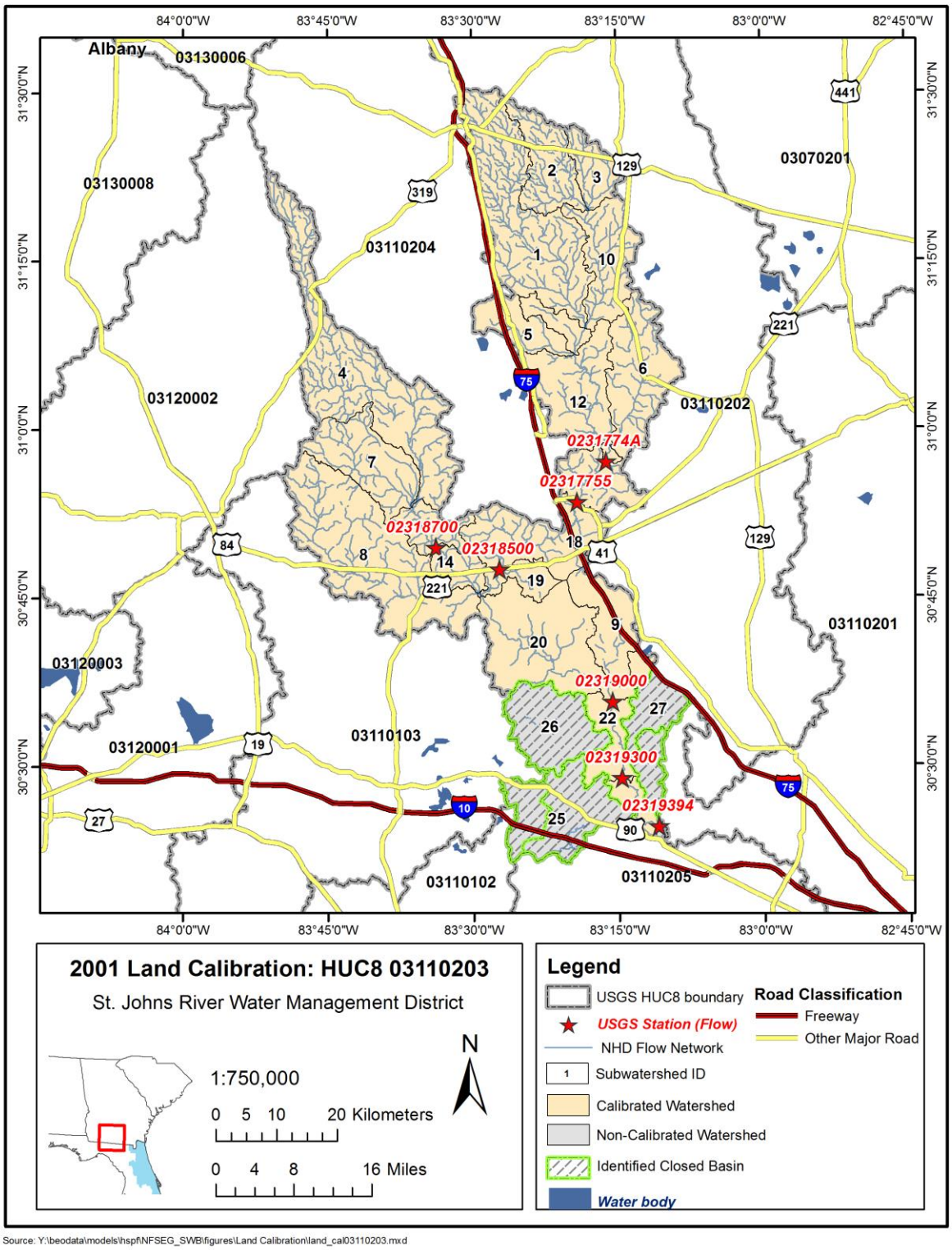


Figure T-03110203-2: Calibrated sub-watersheds.

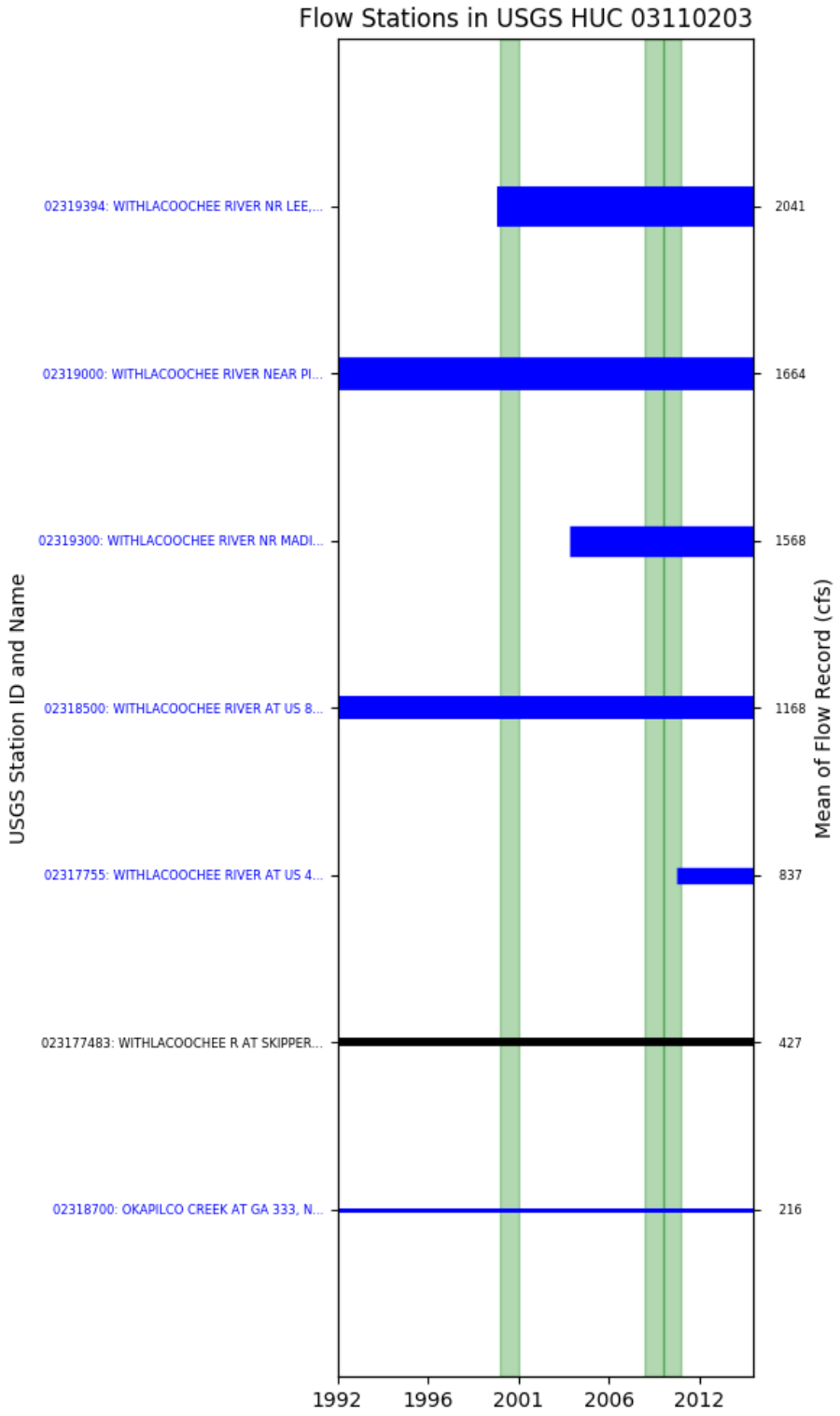


Figure T-03110203-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 13, USGS GAUGE 02318700

Water-Data Report 2009
02318700 OKAPILCO CREEK AT GA 33, NEAR QUITMAN, GA
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 304932, long 833345 referenced to North American Datum of 1983, Brooks County, GA, Hydrologic Unit 03110203, on downstream side of bridge pier on GA 333, 1.0 mile downstream from Coon Creek, and 3.0 mile north of Quitman.

DRAINAGE AREA.--269 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 1979 to current year.
GAGE-HEIGHT: December 1979 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 110 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair. Gage-height records good.

Table T-03110203-1: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02318700.

Statistic	Value
Bias	-71.48
Standard error	191.64
Relative bias	-0.31
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.73
Kling-Gupta coefficient	0.49
Coefficient of efficiency	0.63
Index of agreement	0.79

Table T-03110203-2: Hydrologic Indices Between USGS Gauge 02318700 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02318700	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	231.94	160.49	-30.81
MA2: Median, all daily flows	33.00	50.13	51.90
MA3: CV, all daily flows	216.43	153.53	-29.06
MA4: CV, log of all daily flows	170.91	140.06	-18.05
MA5: Mean daily flow / median daily flow	7.03	3.20	-54.45

MA9: (Q10 - Q90) / median daily flow	18.23	8.88	-51.26
MA10: (Q20 - Q80) / median daily flow	8.48	5.00	-41.03
MA11: (Q25 - Q75) / median daily flow	6.04	3.46	-42.75
MA12: Mean monthly flow, January	319.50	262.93	-17.71
MA13: Mean monthly flow, February	482.34	338.86	-29.75
MA14: Mean monthly flow, March	621.95	381.73	-38.62
MA15: Mean monthly flow, April	314.69	179.78	-42.87
MA16: Mean monthly flow, May	67.45	37.66	-44.17
MA17: Mean monthly flow, June	106.87	42.90	-59.86
MA18: Mean monthly flow, July	144.17	95.93	-33.46
MA19: Mean monthly flow, August	146.06	127.63	-12.62
MA20: Mean monthly flow, September	88.31	84.37	-4.46
MA21: Mean monthly flow, October	147.65	98.94	-32.99
MA22: Mean monthly flow, November	90.66	80.37	-11.35
MA23: Mean monthly flow, December	155.28	128.86	-17.02
ML1: Mean minimum monthly flow, January	61.97	76.29	23.11
ML2: Mean minimum monthly flow, February	131.29	133.60	1.76
ML3: Mean minimum monthly flow, March	120.57	130.20	7.99
ML4: Mean minimum monthly flow, April	45.29	50.85	12.28
ML5: Mean minimum monthly flow, May	11.23	8.13	-27.57
ML6: Mean minimum monthly flow, June	7.17	4.87	-32.04
ML7: Mean minimum monthly flow, July	18.29	35.37	93.35
ML8: Mean minimum monthly flow, August	19.21	41.07	113.85
ML9: Mean minimum monthly flow, September	3.53	15.51	339.64
ML10: Mean minimum monthly flow, October	12.55	21.79	73.57
ML11: Mean minimum monthly flow, November	20.49	34.12	66.46
ML12: Mean minimum monthly flow, December	39.62	52.07	31.41
ML13: CV of minimum monthly flows	179.95	164.31	-8.69
ML14: Mean minimum daily flow / mean median annual flow	0.00	0.00	31.51
ML15: Mean minimum annual flow / mean annual flow	0.00	0.00	95.77
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.32	0.48	50.14
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	30.42
RA1: Mean of positive changes from one day to next (rise rate)	120.34	50.03	
RA2: CV, mean of positive changes from one day to next (rise rate)	370.76	394.34	
RA3: Mean of negative changes from one day to next (fall rate)	62.45	20.01	
RA4: CV, mean of negative changes from one day to next (fall rate)	373.03	340.44	
RA5: Ratio of days that are higher than previous day	0.27	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.23	0.19	
RA7: Median of difference in log of flows over two consecutive days of falling	0.19	0.11	
RA8: Number of flow reversals from one day to the next	57.79	74.04	
RA9: CV, number of flow reversals from one day to the next	34.49	20.05	

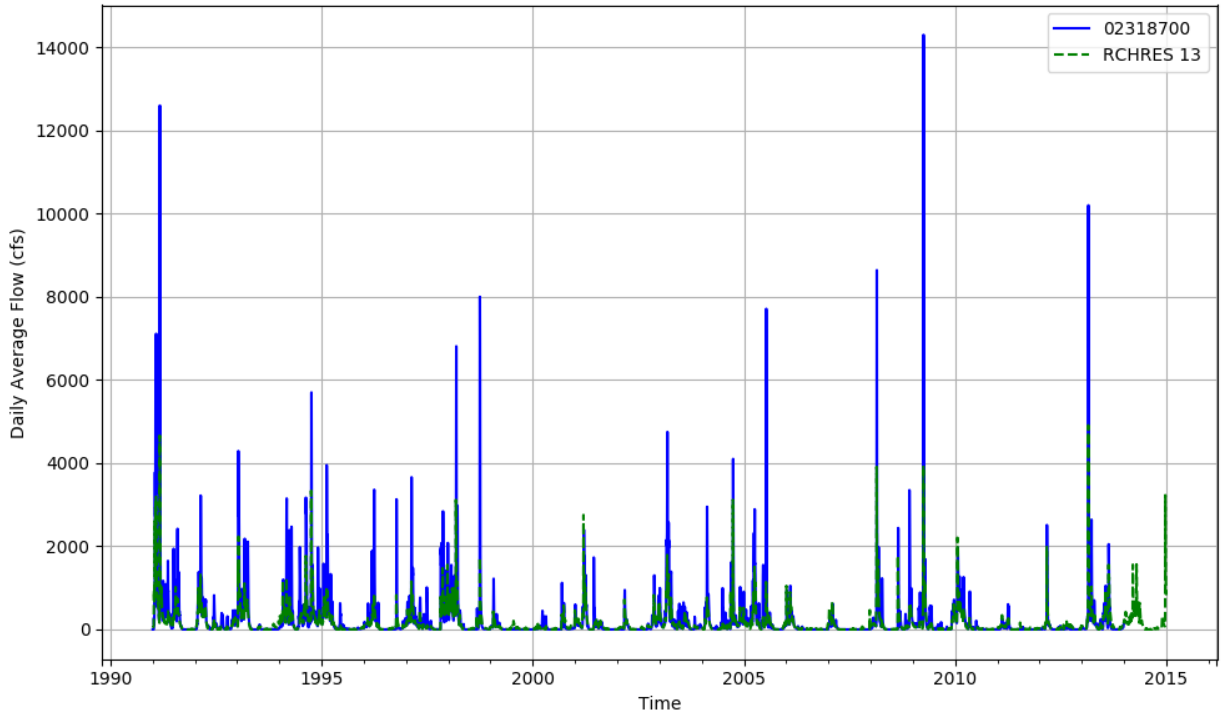


Figure T-03110203-4: Daily flow for HSFP reach 13 and USGS station 02318700.

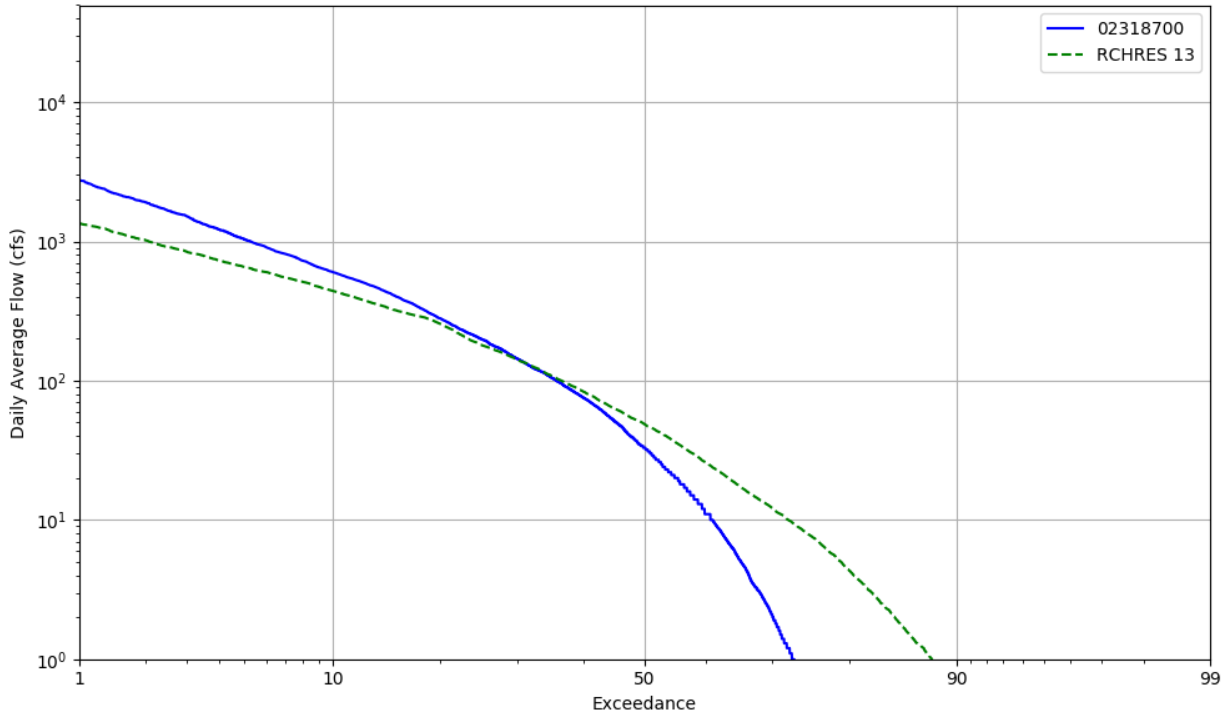


Figure T-03110203-5: Daily exceedance for HSFP reach 13 and USGS station 02318700.

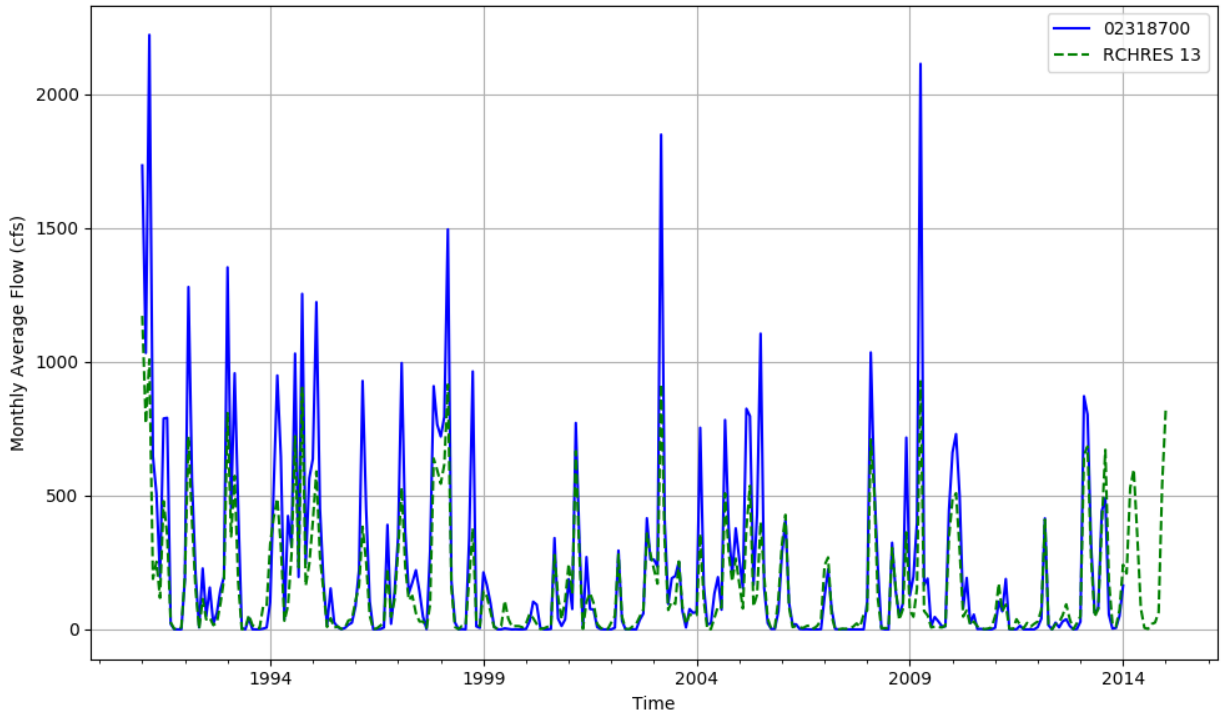


Figure T-03110203-6: Monthly flow for HSFP reach 13 and USGS station 02318700.

HSPF REACH 15, USGS GAUGE 0231774A

Water-Data Report 2009
02318700 OKAPILCO CREEK AT GA 33, NEAR QUITMAN, GA
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 304932, long 833345 referenced to North American Datum of 1983, Brooks County, GA, Hydrologic Unit 03110203, on downstream side of bridge pier on GA 333, 1.0 mile downstream from Coon Creek, and 3.0 mile north of Quitman.

DRAINAGE AREA.--269 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 1979 to current year.
GAGE-HEIGHT: December 1979 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 110 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair. Gage-height records good.

Table T-03110203-3: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 0231774A.

Statistic	Value
Bias	-188.37
Standard error	424.60
Relative bias	-0.41
Relative standard error	0.59
Nash-Sutcliffe coefficient	0.65
Kling-Gupta coefficient	0.37
Coefficient of efficiency	0.57
Index of agreement	0.76

Table T-03110203-4: Hydrologic Indices Between USGS Gauge 0231774A and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 0231774A	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	455.66	267.62	-41.27
MA2: Median, all daily flows	95.00	82.02	-13.66
MA3: CV, all daily flows	196.57	156.49	-20.39
MA4: CV, log of all daily flows	162.61	142.45	-12.40
MA5: Mean daily flow / median daily flow	4.80	3.26	-31.97

MA9: (Q10 - Q90) / median daily flow	12.24	8.97	-26.68
MA10: (Q20 - Q80) / median daily flow	5.56	4.64	-16.50
MA11: (Q25 - Q75) / median daily flow	3.93	3.53	-9.97
MA12: Mean monthly flow, January	619.18	442.25	-28.57
MA13: Mean monthly flow, February	971.43	589.61	-39.30
MA14: Mean monthly flow, March	1143.39	658.77	-42.38
MA15: Mean monthly flow, April	589.44	332.52	-43.59
MA16: Mean monthly flow, May	125.46	65.80	-47.55
MA17: Mean monthly flow, June	181.78	68.25	-62.46
MA18: Mean monthly flow, July	294.06	131.77	-55.19
MA19: Mean monthly flow, August	359.01	170.37	-52.54
MA20: Mean monthly flow, September	257.95	151.41	-41.30
MA21: Mean monthly flow, October	221.65	154.76	-30.18
MA22: Mean monthly flow, November	183.12	123.79	-32.40
MA23: Mean monthly flow, December	336.43	219.52	-34.75
ML1: Mean minimum monthly flow, January	155.39	128.31	-17.43
ML2: Mean minimum monthly flow, February	275.87	230.68	-16.38
ML3: Mean minimum monthly flow, March	244.04	224.75	-7.90
ML4: Mean minimum monthly flow, April	92.54	98.77	6.73
ML5: Mean minimum monthly flow, May	32.93	15.75	-52.17
ML6: Mean minimum monthly flow, June	17.26	9.20	-46.70
ML7: Mean minimum monthly flow, July	55.82	47.69	-14.57
ML8: Mean minimum monthly flow, August	65.10	61.34	-5.77
ML9: Mean minimum monthly flow, September	22.21	24.62	10.84
ML10: Mean minimum monthly flow, October	36.28	32.28	-11.04
ML11: Mean minimum monthly flow, November	61.06	54.13	-11.34
ML12: Mean minimum monthly flow, December	105.00	90.38	-13.93
ML13: CV of minimum monthly flows	155.01	165.21	6.58
ML14: Mean minimum daily flow / mean median annual flow	0.06	0.01	-76.69
ML15: Mean minimum annual flow / mean annual flow	0.02	0.01	-55.57
ML16: Median minimum annual flow / median annual flow	0.03	0.00	-96.33
ML20: Ratio of baseflow volume to total flow volume	0.34	0.49	45.83
ML22: Mean annual minimum flow divided by catchment area	0.04	0.01	-69.29
RA1: Mean of positive changes from one day to next (rise rate)	161.57	79.12	
RA2: CV, mean of positive changes from one day to next (rise rate)	371.03	424.47	
RA3: Mean of negative changes from one day to next (fall rate)	86.32	32.84	
RA4: CV, mean of negative changes from one day to next (fall rate)	391.04	380.74	
RA5: Ratio of days that are higher than previous day	0.33	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.13	0.10	
RA8: Number of flow reversals from one day to the next	77.58	66.46	
RA9: CV, number of flow reversals from one day to the next	20.61	18.68	

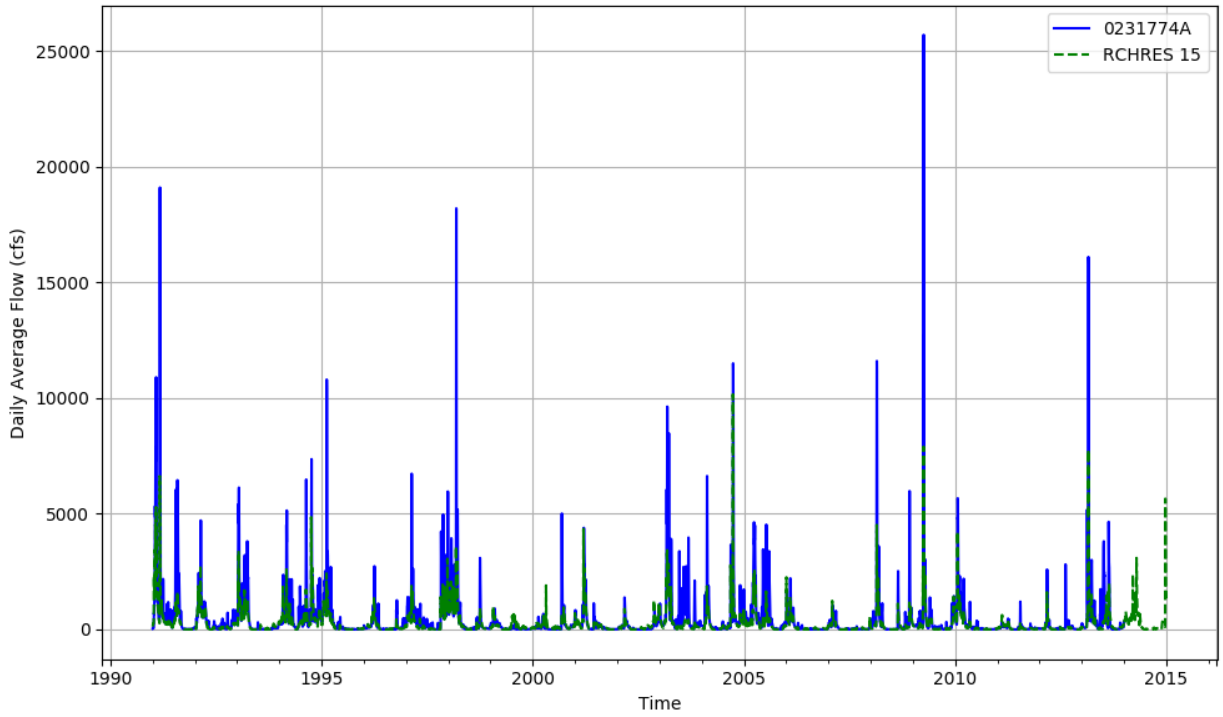


Figure T-03110203-7: Daily flow for HSFP reach 15 and USGS station 0231774A.

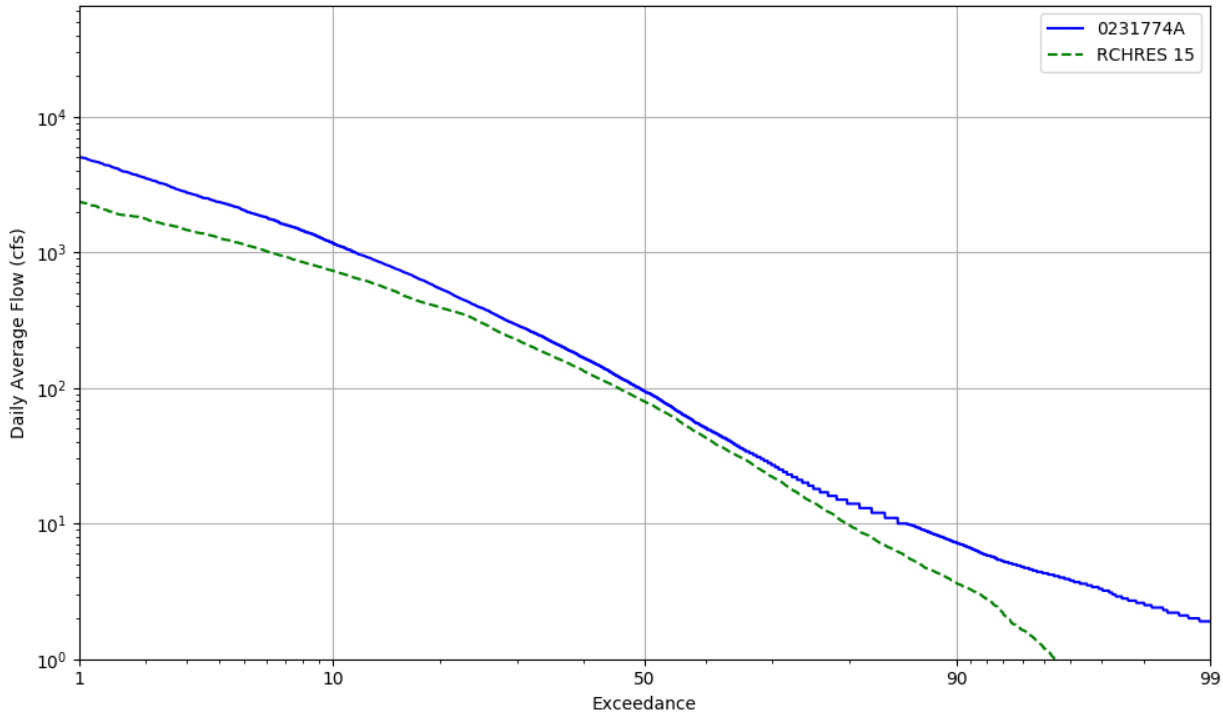


Figure T-03110203-8: Daily exceedance for HSFP reach 15 and USGS station 0231774A.

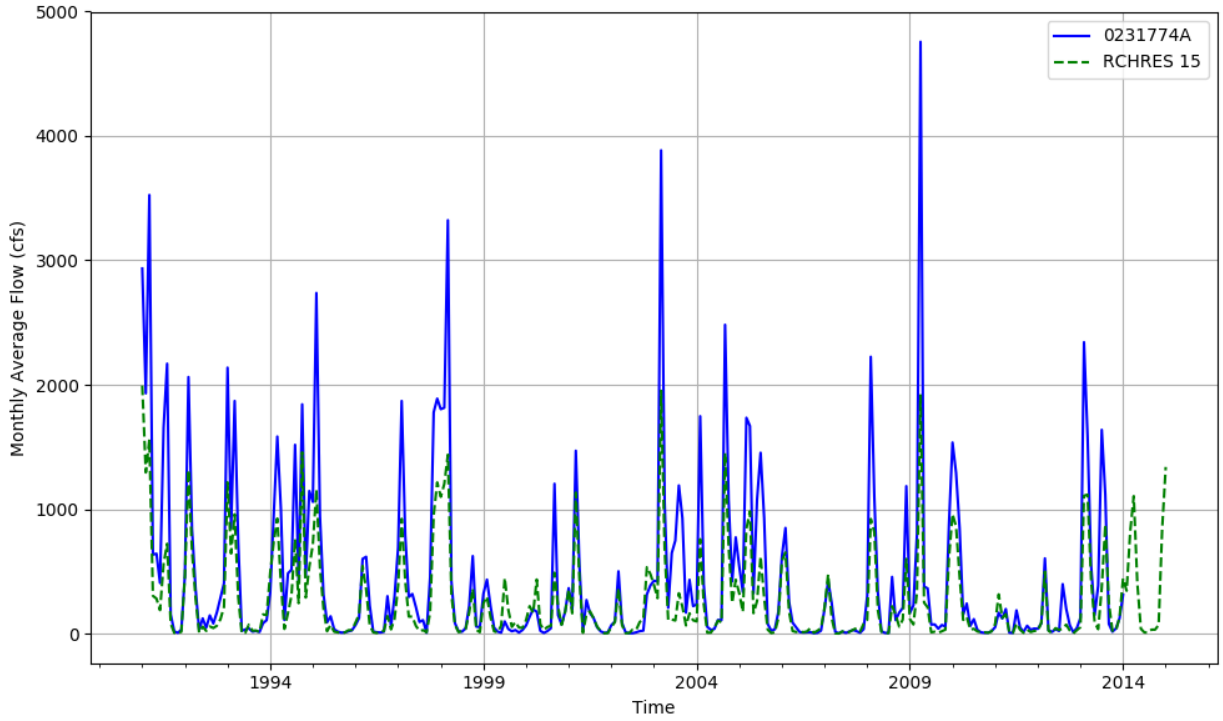


Figure T-03110203-9: Monthly flow for HSFP reach 15 and USGS station 0231774A.

HSPF REACH 16, USGS GAUGE 02317755

Water-Data Report 2009
02318700 OKAPILCO CREEK AT GA 33, NEAR QUITMAN, GA
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 304932, long 833345 referenced to North American Datum of 1983, Brooks County, GA, Hydrologic Unit 03110203, on downstream side of bridge pier on GA 333, 1.0 mile downstream from Coon Creek, and 3.0 mile north of Quitman.

DRAINAGE AREA.--269 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 1979 to current year.
GAGE-HEIGHT: December 1979 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 110 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records fair. Gage-height records good.

Table T-03110203-5: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02317755.

Statistic	Value
Bias	-68.67
Standard error	222.83
Relative bias	-0.28
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.55
Coefficient of efficiency	0.67
Index of agreement	0.82

Table T-03110203-6: Hydrologic Indices Between USGS Gauge 02317755 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02317755	Simulated Reach 16	Percent Difference
MA1: Mean, all daily flows	239.62	171.05	-28.61
MA2: Median, all daily flows	23.00	37.51	63.09
MA3: CV, all daily flows	228.57	161.68	-29.26
MA4: CV, log of all daily flows	199.79	160.83	-19.50
MA5: Mean daily flow / median daily flow	10.42	4.56	-56.23

MA9: (Q10 - Q90) / median daily flow	21.72	12.52	-42.34
MA10: (Q20 - Q80) / median daily flow	7.70	4.56	-40.76
MA11: (Q25 - Q75) / median daily flow	4.91	2.84	-42.11
MA12: Mean monthly flow, January	28.33	42.63	50.47
MA13: Mean monthly flow, February	500.29	395.78	-20.89
MA14: Mean monthly flow, March	633.13	477.92	-24.51
MA15: Mean monthly flow, April	195.15	171.28	-12.23
MA16: Mean monthly flow, May	35.59	29.77	-16.35
MA17: Mean monthly flow, June	89.60	25.60	-71.43
MA18: Mean monthly flow, July	402.17	140.04	-65.18
MA19: Mean monthly flow, August	347.06	259.70	-25.17
MA20: Mean monthly flow, September	70.21	96.87	37.98
MA21: Mean monthly flow, October	21.06	20.27	-3.78
MA22: Mean monthly flow, November	13.32	6.13	-54.00
MA23: Mean monthly flow, December	18.59	18.99	2.14
ML1: Mean minimum monthly flow, January	19.33	18.11	-6.31
ML2: Mean minimum monthly flow, February	19.33	51.78	167.83
ML3: Mean minimum monthly flow, March	123.33	247.94	101.03
ML4: Mean minimum monthly flow, April	70.00	92.77	32.53
ML5: Mean minimum monthly flow, May	9.03	9.10	0.72
ML6: Mean minimum monthly flow, June	7.70	8.68	12.71
ML7: Mean minimum monthly flow, July	78.12	15.18	-80.57
ML8: Mean minimum monthly flow, August	20.00	64.57	222.84
ML9: Mean minimum monthly flow, September	11.97	35.54	196.75
ML10: Mean minimum monthly flow, October	14.53	3.10	-78.67
ML11: Mean minimum monthly flow, November	14.67	3.68	-74.89
ML12: Mean minimum monthly flow, December	18.00	7.40	-58.87
ML13: CV of minimum monthly flows	193.11	223.98	15.99
ML14: Mean minimum daily flow / mean median annual flow	0.28	0.04	-86.86
ML15: Mean minimum annual flow / mean annual flow	0.08	0.02	-75.48
ML16: Median minimum annual flow / median annual flow	0.30	0.04	-87.84
ML20: Ratio of baseflow volume to total flow volume	0.20	0.40	100.72
ML22: Mean annual minimum flow divided by catchment area	0.08	0.01	-85.69
RA1: Mean of positive changes from one day to next (rise rate)	142.84	57.67	
RA2: CV, mean of positive changes from one day to next (rise rate)	462.30	449.00	
RA3: Mean of negative changes from one day to next (fall rate)	67.43	22.70	
RA4: CV, mean of negative changes from one day to next (fall rate)	610.53	495.92	
RA5: Ratio of days that are higher than previous day	0.25	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.16	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.10	
RA8: Number of flow reversals from one day to the next	57.50	52.50	
RA9: CV, number of flow reversals from one day to the next	48.48	51.45	

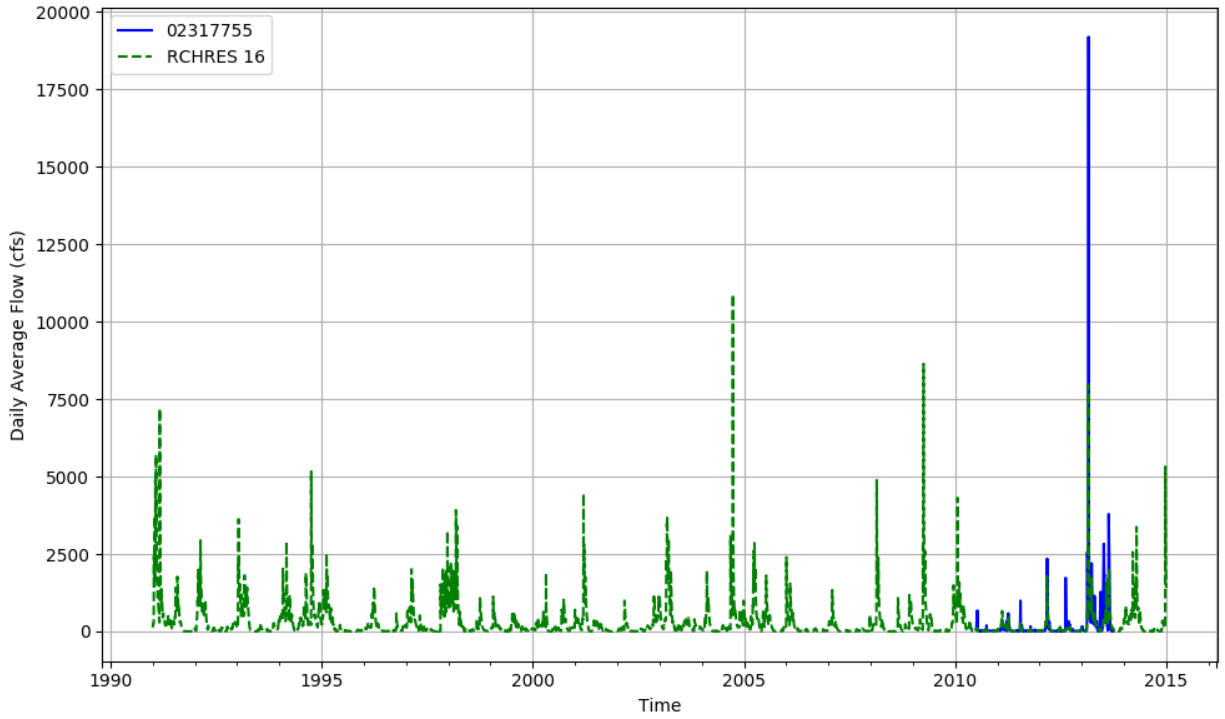


Figure T-03110203-10: Daily flow for HSFP reach 16 and USGS station 02317755.

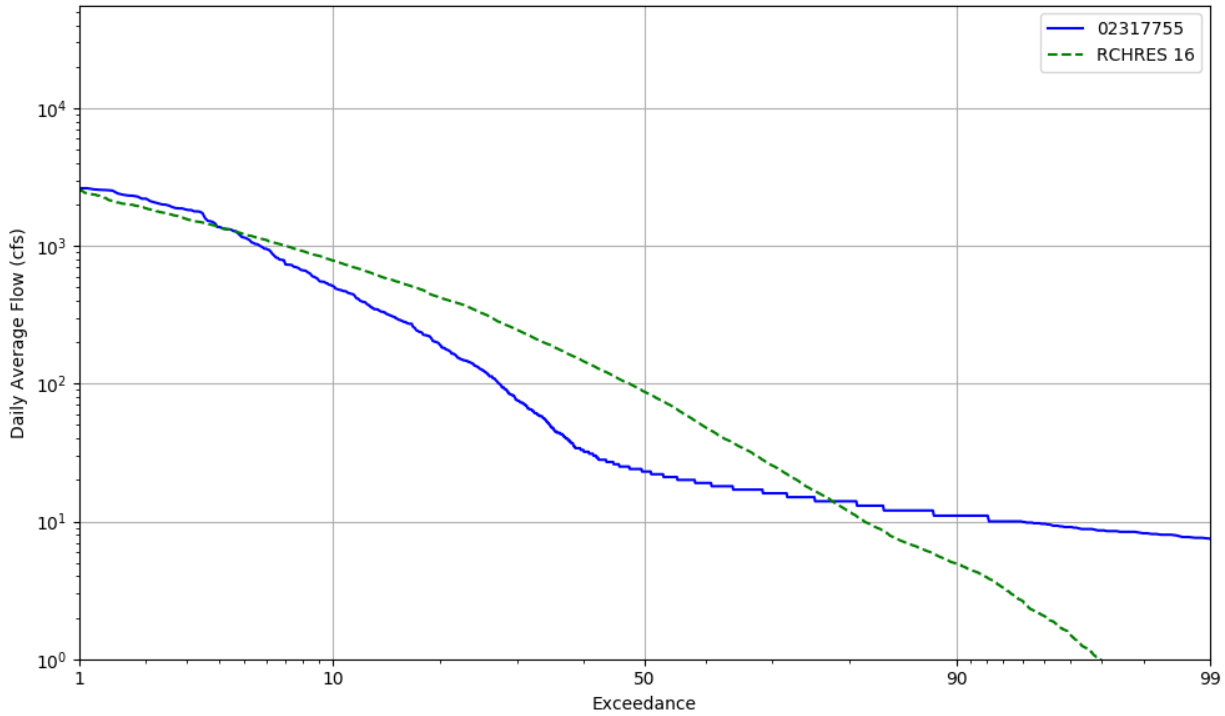


Figure T-03110203-11: Daily exceedance for HSFP reach 16 and USGS station 02317755.

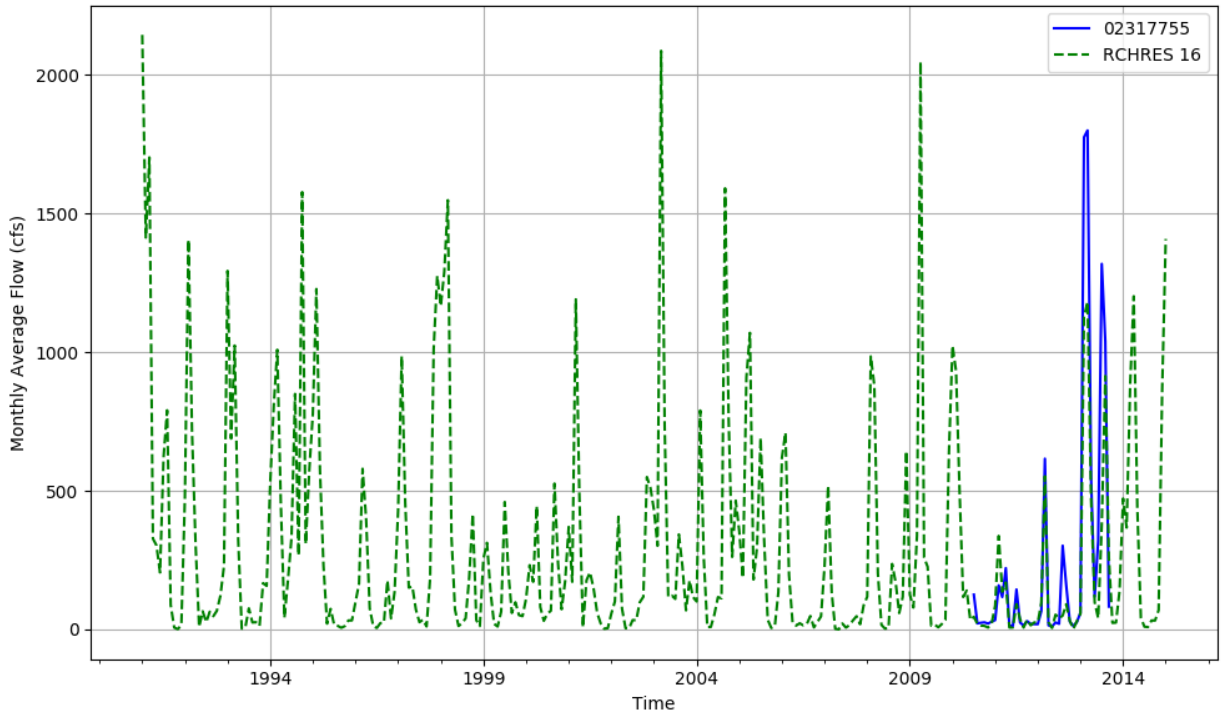


Figure T-03110203-12: Monthly flow for HSFP reach 16 and USGS station 02317755.

HSPF REACH 18, USGS GAUGE 02318500

Water-Data Report 2009
02318500 WITHLACOOCHEE RIVER AT US 84, NEAR QUITMAN, GA
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 304735, long 832713 referenced to North American Datum of 1983, Brooks County, GA, Hydrologic Unit 03110203, on downstream right bank pier of abandoned bridge on old US 84, 4.0 miles upstream from Piscola Creek, 6.0 miles east of Quitman, and 9.0 miles downstream from Little River.

DRAINAGE AREA.--1,480 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1928 to December 1931, June 1937 to May 1948, October 1988 to May 1992, June 1993 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WSP 1304; drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 84.30 feet above National Geodetic Vertical Datum (NGVD) of 1929. From October 1, 1928 to December 11, 1931, a non-recording gage was located at same site at datum 5.0 feet lower. From June 9, 1937 to May 31, 1948, a non-recording gage was located at same site and datum. From May 19, 1949 to March 1, 1954, a crest-stage gage was located at same site and datum. From September 29, 1988 to May 4, 1989, a water-stage recorder was located at a site 2,000 feet upstream at same datum.

COOPERATION.--USGS National Water-Quality Assessment Program.

REMARKS.--Discharge records good except for discharges below 100 cfs and estimated days, which are fair.

Table T-03110203-7: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02318500.

Statistic	Value
Bias	-190.19
Standard error	862.42
Relative bias	-0.15
Relative standard error	0.44
Nash-Sutcliffe coefficient	0.81
Kling-Gupta coefficient	0.62
Coefficient of efficiency	0.70
Index of agreement	0.83

Table T-03110203-8: Hydrologic Indices Between USGS Gauge 02318500 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02318500	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	1233.78	1042.25	-15.52
MA2: Median, all daily flows	254.00	493.87	94.44
MA3: CV, all daily flows	164.49	141.72	-13.85
MA4: CV, log of all daily flows	157.24	111.60	-29.03
MA5: Mean daily flow / median daily flow	4.86	2.11	-56.55
MA9: (Q10 - Q90) / median daily flow	13.69	4.75	-65.28
MA10: (Q20 - Q80) / median daily flow	6.72	2.75	-59.09
MA11: (Q25 - Q75) / median daily flow	4.55	2.14	-53.05
MA12: Mean monthly flow, January	1419.02	1320.70	-6.93
MA13: Mean monthly flow, February	2436.72	1997.13	-18.04
MA14: Mean monthly flow, March	2971.81	2255.51	-24.10
MA15: Mean monthly flow, April	1783.21	1320.32	-25.96
MA16: Mean monthly flow, May	437.06	527.82	20.77
MA17: Mean monthly flow, June	502.03	406.90	-18.95
MA18: Mean monthly flow, July	810.96	598.61	-26.18
MA19: Mean monthly flow, August	894.92	723.26	-19.18
MA20: Mean monthly flow, September	505.11	615.19	21.79
MA21: Mean monthly flow, October	620.45	584.97	-5.72
MA22: Mean monthly flow, November	431.42	462.26	7.15
MA23: Mean monthly flow, December	842.12	742.14	-11.87
ML1: Mean minimum monthly flow, January	481.39	581.42	20.78
ML2: Mean minimum monthly flow, February	911.05	941.62	3.36
ML3: Mean minimum monthly flow, March	836.95	1011.83	20.89
ML4: Mean minimum monthly flow, April	329.18	714.57	117.07
ML5: Mean minimum monthly flow, May	141.86	338.04	138.29
ML6: Mean minimum monthly flow, June	61.79	234.52	279.57
ML7: Mean minimum monthly flow, July	264.82	350.77	32.46
ML8: Mean minimum monthly flow, August	228.82	377.47	64.96
ML9: Mean minimum monthly flow, September	57.21	234.19	309.32
ML10: Mean minimum monthly flow, October	97.30	230.56	136.95
ML11: Mean minimum monthly flow, November	168.93	280.12	65.82
ML12: Mean minimum monthly flow, December	281.93	411.16	45.84
ML13: CV of minimum monthly flows	176.31	112.49	-36.20
ML14: Mean minimum daily flow / mean median annual flow	0.12	0.13	3.81
ML15: Mean minimum annual flow / mean annual flow	0.03	0.08	148.20
ML16: Median minimum annual flow / median annual flow	0.08	0.07	-8.16
ML20: Ratio of baseflow volume to total flow volume	0.38	0.61	59.85
ML22: Mean annual minimum flow divided by catchment area	0.17	0.77	362.82
RA1: Mean of positive changes from one day to next (rise rate)	295.84	393.72	
RA2: CV, mean of positive changes from one day to next (rise rate)	318.31	478.18	
RA3: Mean of negative changes from one day to next (fall rate)	169.01	153.36	
RA4: CV, mean of negative changes from one day to next (fall rate)	325.99	648.26	
RA5: Ratio of days that are higher than previous day	0.34	0.28	

RA6: Median of difference in log of flows over two consecutive days of rising	0.14	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.05	
RA8: Number of flow reversals from one day to the next	71.12	54.42	
RA9: CV, number of flow reversals from one day to the next	24.76	26.64	

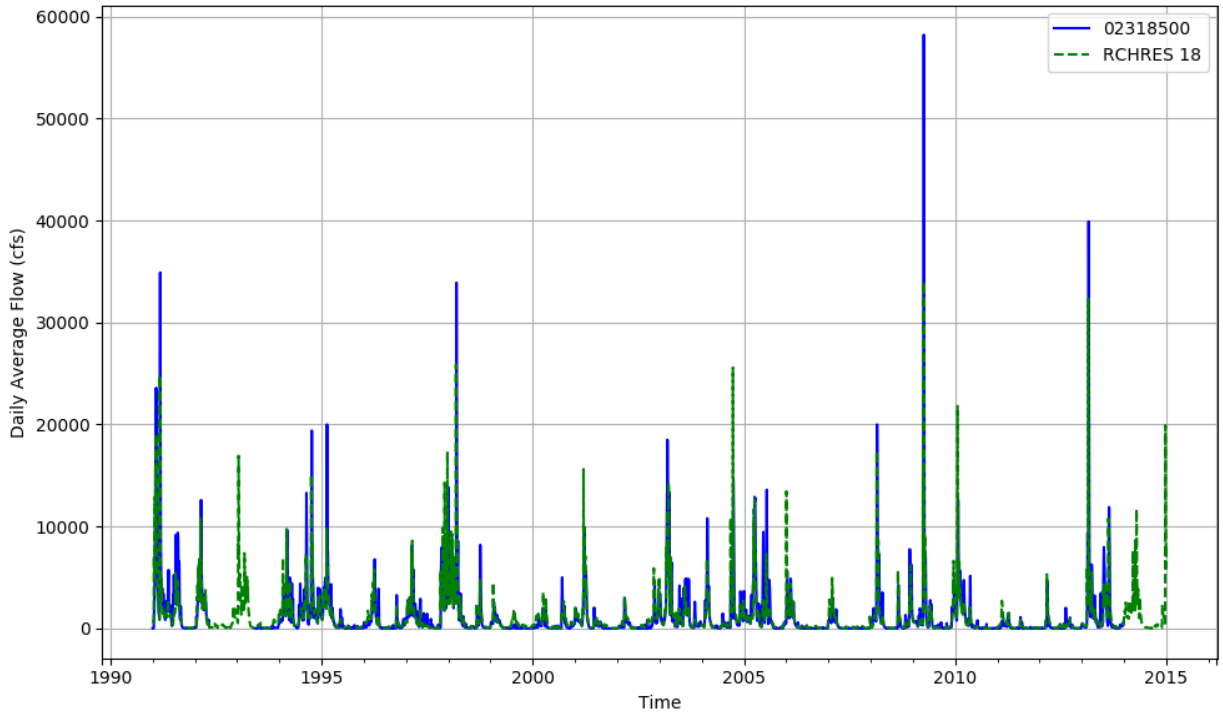


Figure T-03110203-13: Daily flow for HSFP reach 18 and USGS station 02318500.

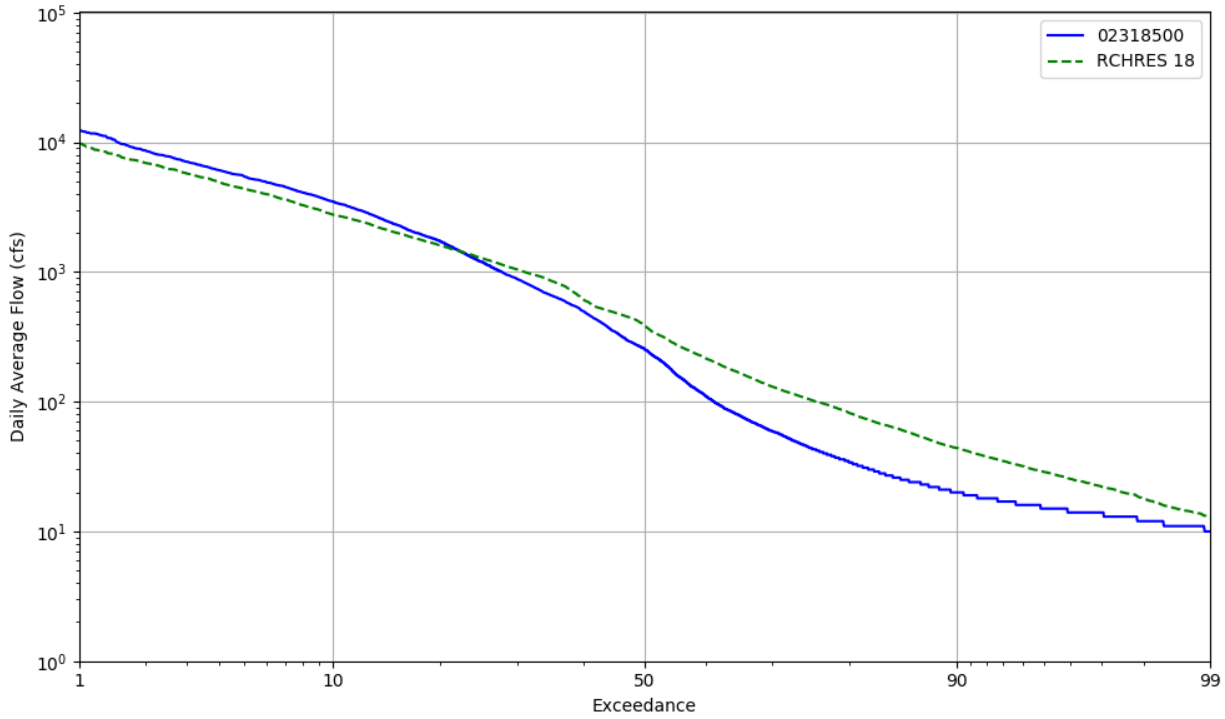


Figure T-03110203-14: Daily exceedance for HSFP reach 18 and USGS station 02318500.

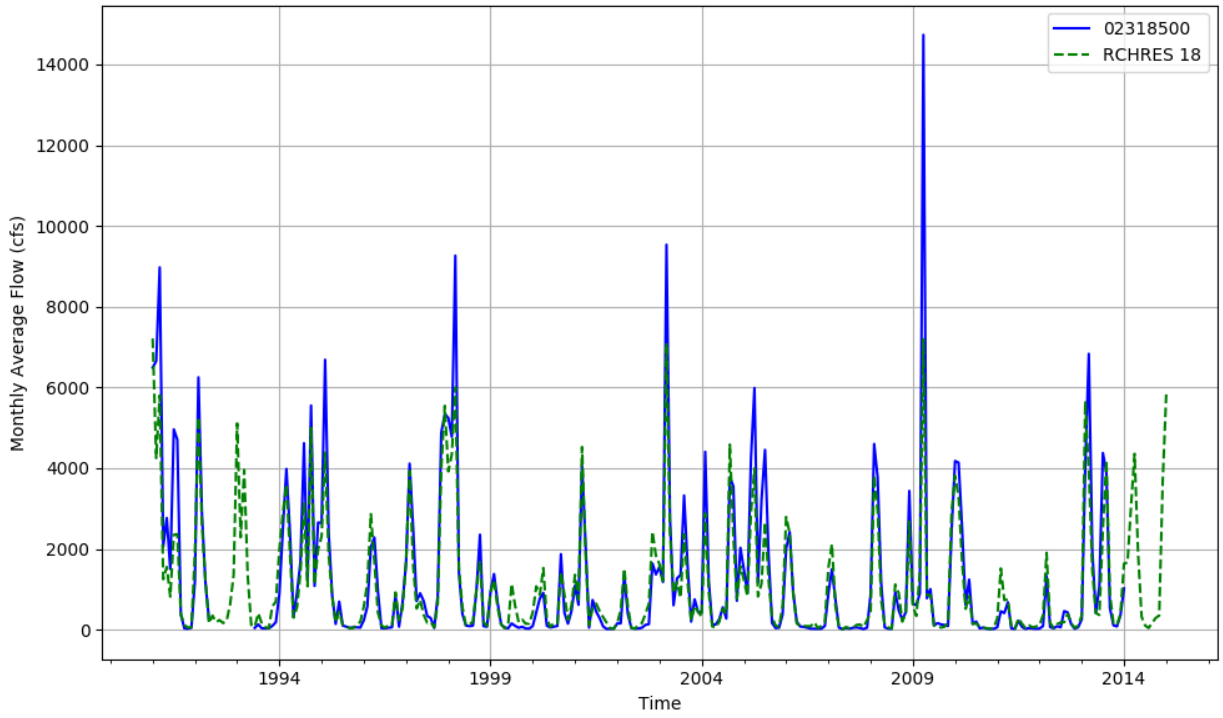


Figure T-03110203-15: Monthly flow for HSFP reach 18 and USGS station 02318500.

HSPF REACH 21, USGS GAUGE 02319000

Water-Data Report 2009
02319000 WITHLACOOCHEE RIVER NEAR PINETTA, FL
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 303543, long 831535 referenced to North American Datum of 1927, Madison County, FL, Hydrologic Unit 03110203, on right bank 300 ft downstream from County Road 150 bridge, 0.1 mi downstream from small tributary, 0.3 mi west of Bellville, 5.6 mi east of Pinetta, and 22 mi upstream from mouth.

DRAINAGE AREA.--2,120 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for October and November 1931, published in WSP 1304.

REVISED RECORDS.--WSP 972: 1941-42. WSP 1905: Drainage area. WDR FL-07-4:2002-03.

GAGE.--Water-stage recorder. Datum of gage is 47.21 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Oct. 11, 1931 to Dec. 3, 1941, nonrecording gage at same site and datum. Dec. 3, 1941 to Aug. 2, 1972, water-stage recorder at same site and datum. Aug. 2, 1972 to Apr. 22, 1986, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair.

Table T-03110203-9: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02319000.

Statistic	Value
Bias	-251.60
Standard error	1063.10
Relative bias	-0.14
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.82
Kling-Gupta coefficient	0.67
Coefficient of efficiency	0.70
Index of agreement	0.84

Table T-03110203-10: Hydrologic Indices Between USGS Gauge 02319000 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02319000	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	1751.75	1499.95	-14.37
MA2: Median, all daily flows	554.00	734.17	32.52
MA3: CV, all daily flows	144.97	131.88	-9.03
MA4: CV, log of all daily flows	136.39	108.37	-20.54

MA5: Mean daily flow / median daily flow	3.16	2.04	-35.39
MA9: (Q10 - Q90) / median daily flow	8.09	4.61	-43.06
MA10: (Q20 - Q80) / median daily flow	4.12	2.61	-36.59
MA11: (Q25 - Q75) / median daily flow	3.02	2.01	-33.21
MA12: Mean monthly flow, January	2111.70	2098.57	-0.62
MA13: Mean monthly flow, February	3337.94	2889.01	-13.45
MA14: Mean monthly flow, March	4380.68	3340.34	-23.75
MA15: Mean monthly flow, April	2687.78	1937.46	-27.92
MA16: Mean monthly flow, May	757.60	758.69	0.15
MA17: Mean monthly flow, June	839.83	633.83	-24.53
MA18: Mean monthly flow, July	1166.75	931.28	-20.18
MA19: Mean monthly flow, August	1285.79	1118.43	-13.02
MA20: Mean monthly flow, September	772.83	916.30	18.56
MA21: Mean monthly flow, October	1077.71	925.57	-14.12
MA22: Mean monthly flow, November	709.81	725.44	2.20
MA23: Mean monthly flow, December	1165.67	1115.28	-4.32
ML1: Mean minimum monthly flow, January	807.83	835.41	3.41
ML2: Mean minimum monthly flow, February	1461.74	1386.01	-5.18
ML3: Mean minimum monthly flow, March	1458.22	1482.37	1.66
ML4: Mean minimum monthly flow, April	803.87	1013.23	26.04
ML5: Mean minimum monthly flow, May	365.22	465.88	27.56
ML6: Mean minimum monthly flow, June	246.91	362.11	46.66
ML7: Mean minimum monthly flow, July	536.00	539.49	0.65
ML8: Mean minimum monthly flow, August	462.87	581.65	25.66
ML9: Mean minimum monthly flow, September	230.57	379.58	64.63
ML10: Mean minimum monthly flow, October	297.04	378.75	27.51
ML11: Mean minimum monthly flow, November	365.48	436.51	19.44
ML12: Mean minimum monthly flow, December	551.39	623.11	13.01
ML13: CV of minimum monthly flows	133.20	105.73	-20.62
ML14: Mean minimum daily flow / mean median annual flow	0.27	0.19	-28.92
ML15: Mean minimum annual flow / mean annual flow	0.11	0.11	-2.47
ML16: Median minimum annual flow / median annual flow	0.20	0.16	-20.56
ML20: Ratio of baseflow volume to total flow volume	0.49	0.63	30.47
ML22: Mean annual minimum flow divided by catchment area	1.22	1.56	28.55
RA1: Mean of positive changes from one day to next (rise rate)	284.52	448.64	
RA2: CV, mean of positive changes from one day to next (rise rate)	275.10	438.64	
RA3: Mean of negative changes from one day to next (fall rate)	173.09	179.27	
RA4: CV, mean of negative changes from one day to next (fall rate)	286.80	496.66	
RA5: Ratio of days that are higher than previous day	0.37	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.05	
RA8: Number of flow reversals from one day to the next	65.54	60.67	
RA9: CV, number of flow reversals from one day to the next	24.18	20.44	

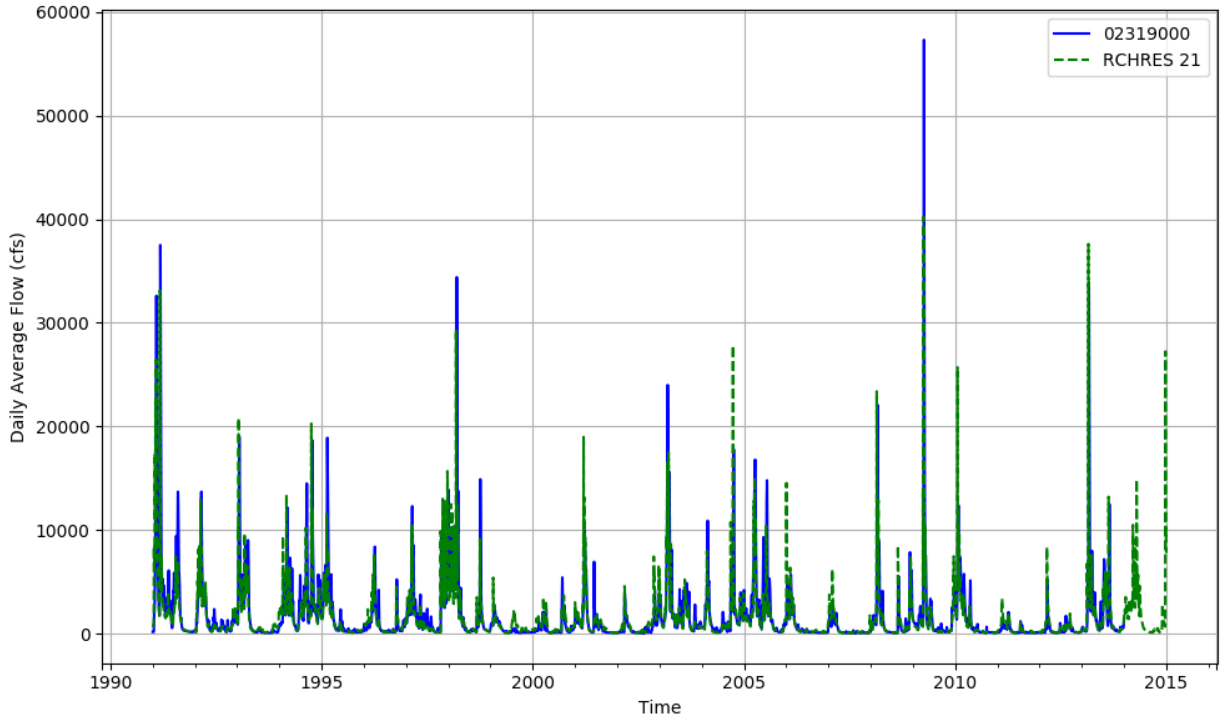


Figure T-03110203-16: Daily flow for HSFP reach 21 and USGS station 02319000.

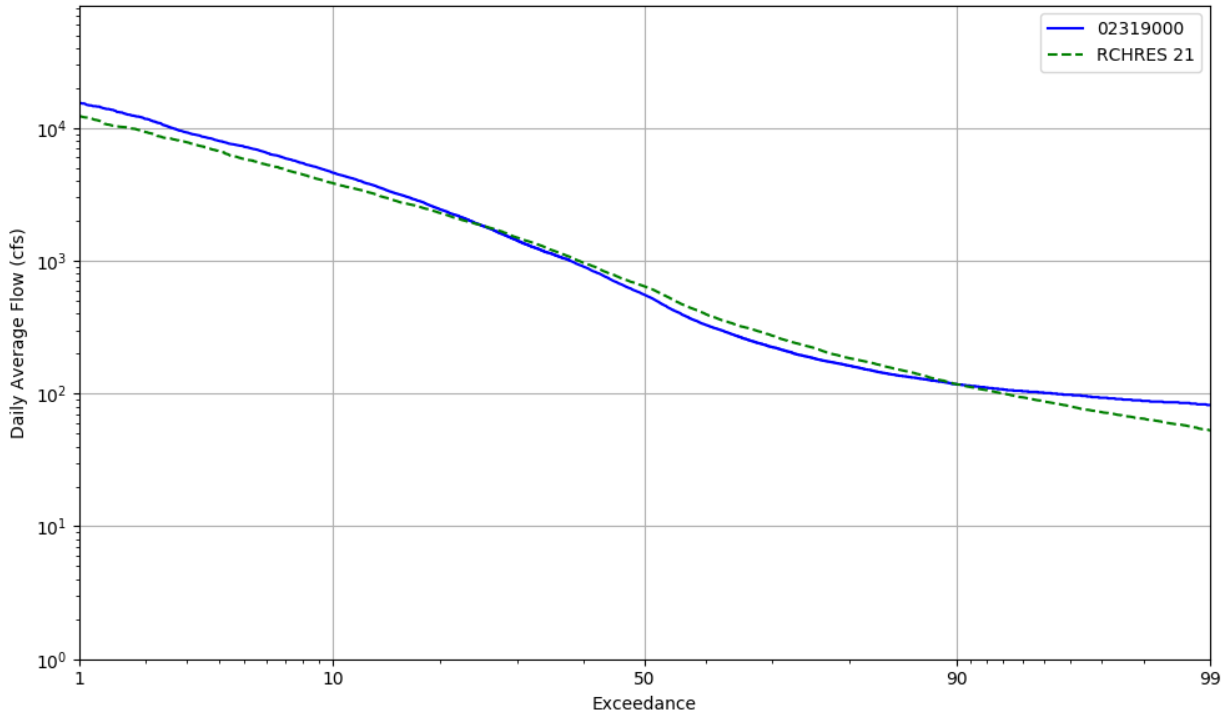


Figure T-03110203-17: Daily exceedance for HSFP reach 21 and USGS station 02319000.

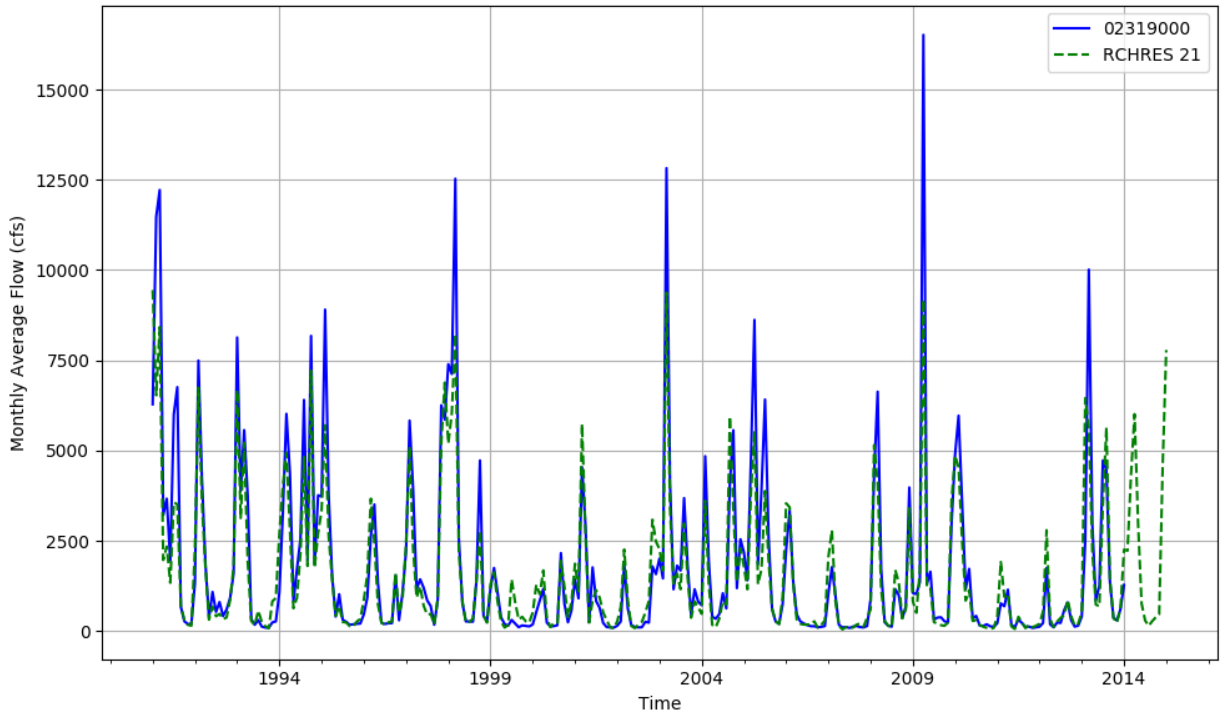


Figure T-03110203-18: Monthly flow for HSFP reach 21 and USGS station 02319000.

HSPF REACH 22, USGS GAUGE 02319300

Water-Data Report 2009
02319300 WITHLACOOCHEE RIVER NEAR MADISON, FL
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 302856, long 831435 referenced to North American Datum of 1927, Hamilton County, FL, Hydrologic Unit 03110203, on left bank 260 ft below bridge on State Highway 6, 10.2 mi east of Madison, and 12 mi upstream from mouth.

DRAINAGE AREA.--2240.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--1964 to 1984 (miscellaneous discharge measurements), October 1964 to September 1972 and November 1975 to September 1984 (annual maximum discharge and gage height), November 2004 to current year.

GAGE.--Water-stage and water -current recorders. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to 1984, non recording and creststage gage at same site and datum.

REMARKS.--Records fair, except for those below 100 ft/s and estimated daily discharges, which are poor.

Table T-03110203-11: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02319300.

Statistic	Value
Bias	-13.44
Standard error	1178.61
Relative bias	-0.01
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.64
Coefficient of efficiency	0.61
Index of agreement	0.78

Table T-03110203-12: Hydrologic Indices Between USGS Gauge 02319300 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02319300	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	1454.18	1432.25	-1.51
MA2: Median, all daily flows	375.00	741.46	97.72
MA3: CV, all daily flows	147.37	121.52	-17.54
MA4: CV, log of all daily flows	139.56	97.10	-30.43
MA5: Mean daily flow / median daily flow	3.88	1.93	-50.19
MA9: (Q10 - Q90) / median daily flow	9.34	3.98	-57.42

MA10: (Q20 - Q80) / median daily flow	5.41	2.33	-56.98
MA11: (Q25 - Q75) / median daily flow	4.17	1.77	-57.48
MA12: Mean monthly flow, January	1343.82	1635.23	21.69
MA13: Mean monthly flow, February	2028.44	2511.49	23.81
MA14: Mean monthly flow, March	3058.79	2505.34	-18.09
MA15: Mean monthly flow, April	3530.22	2324.71	-34.15
MA16: Mean monthly flow, May	713.06	885.69	24.21
MA17: Mean monthly flow, June	833.55	760.81	-8.73
MA18: Mean monthly flow, July	1399.19	1113.82	-20.40
MA19: Mean monthly flow, August	1005.61	1272.69	26.56
MA20: Mean monthly flow, September	577.31	806.54	39.71
MA21: Mean monthly flow, October	220.25	451.07	104.80
MA22: Mean monthly flow, November	364.39	561.57	54.11
MA23: Mean monthly flow, December	1096.41	1192.87	8.80
ML1: Mean minimum monthly flow, January	706.00	920.17	30.34
ML2: Mean minimum monthly flow, February	1011.44	1169.85	15.66
ML3: Mean minimum monthly flow, March	1261.89	1392.71	10.37
ML4: Mean minimum monthly flow, April	994.89	1244.80	25.12
ML5: Mean minimum monthly flow, May	406.56	643.24	58.22
ML6: Mean minimum monthly flow, June	300.78	510.79	69.82
ML7: Mean minimum monthly flow, July	480.00	643.29	34.02
ML8: Mean minimum monthly flow, August	412.11	689.98	67.42
ML9: Mean minimum monthly flow, September	281.00	574.32	104.38
ML10: Mean minimum monthly flow, October	135.11	332.46	146.06
ML11: Mean minimum monthly flow, November	252.00	427.39	69.60
ML12: Mean minimum monthly flow, December	475.00	603.83	27.12
ML13: CV of minimum monthly flows	135.73	88.76	-34.61
ML14: Mean minimum daily flow / mean median annual flow	0.24	0.38	57.04
ML15: Mean minimum annual flow / mean annual flow	0.12	0.23	97.27
ML16: Median minimum annual flow / median annual flow	0.20	0.37	84.35
ML20: Ratio of baseflow volume to total flow volume	0.50	0.66	33.12
ML22: Mean annual minimum flow divided by catchment area	1.32	2.93	121.42
RA1: Mean of positive changes from one day to next (rise rate)	225.88	362.00	
RA2: CV, mean of positive changes from one day to next (rise rate)	420.56	406.83	
RA3: Mean of negative changes from one day to next (fall rate)	137.81	132.90	
RA4: CV, mean of negative changes from one day to next (fall rate)	350.57	498.27	
RA5: Ratio of days that are higher than previous day	0.36	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.07	0.04	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.03	
RA8: Number of flow reversals from one day to the next	79.50	48.50	
RA9: CV, number of flow reversals from one day to the next	49.01	27.27	

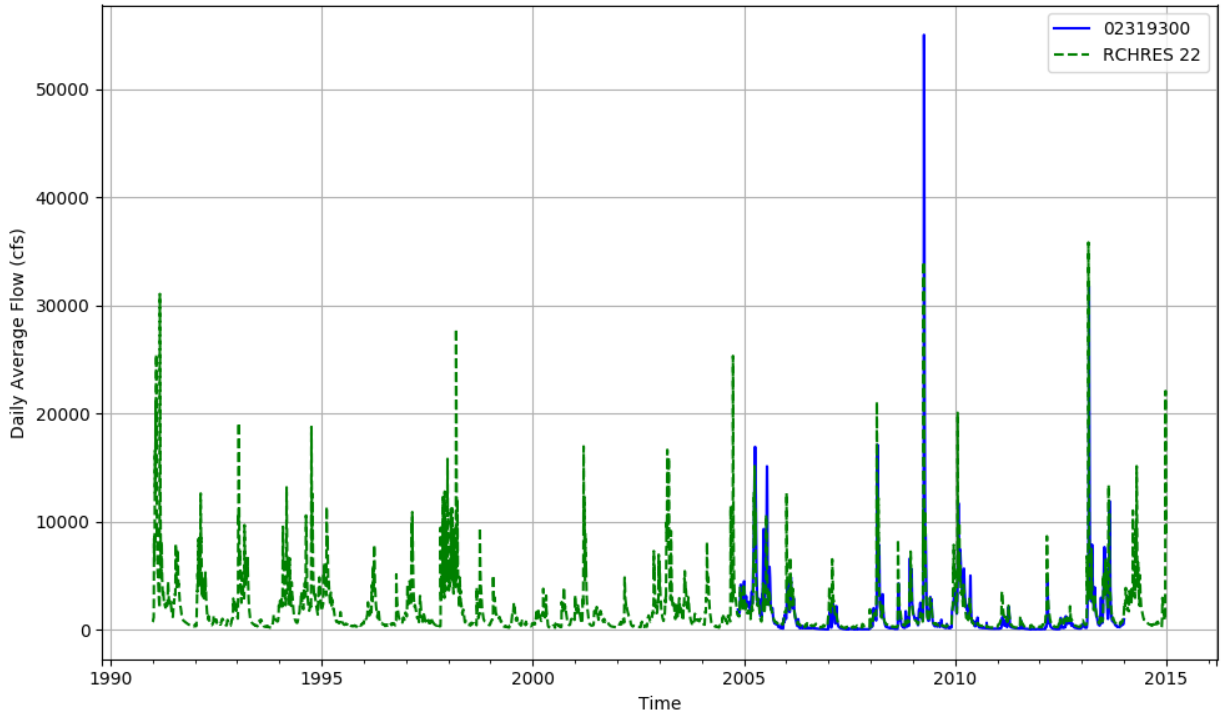


Figure T-03110203-19: Daily flow for HSFP reach 22 and USGS station 02319300.

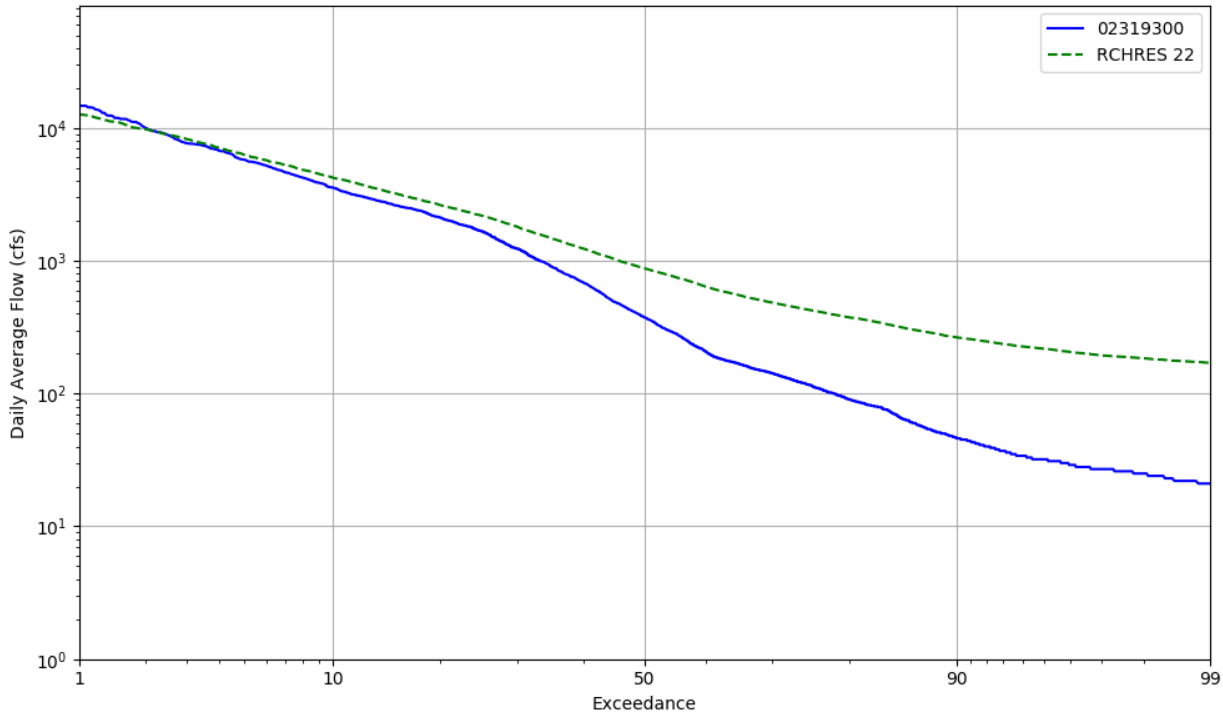


Figure T-03110203-20: Daily exceedance for HSFP reach 22 and USGS station 02319300.

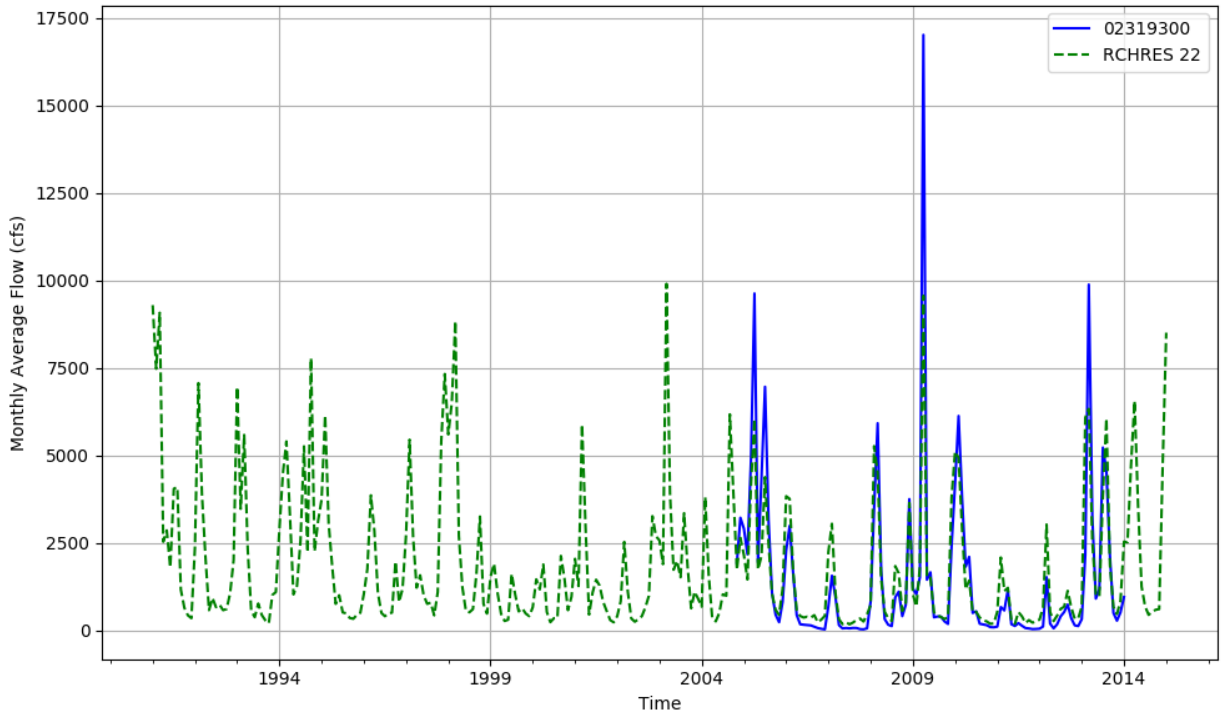


Figure T-03110203-21: Monthly flow for HSFP reach 22 and USGS station 02319300.

HSPF REACH 23, USGS GAUGE 02319394

Water-Data Report 2009
02319394 WITHLACOOCHEE RIVER NEAR LEE, FL
Suwannee Basin Withlacoochee Subbasin

LOCATION.--Lat 302437, long 831049 referenced to North American Datum of 1927, Madison County, FL, Hydrologic Unit 03110203, near right bank on downstream side of bridge on County Road 141 and Myrrh Road, 2.3 mi upstream from mouth, and 7.3 mi east of Lee.

DRAINAGE AREA.--2,330 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 2000 to current year.

REVISED RECORDS.--WRD FL-02-4:2001.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is 0.88 ft above NGVD of 1929 (Florida Department of Transportation benchmark).

REMARKS.--Records fair.

Table T-03110203-13: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02319394.

Statistic	Value
Bias	-246.11
Standard error	1145.88
Relative bias	-0.12
Relative standard error	0.48
Nash-Sutcliffe coefficient	0.77
Kling-Gupta coefficient	0.66
Coefficient of efficiency	0.64
Index of agreement	0.80

Table T-03110203-14: Hydrologic Indices Between USGS Gauge 02319394 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02319394	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	1900.13	1653.37	-12.99
MA2: Median, all daily flows	943.00	1026.73	8.88
MA3: CV, all daily flows	92.27	91.01	-1.36
MA4: CV, log of all daily flows	101.33	83.75	-17.35
MA5: Mean daily flow / median daily flow	2.01	1.61	-20.08
MA9: (Q10 - Q90) / median daily flow	4.22	2.90	-31.44
MA10: (Q20 - Q80) / median daily flow	2.41	1.74	-27.78

MA11: (Q25 - Q75) / median daily flow	1.85	1.34	-27.50
MA12: Mean monthly flow, January	1298.53	1298.58	0.00
MA13: Mean monthly flow, February	1816.69	1827.84	0.61
MA14: Mean monthly flow, March	3268.34	2948.80	-9.78
MA15: Mean monthly flow, April	3511.79	2356.24	-32.90
MA16: Mean monthly flow, May	1004.98	869.12	-13.52
MA17: Mean monthly flow, June	1319.11	890.05	-32.53
MA18: Mean monthly flow, July	1389.25	1048.65	-24.52
MA19: Mean monthly flow, August	1197.74	1103.99	-7.83
MA20: Mean monthly flow, September	1149.64	1314.00	14.30
MA21: Mean monthly flow, October	888.41	792.66	-10.78
MA22: Mean monthly flow, November	780.79	837.21	7.23
MA23: Mean monthly flow, December	1245.21	1138.73	-8.55
ML1: Mean minimum monthly flow, January	948.80	981.20	3.41
ML2: Mean minimum monthly flow, February	1221.30	1091.48	-10.63
ML3: Mean minimum monthly flow, March	1455.40	1499.68	3.04
ML4: Mean minimum monthly flow, April	1498.20	1384.20	-7.61
ML5: Mean minimum monthly flow, May	794.40	748.30	-5.80
ML6: Mean minimum monthly flow, June	671.20	667.51	-0.55
ML7: Mean minimum monthly flow, July	920.20	889.77	-3.31
ML8: Mean minimum monthly flow, August	883.30	867.76	-1.76
ML9: Mean minimum monthly flow, September	673.20	767.99	14.08
ML10: Mean minimum monthly flow, October	655.67	709.59	8.22
ML11: Mean minimum monthly flow, November	663.50	722.01	8.82
ML12: Mean minimum monthly flow, December	820.30	905.33	10.37
ML13: CV of minimum monthly flows	85.95	76.55	-10.94
ML14: Mean minimum daily flow / mean median annual flow	0.36	0.37	1.16
ML15: Mean minimum annual flow / mean annual flow	0.20	0.24	16.24
ML16: Median minimum annual flow / median annual flow	0.38	0.42	10.33
ML20: Ratio of baseflow volume to total flow volume	0.65	0.72	10.80
ML22: Mean annual minimum flow divided by catchment area	16669.59	16670.50	0.01
RA1: Mean of positive changes from one day to next (rise rate)	198.63	323.47	
RA2: CV, mean of positive changes from one day to next (rise rate)	315.83	345.77	
RA3: Mean of negative changes from one day to next (fall rate)	132.90	126.90	
RA4: CV, mean of negative changes from one day to next (fall rate)	309.90	380.43	
RA5: Ratio of days that are higher than previous day	0.39	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.04	0.03	
RA8: Number of flow reversals from one day to the next	83.25	43.33	
RA9: CV, number of flow reversals from one day to the next	60.18	48.74	

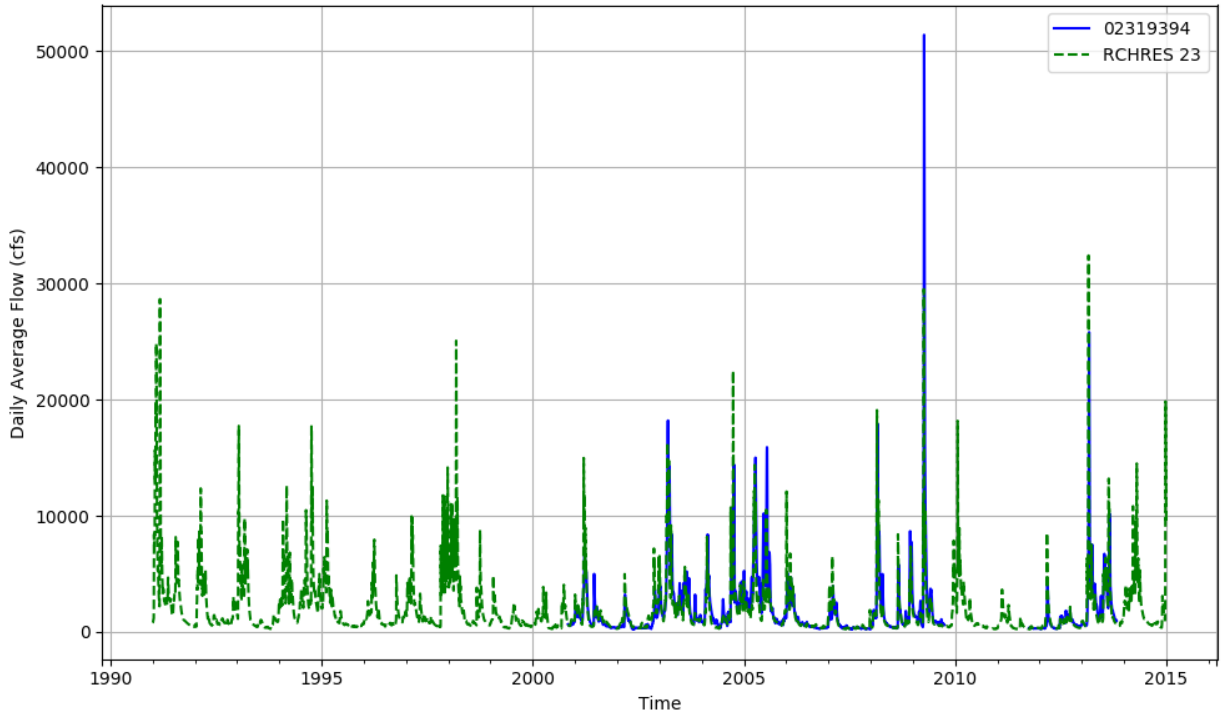


Figure T-03110203-22: Daily flow for HSFP reach 23 and USGS station 02319394.

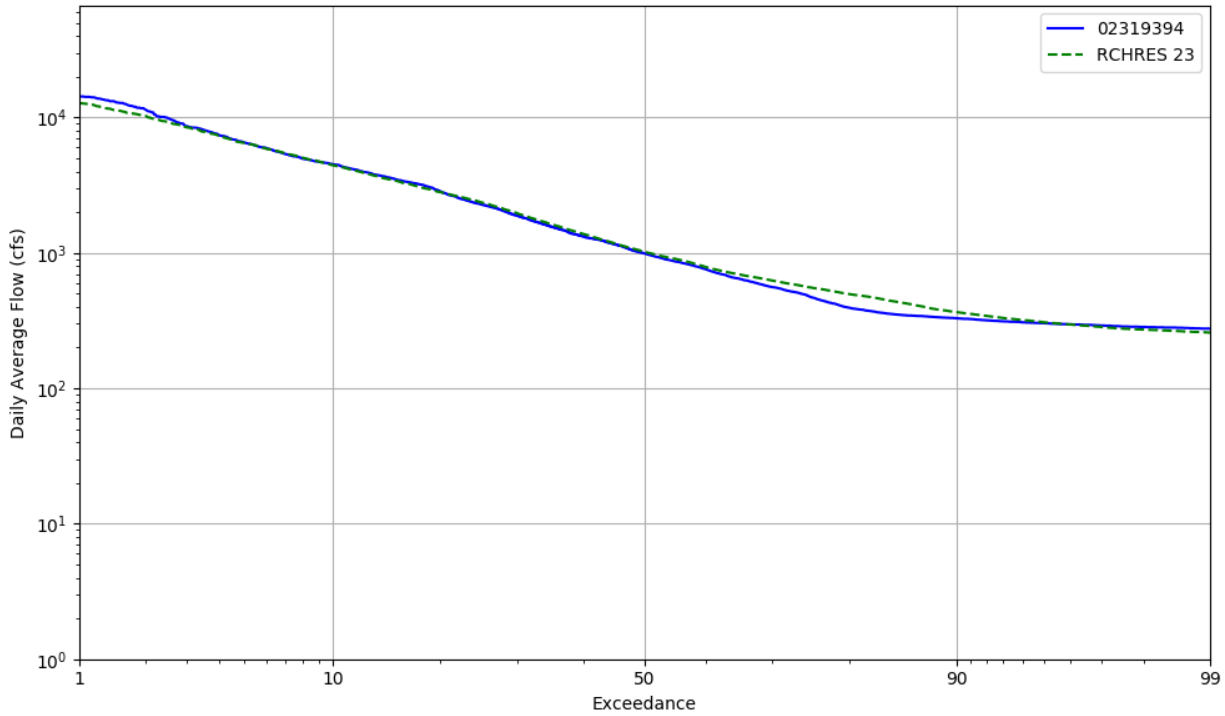


Figure T-03110203-23: Daily exceedance for HSFP reach 23 and USGS station 02319394.

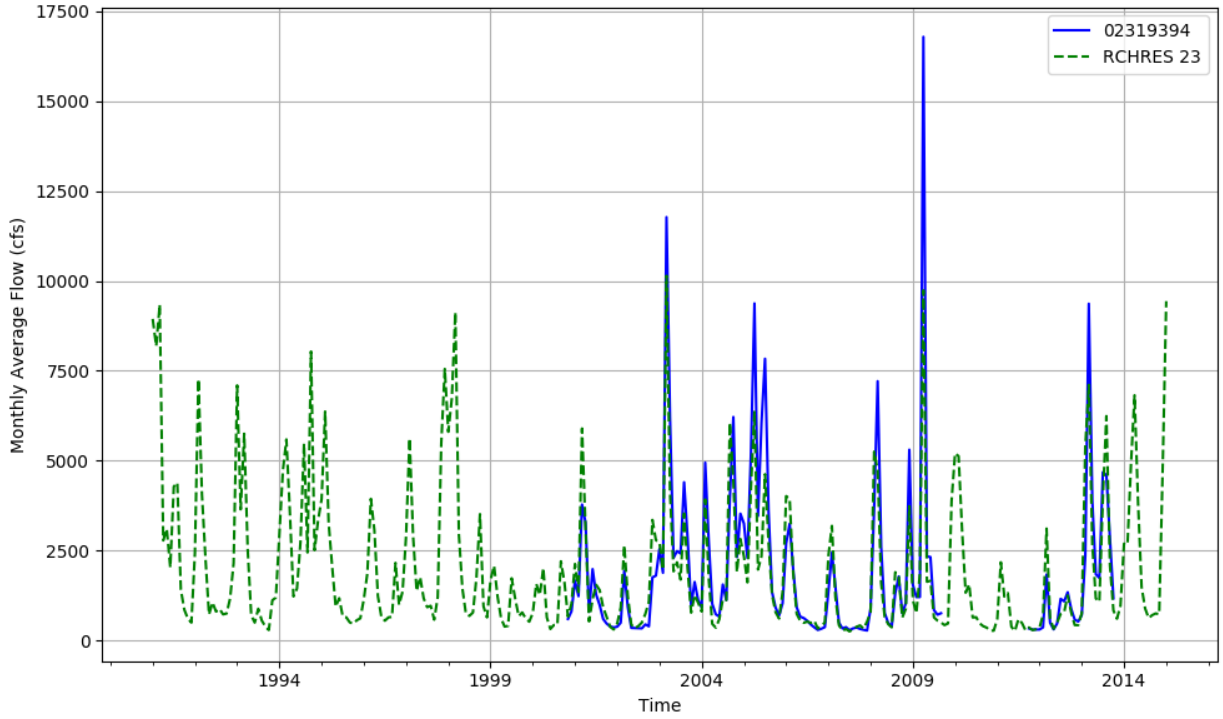


Figure T-03110203-24: Monthly flow for HSFP reach 23 and USGS station 02319394.

Table T-03110203-15: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	5947	47992	12024	3100	1048	509	300504	46275	41771	56044	195877	177853	419	51525	18163	959053
AREA(%)	0.6	5.0	1.2	0.3	0.1	0.1	31.1	4.8	4.3	5.8	20.3	18.4	0.0	5.3	1.9	99.4
IMPERVIOUS																
AREA(ACRES)		2601	1377	798	1062											5837
AREA(%)		0.3	0.1	0.1	0.1											0.6
SUPY	44.0	43.9	43.3	43.4	43.4	42.9	43.9	44.1	43.9	43.3	44.1	44.3	66.2	52.0	48.2	44.2
SURLI			9.9	9.6	9.9									0.0	3.3	0.2
UZLI																0.0
LZLI			2.0	1.6	1.5									0.1	3.2	0.1
SURO: PERVIOUS	4.5	0.9	2.1	1.8	0.0	0.8	0.0	0.1	0.5	0.6	0.1	6.2	3.9	1.0	0.1	1.4
SURO: IMPERVIOUS		33.0	32.5	32.6	32.6											0.2
SURO: COMBINED	4.5	2.6	5.2	8.1	16.4	0.8	0.0	0.1	0.5	0.6	0.1	6.2	3.9	1.0	0.1	1.6
IFWO		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	2.4	6.0	10.3	11.0	8.9	6.3	4.3	7.1	6.8	5.7	6.0	1.3	9.4	9.2	8.1	4.9
AGWI	4.3	8.1	13.5	14.1	11.7	7.8	5.8	8.1	9.2	8.0	8.4	2.4	10.9	12.0	10.3	6.7
IGWI	3.4	8.5	13.7	12.8	10.4	11.8	5.7	12.5	8.4	9.5	8.1	2.1	16.4	11.1	13.7	6.9
CEPE		13.2	9.5	9.5	13.2	6.3	13.8	11.2	9.6	9.5	7.8	21.2	29.0	13.0	9.2	13.0
UZET	3.5	2.6	3.6	3.5	6.3	2.6	1.8	2.5	2.6	2.5	2.3	3.5	2.8	3.1	2.5	2.5
LZET	2.4	13.2	14.2	14.6	16.8	15.0	21.3	11.2	16.7	15.9	20.9	1.1	6.2	14.7	21.0	15.4
AGWET	2.5	1.8	2.5	2.5	2.0	1.6	1.3	1.1	2.2	2.1	2.2	1.4	1.0	2.3	2.0	1.7
BASET	0.1	1.0	1.4	1.4	1.5	0.7	0.6	0.5	1.0	1.0	0.9	0.1	1.4	1.4	0.9	0.7
SURET	28.8											12.2				2.4
PERO	6.9	7.0	12.4	12.8	8.9	7.1	4.3	7.2	7.3	6.3	6.1	7.6	13.3	10.2	8.3	6.3
IGWI	3.4	8.5	13.7	12.8	10.4	11.8	5.7	12.5	8.4	9.5	8.1	2.1	16.4	11.1	13.7	6.9
TAET: PERVIOUS	37.4	31.8	31.3	31.6	39.8	26.1	38.8	26.6	32.1	30.9	34.2	39.5	40.3	34.5	35.5	35.6
IMPEV: IMPERVIOUS		10.9	10.8	10.8	10.8											0.1
ET: COMBINED	37.4	30.7	29.2	27.3	25.2	26.1	38.8	26.6	32.1	30.9	34.2	39.5	40.3	34.5	35.5	35.7
PET	44.4	44.3	44.2	44.2	44.2	44.4	44.3	44.6	44.2	44.2	44.2	44.3	44.2	44.1	44.4	44.0

Table T-03110203-16: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	5947	47992	12024	3100	1048	509	300504	46275	41771	56044	195877	177853	419	51525	18163	959053
AREA(%)	0.6	5.0	1.2	0.3	0.1	0.1	31.1	4.8	4.3	5.8	20.3	18.4	0.0	5.3	1.9	99.4
IMPERVIOUS																
AREA(ACRES)		2601	1377	798	1062											5837
AREA(%)		0.3	0.1	0.1	0.1											0.6
SUPY	54.3	54.8	55.0	54.8	54.8	54.2	54.8	53.9	55.0	54.8	55.1	54.8	66.4	61.5	59.2	54.9
SURLI			11.0	11.2	12.2									0.0	2.4	0.2
UZLI																0.0
LZLI			2.0	1.5	1.4									0.1	0.9	0.1
SURO: PERVIOUS	6.6	2.2	4.2	3.7	0.0	2.2	0.0	0.5	1.1	1.4	0.3	7.5	3.9	1.8	0.3	1.9
SURO: IMPERVIOUS		42.9	43.3	43.1	43.1											0.3
SURO: COMBINED	6.6	4.3	8.2	11.8	21.7	2.2	0.0	0.5	1.1	1.4	0.3	7.5	3.9	1.8	0.3	2.2
IFWO		0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.9	6.0	11.2	11.9	9.7	6.8	4.7	7.4	7.1	6.1	6.3	1.1	6.1	8.6	7.3	5.1
AGWI	4.8	9.7	16.6	17.2	14.1	9.9	6.8	9.8	11.3	10.1	10.2	2.3	10.2	13.5	10.4	7.9
IGWI	3.8	10.4	16.7	15.8	12.7	14.8	6.9	15.6	10.3	11.9	9.8	2.1	15.8	12.5	15.4	8.2
CEPE		14.3	10.4	10.4	14.1	7.2	15.0	12.4	10.5	10.5	8.6	22.0	22.1	13.7	10.2	14.0
UZET	6.8	2.3	3.4	3.4	7.8	2.6	2.3	2.5	2.3	2.3	2.1	4.8	2.5	2.7	2.3	2.8
LZET	4.4	15.1	16.1	16.5	19.4	17.0	23.3	12.6	18.8	17.8	23.4	1.9	11.7	16.9	23.3	17.2
AGWET	3.0	2.4	3.2	3.2	2.5	2.0	1.3	1.5	2.7	2.6	2.6	1.2	2.4	3.0	2.1	1.9
BASET	0.1	0.9	1.6	1.6	1.6	0.6	0.6	0.6	0.9	0.9	0.8	0.1	1.2	1.4	0.7	0.7
SURET	26.0											12.9				2.5
PERO	8.5	8.2	15.4	15.6	9.7	8.9	4.7	7.9	8.2	7.5	6.6	8.6	10.1	10.4	7.6	7.0
IGWI	3.8	10.4	16.7	15.8	12.7	14.8	6.9	15.6	10.3	11.9	9.8	2.1	15.8	12.5	15.4	8.2
TAET: PERVIOUS	40.4	35.0	34.7	35.0	45.4	29.4	42.5	29.5	35.3	34.2	37.5	42.9	39.9	37.7	38.5	39.0
IMPEV: IMPERVIOUS		11.8	11.7	11.7	11.7											0.1
ET: COMBINED	40.4	33.9	32.3	30.3	28.4	29.4	42.5	29.5	35.3	34.2	37.5	42.9	39.9	37.7	38.5	39.1
PET	52.7	52.5	52.5	52.5	52.5	52.8	52.6	52.7	52.4	52.6	52.4	52.5	53.0	52.3	52.6	52.2

Table T-03110203-17: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	5947	47992	12024	3100	1048	509	300504	46275	41771	56044	195877	177853	419	51525	18163	959053
AREA(%)	0.6	5.0	1.2	0.3	0.1	0.1	31.1	4.8	4.3	5.8	20.3	18.4	0.0	5.3	1.9	99.4
IMPERVIOUS																
AREA(ACRES)		2601	1377	798	1062											5837
AREA(%)		0.3	0.1	0.1	0.1											0.6
SUPY	42.2	42.4	42.3	42.4	42.5	41.9	42.3	42.4	42.1	42.1	42.2	42.5	59.7	46.5	46.5	42.4
SURLI			11.4	11.7	12.8									0.0	2.8	0.2
UZLI																0.0
LZLI			2.0	1.6	1.5									0.1	1.0	0.1
SURO: PERVIOUS	6.0	1.6	2.7	2.5	0.0	1.5	0.0	0.6	0.8	1.1	0.3	6.0	2.9	1.2	0.4	1.5
SURO: IMPERVIOUS		32.6	32.5	32.6	32.8											0.2
SURO: COMBINED	6.0	3.2	5.8	8.6	16.5	1.5	0.0	0.6	0.8	1.1	0.3	6.0	2.9	1.2	0.4	1.7
IFWO		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.9	5.1	9.6	10.5	9.0	5.4	4.2	6.4	6.0	4.9	5.4	1.4	5.9	6.6	6.0	4.4
AGWI	4.4	7.0	13.3	14.1	12.0	6.9	5.1	7.3	8.1	7.2	7.3	2.2	8.7	9.4	7.8	5.8
IGWI	3.5	7.6	13.6	13.0	10.8	10.9	5.2	11.9	7.5	8.7	7.1	2.0	13.4	8.9	11.9	6.2
CEPE		12.3	8.6	8.6	12.1	5.8	13.0	10.5	8.7	8.6	6.9	20.2	24.3	10.9	8.3	12.0
UZET	5.8	2.3	3.4	3.4	6.8	2.3	2.0	2.3	2.2	2.2	2.0	3.8	2.5	2.5	2.2	2.5
LZET	3.7	14.2	15.4	15.8	18.7	16.0	21.6	11.8	17.8	16.9	22.0	1.7	9.3	16.3	22.2	16.1
AGWET	2.8	2.1	2.9	2.9	2.3	1.8	1.2	1.3	2.4	2.3	2.3	1.2	1.8	2.6	2.0	1.7
BASET	0.1	0.8	1.5	1.5	1.5	0.5	0.4	0.5	0.8	0.8	0.6	0.1	1.4	1.2	0.6	0.5
SURET	22.9											10.4				2.1
PERO	7.8	6.7	12.3	13.0	9.0	6.9	4.3	7.0	6.8	6.0	5.7	7.4	8.8	7.8	6.4	6.0
IGWI	3.5	7.6	13.6	13.0	10.8	10.9	5.2	11.9	7.5	8.7	7.1	2.0	13.4	8.9	11.9	6.2
TAET: PERVIOUS	35.2	31.7	31.9	32.2	41.4	26.4	38.1	26.5	31.9	30.9	33.8	37.4	39.2	33.6	35.3	34.9
IMPEV: IMPERVIOUS		9.9	9.8	9.8	9.8											0.1
ET: COMBINED	35.2	30.6	29.6	27.6	25.5	26.4	38.1	26.5	31.9	30.9	33.8	37.4	39.2	33.6	35.3	35.0
PET	48.0	47.9	48.0	48.0	47.9	48.0	47.9	47.5	48.0	48.1	47.9	47.9	48.2	48.0	47.9	47.6

Table T-03110203-18: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	5947	47992	12024	3100	1048	509	300504	46275	41771	56044	195877	177853	419	51525	18163	959053
AREA(%)	0.6	5.0	1.2	0.3	0.1	0.1	31.1	4.8	4.3	5.8	20.3	18.4	0.0	5.3	1.9	99.4
IMPERVIOUS																
AREA(ACRES)		2601	1377	798	1062											5837
AREA(%)		0.3	0.1	0.1	0.1											0.6
SUPY	50.4	50.6	50.3	50.4	50.5	50.2	50.5	51.0	50.4	50.1	50.6	50.7	69.0	56.2	54.7	50.6
SURLI			9.1	9.0	9.4					0.0				0.0	2.5	0.2
UZLI																0.0
LZLI			1.9	1.5	1.3									0.1	2.1	0.1
SURO: PERVIOUS	7.3	1.6	2.9	2.5	0.0	1.5	0.0	0.5	0.7	0.9	0.2	7.8	4.0	1.1	0.2	1.8
SURO: IMPERVIOUS		39.8	39.6	39.7	39.8											0.2
SURO: COMBINED	7.3	3.5	6.7	10.1	20.1	1.5	0.0	0.5	0.7	0.9	0.2	7.8	4.0	1.1	0.2	2.1
IFWO		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	2.6	7.0	11.2	11.9	9.5	7.2	5.3	7.9	7.8	6.7	6.9	1.7	9.8	9.0	8.3	5.6
AGWI	4.9	9.7	15.2	15.9	13.0	9.4	7.0	9.6	10.8	9.6	9.9	2.9	12.5	12.9	11.0	7.9
IGWI	3.9	10.4	15.7	14.6	11.7	14.9	7.3	15.7	10.0	11.7	9.7	2.6	16.9	11.9	15.4	8.3
CEPE		13.0	9.5	9.5	12.8	6.7	13.6	11.4	9.6	9.6	7.8	20.2	25.1	12.1	9.2	12.7
UZET	4.1	2.4	3.5	3.4	6.1	2.6	1.9	2.5	2.4	2.4	2.2	3.5	2.3	2.8	2.4	2.5
LZET	2.9	13.4	14.4	14.8	17.5	15.1	20.6	11.3	16.8	15.8	20.7	1.2	8.1	15.5	21.0	15.2
AGWET	2.2	1.8	2.6	2.6	2.2	1.6	1.2	1.2	2.2	2.1	2.1	1.1	1.4	2.5	1.9	1.6
BASET	0.1	0.9	1.3	1.3	1.3	0.6	0.5	0.5	0.9	0.9	0.8	0.2	1.3	1.3	0.8	0.6
SURET	27.6											12.8				2.5
PERO	9.9	8.5	14.2	14.4	9.6	8.6	5.3	8.4	8.5	7.6	7.1	9.5	13.9	10.1	8.5	7.5
IGWI	3.9	10.4	15.7	14.6	11.7	14.9	7.3	15.7	10.0	11.7	9.7	2.6	16.9	11.9	15.4	8.3
TAET: PERVIOUS	36.9	31.6	31.3	31.7	39.9	26.6	37.9	26.8	31.8	30.8	33.7	38.9	38.2	34.2	35.3	35.1
IMPEV: IMPERVIOUS		10.8	10.7	10.7	10.7											0.1
ET: COMBINED	36.9	30.5	29.2	27.4	25.2	26.6	37.9	26.8	31.8	30.8	33.7	38.9	38.2	34.2	35.3	35.2
PET	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.5	46.6	46.6	46.6	46.5	46.6	46.6	46.5	46.3

Table T-03110203-19: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
2	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
3	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
4	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
5	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
6	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
7	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
8	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
9	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
10	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
11	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
12	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
13	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
14	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
15	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
16	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
17	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
18	0.997	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.997
19	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
20	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
21	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
22	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
23	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
24	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
25	0.990	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.990
26	0.990	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.990
27	0.990	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.990
28	0.990	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.990

Table T-03110203-20: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
2	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
3	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
4	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
5	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
6	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
7	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
8	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
11	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
12	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
13	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
14	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
15	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
16	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110203-21: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
2	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
3	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
4	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
5	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
6	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
7	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
8	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
9	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
10	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
11	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
12	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
13	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
14	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
15	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
16	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
17	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
18	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
19	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
20	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
21	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
22	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
23	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
24	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
25	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
26	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
27	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300
28	0.000	0.100	0.050	0.050	0.100	0.020	0.110	0.069	0.050	0.050	0.030	0.300

Table T-03110203-22: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
2	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
3	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
4	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
5	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
6	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
7	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
8	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
9	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
10	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
11	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
12	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
13	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
14	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
15	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
16	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
17	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
18	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465	0.465
19	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
20	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
21	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
22	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
23	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
24	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237
25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
26	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
27	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
28	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Table T-03110203-23: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
9	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
12	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
13	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
14	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
15	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
16	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
17	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
18	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
19	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
20	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
21	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
22	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
23	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
24	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
25	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
26	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
27	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
28	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010

Table T-03110203-24: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03110203-25: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
2	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
3	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
4	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
5	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
6	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
7	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
8	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
9	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
10	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
11	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
12	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
13	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
14	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
15	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
16	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
17	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
18	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
19	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
20	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
21	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
22	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
23	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
24	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
25	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
26	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
27	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
28	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694

Table T-03110203-26: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
2	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
3	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
4	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
5	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
6	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
7	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
8	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
9	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
10	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
11	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
12	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
13	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
14	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
15	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
16	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
17	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
18	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
19	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
20	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
21	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
22	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
23	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
24	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
25	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
26	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
27	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222
28	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222

Table T-03110203-27: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
2	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
3	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
4	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
5	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
6	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
7	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
8	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
9	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
10	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
11	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
12	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
13	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
14	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
15	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
16	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
17	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
18	0.337	0.400	0.400	0.400	0.600	0.450	0.850	0.308	0.459	0.440	0.605	0.900
19	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
20	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
21	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
22	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
23	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
24	0.313	0.600	0.400	0.400	0.600	0.300	0.718	0.409	0.459	0.600	0.535	0.900
25	0.411	0.306	0.306	0.306	0.459	0.344	0.650	0.235	0.351	0.336	0.463	0.900
26	0.411	0.306	0.306	0.306	0.459	0.344	0.650	0.235	0.351	0.336	0.463	0.900
27	0.411	0.306	0.306	0.306	0.459	0.344	0.650	0.235	0.351	0.336	0.463	0.900
28	0.411	0.306	0.306	0.306	0.459	0.344	0.650	0.235	0.351	0.336	0.463	0.900

Table T-03110203-28: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
2	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
3	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
4	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
5	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
6	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
7	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
8	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
9	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
10	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
11	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
12	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
13	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
14	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
15	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
16	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
17	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
18	0.200	5.568	2.761	4.597	8.304	1.500	6.000	5.685	5.522	4.500	5.000	0.100
19	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
20	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
21	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
22	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
23	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
24	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
25	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
26	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
27	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200
28	0.200	4.000	4.000	4.000	4.000	4.500	6.000	4.500	4.500	4.500	5.000	0.200

Table T-03110203-29: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
2	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
3	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
4	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
5	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
6	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
7	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
8	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
9	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
10	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
11	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
12	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
13	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
14	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
15	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
16	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
17	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
18	0.050	0.108	0.108	0.108	3.091	0.108	1.119	0.124	0.124	0.108	0.155	0.053
19	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
20	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
21	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
22	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
23	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
24	0.050	0.070	0.070	0.070	1.877	0.070	0.500	0.080	0.080	0.708	0.100	1.000
25	0.050	0.048	0.048	0.048	1.381	0.048	0.500	0.055	0.055	0.048	0.069	0.056
26	0.050	0.048	0.048	0.048	1.381	0.048	0.500	0.055	0.055	0.048	0.069	0.056
27	0.050	0.048	0.048	0.048	1.381	0.048	0.500	0.055	0.055	0.048	0.069	0.056
28	0.050	0.048	0.048	0.048	1.381	0.048	0.500	0.055	0.055	0.048	0.069	0.056

APPENDIX T-03110204

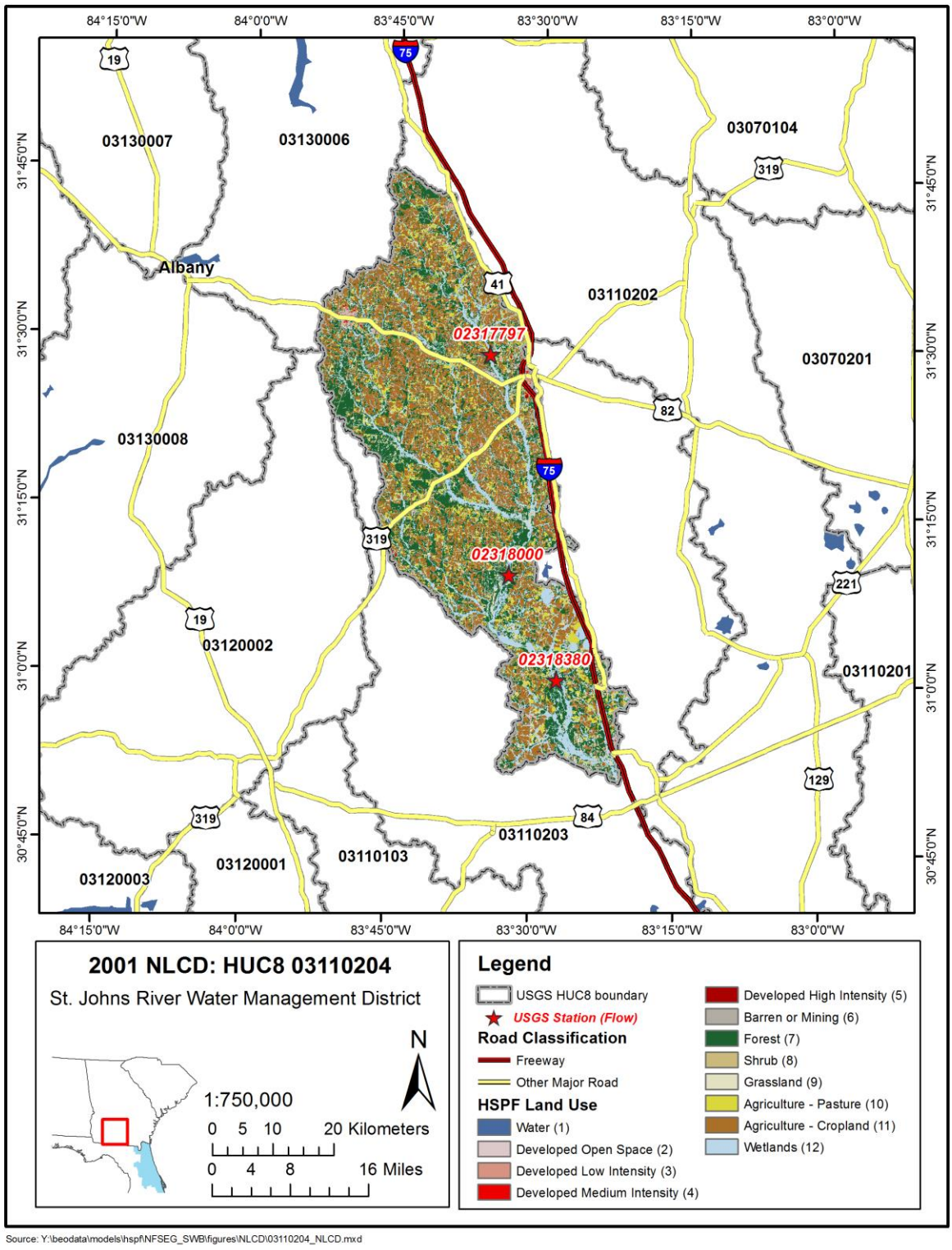


Figure T-03110204-1: Land Cover from the National Land Cover Database.

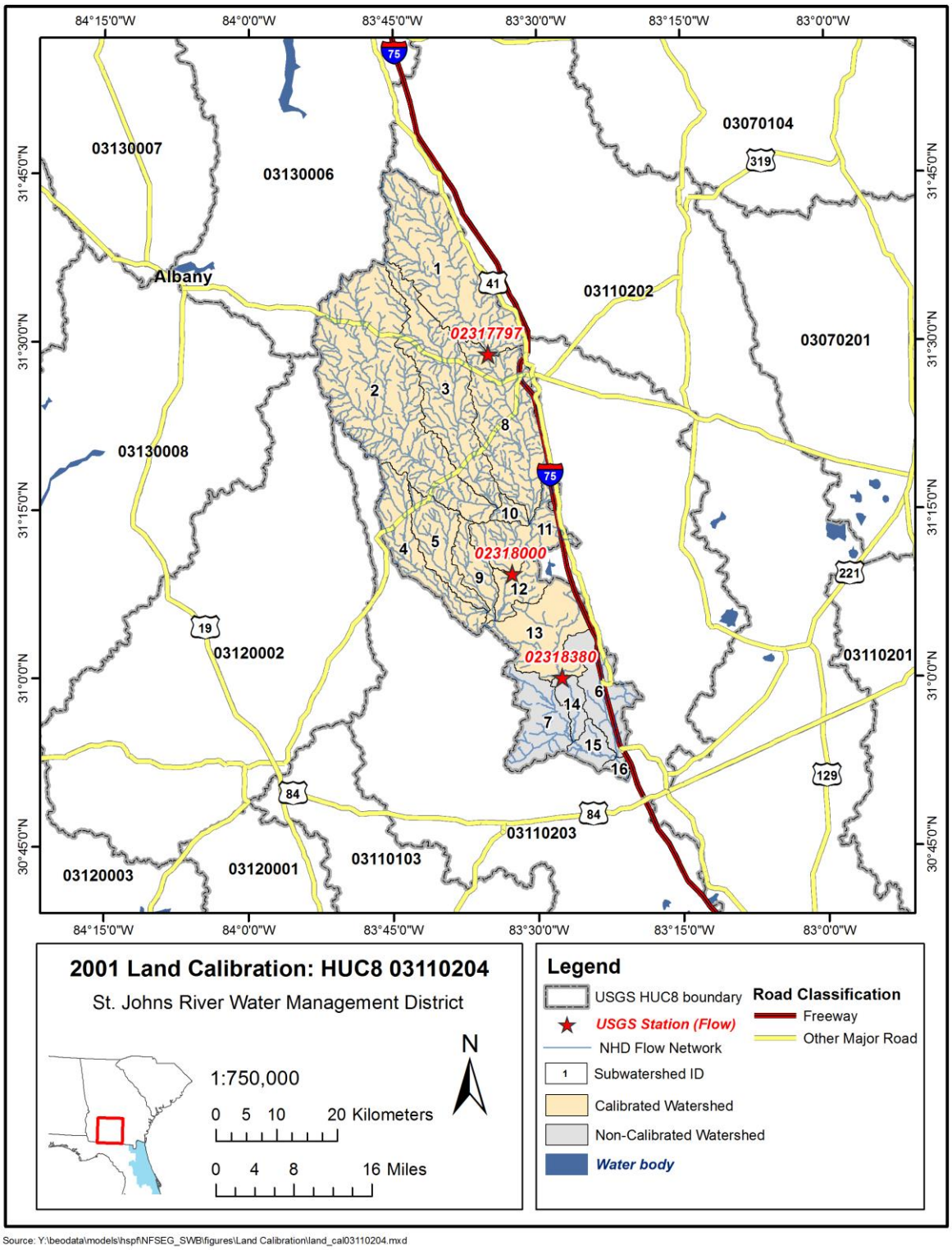


Figure T-03110204-2: Calibrated sub-watersheds.

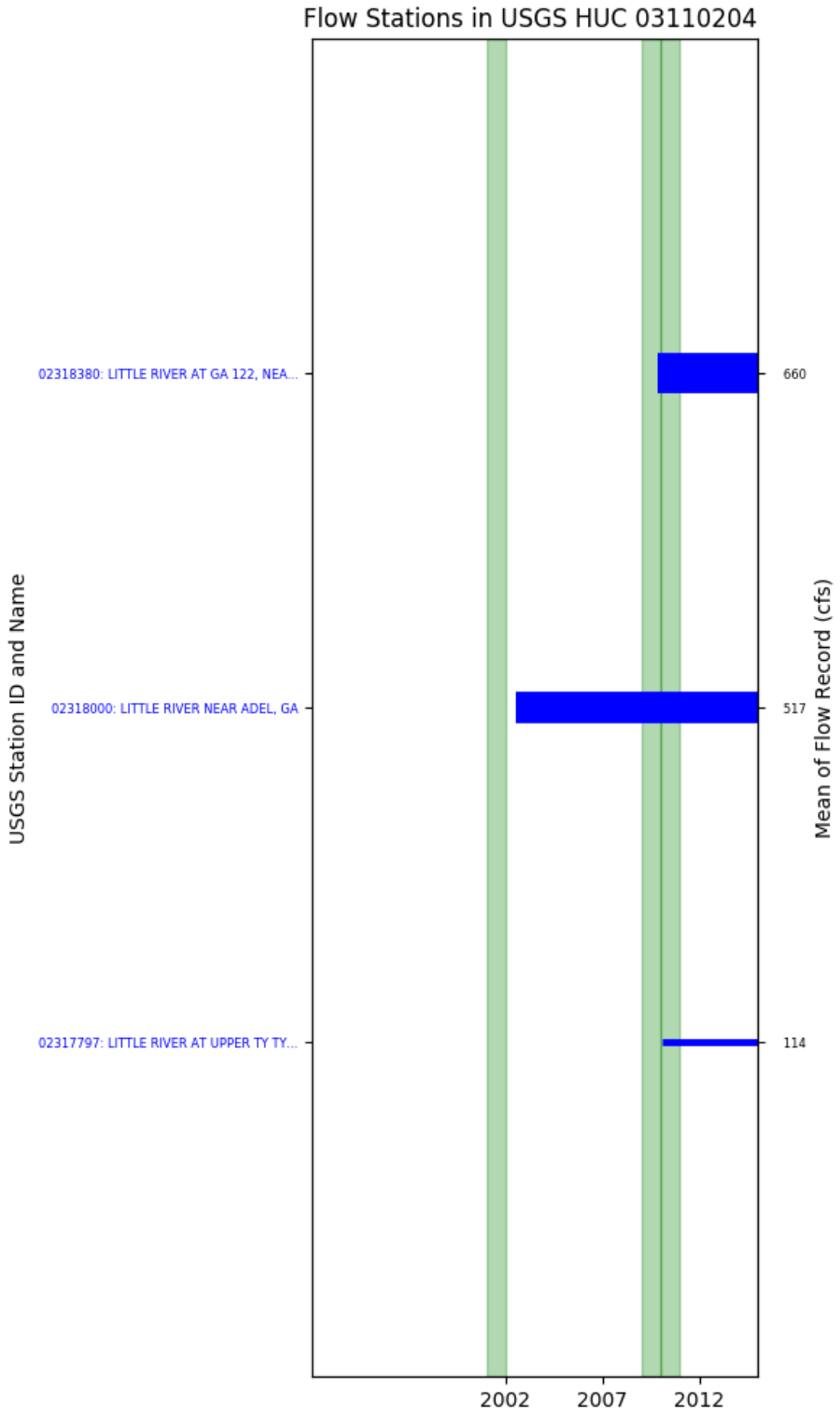


Figure T-03110204-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 01, USGS GAUGE 02317797

Water-Data Report 2009
02231000 ST. MARYS RIVER NEAR MACCLENNY, FL
St. Marys-Satilla Basin St. Marys Subbasin

LOCATION.--Lat 302131, long 820454 referenced to North American Datum of 1927, in NW 1/4 sec.2, T.2 S., R.22 E., Baker County, FL, Hydrologic Unit 03070204, on right bank 200 ft downstream from site of former Stokes Bridge, 1 mi downstream from confluence of North and South Prongs, 6 mi northeast of Macclenny, and 100 mi upstream from mouth.

DRAINAGE AREA.--700 mi, approximately, includes part of watershed in Okefenokee Swamp, which is indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1926 to current year.

REVISED RECORDS.--WSP 1082: 1928(M), 1945(M). WSP 1142: 1928, 1945. WSP 1434: 1927. WSP 1905: Drainage area.

GAGE.--Water-stage recorder and data-collection platform. Datum of gage is 40.00 ft above NGVD of 1929 (levels by Mees and Mees). Prior to Feb. 21, 1939, nonrecording gage and Feb. 21, 1939 to Aug. 15, 1948, water-stage recorder, at site of former bridge 200 ft upstream, at same datum.

REMARKS.--Records fair.

Table T-03110204-1: Comparison Statistics Between HSPF Reach 01 and USGS Gauge 02317797.

Statistic	Value
Bias	-16.43
Standard error	74.84
Relative bias	-0.16
Relative standard error	0.36
Nash-Sutcliffe coefficient	0.87
Kling-Gupta coefficient	0.74
Coefficient of efficiency	0.72
Index of agreement	0.85

Table T-03110204-2: Hydrologic Indices Between USGS Gauge 02317797 and HSPF Reach 01.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02317797	Simulated Reach 01	Percent Difference
MA1: Mean, all daily flows	87.33	78.50	-10.11

MA2: Median, all daily flows	2.30	5.72	148.76
MA3: CV, all daily flows	202.44	183.44	-9.39
MA4: CV, log of all daily flows	199.80	182.42	-8.70
MA5: Mean daily flow / median daily flow	37.97	13.72	-63.86
MA9: (Q10 - Q90) / median daily flow	94.13	33.22	-64.71
MA10: (Q20 - Q80) / median daily flow	34.35	16.26	-52.65
MA11: (Q25 - Q75) / median daily flow	23.80	11.38	-52.20
MA12: Mean monthly flow, January	137.16	73.90	-46.12
MA13: Mean monthly flow, February	332.51	318.98	-4.07
MA14: Mean monthly flow, March	140.46	143.26	1.99
MA15: Mean monthly flow, April	80.01	50.85	-36.45
MA16: Mean monthly flow, May	28.44	20.70	-27.22
MA17: Mean monthly flow, June	31.17	9.72	-68.81
MA18: Mean monthly flow, July	63.99	77.66	21.36
MA19: Mean monthly flow, August	115.02	72.36	-37.09
MA20: Mean monthly flow, September	19.85	15.46	-22.10
MA21: Mean monthly flow, October	2.41	1.80	-25.35
MA22: Mean monthly flow, November	1.36	1.27	-6.53
MA23: Mean monthly flow, December	13.91	22.64	62.74
ML1: Mean minimum monthly flow, January	163.14	74.99	-54.03
ML2: Mean minimum monthly flow, February	53.80	52.72	-2.00
ML3: Mean minimum monthly flow, March	59.55	54.58	-8.35
ML4: Mean minimum monthly flow, April	12.12	12.99	7.23
ML5: Mean minimum monthly flow, May	3.65	0.73	-79.94
ML6: Mean minimum monthly flow, June	0.57	0.38	-34.36
ML7: Mean minimum monthly flow, July	5.25	25.77	390.82
ML8: Mean minimum monthly flow, August	0.45	9.24	1952.92
ML9: Mean minimum monthly flow, September	0.94	2.81	200.01
ML10: Mean minimum monthly flow, October	0.20	0.65	234.23
ML11: Mean minimum monthly flow, November	0.22	0.49	123.65
ML12: Mean minimum monthly flow, December	4.01	5.02	25.00
ML13: CV of minimum monthly flows	381.08	234.57	-38.45
ML14: Mean minimum daily flow / mean median annual flow	0.03	0.06	136.93
ML15: Mean minimum annual flow / mean annual flow	0.00	0.01	111.03
ML16: Median minimum annual flow / median annual flow	0.00	0.00	
ML20: Ratio of baseflow volume to total flow volume	0.23	0.33	45.93
ML22: Mean annual minimum flow divided by catchment area	0.00	0.00	162.94
RA1: Mean of positive changes from one day to next (rise rate)	70.07	32.83	
RA2: CV, mean of positive changes from one day to next (rise rate)	299.53	400.46	
RA3: Mean of negative changes from one day to next (fall rate)	33.78	14.29	
RA4: CV, mean of negative changes from one day to next (fall rate)	378.39	412.36	
RA5: Ratio of days that are higher than previous day	0.20	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.27	0.27	
RA7: Median of difference in log of flows over two consecutive days of falling	0.22	0.13	
RA8: Number of flow reversals from one day to the next	33.40	57.60	

RA9: CV, number of flow reversals from one day to the next	60.42	39.56	

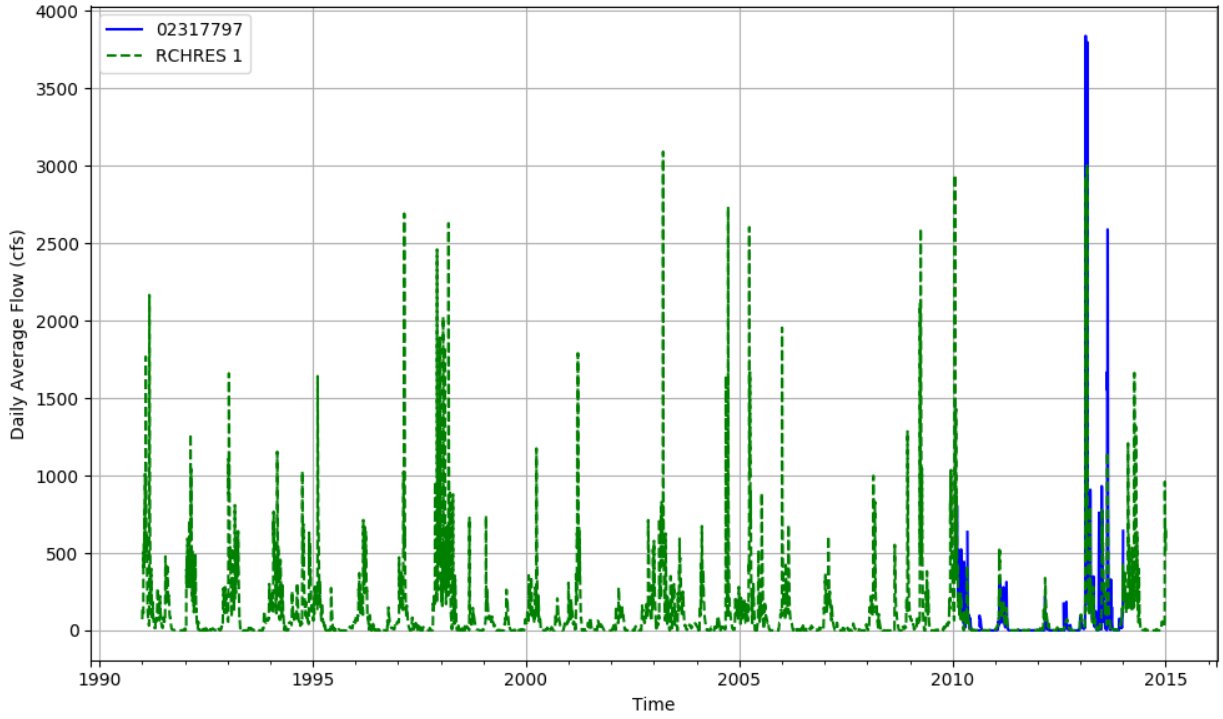


Figure T-03110204-4: Daily flow for HSFP reach 01 and USGS station 02317797.

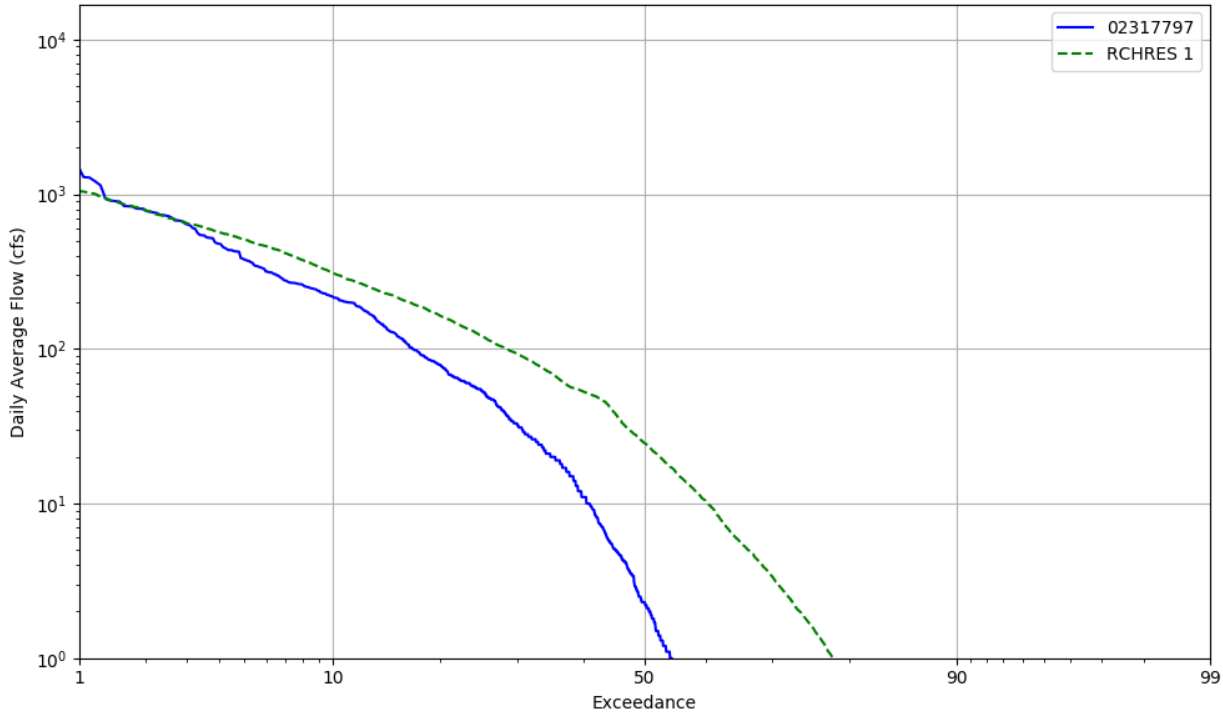


Figure T-03110204-5: Daily exceedance for HSFP reach 01 and USGS station 02317797.

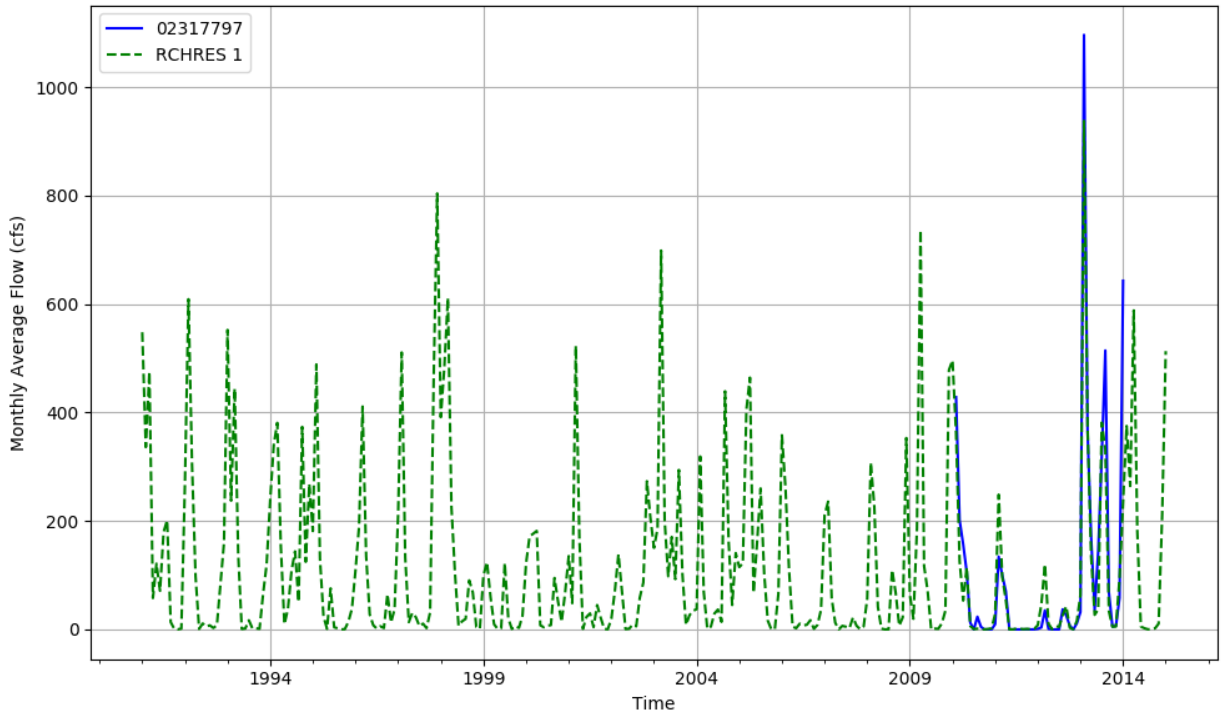


Figure T-03110204-6: Monthly flow for HSFP reach 01 and USGS station 02317797.

HSPF REACH 11, USGS GAUGE 02318000

Water-Data Report 2009
02318000 LITTLE RIVER NEAR ADEL, GA
Suwannee Basin Little Subbasin

LOCATION.--Lat 310920, long 833237 referenced to North American Datum of 1983, Cook County, GA, Hydrologic Unit 03110204, at bridge located just below dam at Reed Bingham State Park, 5.3 miles northwest of Adel.

DRAINAGE AREA.--577 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 1940 to September 1971, July 2002 to current year.
GAGE-HEIGHT: July 2002 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 168 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map). From June 12, 1940 to September 30, 1971, a water-stage recorder was installed at a location approximately 500 yards downstream at a gage datum of 171.08 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division and Suwannee River Water Management District.

REMARKS.--Discharge and gage-height records poor.

Table T-03110204-3: Comparison Statistics Between HSPF Reach 11 and USGS Gauge 02318000.

Statistic	Value
Bias	-23.06
Standard error	247.96
Relative bias	-0.05
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.88
Coefficient of efficiency	0.74
Index of agreement	0.87

Table T-03110204-4: Hydrologic Indices Between USGS Gauge 02318000 and HSPF Reach 11.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02318000	Simulated Reach 11	Percent Difference
MA1: Mean, all daily flows	488.36	464.82	-4.82

MA2: Median, all daily flows	97.50	78.55	-19.44
MA3: CV, all daily flows	182.45	172.70	-5.35
MA4: CV, log of all daily flows	166.02	156.05	-6.00
MA5: Mean daily flow / median daily flow	5.01	5.92	18.14
MA9: (Q10 - Q90) / median daily flow	12.33	15.16	22.89
MA10: (Q20 - Q80) / median daily flow	5.90	8.27	40.20
MA11: (Q25 - Q75) / median daily flow	4.47	6.86	53.50
MA12: Mean monthly flow, January	531.19	582.88	9.73
MA13: Mean monthly flow, February	1026.19	1007.61	-1.81
MA14: Mean monthly flow, March	957.64	876.04	-8.52
MA15: Mean monthly flow, April	771.76	607.00	-21.35
MA16: Mean monthly flow, May	174.38	135.37	-22.37
MA17: Mean monthly flow, June	238.29	139.44	-41.48
MA18: Mean monthly flow, July	350.83	280.02	-20.18
MA19: Mean monthly flow, August	368.17	382.07	3.77
MA20: Mean monthly flow, September	191.25	279.96	46.38
MA21: Mean monthly flow, October	110.91	112.62	1.55
MA22: Mean monthly flow, November	153.34	166.41	8.53
MA23: Mean monthly flow, December	389.35	447.32	14.89
ML1: Mean minimum monthly flow, January	240.17	222.87	-7.20
ML2: Mean minimum monthly flow, February	301.74	298.10	-1.21
ML3: Mean minimum monthly flow, March	271.09	259.59	-4.24
ML4: Mean minimum monthly flow, April	100.84	79.01	-21.65
ML5: Mean minimum monthly flow, May	25.38	4.96	-80.46
ML6: Mean minimum monthly flow, June	15.03	17.11	13.82
ML7: Mean minimum monthly flow, July	74.72	48.74	-34.77
ML8: Mean minimum monthly flow, August	56.82	85.90	51.18
ML9: Mean minimum monthly flow, September	12.22	17.50	43.19
ML10: Mean minimum monthly flow, October	17.75	28.12	58.40
ML11: Mean minimum monthly flow, November	36.36	67.84	86.58
ML12: Mean minimum monthly flow, December	109.33	128.71	17.73
ML13: CV of minimum monthly flows	168.21	179.47	6.70
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.04	73.47
ML15: Mean minimum annual flow / mean annual flow	0.01	0.01	87.83
ML16: Median minimum annual flow / median annual flow	0.01	0.00	-98.90
ML20: Ratio of baseflow volume to total flow volume	0.33	0.39	15.41
ML22: Mean annual minimum flow divided by catchment area	0.01	0.02	98.01
RA1: Mean of positive changes from one day to next (rise rate)	166.93	164.91	
RA2: CV, mean of positive changes from one day to next (rise rate)	414.68	471.61	
RA3: Mean of negative changes from one day to next (fall rate)	105.36	75.26	
RA4: CV, mean of negative changes from one day to next (fall rate)	429.99	386.47	
RA5: Ratio of days that are higher than previous day	0.37	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.21	0.20	
RA7: Median of difference in log of flows over two consecutive days of falling	0.17	0.12	
RA8: Number of flow reversals from one day to the next	87.62	63.54	

RA9: CV, number of flow reversals from one day to the next	32.78	35.58	

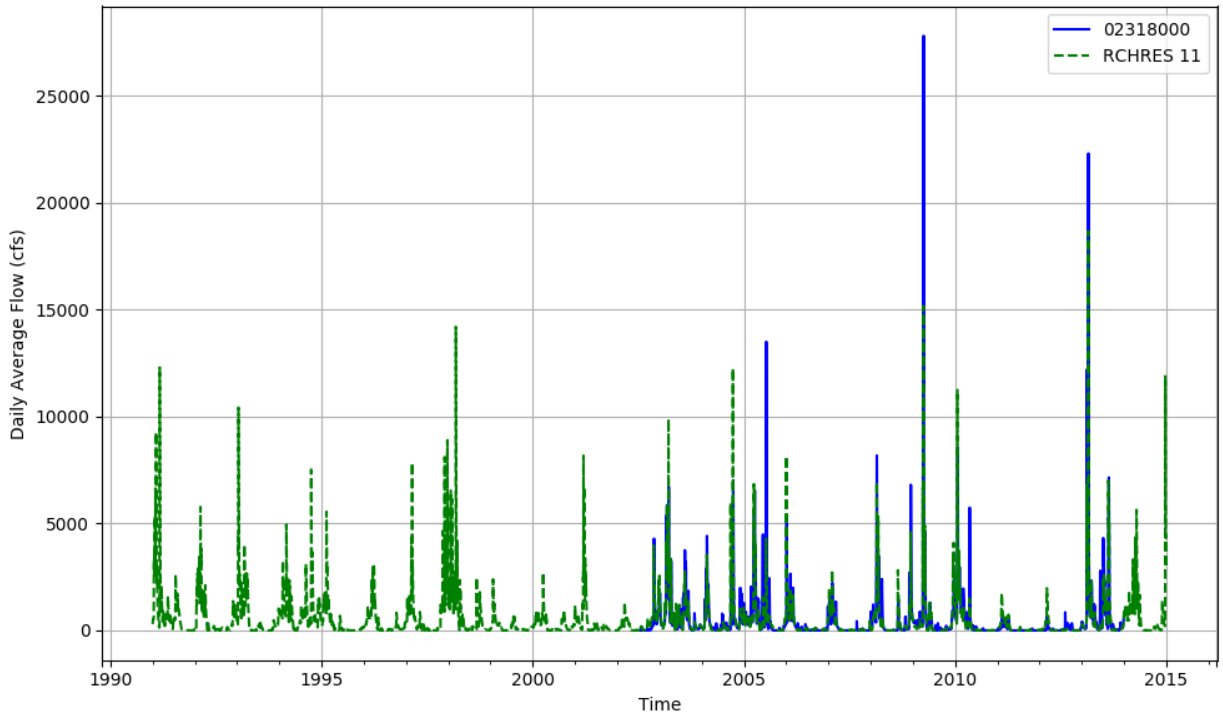


Figure T-03110204-7: Daily flow for HSFP reach 11 and USGS station 02318000.

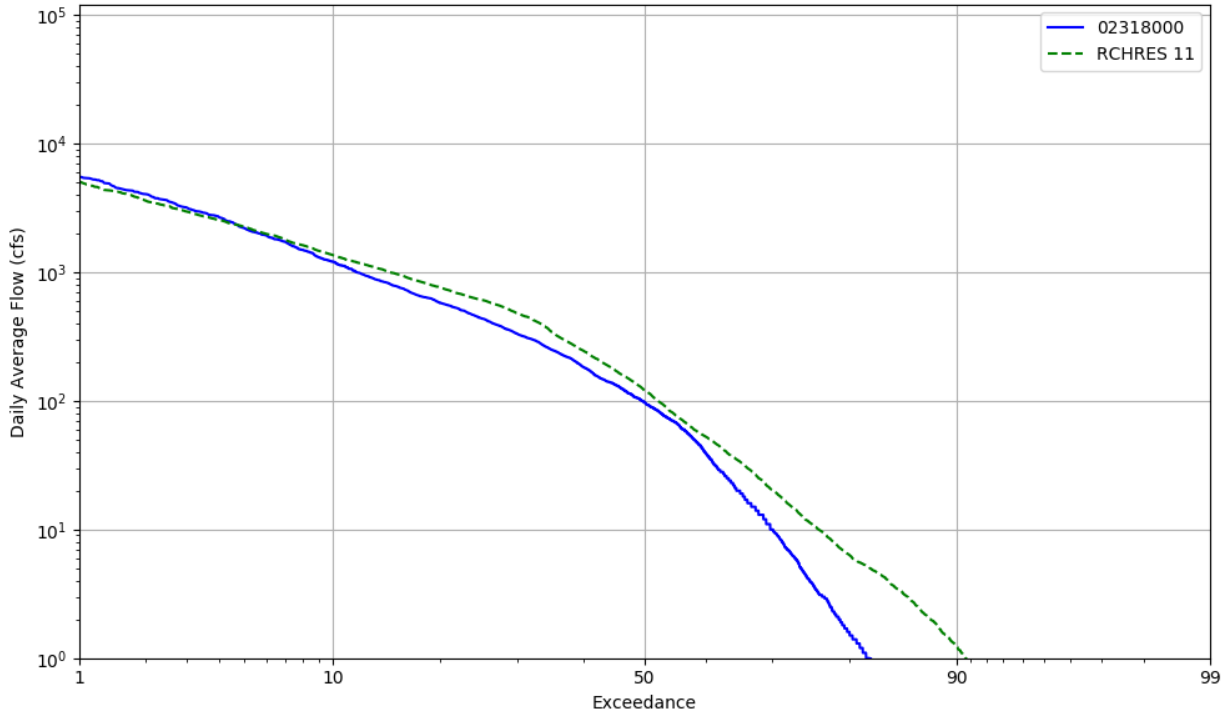


Figure T-03110204-8: Daily exceedance for HSFP reach 11 and USGS station 02318000.

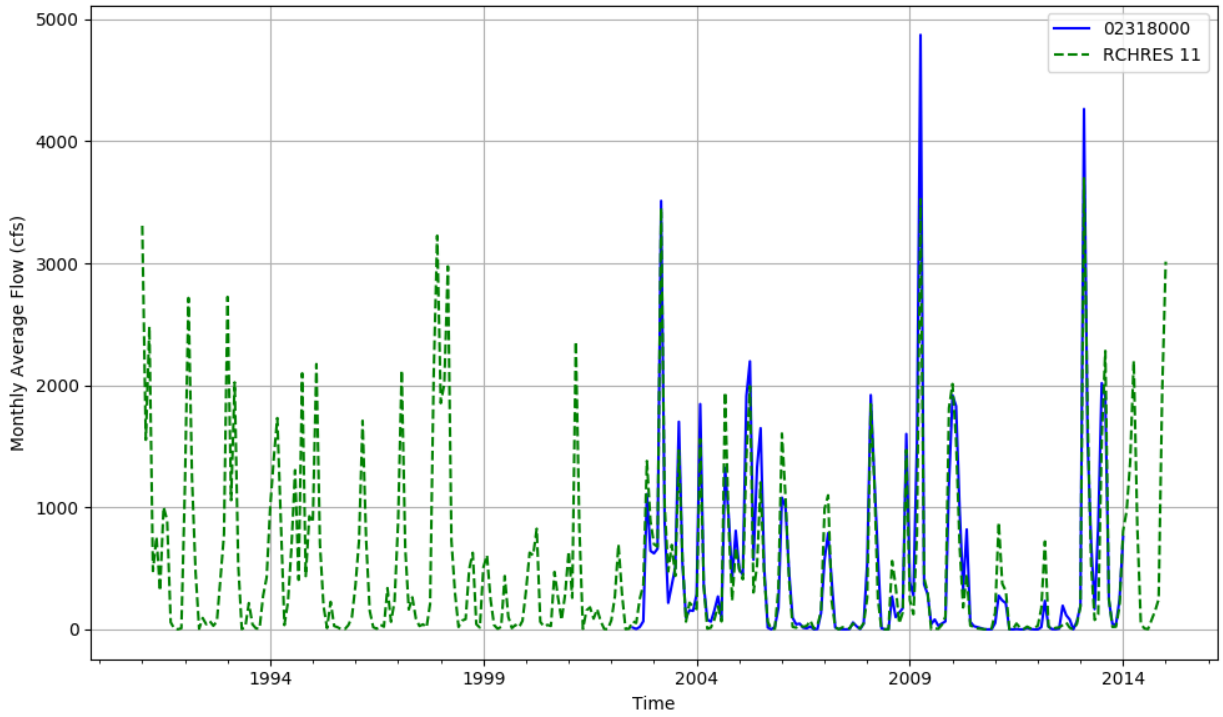


Figure T-03110204-9: Monthly flow for HSFP reach 11 and USGS station 02318000.

HSPF REACH 13, USGS GAUGE 02318380

Water-Data Report 2013
02318380 LITTLE RIVER AT GA 122, NEAR HAHIRA, GA
Suwannee Basin Little Subbasin

LOCATION.--Lat 310003, long 832730 referenced to North American Datum of 1927, Lowndes County, GA, Hydrologic Unit 03110204.

DRAINAGE AREA.--776.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 2009 to current year.
GAGE-HEIGHT: November 2009 to current year.

REVISED RECORDS.--WDR GA-2013: 2010-2012.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 132.8 feet above the North American Vertical Datum (NAVD) of 1988 (leveling by Global Positioning System equipment).

COOPERATION.--Lowndes County, Georgia.

REMARKS.--Discharge records are fair, except for days of estimated discharge, which are poor. Gage height records are fair.

Table T-03110204-5: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02318380.

Statistic	Value
Bias	-25.31
Standard error	285.49
Relative bias	-0.04
Relative standard error	0.30
Nash-Sutcliffe coefficient	0.91
Kling-Gupta coefficient	0.93
Coefficient of efficiency	0.76
Index of agreement	0.88

Table T-03110204-6: Hydrologic Indices Between USGS Gauge 02318380 and HSPF Reach 13.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02318380	Simulated Reach 13	Percent Difference
MA1: Mean, all daily flows	565.45	533.97	-5.57
MA2: Median, all daily flows	75.00	74.99	-0.02

MA3: CV, all daily flows	163.19	174.91	7.18
MA4: CV, log of all daily flows	183.28	173.58	-5.30
MA5: Mean daily flow / median daily flow	7.54	7.12	-5.55
MA9: (Q10 - Q90) / median daily flow	22.08	18.49	-16.26
MA10: (Q20 - Q80) / median daily flow	8.57	8.51	-0.72
MA11: (Q25 - Q75) / median daily flow	5.08	6.16	21.31
MA12: Mean monthly flow, January	714.50	778.88	9.01
MA13: Mean monthly flow, February	1490.94	1557.14	4.44
MA14: Mean monthly flow, March	1007.85	969.70	-3.78
MA15: Mean monthly flow, April	403.29	307.25	-23.81
MA16: Mean monthly flow, May	299.40	152.52	-49.06
MA17: Mean monthly flow, June	188.29	56.07	-70.22
MA18: Mean monthly flow, July	529.64	433.46	-18.16
MA19: Mean monthly flow, August	540.46	624.87	15.62
MA20: Mean monthly flow, September	108.16	102.60	-5.14
MA21: Mean monthly flow, October	44.93	30.27	-32.63
MA22: Mean monthly flow, November	38.15	46.90	22.92
MA23: Mean monthly flow, December	445.49	493.33	10.74
ML1: Mean minimum monthly flow, January	287.88	323.25	12.29
ML2: Mean minimum monthly flow, February	509.75	383.67	-24.73
ML3: Mean minimum monthly flow, March	442.50	435.53	-1.57
ML4: Mean minimum monthly flow, April	173.00	123.19	-28.79
ML5: Mean minimum monthly flow, May	51.40	33.48	-34.87
ML6: Mean minimum monthly flow, June	33.95	17.94	-47.15
ML7: Mean minimum monthly flow, July	215.07	65.96	-69.33
ML8: Mean minimum monthly flow, August	46.70	84.43	80.79
ML9: Mean minimum monthly flow, September	34.15	30.61	-10.37
ML10: Mean minimum monthly flow, October	15.05	15.67	4.14
ML11: Mean minimum monthly flow, November	24.16	32.39	34.07
ML12: Mean minimum monthly flow, December	61.56	55.01	-10.63
ML13: CV of minimum monthly flows	208.65	175.26	-16.00
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.13	-29.08
ML15: Mean minimum annual flow / mean annual flow	0.06	0.06	-1.35
ML16: Median minimum annual flow / median annual flow	0.24	0.08	-68.52
ML20: Ratio of baseflow volume to total flow volume	0.37	0.39	6.54
ML22: Mean annual minimum flow divided by catchment area	0.10	0.09	-8.36
RA1: Mean of positive changes from one day to next (rise rate)	201.23	188.93	
RA2: CV, mean of positive changes from one day to next (rise rate)	474.43	484.97	
RA3: Mean of negative changes from one day to next (fall rate)	95.48	81.29	
RA4: CV, mean of negative changes from one day to next (fall rate)	465.75	459.06	
RA5: Ratio of days that are higher than previous day	0.30	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.08	
RA8: Number of flow reversals from one day to the next	59.80	46.20	
RA9: CV, number of flow reversals from one day to the next	39.69	40.94	

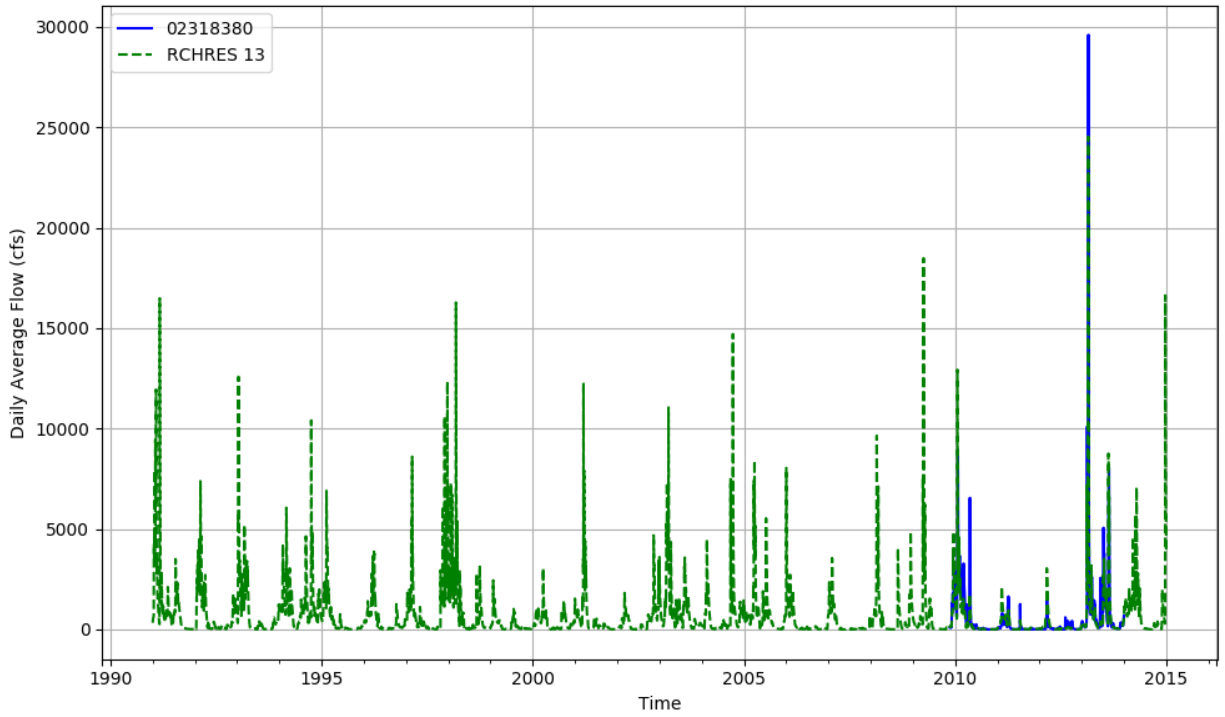


Figure T-03110204-10: Daily flow for HSFP reach 13 and USGS station 02318380.

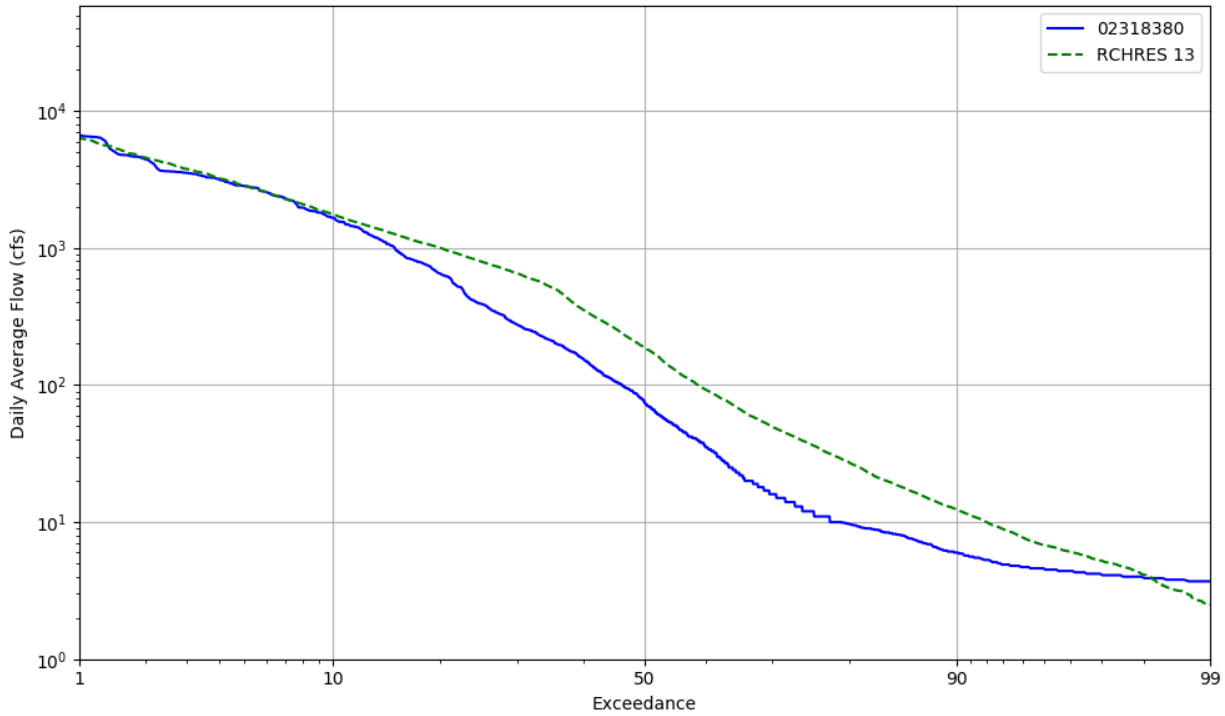


Figure T-03110204-11: Daily exceedance for HSFP reach 13 and USGS station 02318380.

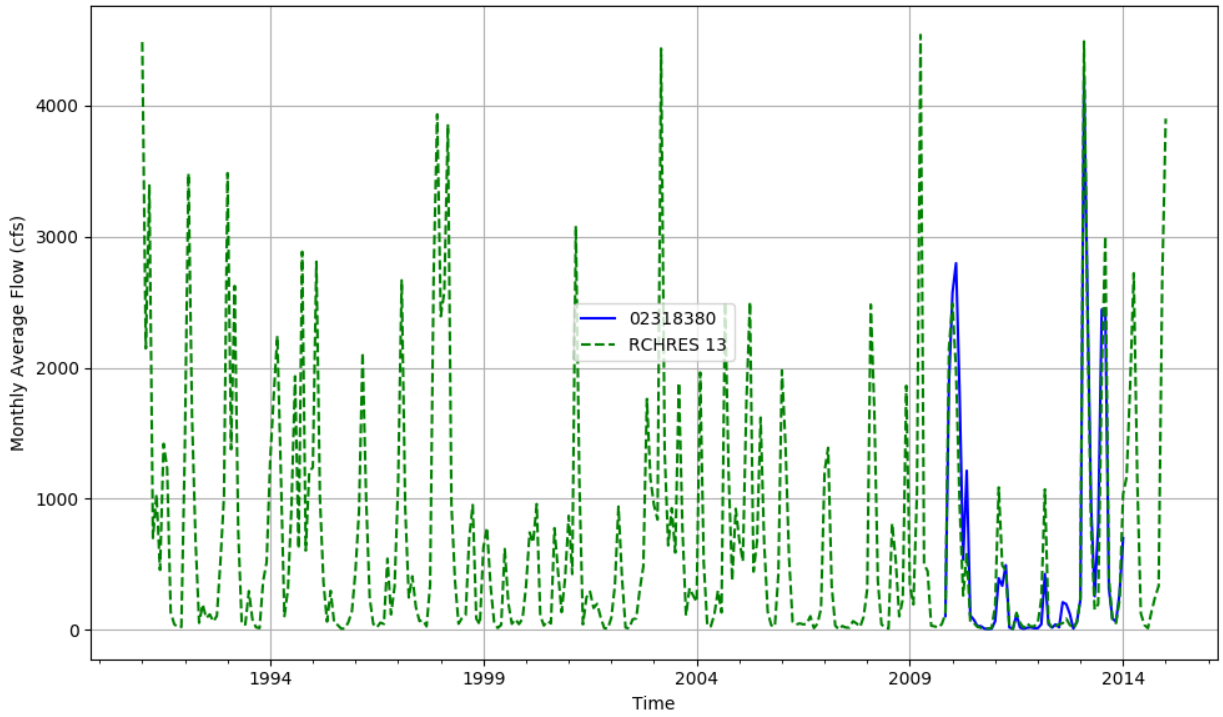


Figure T-03110204-12: Monthly flow for HSFP reach 13 and USGS station 02318380.

Table T-03110204-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4003	23519	8272	1667	525	511	163011	3721	32735	44691	114551	87140	286	73809	8920	567361
AREA(%)	0.7	4.1	1.4	0.3	0.1	0.1	28.6	0.7	5.7	7.8	20.1	15.3	0.1	12.9	1.6	99.4
IMPERVIOUS																
AREA(ACRES)		1308	1011	451	530											3299
AREA(%)		0.2	0.2	0.1	0.1											0.6
SUPY	42.5	42.9	42.7	42.8	42.7	42.9	42.9	43.7	42.8	42.9	42.8	43.0	76.4	51.4	45.8	43.8
SURLI			5.1	5.0	5.1									0.0	2.1	0.1
UZLI																0.0
LZLI			1.1	1.0	0.9									0.0	1.6	0.0
SURO: PERVIOUS	6.3	1.7	2.2	2.3	2.2	1.3	0.5	1.2	0.9	1.3	0.8	4.2	6.7	1.6	1.0	1.5
SURO: IMPERVIOUS		24.3	24.2	24.3	24.3											0.1
SURO: COMBINED	6.3	2.9	4.6	7.0	13.3	1.3	0.5	1.2	0.9	1.3	0.8	4.2	6.7	1.6	1.0	1.6
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.2	9.1	11.7	11.6	11.6	12.7	7.5	10.6	9.7	9.1	8.1	2.2	20.8	13.0	10.3	7.9
AGWI	5.0	10.7	13.7	13.6	13.8	14.7	8.4	11.2	11.4	10.6	9.3	3.8	20.0	15.0	11.9	9.3
IGWI	1.4	3.5	3.9	4.0	3.7	5.2	2.6	8.7	3.4	3.4	2.7	1.9	10.8	3.4	4.0	2.8
CEPE		9.2	9.0	9.0	8.9	6.1	13.3	11.4	9.2	11.0	14.2	20.5	29.7	14.8	16.5	14.0
UZET	4.2	2.6	2.8	2.8	2.8	2.9	1.4	2.7	2.3	2.0	1.8	8.0	3.0	2.3	2.0	2.8
LZET	1.4	17.8	19.1	19.0	19.3	14.7	20.8	10.5	18.6	17.4	17.4	0.9	7.6	16.7	16.8	15.6
AGWET	4.4	2.3	2.6	2.6	2.6	2.7	1.7	1.8	2.4	2.2	1.9	2.5	0.9	2.4	2.2	2.1
BASET	0.4	0.5	0.7	0.7	0.7	0.6	0.3	0.2	0.6	0.5	0.5	0.3	0.6	0.8	0.7	0.5
SURET	28.7											8.3				1.5
PERO	7.5	10.8	13.9	13.9	13.8	14.0	8.0	11.8	10.6	10.4	8.9	6.4	27.5	14.7	11.3	9.4
IGWI	1.4	3.5	3.9	4.0	3.7	5.2	2.6	8.7	3.4	3.4	2.7	1.9	10.8	3.4	4.0	2.8
TAET: PERVIOUS	39.1	32.4	34.2	34.1	34.4	27.1	37.6	26.7	33.0	33.2	35.8	40.6	41.8	37.1	38.2	36.5
IMPEV: IMPERVIOUS		18.7	18.5	18.6	18.6											0.1
ET: COMBINED	39.1	31.7	32.5	30.8	26.4	27.1	37.6	26.7	33.0	33.2	35.8	40.6	41.8	37.1	38.2	36.6
PET	44.2	44.2	44.2	44.2	44.3	44.2	44.2	44.1	44.2	44.2	44.2	44.2	44.2	44.2	44.2	43.9

Table T-03110204-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4003	23519	8272	1667	525	511	163011	3721	32735	44691	114551	87140	286	73809	8920	567361
AREA(%)	0.7	4.1	1.4	0.3	0.1	0.1	28.6	0.7	5.7	7.8	20.1	15.3	0.1	12.9	1.6	99.4
IMPERVIOUS																
AREA(ACRES)		1308	1011	451	530											3299
AREA(%)		0.2	0.2	0.1	0.1											0.6
SUPY	56.5	56.2	56.3	56.1	56.2	56.0	56.4	55.1	56.4	56.2	56.4	56.1	70.7	62.6	57.9	56.8
SURLI			4.6	4.7	4.8									0.0	1.4	0.1
UZLI																0.0
LZLI			1.0	1.0	0.9									0.0	0.7	0.0
SURO: PERVIOUS	9.7	3.6	4.3	4.4	4.3	2.8	1.0	2.6	2.1	2.6	1.6	6.6	6.3	2.7	1.8	2.6
SURO: IMPERVIOUS		36.4	36.6	36.4	36.5											0.2
SURO: COMBINED	9.7	5.4	7.8	11.2	20.5	2.8	1.0	2.6	2.1	2.6	1.6	6.6	6.3	2.7	1.8	2.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.7	11.7	14.6	14.5	15.0	15.6	10.9	11.6	13.0	12.2	11.8	2.4	15.4	14.6	12.9	10.5
AGWI	5.5	15.0	18.4	18.2	18.6	19.9	13.4	14.5	16.3	15.3	14.4	4.6	18.1	18.2	15.5	13.2
IGWI	1.6	4.5	5.0	5.2	4.8	6.7	3.7	11.0	4.5	4.6	3.8	2.1	7.4	4.1	4.9	3.7
CEPE		10.3	10.3	10.3	10.3	7.1	14.4	12.1	10.3	12.0	15.3	21.4	22.1	16.0	17.0	15.0
UZET	4.9	2.3	2.5	2.5	2.4	2.8	1.3	2.6	2.1	1.8	1.5	7.3	2.3	2.0	1.7	2.5
LZET	2.2	19.7	20.8	20.6	20.7	16.1	21.9	12.0	20.4	19.2	18.9	1.2	14.2	18.9	18.3	17.0
AGWET	3.4	2.4	2.8	2.7	2.7	3.2	1.6	2.3	2.4	2.2	1.7	2.1	1.8	2.6	1.8	2.0
BASET	0.5	0.4	0.5	0.5	0.5	0.6	0.4	0.2	0.5	0.4	0.4	0.4	0.4	0.6	0.4	0.4
SURET	31.1											11.2				1.9
PERO	11.3	15.3	19.0	18.9	19.2	18.4	11.9	14.2	15.0	14.7	13.4	9.0	21.6	17.4	14.7	13.1
IGWI	1.6	4.5	5.0	5.2	4.8	6.7	3.7	11.0	4.5	4.6	3.8	2.1	7.4	4.1	4.9	3.7
TAET: PERVIOUS	42.0	35.2	36.9	36.5	36.6	29.8	39.5	29.1	35.6	35.7	37.9	43.6	40.9	40.1	39.2	38.9
IMPEV: IMPERVIOUS		19.6	19.5	19.5	19.4											0.1
ET: COMBINED	42.0	34.3	35.0	32.9	28.0	29.8	39.5	29.1	35.6	35.7	37.9	43.6	40.9	40.1	39.2	39.0
PET	52.4	52.5	52.5	52.6	52.6	52.5	52.4	52.7	52.4	52.4	52.4	52.5	52.6	52.4	52.5	52.1

Table T-03110204-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4003	23519	8272	1667	525	511	163011	3721	32735	44691	114551	87140	286	73809	8920	567361
AREA(%)	0.7	4.1	1.4	0.3	0.1	0.1	28.6	0.7	5.7	7.8	20.1	15.3	0.1	12.9	1.6	99.4
IMPERVIOUS																
AREA(ACRES)		1308	1011	451	530											3299
AREA(%)		0.2	0.2	0.1	0.1											0.6
SUPY	40.7	40.8	40.7	40.6	40.5	40.7	40.8	41.6	40.8	40.8	40.8	40.9	56.9	45.2	42.5	41.2
SURLI			4.6	4.7	4.8									0.0	1.9	0.1
UZLI																0.0
LZLI			1.1	1.0	0.9									0.0	0.8	0.0
SURO: PERVIOUS	8.1	2.0	2.4	2.5	2.5	1.5	0.7	1.5	1.1	1.5	1.1	5.9	3.5	1.6	1.2	1.9
SURO: IMPERVIOUS		23.0	23.0	22.9	22.9											0.1
SURO: COMBINED	8.1	3.1	4.7	6.8	12.7	1.5	0.7	1.5	1.1	1.5	1.1	5.9	3.5	1.6	1.2	2.1
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.3	7.4	9.2	9.1	9.2	10.3	7.6	9.2	8.2	7.7	7.6	2.1	11.3	9.0	8.1	6.9
AGWI	4.8	9.3	12.0	11.8	12.0	13.3	8.4	10.1	10.1	9.4	8.7	3.4	12.7	11.3	9.4	8.3
IGWI	1.3	3.0	3.4	3.6	3.3	4.7	2.4	7.8	2.9	2.9	2.4	1.6	5.2	2.6	3.1	2.4
CEPE		8.5	8.5	8.4	8.4	5.5	12.7	10.2	8.5	10.3	13.6	19.7	21.8	13.1	15.3	13.2
UZET	5.2	2.1	2.3	2.3	2.3	2.4	1.2	2.4	1.9	1.6	1.4	7.3	2.3	1.8	1.5	2.4
LZET	2.1	18.3	19.8	19.8	19.9	15.3	19.5	11.3	18.9	17.7	17.0	1.1	12.8	17.7	17.6	15.4
AGWET	3.5	2.4	2.8	2.8	2.9	3.2	1.5	2.2	2.5	2.2	1.7	2.0	1.8	2.5	1.8	1.9
BASET	0.4	0.4	0.5	0.5	0.5	0.6	0.3	0.2	0.4	0.4	0.3	0.3	0.5	0.6	0.4	0.4
SURET	24.6											7.0				1.2
PERO	9.4	9.4	11.7	11.6	11.6	11.8	8.2	10.7	9.3	9.2	8.7	8.0	14.9	10.6	9.4	8.8
IGWI	1.3	3.0	3.4	3.6	3.3	4.7	2.4	7.8	2.9	2.9	2.4	1.6	5.2	2.6	3.1	2.4
TAET: PERVIOUS	35.8	31.7	34.0	33.8	34.0	27.1	35.2	26.3	32.2	32.2	34.0	37.4	39.2	35.6	36.5	34.5
IMPEV: IMPERVIOUS		18.0	17.9	17.9	17.9											0.1
ET: COMBINED	35.8	30.9	32.2	30.4	25.9	27.1	35.2	26.3	32.2	32.2	34.0	37.4	39.2	35.6	36.5	34.6
PET	49.1	48.9	49.0	49.0	49.0	48.9	48.9	48.1	48.9	48.9	48.9	48.7	48.7	49.1	48.8	48.6

Table T-03110204-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	4003	23519	8272	1667	525	511	163011	3721	32735	44691	114551	87140	286	73809	8920	567361
AREA(%)	0.7	4.1	1.4	0.3	0.1	0.1	28.6	0.7	5.7	7.8	20.1	15.3	0.1	12.9	1.6	99.4
IMPERVIOUS																
AREA(ACRES)		1308	1011	451	530											3299
AREA(%)		0.2	0.2	0.1	0.1											0.6
SUPY	49.1	49.5	49.2	49.1	48.8	49.3	49.6	50.6	49.5	49.5	49.4	49.7	75.1	55.6	51.6	50.1
SURLI			4.4	4.3	4.4									0.0	1.7	0.1
UZLI																0.0
LZLI			0.9	0.8	0.8									0.0	1.2	0.0
SURO: PERVIOUS	9.2	2.2	2.7	2.7	2.6	1.6	0.4	1.7	1.1	1.5	0.9	6.6	5.7	1.6	1.0	1.9
SURO: IMPERVIOUS		31.3	31.0	31.0	30.8											0.2
SURO: COMBINED	9.2	3.7	5.8	8.7	16.8	1.6	0.4	1.7	1.1	1.5	0.9	6.6	5.7	1.6	1.0	2.1
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.4	11.0	13.4	13.2	13.3	14.3	9.7	11.5	11.9	11.2	10.5	2.4	19.9	13.5	11.9	9.5
AGWI	5.2	13.6	16.4	16.1	16.3	17.6	11.7	13.7	14.6	13.7	12.6	4.7	21.7	16.6	14.3	11.9
IGWI	1.5	4.4	4.6	4.8	4.4	6.2	3.5	10.7	4.2	4.3	3.6	2.2	9.7	3.8	4.7	3.5
CEPE		9.4	9.4	9.3	9.3	6.5	13.3	11.1	9.4	11.1	14.2	19.8	25.4	14.2	16.0	13.8
UZET	4.2	2.5	2.6	2.6	2.6	2.8	1.4	2.6	2.2	1.9	1.6	6.6	2.4	2.2	1.8	2.5
LZET	1.8	17.4	18.6	18.5	18.6	14.5	19.3	10.7	18.0	16.9	16.5	1.0	10.2	17.3	16.6	15.0
AGWET	3.3	2.2	2.4	2.4	2.4	2.8	1.6	2.0	2.2	2.0	1.7	2.0	1.3	2.4	1.9	1.9
BASET	0.4	0.4	0.6	0.5	0.6	0.6	0.4	0.2	0.5	0.4	0.4	0.4	0.5	0.7	0.5	0.4
SURET	27.6											9.2				1.6
PERO	10.7	13.2	16.1	15.9	15.8	15.9	10.1	13.2	12.9	12.7	11.3	9.0	25.5	15.1	12.9	11.5
IGWI	1.5	4.4	4.6	4.8	4.4	6.2	3.5	10.7	4.2	4.3	3.6	2.2	9.7	3.8	4.7	3.5
TAET: PERVIOUS	37.4	31.8	33.6	33.4	33.6	27.1	35.9	26.6	32.3	32.4	34.4	38.9	39.8	36.7	36.7	35.2
IMPEV: IMPERVIOUS		18.2	18.1	18.1	18.0											0.1
ET: COMBINED	37.4	31.1	31.9	30.2	25.7	27.1	35.9	26.6	32.3	32.4	34.4	38.9	39.8	36.7	36.7	35.3
PET	47.1	47.0	47.0	47.0	47.1	47.0	47.0	46.7	47.0	47.0	47.0	46.9	46.9	47.0	46.9	46.7

Table T-03110204-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
2	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
3	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
4	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
5	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
6	0.990	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.990
7	0.990	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.990
8	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
9	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
10	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
11	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
12	0.998	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.998
13	0.990	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.990
14	0.990	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.990
15	0.990	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.990
16	0.990	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.990

Table T-03110204-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
2	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
3	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
4	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
5	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
9	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
10	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
11	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
12	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110204-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
2	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
3	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
4	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
5	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
6	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
7	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
8	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
9	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
10	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
11	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
12	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
13	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
14	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
15	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300
16	0.000	0.050	0.050	0.050	0.050	0.020	0.110	0.071	0.050	0.073	0.129	0.300

Table T-03110204-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
2	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
3	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
4	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
5	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
6	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491
7	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491
8	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
9	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
10	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
11	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
12	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152	0.152
13	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491
14	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491
15	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491
16	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491	0.491

Table T-03110204-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
2	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
3	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
4	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
5	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
6	0.010	0.446	0.446	0.446	0.446	0.636	0.955	0.636	0.636	0.636	0.764	0.010
7	0.010	0.446	0.446	0.446	0.446	0.636	0.955	0.636	0.636	0.636	0.764	0.010
8	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
9	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
10	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
11	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
12	0.003	0.421	0.421	0.421	0.421	0.601	0.902	0.601	0.601	0.601	0.721	0.003
13	0.010	0.446	0.446	0.446	0.446	0.636	0.955	0.636	0.636	0.636	0.764	0.010
14	0.010	0.446	0.446	0.446	0.446	0.636	0.955	0.636	0.636	0.636	0.764	0.010
15	0.010	0.446	0.446	0.446	0.446	0.636	0.955	0.636	0.636	0.636	0.764	0.010
16	0.010	0.446	0.446	0.446	0.446	0.636	0.955	0.636	0.636	0.636	0.764	0.010

Table T-03110204-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03110204-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
2	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
3	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
4	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
5	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
6	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
7	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
8	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
9	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
10	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
11	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
12	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.605
13	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
14	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
15	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695
16	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695	0.695

Table T-03110204-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
2	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
3	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
4	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
5	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
9	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
10	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
11	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
12	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999	2.999
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110204-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
2	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
3	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
4	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
5	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
6	0.149	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
7	0.149	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
9	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
10	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
11	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
12	0.262	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	1.200
13	0.149	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
14	0.149	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
15	0.149	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
16	0.149	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03110204-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
2	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
3	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
4	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
5	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
6	0.200	2.750	2.750	2.750	2.750	3.094	4.126	3.094	3.094	3.094	3.438	0.110
7	0.200	2.750	2.750	2.750	2.750	3.094	4.126	3.094	3.094	3.094	3.438	0.110
8	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
9	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
10	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
11	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
12	0.200	2.698	2.698	2.698	2.698	3.035	4.048	3.035	3.035	3.035	3.373	0.100
13	0.200	2.750	2.750	2.750	2.750	3.094	4.126	3.094	3.094	3.094	3.438	0.110
14	0.200	2.750	2.750	2.750	2.750	3.094	4.126	3.094	3.094	3.094	3.438	0.110
15	0.200	2.750	2.750	2.750	2.750	3.094	4.126	3.094	3.094	3.094	3.438	0.110
16	0.200	2.750	2.750	2.750	2.750	3.094	4.126	3.094	3.094	3.094	3.438	0.110

Table T-03110204-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
2	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
3	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
4	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
5	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
6	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.834
7	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.834
8	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
9	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
10	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
11	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
12	0.050	0.093	0.093	0.093	0.093	0.093	0.133	0.107	0.107	0.093	0.133	0.331
13	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.834
14	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.834
15	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.834
16	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.834

APPENDIX T-03110205

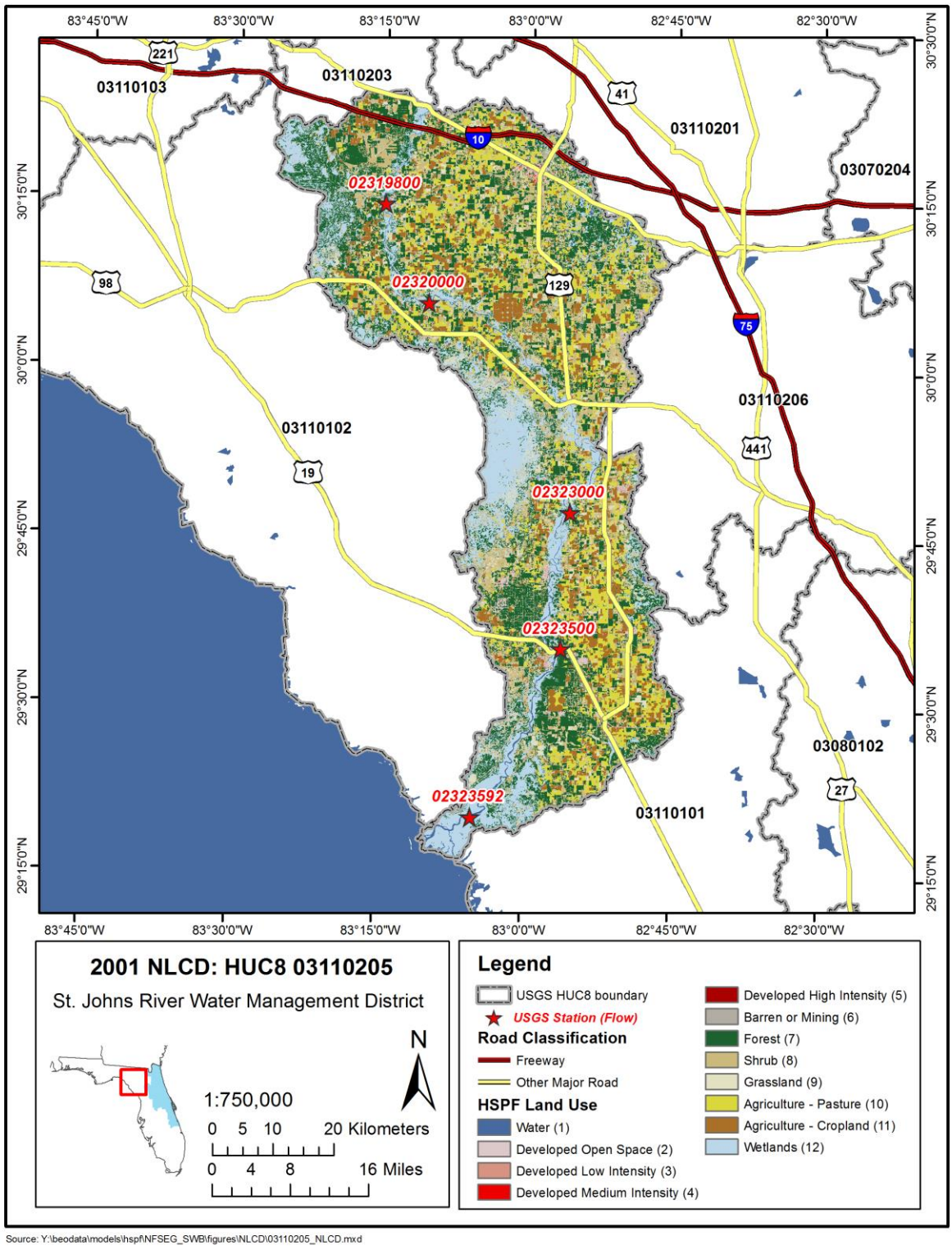


Figure T-03110205-1: Land Cover from the National Land Cover Database.

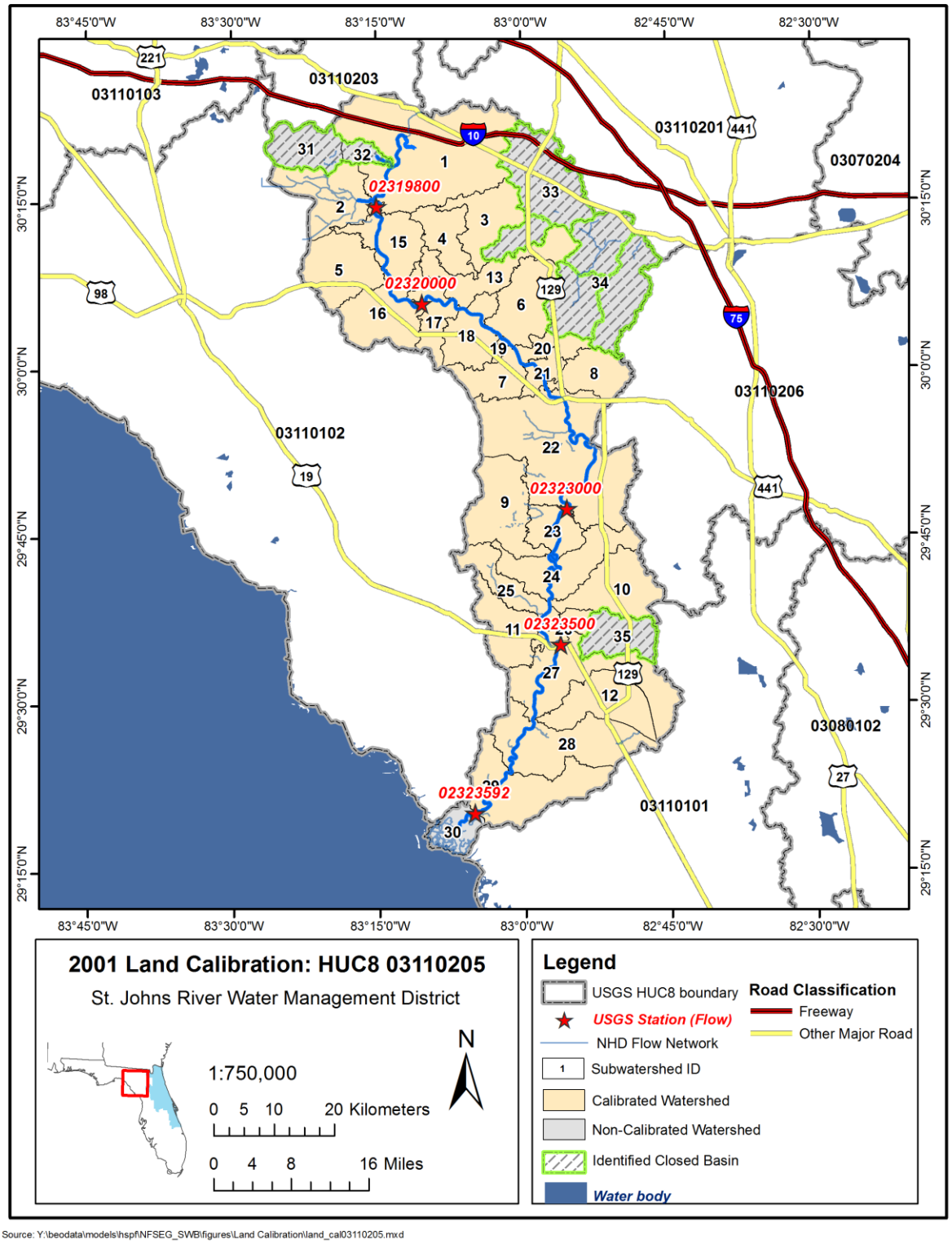


Figure T-03110205-2: Calibrated sub-watersheds.

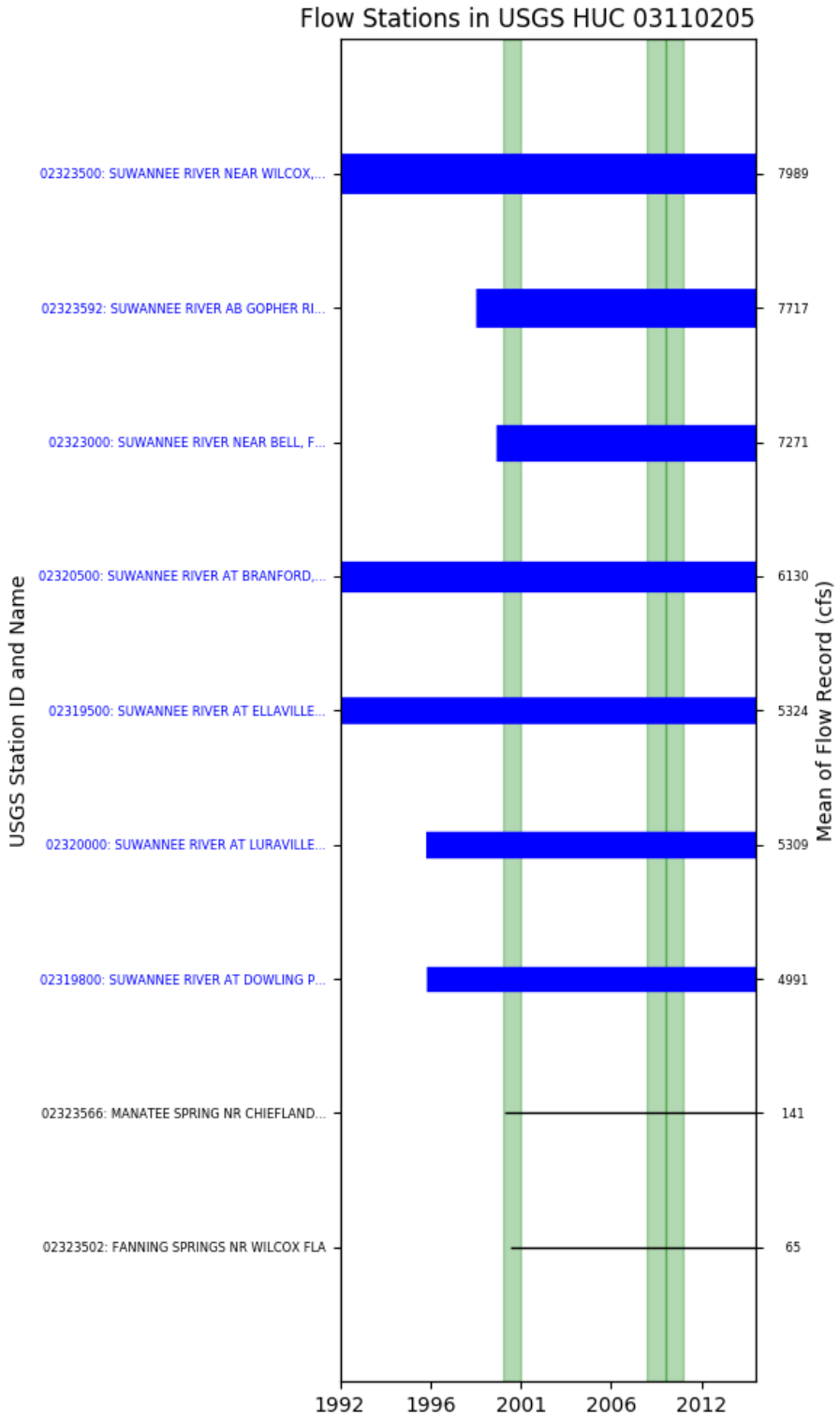


Figure T-03110205-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 14, USGS GAUGE 02319800

Water-Data Report 2009
02319800 SUWANNEE RIVER AT DOWLING PARK, FL
Suwannee Basin Lower Suwannee Subbasin

LOCATION.--Lat 301441, long 831459 referenced to North American Datum of 1927, in NW 1/4 1/ 1/4 4 1/4 sec.8, T.3 S., R.11 E., Lafayette County, FL, Hydrologic Unit 03110205, at bridge on County Road 250 at Dowling Park and 112 mi upstream from mouth.

DRAINAGE AREA.--7190.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1950 to August 1954 and November 1975 to October 1977 (annual maximum discharge and gage-height), October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Drainage Area: Includes part of watershed in Okefenokee Swamp which is indeterminate.

Table T-03110205-1: Comparison Statistics Between HSPF Reach 14 and USGS Gauge 02319800.

Statistic	Value
Bias	-467.57
Standard error	2732.08
Relative bias	-0.10
Relative standard error	0.51
Nash-Sutcliffe coefficient	0.74
Kling-Gupta coefficient	0.80
Coefficient of efficiency	0.56
Index of agreement	0.77

Table T-03110205-2: Hydrologic Indices Between USGS Gauge 02319800 and HSPF Reach 14.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02319800	Simulated Reach 14	Percent Difference
MA1: Mean, all daily flows	4798.15	4315.27	-10.06
MA2: Median, all daily flows	2700.00	2721.46	0.79
MA3: CV, all daily flows	79.81	132.14	65.56
MA4: CV, log of all daily flows	96.36	82.98	-13.88
MA5: Mean daily flow / median daily flow	1.78	1.59	-10.77
MA9: (Q10 - Q90) / median daily flow	3.79	2.72	-28.24
MA10: (Q20 - Q80) / median daily flow	2.15	1.66	-23.04
MA11: (Q25 - Q75) / median daily flow	1.60	1.30	-18.72
MA12: Mean monthly flow, January	4289.44	4830.03	12.60
MA13: Mean monthly flow, February	5725.48	7291.38	27.35

MA14: Mean monthly flow, March	9132.24	8417.54	-7.83
MA15: Mean monthly flow, April	8012.35	5912.90	-26.20
MA16: Mean monthly flow, May	3653.50	2641.10	-27.71
MA17: Mean monthly flow, June	3161.76	2604.08	-17.64
MA18: Mean monthly flow, July	4015.32	2878.34	-28.32
MA19: Mean monthly flow, August	3657.12	3072.31	-15.99
MA20: Mean monthly flow, September	3752.42	3780.64	0.75
MA21: Mean monthly flow, October	3998.95	2904.09	-27.38
MA22: Mean monthly flow, November	2897.79	2361.43	-18.51
MA23: Mean monthly flow, December	3204.96	3404.43	6.22
ML1: Mean minimum monthly flow, January	3286.06	2899.62	-11.76
ML2: Mean minimum monthly flow, February	4560.53	3604.09	-20.97
ML3: Mean minimum monthly flow, March	5866.47	4437.54	-24.36
ML4: Mean minimum monthly flow, April	4571.77	3448.05	-24.58
ML5: Mean minimum monthly flow, May	2572.00	1878.07	-26.98
ML6: Mean minimum monthly flow, June	2244.41	1611.81	-28.19
ML7: Mean minimum monthly flow, July	2935.24	2059.64	-29.83
ML8: Mean minimum monthly flow, August	2866.00	2136.39	-25.46
ML9: Mean minimum monthly flow, September	2295.88	1810.07	-21.16
ML10: Mean minimum monthly flow, October	2591.61	1710.00	-34.02
ML11: Mean minimum monthly flow, November	2205.17	1728.41	-21.62
ML12: Mean minimum monthly flow, December	2410.00	2090.60	-13.25
ML13: CV of minimum monthly flows	110.21	84.06	-23.73
ML14: Mean minimum daily flow / mean median annual flow	0.52	0.27	-49.17
ML15: Mean minimum annual flow / mean annual flow	0.37	0.18	-50.13
ML16: Median minimum annual flow / median annual flow	0.52	0.22	-57.23
ML20: Ratio of baseflow volume to total flow volume	0.81	0.72	-11.76
ML22: Mean annual minimum flow divided by catchment area	13.86	7.67	-44.68
RA1: Mean of positive changes from one day to next (rise rate)	272.81	1511.19	
RA2: CV, mean of positive changes from one day to next (rise rate)	215.87	569.56	
RA3: Mean of negative changes from one day to next (fall rate)	142.67	599.13	
RA4: CV, mean of negative changes from one day to next (fall rate)	189.91	734.65	
RA5: Ratio of days that are higher than previous day	0.32	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.03	
RA8: Number of flow reversals from one day to the next	43.61	54.94	
RA9: CV, number of flow reversals from one day to the next	38.39	24.70	

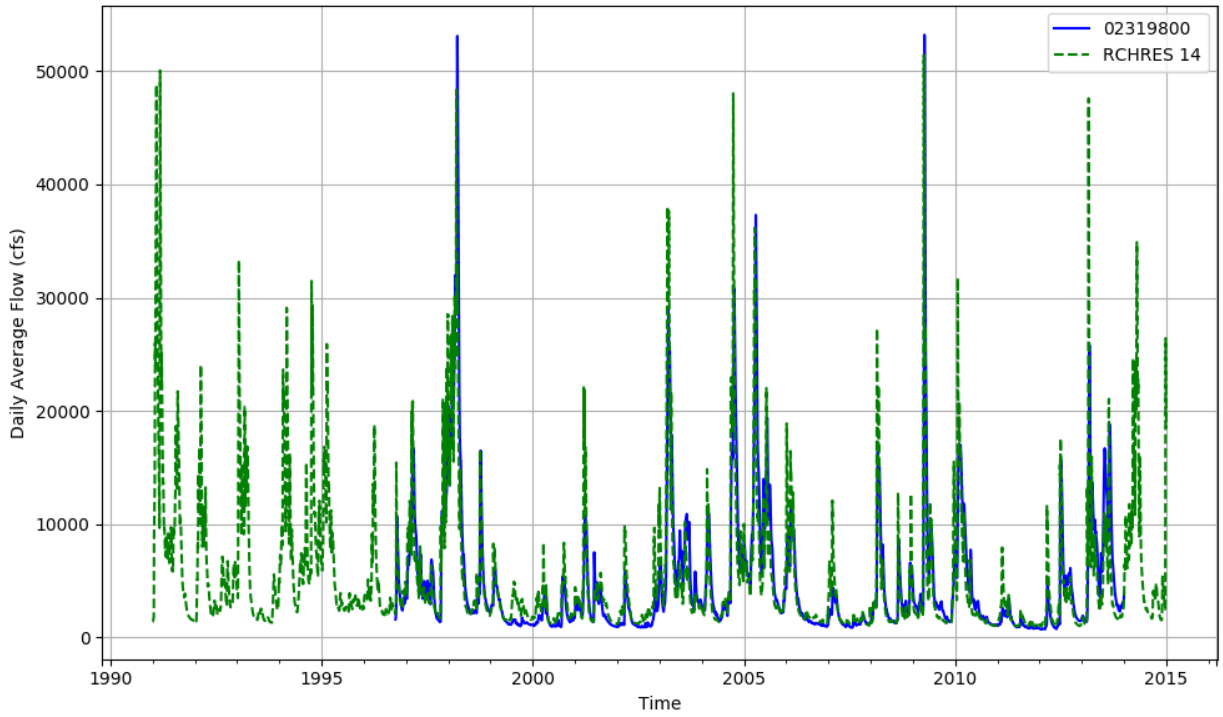


Figure T-03110205-4: Daily flow for HSFP reach 14 and USGS station 02319800.

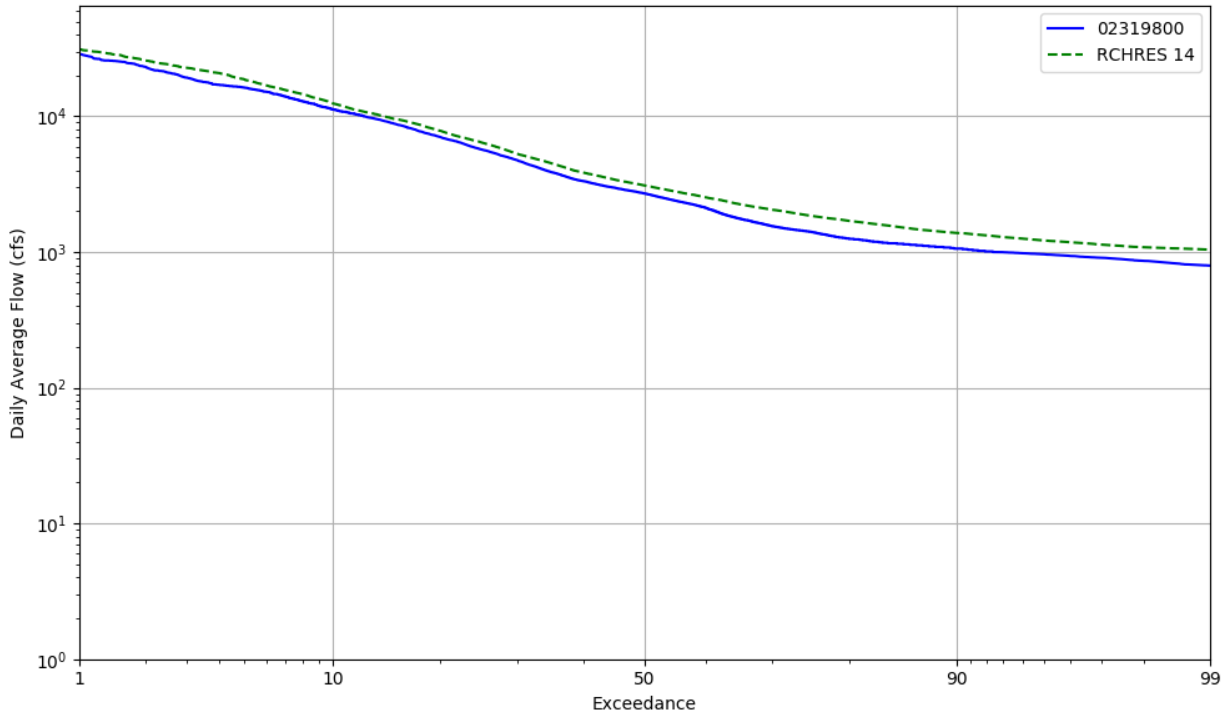


Figure T-03110205-5: Daily exceedance for HSFP reach 14 and USGS station 02319800.

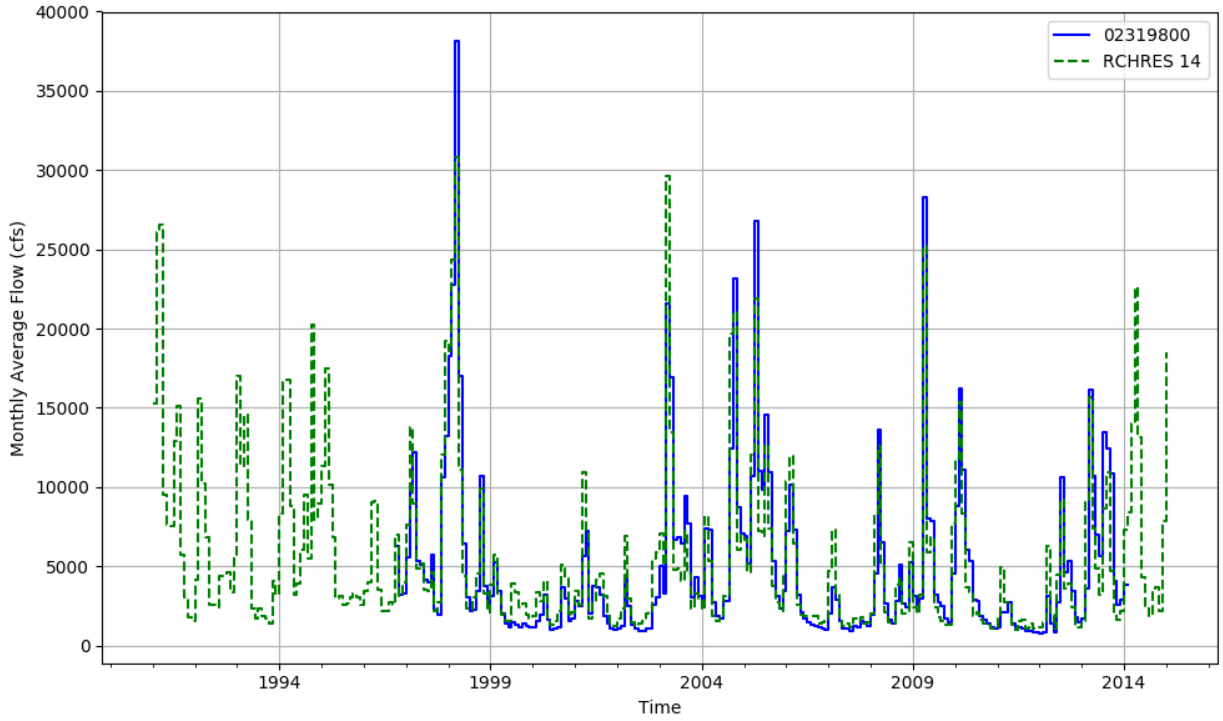


Figure T-03110205-6: Monthly flow for HSFP reach 14 and USGS station 02319800.

HSPF REACH 16, USGS GAUGE 02320000

Water-Data Report 2009
02320000 SUWANNEE RIVER AT LURAVILLE, FL
Suwannee Basin Lower Suwannee Subbasin

LOCATION.--Lat 300559, long 831018 referenced to North American Datum of 1927, in NE 1/4 1/ 1/4 4 1/4 sec.36, T.4 S., R.11 E., Lafayette County, FL, Hydrologic Unit 03110205, on right bank at downstream side of State Highway 51 bridge and 1.6 mi south of Luraville, 3.0 mi north of Mayo, and 97 mi upstream from mouth.

DRAINAGE AREA.--7280.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1927 to December 1937, March 1950 to October 1972 and October 1977 to September 1981 (annual maximum discharge and gage-height), October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Vertical Datum of 1929 (Florida Department of Transportation Benchmark). Feb. 3, 1927 to Dec. 31, 1937, nonrecording gage at site 0.8 mi downstream at datum 16.49 ft lower. Mar. 29, 1950 to Oct. 13, 1972, and Oct. 11, 1977 to March 1980, nonrecording gage at present site and datum.

REMARKS.--No estimated discharges. Records fair. Drainage Area: Includes part of watershed in Okefenokee Swamp which is indeterminate.

Table T-03110205-3: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02320000.

Statistic	Value
Bias	-652.07
Standard error	2987.38
Relative bias	-0.13
Relative standard error	0.53
Nash-Sutcliffe coefficient	0.72
Kling-Gupta coefficient	0.76
Coefficient of efficiency	0.54
Index of agreement	0.76

Table T-03110205-4: Hydrologic Indices Between USGS Gauge 02320000 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02320000	Simulated Reach 16	Percent Difference
MA1: Mean, all daily flows	5125.40	4454.30	-13.09
MA2: Median, all daily flows	2940.00	2858.25	-2.78
MA3: CV, all daily flows	73.08	122.31	67.36
MA4: CV, log of all daily flows	95.55	80.84	-15.39

MA5: Mean daily flow / median daily flow	1.74	1.56	-10.61
MA9: (Q10 - Q90) / median daily flow	3.71	2.63	-29.15
MA10: (Q20 - Q80) / median daily flow	2.05	1.59	-22.47
MA11: (Q25 - Q75) / median daily flow	1.49	1.25	-16.50
MA12: Mean monthly flow, January	4210.38	4710.34	11.87
MA13: Mean monthly flow, February	5652.77	7039.75	24.54
MA14: Mean monthly flow, March	8879.98	8120.52	-8.55
MA15: Mean monthly flow, April	8238.93	5739.55	-30.34
MA16: Mean monthly flow, May	3833.36	2615.50	-31.77
MA17: Mean monthly flow, June	3237.56	2580.46	-20.30
MA18: Mean monthly flow, July	4101.18	2840.77	-30.73
MA19: Mean monthly flow, August	3752.95	3036.54	-19.09
MA20: Mean monthly flow, September	3955.17	3796.36	-4.02
MA21: Mean monthly flow, October	4199.26	2902.85	-30.87
MA22: Mean monthly flow, November	2980.24	2354.53	-21.00
MA23: Mean monthly flow, December	3221.07	3352.96	4.09
ML1: Mean minimum monthly flow, January	3511.11	3020.31	-13.98
ML2: Mean minimum monthly flow, February	4840.23	3737.62	-22.78
ML3: Mean minimum monthly flow, March	6207.06	4581.11	-26.20
ML4: Mean minimum monthly flow, April	5032.94	3579.68	-28.87
ML5: Mean minimum monthly flow, May	2928.29	1992.20	-31.97
ML6: Mean minimum monthly flow, June	2550.59	1718.15	-32.64
ML7: Mean minimum monthly flow, July	3150.18	2182.80	-30.71
ML8: Mean minimum monthly flow, August	3129.41	2264.90	-27.63
ML9: Mean minimum monthly flow, September	2524.44	1926.53	-23.68
ML10: Mean minimum monthly flow, October	2960.78	1842.70	-37.76
ML11: Mean minimum monthly flow, November	2382.94	1852.40	-22.26
ML12: Mean minimum monthly flow, December	2620.28	2216.32	-15.42
ML13: CV of minimum monthly flows	107.40	80.97	-24.61
ML14: Mean minimum daily flow / mean median annual flow	0.57	0.33	-41.91
ML15: Mean minimum annual flow / mean annual flow	0.42	0.25	-41.41
ML16: Median minimum annual flow / median annual flow	0.58	0.27	-52.55
ML20: Ratio of baseflow volume to total flow volume	0.82	0.73	-11.46
ML22: Mean annual minimum flow divided by catchment area	16.05	9.15	-42.97
RA1: Mean of positive changes from one day to next (rise rate)	270.63	1516.02	
RA2: CV, mean of positive changes from one day to next (rise rate)	184.21	572.18	
RA3: Mean of negative changes from one day to next (fall rate)	141.32	598.62	
RA4: CV, mean of negative changes from one day to next (fall rate)	167.59	718.75	
RA5: Ratio of days that are higher than previous day	0.31	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.02	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.03	
RA8: Number of flow reversals from one day to the next	40.58	52.11	
RA9: CV, number of flow reversals from one day to the next	48.99	34.97	

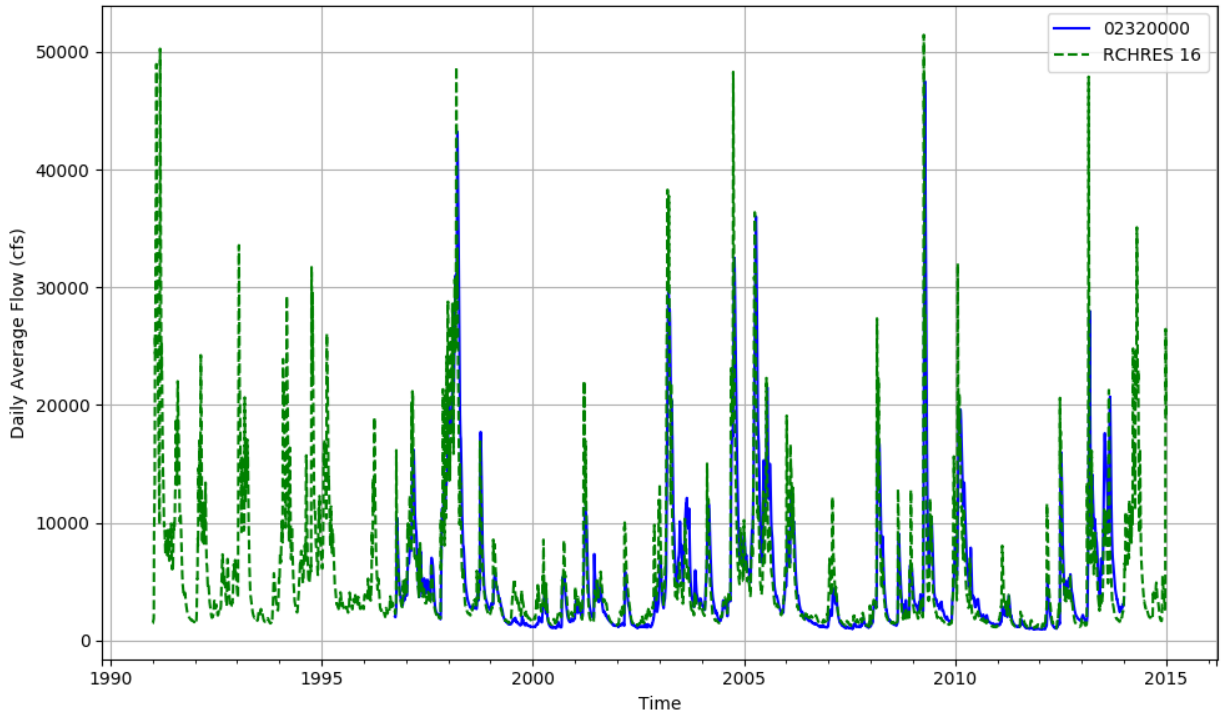


Figure T-03110205-7: Daily flow for HSFP reach 16 and USGS station 02320000.

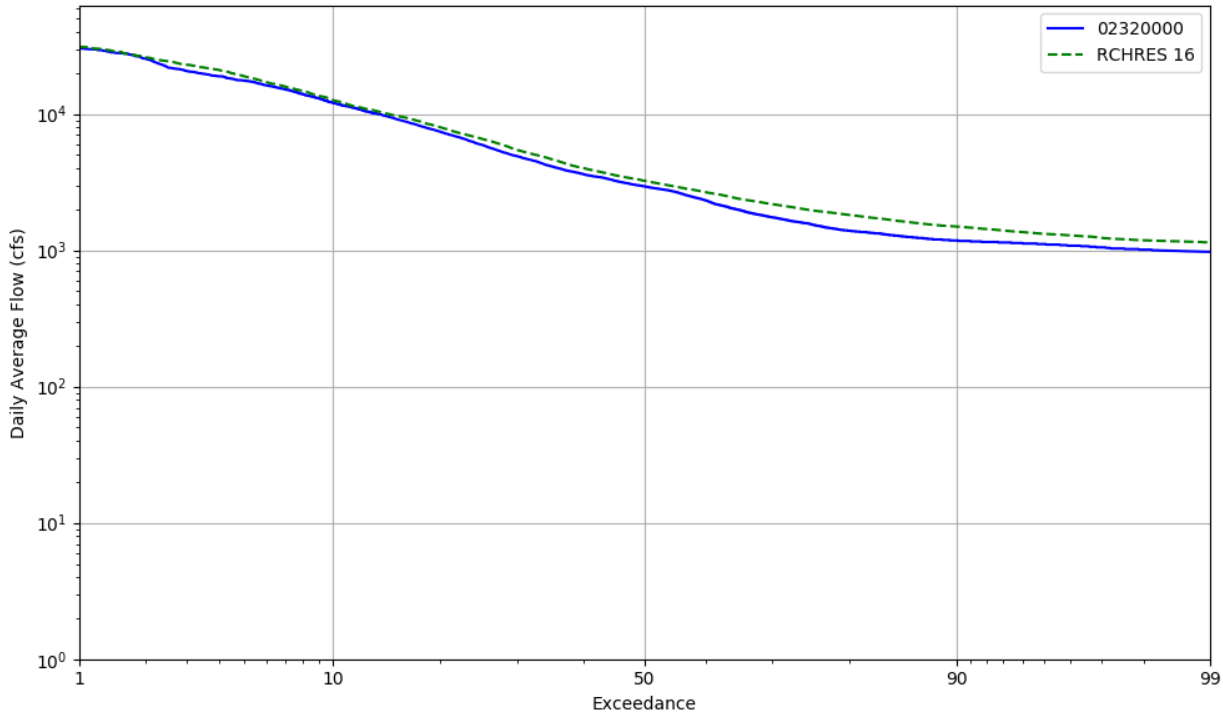


Figure T-03110205-8: Daily exceedance for HSFP reach 16 and USGS station 02320000.

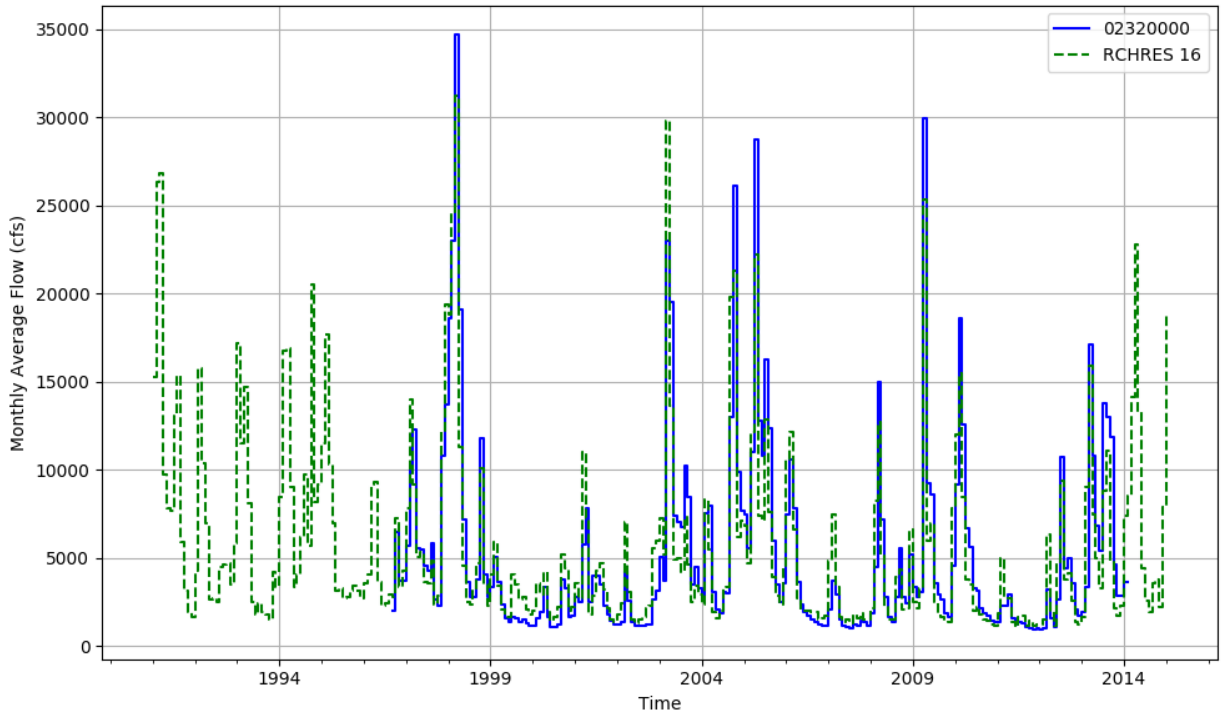


Figure T-03110205-9: Monthly flow for HSFP reach 16 and USGS station 02320000.

HSPF REACH 21, USGS GAUGE 02320500

Water-Data Report 2009
02320500 SUWANNEE RIVER AT BRANFORD, FL
Suwannee Basin Lower Suwannee Subbasin

LOCATION.--Lat 295720, long 825540 referenced to North American Datum of 1927, Suwannee County, FL, Hydrologic Unit 03110205, near left bank on downstream side of bridge on U.S. Highway 27 at Branford, 10.2 mi upstream from Santa Fe River, and 75 mi upstream from mouth.

DRAINAGE AREA.--7,880 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1931 to current year.

REVISED RECORDS.--WSP 1905: WDR FL-75-1: Drainage area. WDR FL-96-4:1995.

GAGE.--Water-stage recorder. Datum of gage is 4.81 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Drainage Area: Includes part of watershed in Okefenokee Swamp which is indeterminate.

Table T-03110205-5: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02320500.

Statistic	Value
Bias	-667.89
Standard error	3210.48
Relative bias	-0.11
Relative standard error	0.55
Nash-Sutcliffe coefficient	0.70
Kling-Gupta coefficient	0.78
Coefficient of efficiency	0.53
Index of agreement	0.75

Table T-03110205-6: Hydrologic Indices Between USGS Gauge 02320500 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02320500	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	6310.07	5632.94	-10.73
MA2: Median, all daily flows	3860.00	3763.05	-2.51
MA3: CV, all daily flows	66.03	109.02	65.09
MA4: CV, log of all daily flows	82.54	72.44	-12.23
MA5: Mean daily flow / median daily flow	1.63	1.50	-8.43
MA9: (Q10 - Q90) / median daily flow	3.31	2.39	-27.96

MA10: (Q20 - Q80) / median daily flow	2.00	1.44	-27.69
MA11: (Q25 - Q75) / median daily flow	1.48	1.11	-24.83
MA12: Mean monthly flow, January	5234.72	6782.75	29.57
MA13: Mean monthly flow, February	8257.80	9161.98	10.95
MA14: Mean monthly flow, March	11415.81	10509.76	-7.94
MA15: Mean monthly flow, April	10070.82	7025.68	-30.24
MA16: Mean monthly flow, May	5311.47	3670.65	-30.89
MA17: Mean monthly flow, June	4257.39	3575.88	-16.01
MA18: Mean monthly flow, July	5076.71	4117.84	-18.89
MA19: Mean monthly flow, August	5256.73	4490.90	-14.57
MA20: Mean monthly flow, September	5023.10	4451.79	-11.37
MA21: Mean monthly flow, October	5178.68	4210.26	-18.70
MA22: Mean monthly flow, November	3916.33	3187.52	-18.61
MA23: Mean monthly flow, December	3935.62	4041.59	2.69
ML1: Mean minimum monthly flow, January	3923.33	3628.70	-7.51
ML2: Mean minimum monthly flow, February	6605.65	5262.63	-20.33
ML3: Mean minimum monthly flow, March	8260.43	5804.62	-29.73
ML4: Mean minimum monthly flow, April	6728.70	4589.67	-31.79
ML5: Mean minimum monthly flow, May	4030.00	2848.68	-29.31
ML6: Mean minimum monthly flow, June	3503.04	2521.90	-28.01
ML7: Mean minimum monthly flow, July	4092.17	3173.24	-22.46
ML8: Mean minimum monthly flow, August	4302.17	3240.05	-24.69
ML9: Mean minimum monthly flow, September	3568.70	2765.46	-22.51
ML10: Mean minimum monthly flow, October	3804.78	2647.40	-30.42
ML11: Mean minimum monthly flow, November	3220.43	2594.21	-19.45
ML12: Mean minimum monthly flow, December	3419.13	2965.49	-13.27
ML13: CV of minimum monthly flows	88.74	65.18	-26.55
ML14: Mean minimum daily flow / mean median annual flow	0.54	0.42	-22.76
ML15: Mean minimum annual flow / mean annual flow	0.41	0.31	-26.08
ML16: Median minimum annual flow / median annual flow	0.57	0.40	-30.37
ML20: Ratio of baseflow volume to total flow volume	0.86	0.75	-12.77
ML22: Mean annual minimum flow divided by catchment area	21.45	15.69	-26.87
RA1: Mean of positive changes from one day to next (rise rate)	251.26	1528.36	
RA2: CV, mean of positive changes from one day to next (rise rate)	165.35	550.50	
RA3: Mean of negative changes from one day to next (fall rate)	141.43	610.80	
RA4: CV, mean of negative changes from one day to next (fall rate)	149.91	666.48	
RA5: Ratio of days that are higher than previous day	0.33	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.02	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.02	
RA8: Number of flow reversals from one day to the next	44.54	56.38	
RA9: CV, number of flow reversals from one day to the next	39.89	22.15	

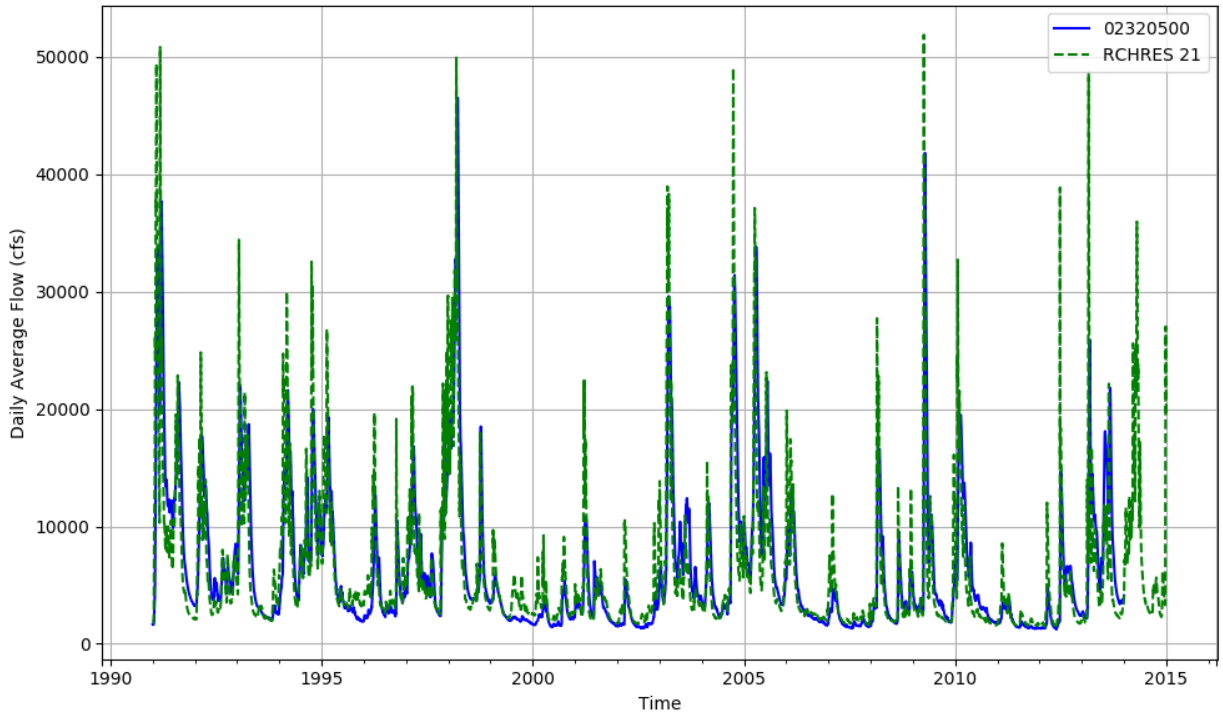


Figure T-03110205-10: Daily flow for HSFP reach 21 and USGS station 02320500.

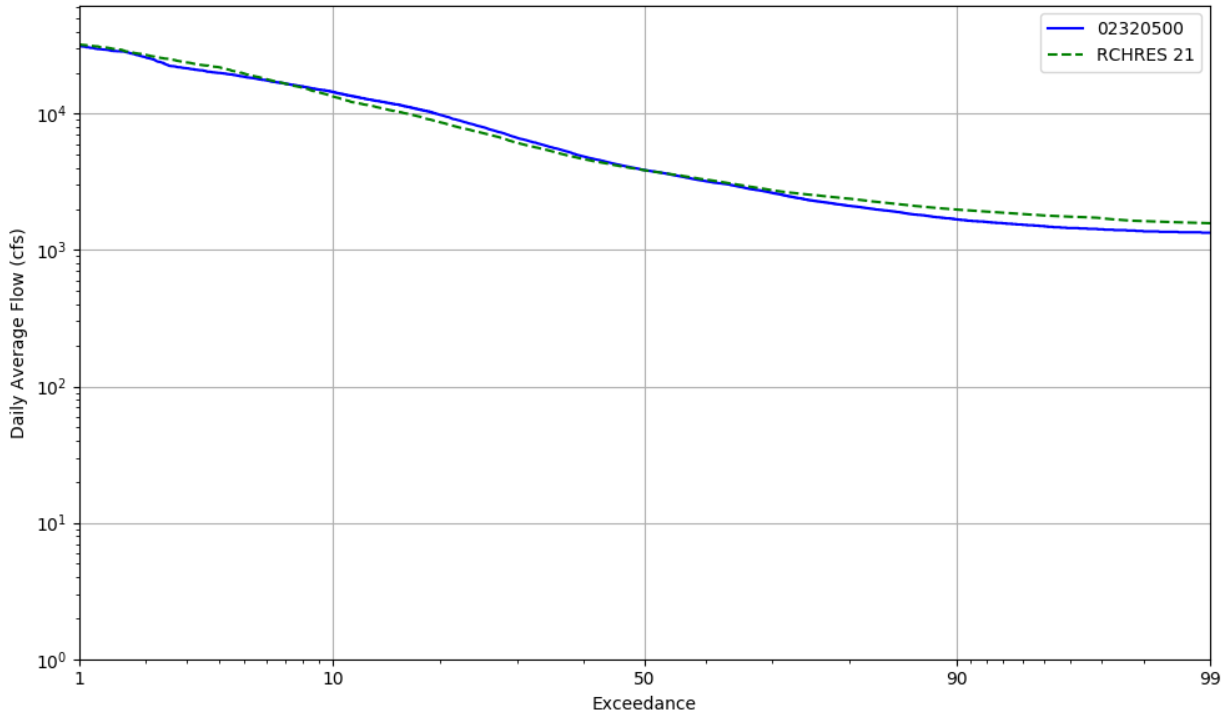


Figure T-03110205-11: Daily exceedance for HSFP reach 21 and USGS station 02320500.

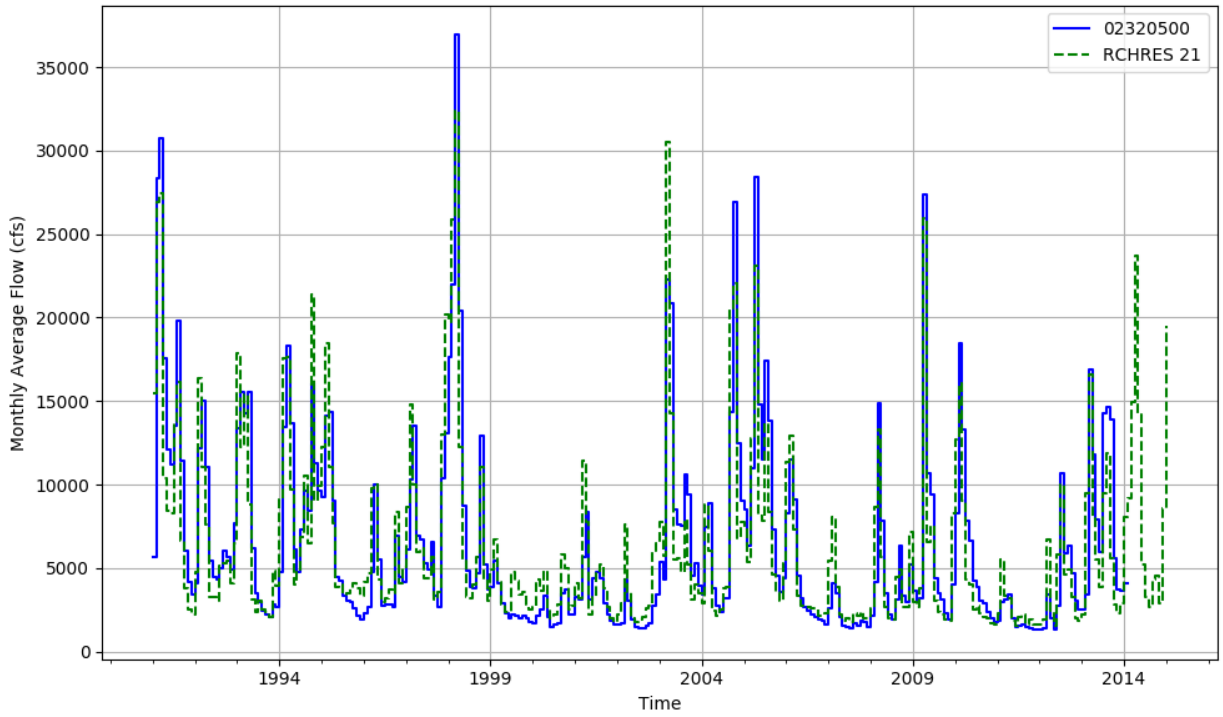


Figure T-03110205-12: Monthly flow for HSFP reach 21 and USGS station 02320500.

HSPF REACH 22, USGS GAUGE 02323000

Water-Data Report 2009
02323000 SUWANNEE RIVER NEAR BELL, FL
Suwannee Basin Lower Suwannee Subbasin

LOCATION.--Lat 294728, long 825528 referenced to North American Datum of 1927, Gilchrist County, FL, Hydrologic Unit 03110205, on downstream side of bridge on State Road 340, 4.5 mi northwest of Bell, 10.4 mi downstream from Santa Fe River, and 55 mi upstream from mouth.

DRAINAGE AREA.--9390.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1932 to November 1956, November 1975 to October 1977 (annual maximum elevation), November 1996 to January 1999 (gageheights only), October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Suwannee River Water Management District). June 1, 1932 to Nov. 16, 1956, water-stage recorder at site .4 mi downstream at datum 3.60 ft higher, Nov. 18, 1975 to Oct. 10, 1977, nonrecording gage at present site at datum 3.60 ft higher, Nov. 1, 1996 to Jan. 31, 1999 and since Aug. 3, 2000, water-stage recorder at present site and datum.

REMARKS.--Records good. Drainage Area: Includes part of watershed in Okefenokee Swamp which is indeterminate.

Table T-03110205-7: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02323000.

Statistic	Value
Bias	-1192.69
Standard error	3651.28
Relative bias	-0.17
Relative standard error	0.69
Nash-Sutcliffe coefficient	0.53
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.39
Index of agreement	0.69

Table T-03110205-8: Hydrologic Indices Between USGS Gauge 02323000 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02323000	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	6954.04	5770.95	-17.01
MA2: Median, all daily flows	4690.00	4080.75	-12.99
MA3: CV, all daily flows	48.93	109.01	122.79
MA4: CV, log of all daily flows	70.73	67.96	-3.92

MA5: Mean daily flow / median daily flow	1.48	1.41	-4.62
MA9: (Q10 - Q90) / median daily flow	2.60	2.16	-17.16
MA10: (Q20 - Q80) / median daily flow	1.63	1.39	-14.63
MA11: (Q25 - Q75) / median daily flow	1.24	1.12	-9.88
MA12: Mean monthly flow, January	4394.70	4231.44	-3.71
MA13: Mean monthly flow, February	5422.39	6069.73	11.94
MA14: Mean monthly flow, March	8682.21	9283.64	6.93
MA15: Mean monthly flow, April	9788.41	7518.35	-23.19
MA16: Mean monthly flow, May	5932.07	3476.66	-41.39
MA17: Mean monthly flow, June	5175.31	4198.62	-18.87
MA18: Mean monthly flow, July	6526.31	4559.85	-30.13
MA19: Mean monthly flow, August	6272.55	5350.81	-14.69
MA20: Mean monthly flow, September	6917.12	6391.20	-7.60
MA21: Mean monthly flow, October	5366.75	3292.84	-38.64
MA22: Mean monthly flow, November	4057.33	2595.42	-36.03
MA23: Mean monthly flow, December	3968.36	3313.50	-16.50
ML1: Mean minimum monthly flow, January	4299.17	3289.26	-23.49
ML2: Mean minimum monthly flow, February	5173.33	4053.65	-21.64
ML3: Mean minimum monthly flow, March	6747.50	5800.04	-14.04
ML4: Mean minimum monthly flow, April	7421.67	4986.89	-32.81
ML5: Mean minimum monthly flow, May	5233.33	2905.62	-44.48
ML6: Mean minimum monthly flow, June	4772.50	2768.88	-41.98
ML7: Mean minimum monthly flow, July	5877.50	3756.31	-36.09
ML8: Mean minimum monthly flow, August	5643.08	3805.86	-32.56
ML9: Mean minimum monthly flow, September	5129.23	3514.11	-31.49
ML10: Mean minimum monthly flow, October	5199.17	2807.19	-46.01
ML11: Mean minimum monthly flow, November	3961.67	2442.19	-38.35
ML12: Mean minimum monthly flow, December	3840.00	2765.92	-27.97
ML13: CV of minimum monthly flows	71.24	66.06	-7.27
ML14: Mean minimum daily flow / mean median annual flow	0.59	0.40	-32.32
ML15: Mean minimum annual flow / mean annual flow	0.46	0.28	-39.79
ML16: Median minimum annual flow / median annual flow	0.67	0.39	-41.97
ML20: Ratio of baseflow volume to total flow volume	0.90	0.77	-14.66
ML22: Mean annual minimum flow divided by catchment area	7171.89	7158.86	-0.18
RA1: Mean of positive changes from one day to next (rise rate)	222.88	1509.01	
RA2: CV, mean of positive changes from one day to next (rise rate)	157.84	597.22	
RA3: Mean of negative changes from one day to next (fall rate)	151.82	622.84	
RA4: CV, mean of negative changes from one day to next (fall rate)	125.40	712.05	
RA5: Ratio of days that are higher than previous day	0.39	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.02	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.02	
RA8: Number of flow reversals from one day to the next	69.36	48.64	
RA9: CV, number of flow reversals from one day to the next	55.74	43.81	

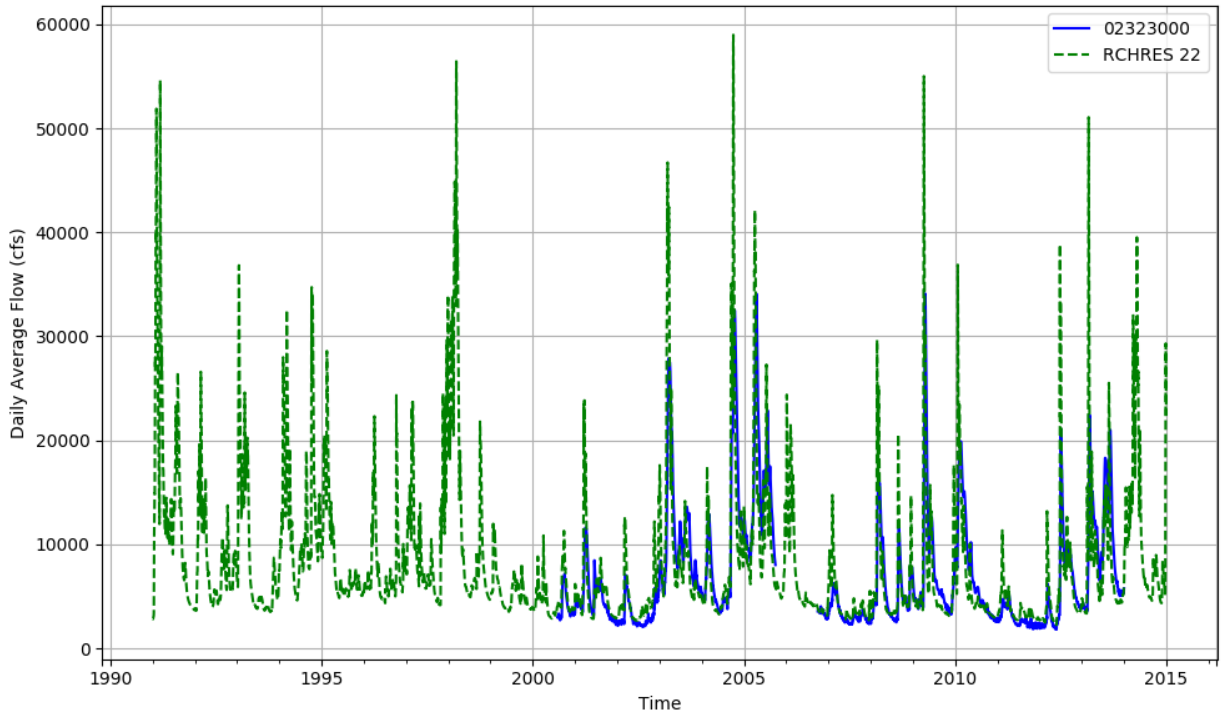


Figure T-03110205-13: Daily flow for HSFP reach 22 and USGS station 02323000.

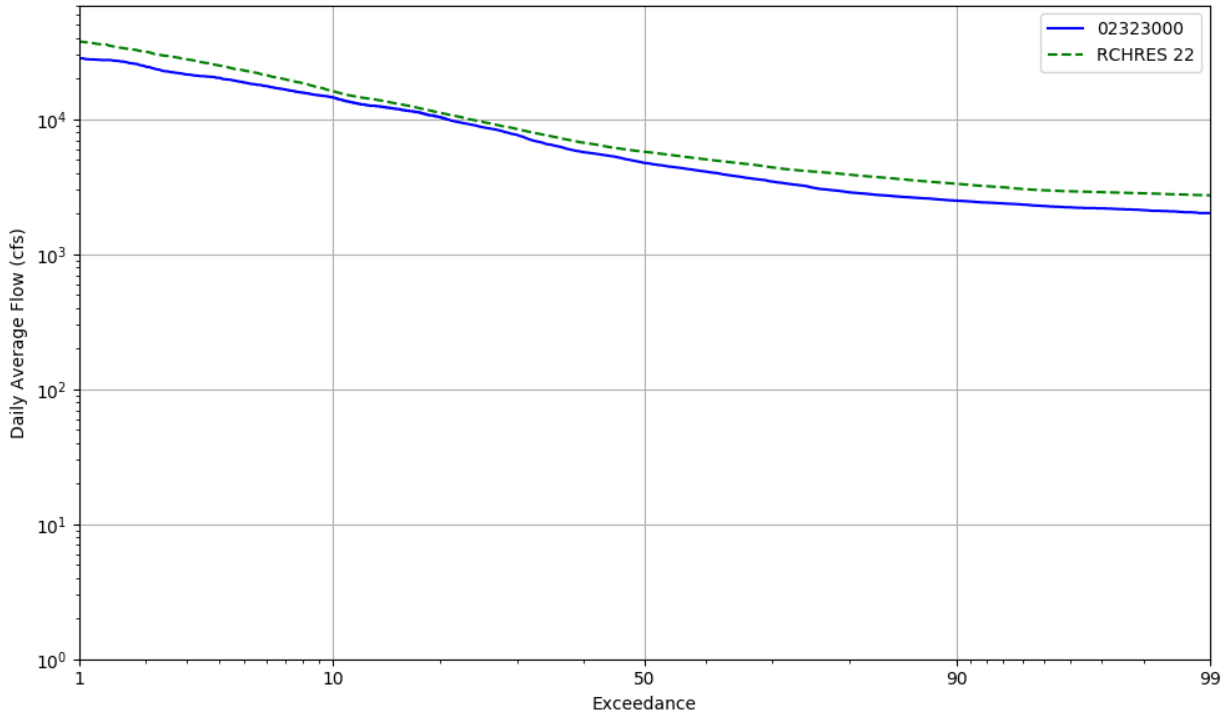


Figure T-03110205-14: Daily exceedance for HSFP reach 22 and USGS station 02323000.

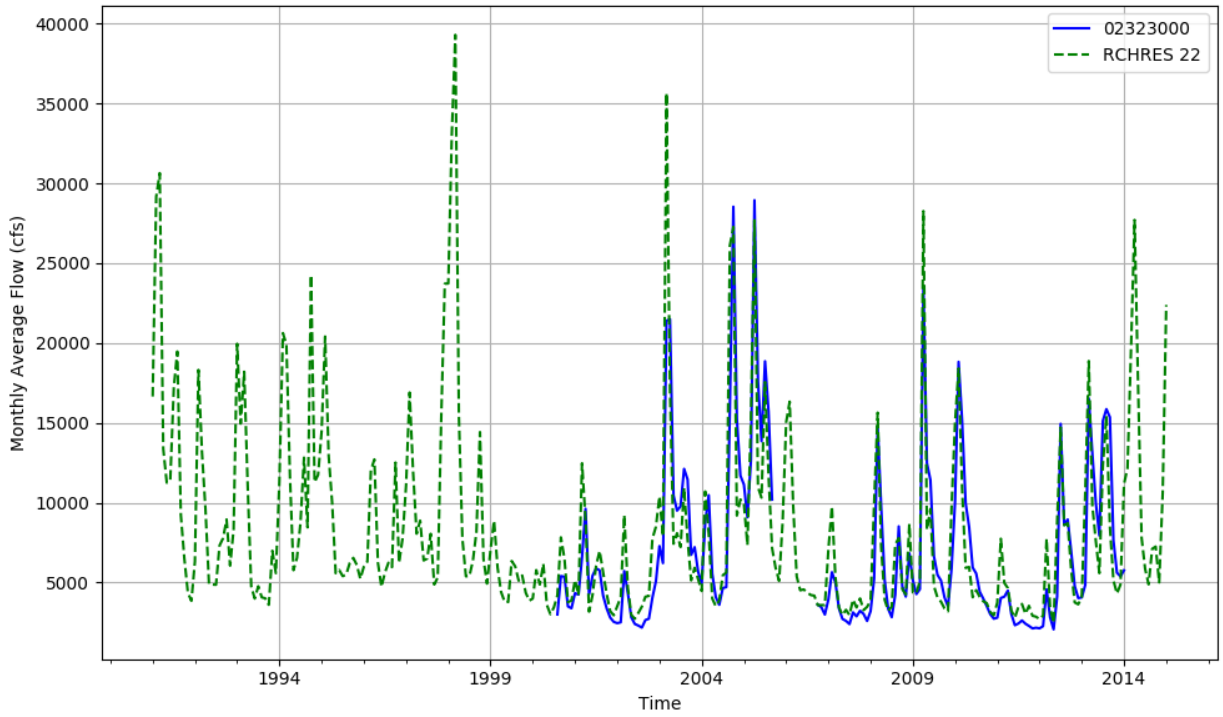


Figure T-03110205-15: Monthly flow for HSFP reach 22 and USGS station 02323000.

HSPF REACH 26, USGS GAUGE 02323500

Water-Data Report 2009
02323500 SUWANNEE RIVER NEAR WILCOX, FL
Suwannee Basin Lower Suwannee Subbasin

LOCATION.--Lat 293522, long 825612 referenced to North American Datum of 1927, Levy County, FL, Hydrologic Unit 03110205, on left bank about 400 ft downstream from Fort Fannin Bridge on U.S. Highway 19, 2.0 mi southwest of Wilcox, and 33 mi upstream from mouth.

DRAINAGE AREA.--9640.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1930 to September 1931, October 1941 to current year. Monthly discharge only for some periods, published in WSP 1304.

REVISED RECORDS.--WSP 1905: WDR FL-75-1: Drainage area. WDR FL-97-4: 1996.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is 0.53 ft below National Geodetic Vertical Datum of 1929. Prior to July 4, 1931, nonrecording gage at site 400 ft upstream at present datum. July 4 to Sept. 30, 1931, and Mar. 26 to May 14, 1942, water-stage recorder, and May 15, 1942 to Jan. 24, 1951, nonrecording gage at present site and datum. Feb. 1, 1951 to Dec. 9, 1999, auxiliary water-stage recorder about 9.0 mi downstream from base gage. Datum of auxiliary gage is 2.99 ft below National Geodetic Vertical Datum of 1929. Water-current meter since Dec. 9, 1999.

REMARKS.--Records fair, except estimated discharges which are poor. Flow generally affected by tide when discharge is less than 17,500 ft/s. Discharge computed from continuous velocity record obtained from water-current meter. Drainage Area: Includes part of watershed in Okefenokee Swamp which is indeterminate.

Table T-03110205-9: Comparison Statistics Between HSPF Reach 26 and USGS Gauge 02323500.

Statistic	Value
Bias	-1163.80
Standard error	3787.07
Relative bias	-0.14
Relative standard error	0.64
Nash-Sutcliffe coefficient	0.60
Kling-Gupta coefficient	0.77
Coefficient of efficiency	0.45
Index of agreement	0.72

Table T-03110205-10: Hydrologic Indices Between USGS Gauge 02323500 and HSPF Reach 26.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02323500	Simulated Reach 26	Percent Difference
MA1: Mean, all daily flows	8145.96	6972.62	-14.40
MA2: Median, all daily flows	5810.00	4775.06	-17.81
MA3: CV, all daily flows	50.33	99.17	97.03
MA4: CV, log of all daily flows	65.30	67.91	4.01
MA5: Mean daily flow / median daily flow	1.40	1.46	4.15
MA9: (Q10 - Q90) / median daily flow	2.38	2.21	-7.39
MA10: (Q20 - Q80) / median daily flow	1.45	1.33	-8.11
MA11: (Q25 - Q75) / median daily flow	1.11	1.05	-6.04
MA12: Mean monthly flow, January	7223.93	7992.84	10.64
MA13: Mean monthly flow, February	9999.57	10778.97	7.79
MA14: Mean monthly flow, March	12541.36	12180.86	-2.87
MA15: Mean monthly flow, April	11634.18	8293.45	-28.71
MA16: Mean monthly flow, May	7382.76	4505.13	-38.98
MA17: Mean monthly flow, June	5901.75	4580.52	-22.39
MA18: Mean monthly flow, July	6766.32	5345.18	-21.00
MA19: Mean monthly flow, August	6882.50	6150.47	-10.64
MA20: Mean monthly flow, September	6838.36	6066.78	-11.28
MA21: Mean monthly flow, October	7236.72	5628.24	-22.23
MA22: Mean monthly flow, November	5897.01	4104.82	-30.39
MA23: Mean monthly flow, December	5836.51	5081.58	-12.93
ML1: Mean minimum monthly flow, January	5593.33	4544.45	-18.75
ML2: Mean minimum monthly flow, February	8190.44	6345.41	-22.53
ML3: Mean minimum monthly flow, March	9743.91	6974.16	-28.43
ML4: Mean minimum monthly flow, April	8495.65	5536.17	-34.84
ML5: Mean minimum monthly flow, May	5796.96	3561.77	-38.56
ML6: Mean minimum monthly flow, June	5001.30	3226.23	-35.49
ML7: Mean minimum monthly flow, July	5725.22	4159.40	-27.35
ML8: Mean minimum monthly flow, August	5979.56	4390.84	-26.57
ML9: Mean minimum monthly flow, September	5250.00	3897.48	-25.76
ML10: Mean minimum monthly flow, October	5460.00	3629.26	-33.53
ML11: Mean minimum monthly flow, November	4780.44	3431.70	-28.21
ML12: Mean minimum monthly flow, December	4911.74	3774.01	-23.16
ML13: CV of minimum monthly flows	72.98	59.85	-18.00
ML14: Mean minimum daily flow / mean median annual flow	0.49	0.45	-8.51
ML15: Mean minimum annual flow / mean annual flow	0.42	0.34	-19.72
ML16: Median minimum annual flow / median annual flow	0.47	0.44	-8.09
ML20: Ratio of baseflow volume to total flow volume	0.89	0.76	-14.14
ML22: Mean annual minimum flow divided by catchment area	32.74	21.90	-33.12
RA1: Mean of positive changes from one day to next (rise rate)	339.84	1616.62	
RA2: CV, mean of positive changes from one day to next (rise rate)	118.79	491.15	
RA3: Mean of negative changes from one day to next (fall rate)	288.63	670.73	
RA4: CV, mean of negative changes from one day to next (fall rate)	101.83	630.86	
RA5: Ratio of days that are higher than previous day	0.44	0.29	

RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.02	
RA8: Number of flow reversals from one day to the next	134.42	55.21	
RA9: CV, number of flow reversals from one day to the next	34.56	23.95	

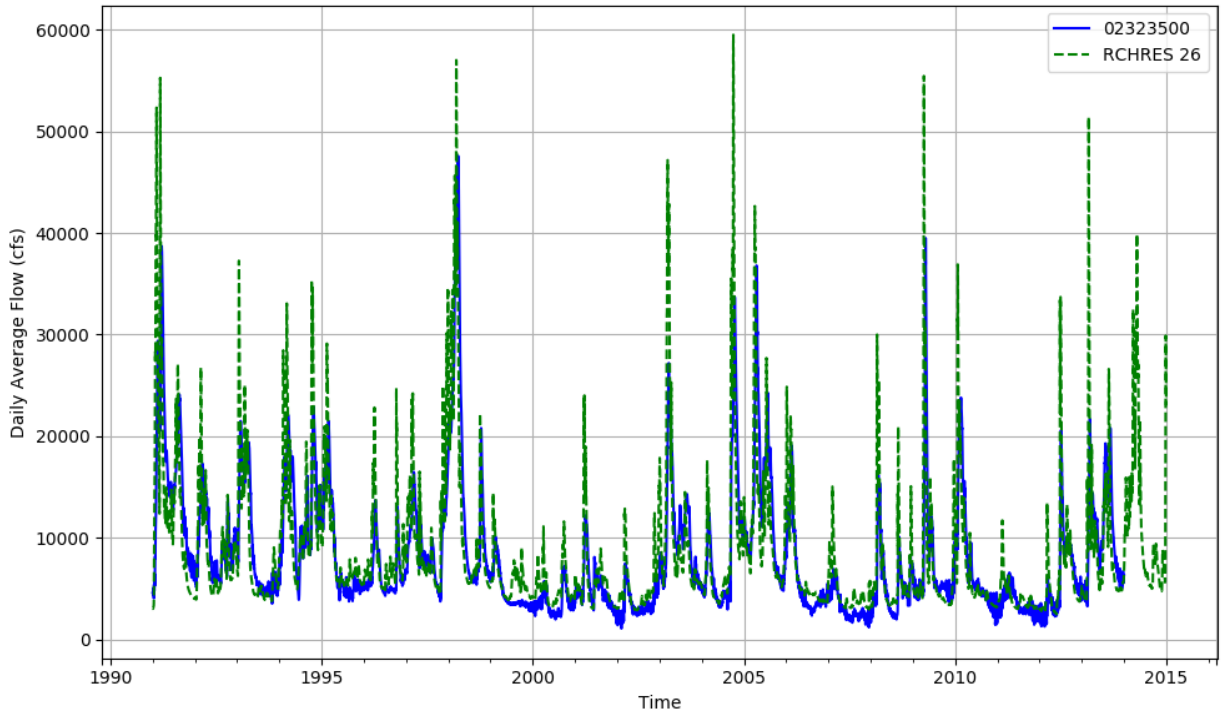


Figure T-03110205-16: Daily flow for HSFP reach 26 and USGS station 02323500.

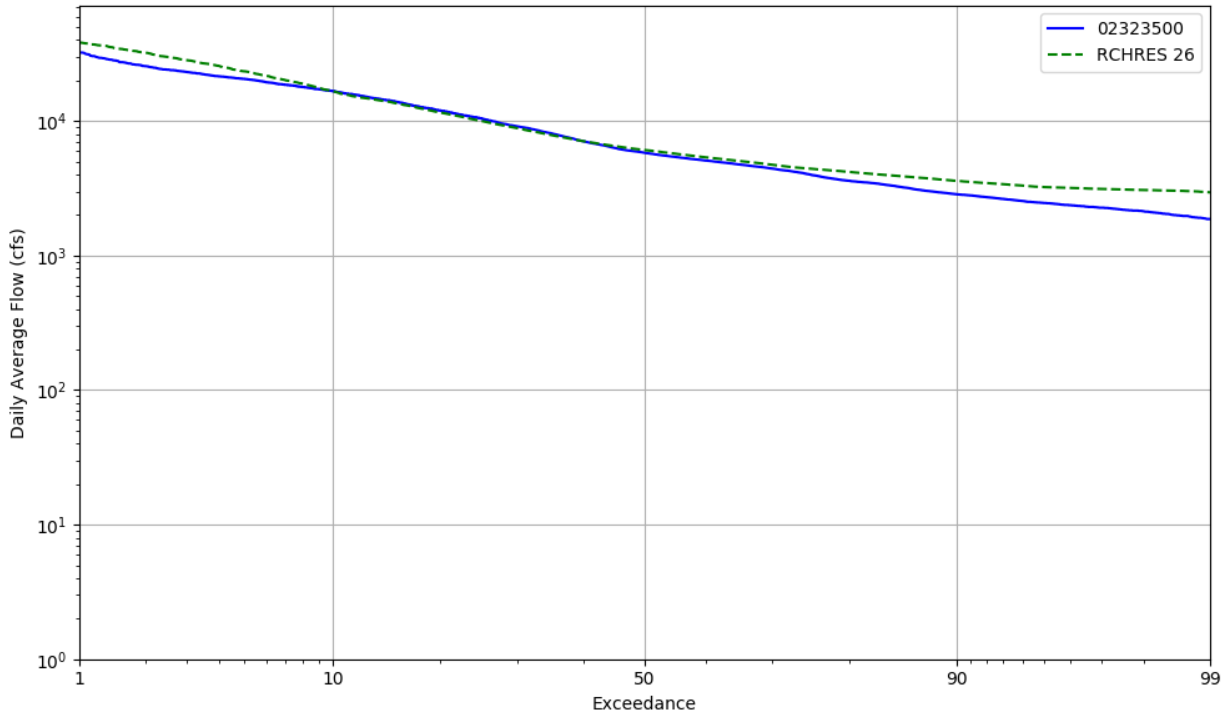


Figure T-03110205-17: Daily exceedance for HSFP reach 26 and USGS station 02323500.

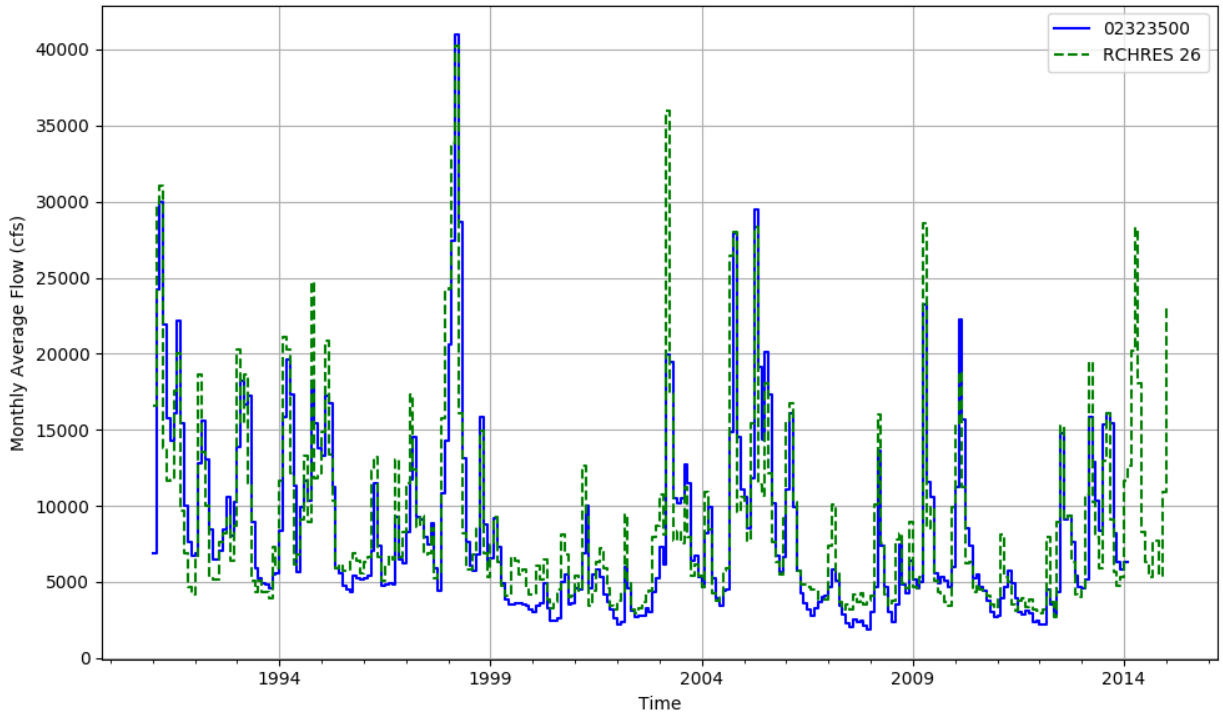


Figure T-03110205-18: Monthly flow for HSFP reach 26 and USGS station 02323500.

HSPF REACH 29, USGS GAUGE 02323592

Water-Data Report 2009
02323592 SUWANNEE RIVER ABOVE GOPHER RIVER NEAR SUWANNEE, FL
Suwannee Basin Lower Suwannee Subbasin

LOCATION.--Lat 292021, long 830512 referenced to North American Datum of 1927, in sec.22, T.13 S., R.12 E., Dixie County, FL, Hydrologic Unit 03110205, on right bank, 0.6 mi downstream of Flag Creek, 1.9 mi upstream of Gopher River, 4.8 mi upstream of the town of Suwannee, and 7.6 mi above the mouth.

DRAINAGE AREA.--9,973 mi, 9,973 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1999 to current year.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is National Geodetic Vertical Datum of 1929 (corrected).

REMARKS.--Records fair, estimated discharges poor. Flow affected by tide.
CORRECTIONS.--Water years prior to 2009 showed the datum of the gage was 2.10 ft below National Geodetic Vertical Datum of 1929; however, the published data are elevation and already have the datum incorporated. Effective for water year 2009, the datum paragraph is corrected to show the datum of the gage is NGVD 1929.

Table T-03110205-11: Comparison Statistics Between HSPF Reach 29 and USGS Gauge 02323592.

Statistic	Value
Bias	-1246.04
Standard error	3584.31
Relative bias	-0.17
Relative standard error	0.70
Nash-Sutcliffe coefficient	0.51
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.36
Index of agreement	0.68

Table T-03110205-12: Hydrologic Indices Between USGS Gauge 02323592 and HSPF Reach 29.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02323592	Simulated Reach 29	Percent Difference
MA1: Mean, all daily flows	7405.60	6124.95	-17.29
MA2: Median, all daily flows	5610.00	4478.59	-20.17
MA3: CV, all daily flows	45.84	96.18	109.85
MA4: CV, log of all daily flows	60.08	60.02	-0.10

MA5: Mean daily flow / median daily flow	1.32	1.37	3.60
MA9: (Q10 - Q90) / median daily flow	1.99	1.89	-4.94
MA10: (Q20 - Q80) / median daily flow	1.16	1.19	2.56
MA11: (Q25 - Q75) / median daily flow	0.87	0.93	6.60
MA12: Mean monthly flow, January	5756.67	5411.31	-6.00
MA13: Mean monthly flow, February	6399.46	7019.44	9.69
MA14: Mean monthly flow, March	9111.52	9382.10	2.97
MA15: Mean monthly flow, April	10030.02	7693.68	-23.29
MA16: Mean monthly flow, May	6427.57	3891.26	-39.46
MA17: Mean monthly flow, June	5691.97	4539.86	-20.24
MA18: Mean monthly flow, July	7037.10	5122.10	-27.21
MA19: Mean monthly flow, August	6880.81	6050.73	-12.06
MA20: Mean monthly flow, September	7283.16	6689.11	-8.16
MA21: Mean monthly flow, October	6513.14	4299.84	-33.98
MA22: Mean monthly flow, November	5255.63	3418.00	-34.97
MA23: Mean monthly flow, December	5141.68	4251.68	-17.31
ML1: Mean minimum monthly flow, January	4194.00	4191.77	-0.05
ML2: Mean minimum monthly flow, February	4512.14	4809.07	6.58
ML3: Mean minimum monthly flow, March	6253.93	6176.65	-1.24
ML4: Mean minimum monthly flow, April	6736.43	5360.23	-20.43
ML5: Mean minimum monthly flow, May	4977.14	3328.84	-33.12
ML6: Mean minimum monthly flow, June	3827.20	3063.04	-19.97
ML7: Mean minimum monthly flow, July	4854.00	4019.21	-17.20
ML8: Mean minimum monthly flow, August	5469.13	4673.98	-14.54
ML9: Mean minimum monthly flow, September	5008.67	4062.97	-18.88
ML10: Mean minimum monthly flow, October	4830.00	3551.99	-26.46
ML11: Mean minimum monthly flow, November	3465.33	3085.22	-10.97
ML12: Mean minimum monthly flow, December	3355.33	3394.95	1.18
ML13: CV of minimum monthly flows	76.32	57.82	-24.25
ML14: Mean minimum daily flow / mean median annual flow	0.28	0.50	78.81
ML15: Mean minimum annual flow / mean annual flow	0.25	0.39	55.63
ML16: Median minimum annual flow / median annual flow	0.27	0.47	76.31
ML20: Ratio of baseflow volume to total flow volume	0.79	0.80	2.05
ML22: Mean annual minimum flow divided by catchment area	18.68	22.77	21.87
RA1: Mean of positive changes from one day to next (rise rate)	791.41	1326.57	
RA2: CV, mean of positive changes from one day to next (rise rate)	137.93	501.71	
RA3: Mean of negative changes from one day to next (fall rate)	681.14	556.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	104.94	795.57	
RA5: Ratio of days that are higher than previous day	0.46	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.02	
RA8: Number of flow reversals from one day to the next	176.00	51.88	
RA9: CV, number of flow reversals from one day to the next	28.00	33.61	

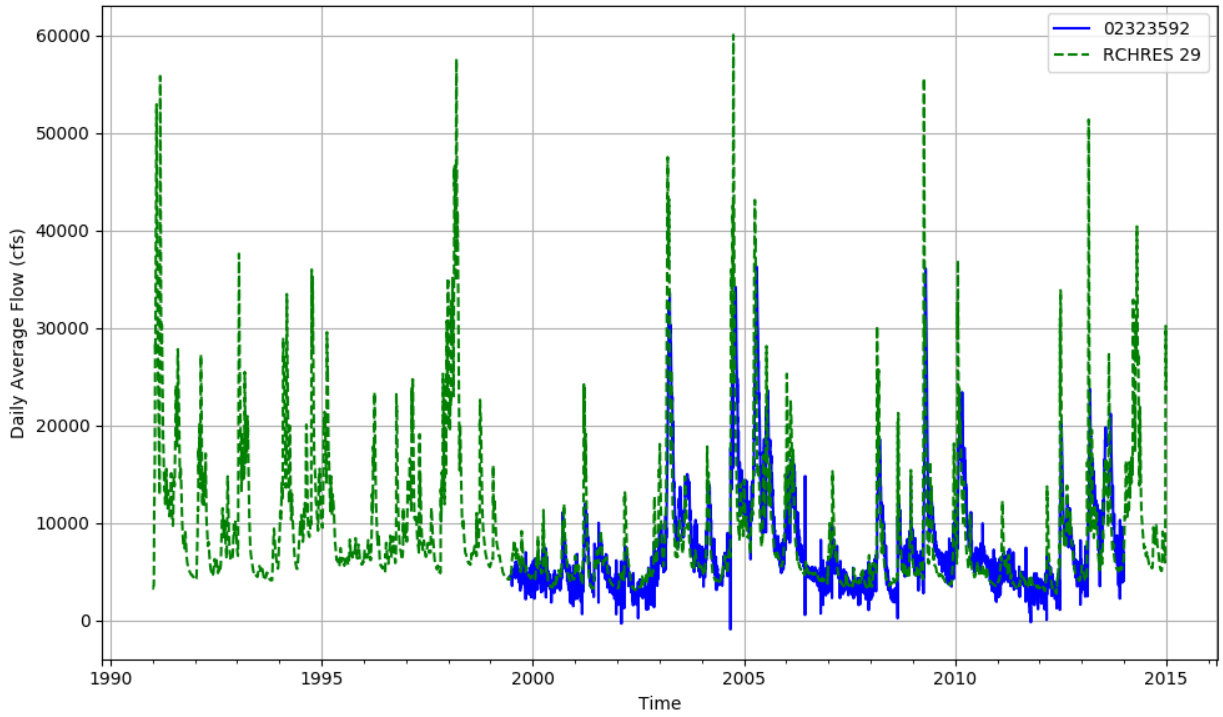


Figure T-03110205-19: Daily flow for HSFP reach 29 and USGS station 02323592.

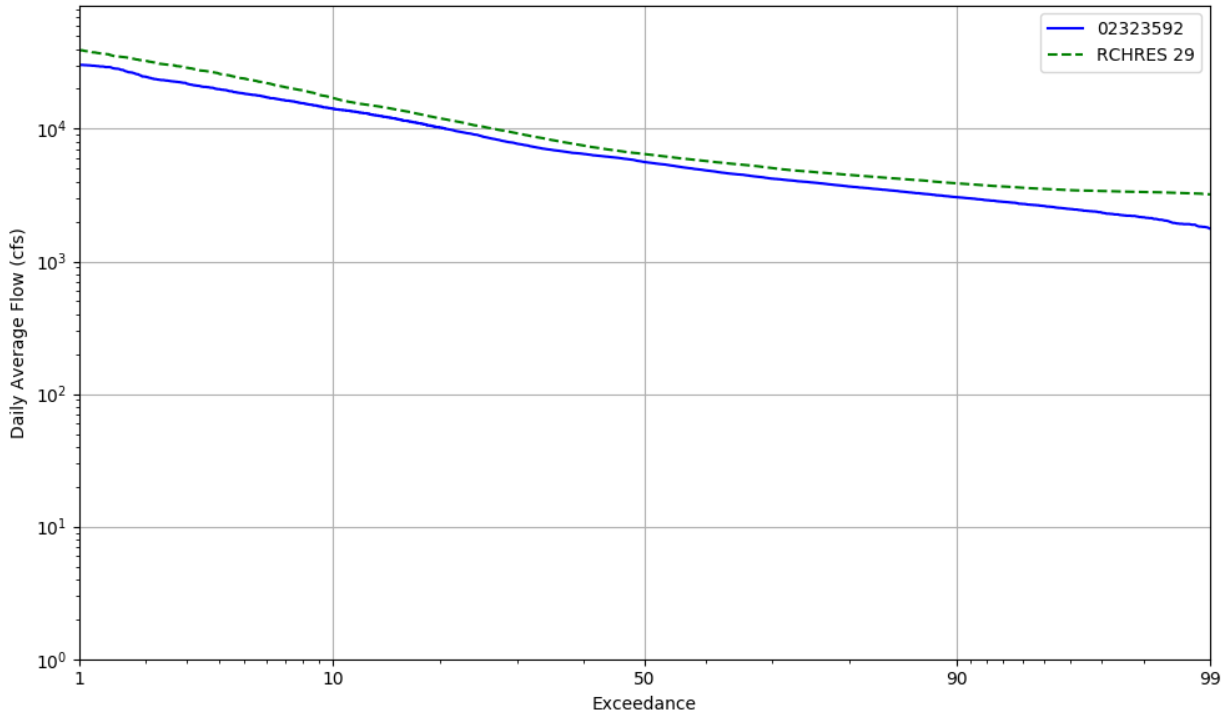


Figure T-03110205-20: Daily exceedance for HSFP reach 29 and USGS station 02323592.

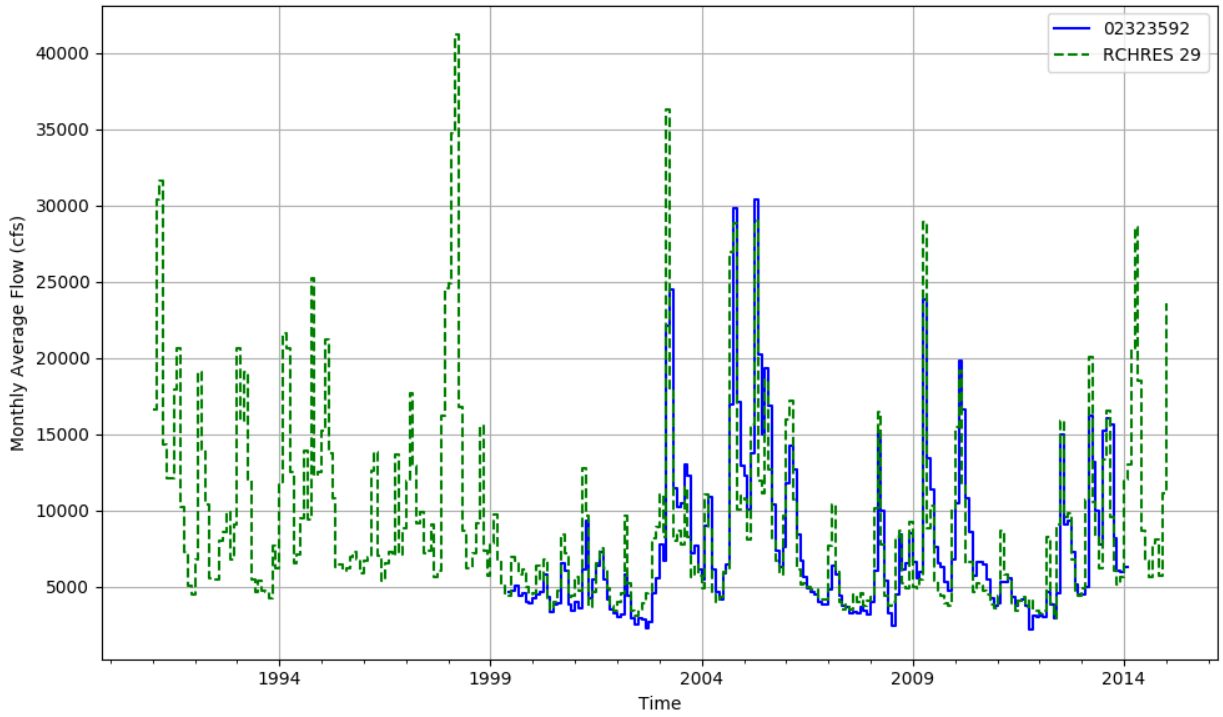


Figure T-03110205-21: Monthly flow for HSFP reach 29 and USGS station 02323592.

Table T-03110205-13: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7224	51708	9749	878	102	1570	281691	169419	53278	137109	69475	173757	222	30027	20909	1007118
AREA(%)	0.7	5.1	1.0	0.1	0.0	0.2	27.9	16.8	5.3	13.6	6.9	17.2	0.0	3.0	2.1	99.6
IMPERVIOUS																
AREA(ACRES)		2789	1108	228	112											4237
AREA(%)		0.3	0.1	0.0	0.0											0.4
SUPY	40.2	40.7	41.2	42.0	42.1	40.0	40.6	40.6	40.7	41.1	41.0	39.8	62.4	57.7	49.2	41.1
SURLI			4.7	4.8	4.0										7.1	0.2
UZLI																0.0
LZLI			3.7	3.7	3.1											0.0
SURO: PERVIOUS		0.3	0.7	0.5	0.4	0.1	0.0	0.1	0.1	0.1	0.0		1.7	0.2	0.0	0.1
SURO: IMPERVIOUS		32.1	32.5	33.4	33.2											0.1
SURO: COMBINED		2.0	4.0	7.3	17.6	0.1	0.0	0.1	0.1	0.1	0.0		1.7	0.2	0.0	0.2
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.5	1.3	2.5	2.4	1.8	3.7	0.5	1.7	1.4	1.1	1.1	0.5	2.1	3.1	2.7	1.1
AGWI	2.9	1.9	2.9	2.7	2.1	5.0	1.0	2.3	2.0	1.5	1.6	1.3	2.3	3.6	3.2	1.6
IGWI	6.9	10.0	17.0	18.3	16.3	12.6	2.7	14.0	10.2	11.4	10.0	1.6	20.4	20.8	19.8	8.0
CEPE		11.1	9.3	9.2	12.8	6.8	16.5	11.2	11.8	10.5	7.5	19.7	26.3	13.8	9.7	13.7
UZET	3.7	2.0	2.6	2.7	2.1	2.3	1.2	2.2	1.7	1.8	1.7	9.9	2.3	2.9	2.4	3.2
LZET	2.1	16.0	17.5	17.7	16.0	13.7	20.1	11.3	15.6	16.5	21.1	0.9	9.7	16.4	21.8	14.1
AGWET	3.0	0.5	0.4	0.3	0.3	1.2	0.4	0.5	0.5	0.4	0.5	0.8	0.2	0.4	0.5	0.5
BASET	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
SURET	24.7											7.9				1.5
PERO	0.5	1.6	3.2	2.9	2.2	3.8	0.5	1.8	1.5	1.2	1.2	0.5	3.9	3.2	2.7	1.1
IGWI	6.9	10.0	17.0	18.3	16.3	12.6	2.7	14.0	10.2	11.4	10.0	1.6	20.4	20.8	19.8	8.0
TAET: PERVIOUS	33.5	29.8	30.0	30.0	31.3	24.1	38.4	25.3	29.7	29.2	30.8	39.3	38.5	33.7	34.5	33.2
IMPEV: IMPERVIOUS		8.6	8.7	8.6	8.6											0.0
ET: COMBINED	33.5	28.7	27.8	25.6	19.4	24.1	38.4	25.3	29.7	29.2	30.8	39.3	38.5	33.7	34.5	33.2
PET	45.7	46.4	46.4	46.4	46.3	46.3	46.3	46.4	46.4	46.4	46.4	46.1	46.6	46.3	46.3	46.1

Table T-03110205-14: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7224	51708	9749	878	102	1570	281691	169419	53278	137109	69475	173757	222	30027	20909	1007118
AREA(%)	0.7	5.1	1.0	0.1	0.0	0.2	27.9	16.8	5.3	13.6	6.9	17.2	0.0	3.0	2.1	99.6
IMPERVIOUS																
AREA(ACRES)		2789	1108	228	112											4237
AREA(%)		0.3	0.1	0.0	0.0											0.4
SUPY	52.1	52.0	51.6	51.5	51.0	51.8	52.0	51.9	51.9	51.8	52.0	52.1	66.9	64.5	61.5	52.3
SURLI			4.6	4.4	3.8										6.8	0.2
UZLI																0.0
LZLI			3.8	3.5	3.0											0.0
SURO: PERVIOUS		1.0	1.6	1.3	1.3	0.3	0.0	0.5	0.3	0.3	0.1		2.3	0.4	0.2	0.2
SURO: IMPERVIOUS		40.8	40.5	40.4	40.1											0.2
SURO: COMBINED		3.0	5.6	9.3	21.7	0.3	0.0	0.5	0.3	0.3	0.1		2.3	0.4	0.2	0.4
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.9	2.1	3.1	2.8	2.1	6.1	1.3	2.7	2.4	1.7	1.8	1.2	2.0	3.5	3.7	1.8
AGWI	3.2	2.8	3.7	3.2	2.5	7.8	2.0	3.5	3.1	2.2	2.4	2.0	2.3	4.2	4.4	2.5
IGWI	9.6	13.4	20.6	20.8	18.7	17.0	4.9	18.9	14.2	15.5	13.8	2.0	21.1	23.1	25.0	10.9
CEPE		14.1	11.8	11.9	15.5	8.5	19.9	14.1	14.7	13.2	9.7	24.1	26.6	15.8	12.2	16.9
UZET	5.4	2.3	2.8	2.8	2.1	2.8	2.4	2.5	1.9	2.0	1.9	8.7	2.4	3.0	2.6	3.4
LZET	2.9	17.7	18.8	18.8	17.2	15.1	23.9	12.2	17.2	18.1	23.5	1.0	12.4	18.0	23.7	16.0
AGWET	1.3	0.6	0.5	0.4	0.4	1.4	0.6	0.6	0.6	0.5	0.6	0.7	0.2	0.5	0.5	0.6
BASET	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SURET	32.4											15.9				3.0
PERO	0.9	3.0	4.7	4.0	3.4	6.4	1.3	3.2	2.6	2.0	1.9	1.2	4.3	3.9	3.9	2.1
IGWI	9.6	13.4	20.6	20.8	18.7	17.0	4.9	18.9	14.2	15.5	13.8	2.0	21.1	23.1	25.0	10.9
TAET: PERVIOUS	42.1	34.8	34.0	33.9	35.3	27.9	47.0	29.6	34.6	33.8	35.7	50.4	41.5	37.3	39.1	40.0
IMPEV: IMPERVIOUS		11.2	11.1	11.1	11.0											0.0
ET: COMBINED	42.1	33.6	31.6	29.2	22.6	27.9	47.0	29.6	34.6	33.8	35.7	50.4	41.5	37.3	39.1	40.0
PET	52.6	53.8	53.9	53.9	53.8	53.9	53.7	53.9	53.9	53.9	53.9	53.3	54.3	53.8	53.9	53.5

Table T-03110205-15: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7224	51708	9749	878	102	1570	281691	169419	53278	137109	69475	173757	222	30027	20909	1007118
AREA(%)	0.7	5.1	1.0	0.1	0.0	0.2	27.9	16.8	5.3	13.6	6.9	17.2	0.0	3.0	2.1	99.6
IMPERVIOUS																
AREA(ACRES)		2789	1108	228	112											4237
AREA(%)		0.3	0.1	0.0	0.0											0.4
SUPY	52.7	48.7	47.8	49.3	47.1	48.3	48.6	48.4	48.9	48.4	49.0	50.5	66.0	61.7	55.9	49.3
SURLI			3.9	3.7	3.3										7.9	0.2
UZLI																0.0
LZLI			3.3	3.1	2.7											0.0
SURO: PERVIOUS	0.4	2.1	2.6	2.0	1.8	1.4	0.1	1.4	1.1	1.1	0.7	0.8	3.2	1.3	1.0	0.9
SURO: IMPERVIOUS		39.0	38.1	39.6	37.7											0.2
SURO: COMBINED	0.4	4.0	6.2	9.7	20.6	1.4	0.1	1.4	1.1	1.1	0.7	0.8	3.2	1.3	1.0	1.0
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.5	2.6	3.4	3.2	2.3	6.9	1.7	3.0	2.9	2.0	2.2	2.2	2.5	3.7	3.7	2.3
AGWI	3.2	3.0	3.7	3.4	2.5	7.7	2.1	3.5	3.4	2.3	2.6	3.0	2.6	4.2	4.2	2.8
IGWI	9.5	14.4	19.8	21.5	18.3	16.4	6.7	18.4	15.1	16.4	15.7	2.4	23.2	23.4	25.1	11.7
CEPE		12.6	10.4	10.5	14.2	7.3	18.6	12.7	13.3	11.8	8.3	22.6	24.8	14.3	10.1	15.5
UZET	3.5	2.5	3.0	3.1	2.3	3.0	3.3	2.7	2.2	2.2	2.2	5.0	2.5	3.1	2.7	3.1
LZET	1.6	16.2	17.3	17.4	15.7	14.0	19.7	11.2	15.8	16.7	21.9	0.5	10.7	16.1	21.8	14.0
AGWET	0.9	0.5	0.4	0.3	0.3	1.2	0.5	0.5	0.5	0.4	0.5	0.4	0.2	0.4	0.5	0.5
BASET	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
SURET	34.3											16.0				3.0
PERO	1.8	4.6	6.0	5.2	4.1	8.3	1.8	4.4	4.0	3.1	2.9	3.1	5.7	5.1	4.7	3.2
IGWI	9.5	14.4	19.8	21.5	18.3	16.4	6.7	18.4	15.1	16.4	15.7	2.4	23.2	23.4	25.1	11.7
TAET: PERVIOUS	40.3	32.0	31.2	31.4	32.6	25.6	42.1	27.2	31.9	31.1	33.0	44.6	38.2	34.0	35.2	36.2
IMPEV: IMPERVIOUS		9.8	9.7	9.8	9.7											0.0
ET: COMBINED	40.3	30.9	29.0	27.0	20.6	25.6	42.1	27.2	31.9	31.1	33.0	44.6	38.2	34.0	35.2	36.2
PET	45.2	46.4	46.6	46.6	47.0	46.3	46.3	46.4	46.3	46.5	46.3	45.7	46.9	46.3	46.5	46.1

Table T-03110205-16: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7224	51708	9749	878	102	1570	281691	169419	53278	137109	69475	173757	222	30027	20909	1007118
AREA(%)	0.7	5.1	1.0	0.1	0.0	0.2	27.9	16.8	5.3	13.6	6.9	17.2	0.0	3.0	2.1	99.6
IMPERVIOUS																
AREA(ACRES)		2789	1108	228	112											4237
AREA(%)		0.3	0.1	0.0	0.0											0.4
SUPY	51.9	52.3	52.4	52.6	52.4	52.2	52.2	52.3	52.4	52.4	52.4	52.0	64.8	63.4	59.3	52.5
SURLI		0.0	4.5	4.5	3.9					0.0					5.3	0.2
UZLI																0.0
LZLI			3.6	3.4	2.9											0.0
SURO: PERVIOUS	3.1	1.8	2.5	2.0	1.7	0.8	0.1	1.0	0.7	0.7	0.3	5.3	3.1	0.9	0.5	1.4
SURO: IMPERVIOUS		42.1	42.2	42.4	42.3											0.2
SURO: COMBINED	3.1	3.9	6.5	10.3	23.0	0.8	0.1	1.0	0.7	0.7	0.3	5.3	3.1	0.9	0.5	1.6
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.1	2.8	3.6	3.2	2.6	7.1	2.2	3.3	3.0	2.2	2.3	2.4	2.3	3.9	3.7	2.6
AGWI	2.5	3.4	4.0	3.6	2.9	8.4	2.7	3.9	3.6	2.6	2.9	3.0	2.5	4.4	4.3	3.1
IGWI	8.6	15.9	23.0	24.1	22.2	18.4	8.4	20.8	16.9	18.4	16.9	1.4	22.7	24.6	25.1	13.0
CEPE		12.8	10.9	10.8	14.4	7.9	18.1	12.9	13.5	12.1	8.9	21.6	22.1	14.2	10.6	15.3
UZET	2.6	2.3	2.8	2.8	2.3	2.8	3.3	2.5	2.0	2.0	2.1	5.2	2.4	2.8	2.6	3.1
LZET	1.3	16.0	17.2	17.3	15.6	13.7	19.6	11.1	15.6	16.5	21.3	0.5	12.0	16.4	21.5	13.9
AGWET	1.4	0.5	0.4	0.3	0.3	1.2	0.5	0.5	0.5	0.4	0.5	0.6	0.2	0.4	0.5	0.5
BASET	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
SURET	35.1											16.4				3.1
PERO	4.2	4.6	6.1	5.2	4.3	7.9	2.3	4.3	3.7	2.9	2.7	7.7	5.4	4.8	4.2	4.0
IGWI	8.6	15.9	23.0	24.1	22.2	18.4	8.4	20.8	16.9	18.4	16.9	1.4	22.7	24.6	25.1	13.0
TAET: PERVIOUS	40.5	31.8	31.3	31.3	32.6	25.7	41.6	27.2	31.7	31.1	32.8	44.4	36.7	33.9	35.2	35.9
IMPEV: IMPERVIOUS		10.2	10.2	10.2	10.1											0.0
ET: COMBINED	40.5	30.7	29.1	27.0	20.8	25.7	41.6	27.2	31.7	31.1	32.8	44.4	36.7	33.9	35.2	36.0
PET	46.3	47.1	47.2	47.2	47.2	47.0	47.0	47.1	47.1	47.2	47.1	46.7	47.4	47.0	47.1	46.8

Table T-03110205-17: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
2	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
3	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
4	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
5	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
6	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
7	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
8	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
9	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
10	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
11	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
12	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
13	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
14	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
15	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
16	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
17	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
18	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
19	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
20	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
21	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
22	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
23	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
24	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
25	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
26	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
27	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
28	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
29	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
30	0.999	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.999
31	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
32	0.990	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.987	0.990
33	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
34	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994
35	0.994	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.982	0.994

Table T-03110205-18: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110205-19: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
2	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
3	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
4	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
5	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
6	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
7	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
8	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
9	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
10	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
11	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
12	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
13	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
14	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
15	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
16	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
17	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
18	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
19	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
20	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
21	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
22	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
23	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
24	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
25	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
26	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
27	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
28	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
29	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
30	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
31	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
32	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
33	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
34	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300
35	0.000	0.074	0.050	0.050	0.100	0.022	0.182	0.075	0.083	0.064	0.030	0.300

Table T-03110205-20: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
4	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
7	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
8	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
11	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
12	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
13	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
16	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
17	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
18	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
21	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
22	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
23	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
24	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
25	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
26	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
27	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
28	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
29	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
34	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
35	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900

Table T-03110205-21: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
2	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
3	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
4	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
5	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
6	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
7	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
8	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
9	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
10	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
11	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
12	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
13	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
14	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
15	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
16	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
17	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
18	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
19	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
20	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
21	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
22	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
23	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
24	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
25	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
26	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
27	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
28	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
29	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
30	0.010	0.467	0.467	0.467	0.467	0.667	0.999	0.667	0.667	0.667	0.800	0.005
31	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
32	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
33	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
34	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001
35	0.010	0.467	0.467	0.467	0.467	0.667	0.450	0.667	0.667	0.667	0.800	0.001

Table T-03110205-22: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
2		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
3		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
4		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
5		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
6		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
7		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
8		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
9		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
10		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
11		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
12		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
13		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
14		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
15		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
16		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
17		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
18		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
19		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
20		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
21		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
22		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
23		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
24		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
25		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
26		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
27		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
28		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
29		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	

30		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
31		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
32		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
33		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
34		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
35		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	

Table T-03110205-23: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
2	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
3	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
4	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
5	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
6	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
7	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
8	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
9	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
10	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
11	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
12	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
13	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
14	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
15	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
16	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
17	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
18	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
19	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
20	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
21	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
22	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
23	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
24	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
25	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
26	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
27	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
28	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
29	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
30	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675	0.675
31	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
32	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678	0.678
33	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
34	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696
35	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696	0.696

Table T-03110205-24: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03110205-25: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
2	0.262	0.599	0.400	0.400	0.600	0.450	0.600	0.531	0.435	0.600	0.494	0.900
3	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
4	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
5	0.262	0.599	0.400	0.400	0.600	0.450	0.600	0.531	0.435	0.600	0.494	0.900
6	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
7	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
8	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
9	0.262	0.599	0.400	0.400	0.600	0.450	0.600	0.531	0.435	0.600	0.494	0.900
10	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
11	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
12	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
13	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
14	0.262	0.599	0.400	0.400	0.600	0.450	0.600	0.531	0.435	0.600	0.494	0.900
15	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
16	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
17	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
18	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
19	0.262	0.599	0.400	0.400	0.600	0.450	0.600	0.531	0.435	0.600	0.494	0.900
20	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
21	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
22	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
23	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
24	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
25	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
26	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
27	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
28	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
29	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
30	0.262	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.911
31	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
32	0.262	0.599	0.400	0.400	0.600	0.450	0.600	0.531	0.435	0.600	0.494	0.900
33	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
34	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900
35	0.262	0.424	0.424	0.424	0.424	0.282	0.850	0.282	0.424	0.424	0.494	0.900

Table T-03110205-26: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
3	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
4	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
6	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
7	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
8	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
10	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
11	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
12	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
13	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
14	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
15	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
16	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
17	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
18	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
19	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
20	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
21	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
22	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
23	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
24	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
25	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
26	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
27	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
28	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
29	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
30	0.064	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
31	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
32	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.200
33	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
34	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102
35	0.171	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.102

Table T-03110205-27: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
2	0.050	0.070	0.070	0.070	0.135	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
4	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
5	0.050	0.070	0.070	0.070	0.135	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
7	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
8	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
9	0.050	0.070	0.070	0.070	0.135	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
11	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
12	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
13	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
14	0.050	0.070	0.070	0.070	0.135	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
16	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
17	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
18	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
19	0.050	0.070	0.070	0.070	0.135	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
21	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
22	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
23	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
24	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
25	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
26	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
27	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
28	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
29	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
32	0.050	0.070	0.070	0.070	0.135	0.070	0.100	0.080	0.080	0.070	0.100	1.000
33	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
34	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992
35	0.050	0.070	0.070	0.070	0.070	0.070	2.000	0.080	0.080	0.070	0.100	0.992

APPENDIX T-03110206

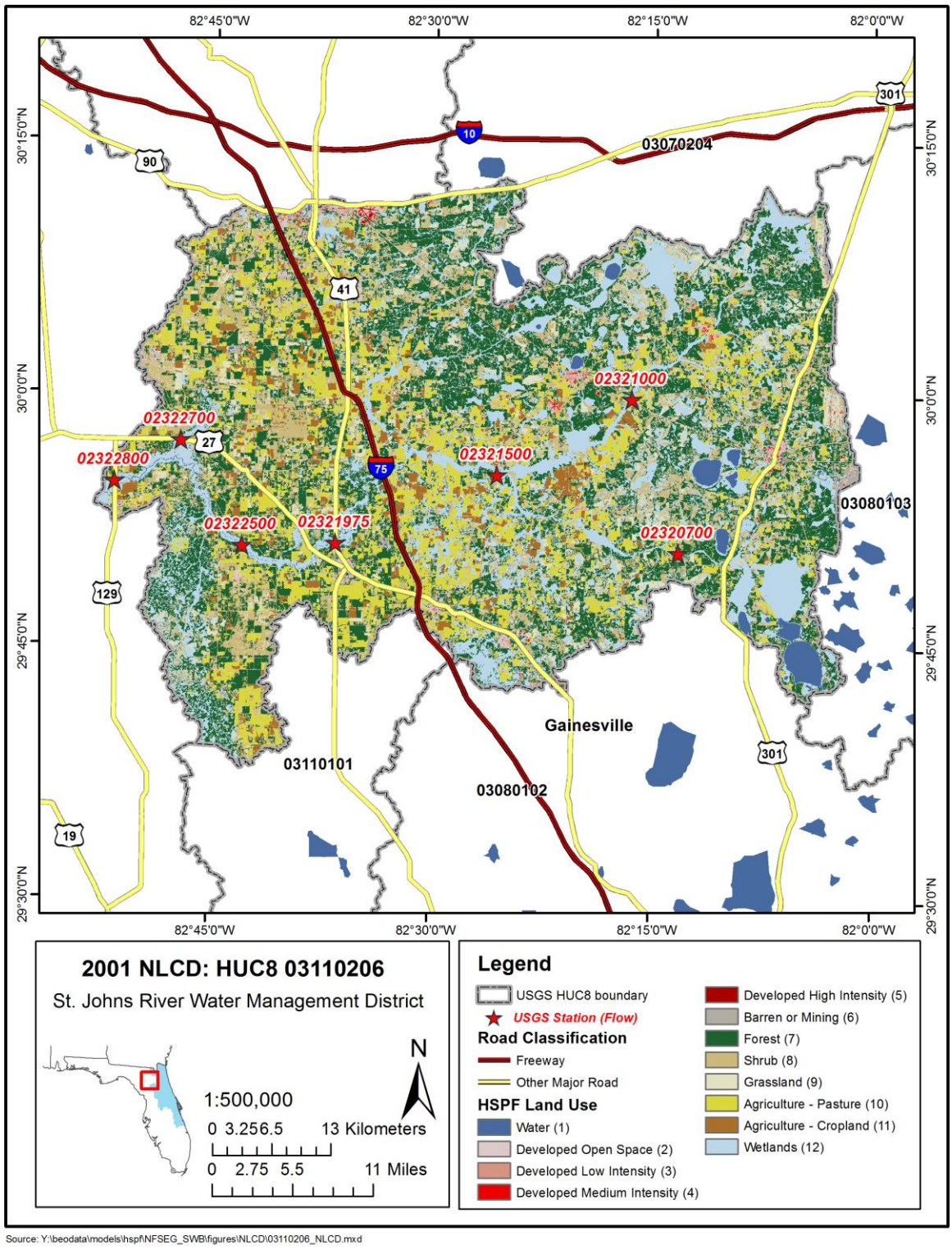


Figure T-03110206-1: Land Cover from the National Land Cover Database.

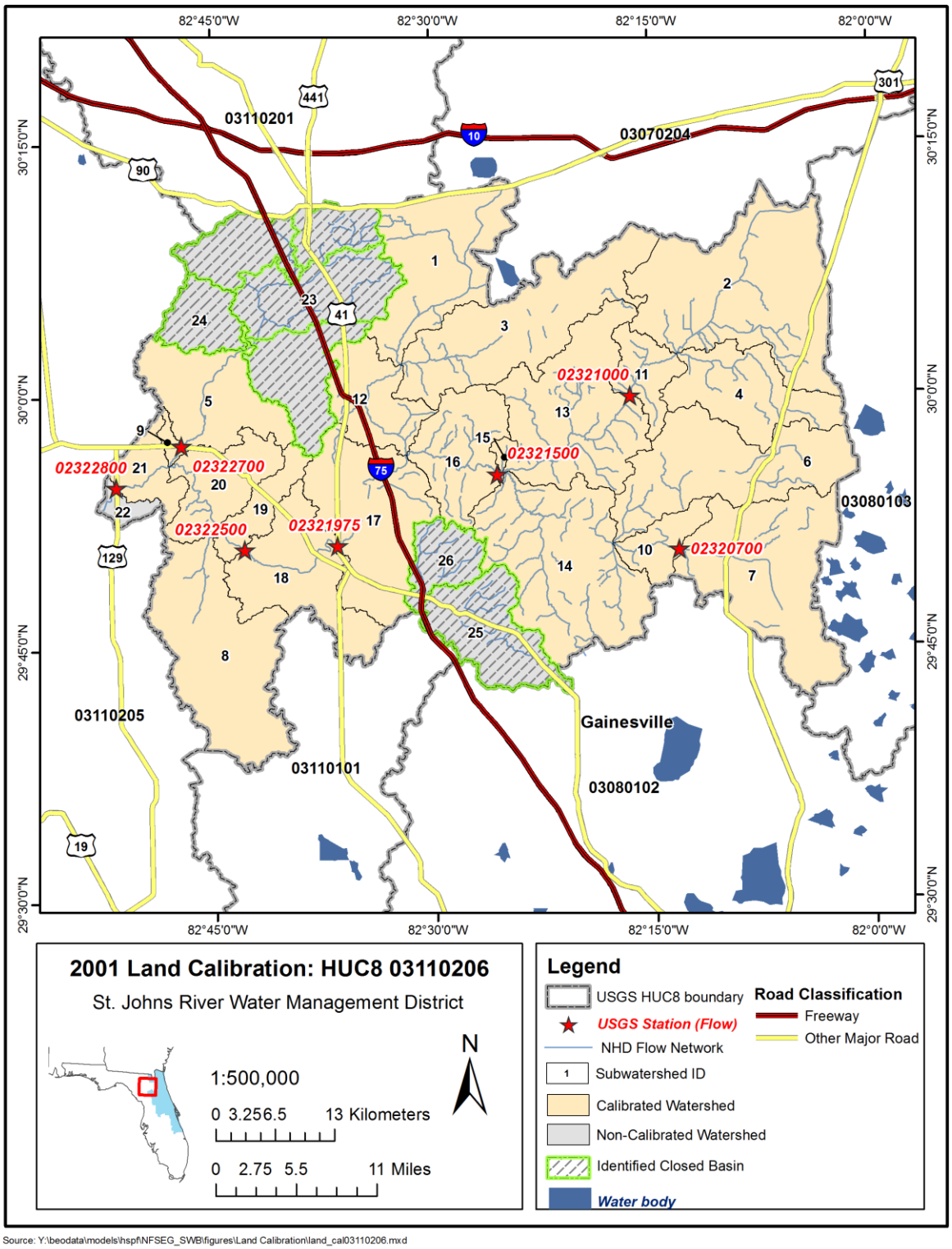


Figure T-03110206-2: Calibrated sub-watersheds.

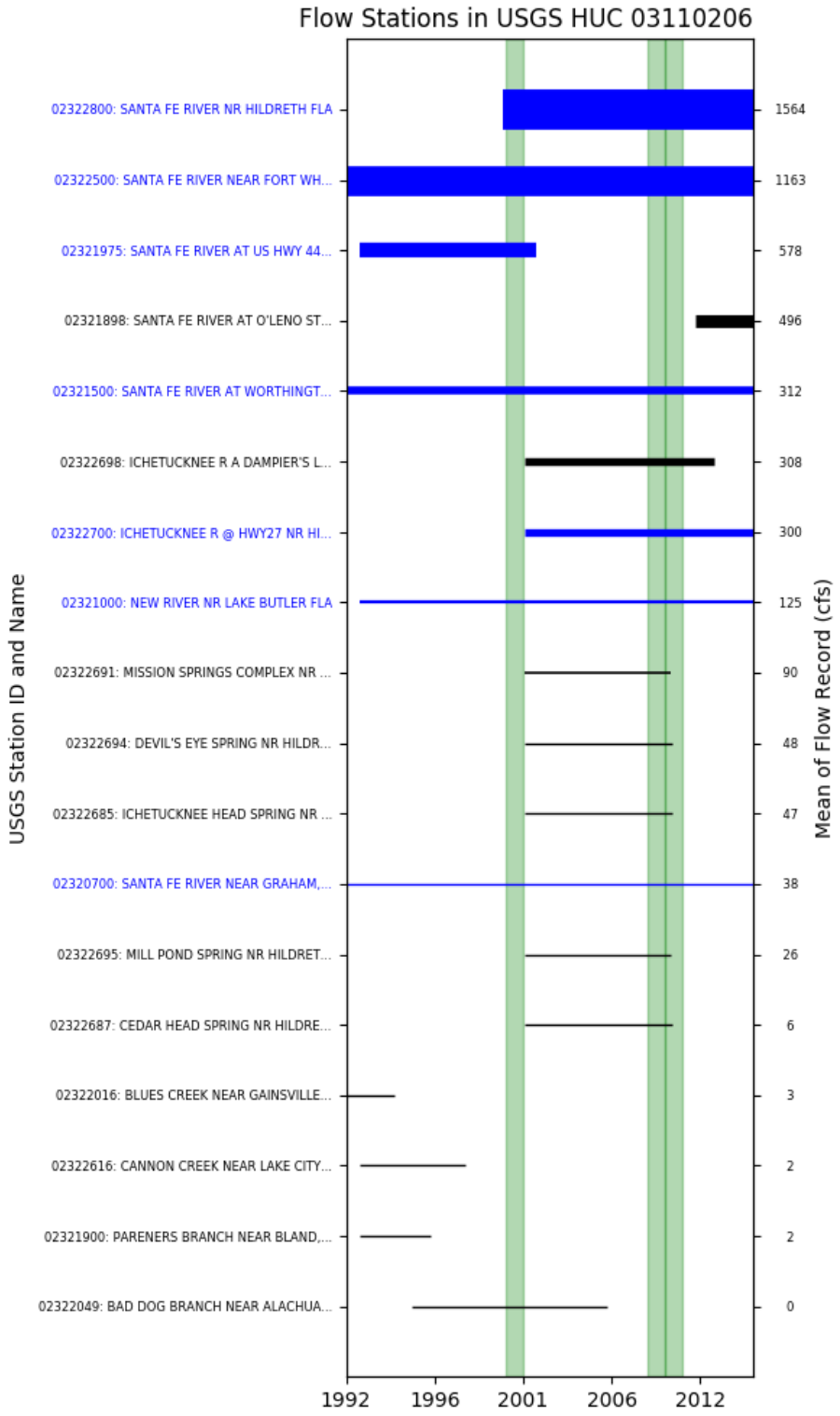


Figure T-03110206-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 05, USGS GAUGE 02322700

Water-Data Report 2009
02322700 ICHETUCKNEE RIVER AT HIGHWAY 27 NEAR HILDRETH, FL
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295709, long 824710 referenced to North American Datum of 1927, in SE 1/4 NE 1/4 NE 1/4 sec.12, T.6 5., R.1 5., Columbia County, FL, Hydrologic Unit 03110206, on the downstream side of bridge on U.S. Highway 27, 1.0 mi east of Hildreth, 1.5 mi upstream from mouth, and 3.0 mi downstream from Ichetucknee Head Spring.

DRAINAGE AREA.--213 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--1917, 1989, 1991 (miscellaneous discharge measurements), October 1929 to September 1983 and October 1995 to September 1998 (discharge measurements), February 2002 to current year. Published as Ichetucknee Springs near Hildreth, 1989, October 1995 to September 1996, 1998.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Auxiliary water-stage recorder at bridge on U.S. Highway 129, 7.0 mi below base gage, at datum 3.5 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Gage-height record is good, discharge record is poor due to presence of submerged aquatic vegetation in discharge measurement section.

Table T-03110206-1: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02322700.

Statistic	Value
Bias	-1.44
Standard error	47.42
Relative bias	-0.00
Relative standard error	0.63
Nash-Sutcliffe coefficient	0.60
Kling-Gupta coefficient	0.75
Coefficient of efficiency	0.44
Index of agreement	0.71

Table T-03110206-2: Hydrologic Indices Between USGS Gauge 02322700 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02322700	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	298.67	296.71	-0.66
MA2: Median, all daily flows	285.00	285.17	0.06
MA3: CV, all daily flows	14.28	13.15	-7.93
MA4: CV, log of all daily flows	23.78	21.71	-8.72

MA5: Mean daily flow / median daily flow	1.05	1.04	-0.72
MA9: (Q10 - Q90) / median daily flow	0.73	0.66	-9.26
MA10: (Q20 - Q80) / median daily flow	0.42	0.41	-1.99
MA11: (Q25 - Q75) / median daily flow	0.36	0.34	-4.18
MA12: Mean monthly flow, January	276.66	273.73	-1.06
MA13: Mean monthly flow, February	262.07	259.30	-1.06
MA14: Mean monthly flow, March	266.18	271.20	1.89
MA15: Mean monthly flow, April	250.52	268.07	7.01
MA16: Mean monthly flow, May	281.00	257.59	-8.33
MA17: Mean monthly flow, June	279.03	267.42	-4.16
MA18: Mean monthly flow, July	291.53	277.84	-4.70
MA19: Mean monthly flow, August	291.96	290.76	-0.41
MA20: Mean monthly flow, September	296.75	295.04	-0.58
MA21: Mean monthly flow, October	268.67	285.53	6.27
MA22: Mean monthly flow, November	268.04	272.08	1.51
MA23: Mean monthly flow, December	273.73	271.65	-0.76
ML1: Mean minimum monthly flow, January	286.50	280.72	-2.02
ML2: Mean minimum monthly flow, February	262.50	267.18	1.78
ML3: Mean minimum monthly flow, March	233.67	275.26	17.80
ML4: Mean minimum monthly flow, April	244.92	277.85	13.45
ML5: Mean minimum monthly flow, May	278.83	270.10	-3.13
ML6: Mean minimum monthly flow, June	284.50	270.58	-4.89
ML7: Mean minimum monthly flow, July	290.58	287.06	-1.21
ML8: Mean minimum monthly flow, August	299.33	295.22	-1.37
ML9: Mean minimum monthly flow, September	291.75	300.42	2.97
ML10: Mean minimum monthly flow, October	278.58	297.10	6.65
ML11: Mean minimum monthly flow, November	272.17	286.13	5.13
ML12: Mean minimum monthly flow, December	288.50	281.04	-2.59
ML13: CV of minimum monthly flows	27.15	22.16	-18.38
ML14: Mean minimum daily flow / mean median annual flow	0.71	0.86	21.97
ML15: Mean minimum annual flow / mean annual flow	0.70	0.85	21.27
ML16: Median minimum annual flow / median annual flow	0.80	0.87	9.68
ML20: Ratio of baseflow volume to total flow volume	0.97	0.97	-0.14
ML22: Mean annual minimum flow divided by catchment area	2.05	2.54	24.09
RA1: Mean of positive changes from one day to next (rise rate)	5.43	9.02	
RA2: CV, mean of positive changes from one day to next (rise rate)	187.64	228.99	
RA3: Mean of negative changes from one day to next (fall rate)	3.75	2.21	
RA4: CV, mean of negative changes from one day to next (fall rate)	263.43	250.50	
RA5: Ratio of days that are higher than previous day	0.30	0.20	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.01	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.00	
RA8: Number of flow reversals from one day to the next	85.77	67.92	
RA9: CV, number of flow reversals from one day to the next	33.94	29.72	

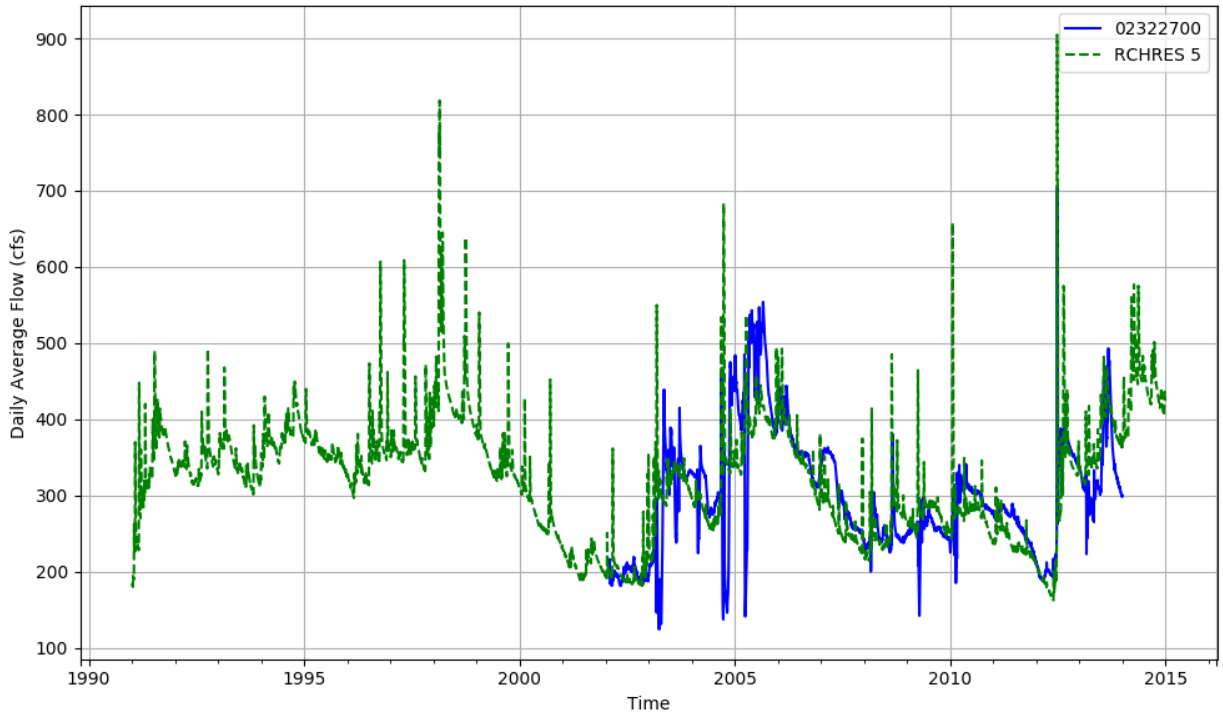


Figure T-03110206-4: Daily flow for HSFP reach 05 and USGS station 02322700.

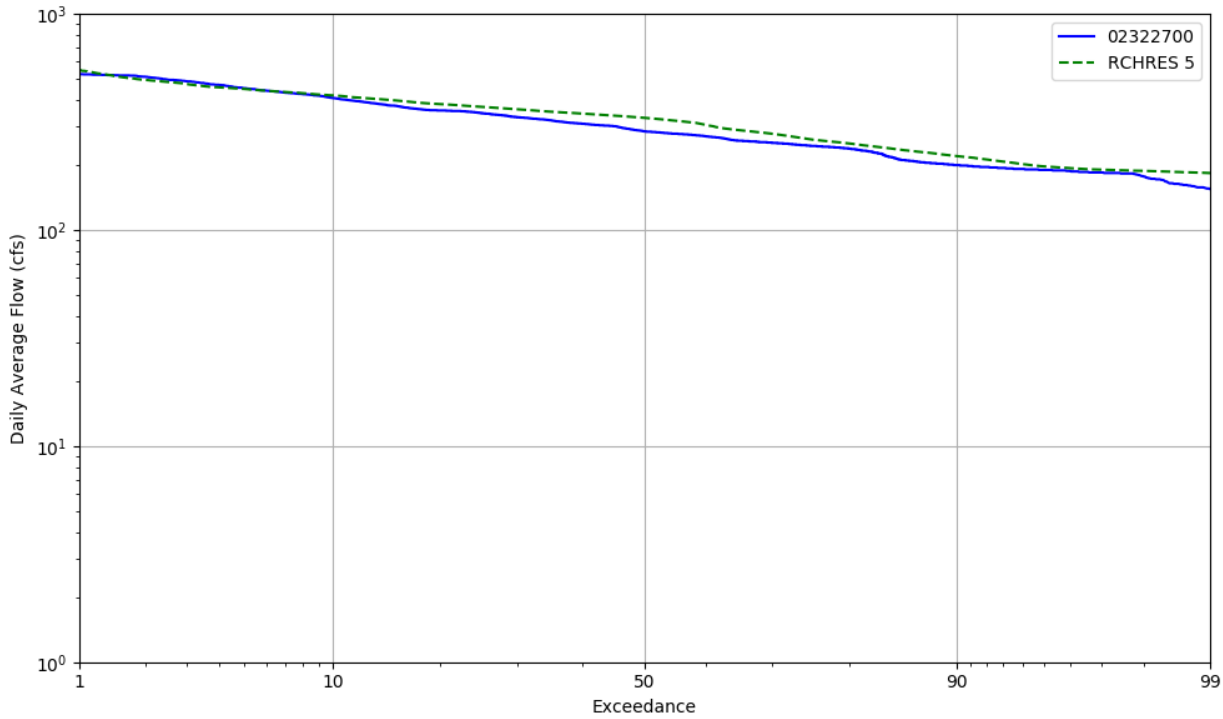


Figure T-03110206-5: Daily exceedance for HSFP reach 05 and USGS station 02322700.

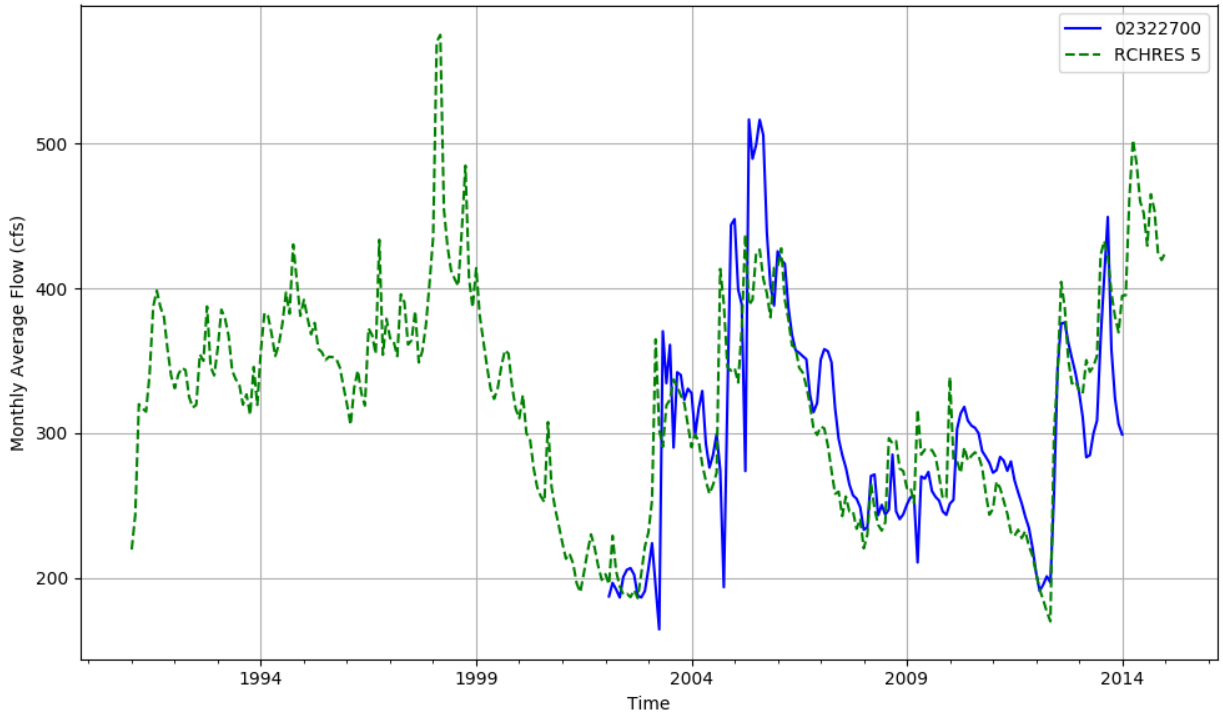


Figure T-03110206-6: Monthly flow for HSFP reach 05 and USGS station 02322700.

HSPF REACH 07, USGS GAUGE 02320700

Water-Data Report 2010
02320700 SANTA FE RIVER NEAR GRAHAM, FLA.
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295046, long 821311 referenced to North American Datum of 1927, Bradford County, FL, Hydrologic Unit 03110206, near left bank on upstream side of bridge on County Road 225 (State Highway 220 A), 1.0 mi south of Graham, 1.5 mi upstream from Sampson River, and 71 mi upstream from mouth.

DRAINAGE AREA.--94.90 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1957 to September 1998, October 2009 to September 2010.

REVISED RECORDS.--WSP 2105: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 103.55 ft above Nationnal Geodetic Verical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Records do not include diversions during periods of high stages from Santa Fe Lake through Lockloosa Creek in St. Johns River basin.

Table T-03110206-3: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02320700.

Statistic	Value
Bias	0.34
Standard error	31.75
Relative bias	0.01
Relative standard error	0.82
Nash-Sutcliffe coefficient	0.32
Kling-Gupta coefficient	0.67
Coefficient of efficiency	0.28
Index of agreement	0.64

Table T-03110206-4: Hydrologic Indices Between USGS Gauge 02320700 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02320700	Simulated Reach 07	Percent Difference
MA1: Mean, all daily flows	34.67	34.92	0.74
MA2: Median, all daily flows	19.00	16.95	-10.81
MA3: CV, all daily flows	89.09	86.15	-3.30
MA4: CV, log of all daily flows	114.37	117.43	2.67

MA5: Mean daily flow / median daily flow	1.82	2.06	12.95
MA9: (Q10 - Q90) / median daily flow	4.32	5.24	21.23
MA10: (Q20 - Q80) / median daily flow	2.38	2.65	11.56
MA11: (Q25 - Q75) / median daily flow	1.87	2.02	8.13
MA12: Mean monthly flow, January	17.18	24.24	41.14
MA13: Mean monthly flow, February	21.78	19.72	-9.47
MA14: Mean monthly flow, March	31.17	26.15	-16.12
MA15: Mean monthly flow, April	28.84	17.78	-38.37
MA16: Mean monthly flow, May	10.19	8.93	-12.43
MA17: Mean monthly flow, June	19.19	18.43	-3.97
MA18: Mean monthly flow, July	16.95	16.81	-0.85
MA19: Mean monthly flow, August	26.12	19.11	-26.83
MA20: Mean monthly flow, September	13.73	15.98	16.40
MA21: Mean monthly flow, October	31.78	46.16	45.24
MA22: Mean monthly flow, November	10.51	12.23	16.43
MA23: Mean monthly flow, December	6.63	9.77	47.29
ML1: Mean minimum monthly flow, January	9.49	11.79	24.21
ML2: Mean minimum monthly flow, February	14.76	11.49	-22.13
ML3: Mean minimum monthly flow, March	16.54	8.56	-48.25
ML4: Mean minimum monthly flow, April	11.29	6.55	-41.98
ML5: Mean minimum monthly flow, May	5.10	6.45	26.56
ML6: Mean minimum monthly flow, June	6.25	8.18	30.78
ML7: Mean minimum monthly flow, July	9.16	9.98	9.02
ML8: Mean minimum monthly flow, August	11.27	8.03	-28.77
ML9: Mean minimum monthly flow, September	8.05	8.77	8.94
ML10: Mean minimum monthly flow, October	11.73	12.87	9.68
ML11: Mean minimum monthly flow, November	13.39	10.14	-24.28
ML12: Mean minimum monthly flow, December	8.64	5.55	-35.73
ML13: CV of minimum monthly flows	109.60	110.20	0.55
ML14: Mean minimum daily flow / mean median annual flow	0.03	0.03	-5.56
ML15: Mean minimum annual flow / mean annual flow	0.02	0.02	-21.66
ML16: Median minimum annual flow / median annual flow	0.01	0.03	216.97
ML20: Ratio of baseflow volume to total flow volume	0.42	0.41	-3.03
ML22: Mean annual minimum flow divided by catchment area	41666.68	41666.67	-0.00
RA1: Mean of positive changes from one day to next (rise rate)	13.98	10.35	
RA2: CV, mean of positive changes from one day to next (rise rate)	288.37	298.58	
RA3: Mean of negative changes from one day to next (fall rate)	4.86	4.22	
RA4: CV, mean of negative changes from one day to next (fall rate)	232.95	223.54	
RA5: Ratio of days that are higher than previous day	0.24	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.09	
RA8: Number of flow reversals from one day to the next	45.42	37.00	
RA9: CV, number of flow reversals from one day to the next	89.95	88.92	

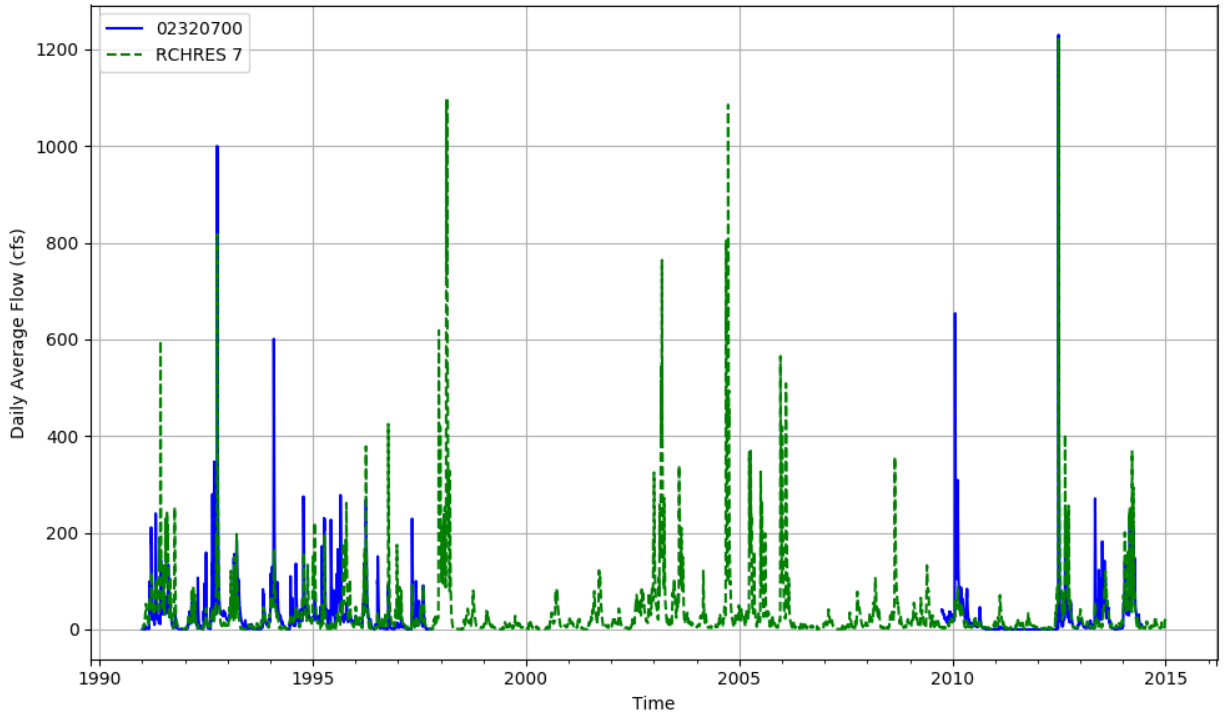


Figure T-03110206-7: Daily flow for HSFP reach 07 and USGS station 02320700.

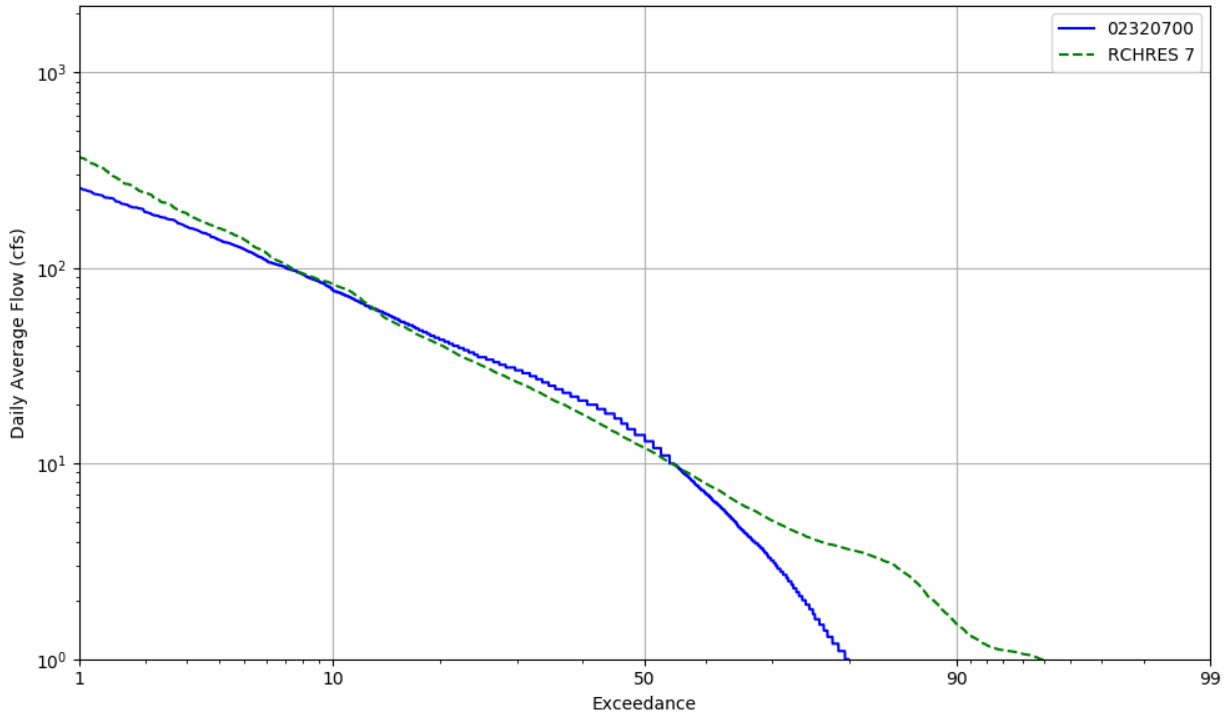


Figure T-03110206-8: Daily exceedance for HSFP reach 07 and USGS station 02320700.

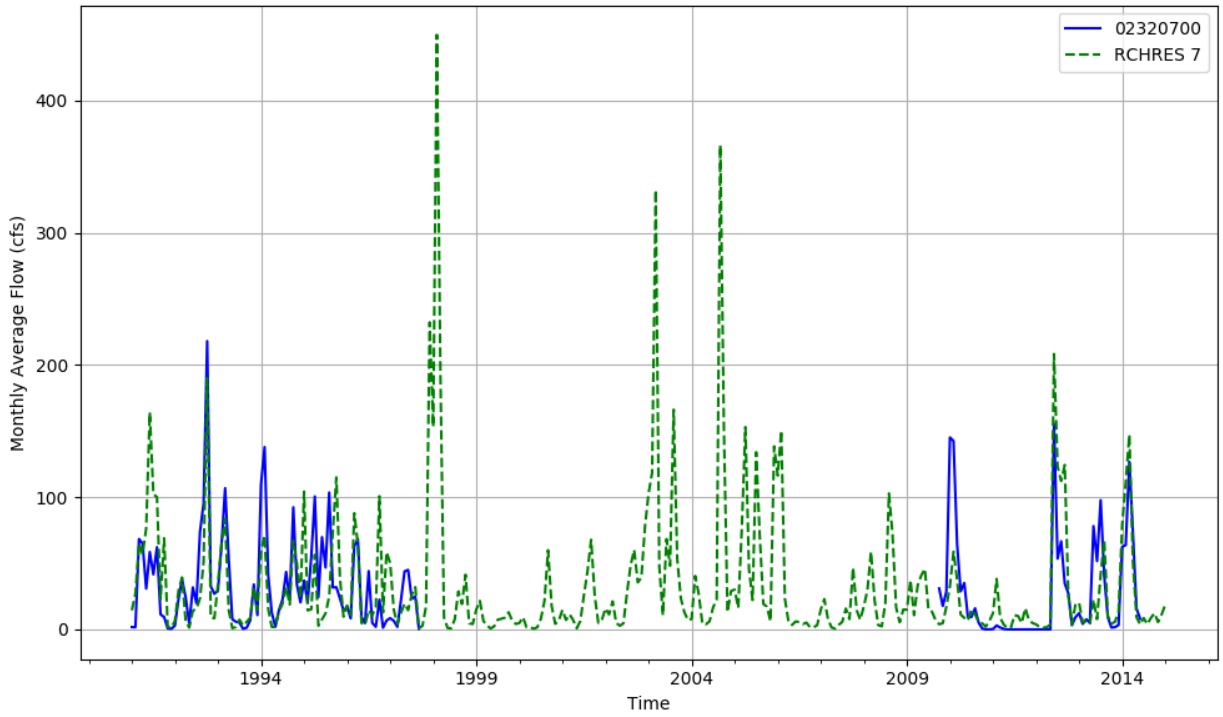


Figure T-03110206-9: Monthly flow for HSFP reach 07 and USGS station 02320700.

HSPF REACH 11, USGS GAUGE 02321000

Water-Data Report 2009
02321000 NEW RIVER NEAR LAKE BUTLER, FL
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295953, long 821627 referenced to North American Datum of 1927, in SW 1/4 1/ 1/4 4 1/4 sec.2, T.6 S., R.20 E., Union County, FL, Hydrologic Unit 03110206, near right bank on downstream side of bridge on State Highway 100 and 4.4 miles southeast of Lake Butler.

DRAINAGE AREA.--191.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1950 to September 1971, June 1973 to May 1977, periodic discharge measurements. October 1990 to September 1991, October 1992 to current year.

REVISED RECORDS.--WRD FLA. 1968 Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 83.8 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

Table T-03110206-5: Comparison Statistics Between HSPF Reach 11 and USGS Gauge 02321000.

Statistic	Value
Bias	-21.01
Standard error	130.44
Relative bias	-0.15
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.73
Kling-Gupta coefficient	0.66
Coefficient of efficiency	0.59
Index of agreement	0.76

Table T-03110206-6: Hydrologic Indices Between USGS Gauge 02321000 and HSPF Reach 11.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02321000	Simulated Reach 11	Percent Difference
MA1: Mean, all daily flows	135.50	114.73	-15.32
MA2: Median, all daily flows	22.00	31.99	45.42
MA3: CV, all daily flows	255.02	218.47	-14.33
MA4: CV, log of all daily flows	179.26	143.66	-19.86
MA5: Mean daily flow / median daily flow	6.16	3.59	-41.77

MA9: (Q10 - Q90) / median daily flow	13.52	7.75	-42.65
MA10: (Q20 - Q80) / median daily flow	5.69	4.13	-27.28
MA11: (Q25 - Q75) / median daily flow	4.13	3.23	-21.74
MA12: Mean monthly flow, January	93.40	121.08	29.65
MA13: Mean monthly flow, February	191.30	156.64	-18.12
MA14: Mean monthly flow, March	194.64	160.52	-17.53
MA15: Mean monthly flow, April	115.57	88.30	-23.60
MA16: Mean monthly flow, May	79.42	55.20	-30.50
MA17: Mean monthly flow, June	143.98	115.43	-19.83
MA18: Mean monthly flow, July	103.99	98.57	-5.21
MA19: Mean monthly flow, August	195.95	136.60	-30.29
MA20: Mean monthly flow, September	136.21	131.81	-3.23
MA21: Mean monthly flow, October	192.36	118.92	-38.18
MA22: Mean monthly flow, November	25.85	37.32	44.41
MA23: Mean monthly flow, December	70.12	83.38	18.91
ML1: Mean minimum monthly flow, January	25.66	23.74	-7.50
ML2: Mean minimum monthly flow, February	33.82	34.42	1.78
ML3: Mean minimum monthly flow, March	36.35	34.16	-6.02
ML4: Mean minimum monthly flow, April	13.18	15.00	13.76
ML5: Mean minimum monthly flow, May	12.58	8.92	-29.08
ML6: Mean minimum monthly flow, June	13.97	13.48	-3.50
ML7: Mean minimum monthly flow, July	19.01	20.12	5.87
ML8: Mean minimum monthly flow, August	25.15	25.48	1.30
ML9: Mean minimum monthly flow, September	20.47	20.88	2.01
ML10: Mean minimum monthly flow, October	14.33	15.91	11.03
ML11: Mean minimum monthly flow, November	11.65	11.36	-2.53
ML12: Mean minimum monthly flow, December	14.20	14.65	3.15
ML13: CV of minimum monthly flows	150.33	148.02	-1.54
ML14: Mean minimum daily flow / mean median annual flow	0.05	0.07	21.87
ML15: Mean minimum annual flow / mean annual flow	0.01	0.02	39.79
ML16: Median minimum annual flow / median annual flow	0.02	0.05	138.82
ML20: Ratio of baseflow volume to total flow volume	0.25	0.27	7.19
ML22: Mean annual minimum flow divided by catchment area	0.02	0.02	-2.13
RA1: Mean of positive changes from one day to next (rise rate)	76.89	85.44	
RA2: CV, mean of positive changes from one day to next (rise rate)	467.41	357.91	
RA3: Mean of negative changes from one day to next (fall rate)	29.42	25.42	
RA4: CV, mean of negative changes from one day to next (fall rate)	405.28	424.15	
RA5: Ratio of days that are higher than previous day	0.25	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.26	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.13	
RA8: Number of flow reversals from one day to the next	61.33	60.50	
RA9: CV, number of flow reversals from one day to the next	25.93	25.22	

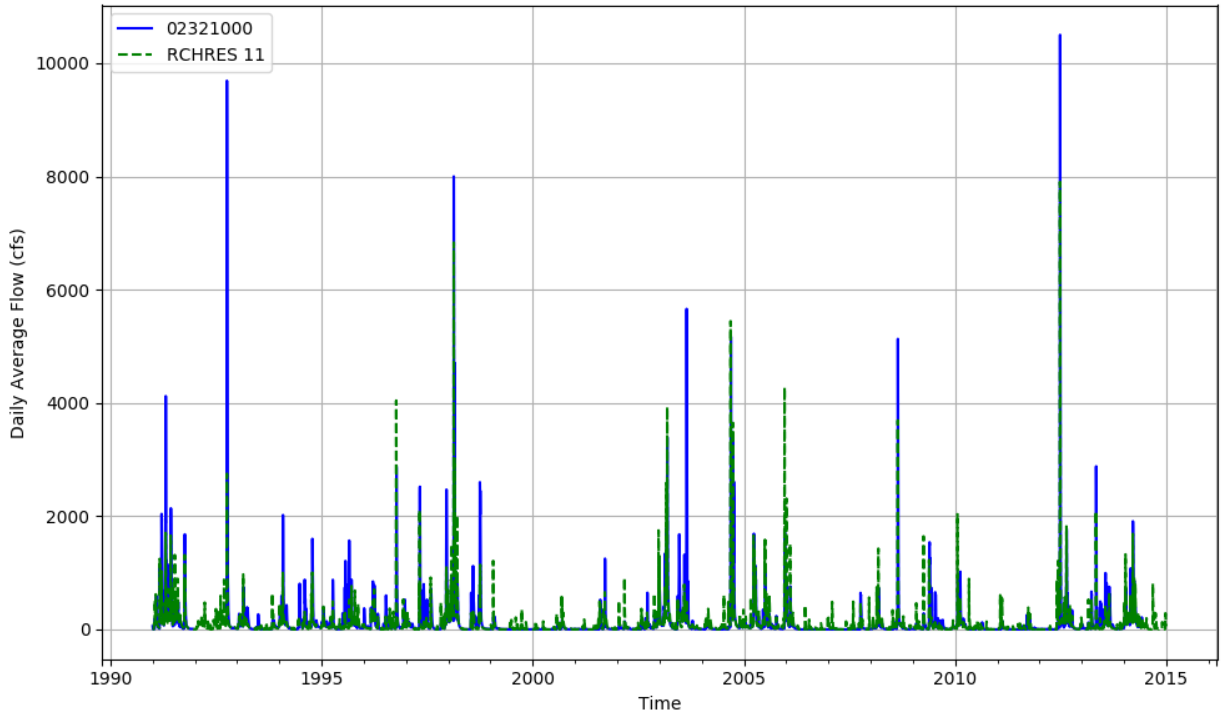


Figure T-03110206-10: Daily flow for HSFP reach 11 and USGS station 02321000.

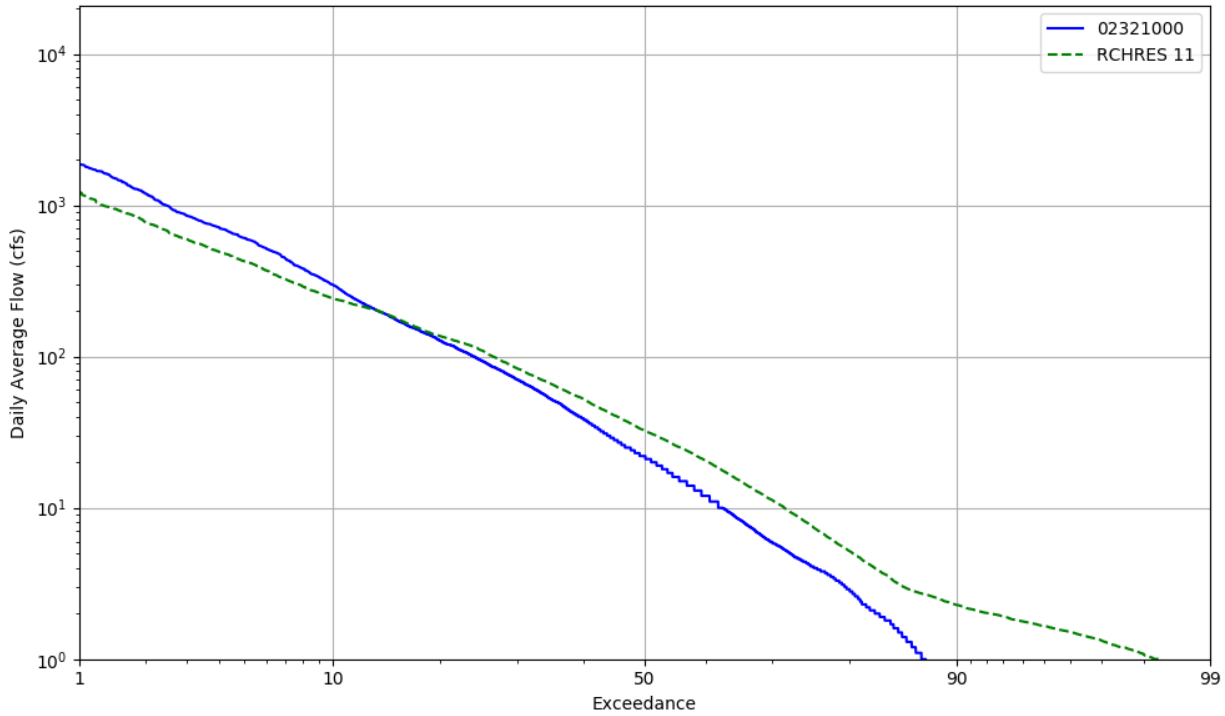


Figure T-03110206-11: Daily exceedance for HSFP reach 11 and USGS station 02321000.

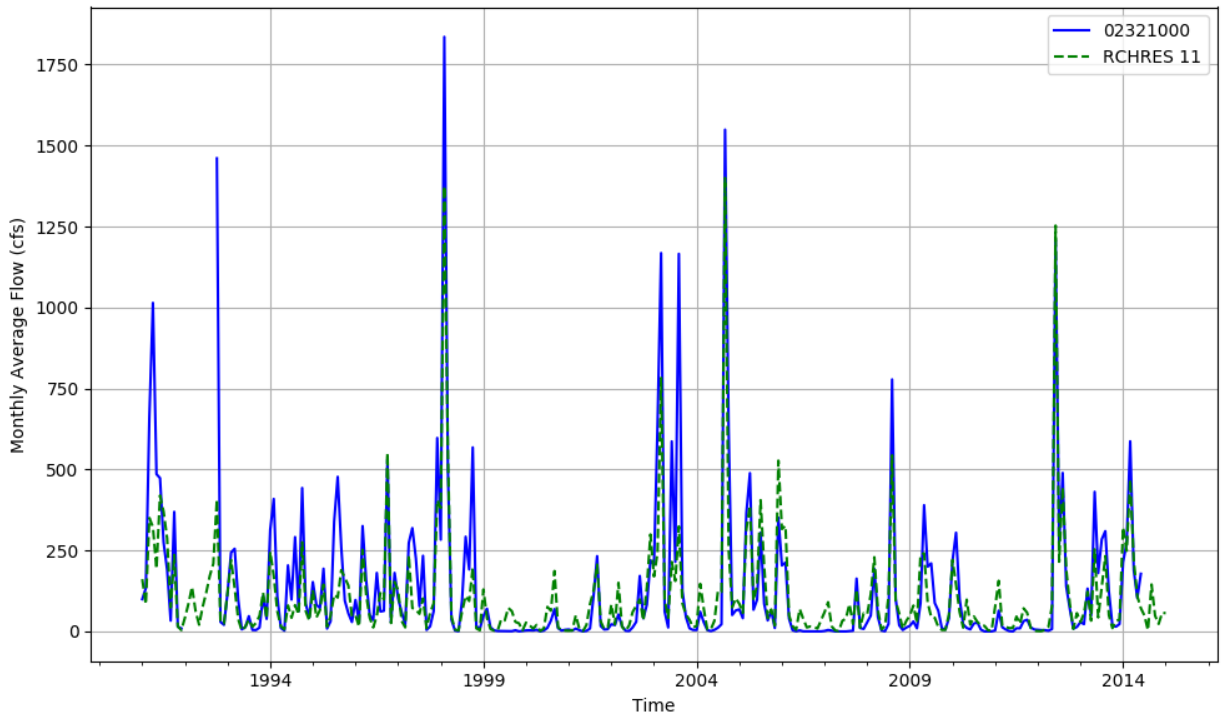


Figure T-03110206-12: Monthly flow for HSFP reach 11 and USGS station 02321000.

HSPF REACH 15, USGS GAUGE 02321500

Water-Data Report 2009
02321500 SANTA FE RIVER AT WORTHINGTON SPRINGS, FL
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295518, long 822535 referenced to North American Datum of 1927, Alachua County, FL, Hydrologic Unit 03110206, near center of span on downstream side of bridge on State Highway 121, 0.5 mi south of Worthington Springs, 0.8 mi downstream from New River, and 51 mi upstream from mouth.

DRAINAGE AREA.--575.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1931 to current year. Published as "near Worthington" prior to October 1965. Monthly discharge only for October 1931, published in WSP 1304.

REVISED RECORDS.--WSP 2105: WDR FL-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 42.74 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 16, 1939, nonrecording gage at site 0.2 mi downstream at present datum; Jan. 16, 1939 to July 23, 1953, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Records do not include diversions during periods of high stages from Santa Fe Lake to Lochloosa Creek in St. Johns River Basin.

Table T-03110206-7: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02321500.

Statistic	Value
Bias	-26.69
Standard error	234.53
Relative bias	-0.08
Relative standard error	0.45
Nash-Sutcliffe coefficient	0.79
Kling-Gupta coefficient	0.77
Coefficient of efficiency	0.60
Index of agreement	0.78

Table T-03110206-8: Hydrologic Indices Between USGS Gauge 02321500 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02321500	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	324.35	298.28	-8.04

MA2: Median, all daily flows	79.00	124.78	57.94
MA3: CV, all daily flows	181.85	157.29	-13.51
MA4: CV, log of all daily flows	154.45	121.34	-21.44
MA5: Mean daily flow / median daily flow	4.11	2.39	-41.77
MA9: (Q10 - Q90) / median daily flow	10.82	5.43	-49.80
MA10: (Q20 - Q80) / median daily flow	5.03	3.10	-38.39
MA11: (Q25 - Q75) / median daily flow	3.73	2.32	-37.85
MA12: Mean monthly flow, January	261.51	313.58	19.91
MA13: Mean monthly flow, February	486.73	416.62	-14.40
MA14: Mean monthly flow, March	521.95	446.46	-14.46
MA15: Mean monthly flow, April	313.83	246.94	-21.31
MA16: Mean monthly flow, May	181.01	129.71	-28.34
MA17: Mean monthly flow, June	319.34	247.89	-22.37
MA18: Mean monthly flow, July	311.83	285.10	-8.57
MA19: Mean monthly flow, August	402.48	376.37	-6.49
MA20: Mean monthly flow, September	348.11	378.21	8.65
MA21: Mean monthly flow, October	413.54	327.98	-20.69
MA22: Mean monthly flow, November	83.89	117.31	39.84
MA23: Mean monthly flow, December	176.92	221.29	25.08
ML1: Mean minimum monthly flow, January	86.10	103.10	19.76
ML2: Mean minimum monthly flow, February	138.53	141.85	2.39
ML3: Mean minimum monthly flow, March	168.97	141.05	-16.52
ML4: Mean minimum monthly flow, April	61.91	63.85	3.14
ML5: Mean minimum monthly flow, May	40.14	34.18	-14.85
ML6: Mean minimum monthly flow, June	56.78	47.37	-16.57
ML7: Mean minimum monthly flow, July	102.87	93.08	-9.52
ML8: Mean minimum monthly flow, August	107.02	125.52	17.29
ML9: Mean minimum monthly flow, September	70.75	107.22	51.55
ML10: Mean minimum monthly flow, October	72.29	78.39	8.44
ML11: Mean minimum monthly flow, November	47.63	52.38	9.96
ML12: Mean minimum monthly flow, December	40.17	55.17	37.35
ML13: CV of minimum monthly flows	158.18	132.47	-16.25
ML14: Mean minimum daily flow / mean median annual flow	0.06	0.07	17.76
ML15: Mean minimum annual flow / mean annual flow	0.02	0.03	28.69
ML16: Median minimum annual flow / median annual flow	0.03	0.06	80.72
ML20: Ratio of baseflow volume to total flow volume	0.41	0.45	11.33
ML22: Mean annual minimum flow divided by catchment area	0.10	0.09	-2.89
RA1: Mean of positive changes from one day to next (rise rate)	108.05	113.58	
RA2: CV, mean of positive changes from one day to next (rise rate)	361.87	368.09	
RA3: Mean of negative changes from one day to next (fall rate)	44.80	38.04	
RA4: CV, mean of negative changes from one day to next (fall rate)	331.51	329.98	
RA5: Ratio of days that are higher than previous day	0.27	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.09	
RA8: Number of flow reversals from one day to the next	60.71	56.04	

RA9: CV, number of flow reversals from one day to the next	13.93	14.43	

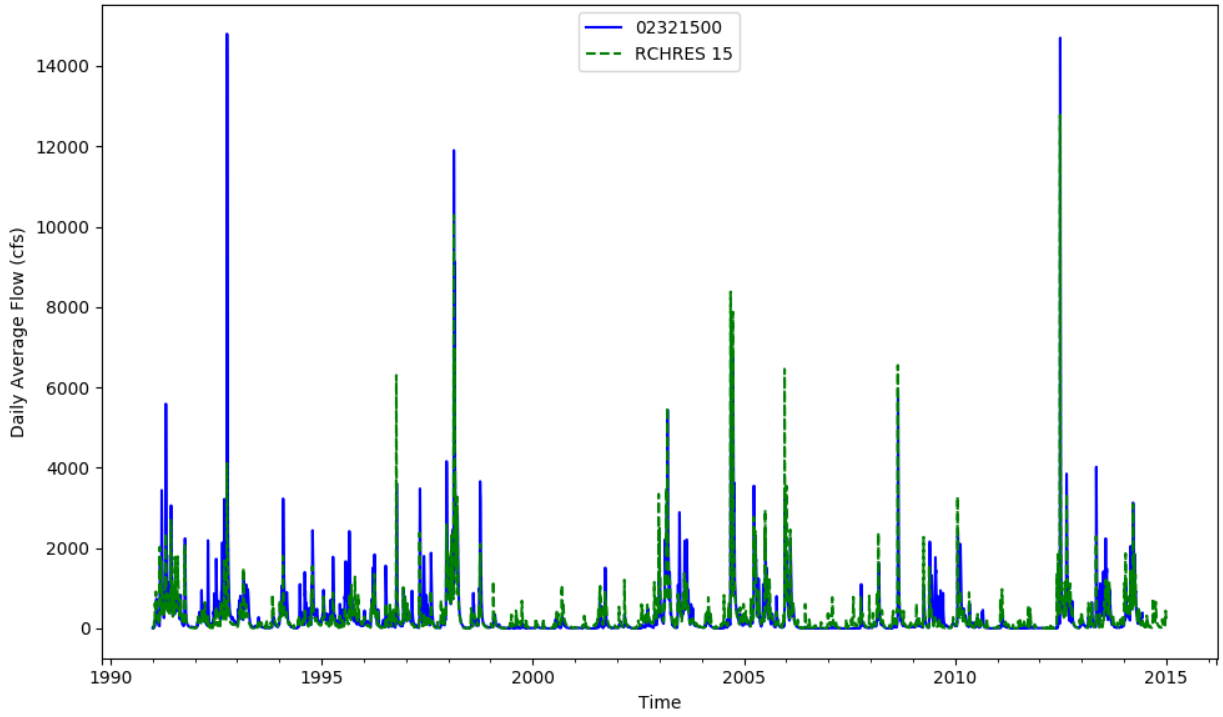


Figure T-03110206-13: Daily flow for HSFP reach 15 and USGS station 02321500.

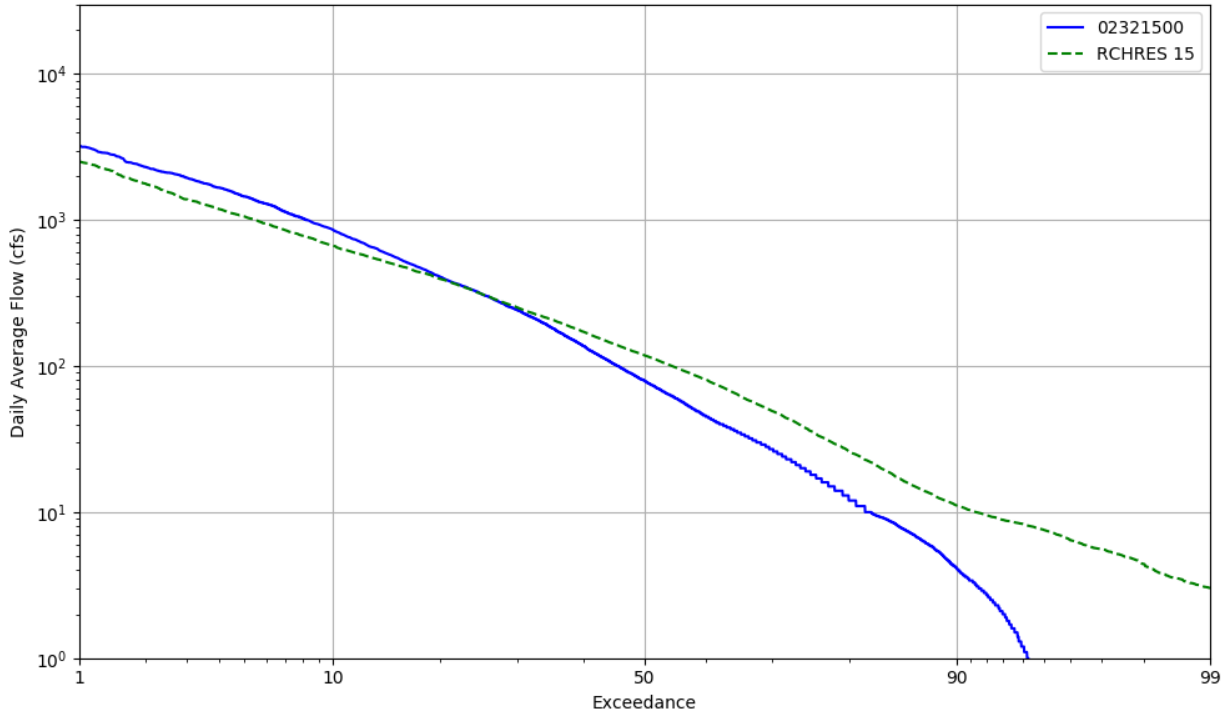


Figure T-03110206-14: Daily exceedance for HSFP reach 15 and USGS station 02321500.

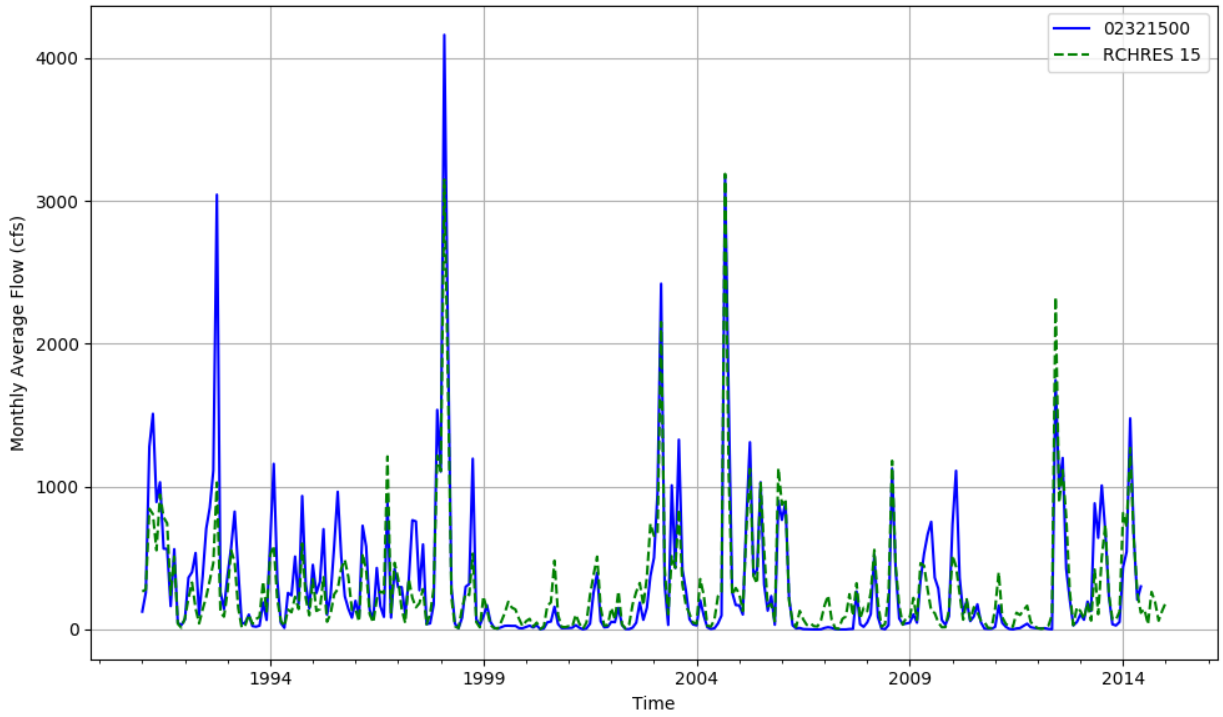


Figure T-03110206-15: Monthly flow for HSFP reach 15 and USGS station 02321500.

HSPF REACH 17, USGS GAUGE 02321975

Water-Data Report 2009
02321500 SANTA FE RIVER AT WORTHINGTON SPRINGS, FL
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295518, long 822535 referenced to North American Datum of 1927, Alachua County, FL, Hydrologic Unit 03110206, near center of span on downstream side of bridge on State Highway 121, 0.5 mi south of Worthington Springs, 0.8 mi downstream from New River, and 51 mi upstream from mouth.

DRAINAGE AREA.--575.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1931 to current year. Published as "near Worthington" prior to October 1965. Monthly discharge only for October 1931, published in WSP 1304.

REVISED RECORDS.--WSP 2105: WDR FL-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 42.74 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 16, 1939, nonrecording gage at site 0.2 mi downstream at present datum; Jan. 16, 1939 to July 23, 1953, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Records do not include diversions during periods of high stages from Santa Fe Lake to Lochloosa Creek in St. Johns River Basin.

Table T-03110206-9: Comparison Statistics Between HSPF Reach 17 and USGS Gauge 02321975.

Statistic	Value
Bias	59.05
Standard error	364.79
Relative bias	0.08
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.73
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.41
Index of agreement	0.69

Table T-03110206-10: Hydrologic Indices Between USGS Gauge 02321975 and HSPF Reach 17.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02321975	Simulated Reach 17	Percent Difference
MA1: Mean, all daily flows	769.97	828.56	7.61

MA2: Median, all daily flows	568.00	573.94	1.05
MA3: CV, all daily flows	91.55	81.21	-11.29
MA4: CV, log of all daily flows	60.28	61.21	1.54
MA5: Mean daily flow / median daily flow	1.36	1.44	6.50
MA9: (Q10 - Q90) / median daily flow	1.85	1.81	-2.09
MA10: (Q20 - Q80) / median daily flow	1.12	0.98	-12.47
MA11: (Q25 - Q75) / median daily flow	0.84	0.75	-10.39
MA12: Mean monthly flow, January	615.63	859.79	39.66
MA13: Mean monthly flow, February	1138.00	1246.12	9.50
MA14: Mean monthly flow, March	1066.19	1026.01	-3.77
MA15: Mean monthly flow, April	692.27	634.08	-8.41
MA16: Mean monthly flow, May	484.36	416.37	-14.04
MA17: Mean monthly flow, June	393.35	395.76	0.61
MA18: Mean monthly flow, July	467.54	520.98	11.43
MA19: Mean monthly flow, August	562.84	593.04	5.36
MA20: Mean monthly flow, September	459.14	555.08	20.90
MA21: Mean monthly flow, October	1348.29	1217.79	-9.68
MA22: Mean monthly flow, November	521.07	679.04	30.32
MA23: Mean monthly flow, December	527.64	764.90	44.97
ML1: Mean minimum monthly flow, January	470.33	645.26	37.19
ML2: Mean minimum monthly flow, February	653.33	683.07	4.55
ML3: Mean minimum monthly flow, March	841.50	694.25	-17.50
ML4: Mean minimum monthly flow, April	528.17	438.71	-16.94
ML5: Mean minimum monthly flow, May	348.50	369.23	5.95
ML6: Mean minimum monthly flow, June	342.50	361.30	5.49
ML7: Mean minimum monthly flow, July	393.83	423.02	7.41
ML8: Mean minimum monthly flow, August	415.83	457.10	9.92
ML9: Mean minimum monthly flow, September	414.83	461.95	11.36
ML10: Mean minimum monthly flow, October	552.71	493.57	-10.70
ML11: Mean minimum monthly flow, November	439.43	494.82	12.60
ML12: Mean minimum monthly flow, December	352.00	464.75	32.03
ML13: CV of minimum monthly flows	68.92	48.35	-29.84
ML14: Mean minimum daily flow / mean median annual flow	0.40	0.58	43.48
ML15: Mean minimum annual flow / mean annual flow	0.31	0.43	37.76
ML16: Median minimum annual flow / median annual flow	0.33	0.58	72.91
ML20: Ratio of baseflow volume to total flow volume	0.70	0.70	0.32
ML22: Mean annual minimum flow divided by catchment area	2.42	3.29	36.14
RA1: Mean of positive changes from one day to next (rise rate)	78.29	111.68	
RA2: CV, mean of positive changes from one day to next (rise rate)	342.72	299.04	
RA3: Mean of negative changes from one day to next (fall rate)	42.46	43.79	
RA4: CV, mean of negative changes from one day to next (fall rate)	257.73	227.91	
RA5: Ratio of days that are higher than previous day	0.31	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.04	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.03	
RA8: Number of flow reversals from one day to the next	40.14	37.86	

RA9: CV, number of flow reversals from one day to the next	46.39	39.28	

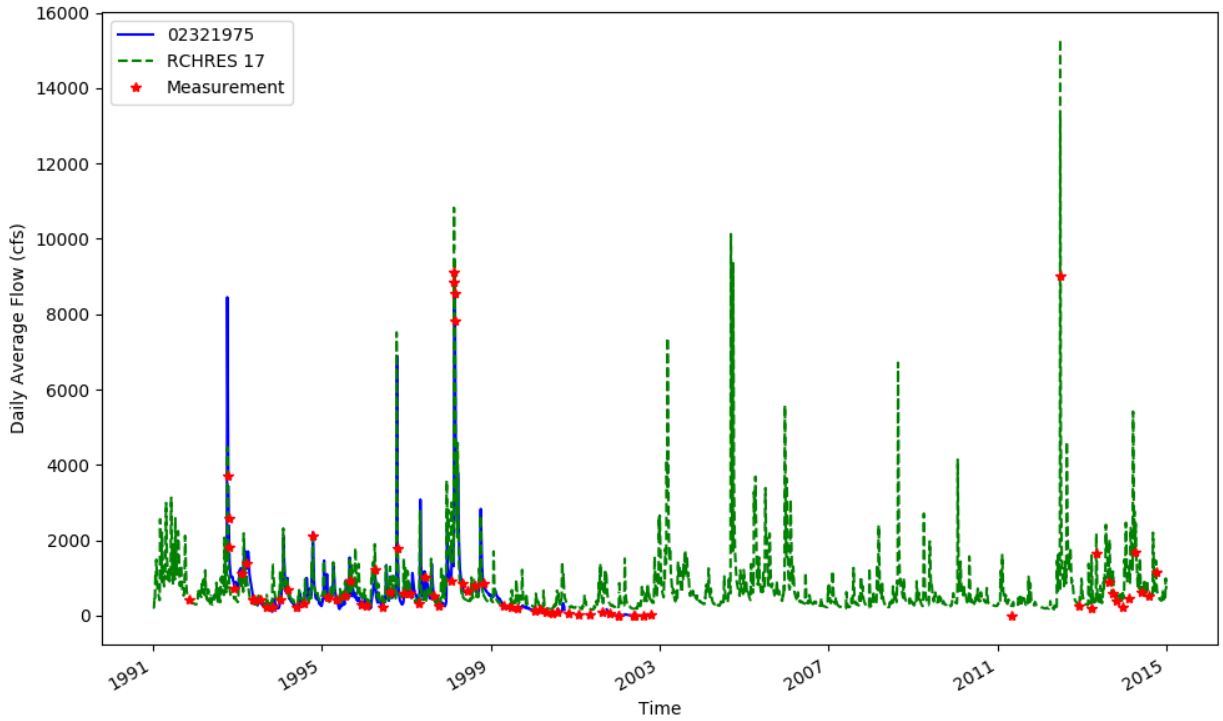


Figure T-03110206-16: Daily flow for HSFP reach 17 and USGS station 02321975.

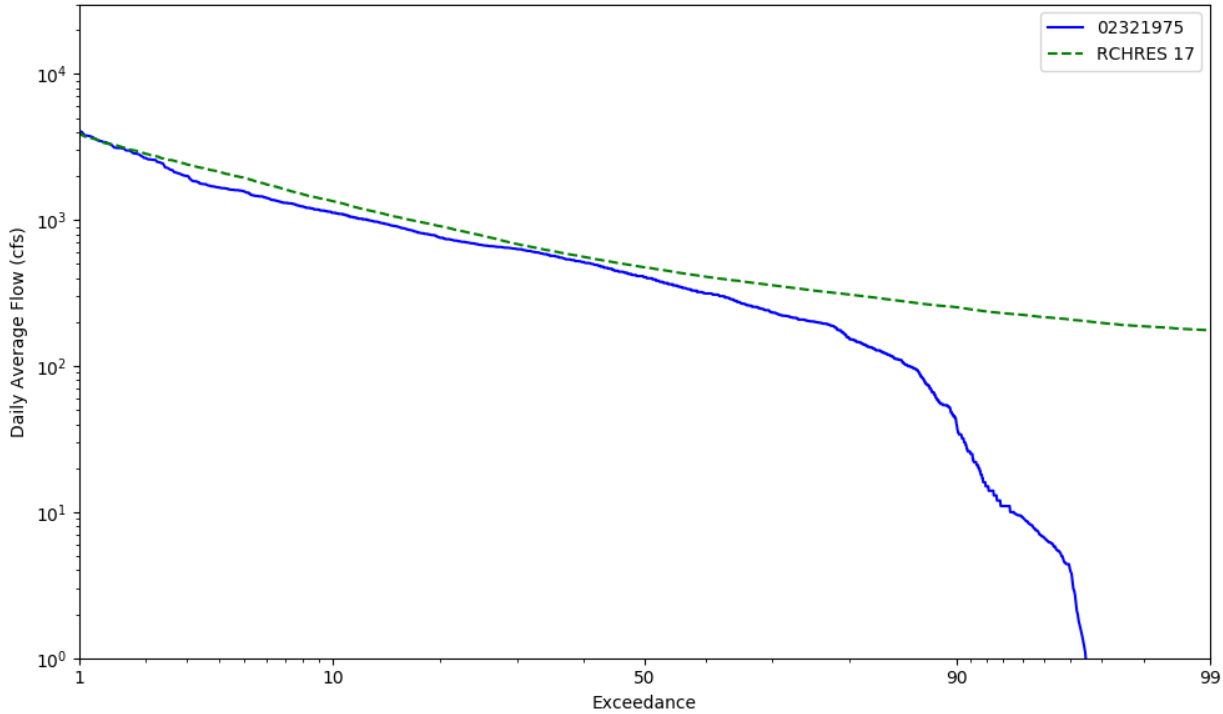


Figure T-03110206-17: Daily exceedance for HSFP reach 17 and USGS station 02321975.

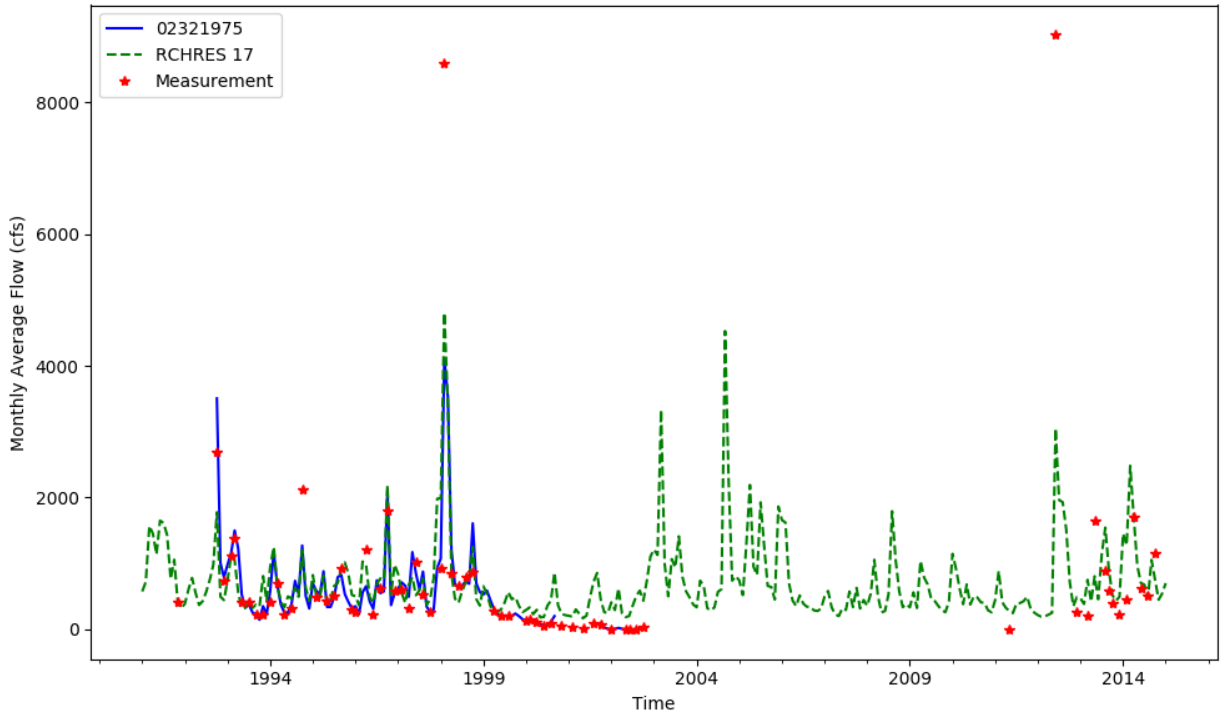


Figure T-03110206-18: Monthly flow for HSFP reach 17 and USGS station 02321975.

HSPF REACH 18, USGS GAUGE 02322500

Water-Data Report 2009
02322500 SANTA FE RIVER NEAR FORT WHITE, FL
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295055, long 824255 referenced to North American Datum of 1927, Gilchrist County, FL, Hydrologic Unit 03110206, on left bank 2.1 mi upstream from bridge on State Highway 47, 5.1 mi south of Fort White, and 18 mi upstream from mouth.

DRAINAGE AREA.--1,017 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1927 to January 1930, June 1932 to current year.

REVISED RECORDS.--WDR FL-75-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 20.86 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 3, 1932, nonrecording gage at several sites within 200 ft of present site at various datums. Oct. 1, 1947 to Feb. 10, 1949, auxiliary nonrecording gage and since Feb. 11, 1949, auxiliary water-stage recorder at bridge on U.S. Highway 129, 16 mi downstream from base gage at datum 3.5 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good, except for estimated discharges which are fair.

Table T-03110206-11: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02322500.

Statistic	Value
Bias	88.44
Standard error	382.21
Relative bias	0.08
Relative standard error	0.50
Nash-Sutcliffe coefficient	0.74
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.49
Index of agreement	0.73

Table T-03110206-12: Hydrologic Indices Between USGS Gauge 02322500 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02322500	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	1170.38	1257.83	7.47
MA2: Median, all daily flows	955.00	1035.10	8.39

MA3: CV, all daily flows	48.43	51.25	5.84
MA4: CV, log of all daily flows	44.62	42.13	-5.59
MA5: Mean daily flow / median daily flow	1.23	1.22	-0.85
MA9: (Q10 - Q90) / median daily flow	1.41	1.24	-11.77
MA10: (Q20 - Q80) / median daily flow	0.82	0.70	-14.62
MA11: (Q25 - Q75) / median daily flow	0.66	0.54	-18.05
MA12: Mean monthly flow, January	962.60	1222.48	27.00
MA13: Mean monthly flow, February	1182.01	1327.94	12.35
MA14: Mean monthly flow, March	1378.29	1397.32	1.38
MA15: Mean monthly flow, April	1195.50	1131.78	-5.33
MA16: Mean monthly flow, May	1019.39	939.74	-7.81
MA17: Mean monthly flow, June	1015.16	1066.47	5.05
MA18: Mean monthly flow, July	1170.68	1228.82	4.97
MA19: Mean monthly flow, August	1170.97	1368.54	16.87
MA20: Mean monthly flow, September	1242.83	1393.85	12.15
MA21: Mean monthly flow, October	1336.93	1362.98	1.95
MA22: Mean monthly flow, November	938.84	996.03	6.09
MA23: Mean monthly flow, December	887.40	1085.46	22.32
ML1: Mean minimum monthly flow, January	865.79	928.72	7.27
ML2: Mean minimum monthly flow, February	966.04	984.32	1.89
ML3: Mean minimum monthly flow, March	1085.48	1030.11	-5.10
ML4: Mean minimum monthly flow, April	975.61	899.21	-7.83
ML5: Mean minimum monthly flow, May	895.39	822.25	-8.17
ML6: Mean minimum monthly flow, June	888.17	837.47	-5.71
ML7: Mean minimum monthly flow, July	980.52	959.82	-2.11
ML8: Mean minimum monthly flow, August	995.78	1042.89	4.73
ML9: Mean minimum monthly flow, September	960.57	1039.75	8.24
ML10: Mean minimum monthly flow, October	1017.74	991.17	-2.61
ML11: Mean minimum monthly flow, November	891.26	907.35	1.81
ML12: Mean minimum monthly flow, December	826.04	880.43	6.58
ML13: CV of minimum monthly flows	42.85	32.71	-23.67
ML14: Mean minimum daily flow / mean median annual flow	0.73	0.70	-3.96
ML15: Mean minimum annual flow / mean annual flow	0.64	0.60	-5.90
ML16: Median minimum annual flow / median annual flow	0.78	0.73	-6.57
ML20: Ratio of baseflow volume to total flow volume	0.88	0.83	-6.20
ML22: Mean annual minimum flow divided by catchment area	7.02	7.25	3.30
RA1: Mean of positive changes from one day to next (rise rate)	59.59	101.43	
RA2: CV, mean of positive changes from one day to next (rise rate)	389.42	290.40	
RA3: Mean of negative changes from one day to next (fall rate)	28.97	40.84	
RA4: CV, mean of negative changes from one day to next (fall rate)	350.70	249.18	
RA5: Ratio of days that are higher than previous day	0.28	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.01	
RA8: Number of flow reversals from one day to the next	66.33	38.96	
RA9: CV, number of flow reversals from one day to the next	37.96	23.09	

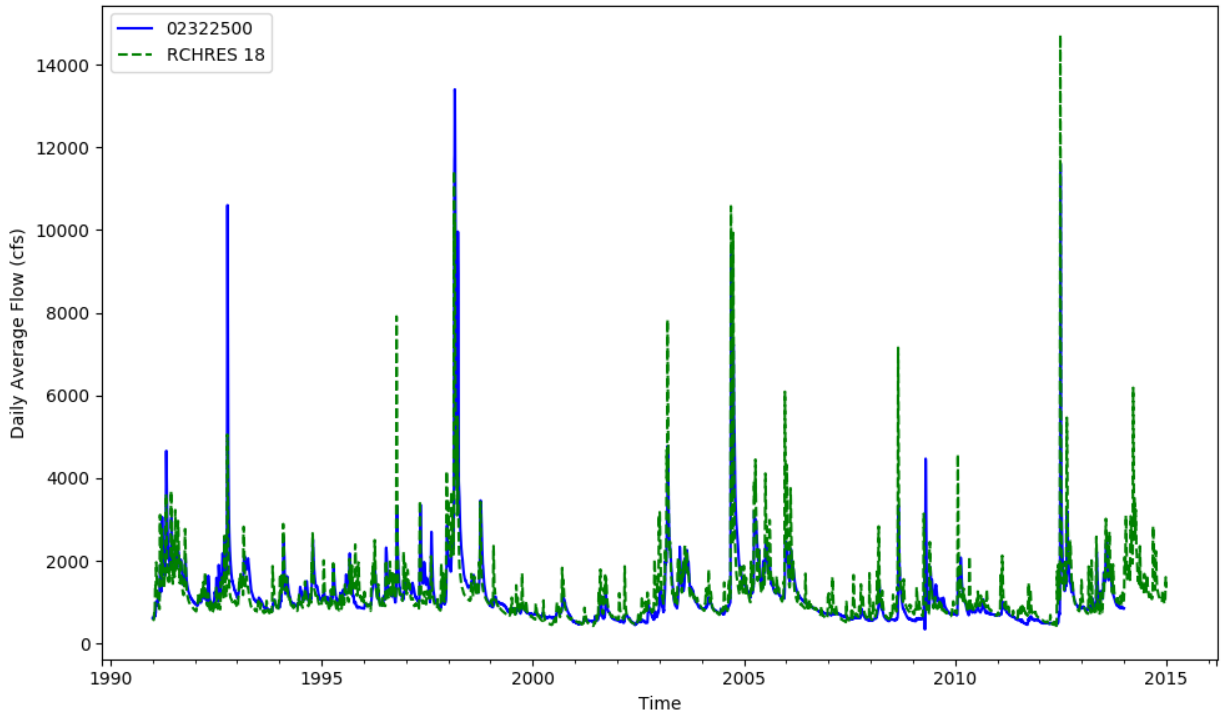


Figure T-03110206-19: Daily flow for HSFP reach 18 and USGS station 02322500.

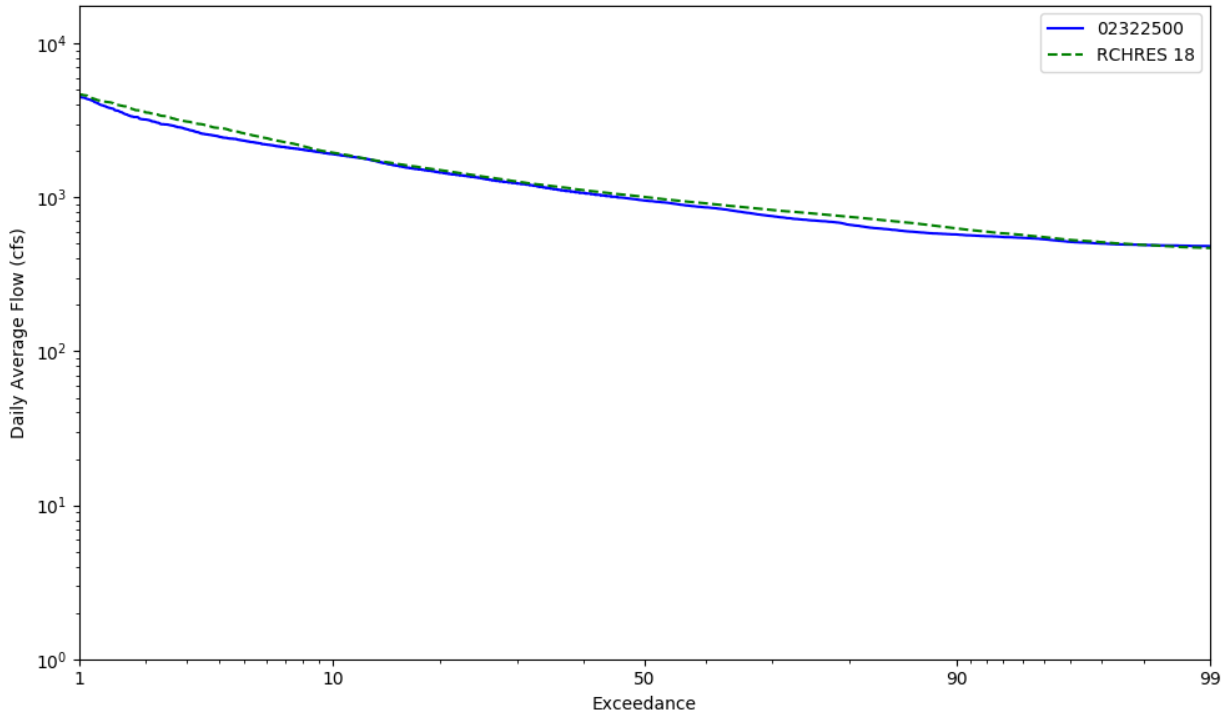


Figure T-03110206-20: Daily exceedance for HSFP reach 18 and USGS station 02322500.

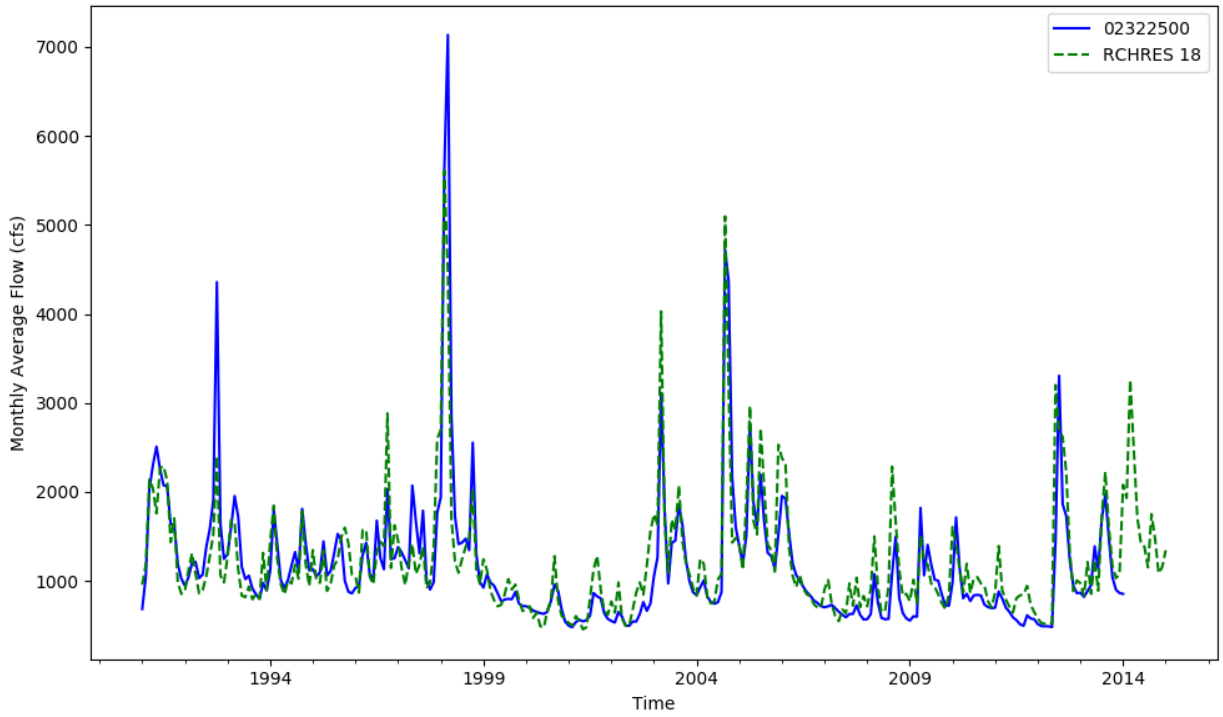


Figure T-03110206-21: Monthly flow for HSFP reach 18 and USGS station 02322500.

HSPF REACH 21, USGS GAUGE 02322800

Water-Data Report 2009
02322800 SANTA FE RIVER NEAR HILDRETH, FL
Suwannee Basin Santa Fe Subbasin

LOCATION.--Lat 295441, long 825138 referenced to North American Datum of 1927, in NE 1/4 1/ 1/4 4 1/4 sec.1, T.7 S., R.14 E., Gilchrist County, FL, Hydrologic Unit 03110206, near left bank on downstream side of bridge of U.S. Highway 129 and State Highway 49, 1.7 mi upsteam from mouth, and 8.6 mi west of Fort White.

DRAINAGE AREA.--1,374 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1947 to October 2000 (gage heights only), November 2000 to September 2005 (discharge and gage height), October 2006 to September 2007 (gage heights only), October 2007 to current year (discharge and gage heights). Published as "near Fort White (auxiliary)" prior to September 1965.

GAGE.--Water-stage and water-current meter recorders. Datum of gage is 3.5 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 11, 1949, nonrecording gage at same sites and datum. Since October 1947 used as auxiliary gage for Santa Fe River near Fort White (station 02322500).

REMARKS.--No estimated daily discharges. Records good.

Table T-03110206-13: Comparison Statistics Between HSPF Reach 21 and USGS Gauge 02322800.

Statistic	Value
Bias	321.83
Standard error	511.88
Relative bias	0.21
Relative standard error	0.66
Nash-Sutcliffe coefficient	0.57
Kling-Gupta coefficient	0.75
Coefficient of efficiency	0.28
Index of agreement	0.65

Table T-03110206-14: Hydrologic Indices Between USGS Gauge 02322800 and HSPF Reach 21.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02322800	Simulated Reach 21	Percent Difference
MA1: Mean, all daily flows	1511.81	1829.43	21.01
MA2: Median, all daily flows	1220.00	1543.24	26.49

MA3: CV, all daily flows	34.74	37.90	9.09
MA4: CV, log of all daily flows	41.08	37.06	-9.79
MA5: Mean daily flow / median daily flow	1.24	1.19	-4.34
MA9: (Q10 - Q90) / median daily flow	1.29	1.08	-16.10
MA10: (Q20 - Q80) / median daily flow	0.83	0.65	-21.13
MA11: (Q25 - Q75) / median daily flow	0.64	0.50	-21.80
MA12: Mean monthly flow, January	1006.89	1344.55	33.53
MA13: Mean monthly flow, February	1133.48	1361.93	20.15
MA14: Mean monthly flow, March	1270.60	1671.29	31.54
MA15: Mean monthly flow, April	1281.35	1487.96	16.12
MA16: Mean monthly flow, May	1240.85	1271.78	2.49
MA17: Mean monthly flow, June	1245.26	1428.56	14.72
MA18: Mean monthly flow, July	1497.86	1787.08	19.31
MA19: Mean monthly flow, August	1396.32	1940.65	38.98
MA20: Mean monthly flow, September	1706.91	2063.07	20.87
MA21: Mean monthly flow, October	1442.66	1691.78	17.27
MA22: Mean monthly flow, November	1131.58	1261.60	11.49
MA23: Mean monthly flow, December	1021.80	1275.68	24.85
ML1: Mean minimum monthly flow, January	1079.55	1306.79	21.05
ML2: Mean minimum monthly flow, February	1145.00	1378.83	20.42
ML3: Mean minimum monthly flow, March	1040.55	1496.64	43.83
ML4: Mean minimum monthly flow, April	1167.09	1391.82	19.26
ML5: Mean minimum monthly flow, May	1247.27	1281.44	2.74
ML6: Mean minimum monthly flow, June	1225.73	1356.71	10.69
ML7: Mean minimum monthly flow, July	1393.73	1585.77	13.78
ML8: Mean minimum monthly flow, August	1413.36	1777.55	25.77
ML9: Mean minimum monthly flow, September	1377.55	1792.63	30.13
ML10: Mean minimum monthly flow, October	1460.36	1616.54	10.69
ML11: Mean minimum monthly flow, November	1211.64	1363.39	12.52
ML12: Mean minimum monthly flow, December	1114.45	1329.05	19.26
ML13: CV of minimum monthly flows	41.13	30.10	-26.82
ML14: Mean minimum daily flow / mean median annual flow	0.58	0.70	21.22
ML15: Mean minimum annual flow / mean annual flow	0.52	0.63	20.43
ML16: Median minimum annual flow / median annual flow	0.71	0.77	8.57
ML20: Ratio of baseflow volume to total flow volume	0.90	0.87	-3.17
ML22: Mean annual minimum flow divided by catchment area	7700.15	7703.76	0.05
RA1: Mean of positive changes from one day to next (rise rate)	57.25	96.17	
RA2: CV, mean of positive changes from one day to next (rise rate)	272.02	294.21	
RA3: Mean of negative changes from one day to next (fall rate)	46.48	44.12	
RA4: CV, mean of negative changes from one day to next (fall rate)	157.10	265.58	
RA5: Ratio of days that are higher than previous day	0.40	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.02	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.02	0.01	
RA8: Number of flow reversals from one day to the next	123.08	31.31	
RA9: CV, number of flow reversals from one day to the next	49.03	46.99	

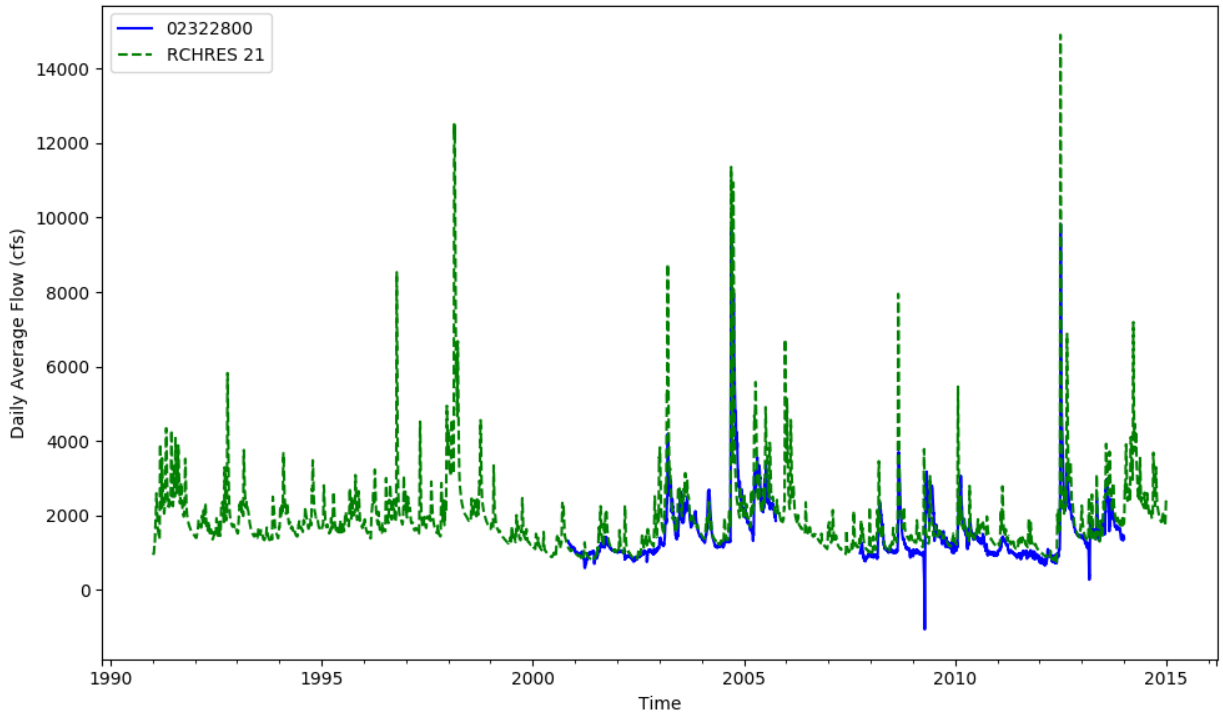


Figure T-03110206-22: Daily flow for HSFP reach 21 and USGS station 02322800.

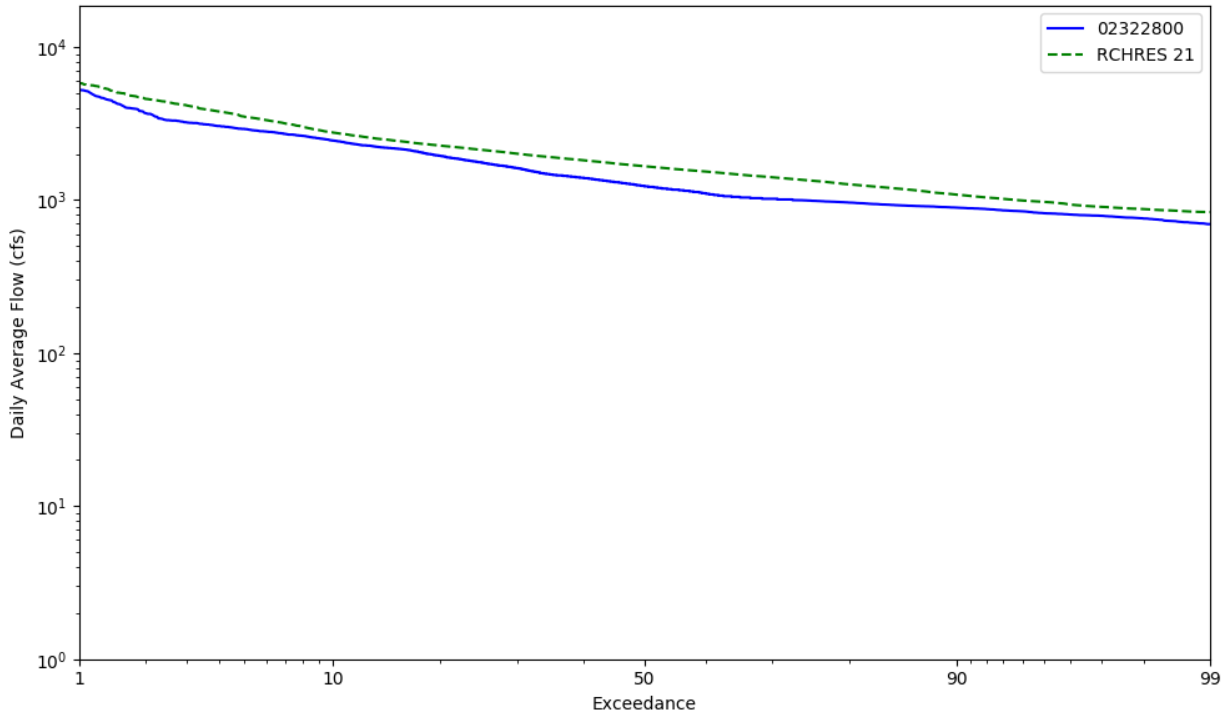


Figure T-03110206-23: Daily exceedance for HSFP reach 21 and USGS station 02322800.

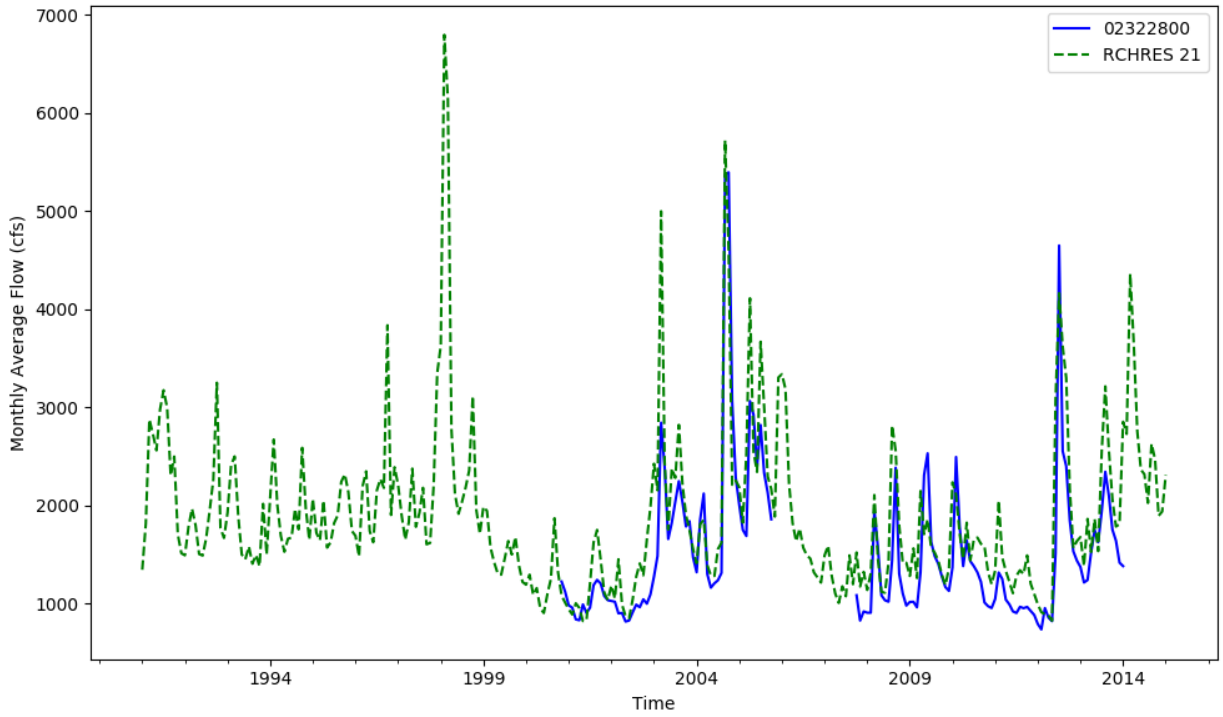


Figure T-03110206-24: Monthly flow for HSFP reach 21 and USGS station 02322800.

Table T-03110206-15: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11409	42621	9005	1786	269	2615	272426	159642	49871	117049	30679	172448	493	4303	6404	881020
AREA(%)	1.3	4.8	1.0	0.2	0.0	0.3	30.8	18.0	5.6	13.2	3.5	19.5	0.1	0.5	0.7	99.5
IMPERVIOUS																
AREA(ACRES)		2277	1006	448	269											4000
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	44.9	42.8	42.7	42.7	42.7	44.4	42.9	42.6	42.9	42.3	42.0	43.3	73.5	54.8	50.3	42.8
SURLI			8.1	6.9	6.8										7.9	0.2
UZLI																0.0
LZLI			6.2	5.3	5.5											0.1
SURO: PERVIOUS	0.0	2.0	5.4	7.5	5.3	3.1	0.1	1.2	0.9	1.3	0.7	0.0	13.9	1.5	1.0	0.7
SURO: IMPERVIOUS		31.0	31.0	31.0	31.0											0.1
SURO: COMBINED	0.0	3.5	8.0	12.2	18.1	3.1	0.1	1.2	0.9	1.3	0.7	0.0	13.9	1.5	1.0	0.8
IFWO		2.4	2.8	2.8	1.6	9.2	0.1	1.4	2.1	1.0	0.4		3.6	1.2	1.4	0.7
AGWO	0.4	2.3	4.9	2.8	2.7	2.4	1.4	3.8	2.8	3.4	3.4	0.2	2.1	7.2	9.1	2.2
AGWI	1.4	3.3	6.2	4.1	4.0	4.3	2.4	4.9	4.0	4.1	4.2	1.7	2.8	8.2	9.9	3.2
IGWI	1.0	3.7	8.6	7.3	7.7	3.6	2.2	5.6	4.1	5.1	5.2	1.6	9.8	9.9	11.5	3.5
CEPE		11.7	10.7	10.7	14.4	7.7	18.8	12.7	10.9	11.1	8.7	16.3	31.9	12.8	10.0	14.5
UZET	1.5	3.6	5.4	5.2	4.5	6.4	1.1	4.0	3.8	3.3	2.9	5.0	3.9	4.2	4.0	3.1
LZET	0.4	16.0	18.0	17.4	17.6	9.9	17.6	12.6	17.0	16.4	20.1	1.2	7.6	16.9	20.8	13.0
AGWET	0.7	0.9	1.1	1.1	1.2	1.6	0.8	1.0	1.1	0.7	0.7	1.1	0.5	0.8	0.9	0.9
BASET	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
SURET	37.5											15.9				3.6
PERO	0.4	6.7	13.2	13.2	9.5	14.7	1.6	6.4	5.8	5.7	4.6	0.2	19.5	9.9	11.6	3.6
IGWI	1.0	3.7	8.6	7.3	7.7	3.6	2.2	5.6	4.1	5.1	5.2	1.6	9.8	9.9	11.5	3.5
TAET: PERVIOUS	40.3	32.3	35.4	34.6	38.0	26.0	38.5	30.4	32.9	31.6	32.4	39.6	44.1	34.9	35.8	35.3
IMPEV: IMPERVIOUS		11.7	11.7	11.7	11.7											0.1
ET: COMBINED	40.3	31.3	33.0	30.0	24.8	26.0	38.5	30.4	32.9	31.6	32.4	39.6	44.1	34.9	35.8	35.3
PET	47.1	47.0	47.0	47.0	47.1	47.3	46.9	46.9	47.0	46.8	46.9	46.9	47.0	46.8	46.8	46.7

Table T-03110206-16: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11409	42621	9005	1786	269	2615	272426	159642	49871	117049	30679	172448	493	4303	6404	881020
AREA(%)	1.3	4.8	1.0	0.2	0.0	0.3	30.8	18.0	5.6	13.2	3.5	19.5	0.1	0.5	0.7	99.5
IMPERVIOUS																
AREA(ACRES)		2277	1006	448	269											4000
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	53.9	51.9	51.9	52.0	52.2	53.7	51.9	51.7	52.0	51.2	51.0	52.1	67.9	58.7	60.4	51.7
SURLI			8.1	6.8	6.8										7.4	0.2
UZLI																0.0
LZLI			6.2	5.3	5.5										0.0	0.1
SURO: PERVIOUS	0.0	2.4	6.5	9.3	6.8	3.5	0.2	1.6	1.1	1.4	1.0	0.0	11.3	1.6	1.1	0.9
SURO: IMPERVIOUS		38.7	38.6	38.7	38.8											0.2
SURO: COMBINED	0.0	4.2	9.7	15.2	22.8	3.5	0.2	1.6	1.1	1.4	1.0	0.0	11.3	1.6	1.1	1.0
IFWO		3.2	3.8	3.7	2.1	13.6	0.4	2.0	3.0	1.2	0.6		3.8	1.0	1.1	1.1
AGWO	0.7	2.9	5.5	3.1	2.7	2.8	2.5	4.7	3.3	4.2	4.2	0.4	0.6	7.4	10.4	2.9
AGWI	1.2	4.4	7.0	4.7	4.7	5.2	4.0	6.4	5.2	5.4	5.3	1.6	1.8	8.5	11.8	4.3
IGWI	0.9	4.9	9.9	8.5	8.8	4.4	3.5	7.4	5.3	6.8	6.7	1.5	5.9	10.3	14.1	4.7
CEPE		13.2	12.2	12.2	16.2	8.1	20.8	14.3	12.2	12.7	10.0	18.2	25.9	13.9	11.7	16.2
UZET	0.2	4.2	6.1	5.8	5.1	7.5	1.5	4.7	4.4	3.9	3.2	5.6	4.9	4.0	4.4	3.6
LZET	0.0	18.4	19.7	18.9	19.7	10.7	22.2	14.4	19.7	18.8	23.2	1.2	13.9	18.7	23.2	15.5
AGWET	0.2	1.2	1.3	1.3	1.5	1.9	1.3	1.4	1.6	1.0	1.0	1.5	1.0	1.0	1.2	1.3
BASET	0.2	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2
SURET	53.6											25.7				5.7
PERO	0.7	8.4	15.7	16.1	11.6	19.9	3.1	8.3	7.4	6.9	5.8	0.4	15.7	10.0	12.7	4.9
IGWI	0.9	4.9	9.9	8.5	8.8	4.4	3.5	7.4	5.3	6.8	6.7	1.5	5.9	10.3	14.1	4.7
TAET: PERVIOUS	54.2	37.2	39.5	38.5	42.8	28.5	46.1	35.0	38.0	36.4	37.5	52.3	45.9	37.7	40.6	42.5
IMPEV: IMPERVIOUS		13.2	13.2	13.3	13.3											0.1
ET: COMBINED	54.2	35.9	36.9	33.4	28.1	28.5	46.1	35.0	38.0	36.4	37.5	52.3	45.9	37.7	40.6	42.6
PET	54.3	54.2	54.3	54.3	54.3	54.4	54.2	54.3	54.3	54.2	54.2	54.2	54.4	54.3	54.2	54.0

Table T-03110206-17: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11409	42621	9005	1786	269	2615	272426	159642	49871	117049	30679	172448	493	4303	6404	881020
AREA(%)	1.3	4.8	1.0	0.2	0.0	0.3	30.8	18.0	5.6	13.2	3.5	19.5	0.1	0.5	0.7	99.5
IMPERVIOUS																
AREA(ACRES)		2277	1006	448	269											4000
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	44.0	46.6	46.8	46.9	46.8	44.5	46.6	46.8	46.4	47.4	47.6	46.3	61.4	57.2	57.3	46.6
SURLI			7.2	6.2	6.3										9.9	0.2
UZLI																0.0
LZLI			5.8	5.0	5.3										0.0	0.1
SURO: PERVIOUS	0.0	3.7	7.4	10.1	8.1	4.5	0.4	2.4	2.0	2.6	1.8	0.0	13.2	2.5	1.7	1.4
SURO: IMPERVIOUS		34.9	35.0	35.0	35.0											0.2
SURO: COMBINED	0.0	5.3	10.2	15.1	21.6	4.5	0.4	2.4	2.0	2.6	1.8	0.0	13.2	2.5	1.7	1.6
IFWO		3.4	3.2	2.9	1.8	8.9	0.8	2.5	3.1	1.8	1.4		2.2	2.4	2.8	1.4
AGWO	0.6	3.1	5.3	3.2	2.6	3.0	2.5	4.9	3.8	4.7	4.9	0.5	0.6	7.8	11.3	3.1
AGWI	1.1	4.1	6.3	4.3	3.9	4.5	3.6	5.9	5.0	5.4	5.7	1.8	1.4	8.7	12.6	4.2
IGWI	0.8	4.8	9.3	8.2	8.4	4.0	3.6	6.9	5.3	7.0	7.3	1.9	5.6	10.5	14.7	4.7
CEPE		11.8	10.8	10.8	14.8	6.8	19.8	12.9	10.8	11.3	8.6	16.8	23.4	12.5	9.8	15.0
UZET	0.3	4.5	6.3	6.0	5.5	7.1	1.7	5.1	4.7	4.2	3.7	5.1	5.1	4.4	4.7	3.8
LZET	0.0	17.2	18.4	17.7	17.9	10.4	19.6	13.3	18.3	17.5	21.9	0.5	12.5	17.2	21.6	14.0
AGWET	0.6	1.1	1.2	1.2	1.3	1.7	1.1	1.2	1.3	0.9	0.9	1.0	0.8	0.9	1.1	1.1
BASET	0.3	0.1	0.1	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1
SURET	47.7											24.0				5.3
PERO	0.7	10.2	16.0	16.1	12.6	16.3	3.7	9.8	8.8	9.1	8.0	0.5	16.0	12.7	15.9	5.9
IGWI	0.8	4.8	9.3	8.2	8.4	4.0	3.6	6.9	5.3	7.0	7.3	1.9	5.6	10.5	14.7	4.7
TAET: PERVIOUS	48.9	34.6	36.8	35.8	39.8	26.2	42.4	32.6	35.4	34.1	35.1	47.6	41.9	35.1	37.2	39.2
IMPEV: IMPERVIOUS		11.8	11.8	11.9	11.8											0.1
ET: COMBINED	48.9	33.5	34.3	31.0	25.8	26.2	42.4	32.6	35.4	34.1	35.1	47.6	41.9	35.1	37.2	39.3
PET	48.9	48.0	47.9	48.0	48.0	48.6	48.0	47.9	48.0	47.7	47.6	48.2	48.1	47.4	47.6	47.8

Table T-03110206-18: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11409	42621	9005	1786	269	2615	272426	159642	49871	117049	30679	172448	493	4303	6404	881020
AREA(%)	1.3	4.8	1.0	0.2	0.0	0.3	30.8	18.0	5.6	13.2	3.5	19.5	0.1	0.5	0.7	99.5
IMPERVIOUS																
AREA(ACRES)		2277	1006	448	269											4000
AREA(%)		0.3	0.1	0.1	0.0											0.5
SUPY	50.5	51.6	51.6	51.7	51.8	51.4	51.4	51.5	51.5	51.4	51.6	51.2	67.0	59.3	57.9	51.2
SURLI			8.8	7.7	7.7					0.0		0.0			5.7	0.2
UZLI																0.0
LZLI			6.4	5.5	5.8										0.0	0.1
SURO: PERVIOUS	3.5	3.9	8.5	11.5	9.2	5.0	0.5	2.6	2.0	2.7	1.9	2.7	14.3	2.5	1.8	2.1
SURO: IMPERVIOUS		39.2	39.2	39.3	39.4											0.2
SURO: COMBINED	3.5	5.7	11.5	17.1	24.3	5.0	0.5	2.6	2.0	2.7	1.9	2.7	14.3	2.5	1.8	2.3
IFWO		4.2	4.0	3.6	2.6	11.7	0.9	3.1	4.0	2.0	1.2		3.5	2.2	1.5	1.7
AGWO	0.4	3.6	6.5	4.1	3.9	3.4	3.9	5.6	4.4	5.2	5.5	1.1	1.2	8.2	10.0	3.9
AGWI	1.0	4.9	7.8	5.4	5.3	5.4	5.2	6.9	5.9	6.2	6.5	2.3	2.1	9.2	11.2	5.1
IGWI	0.7	5.6	11.3	10.1	10.6	4.7	4.9	8.0	6.1	8.0	8.3	2.4	6.9	11.3	13.5	5.7
CEPE		12.4	11.4	11.4	15.1	7.9	19.5	13.4	11.5	11.8	9.2	17.0	23.5	12.9	10.4	15.2
UZET	0.7	4.1	5.9	5.6	5.1	6.8	1.9	4.8	4.5	3.9	3.6	3.6	4.6	4.0	4.2	3.4
LZET	0.2	16.5	17.9	17.4	17.6	10.0	18.6	12.7	17.4	16.8	20.8	0.7	12.3	17.1	21.0	13.4
AGWET	0.4	1.1	1.1	1.2	1.2	1.7	1.0	1.1	1.3	0.8	0.8	0.9	0.7	0.9	1.0	1.0
BASET	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2
SURET	44.7											23.3				5.1
PERO	4.0	11.8	19.0	19.2	15.6	20.1	5.4	11.3	10.5	9.9	8.7	3.7	18.9	12.9	13.2	7.7
IGWI	0.7	5.6	11.3	10.1	10.6	4.7	4.9	8.0	6.1	8.0	8.3	2.4	6.9	11.3	13.5	5.7
TAET: PERVIOUS	46.1	34.2	36.5	35.6	39.2	26.7	41.2	32.2	34.8	33.5	34.5	45.7	41.2	35.0	36.6	38.2
IMPEV: IMPERVIOUS		12.4	12.4	12.4	12.4											0.1
ET: COMBINED	46.1	33.1	34.1	31.0	25.8	26.7	41.2	32.2	34.8	33.5	34.5	45.7	41.2	35.0	36.6	38.2
PET	48.4	48.0	48.0	48.1	48.2	48.4	48.0	48.0	48.1	47.9	47.8	48.1	48.1	47.7	47.8	47.8

Table T-03110206-19: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.999	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.999
2	0.999	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.999
3	0.999	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.999
4	0.999	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.999
5	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
6	0.999	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.999
7	0.995	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.995
8	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
9	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
10	0.999	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.999
11	0.999	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.999
12	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
13	0.999	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.999
14	0.999	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.999
15	0.999	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.963	0.999
16	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
17	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
18	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
19	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
20	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
21	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
22	0.999	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.999
23	0.999	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.999
24	0.999	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.999
25	0.999	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.999
26	0.999	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.999

Table T-03110206-20: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
2	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
3	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
4	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
7	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
11	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
14	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
15	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
24	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
25	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
26	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003

Table T-03110206-21: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
2	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
3	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
4	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
5	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
6	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
7	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
8	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
9	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
10	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
11	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
12	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
13	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
14	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
15	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
16	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
17	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
18	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
19	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
20	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
21	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
22	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
23	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
24	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
25	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136
26	0.000	0.061	0.050	0.050	0.100	0.020	0.200	0.075	0.051	0.055	0.030	0.136

Table T-03110206-22: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
2	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
3	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
4	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
5	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
6	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
7	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438	0.438
8	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
9	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
10	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412
11	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
12	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
13	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412
14	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412
15	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412	0.412
16	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
17	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
18	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
19	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
20	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
21	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
22	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
23	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
24	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
25	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900
26	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900

Table T-03110206-23: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.040	0.010	0.010	0.073	0.024	0.245	0.044	0.045	0.028	0.042	0.001
2	0.001	0.040	0.010	0.010	0.073	0.024	0.245	0.044	0.045	0.028	0.042	0.001
3	0.001	0.040	0.010	0.010	0.073	0.024	0.245	0.044	0.045	0.028	0.042	0.001
4	0.001	0.040	0.010	0.010	0.073	0.024	0.245	0.044	0.045	0.028	0.042	0.001
5	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
6	0.001	0.040	0.010	0.010	0.073	0.024	0.245	0.044	0.045	0.028	0.042	0.001
7	0.001	0.341	0.341	0.341	0.341	0.487	0.731	0.487	0.487	0.487	0.584	0.001
8	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
9	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
10	0.001	0.341	0.341	0.378	0.378	0.540	0.810	0.540	0.540	0.540	0.648	0.001
11	0.001	0.040	0.010	0.010	0.073	0.024	0.245	0.044	0.045	0.028	0.042	0.001
12	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
13	0.001	0.341	0.341	0.378	0.378	0.540	0.810	0.540	0.540	0.540	0.648	0.001
14	0.001	0.341	0.341	0.378	0.378	0.540	0.810	0.540	0.540	0.540	0.648	0.001
15	0.001	0.341	0.341	0.378	0.378	0.540	0.810	0.540	0.540	0.540	0.648	0.001
16	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
17	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
18	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
19	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
20	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
21	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
22	0.004	0.429	0.429	0.429	0.429	0.612	0.919	0.612	0.612	0.612	0.735	0.004
23	0.001	0.038	0.038	0.038	0.038	0.055	0.082	0.055	0.055	0.055	0.066	0.001
24	0.001	0.038	0.038	0.038	0.038	0.055	0.082	0.055	0.055	0.055	0.066	0.001
25	0.001	0.038	0.038	0.038	0.038	0.055	0.082	0.055	0.055	0.055	0.066	0.001
26	0.001	0.038	0.038	0.038	0.038	0.055	0.082	0.055	0.055	0.055	0.066	0.001

Table T-03110206-24: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
2		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
12		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
13		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
14		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
15		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
16		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
17		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
18		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
19		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
20		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
21		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
22		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
23		0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	
24		0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	
25		0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	
26		0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	

Table T-03110206-25: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
2	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
3	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
4	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
5	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
6	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
7	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697	0.697
8	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
9	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635	0.635
12	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
17	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
18	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
19	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
20	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
21	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
22	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652	0.652
23	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691
24	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691
25	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691
26	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691	0.691

Table T-03110206-26: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287
2	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287
3	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287
4	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287
5	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
6	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287
7	0.545	0.545	0.545	0.545	0.545	0.545	0.545	0.545	0.545	0.545	0.545	0.545
8	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
9	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287	0.287
12	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
17	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
18	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
19	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
20	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
21	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
22	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715	0.715
23	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187
24	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187
25	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187
26	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187

Table T-03110206-27: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.242	0.600	0.600	0.400	0.600	0.300	0.850	0.650	0.650	0.600	0.750	1.196
2	0.242	0.600	0.600	0.400	0.600	0.300	0.850	0.650	0.650	0.600	0.750	1.196
3	0.242	0.600	0.600	0.400	0.600	0.300	0.850	0.650	0.650	0.600	0.750	1.196
4	0.242	0.600	0.600	0.400	0.600	0.300	0.850	0.650	0.650	0.600	0.750	1.196
5	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
6	0.242	0.600	0.600	0.400	0.600	0.300	0.850	0.650	0.650	0.600	0.750	1.196
7	0.233	0.635	0.635	0.635	0.635	0.424	0.900	0.424	0.635	0.635	0.741	0.907
8	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
9	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
10	0.262	0.591	0.591	0.591	0.591	0.394	0.837	0.394	0.591	0.591	0.690	1.055
11	0.242	0.600	0.600	0.400	0.600	0.300	0.850	0.650	0.650	0.600	0.750	1.196
12	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
13	0.262	0.591	0.591	0.591	0.591	0.394	0.837	0.394	0.591	0.591	0.690	1.055
14	0.262	0.591	0.591	0.591	0.591	0.394	0.837	0.394	0.591	0.591	0.690	1.055
15	0.262	0.591	0.591	0.591	0.591	0.394	0.837	0.394	0.591	0.591	0.690	1.055
16	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
17	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
18	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
19	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
20	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
21	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
22	0.276	0.388	0.388	0.388	0.388	0.259	0.550	0.259	0.388	0.388	0.453	0.988
23	0.526	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.970
24	0.526	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.970
25	0.526	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.970
26	0.526	0.600	0.600	0.600	0.600	0.400	0.850	0.400	0.600	0.600	0.700	0.970

Table T-03110206-28: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.665	6.649	6.659	6.682	7.494	10.000	7.441	7.477	7.469	8.324	0.300
2	0.200	6.665	6.649	6.659	6.682	7.494	10.000	7.441	7.477	7.469	8.324	0.300
3	0.200	6.665	6.649	6.659	6.682	7.494	10.000	7.441	7.477	7.469	8.324	0.300
4	0.200	6.665	6.649	6.659	6.682	7.494	10.000	7.441	7.477	7.469	8.324	0.300
5	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
6	0.200	6.665	6.649	6.659	6.682	7.494	10.000	7.441	7.477	7.469	8.324	0.300
7	0.050	3.397	3.397	3.397	3.397	3.822	5.097	3.822	3.822	3.822	4.247	0.100
8	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
9	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
10	0.107	3.397	3.397	3.397	3.397	3.822	10.000	3.822	3.822	3.822	4.247	0.154
11	0.200	6.665	6.649	6.659	6.682	7.494	10.000	7.441	7.477	7.469	8.324	0.300
12	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
13	0.107	3.397	3.397	3.397	3.397	3.822	10.000	3.822	3.822	3.822	4.247	0.154
14	0.107	3.397	3.397	3.397	3.397	3.822	10.000	3.822	3.822	3.822	4.247	0.154
15	0.107	3.397	3.397	3.397	3.397	3.822	10.000	3.822	3.822	3.822	4.247	0.154
16	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
17	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
18	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
19	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
20	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
21	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
22	0.132	8.020	7.990	7.997	8.001	9.000	12.000	9.146	9.032	9.000	10.000	0.199
23	0.102	7.334	7.334	7.334	7.334	8.251	11.000	8.251	8.251	8.251	9.168	0.100
24	0.102	7.334	7.334	7.334	7.334	8.251	11.000	8.251	8.251	8.251	9.168	0.100
25	0.102	7.334	7.334	7.334	7.334	8.251	11.000	8.251	8.251	8.251	9.168	0.100
26	0.102	7.334	7.334	7.334	7.334	8.251	11.000	8.251	8.251	8.251	9.168	0.100

Table T-03110206-29: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.093	0.132	0.070	0.209	0.070	0.202	0.267	0.143	0.281	0.146	0.055
2	0.050	0.093	0.132	0.070	0.209	0.070	0.202	0.267	0.143	0.281	0.146	0.055
3	0.050	0.093	0.132	0.070	0.209	0.070	0.202	0.267	0.143	0.281	0.146	0.055
4	0.050	0.093	0.132	0.070	0.209	0.070	0.202	0.267	0.143	0.281	0.146	0.055
5	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.093	0.132	0.070	0.209	0.070	0.202	0.267	0.143	0.281	0.146	0.055
7	0.050	1.014	1.014	1.014	1.014	1.014	1.449	1.159	1.159	1.014	1.449	0.112
8	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.227
11	0.050	0.093	0.132	0.070	0.209	0.070	0.202	0.267	0.143	0.281	0.146	0.055
12	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.227
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.227
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.227
16	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.102	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.987
24	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.987
25	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.987
26	0.050	0.071	0.071	0.071	0.071	0.071	0.101	0.081	0.081	0.071	0.101	0.987

APPENDIX T-03120001

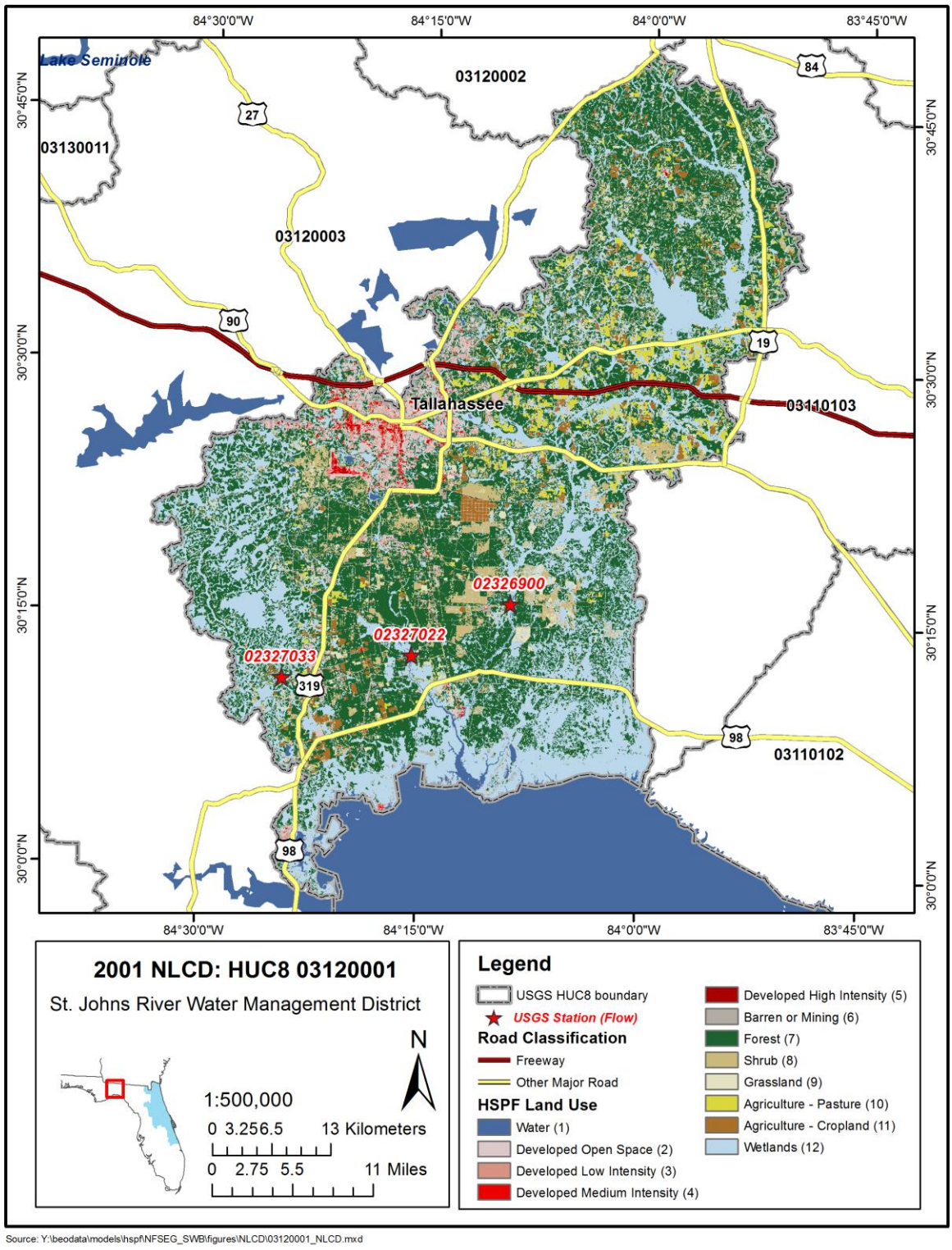


Figure T-03120001-1: Land Cover from the National Land Cover Database.

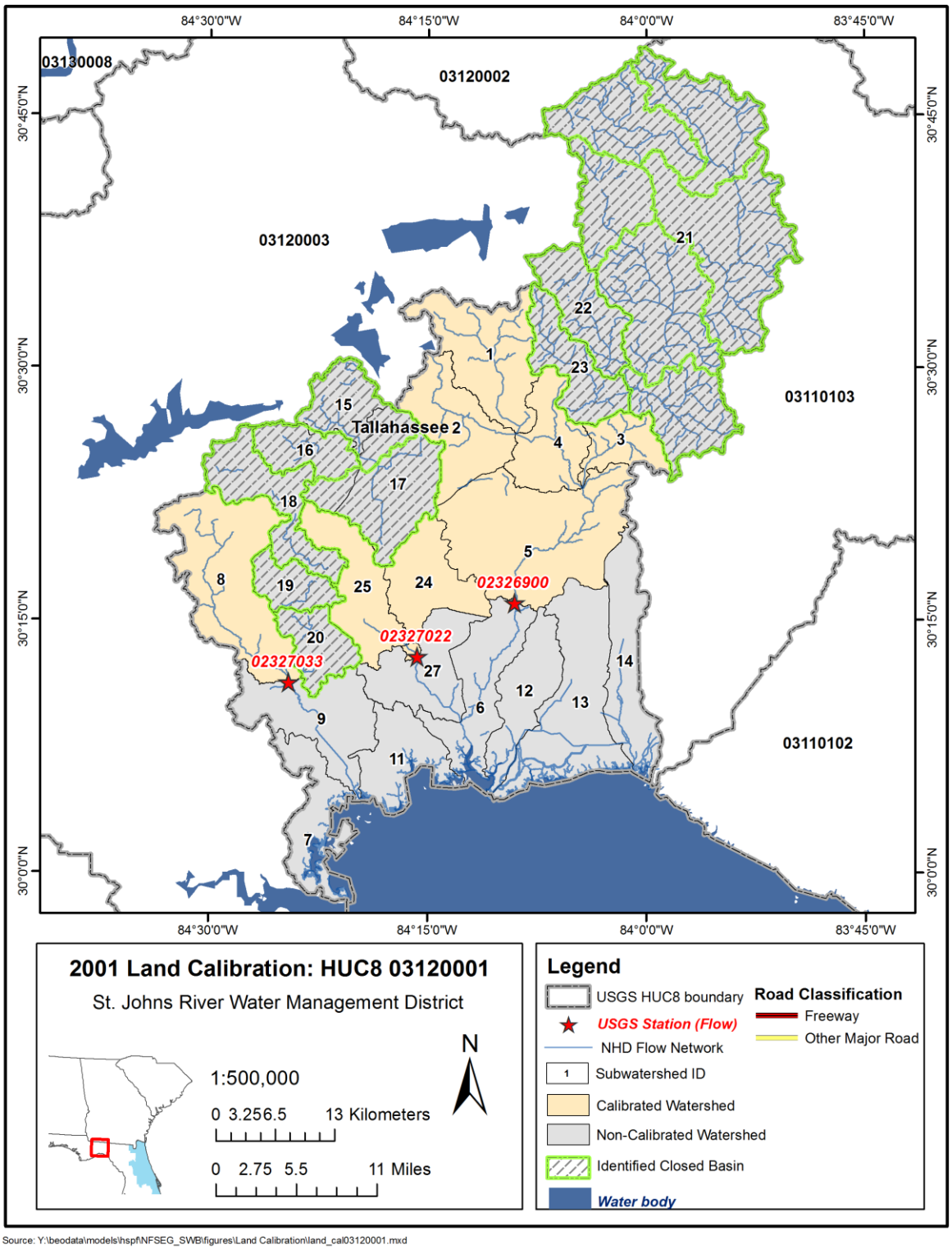


Figure T-03120001-2: Calibrated sub-watersheds.

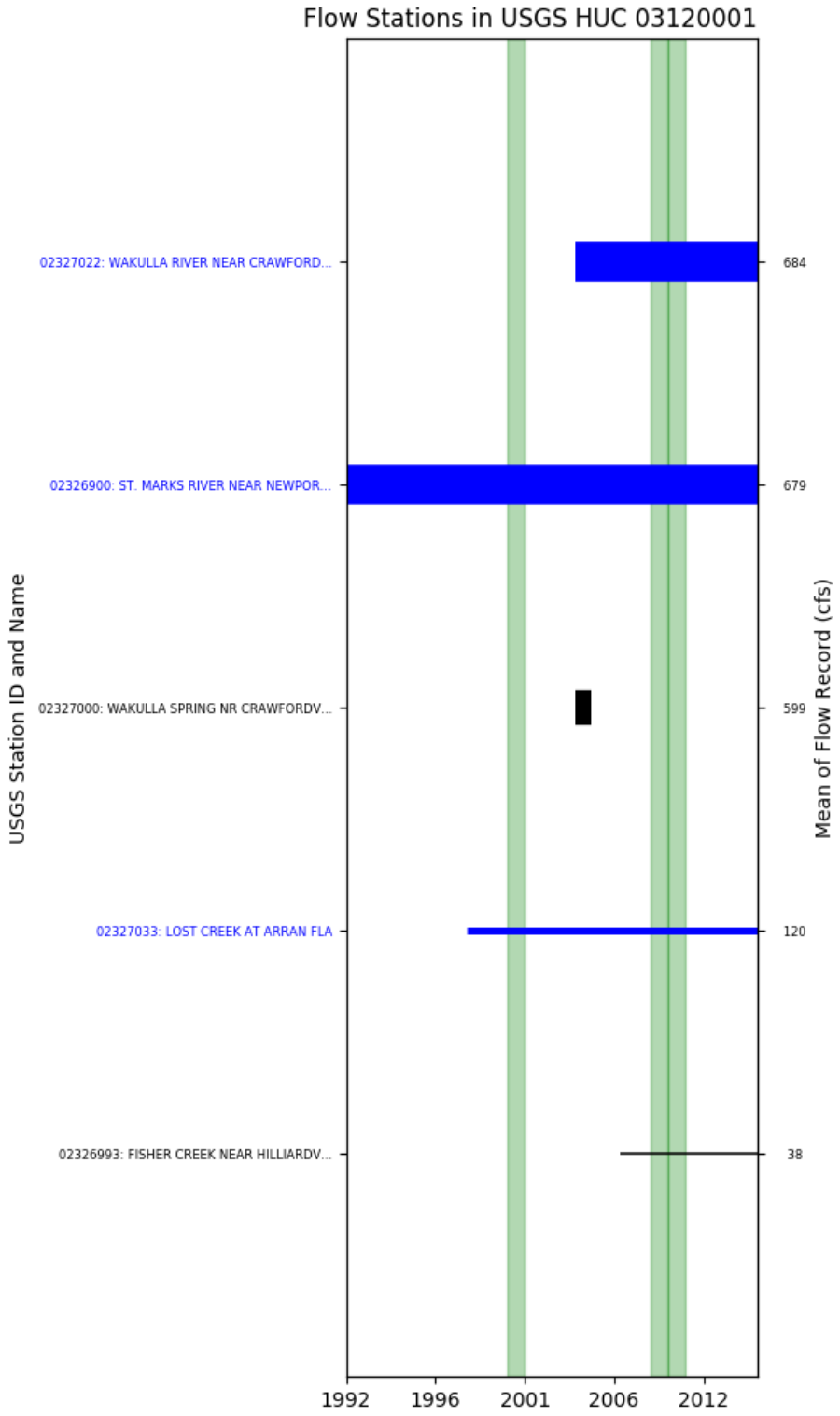


Figure T-03120001-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 05, USGS GAUGE 02326900

Water-Data Report 2009
02326900 ST. MARKS RIVER NEAR NEWPORT, FL
Ochlockonee Basin Apalachee Bay-St. Marks Subbasin

LOCATION.--Lat 301600, long 840900 referenced to North American Datum of 1927, Wakulla County, FL, Hydrologic Unit 03120001, on right bank 0.5 mi downstream from Rhodes Springs, 6.4 mi north of Newport, 11 mi upstream from Wakulla River, and 14.4 mi upstream from mouth.

DRAINAGE AREA.--535.00 mi, including 240 mi of Lake Miccosukee, which contributes at high stages to the St. Marks River.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1956 to September 1976. October 1976 to September 1977 (gage heights only); October 1977 to September 1990; October 1990 to September 1991 (gage heights and peak discharge only); October 1991 to September 1994; July 1996 to current year.

REVISED RECORDS.--WSP 1905: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.53 ft above National Geodetic Vertical Datum of 1929. Prior to July 1, 2004, at site 0.4 mi downstream at same datum.

REMARKS.--Records poor.

Table T-03120001-1: Comparison Statistics Between HSPF Reach 05 and USGS Gauge 02326900.

Statistic	Value
Bias	-14.73
Standard error	182.89
Relative bias	-0.02
Relative standard error	0.57
Nash-Sutcliffe coefficient	0.68
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.41
Index of agreement	0.71

Table T-03120001-2: Hydrologic Indices Between USGS Gauge 02326900 and HSPF Reach 05.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02326900	Simulated Reach 05	Percent Difference
MA1: Mean, all daily flows	696.96	681.70	-2.19
MA2: Median, all daily flows	612.00	573.83	-6.24

MA3: CV, all daily flows	38.70	42.25	9.17
MA4: CV, log of all daily flows	35.81	39.64	10.69
MA5: Mean daily flow / median daily flow	1.14	1.19	4.32
MA9: (Q10 - Q90) / median daily flow	1.06	1.18	12.04
MA10: (Q20 - Q80) / median daily flow	0.63	0.73	16.07
MA11: (Q25 - Q75) / median daily flow	0.46	0.56	23.01
MA12: Mean monthly flow, January	492.18	588.93	19.66
MA13: Mean monthly flow, February	594.82	670.43	12.71
MA14: Mean monthly flow, March	747.29	705.33	-5.62
MA15: Mean monthly flow, April	612.12	536.88	-12.29
MA16: Mean monthly flow, May	566.41	506.51	-10.58
MA17: Mean monthly flow, June	597.42	540.97	-9.45
MA18: Mean monthly flow, July	666.46	632.88	-5.04
MA19: Mean monthly flow, August	761.91	697.15	-8.50
MA20: Mean monthly flow, September	651.09	599.16	-7.98
MA21: Mean monthly flow, October	579.94	568.48	-1.98
MA22: Mean monthly flow, November	421.40	457.45	8.56
MA23: Mean monthly flow, December	449.57	485.82	8.06
ML1: Mean minimum monthly flow, January	505.39	489.31	-3.18
ML2: Mean minimum monthly flow, February	603.72	570.03	-5.58
ML3: Mean minimum monthly flow, March	662.89	574.19	-13.38
ML4: Mean minimum monthly flow, April	644.72	527.70	-18.15
ML5: Mean minimum monthly flow, May	604.74	486.61	-19.53
ML6: Mean minimum monthly flow, June	587.53	497.48	-15.33
ML7: Mean minimum monthly flow, July	622.75	552.97	-11.20
ML8: Mean minimum monthly flow, August	624.80	574.83	-8.00
ML9: Mean minimum monthly flow, September	571.60	526.50	-7.89
ML10: Mean minimum monthly flow, October	531.05	485.65	-8.55
ML11: Mean minimum monthly flow, November	487.00	462.89	-4.95
ML12: Mean minimum monthly flow, December	488.00	468.39	-4.02
ML13: CV of minimum monthly flows	30.00	27.43	-8.56
ML14: Mean minimum daily flow / mean median annual flow	0.72	0.69	-4.58
ML15: Mean minimum annual flow / mean annual flow	0.66	0.63	-5.03
ML16: Median minimum annual flow / median annual flow	0.75	0.71	-6.56
ML20: Ratio of baseflow volume to total flow volume	0.90	0.85	-5.08
ML22: Mean annual minimum flow divided by catchment area	4.66	4.38	-6.03
RA1: Mean of positive changes from one day to next (rise rate)	36.04	78.34	
RA2: CV, mean of positive changes from one day to next (rise rate)	334.78	270.89	
RA3: Mean of negative changes from one day to next (fall rate)	17.87	24.04	
RA4: CV, mean of negative changes from one day to next (fall rate)	214.46	225.81	
RA5: Ratio of days that are higher than previous day	0.31	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.01	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.01	0.02	
RA8: Number of flow reversals from one day to the next	75.41	63.82	
RA9: CV, number of flow reversals from one day to the next	39.57	36.68	

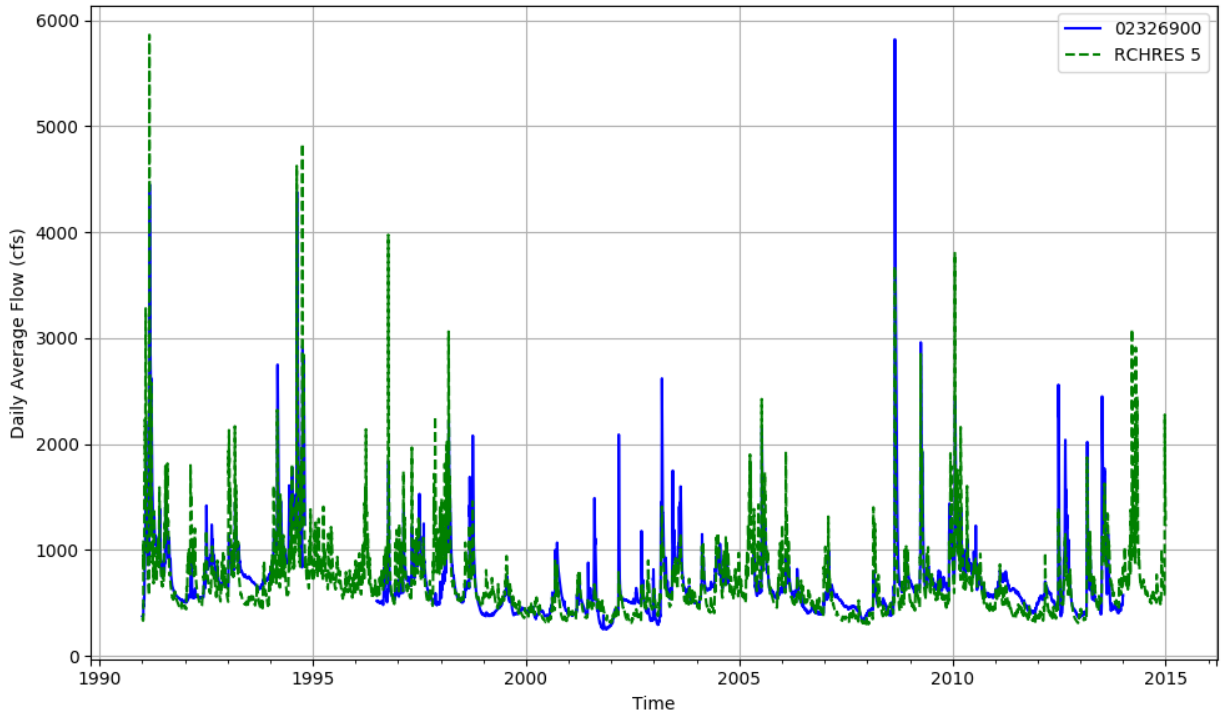


Figure T-03120001-4: Daily flow for HSFP reach 05 and USGS station 02326900.

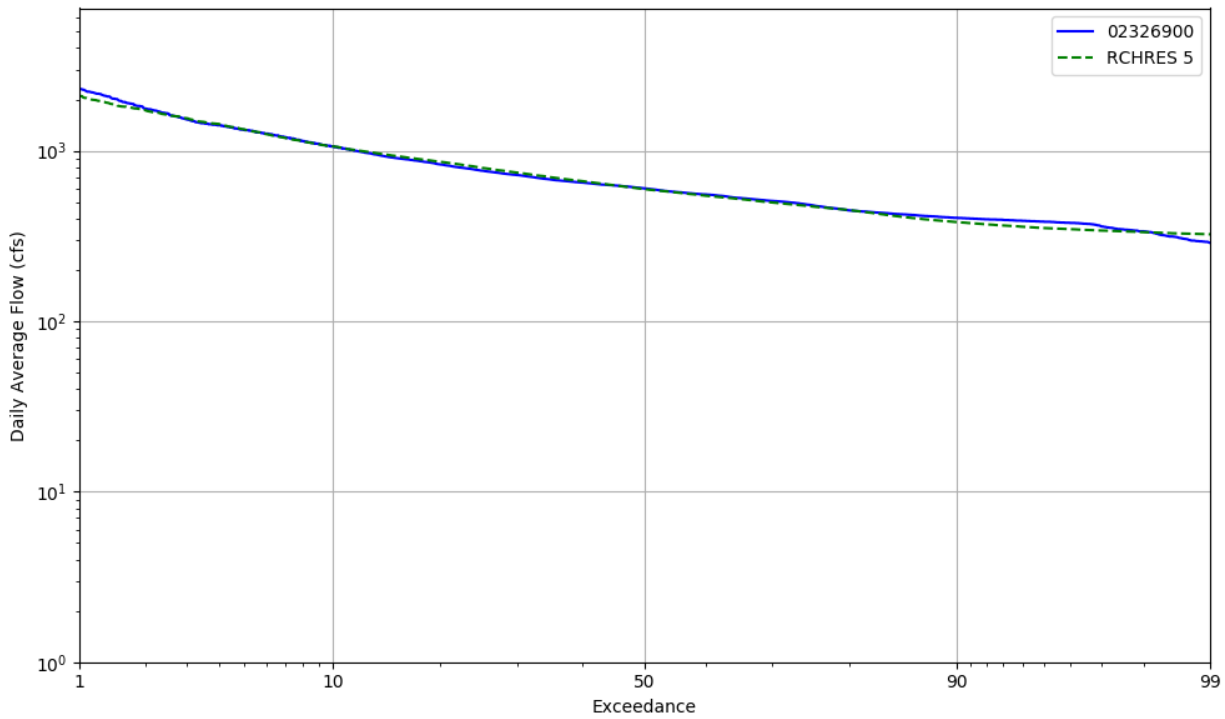


Figure T-03120001-5: Daily exceedance for HSFP reach 05 and USGS station 02326900.

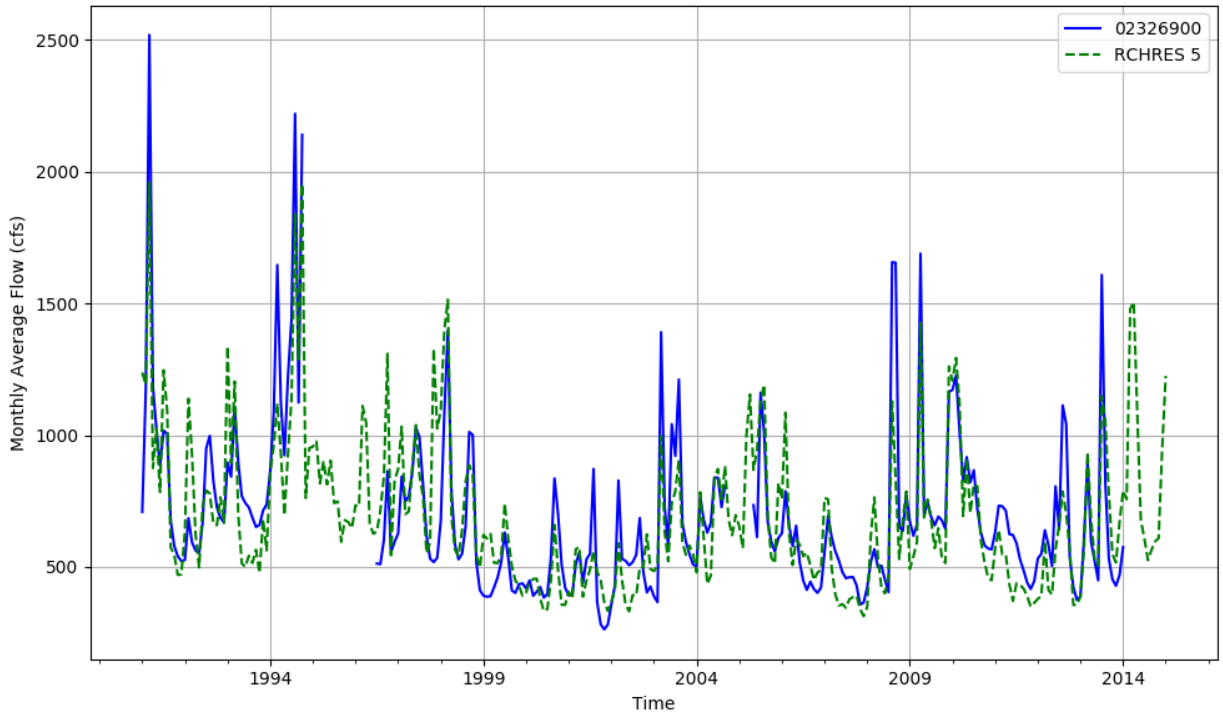


Figure T-03120001-6: Monthly flow for HSFP reach 05 and USGS station 02326900.

HSPF REACH 08, USGS GAUGE 02327033

Water-Data Report 2009
02327033 LOST CREEK AT ARRAN, FL
Ochlockonee Basin Apalachee Bay-St. Marks Subbasin

LOCATION.--Lat 301117, long 842430 referenced to North American Datum of 1927, Wakulla County, FL, Hydrologic Unit 03120001, on downstream side of bridge on State Highway 368, and 0.5 mi east of Arran.

DRAINAGE AREA.--70.4 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1928 to May 1981, miscellaneous discharge measurements only; October 1998 to September 2005 (discontinued). January 2007 to current year.

GAGE.--Water-stage recorder. Datum of gage is 11.08 ft above NGVD 1929.

REMARKS.--Records poor.

Table T-03120001-3: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02327033.

Statistic	Value
Bias	-51.27
Standard error	135.49
Relative bias	-0.44
Relative standard error	0.87
Nash-Sutcliffe coefficient	0.25
Kling-Gupta coefficient	0.22
Coefficient of efficiency	0.38
Index of agreement	0.63

Table T-03120001-4: Hydrologic Indices Between USGS Gauge 02327033 and HSPF Reach 08.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02327033	Simulated Reach 08	Percent Difference
MA1: Mean, all daily flows	112.30	55.89	-50.23
MA2: Median, all daily flows	32.00	36.25	13.29
MA3: CV, all daily flows	203.33	79.18	-61.06
MA4: CV, log of all daily flows	150.90	73.99	-50.97
MA5: Mean daily flow / median daily flow	3.51	1.54	-56.07
MA9: (Q10 - Q90) / median daily flow	8.01	2.55	-68.18
MA10: (Q20 - Q80) / median daily flow	3.94	1.34	-66.07
MA11: (Q25 - Q75) / median daily flow	2.78	0.99	-64.57
MA12: Mean monthly flow, January	57.80	31.59	-45.35
MA13: Mean monthly flow, February	111.57	44.22	-60.37

MA14: Mean monthly flow, March	201.16	58.28	-71.03
MA15: Mean monthly flow, April	97.70	83.15	-14.89
MA16: Mean monthly flow, May	22.54	36.77	63.15
MA17: Mean monthly flow, June	108.12	50.38	-53.41
MA18: Mean monthly flow, July	111.69	62.50	-44.04
MA19: Mean monthly flow, August	193.40	79.20	-59.05
MA20: Mean monthly flow, September	139.13	50.34	-63.82
MA21: Mean monthly flow, October	67.77	32.95	-51.38
MA22: Mean monthly flow, November	37.67	33.65	-10.66
MA23: Mean monthly flow, December	42.30	32.14	-24.03
ML1: Mean minimum monthly flow, January	20.50	26.01	26.86
ML2: Mean minimum monthly flow, February	24.94	27.35	9.68
ML3: Mean minimum monthly flow, March	25.81	36.82	42.68
ML4: Mean minimum monthly flow, April	10.19	35.41	247.49
ML5: Mean minimum monthly flow, May	3.10	22.54	627.07
ML6: Mean minimum monthly flow, June	7.45	27.10	263.74
ML7: Mean minimum monthly flow, July	26.89	37.14	38.10
ML8: Mean minimum monthly flow, August	28.49	40.41	41.88
ML9: Mean minimum monthly flow, September	13.97	31.49	125.39
ML10: Mean minimum monthly flow, October	13.41	27.51	105.15
ML11: Mean minimum monthly flow, November	10.46	26.18	150.41
ML12: Mean minimum monthly flow, December	14.67	25.45	73.49
ML13: CV of minimum monthly flows	129.14	57.25	-55.66
ML14: Mean minimum daily flow / mean median annual flow	0.08	0.42	414.01
ML15: Mean minimum annual flow / mean annual flow	0.01	0.32	2161.99
ML16: Median minimum annual flow / median annual flow	0.05	0.45	872.52
ML20: Ratio of baseflow volume to total flow volume	0.27	0.69	156.44
ML22: Mean annual minimum flow divided by catchment area	9090.92	9091.07	0.00
RA1: Mean of positive changes from one day to next (rise rate)	59.83	11.60	
RA2: CV, mean of positive changes from one day to next (rise rate)	320.34	320.33	
RA3: Mean of negative changes from one day to next (fall rate)	25.67	3.29	
RA4: CV, mean of negative changes from one day to next (fall rate)	298.78	307.11	
RA5: Ratio of days that are higher than previous day	0.26	0.22	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.14	0.03	
RA8: Number of flow reversals from one day to the next	65.91	64.09	
RA9: CV, number of flow reversals from one day to the next	37.95	36.00	

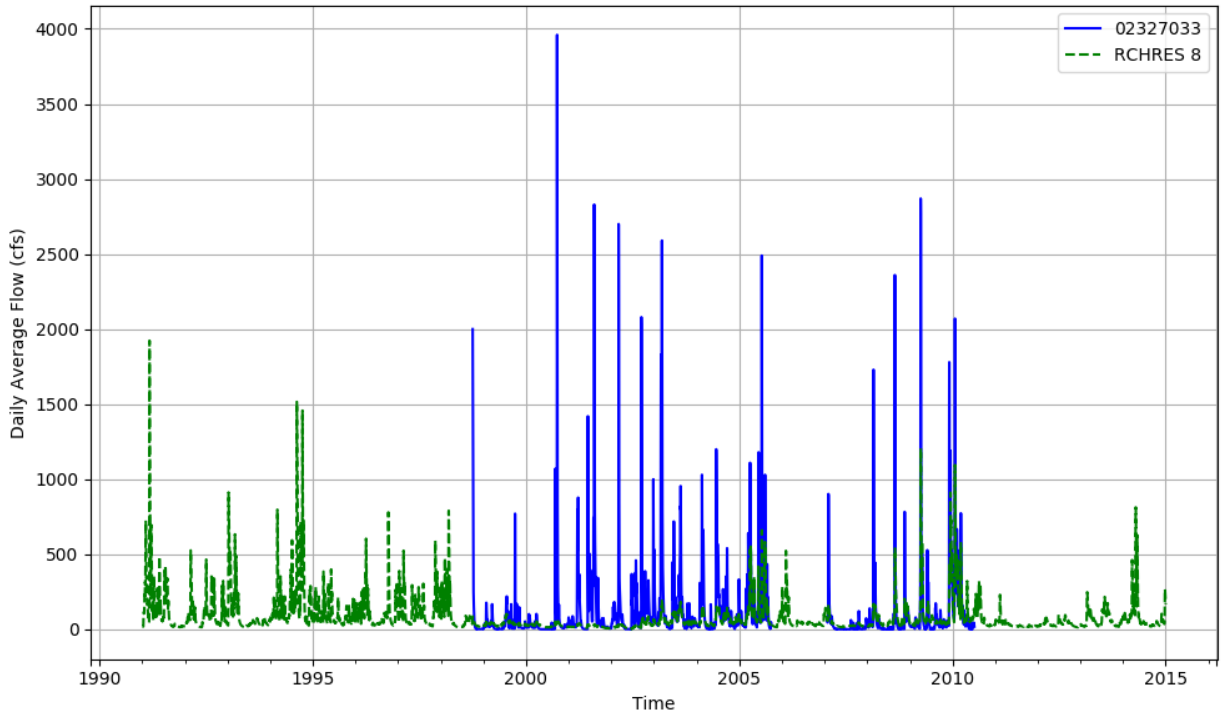


Figure T-03120001-7: Daily flow for HSFP reach 08 and USGS station 02327033.

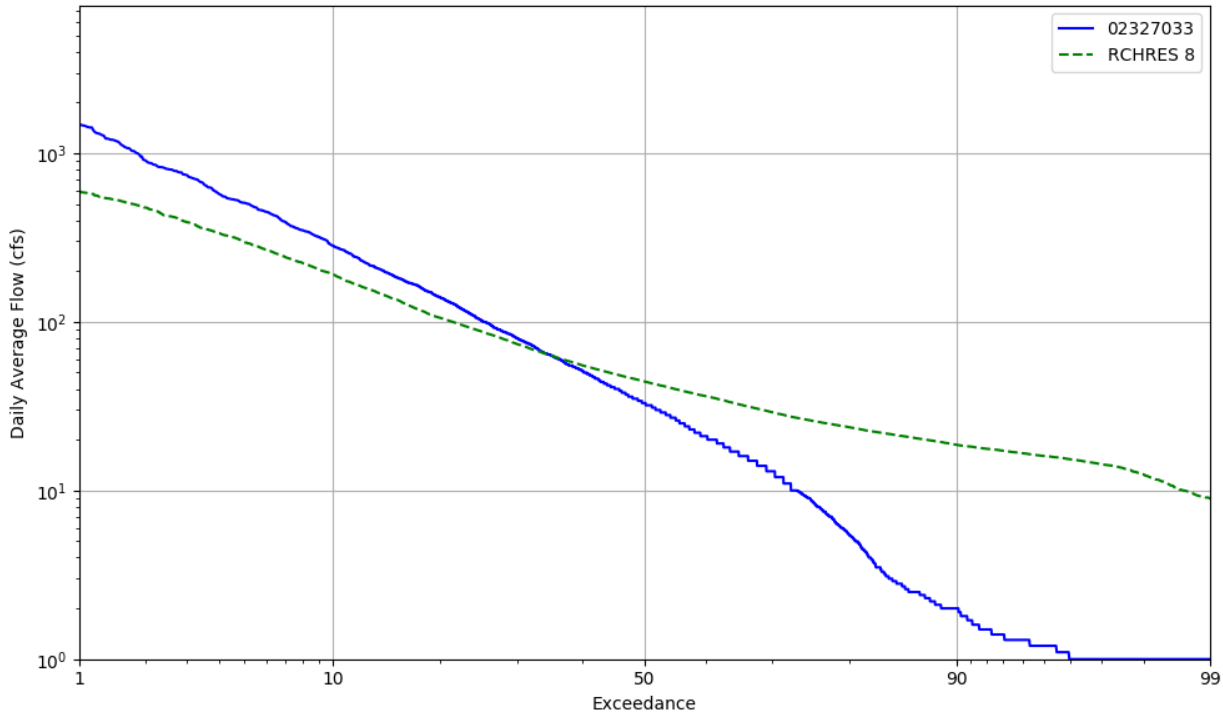


Figure T-03120001-8: Daily exceedance for HSFP reach 08 and USGS station 02327033.

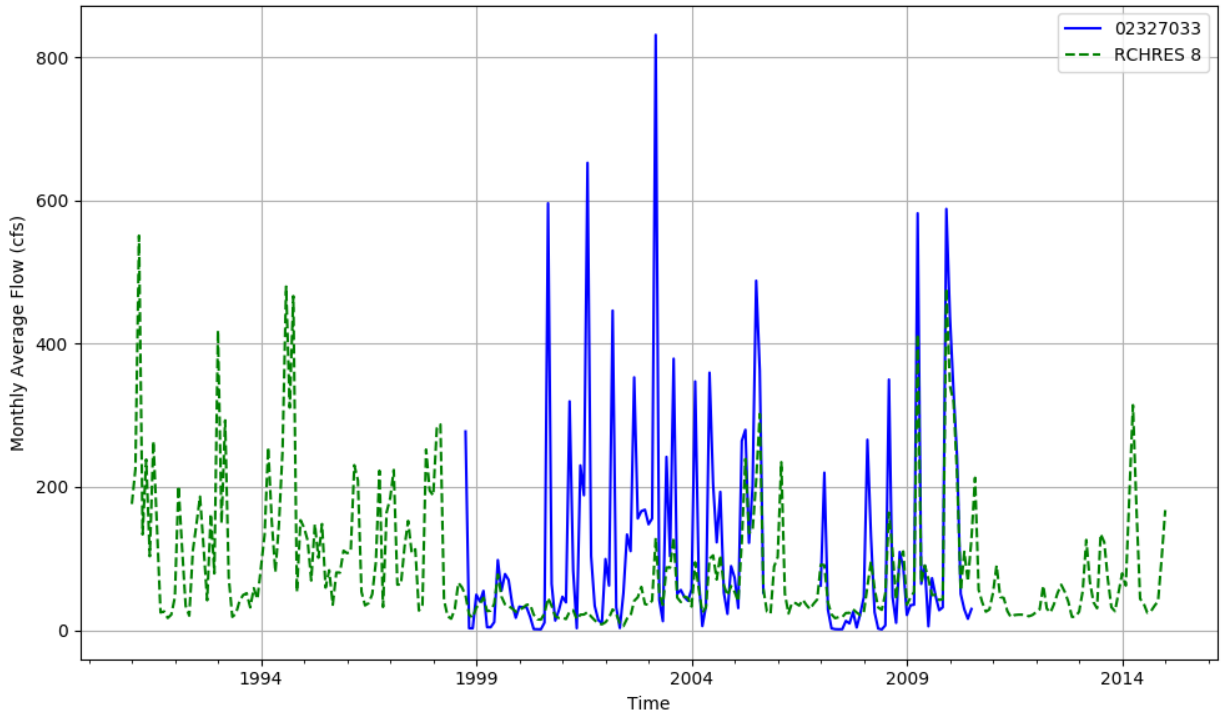


Figure T-03120001-9: Monthly flow for HSFP reach 08 and USGS station 02327033.

HSPF REACH 26, USGS GAUGE 02327022

Water-Data Report 2009
02327022 WAKULLA RIVER NEAR CRAWFORDVILLE, FL
Ochlockonee Basin Apalachee Bay-St. Marks Subbasin

LOCATION.--Lat 301249, long 841542 referenced to North American Datum of 1927, Wakulla County, FL, Hydrologic Unit 03120001, on downstream side of bridge on County Road 365, 5.2 mi northeast of Crawfordville, 5.4 mi northwest of St. Marks, and 6.5 mi above mouth.

DRAINAGE AREA.--Indeterminate.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--1907, 1917, 1929, 1930 (one discharge measurement each water year); February 1931 to June 1932 and July 1941 to September 1982 (gage heights and discharge measurements only); October 2004 to current year.

GAGE.--Water-stage and water-current meter recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 6, 1942, nonrecording gage at same site at datum 2.42 ft above National Geodetic Vertical Datum of 1929. Oct. 6, 1942 to Sept. 30, 2003, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow affected by tide. Discharges computed from continuous velocity record obtained from water-current meter.

Table T-03120001-5: Comparison Statistics Between HSPF Reach 26 and USGS Gauge 02327022.

Statistic	Value
Bias	-59.95
Standard error	174.60
Relative bias	-0.09
Relative standard error	0.99
Nash-Sutcliffe coefficient	0.02
Kling-Gupta coefficient	0.25
Coefficient of efficiency	-0.10
Index of agreement	0.37

Table T-03120001-6: Hydrologic Indices Between USGS Gauge 02327022 and HSPF Reach 26.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02327022	Simulated Reach 26	Percent Difference
MA1: Mean, all daily flows	637.77	575.46	-9.77
MA2: Median, all daily flows	636.00	535.23	-15.84
MA3: CV, all daily flows	25.02	14.37	-42.56
MA4: CV, log of all daily flows	25.79	16.66	-35.40

MA5: Mean daily flow / median daily flow	1.00	1.08	7.22
MA9: (Q10 - Q90) / median daily flow	0.72	0.46	-36.54
MA10: (Q20 - Q80) / median daily flow	0.49	0.30	-38.91
MA11: (Q25 - Q75) / median daily flow	0.39	0.23	-39.70
MA12: Mean monthly flow, January	432.02	434.47	0.57
MA13: Mean monthly flow, February	451.61	461.87	2.27
MA14: Mean monthly flow, March	378.88	449.84	18.73
MA15: Mean monthly flow, April	416.49	463.43	11.27
MA16: Mean monthly flow, May	435.75	418.84	-3.88
MA17: Mean monthly flow, June	489.32	424.14	-13.32
MA18: Mean monthly flow, July	566.44	436.09	-23.01
MA19: Mean monthly flow, August	610.60	471.65	-22.76
MA20: Mean monthly flow, September	506.68	423.15	-16.49
MA21: Mean monthly flow, October	598.07	523.78	-12.42
MA22: Mean monthly flow, November	571.39	447.62	-21.66
MA23: Mean monthly flow, December	558.58	510.01	-8.70
ML1: Mean minimum monthly flow, January	405.83	513.24	26.47
ML2: Mean minimum monthly flow, February	459.17	528.55	15.11
ML3: Mean minimum monthly flow, March	351.00	528.18	50.48
ML4: Mean minimum monthly flow, April	366.00	535.35	46.27
ML5: Mean minimum monthly flow, May	433.83	509.90	17.53
ML6: Mean minimum monthly flow, June	588.17	517.10	-12.08
ML7: Mean minimum monthly flow, July	610.33	531.97	-12.84
ML8: Mean minimum monthly flow, August	621.83	553.44	-11.00
ML9: Mean minimum monthly flow, September	537.67	517.15	-3.82
ML10: Mean minimum monthly flow, October	500.12	503.50	0.68
ML11: Mean minimum monthly flow, November	526.14	485.23	-7.78
ML12: Mean minimum monthly flow, December	518.14	500.20	-3.46
ML13: CV of minimum monthly flows	30.74	10.34	-66.35
ML14: Mean minimum daily flow / mean median annual flow	0.56	0.90	59.19
ML15: Mean minimum annual flow / mean annual flow	0.56	0.86	54.38
ML16: Median minimum annual flow / median annual flow	0.49	0.92	87.72
ML20: Ratio of baseflow volume to total flow volume	0.88	0.95	8.06
ML22: Mean annual minimum flow divided by catchment area	3.36	4.90	45.69
RA1: Mean of positive changes from one day to next (rise rate)	32.39	29.15	
RA2: CV, mean of positive changes from one day to next (rise rate)	191.51	259.23	
RA3: Mean of negative changes from one day to next (fall rate)	28.62	8.05	
RA4: CV, mean of negative changes from one day to next (fall rate)	108.37	235.83	
RA5: Ratio of days that are higher than previous day	0.46	0.22	
RA6: Median of difference in log of flows over two consecutive days of rising	0.03	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.03	0.01	
RA8: Number of flow reversals from one day to the next	108.62	56.38	
RA9: CV, number of flow reversals from one day to the next	53.75	56.90	

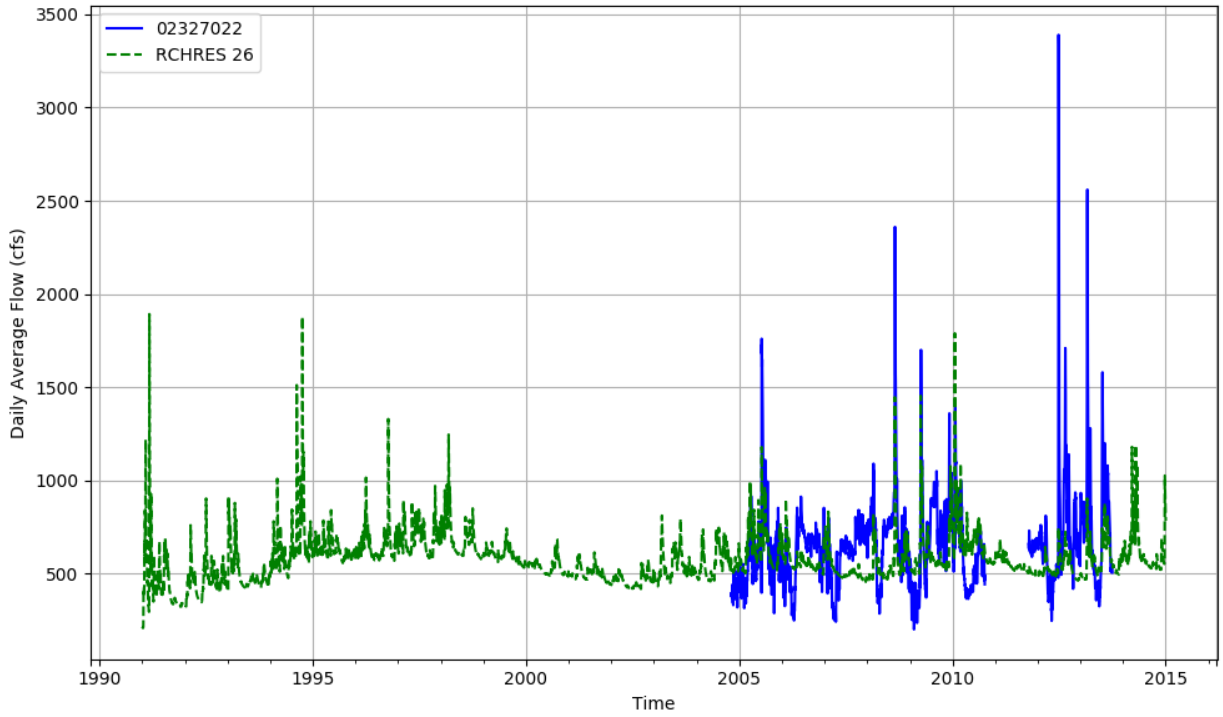


Figure T-03120001-10: Daily flow for HSFP reach 26 and USGS station 02327022.

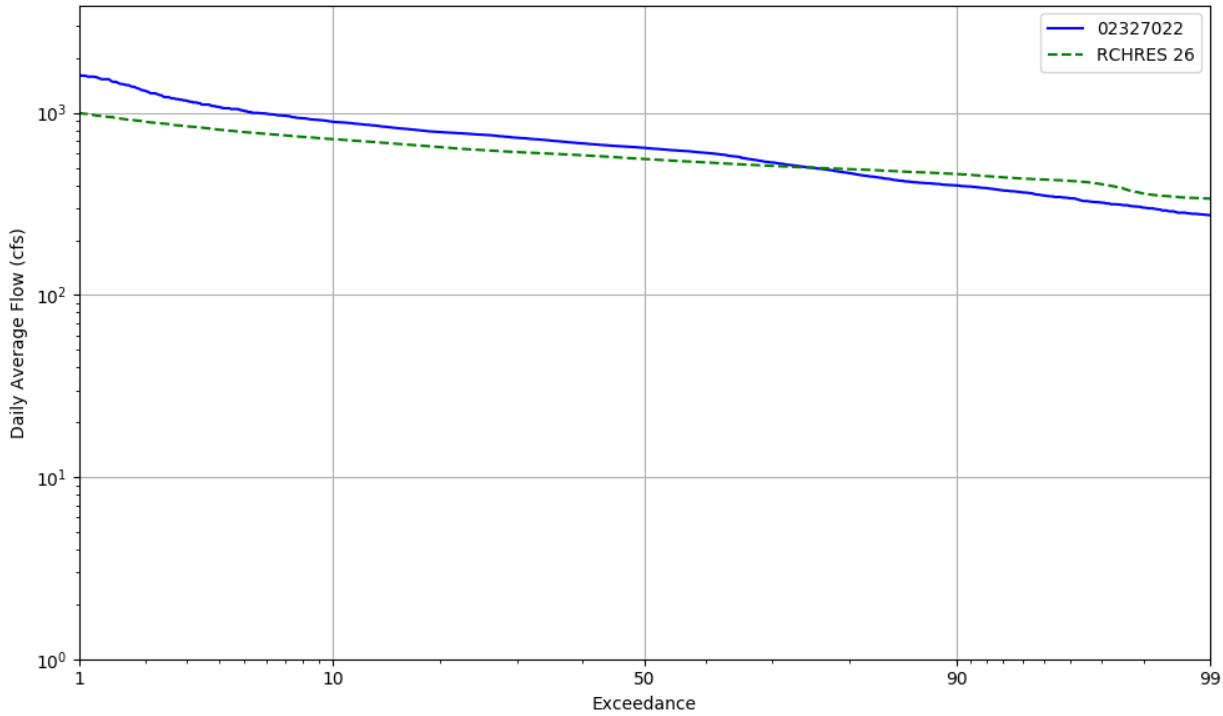


Figure T-03120001-11: Daily exceedance for HSFP reach 26 and USGS station 02327022.

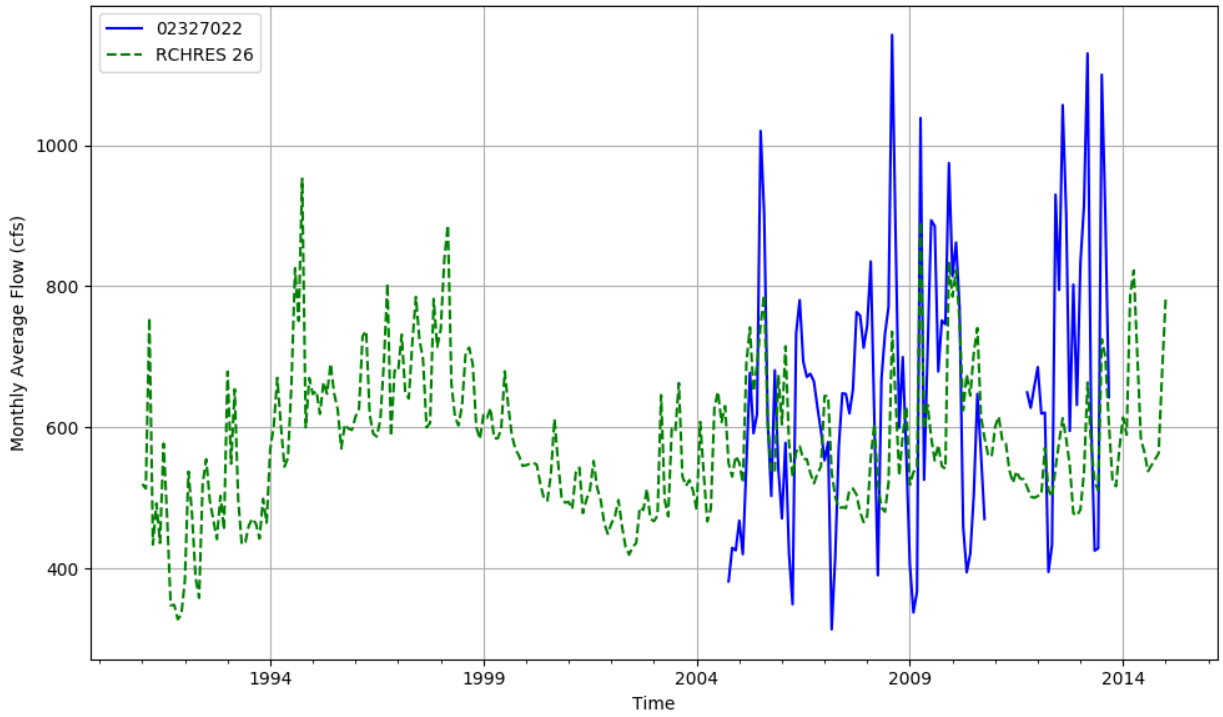


Figure T-03120001-12: Monthly flow for HSFP reach 26 and USGS station 02327022.

Table T-03120001-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7847	53321	11445	3512	751	3074	321713	47823	26515	20340	17944	232120	1347	481	1611	749845
AREA(%)	1.0	7.1	1.5	0.5	0.1	0.4	42.6	6.3	3.5	2.7	2.4	30.7	0.2	0.1	0.2	99.2
IMPERVIOUS																
AREA(ACRES)		2861	1278	879	752											5771
AREA(%)		0.4	0.2	0.1	0.1											0.8
SUPY	38.0	39.7	38.5	37.9	37.9	37.2	40.7	41.0	41.6	42.0	41.7	39.1	55.8	59.3	47.7	39.9
SURLI			11.8	11.6	11.2										15.6	0.3
UZLI																0.0
LZLI			3.2	1.8	1.8											0.1
SURO: PERVIOUS		0.5	0.9	0.9	0.4	0.1	0.1	0.4	0.4	0.5	0.2		1.2	0.8	0.6	0.2
SURO: IMPERVIOUS		27.5	26.5	26.1	26.1											0.2
SURO: COMBINED		1.9	3.5	5.9	13.3	0.1	0.1	0.4	0.4	0.5	0.2		1.2	0.8	0.6	0.4
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	2.3	7.4	16.7	15.0	11.1	11.9	3.9	9.9	3.6	4.3	5.1	2.4	12.1	11.1	2.7	4.3
AGWI	2.8	7.1	16.2	14.5	10.6	11.8	3.8	9.6	3.5	4.1	5.0	2.2	11.6	10.8	2.6	4.2
IGWI	1.5	5.9	8.8	8.4	7.2	1.8	5.7	7.4	9.2	10.5	8.4	3.1	8.1	16.7	28.0	5.3
CEPE		9.2	9.0	8.9	12.1	6.0	13.2	10.8	9.7	10.1	7.9	12.3	21.9	11.8	10.2	11.8
UZET	1.8	3.4	3.0	2.9	3.5	1.9	1.2	3.4	2.1	2.3	2.0	5.5	4.4	4.6	3.1	3.0
LZET	0.9	14.8	16.5	16.9	18.8	15.8	18.2	10.1	18.0	15.9	19.5	1.7	9.7	16.1	20.0	12.0
AGWET	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.5
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	37.0											20.1				6.6
PERO	2.3	7.8	17.6	15.8	11.6	11.9	4.0	10.3	4.0	4.8	5.3	2.4	13.3	11.9	3.3	4.5
IGWI	1.5	5.9	8.8	8.4	7.2	1.8	5.7	7.4	9.2	10.5	8.4	3.1	8.1	16.7	28.0	5.3
TAET: PERVIOUS	42.0	27.5	28.6	28.8	34.4	23.8	32.6	24.4	29.9	28.4	29.5	41.2	36.0	32.5	33.3	33.8
IMPEV: IMPERVIOUS		12.2	12.0	11.8	11.8											0.1
ET: COMBINED	42.0	26.7	26.9	25.4	23.1	23.8	32.6	24.4	29.9	28.4	29.5	41.2	36.0	32.5	33.3	33.9
PET	44.2	45.2	45.4	45.5	45.6	43.7	44.9	45.1	44.9	44.9	45.0	44.7	45.7	45.0	44.6	44.5

Table T-03120001-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7847	53321	11445	3512	751	3074	321713	47823	26515	20340	17944	232120	1347	481	1611	749845
AREA(%)	1.0	7.1	1.5	0.5	0.1	0.4	42.6	6.3	3.5	2.7	2.4	30.7	0.2	0.1	0.2	99.2
IMPERVIOUS																
AREA(ACRES)		2861	1278	879	752											5771
AREA(%)		0.4	0.2	0.1	0.1											0.8
SUPY	67.8	67.3	68.2	68.7	68.7	68.1	66.3	67.0	64.8	63.3	65.0	67.3	83.9	72.9	65.7	66.1
SURLI			11.0	10.8	10.3										14.1	0.3
UZLI																0.0
LZLI			3.2	1.8	1.7											0.1
SURO: PERVIOUS	10.8	2.7	5.6	5.7	3.2	1.7	0.6	1.8	1.7	2.0	0.9	4.5	5.6	2.8	2.0	2.3
SURO: IMPERVIOUS		51.7	52.5	53.0	53.0											0.4
SURO: COMBINED	10.8	5.2	10.3	15.2	28.1	1.7	0.6	1.8	1.7	2.0	0.9	4.5	5.6	2.8	2.0	2.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	2.7	17.3	27.6	26.0	22.4	31.9	14.1	20.2	11.3	10.0	14.0	3.1	21.2	12.5	4.2	11.2
AGWI	2.7	18.0	28.2	26.7	23.0	32.9	14.7	20.9	11.8	10.5	14.6	3.0	21.9	12.8	4.3	11.6
IGWI	1.7	11.5	15.1	15.2	13.4	4.2	11.0	12.9	15.0	16.6	13.6	4.8	15.3	22.0	36.3	9.5
CEPE		11.9	12.0	12.1	15.9	7.9	16.2	13.7	11.7	11.8	9.6	15.5	23.8	12.6	11.0	14.7
UZET	0.2	7.7	4.0	4.0	8.2	3.9	3.4	7.1	4.7	4.3	4.3	2.1	7.7	5.7	3.6	3.6
LZET	0.1	14.7	16.6	16.9	16.4	16.5	19.4	9.9	19.0	17.5	21.2	0.8	9.5	16.7	22.0	12.3
AGWET		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	46.4											29.0				9.4
PERO	13.5	19.9	33.2	31.7	25.6	33.6	14.7	22.0	13.0	12.1	14.9	7.6	26.8	15.3	6.2	13.5
IGWI	1.7	11.5	15.1	15.2	13.4	4.2	11.0	12.9	15.0	16.6	13.6	4.8	15.3	22.0	36.3	9.5
TAET: PERVIOUS	46.7	34.4	32.7	33.0	40.6	28.4	39.2	30.7	35.5	33.6	35.1	47.4	41.0	35.1	36.7	40.1
IMPEV: IMPERVIOUS		15.4	15.5	15.6	15.6											0.1
ET: COMBINED	46.7	33.4	31.0	29.5	28.1	28.4	39.2	30.7	35.5	33.6	35.1	47.4	41.0	35.1	36.7	40.2
PET	47.0	49.0	48.8	48.9	49.0	46.2	49.1	49.3	49.6	50.0	49.6	48.6	49.0	50.1	50.6	48.6

Table T-03120001-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7847	53321	11445	3512	751	3074	321713	47823	26515	20340	17944	232120	1347	481	1611	749845
AREA(%)	1.0	7.1	1.5	0.5	0.1	0.4	42.6	6.3	3.5	2.7	2.4	30.7	0.2	0.1	0.2	99.2
IMPERVIOUS																
AREA(ACRES)		2861	1278	879	752											5771
AREA(%)		0.4	0.2	0.1	0.1											0.8
SUPY	58.4	57.2	57.8	58.2	58.0	58.6	56.5	57.3	54.9	52.8	55.4	57.4	73.1	63.0	55.0	56.3
SURLI			10.6	10.2	9.8										20.6	0.3
UZLI																0.0
LZLI			3.2	1.8	1.7											0.1
SURO: PERVIOUS	15.4	3.1	5.5	5.4	3.5	3.5	0.9	2.6	1.9	2.0	1.2	10.5	5.5	2.5	2.3	4.4
SURO: IMPERVIOUS		43.2	43.9	44.2	44.0											0.3
SURO: COMBINED	15.4	5.1	9.3	13.2	23.8	3.5	0.9	2.6	1.9	2.0	1.2	10.5	5.5	2.5	2.3	4.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	2.7	16.6	24.7	23.1	21.3	28.5	14.6	18.9	11.8	9.8	14.3	3.0	19.4	11.5	4.6	11.2
AGWI	2.7	15.9	24.2	22.6	20.6	27.6	13.9	18.4	11.2	9.3	13.7	3.0	18.8	11.2	4.6	10.8
IGWI	1.5	9.3	12.7	12.7	11.1	3.5	8.8	10.2	11.9	13.0	11.0	4.8	12.4	18.2	35.1	8.0
CEPE		10.3	10.2	10.2	14.4	6.9	15.0	12.2	10.3	10.3	8.3	14.2	22.3	11.3	9.7	13.4
UZET	0.1	8.5	5.0	5.0	8.5	4.4	4.7	7.8	5.7	5.0	5.6	1.4	7.9	5.7	4.2	4.1
LZET	0.1	13.9	15.9	16.3	15.5	16.1	17.4	9.3	17.4	16.1	19.3	0.3	8.7	15.7	20.5	11.0
AGWET		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	43.3											27.6				8.9
PERO	18.1	19.7	30.1	28.5	24.8	32.0	15.5	21.5	13.7	11.8	15.4	13.5	24.9	14.0	6.9	15.7
IGWI	1.5	9.3	12.7	12.7	11.1	3.5	8.8	10.2	11.9	13.0	11.0	4.8	12.4	18.2	35.1	8.0
TAET: PERVIOUS	43.5	32.6	31.3	31.6	38.5	27.4	37.1	29.3	33.3	31.3	33.2	43.5	38.9	32.7	34.5	37.5
IMPEV: IMPERVIOUS		14.0	14.1	14.1	14.1											0.1
ET: COMBINED	43.5	31.7	29.5	28.1	26.3	27.4	37.1	29.3	33.3	31.3	33.2	43.5	38.9	32.7	34.5	37.6
PET	43.8	45.4	45.3	45.4	45.5	43.2	45.4	45.5	45.7	46.0	45.7	44.9	45.5	46.1	46.4	44.9

Table T-03120001-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7847	53321	11445	3512	751	3074	321713	47823	26515	20340	17944	232120	1347	481	1611	749845
AREA(%)	1.0	7.1	1.5	0.5	0.1	0.4	42.6	6.3	3.5	2.7	2.4	30.7	0.2	0.1	0.2	99.2
IMPERVIOUS																
AREA(ACRES)		2861	1278	879	752											5771
AREA(%)		0.4	0.2	0.1	0.1											0.8
SUPY	55.2	56.5	57.1	57.5	57.6	54.7	55.9	56.4	55.7	55.3	55.8	55.6	72.0	67.1	58.7	55.5
SURLI		0.0	12.4	12.5	12.1					0.0					11.7	0.3
UZLI																0.0
LZLI			3.0	1.8	1.8											0.1
SURO: PERVIOUS	7.9	1.9	3.9	4.0	2.2	0.9	0.5	1.4	1.4	1.7	0.8	5.2	4.0	2.3	1.7	2.3
SURO: IMPERVIOUS		43.1	43.6	44.0	44.0											0.3
SURO: COMBINED	7.9	4.0	7.9	12.0	23.1	0.9	0.5	1.4	1.4	1.7	0.8	5.2	4.0	2.3	1.7	2.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	2.6	14.1	24.7	23.5	20.1	24.5	10.8	16.6	9.0	8.4	11.2	2.9	18.0	11.2	3.4	9.0
AGWI	3.0	14.2	24.8	23.5	20.2	24.7	10.8	16.6	9.0	8.4	11.3	3.3	18.0	11.2	3.4	9.2
IGWI	1.5	10.1	13.8	13.9	12.3	3.3	10.0	11.3	13.8	15.3	12.6	4.6	13.4	21.2	32.0	8.7
CEPE		10.3	10.3	10.3	13.8	7.0	14.2	11.9	10.3	10.5	8.5	13.6	20.7	11.7	10.0	12.9
UZET	0.2	6.0	3.9	3.8	6.3	3.2	2.5	5.6	3.6	3.5	3.5	1.4	6.3	4.8	3.3	2.7
LZET	0.1	13.9	15.8	16.1	16.3	15.4	17.7	9.4	17.5	15.9	19.2	0.5	9.5	15.9	20.0	11.3
AGWET	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	42.7											27.7				8.9
PERO	10.5	16.0	28.6	27.4	22.4	25.5	11.3	18.0	10.4	10.0	12.0	8.1	21.9	13.5	5.1	11.3
IGWI	1.5	10.1	13.8	13.9	12.3	3.3	10.0	11.3	13.8	15.3	12.6	4.6	13.4	21.2	32.0	8.7
TAET: PERVIOUS	43.2	30.3	30.0	30.3	36.5	25.7	34.5	26.9	31.4	29.8	31.2	43.4	36.5	32.4	33.4	35.9
IMPEV: IMPERVIOUS		13.5	13.5	13.5	13.5											0.1
ET: COMBINED	43.2	29.4	28.3	27.0	25.0	25.7	34.5	26.9	31.4	29.8	31.2	43.4	36.5	32.4	33.4	36.0
PET	43.7	45.4	45.4	45.5	45.6	43.1	45.3	45.4	45.5	45.8	45.5	44.8	45.6	45.9	45.9	44.8

Table T-03120001-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
2	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
3	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
4	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
5	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
6	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
7	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
8	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
9	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
10	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
11	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
12	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
13	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
14	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
15	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
16	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
17	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
18	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
19	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
20	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
21	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
22	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
23	0.990	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.882	0.990
24	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
25	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
26	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999
27	0.999	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.977	0.999

Table T-03120001-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03120001-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
2	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
3	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
4	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
5	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
6	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
7	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
8	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
9	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
10	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
11	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
12	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
13	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
14	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
15	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
16	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
17	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
18	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
19	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
20	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
21	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
22	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
23	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
24	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
25	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
26	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100
27	0.000	0.050	0.050	0.050	0.100	0.020	0.110	0.071	0.050	0.050	0.030	0.100

Table T-03120001-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
2	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
3	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
4	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
5	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
6	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
7	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
8	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
9	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
10	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
11	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
12	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
13	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
14	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
15	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
16	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
21	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
22	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
23	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
24	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
25	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
26	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
27	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078

Table T-03120001-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
2	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
3	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
4	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
5	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
6	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
7	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
8	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
9	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
10	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
11	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
12	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
13	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
14	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
15	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
16	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
17	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
18	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
19	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
20	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
21	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
22	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
23	0.010	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.010
24	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
25	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
26	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003
27	0.003	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.003

Table T-03120001-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03120001-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
2	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
3	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
4	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
5	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
6	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
7	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
8	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
9	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
10	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
11	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
12	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
13	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
14	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
15	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
16	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
17	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
22	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
23	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
24	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
25	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
26	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694
27	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694	0.694

Table T-03120001-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
2	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
3	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
4	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
5	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
6	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
7	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
8	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
9	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
10	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
11	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
12	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
13	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
14	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
15	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
16	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
19	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
22	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
23	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
24	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
25	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
26	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483
27	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483	0.483

Table T-03120001-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
2	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
3	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
4	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
5	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
6	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
7	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
8	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
9	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
10	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
11	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
12	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
13	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
14	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
15	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
16	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
17	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
18	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
19	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
20	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
21	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
22	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
23	0.202	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
24	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
25	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
26	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200
27	0.262	0.400	0.400	0.413	0.600	0.363	0.600	0.282	0.633	0.480	0.494	1.200

Table T-03120001-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
4	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
6	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
7	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
8	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
10	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
11	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
12	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
13	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
14	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
15	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
16	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
17	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
18	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
19	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
20	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
21	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
22	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
23	0.200	1.333	1.333	1.333	1.333	1.500	2.000	1.500	1.500	1.500	1.667	0.200
24	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
25	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
26	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194
27	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.194

Table T-03120001-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
2	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
3	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
4	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
5	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
6	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
7	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
8	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
9	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
10	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
11	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
12	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
13	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
14	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
15	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
16	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.373
24	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
25	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
26	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314
27	0.050	1.701	0.100	0.100	2.000	0.100	2.000	1.570	2.000	2.000	2.000	0.314

APPENDIX T-03120002

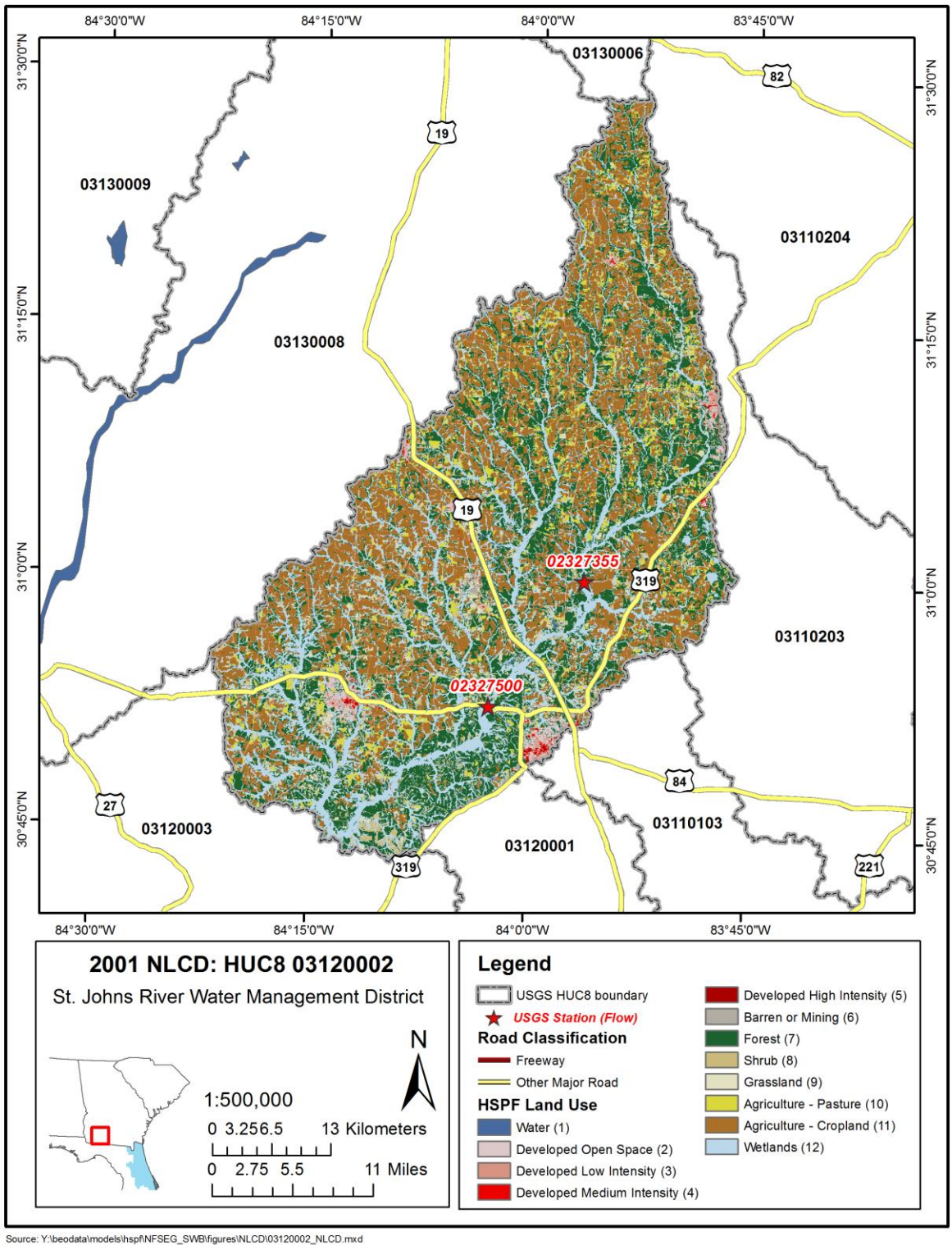
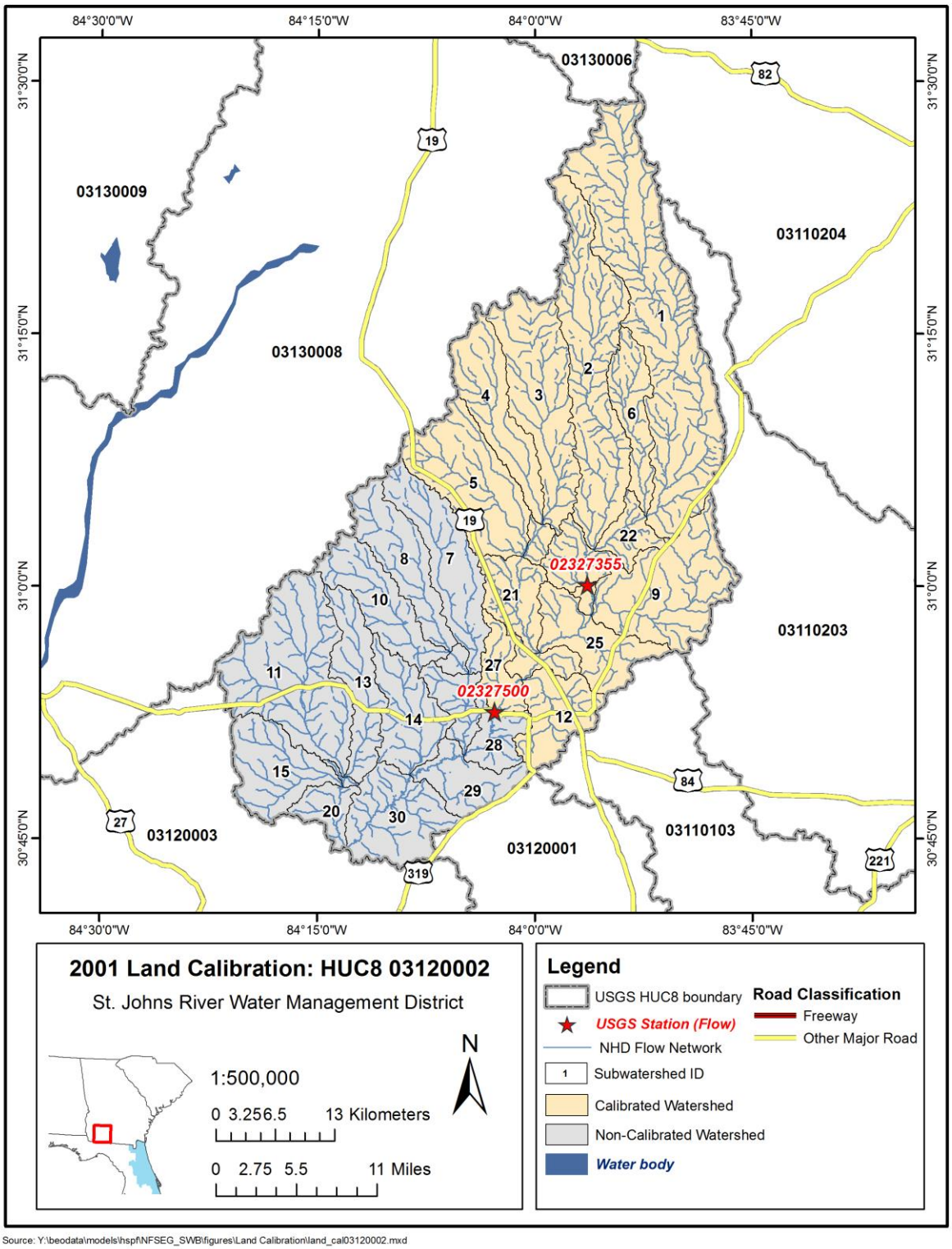


Figure T-03120002-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03120002.mxd

Figure T-03120002-2: Calibrated sub-watersheds.

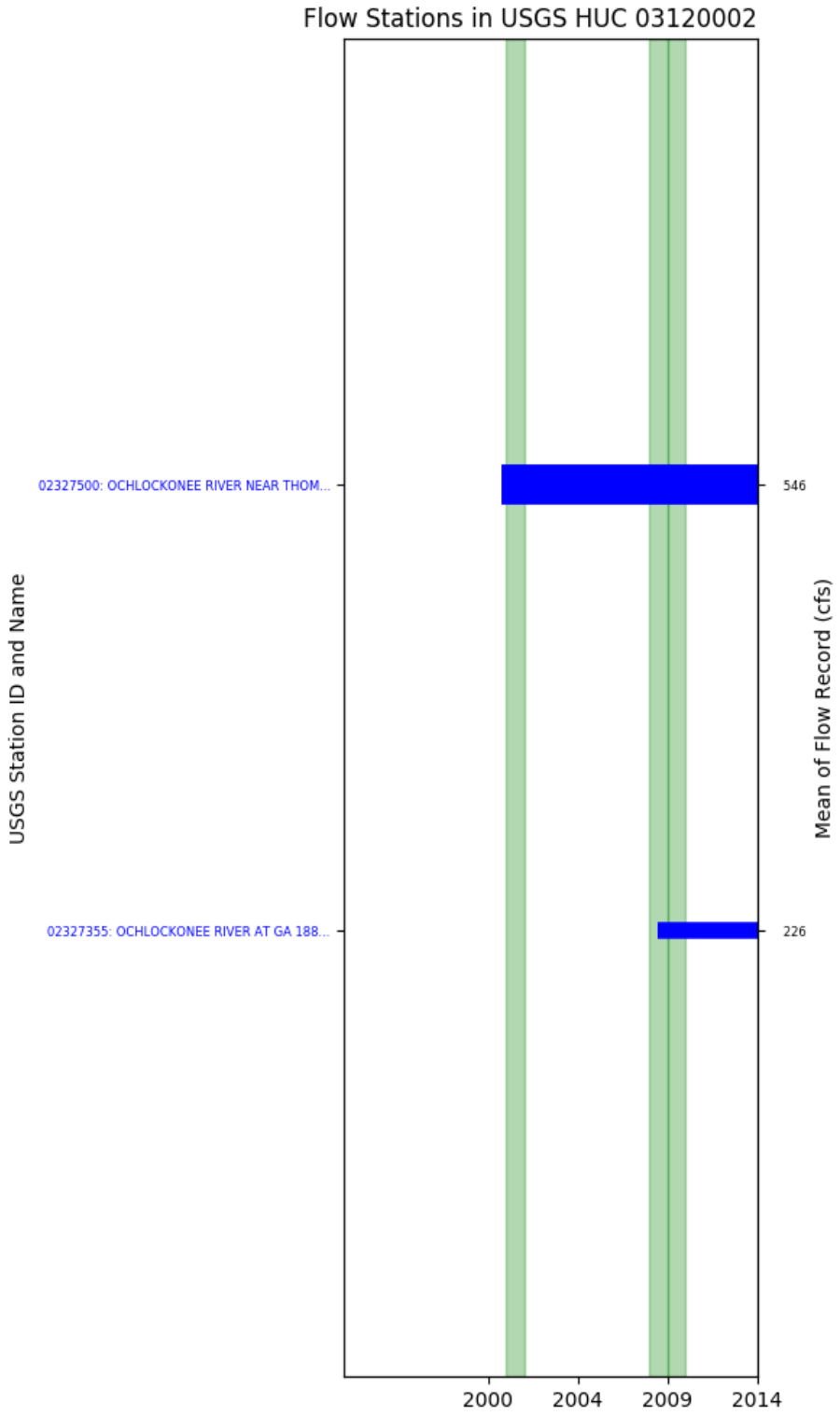


Figure T-03120002-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 23, USGS GAUGE 02327355

Water-Data Report 2009
02327355 OCHLOCKONEE RIVER AT GA 188, NEAR COOLIDGE, GA
Ochlockonee Basin Upper Ochlockonee Subbasin

LOCATION.--Lat 310008, long 835621 referenced to North American Datum of 1983, Thomas County, GA, Hydrologic Unit 03120002, 3.1 mi upstream from confluence with Big Creek, 3.5 mi downstream from Bridge Creek, and 4.0 mi west of Coolidge.

DRAINAGE AREA.--260 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--1981 to current year.

GAGE.--Crest-stage partial-record gage. Datum of gage is 166.86 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Transportation.

REMARKS.--A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information of some lower floods may have been obtained, but is not published within. The years given in the period of record represent water years for which the annual maximum has been determined.

Table T-03120002-1: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02327355.

Statistic	Value
Bias	-5.74
Standard error	82.77
Relative bias	-0.03
Relative standard error	0.25
Nash-Sutcliffe coefficient	0.94
Kling-Gupta coefficient	0.95
Coefficient of efficiency	0.78
Index of agreement	0.89

Table T-03120002-2: Hydrologic Indices Between USGS Gauge 02327355 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02327355	Simulated Reach 23	Percent Difference

MA1: Mean, all daily flows	183.27	177.59	-3.10
MA2: Median, all daily flows	25.00	27.34	9.34
MA3: CV, all daily flows	170.91	174.59	2.15
MA4: CV, log of all daily flows	186.59	169.04	-9.40
MA5: Mean daily flow / median daily flow	7.33	6.50	-11.38
MA9: (Q10 - Q90) / median daily flow	18.13	15.62	-13.88
MA10: (Q20 - Q80) / median daily flow	6.80	6.65	-2.31
MA11: (Q25 - Q75) / median daily flow	4.94	4.23	-14.28
MA12: Mean monthly flow, January	232.21	220.27	-5.14
MA13: Mean monthly flow, February	425.95	428.02	0.49
MA14: Mean monthly flow, March	259.04	320.83	23.85
MA15: Mean monthly flow, April	105.28	87.47	-16.92
MA16: Mean monthly flow, May	76.42	61.84	-19.07
MA17: Mean monthly flow, June	65.42	21.50	-67.13
MA18: Mean monthly flow, July	123.46	102.00	-17.39
MA19: Mean monthly flow, August	247.58	256.63	3.65
MA20: Mean monthly flow, September	34.62	38.72	11.82
MA21: Mean monthly flow, October	19.55	13.34	-31.77
MA22: Mean monthly flow, November	13.40	12.05	-10.05
MA23: Mean monthly flow, December	132.70	119.42	-10.01
ML1: Mean minimum monthly flow, January	108.68	108.83	0.14
ML2: Mean minimum monthly flow, February	111.00	121.96	9.87
ML3: Mean minimum monthly flow, March	135.50	133.93	-1.16
ML4: Mean minimum monthly flow, April	39.88	31.44	-21.14
ML5: Mean minimum monthly flow, May	6.43	7.32	13.83
ML6: Mean minimum monthly flow, June	9.11	2.40	-73.67
ML7: Mean minimum monthly flow, July	46.48	20.03	-56.91
ML8: Mean minimum monthly flow, August	12.87	25.81	100.49
ML9: Mean minimum monthly flow, September	9.46	6.69	-29.23
ML10: Mean minimum monthly flow, October	5.31	2.60	-51.10
ML11: Mean minimum monthly flow, November	8.56	6.21	-27.44
ML12: Mean minimum monthly flow, December	20.62	21.65	5.00
ML13: CV of minimum monthly flows	204.13	196.90	-3.54
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.04	-70.48
ML15: Mean minimum annual flow / mean annual flow	0.07	0.02	-71.73
ML16: Median minimum annual flow / median annual flow	0.01	0.01	-12.60
ML20: Ratio of baseflow volume to total flow volume	0.29	0.28	-2.60
ML22: Mean annual minimum flow divided by catchment area	0.04	0.01	-67.61
RA1: Mean of positive changes from one day to next (rise rate)	82.89	75.11	
RA2: CV, mean of positive changes from one day to next (rise rate)	457.43	519.54	
RA3: Mean of negative changes from one day to next (fall rate)	45.65	31.12	
RA4: CV, mean of negative changes from one day to next (fall rate)	430.26	602.16	
RA5: Ratio of days that are higher than previous day	0.34	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.20	0.20	
RA7: Median of difference in log of flows over two consecutive days of falling	0.16	0.11	
RA8: Number of flow reversals from one day to the next	61.33	58.17	

RA9: CV, number of flow reversals from one day to the next	45.16	48.59	

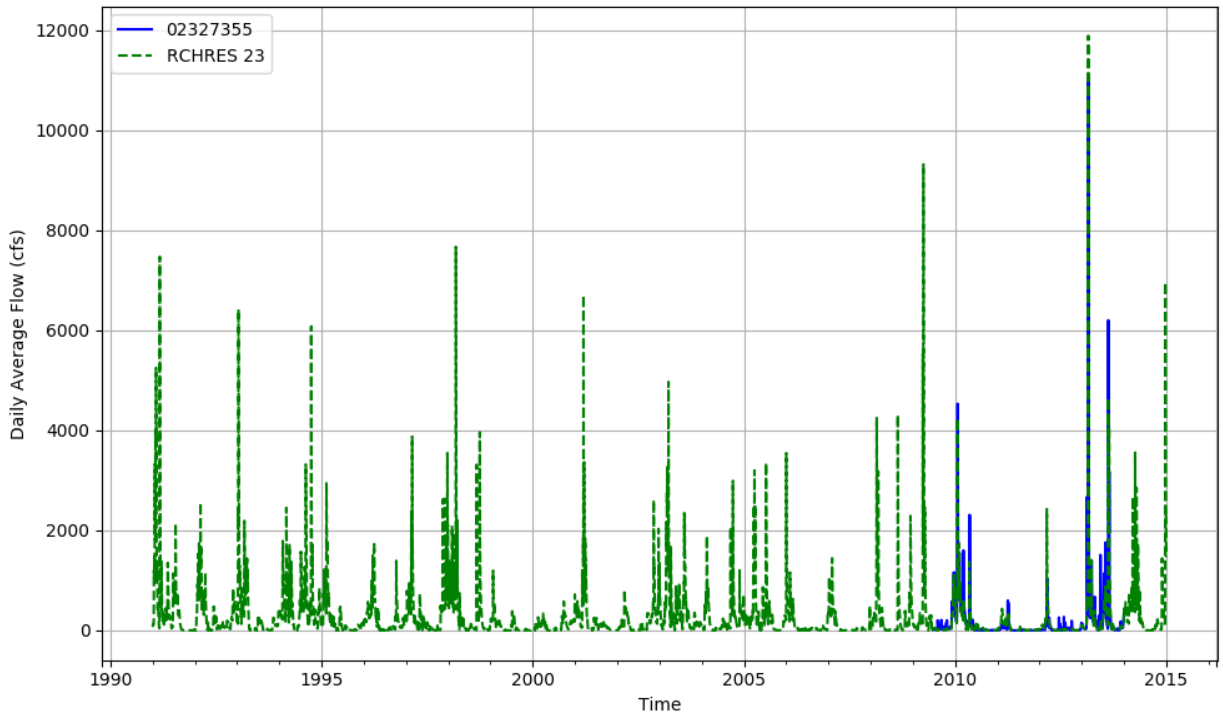


Figure T-03120002-4: Daily flow for HSFP reach 23 and USGS station 02327355.

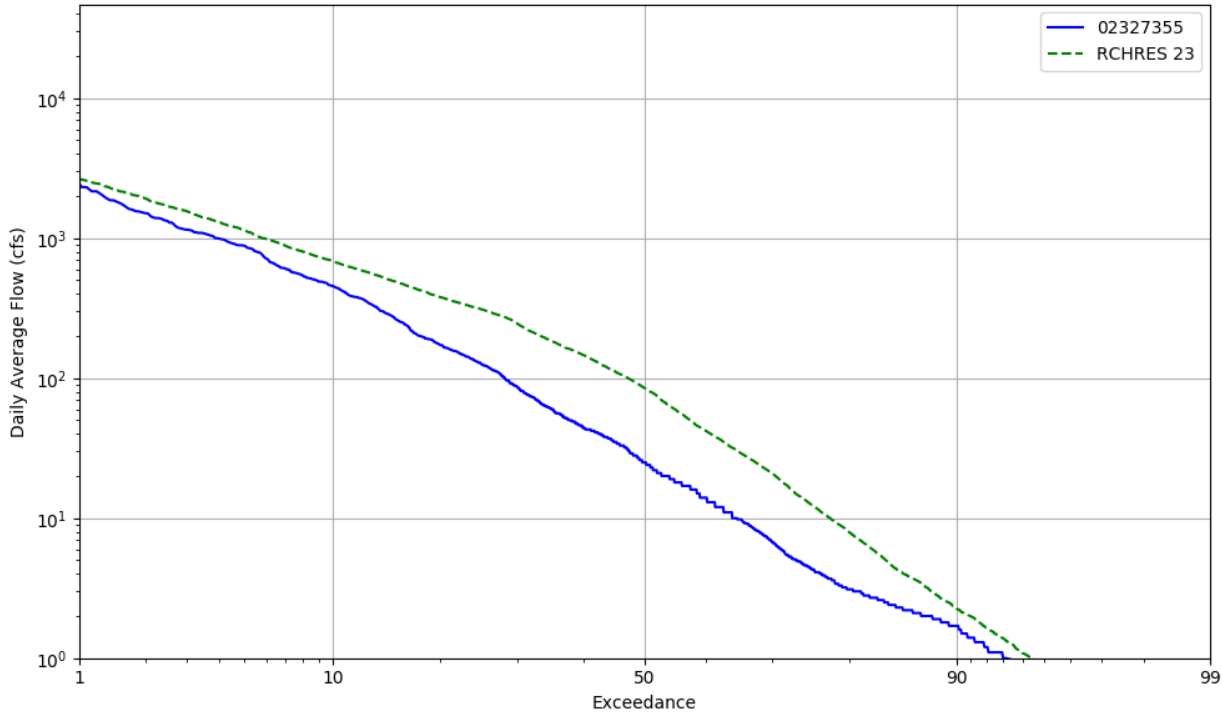


Figure T-03120002-5: Daily exceedance for HSFP reach 23 and USGS station 02327355.

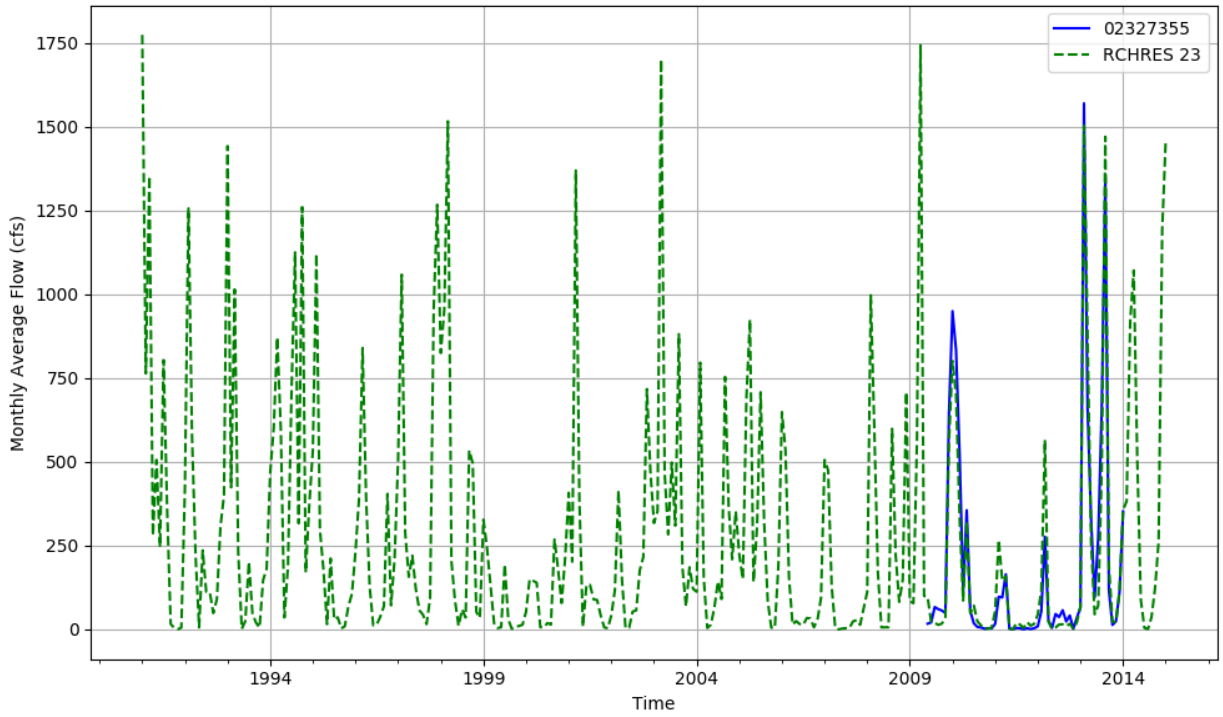


Figure T-03120002-6: Monthly flow for HSFP reach 23 and USGS station 02327355.

HSPF REACH 27, USGS GAUGE 02327500

Water-Data Report 2009
02327500 OCHLOCKONEE RIVER NEAR THOMASVILLE, GA
Ochlockonee Basin Upper Ochlockonee Subbasin

LOCATION.--Lat 305232, long 840244 referenced to North American Datum of 1927, Thomas County, GA, Hydrologic Unit 03120002, on downstream side of left bank pier of bridge on US 84, 2.0 miles upstream from Seaboard Coast Line Railroad bridge, 4.0 miles upstream from Barnetts Creek, 5.0 miles northwest of Thomasville, and 6.0 miles downstream from Little Ochlocknee River.

DRAINAGE AREA.--550 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: August 1937 to June 1971, October 2000 to current year.
GAGE-HEIGHT: October 2000 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 133.60 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to January 7, 1947, a non-recording gage was located at same site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for estimated days, which are fair. Gage-height records good.

Table T-03120002-3: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02327500.

Statistic	Value
Bias	-6.67
Standard error	235.77
Relative bias	-0.01
Relative standard error	0.31
Nash-Sutcliffe coefficient	0.91
Kling-Gupta coefficient	0.93
Coefficient of efficiency	0.73
Index of agreement	0.86

Table T-03120002-4: Hydrologic Indices Between USGS Gauge 02327500 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02327500	Simulated Reach 27	Percent Difference

MA1: Mean, all daily flows	522.11	514.72	-1.41
MA2: Median, all daily flows	134.00	137.55	2.65
MA3: CV, all daily flows	190.16	182.69	-3.93
MA4: CV, log of all daily flows	147.63	140.66	-4.72
MA5: Mean daily flow / median daily flow	3.90	3.74	-3.96
MA9: (Q10 - Q90) / median daily flow	9.44	8.82	-6.60
MA10: (Q20 - Q80) / median daily flow	4.57	4.78	4.54
MA11: (Q25 - Q75) / median daily flow	3.25	3.65	12.22
MA12: Mean monthly flow, January	544.19	597.47	9.79
MA13: Mean monthly flow, February	974.79	1025.46	5.20
MA14: Mean monthly flow, March	1215.62	1249.72	2.81
MA15: Mean monthly flow, April	823.02	704.11	-14.45
MA16: Mean monthly flow, May	195.23	152.05	-22.12
MA17: Mean monthly flow, June	263.92	197.91	-25.01
MA18: Mean monthly flow, July	470.58	328.65	-30.16
MA19: Mean monthly flow, August	553.68	551.77	-0.34
MA20: Mean monthly flow, September	238.33	279.60	17.32
MA21: Mean monthly flow, October	113.86	158.00	38.77
MA22: Mean monthly flow, November	195.95	230.27	17.52
MA23: Mean monthly flow, December	416.05	454.01	9.12
ML1: Mean minimum monthly flow, January	232.00	247.49	6.67
ML2: Mean minimum monthly flow, February	269.92	257.83	-4.48
ML3: Mean minimum monthly flow, March	279.46	246.47	-11.81
ML4: Mean minimum monthly flow, April	128.54	85.88	-33.19
ML5: Mean minimum monthly flow, May	39.12	15.21	-61.12
ML6: Mean minimum monthly flow, June	32.25	31.77	-1.51
ML7: Mean minimum monthly flow, July	96.59	96.48	-0.11
ML8: Mean minimum monthly flow, August	96.80	103.27	6.68
ML9: Mean minimum monthly flow, September	41.54	38.42	-7.51
ML10: Mean minimum monthly flow, October	37.21	53.31	43.24
ML11: Mean minimum monthly flow, November	53.58	88.50	65.18
ML12: Mean minimum monthly flow, December	122.94	127.24	3.50
ML13: CV of minimum monthly flows	142.58	148.29	4.01
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.04	-68.48
ML15: Mean minimum annual flow / mean annual flow	0.04	0.02	-59.75
ML16: Median minimum annual flow / median annual flow	0.11	0.03	-73.87
ML20: Ratio of baseflow volume to total flow volume	0.35	0.37	5.50
ML22: Mean annual minimum flow divided by catchment area	0.18	0.07	-60.53
RA1: Mean of positive changes from one day to next (rise rate)	229.86	228.86	
RA2: CV, mean of positive changes from one day to next (rise rate)	423.48	445.66	
RA3: Mean of negative changes from one day to next (fall rate)	105.72	88.70	
RA4: CV, mean of negative changes from one day to next (fall rate)	466.83	452.93	
RA5: Ratio of days that are higher than previous day	0.30	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.15	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.10	
RA8: Number of flow reversals from one day to the next	74.50	70.79	

RA9: CV, number of flow reversals from one day to the next	27.37	21.87	

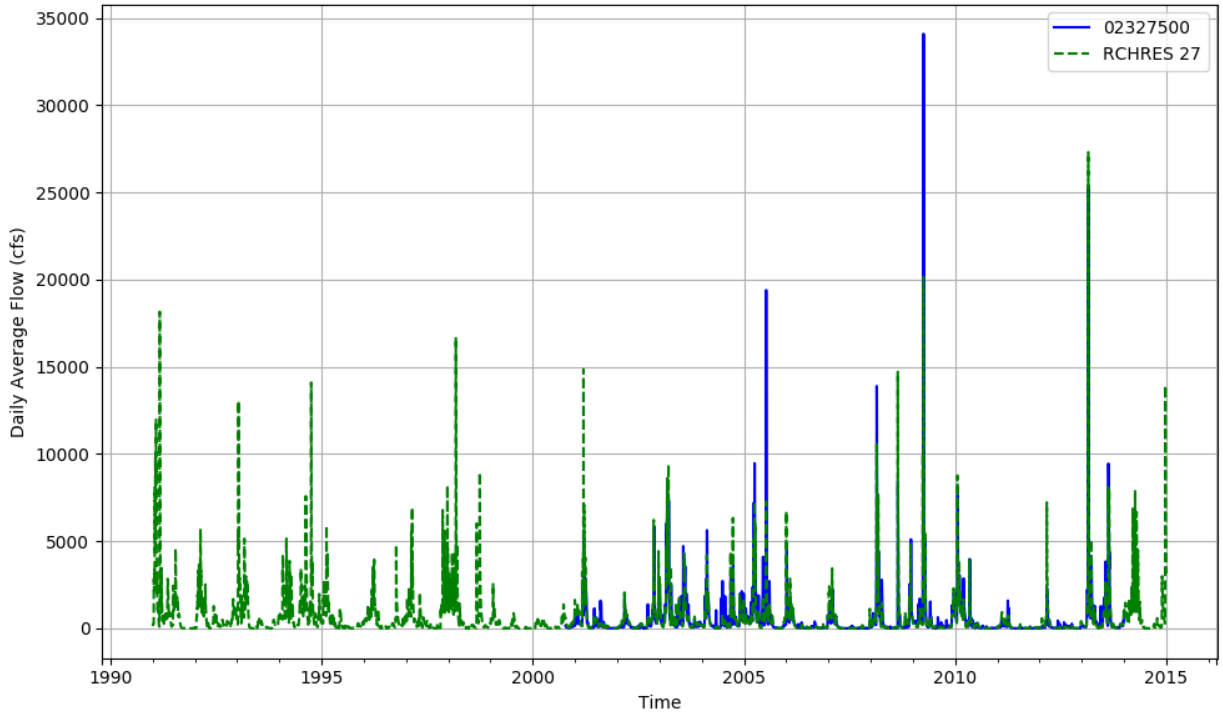


Figure T-03120002-7: Daily flow for HSFP reach 27 and USGS station 02327500.

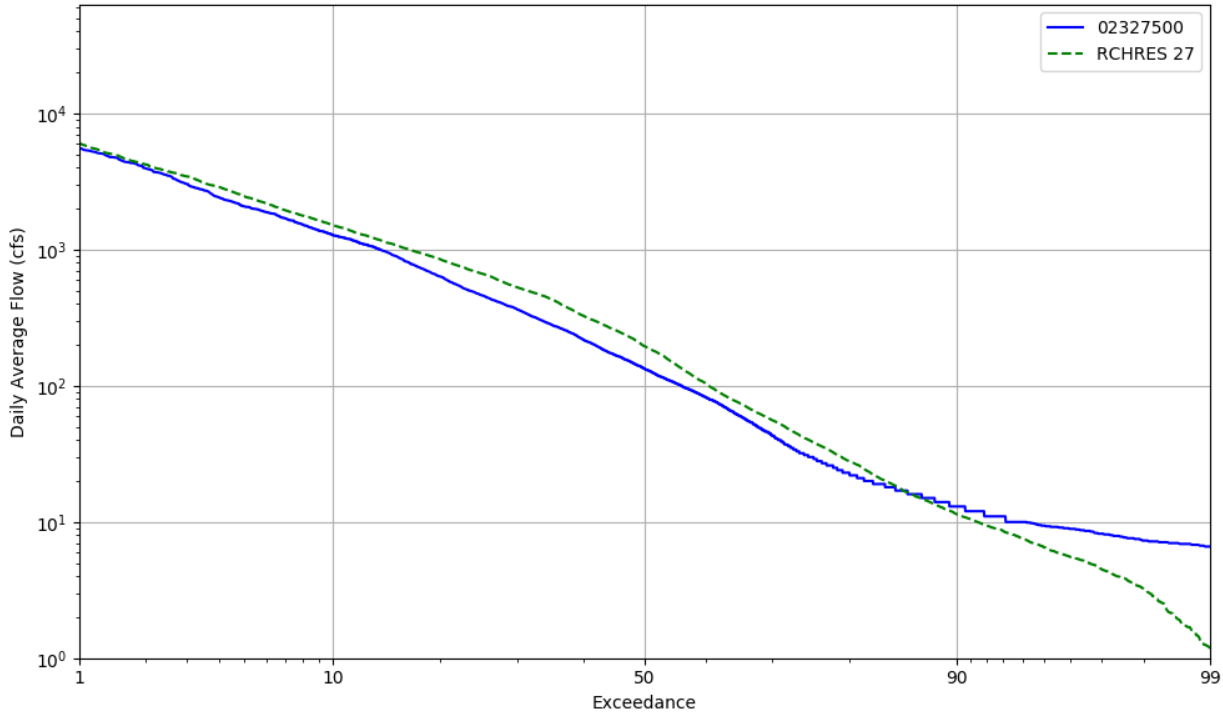


Figure T-03120002-8: Daily exceedance for HSFP reach 27 and USGS station 02327500.

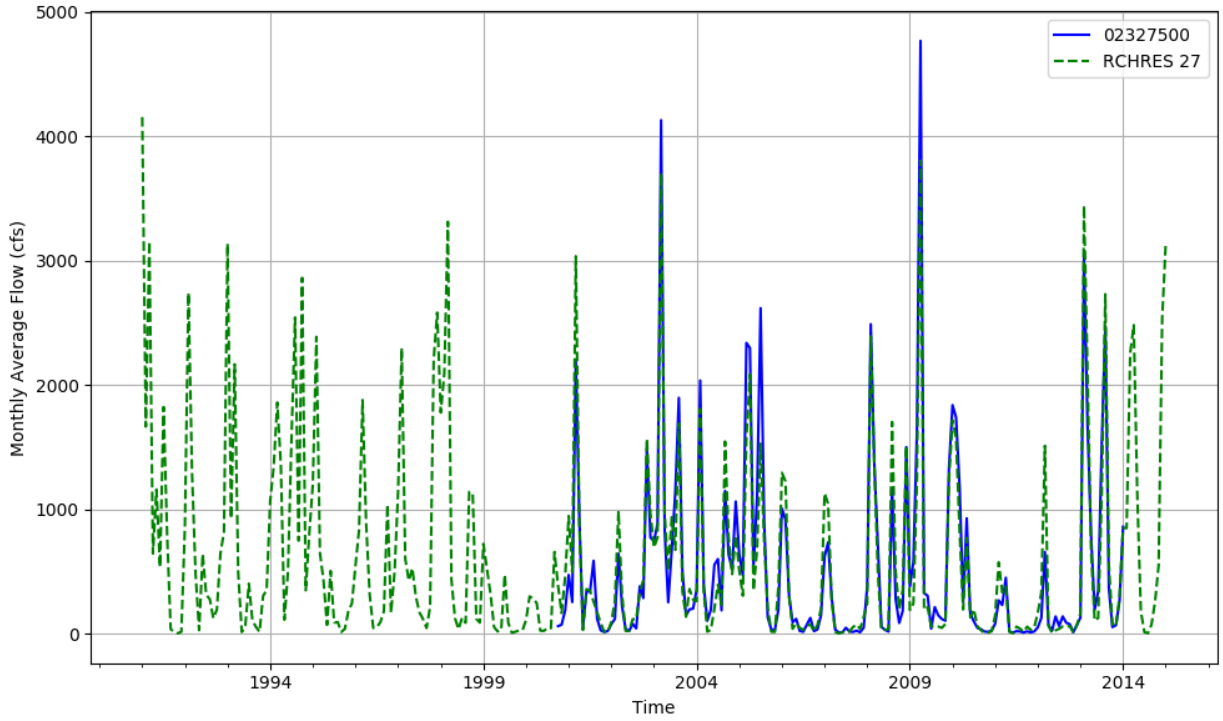


Figure T-03120002-9: Monthly flow for HSFP reach 27 and USGS station 02327500.

Table T-03120002-5: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3682	26037	7869	1163	381	724	164868	17667	25439	28806	143928	115807	217	47057	6510	590153
AREA(%)	0.6	4.4	1.3	0.2	0.1	0.1	27.8	3.0	4.3	4.9	24.3	19.5	0.0	7.9	1.1	99.5
IMPERVIOUS																
AREA(ACRES)		1420	934	302	389											3045
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	45.1	44.9	44.8	44.9	44.8	46.4	44.9	45.0	44.9	45.0	45.2	44.9	63.7	52.2	45.8	45.3
SURLI		0.0	8.3	10.6	11.3									0.0	4.5	0.2
UZLI																0.0
LZLI		0.0	1.2	0.9	0.7									0.0	5.0	0.1
SURO: PERVIOUS	11.3	2.4	3.3	3.2	2.9	1.9	0.9	2.1	1.3	1.9	1.5	8.5	4.8	2.2	1.7	2.9
SURO: IMPERVIOUS		28.7	28.6	28.7	28.6											0.1
SURO: COMBINED	11.3	3.8	6.0	8.4	15.9	1.9	0.9	2.1	1.3	1.9	1.5	8.5	4.8	2.2	1.7	3.0
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.6	12.9	18.4	20.0	19.8	19.7	10.7	17.0	13.9	11.9	11.1	1.5	20.5	15.5	17.1	10.0
AGWI	1.8	14.7	20.9	22.5	22.0	22.0	12.1	19.1	15.8	13.3	12.2	2.2	22.1	17.0	19.1	11.2
IGWI	0.2	1.4	2.0	2.2	2.2	2.1	1.2	1.9	1.5	1.3	1.2	0.2	2.2	1.7	1.9	1.1
CEPE		10.1	10.1	10.1	13.5	7.1	16.2	10.1	10.1	16.4	17.9	13.5	24.5	20.1	18.8	15.4
UZET	3.1	2.7	3.0	3.1	2.7	3.5	1.4	3.1	2.4	1.7	1.6	14.9	2.9	2.0	1.9	4.3
LZET	0.2	16.5	17.1	17.2	15.5	12.1	17.4	10.9	16.8	13.8	14.6	0.9	9.5	12.2	14.7	12.4
AGWET	0.9	2.1	2.3	2.3	2.0	2.3	1.7	2.0	2.1	1.7	1.5	0.6	1.1	1.6	1.7	1.5
BASET	0.4	1.1	1.3	1.3	1.3	1.2	1.0	1.2	1.1	1.1	1.0	0.6	1.2	1.3	1.3	0.9
SURET	33.6											11.2				2.4
PERO	11.8	15.3	21.7	23.2	22.7	21.6	11.6	19.1	15.3	13.8	12.5	9.9	25.3	17.7	18.8	12.8
IGWI	0.2	1.4	2.0	2.2	2.2	2.1	1.2	1.9	1.5	1.3	1.2	0.2	2.2	1.7	1.9	1.1
TAET: PERVIOUS	38.2	32.4	33.7	33.9	35.0	26.1	37.7	27.3	32.6	34.6	36.7	41.6	39.2	37.2	38.3	37.0
IMPEV: IMPERVIOUS		16.2	16.2	16.2	16.2											0.1
ET: COMBINED	38.2	31.6	31.8	30.3	25.5	26.1	37.7	27.3	32.6	34.6	36.7	41.6	39.2	37.2	38.3	37.1
PET	44.0	44.0	44.0	44.0	44.0	43.9	44.0	44.1	44.0	43.9	43.9	44.0	43.9	43.9	43.9	43.7

Table T-03120002-6: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3682	26037	7869	1163	381	724	164868	17667	25439	28806	143928	115807	217	47057	6510	590153
AREA(%)	0.6	4.4	1.3	0.2	0.1	0.1	27.8	3.0	4.3	4.9	24.3	19.5	0.0	7.9	1.1	99.5
IMPERVIOUS																
AREA(ACRES)		1420	934	302	389											3045
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	56.9	56.8	56.7	56.7	56.7	57.3	56.9	57.1	56.7	56.7	56.8	57.0	65.9	62.6	57.6	57.0
SURLI		0.0	7.9	9.6	10.0									0.0	2.6	0.2
UZLI																0.0
LZLI		0.0	1.4	1.0	0.8									0.1	3.1	0.1
SURO: PERVIOUS	14.0	4.3	5.5	5.4	4.9	3.6	1.4	4.0	2.6	3.2	2.4	9.7	5.9	3.6	2.7	3.9
SURO: IMPERVIOUS		40.0	39.9	39.7	39.6											0.2
SURO: COMBINED	14.0	6.2	9.2	12.5	22.4	3.6	1.4	4.0	2.6	3.2	2.4	9.7	5.9	3.6	2.7	4.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.6	13.8	19.9	21.1	20.7	21.6	12.2	19.8	15.3	13.2	12.2	1.7	17.6	15.7	16.2	11.0
AGWI	2.0	18.4	24.7	25.9	25.2	26.7	15.8	24.6	20.0	17.2	15.7	2.7	21.8	19.8	20.3	14.2
IGWI	0.2	1.8	2.4	2.5	2.5	2.6	1.5	2.4	2.0	1.7	1.5	0.3	2.1	1.9	2.0	1.4
CEPE		10.4	10.4	10.5	14.2	7.0	16.6	10.4	10.3	16.5	18.3	14.0	18.0	20.4	19.0	15.8
UZET	3.6	2.6	2.9	3.0	2.5	3.3	1.2	3.0	2.2	1.5	1.3	14.6	2.6	1.8	1.5	4.1
LZET	0.2	18.6	19.3	19.3	17.5	13.6	20.0	12.2	19.1	16.0	16.9	1.4	15.1	14.8	17.2	14.4
AGWET	0.9	2.8	2.8	2.8	2.5	3.0	2.1	2.8	2.8	2.3	2.1	0.5	2.2	2.1	2.2	1.9
BASET	0.5	1.2	1.5	1.5	1.5	1.5	0.8	1.4	1.2	1.0	0.8	0.6	1.3	1.4	1.2	0.9
SURET	36.3											13.8				2.9
PERO	14.6	18.1	25.4	26.5	25.6	25.3	13.6	23.8	17.9	16.5	14.6	11.4	23.5	19.3	18.9	14.9
IGWI	0.2	1.8	2.4	2.5	2.5	2.6	1.5	2.4	2.0	1.7	1.5	0.3	2.1	1.9	2.0	1.4
TAET: PERVIOUS	41.5	35.6	36.9	37.1	38.2	28.5	40.6	29.8	35.7	37.3	39.4	44.8	39.2	40.5	41.2	40.0
IMPEV: IMPERVIOUS		16.6	16.6	16.9	16.9											0.1
ET: COMBINED	41.5	34.6	34.7	32.9	27.5	28.5	40.6	29.8	35.7	37.3	39.4	44.8	39.2	40.5	41.2	40.0
PET	51.5	51.3	51.3	51.2	51.2	51.6	51.3	51.0	51.4	51.5	51.4	51.2	51.2	51.7	51.4	51.1

Table T-03120002-7: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3682	26037	7869	1163	381	724	164868	17667	25439	28806	143928	115807	217	47057	6510	590153
AREA(%)	0.6	4.4	1.3	0.2	0.1	0.1	27.8	3.0	4.3	4.9	24.3	19.5	0.0	7.9	1.1	99.5
IMPERVIOUS																
AREA(ACRES)		1420	934	302	389											3045
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	43.5	43.7	43.6	43.9	44.0	43.8	43.9	44.9	43.5	43.1	43.4	44.3	53.2	46.6	44.2	43.8
SURLI		0.0	7.9	9.5	9.9									0.0	2.9	0.2
UZLI																0.0
LZLI		0.0	1.4	1.0	0.8									0.0	3.3	0.1
SURO: PERVIOUS	8.8	2.5	3.2	3.3	3.1	2.0	0.7	2.4	1.3	1.7	1.2	7.8	3.5	1.8	1.4	2.6
SURO: IMPERVIOUS		28.5	28.4	28.6	28.6											0.1
SURO: COMBINED	8.8	3.8	5.9	8.5	16.0	2.0	0.7	2.4	1.3	1.7	1.2	7.8	3.5	1.8	1.4	2.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.6	10.8	15.7	16.8	16.1	16.1	10.1	15.4	11.9	10.0	9.7	1.9	13.9	11.4	12.3	8.8
AGWI	1.7	13.7	19.5	20.6	19.7	20.0	11.9	19.0	14.9	12.2	11.5	2.6	16.6	13.6	15.0	10.6
IGWI	0.2	1.3	1.9	2.0	1.9	2.0	1.2	1.9	1.5	1.2	1.1	0.3	1.6	1.3	1.5	1.0
CEPE		8.8	8.8	8.9	12.6	5.8	15.3	9.0	8.8	15.3	17.0	12.6	16.9	18.0	17.8	14.4
UZET	3.2	2.7	3.0	3.1	2.7	3.3	1.3	3.2	2.3	1.5	1.4	9.9	2.6	1.6	1.6	3.2
LZET	0.2	17.6	18.6	18.6	16.8	13.1	18.4	11.8	18.0	14.8	15.5	0.6	14.3	14.0	16.3	13.2
AGWET	0.8	2.5	2.7	2.7	2.4	2.9	1.9	2.6	2.5	2.0	1.8	0.3	2.0	1.8	2.1	1.6
BASET	0.4	1.1	1.3	1.4	1.4	1.3	0.9	1.3	1.2	1.0	0.9	0.7	1.2	1.2	1.2	0.9
SURET	32.7											16.9				3.5
PERO	9.4	13.3	18.9	20.0	19.2	18.1	10.8	17.7	13.2	11.7	10.9	9.7	17.4	13.2	13.7	11.4
IGWI	0.2	1.3	1.9	2.0	1.9	2.0	1.2	1.9	1.5	1.2	1.1	0.3	1.6	1.3	1.5	1.0
TAET: PERVIOUS	37.4	32.7	34.4	34.6	35.8	26.4	37.9	27.9	32.9	34.6	36.5	41.1	37.0	36.6	38.9	36.9
IMPEV: IMPERVIOUS		15.3	15.3	15.5	15.5											0.1
ET: COMBINED	37.4	31.8	32.4	30.7	25.5	26.4	37.9	27.9	32.9	34.6	36.5	41.1	37.0	36.6	38.9	37.0
PET	48.4	48.2	48.2	48.0	47.9	48.5	48.1	47.9	48.2	48.4	48.3	48.1	48.3	48.6	48.4	48.0

Table T-03120002-8: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	3682	26037	7869	1163	381	724	164868	17667	25439	28806	143928	115807	217	47057	6510	590153
AREA(%)	0.6	4.4	1.3	0.2	0.1	0.1	27.8	3.0	4.3	4.9	24.3	19.5	0.0	7.9	1.1	99.5
IMPERVIOUS																
AREA(ACRES)		1420	934	302	389											3045
AREA(%)		0.2	0.2	0.1	0.1											0.5
SUPY	51.6	51.8	51.7	52.0	52.0	51.8	51.8	52.3	51.7	51.5	51.6	52.0	67.6	57.5	52.6	52.0
SURLI		0.0	7.2	9.0	9.5									0.0	3.4	0.2
UZLI																0.0
LZLI		0.0	1.1	0.8	0.7									0.0	3.9	0.1
SURO: PERVIOUS	13.3	2.9	4.0	4.1	3.7	2.1	0.7	2.8	1.5	1.9	1.3	9.5	5.0	2.1	1.6	3.1
SURO: IMPERVIOUS		36.0	36.0	36.2	36.2											0.2
SURO: COMBINED	13.3	4.7	7.4	10.7	20.1	2.1	0.7	2.8	1.5	1.9	1.3	9.5	5.0	2.1	1.6	3.2
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.6	14.9	19.9	21.2	21.0	21.1	12.8	19.6	16.0	14.1	13.1	1.9	22.3	16.4	18.0	11.6
AGWI	1.8	18.1	23.5	24.9	24.5	24.9	15.2	23.2	19.2	16.7	15.4	3.0	25.0	19.3	21.0	13.8
IGWI	0.2	1.8	2.3	2.4	2.4	2.4	1.5	2.3	1.9	1.6	1.5	0.3	2.4	1.9	2.1	1.4
CEPE		9.8	9.8	9.8	13.1	6.8	15.7	9.9	9.8	15.7	17.3	13.2	20.9	19.2	18.1	14.9
UZET	3.3	2.6	2.8	2.9	2.5	3.0	1.3	2.9	2.3	1.5	1.4	10.8	2.5	1.8	1.7	3.4
LZET	0.2	16.6	17.4	17.5	15.9	12.4	17.3	11.1	17.0	13.9	14.6	0.8	11.7	13.2	15.3	12.5
AGWET	0.8	2.2	2.4	2.4	2.2	2.6	1.6	2.4	2.2	1.7	1.5	0.4	1.5	1.7	1.8	1.4
BASET	0.5	1.0	1.2	1.2	1.2	1.2	0.8	1.2	1.0	0.9	0.8	0.7	1.2	1.1	1.2	0.8
SURET	32.8											14.4				3.0
PERO	14.0	17.8	24.0	25.3	24.7	23.2	13.5	22.4	17.4	15.9	14.4	11.4	27.3	18.5	19.6	14.6
IGWI	0.2	1.8	2.3	2.4	2.4	2.4	1.5	2.3	1.9	1.6	1.5	0.3	2.4	1.9	2.1	1.4
TAET: PERVIOUS	37.5	32.1	33.6	33.9	34.9	26.0	36.7	27.4	32.2	33.8	35.6	40.4	37.8	37.1	38.1	36.1
IMPEV: IMPERVIOUS		15.7	15.7	15.8	15.8											0.1
ET: COMBINED	37.5	31.2	31.7	30.2	25.2	26.0	36.7	27.4	32.2	33.8	35.6	40.4	37.8	37.1	38.1	36.2
PET	46.7	46.6	46.6	46.5	46.5	46.8	46.6	46.4	46.6	46.7	46.7	46.5	46.6	46.8	46.7	46.4

Table T-03120002-9: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
2	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
3	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
4	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
5	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
6	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
7	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
8	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
9	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
10	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
11	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
12	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
13	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
14	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
15	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
16	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
17	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
18	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
19	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
20	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
21	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
22	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
23	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
24	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
25	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
26	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
27	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
28	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
29	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
30	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989

Table T-03120002-10: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
2	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
3	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
4	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
5	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
6	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
7	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
8	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
9	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
10	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
11	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
12	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
13	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
14	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
15	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
16	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
17	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
18	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
19	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
20	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
21	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
22	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
23	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
24	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
25	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
26	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
27	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
28	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
29	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
30	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031

Table T-03120002-11: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
2	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
3	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
4	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
5	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
6	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
7	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
8	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
9	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
10	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
11	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
12	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
13	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
14	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
15	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
16	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
17	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
18	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
19	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
20	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
21	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
22	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
23	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
24	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
25	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
26	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
27	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
28	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
29	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100
30	0.000	0.050	0.050	0.050	0.100	0.020	0.154	0.050	0.050	0.158	0.200	0.100

Table T-03120002-12: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
2	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
3	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
4	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
5	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
6	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
7	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
8	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
9	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
10	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
11	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
12	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
13	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
14	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
15	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
16	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
17	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
18	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
19	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
20	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
21	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
22	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
23	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
24	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
25	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
26	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
27	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
28	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
29	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089
30	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089

Table T-03120002-13: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
2	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
3	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
4	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
5	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
6	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
7	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
8	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
9	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
10	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
11	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
12	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
13	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
14	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
15	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
16	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
17	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
18	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
19	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
20	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
21	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
22	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
23	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
24	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
25	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
26	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
27	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
28	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
29	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001
30	0.001	0.384	0.384	0.384	0.384	0.549	0.822	0.549	0.549	0.549	0.658	0.001

Table T-03120002-14: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
18		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
19		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
20		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
21		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
22		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
23		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
24		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
25		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
26		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
27		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
28		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
29		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

30		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03120002-15: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
2	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
3	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
4	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
5	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
6	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
7	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
8	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
9	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
10	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
11	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
12	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
13	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
14	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
15	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
16	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
17	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
18	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
19	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
20	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
21	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
22	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
23	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
24	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
25	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
26	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
27	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
28	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
29	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601
30	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601

Table T-03120002-16: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
15	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
19	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
22	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
23	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
24	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
25	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
26	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
27	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
28	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
29	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
30	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03120002-17: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
2	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
3	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
4	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
5	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
6	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
7	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
8	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
9	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
10	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
11	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
12	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
13	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
14	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
15	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
16	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
17	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
18	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
19	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
20	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
21	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
22	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
23	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
24	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
25	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
26	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
27	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
28	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
29	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900
30	0.021	0.463	0.463	0.463	0.463	0.309	0.656	0.309	0.463	0.463	0.541	0.900

Table T-03120002-18: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
2	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
3	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
4	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
5	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
6	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
7	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
8	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
9	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
10	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
11	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
12	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
13	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
14	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
15	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
16	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
17	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
18	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
19	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
20	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
21	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
22	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
23	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
24	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
25	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
26	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
27	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
28	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
29	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100
30	0.050	4.147	4.147	4.147	4.147	4.665	6.220	4.665	4.665	4.665	5.184	0.100

Table T-03120002-19: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03120003

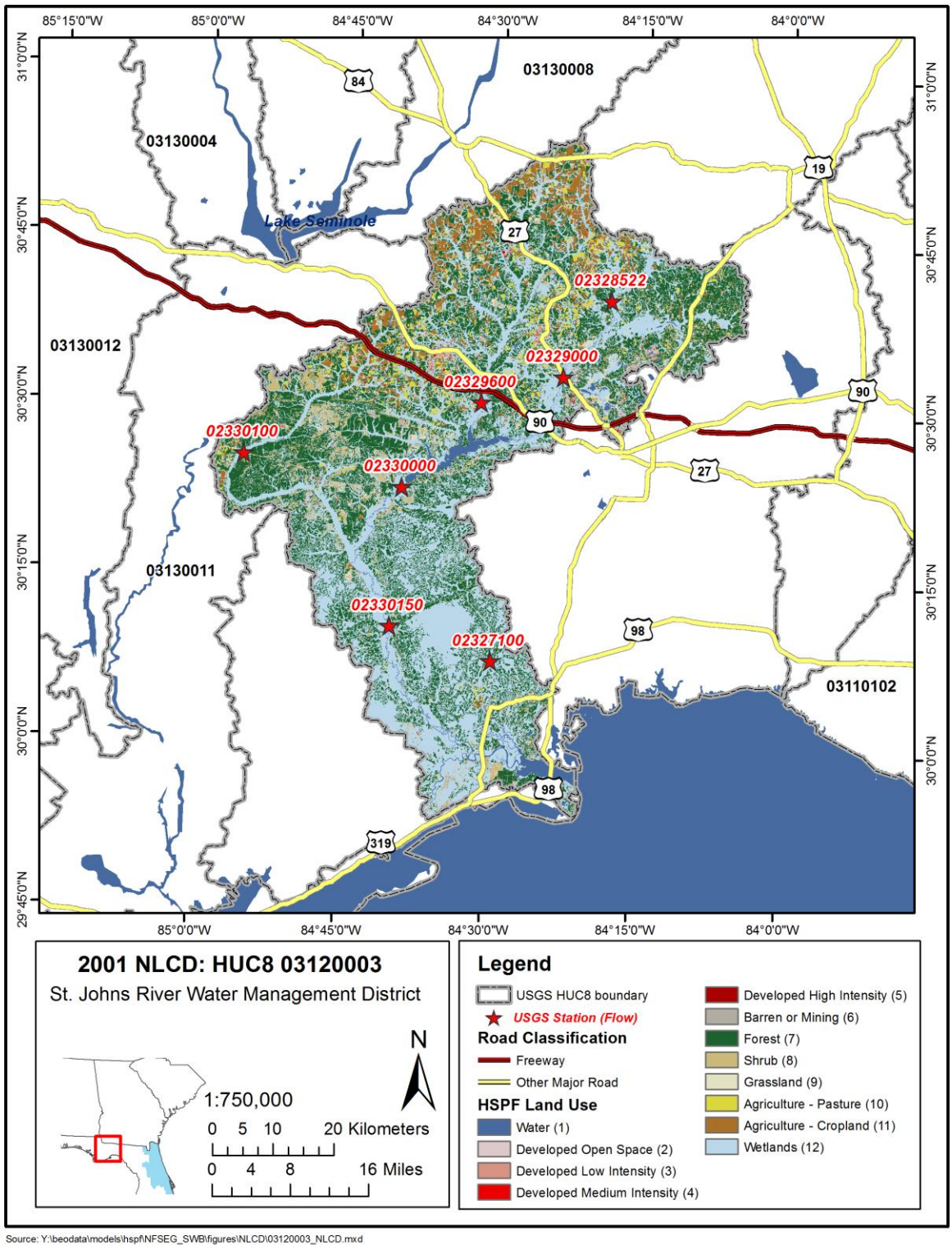


Figure T-03120003-1: Land Cover from the National Land Cover Database.

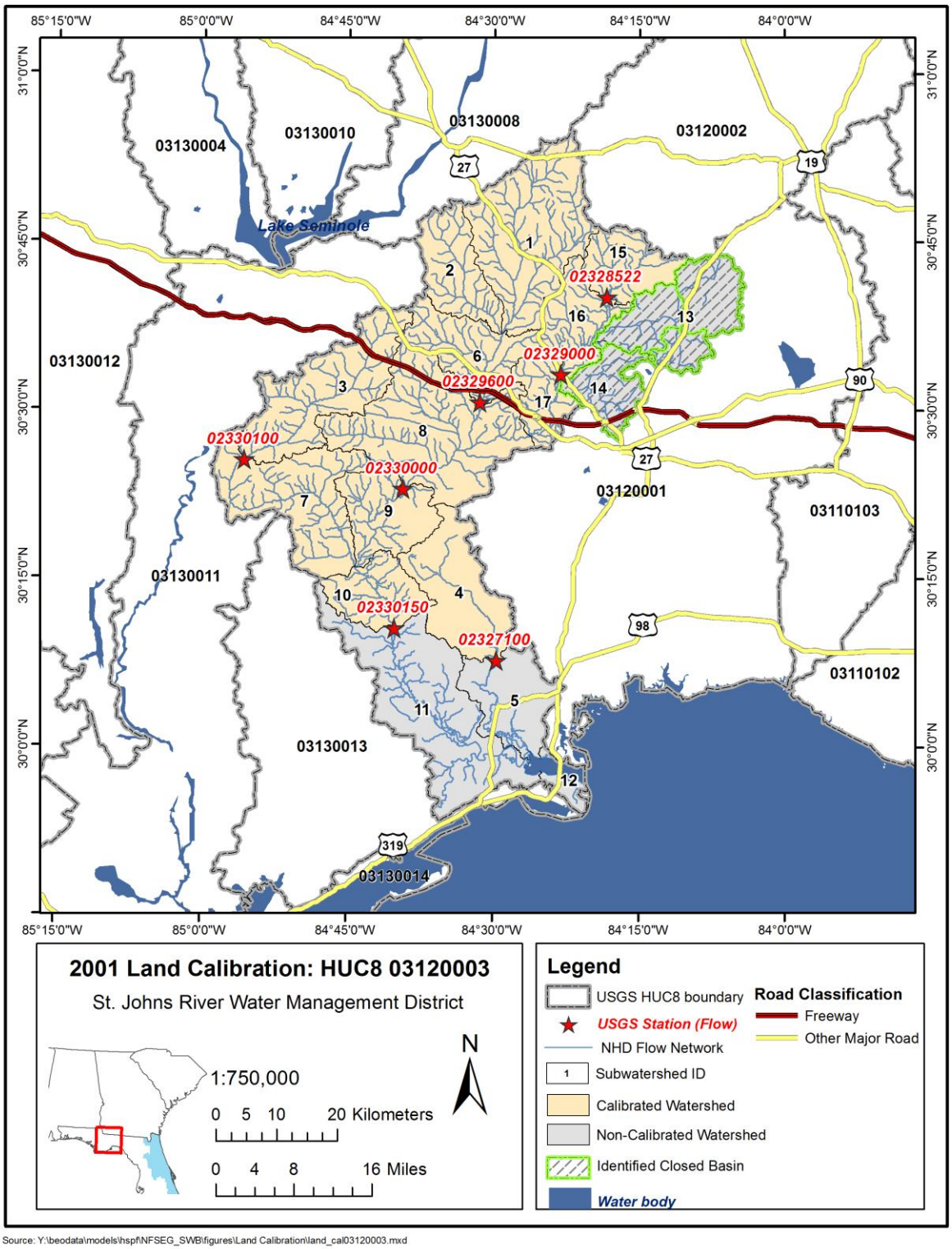


Figure T-03120003-2: Calibrated sub-watersheds.

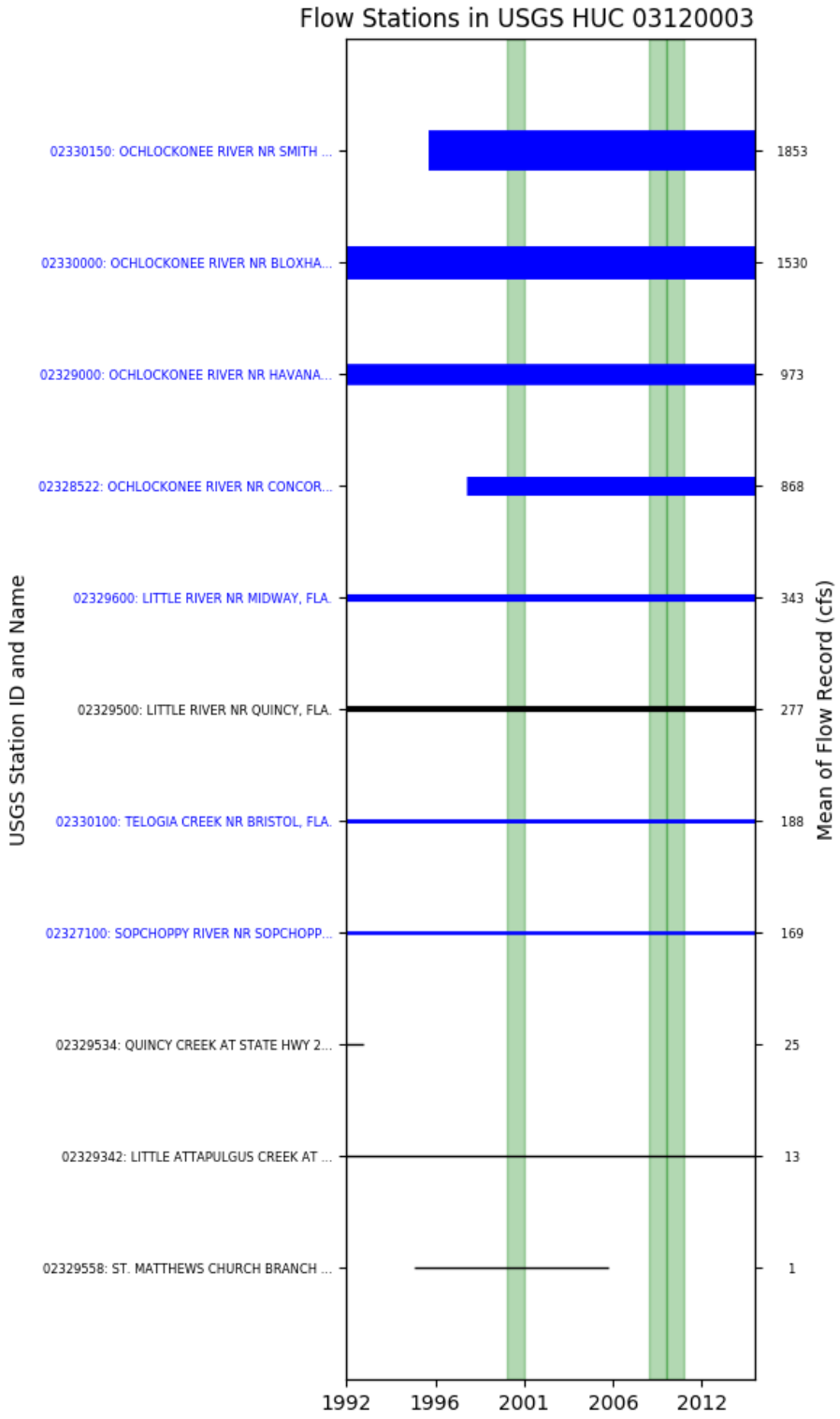


Figure T-03120003-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 03, USGS GAUGE 02330100

Water-Data Report 2009
02330100 TELOGIA CREEK NEAR BRISTOL, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 302535, long 845540 referenced to North American Datum of 1927, Liberty County, FL, Hydrologic Unit 03120003, near left bank at downstream side of bridge on State Highway 20, 600 ft upstream from White Branch, 3.0 mi east of Bristol, and 33 mi upstream from mouth.

DRAINAGE AREA.--126.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1950 to September 1971, October 1974 to September 1979, October 1980 to current year.

REVISED RECORDS.--WSP 1504: 1950-51, 1953 (M), 1955-56.

GAGE.--Water-stage recorder. Datum of gage is 99.50 ft above National Geodetic Vertical Datum of 1929 (Florida Department of Transportation bench mark).

REMARKS.--Records fair.

Table T-03120003-1: Comparison Statistics Between HSPF Reach 03 and USGS Gauge 02330100.

Statistic	Value
Bias	-42.14
Standard error	86.88
Relative bias	-0.22
Relative standard error	0.52
Nash-Sutcliffe coefficient	0.73
Kling-Gupta coefficient	0.74
Coefficient of efficiency	0.50
Index of agreement	0.76

Table T-03120003-2: Hydrologic Indices Between USGS Gauge 02330100 and HSPF Reach 03.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02330100	Simulated Reach 03	Percent Difference
MA1: Mean, all daily flows	193.64	151.65	-21.68
MA2: Median, all daily flows	107.00	82.66	-22.75
MA3: CV, all daily flows	151.41	122.23	-19.27
MA4: CV, log of all daily flows	92.93	98.24	5.72
MA5: Mean daily flow / median daily flow	1.81	1.83	1.38

MA9: (Q10 - Q90) / median daily flow	3.21	3.85	20.14
MA10: (Q20 - Q80) / median daily flow	1.40	2.19	56.39
MA11: (Q25 - Q75) / median daily flow	1.04	1.74	68.15
MA12: Mean monthly flow, January	224.79	192.16	-14.51
MA13: Mean monthly flow, February	252.83	233.89	-7.49
MA14: Mean monthly flow, March	298.44	271.72	-8.95
MA15: Mean monthly flow, April	204.44	177.73	-13.06
MA16: Mean monthly flow, May	142.48	105.26	-26.13
MA17: Mean monthly flow, June	133.93	92.23	-31.14
MA18: Mean monthly flow, July	171.98	114.32	-33.53
MA19: Mean monthly flow, August	220.28	139.24	-36.79
MA20: Mean monthly flow, September	145.83	103.62	-28.94
MA21: Mean monthly flow, October	148.02	114.39	-22.72
MA22: Mean monthly flow, November	135.78	95.96	-29.33
MA23: Mean monthly flow, December	162.64	114.54	-29.58
ML1: Mean minimum monthly flow, January	101.96	68.02	-33.29
ML2: Mean minimum monthly flow, February	104.91	97.83	-6.75
ML3: Mean minimum monthly flow, March	106.74	114.16	6.95
ML4: Mean minimum monthly flow, April	82.04	77.99	-4.94
ML5: Mean minimum monthly flow, May	59.87	39.34	-34.29
ML6: Mean minimum monthly flow, June	56.17	38.36	-31.72
ML7: Mean minimum monthly flow, July	69.91	54.83	-21.57
ML8: Mean minimum monthly flow, August	74.74	64.09	-14.25
ML9: Mean minimum monthly flow, September	63.61	44.98	-29.29
ML10: Mean minimum monthly flow, October	64.39	40.35	-37.33
ML11: Mean minimum monthly flow, November	76.22	45.58	-40.20
ML12: Mean minimum monthly flow, December	89.17	51.78	-41.93
ML13: CV of minimum monthly flows	53.85	91.92	70.68
ML14: Mean minimum daily flow / mean median annual flow	0.38	0.13	-64.61
ML15: Mean minimum annual flow / mean annual flow	0.24	0.09	-61.85
ML16: Median minimum annual flow / median annual flow	0.36	0.09	-76.13
ML20: Ratio of baseflow volume to total flow volume	0.47	0.54	14.00
ML22: Mean annual minimum flow divided by catchment area	0.43	0.14	-67.82
RA1: Mean of positive changes from one day to next (rise rate)	105.52	52.02	
RA2: CV, mean of positive changes from one day to next (rise rate)	359.01	459.54	
RA3: Mean of negative changes from one day to next (fall rate)	53.29	22.97	
RA4: CV, mean of negative changes from one day to next (fall rate)	414.87	445.39	
RA5: Ratio of days that are higher than previous day	0.32	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.07	
RA8: Number of flow reversals from one day to the next	87.88	97.17	
RA9: CV, number of flow reversals from one day to the next	18.12	25.62	

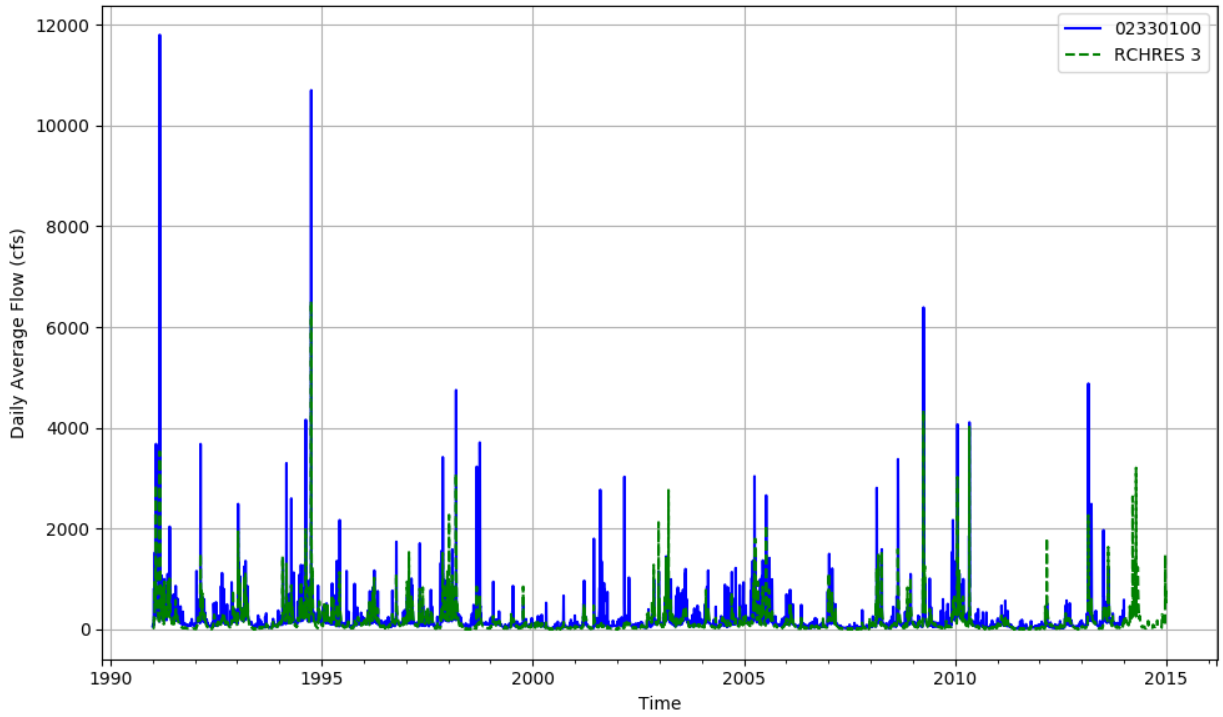


Figure T-03120003-4: Daily flow for HSFP reach 03 and USGS station 02330100.

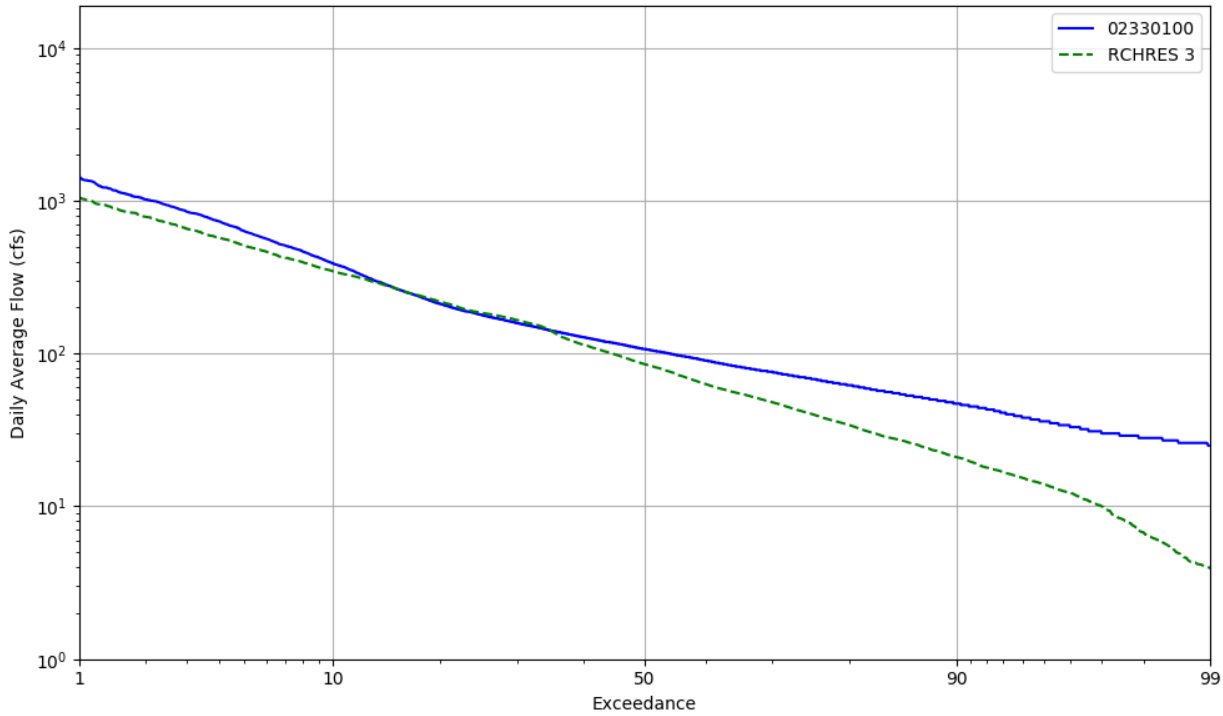


Figure T-03120003-5: Daily exceedance for HSFP reach 03 and USGS station 02330100.

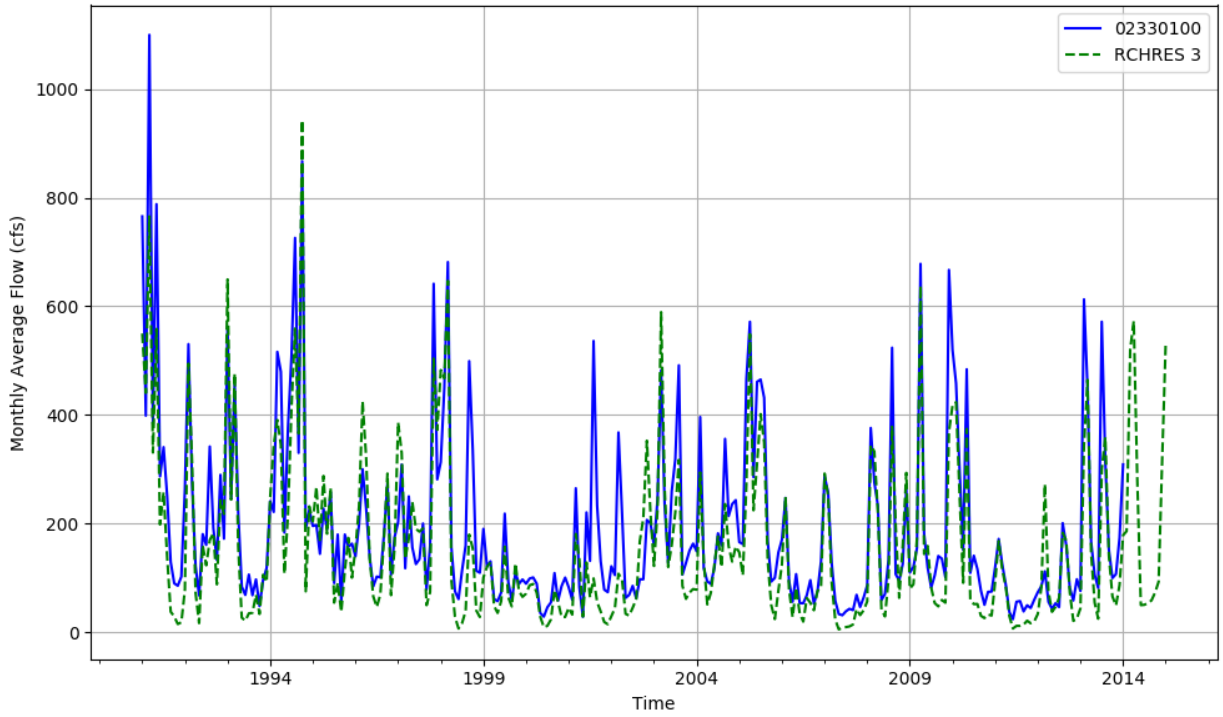


Figure T-03120003-6: Monthly flow for HSFP reach 03 and USGS station 02330100.

HSPF REACH 04, USGS GAUGE 02327100

Water-Data Report 2009
02327100 SOPCHOPPY RIVER NEAR SOPCHOPPY, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 300745, long 842940 referenced to North American Datum of 1927, Wakulla County, FL, Hydrologic Unit 03120003, Apalachicola National Forest, near left bank on downstream side of bridge on U.S. Forest Road 343, 4.7 mi north of Sopchoppy, 5.2 mi upstream from Duval Branch, and 24 mi upstream from mouth.

DRAINAGE AREA.--102.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Water years 1961-64 (annual maximum); June 1964 to current year.

REVISED RECORDS.--WSP 1905, WRD FL-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Jan. 27, 1961 to June 3, 1964, nonrecording gage and creststage gage at same site at datum 9.63 ft higher.

REMARKS.--Records poor.

Table T-03120003-3: Comparison Statistics Between HSPF Reach 04 and USGS Gauge 02327100.

Statistic	Value
Bias	-66.06
Standard error	186.52
Relative bias	-0.38
Relative standard error	0.81
Nash-Sutcliffe coefficient	0.34
Kling-Gupta coefficient	0.37
Coefficient of efficiency	0.46
Index of agreement	0.71

Table T-03120003-4: Hydrologic Indices Between USGS Gauge 02327100 and HSPF Reach 04.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02327100	Simulated Reach 04	Percent Difference
MA1: Mean, all daily flows	173.18	108.00	-37.64
MA2: Median, all daily flows	40.00	37.73	-5.66
MA3: CV, all daily flows	205.16	166.70	-18.75
MA4: CV, log of all daily flows	152.08	138.66	-8.82
MA5: Mean daily flow / median daily flow	4.33	2.86	-33.89

MA9: (Q10 - Q90) / median daily flow	10.94	5.31	-51.50
MA10: (Q20 - Q80) / median daily flow	5.67	2.25	-60.30
MA11: (Q25 - Q75) / median daily flow	4.12	1.81	-56.16
MA12: Mean monthly flow, January	217.25	147.73	-32.00
MA13: Mean monthly flow, February	227.64	172.84	-24.08
MA14: Mean monthly flow, March	307.12	186.21	-39.37
MA15: Mean monthly flow, April	109.29	116.55	6.65
MA16: Mean monthly flow, May	53.05	56.36	6.25
MA17: Mean monthly flow, June	157.05	52.17	-66.78
MA18: Mean monthly flow, July	203.90	95.28	-53.27
MA19: Mean monthly flow, August	286.28	117.02	-59.12
MA20: Mean monthly flow, September	197.02	63.52	-67.76
MA21: Mean monthly flow, October	97.65	73.15	-25.09
MA22: Mean monthly flow, November	40.96	60.94	48.79
MA23: Mean monthly flow, December	113.78	106.75	-6.17
ML1: Mean minimum monthly flow, January	50.81	33.08	-34.89
ML2: Mean minimum monthly flow, February	53.19	44.22	-16.86
ML3: Mean minimum monthly flow, March	49.27	50.12	1.73
ML4: Mean minimum monthly flow, April	11.72	34.09	190.91
ML5: Mean minimum monthly flow, May	6.84	21.89	220.12
ML6: Mean minimum monthly flow, June	4.33	21.02	385.66
ML7: Mean minimum monthly flow, July	42.16	31.85	-24.46
ML8: Mean minimum monthly flow, August	52.14	40.05	-23.18
ML9: Mean minimum monthly flow, September	21.56	28.12	30.43
ML10: Mean minimum monthly flow, October	10.40	23.37	124.79
ML11: Mean minimum monthly flow, November	8.01	23.08	188.32
ML12: Mean minimum monthly flow, December	19.54	28.27	44.72
ML13: CV of minimum monthly flows	175.02	72.57	-58.54
ML14: Mean minimum daily flow / mean median annual flow	0.08	0.34	339.41
ML15: Mean minimum annual flow / mean annual flow	0.01	0.19	1204.12
ML16: Median minimum annual flow / median annual flow	0.05	0.31	541.18
ML20: Ratio of baseflow volume to total flow volume	0.30	0.40	33.68
ML22: Mean annual minimum flow divided by catchment area	0.02	0.13	601.97
RA1: Mean of positive changes from one day to next (rise rate)	87.90	65.78	
RA2: CV, mean of positive changes from one day to next (rise rate)	378.80	345.97	
RA3: Mean of negative changes from one day to next (fall rate)	35.05	21.52	
RA4: CV, mean of negative changes from one day to next (fall rate)	353.35	362.08	
RA5: Ratio of days that are higher than previous day	0.27	0.25	
RA6: Median of difference in log of flows over two consecutive days of rising	0.22	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.14	0.04	
RA8: Number of flow reversals from one day to the next	69.54	61.92	
RA9: CV, number of flow reversals from one day to the next	21.56	19.24	

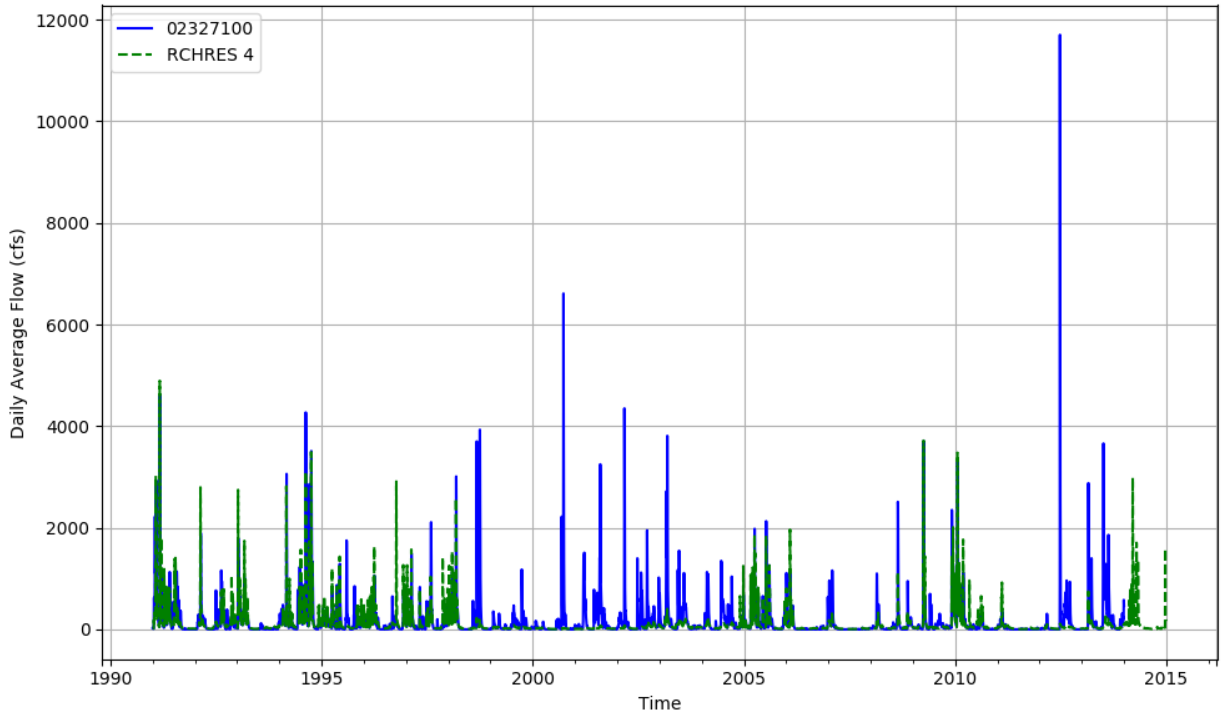


Figure T-03120003-7: Daily flow for HSFP reach 04 and USGS station 02327100.

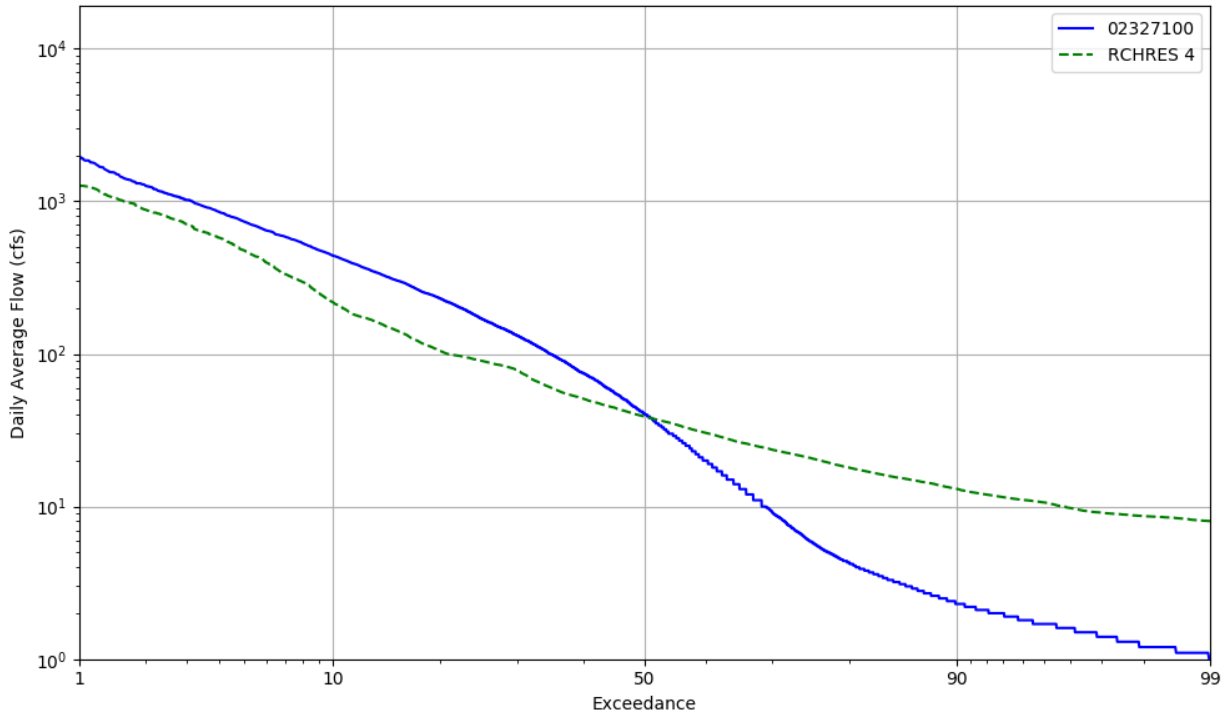


Figure T-03120003-8: Daily exceedance for HSFP reach 04 and USGS station 02327100.

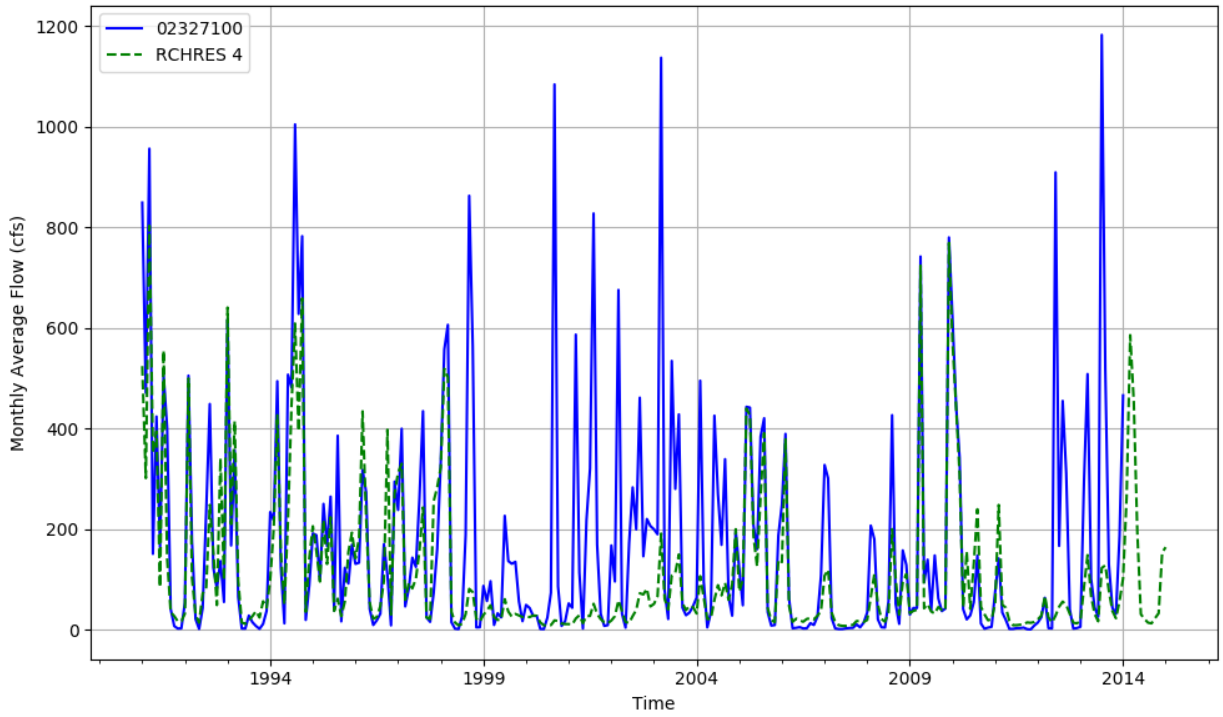


Figure T-03120003-9: Monthly flow for HSFP reach 04 and USGS station 02327100.

HSPF REACH 06, USGS GAUGE 02329600

Water-Data Report 2009
02329600 LITTLE RIVER NEAR MIDWAY, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 303044, long 843125 referenced to North American Datum of 1927, Gadsden County, FL, Hydrologic Unit 03120003, at bridge on State Highway 268, 0.5 mi upstream from Monroe Creek, 3.2 mi above mouth, and 3.7 mi west of Midway.

DRAINAGE AREA.--305.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Annual maximums, water years 1965 to 1985. October 1985 to current year.

GAGE.--Water-stage recorder and crest-stage. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 22, 1985, nonrecording and creststage gages at same site and datum.

REMARKS.--No estimated daily discharges. Records fair, except for October 1 to April 3, and periods when daily discharges are less than 200 ft/s, which are poor.

Table T-03120003-5: Comparison Statistics Between HSPF Reach 06 and USGS Gauge 02329600.

Statistic	Value
Bias	-20.48
Standard error	165.21
Relative bias	-0.06
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.82
Kling-Gupta coefficient	0.85
Coefficient of efficiency	0.63
Index of agreement	0.81

Table T-03120003-6: Hydrologic Indices Between USGS Gauge 02329600 and HSPF Reach 06.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02329600	Simulated Reach 06	Percent Difference
MA1: Mean, all daily flows	351.88	331.60	-5.76
MA2: Median, all daily flows	162.00	175.00	8.02
MA3: CV, all daily flows	182.96	126.76	-30.72
MA4: CV, log of all daily flows	115.87	101.91	-12.04
MA5: Mean daily flow / median daily flow	2.17	1.89	-12.76
MA9: (Q10 - Q90) / median daily flow	4.35	3.88	-10.81

MA10: (Q20 - Q80) / median daily flow	2.01	2.08	3.15
MA11: (Q25 - Q75) / median daily flow	1.48	1.63	10.16
MA12: Mean monthly flow, January	429.82	430.43	0.14
MA13: Mean monthly flow, February	525.24	540.63	2.93
MA14: Mean monthly flow, March	687.41	645.15	-6.15
MA15: Mean monthly flow, April	392.53	369.52	-5.86
MA16: Mean monthly flow, May	208.93	206.17	-1.32
MA17: Mean monthly flow, June	204.84	194.19	-5.20
MA18: Mean monthly flow, July	261.61	267.99	2.44
MA19: Mean monthly flow, August	392.17	319.83	-18.45
MA20: Mean monthly flow, September	221.59	196.59	-11.28
MA21: Mean monthly flow, October	265.31	215.83	-18.65
MA22: Mean monthly flow, November	219.33	200.63	-8.53
MA23: Mean monthly flow, December	266.78	252.25	-5.45
ML1: Mean minimum monthly flow, January	160.42	157.60	-1.76
ML2: Mean minimum monthly flow, February	175.13	214.90	22.71
ML3: Mean minimum monthly flow, March	192.48	259.68	34.91
ML4: Mean minimum monthly flow, April	115.57	167.10	44.59
ML5: Mean minimum monthly flow, May	64.67	89.02	37.67
ML6: Mean minimum monthly flow, June	53.33	86.47	62.13
ML7: Mean minimum monthly flow, July	74.30	136.47	83.69
ML8: Mean minimum monthly flow, August	96.00	151.56	57.88
ML9: Mean minimum monthly flow, September	64.51	100.29	55.47
ML10: Mean minimum monthly flow, October	73.13	84.75	15.88
ML11: Mean minimum monthly flow, November	84.43	101.55	20.29
ML12: Mean minimum monthly flow, December	121.74	122.86	0.92
ML13: CV of minimum monthly flows	86.60	83.89	-3.13
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.20	2.55
ML15: Mean minimum annual flow / mean annual flow	0.11	0.13	22.54
ML16: Median minimum annual flow / median annual flow	0.18	0.20	10.99
ML20: Ratio of baseflow volume to total flow volume	0.38	0.55	44.28
ML22: Mean annual minimum flow divided by catchment area	0.35	0.38	7.43
RA1: Mean of positive changes from one day to next (rise rate)	172.00	120.58	
RA2: CV, mean of positive changes from one day to next (rise rate)	461.08	410.88	
RA3: Mean of negative changes from one day to next (fall rate)	101.12	46.78	
RA4: CV, mean of negative changes from one day to next (fall rate)	431.54	388.98	
RA5: Ratio of days that are higher than previous day	0.35	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.15	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.11	0.05	
RA8: Number of flow reversals from one day to the next	90.88	77.71	
RA9: CV, number of flow reversals from one day to the next	20.01	21.70	

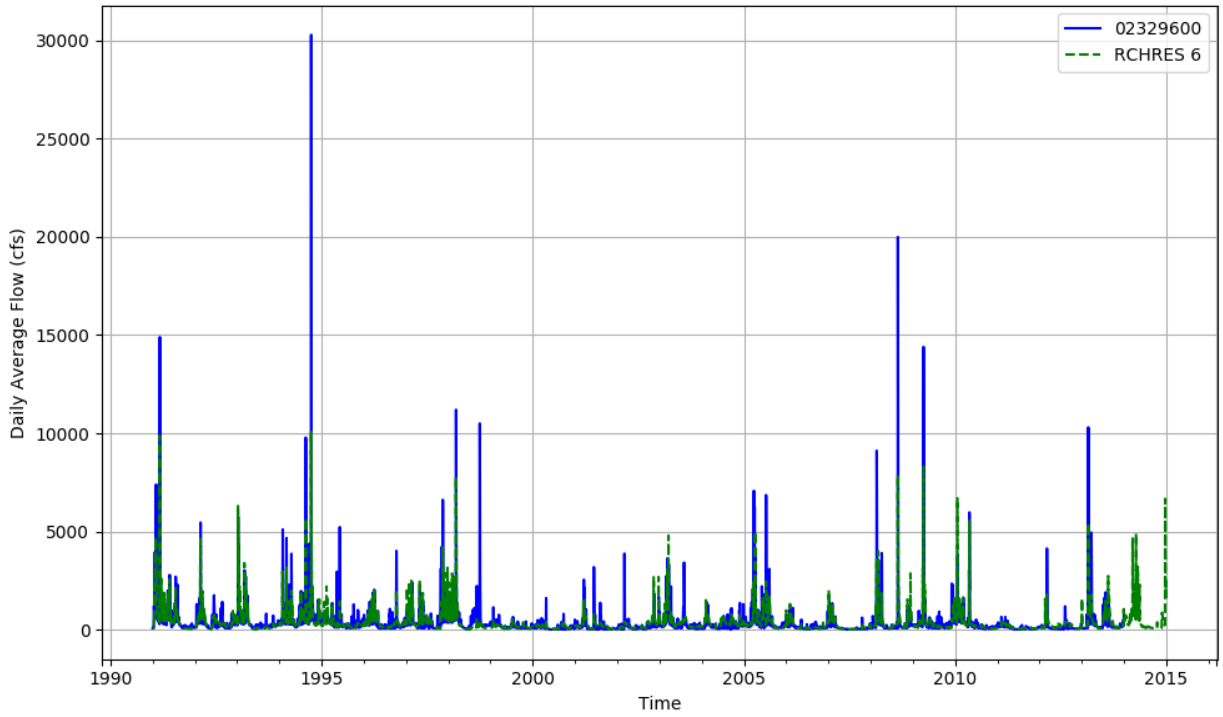


Figure T-03120003-10: Daily flow for HSFP reach 06 and USGS station 02329600.

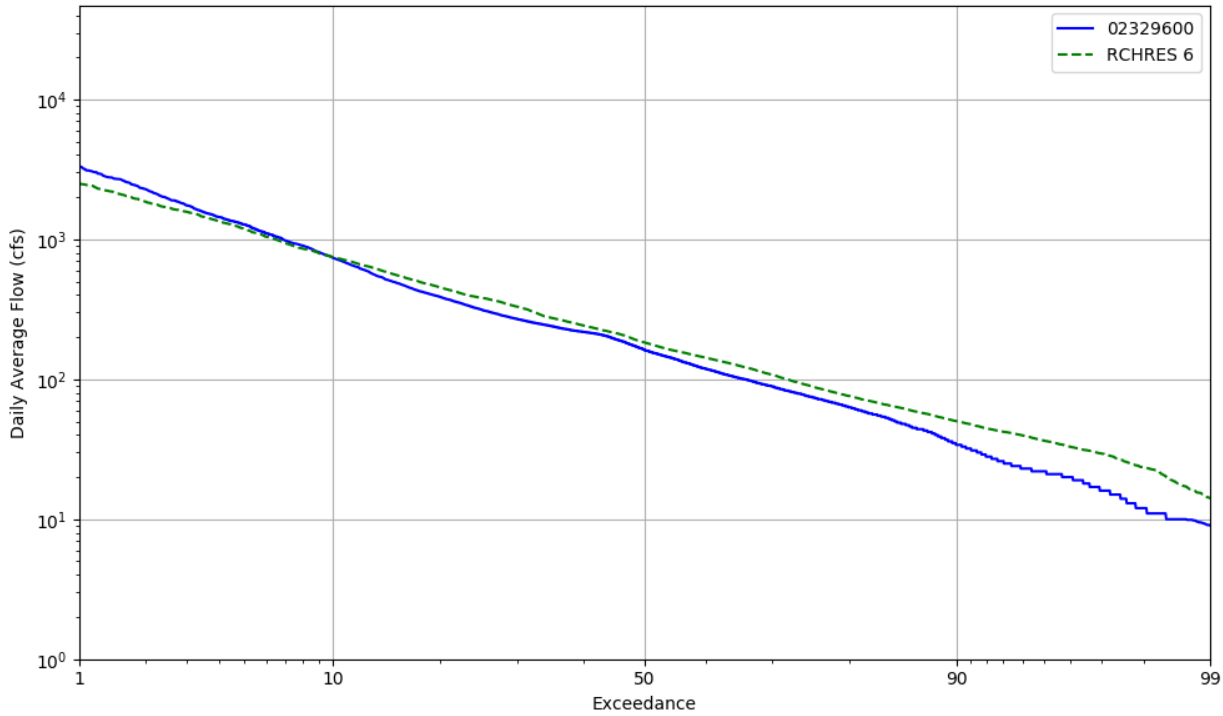


Figure T-03120003-11: Daily exceedance for HSFP reach 06 and USGS station 02329600.

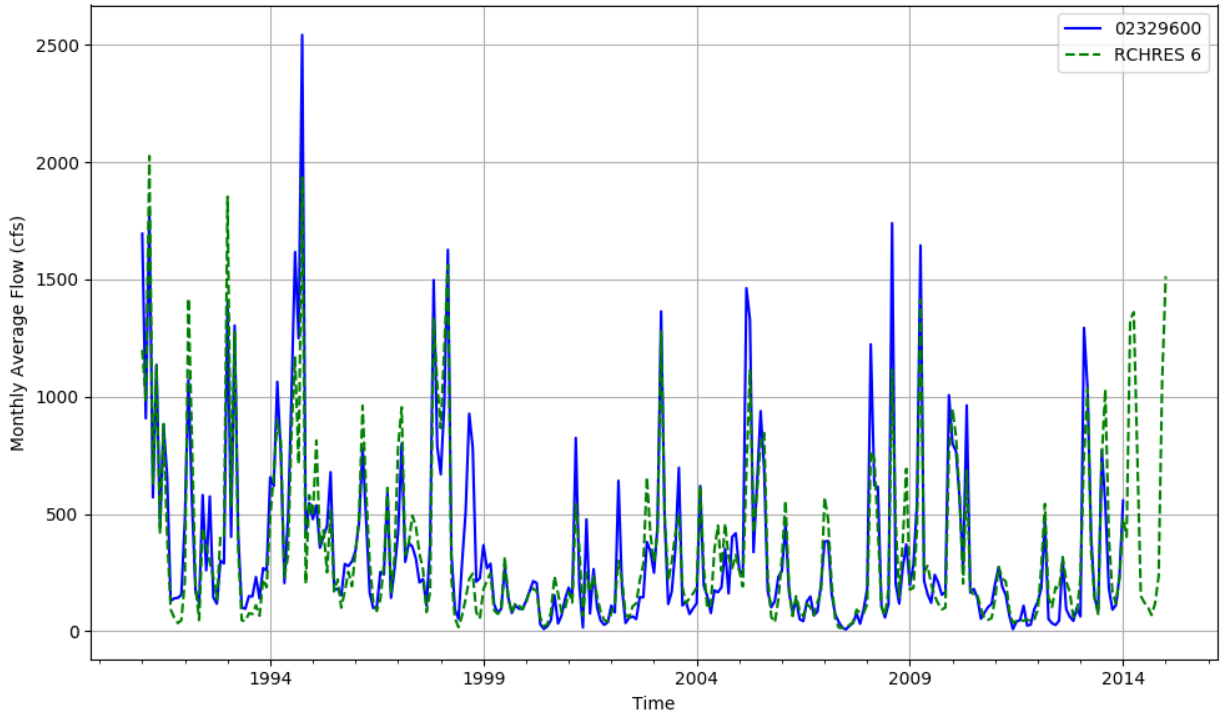


Figure T-03120003-12: Monthly flow for HSFP reach 06 and USGS station 02329600.

HSPF REACH 08, USGS GAUGE 02330000

Water-Data Report 2009
02330000 OCHLOCKONEE RIVER NEAR BLOXHAM, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 302259, long 843918 referenced to North American Datum of 1927, Leon County, FL, Hydrologic Unit 03120003, on left bank at Old State Highway 20(Crooked Road), 3,000 ft downstream from C.H. Corn Hydroelectric Dam, 1.5 mi southwest of Bloxham, and 65 mi upstream from mouth.

DRAINAGE AREA.--1700.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1926 to current year. Low-flow records not equivalent prior to Oct. 1, 1954, due to undetermined amount of seepage inflow.

REVISED RECORDS.--WSP 1002: 1940-42. WSP 1704: 1958-59. WSP 1905, WRD FL-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 24.46 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 9, 1930, nonrecording gage at site 2,700 ft upstream at datum 5.23 ft higher, Apr. 9, 1930 to Jan. 19, 1939, water-stage recorder at site 2,000 ft upstream at datum 5.23 ft higher, Jan. 20, 1939 to Sept. 30, 1954, water-stage recorder at present site at datum 5.23 ft higher, Oct. 1, 1954 to Sept. 30, 1985, water-stage recorder at present site and at datum .23 ft higher, Oct. 1, 1985 to Aug. 27, 1997, at site 2,000 ft upstream at datum .23 ft higher.

REMARKS.--No estimated daily discharges. Records fair above 150 ft/s, and poor below 150 ft/s due to the regularly shifting nature of the channel. Flow regulated since 1929 by C.H. Corn Hydroelectric Dam (formerly Jackson Bluff Dam) above station and storage in Lake Talquin (02329900). Since October 1981, the publication of adjusted values for storage has been discontinued since the difference between adjusted and the unadjusted values have been minimal. Maximum discharge, 89,400 ft/s, Sept. 23, 1969, gage height, 29.2 ft, from floodmark; minimum discharge, since October 1954, 1.0 ft/s, Nov. 1, 1957, caused by closure of breaks in earth embankment of C.H. Corn Hydroelectric Dam (indeterminate prior to October 1954).

Table T-03120003-7: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02330000.

Statistic	Value
Bias	-30.90
Standard error	570.08
Relative bias	-0.02
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90

Kling-Gupta coefficient	0.93
Coefficient of efficiency	0.74
Index of agreement	0.87

Table T-03120003-8: Hydrologic Indices Between USGS Gauge 02330000 and HSPF Reach 08.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02330000	Simulated Reach 08	Percent Difference
MA1: Mean, all daily flows	1567.17	1536.20	-1.98
MA2: Median, all daily flows	759.00	797.72	5.10
MA3: CV, all daily flows	129.22	141.85	9.77
MA4: CV, log of all daily flows	109.48	100.76	-7.97
MA5: Mean daily flow / median daily flow	2.06	1.93	-6.73
MA9: (Q10 - Q90) / median daily flow	4.70	3.94	-16.22
MA10: (Q20 - Q80) / median daily flow	2.93	2.21	-24.69
MA11: (Q25 - Q75) / median daily flow	2.24	1.69	-24.50
MA12: Mean monthly flow, January	1733.26	2017.85	16.42
MA13: Mean monthly flow, February	2681.66	2708.05	0.98
MA14: Mean monthly flow, March	3256.50	3197.34	-1.82
MA15: Mean monthly flow, April	2092.50	1872.11	-10.53
MA16: Mean monthly flow, May	901.02	946.86	5.09
MA17: Mean monthly flow, June	853.98	791.06	-7.37
MA18: Mean monthly flow, July	1195.89	1098.00	-8.19
MA19: Mean monthly flow, August	1676.03	1382.69	-17.50
MA20: Mean monthly flow, September	877.90	869.02	-1.01
MA21: Mean monthly flow, October	1055.63	959.43	-9.11
MA22: Mean monthly flow, November	740.31	828.18	11.87
MA23: Mean monthly flow, December	1091.35	1128.78	3.43
ML1: Mean minimum monthly flow, January	657.79	791.76	20.37
ML2: Mean minimum monthly flow, February	1107.83	1186.45	7.10
ML3: Mean minimum monthly flow, March	1201.04	1364.80	13.63
ML4: Mean minimum monthly flow, April	713.30	959.63	34.53
ML5: Mean minimum monthly flow, May	254.91	501.95	96.91
ML6: Mean minimum monthly flow, June	235.13	431.33	83.45
ML7: Mean minimum monthly flow, July	435.35	624.32	43.41
ML8: Mean minimum monthly flow, August	472.48	650.99	37.78
ML9: Mean minimum monthly flow, September	264.43	466.90	76.56
ML10: Mean minimum monthly flow, October	289.61	427.40	47.58
ML11: Mean minimum monthly flow, November	262.70	432.97	64.82
ML12: Mean minimum monthly flow, December	524.96	596.01	13.53
ML13: CV of minimum monthly flows	118.91	88.54	-25.54
ML14: Mean minimum daily flow / mean median annual flow	0.18	0.23	30.29
ML15: Mean minimum annual flow / mean annual flow	0.09	0.15	54.99
ML16: Median minimum annual flow / median annual flow	0.15	0.22	42.19
ML20: Ratio of baseflow volume to total flow volume	0.49	0.60	22.46
ML22: Mean annual minimum flow divided by catchment area	1.17	2.04	73.78
RA1: Mean of positive changes from one day to next (rise rate)	370.72	638.98	
RA2: CV, mean of positive changes from one day to next (rise rate)	305.29	421.67	
RA3: Mean of negative changes from one day to next (fall rate)	277.53	242.83	

RA4: CV, mean of negative changes from one day to next (fall rate)	241.13	593.97	
RA5: Ratio of days that are higher than previous day	0.40	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.04	
RA8: Number of flow reversals from one day to the next	113.17	63.62	
RA9: CV, number of flow reversals from one day to the next	23.46	20.88	

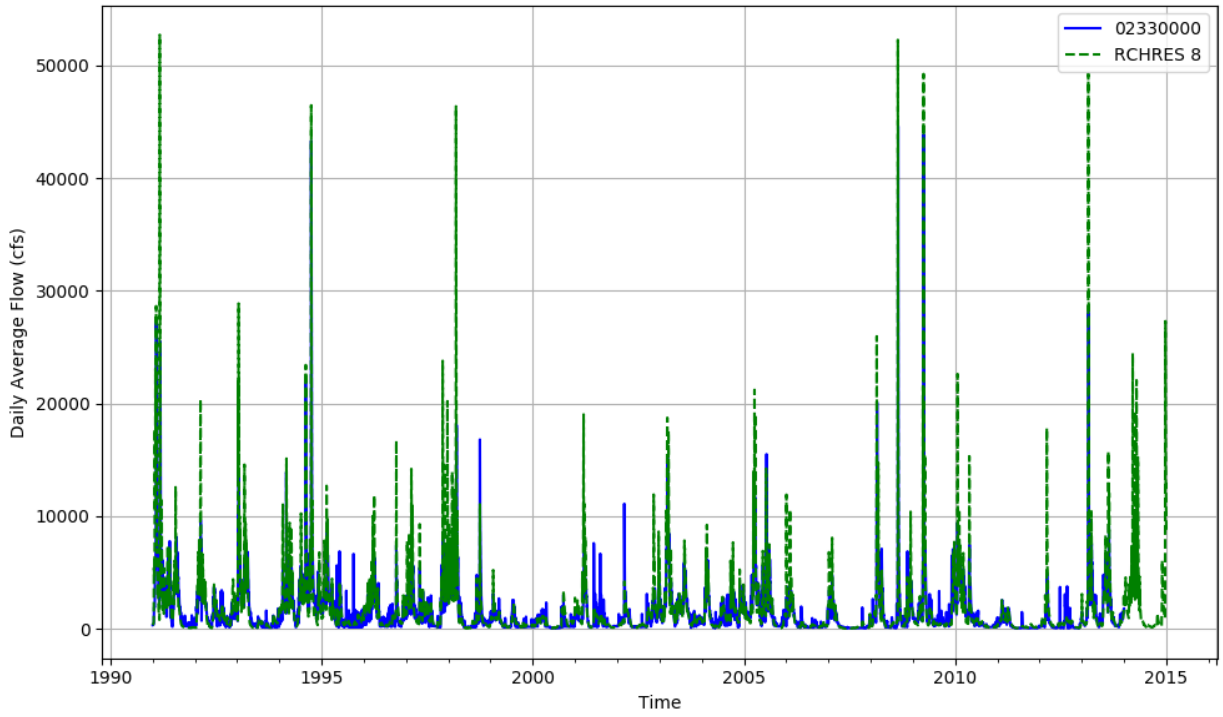


Figure T-03120003-13: Daily flow for HSFP reach 08 and USGS station 02330000.

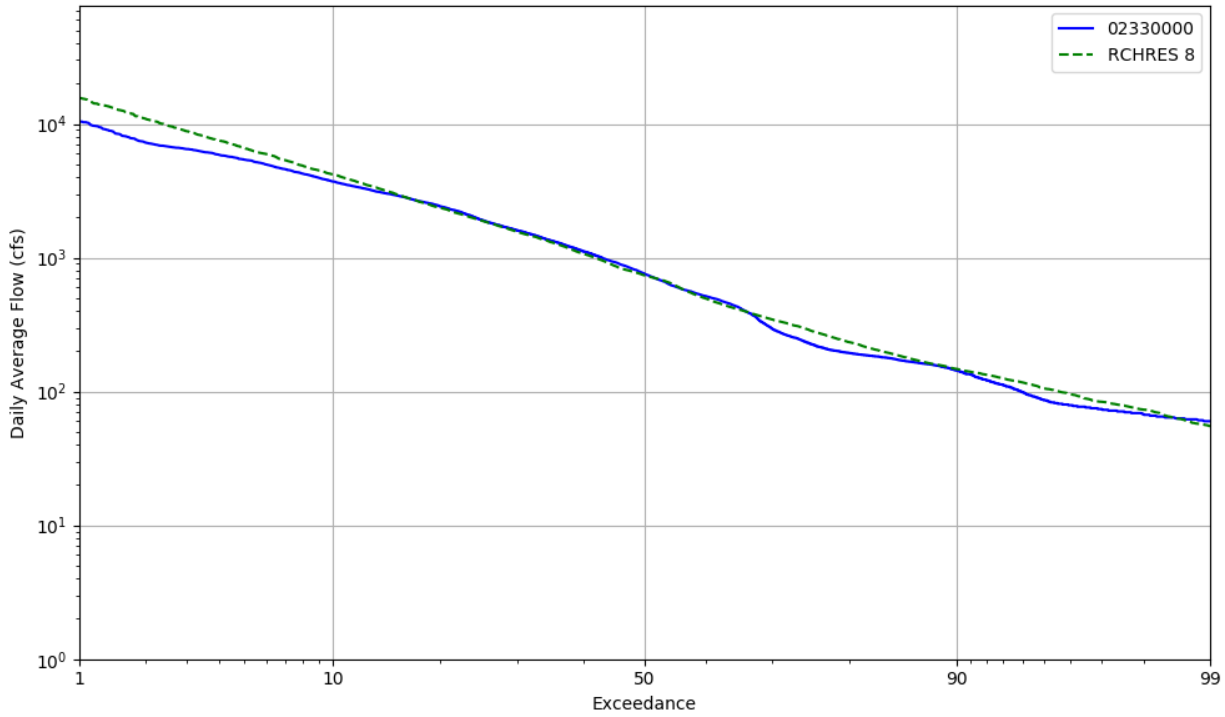


Figure T-03120003-14: Daily exceedance for HSFP reach 08 and USGS station 02330000.

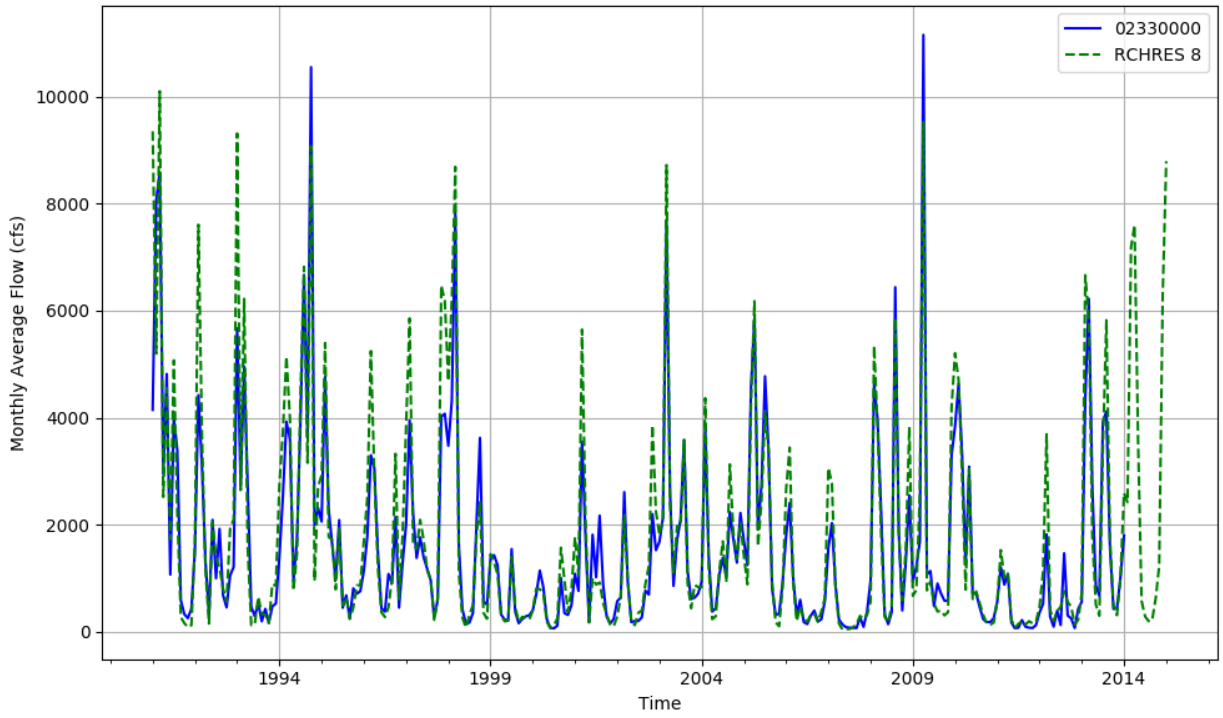


Figure T-03120003-15: Monthly flow for HSFP reach 08 and USGS station 02330000.

HSPF REACH 10, USGS GAUGE 02330150

Water-Data Report 2009
02330150 OCHLOCKONEE RIVER NEAR SMITH CREEK, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 301035, long 844005 referenced to North American Datum of 1927, in NE 1/4 1/ 1/4 4 1/4 sec.31, T.3 S., R.4 W., Wakulla County, FL, Hydrologic Unit 03120003, at bridge on County Road 368 and Forest Road FH-13, 1.3 mi upstream from Smith Creek, 2.0 mi southwest of community of Smith Creek, and 39 mi upstream from mouth.

DRAINAGE AREA.--2080.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1964 to November 1992 (annual peak stage); October 1996 to current year.

REVISED RECORDS.--WRD FL-03-4: 2003.

GAGE.--Water-stage recorder. Datum of gage is not determined. Prior to Nov. 29, 1972, crest-stage gage at NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good.

Table T-03120003-9: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02330150.

Statistic	Value
Bias	-98.19
Standard error	866.10
Relative bias	-0.05
Relative standard error	0.43
Nash-Sutcliffe coefficient	0.81
Kling-Gupta coefficient	0.87
Coefficient of efficiency	0.65
Index of agreement	0.83

Table T-03120003-10: Hydrologic Indices Between USGS Gauge 02330150 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02330150	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	1791.03	1690.12	-5.63
MA2: Median, all daily flows	848.00	913.53	7.73
MA3: CV, all daily flows	121.42	128.89	6.16
MA4: CV, log of all daily flows	103.16	100.28	-2.79
MA5: Mean daily flow / median daily flow	2.11	1.85	-12.40
MA9: (Q10 - Q90) / median daily flow	4.67	3.69	-21.00

MA10: (Q20 - Q80) / median daily flow	2.72	1.99	-26.82
MA11: (Q25 - Q75) / median daily flow	2.12	1.52	-28.19
MA12: Mean monthly flow, January	1719.76	1875.42	9.05
MA13: Mean monthly flow, February	2491.79	2738.52	9.90
MA14: Mean monthly flow, March	3482.99	3084.28	-11.45
MA15: Mean monthly flow, April	2271.79	2050.78	-9.73
MA16: Mean monthly flow, May	870.62	962.06	10.50
MA17: Mean monthly flow, June	995.47	798.88	-19.75
MA18: Mean monthly flow, July	1471.74	1126.19	-23.48
MA19: Mean monthly flow, August	2024.00	1576.23	-22.12
MA20: Mean monthly flow, September	1182.72	1073.55	-9.23
MA21: Mean monthly flow, October	972.68	917.02	-5.72
MA22: Mean monthly flow, November	925.48	1076.28	16.29
MA23: Mean monthly flow, December	1447.26	1491.87	3.08
ML1: Mean minimum monthly flow, January	1034.72	1027.13	-0.73
ML2: Mean minimum monthly flow, February	1287.88	1213.74	-5.76
ML3: Mean minimum monthly flow, March	1462.71	1428.01	-2.37
ML4: Mean minimum monthly flow, April	900.94	1028.34	14.14
ML5: Mean minimum monthly flow, May	341.35	524.49	53.65
ML6: Mean minimum monthly flow, June	331.29	476.59	43.86
ML7: Mean minimum monthly flow, July	596.59	636.71	6.72
ML8: Mean minimum monthly flow, August	803.22	768.06	-4.38
ML9: Mean minimum monthly flow, September	393.00	555.81	41.43
ML10: Mean minimum monthly flow, October	381.72	527.77	38.26
ML11: Mean minimum monthly flow, November	476.44	580.53	21.85
ML12: Mean minimum monthly flow, December	722.22	730.44	1.14
ML13: CV of minimum monthly flows	114.98	88.16	-23.32
ML14: Mean minimum daily flow / mean median annual flow	0.28	0.28	0.83
ML15: Mean minimum annual flow / mean annual flow	0.16	0.19	16.68
ML16: Median minimum annual flow / median annual flow	0.24	0.29	19.66
ML20: Ratio of baseflow volume to total flow volume	0.50	0.59	19.12
ML22: Mean annual minimum flow divided by catchment area	2.32	2.90	25.03
RA1: Mean of positive changes from one day to next (rise rate)	356.04	665.98	
RA2: CV, mean of positive changes from one day to next (rise rate)	315.92	449.58	
RA3: Mean of negative changes from one day to next (fall rate)	216.58	266.44	
RA4: CV, mean of negative changes from one day to next (fall rate)	292.90	580.42	
RA5: Ratio of days that are higher than previous day	0.37	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	70.26	50.37	
RA9: CV, number of flow reversals from one day to the next	30.66	34.72	

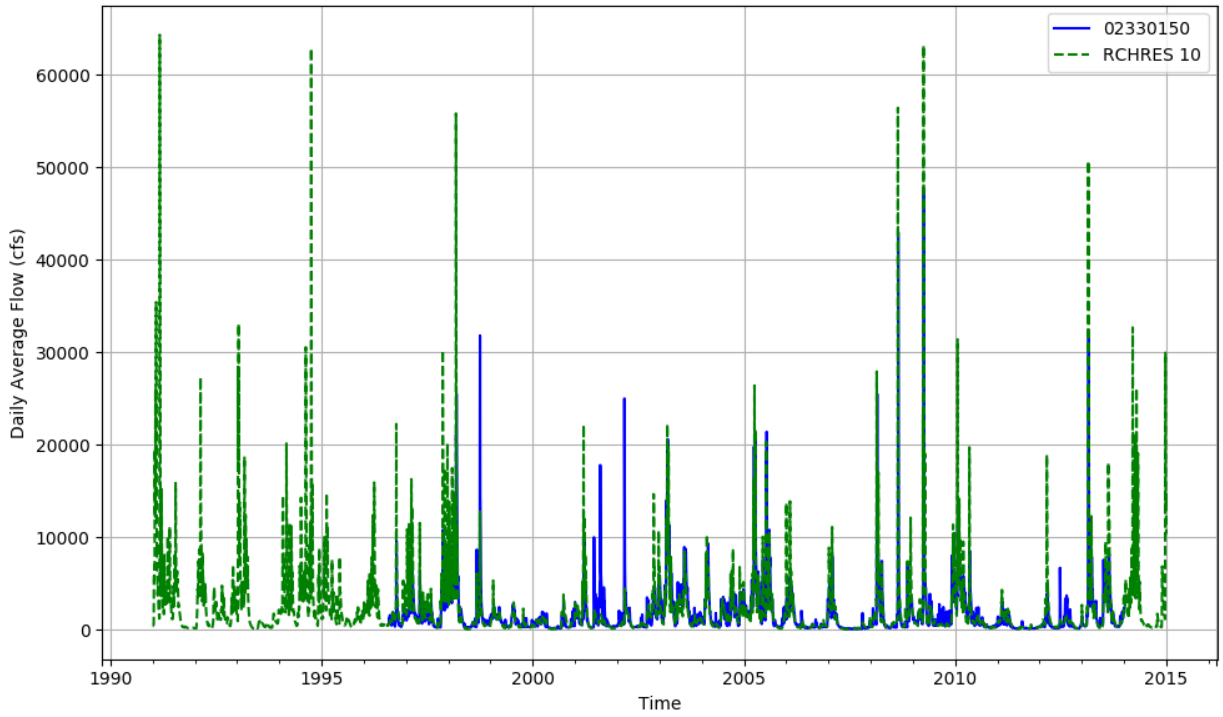


Figure T-03120003-16: Daily flow for HSFP reach 10 and USGS station 02330150.

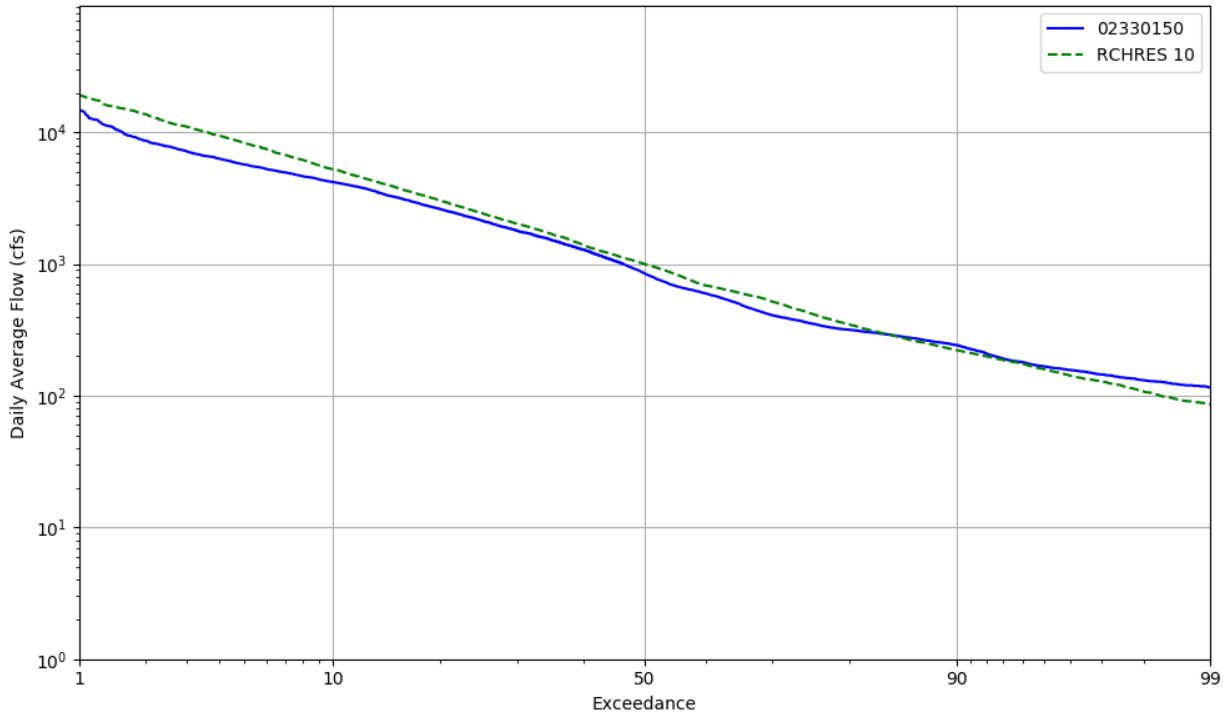


Figure T-03120003-17: Daily exceedance for HSFP reach 10 and USGS station 02330150.

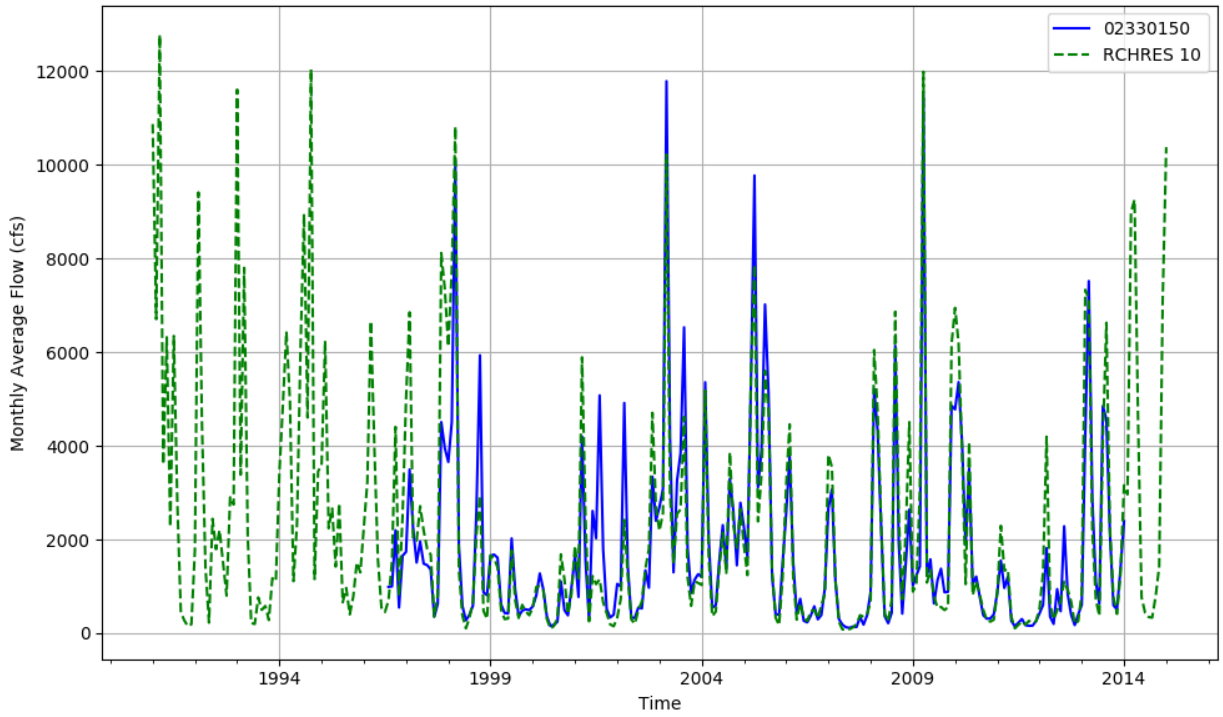


Figure T-03120003-18: Monthly flow for HSFP reach 10 and USGS station 02330150.

HSPF REACH 15, USGS GAUGE 02328522

Water-Data Report 2009
02328522 OCHLOCKONEE RIVER NEAR CONCORD, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 304008, long 841819 referenced to North American Datum of 1927, in SW 1/4 1/ 1/4 4 1/4 sec.11, T.3 N., R.1 W., Leon County, FL, Hydrologic Unit 03120003, near center of stream on downstream side of bridge on State Highway 12, and 3.7 mi east of Concord.

DRAINAGE AREA.--1,002 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1920 to October 1990 (miscellaneous discharge measurements), October 1998 to current year.

GAGE.--Water-stage recorder. Datum of the gage is 69.81 ft above National Vertical Datum of 1929 (levels by Creech Engineers, Inc).

REMARKS.--No estimated daily discharges. Records fair.

Table T-03120003-11: Comparison Statistics Between HSPF Reach 15 and USGS Gauge 02328522.

Statistic	Value
Bias	-135.99
Standard error	541.67
Relative bias	-0.16
Relative standard error	0.44
Nash-Sutcliffe coefficient	0.80
Kling-Gupta coefficient	0.64
Coefficient of efficiency	0.67
Index of agreement	0.82

Table T-03120003-12: Hydrologic Indices Between USGS Gauge 02328522 and HSPF Reach 15.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02328522	Simulated Reach 15	Percent Difference
MA1: Mean, all daily flows	823.04	685.98	-16.65
MA2: Median, all daily flows	265.00	368.44	39.03
MA3: CV, all daily flows	172.96	167.60	-3.10
MA4: CV, log of all daily flows	130.27	98.70	-24.24
MA5: Mean daily flow / median daily flow	3.11	1.86	-40.05
MA9: (Q10 - Q90) / median daily flow	6.68	3.60	-46.04
MA10: (Q20 - Q80) / median daily flow	3.75	2.20	-41.32
MA11: (Q25 - Q75) / median daily flow	2.85	1.76	-38.45
MA12: Mean monthly flow, January	801.58	727.48	-9.24

MA13: Mean monthly flow, February	1329.78	1192.46	-10.33
MA14: Mean monthly flow, March	1859.87	1483.79	-20.22
MA15: Mean monthly flow, April	1398.95	1095.02	-21.73
MA16: Mean monthly flow, May	348.83	399.02	14.39
MA17: Mean monthly flow, June	385.54	312.70	-18.89
MA18: Mean monthly flow, July	785.73	436.17	-44.49
MA19: Mean monthly flow, August	959.35	692.02	-27.87
MA20: Mean monthly flow, September	412.09	448.56	8.85
MA21: Mean monthly flow, October	361.15	334.60	-7.35
MA22: Mean monthly flow, November	291.95	320.22	9.68
MA23: Mean monthly flow, December	569.44	498.29	-12.49
ML1: Mean minimum monthly flow, January	398.94	397.54	-0.35
ML2: Mean minimum monthly flow, February	521.27	482.49	-7.44
ML3: Mean minimum monthly flow, March	583.07	659.56	13.12
ML4: Mean minimum monthly flow, April	333.67	523.82	56.99
ML5: Mean minimum monthly flow, May	109.47	237.25	116.73
ML6: Mean minimum monthly flow, June	81.60	194.81	138.74
ML7: Mean minimum monthly flow, July	233.67	258.02	10.42
ML8: Mean minimum monthly flow, August	249.73	298.20	19.41
ML9: Mean minimum monthly flow, September	114.87	218.46	90.19
ML10: Mean minimum monthly flow, October	111.17	199.49	79.44
ML11: Mean minimum monthly flow, November	132.75	186.19	40.26
ML12: Mean minimum monthly flow, December	242.44	266.36	9.87
ML13: CV of minimum monthly flows	127.97	101.68	-20.55
ML14: Mean minimum daily flow / mean median annual flow	0.17	0.18	10.59
ML15: Mean minimum annual flow / mean annual flow	0.08	0.12	57.12
ML16: Median minimum annual flow / median annual flow	0.15	0.13	-14.33
ML20: Ratio of baseflow volume to total flow volume	0.42	0.63	47.82
ML22: Mean annual minimum flow divided by catchment area	0.51	1.01	98.34
RA1: Mean of positive changes from one day to next (rise rate)	228.05	351.02	
RA2: CV, mean of positive changes from one day to next (rise rate)	516.85	508.38	
RA3: Mean of negative changes from one day to next (fall rate)	114.02	128.40	
RA4: CV, mean of negative changes from one day to next (fall rate)	536.12	802.38	
RA5: Ratio of days that are higher than previous day	0.32	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	54.56	68.62	
RA9: CV, number of flow reversals from one day to the next	20.79	22.37	

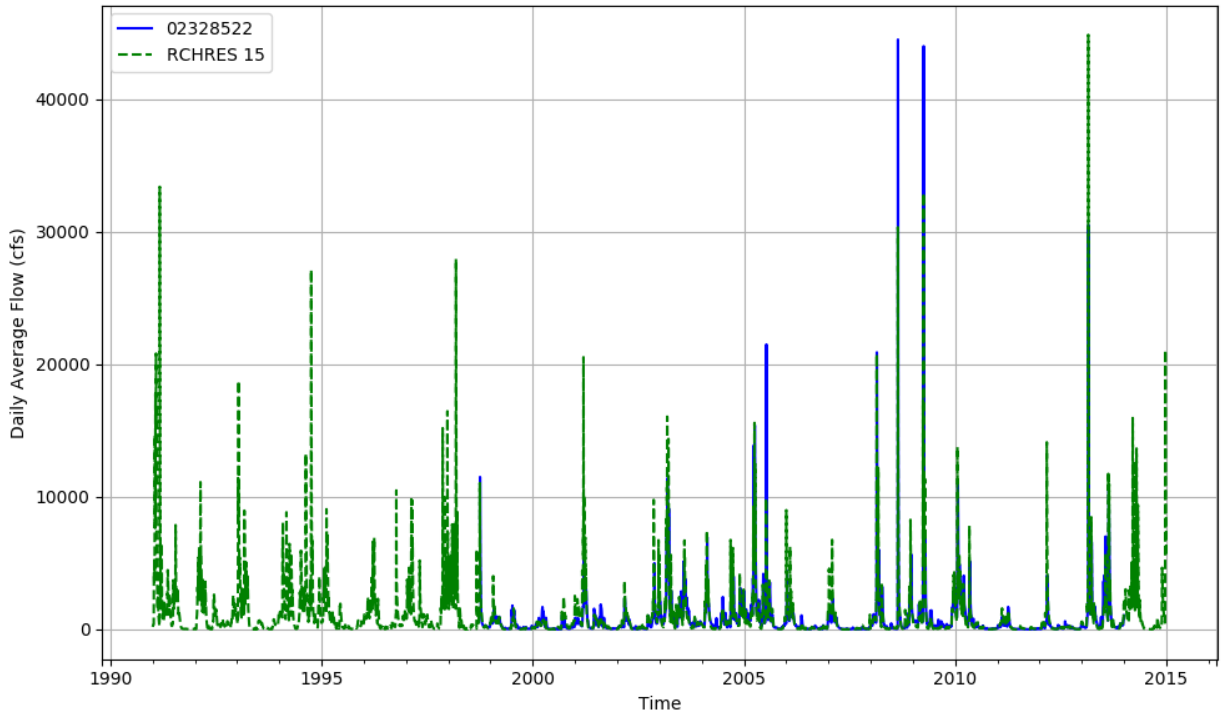


Figure T-03120003-19: Daily flow for HSFP reach 15 and USGS station 02328522.

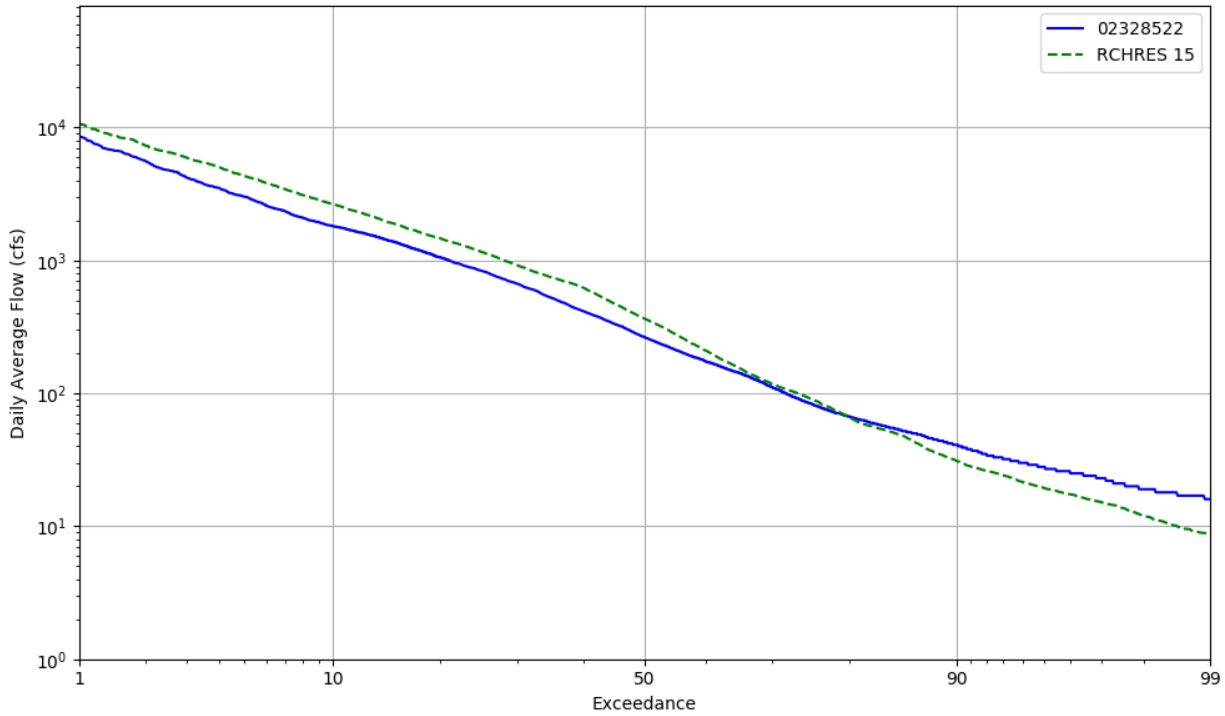


Figure T-03120003-20: Daily exceedance for HSFP reach 15 and USGS station 02328522.

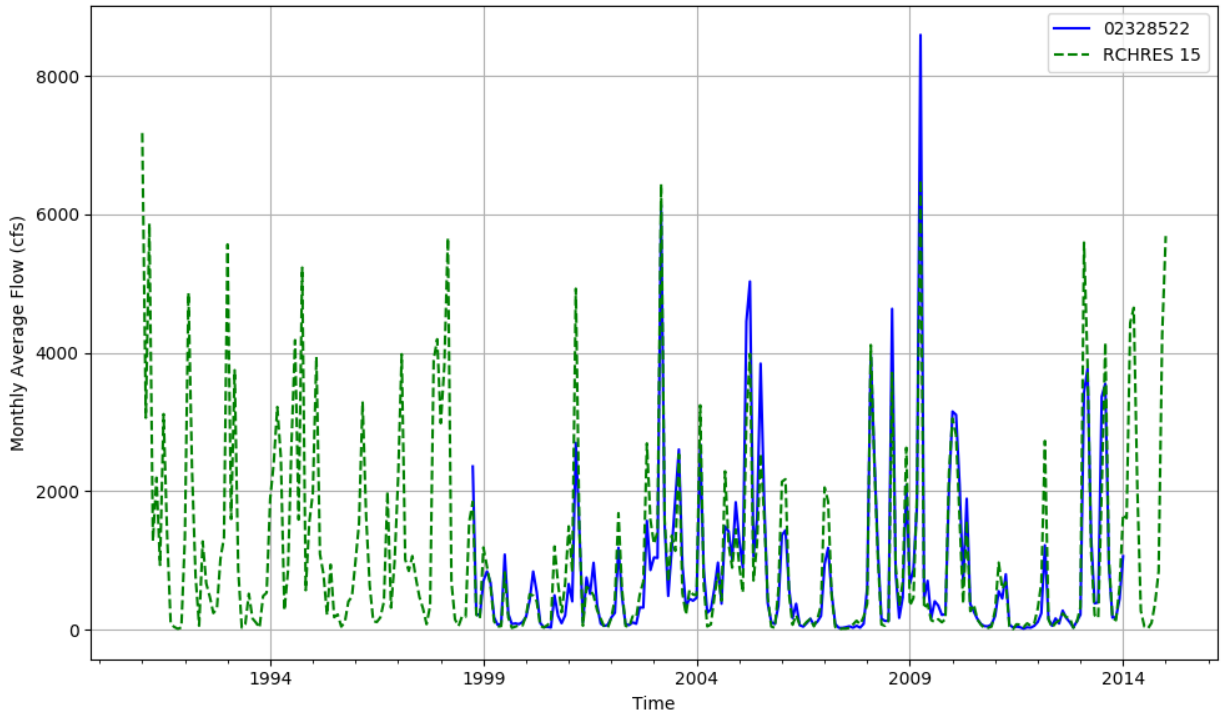


Figure T-03120003-21: Monthly flow for HSFP reach 15 and USGS station 02328522.

HSPF REACH 16, USGS GAUGE 02329000

Water-Data Report 2009
02329000 OCHLOCKONEE RIVER NEAR HAVANA, FL
Ochlockonee Basin Lower Ochlockonee Subbasin

LOCATION.--Lat 303314, long 842303 referenced to North American Datum of 1927, Leon County, FL, Hydrologic Unit 03120003, near center of downstream side of downstream bridge on divided U.S. Highway 27, 0.8 mi upstream from Seaboard Air Line Railroad bridge, 4.0 mi downstream from Mill Creek, 5.0 mi southeast of Havana, and 94 mi upstream from mouth.

DRAINAGE AREA.--1,140 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1926 to current year. June 1926 to December 1929 (published as "at Ochlockonee"). Records published for both sites December 1928 to December 1929.

REVISED RECORDS.--WSP 822: 1929 (M). WSP 1504: 1928. WSP 1905: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 59.36 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1930, nonrecording gage at site about 10 mi downstream at datum 9.36 ft lower. Dec. 12, 1928, to Nov. 17, 1963, nonrecording gage at site 100 ft upstream at present datum. Nov. 18, 1963 to Nov. 15, 1976, nonrecording gage at same site and datum.

REMARKS.--Records good. Drainage Area: At site used prior to January 1929, 1,220 mi, approximately.

Table T-03120003-13: Comparison Statistics Between HSPF Reach 16 and USGS Gauge 02329000.

Statistic	Value
Bias	-51.52
Standard error	451.36
Relative bias	-0.05
Relative standard error	0.34
Nash-Sutcliffe coefficient	0.88
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.73
Index of agreement	0.86

Table T-03120003-14: Hydrologic Indices Between USGS Gauge 02329000 and HSPF Reach 16.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02329000	Simulated Reach 16	Percent Difference
MA1: Mean, all daily flows	999.26	946.13	-5.32

MA2: Median, all daily flows	390.00	487.43	24.98
MA3: CV, all daily flows	146.07	155.59	6.52
MA4: CV, log of all daily flows	121.36	100.99	-16.79
MA5: Mean daily flow / median daily flow	2.56	1.94	-24.24
MA9: (Q10 - Q90) / median daily flow	6.02	3.96	-34.19
MA10: (Q20 - Q80) / median daily flow	3.43	2.31	-32.61
MA11: (Q25 - Q75) / median daily flow	2.53	1.76	-30.45
MA12: Mean monthly flow, January	1118.83	1251.48	11.86
MA13: Mean monthly flow, February	1768.30	1777.65	0.53
MA14: Mean monthly flow, March	2277.04	2084.61	-8.45
MA15: Mean monthly flow, April	1498.33	1223.19	-18.36
MA16: Mean monthly flow, May	514.09	557.18	8.38
MA17: Mean monthly flow, June	484.83	443.05	-8.62
MA18: Mean monthly flow, July	812.65	607.58	-25.23
MA19: Mean monthly flow, August	994.16	796.45	-19.89
MA20: Mean monthly flow, September	465.36	520.06	11.76
MA21: Mean monthly flow, October	621.78	567.34	-8.76
MA22: Mean monthly flow, November	399.89	468.96	17.27
MA23: Mean monthly flow, December	611.01	674.06	10.32
ML1: Mean minimum monthly flow, January	478.29	512.73	7.20
ML2: Mean minimum monthly flow, February	823.39	808.72	-1.78
ML3: Mean minimum monthly flow, March	878.43	907.03	3.26
ML4: Mean minimum monthly flow, April	536.30	659.91	23.05
ML5: Mean minimum monthly flow, May	205.13	327.39	59.60
ML6: Mean minimum monthly flow, June	155.48	263.87	69.72
ML7: Mean minimum monthly flow, July	345.65	371.47	7.47
ML8: Mean minimum monthly flow, August	347.17	370.13	6.61
ML9: Mean minimum monthly flow, September	165.96	269.07	62.13
ML10: Mean minimum monthly flow, October	178.93	265.20	48.22
ML11: Mean minimum monthly flow, November	203.09	249.99	23.09
ML12: Mean minimum monthly flow, December	335.87	384.76	14.55
ML13: CV of minimum monthly flows	122.05	97.07	-20.46
ML14: Mean minimum daily flow / mean median annual flow	0.16	0.19	18.27
ML15: Mean minimum annual flow / mean annual flow	0.08	0.12	43.31
ML16: Median minimum annual flow / median annual flow	0.14	0.15	3.92
ML20: Ratio of baseflow volume to total flow volume	0.54	0.61	14.25
ML22: Mean annual minimum flow divided by catchment area	0.64	1.13	76.65
RA1: Mean of positive changes from one day to next (rise rate)	196.54	435.93	
RA2: CV, mean of positive changes from one day to next (rise rate)	443.86	456.54	
RA3: Mean of negative changes from one day to next (fall rate)	106.85	164.20	
RA4: CV, mean of negative changes from one day to next (fall rate)	376.72	702.90	
RA5: Ratio of days that are higher than previous day	0.34	0.27	
RA6: Median of difference in log of flows over two consecutive days of rising	0.09	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	56.12	63.46	

RA9: CV, number of flow reversals from one day to the next	25.17	18.63	

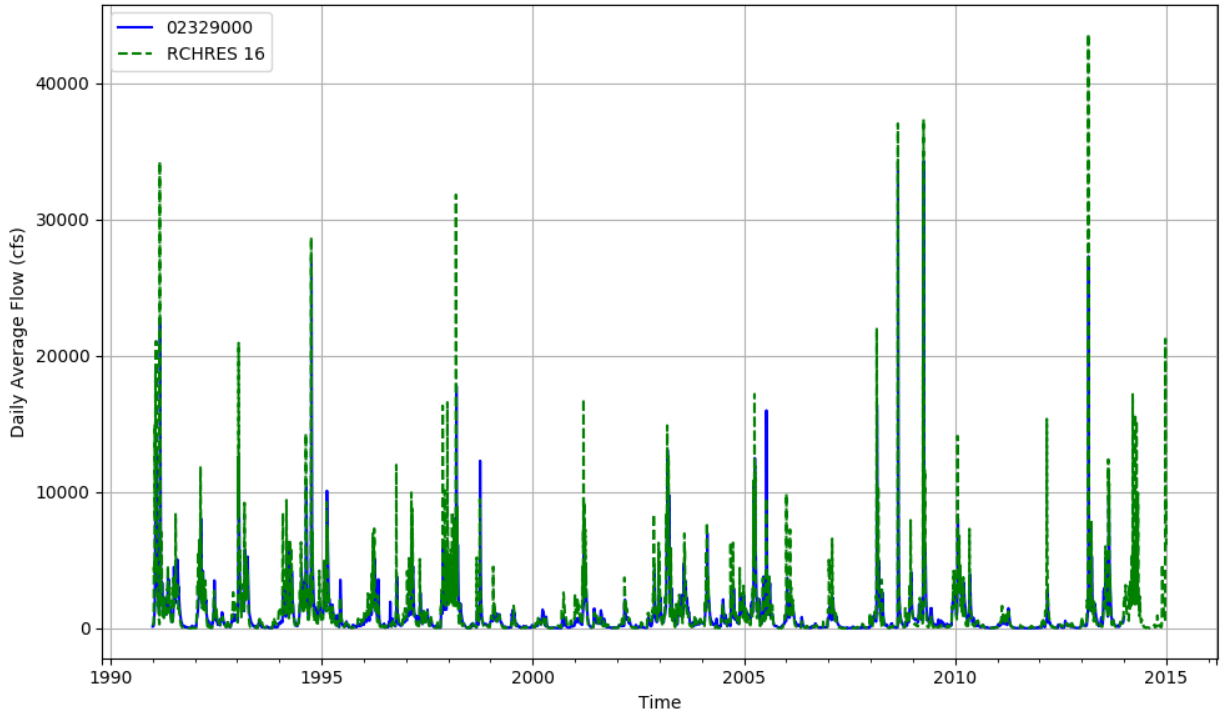


Figure T-03120003-22: Daily flow for HSFP reach 16 and USGS station 02329000.

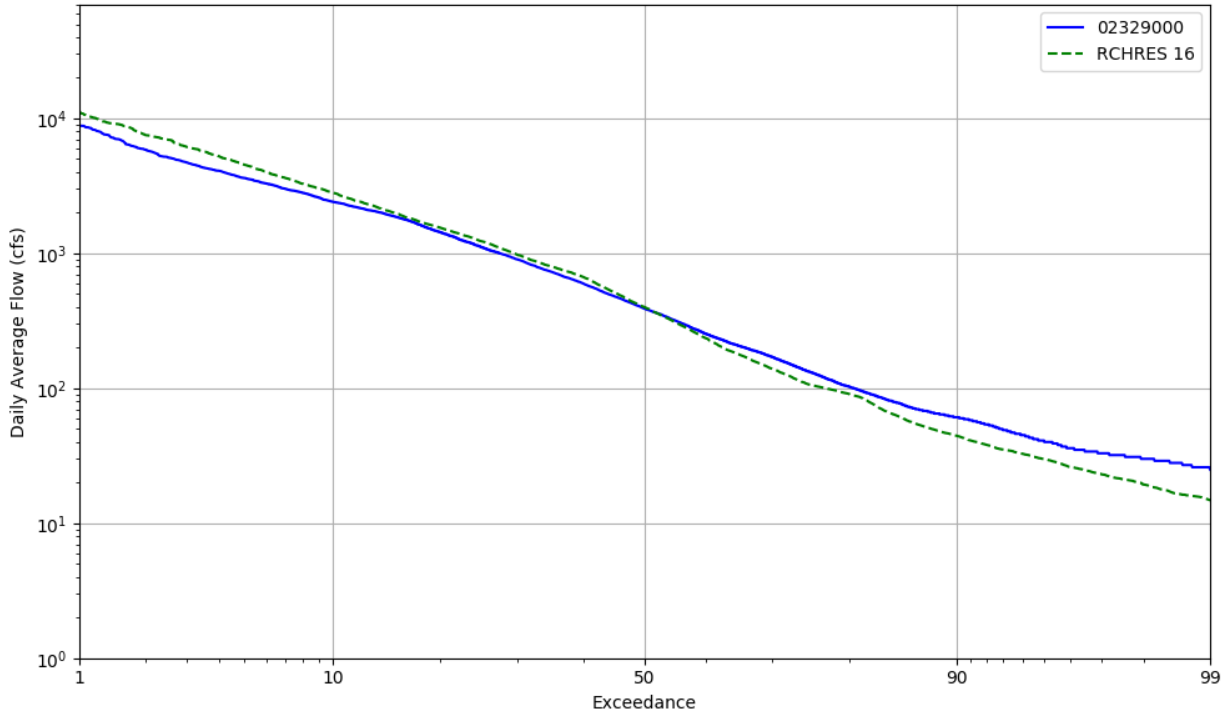


Figure T-03120003-23: Daily exceedance for HSFP reach 16 and USGS station 02329000.

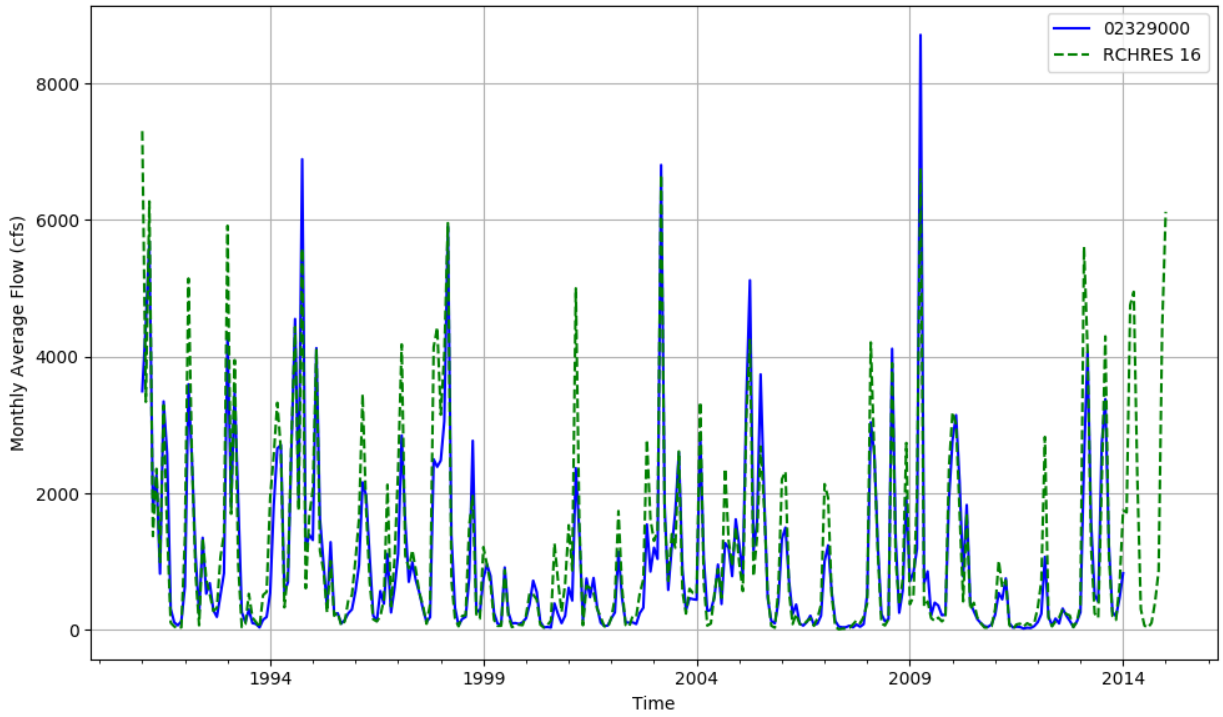


Figure T-03120003-24: Monthly flow for HSFP reach 16 and USGS station 02329000.

Table T-03120003-15: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	20663	41446	7071	978	242	2655	353789	54434	24839	20904	41654	407986	627	7111	8221	992621
AREA(%)	2.1	4.2	0.7	0.1	0.0	0.3	35.5	5.5	2.5	2.1	4.2	41.0	0.1	0.7	0.8	99.6
IMPERVIOUS																
AREA(ACRES)		2231	841	271	242											3585
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	35.5	39.3	39.2	39.4	39.8	37.1	39.3	38.8	40.2	40.6	40.7	39.0	58.8	52.4	43.4	39.1
SURLI			7.8	9.2	8.7									0.0	23.0	0.3
UZLI																0.0
LZLI			4.7	4.8	4.6										0.3	0.0
SURO: PERVIOUS		1.2	2.3	2.5	2.3	1.1	0.1	1.3	0.8	0.9	0.4		3.4	1.5	3.2	0.3
SURO: IMPERVIOUS		24.2	24.2	24.3	24.7											0.1
SURO: COMBINED		2.4	4.6	7.3	13.5	1.1	0.1	1.3	0.8	0.9	0.4		3.4	1.5	3.2	0.4
IFWO		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.2	9.0	17.3	18.7	17.8	11.8	5.9	12.5	10.1	10.7	10.2	1.5	18.1	17.9	27.6	5.2
AGWI	1.2	9.6	17.7	19.0	17.9	12.4	6.6	12.9	10.5	11.1	10.6	1.5	17.6	17.9	27.7	5.6
IGWI	0.2	1.3	2.4	2.6	2.5	1.7	0.9	1.8	1.4	1.5	1.5	0.2	2.4	2.5	3.8	0.8
CEPE		9.4	9.2	9.3	12.3	8.8	12.8	10.4	10.2	9.4	7.7	18.7	22.5	13.6	8.6	14.2
UZET		2.1	2.5	2.6	2.3	2.1	1.1	2.2	1.9	1.9	1.9	0.1	2.5	2.6	3.2	0.9
LZET		17.3	18.7	18.7	17.2	11.9	20.1	11.4	17.3	17.9	21.3	0.0	11.6	16.3	22.4	10.7
AGWET		1.1	1.1	1.1	1.0	1.1	1.0	1.1	1.1	1.1	1.2	0.0	0.7	0.9	1.1	0.6
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	44.2											27.1				12.0
PERO	1.2	10.3	19.6	21.2	20.0	12.9	6.0	13.9	10.9	11.6	10.5	1.5	21.5	19.5	30.8	5.5
IGWI	0.2	1.3	2.4	2.6	2.5	1.7	0.9	1.8	1.4	1.5	1.5	0.2	2.4	2.5	3.8	0.8
TAET: PERVIOUS	44.2	30.0	31.5	31.7	32.9	23.9	35.0	25.1	30.6	30.3	32.1	46.0	37.3	33.5	35.3	38.4
IMPEV: IMPERVIOUS		15.2	15.2	15.3	15.2											0.1
ET: COMBINED	44.2	29.2	29.8	28.2	24.0	23.9	35.0	25.1	30.6	30.3	32.1	46.0	37.3	33.5	35.3	38.5
PET	44.2	45.7	45.3	45.4	45.5	44.6	45.8	45.8	45.5	45.5	45.2	46.0	45.3	44.7	45.3	45.6

Table T-03120003-16: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	20663	41446	7071	978	242	2655	353789	54434	24839	20904	41654	407986	627	7111	8221	992621
AREA(%)	2.1	4.2	0.7	0.1	0.0	0.3	35.5	5.5	2.5	2.1	4.2	41.0	0.1	0.7	0.8	99.6
IMPERVIOUS																
AREA(ACRES)		2231	841	271	242											3585
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	66.6	65.0	64.3	64.2	63.9	65.4	65.4	64.9	63.4	62.6	61.1	66.7	78.2	72.9	64.1	65.4
SURLI			6.9	8.0	7.5									0.1	21.0	0.2
UZLI																0.0
LZLI			4.3	4.4	4.2										0.3	0.0
SURO: PERVIOUS	15.5	6.1	8.2	8.4	7.4	6.5	1.5	6.1	4.3	4.3	2.6	10.9	8.9	5.1	6.0	6.4
SURO: IMPERVIOUS		46.0	45.4	45.1	44.9											0.2
SURO: COMBINED	15.5	8.2	12.1	16.3	26.2	6.5	1.5	6.1	4.3	4.3	2.6	10.9	8.9	5.1	6.0	6.5
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.3	19.7	27.0	27.8	26.5	25.9	19.1	24.6	19.9	19.6	18.3	1.7	25.4	26.2	35.0	12.1
AGWI	1.3	21.8	28.9	29.7	28.3	27.8	21.1	26.6	22.0	21.8	20.6	1.7	27.2	28.0	37.2	13.3
IGWI	0.2	3.0	4.0	4.1	3.9	3.8	2.9	3.6	3.0	3.0	2.8	0.2	3.7	3.8	5.1	1.8
CEPE		11.8	11.5	11.5	15.3	11.5	16.0	13.4	12.5	11.4	9.2	23.1	21.6	14.8	10.4	17.6
UZET		3.0	3.3	3.4	2.6	3.2	1.8	3.1	2.5	2.5	2.5		2.9	3.3	3.7	1.2
LZET		18.2	18.8	18.9	17.1	11.9	21.1	11.4	18.2	18.8	22.7		13.5	17.7	22.8	11.2
AGWET		1.1	1.1	1.1	1.0	1.1	1.0	1.1	1.1	1.2	1.3		0.8	1.0	1.2	0.6
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
SURET	46.3											25.6				11.5
PERO	16.8	25.9	35.2	36.1	33.9	32.3	20.6	30.6	24.2	24.0	21.0	12.5	34.3	31.3	41.0	18.5
IGWI	0.2	3.0	4.0	4.1	3.9	3.8	2.9	3.6	3.0	3.0	2.8	0.2	3.7	3.8	5.1	1.8
TAET: PERVIOUS	46.3	34.2	34.8	34.9	36.2	27.7	40.0	29.0	34.4	33.9	35.7	48.7	38.8	36.9	38.2	42.2
IMPEV: IMPERVIOUS		18.8	18.7	18.8	18.8											0.1
ET: COMBINED	46.3	33.4	33.1	31.4	27.5	27.7	40.0	29.0	34.4	33.9	35.7	48.7	38.8	36.9	38.2	42.2
PET	46.3	49.1	48.8	48.9	49.3	47.4	49.2	49.3	49.5	49.7	49.9	48.7	49.4	50.2	50.0	48.8

Table T-03120003-17: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	20663	41446	7071	978	242	2655	353789	54434	24839	20904	41654	407986	627	7111	8221	992621
AREA(%)	2.1	4.2	0.7	0.1	0.0	0.3	35.5	5.5	2.5	2.1	4.2	41.0	0.1	0.7	0.8	99.6
IMPERVIOUS																
AREA(ACRES)		2231	841	271	242											3585
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	57.1	53.9	53.2	52.9	52.3	55.0	54.4	53.5	51.8	50.7	48.5	56.5	66.3	56.0	50.9	54.7
SURLI			6.7	7.8	7.2									0.0	32.0	0.3
UZLI																0.0
LZLI			4.3	4.3	4.1										0.3	0.0
SURO: PERVIOUS	16.8	5.5	6.6	6.7	6.2	5.7	1.8	5.2	3.7	3.6	2.1	13.9	7.4	2.9	7.8	7.6
SURO: IMPERVIOUS		36.2	35.5	35.1	34.7											0.1
SURO: COMBINED	16.8	7.1	9.7	12.8	20.5	5.7	1.8	5.2	3.7	3.6	2.1	13.9	7.4	2.9	7.8	7.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
AGWO	1.3	17.5	23.8	24.4	22.6	22.6	18.0	20.9	17.6	17.3	16.2	1.7	21.8	20.5	35.7	11.2
AGWI	1.3	17.5	24.2	24.8	22.9	22.9	17.7	21.2	17.4	17.1	16.0	1.7	21.7	20.2	36.6	11.1
IGWI	0.2	2.4	3.3	3.4	3.1	3.1	2.4	2.9	2.4	2.3	2.2	0.2	3.0	2.8	5.0	1.5
CEPE		10.2	10.0	10.0	14.0	10.1	14.7	11.8	11.0	9.9	7.8	22.7	20.4	13.1	9.0	16.7
UZET		3.6	3.9	3.9	3.3	3.9	2.3	3.7	3.0	2.8	2.6		3.2	2.9	4.0	1.5
LZET		17.6	18.3	18.4	16.4	11.7	20.1	11.2	17.5	18.2	21.8		12.7	17.3	22.1	10.7
AGWET		1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.2		0.7	1.0	1.1	0.6
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	44.0											23.2				10.4
PERO	18.1	23.0	30.5	31.1	28.9	28.3	19.9	26.1	21.3	20.8	18.3	15.5	29.2	23.4	43.5	18.8
IGWI	0.2	2.4	3.3	3.4	3.1	3.1	2.4	2.9	2.4	2.3	2.2	0.2	3.0	2.8	5.0	1.5
TAET: PERVIOUS	44.0	32.5	33.4	33.4	34.7	26.8	38.1	27.7	32.6	32.0	33.5	45.9	37.2	34.4	36.4	39.9
IMPEV: IMPERVIOUS		17.8	17.7	17.7	17.7											0.1
ET: COMBINED	44.0	31.8	31.7	30.0	26.2	26.8	38.1	27.7	32.6	32.0	33.5	45.9	37.2	34.4	36.4	40.0
PET	44.0	46.2	46.0	46.0	46.5	45.1	46.3	46.6	46.6	46.9	47.3	45.9	46.5	47.8	47.5	46.0

Table T-03120003-18: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	20663	41446	7071	978	242	2655	353789	54434	24839	20904	41654	407986	627	7111	8221	992621
AREA(%)	2.1	4.2	0.7	0.1	0.0	0.3	35.5	5.5	2.5	2.1	4.2	41.0	0.1	0.7	0.8	99.6
IMPERVIOUS																
AREA(ACRES)		2231	841	271	242											3585
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	55.0	55.5	55.1	55.1	55.0	55.0	55.8	55.6	55.0	54.7	54.1	56.2	69.9	61.8	56.3	55.7
SURLI			7.8	9.2	8.8					0.1				0.0	16.3	0.2
UZLI																0.0
LZLI			4.4	4.6	4.4										0.2	0.0
SURO: PERVIOUS	9.9	3.9	5.4	5.6	5.0	3.9	0.8	3.8	2.6	2.7	1.4	8.6	6.1	2.8	3.1	4.6
SURO: IMPERVIOUS		38.5	38.2	38.1	38.1											0.1
SURO: COMBINED	9.9	5.6	8.9	12.7	21.5	3.9	0.8	3.8	2.6	2.7	1.4	8.6	6.1	2.8	3.1	4.8
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.4	17.7	25.6	26.7	25.7	22.2	16.2	21.8	18.0	18.1	17.2	1.9	24.2	22.0	30.1	10.7
AGWI	1.4	18.8	26.8	27.8	26.7	23.3	17.2	22.9	19.1	19.3	18.5	1.9	25.1	23.1	31.3	11.3
IGWI	0.2	2.6	3.7	3.8	3.7	3.2	2.4	3.1	2.6	2.6	2.5	0.3	3.4	3.2	4.3	1.6
CEPE		10.5	10.3	10.3	13.7	10.1	14.4	12.0	11.3	10.3	8.4	21.0	19.6	13.2	9.3	16.0
UZET	0.0	2.9	3.2	3.2	2.7	3.0	1.8	3.0	2.5	2.4	2.4	0.0	2.7	2.8	3.4	1.2
LZET	0.0	16.8	17.9	17.9	16.3	11.4	19.1	10.8	16.7	17.3	20.7	0.0	12.8	16.7	21.5	10.2
AGWET	0.0	1.0	1.0	1.1	1.0	1.0	0.9	1.0	1.0	1.1	1.1	0.0	0.8	1.0	1.1	0.6
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	43.5											24.4				10.9
PERO	11.3	21.5	31.1	32.3	30.6	26.1	17.0	25.5	20.6	20.8	18.6	10.4	30.4	24.7	33.1	15.3
IGWI	0.2	2.6	3.7	3.8	3.7	3.2	2.4	3.1	2.6	2.6	2.5	0.3	3.4	3.2	4.3	1.6
TAET: PERVIOUS	43.6	31.3	32.4	32.6	33.7	25.5	36.3	26.8	31.6	31.2	32.7	45.6	35.9	33.8	35.3	38.9
IMPEV: IMPERVIOUS		17.0	16.9	16.9	16.9											0.1
ET: COMBINED	43.6	30.6	30.8	29.2	25.3	25.5	36.3	26.8	31.6	31.2	32.7	45.6	35.9	33.8	35.3	39.0
PET	43.6	45.8	45.5	45.6	46.0	44.5	45.9	46.0	46.0	46.1	46.2	45.6	46.0	46.3	46.4	45.6

Table T-03120003-19: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
2	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
3	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
4	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
5	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
6	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
7	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
8	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
9	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
10	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
11	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
12	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
13	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
14	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
15	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
16	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
17	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985

Table T-03120003-20: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03120003-21: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
2	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
3	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
4	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
5	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
6	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
7	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
8	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
9	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
10	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
11	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
12	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
13	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
14	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
15	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
16	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300
17	0.000	0.051	0.050	0.050	0.100	0.050	0.110	0.071	0.062	0.050	0.030	0.300

Table T-03120003-22: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
2	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
3	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
4	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
5	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
6	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
7	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
8	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
9	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
10	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
11	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
12	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
13	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
14	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
15	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
16	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
17	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121

Table T-03120003-23: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
2	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
3	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
4	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
5	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
6	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
7	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
8	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
9	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
10	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
11	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
12	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
13	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
14	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
15	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
16	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001
17	0.001	0.357	0.357	0.357	0.357	0.509	0.764	0.509	0.509	0.509	0.611	0.001

Table T-03120003-24: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
2		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
3		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
4		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
5		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
6		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
7		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
8		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
9		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
10		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
11		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
12		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
13		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
14		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
15		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
16		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
17		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table T-03120003-25: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
2	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
3	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
4	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
5	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
6	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
7	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
8	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
9	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
10	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
11	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
12	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
13	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
14	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
15	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
16	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
17	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689

Table T-03120003-26: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
4	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
7	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
8	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
12	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
13	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
14	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
15	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
17	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Table T-03120003-27: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
2	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
3	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
4	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
5	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
6	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
7	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
8	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
9	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
10	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
11	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
12	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
13	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
14	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
15	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
16	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902
17	0.255	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.902

Table T-03120003-28: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
2	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
3	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
4	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
5	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
6	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
7	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
8	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
9	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
10	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
11	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
12	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
13	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
14	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
15	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
16	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162
17	0.200	4.732	4.732	4.732	4.732	5.323	7.097	5.323	5.323	5.323	5.914	0.162

Table T-03120003-29: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.214

APPENDIX T-03130005

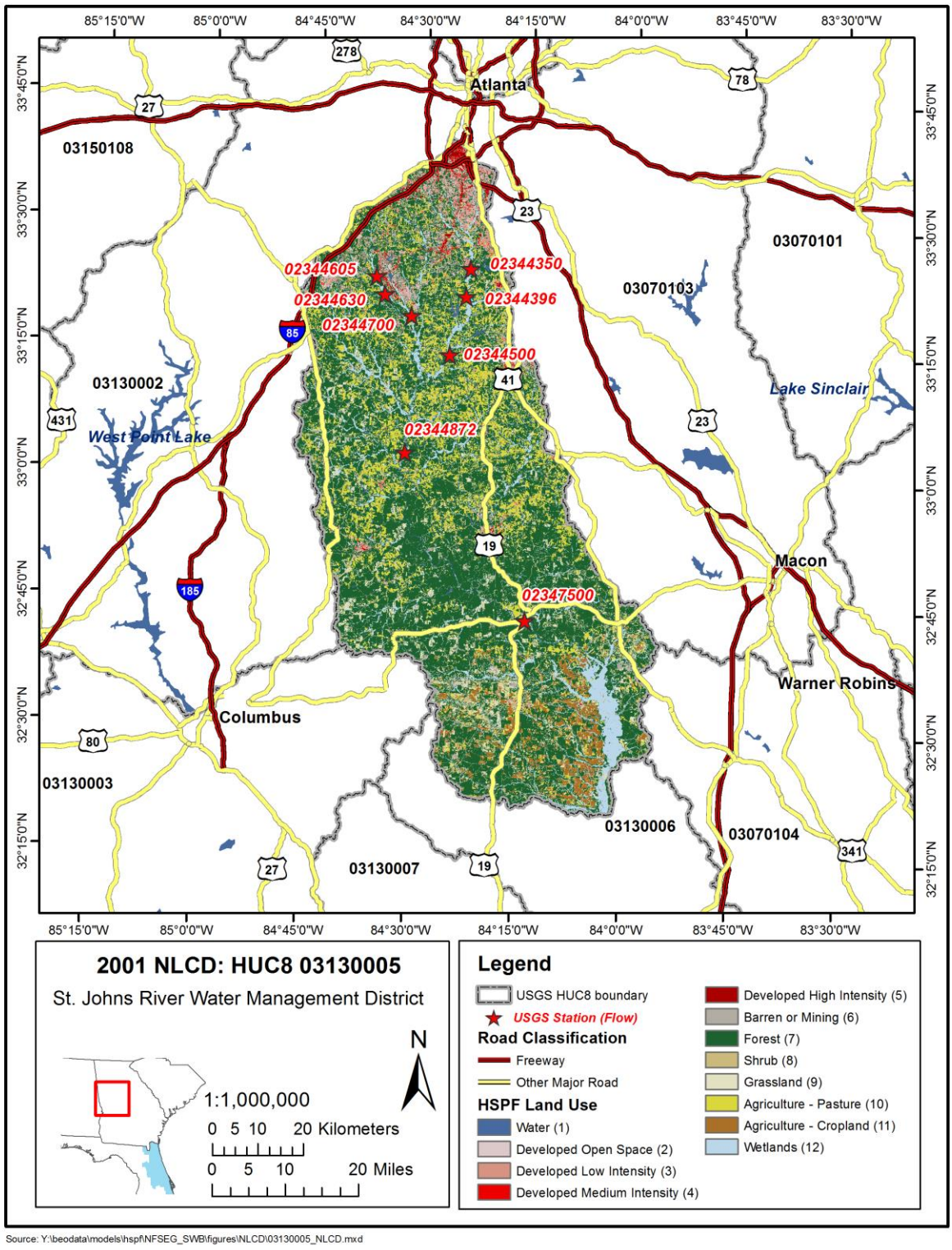


Figure T-03130005-1: Land Cover from the National Land Cover Database.

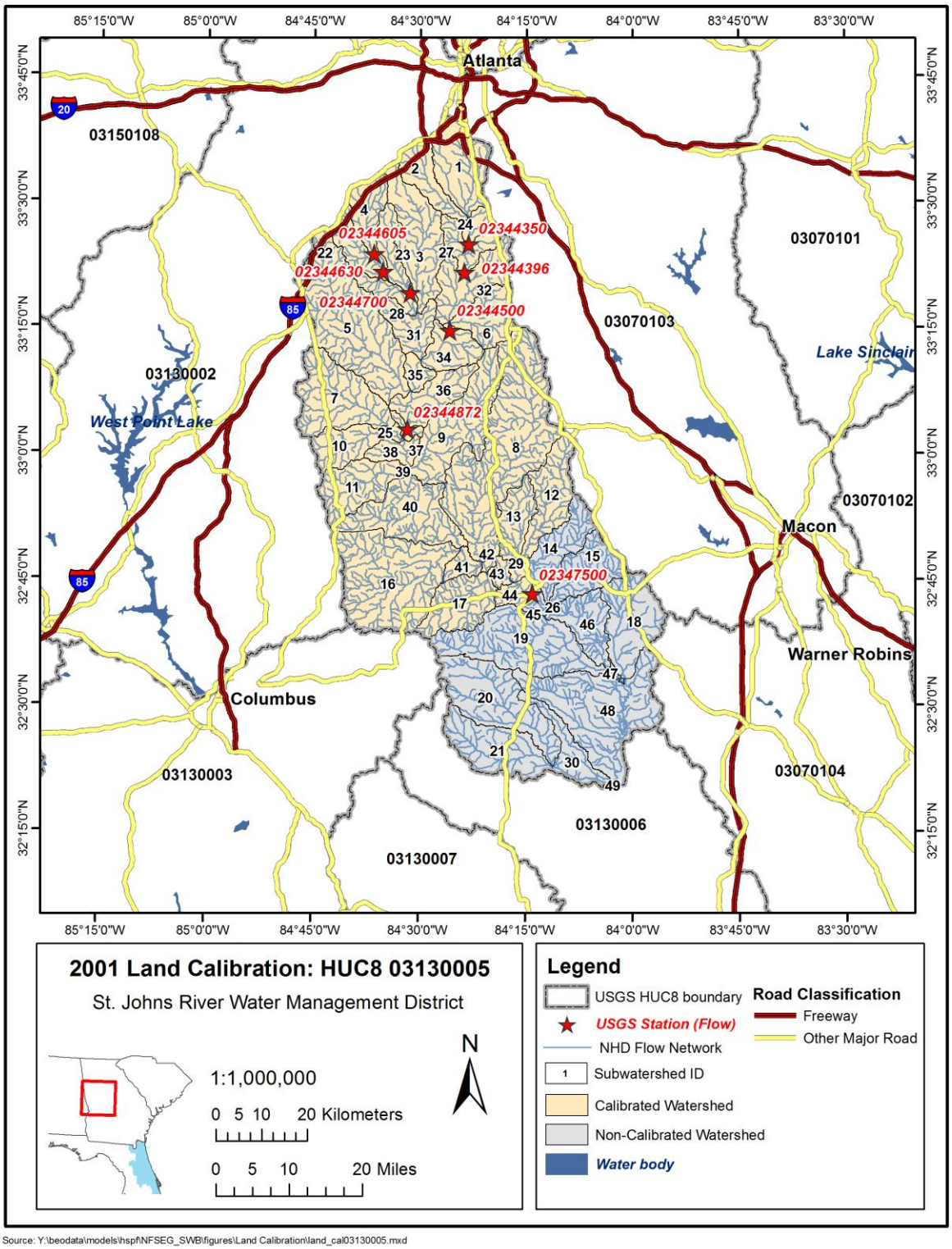


Figure T-03130005-2: Calibrated sub-watersheds.

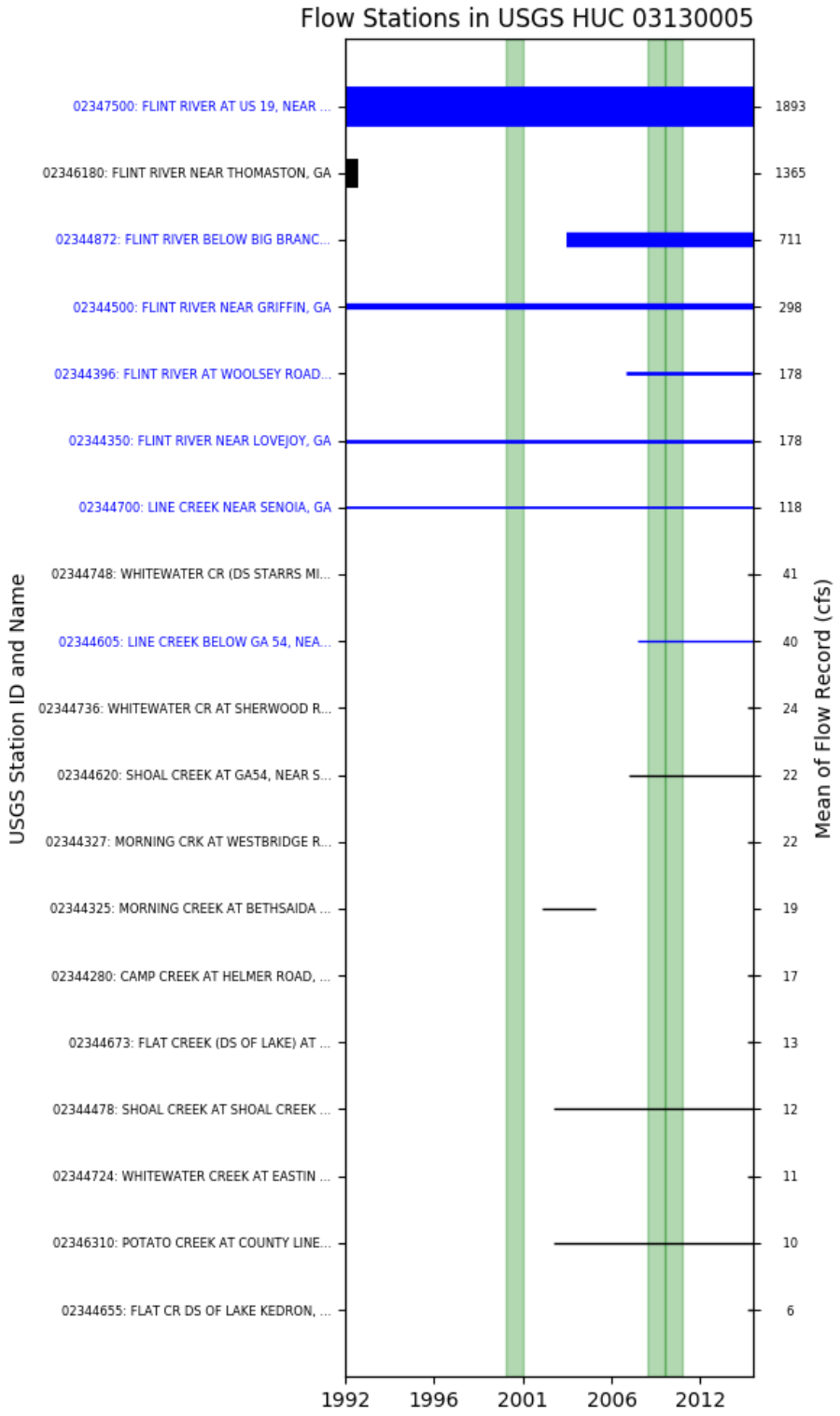


Figure T-03130005-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 04, USGS GAUGE 02344605

Water-Data Report 2009
02344605 LINE CREEK BELOW GA 54 NEAR PEACHTREE CITY, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 332344, long 843625 referenced to North American Datum of 1983, Fayette County, GA, Hydrologic Unit 03130005.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: June 2008 to current year.
GAGE-HEIGHT: June 2008 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 800 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Fayette County.

REMARKS.--Discharge record is good, except for days of estimated discharge, which are poor. Gage-height record is good.

Table T-03130005-1: Comparison Statistics Between HSPF Reach 04 and USGS Gauge 02344605.

Statistic	Value
Bias	-8.85
Standard error	18.56
Relative bias	-0.21
Relative standard error	0.44
Nash-Sutcliffe coefficient	0.81
Kling-Gupta coefficient	0.76
Coefficient of efficiency	0.66
Index of agreement	0.83

Table T-03130005-2: Hydrologic Indices Between USGS Gauge 02344605 and HSPF Reach 04.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344605	Simulated Reach 04	Percent Difference
MA1: Mean, all daily flows	41.35	32.70	-20.91
MA2: Median, all daily flows	18.00	11.21	-37.71
MA3: CV, all daily flows	172.43	166.10	-3.67
MA4: CV, log of all daily flows	126.82	144.74	14.13
MA5: Mean daily flow / median daily flow	2.30	2.92	26.97
MA9: (Q10 - Q90) / median daily flow	5.35	7.00	30.77
MA10: (Q20 - Q80) / median daily flow	2.95	3.67	24.61
MA11: (Q25 - Q75) / median daily flow	2.37	2.61	10.16
MA12: Mean monthly flow, January	57.76	45.57	-21.11

MA13: Mean monthly flow, February	53.74	49.84	-7.25
MA14: Mean monthly flow, March	58.15	56.04	-3.63
MA15: Mean monthly flow, April	34.46	23.49	-31.84
MA16: Mean monthly flow, May	24.39	19.54	-19.87
MA17: Mean monthly flow, June	16.14	8.91	-44.81
MA18: Mean monthly flow, July	20.58	11.73	-42.98
MA19: Mean monthly flow, August	19.34	4.89	-74.73
MA20: Mean monthly flow, September	13.39	11.43	-14.66
MA21: Mean monthly flow, October	17.37	15.57	-10.35
MA22: Mean monthly flow, November	25.83	19.57	-24.23
MA23: Mean monthly flow, December	65.72	54.33	-17.33
ML1: Mean minimum monthly flow, January	31.40	23.83	-24.11
ML2: Mean minimum monthly flow, February	18.56	18.74	0.98
ML3: Mean minimum monthly flow, March	21.70	18.75	-13.61
ML4: Mean minimum monthly flow, April	14.20	11.35	-20.09
ML5: Mean minimum monthly flow, May	4.99	7.06	41.66
ML6: Mean minimum monthly flow, June	0.58	2.59	349.26
ML7: Mean minimum monthly flow, July	2.89	2.02	-30.03
ML8: Mean minimum monthly flow, August	3.41	1.67	-50.95
ML9: Mean minimum monthly flow, September	1.32	0.82	-37.54
ML10: Mean minimum monthly flow, October	3.79	2.55	-32.73
ML11: Mean minimum monthly flow, November	6.84	5.09	-25.59
ML12: Mean minimum monthly flow, December	13.27	9.03	-31.96
ML13: CV of minimum monthly flows	164.74	141.57	-14.06
ML14: Mean minimum daily flow / mean median annual flow	0.04	0.10	132.69
ML15: Mean minimum annual flow / mean annual flow	0.02	0.02	5.58
ML16: Median minimum annual flow / median annual flow	0.00	0.00	-34.79
ML20: Ratio of baseflow volume to total flow volume	0.29	0.31	5.92
ML22: Mean annual minimum flow divided by catchment area	0.01	0.01	-52.08
RA1: Mean of positive changes from one day to next (rise rate)	32.65	27.42	
RA2: CV, mean of positive changes from one day to next (rise rate)	283.35	299.56	
RA3: Mean of negative changes from one day to next (fall rate)	20.07	9.65	
RA4: CV, mean of negative changes from one day to next (fall rate)	302.58	300.78	
RA5: Ratio of days that are higher than previous day	0.36	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.38	0.40	
RA7: Median of difference in log of flows over two consecutive days of falling	0.25	0.19	
RA8: Number of flow reversals from one day to the next	89.29	82.86	
RA9: CV, number of flow reversals from one day to the next	48.63	41.38	

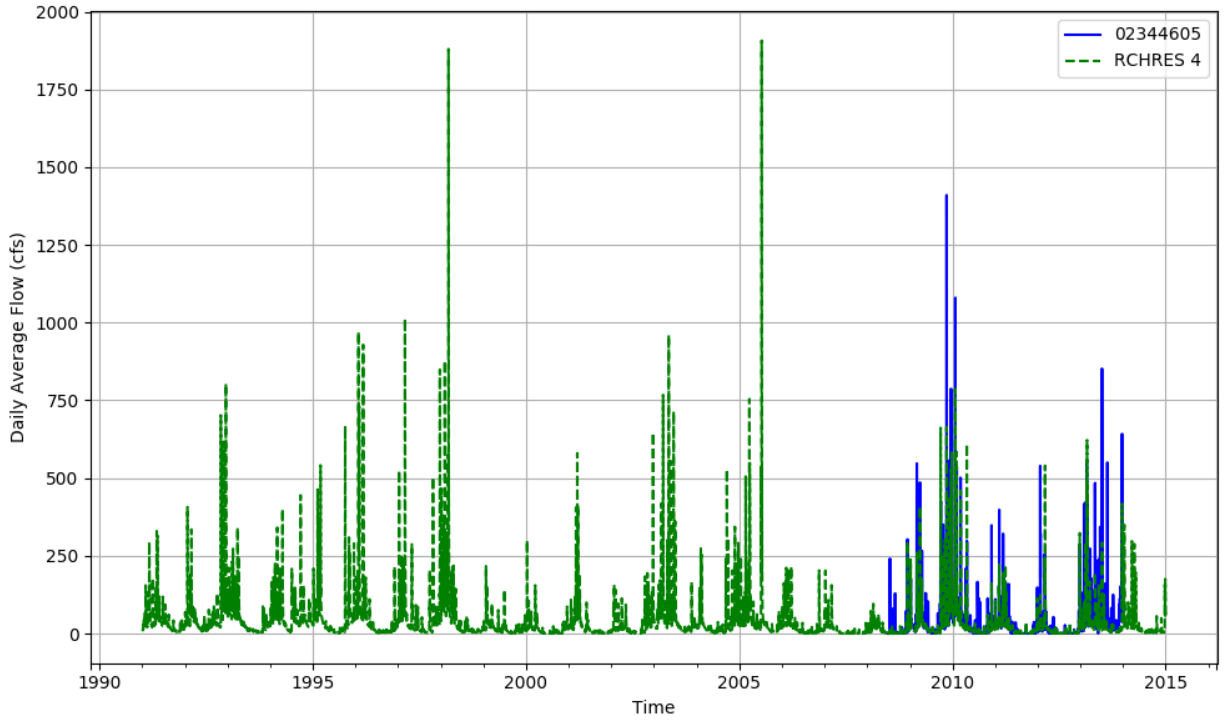


Figure T-03130005-4: Daily flow for HSFP reach 04 and USGS station 02344605.

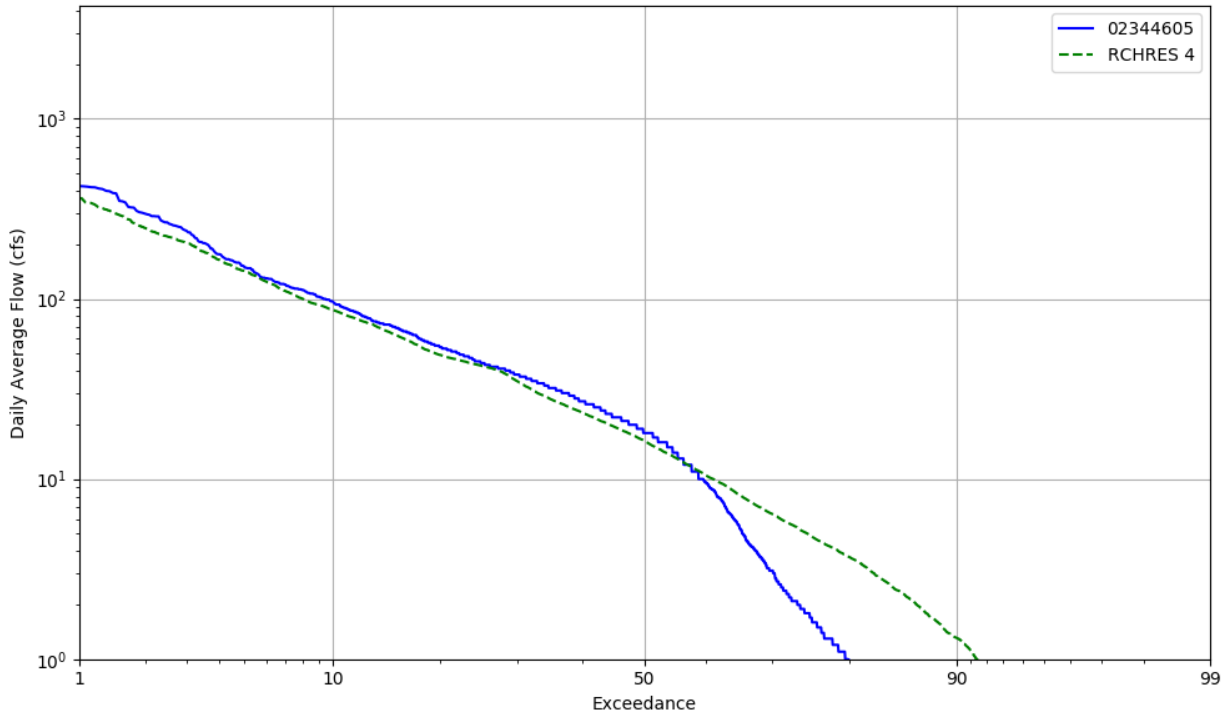


Figure T-03130005-5: Daily exceedance for HSFP reach 04 and USGS station 02344605.

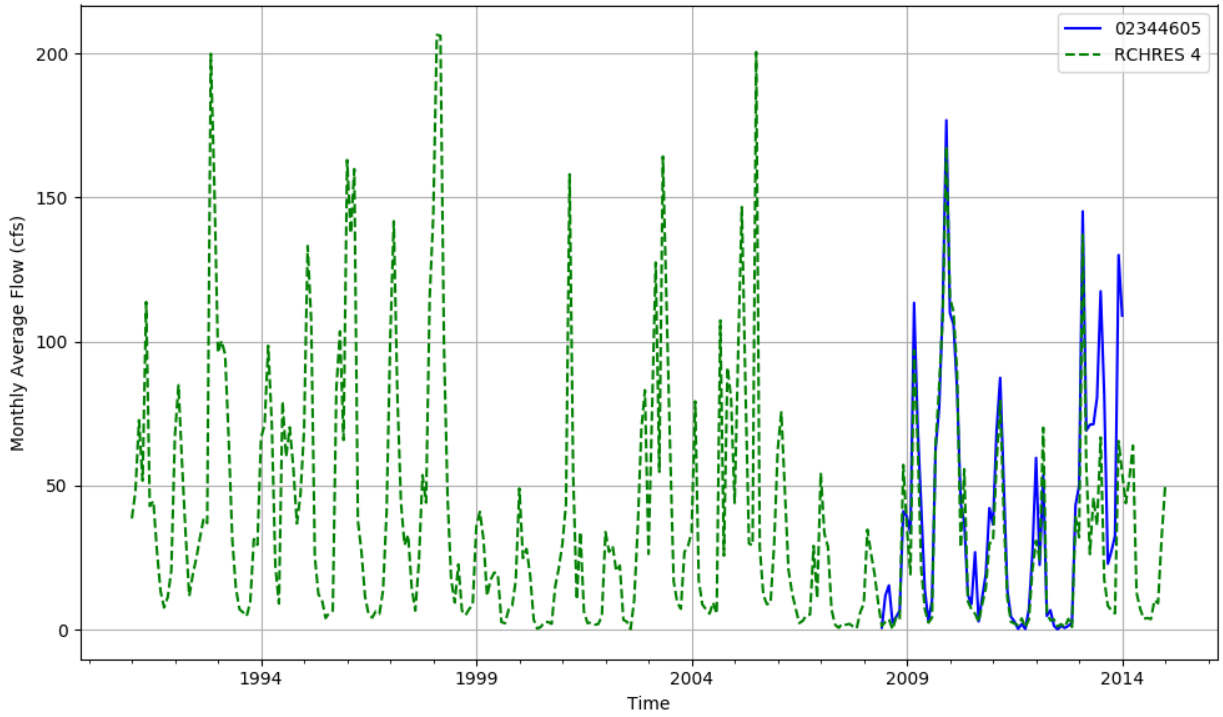


Figure T-03130005-6: Monthly flow for HSFP reach 04 and USGS station 02344605.

HSPF REACH 22, USGS GAUGE 02344630

Water-Data Report 2009
02344630 LINE CREEK BLW LAKE MCINTOSH NR PEACHTREE CITY, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 332137, long 843511 referenced to North American Datum of 1927, Fayette County, GA, Hydrologic Unit 03130005, 3.9 miles northeast of Sharpsburg and 2.5 miles south of Peachtree City, GA.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 2008 to current year.

PERIOD OF DAILY RECORD.-SPECIFIC CONDUCTANCE: May 2008 to current year. pH: May 2008 to current year.

WATER TEMPERATURE: May 2008 to current year. DISSOLVED OXYGEN: May 2008 to current year. TURBIDITY: May 2008 to current year.
INSTRUMENTATION.--Satellite telemetry with a continuous water-quality monitor.

REMARKS.--Continuous specific conductance, pH, and water temperature records are good; dissolved oxygen record is fair; turbidity record is poor.

Table T-03130005-3: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02344630.

Statistic	Value
Bias	2.31
Standard error	22.19
Relative bias	0.06
Relative standard error	0.54
Nash-Sutcliffe coefficient	0.71
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.60
Index of agreement	0.80

Table T-03130005-4: Hydrologic Indices Between USGS Gauge 02344630 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344630	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	35.33	37.57	6.34
MA2: Median, all daily flows	16.00	17.19	7.43
MA3: CV, all daily flows	193.26	186.38	-3.56
MA4: CV, log of all daily flows	116.13	118.64	2.16
MA5: Mean daily flow / median daily flow	2.21	2.19	-1.01
MA9: (Q10 - Q90) / median daily flow	5.69	5.09	-10.59
MA10: (Q20 - Q80) / median daily flow	3.30	3.18	-3.61

MA11: (Q25 - Q75) / median daily flow	2.67	2.40	-10.11
MA12: Mean monthly flow, January	67.39	85.60	27.02
MA13: Mean monthly flow, February	38.11	47.62	24.97
MA14: Mean monthly flow, March	40.52	52.78	30.26
MA15: Mean monthly flow, April	34.23	27.07	-20.93
MA16: Mean monthly flow, May	21.22	23.96	12.91
MA17: Mean monthly flow, June	23.73	23.60	-0.54
MA18: Mean monthly flow, July	20.75	21.36	2.95
MA19: Mean monthly flow, August	22.34	15.14	-32.24
MA20: Mean monthly flow, September	10.06	6.65	-33.88
MA21: Mean monthly flow, October	11.52	8.39	-27.20
MA22: Mean monthly flow, November	16.12	7.72	-52.13
MA23: Mean monthly flow, December	71.77	79.45	10.71
ML1: Mean minimum monthly flow, January	55.30	56.27	1.75
ML2: Mean minimum monthly flow, February	32.00	29.97	-6.34
ML3: Mean minimum monthly flow, March	13.60	30.23	122.28
ML4: Mean minimum monthly flow, April	18.35	15.15	-17.46
ML5: Mean minimum monthly flow, May	6.30	11.57	83.65
ML6: Mean minimum monthly flow, June	5.21	9.54	83.27
ML7: Mean minimum monthly flow, July	11.14	9.50	-14.75
ML8: Mean minimum monthly flow, August	13.60	8.51	-37.45
ML9: Mean minimum monthly flow, September	2.99	4.52	51.18
ML10: Mean minimum monthly flow, October	3.87	3.17	-18.14
ML11: Mean minimum monthly flow, November	4.40	3.58	-18.56
ML12: Mean minimum monthly flow, December	15.13	6.18	-59.19
ML13: CV of minimum monthly flows	170.35	163.04	-4.29
ML14: Mean minimum daily flow / mean median annual flow	0.11	0.22	95.75
ML15: Mean minimum annual flow / mean annual flow	0.05	0.06	12.73
ML16: Median minimum annual flow / median annual flow	0.06	0.05	-8.95
ML20: Ratio of baseflow volume to total flow volume	0.38	0.35	-7.85
ML22: Mean annual minimum flow divided by catchment area	0.03	0.03	-10.40
RA1: Mean of positive changes from one day to next (rise rate)	20.91	27.46	
RA2: CV, mean of positive changes from one day to next (rise rate)	292.04	238.82	
RA3: Mean of negative changes from one day to next (fall rate)	10.99	10.39	
RA4: CV, mean of negative changes from one day to next (fall rate)	313.57	254.90	
RA5: Ratio of days that are higher than previous day	0.32	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.30	0.35	
RA7: Median of difference in log of flows over two consecutive days of falling	0.18	0.18	
RA8: Number of flow reversals from one day to the next	82.67	85.67	
RA9: CV, number of flow reversals from one day to the next	53.75	54.56	

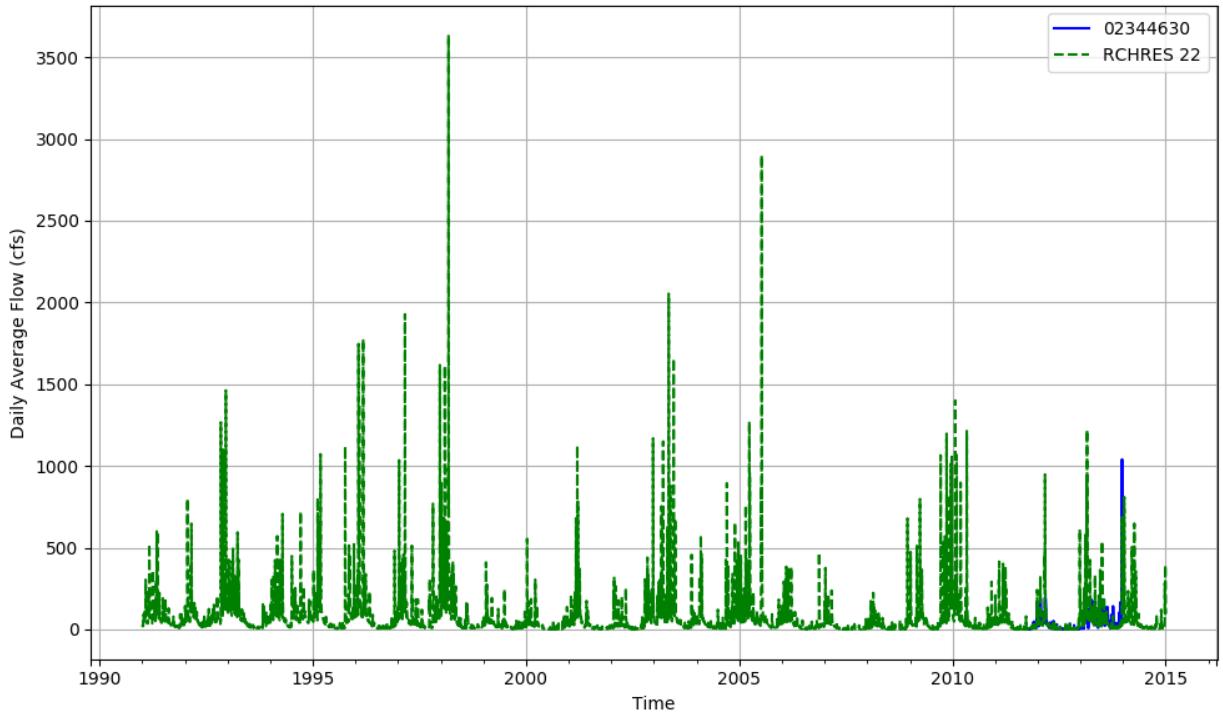


Figure T-03130005-7: Daily flow for HSFP reach 22 and USGS station 02344630.

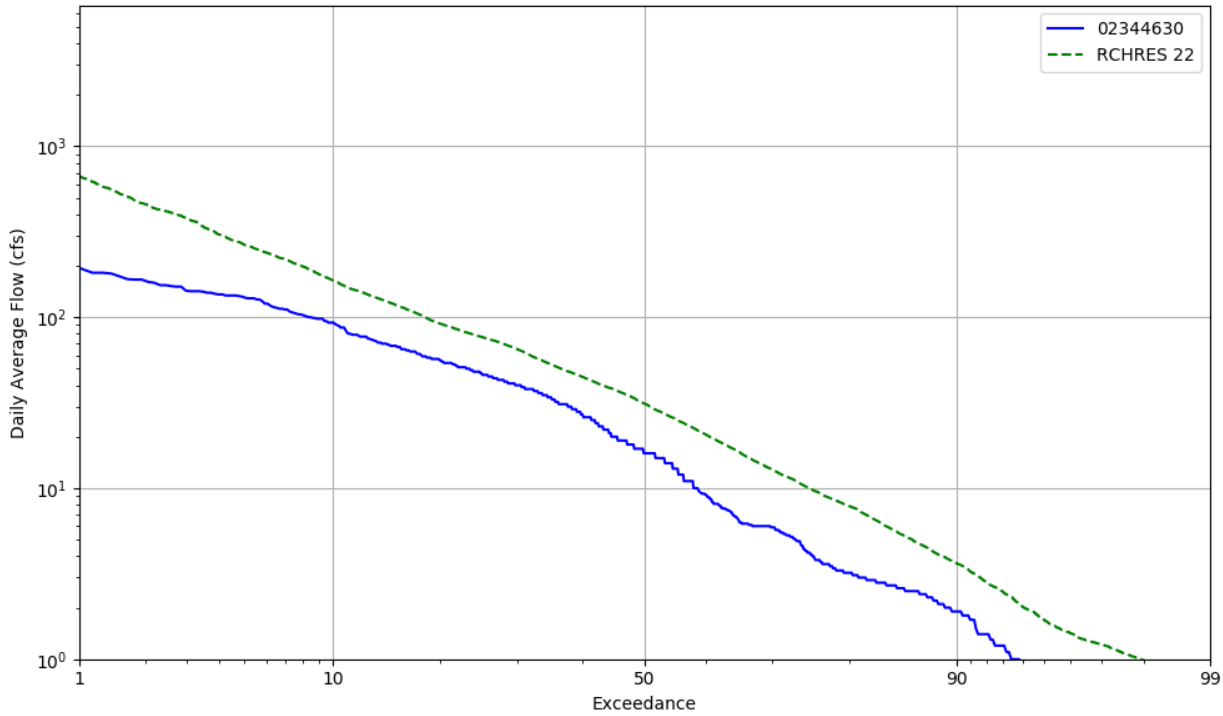


Figure T-03130005-8: Daily exceedance for HSFP reach 22 and USGS station 02344630.

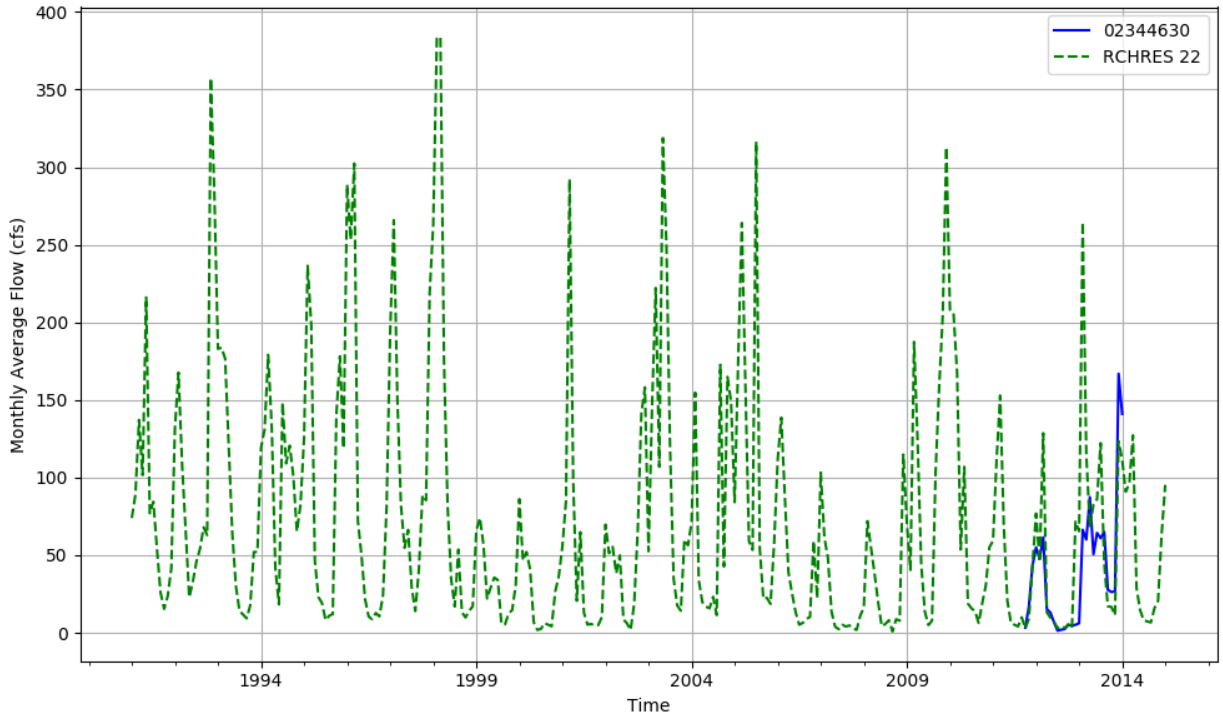


Figure T-03130005-9: Monthly flow for HSFP reach 22 and USGS station 02344630.

HSPF REACH 23, USGS GAUGE 02344700

Water-Data Report 2009
02344700 LINE CREEK NEAR SENOIA, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 331909, long 843120 referenced to North American Datum of 1983, Coweta County, GA, Hydrologic Unit 03130005, downstream of bridge on GA 85, 2.2 miles northeast of Senoia, 4.1 miles upstream from Whitewater Creek, and 11.2 miles upstream from mouth.

DRAINAGE AREA.--101 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: September 1964 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.-REVISED RECORDS: WDR GA-87-1: 1986 (m).

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 729.27 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment).

COOPERATION.--Environmental Protection Division, Georgia Department of Natural Resources.

REMARKS.--Discharge records good. Gage-height records good.

Table T-03130005-5: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02344700.

Statistic	Value
Bias	-13.64
Standard error	60.87
Relative bias	-0.11
Relative standard error	0.48
Nash-Sutcliffe coefficient	0.77
Kling-Gupta coefficient	0.82
Coefficient of efficiency	0.66
Index of agreement	0.84

Table T-03130005-6: Hydrologic Indices Between USGS Gauge 02344700 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344700	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	119.98	106.16	-11.52

MA2: Median, all daily flows	58.00	45.31	-21.88
MA3: CV, all daily flows	191.67	165.77	-13.51
MA4: CV, log of all daily flows	106.79	122.98	15.16
MA5: Mean daily flow / median daily flow	2.07	2.34	13.27
MA9: (Q10 - Q90) / median daily flow	4.14	5.40	30.50
MA10: (Q20 - Q80) / median daily flow	2.21	2.98	35.01
MA11: (Q25 - Q75) / median daily flow	1.67	2.17	29.69
MA12: Mean monthly flow, January	152.52	165.41	8.46
MA13: Mean monthly flow, February	202.98	205.97	1.47
MA14: Mean monthly flow, March	224.79	215.55	-4.11
MA15: Mean monthly flow, April	127.51	101.23	-20.60
MA16: Mean monthly flow, May	94.10	81.25	-13.66
MA17: Mean monthly flow, June	75.48	51.08	-32.33
MA18: Mean monthly flow, July	122.85	63.32	-48.46
MA19: Mean monthly flow, August	58.15	30.60	-47.37
MA20: Mean monthly flow, September	48.56	43.34	-10.75
MA21: Mean monthly flow, October	60.22	51.30	-14.81
MA22: Mean monthly flow, November	101.50	94.94	-6.47
MA23: Mean monthly flow, December	123.59	130.89	5.91
ML1: Mean minimum monthly flow, January	63.96	56.53	-11.62
ML2: Mean minimum monthly flow, February	69.65	65.02	-6.65
ML3: Mean minimum monthly flow, March	73.00	61.93	-15.17
ML4: Mean minimum monthly flow, April	54.96	39.12	-28.82
ML5: Mean minimum monthly flow, May	29.31	24.44	-16.63
ML6: Mean minimum monthly flow, June	22.36	15.31	-31.52
ML7: Mean minimum monthly flow, July	17.11	12.45	-27.28
ML8: Mean minimum monthly flow, August	17.22	12.29	-28.62
ML9: Mean minimum monthly flow, September	12.17	8.43	-30.79
ML10: Mean minimum monthly flow, October	17.23	12.70	-26.31
ML11: Mean minimum monthly flow, November	29.52	21.92	-25.75
ML12: Mean minimum monthly flow, December	45.13	40.54	-10.17
ML13: CV of minimum monthly flows	87.07	108.90	25.07
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.07	-49.86
ML15: Mean minimum annual flow / mean annual flow	0.07	0.03	-56.32
ML16: Median minimum annual flow / median annual flow	0.12	0.03	-73.67
ML20: Ratio of baseflow volume to total flow volume	0.38	0.36	-4.38
ML22: Mean annual minimum flow divided by catchment area	0.08	0.04	-50.40
RA1: Mean of positive changes from one day to next (rise rate)	88.69	82.17	
RA2: CV, mean of positive changes from one day to next (rise rate)	452.55	299.94	
RA3: Mean of negative changes from one day to next (fall rate)	43.40	29.31	
RA4: CV, mean of negative changes from one day to next (fall rate)	466.53	335.89	
RA5: Ratio of days that are higher than previous day	0.31	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.37	
RA7: Median of difference in log of flows over two consecutive days of falling	0.14	0.17	
RA8: Number of flow reversals from one day to the next	98.83	105.21	

RA9: CV, number of flow reversals from one day to the next	18.57	19.31	

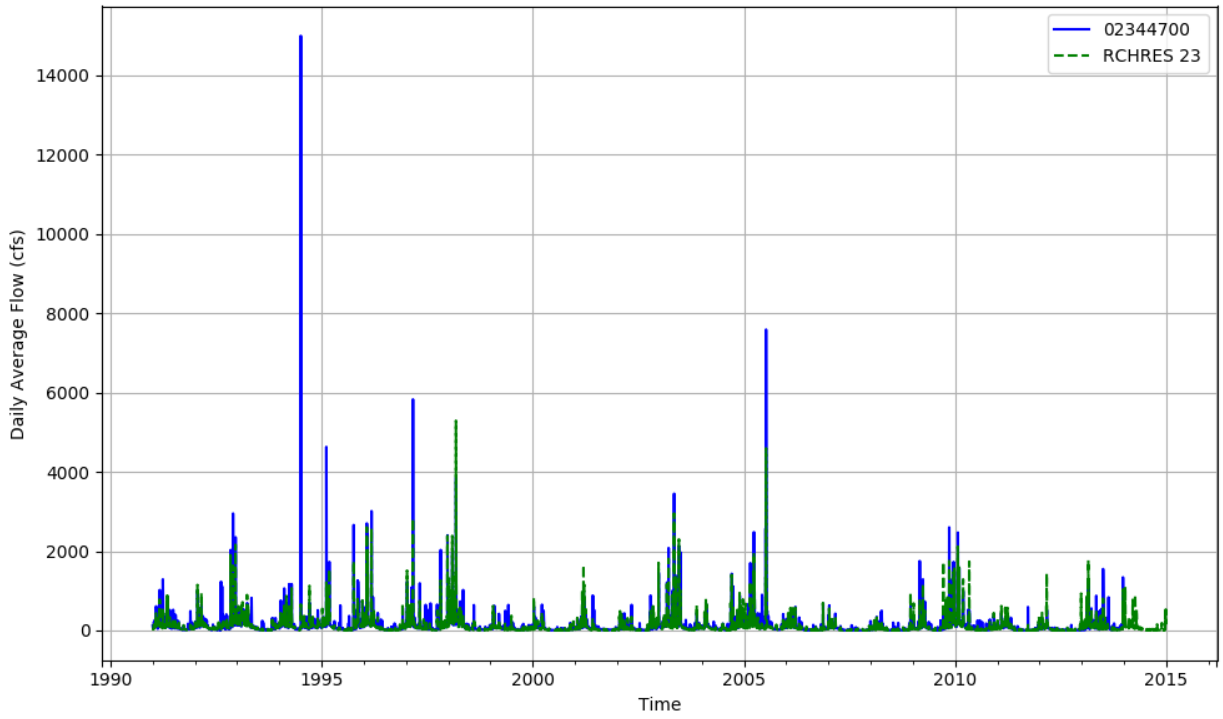


Figure T-03130005-10: Daily flow for HSFP reach 23 and USGS station 02344700.

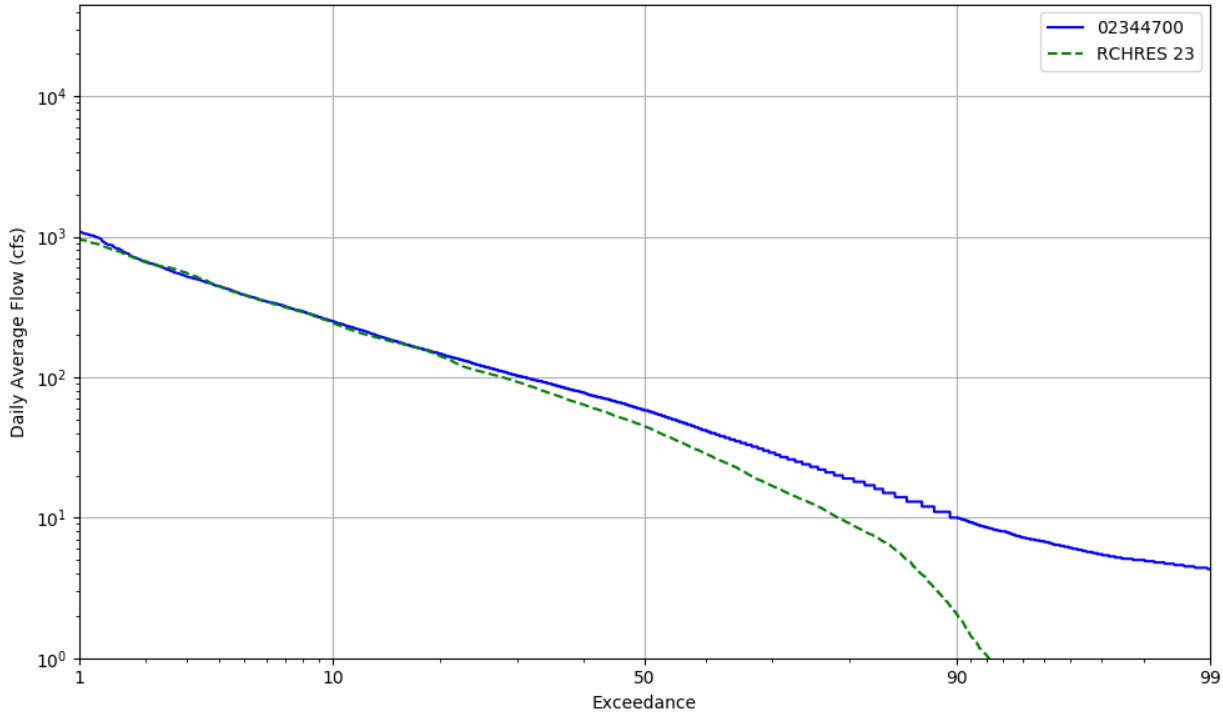


Figure T-03130005-11: Daily exceedance for HSFP reach 23 and USGS station 02344700.

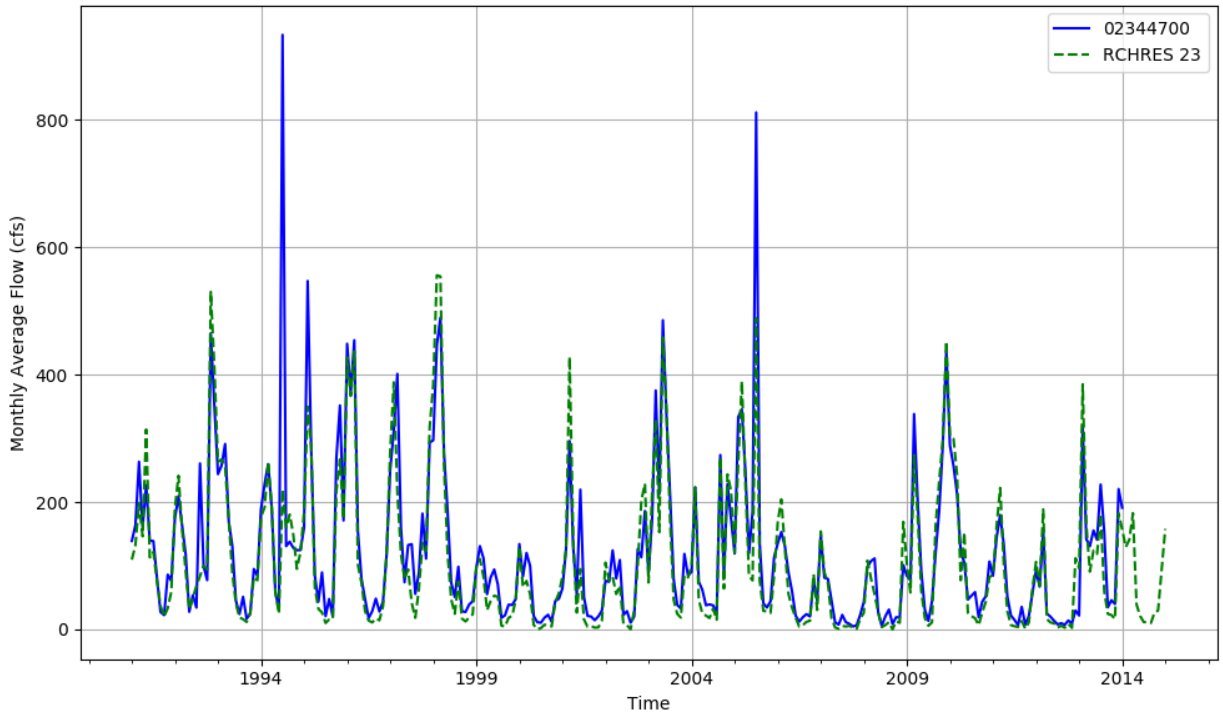


Figure T-03130005-12: Monthly flow for HSFP reach 23 and USGS station 02344700.

HSPF REACH 24, USGS GAUGE 02344350

Water-Data Report 2009
02344350 FLINT RIVER NEAR LOVEJOY, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 332456, long 842305 referenced to North American Datum of 1983, Clayton County, GA, Hydrologic Unit 03130005, at the downstream side of bridge on North Bridge Road, 0.7 miles upstream from Shoal Creek, 4.4 miles southwest of Lovejoy, 4.7 miles southeast of Fayetteville, and at river mile 325.7.

DRAINAGE AREA.--130 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 1985 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 758.75 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Clayton County Water Authority).

COOPERATION.--Clayton County Water Authority.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage height record good. Discharge affected by diversion by the Clayton County Water Authority.

Table T-03130005-7: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02344350.

Statistic	Value
Bias	-17.39
Standard error	56.60
Relative bias	-0.10
Relative standard error	0.36
Nash-Sutcliffe coefficient	0.87
Kling-Gupta coefficient	0.88
Coefficient of efficiency	0.71
Index of agreement	0.86

Table T-03130005-8: Hydrologic Indices Between USGS Gauge 02344350 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344350	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	180.46	162.57	-9.91

MA2: Median, all daily flows	83.00	80.41	-3.11
MA3: CV, all daily flows	194.20	154.06	-20.67
MA4: CV, log of all daily flows	115.35	108.61	-5.85
MA5: Mean daily flow / median daily flow	2.17	2.02	-7.02
MA9: (Q10 - Q90) / median daily flow	4.21	4.19	-0.51
MA10: (Q20 - Q80) / median daily flow	1.92	2.34	21.80
MA11: (Q25 - Q75) / median daily flow	1.46	1.91	30.83
MA12: Mean monthly flow, January	224.90	216.35	-3.80
MA13: Mean monthly flow, February	271.92	266.63	-1.95
MA14: Mean monthly flow, March	305.05	290.04	-4.92
MA15: Mean monthly flow, April	168.68	142.81	-15.34
MA16: Mean monthly flow, May	132.16	124.29	-5.96
MA17: Mean monthly flow, June	122.24	94.88	-22.38
MA18: Mean monthly flow, July	182.29	144.93	-20.49
MA19: Mean monthly flow, August	98.79	70.57	-28.56
MA20: Mean monthly flow, September	120.13	108.12	-10.00
MA21: Mean monthly flow, October	112.84	100.20	-11.20
MA22: Mean monthly flow, November	158.79	146.70	-7.62
MA23: Mean monthly flow, December	190.78	182.30	-4.45
ML1: Mean minimum monthly flow, January	78.62	73.22	-6.87
ML2: Mean minimum monthly flow, February	85.22	84.37	-1.00
ML3: Mean minimum monthly flow, March	84.78	82.99	-2.11
ML4: Mean minimum monthly flow, April	63.70	54.83	-13.92
ML5: Mean minimum monthly flow, May	39.57	40.14	1.46
ML6: Mean minimum monthly flow, June	31.42	28.81	-8.29
ML7: Mean minimum monthly flow, July	29.19	30.10	3.12
ML8: Mean minimum monthly flow, August	26.25	22.77	-13.26
ML9: Mean minimum monthly flow, September	22.60	15.53	-31.27
ML10: Mean minimum monthly flow, October	25.91	21.67	-16.36
ML11: Mean minimum monthly flow, November	40.90	31.83	-22.16
ML12: Mean minimum monthly flow, December	60.26	52.67	-12.59
ML13: CV of minimum monthly flows	68.88	95.68	38.91
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.08	-59.64
ML15: Mean minimum annual flow / mean annual flow	0.08	0.04	-54.99
ML16: Median minimum annual flow / median annual flow	0.16	0.05	-67.44
ML20: Ratio of baseflow volume to total flow volume	0.32	0.35	10.35
ML22: Mean annual minimum flow divided by catchment area	0.15	0.07	-51.80
RA1: Mean of positive changes from one day to next (rise rate)	167.97	151.13	
RA2: CV, mean of positive changes from one day to next (rise rate)	270.90	248.27	
RA3: Mean of negative changes from one day to next (fall rate)	87.98	46.08	
RA4: CV, mean of negative changes from one day to next (fall rate)	321.32	313.66	
RA5: Ratio of days that are higher than previous day	0.33	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.39	0.43	
RA7: Median of difference in log of flows over two consecutive days of falling	0.16	0.16	
RA8: Number of flow reversals from one day to the next	110.83	96.00	

RA9: CV, number of flow reversals from one day to the next	16.59	17.68	

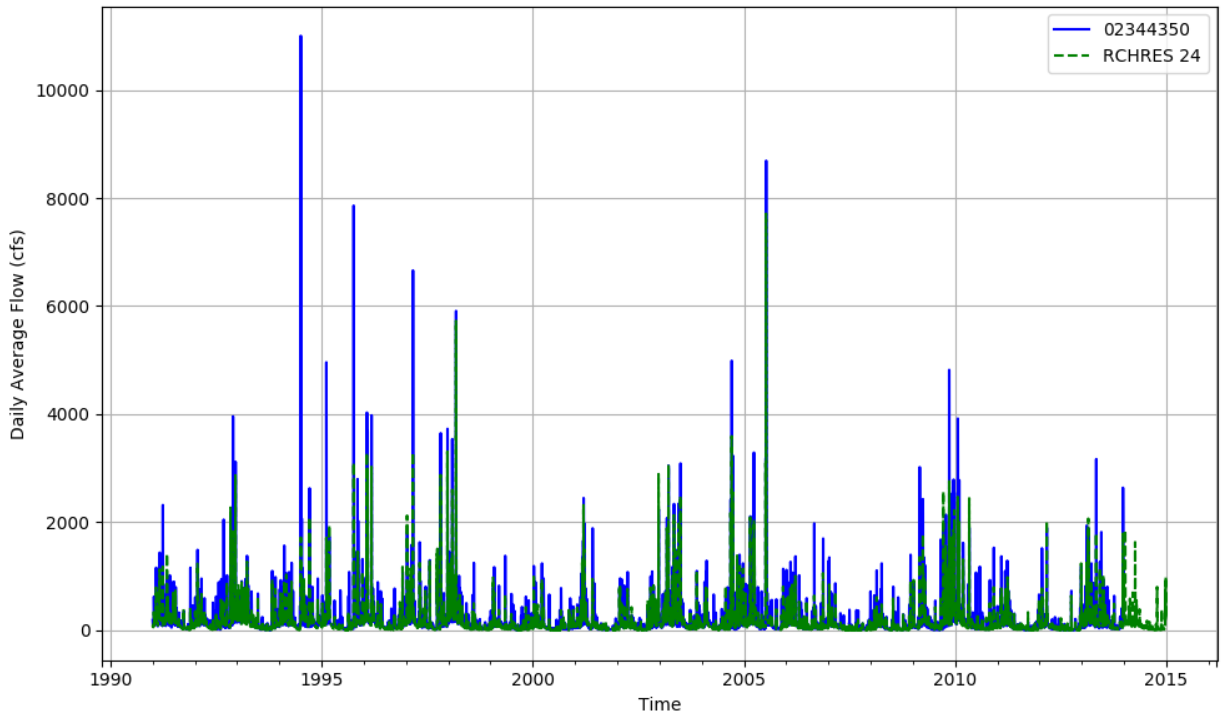


Figure T-03130005-13: Daily flow for HSFP reach 24 and USGS station 02344350.

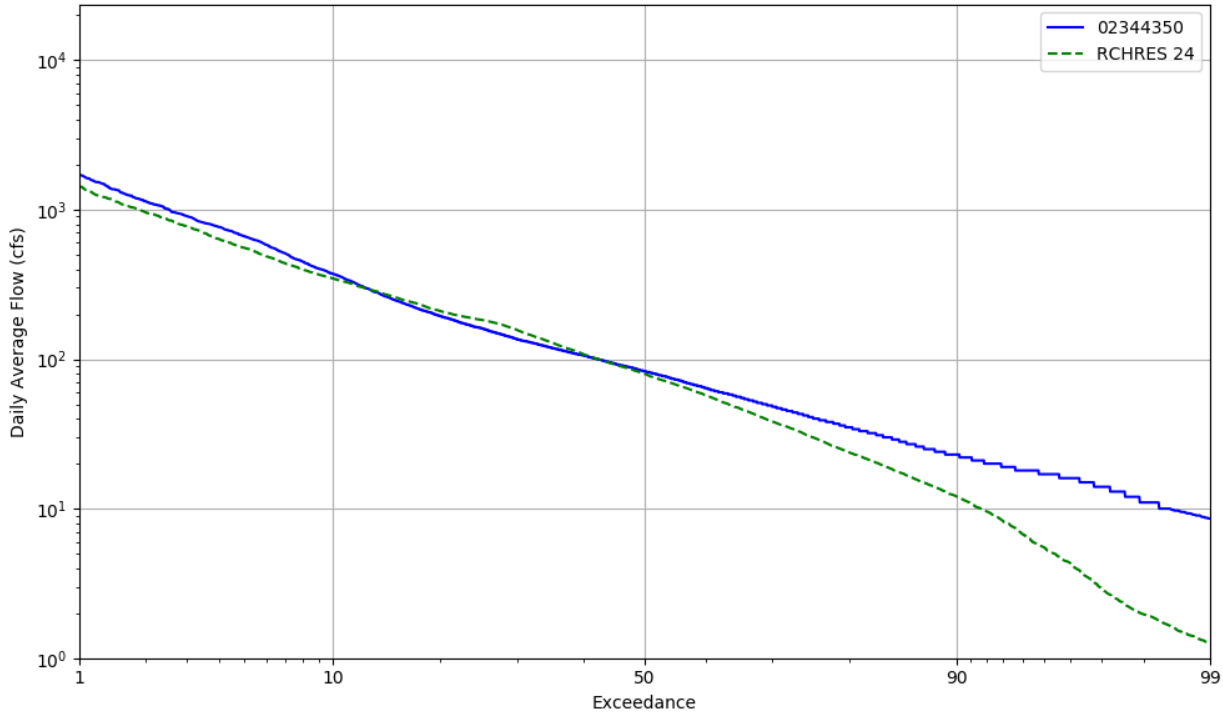


Figure T-03130005-14: Daily exceedance for HSFP reach 24 and USGS station 02344350.

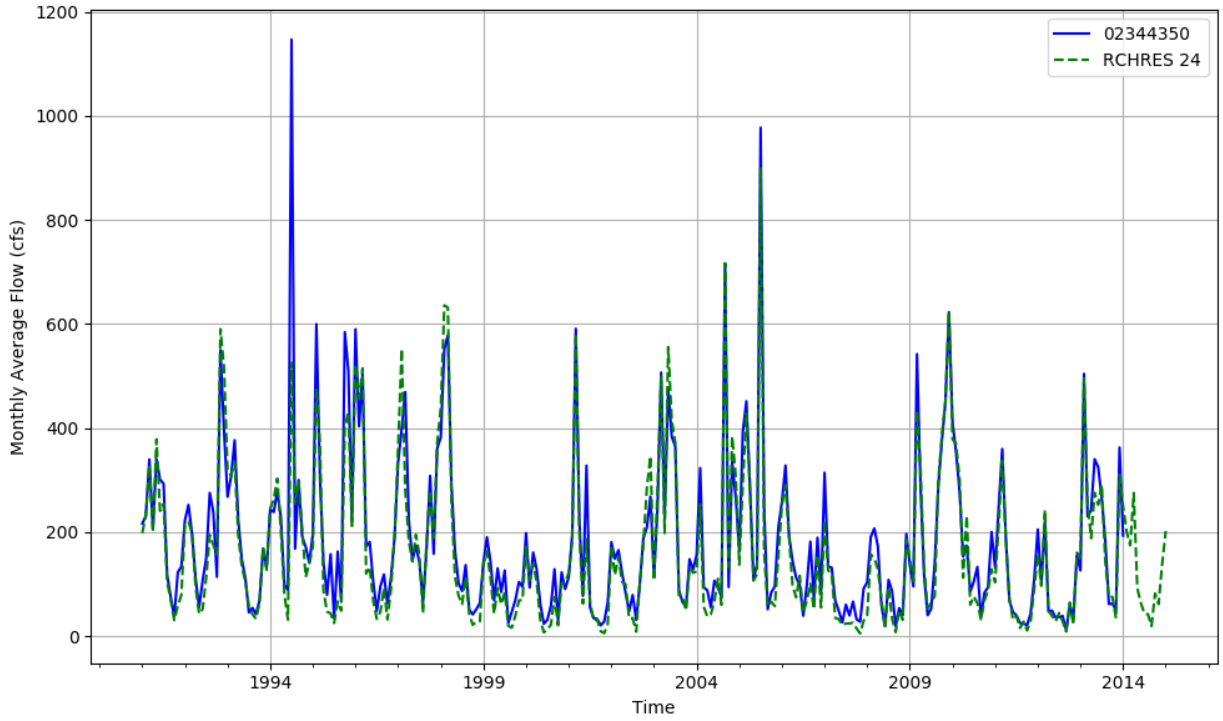


Figure T-03130005-15: Monthly flow for HSFP reach 24 and USGS station 02344350.

HSPF REACH 27, USGS GAUGE 02344396

Water-Data Report 2009
02344396 FLINT RIVER AT WOOLSEY ROAD, NEAR WOOLSEY, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 332135, long 842340 referenced to North American Datum of 1983, Fayette County, GA, Hydrologic Unit 03130005, downstream of Hampton-Woolsey Road, approximately 70 feet on right bank, 7.0 miles west of Hampton, 7.0 miles southeast of Fayetteville.

DRAINAGE AREA.--160 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 3, 2000 to current year.

GAGE.--Standard USGS vertical staff gage from May 3, 2000 to November 2, 2007. Satellite telemetry with a water-stage recorder from November 3, 2007 to current year. Datum of gage is 769.29 feet above National Geodetic Vertical Datum (NGVD) of 1983.

COOPERATION.--Fayette County Water System.

REMARKS.--Records good, except for estimated days which are poor.

Table T-03130005-9: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02344396.

Statistic	Value
Bias	-7.78
Standard error	38.45
Relative bias	-0.04
Relative standard error	0.24
Nash-Sutcliffe coefficient	0.94
Kling-Gupta coefficient	0.95
Coefficient of efficiency	0.78
Index of agreement	0.89

Table T-03130005-10: Hydrologic Indices Between USGS Gauge 02344396 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344396	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	180.48	170.85	-5.33
MA2: Median, all daily flows	68.00	81.27	19.52
MA3: CV, all daily flows	178.41	151.78	-14.93
MA4: CV, log of all daily flows	139.42	114.27	-18.04
MA5: Mean daily flow / median daily flow	2.65	2.10	-20.80
MA9: (Q10 - Q90) / median daily flow	6.08	4.57	-24.86

MA10: (Q20 - Q80) / median daily flow	2.35	2.67	13.63
MA11: (Q25 - Q75) / median daily flow	1.71	2.13	25.14
MA12: Mean monthly flow, January	217.18	220.03	1.32
MA13: Mean monthly flow, February	241.89	246.40	1.87
MA14: Mean monthly flow, March	307.57	297.55	-3.26
MA15: Mean monthly flow, April	191.47	170.13	-11.15
MA16: Mean monthly flow, May	130.85	138.90	6.15
MA17: Mean monthly flow, June	90.62	74.22	-18.09
MA18: Mean monthly flow, July	100.56	100.28	-0.28
MA19: Mean monthly flow, August	98.40	58.60	-40.44
MA20: Mean monthly flow, September	66.95	72.74	8.65
MA21: Mean monthly flow, October	104.64	109.00	4.17
MA22: Mean monthly flow, November	121.79	111.88	-8.14
MA23: Mean monthly flow, December	271.97	260.72	-4.13
ML1: Mean minimum monthly flow, January	91.29	103.03	12.87
ML2: Mean minimum monthly flow, February	78.83	82.20	4.27
ML3: Mean minimum monthly flow, March	84.33	109.93	30.35
ML4: Mean minimum monthly flow, April	62.83	73.93	17.65
ML5: Mean minimum monthly flow, May	42.00	52.51	25.03
ML6: Mean minimum monthly flow, June	23.97	29.70	23.94
ML7: Mean minimum monthly flow, July	28.57	27.06	-5.26
ML8: Mean minimum monthly flow, August	23.35	20.57	-11.91
ML9: Mean minimum monthly flow, September	17.78	12.33	-30.64
ML10: Mean minimum monthly flow, October	22.83	22.92	0.40
ML11: Mean minimum monthly flow, November	34.14	28.90	-15.35
ML12: Mean minimum monthly flow, December	50.00	40.51	-18.97
ML13: CV of minimum monthly flows	83.79	112.56	34.33
ML14: Mean minimum daily flow / mean median annual flow	0.23	0.10	-57.01
ML15: Mean minimum annual flow / mean annual flow	0.08	0.04	-56.09
ML16: Median minimum annual flow / median annual flow	0.14	0.03	-75.10
ML20: Ratio of baseflow volume to total flow volume	0.30	0.35	17.77
ML22: Mean annual minimum flow divided by catchment area	0.14	0.07	-52.29
RA1: Mean of positive changes from one day to next (rise rate)	155.79	153.04	
RA2: CV, mean of positive changes from one day to next (rise rate)	207.38	232.78	
RA3: Mean of negative changes from one day to next (fall rate)	85.67	45.19	
RA4: CV, mean of negative changes from one day to next (fall rate)	267.91	276.47	
RA5: Ratio of days that are higher than previous day	0.34	0.23	
RA6: Median of difference in log of flows over two consecutive days of rising	0.40	0.42	
RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.15	
RA8: Number of flow reversals from one day to the next	106.29	83.71	
RA9: CV, number of flow reversals from one day to the next	33.05	31.07	

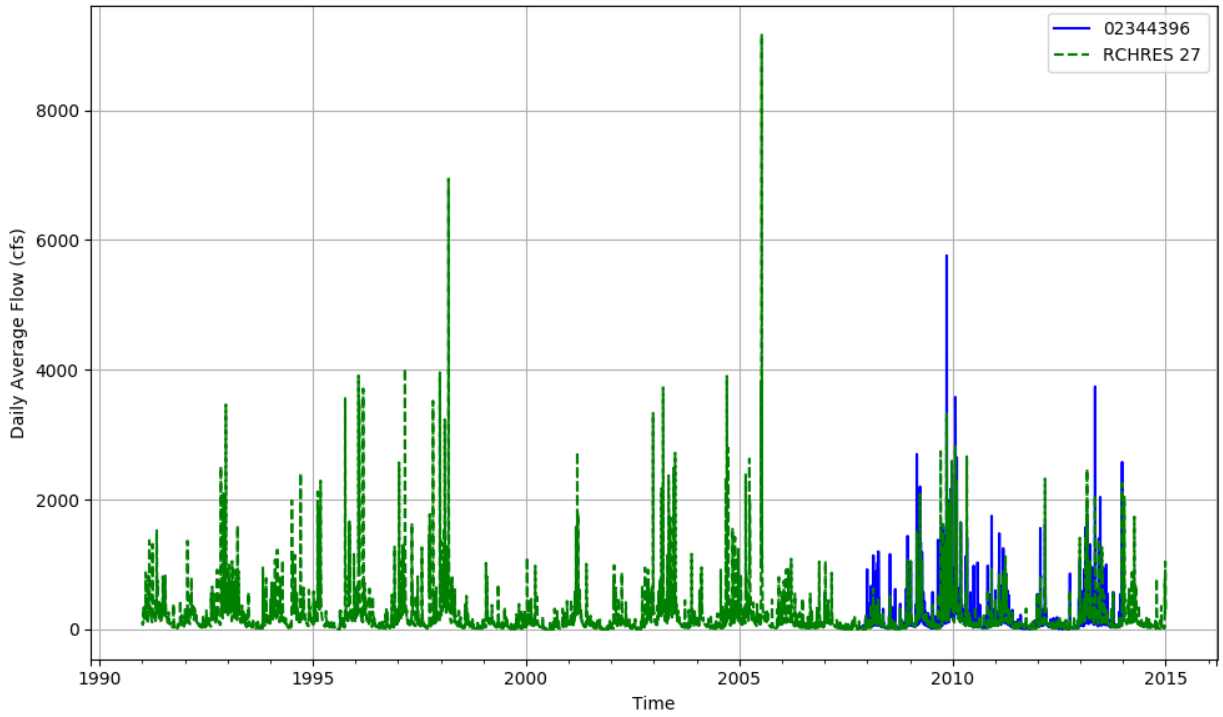


Figure T-03130005-16: Daily flow for HSFP reach 27 and USGS station 02344396.

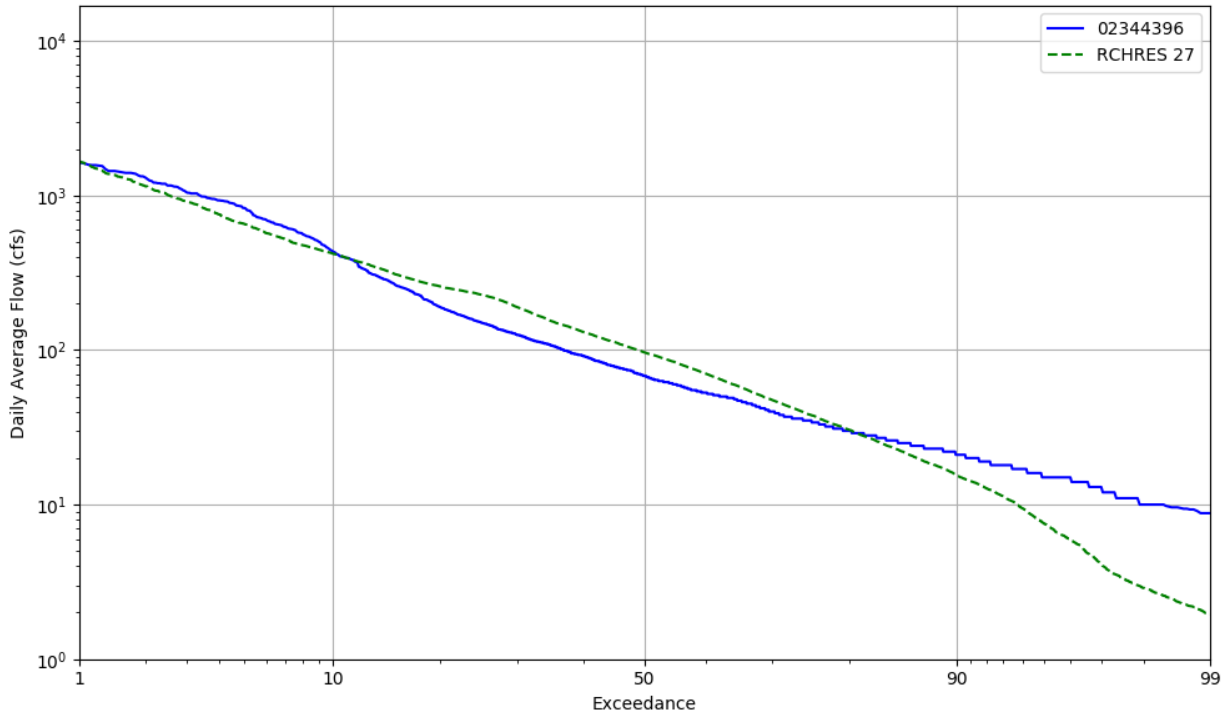


Figure T-03130005-17: Daily exceedance for HSFP reach 27 and USGS station 02344396.

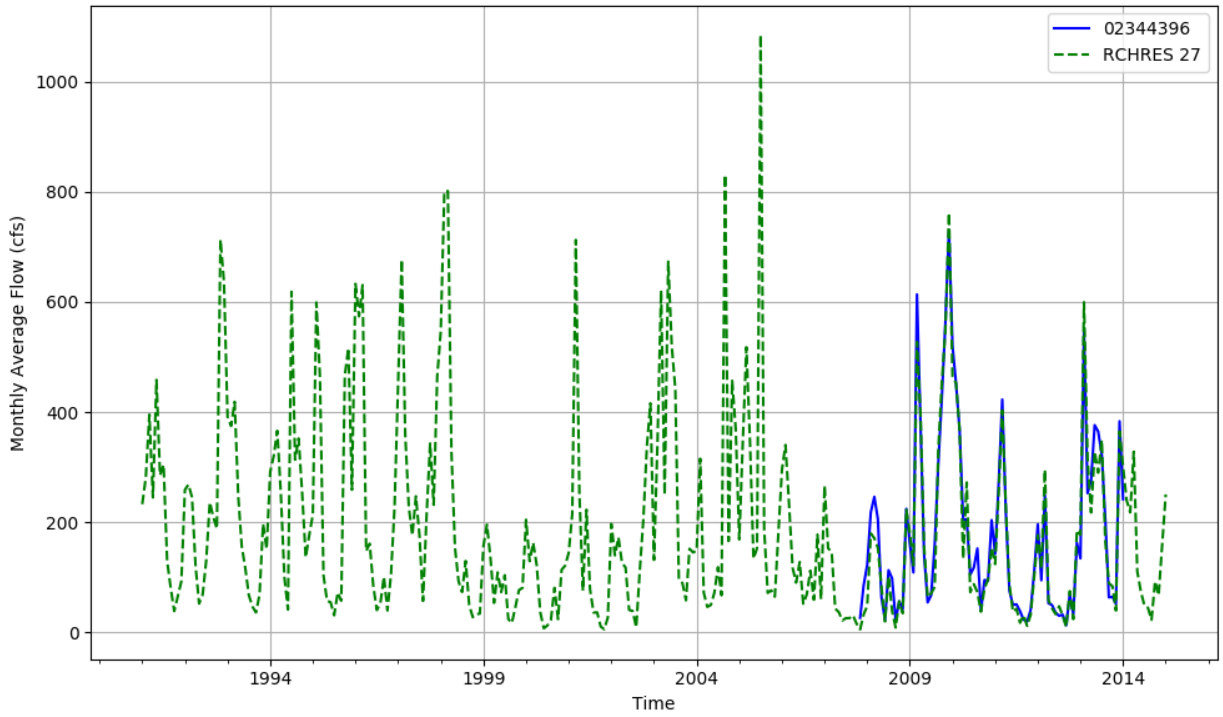


Figure T-03130005-18: Monthly flow for HSFP reach 27 and USGS station 02344396.

HSPF REACH 33, USGS GAUGE 02344500

Water-Data Report 2009
02344500 FLINT RIVER NEAR GRIFFIN, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 331439, long 842545 referenced to North American Datum of 1983, Spalding County, GA, Hydrologic Unit 03130005, at downstream side of bridge pier on GA 16, 1.5 miles downstream from Shoal Creek, 5.5 miles upstream from Line Creek, 10.0 miles west of Griffin, and at river mile 304.4.

DRAINAGE AREA.--272 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: March 1937 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite transmitter with a water-stage recorder. Datum of gage is 711.44 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by U.S. Army Corps of Engineers). Prior to August 25, 1938, a non-recording gage was located at present site at a datum 3.00 feet higher. From August 25, 1938, to May 5, 1941, a non-recording gage was located at the site and from May 6, 1941 to August 20, 1959, a water-stage recorder was located at the site. From August 21, 1959 to September 13, 1960, a non-recording gage was located at the site. All gage installations were located at present site and datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage-height records good. Some diurnal fluctuation occurs at low flow.

Table T-03130005-11: Comparison Statistics Between HSPF Reach 33 and USGS Gauge 02344500.

Statistic	Value
Bias	4.20
Standard error	122.89
Relative bias	0.01
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.90
Coefficient of efficiency	0.78
Index of agreement	0.89

Table T-03130005-12: Hydrologic Indices Between USGS Gauge 02344500 and HSPF Reach 33.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344500	Simulated Reach 33	Percent Difference
MA1: Mean, all daily flows	302.40	307.89	1.81
MA2: Median, all daily flows	136.00	156.36	14.97
MA3: CV, all daily flows	176.68	142.33	-19.44
MA4: CV, log of all daily flows	116.38	103.24	-11.29
MA5: Mean daily flow / median daily flow	2.22	1.97	-11.44
MA9: (Q10 - Q90) / median daily flow	4.80	4.01	-16.43
MA10: (Q20 - Q80) / median daily flow	2.46	2.28	-7.39
MA11: (Q25 - Q75) / median daily flow	1.86	1.78	-4.28
MA12: Mean monthly flow, January	395.97	413.20	4.35
MA13: Mean monthly flow, February	501.85	525.48	4.71
MA14: Mean monthly flow, March	584.66	578.93	-0.98
MA15: Mean monthly flow, April	313.00	297.61	-4.92
MA16: Mean monthly flow, May	226.34	240.18	6.11
MA17: Mean monthly flow, June	181.17	178.88	-1.26
MA18: Mean monthly flow, July	303.56	252.13	-16.94
MA19: Mean monthly flow, August	127.80	127.20	-0.48
MA20: Mean monthly flow, September	152.48	176.84	15.98
MA21: Mean monthly flow, October	170.34	180.10	5.73
MA22: Mean monthly flow, November	253.70	262.59	3.50
MA23: Mean monthly flow, December	318.72	344.89	8.21
ML1: Mean minimum monthly flow, January	170.12	161.23	-5.23
ML2: Mean minimum monthly flow, February	160.48	190.38	18.63
ML3: Mean minimum monthly flow, March	166.70	193.02	15.79
ML4: Mean minimum monthly flow, April	117.35	129.55	10.39
ML5: Mean minimum monthly flow, May	65.52	94.73	44.57
ML6: Mean minimum monthly flow, June	51.29	71.67	39.72
ML7: Mean minimum monthly flow, July	45.37	68.89	51.84
ML8: Mean minimum monthly flow, August	36.41	53.89	48.02
ML9: Mean minimum monthly flow, September	28.94	38.16	31.86
ML10: Mean minimum monthly flow, October	37.70	50.66	34.40
ML11: Mean minimum monthly flow, November	69.35	71.88	3.66
ML12: Mean minimum monthly flow, December	106.61	119.71	12.29
ML13: CV of minimum monthly flows	102.42	91.69	-10.47
ML14: Mean minimum daily flow / mean median annual flow	0.14	0.12	-14.64
ML15: Mean minimum annual flow / mean annual flow	0.06	0.06	5.68
ML16: Median minimum annual flow / median annual flow	0.12	0.10	-19.01
ML20: Ratio of baseflow volume to total flow volume	0.34	0.42	23.88
ML22: Mean annual minimum flow divided by catchment area	0.18	0.21	20.60
RA1: Mean of positive changes from one day to next (rise rate)	160.50	200.21	
RA2: CV, mean of positive changes from one day to next (rise rate)	314.78	296.82	
RA3: Mean of negative changes from one day to next (fall rate)	104.42	68.07	
RA4: CV, mean of negative changes from one day to next (fall rate)	343.61	330.03	
RA5: Ratio of days that are higher than previous day	0.38	0.25	

RA6: Median of difference in log of flows over two consecutive days of rising	0.25	0.24	
RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.11	
RA8: Number of flow reversals from one day to the next	102.12	84.12	
RA9: CV, number of flow reversals from one day to the next	17.48	18.98	

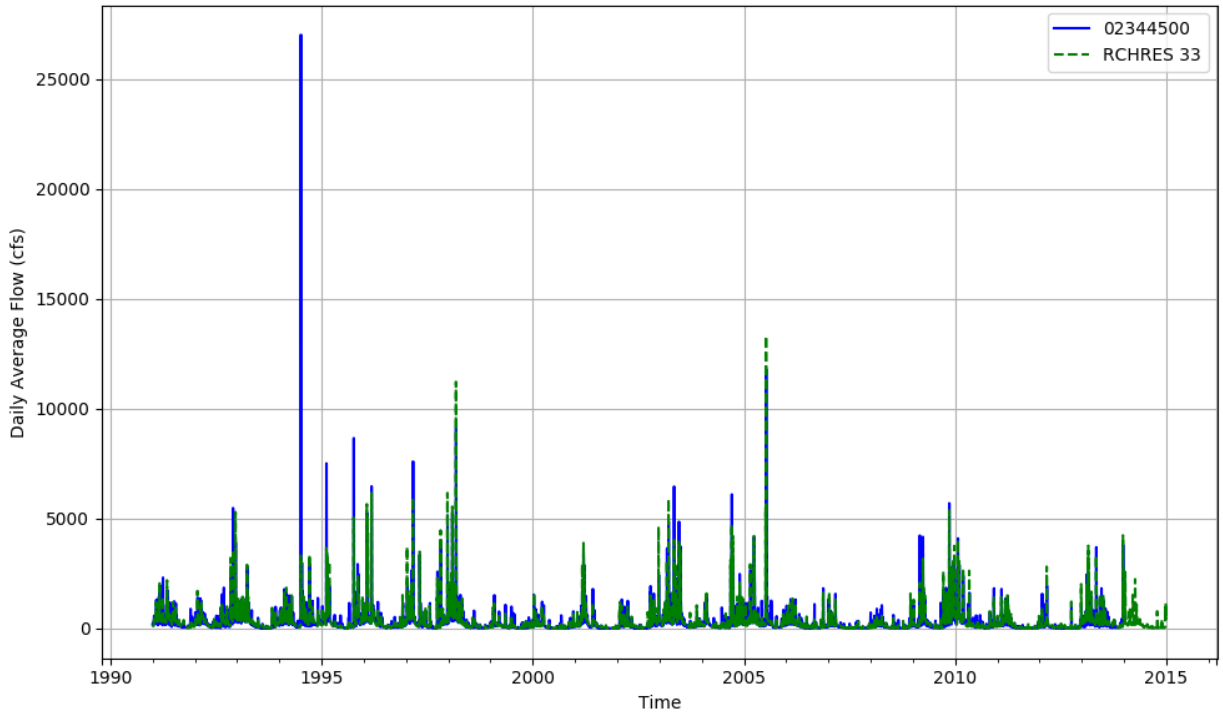


Figure T-03130005-19: Daily flow for HSFP reach 33 and USGS station 02344500.

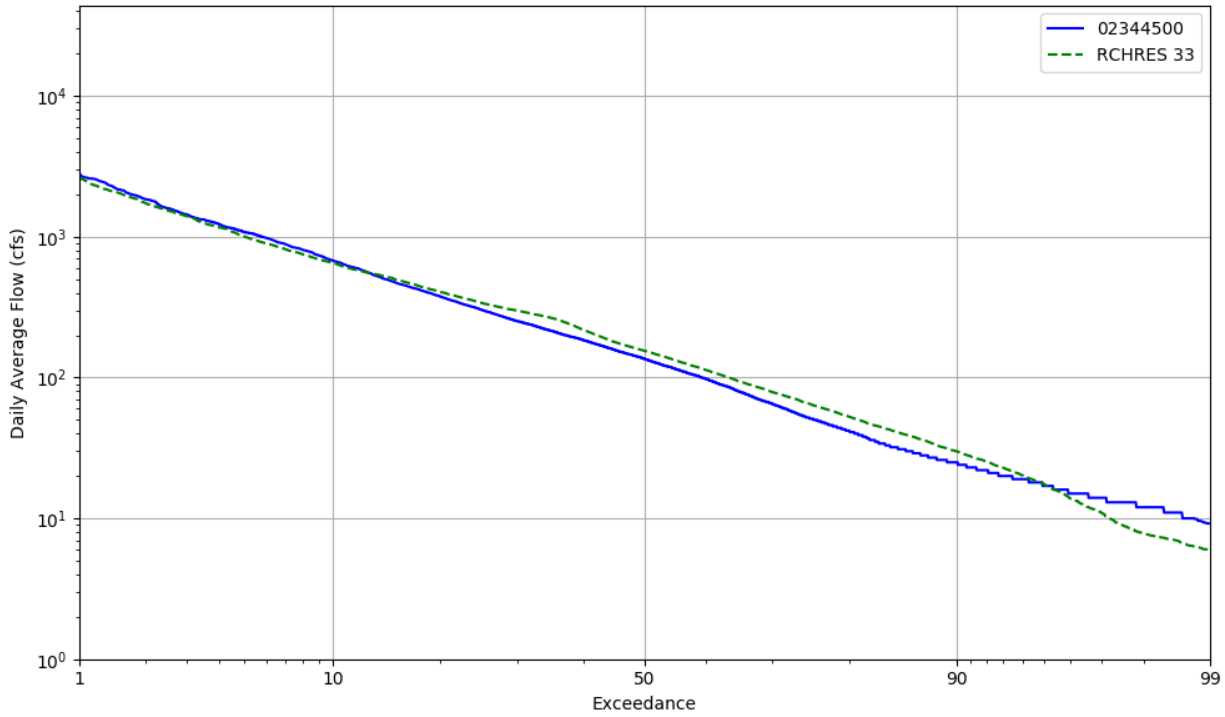


Figure T-03130005-20: Daily exceedance for HSFP reach 33 and USGS station 02344500.

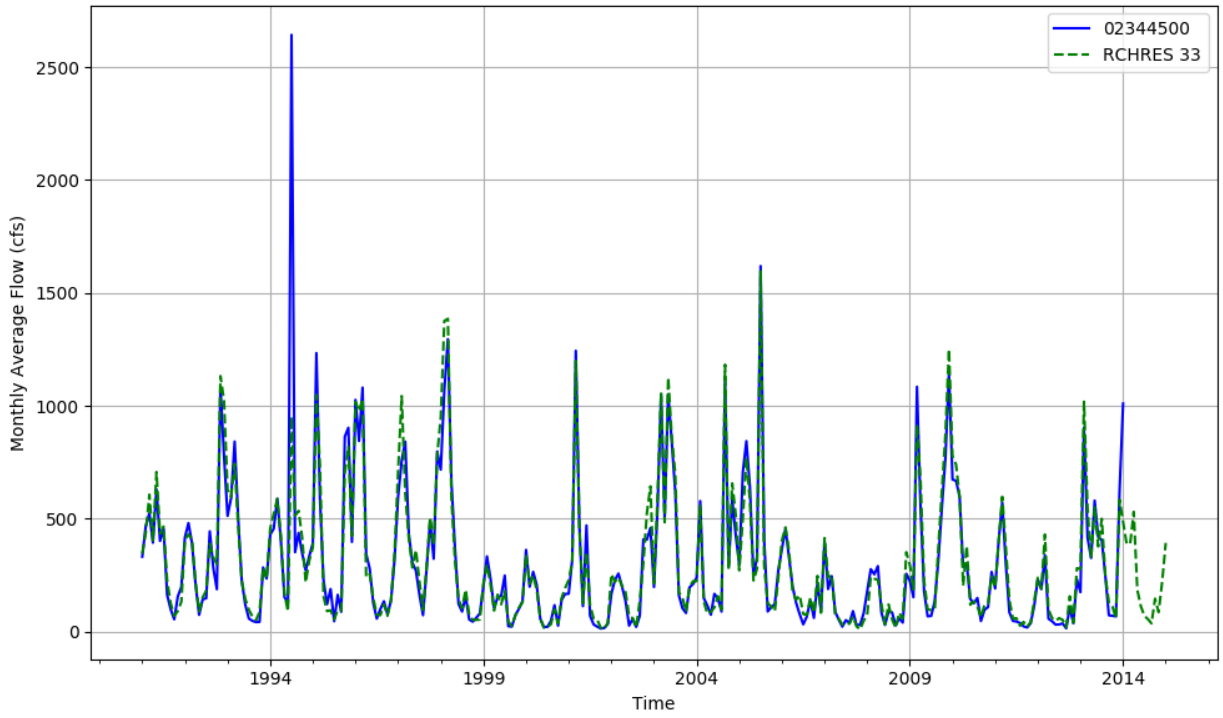


Figure T-03130005-21: Monthly flow for HSFP reach 33 and USGS station 02344500.

HSPF REACH 36, USGS GAUGE 02344872

Water-Data Report 2009
02344872 FLINT RIVER BELOW BIG BRANCH NEAR MOLENA, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 330249, long 843137 referenced to North American Datum of 1927, Pike County, GA, Hydrologic Unit 03130005, 140 feet downstream of the Still Branch Reservoir intakes, and 7.8 miles southwest of Concord, GA.

DRAINAGE AREA.--794 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: July 2004 to current year.
GAGE-HEIGHT: July 2004 to current year.

GAGE.--Satellite transmitter with a water stage stage recorder. Datum of gage is 649.58 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--City of Griffin.

REMARKS.--Discharge records are good, except for days of estimated discharge, which are poor. Gage-height records are good.

Table T-03130005-13: Comparison Statistics Between HSPF Reach 36 and USGS Gauge 02344872.

Statistic	Value
Bias	24.54
Standard error	223.32
Relative bias	0.03
Relative standard error	0.28
Nash-Sutcliffe coefficient	0.92
Kling-Gupta coefficient	0.95
Coefficient of efficiency	0.77
Index of agreement	0.88

Table T-03130005-14: Hydrologic Indices Between USGS Gauge 02344872 and HSPF Reach 36.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02344872	Simulated Reach 36	Percent Difference
MA1: Mean, all daily flows	715.94	750.51	4.83
MA2: Median, all daily flows	357.00	373.33	4.58
MA3: CV, all daily flows	148.30	151.29	2.02
MA4: CV, log of all daily flows	113.58	106.89	-5.89
MA5: Mean daily flow / median daily flow	2.01	2.01	0.24

MA9: (Q10 - Q90) / median daily flow	4.36	4.09	-6.07
MA10: (Q20 - Q80) / median daily flow	2.50	2.39	-4.37
MA11: (Q25 - Q75) / median daily flow	1.95	1.91	-2.22
MA12: Mean monthly flow, January	997.81	935.44	-6.25
MA13: Mean monthly flow, February	1023.03	1067.88	4.38
MA14: Mean monthly flow, March	1253.94	1273.96	1.60
MA15: Mean monthly flow, April	778.87	723.50	-7.11
MA16: Mean monthly flow, May	447.53	488.18	9.08
MA17: Mean monthly flow, June	288.50	309.10	7.14
MA18: Mean monthly flow, July	668.39	656.52	-1.78
MA19: Mean monthly flow, August	291.41	242.92	-16.64
MA20: Mean monthly flow, September	344.15	433.96	26.10
MA21: Mean monthly flow, October	304.57	350.96	15.23
MA22: Mean monthly flow, November	473.08	536.28	13.36
MA23: Mean monthly flow, December	841.46	950.56	12.97
ML1: Mean minimum monthly flow, January	672.00	503.99	-25.00
ML2: Mean minimum monthly flow, February	491.44	476.89	-2.96
ML3: Mean minimum monthly flow, March	550.56	592.90	7.69
ML4: Mean minimum monthly flow, April	366.67	394.43	7.57
ML5: Mean minimum monthly flow, May	205.89	264.39	28.41
ML6: Mean minimum monthly flow, June	116.44	171.70	47.45
ML7: Mean minimum monthly flow, July	142.50	147.91	3.79
ML8: Mean minimum monthly flow, August	118.90	148.08	24.54
ML9: Mean minimum monthly flow, September	71.10	86.94	22.28
ML10: Mean minimum monthly flow, October	89.40	120.41	34.69
ML11: Mean minimum monthly flow, November	158.70	178.21	12.29
ML12: Mean minimum monthly flow, December	288.70	290.20	0.52
ML13: CV of minimum monthly flows	128.04	99.53	-22.26
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.18	-3.45
ML15: Mean minimum annual flow / mean annual flow	0.08	0.08	8.35
ML16: Median minimum annual flow / median annual flow	0.12	0.12	-0.42
ML20: Ratio of baseflow volume to total flow volume	0.43	0.44	4.50
ML22: Mean annual minimum flow divided by catchment area	0.53	0.65	23.56
RA1: Mean of positive changes from one day to next (rise rate)	266.99	414.94	
RA2: CV, mean of positive changes from one day to next (rise rate)	242.24	345.41	
RA3: Mean of negative changes from one day to next (fall rate)	153.76	147.17	
RA4: CV, mean of negative changes from one day to next (fall rate)	279.23	358.83	
RA5: Ratio of days that are higher than previous day	0.36	0.26	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.18	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.10	
RA8: Number of flow reversals from one day to the next	79.91	66.18	
RA9: CV, number of flow reversals from one day to the next	35.64	33.87	

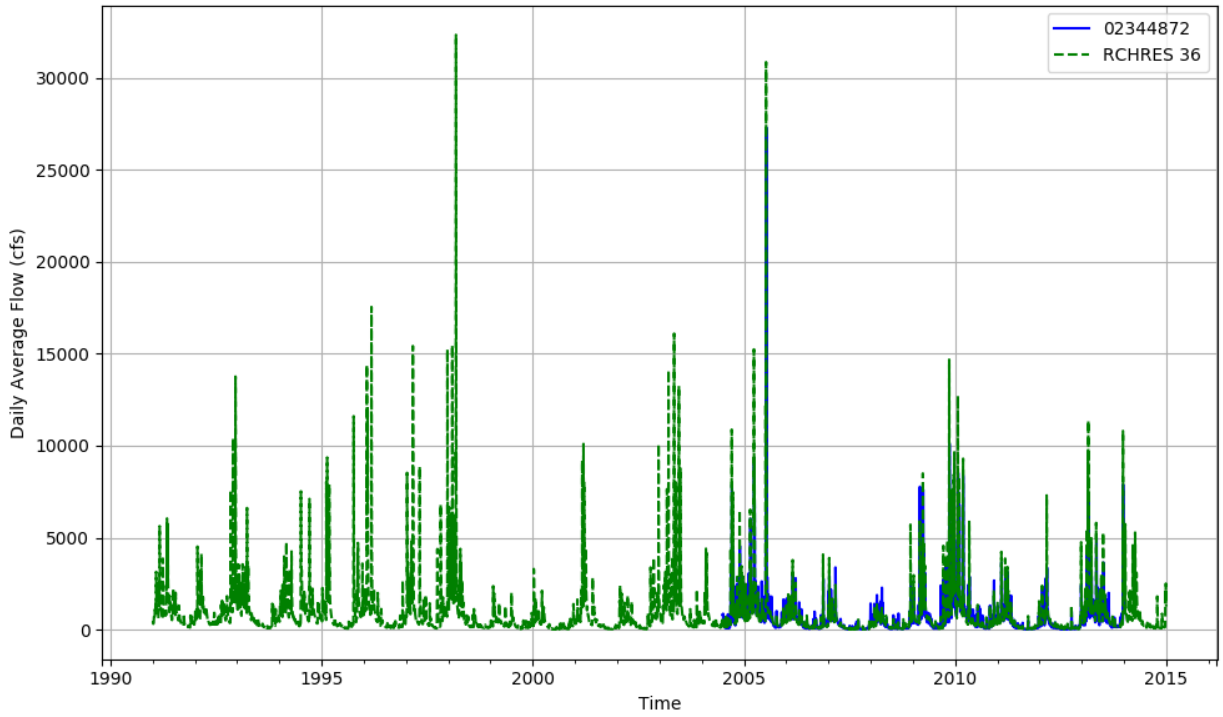


Figure T-03130005-22: Daily flow for HSFP reach 36 and USGS station 02344872.

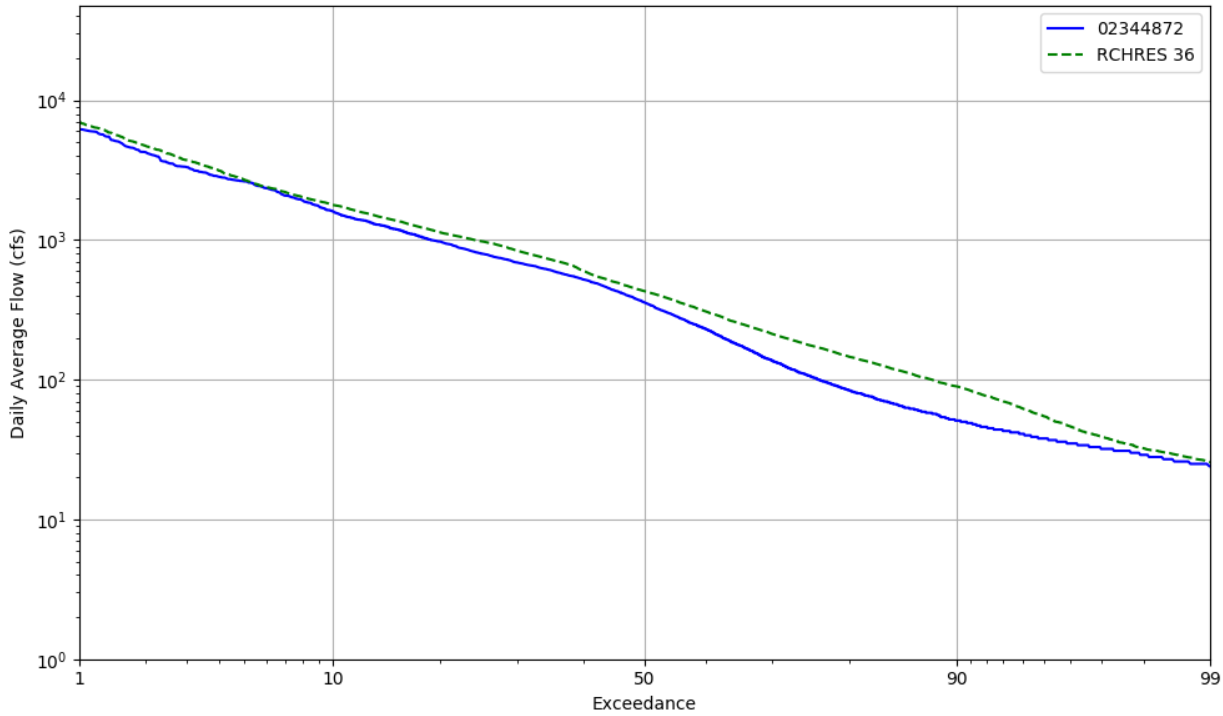


Figure T-03130005-23: Daily exceedance for HSFP reach 36 and USGS station 02344872.

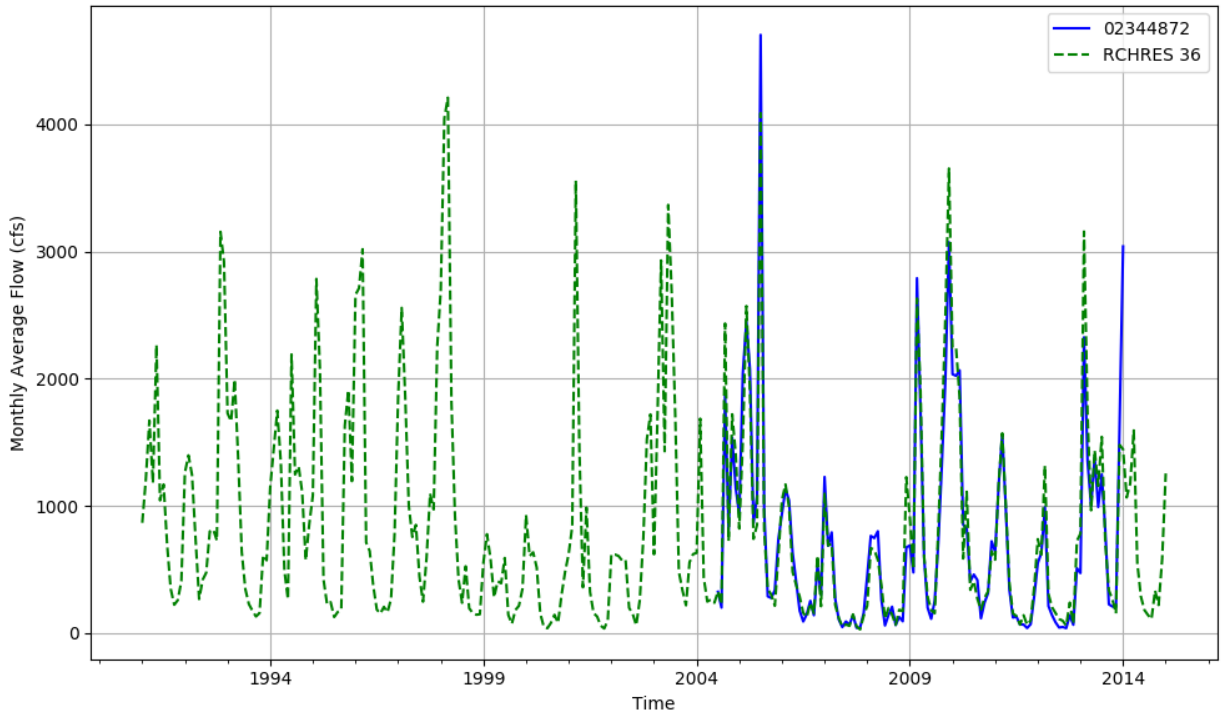


Figure T-03130005-24: Monthly flow for HSFP reach 36 and USGS station 02344872.

HSPF REACH 44, USGS GAUGE 02347500

Water-Data Report 2009
02347500 FLINT RIVER AT US 19, NEAR CARSONVILLE, GA
Apalachicola Basin Upper Flint Subbasin

LOCATION.--Lat 324317, long 841357 referenced to North American Datum of 1983, Upson County, GA, Hydrologic Unit 03130005, on the downstream left end of U.S. Highway 19, 4.0 miles upstream from Auchumpkee Creek, 5.0 miles downstream from Swift Creek, 13.0 miles southwest of Culloden, and at mile 238.4.

DRAINAGE AREA.--1,850 mi.

SURFACE-WATER RECORDS
PERIOD OF RECORD
DISCHARGE: July 1911 to May 1923, July 1928 to December 1931, March 1937 to September 2005 (published as station 02347500 Flint River near
Culloden, GA). October 2005 to current year.
GAGE-HEIGHT: October 1998 to September 2005 (published as station 02347500 Flint River near Culloden, GA). October 2005 to current year.
REVISED RECORDS.--WSP 697:1911-23. WSP 1002: 1943. WSP 1504: 1913, 196-17, 1918(M), 1919-22, 1923(M), drainage area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 334.54 feet above National Geodetic Vertical Datum (NGVD) of 1929. From July 1, 1911 to October 11, 1918, a non-recording gage was installed. From October 12, 1918 to May 31, 1923, a water-stage recorder was located at a site 2.5 miles downstream at different datum. From July 21, 1928 to December 31, 1931, and from March 18, 1937 to May 3, 1939, a non-recording gage was located at present site and datum.

COOPERATION.--U.S. Army Corps of Engineers, Mobile District.

REMARKS.--Discharge records good. Gage-height records good.

Table T-03130005-15: Comparison Statistics Between HSPF Reach 44 and USGS Gauge 02347500.

Statistic	Value
Bias	-48.69
Standard error	752.25
Relative bias	-0.03
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.86
Kling-Gupta coefficient	0.92
Coefficient of efficiency	0.77
Index of agreement	0.89

Table T-03130005-16: Hydrologic Indices Between USGS Gauge 02347500 and HSPF Reach 44.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02347500	Simulated Reach 44	Percent Difference
MA1: Mean, all daily flows	1905.15	1856.39	-2.56
MA2: Median, all daily flows	1020.00	958.11	-6.07
MA3: CV, all daily flows	141.46	131.61	-6.96
MA4: CV, log of all daily flows	98.02	101.77	3.83
MA5: Mean daily flow / median daily flow	1.87	1.94	3.73
MA9: (Q10 - Q90) / median daily flow	3.74	4.03	7.78
MA10: (Q20 - Q80) / median daily flow	2.10	2.46	17.01
MA11: (Q25 - Q75) / median daily flow	1.63	1.96	20.67
MA12: Mean monthly flow, January	2422.64	2451.51	1.19
MA13: Mean monthly flow, February	3252.16	3361.78	3.37
MA14: Mean monthly flow, March	3932.16	3948.75	0.42
MA15: Mean monthly flow, April	2340.65	2156.36	-7.87
MA16: Mean monthly flow, May	1551.75	1508.77	-2.77
MA17: Mean monthly flow, June	1113.72	1061.49	-4.69
MA18: Mean monthly flow, July	1761.89	1297.16	-26.38
MA19: Mean monthly flow, August	812.41	719.04	-11.49
MA20: Mean monthly flow, September	724.88	794.80	9.65
MA21: Mean monthly flow, October	846.74	845.02	-0.20
MA22: Mean monthly flow, November	1461.40	1395.99	-4.48
MA23: Mean monthly flow, December	2001.83	2119.66	5.89
ML1: Mean minimum monthly flow, January	1309.58	1188.89	-9.22
ML2: Mean minimum monthly flow, February	1398.09	1398.31	0.02
ML3: Mean minimum monthly flow, March	1493.48	1499.79	0.42
ML4: Mean minimum monthly flow, April	1120.83	1015.22	-9.42
ML5: Mean minimum monthly flow, May	658.39	721.22	9.54
ML6: Mean minimum monthly flow, June	495.96	544.43	9.77
ML7: Mean minimum monthly flow, July	443.52	486.46	9.68
ML8: Mean minimum monthly flow, August	365.78	417.18	14.05
ML9: Mean minimum monthly flow, September	272.48	286.24	5.05
ML10: Mean minimum monthly flow, October	332.83	349.96	5.15
ML11: Mean minimum monthly flow, November	518.57	478.83	-7.66
ML12: Mean minimum monthly flow, December	875.70	859.46	-1.85
ML13: CV of minimum monthly flows	86.06	93.61	8.77
ML14: Mean minimum daily flow / mean median annual flow	0.17	0.18	9.86
ML15: Mean minimum annual flow / mean annual flow	0.09	0.10	9.67
ML16: Median minimum annual flow / median annual flow	0.13	0.14	10.86
ML20: Ratio of baseflow volume to total flow volume	0.48	0.51	6.64
ML22: Mean annual minimum flow divided by catchment area	1.83	1.79	-2.41
RA1: Mean of positive changes from one day to next (rise rate)	709.26	761.76	
RA2: CV, mean of positive changes from one day to next (rise rate)	324.57	355.30	
RA3: Mean of negative changes from one day to next (fall rate)	357.92	297.83	
RA4: CV, mean of negative changes from one day to next (fall rate)	291.87	328.49	
RA5: Ratio of days that are higher than previous day	0.33	0.28	

RA6: Median of difference in log of flows over two consecutive days of rising	0.12	0.11	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.07	
RA8: Number of flow reversals from one day to the next	90.71	67.71	
RA9: CV, number of flow reversals from one day to the next	17.92	18.96	

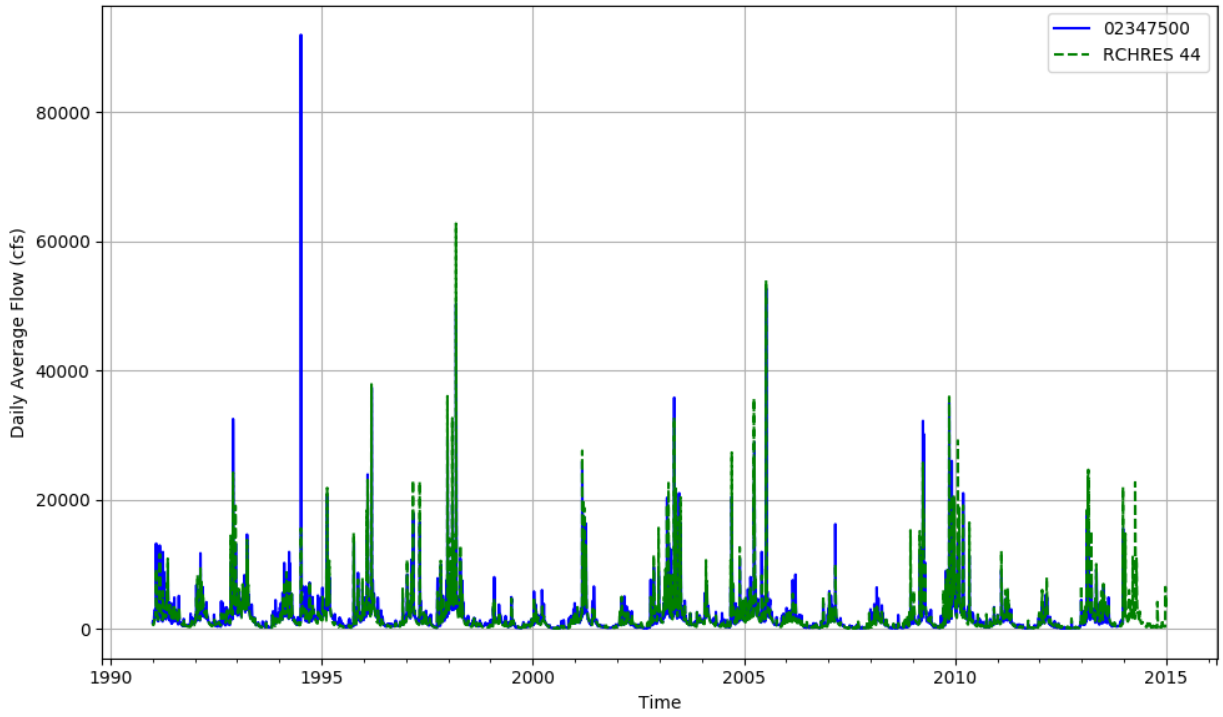


Figure T-03130005-25: Daily flow for HSFP reach 44 and USGS station 02347500.

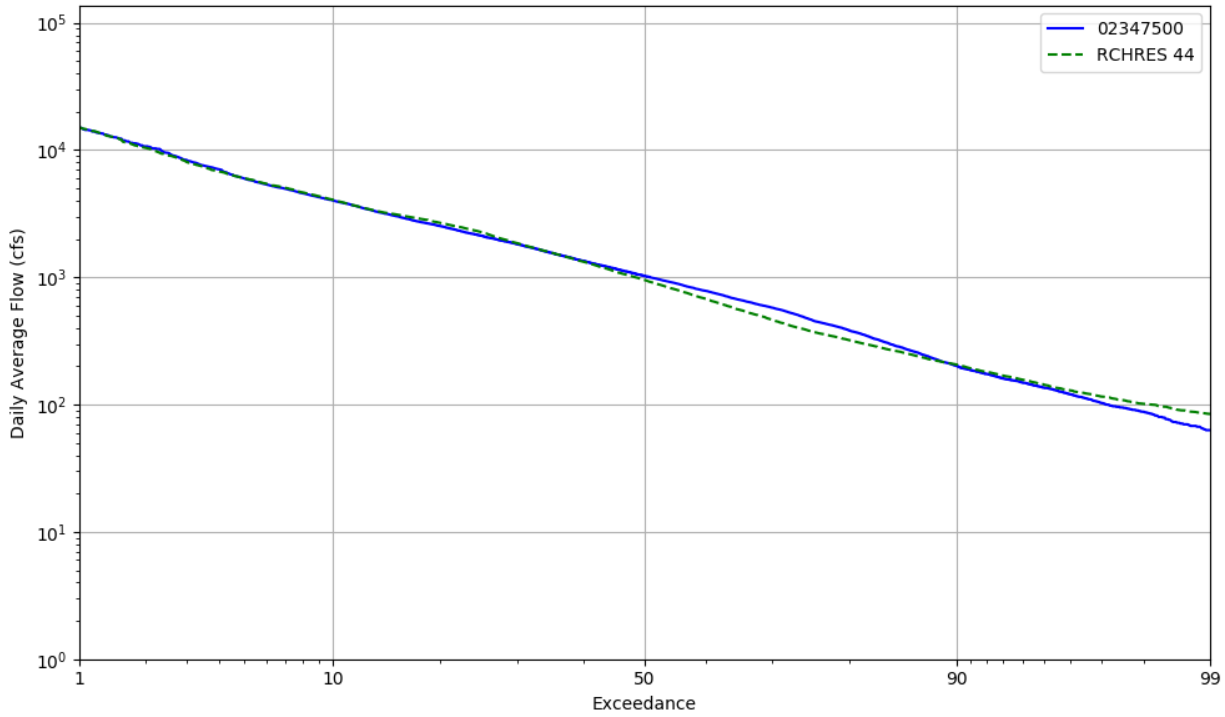


Figure T-03130005-26: Daily exceedance for HSFP reach 44 and USGS station 02347500.

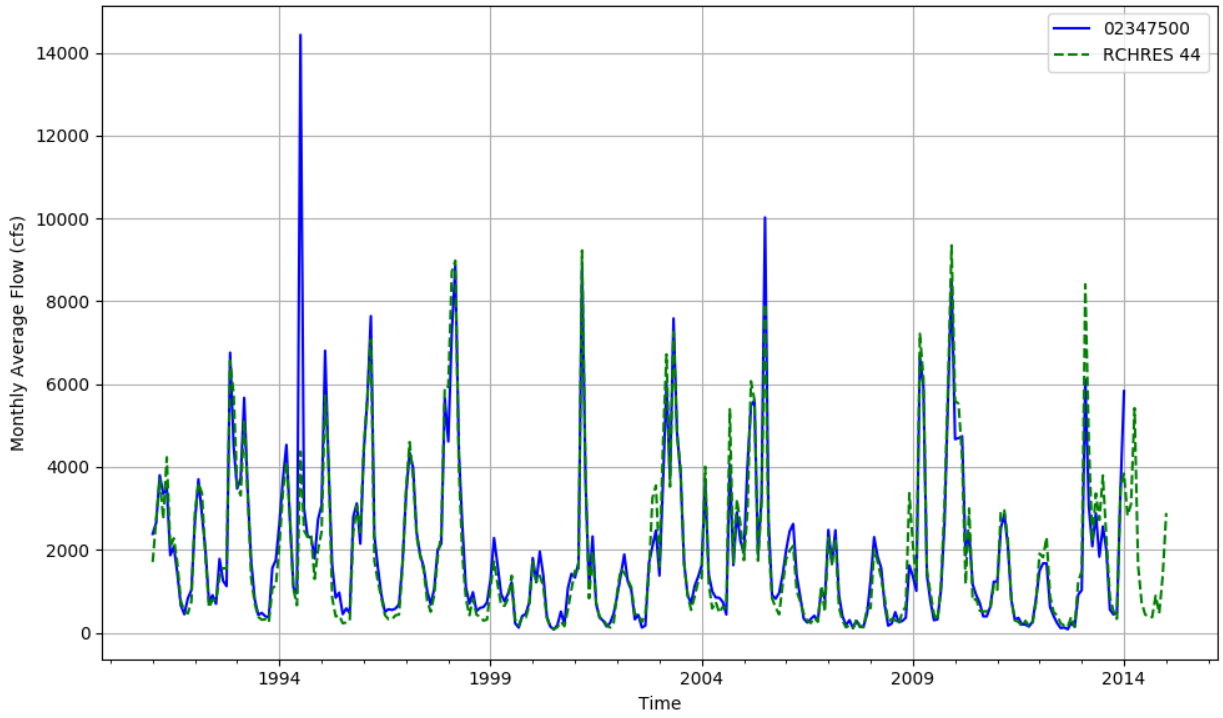


Figure T-03130005-27: Monthly flow for HSFP reach 44 and USGS station 02347500.

Table T-03130005-17: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	17736	86394	45691	11178	4886	9926	936792	33824	113437	225308	40966	121816	2623	11080	3832	1665491
AREA(%)	1.1	5.1	2.7	0.7	0.3	0.6	55.7	2.0	6.7	13.4	2.4	7.2	0.2	0.7	0.2	99.0
IMPERVIOUS																
AREA(ACRES)		4638	5125	2812	4889											17463
AREA(%)		0.3	0.3	0.2	0.3											1.0
SUPY	41.4	41.4	40.6	40.3	40.1	42.5	42.4	43.0	42.8	41.7	43.5	42.4	68.5	53.2	44.3	41.9
SURLI		0.0	7.1	7.1	6.6										0.7	0.3
UZLI																0.0
LZLI		0.0	0.7	0.5	0.4									0.1	6.2	0.0
SURO: PERVIOUS		2.1	2.2	2.2	1.4	1.4	0.2	2.7	1.6	1.3	0.9		3.9	3.6	1.6	0.7
SURO: IMPERVIOUS		30.7	30.1	29.8	29.7											0.3
SURO: COMBINED		3.5	5.0	7.7	15.5	1.4	0.2	2.7	1.6	1.3	0.9		3.9	3.6	1.6	1.0
IFWO		7.7	8.3	8.1	8.3	8.6	4.2	8.9	8.1	8.2	6.7		14.6	10.6	7.5	5.2
AGWO	6.0	5.5	9.0	9.0	8.7	8.8	7.2	6.4	5.3	5.3	5.9	6.2	11.4	6.6	9.4	6.6
AGWI	7.2	5.7	9.4	9.3	8.8	8.9	7.3	6.4	5.3	5.3	5.9	7.6	12.0	6.6	9.4	6.8
IGWI	1.2	0.9	1.4	1.4	1.4	1.5	1.2	1.1	0.9	0.9	1.0	1.3	1.5	1.2	1.7	1.2
CEPE		7.5	7.4	7.3	9.2	5.0	13.2	7.6	10.7	11.6	6.0	11.4	25.8	15.3	6.2	11.6
UZET	1.0	8.2	8.9	8.9	8.0	9.9	4.5	10.0	7.3	6.3	9.8	0.7	6.4	8.5	10.9	5.2
LZET	0.2	12.2	12.8	12.8	12.2	9.1	15.5	8.1	11.5	11.1	16.1	0.6	4.9	10.0	16.4	12.8
AGWET	0.9	0.3	0.4	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.9	0.2	0.0	0.0	0.2
BASET	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.8	0.5	0.5	0.6
SURET	35.6											24.4				2.1
PERO	6.0	15.2	19.5	19.3	18.4	18.8	11.6	18.0	15.1	14.8	13.5	6.2	29.9	20.8	18.6	12.5
IGWI	1.2	0.9	1.4	1.4	1.4	1.5	1.2	1.1	0.9	0.9	1.0	1.3	1.5	1.2	1.7	1.2
TAET: PERVIOUS	38.1	28.7	30.2	30.1	30.2	24.7	33.8	26.3	30.1	29.7	32.5	38.5	38.1	34.2	34.1	32.4
IMPEV: IMPERVIOUS		10.6	10.5	10.4	10.4											0.1
ET: COMBINED	38.1	27.8	28.2	26.1	20.3	24.7	33.8	26.3	30.1	29.7	32.5	38.5	38.1	34.2	34.1	32.5
PET	41.6	41.5	41.1	41.0	40.9	41.8	41.9	42.1	42.0	41.7	42.5	41.9	41.0	42.4	42.5	41.4

Table T-03130005-18: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	17736	86394	45691	11178	4886	9926	936792	33824	113437	225308	40966	121816	2623	11080	3832	1665491
AREA(%)	1.1	5.1	2.7	0.7	0.3	0.6	55.7	2.0	6.7	13.4	2.4	7.2	0.2	0.7	0.2	99.0
IMPERVIOUS																
AREA(ACRES)		4638	5125	2812	4889											17463
AREA(%)		0.3	0.3	0.2	0.3											1.0
SUPY	65.5	65.7	65.4	65.7	66.1	66.4	66.3	66.3	66.4	65.5	64.2	64.8	81.6	74.7	62.8	65.4
SURLI		0.0	5.7	5.3	4.5										1.4	0.2
UZLI																0.0
LZLI		0.0	0.7	0.6	0.5									0.2	5.5	0.0
SURO: PERVIOUS	0.1	4.0	4.2	4.2	2.6	2.6	0.4	4.9	3.2	2.5	1.5	0.1	5.5	3.0	1.6	1.3
SURO: IMPERVIOUS		52.4	52.4	52.8	53.2											0.5
SURO: COMBINED	0.1	6.4	9.0	13.9	27.9	2.6	0.4	4.9	3.2	2.5	1.5	0.1	5.5	3.0	1.6	1.9
IFWO		16.9	18.1	17.9	18.9	18.0	9.5	18.3	17.5	17.7	14.0		22.1	18.1	14.2	11.4
AGWO	6.7	8.3	11.6	11.4	11.1	13.1	12.5	9.3	8.1	7.9	9.0	7.2	11.4	9.3	11.7	10.6
AGWI	8.3	9.9	13.4	13.1	12.5	14.3	14.1	10.4	9.3	9.2	10.3	8.8	13.3	10.4	12.9	12.1
IGWI	1.4	1.6	2.0	2.0	2.0	2.4	2.4	1.8	1.6	1.6	1.8	1.5	1.6	1.8	2.3	2.0
CEPE		9.6	9.5	9.5	11.6	6.7	16.1	10.0	13.4	14.1	8.1	14.1	21.4	19.4	8.2	14.2
UZET	1.3	10.5	11.4	11.5	10.4	12.1	6.0	11.9	9.1	8.1	11.3	0.9	8.7	11.1	12.6	6.8
LZET	0.1	11.7	12.0	11.9	11.3	8.9	14.9	7.7	10.9	10.7	15.5	0.7	8.0	9.6	16.5	12.3
AGWET	1.0	0.3	0.4	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.0	1.0	0.3	0.0	0.0	0.2
BASET	0.6	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.9	0.6	0.6	0.6
SURET	42.1											28.6				2.5
PERO	6.8	29.2	33.8	33.5	32.7	33.7	22.4	32.5	28.7	28.1	24.4	7.3	39.0	30.4	27.6	23.3
IGWI	1.4	1.6	2.0	2.0	2.0	2.4	2.4	1.8	1.6	1.6	1.8	1.5	1.6	1.8	2.3	2.0
TAET: PERVIOUS	45.1	32.7	34.1	34.0	34.2	28.5	37.8	30.3	34.1	33.7	35.7	45.9	39.3	40.7	37.9	36.6
IMPEV: IMPERVIOUS		13.1	13.0	12.8	12.8											0.1
ET: COMBINED	45.1	31.7	31.9	29.7	23.5	28.5	37.8	30.3	34.1	33.7	35.7	45.9	39.3	40.7	37.9	36.8
PET	48.2	48.1	47.7	47.6	47.4	48.3	48.4	48.6	48.5	48.3	49.3	48.6	47.7	49.3	49.5	47.9

Table T-03130005-19: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	17736	86394	45691	11178	4886	9926	936792	33824	113437	225308	40966	121816	2623	11080	3832	1665491
AREA(%)	1.1	5.1	2.7	0.7	0.3	0.6	55.7	2.0	6.7	13.4	2.4	7.2	0.2	0.7	0.2	99.0
IMPERVIOUS																
AREA(ACRES)		4638	5125	2812	4889											17463
AREA(%)		0.3	0.3	0.2	0.3											1.0
SUPY	44.9	45.0	44.8	44.8	44.8	45.2	45.1	45.2	45.2	45.1	45.2	45.3	63.0	52.7	45.6	44.7
SURLI		0.0	5.6	5.1	4.3										1.0	0.2
UZLI																0.0
LZLI		0.0	0.8	0.6	0.5									0.2	4.0	0.0
SURO: PERVIOUS	3.0	2.4	2.7	2.8	2.0	1.6	0.3	2.9	1.8	1.5	1.1	1.5	3.8	2.3	1.3	1.0
SURO: IMPERVIOUS		34.3	34.5	34.6	34.7											0.4
SURO: COMBINED	3.0	4.0	5.9	9.2	18.4	1.6	0.3	2.9	1.8	1.5	1.1	1.5	3.8	2.3	1.3	1.3
IFWO		8.6	9.3	9.1	9.4	9.7	5.2	9.9	8.9	9.0	8.4		13.4	11.2	9.2	6.0
AGWO	6.9	5.9	8.8	8.5	8.1	9.4	8.5	6.8	5.8	5.7	6.8	7.2	9.0	6.8	8.4	7.5
AGWI	7.4	6.0	9.3	9.0	8.3	9.4	7.9	6.7	5.5	5.5	6.2	7.7	9.5	6.5	8.0	7.2
IGWI	1.3	1.0	1.4	1.3	1.3	1.6	1.4	1.2	1.0	0.9	1.1	1.3	1.1	1.1	1.4	1.2
CEPE		7.6	7.3	7.2	9.1	5.3	13.6	8.2	11.2	11.8	7.0	11.8	20.2	15.6	7.0	11.9
UZET		9.2	10.2	10.2	9.2	10.4	5.4	10.2	7.8	7.3	9.1	0.0	8.4	8.4	10.1	5.9
LZET		12.8	13.0	12.9	12.3	9.6	16.8	8.7	12.3	11.9	17.2		8.0	11.4	17.6	13.7
AGWET		0.3	0.4	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.0		0.3	0.0	0.0	0.1
BASET	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.9	0.6	0.6	0.6
SURET	44.7											33.5				2.9
PERO	9.8	16.9	20.8	20.4	19.5	20.6	14.0	19.5	16.4	16.2	16.3	8.7	26.2	20.4	18.9	14.5
IGWI	1.3	1.0	1.4	1.3	1.3	1.6	1.4	1.2	1.0	0.9	1.1	1.3	1.1	1.1	1.4	1.2
TAET: PERVIOUS	45.3	30.5	31.7	31.4	31.5	26.2	36.4	27.8	32.0	31.6	33.9	45.9	37.8	35.9	35.3	35.1
IMPEV: IMPERVIOUS		10.8	10.5	10.4	10.2											0.1
ET: COMBINED	45.3	29.5	29.6	27.2	20.8	26.2	36.4	27.8	32.0	31.6	33.9	45.9	37.8	35.9	35.3	35.2
PET	45.3	45.1	44.5	44.3	44.0	45.8	45.8	46.3	46.1	45.5	47.1	45.9	44.4	46.9	47.1	45.3

Table T-03130005-20: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	17736	86394	45691	11178	4886	9926	936792	33824	113437	225308	40966	121816	2623	11080	3832	1665491
AREA(%)	1.1	5.1	2.7	0.7	0.3	0.6	55.7	2.0	6.7	13.4	2.4	7.2	0.2	0.7	0.2	99.0
IMPERVIOUS																
AREA(ACRES)		4638	5125	2812	4889											17463
AREA(%)		0.3	0.3	0.2	0.3											1.0
SUPY	47.9	48.1	48.2	48.3	48.5	48.0	48.0	47.8	47.9	47.9	47.6	47.8	62.5	58.2	48.7	47.5
SURLI		0.0	5.8	5.7	5.3										1.2	0.2
UZLI																0.0
LZLI		0.0	0.7	0.5	0.4									0.1	6.7	0.0
SURO: PERVIOUS	2.4	1.9	2.2	2.3	1.5	1.3	0.2	2.3	1.3	1.1	0.7	1.6	3.1	4.1	1.9	0.8
SURO: IMPERVIOUS		36.3	36.5	36.6	36.8											0.4
SURO: COMBINED	2.4	3.7	5.7	9.2	19.2	1.3	0.2	2.3	1.3	1.1	0.7	1.6	3.1	4.1	1.9	1.1
IFWO		8.5	9.7	9.7	10.2	8.7	3.5	9.2	8.1	8.6	6.3		12.7	10.1	7.3	4.9
AGWO	5.3	6.5	9.8	9.8	9.6	10.3	8.1	7.5	6.1	6.1	6.7	5.7	9.3	7.1	10.6	7.3
AGWI	6.7	7.4	10.9	10.9	10.4	11.1	8.8	8.1	6.7	6.7	7.3	7.1	10.6	7.7	11.2	8.1
IGWI	1.2	1.2	1.6	1.6	1.7	1.9	1.5	1.4	1.2	1.1	1.3	1.2	1.4	1.4	2.0	1.4
CEPE		8.6	8.6	8.5	10.5	6.0	14.3	8.8	11.9	12.7	7.2	12.6	18.5	16.3	7.3	12.7
UZET	1.5	8.5	9.4	9.4	8.4	10.0	4.7	9.9	7.4	6.7	9.0	1.0	7.9	8.4	10.2	5.4
LZET	0.2	11.9	12.3	12.2	11.5	9.1	15.0	8.0	11.3	11.0	15.8	0.8	8.3	10.4	16.7	12.4
AGWET	0.8	0.3	0.4	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.9	0.4	0.0	0.0	0.2
BASET	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.8	0.6	0.6	0.6
SURET	36.8											24.2				2.1
PERO	7.7	16.9	21.7	21.8	21.2	20.2	11.8	18.9	15.6	15.7	13.7	7.3	25.1	21.3	19.8	13.0
IGWI	1.2	1.2	1.6	1.6	1.7	1.9	1.5	1.4	1.2	1.1	1.3	1.2	1.4	1.4	2.0	1.4
TAET: PERVIOUS	39.8	30.0	31.4	31.2	31.3	25.8	34.7	27.4	31.2	31.0	32.7	39.9	35.9	35.7	34.8	33.4
IMPEV: IMPERVIOUS		11.8	11.7	11.7	11.7											0.1
ET: COMBINED	39.8	29.1	29.4	27.3	21.5	25.8	34.7	27.4	31.2	31.0	32.7	39.9	35.9	35.7	34.8	33.6
PET	44.4	44.2	43.7	43.5	43.3	44.7	44.8	45.1	44.9	44.5	45.6	44.8	43.7	45.5	45.6	44.2

Table T-03130005-21: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
2	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
3	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
6	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
7	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
8	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
9	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
10	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
11	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
12	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
13	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
14	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
15	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
16	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
17	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
18	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
19	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
20	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
21	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
22	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
23	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
24	0.990	0.999	0.999	0.999	0.999	0.991	0.991	0.991	0.991	0.991	0.991	0.990
25	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
26	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
27	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
28	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
29	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
30	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
31	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
32	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
33	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
34	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
35	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
36	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
37	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
38	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990

39	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
40	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
41	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
42	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
43	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
44	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
45	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
46	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
47	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
48	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990
49	0.990	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.990

Table T-03130005-22: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
2	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
3	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
4	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
5	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
6	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
7	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
8	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
9	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
10	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
11	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
12	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
13	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
14	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
15	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
16	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
17	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
18	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
19	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
20	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
21	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
22	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
23	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
24	0.039	0.039	0.039	0.039	0.039	0.013	0.013	0.013	0.013	0.013	0.013	0.013
25	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
26	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
27	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
28	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
29	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
30	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
31	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
32	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
33	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
34	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
35	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
36	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
37	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
38	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013

39	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
40	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
41	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
42	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
43	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
44	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
45	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
46	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
47	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
48	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
49	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013

Table T-03130005-23: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
2	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
3	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
4	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
5	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
6	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
7	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
8	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
9	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
10	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
11	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
12	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
13	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
14	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
15	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
16	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
17	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
18	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
19	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
20	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
21	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
22	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
23	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
24	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
25	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
26	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
27	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
28	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
29	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
30	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
31	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
32	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
33	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
34	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
35	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
36	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
37	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
38	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114

39	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
40	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
41	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
42	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
43	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
44	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
45	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
46	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
47	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
48	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114
49	0.000	0.050	0.050	0.050	0.081	0.020	0.156	0.050	0.100	0.119	0.030	0.114

Table T-03130005-24: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
2	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
3	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
4	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
5	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
6	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
7	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
8	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
9	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
10	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
11	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
12	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
13	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
14	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
15	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
16	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
17	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
18	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
19	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
20	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
21	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
22	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
23	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
24	0.014	0.014	0.014	0.014	0.014	0.150	0.150	0.150	0.150	0.150	0.150	0.150
25	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
26	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
27	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
28	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
29	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
30	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
31	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
32	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
33	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
34	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
35	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
36	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
37	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
38	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150

39	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
40	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
41	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
42	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
43	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
44	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
45	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
46	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
47	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
48	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
49	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150

Table T-03130005-25: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
2	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
3	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
4	0.001	0.040	0.040	0.040	0.040	0.060	0.100	0.040	0.040	0.040	0.048	0.001
5	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
6	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
7	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
8	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
9	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
10	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
11	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
12	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
13	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
14	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
15	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
16	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
17	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
18	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
19	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
20	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
21	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
22	0.001	0.040	0.040	0.040	0.040	0.060	0.100	0.040	0.040	0.040	0.048	0.001
23	0.001	0.040	0.040	0.040	0.040	0.060	0.100	0.040	0.040	0.040	0.048	0.001
24	0.001	0.040	0.040	0.040	0.040	0.074	0.123	0.049	0.049	0.049	0.059	0.007
25	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
26	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
27	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
28	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
29	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
30	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
31	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
32	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
33	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
34	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
35	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
36	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
37	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
38	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007

39	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
40	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
41	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
42	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
43	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
44	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
45	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
46	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
47	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
48	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007
49	0.007	0.049	0.049	0.049	0.049	0.074	0.123	0.049	0.049	0.049	0.059	0.007

Table T-03130005-26: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
2		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
3		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
4		2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	
5		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
6		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
7		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
8		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
9		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
10		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
11		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
12		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
13		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
14		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
15		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
16		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
17		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
18		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
19		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
20		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
21		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
22		2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	
23		2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	2.704	
24		2.704	2.704	2.704	2.704	2.972	2.972	2.972	2.972	2.972	2.972	
25		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
26		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
27		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
28		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
29		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	

30		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
31		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
32		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
33		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
34		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
35		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
36		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
37		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
38		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
39		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
40		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
41		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
42		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
43		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
44		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
45		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
46		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
47		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
48		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	
49		2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	2.972	

Table T-03130005-27: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
2	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
3	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
4	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
5	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
6	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
7	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
8	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
9	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
10	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
11	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
12	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
13	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
14	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
15	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
16	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
17	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
18	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
19	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
20	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
21	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
22	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
23	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629	0.629
24	0.629	0.629	0.629	0.629	0.629	0.627	0.627	0.627	0.627	0.627	0.627	0.627
25	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
26	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
27	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
28	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
29	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
30	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
31	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
32	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
33	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
34	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
35	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
36	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
37	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
38	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627

39	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
40	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
41	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
42	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
43	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
44	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
45	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
46	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
47	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
48	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
49	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627

Table T-03130005-28: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
2	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
3	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
4	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868
5	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
6	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
7	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
8	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
9	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
10	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
11	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
12	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
13	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
14	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
15	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
16	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
17	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
18	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
19	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
20	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
21	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
22	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868
23	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868	1.868
24	1.868	1.868	1.868	1.868	1.868	1.756	1.756	1.756	1.756	1.756	1.756	1.756
25	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
26	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
27	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
28	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
29	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
30	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
31	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
32	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
33	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
34	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
35	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
36	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
37	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
38	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756

39	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
40	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
41	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
42	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
43	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
44	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
45	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
46	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
47	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
48	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756
49	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756	1.756

Table T-03130005-29: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
3	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
4	0.104	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.919
5	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
6	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
7	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
9	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
10	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
11	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
12	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
13	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
14	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
15	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
16	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
17	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
18	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
19	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
20	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
21	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
22	0.104	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.919
23	0.104	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.919
24	0.104	0.459	0.459	0.459	0.459	0.282	0.600	0.282	0.424	0.424	0.494	0.900
25	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
26	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
27	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
28	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
29	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
30	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
31	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
32	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
33	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
34	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
35	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
36	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
37	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
38	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

39	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
40	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
41	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
42	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
43	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
44	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
45	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
46	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
47	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
48	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
49	0.026	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03130005-30: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
2	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
3	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
4	0.164	3.955	3.955	3.955	3.955	4.449	5.932	4.449	4.449	4.449	4.944	0.100
5	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
6	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
7	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
8	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
9	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
10	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
11	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
12	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
13	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
14	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
15	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
16	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
17	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
18	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
19	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
20	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
21	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
22	0.164	3.955	3.955	3.955	3.955	4.449	5.932	4.449	4.449	4.449	4.944	0.100
23	0.164	3.955	3.955	3.955	3.955	4.449	5.932	4.449	4.449	4.449	4.944	0.100
24	0.164	3.955	3.955	3.955	3.955	7.500	10.000	7.500	7.500	7.500	8.333	0.104
25	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
26	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
27	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
28	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
29	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
30	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
31	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
32	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
33	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
34	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
35	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
36	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
37	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
38	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104

39	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
40	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
41	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
42	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
43	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
44	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
45	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
46	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
47	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
48	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104
49	0.117	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.333	0.104

Table T-03130005-31: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
2	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
3	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
4	0.050	0.361	0.361	0.361	0.361	0.361	0.516	0.413	0.413	0.361	0.516	0.053
5	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
6	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
7	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
8	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
9	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
10	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
11	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
12	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
13	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
14	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
15	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
16	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
17	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
18	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
19	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
20	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
21	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
22	0.050	0.361	0.361	0.361	0.361	0.361	0.516	0.413	0.413	0.361	0.516	0.053
23	0.050	0.361	0.361	0.361	0.361	0.361	0.516	0.413	0.413	0.361	0.516	0.053
24	0.050	0.361	0.361	0.361	0.361	0.280	0.400	0.320	0.320	0.280	0.400	0.060
25	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
26	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
27	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
28	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
29	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
30	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
31	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
32	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
33	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
34	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
35	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
36	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
37	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
38	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060

39	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
40	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
41	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
42	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
43	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
44	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
45	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
46	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
47	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
48	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060
49	0.050	0.280	0.280	0.280	0.280	0.280	0.400	0.320	0.320	0.280	0.400	0.060

APPENDIX T-03130006

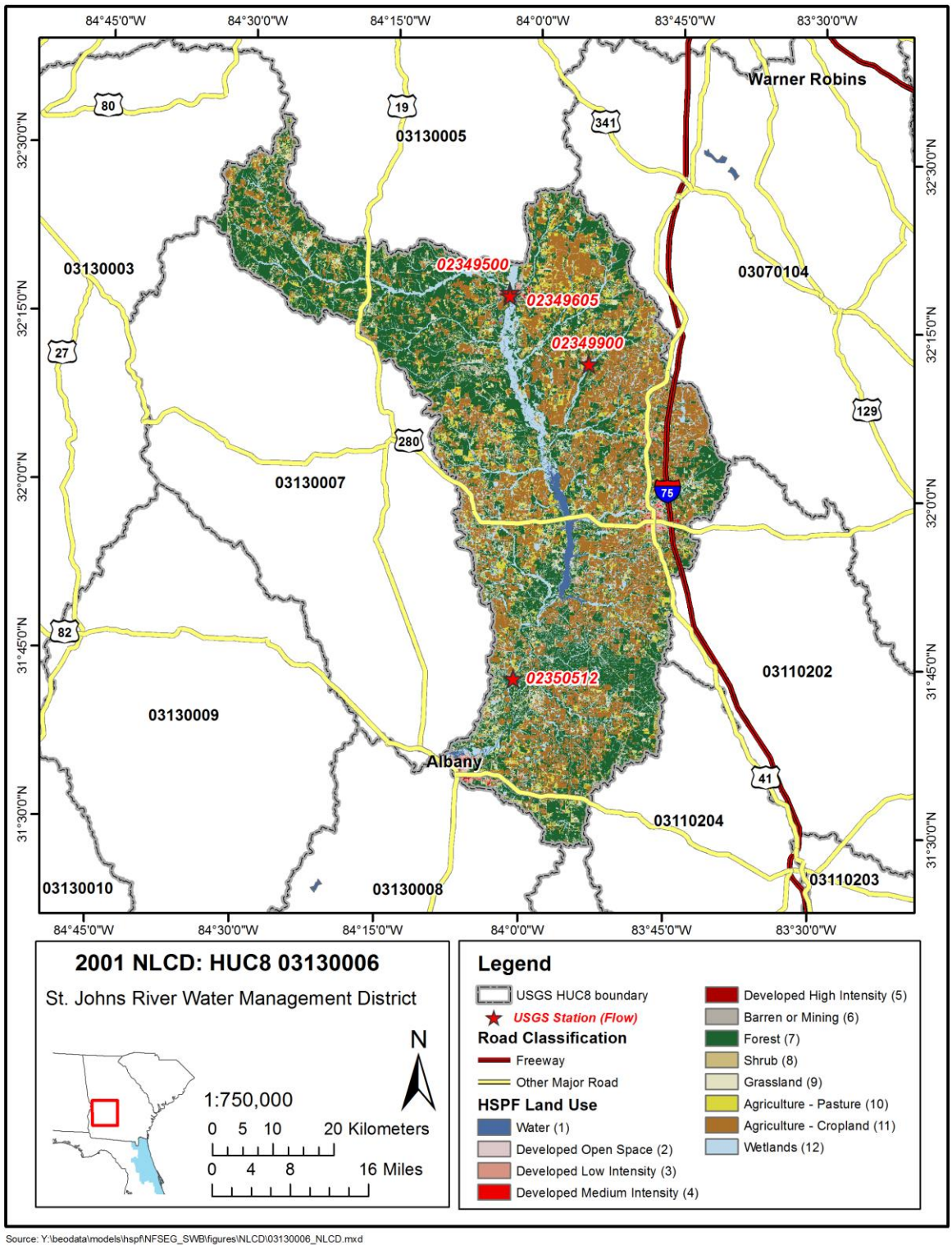


Figure T-03130006-1: Land Cover from the National Land Cover Database.

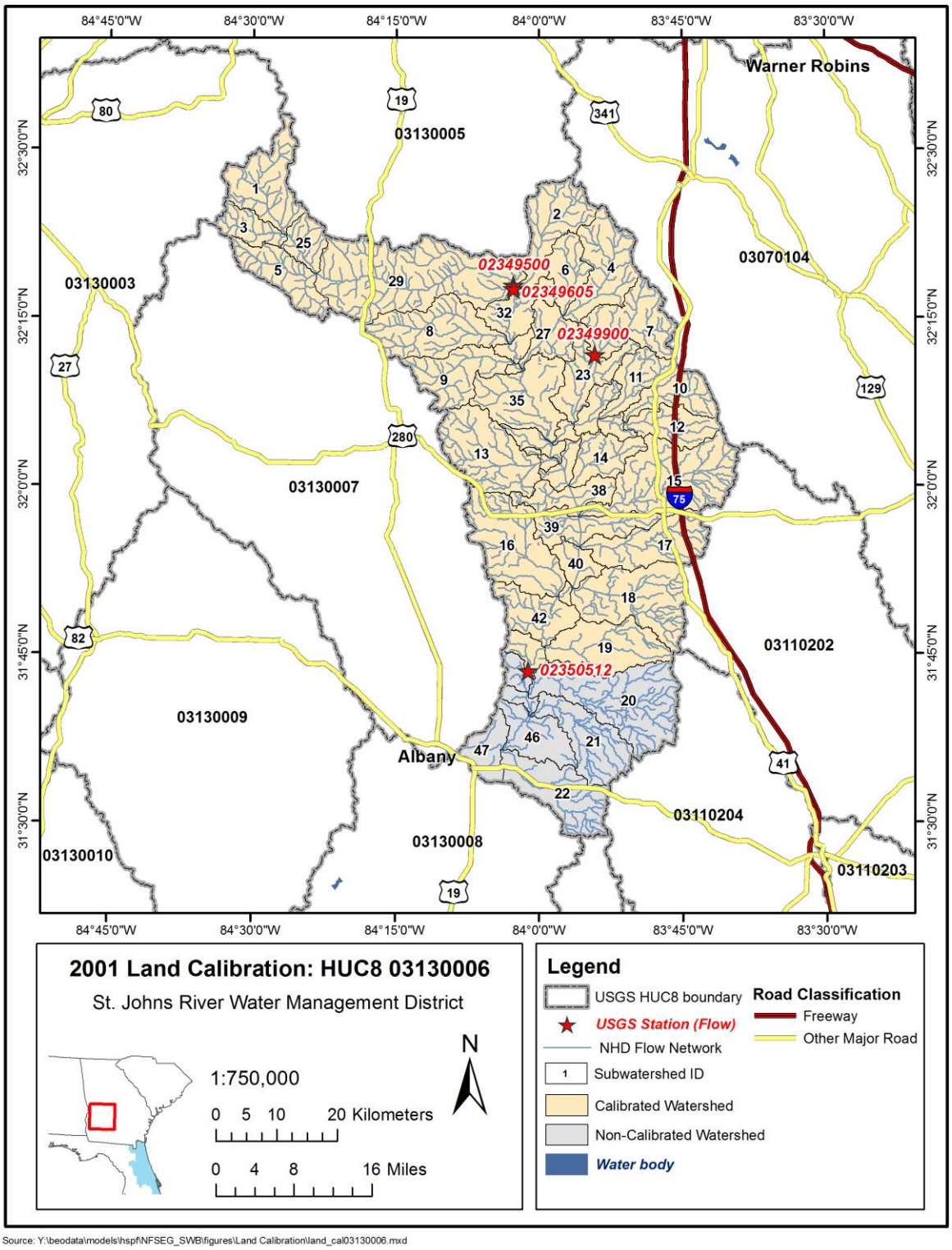


Figure T-03130006-2: Calibrated sub-watersheds.

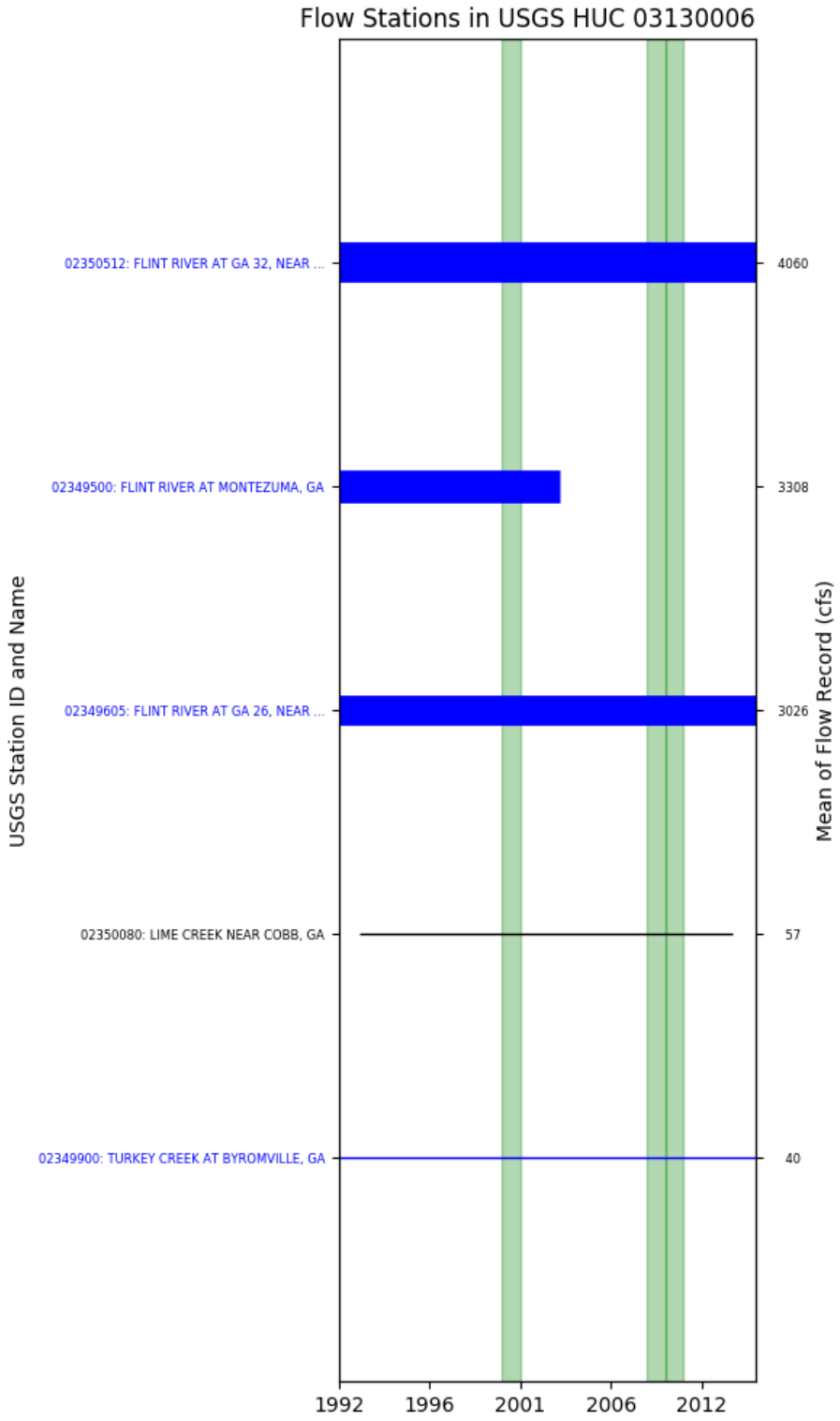


Figure T-03130006-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 07, USGS GAUGE 02349900

Water-Data Report 2009
02349900 TURKEY CREEK AT BYROMVILLE, GA
Apalachicola Basin Middle Flint Subbasin

LOCATION.--Lat 321144, long 835408 referenced to North American Datum of 1983, Dooly County, GA, Hydrologic Unit 03130006, on downstream side of bridge pier on GA 90, 0.5 miles southwest of Byromville, 1.1 miles downstream from Rogers Branch, and 11.0 miles upstream from mouth.

DRAINAGE AREA.--45.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--
DISCHARGE:Water years 1951-58 (annual maximum), June 1958 to current year.
GAGE-HEIGHT:October 1998 to current year.

REVISED RECORDS.--WDR GA-90-1: 1967, 1969, WDR GA-92-1: 1968.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 286 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map). Prior to June 19, 1958, a crest-stage gage was located at a site 50 feet upstream at same datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03130006-1: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02349900.

Statistic	Value
Bias	2.21
Standard error	24.39
Relative bias	0.05
Relative standard error	0.47
Nash-Sutcliffe coefficient	0.78
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.60
Index of agreement	0.79

Table T-03130006-2: Hydrologic Indices Between USGS Gauge 02349900 and HSPF Reach 07.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02349900	Simulated Reach 07	Percent Difference

MA1: Mean, all daily flows	40.59	42.70	5.19
MA2: Median, all daily flows	13.00	16.49	26.84
MA3: CV, all daily flows	199.38	194.20	-2.60
MA4: CV, log of all daily flows	127.85	121.28	-5.14
MA5: Mean daily flow / median daily flow	3.12	2.59	-17.07
MA9: (Q10 - Q90) / median daily flow	6.65	5.45	-17.98
MA10: (Q20 - Q80) / median daily flow	3.42	2.93	-14.47
MA11: (Q25 - Q75) / median daily flow	2.59	2.00	-22.90
MA12: Mean monthly flow, January	57.11	60.37	5.71
MA13: Mean monthly flow, February	81.34	79.69	-2.03
MA14: Mean monthly flow, March	90.78	83.21	-8.35
MA15: Mean monthly flow, April	51.21	52.63	2.77
MA16: Mean monthly flow, May	25.47	30.86	21.16
MA17: Mean monthly flow, June	20.98	22.46	7.07
MA18: Mean monthly flow, July	30.11	24.46	-18.77
MA19: Mean monthly flow, August	15.14	21.52	42.10
MA20: Mean monthly flow, September	19.70	29.03	47.37
MA21: Mean monthly flow, October	13.99	18.35	31.17
MA22: Mean monthly flow, November	22.39	24.27	8.39
MA23: Mean monthly flow, December	44.50	51.39	15.50
ML1: Mean minimum monthly flow, January	22.09	20.54	-7.03
ML2: Mean minimum monthly flow, February	28.99	23.91	-17.52
ML3: Mean minimum monthly flow, March	28.82	25.00	-13.24
ML4: Mean minimum monthly flow, April	16.68	18.97	13.76
ML5: Mean minimum monthly flow, May	8.45	9.90	17.25
ML6: Mean minimum monthly flow, June	6.57	8.22	25.12
ML7: Mean minimum monthly flow, July	6.16	7.97	29.43
ML8: Mean minimum monthly flow, August	5.43	8.19	51.00
ML9: Mean minimum monthly flow, September	4.50	6.37	41.47
ML10: Mean minimum monthly flow, October	5.69	5.91	3.77
ML11: Mean minimum monthly flow, November	8.45	7.57	-10.40
ML12: Mean minimum monthly flow, December	15.09	11.84	-21.52
ML13: CV of minimum monthly flows	111.95	109.01	-2.62
ML14: Mean minimum daily flow / mean median annual flow	0.26	0.22	-13.88
ML15: Mean minimum annual flow / mean annual flow	0.11	0.09	-16.66
ML16: Median minimum annual flow / median annual flow	0.26	0.19	-25.72
ML20: Ratio of baseflow volume to total flow volume	0.41	0.37	-10.56
ML22: Mean annual minimum flow divided by catchment area	0.03	0.04	12.91
RA1: Mean of positive changes from one day to next (rise rate)	35.33	42.67	
RA2: CV, mean of positive changes from one day to next (rise rate)	341.16	348.90	
RA3: Mean of negative changes from one day to next (fall rate)	14.58	12.27	
RA4: CV, mean of negative changes from one day to next (fall rate)	473.74	477.66	
RA5: Ratio of days that are higher than previous day	0.26	0.22	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.17	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.08	
RA8: Number of flow reversals from one day to the next	91.38	81.12	

RA9: CV, number of flow reversals from one day to the next	19.21	22.26	

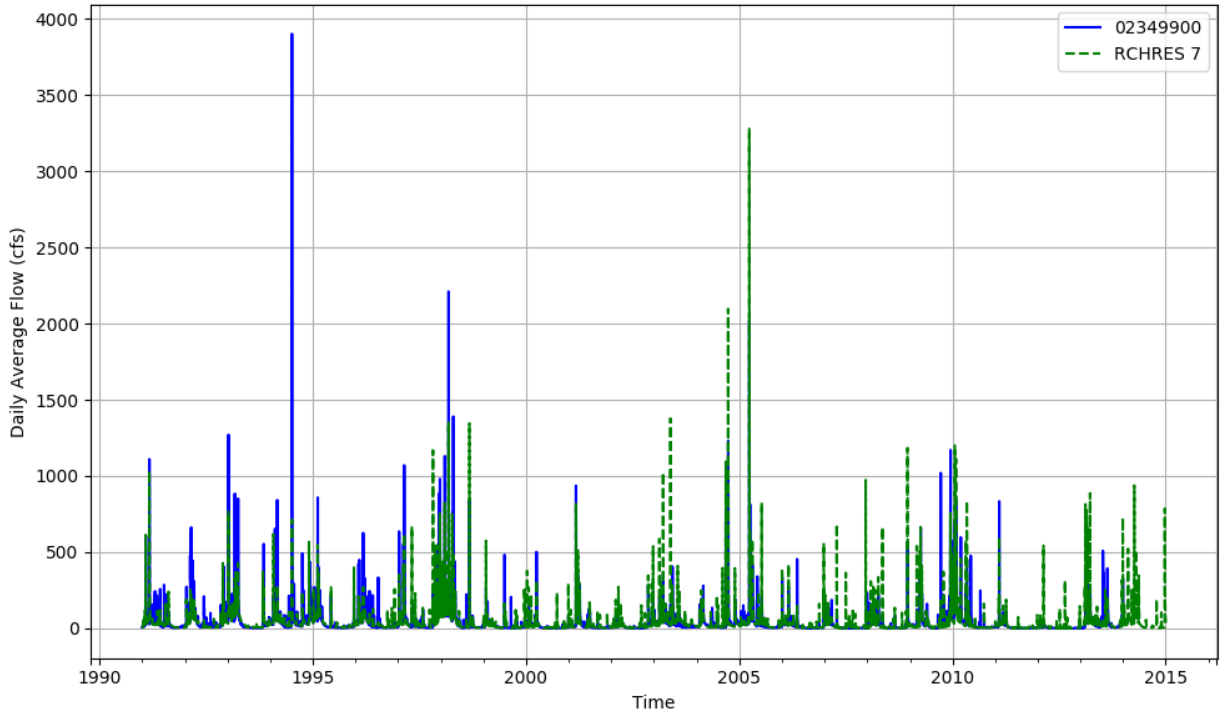


Figure T-03130006-4: Daily flow for HSFP reach 07 and USGS station 02349900.

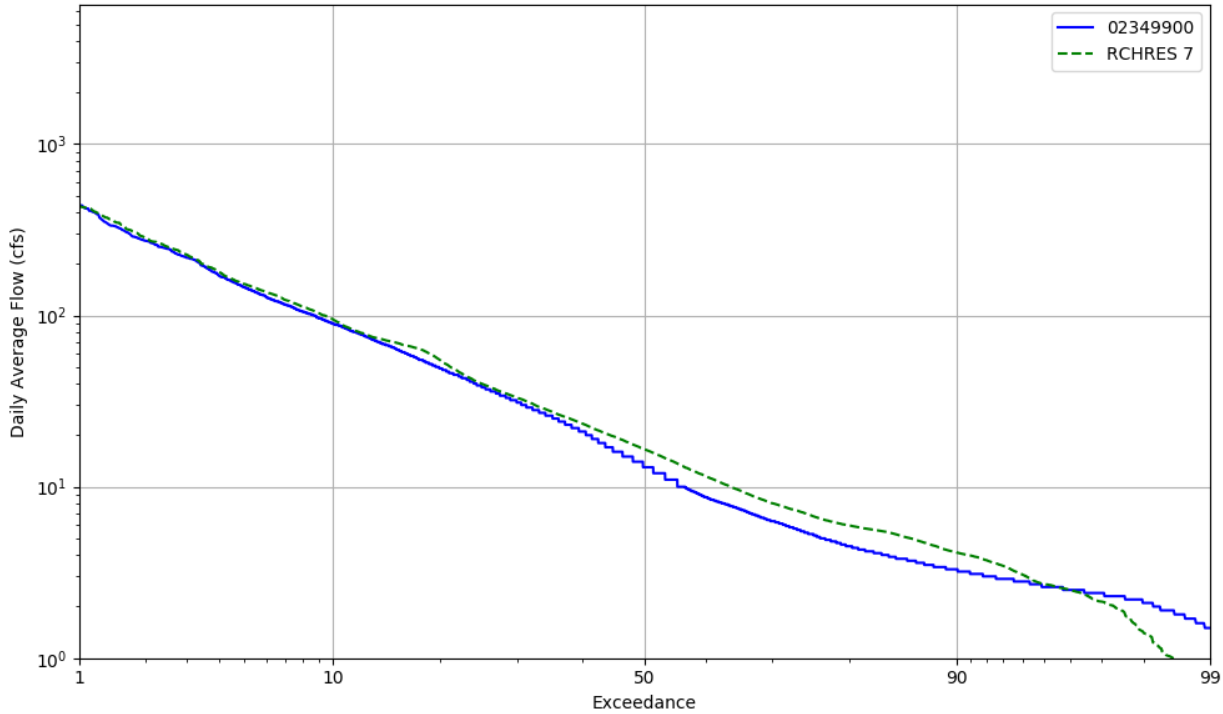


Figure T-03130006-5: Daily exceedance for HSFP reach 07 and USGS station 02349900.

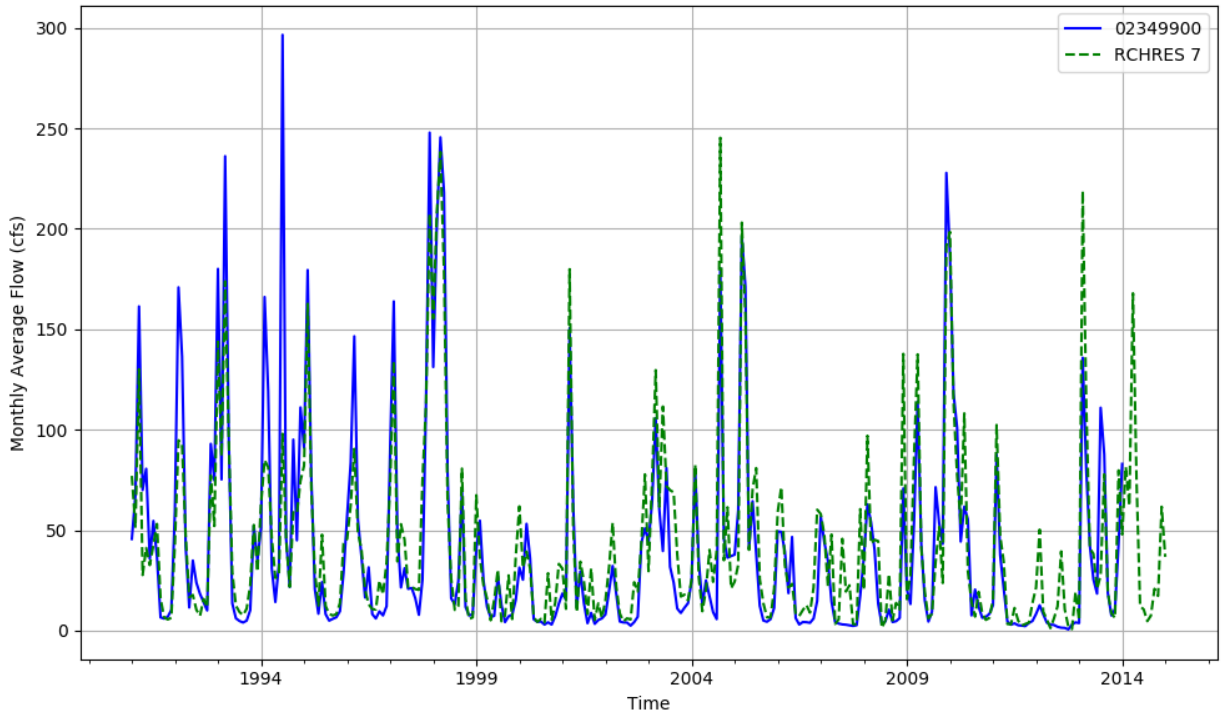


Figure T-03130006-6: Monthly flow for HSFP reach 07 and USGS station 02349900.

HSPF REACH 29, USGS GAUGE 02349500

Water-Data Report 2009
02349900 TURKEY CREEK AT BYROMVILLE, GA
Apalachicola Basin Middle Flint Subbasin

LOCATION.--Lat 321144, long 835408 referenced to North American Datum of 1983, Dooly County, GA, Hydrologic Unit 03130006, on downstream side of bridge pier on GA 90, 0.5 miles southwest of Byromville, 1.1 miles downstream from Rogers Branch, and 11.0 miles upstream from mouth.

DRAINAGE AREA.--45.0 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--
DISCHARGE:Water years 1951-58 (annual maximum), June 1958 to current year.
GAGE-HEIGHT:October 1998 to current year.

REVISED RECORDS.--WDR GA-90-1: 1967, 1969, WDR GA-92-1: 1968.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 286 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map). Prior to June 19, 1958, a crest-stage gage was located at a site 50 feet upstream at same datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good.

Table T-03130006-3: Comparison Statistics Between HSPF Reach 29 and USGS Gauge 02349500.

Statistic	Value
Bias	-565.45
Standard error	1781.95
Relative bias	-0.17
Relative standard error	0.60
Nash-Sutcliffe coefficient	0.64
Kling-Gupta coefficient	0.76
Coefficient of efficiency	0.58
Index of agreement	0.81

Table T-03130006-4: Hydrologic Indices Between USGS Gauge 02349500 and HSPF Reach 29.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02349500	Simulated Reach 29	Percent Difference

MA1: Mean, all daily flows	3297.29	2729.16	-17.23
MA2: Median, all daily flows	2090.00	1630.17	-22.00
MA3: CV, all daily flows	108.27	119.39	10.27
MA4: CV, log of all daily flows	76.77	94.21	22.71
MA5: Mean daily flow / median daily flow	1.58	1.67	6.12
MA9: (Q10 - Q90) / median daily flow	2.74	3.53	28.97
MA10: (Q20 - Q80) / median daily flow	1.51	2.36	56.20
MA11: (Q25 - Q75) / median daily flow	1.17	1.91	63.00
MA12: Mean monthly flow, January	3679.79	3335.04	-9.37
MA13: Mean monthly flow, February	5577.02	5377.14	-3.58
MA14: Mean monthly flow, March	6303.78	6453.55	2.38
MA15: Mean monthly flow, April	3808.07	3578.26	-6.03
MA16: Mean monthly flow, May	2686.75	2383.61	-11.28
MA17: Mean monthly flow, June	2008.14	1505.85	-25.01
MA18: Mean monthly flow, July	3296.34	1451.19	-55.98
MA19: Mean monthly flow, August	1598.77	1011.05	-36.76
MA20: Mean monthly flow, September	1267.85	716.66	-43.47
MA21: Mean monthly flow, October	1626.33	895.98	-44.91
MA22: Mean monthly flow, November	2387.82	1610.09	-32.57
MA23: Mean monthly flow, December	3072.83	2613.53	-14.95
ML1: Mean minimum monthly flow, January	2150.71	1917.38	-10.85
ML2: Mean minimum monthly flow, February	2634.29	2818.07	6.98
ML3: Mean minimum monthly flow, March	2950.77	3161.83	7.15
ML4: Mean minimum monthly flow, April	2280.77	2318.22	1.64
ML5: Mean minimum monthly flow, May	1539.69	1451.04	-5.76
ML6: Mean minimum monthly flow, June	1335.15	1081.73	-18.98
ML7: Mean minimum monthly flow, July	1292.08	893.13	-30.88
ML8: Mean minimum monthly flow, August	1047.38	690.50	-34.07
ML9: Mean minimum monthly flow, September	953.23	485.20	-49.10
ML10: Mean minimum monthly flow, October	1031.31	496.73	-51.83
ML11: Mean minimum monthly flow, November	1306.92	767.21	-41.30
ML12: Mean minimum monthly flow, December	1904.31	1625.94	-14.62
ML13: CV of minimum monthly flows	55.60	94.34	69.67
ML14: Mean minimum daily flow / mean median annual flow	0.36	0.09	-73.54
ML15: Mean minimum annual flow / mean annual flow	0.26	0.06	-74.87
ML16: Median minimum annual flow / median annual flow	0.32	0.06	-81.84
ML20: Ratio of baseflow volume to total flow volume	0.60	0.69	14.80
ML22: Mean annual minimum flow divided by catchment area	7.74	1.80	-76.78
RA1: Mean of positive changes from one day to next (rise rate)	660.16	982.10	
RA2: CV, mean of positive changes from one day to next (rise rate)	383.37	468.03	
RA3: Mean of negative changes from one day to next (fall rate)	404.13	412.48	
RA4: CV, mean of negative changes from one day to next (fall rate)	302.17	611.88	
RA5: Ratio of days that are higher than previous day	0.37	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.04	
RA8: Number of flow reversals from one day to the next	72.79	52.93	

RA9: CV, number of flow reversals from one day to the next	19.54	22.82	

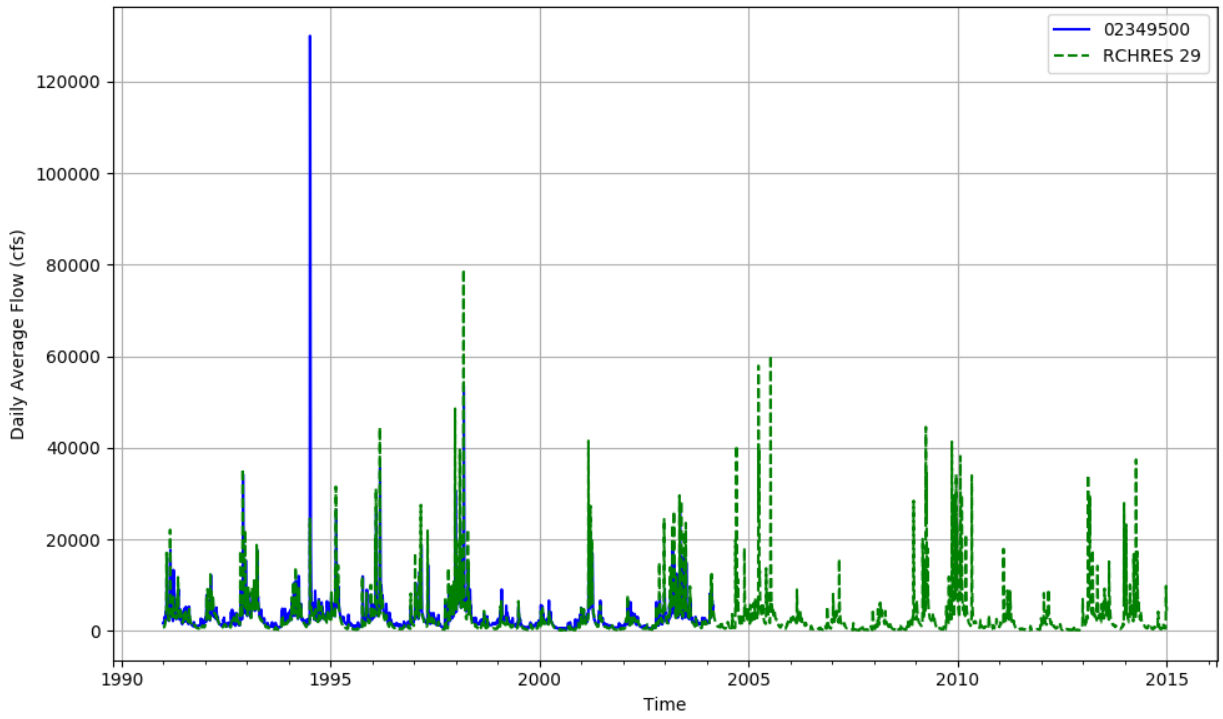


Figure T-03130006-7: Daily flow for HSFP reach 29 and USGS station 02349500.

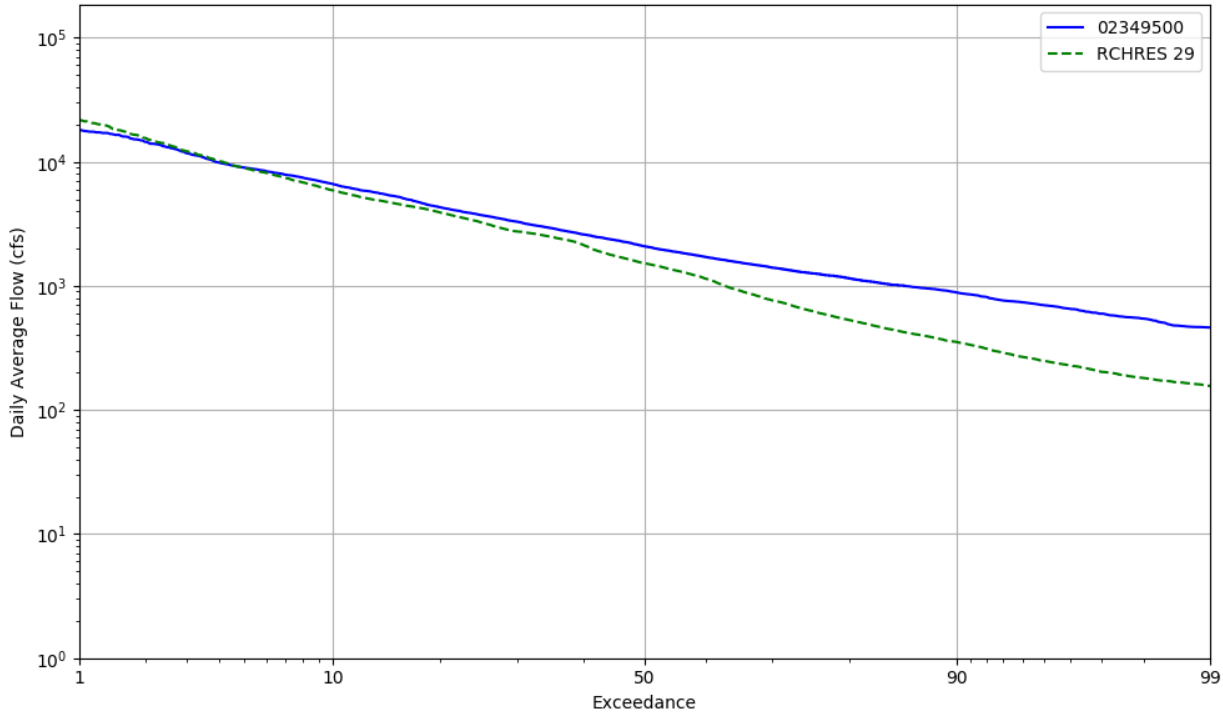


Figure T-03130006-8: Daily exceedance for HSFP reach 29 and USGS station 02349500.

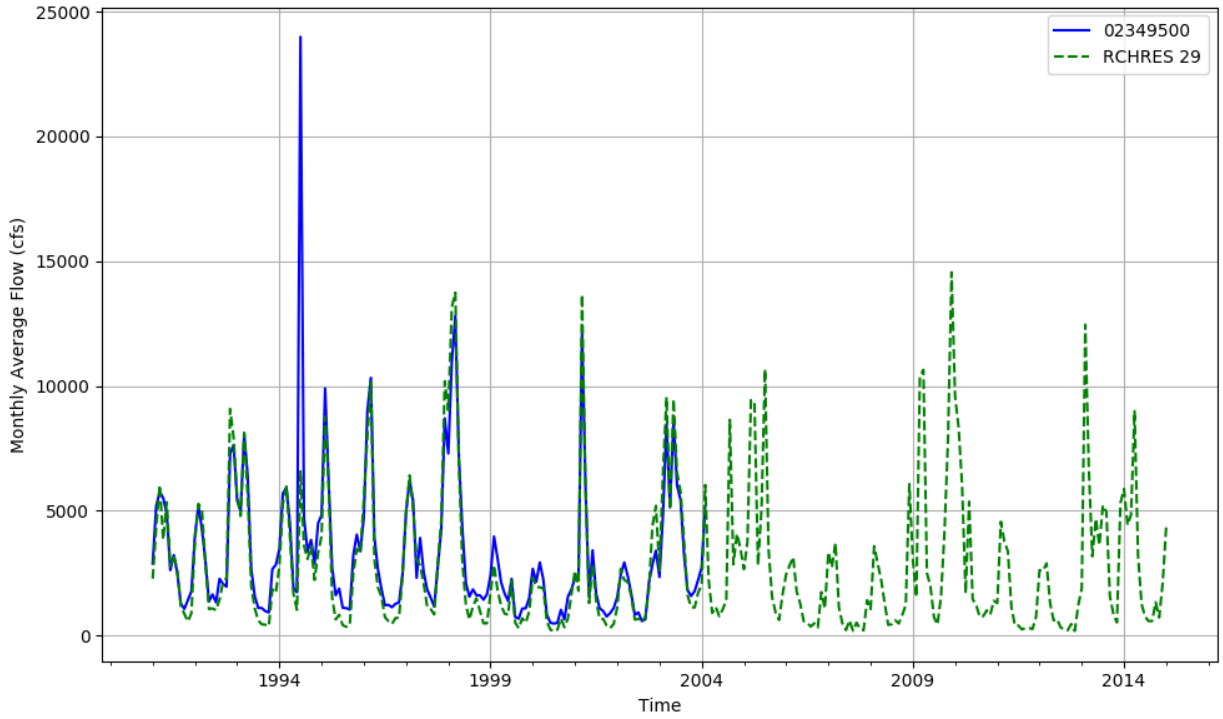


Figure T-03130006-9: Monthly flow for HSFP reach 29 and USGS station 02349500.

HSPF REACH 31, USGS GAUGE 02349605

Water-Data Report 2009
02349605 FLINT RIVER AT GA 26, NEAR MONTEZUMA, GA
Apalachicola Basin Middle Flint Subbasin

LOCATION.--Lat 321735, long 840237 referenced to North American Datum of 1983, Macon County, GA, Hydrologic Unit 03130006, near left bank on downstream end of pier of bridge on GA 26, 1,250 feet downstream from Central of Georgia Railway bridge, 850 feet downstream from Seaboard Coast Line Railroad (formerly Atlanta, Birmingham and Coast) bridge, 1.08 mi upstream from confluence with Spring Creek, 950 feet downstream from confluence with Beaver Creek, 0.3 mi downstream from confluence with Buck Creek, 1.0 mile southwest of Montezuma, and at mile 180.3.

DRAINAGE AREA.--2,920 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--
DISCHARGE:October 1904 to December 1912 (published as "near Montezuma"), July 1930 to September 2002 (published as station 02349500 Flint River at Montezuma, GA). October 1, 2002 to current year. Monthly discharge only for January to December 1910, published in WSP 1304.
GAGE-HEIGHT:October 1998 to September 2002 (published as station 02349500 Flint River at Montezuma, GA). October 2002 to current year.

REVISED RECORDS.--WSP 822: Drainage area. WSP 852: 1936(M). WSP 1504: 1905-9, 1911-12, drainage area (at site used prior 1912). WDR GA-82-1: 1981(P).

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 255.83 feet above National Geodetic Vertical Datum (NGVD) of 1929. From January 1905 to December 1909, and from January 1911 to December 1912, a non-recording gage was located at a site 1.5 miles upstream at same datum. From July 1, 1930 to June 30, 1933, and from October 1, 1934 to December 12, 1941, a non-recording gage was located at the site. From December 13, 1941 to October 25, 1955, a water-stage recorder was located at a site 500 feet downstream at same datum. From October 25, 1955 to September 30, 2002, a water stage recorder was located 2,250 feet upstream of current location at the same datum.

COOPERATION.-STREAMGAGE: U.S. Army Corps of Engineers, Mobile District; Crisp County Power Commission.

WATER-QUALITY: Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good. Prior to December 31, 1963, when operation was discontinued, moderate diurnal fluctuation at low flow caused by power plant above station.

Table T-03130006-5: Comparison Statistics Between HSPF Reach 31 and USGS Gauge 02349605.

Statistic	Value
Bias	-435.42
Standard error	1526.57
Relative bias	-0.14
Relative standard error	0.55
Nash-Sutcliffe coefficient	0.70
Kling-Gupta coefficient	0.80
Coefficient of efficiency	0.58
Index of agreement	0.81

Table T-03130006-6: Hydrologic Indices Between USGS Gauge 02349605 and HSPF Reach 31.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02349605	Simulated Reach 31	Percent Difference
MA1: Mean, all daily flows	3030.63	2611.64	-13.82
MA2: Median, all daily flows	1930.00	1493.86	-22.60
MA3: CV, all daily flows	105.82	129.97	22.82
MA4: CV, log of all daily flows	81.28	97.59	20.06
MA5: Mean daily flow / median daily flow	1.57	1.75	11.33
MA9: (Q10 - Q90) / median daily flow	2.85	3.60	26.67
MA10: (Q20 - Q80) / median daily flow	1.57	2.48	57.65
MA11: (Q25 - Q75) / median daily flow	1.21	1.99	63.70
MA12: Mean monthly flow, January	3827.51	3383.60	-11.60
MA13: Mean monthly flow, February	4931.64	4970.12	0.78
MA14: Mean monthly flow, March	5641.90	6019.46	6.69
MA15: Mean monthly flow, April	3846.52	3663.78	-4.75
MA16: Mean monthly flow, May	2480.40	2266.49	-8.62
MA17: Mean monthly flow, June	1882.24	1436.63	-23.67
MA18: Mean monthly flow, July	2879.89	1509.88	-47.57
MA19: Mean monthly flow, August	1586.16	1043.90	-34.19
MA20: Mean monthly flow, September	1411.65	870.93	-38.30
MA21: Mean monthly flow, October	1524.73	880.71	-42.24
MA22: Mean monthly flow, November	2219.34	1519.96	-31.51
MA23: Mean monthly flow, December	3193.34	2834.43	-11.24
ML1: Mean minimum monthly flow, January	2455.00	1985.45	-19.13
ML2: Mean minimum monthly flow, February	2509.57	2586.00	3.05
ML3: Mean minimum monthly flow, March	2717.83	2965.91	9.13
ML4: Mean minimum monthly flow, April	2081.26	2191.35	5.29
ML5: Mean minimum monthly flow, May	1412.74	1353.11	-4.22
ML6: Mean minimum monthly flow, June	1173.96	943.16	-19.66
ML7: Mean minimum monthly flow, July	1179.09	791.85	-32.84
ML8: Mean minimum monthly flow, August	1032.13	681.44	-33.98
ML9: Mean minimum monthly flow, September	878.26	406.53	-53.71
ML10: Mean minimum monthly flow, October	959.74	467.34	-51.31
ML11: Mean minimum monthly flow, November	1186.13	708.91	-40.23
ML12: Mean minimum monthly flow, December	1702.04	1405.91	-17.40
ML13: CV of minimum monthly flows	68.37	99.12	44.98

ML14: Mean minimum daily flow / mean median annual flow	0.37	0.09	-74.74
ML15: Mean minimum annual flow / mean annual flow	0.25	0.06	-77.53
ML16: Median minimum annual flow / median annual flow	0.35	0.06	-82.92
ML20: Ratio of baseflow volume to total flow volume	0.61	0.67	10.71
ML22: Mean annual minimum flow divided by catchment area	7.00	1.60	-77.16
RA1: Mean of positive changes from one day to next (rise rate)	590.78	1081.98	
RA2: CV, mean of positive changes from one day to next (rise rate)	347.61	460.17	
RA3: Mean of negative changes from one day to next (fall rate)	353.55	421.41	
RA4: CV, mean of negative changes from one day to next (fall rate)	287.50	620.91	
RA5: Ratio of days that are higher than previous day	0.37	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.05	
RA8: Number of flow reversals from one day to the next	72.29	57.00	
RA9: CV, number of flow reversals from one day to the next	18.61	21.20	

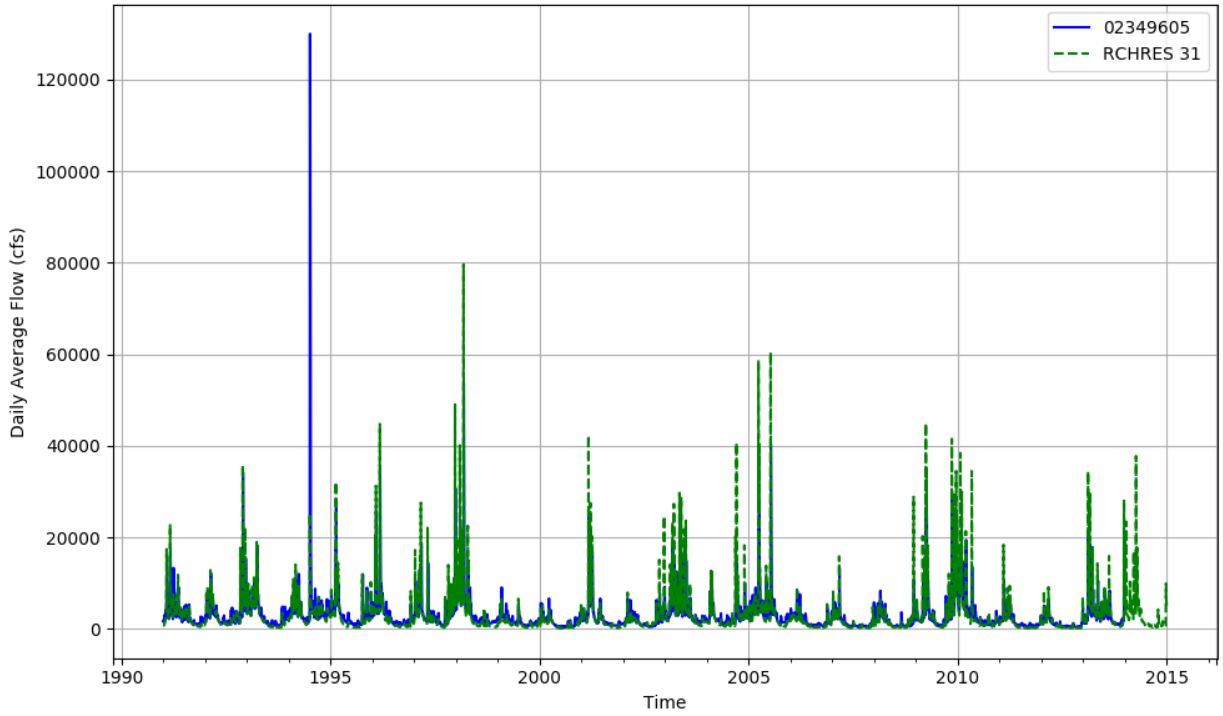


Figure T-03130006-10: Daily flow for HSFP reach 31 and USGS station 02349605.

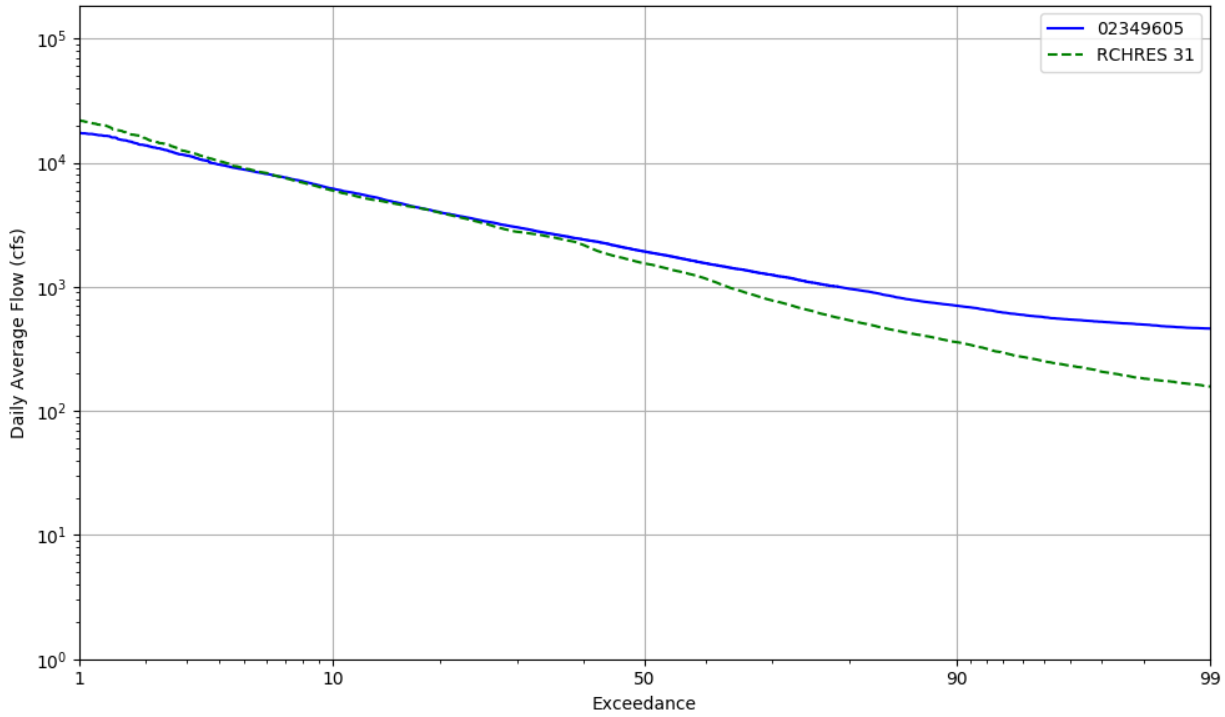


Figure T-03130006-11: Daily exceedance for HSFP reach 31 and USGS station 02349605.

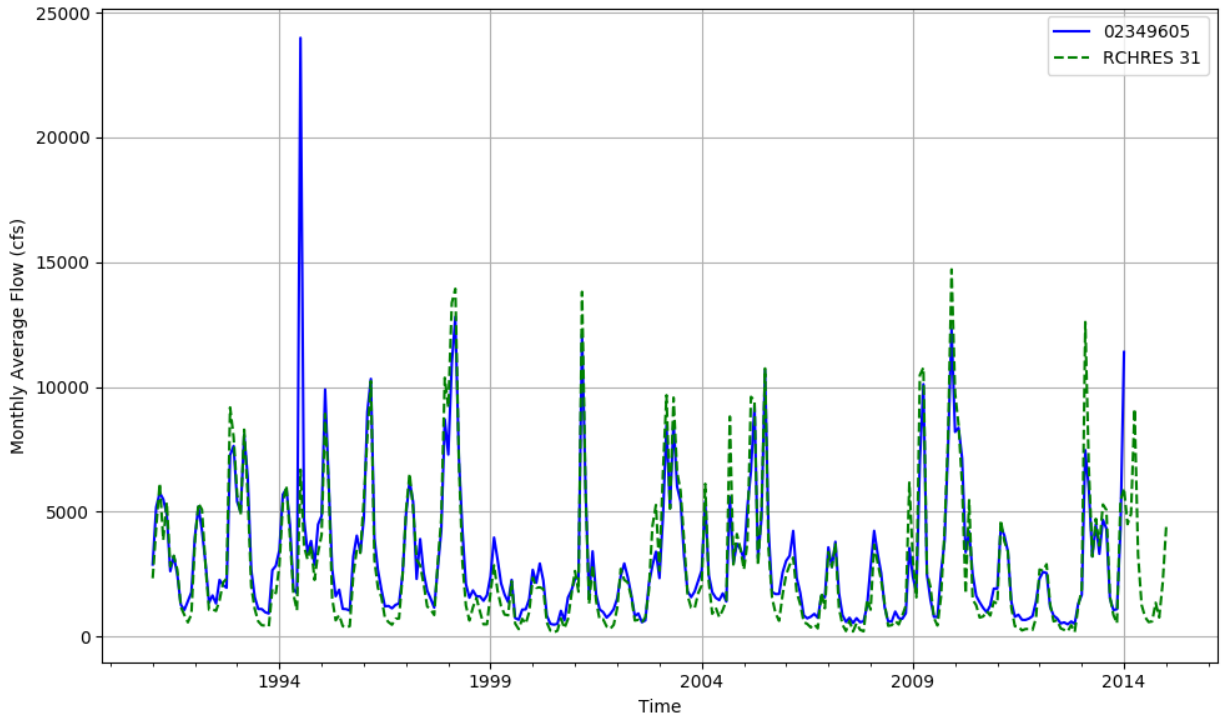


Figure T-03130006-12: Monthly flow for HSFP reach 31 and USGS station 02349605.

HSPF REACH 43, USGS GAUGE 02350512

Water-Data Report 2009
02350512 FLINT RIVER AT GA 32, NEAR OAKFIELD, GA
Apalachicola Basin Middle Flint Subbasin

LOCATION.--Lat 314330, long 840107 referenced to North American Datum of 1983, Worth County, GA, Hydrologic Unit 03130006, on downstream end of pier of bridge on GA 32, 5.0 miles southwest of Oakfield, 3.2 miles downstream from Jones Creek, 13.9 miles downstream from Crisp County dam site, and at river mile 120.8.

DRAINAGE AREA.--3,880 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1929 to December 1958, May 1987 to current year. Monthly discharge only, October 1929 to January 1930 and June 1933 to October 1934 (published in WSP 1304). Prior to May 1987, published as station 02350500 Flint River at Oakfield, GA.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 185.87 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). From January 9, 1930 to June 23, 1933, and from October 1, 1934 to December 31, 1958, a recording gage was located at a site 4.2 miles upstream at datum 193.29 feet above sea level, supplementary adjustment of 1936.

COOPERATION.--Georgia Power Corporation; Crisp County Power Commission.

REMARKS.--Discharge records good, except for days of estimated discharge, which are fair. Gage-height records are good. Flow regulated by power plant at Warwick Reservoir since 1930 that has a capacity of approximately 35,000 acre-ft. Normal operation of power plant does not materially affect figures of monthly runoff.

Table T-03130006-7: Comparison Statistics Between HSPF Reach 43 and USGS Gauge 02350512.

Statistic	Value
Bias	-564.67
Standard error	1793.78
Relative bias	-0.14
Relative standard error	0.48
Nash-Sutcliffe coefficient	0.77
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.65
Index of agreement	0.83

Table T-03130006-8: Hydrologic Indices Between USGS Gauge 02350512 and HSPF Reach 43.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02350512	Simulated Reach 43	Percent Difference
MA1: Mean, all daily flows	4062.86	3516.97	-13.44
MA2: Median, all daily flows	2625.00	2027.89	-22.75
MA3: CV, all daily flows	98.94	127.94	29.32
MA4: CV, log of all daily flows	84.82	96.16	13.37
MA5: Mean daily flow / median daily flow	1.55	1.73	12.05
MA9: (Q10 - Q90) / median daily flow	2.95	3.54	20.09
MA10: (Q20 - Q80) / median daily flow	1.77	2.28	29.06
MA11: (Q25 - Q75) / median daily flow	1.38	1.83	32.59
MA12: Mean monthly flow, January	5316.53	4590.02	-13.67
MA13: Mean monthly flow, February	6762.36	6550.60	-3.13
MA14: Mean monthly flow, March	7705.67	7736.50	0.40
MA15: Mean monthly flow, April	5386.34	4910.42	-8.84
MA16: Mean monthly flow, May	3214.15	2993.59	-6.86
MA17: Mean monthly flow, June	2506.77	1960.65	-21.79
MA18: Mean monthly flow, July	3635.32	2085.34	-42.64
MA19: Mean monthly flow, August	2054.93	1528.42	-25.62
MA20: Mean monthly flow, September	1837.72	1485.03	-19.19
MA21: Mean monthly flow, October	1969.05	1250.22	-36.51
MA22: Mean monthly flow, November	2904.94	2009.15	-30.84
MA23: Mean monthly flow, December	4186.20	3862.80	-7.73
ML1: Mean minimum monthly flow, January	2880.25	2525.96	-12.30
ML2: Mean minimum monthly flow, February	2909.13	3263.63	12.19
ML3: Mean minimum monthly flow, March	3287.83	3651.71	11.07
ML4: Mean minimum monthly flow, April	2362.00	2747.42	16.32
ML5: Mean minimum monthly flow, May	1402.04	1697.22	21.05
ML6: Mean minimum monthly flow, June	1100.74	1217.29	10.59
ML7: Mean minimum monthly flow, July	1176.91	1078.60	-8.35
ML8: Mean minimum monthly flow, August	1036.17	935.16	-9.75
ML9: Mean minimum monthly flow, September	872.57	595.79	-31.72
ML10: Mean minimum monthly flow, October	1048.00	664.74	-36.57
ML11: Mean minimum monthly flow, November	1329.09	919.51	-30.82
ML12: Mean minimum monthly flow, December	1745.78	1746.86	0.06
ML13: CV of minimum monthly flows	85.39	96.40	12.89
ML14: Mean minimum daily flow / mean median annual flow	0.27	0.13	-50.85
ML15: Mean minimum annual flow / mean annual flow	0.18	0.08	-57.59
ML16: Median minimum annual flow / median annual flow	0.24	0.10	-57.29
ML20: Ratio of baseflow volume to total flow volume	0.54	0.63	17.12
ML22: Mean annual minimum flow divided by catchment area	6.46	2.71	-58.02
RA1: Mean of positive changes from one day to next (rise rate)	811.60	1587.94	
RA2: CV, mean of positive changes from one day to next (rise rate)	189.80	378.89	
RA3: Mean of negative changes from one day to next (fall rate)	711.39	574.77	
RA4: CV, mean of negative changes from one day to next (fall rate)	180.25	551.41	
RA5: Ratio of days that are higher than previous day	0.46	0.27	

RA6: Median of difference in log of flows over two consecutive days of rising	0.13	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.05	
RA8: Number of flow reversals from one day to the next	158.33	61.62	
RA9: CV, number of flow reversals from one day to the next	18.70	21.46	

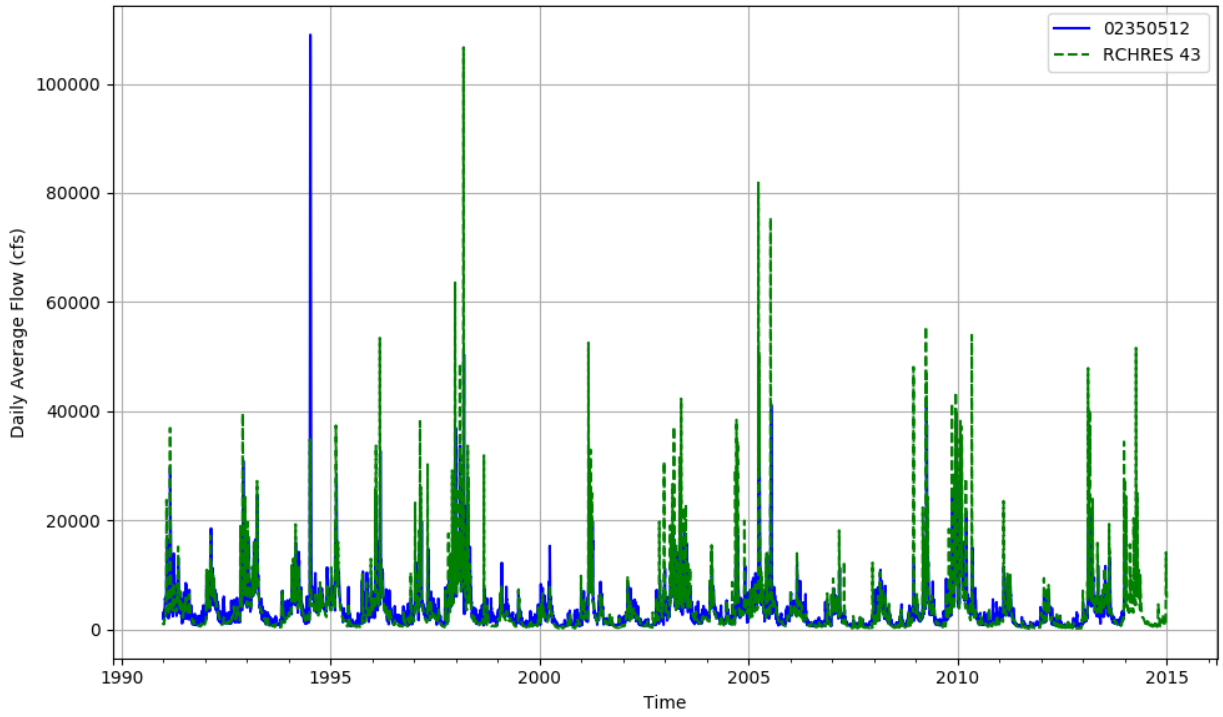


Figure T-03130006-13: Daily flow for HSFP reach 43 and USGS station 02350512.

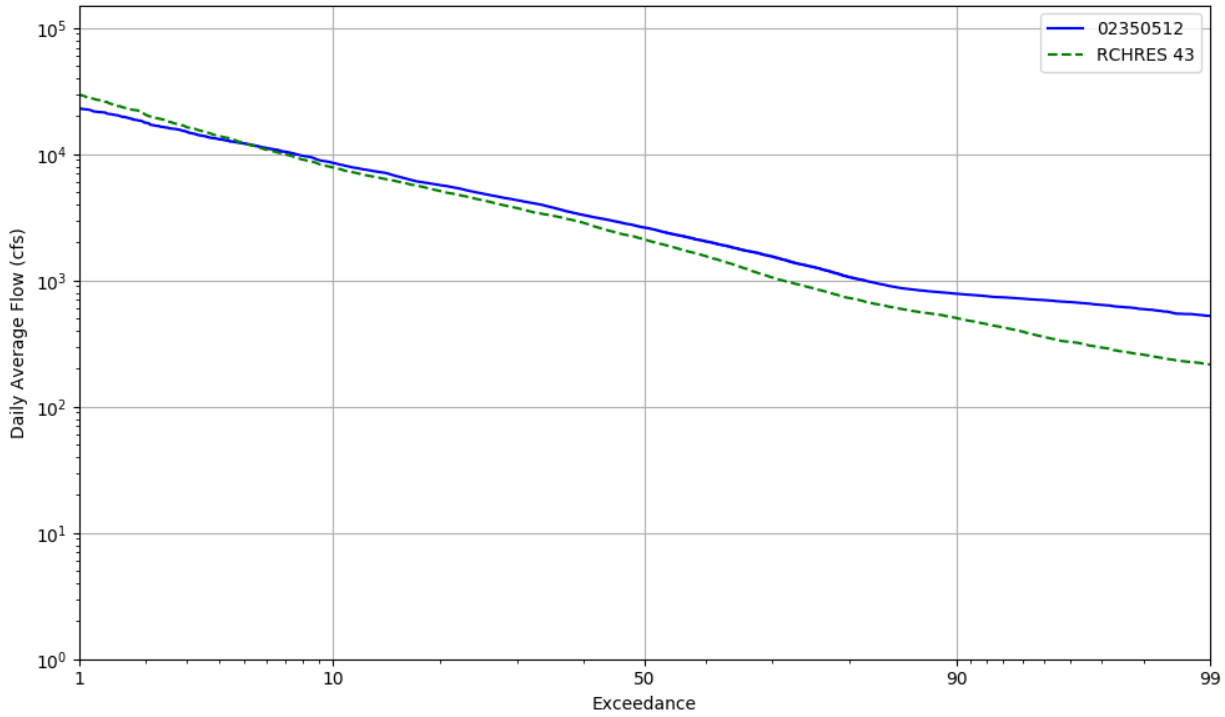


Figure T-03130006-14: Daily exceedance for HSFP reach 43 and USGS station 02350512.

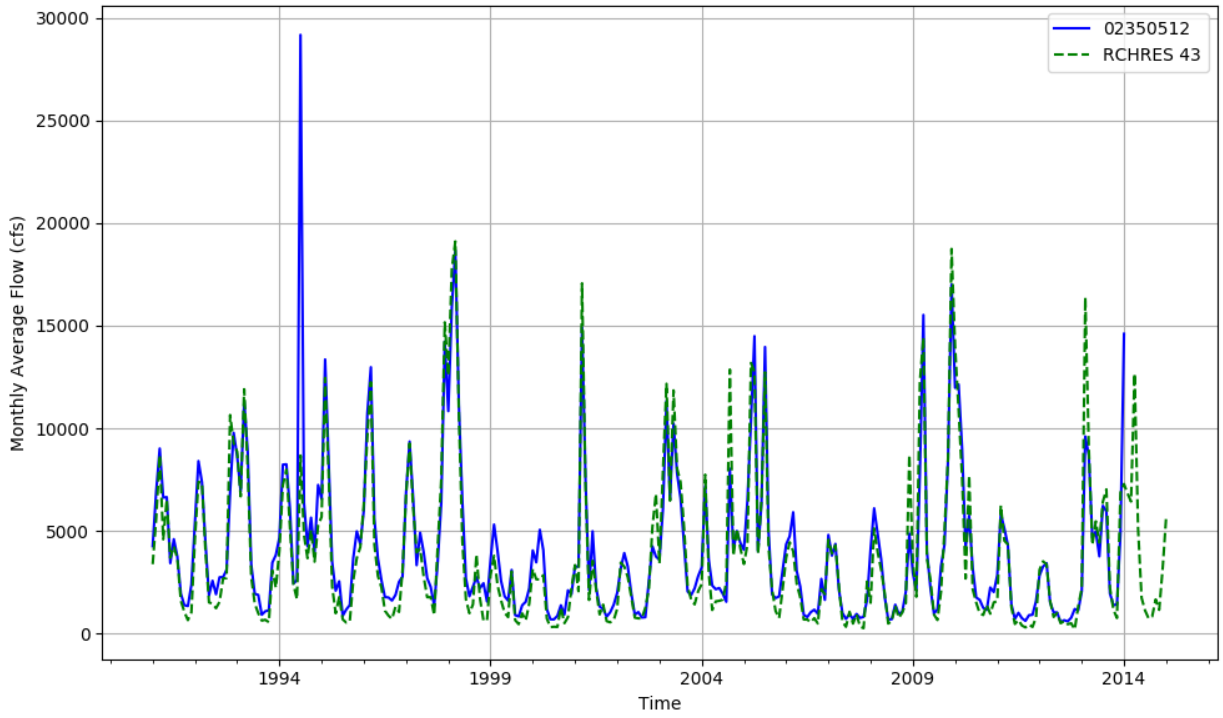


Figure T-03130006-15: Monthly flow for HSFP reach 43 and USGS station 02350512.

Table T-03130006-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11070	35450	11271	1887	491	1037	390265	8106	71731	59009	170541	105898	840	113160	12193	992948
AREA(%)	1.1	3.6	1.1	0.2	0.0	0.1	39.1	0.8	7.2	5.9	17.1	10.6	0.1	11.3	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		2004	1337	493	493											4328
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	41.6	41.8	41.7	41.9	41.9	42.4	42.2	43.0	42.0	42.0	41.7	41.8	58.0	48.8	42.6	42.6
SURLI		0.0	4.5	5.3	5.6									0.0	2.8	0.1
UZLI																0.0
LZLI		0.0	0.9	0.6	0.5									0.0	4.8	0.1
SURO: PERVIOUS		4.2	4.7	4.7	2.1	2.3	0.4	5.4	4.3	4.4	2.9		7.3	5.0	3.6	2.1
SURO: IMPERVIOUS		25.4	25.1	25.1	25.2											0.1
SURO: COMBINED		5.3	6.8	8.9	13.6	2.3	0.4	5.4	4.3	4.4	2.9		7.3	5.0	3.6	2.2
IFWO		5.9	6.6	6.7	8.4	8.8	3.5	7.8	5.7	6.0	4.8		9.2	6.7	5.8	4.2
AGWO	1.1	2.4	5.2	5.5	5.7	7.4	4.1	4.8	2.5	2.5	2.8	1.0	8.1	5.3	7.3	3.4
AGWI	1.1	5.4	8.1	8.3	8.3	9.9	7.3	7.5	5.4	5.6	6.1	1.0	8.2	7.7	9.7	6.1
IGWI	0.2	0.9	1.4	1.4	1.4	1.7	1.3	1.3	0.9	1.0	1.1	0.2	1.4	1.3	1.7	1.1
CEPE		9.3	8.0	8.0	11.3	5.2	11.5	7.6	9.2	7.8	6.1	17.9	21.1	11.0	6.7	10.4
UZET		3.7	4.4	4.5	3.6	5.1	2.7	5.0	4.0	4.0	4.9		3.6	4.8	5.7	3.3
LZET		14.8	16.1	16.1	14.9	11.2	18.5	10.1	14.8	15.4	18.4		10.0	14.5	19.1	15.1
AGWET		2.9	3.0	3.0	2.7	3.1	2.8	2.9	2.9	3.0	3.1		1.8	2.6	2.9	2.5
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	43.7											25.7				3.2
PERO	1.1	12.5	16.5	16.9	16.2	18.4	8.0	18.0	12.4	12.8	10.4	1.0	24.6	17.1	16.8	9.7
IGWI	0.2	0.9	1.4	1.4	1.4	1.7	1.3	1.3	0.9	1.0	1.1	0.2	1.4	1.3	1.7	1.1
TAET: PERVIOUS	43.7	30.7	31.5	31.6	32.6	24.7	35.6	25.7	30.9	30.4	32.6	43.6	36.5	33.0	34.5	34.6
IMPEV: IMPERVIOUS		16.5	16.8	16.9	16.9											0.1
ET: COMBINED	43.7	30.0	29.9	28.5	24.7	24.7	35.6	25.7	30.9	30.4	32.6	43.6	36.5	33.0	34.5	34.6
PET	43.7	43.6	43.7	43.7	43.7	43.4	43.5	43.3	43.5	43.5	43.6	43.6	43.7	43.6	43.5	43.4

Table T-03130006-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11070	35450	11271	1887	491	1037	390265	8106	71731	59009	170541	105898	840	113160	12193	992948
AREA(%)	1.1	3.6	1.1	0.2	0.0	0.1	39.1	0.8	7.2	5.9	17.1	10.6	0.1	11.3	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		2004	1337	493	493											4328
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	59.3	60.3	59.2	59.0	58.9	61.4	61.7	65.1	61.1	60.9	60.0	60.5	63.3	70.1	60.2	61.8
SURLI		0.0	5.1	5.9	6.5									0.0	2.6	0.1
UZLI																0.0
LZLI		0.0	1.0	0.7	0.6									0.0	5.3	0.1
SURO: PERVIOUS		7.1	7.3	7.4	4.2	3.7	1.0	9.6	7.3	7.3	4.9		7.7	7.5	5.0	3.5
SURO: IMPERVIOUS		40.8	39.9	39.8	39.7											0.2
SURO: COMBINED		8.9	10.8	14.1	22.0	3.7	1.0	9.6	7.3	7.3	4.9		7.7	7.5	5.0	3.7
IFWO		10.2	10.8	10.9	12.9	14.0	7.2	13.7	10.2	10.5	8.9		10.7	11.1	9.5	7.7
AGWO	1.7	3.4	6.8	7.0	7.4	9.9	7.7	7.1	3.7	3.7	4.2	1.3	4.5	7.7	9.5	5.6
AGWI	1.9	9.4	12.5	12.6	12.8	15.6	14.0	12.5	9.7	9.9	10.7	1.4	9.9	12.8	14.6	11.0
IGWI	0.3	1.6	2.1	2.2	2.2	2.7	2.4	2.2	1.7	1.7	1.8	0.2	1.7	2.2	2.5	1.9
CEPE		11.0	9.5	9.5	12.9	6.9	13.9	10.0	11.2	9.7	7.6	21.0	13.5	13.5	8.3	12.6
UZET	0.6	4.2	4.8	4.8	3.9	5.8	3.1	6.0	4.5	4.6	5.5	0.2	4.1	6.0	6.5	3.8
LZET	0.1	15.6	17.1	17.1	15.8	11.7	18.8	10.2	15.4	16.2	19.2	0.1	14.8	15.9	20.6	15.7
AGWET	0.2	3.4	3.5	3.5	3.3	3.6	3.2	3.2	3.3	3.5	3.6	0.1	3.2	3.0	3.5	2.9
BASET	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SURET	50.0											29.4				3.7
PERO	1.7	20.7	24.9	25.2	24.5	27.6	15.9	30.4	21.2	21.5	18.0	1.3	22.8	26.3	24.0	16.9
IGWI	0.3	1.6	2.1	2.2	2.2	2.7	2.4	2.2	1.7	1.7	1.8	0.2	1.7	2.2	2.5	1.9
TAET: PERVIOUS	50.9	34.3	34.9	35.0	36.0	28.0	39.0	29.5	34.5	33.9	36.0	50.9	35.6	38.5	38.9	38.7
IMPEV: IMPERVIOUS		19.2	19.0	19.0	18.9											0.1
ET: COMBINED	50.9	33.4	33.2	31.7	27.4	28.0	39.0	29.5	34.5	33.9	36.0	50.9	35.6	38.5	38.9	38.8
PET	51.3	51.1	51.4	51.3	51.4	50.6	50.7	49.8	50.9	50.9	51.2	51.1	51.1	51.3	51.2	50.7

Table T-03130006-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11070	35450	11271	1887	491	1037	390265	8106	71731	59009	170541	105898	840	113160	12193	992948
AREA(%)	1.1	3.6	1.1	0.2	0.0	0.1	39.1	0.8	7.2	5.9	17.1	10.6	0.1	11.3	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		2004	1337	493	493											4328
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	42.2	42.4	42.3	42.6	42.7	43.7	42.6	42.9	42.5	42.9	42.8	42.6	56.6	50.9	44.5	43.4
SURLI		0.0	5.2	6.1	6.8									0.0	3.7	0.1
UZLI																0.0
LZLI		0.0	1.0	0.7	0.6									0.0	6.1	0.1
SURO: PERVIOUS	0.2	5.0	5.2	5.2	3.2	3.4	0.7	6.0	5.1	5.3	3.9	0.4	6.0	5.9	4.3	2.7
SURO: IMPERVIOUS		25.9	25.7	25.8	25.8											0.1
SURO: COMBINED	0.2	6.1	7.4	9.5	14.5	3.4	0.7	6.0	5.1	5.3	3.9	0.4	6.0	5.9	4.3	2.8
IFWO		6.5	7.0	7.1	8.4	9.6	5.6	7.9	6.4	6.7	6.1		7.9	7.3	6.9	5.4
AGWO	1.7	4.1	7.0	7.3	7.7	8.8	8.2	6.1	4.3	4.3	5.1	1.3	6.0	7.1	9.2	6.0
AGWI	1.7	5.4	8.5	8.8	8.9	9.7	8.0	7.0	5.4	5.7	6.3	1.3	7.4	7.9	10.7	6.5
IGWI	0.3	0.9	1.5	1.5	1.5	1.7	1.4	1.2	0.9	1.0	1.1	0.2	1.3	1.4	1.8	1.1
CEPE		9.2	7.9	8.0	11.4	5.7	11.8	8.1	9.3	7.9	6.2	18.0	21.3	11.2	7.0	10.6
UZET		3.4	4.2	4.3	3.5	4.6	2.3	4.5	3.6	3.7	4.4		3.2	4.8	5.6	3.0
LZET		15.4	17.0	17.0	15.8	11.8	18.7	10.6	15.3	16.0	19.1		11.3	15.8	20.6	15.6
AGWET		3.4	3.5	3.5	3.2	3.6	3.3	3.3	3.4	3.5	3.6		2.3	3.1	3.4	2.9
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	48.6											30.5				3.8
PERO	1.9	15.5	19.2	19.5	19.3	21.8	14.5	20.0	15.7	16.3	15.1	1.6	19.9	20.3	20.4	14.1
IGWI	0.3	0.9	1.5	1.5	1.5	1.7	1.4	1.2	0.9	1.0	1.1	0.2	1.3	1.4	1.8	1.1
TAET: PERVIOUS	48.7	31.5	32.6	32.8	33.9	25.7	36.0	26.6	31.7	31.2	33.3	48.5	38.1	35.0	36.6	35.9
IMPEV: IMPERVIOUS		16.7	16.9	17.0	17.1											0.1
ET: COMBINED	48.7	30.7	31.0	29.5	25.5	25.7	36.0	26.6	31.7	31.2	33.3	48.5	38.1	35.0	36.6	35.9
PET	48.7	48.6	48.8	48.7	48.7	48.2	48.4	48.0	48.5	48.4	48.6	48.5	48.7	48.6	48.5	48.3

Table T-03130006-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	11070	35450	11271	1887	491	1037	390265	8106	71731	59009	170541	105898	840	113160	12193	992948
AREA(%)	1.1	3.6	1.1	0.2	0.0	0.1	39.1	0.8	7.2	5.9	17.1	10.6	0.1	11.3	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		2004	1337	493	493											4328
AREA(%)		0.2	0.1	0.0	0.0											0.4
SUPY	47.5	47.9	47.8	47.7	47.7	48.0	48.1	48.7	48.0	47.8	47.6	47.8	63.1	53.9	48.1	48.4
SURLI		0.0	4.3	5.0	5.5									0.0	2.7	0.1
UZLI																0.0
LZLI		0.0	0.8	0.6	0.5									0.0	4.4	0.1
SURO: PERVIOUS	2.4	4.3	4.7	4.7	2.4	2.2	0.5	5.0	4.3	4.3	2.9	2.5	6.3	4.7	3.4	2.4
SURO: IMPERVIOUS		30.5	30.3	30.3	30.2											0.1
SURO: COMBINED	2.4	5.7	7.4	10.0	16.4	2.2	0.5	5.0	4.3	4.3	2.9	2.5	6.3	4.7	3.4	2.5
IFWO		6.7	7.4	7.5	8.9	8.7	3.6	8.3	6.4	6.6	5.4		9.7	7.1	6.2	4.5
AGWO	1.4	4.3	6.8	7.1	7.2	9.1	6.6	6.5	4.4	4.4	4.8	1.2	8.8	6.3	8.2	5.2
AGWI	1.5	7.5	10.2	10.5	10.4	12.7	9.8	9.8	7.6	7.8	8.3	1.3	11.2	9.4	11.6	8.1
IGWI	0.3	1.3	1.8	1.8	1.8	2.2	1.7	1.7	1.3	1.3	1.4	0.2	1.9	1.6	2.0	1.4
CEPE		10.1	8.8	8.8	12.0	6.4	12.5	8.9	10.1	8.8	7.0	18.8	19.9	11.4	7.5	11.3
UZET	0.6	3.6	4.2	4.2	3.4	4.8	2.5	5.0	3.9	3.9	4.6	0.2	3.3	4.7	5.4	3.1
LZET	0.2	14.4	15.8	15.9	14.6	11.1	17.6	10.0	14.4	15.1	17.9	0.1	10.8	15.0	19.1	14.6
AGWET	0.1	3.1	3.2	3.2	3.0	3.3	3.0	3.1	3.1	3.2	3.3	0.1	2.2	2.9	3.2	2.7
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	43.8											26.0				3.2
PERO	3.7	15.2	18.9	19.3	18.6	19.9	10.6	19.8	15.1	15.3	13.2	3.6	24.8	18.2	17.8	12.1
IGWI	0.3	1.3	1.8	1.8	1.8	2.2	1.7	1.7	1.3	1.3	1.4	0.2	1.9	1.6	2.0	1.4
TAET: PERVIOUS	44.8	31.3	32.0	32.1	33.0	25.6	35.6	26.9	31.5	31.0	32.8	45.2	36.2	34.0	35.3	35.0
IMPEV: IMPERVIOUS		17.4	17.4	17.4	17.4											0.1
ET: COMBINED	44.8	30.5	30.5	29.1	25.2	25.6	35.6	26.9	31.5	31.0	32.8	45.2	36.2	34.0	35.3	35.1
PET	46.6	46.5	46.7	46.6	46.7	46.3	46.4	46.1	46.4	46.4	46.5	46.5	46.6	46.6	46.5	46.3

Table T-03130006-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
12	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
13	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
19	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
20	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
21	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
22	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
23	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
24	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
25	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
26	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
27	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
28	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
29	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
30	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
31	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
32	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
33	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
34	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
35	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
36	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
37	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
38	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

39	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
40	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
41	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
42	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
43	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
44	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
45	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
46	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
47	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

Table T-03130006-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
33	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
34	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
35	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
36	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
37	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
38	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

39	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
40	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
41	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
42	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
43	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
44	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
45	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
46	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
47	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130006-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
2	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
3	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
4	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
5	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
6	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
7	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
8	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
9	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
10	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
11	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
12	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
13	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
14	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
15	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
16	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
17	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
18	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
19	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
20	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
21	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
22	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
23	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
24	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
25	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
26	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
27	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
28	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
29	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
30	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
31	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
32	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
33	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
34	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
35	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
36	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
37	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
38	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300

39	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
40	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
41	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
42	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
43	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
44	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
45	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
46	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300
47	0.000	0.068	0.050	0.050	0.100	0.024	0.110	0.050	0.069	0.050	0.030	0.300

Table T-03130006-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
2	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
3	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
4	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
5	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
6	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
7	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
8	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
9	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
10	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
11	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
12	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
13	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
14	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
15	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
16	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
17	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
18	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
19	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
20	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
21	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
22	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
23	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
24	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
25	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
26	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
27	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
28	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
29	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
30	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
31	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
32	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
33	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
34	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
35	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
36	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
37	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
38	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147

39	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
40	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
41	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
42	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
43	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
44	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
45	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
46	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
47	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147

Table T-03130006-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
2	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
3	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
4	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
5	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
6	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
7	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
8	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
9	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
10	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
11	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
12	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
13	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
14	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
15	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
16	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
17	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
18	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
19	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
20	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
21	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
22	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
23	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
24	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
25	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
26	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
27	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
28	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
29	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
30	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
31	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
32	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
33	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
34	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
35	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
36	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
37	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
38	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001

39	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
40	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
41	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
42	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
43	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
44	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
45	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
46	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001
47	0.001	0.080	0.080	0.080	0.080	0.120	0.201	0.080	0.080	0.080	0.096	0.001

Table T-03130006-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
2		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
3		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
4		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
5		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
6		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
7		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
8		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
9		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
10		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
11		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
12		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
13		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
14		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
15		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
16		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
17		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
18		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
19		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
20		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
21		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
22		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
23		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
24		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
25		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
26		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
27		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
28		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
29		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	

30		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
31		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
32		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
33		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
34		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
35		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
36		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
37		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
38		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
39		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
40		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
41		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
42		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
43		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
44		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
45		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
46		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	
47		1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	

Table T-03130006-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
3	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
4	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
5	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
6	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
7	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
8	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
9	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
10	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
11	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
12	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
13	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
14	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
15	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
16	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
17	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
18	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
19	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
20	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
21	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
22	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
23	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
24	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
25	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
26	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
27	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
28	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
29	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
30	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
31	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
32	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
33	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
34	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
35	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
36	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
37	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
38	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

39	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
40	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
41	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
42	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
43	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
44	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
45	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
46	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
47	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600

Table T-03130006-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
15	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
19	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
22	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
23	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
24	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
25	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
26	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
27	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
28	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
29	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
30	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
31	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
32	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
33	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
34	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
35	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
36	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
37	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
38	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

39	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
40	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
41	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
42	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
43	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
44	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
45	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
46	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
47	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03130006-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
2	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
3	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
4	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
5	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
6	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
7	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
8	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
9	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
10	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
11	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
12	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
13	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
14	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
15	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
16	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
17	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
18	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
19	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
20	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
21	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
22	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
23	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
24	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
25	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
26	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
27	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
28	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
29	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
30	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
31	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
32	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
33	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
34	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
35	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
36	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
37	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
38	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904

39	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
40	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
41	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
42	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
43	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
44	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
45	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
46	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904
47	0.101	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.904

Table T-03130006-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
2	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
3	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
4	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
5	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
6	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
7	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
8	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
9	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
10	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
11	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
12	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
13	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
14	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
15	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
16	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
17	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
18	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
19	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
20	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
21	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
22	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
23	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
24	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
25	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
26	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
27	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
28	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
29	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
30	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
31	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
32	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
33	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
34	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
35	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
36	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
37	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
38	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100

39	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
40	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
41	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
42	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
43	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
44	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
45	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
46	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100
47	0.196	4.878	4.878	4.878	4.878	5.285	6.504	5.285	5.285	5.285	5.691	0.100

Table T-03130006-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
33	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
34	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
35	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
36	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
37	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
38	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

39	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
40	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
41	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
42	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
43	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
44	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
45	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
46	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
47	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03130007

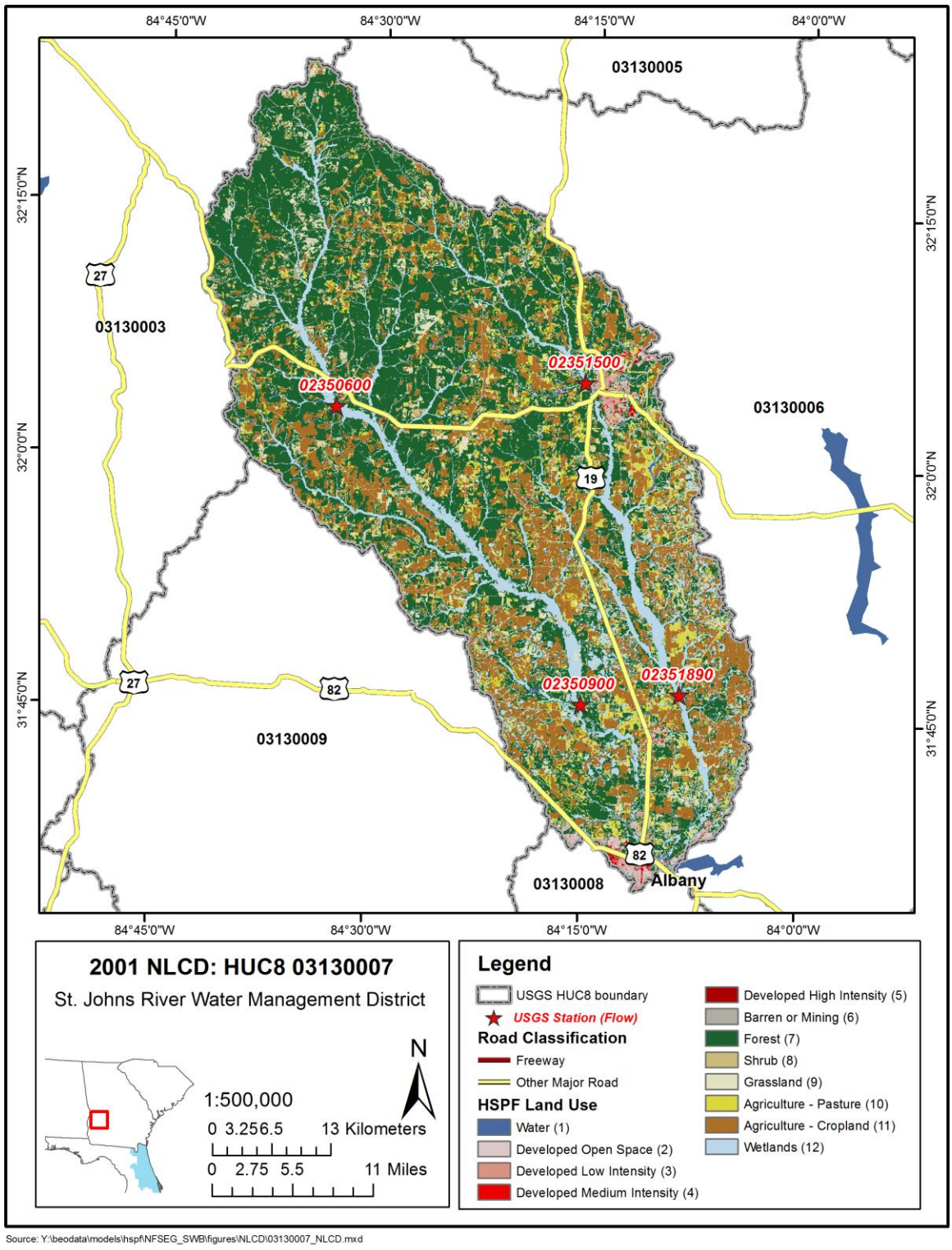


Figure T-03130007-1: Land Cover from the National Land Cover Database.

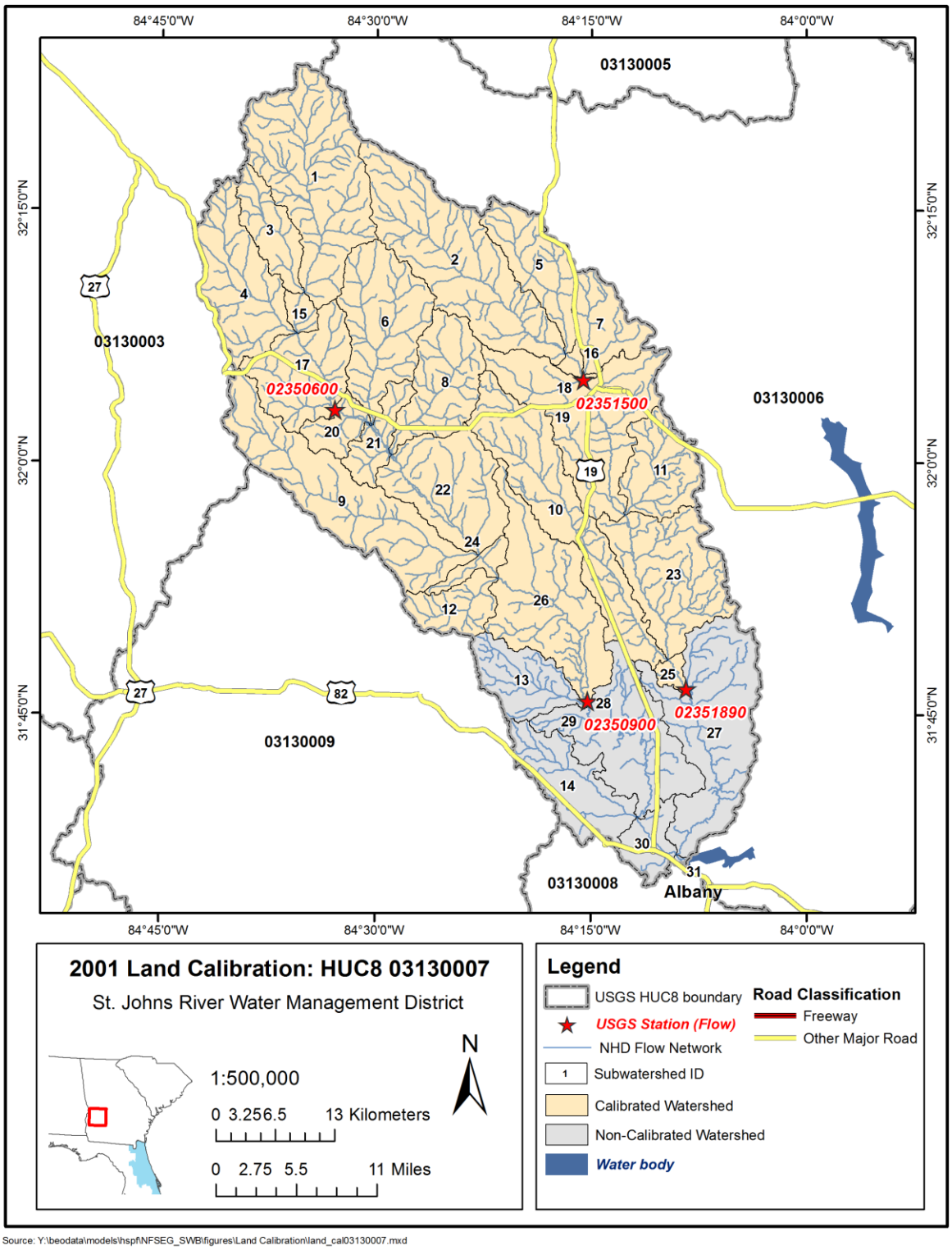


Figure T-03130007-2: Calibrated sub-watersheds.

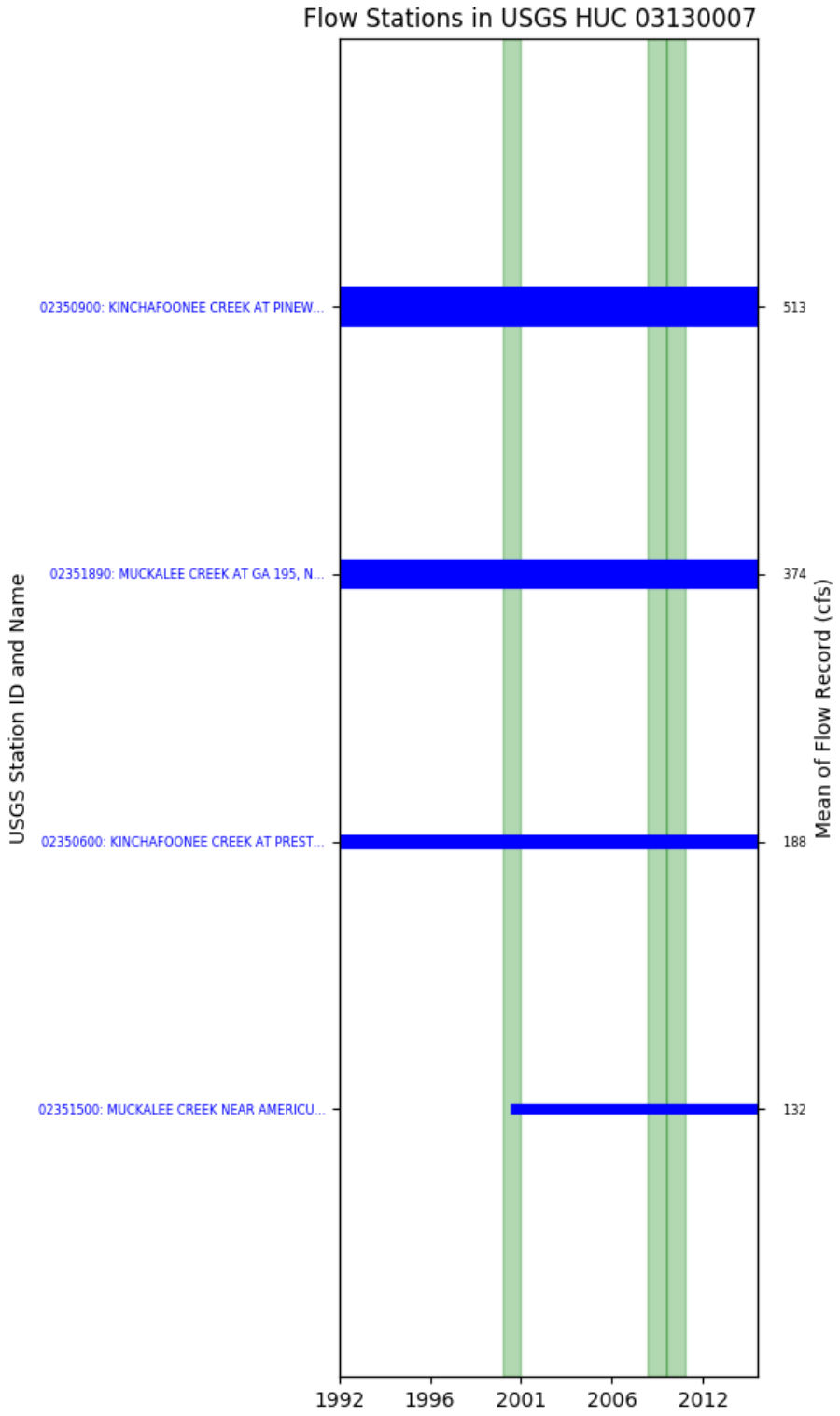


Figure T-03130007-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 17, USGS GAUGE 02350600

Water-Data Report 2009
02350600 KINCHAFOONEE CREEK AT PRESTON, GA
Apalachicola Basin Kinchafoonee-Muckalee Subbasin

LOCATION.--Lat 320309, long 843254 referenced to North American Datum of 1983, Webster County, GA, Hydrologic Unit 03130007, at bridge on GA 41, 1.0 miles southwest of Preston, and 1.0 mile upstream from Harrell Mill Creek.

DRAINAGE AREA.--197 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1951 to October 1977. October 1986 to September 2002 (annual maximum only).
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 337.70 feet above National Geodetic Vertical Datum (NGVD) of 1929 (leveling by Global Positioning System equipment).

COOPERATION.--Georgia Department of Transportation.

REMARKS.--Records good.

Table T-03130007-1: Comparison Statistics Between HSPF Reach 17 and USGS Gauge 02350600.

Statistic	Value
Bias	-19.05
Standard error	78.94
Relative bias	-0.10
Relative standard error	0.45
Nash-Sutcliffe coefficient	0.80
Kling-Gupta coefficient	0.86
Coefficient of efficiency	0.63
Index of agreement	0.81

Table T-03130007-2: Hydrologic Indices Between USGS Gauge 02350600 and HSPF Reach 17.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02350600	Simulated Reach 17	Percent Difference
MA1: Mean, all daily flows	200.88	169.62	-15.56
MA2: Median, all daily flows	127.00	103.44	-18.55
MA3: CV, all daily flows	92.74	70.81	-23.64
MA4: CV, log of all daily flows	82.69	83.71	1.23

MA5: Mean daily flow / median daily flow	1.58	1.64	3.67
MA9: (Q10 - Q90) / median daily flow	2.86	3.05	6.78
MA10: (Q20 - Q80) / median daily flow	1.56	1.87	19.69
MA11: (Q25 - Q75) / median daily flow	1.24	1.42	14.48
MA12: Mean monthly flow, January	195.88	185.62	-5.24
MA13: Mean monthly flow, February	256.03	226.23	-11.64
MA14: Mean monthly flow, March	290.38	257.56	-11.30
MA15: Mean monthly flow, April	196.46	158.90	-19.12
MA16: Mean monthly flow, May	104.80	86.88	-17.10
MA17: Mean monthly flow, June	77.41	53.40	-31.01
MA18: Mean monthly flow, July	108.67	59.44	-45.30
MA19: Mean monthly flow, August	57.16	43.55	-23.80
MA20: Mean monthly flow, September	54.37	49.63	-8.72
MA21: Mean monthly flow, October	68.75	57.62	-16.18
MA22: Mean monthly flow, November	113.15	98.73	-12.75
MA23: Mean monthly flow, December	149.78	135.43	-9.58
ML1: Mean minimum monthly flow, January	146.50	136.10	-7.10
ML2: Mean minimum monthly flow, February	171.92	177.15	3.04
ML3: Mean minimum monthly flow, March	176.67	181.32	2.64
ML4: Mean minimum monthly flow, April	121.25	138.07	13.87
ML5: Mean minimum monthly flow, May	68.92	77.82	12.92
ML6: Mean minimum monthly flow, June	49.17	52.31	6.39
ML7: Mean minimum monthly flow, July	42.00	40.74	-3.01
ML8: Mean minimum monthly flow, August	40.17	49.59	23.45
ML9: Mean minimum monthly flow, September	39.58	48.89	23.50
ML10: Mean minimum monthly flow, October	55.36	56.69	2.40
ML11: Mean minimum monthly flow, November	87.09	76.95	-11.64
ML12: Mean minimum monthly flow, December	132.18	126.06	-4.63
ML13: CV of minimum monthly flows	71.80	73.76	2.73
ML14: Mean minimum daily flow / mean median annual flow	0.15	0.18	18.74
ML15: Mean minimum annual flow / mean annual flow	0.10	0.13	20.92
ML16: Median minimum annual flow / median annual flow	0.18	0.22	25.88
ML20: Ratio of baseflow volume to total flow volume	0.55	0.68	23.76
ML22: Mean annual minimum flow divided by catchment area	29411.97	29411.98	0.00
RA1: Mean of positive changes from one day to next (rise rate)	93.34	37.52	
RA2: CV, mean of positive changes from one day to next (rise rate)	307.92	375.89	
RA3: Mean of negative changes from one day to next (fall rate)	50.31	16.79	
RA4: CV, mean of negative changes from one day to next (fall rate)	338.05	279.68	
RA5: Ratio of days that are higher than previous day	0.33	0.31	
RA6: Median of difference in log of flows over two consecutive days of rising	0.17	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.09	0.04	
RA8: Number of flow reversals from one day to the next	69.00	63.41	
RA9: CV, number of flow reversals from one day to the next	67.22	69.23	

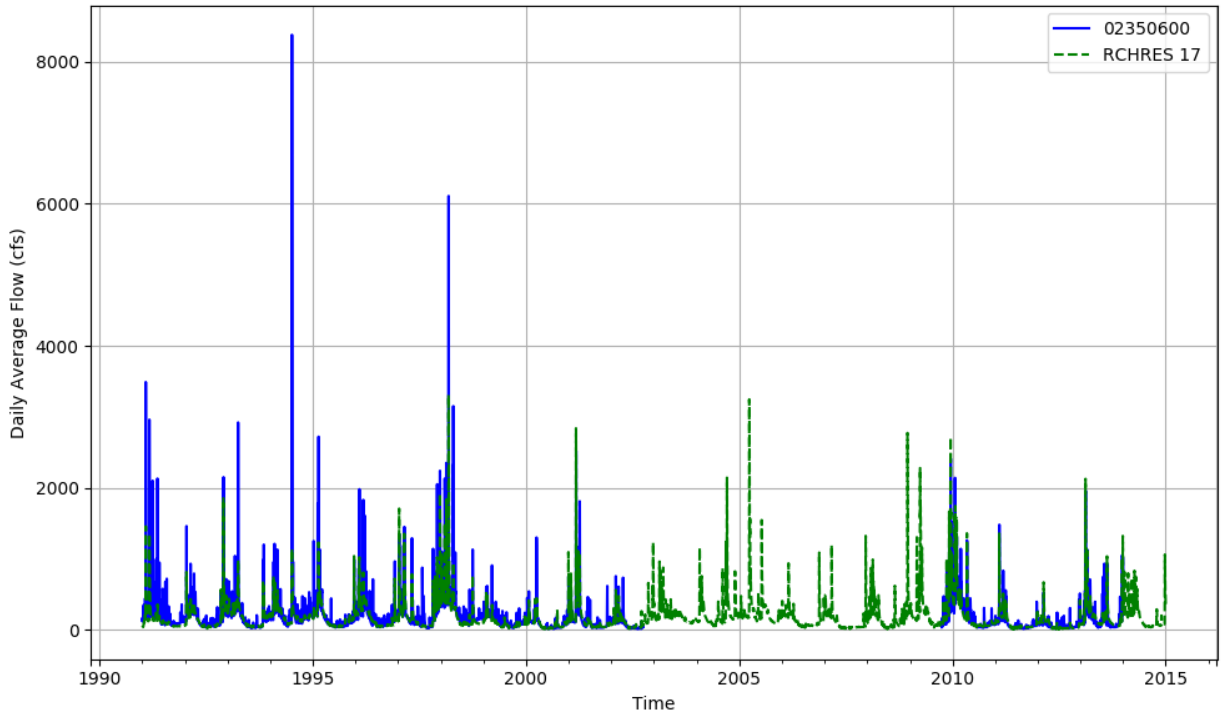


Figure T-03130007-4: Daily flow for HSFP reach 17 and USGS station 02350600.

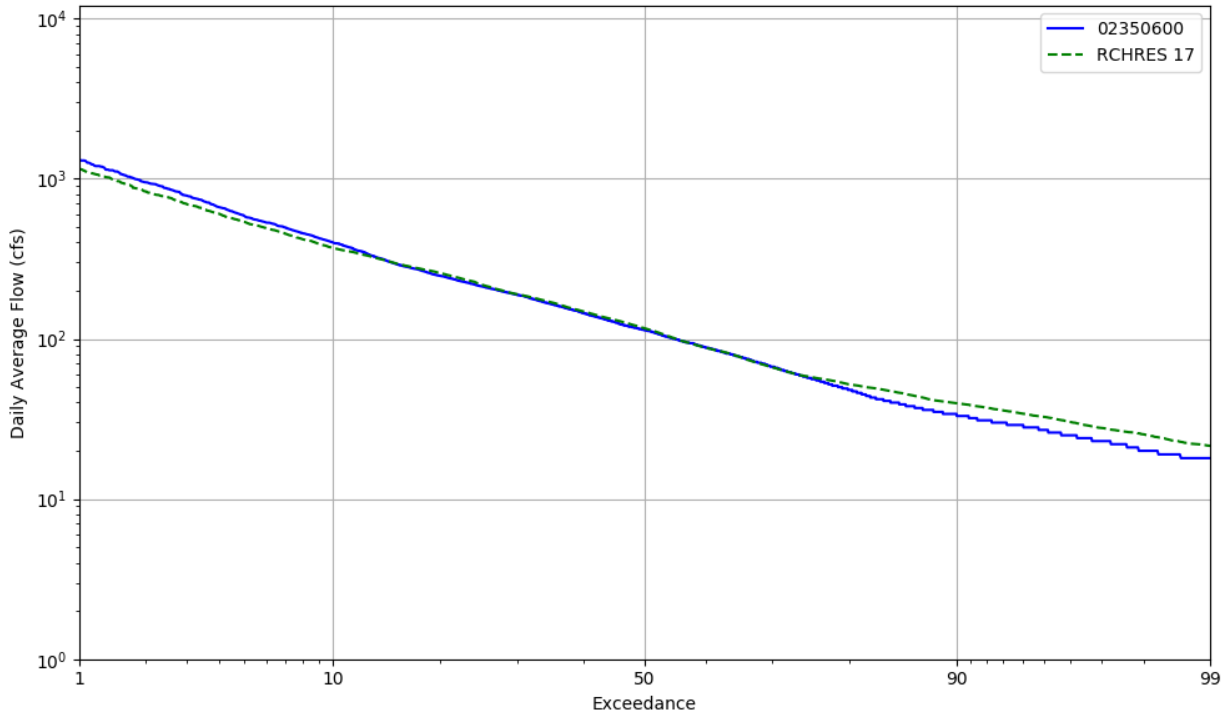


Figure T-03130007-5: Daily exceedance for HSFP reach 17 and USGS station 02350600.

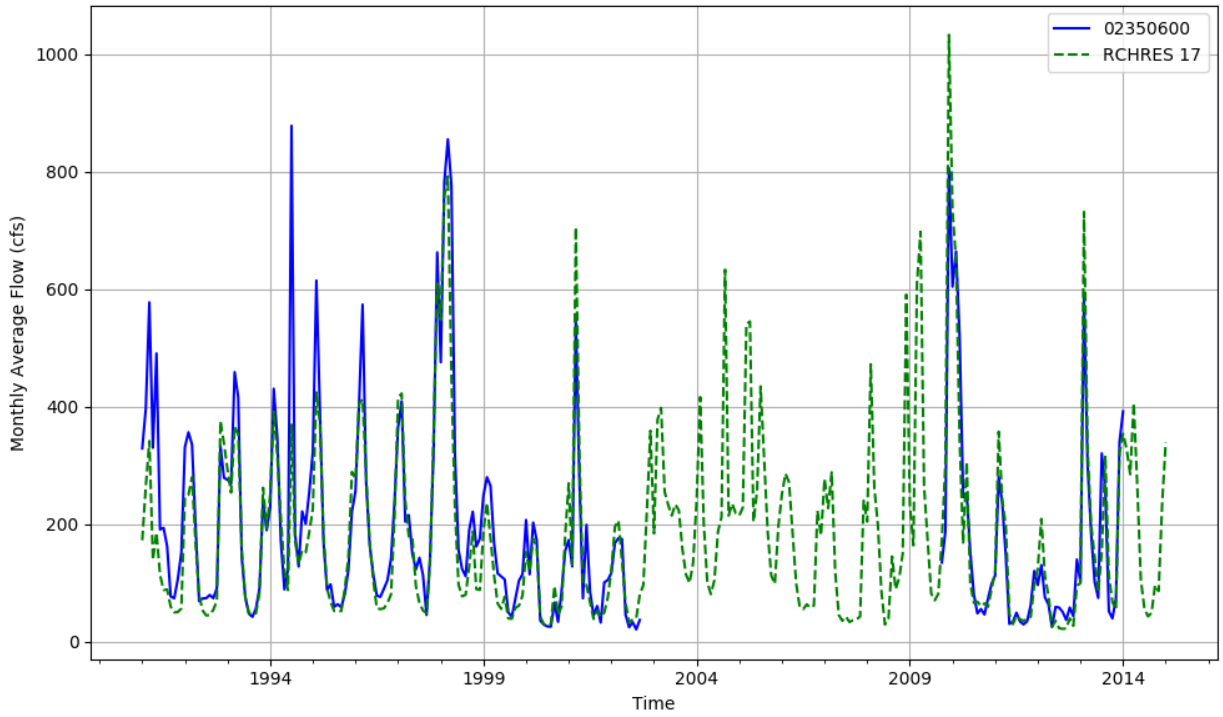


Figure T-03130007-6: Monthly flow for HSFP reach 17 and USGS station 02350600.

HSPF REACH 18, USGS GAUGE 02351500

Water-Data Report 2009
02351500 MUCKALEE CREEK NEAR AMERICUS, GA
Apalachicola Basin Kinchafoonee-Muckalee Subbasin

LOCATION.--Lat 320459, long 841529 referenced to North American Datum of 1983, Sumter County, GA, Hydrologic Unit 03130007, on GA 30, 1.0 mile west of intersection with GA 19/38 in Americus.

DRAINAGE AREA.--140 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: 1948, 1963-83 (annual maximum only), May 2001 to current year.
GAGE-HEIGHT: May 2001 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 321.09 feet above National Geodetic Vertical Datum (NGVD) of 1929.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Records good.

Table T-03130007-3: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02351500.

Statistic	Value
Bias	3.21
Standard error	47.76
Relative bias	0.02
Relative standard error	0.47
Nash-Sutcliffe coefficient	0.78
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.58
Index of agreement	0.81

Table T-03130007-4: Hydrologic Indices Between USGS Gauge 02351500 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02351500	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	131.06	132.79	1.32
MA2: Median, all daily flows	83.00	81.02	-2.39
MA3: CV, all daily flows	116.04	121.91	5.06
MA4: CV, log of all daily flows	92.98	90.17	-3.02
MA5: Mean daily flow / median daily flow	1.58	1.64	3.80

MA9: (Q10 - Q90) / median daily flow	3.22	2.98	-7.45
MA10: (Q20 - Q80) / median daily flow	1.64	1.69	3.01
MA11: (Q25 - Q75) / median daily flow	1.27	1.32	4.63
MA12: Mean monthly flow, January	178.96	179.42	0.26
MA13: Mean monthly flow, February	195.44	219.15	12.13
MA14: Mean monthly flow, March	178.24	193.70	8.67
MA15: Mean monthly flow, April	146.58	146.27	-0.21
MA16: Mean monthly flow, May	77.30	80.16	3.70
MA17: Mean monthly flow, June	79.71	64.84	-18.65
MA18: Mean monthly flow, July	77.33	78.18	1.10
MA19: Mean monthly flow, August	77.68	82.90	6.72
MA20: Mean monthly flow, September	77.42	90.97	17.50
MA21: Mean monthly flow, October	67.06	63.00	-6.05
MA22: Mean monthly flow, November	100.15	75.66	-24.46
MA23: Mean monthly flow, December	184.18	200.89	9.08
ML1: Mean minimum monthly flow, January	105.54	115.25	9.20
ML2: Mean minimum monthly flow, February	99.17	107.49	8.39
ML3: Mean minimum monthly flow, March	98.83	104.24	5.48
ML4: Mean minimum monthly flow, April	65.83	83.20	26.38
ML5: Mean minimum monthly flow, May	32.59	45.74	40.33
ML6: Mean minimum monthly flow, June	25.47	36.71	44.13
ML7: Mean minimum monthly flow, July	25.36	37.04	46.04
ML8: Mean minimum monthly flow, August	28.64	45.34	58.30
ML9: Mean minimum monthly flow, September	25.69	42.87	66.86
ML10: Mean minimum monthly flow, October	38.00	44.56	17.26
ML11: Mean minimum monthly flow, November	54.38	49.69	-8.63
ML12: Mean minimum monthly flow, December	75.69	66.41	-12.26
ML13: CV of minimum monthly flows	76.72	86.86	13.22
ML14: Mean minimum daily flow / mean median annual flow	0.24	0.27	13.48
ML15: Mean minimum annual flow / mean annual flow	0.14	0.16	10.15
ML16: Median minimum annual flow / median annual flow	0.19	0.19	2.72
ML20: Ratio of baseflow volume to total flow volume	0.50	0.58	14.40
ML22: Mean annual minimum flow divided by catchment area	0.19	0.22	16.73
RA1: Mean of positive changes from one day to next (rise rate)	58.45	42.00	
RA2: CV, mean of positive changes from one day to next (rise rate)	219.97	402.61	
RA3: Mean of negative changes from one day to next (fall rate)	32.29	16.91	
RA4: CV, mean of negative changes from one day to next (fall rate)	262.42	285.23	
RA5: Ratio of days that are higher than previous day	0.34	0.29	
RA6: Median of difference in log of flows over two consecutive days of rising	0.18	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.12	0.05	
RA8: Number of flow reversals from one day to the next	93.36	87.00	
RA9: CV, number of flow reversals from one day to the next	27.37	30.61	

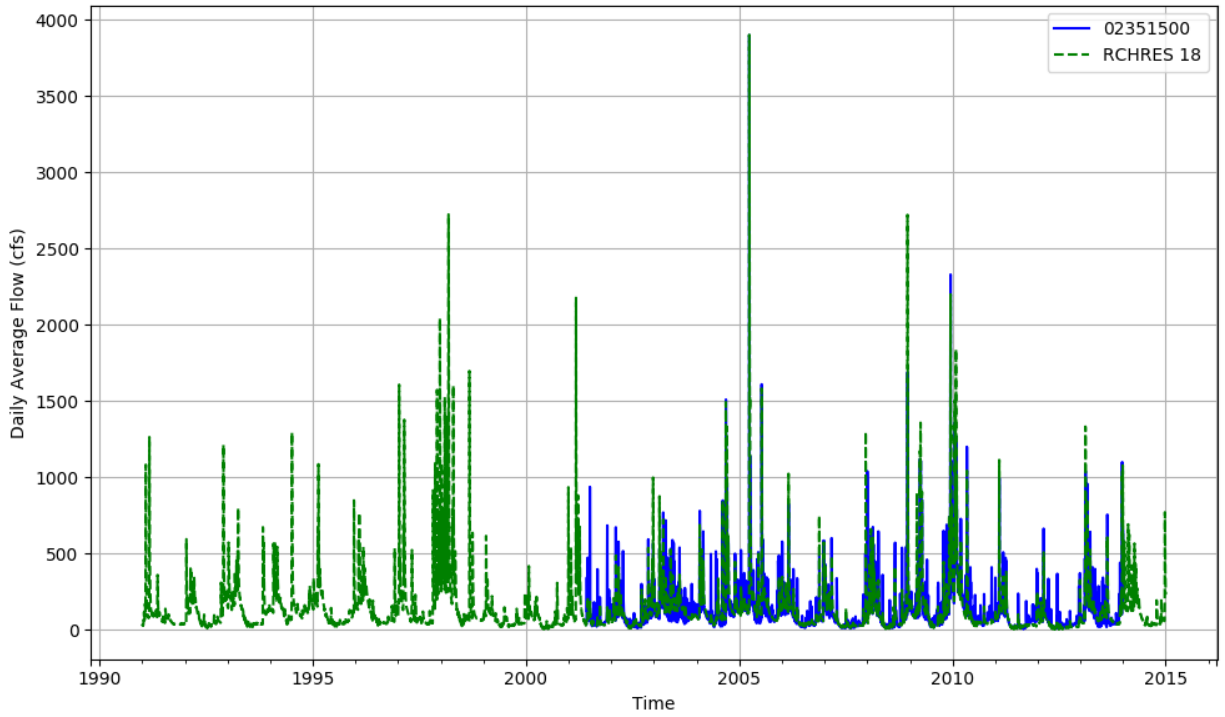


Figure T-03130007-7: Daily flow for HSFP reach 18 and USGS station 02351500.

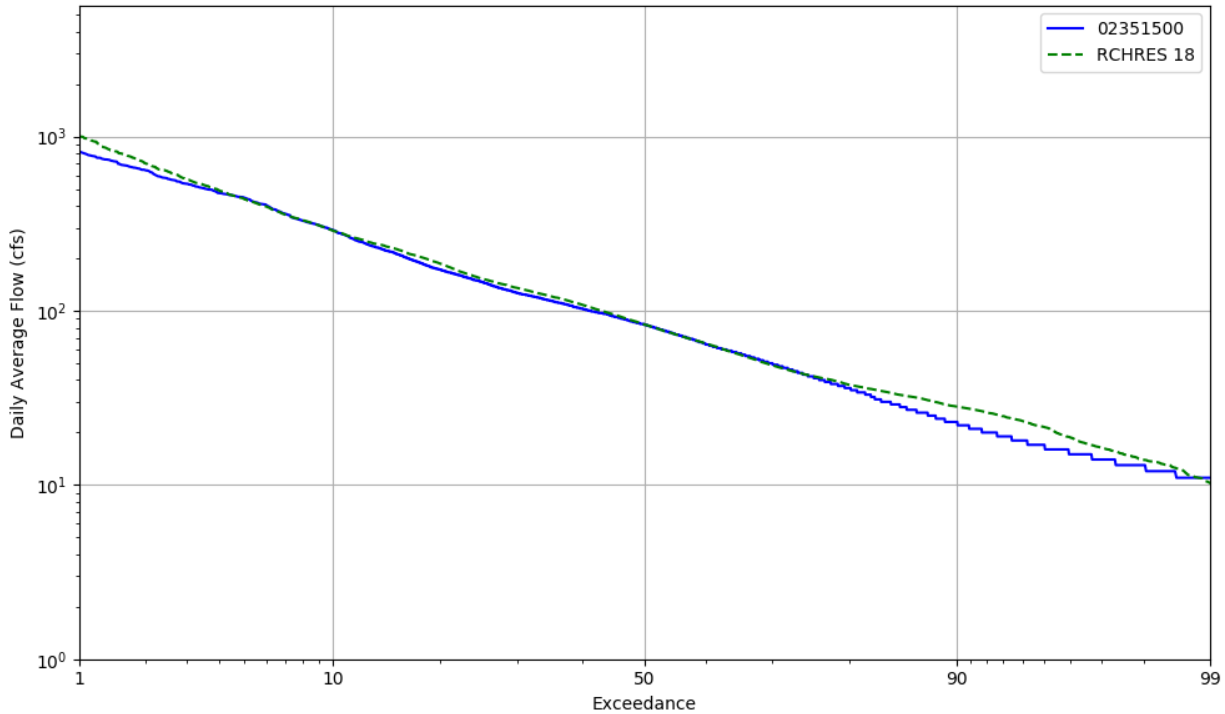


Figure T-03130007-8: Daily exceedance for HSFP reach 18 and USGS station 02351500.

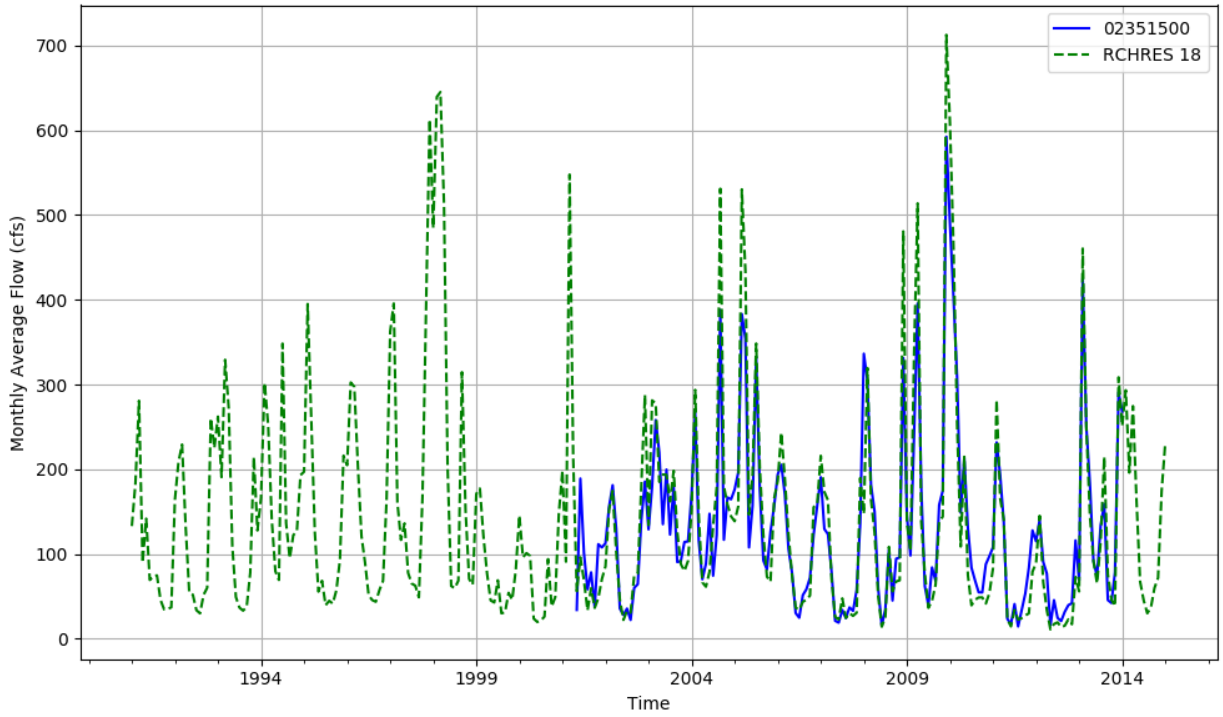


Figure T-03130007-9: Monthly flow for HSFP reach 18 and USGS station 02351500.

HSPF REACH 25, USGS GAUGE 02351890

Water-Data Report 2009
02351890 MUCKALEE CREEK AT GA 195, NEAR LEESBURG, GA
Apalachicola Basin Kinchafoonee-Muckalee Subbasin

LOCATION.--Lat 314634, long 840822 referenced to North American Datum of 1983, Lee County, GA, Hydrologic Unit 03130007, on downstream end of bridge pier on GA 195, 75 feet downstream from White Oak Branch, 3.3 miles downstream from Muckaloochee Creek, and 4.0 miles northeast of Leesburg.

DRAINAGE AREA.--362 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: December 1979 to current year.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WRD GA-82-1: 1980(P), 1981(P).

GAGE.--Satellite telemetry with a water-stage recorder. Elevation of gage is 220 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division; Georgia Power Corporation.

REMARKS.--Discharge records good, except for days of estimated discharge, which are poor. Gage-height records good. Discharges during growing season affected by undetermined amount of irrigation withdrawal.

Table T-03130007-5: Comparison Statistics Between HSPF Reach 25 and USGS Gauge 02351890.

Statistic	Value
Bias	-10.37
Standard error	181.93
Relative bias	-0.03
Relative standard error	0.48
Nash-Sutcliffe coefficient	0.77
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.68
Index of agreement	0.84

Table T-03130007-6: Hydrologic Indices Between USGS Gauge 02351890 and HSPF Reach 25.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02351890	Simulated Reach 25	Percent Difference
MA1: Mean, all daily flows	377.02	366.40	-2.82
MA2: Median, all daily flows	223.00	226.18	1.43
MA3: CV, all daily flows	128.08	114.45	-10.64
MA4: CV, log of all daily flows	88.21	86.77	-1.63
MA5: Mean daily flow / median daily flow	1.69	1.62	-4.18
MA9: (Q10 - Q90) / median daily flow	3.20	3.02	-5.43
MA10: (Q20 - Q80) / median daily flow	1.83	1.67	-8.31
MA11: (Q25 - Q75) / median daily flow	1.39	1.32	-5.16
MA12: Mean monthly flow, January	542.49	557.47	2.76
MA13: Mean monthly flow, February	622.20	653.33	5.00
MA14: Mean monthly flow, March	670.29	638.38	-4.76
MA15: Mean monthly flow, April	478.32	436.37	-8.77
MA16: Mean monthly flow, May	260.41	225.78	-13.30
MA17: Mean monthly flow, June	213.91	178.40	-16.60
MA18: Mean monthly flow, July	325.88	216.42	-33.59
MA19: Mean monthly flow, August	190.20	198.10	4.16
MA20: Mean monthly flow, September	198.50	239.18	20.50
MA21: Mean monthly flow, October	185.29	190.40	2.76
MA22: Mean monthly flow, November	247.12	253.36	2.53
MA23: Mean monthly flow, December	469.12	496.83	5.91
ML1: Mean minimum monthly flow, January	321.54	289.46	-9.98
ML2: Mean minimum monthly flow, February	315.61	308.76	-2.17
ML3: Mean minimum monthly flow, March	314.09	311.52	-0.82
ML4: Mean minimum monthly flow, April	215.13	226.48	5.28
ML5: Mean minimum monthly flow, May	109.91	111.11	1.09
ML6: Mean minimum monthly flow, June	79.16	88.76	12.13
ML7: Mean minimum monthly flow, July	86.48	88.96	2.87
ML8: Mean minimum monthly flow, August	83.10	115.13	38.54
ML9: Mean minimum monthly flow, September	74.93	108.96	45.41
ML10: Mean minimum monthly flow, October	106.57	120.09	12.69
ML11: Mean minimum monthly flow, November	146.43	149.16	1.86
ML12: Mean minimum monthly flow, December	224.91	215.19	-4.32
ML13: CV of minimum monthly flows	87.97	81.92	-6.88
ML14: Mean minimum daily flow / mean median annual flow	0.20	0.23	14.52
ML15: Mean minimum annual flow / mean annual flow	0.13	0.14	10.37
ML16: Median minimum annual flow / median annual flow	0.18	0.20	11.82
ML20: Ratio of baseflow volume to total flow volume	0.54	0.58	7.77
ML22: Mean annual minimum flow divided by catchment area	0.50	0.56	12.68
RA1: Mean of positive changes from one day to next (rise rate)	101.64	107.06	
RA2: CV, mean of positive changes from one day to next (rise rate)	547.23	373.10	
RA3: Mean of negative changes from one day to next (fall rate)	64.77	45.23	
RA4: CV, mean of negative changes from one day to next (fall rate)	627.31	280.29	
RA5: Ratio of days that are higher than previous day	0.38	0.30	

RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.07	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.05	
RA8: Number of flow reversals from one day to the next	81.71	77.17	
RA9: CV, number of flow reversals from one day to the next	16.72	20.80	

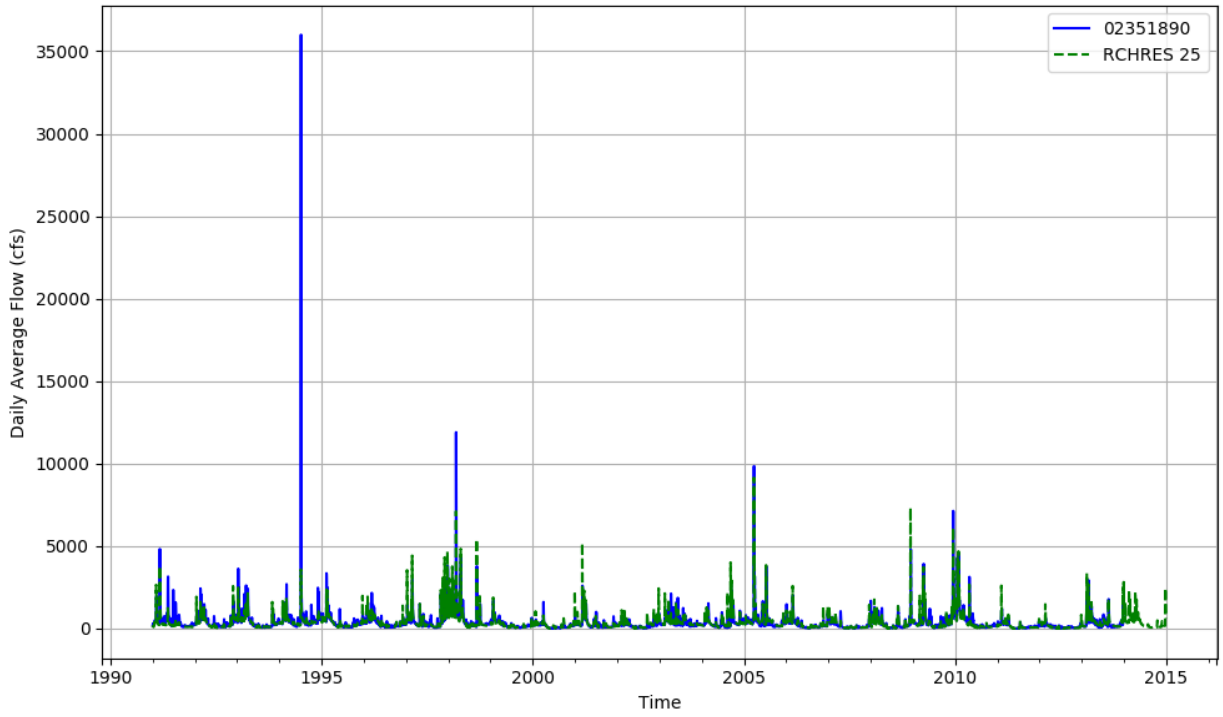


Figure T-03130007-10: Daily flow for HSFP reach 25 and USGS station 02351890.

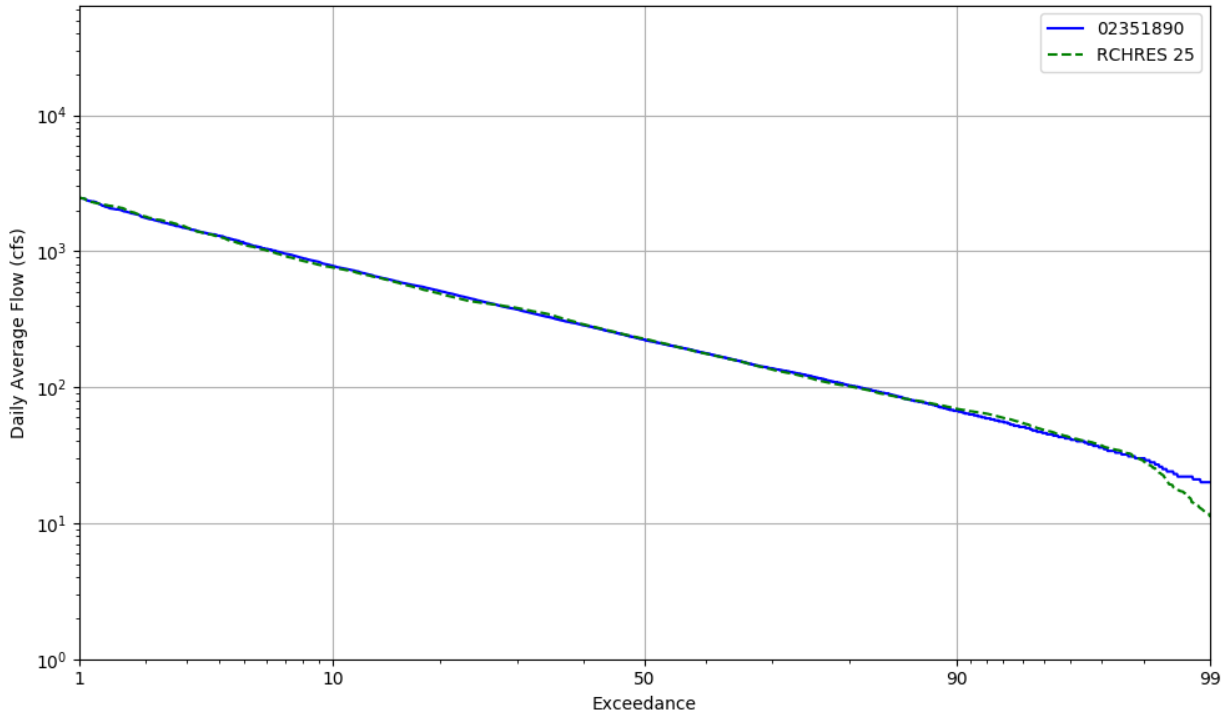


Figure T-03130007-11: Daily exceedance for HSFP reach 25 and USGS station 02351890.

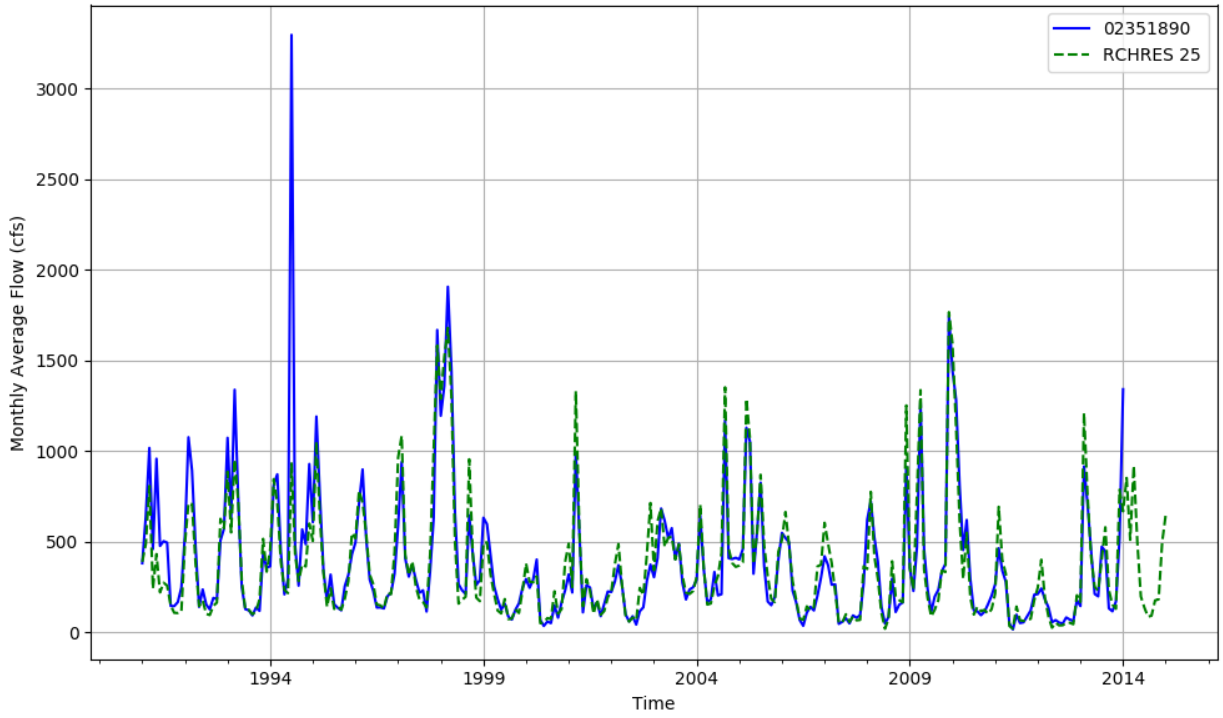


Figure T-03130007-12: Monthly flow for HSFP reach 25 and USGS station 02351890.

HSPF REACH 26, USGS GAUGE 02350900

Water-Data Report 2009
02350900 KINCHAFOONEE CREEK NEAR DAWSON, GA
Apalachicola Basin Kinchafoonee-Muckalee Subbasin

LOCATION.--Lat 314552, long 841512 referenced to North American Datum of 1983, Lee County, GA, Hydrologic Unit 03130007, on downstream end of bridge pier on Pinewood Road, 3.6 miles west of US 19, 12.4 miles east of Dawson, and 5.2 miles northwest of Leesburg.

DRAINAGE AREA.--527 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: Water years 1949-65 (annual maximum only), March 1985 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 211.74 feet above National Geodetic Vertical Datum (NGVD) of 1929 (Georgia State Highway Commission benchmark). From April 6, 1949 to September 30, 1965, a crest-stage gage was located at a site 1,500 feet upstream at same datum.

COOPERATION.--U.S. Army Corps of Engineers, Mobile District.

REMARKS.--Discharge and gage-heights records are good.

Table T-03130007-7: Comparison Statistics Between HSPF Reach 26 and USGS Gauge 02350900.

Statistic	Value
Bias	-14.34
Standard error	196.71
Relative bias	-0.03
Relative standard error	0.40
Nash-Sutcliffe coefficient	0.84
Kling-Gupta coefficient	0.88
Coefficient of efficiency	0.69
Index of agreement	0.84

Table T-03130007-8: Hydrologic Indices Between USGS Gauge 02350900 and HSPF Reach 26.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02350900	Simulated Reach 26	Percent Difference
MA1: Mean, all daily flows	516.16	501.69	-2.80
MA2: Median, all daily flows	329.00	319.74	-2.82
MA3: CV, all daily flows	109.35	106.40	-2.70
MA4: CV, log of all daily flows	86.53	83.78	-3.18

MA5: Mean daily flow / median daily flow	1.57	1.57	0.01
MA9: (Q10 - Q90) / median daily flow	2.98	2.86	-3.93
MA10: (Q20 - Q80) / median daily flow	1.76	1.69	-3.94
MA11: (Q25 - Q75) / median daily flow	1.34	1.30	-2.99
MA12: Mean monthly flow, January	744.35	746.74	0.32
MA13: Mean monthly flow, February	885.77	915.63	3.37
MA14: Mean monthly flow, March	938.74	906.27	-3.46
MA15: Mean monthly flow, April	689.21	625.04	-9.31
MA16: Mean monthly flow, May	366.53	330.72	-9.77
MA17: Mean monthly flow, June	273.74	237.28	-13.32
MA18: Mean monthly flow, July	414.76	285.33	-31.20
MA19: Mean monthly flow, August	259.95	267.06	2.73
MA20: Mean monthly flow, September	244.29	289.54	18.52
MA21: Mean monthly flow, October	235.01	248.27	5.65
MA22: Mean monthly flow, November	332.36	349.64	5.20
MA23: Mean monthly flow, December	645.34	663.01	2.74
ML1: Mean minimum monthly flow, January	453.58	420.45	-7.30
ML2: Mean minimum monthly flow, February	485.61	477.99	-1.57
ML3: Mean minimum monthly flow, March	482.26	472.47	-2.03
ML4: Mean minimum monthly flow, April	339.13	354.62	4.57
ML5: Mean minimum monthly flow, May	172.96	188.33	8.89
ML6: Mean minimum monthly flow, June	117.26	140.89	20.15
ML7: Mean minimum monthly flow, July	130.78	138.42	5.84
ML8: Mean minimum monthly flow, August	129.39	171.47	32.52
ML9: Mean minimum monthly flow, September	110.74	159.26	43.82
ML10: Mean minimum monthly flow, October	137.78	170.09	23.45
ML11: Mean minimum monthly flow, November	193.00	209.76	8.69
ML12: Mean minimum monthly flow, December	310.70	313.67	0.96
ML13: CV of minimum monthly flows	85.42	78.32	-8.32
ML14: Mean minimum daily flow / mean median annual flow	0.22	0.24	8.47
ML15: Mean minimum annual flow / mean annual flow	0.15	0.16	5.89
ML16: Median minimum annual flow / median annual flow	0.19	0.21	9.02
ML20: Ratio of baseflow volume to total flow volume	0.59	0.64	7.41
ML22: Mean annual minimum flow divided by catchment area	0.74	0.84	13.68
RA1: Mean of positive changes from one day to next (rise rate)	122.79	117.65	
RA2: CV, mean of positive changes from one day to next (rise rate)	319.25	382.11	
RA3: Mean of negative changes from one day to next (fall rate)	69.41	54.05	
RA4: CV, mean of negative changes from one day to next (fall rate)	349.54	278.25	
RA5: Ratio of days that are higher than previous day	0.35	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.05	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	81.12	70.17	
RA9: CV, number of flow reversals from one day to the next	16.52	22.20	

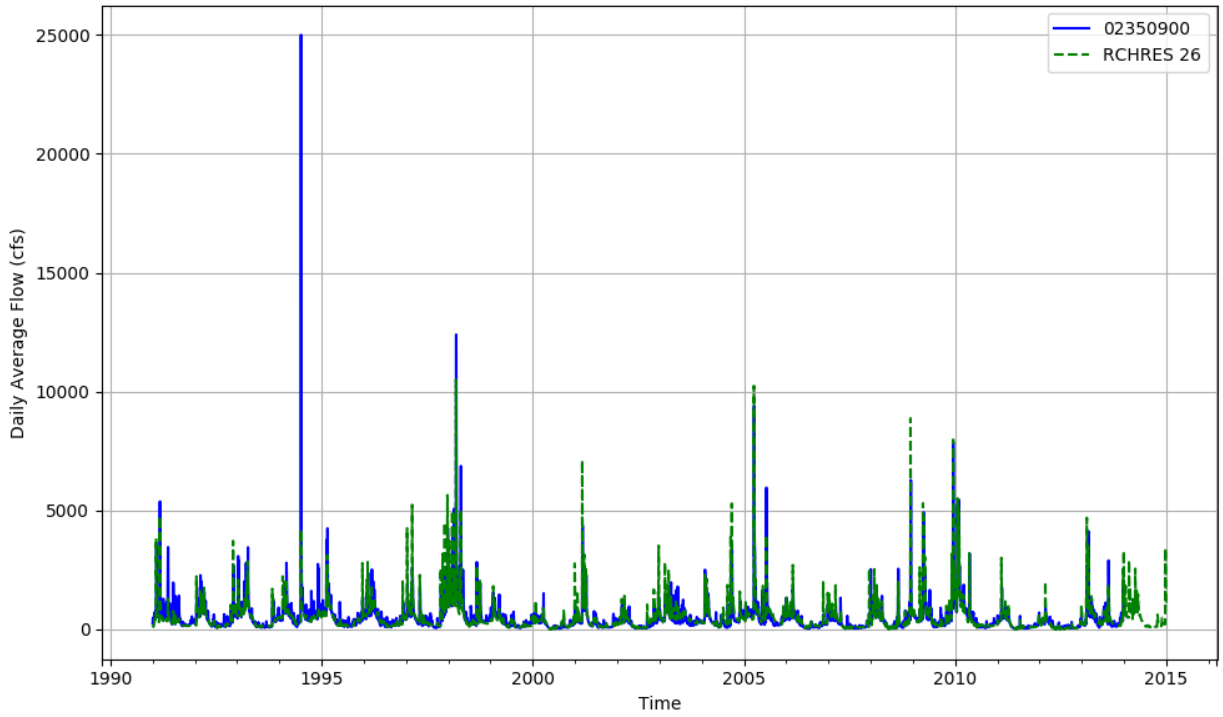


Figure T-03130007-13: Daily flow for HSFP reach 26 and USGS station 02350900.

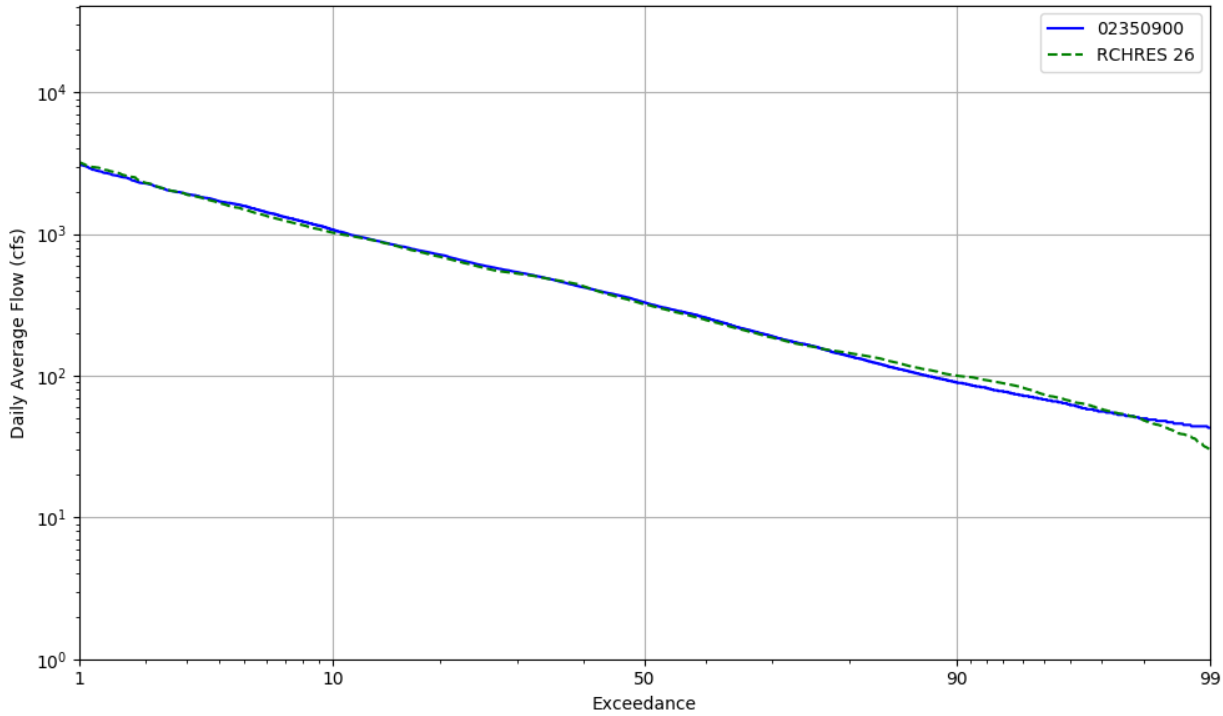


Figure T-03130007-14: Daily exceedance for HSFP reach 26 and USGS station 02350900.

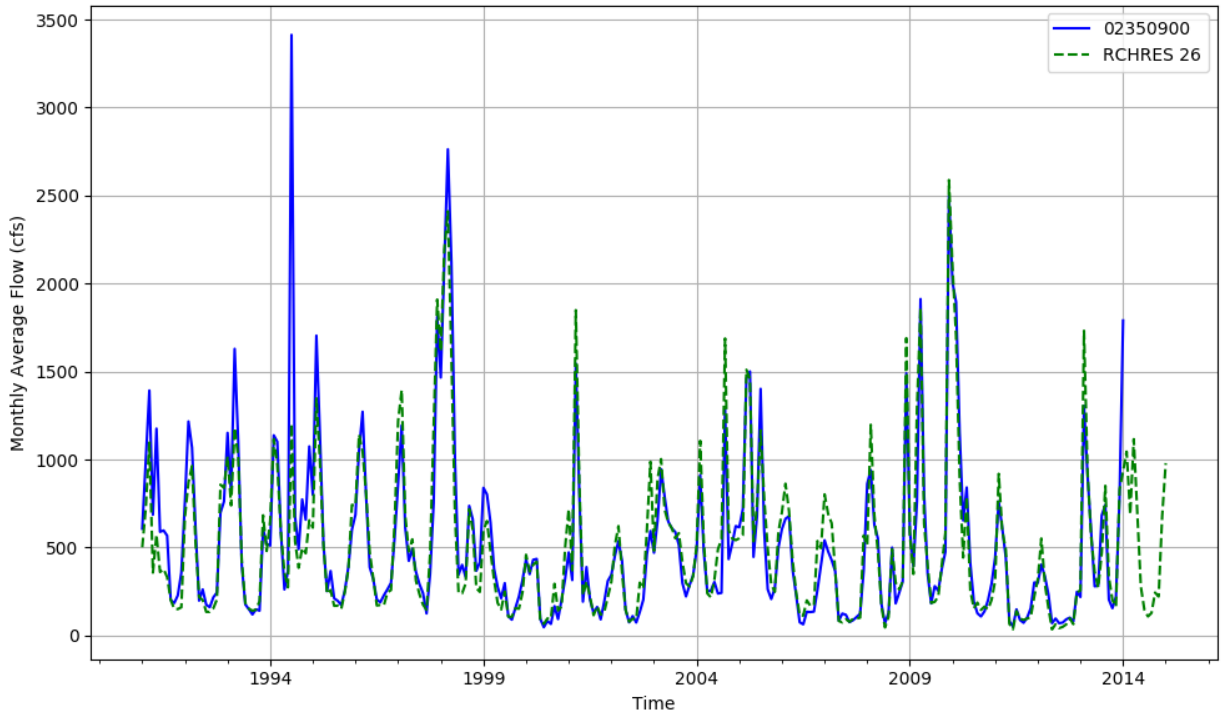


Figure T-03130007-15: Monthly flow for HSFP reach 26 and USGS station 02350900.

Table T-03130007-9: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2555	23106	7175	1498	467	521	320242	11455	49628	42810	88224	75196	356	69987	8414	701633
AREA(%)	0.4	3.3	1.0	0.2	0.1	0.1	45.4	1.6	7.0	6.1	12.5	10.7	0.1	9.9	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		1297	840	388	467											2992
AREA(%)		0.2	0.1	0.1	0.1											0.4
SUPY	42.6	42.3	42.0	42.2	42.3	42.0	42.6	42.4	42.5	42.4	42.1	42.3	85.2	49.2	42.6	43.0
SURLI		0.0	9.3	11.1	11.0										1.4	0.1
UZLI																0.0
LZLI		0.0	1.3	1.0	1.0									0.1	7.0	0.1
SURO: PERVIOUS		0.5	1.0	1.2	0.7	0.3	0.1	1.2	1.0	0.5	0.2		1.6	0.5	0.2	0.3
SURO: IMPERVIOUS		26.9	26.5	26.7	26.8											0.1
SURO: COMBINED		1.9	3.7	6.4	13.7	0.3	0.1	1.2	1.0	0.5	0.2		1.6	0.5	0.2	0.4
IFWO		7.9	8.7	8.9	9.4	7.1	3.6	9.0	7.3	7.8	5.8		22.6	8.7	6.2	4.8
AGWO	6.2	5.3	11.6	12.4	11.9	10.3	6.3	7.3	5.2	5.8	6.3	7.6	22.4	8.6	11.1	6.7
AGWI	9.0	8.1	14.3	15.2	14.4	13.2	8.8	10.2	7.9	8.9	9.4	10.2	18.0	11.1	13.7	9.3
IGWI	1.5	1.4	2.5	2.6	2.5	2.3	1.5	1.8	1.4	1.5	1.6	1.8	3.1	1.9	2.4	1.6
CEPE		10.5	7.5	7.4	10.6	5.6	14.4	7.6	10.5	7.4	5.7	10.8	36.8	10.8	6.3	11.4
UZET	1.7	2.7	3.7	3.8	3.2	3.7	1.8	3.9	2.9	3.2	3.9	5.4	1.9	3.7	4.5	2.9
LZET	0.2	12.7	16.1	16.3	14.9	11.0	14.0	9.9	12.8	14.4	16.9	1.5	2.8	13.9	19.2	12.8
AGWET	2.3	3.0	3.2	3.2	2.9	3.3	2.6	3.1	2.9	3.2	3.3	2.7	0.4	2.8	3.2	2.8
BASET	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.8	0.8	0.8	0.8
SURET	34.1											16.1				1.8
PERO	6.2	13.7	21.3	22.5	21.9	17.7	10.1	17.5	13.5	14.1	12.3	7.6	46.6	17.8	17.5	11.8
IGWI	1.5	1.4	2.5	2.6	2.5	2.3	1.5	1.8	1.4	1.5	1.6	1.8	3.1	1.9	2.4	1.6
TAET: PERVIOUS	38.9	29.6	31.2	31.5	32.3	24.4	33.6	25.4	29.9	29.1	30.6	37.0	42.7	32.1	34.0	32.5
IMPEV: IMPERVIOUS		15.5	15.6	15.6	15.6											0.1
ET: COMBINED	38.9	28.8	29.6	28.2	24.0	24.4	33.6	25.4	29.9	29.1	30.6	37.0	42.7	32.1	34.0	32.6
PET	43.4	43.5	43.6	43.6	43.6	43.5	43.4	43.4	43.5	43.5	43.5	43.5	43.6	43.6	43.7	43.3

Table T-03130007-10: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2555	23106	7175	1498	467	521	320242	11455	49628	42810	88224	75196	356	69987	8414	701633
AREA(%)	0.4	3.3	1.0	0.2	0.1	0.1	45.4	1.6	7.0	6.1	12.5	10.7	0.1	9.9	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		1297	840	388	467											2992
AREA(%)		0.2	0.1	0.1	0.1											0.4
SUPY	64.1	63.0	61.1	61.2	61.3	64.3	65.6	66.1	64.3	63.3	63.3	63.3	64.7	72.7	61.2	65.1
SURLI		0.0	7.1	7.4	6.9										1.3	0.1
UZLI																0.0
LZLI		0.0	1.0	0.8	0.7									0.1	6.8	0.1
SURO: PERVIOUS		0.8	1.5	1.8	1.0	0.5	0.2	1.8	1.6	0.8	0.4		0.9	0.8	0.4	0.5
SURO: IMPERVIOUS		43.6	42.1	42.1	42.2											0.2
SURO: COMBINED		3.1	5.8	10.1	21.6	0.5	0.2	1.8	1.6	0.8	0.4		0.9	0.8	0.4	0.6
IFWO		13.7	13.5	13.6	14.3	12.6	6.7	16.1	13.2	13.6	10.8		14.2	13.9	10.1	8.5
AGWO	7.5	7.1	12.2	12.1	11.3	14.5	11.1	10.8	7.4	7.8	8.7	10.0	8.1	11.8	12.4	10.1
AGWI	9.6	14.7	19.5	19.3	18.2	22.9	19.5	18.7	15.2	15.9	17.1	13.0	14.3	19.8	20.5	17.7
IGWI	1.6	2.5	3.4	3.3	3.1	3.9	3.4	3.2	2.6	2.7	2.9	2.2	2.5	3.4	3.5	3.1
CEPE		13.3	9.6	9.6	13.2	7.7	18.6	10.6	13.6	9.9	7.9	13.6	16.1	13.8	8.1	14.7
UZET	1.3	3.3	4.2	4.2	3.4	4.7	2.2	5.1	3.6	4.0	4.7	5.3	3.1	4.9	5.1	3.5
LZET	0.1	14.1	16.8	16.8	15.1	11.6	14.4	10.2	13.9	15.8	18.7	1.6	13.1	15.7	20.9	13.7
AGWET	1.2	3.3	3.6	3.6	3.3	3.7	2.8	3.3	3.2	3.5	3.7	2.2	3.0	3.1	3.7	3.0
BASET	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.9	0.9	0.9	0.9
SURET	45.3											23.0				2.6
PERO	7.5	21.6	27.2	27.5	26.6	27.7	18.0	28.8	22.3	22.1	19.9	10.0	23.2	26.4	22.9	19.1
IGWI	1.6	2.5	3.4	3.3	3.1	3.9	3.4	3.2	2.6	2.7	2.9	2.2	2.5	3.4	3.5	3.1
TAET: PERVIOUS	48.6	34.8	35.2	35.2	36.0	28.5	38.9	30.0	35.1	34.1	35.9	46.5	36.3	38.4	38.7	38.2
IMPEV: IMPERVIOUS		19.2	18.8	18.9	18.9											0.1
ET: COMBINED	48.6	34.0	33.5	31.8	27.4	28.5	38.9	30.0	35.1	34.1	35.9	46.5	36.3	38.4	38.7	38.3
PET	49.9	50.1	50.5	50.4	50.4	49.9	49.5	49.5	49.8	50.1	50.1	50.1	50.5	50.3	50.8	49.6

Table T-03130007-11: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2555	23106	7175	1498	467	521	320242	11455	49628	42810	88224	75196	356	69987	8414	701633
AREA(%)	0.4	3.3	1.0	0.2	0.1	0.1	45.4	1.6	7.0	6.1	12.5	10.7	0.1	9.9	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		1297	840	388	467											2992
AREA(%)		0.2	0.1	0.1	0.1											0.4
SUPY	41.5	41.3	41.3	41.8	42.0	40.9	41.4	41.2	41.2	41.2	41.0	41.0	50.5	50.4	42.3	42.0
SURLI		0.0	6.9	7.0	6.6										2.4	0.1
UZLI																0.0
LZLI		0.0	0.9	0.7	0.7									0.1	10.5	0.1
SURO: PERVIOUS		0.4	0.8	0.9	0.5	0.3	0.1	0.9	0.9	0.4	0.2		0.5	0.5	0.2	0.2
SURO: IMPERVIOUS		25.4	25.3	25.7	25.9											0.1
SURO: COMBINED		1.8	3.4	6.0	13.2	0.3	0.1	0.9	0.9	0.4	0.2		0.5	0.5	0.2	0.4
IFWO		8.3	8.3	8.4	8.9	7.2	4.3	8.9	7.8	8.2	6.8		9.8	8.8	6.7	5.3
AGWO	6.8	6.8	11.1	11.1	10.3	12.4	10.7	9.3	7.0	7.5	8.4	9.2	8.4	10.9	13.0	9.6
AGWI	8.2	7.0	11.9	11.9	10.8	12.4	8.9	9.5	6.9	7.8	8.3	10.6	9.0	11.2	15.4	9.1
IGWI	1.4	1.2	2.0	2.1	1.9	2.1	1.5	1.6	1.2	1.3	1.4	1.8	1.6	1.9	2.6	1.6
CEPE		11.0	7.7	7.7	11.2	5.9	15.2	8.3	11.2	7.8	6.1	11.3	17.2	11.5	6.5	12.0
UZET	0.8	2.1	3.1	3.2	2.5	3.0	1.3	3.2	2.2	2.6	2.9	3.5	2.2	3.4	4.0	2.2
LZET	0.1	12.9	16.5	16.5	14.8	11.4	12.9	10.2	12.8	14.8	17.3	1.1	11.4	14.9	21.2	12.5
AGWET	1.0	3.4	3.7	3.7	3.4	3.8	3.1	3.6	3.4	3.7	3.8	2.1	2.8	3.3	3.7	3.1
BASET	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.9	0.9	0.9	0.8
SURET	43.8											23.7				2.7
PERO	6.8	15.5	20.2	20.4	19.8	19.9	15.1	19.1	15.6	16.1	15.5	9.2	18.7	20.1	19.9	15.2
IGWI	1.4	1.2	2.0	2.1	1.9	2.1	1.5	1.6	1.2	1.3	1.4	1.8	1.6	1.9	2.6	1.6
TAET: PERVIOUS	46.6	30.3	31.9	32.0	32.8	25.0	33.3	26.1	30.4	29.8	31.0	42.4	34.5	33.9	36.3	33.3
IMPEV: IMPERVIOUS		16.1	16.1	16.3	16.3											0.1
ET: COMBINED	46.6	29.5	30.2	28.8	24.5	25.0	33.3	26.1	30.4	29.8	31.0	42.4	34.5	33.9	36.3	33.4
PET	48.1	48.2	48.4	48.4	48.3	48.2	47.9	48.0	48.1	48.2	48.2	48.2	48.4	48.3	48.6	47.9

Table T-03130007-12: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2555	23106	7175	1498	467	521	320242	11455	49628	42810	88224	75196	356	69987	8414	701633
AREA(%)	0.4	3.3	1.0	0.2	0.1	0.1	45.4	1.6	7.0	6.1	12.5	10.7	0.1	9.9	1.2	99.6
IMPERVIOUS																
AREA(ACRES)		1297	840	388	467											2992
AREA(%)		0.2	0.1	0.1	0.1											0.4
SUPY	48.8	48.8	48.8	48.8	48.8	48.7	48.7	48.7	48.8	48.8	48.8	48.8	79.4	54.3	49.6	49.1
SURLI		0.0	8.0	9.2	9.1										1.1	0.1
UZLI																0.0
LZLI		0.0	1.0	0.8	0.8									0.1	4.8	0.1
SURO: PERVIOUS	0.6	0.5	1.1	1.2	0.7	0.3	0.1	1.0	0.9	0.5	0.3	0.1	1.2	0.5	0.3	0.3
SURO: IMPERVIOUS		31.7	31.8	31.9	31.9											0.1
SURO: COMBINED	0.6	2.2	4.3	7.5	16.3	0.3	0.1	1.0	0.9	0.5	0.3	0.1	1.2	0.5	0.3	0.4
IFWO		8.1	8.8	8.9	9.4	7.0	3.0	8.7	7.4	7.9	6.0		17.6	8.3	6.4	4.6
AGWO	6.0	6.9	12.3	12.8	12.2	12.1	8.5	9.2	6.9	7.5	8.1	8.3	17.9	9.4	11.0	8.3
AGWI	8.2	11.2	16.9	17.5	16.6	17.1	12.5	13.8	11.2	12.1	12.8	10.5	20.8	13.8	15.8	12.4
IGWI	1.4	1.9	2.9	3.0	2.9	2.9	2.2	2.4	1.9	2.1	2.2	1.8	3.6	2.4	2.7	2.1
CEPE		11.8	8.7	8.7	11.9	6.8	16.2	9.2	12.0	8.7	7.0	12.1	27.4	11.3	7.3	12.8
UZET	1.7	2.6	3.6	3.6	3.0	3.7	1.6	3.9	2.8	3.2	3.7	3.6	1.9	3.6	4.1	2.6
LZET	0.2	12.6	15.7	15.8	14.3	10.8	13.1	9.7	12.6	14.3	16.8	1.3	6.8	14.5	18.8	12.4
AGWET	1.4	3.1	3.3	3.3	3.1	3.5	2.7	3.2	3.1	3.3	3.5	1.6	1.6	3.1	3.4	2.8
BASET	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.8	0.8	0.8	0.8
SURET	37.8											20.4				2.3
PERO	6.7	15.5	22.2	23.0	22.3	19.4	11.6	18.9	15.2	15.8	14.3	8.4	36.7	18.2	17.7	13.2
IGWI	1.4	1.9	2.9	3.0	2.9	2.9	2.2	2.4	1.9	2.1	2.2	1.8	3.6	2.4	2.7	2.1
TAET: PERVIOUS	41.8	30.9	32.1	32.2	33.0	25.7	34.4	26.8	31.2	30.4	31.8	39.7	38.6	33.2	34.5	33.7
IMPEV: IMPERVIOUS		17.1	17.0	17.0	17.0											0.1
ET: COMBINED	41.8	30.2	30.5	29.1	25.0	25.7	34.4	26.8	31.2	30.4	31.8	39.7	38.6	33.2	34.5	33.7
PET	46.1	46.2	46.3	46.3	46.3	46.2	46.0	46.0	46.1	46.2	46.2	46.2	46.4	46.2	46.4	45.9

Table T-03130007-13: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
12	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
13	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
19	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
20	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
21	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
22	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
23	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
24	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
25	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
26	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
27	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
28	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
29	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
30	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
31	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

Table T-03130007-14: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
2	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
3	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
4	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
5	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
6	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
7	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
8	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
9	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
10	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
11	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
12	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
13	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
14	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
15	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
16	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
17	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
18	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
19	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
20	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
21	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
22	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
23	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
24	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
25	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
26	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
27	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
28	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
29	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
30	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
31	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018

Table T-03130007-15: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
2	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
3	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
4	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
5	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
6	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
7	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
8	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
9	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
10	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
11	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
12	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
13	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
14	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
15	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
16	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
17	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
18	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
19	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
20	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
21	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
22	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
23	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
24	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
25	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
26	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
27	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
28	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
29	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
30	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102
31	0.000	0.097	0.050	0.050	0.100	0.027	0.200	0.054	0.100	0.050	0.030	0.102

Table T-03130007-16: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
2	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
3	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
4	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
5	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
6	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
7	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
8	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
9	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
10	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
11	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
12	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
13	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
14	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
15	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
16	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
17	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
18	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
19	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
20	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
21	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
22	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
23	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
24	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
25	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
26	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
27	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
28	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
29	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
30	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147
31	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147

Table T-03130007-17: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
2	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
3	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
4	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
5	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
6	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
7	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
8	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
9	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
10	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
11	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
12	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
13	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
14	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
15	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
16	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
17	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
18	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
19	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
20	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
21	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
22	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
23	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
24	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
25	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
26	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
27	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
28	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
29	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
30	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010
31	0.010	0.185	0.185	0.185	0.185	0.277	0.462	0.185	0.185	0.185	0.222	0.010

Table T-03130007-18: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
2		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
3		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
4		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
5		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
6		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
7		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
8		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
9		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
10		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
11		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
12		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
13		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
14		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
15		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
16		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
17		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
18		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
19		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
20		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
21		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
22		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
23		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
24		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
25		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
26		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
27		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
28		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
29		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	

30		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	
31		2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	2.453	

Table T-03130007-19: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
2	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
3	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
4	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
5	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
6	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
7	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
8	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
9	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
10	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
11	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
12	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
13	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
14	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
15	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
16	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
17	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
18	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
19	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
20	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
21	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
22	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
23	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
24	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
25	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
26	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
27	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
28	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
29	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
30	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
31	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700

Table T-03130007-20: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
2	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
3	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
4	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
5	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
6	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
7	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
8	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
9	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
10	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
11	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
12	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
13	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
14	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
15	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
16	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
17	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
18	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
19	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
20	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
21	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
22	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
23	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
24	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
25	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
26	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
27	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
28	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
29	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
30	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879
31	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879	0.879

Table T-03130007-21: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
10	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
11	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
12	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
16	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
21	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
22	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
23	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
24	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
25	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
26	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
27	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
28	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
29	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
30	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
31	0.038	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03130007-22: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
2	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
3	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
4	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
5	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
6	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
7	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
8	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
9	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
10	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
11	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
12	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
13	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
14	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
15	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
16	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
17	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
18	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
19	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
20	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
21	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
22	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
23	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
24	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
25	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
26	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
27	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
28	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
29	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
30	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147
31	0.050	1.716	1.716	1.716	1.716	1.930	2.573	1.930	1.930	1.930	2.144	0.147

Table T-03130007-23: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.222

APPENDIX T-03130008

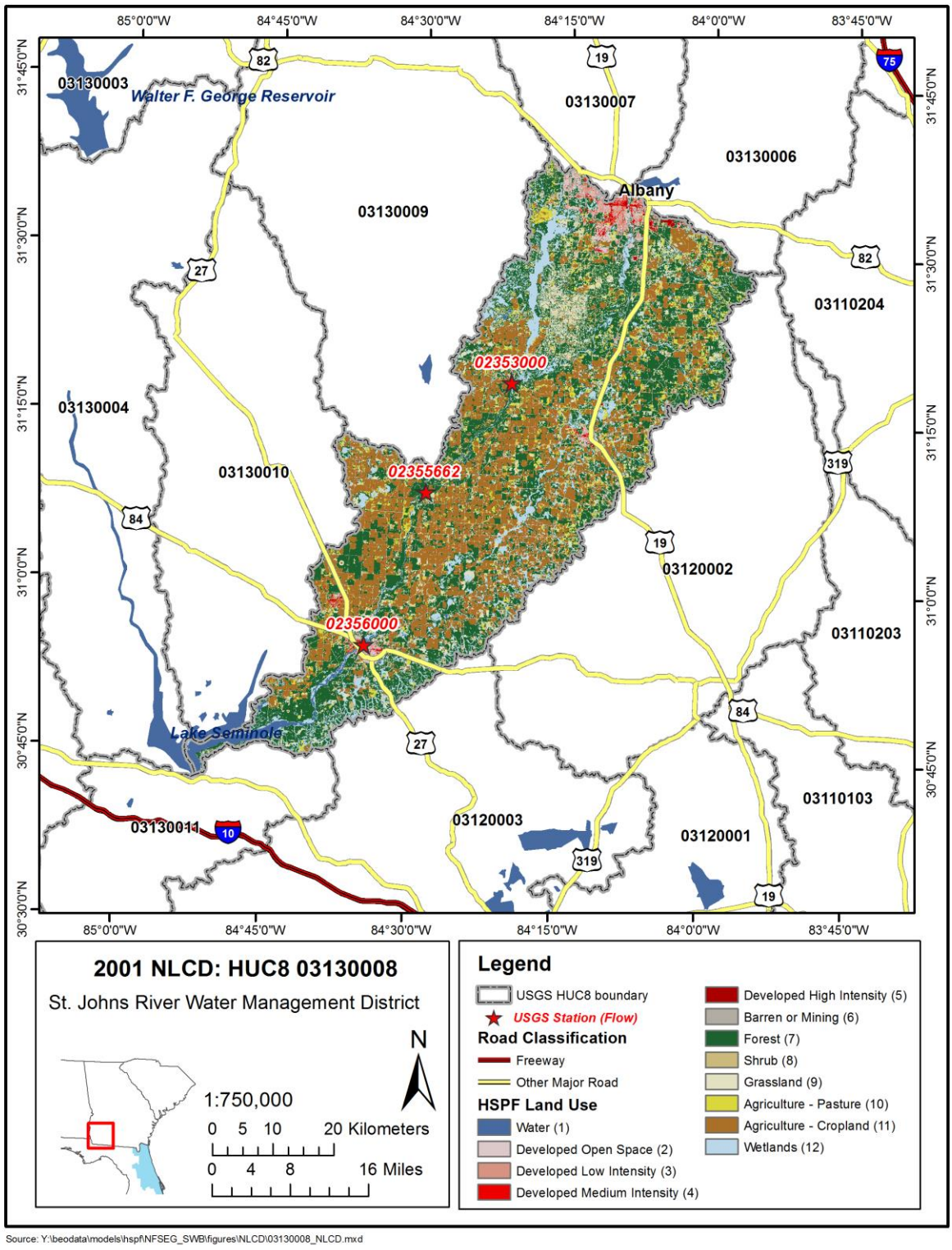
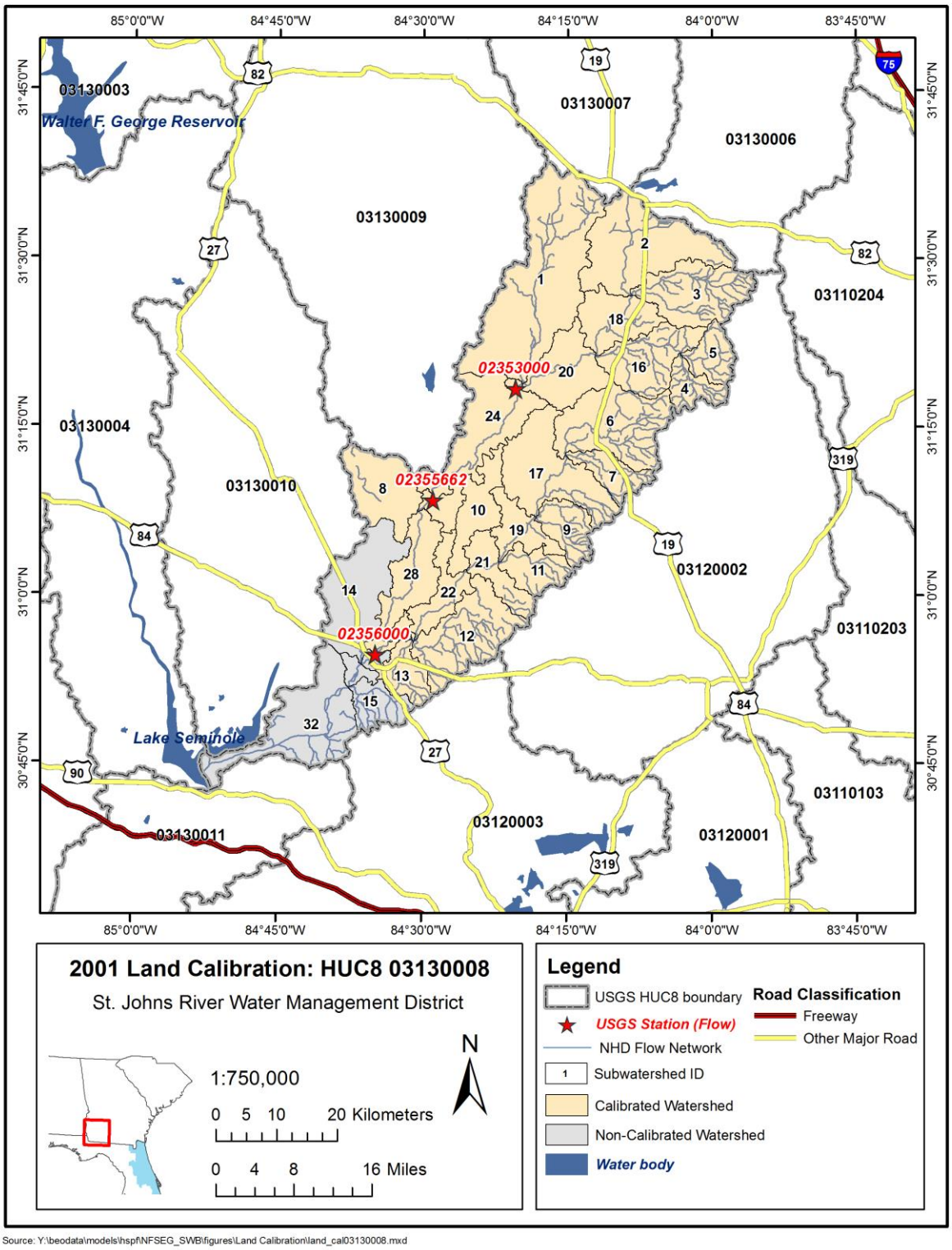


Figure T-03130008-1: Land Cover from the National Land Cover Database.



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Figure T-03130008-2: Calibrated sub-watersheds.

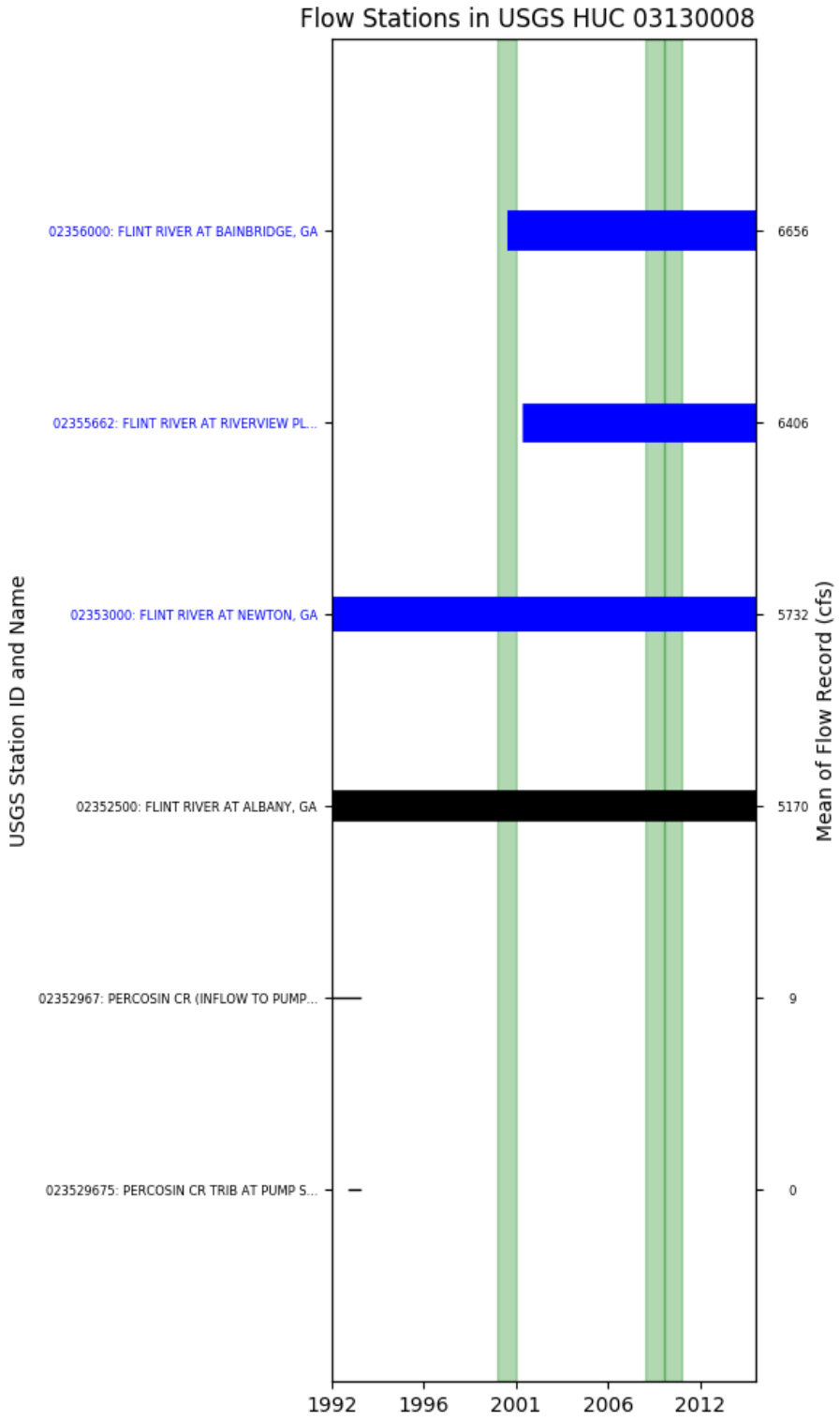


Figure T-03130008-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 23, USGS GAUGE 02353000

Water-Data Report 2009
02353000 FLINT RIVER AT NEWTON, GA
Apalachicola Basin Lower Flint Subbasin

LOCATION.--Lat 311825, long 842020 referenced to North American Datum of 1983, Baker County, GA, Hydrologic Unit 03130008, on downstream side of pier of bridge on GA 37, 16.24 mi upstream from confluence with Ichawaynochaway Creek, 0.8 mi downstream from confluence with Cooleewahee Creek, 0.5 mi southwest of Newton, and at mile 69.5.

DRAINAGE AREA.--5,740 mi, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1938 to September 1950 (monthly discharge only for October 1945 to September 1946, October 1947 to December 1948, published in WSP 1304), October 1956 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 110.20 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by U.S. Army Corps of Engineers). Prior to November 12, 1956, a non-recording gage was located at same site and datum.

COOPERATION.--U.S. Army Corps of Engineers, Mobile District.

REMARKS.--Discharge records good. Gage-height records good. Flow regulated by power plants at Flint River Reservoir since 1921, with a capacity of 7,500 acre-ft; and at Warwick Reservoir since 1930, with a capacity of about 35,000 acre-ft. Normal operation of power plants does not materially affect figures of monthly runoff. Periods of monthly discharge only are not included in statistics computations.

Table T-03130008-1: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02353000.

Statistic	Value
Bias	-701.99
Standard error	2427.47
Relative bias	-0.12
Relative standard error	0.49
Nash-Sutcliffe coefficient	0.76
Kling-Gupta coefficient	0.83
Coefficient of efficiency	0.63
Index of agreement	0.83

Table T-03130008-2: Hydrologic Indices Between USGS Gauge 02353000 and HSPF Reach 23.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02353000	Simulated Reach 23	Percent Difference
MA1: Mean, all daily flows	5753.82	5074.01	-11.81
MA2: Median, all daily flows	3950.00	3075.39	-22.14
MA3: CV, all daily flows	84.74	117.33	38.45
MA4: CV, log of all daily flows	75.72	88.51	16.88
MA5: Mean daily flow / median daily flow	1.46	1.65	13.26
MA9: (Q10 - Q90) / median daily flow	2.53	3.16	24.79
MA10: (Q20 - Q80) / median daily flow	1.55	2.09	34.51
MA11: (Q25 - Q75) / median daily flow	1.22	1.67	37.41
MA12: Mean monthly flow, January	7364.61	6491.59	-11.85
MA13: Mean monthly flow, February	9103.31	9335.13	2.55
MA14: Mean monthly flow, March	10383.01	11068.15	6.60
MA15: Mean monthly flow, April	7957.18	7325.48	-7.94
MA16: Mean monthly flow, May	4668.63	4405.06	-5.65
MA17: Mean monthly flow, June	3702.51	2969.11	-19.81
MA18: Mean monthly flow, July	5166.95	3052.05	-40.93
MA19: Mean monthly flow, August	3328.98	2427.95	-27.07
MA20: Mean monthly flow, September	2896.98	2164.18	-25.30
MA21: Mean monthly flow, October	2981.61	1908.66	-35.99
MA22: Mean monthly flow, November	3780.79	2704.44	-28.47
MA23: Mean monthly flow, December	5784.60	5165.20	-10.71
ML1: Mean minimum monthly flow, January	4703.33	3922.49	-16.60
ML2: Mean minimum monthly flow, February	5080.00	5238.42	3.12
ML3: Mean minimum monthly flow, March	5654.78	5803.05	2.62
ML4: Mean minimum monthly flow, April	4207.83	4598.36	9.28
ML5: Mean minimum monthly flow, May	2611.35	2935.33	12.41
ML6: Mean minimum monthly flow, June	2089.13	2223.89	6.45
ML7: Mean minimum monthly flow, July	2191.48	1961.59	-10.49
ML8: Mean minimum monthly flow, August	2080.30	1799.51	-13.50
ML9: Mean minimum monthly flow, September	1715.39	1307.04	-23.80
ML10: Mean minimum monthly flow, October	1914.17	1353.91	-29.27
ML11: Mean minimum monthly flow, November	2244.43	1588.14	-29.24
ML12: Mean minimum monthly flow, December	3202.61	2749.97	-14.13
ML13: CV of minimum monthly flows	73.00	84.17	15.30
ML14: Mean minimum daily flow / mean median annual flow	0.33	0.27	-18.12
ML15: Mean minimum annual flow / mean annual flow	0.25	0.17	-32.59
ML16: Median minimum annual flow / median annual flow	0.31	0.26	-18.27
ML20: Ratio of baseflow volume to total flow volume	0.66	0.73	10.46
ML22: Mean annual minimum flow divided by catchment area	12.86	7.29	-43.31
RA1: Mean of positive changes from one day to next (rise rate)	731.27	1654.92	
RA2: CV, mean of positive changes from one day to next (rise rate)	177.72	469.18	
RA3: Mean of negative changes from one day to next (fall rate)	608.78	718.98	
RA4: CV, mean of negative changes from one day to next (fall rate)	170.06	650.78	
RA5: Ratio of days that are higher than previous day	0.45	0.30	

RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.03	
RA8: Number of flow reversals from one day to the next	135.96	56.12	
RA9: CV, number of flow reversals from one day to the next	20.05	22.61	

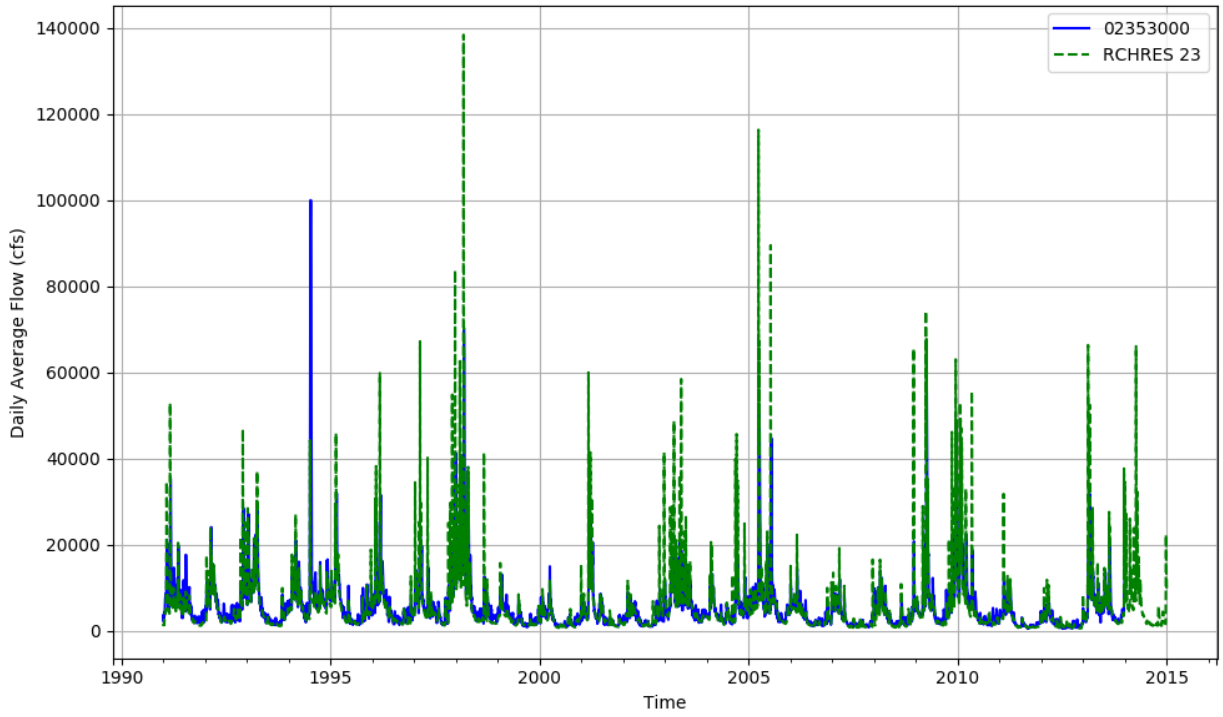


Figure T-03130008-4: Daily flow for HSFP reach 23 and USGS station 02353000.

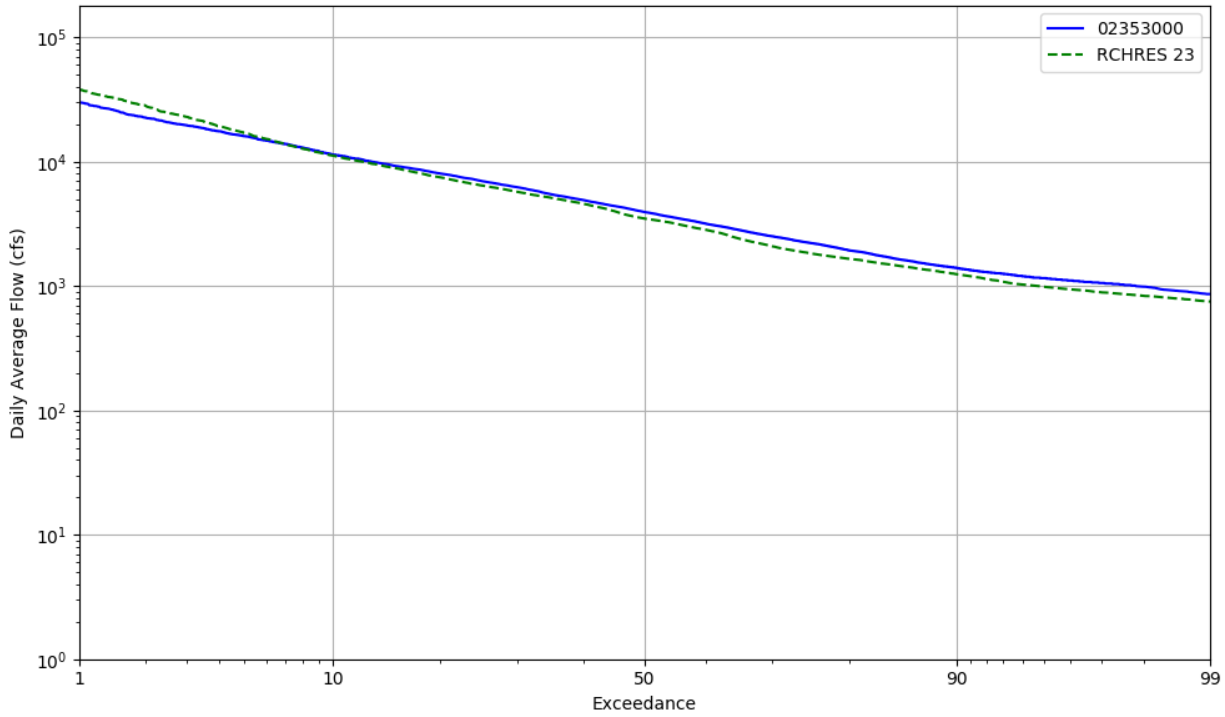


Figure T-03130008-5: Daily exceedance for HSFP reach 23 and USGS station 02353000.

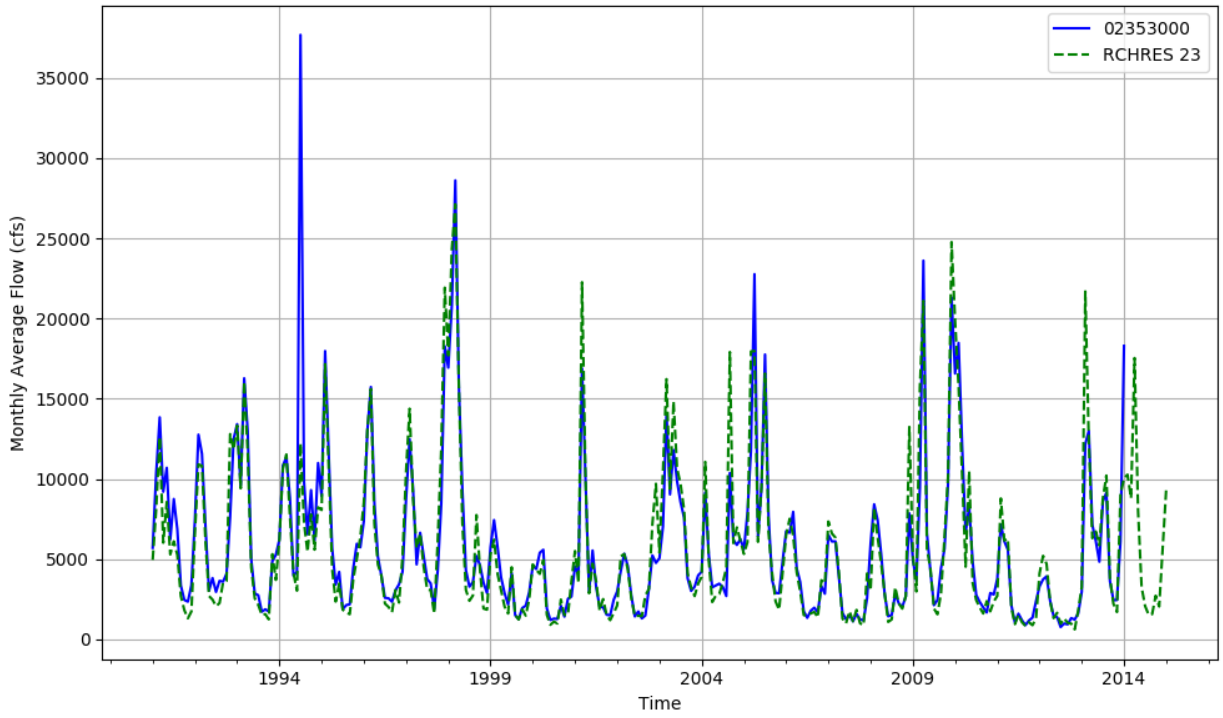


Figure T-03130008-6: Monthly flow for HSFP reach 23 and USGS station 02353000.

HSPF REACH 24, USGS GAUGE 02355662

Water-Data Report 2009
02355662 FLINT RIVER AT RIVERVIEW PLANTATION, NEAR HOPEFUL, GA
Apalachicola Basin Lower Flint Subbasin

LOCATION.--Lat 310826, long 842849 referenced to North American Datum of 1983, Mitchell County, GA, Hydrologic Unit 03130008, on top of left bank 2.4 mi. downstream of confluence with Ichawaynochaway Creek, approximately 1.0 mi. south of the main house at Riverview Plantation, and approximately 1.2 mi. southwest of intersection of Riverview road and Roswell road.

DRAINAGE AREA.--7,080 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 2002 to current year.
GAGE-HEIGHT: May 2002 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 72 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records good. Flow regulated by power plants at Flint River Reservoir since 1921, with a capacity of 7,500 acrefeet; and at Warwick Reservoir since 1930, with a capacity of about 35,000 acre-feet. Normal operation of power plants does not materially affect figures of monthly runoff. Periods of monthly discharge only are not included in statistics computations.

Table T-03130008-3: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02355662.

Statistic	Value
Bias	-557.18
Standard error	2337.36
Relative bias	-0.09
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.82
Kling-Gupta coefficient	0.85
Coefficient of efficiency	0.62
Index of agreement	0.82

Table T-03130008-4: Hydrologic Indices Between USGS Gauge 02355662 and HSPF Reach 24.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02355662	Simulated Reach 24	Percent Difference
MA1: Mean, all daily flows	6253.03	5758.79	-7.90
MA2: Median, all daily flows	4250.00	3372.68	-20.64
MA3: CV, all daily flows	76.42	117.73	54.06
MA4: CV, log of all daily flows	76.90	87.48	13.75
MA5: Mean daily flow / median daily flow	1.47	1.71	16.05
MA9: (Q10 - Q90) / median daily flow	2.61	3.12	19.48
MA10: (Q20 - Q80) / median daily flow	1.61	2.18	35.25
MA11: (Q25 - Q75) / median daily flow	1.27	1.81	42.65
MA12: Mean monthly flow, January	7737.44	6826.95	-11.77
MA13: Mean monthly flow, February	8334.22	8974.72	7.69
MA14: Mean monthly flow, March	9160.22	10134.92	10.64
MA15: Mean monthly flow, April	9035.87	7973.57	-11.76
MA16: Mean monthly flow, May	5283.32	5103.32	-3.41
MA17: Mean monthly flow, June	4297.69	3592.24	-16.41
MA18: Mean monthly flow, July	4808.78	3683.68	-23.40
MA19: Mean monthly flow, August	3994.80	3219.49	-19.41
MA20: Mean monthly flow, September	3562.14	2920.99	-18.00
MA21: Mean monthly flow, October	3059.73	2072.46	-32.27
MA22: Mean monthly flow, November	3730.10	2605.85	-30.14
MA23: Mean monthly flow, December	6136.87	5989.70	-2.40
ML1: Mean minimum monthly flow, January	6175.00	4602.14	-25.47
ML2: Mean minimum monthly flow, February	5718.18	5166.98	-9.64
ML3: Mean minimum monthly flow, March	6518.18	6476.47	-0.64
ML4: Mean minimum monthly flow, April	5242.73	5327.19	1.61
ML5: Mean minimum monthly flow, May	3363.33	3424.32	1.81
ML6: Mean minimum monthly flow, June	2589.17	2604.70	0.60
ML7: Mean minimum monthly flow, July	2726.83	2408.38	-11.68
ML8: Mean minimum monthly flow, August	2550.00	2282.99	-10.47
ML9: Mean minimum monthly flow, September	2130.08	1672.53	-21.48
ML10: Mean minimum monthly flow, October	2303.33	1632.60	-29.12
ML11: Mean minimum monthly flow, November	2608.33	1826.77	-29.96
ML12: Mean minimum monthly flow, December	3428.33	2582.53	-24.67
ML13: CV of minimum monthly flows	77.90	83.74	7.50
ML14: Mean minimum daily flow / mean median annual flow	0.43	0.33	-21.32
ML15: Mean minimum annual flow / mean annual flow	0.32	0.21	-35.03
ML16: Median minimum annual flow / median annual flow	0.40	0.32	-20.26
ML20: Ratio of baseflow volume to total flow volume	0.68	0.72	4.70
ML22: Mean annual minimum flow divided by catchment area	16.39	9.81	-40.14
RA1: Mean of positive changes from one day to next (rise rate)	671.35	2090.23	
RA2: CV, mean of positive changes from one day to next (rise rate)	185.98	480.11	
RA3: Mean of negative changes from one day to next (fall rate)	524.97	881.45	
RA4: CV, mean of negative changes from one day to next (fall rate)	170.58	662.82	
RA5: Ratio of days that are higher than previous day	0.43	0.30	

RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.03	
RA7: Median of difference in log of flows over two consecutive days of falling	0.05	0.03	
RA8: Number of flow reversals from one day to the next	108.23	48.77	
RA9: CV, number of flow reversals from one day to the next	29.45	32.53	

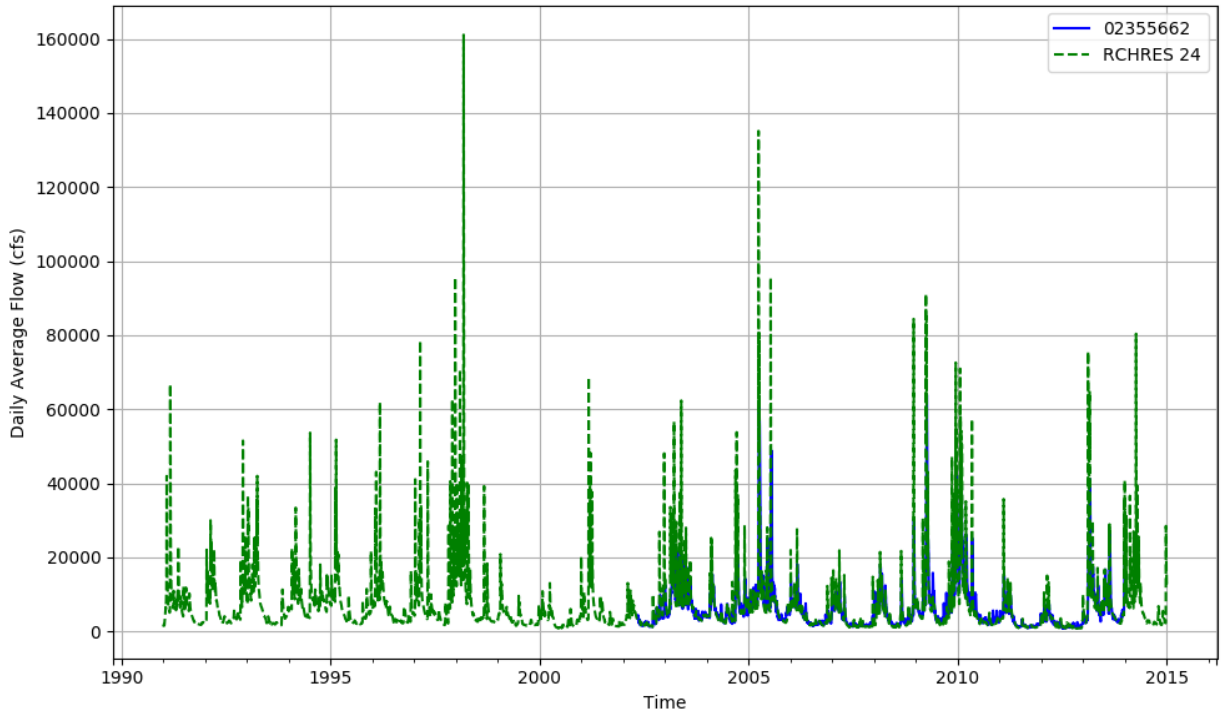


Figure T-03130008-7: Daily flow for HSFP reach 24 and USGS station 02355662.

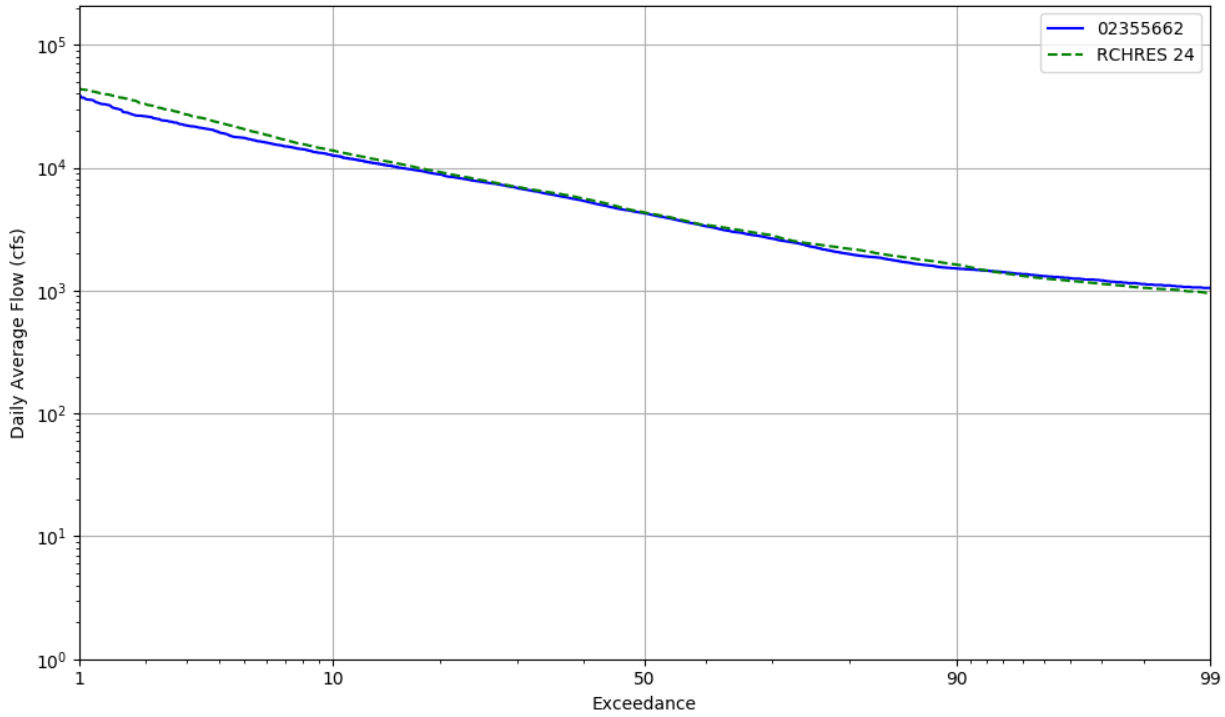


Figure T-03130008-8: Daily exceedance for HSFP reach 24 and USGS station 02355662.

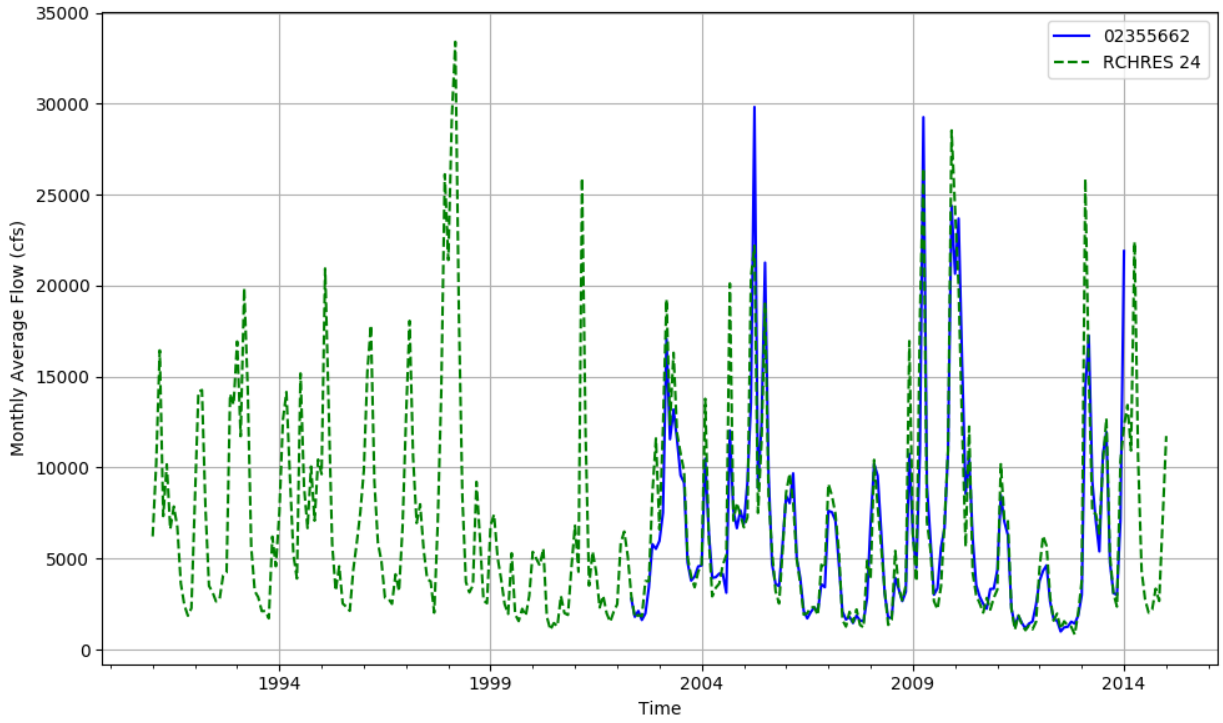


Figure T-03130008-9: Monthly flow for HSFP reach 24 and USGS station 02355662.

HSPF REACH 29, USGS GAUGE 02356000

Water-Data Report 2009
02356000 FLINT RIVER AT BAINBRIDGE, GA
Apalachicola Basin Lower Flint Subbasin

LOCATION.--Lat 305441, long 843448 referenced to North American Datum of 1927, Decatur County, GA, Hydrologic Unit 03130008, on downstream side of bridge on US 27 (Business Route), 0.2 mi downstream from Seaboard Coast Line Railroad bridge, and 29.2 mi upstream from Jim Woodruff Dam, 5.19 mi upstream from confluence with Fourmile Creek, 2.37 mi downstream from confluence with Big Slough Creek, 0.6 mi northwest of Bainbridge, and at mile 29.0.

DRAINAGE AREA.--7,570 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1907 to December 1913, October 1928 to September 1971, October 1971 to September 1996(annual peaks only), October 2001 to current year.
GAGE-HEIGHT: October 1998 to current year.

WATER VELOCITY: April 2001 to current year.

GAGE.--Satellite telemetry with a water-stage recorder and an acoustic velocity meter. Datum of gage is 58.06 feet above National Geodetic Vertical Datum (NGVD) of 1929. Prior to December 31, 1913, a non-recording gage was located at same site at datum 0.3 feet higher. From October 1, 1928 to January 14, 1929, a non-recording gage was located at present site and datum. An auxiliary water-stage recorder was located at a site 6.4 miles upstream January 15, 1957 to September 1971.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good, except for periods of estimated discharge, which are fair. Gage-height and water velocity records are good. Water velocity data represent water velocity at the downstream cross-section of the bridge with positive values in the downstream direction. Flow regulated by power plants at Flint River Reservoir since 1921, with a capacity of 7,500 acre-feet; and at Warwick Reservoir since 1930, with a capacity of about 35,000 acre-feet. Normal operation of power plants does not materially affect figures of monthly runoff.

Table T-03130008-5: Comparison Statistics Between HSPF Reach 29 and USGS Gauge 02356000.

Statistic	Value

Bias	-291.81
Standard error	2228.66
Relative bias	-0.04
Relative standard error	0.42
Nash-Sutcliffe coefficient	0.83
Kling-Gupta coefficient	0.84
Coefficient of efficiency	0.65
Index of agreement	0.84

Table T-03130008-6: Hydrologic Indices Between USGS Gauge 02356000 and HSPF Reach 29.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02356000	Simulated Reach 29	Percent Difference
MA1: Mean, all daily flows	6478.12	6232.07	-3.80
MA2: Median, all daily flows	4600.00	3877.67	-15.70
MA3: CV, all daily flows	68.11	105.21	54.46
MA4: CV, log of all daily flows	70.76	78.93	11.54
MA5: Mean daily flow / median daily flow	1.41	1.61	14.12
MA9: (Q10 - Q90) / median daily flow	2.38	2.73	14.60
MA10: (Q20 - Q80) / median daily flow	1.50	1.85	23.58
MA11: (Q25 - Q75) / median daily flow	1.21	1.52	26.11
MA12: Mean monthly flow, January	7700.62	7067.01	-8.23
MA13: Mean monthly flow, February	8406.11	9212.53	9.59
MA14: Mean monthly flow, March	9212.53	10508.00	14.06
MA15: Mean monthly flow, April	9206.21	8534.51	-7.30
MA16: Mean monthly flow, May	5384.35	5345.37	-0.72
MA17: Mean monthly flow, June	4392.05	3876.04	-11.75
MA18: Mean monthly flow, July	4962.96	4280.64	-13.75
MA19: Mean monthly flow, August	4306.59	3786.05	-12.09
MA20: Mean monthly flow, September	3901.67	3410.36	-12.59
MA21: Mean monthly flow, October	3328.21	2579.41	-22.50
MA22: Mean monthly flow, November	3945.41	3023.32	-23.37
MA23: Mean monthly flow, December	6193.66	6169.76	-0.39
ML1: Mean minimum monthly flow, January	6140.00	4914.73	-19.96
ML2: Mean minimum monthly flow, February	5898.33	5407.70	-8.32
ML3: Mean minimum monthly flow, March	6890.83	6926.65	0.52
ML4: Mean minimum monthly flow, April	5704.17	5941.77	4.17
ML5: Mean minimum monthly flow, May	3959.17	4085.35	3.19
ML6: Mean minimum monthly flow, June	3074.17	3220.32	4.75
ML7: Mean minimum monthly flow, July	3095.39	3064.12	-1.01
ML8: Mean minimum monthly flow, August	2990.77	2812.15	-5.97
ML9: Mean minimum monthly flow, September	2493.08	2251.85	-9.68
ML10: Mean minimum monthly flow, October	2532.31	2161.31	-14.65
ML11: Mean minimum monthly flow, November	2800.00	2318.24	-17.21
ML12: Mean minimum monthly flow, December	3587.69	2990.63	-16.64
ML13: CV of minimum monthly flows	72.23	72.71	0.66
ML14: Mean minimum daily flow / mean median annual flow	0.45	0.46	1.95
ML15: Mean minimum annual flow / mean annual flow	0.35	0.31	-11.39
ML16: Median minimum annual flow / median annual flow	0.45	0.48	7.52
ML20: Ratio of baseflow volume to total flow volume	0.72	0.74	2.82
ML22: Mean annual minimum flow divided by catchment area	19.45	15.71	-19.25

RA1: Mean of positive changes from one day to next (rise rate)	629.31	1987.68	
RA2: CV, mean of positive changes from one day to next (rise rate)	177.76	480.55	
RA3: Mean of negative changes from one day to next (fall rate)	502.22	851.84	
RA4: CV, mean of negative changes from one day to next (fall rate)	161.85	672.29	
RA5: Ratio of days that are higher than previous day	0.44	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.06	0.02	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.02	
RA8: Number of flow reversals from one day to the next	125.07	44.43	
RA9: CV, number of flow reversals from one day to the next	35.73	43.63	

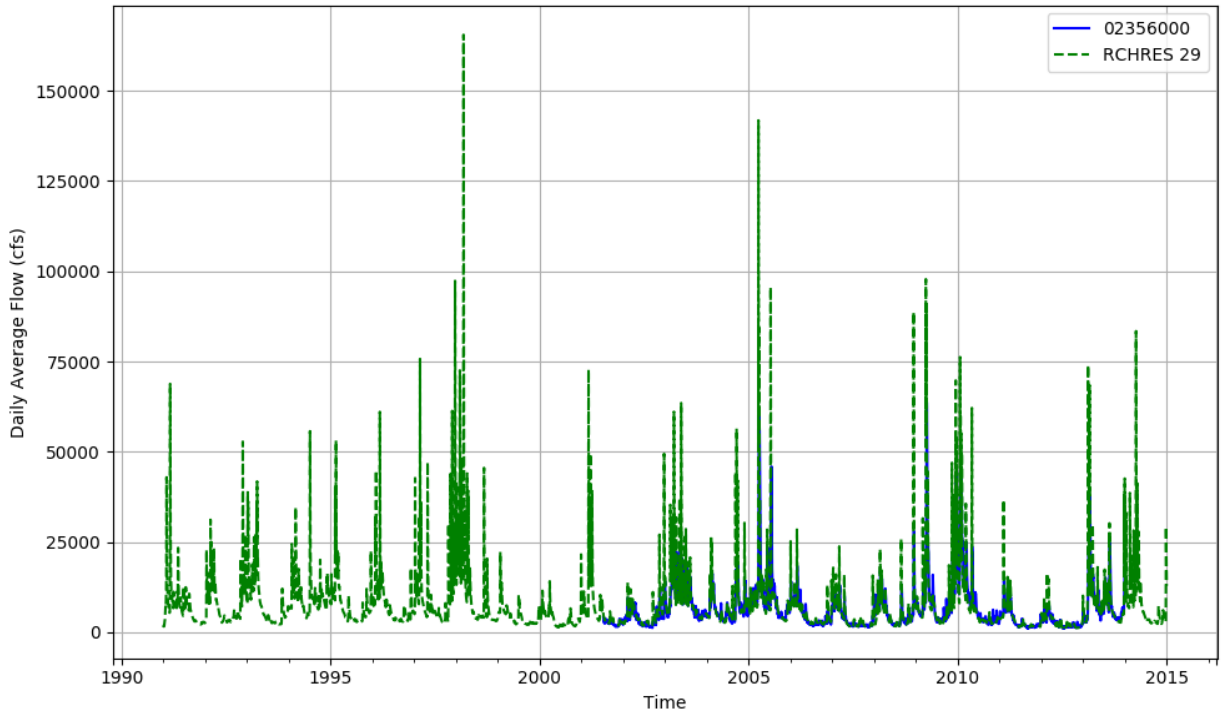


Figure T-03130008-10: Daily flow for HSFP reach 29 and USGS station 02356000.

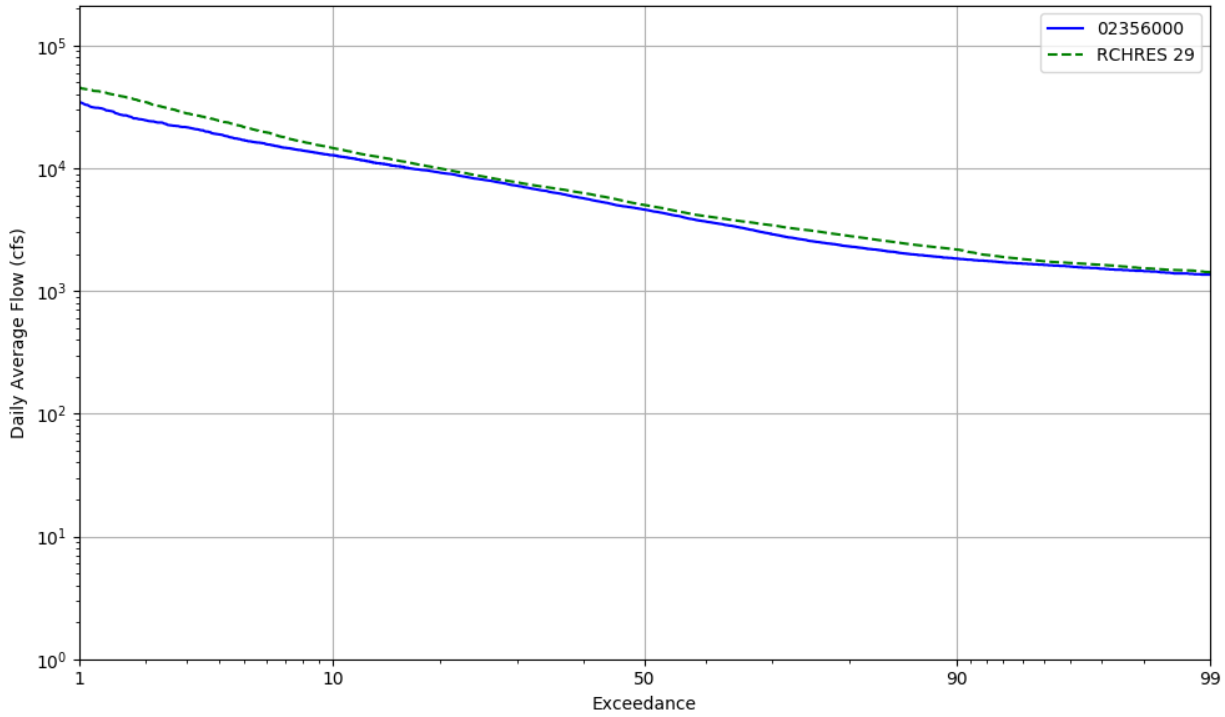


Figure T-03130008-11: Daily exceedance for HSFP reach 29 and USGS station 02356000.

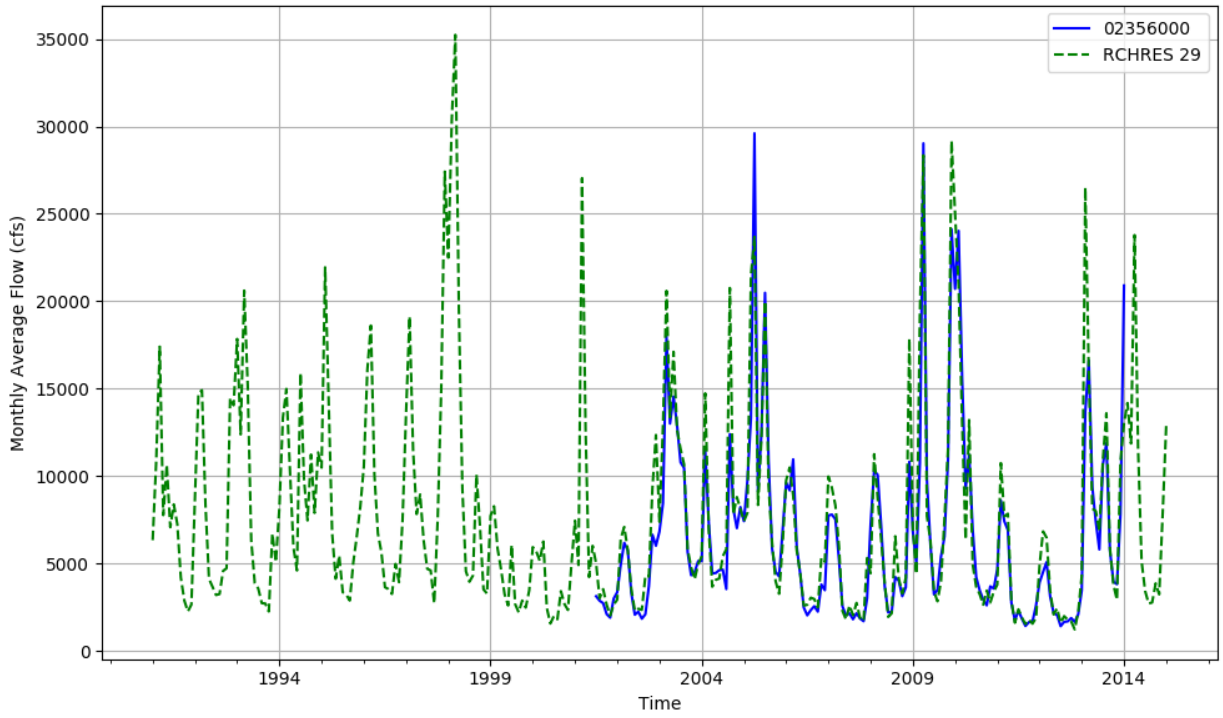


Figure T-03130008-12: Monthly flow for HSFP reach 29 and USGS station 02356000.

Table T-03130008-7: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12215	36230	15035	3280	1069	927	284288	13406	68406	39051	96198	74652	839	141349	22946	809890
AREA(%)	1.5	4.4	1.8	0.4	0.1	0.1	34.9	1.6	8.4	4.8	11.8	9.2	0.1	17.3	2.8	99.3
IMPERVIOUS																
AREA(ACRES)		2039	1766	854	1078											5737
AREA(%)		0.2	0.2	0.1	0.1											0.7
SUPY	43.6	43.1	42.7	41.9	41.8	43.1	43.6	43.0	43.3	43.9	45.2	42.8	58.1	53.6	43.4	45.1
SURLI			7.1	7.4	6.9									0.0	2.1	0.2
UZLI																0.0
LZLI			0.6	0.3	0.2									0.0	9.4	0.3
SURO: PERVIOUS	0.8	0.3	0.7	0.5	0.3	0.1	0.0	0.4	0.3	0.3	0.2	0.6	0.6	0.4	0.1	0.3
SURO: IMPERVIOUS		32.3	32.2	31.6	31.5											0.2
SURO: COMBINED	0.8	2.0	4.0	7.0	16.0	0.1	0.0	0.4	0.3	0.3	0.2	0.6	0.6	0.4	0.1	0.5
IFWO		2.4	2.6	2.5	2.6	2.0	0.3	3.1	2.3	2.5	1.5		4.9	3.4	1.6	1.5
AGWO	10.3	13.8	20.8	20.6	19.1	20.2	11.8	17.8	14.1	14.9	14.1	8.4	25.1	21.0	23.4	14.3
AGWI	13.7	14.9	21.5	21.1	19.3	21.0	13.9	18.0	15.4	16.7	16.9	8.8	19.5	22.4	24.4	16.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		11.6	8.6	8.4	11.6	8.8	12.8	10.6	10.9	9.0	7.3	12.2	24.6	12.0	7.3	11.0
UZET	5.1	2.3	2.9	2.9	2.4	2.7	1.5	3.1	2.6	2.7	3.0	14.3	2.4	3.4	3.3	3.5
LZET	3.1	14.9	16.7	16.8	15.3	10.8	19.4	9.9	15.2	16.2	20.3	2.1	9.3	15.0	21.1	15.9
AGWET	4.8	2.3	2.5	2.5	2.3	2.5	2.2	2.3	2.3	2.4	2.5	2.2	1.3	2.1	2.5	2.3
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	23.4											9.0				1.2
PERO	11.1	16.5	24.2	23.7	22.0	22.3	12.2	21.3	16.7	17.7	15.8	9.0	30.5	24.8	25.0	16.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	36.4	31.1	30.7	30.6	31.7	24.8	36.0	26.0	31.1	30.4	33.2	39.8	37.7	32.5	34.3	33.9
IMPEV: IMPERVIOUS		10.8	10.7	10.5	10.4											0.1
ET: COMBINED	36.4	30.1	28.6	26.5	21.0	24.8	36.0	26.0	31.1	30.4	33.2	39.8	37.7	32.5	34.3	34.0
PET	44.5	43.8	43.8	43.9	43.9	43.8	43.8	43.8	43.8	43.7	43.6	43.9	44.0	43.5	43.8	43.4

Table T-03130008-8: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12215	36230	15035	3280	1069	927	284288	13406	68406	39051	96198	74652	839	141349	22946	809890
AREA(%)	1.5	4.4	1.8	0.4	0.1	0.1	34.9	1.6	8.4	4.8	11.8	9.2	0.1	17.3	2.8	99.3
IMPERVIOUS																
AREA(ACRES)		2039	1766	854	1078											5737
AREA(%)		0.2	0.2	0.1	0.1											0.7
SUPY	59.5	56.5	56.4	56.7	56.8	56.4	56.8	57.0	56.3	56.5	56.4	56.7	61.4	70.4	57.8	58.7
SURLI			4.7	4.3	4.0									0.0	1.8	0.2
UZLI																0.0
LZLI			0.6	0.3	0.2									0.1	8.0	0.3
SURO: PERVIOUS	5.0	1.2	1.8	1.4	0.9	0.6	0.2	1.6	1.2	1.2	0.7	2.1	1.2	1.5	0.6	1.0
SURO: IMPERVIOUS		44.8	44.8	44.9	45.0											0.3
SURO: COMBINED	5.0	3.5	6.3	10.4	23.1	0.6	0.2	1.6	1.2	1.2	0.7	2.1	1.2	1.5	0.6	1.3
IFWO		4.2	4.0	3.9	4.1	3.9	1.3	5.3	4.0	4.2	3.1		4.7	5.2	3.1	2.7
AGWO	11.9	14.1	19.6	19.1	17.7	21.1	13.1	18.5	14.5	15.2	14.6	10.1	18.0	22.6	23.1	15.3
AGWI	15.0	19.4	24.9	24.8	23.4	27.5	18.9	24.1	19.7	20.7	19.8	11.9	21.5	29.7	28.6	20.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		12.4	9.5	9.6	13.1	9.5	13.6	11.4	11.5	9.5	7.7	13.0	16.2	13.1	8.3	11.8
UZET	5.7	2.3	2.9	2.9	2.4	2.9	1.4	3.3	2.6	2.7	2.7	13.5	2.4	4.0	3.3	3.5
LZET	2.7	16.4	18.1	18.1	16.5	11.9	21.8	10.9	16.9	17.9	22.3	2.8	15.0	16.9	23.4	17.7
AGWET	4.2	2.8	3.0	3.0	2.7	3.0	2.8	2.8	2.8	3.0	3.1	3.0	2.5	2.6	3.0	2.8
BASET	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
SURET	30.9											13.5				1.7
PERO	16.9	19.5	25.4	24.4	22.6	25.5	14.5	25.5	19.7	20.5	18.3	12.2	24.0	29.3	26.9	19.0
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	43.6	34.0	33.5	33.6	34.8	27.3	39.5	28.5	33.9	33.2	35.9	45.9	36.2	36.7	38.1	37.6
IMPEV: IMPERVIOUS		11.5	11.6	11.7	11.7											0.1
ET: COMBINED	43.6	32.8	31.2	29.0	23.2	27.3	39.5	28.5	33.9	33.2	35.9	45.9	36.2	36.7	38.1	37.7
PET	50.6	51.4	51.4	51.4	51.4	51.4	51.3	51.1	51.4	51.4	51.3	51.3	51.4	51.2	51.6	50.9

Table T-03130008-9: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12215	36230	15035	3280	1069	927	284288	13406	68406	39051	96198	74652	839	141349	22946	809890
AREA(%)	1.5	4.4	1.8	0.4	0.1	0.1	34.9	1.6	8.4	4.8	11.8	9.2	0.1	17.3	2.8	99.3
IMPERVIOUS																
AREA(ACRES)		2039	1766	854	1078											5737
AREA(%)		0.2	0.2	0.1	0.1											0.7
SUPY	44.0	42.1	42.0	41.7	41.7	42.1	42.5	42.8	42.2	42.3	42.7	42.4	57.0	53.4	43.4	44.1
SURLI			4.3	3.9	3.6									0.0	2.9	0.2
UZLI																0.0
LZLI			0.6	0.3	0.2									0.0	9.8	0.3
SURO: PERVIOUS	5.2	0.3	0.6	0.5	0.3	0.1	0.0	0.6	0.3	0.3	0.1	1.3	0.5	0.3	0.1	0.4
SURO: IMPERVIOUS		31.9	31.8	31.7	31.6											0.2
SURO: COMBINED	5.2	2.0	3.9	6.9	16.1	0.1	0.0	0.6	0.3	0.3	0.1	1.3	0.5	0.3	0.1	0.6
IFWO		2.3	2.3	2.4	2.5	1.7	0.4	3.0	2.0	2.1	1.2		3.4	2.5	1.3	1.2
AGWO	9.2	15.0	20.4	20.0	18.5	22.1	13.8	19.4	15.3	16.1	15.4	8.9	18.9	23.6	23.8	15.9
AGWI	12.7	14.2	18.8	18.2	16.6	20.6	13.6	18.0	14.8	15.7	15.3	9.3	18.6	22.4	24.2	15.6
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		11.2	8.1	8.0	11.5	8.2	12.5	10.1	10.3	8.2	6.4	11.9	23.2	11.4	6.9	10.5
UZET	6.3	2.2	2.7	2.6	2.2	2.6	1.2	3.1	2.5	2.6	2.7	11.7	2.1	3.5	3.1	3.1
LZET	2.8	15.7	17.6	17.6	16.0	11.7	20.6	10.8	16.3	17.3	21.5	2.3	11.3	16.7	23.1	17.0
AGWET	5.3	2.7	2.9	2.9	2.7	2.9	2.7	2.7	2.8	2.9	3.0	2.7	1.8	2.6	3.0	2.8
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	22.7											10.4				1.3
PERO	14.4	17.6	23.3	22.8	21.4	23.9	14.2	22.9	17.6	18.4	16.7	10.2	22.8	26.5	25.2	17.5
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	37.1	31.9	31.4	31.3	32.4	25.4	37.0	26.8	31.9	31.1	33.7	39.0	38.4	34.1	36.1	34.8
IMPEV: IMPERVIOUS		10.3	10.2	10.1	10.1											0.1
ET: COMBINED	37.1	30.8	29.2	26.9	21.2	25.4	37.0	26.8	31.9	31.1	33.7	39.0	38.4	34.1	36.1	34.9
PET	48.5	49.1	49.1	49.1	49.1	49.1	49.0	49.0	49.1	49.1	49.1	49.0	49.1	49.1	49.1	48.7

Table T-03130008-10: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	12215	36230	15035	3280	1069	927	284288	13406	68406	39051	96198	74652	839	141349	22946	809890
AREA(%)	1.5	4.4	1.8	0.4	0.1	0.1	34.9	1.6	8.4	4.8	11.8	9.2	0.1	17.3	2.8	99.3
IMPERVIOUS																
AREA(ACRES)		2039	1766	854	1078											5737
AREA(%)		0.2	0.2	0.1	0.1											0.7
SUPY	52.7	50.6	50.3	49.9	49.7	50.5	51.0	51.5	50.7	50.7	51.1	51.1	64.4	59.1	51.3	52.1
SURLI			6.0	6.0	5.6									0.0	1.8	0.2
UZLI																0.0
LZLI			0.5	0.2	0.2									0.0	7.0	0.2
SURO: PERVIOUS	4.7	0.4	0.9	0.8	0.5	0.2	0.0	0.6	0.4	0.4	0.2	2.1	0.7	0.5	0.2	0.5
SURO: IMPERVIOUS		39.3	39.2	38.8	38.6											0.3
SURO: COMBINED	4.7	2.5	4.9	8.6	19.7	0.2	0.0	0.6	0.4	0.4	0.2	2.1	0.7	0.5	0.2	0.8
IFWO		2.6	2.8	2.8	2.9	2.3	0.4	3.7	2.4	2.5	1.5		4.5	3.0	1.7	1.5
AGWO	10.0	14.3	20.0	19.6	18.2	20.1	12.9	18.2	14.6	15.3	14.6	9.3	20.2	20.3	20.9	14.7
AGWI	14.3	18.4	24.5	24.1	22.3	25.2	16.8	22.9	18.8	19.7	19.0	11.5	23.8	24.9	25.8	18.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CEPE		12.1	9.2	9.1	12.3	9.2	13.3	11.1	11.3	9.3	7.6	12.7	22.4	12.0	7.9	11.3
UZET	4.4	2.2	2.8	2.7	2.3	2.6	1.3	3.1	2.5	2.6	2.7	11.8	2.1	3.1	3.1	3.1
LZET	2.7	14.7	16.5	16.6	15.1	10.8	19.1	10.0	15.2	16.1	20.0	2.0	10.7	15.6	21.3	15.8
AGWET	4.2	2.5	2.6	2.6	2.4	2.6	2.4	2.5	2.5	2.6	2.8	2.1	1.7	2.4	2.7	2.5
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SURET	26.4											11.0				1.4
PERO	14.8	17.3	23.7	23.2	21.6	22.6	13.3	22.5	17.5	18.2	16.2	11.4	25.3	23.8	22.8	16.7
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAET: PERVIOUS	37.6	31.5	31.2	31.1	32.2	25.4	36.2	26.7	31.5	30.7	33.1	39.6	37.0	33.1	35.0	34.2
IMPEV: IMPERVIOUS		11.2	11.2	11.1	11.0											0.1
ET: COMBINED	37.6	30.5	29.1	27.0	21.6	25.4	36.2	26.7	31.5	30.7	33.1	39.6	37.0	33.1	35.0	34.3
PET	46.5	46.7	46.7	46.7	46.7	46.6	46.6	46.5	46.7	46.7	46.5	46.6	46.8	46.5	46.8	46.3

Table T-03130008-11: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
12	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
13	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
14	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
15	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
16	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
17	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
18	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
19	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
20	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
21	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
22	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
23	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
24	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
25	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
26	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
27	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
28	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
29	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
30	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
31	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
32	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

Table T-03130008-12: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130008-13: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
2	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
3	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
4	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
5	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
6	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
7	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
8	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
9	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
10	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
11	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
12	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
13	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
14	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
15	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
16	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
17	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
18	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
19	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
20	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
21	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
22	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
23	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
24	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
25	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
26	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
27	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
28	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
29	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
30	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
31	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100
32	0.000	0.092	0.050	0.050	0.100	0.050	0.110	0.072	0.078	0.050	0.030	0.100

Table T-03130008-14: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130008-15: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
2	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
3	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
4	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
5	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
6	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
7	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
8	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
9	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
10	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
11	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
12	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
13	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
14	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
15	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
16	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
17	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
18	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
19	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
20	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
21	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
22	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
23	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
24	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
25	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
26	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
27	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
28	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
29	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
30	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
31	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010
32	0.010	0.400	0.400	0.400	0.400	0.600	1.000	0.400	0.400	0.400	0.480	0.010

Table T-03130008-16: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
4		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
6		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
7		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
8		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
9		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
10		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
11		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
12		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
13		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
14		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
15		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
16		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
17		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
18		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
19		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
20		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
21		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
22		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
23		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
24		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
25		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
26		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
27		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
28		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
29		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	

30		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
31		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
32		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	

Table T-03130008-17: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
17	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
22	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
23	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
24	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
25	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
26	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
27	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
28	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
29	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
30	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
31	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
32	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03130008-18: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
12	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
13	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
14	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
15	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
16	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
17	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
19	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
20	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
21	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
22	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
23	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
24	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
25	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
28	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
29	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
30	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
31	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
32	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130008-19: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
3	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
4	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
5	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
6	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
7	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
9	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
10	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
11	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
12	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
13	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
14	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
15	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
16	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
17	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
18	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
19	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
20	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
21	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
22	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
23	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
24	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
25	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
26	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
27	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
28	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
29	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
30	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
31	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
32	0.252	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03130008-20: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
4	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
6	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
7	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
8	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
10	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
11	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
12	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
13	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
14	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
15	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
16	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
17	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
18	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
19	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
20	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
21	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
22	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
23	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
24	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
25	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
26	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
27	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
28	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
29	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
30	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
31	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100
32	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	8.334	0.100

Table T-03130008-21: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03130009

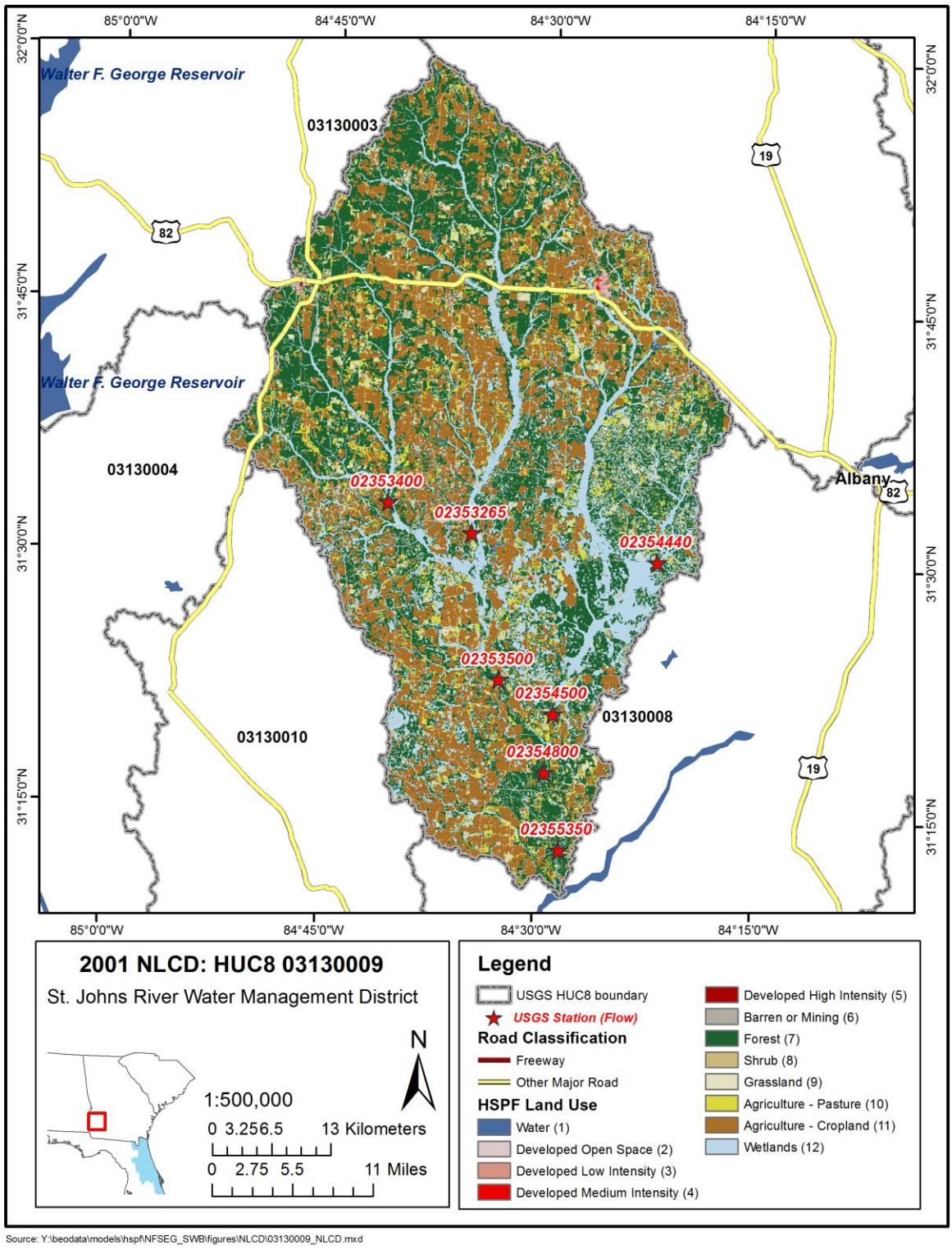


Figure T-03130009-1: Land Cover from the National Land Cover Database.

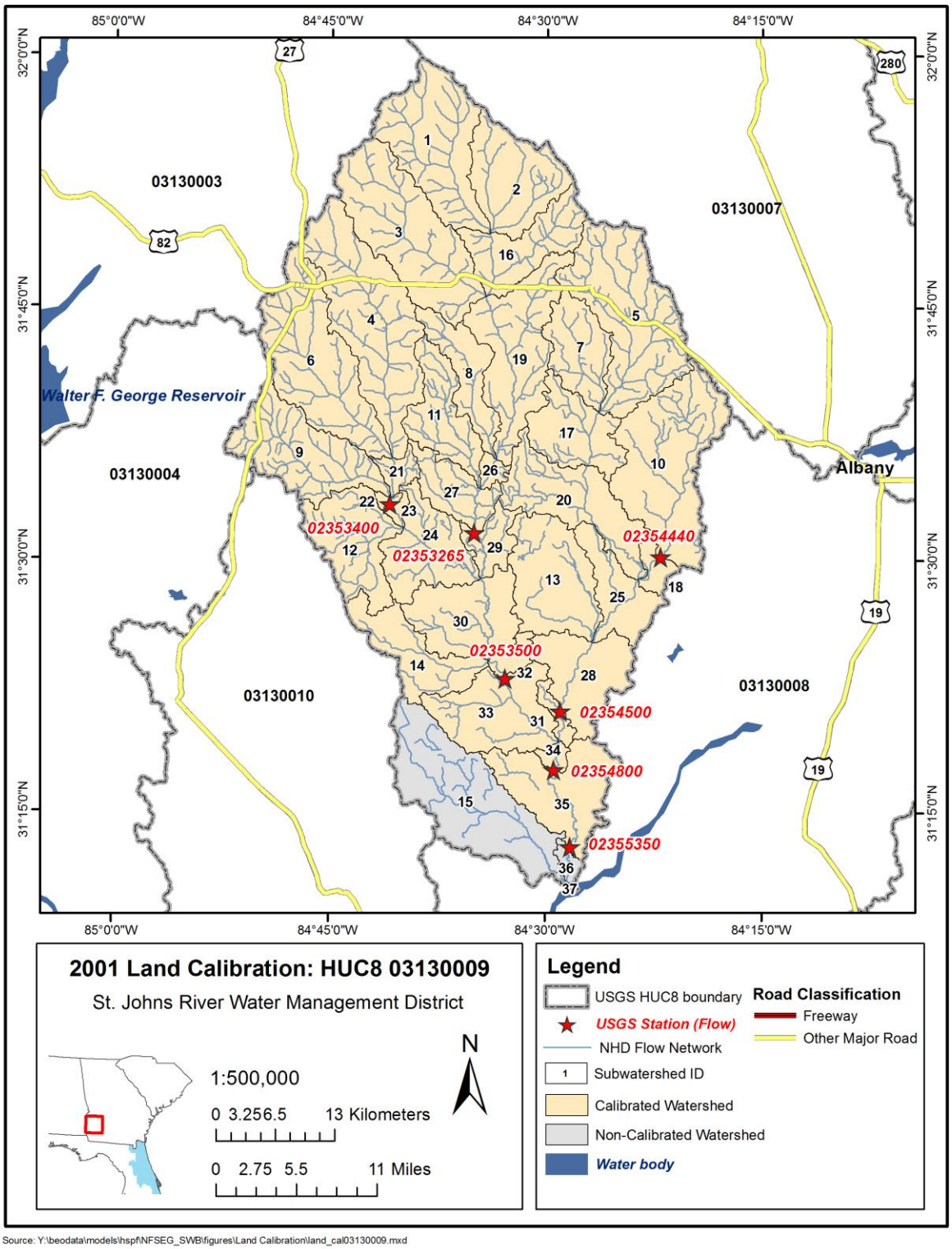


Figure T-03130009-2: Calibrated sub-watersheds.

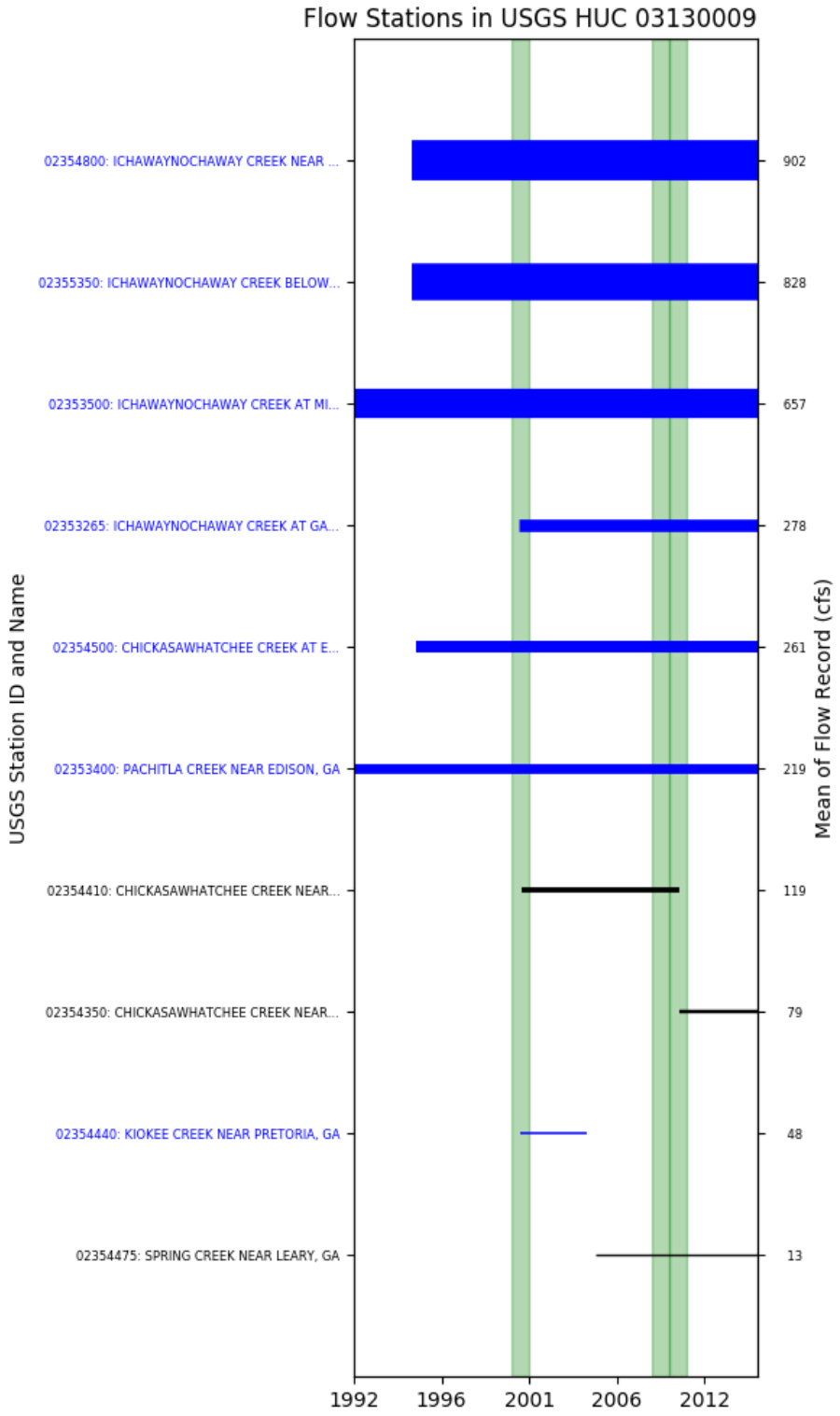


Figure T-03130009-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 10, USGS GAUGE 02354440

Water-Data Report 2009
02198500 SAVANNAH RIVER NEAR CLYO, GA
Savannah Basin Lower Savannah Subbasin

LOCATION.--Lat 323141, long 811608 referenced to North American Datum of 1927, Effingham County, GA, Hydrologic Unit 03060109, at GeorgiaSouth Carolina State line, on downstream side of State Highway 119 bridge, 3.0 mi north of Clyo, and at river mile 61.4.

DRAINAGE AREA.--9,850 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1929 to September 1933, October 1937 to current year. Gage-height records collected at same site 1921-43 by National Weather Service (unpublished prior to 1933).

REVISED RECORDS.--WSP 1112: 1940.

GAGE.--Data collection platform. Datum of gage is 13.39 ft above NGVD of 1929. Prior to July 26, 2000, at site 2,100 ft downstream at same datum. Prior to Jan. 31, 1933, nonrecording gage at same site and at datum 4.00 ft higher. Jan. 31, 1933, to June 12, 1945, nonrecording gage at same site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by Thurmond Lake, and by other powerplants above station.

Table T-03130009-1: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02354440.

Statistic	Value
Bias	4.69
Standard error	63.02
Relative bias	0.07
Relative standard error	0.41
Nash-Sutcliffe coefficient	0.83
Kling-Gupta coefficient	0.63
Coefficient of efficiency	0.52
Index of agreement	0.71

Table T-03130009-2: Hydrologic Indices Between USGS Gauge 02354440 and HSPF Reach 10.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02354440	Simulated Reach 10	Percent Difference
MA1: Mean, all daily flows	48.94	60.14	22.88

MA2: Median, all daily flows	10.50	39.12	272.61
MA3: CV, all daily flows	174.07	111.45	-35.98
MA4: CV, log of all daily flows	146.87	75.30	-48.73
MA5: Mean daily flow / median daily flow	4.66	1.54	-67.02
MA9: (Q10 - Q90) / median daily flow	12.05	2.51	-79.20
MA10: (Q20 - Q80) / median daily flow	7.81	1.42	-81.80
MA11: (Q25 - Q75) / median daily flow	6.07	1.12	-81.60
MA12: Mean monthly flow, January	38.88	34.27	-11.84
MA13: Mean monthly flow, February	59.93	60.46	0.88
MA14: Mean monthly flow, March	116.45	93.90	-19.36
MA15: Mean monthly flow, April	239.28	175.45	-26.67
MA16: Mean monthly flow, May	15.81	34.63	119.11
MA17: Mean monthly flow, June	22.40	36.79	64.20
MA18: Mean monthly flow, July	21.73	31.84	46.50
MA19: Mean monthly flow, August	27.36	46.96	71.68
MA20: Mean monthly flow, September	37.86	55.67	47.05
MA21: Mean monthly flow, October	10.24	27.71	170.67
MA22: Mean monthly flow, November	9.75	35.12	260.14
MA23: Mean monthly flow, December	27.34	38.28	40.02
ML1: Mean minimum monthly flow, January	26.77	30.15	12.59
ML2: Mean minimum monthly flow, February	32.00	37.92	18.51
ML3: Mean minimum monthly flow, March	48.00	42.73	-10.98
ML4: Mean minimum monthly flow, April	174.56	167.90	-3.81
ML5: Mean minimum monthly flow, May	3.67	28.08	665.79
ML6: Mean minimum monthly flow, June	3.76	29.88	694.10
ML7: Mean minimum monthly flow, July	3.98	26.95	577.90
ML8: Mean minimum monthly flow, August	11.50	32.86	185.73
ML9: Mean minimum monthly flow, September	0.72	24.92	3337.18
ML10: Mean minimum monthly flow, October	5.75	28.32	392.31
ML11: Mean minimum monthly flow, November	2.80	28.06	902.02
ML12: Mean minimum monthly flow, December	14.43	31.72	119.89
ML13: CV of minimum monthly flows	336.69	185.82	-44.81
ML14: Mean minimum daily flow / mean median annual flow	0.02	0.48	2103.90
ML15: Mean minimum annual flow / mean annual flow	0.01	0.36	2580.87
ML16: Median minimum annual flow / median annual flow	0.00	0.42	
ML20: Ratio of baseflow volume to total flow volume	0.47	0.61	30.18
ML22: Mean annual minimum flow divided by catchment area	0.02	0.19	914.09
RA1: Mean of positive changes from one day to next (rise rate)	36.87	18.28	
RA2: CV, mean of positive changes from one day to next (rise rate)	264.79	424.57	
RA3: Mean of negative changes from one day to next (fall rate)	15.08	6.47	
RA4: CV, mean of negative changes from one day to next (fall rate)	464.15	338.25	
RA5: Ratio of days that are higher than previous day	0.20	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.31	0.04	
RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.04	
RA8: Number of flow reversals from one day to the next	46.20	66.40	

RA9: CV, number of flow reversals from one day to the next	80.83	50.42	

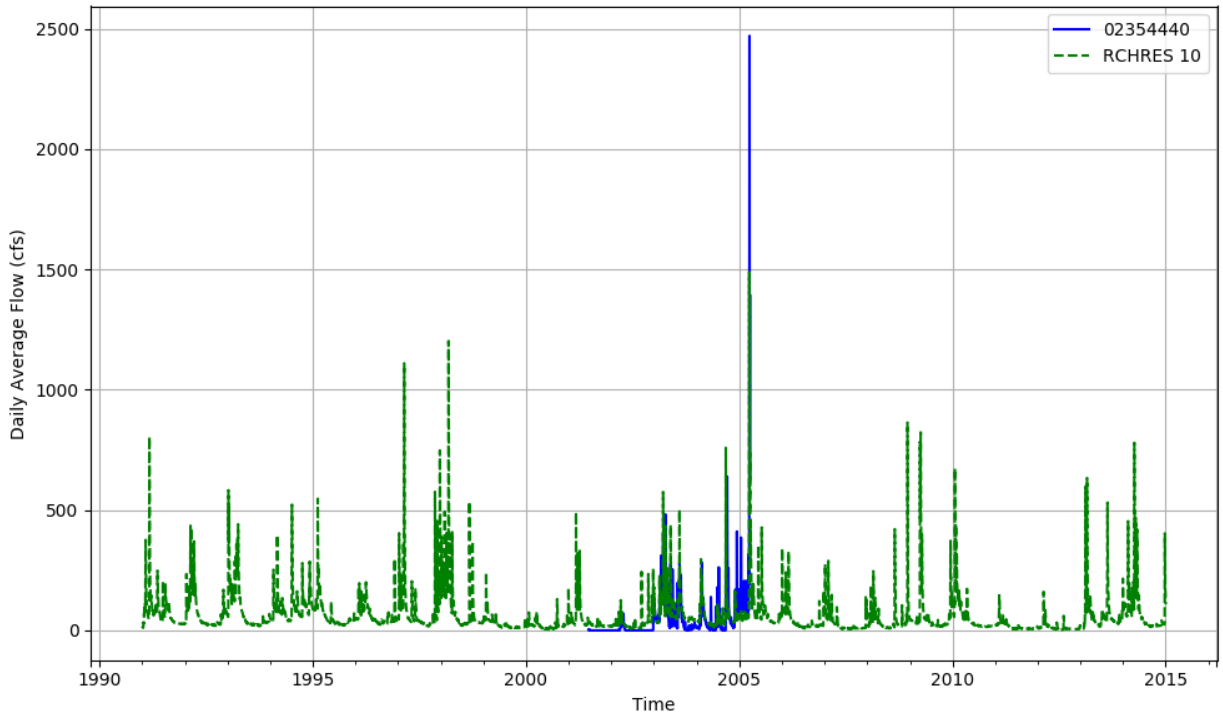


Figure T-03130009-4: Daily flow for HSFP reach 10 and USGS station 02354440.

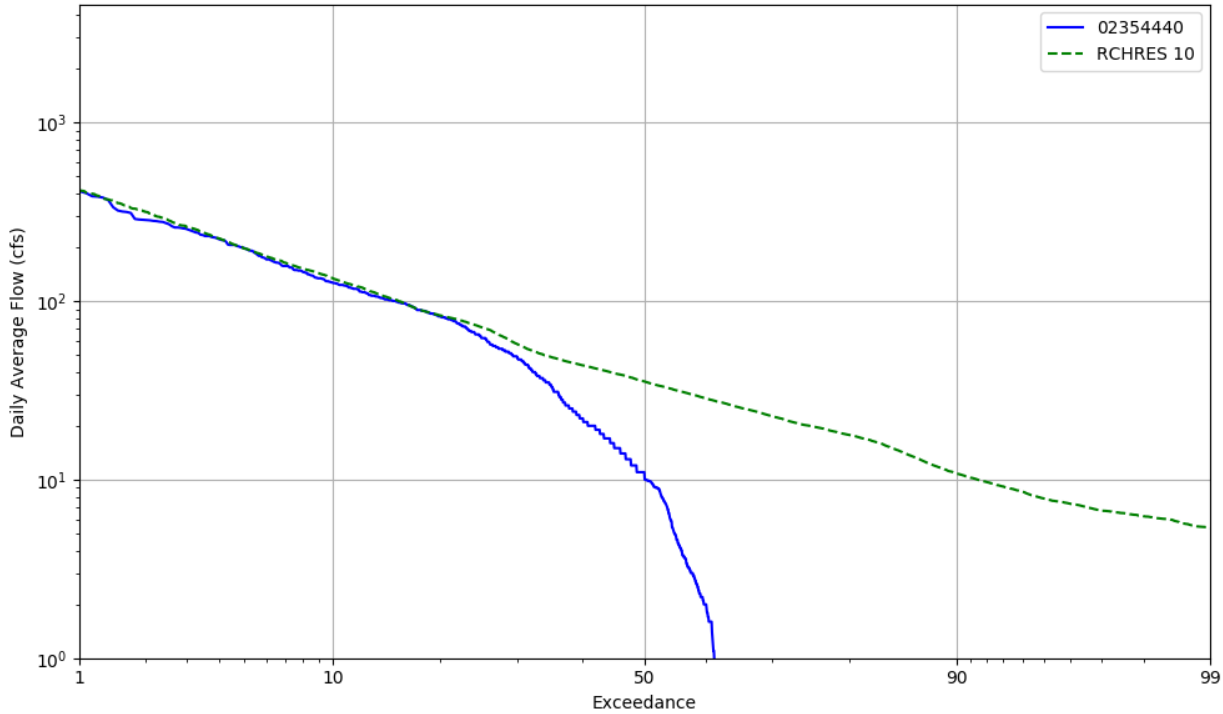


Figure T-03130009-5: Daily exceedance for HSFP reach 10 and USGS station 02354440.

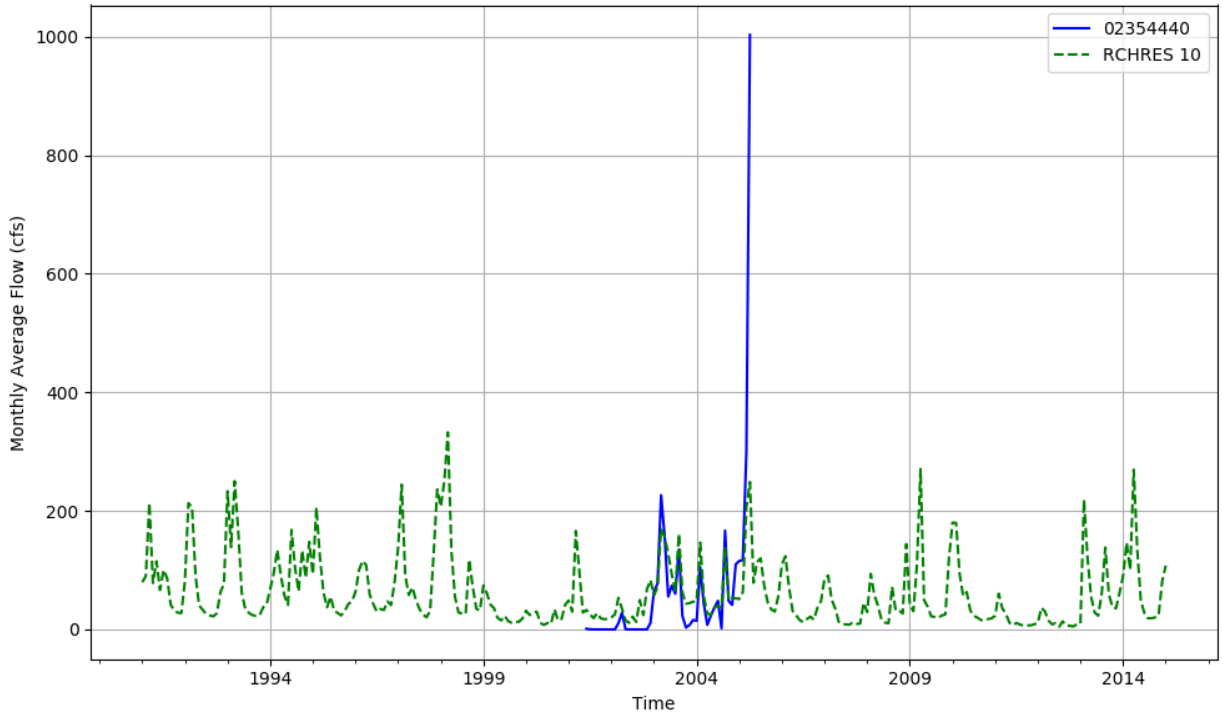


Figure T-03130009-6: Monthly flow for HSFP reach 10 and USGS station 02354440.

HSPF REACH 22, USGS GAUGE 02353400

Water-Data Report 2009
02353400 PACHITLA CREEK NEAR EDISON, GA
Apalachicola Basin Ichawaynochaway Subbasin

LOCATION.--Lat 313318, long 844051 referenced to North American Datum of 1983, Calhoun County, GA, Hydrologic Unit 03130009, on downstream side of bridge pier on GA 37, 2.2 miles upstream from Neals Creek, 3.6 miles east of Edison, and 8.5 miles upstream from mouth.

DRAINAGE AREA.--188 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: Annual maximum, water years 1950-59 and occasional low-flow measurements, 1951-58, 1972-81; June 1959 to September 1971, March 1988 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 212.64 feet above National Geodetic Vertical Datum of 1929. From March 17, 1949 to March 16, 1955, a crest-stage gage was located at same site and datum. From March 17, 1955 to June 9, 1959, a crest-stage gage was located at site 200 feet downstream at same datum.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge and gage-height records fair.

Table T-03130009-3: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02353400.

Statistic	Value
Bias	-39.43
Standard error	102.07
Relative bias	-0.18
Relative standard error	0.58
Nash-Sutcliffe coefficient	0.67
Kling-Gupta coefficient	0.75
Coefficient of efficiency	0.51
Index of agreement	0.76

Table T-03130009-4: Hydrologic Indices Between USGS Gauge 02353400 and HSPF Reach 22.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02353400	Simulated Reach 22	Percent Difference
MA1: Mean, all daily flows	218.22	178.43	-18.23

MA2: Median, all daily flows	145.00	112.71	-22.27
MA3: CV, all daily flows	121.64	105.14	-13.56
MA4: CV, log of all daily flows	78.43	84.42	7.64
MA5: Mean daily flow / median daily flow	1.50	1.58	5.19
MA9: (Q10 - Q90) / median daily flow	2.68	2.93	9.22
MA10: (Q20 - Q80) / median daily flow	1.52	1.62	6.29
MA11: (Q25 - Q75) / median daily flow	1.15	1.23	7.11
MA12: Mean monthly flow, January	301.83	247.67	-17.95
MA13: Mean monthly flow, February	338.59	317.30	-6.29
MA14: Mean monthly flow, March	345.65	318.51	-7.85
MA15: Mean monthly flow, April	239.19	234.15	-2.11
MA16: Mean monthly flow, May	125.71	120.74	-3.96
MA17: Mean monthly flow, June	128.70	95.79	-25.57
MA18: Mean monthly flow, July	217.10	120.79	-44.36
MA19: Mean monthly flow, August	147.20	111.12	-24.51
MA20: Mean monthly flow, September	127.91	106.29	-16.91
MA21: Mean monthly flow, October	130.31	89.70	-31.17
MA22: Mean monthly flow, November	169.65	108.99	-35.76
MA23: Mean monthly flow, December	262.43	208.19	-20.67
ML1: Mean minimum monthly flow, January	172.12	124.41	-27.72
ML2: Mean minimum monthly flow, February	180.17	155.89	-13.48
ML3: Mean minimum monthly flow, March	174.48	165.31	-5.25
ML4: Mean minimum monthly flow, April	120.09	128.38	6.91
ML5: Mean minimum monthly flow, May	63.68	68.82	8.06
ML6: Mean minimum monthly flow, June	51.18	50.96	-0.42
ML7: Mean minimum monthly flow, July	62.38	57.69	-7.52
ML8: Mean minimum monthly flow, August	59.42	74.01	24.56
ML9: Mean minimum monthly flow, September	60.00	69.19	15.30
ML10: Mean minimum monthly flow, October	78.04	67.49	-13.52
ML11: Mean minimum monthly flow, November	101.04	74.24	-26.52
ML12: Mean minimum monthly flow, December	138.39	95.59	-30.92
ML13: CV of minimum monthly flows	70.98	76.62	7.94
ML14: Mean minimum daily flow / mean median annual flow	0.25	0.26	6.54
ML15: Mean minimum annual flow / mean annual flow	0.17	0.18	3.09
ML16: Median minimum annual flow / median annual flow	0.23	0.21	-11.90
ML20: Ratio of baseflow volume to total flow volume	0.56	0.64	14.06
ML22: Mean annual minimum flow divided by catchment area	0.40	0.34	-14.59
RA1: Mean of positive changes from one day to next (rise rate)	87.95	45.65	
RA2: CV, mean of positive changes from one day to next (rise rate)	310.81	386.82	
RA3: Mean of negative changes from one day to next (fall rate)	50.17	19.42	
RA4: CV, mean of negative changes from one day to next (fall rate)	458.13	297.02	
RA5: Ratio of days that are higher than previous day	0.35	0.30	
RA6: Median of difference in log of flows over two consecutive days of rising	0.16	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.10	0.04	
RA8: Number of flow reversals from one day to the next	101.50	94.21	

RA9: CV, number of flow reversals from one day to the next	17.29	22.21	

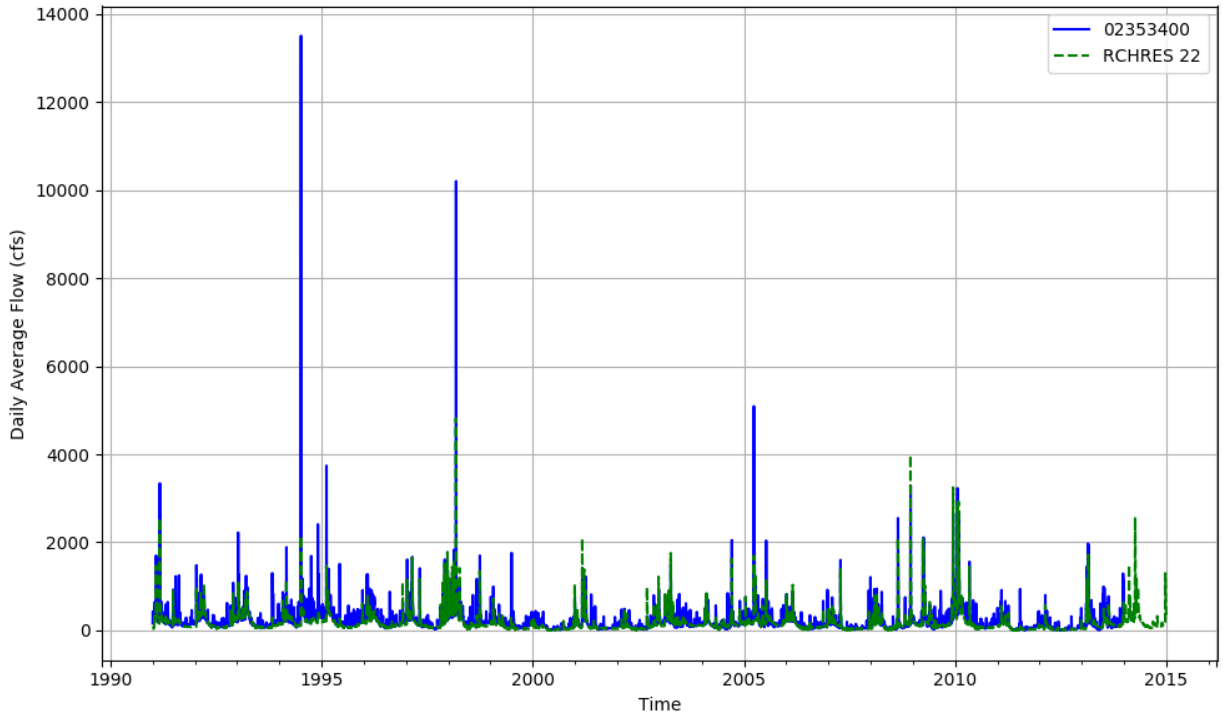


Figure T-03130009-7: Daily flow for HSFP reach 22 and USGS station 02353400.

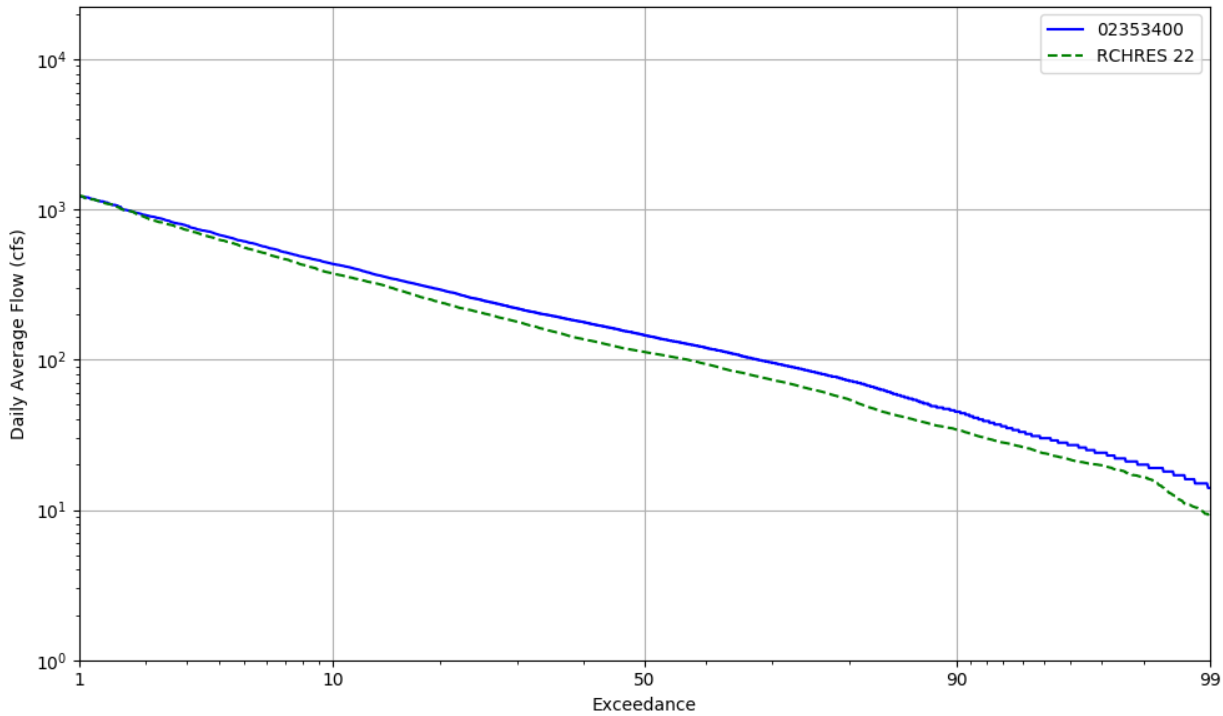


Figure T-03130009-8: Daily exceedance for HSFP reach 22 and USGS station 02353400.

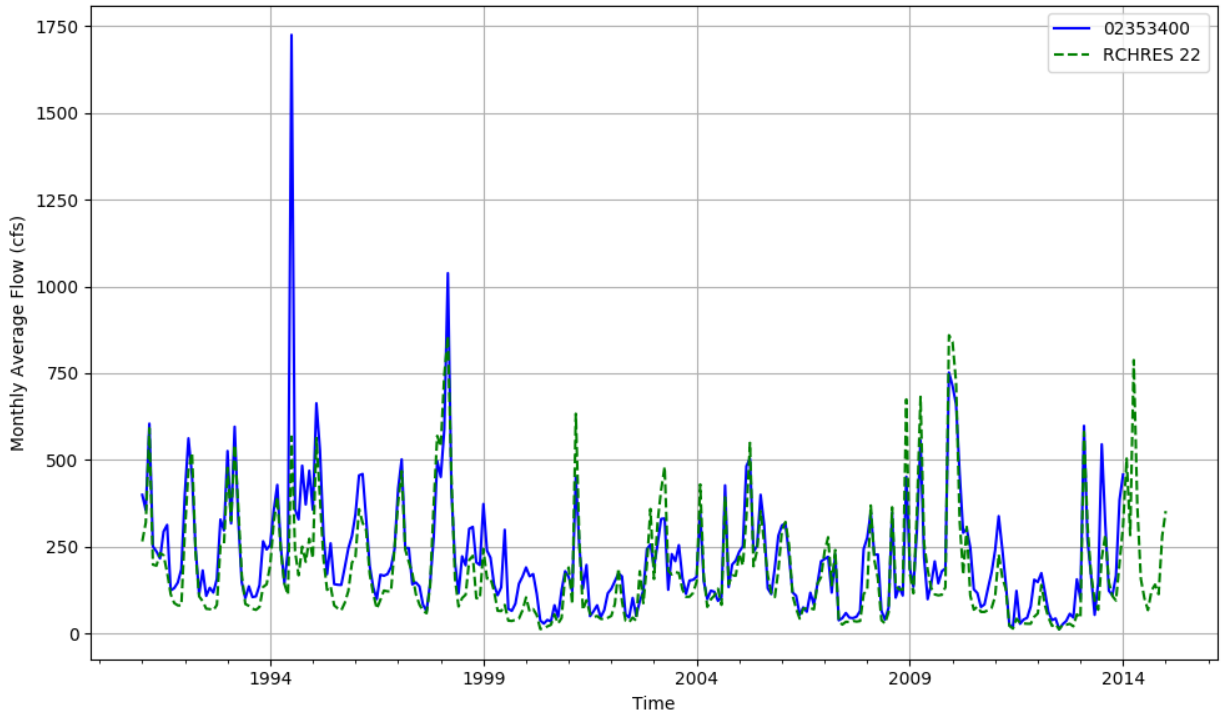


Figure T-03130009-9: Monthly flow for HSFP reach 22 and USGS station 02353400.

HSPF REACH 27, USGS GAUGE 02353265

Water-Data Report 2009
02353265 ICHAWAYNOCHAWAY CREEK AT GA 37, NEAR MORGAN, GA
Apalachicola Basin Ichawaynochaway Subbasin

LOCATION.--Lat 313137, long 843458 referenced to North American Datum of 1983, Calhoun County, GA, Hydrologic Unit 03130009, on GA 37, 1.1 miles east of Morgan.

DRAINAGE AREA.--301 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: May 2001 to current year.
GAGE-HEIGHT: May 2001 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 175 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good except for estimated periods which are fair. Gage-height records good.

Table T-03130009-5: Comparison Statistics Between HSPF Reach 27 and USGS Gauge 02353265.

Statistic	Value
Bias	3.03
Standard error	80.68
Relative bias	0.01
Relative standard error	0.32
Nash-Sutcliffe coefficient	0.90
Kling-Gupta coefficient	0.93
Coefficient of efficiency	0.67
Index of agreement	0.84

Table T-03130009-6: Hydrologic Indices Between USGS Gauge 02353265 and HSPF Reach 27.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02353265	Simulated Reach 27	Percent Difference
MA1: Mean, all daily flows	271.05	276.17	1.89
MA2: Median, all daily flows	178.00	176.39	-0.91
MA3: CV, all daily flows	113.74	104.48	-8.14
MA4: CV, log of all daily flows	80.77	84.98	5.22
MA5: Mean daily flow / median daily flow	1.52	1.57	2.82

MA9: (Q10 - Q90) / median daily flow	2.56	2.92	14.08
MA10: (Q20 - Q80) / median daily flow	1.53	1.70	11.43
MA11: (Q25 - Q75) / median daily flow	1.16	1.34	15.47
MA12: Mean monthly flow, January	406.36	351.29	-13.55
MA13: Mean monthly flow, February	391.19	446.87	14.23
MA14: Mean monthly flow, March	334.45	362.21	8.30
MA15: Mean monthly flow, April	321.94	339.76	5.54
MA16: Mean monthly flow, May	161.90	174.09	7.53
MA17: Mean monthly flow, June	155.44	147.97	-4.81
MA18: Mean monthly flow, July	178.41	191.43	7.30
MA19: Mean monthly flow, August	204.93	218.77	6.76
MA20: Mean monthly flow, September	172.91	196.97	13.92
MA21: Mean monthly flow, October	132.28	132.23	-0.03
MA22: Mean monthly flow, November	178.14	145.27	-18.45
MA23: Mean monthly flow, December	396.26	360.39	-9.05
ML1: Mean minimum monthly flow, January	287.23	208.99	-27.24
ML2: Mean minimum monthly flow, February	227.83	220.40	-3.26
ML3: Mean minimum monthly flow, March	202.75	226.58	11.75
ML4: Mean minimum monthly flow, April	152.75	162.36	6.29
ML5: Mean minimum monthly flow, May	73.00	77.88	6.69
ML6: Mean minimum monthly flow, June	50.87	53.47	5.10
ML7: Mean minimum monthly flow, July	64.32	80.49	25.16
ML8: Mean minimum monthly flow, August	65.21	125.35	92.23
ML9: Mean minimum monthly flow, September	69.78	118.56	69.91
ML10: Mean minimum monthly flow, October	92.85	108.10	16.43
ML11: Mean minimum monthly flow, November	121.85	112.88	-7.36
ML12: Mean minimum monthly flow, December	176.38	139.21	-21.08
ML13: CV of minimum monthly flows	101.07	93.40	-7.59
ML14: Mean minimum daily flow / mean median annual flow	0.18	0.20	9.95
ML15: Mean minimum annual flow / mean annual flow	0.12	0.14	14.80
ML16: Median minimum annual flow / median annual flow	0.11	0.12	5.62
ML20: Ratio of baseflow volume to total flow volume	0.55	0.59	7.21
ML22: Mean annual minimum flow divided by catchment area	0.36	0.42	18.99
RA1: Mean of positive changes from one day to next (rise rate)	74.68	67.80	
RA2: CV, mean of positive changes from one day to next (rise rate)	306.70	387.54	
RA3: Mean of negative changes from one day to next (fall rate)	46.44	31.81	
RA4: CV, mean of negative changes from one day to next (fall rate)	320.63	268.05	
RA5: Ratio of days that are higher than previous day	0.37	0.32	
RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.08	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.05	
RA8: Number of flow reversals from one day to the next	78.14	80.79	
RA9: CV, number of flow reversals from one day to the next	29.28	32.12	

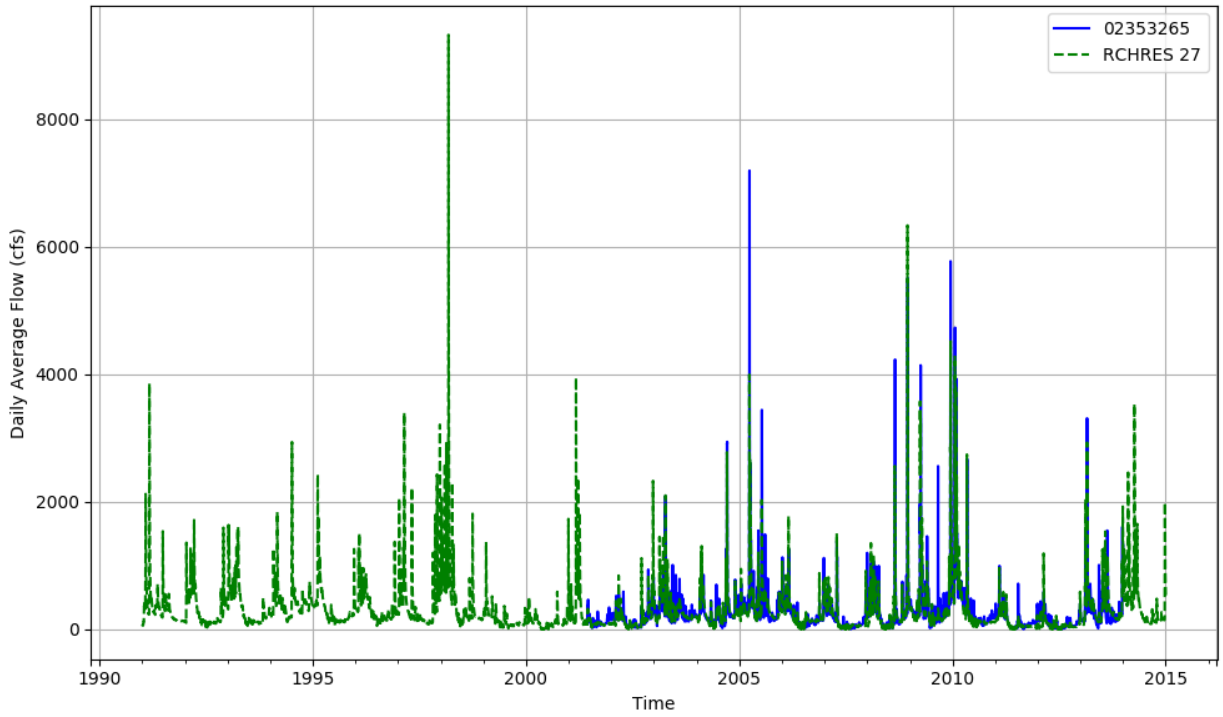


Figure T-03130009-10: Daily flow for HSFP reach 27 and USGS station 02353265.

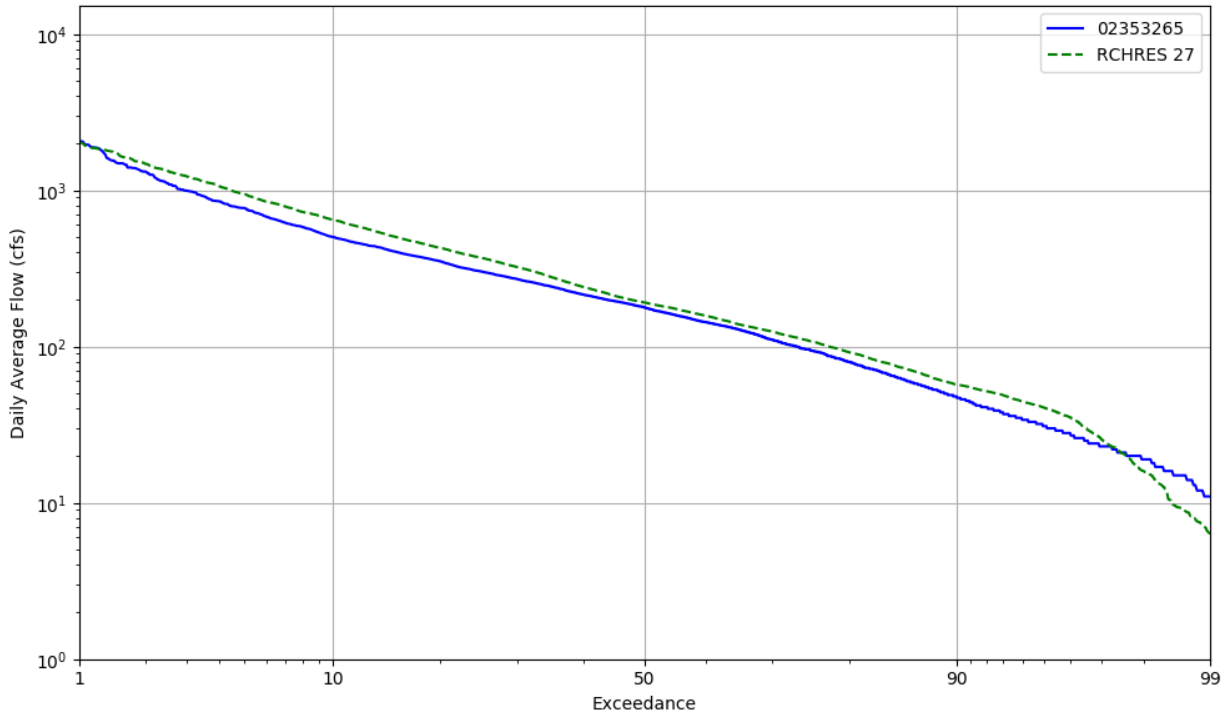


Figure T-03130009-11: Daily exceedance for HSFP reach 27 and USGS station 02353265.

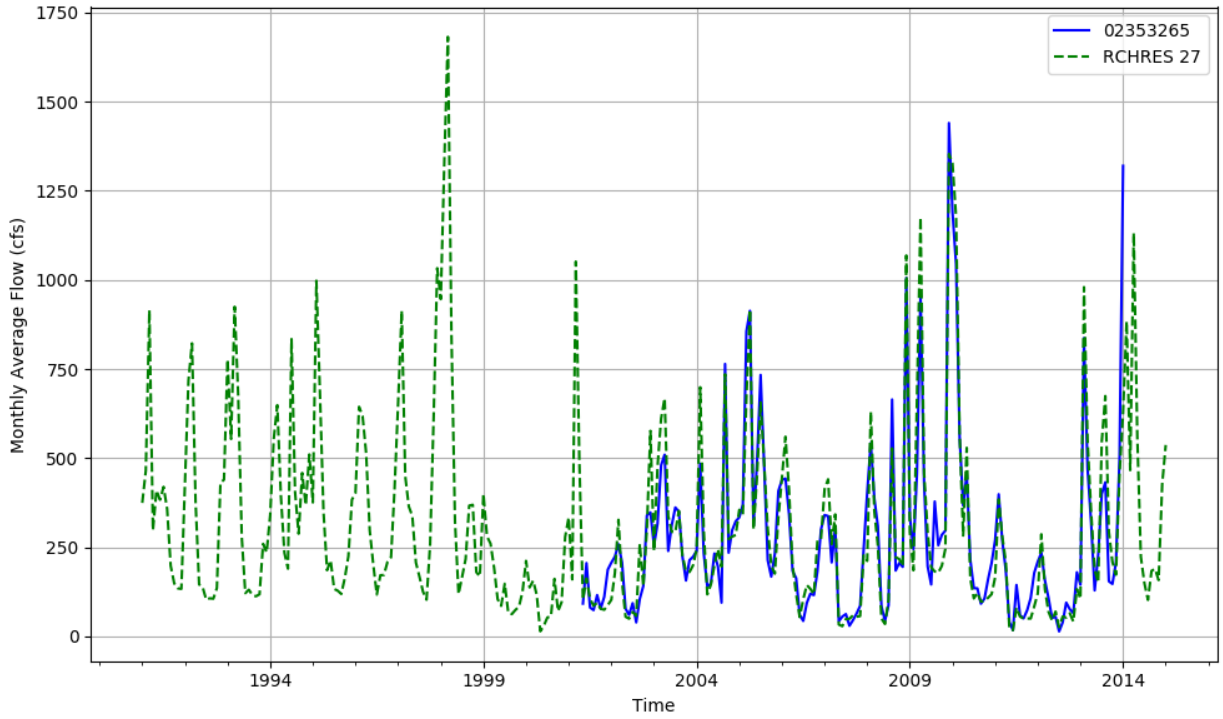


Figure T-03130009-12: Monthly flow for HSFP reach 27 and USGS station 02353265.

HSPF REACH 28, USGS GAUGE 02354500

Water-Data Report 2009
02354500 CHICKASAWHATCHEE CREEK AT ELMODEL, GA
Apalachicola Basin Ichawaynochaway Subbasin

LOCATION.--Lat 312102, long 842857 referenced to North American Datum of 1983, Baker County, GA, Hydrologic Unit 03130009, at bridge on GA 37 at Elmodel, 2.0 miles upstream from confluence with Ichawaynochaway Creek.

DRAINAGE AREA.--320 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1939 to December 1949, water years 1952-65 and 1970-83 (annual maximum), July 1995 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 137.7 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by the Georgia Department of Transportation). From October 1, 1939 to October 30, 1941, a non-recording gage was located at site approximately 100 feet upstream at present datum. From October 31, 1941 to December 31, 1949, a recording gage was located at present datum. From September 25, 1951 to September 1965 and October 1970 to September 1983, a non-recording gage was located at site 100 feet upstream and present datum.

COOPERATION.--Dougherty County.

REMARKS.--Discharge and gage-height records good. Discharge during growing season affected by undetermined amount of irrigation withdrawal.

Table T-03130009-7: Comparison Statistics Between HSPF Reach 28 and USGS Gauge 02354500.

Statistic	Value
Bias	35.25
Standard error	143.24
Relative bias	0.14
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.72
Coefficient of efficiency	0.59
Index of agreement	0.76

Table T-03130009-8: Hydrologic Indices Between USGS Gauge 02354500 and HSPF Reach 28.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02354500	Simulated Reach 28	Percent Difference
MA1: Mean, all daily flows	251.01	285.09	13.58
MA2: Median, all daily flows	90.00	170.70	89.67
MA3: CV, all daily flows	133.05	104.21	-21.68
MA4: CV, log of all daily flows	139.38	89.82	-35.55
MA5: Mean daily flow / median daily flow	2.79	1.67	-40.12
MA9: (Q10 - Q90) / median daily flow	7.03	3.12	-55.66
MA10: (Q20 - Q80) / median daily flow	3.97	1.59	-59.89
MA11: (Q25 - Q75) / median daily flow	3.15	1.20	-61.73
MA12: Mean monthly flow, January	373.17	369.56	-0.97
MA13: Mean monthly flow, February	448.64	493.21	9.93
MA14: Mean monthly flow, March	539.95	473.26	-12.35
MA15: Mean monthly flow, April	418.61	382.09	-8.72
MA16: Mean monthly flow, May	133.16	173.43	30.24
MA17: Mean monthly flow, June	116.08	152.32	31.22
MA18: Mean monthly flow, July	116.54	170.83	46.59
MA19: Mean monthly flow, August	127.21	197.65	55.37
MA20: Mean monthly flow, September	105.24	187.66	78.32
MA21: Mean monthly flow, October	74.02	144.31	94.97
MA22: Mean monthly flow, November	87.22	165.11	89.30
MA23: Mean monthly flow, December	291.56	314.96	8.03
ML1: Mean minimum monthly flow, January	221.94	226.64	2.12
ML2: Mean minimum monthly flow, February	260.85	237.55	-8.93
ML3: Mean minimum monthly flow, March	236.56	230.06	-2.75
ML4: Mean minimum monthly flow, April	137.89	180.48	30.89
ML5: Mean minimum monthly flow, May	31.54	96.00	204.39
ML6: Mean minimum monthly flow, June	27.45	84.13	206.53
ML7: Mean minimum monthly flow, July	30.01	91.19	203.92
ML8: Mean minimum monthly flow, August	31.04	106.83	244.20
ML9: Mean minimum monthly flow, September	15.45	101.05	554.13
ML10: Mean minimum monthly flow, October	26.80	101.41	278.43
ML11: Mean minimum monthly flow, November	43.57	110.92	154.56
ML12: Mean minimum monthly flow, December	124.80	141.10	13.06
ML13: CV of minimum monthly flows	169.64	89.23	-47.40
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.32	211.81
ML15: Mean minimum annual flow / mean annual flow	0.04	0.22	417.12
ML16: Median minimum annual flow / median annual flow	0.06	0.28	408.14
ML20: Ratio of baseflow volume to total flow volume	0.52	0.59	13.71
ML22: Mean annual minimum flow divided by catchment area	0.07	0.60	761.26
RA1: Mean of positive changes from one day to next (rise rate)	51.38	67.27	
RA2: CV, mean of positive changes from one day to next (rise rate)	326.14	418.99	
RA3: Mean of negative changes from one day to next (fall rate)	26.37	33.78	
RA4: CV, mean of negative changes from one day to next (fall rate)	304.82	291.61	
RA5: Ratio of days that are higher than previous day	0.31	0.34	

RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.08	0.05	
RA8: Number of flow reversals from one day to the next	68.40	75.40	
RA9: CV, number of flow reversals from one day to the next	26.90	28.15	

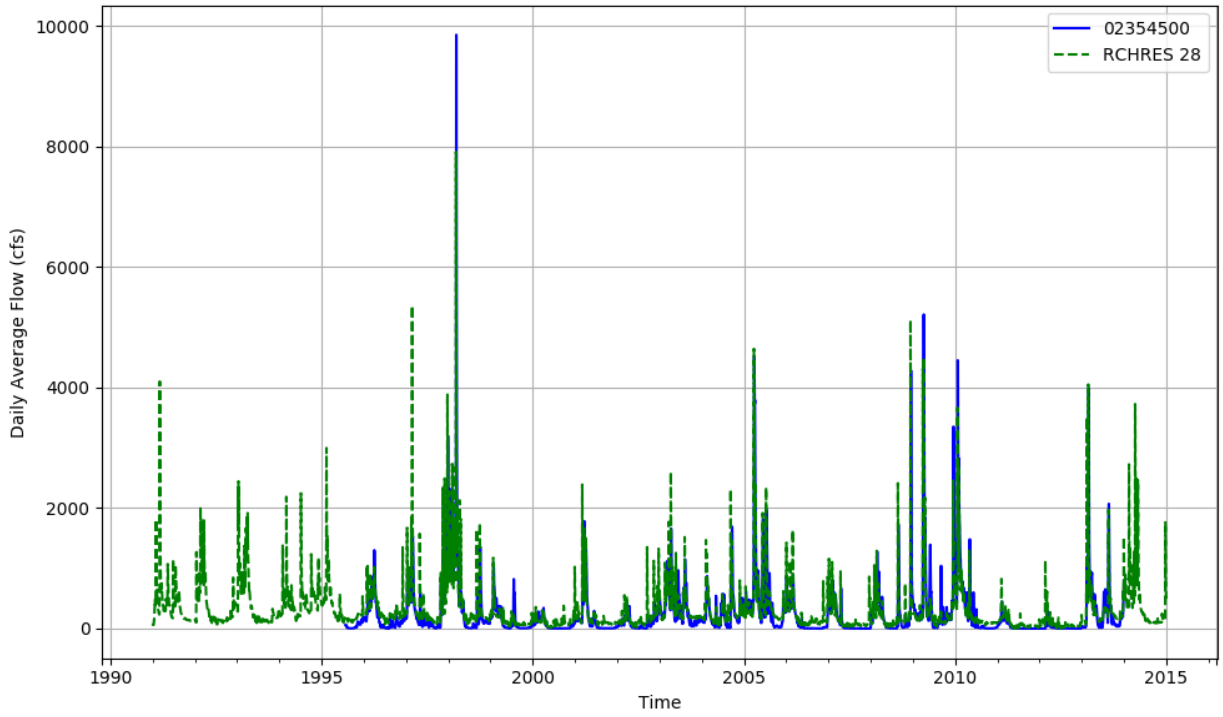


Figure T-03130009-13: Daily flow for HSFP reach 28 and USGS station 02354500.

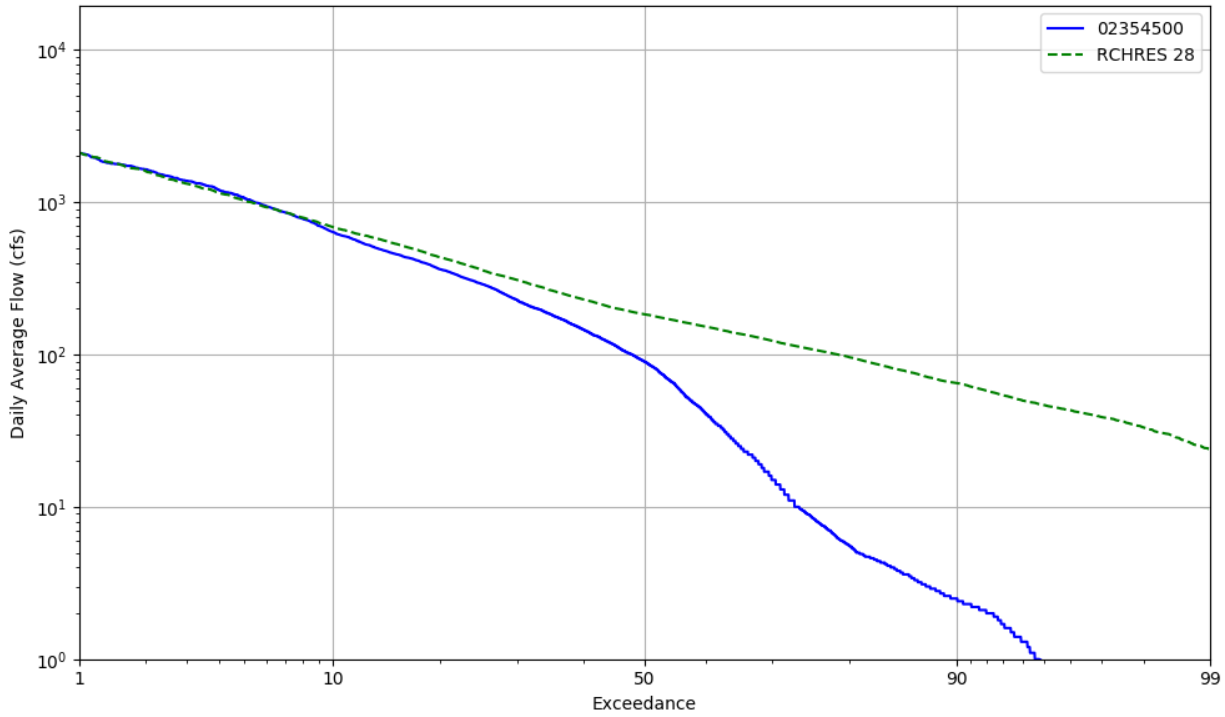


Figure T-03130009-14: Daily exceedance for HSFP reach 28 and USGS station 02354500.

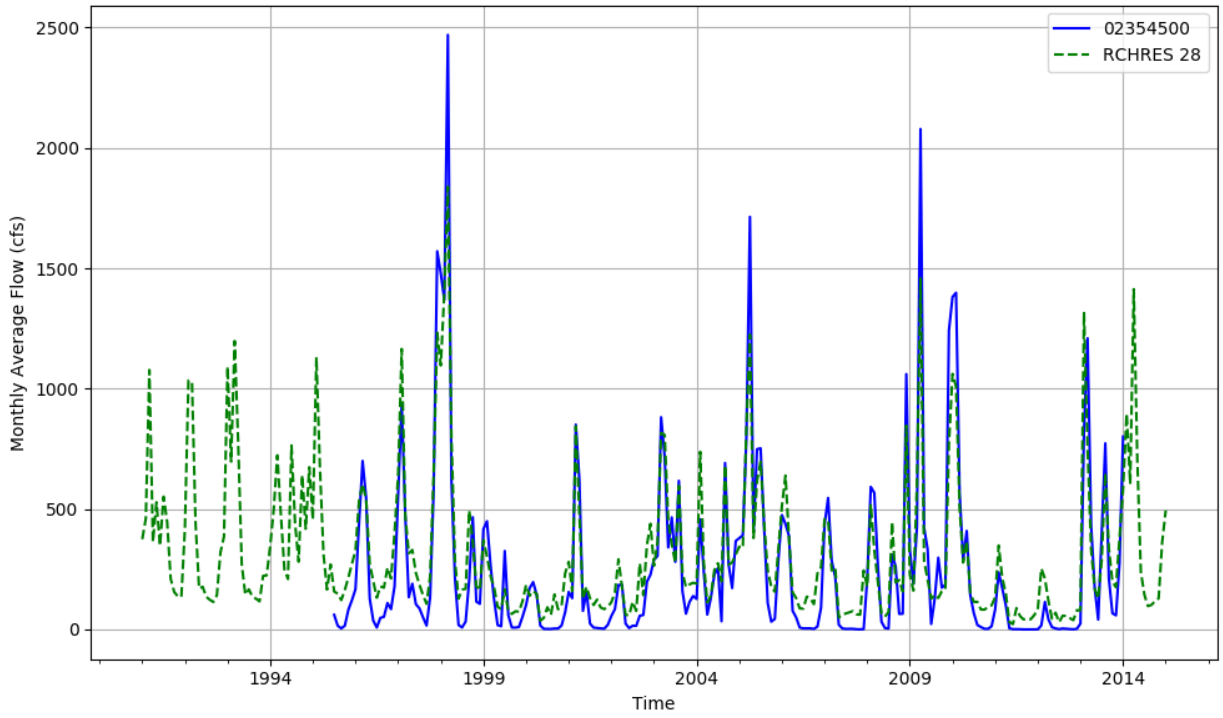


Figure T-03130009-15: Monthly flow for HSFP reach 28 and USGS station 02354500.

HSPF REACH 32, USGS GAUGE 02353500

Water-Data Report 2009
02353500 ICHAWAYNOCHAWAY CREEK AT MILFORD, GA
Apalachicola Basin Ichawaynochaway Subbasin

LOCATION.--Lat 312258, long 843247 referenced to North American Datum of 1983, Baker County, GA, Hydrologic Unit 03130009, on downstream end of left bank pier of bridge on GA 216 at Milford, 2.2 miles upstream from Alligator Creek, and 5.5 miles upstream from Chickasawhatchee Creek.

DRAINAGE AREA.--620 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: September 1905 to December 1907, October 1939 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 150.3 feet above National Geodetic Vertical Datum (NGVD) of 1929 (levels by Georgia Department of Transportation). From August 29, 1905 to December 31, 1907, a non-recording gage was located at several sites within 450.00 feet of present site at various datums. From October 1, 1939 to November 10, 1941, a non-recording gage was located at site 100.00 feet downstream at present datum.

COOPERATION.--U.S. Army Corps of Engineers, Mobile District; Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge record good, except estimated periods which are fair. Gage-height record good. Discharges during growing season affected by undetermined amount of irrigation withdrawal. Moderate diurnal fluctuation occurs at low flow.

Table T-03130009-9: Comparison Statistics Between HSPF Reach 32 and USGS Gauge 02353500.

Statistic	Value
Bias	-18.26
Standard error	225.30
Relative bias	-0.03
Relative standard error	0.38
Nash-Sutcliffe coefficient	0.85
Kling-Gupta coefficient	0.91
Coefficient of efficiency	0.71
Index of agreement	0.85

Table T-03130009-10: Hydrologic Indices Between USGS Gauge 02353500 and HSPF Reach 32.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02353500	Simulated Reach 32	Percent Difference
MA1: Mean, all daily flows	655.90	638.18	-2.70
MA2: Median, all daily flows	431.00	400.45	-7.09
MA3: CV, all daily flows	112.23	103.09	-8.14
MA4: CV, log of all daily flows	79.31	83.57	5.37
MA5: Mean daily flow / median daily flow	1.52	1.59	4.72
MA9: (Q10 - Q90) / median daily flow	2.80	2.96	5.75
MA10: (Q20 - Q80) / median daily flow	1.61	1.67	3.94
MA11: (Q25 - Q75) / median daily flow	1.25	1.29	3.44
MA12: Mean monthly flow, January	943.09	878.19	-6.88
MA13: Mean monthly flow, February	1090.29	1138.72	4.44
MA14: Mean monthly flow, March	1134.98	1151.61	1.47
MA15: Mean monthly flow, April	799.82	825.20	3.17
MA16: Mean monthly flow, May	402.09	412.87	2.68
MA17: Mean monthly flow, June	365.08	336.95	-7.71
MA18: Mean monthly flow, July	561.75	437.09	-22.19
MA19: Mean monthly flow, August	405.61	429.76	5.95
MA20: Mean monthly flow, September	361.46	386.93	7.04
MA21: Mean monthly flow, October	370.74	332.79	-10.23
MA22: Mean monthly flow, November	442.61	389.24	-12.06
MA23: Mean monthly flow, December	783.54	731.01	-6.70
ML1: Mean minimum monthly flow, January	569.42	440.39	-22.66
ML2: Mean minimum monthly flow, February	594.04	561.94	-5.40
ML3: Mean minimum monthly flow, March	571.70	590.96	3.37
ML4: Mean minimum monthly flow, April	410.91	434.73	5.80
ML5: Mean minimum monthly flow, May	206.09	204.39	-0.82
ML6: Mean minimum monthly flow, June	149.77	152.72	1.97
ML7: Mean minimum monthly flow, July	171.47	190.59	11.15
ML8: Mean minimum monthly flow, August	164.68	270.41	64.21
ML9: Mean minimum monthly flow, September	164.77	254.32	54.35
ML10: Mean minimum monthly flow, October	240.26	242.47	0.92
ML11: Mean minimum monthly flow, November	296.35	267.07	-9.88
ML12: Mean minimum monthly flow, December	427.22	349.05	-18.30
ML13: CV of minimum monthly flows	80.86	82.65	2.21
ML14: Mean minimum daily flow / mean median annual flow	0.19	0.20	7.91
ML15: Mean minimum annual flow / mean annual flow	0.14	0.14	4.25
ML16: Median minimum annual flow / median annual flow	0.16	0.16	3.82
ML20: Ratio of baseflow volume to total flow volume	0.59	0.63	6.72
ML22: Mean annual minimum flow divided by catchment area	0.99	0.99	0.30
RA1: Mean of positive changes from one day to next (rise rate)	151.94	145.67	
RA2: CV, mean of positive changes from one day to next (rise rate)	373.31	388.48	
RA3: Mean of negative changes from one day to next (fall rate)	92.99	68.92	
RA4: CV, mean of negative changes from one day to next (fall rate)	353.58	279.14	
RA5: Ratio of days that are higher than previous day	0.37	0.32	

RA6: Median of difference in log of flows over two consecutive days of rising	0.11	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.04	
RA8: Number of flow reversals from one day to the next	78.12	81.29	
RA9: CV, number of flow reversals from one day to the next	19.98	23.22	

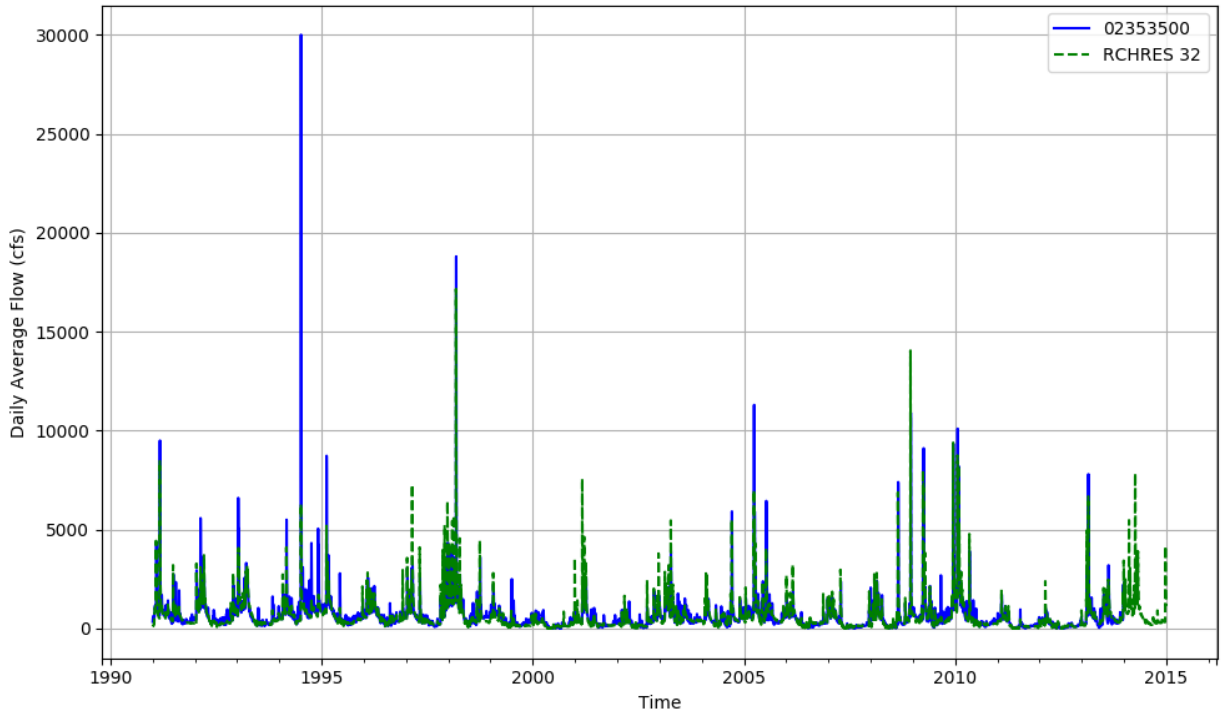


Figure T-03130009-16: Daily flow for HSFP reach 32 and USGS station 02353500.

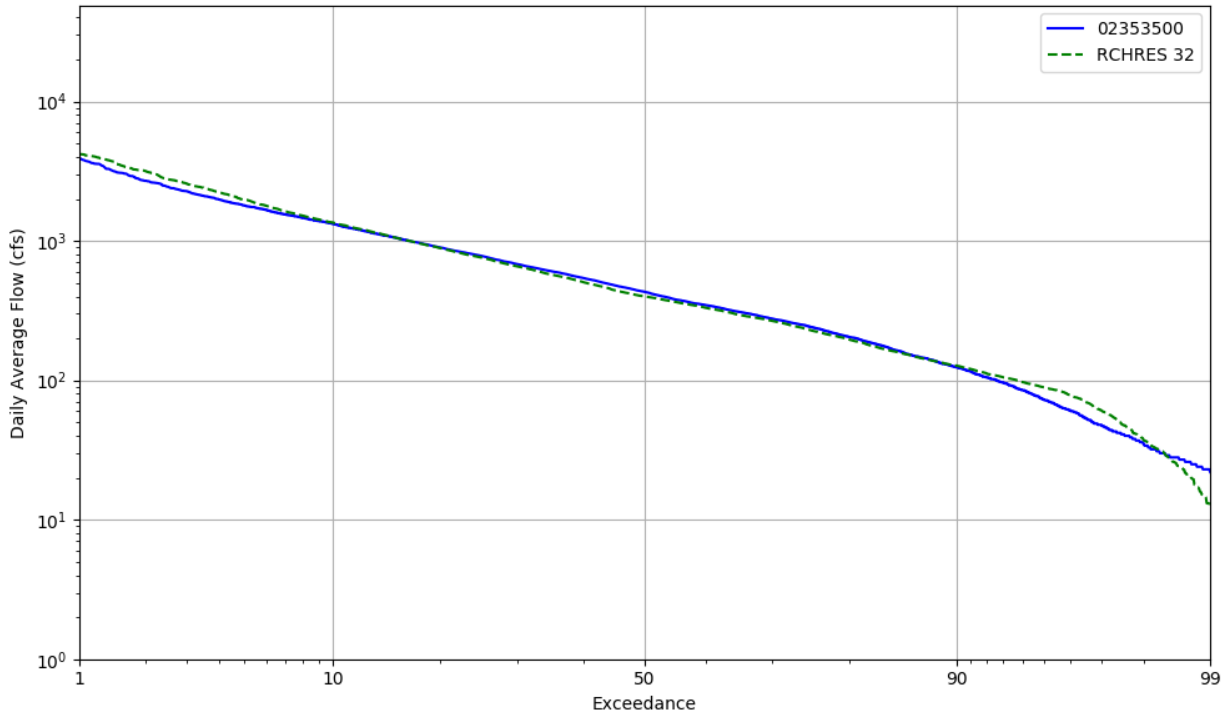


Figure T-03130009-17: Daily exceedance for HSFP reach 32 and USGS station 02353500.

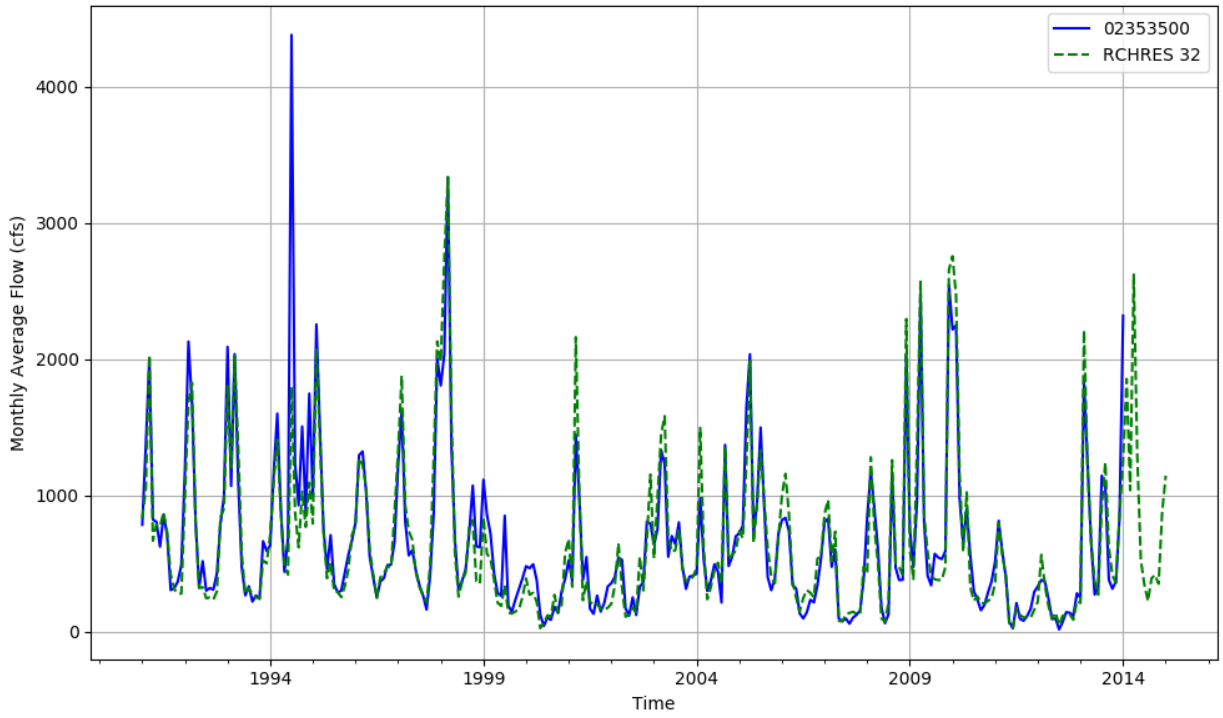


Figure T-03130009-18: Monthly flow for HSFP reach 32 and USGS station 02353500.

HSPF REACH 34, USGS GAUGE 02354800

Water-Data Report 2009
02354800 ICHAWAYNOCHAWAY CREEK NEAR ELMODEL, GA
Apalachicola Basin Ichawaynochaway Subbasin

LOCATION.--Lat 311738, long 842931 referenced to North American Datum of 1983, Baker County, GA, Hydrologic Unit 03130009, on right bank 50 feet below sampling dock, approximately 0.6 miles downstream of old dam site, 1.6 miles north of GA 200, 9.0 miles west-southwest of Newton, and 3.7 miles south of Elmodel.

DRAINAGE AREA.--1,000 mi of which 1,000 mi probably is noncontributing, approximately.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: April 1995 to current year.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 140 feet above National Geodetic Vertical Datum (NGVD) of 1929 (from topographic map).

COOPERATION.--Dougherty County.

REMARKS.--Discharge records good. Gage-height records good. Discharge during growing season affected by undetermined amount of irrigation withdrawal. Moderate diurnal fluctuation occurs at low flow.

Table T-03130009-11: Comparison Statistics Between HSPF Reach 34 and USGS Gauge 02354800.

Statistic	Value
Bias	49.08
Standard error	261.20
Relative bias	0.06
Relative standard error	0.27
Nash-Sutcliffe coefficient	0.93
Kling-Gupta coefficient	0.91
Coefficient of efficiency	0.73
Index of agreement	0.86

Table T-03130009-12: Hydrologic Indices Between USGS Gauge 02354800 and HSPF Reach 34.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02354800	Simulated Reach 34	Percent Difference
MA1: Mean, all daily flows	876.95	925.01	5.48
MA2: Median, all daily flows	499.00	575.19	15.27

MA3: CV, all daily flows	109.26	103.64	-5.14
MA4: CV, log of all daily flows	93.69	85.86	-8.36
MA5: Mean daily flow / median daily flow	1.76	1.61	-8.49
MA9: (Q10 - Q90) / median daily flow	3.56	2.98	-16.46
MA10: (Q20 - Q80) / median daily flow	2.07	1.62	-21.95
MA11: (Q25 - Q75) / median daily flow	1.53	1.18	-22.78
MA12: Mean monthly flow, January	1254.60	1231.67	-1.83
MA13: Mean monthly flow, February	1411.52	1580.33	11.96
MA14: Mean monthly flow, March	1581.30	1505.18	-4.81
MA15: Mean monthly flow, April	1321.14	1257.49	-4.82
MA16: Mean monthly flow, May	547.65	596.85	8.98
MA17: Mean monthly flow, June	482.30	504.95	4.70
MA18: Mean monthly flow, July	520.67	557.45	7.06
MA19: Mean monthly flow, August	516.48	640.78	24.07
MA20: Mean monthly flow, September	467.54	606.12	29.64
MA21: Mean monthly flow, October	408.18	478.29	17.18
MA22: Mean monthly flow, November	480.07	544.62	13.45
MA23: Mean monthly flow, December	1061.12	1103.41	3.99
ML1: Mean minimum monthly flow, January	839.16	721.77	-13.99
ML2: Mean minimum monthly flow, February	864.28	788.11	-8.81
ML3: Mean minimum monthly flow, March	821.33	772.76	-5.91
ML4: Mean minimum monthly flow, April	583.47	614.48	5.31
ML5: Mean minimum monthly flow, May	244.32	297.71	21.85
ML6: Mean minimum monthly flow, June	194.21	243.70	25.48
ML7: Mean minimum monthly flow, July	206.16	271.42	31.66
ML8: Mean minimum monthly flow, August	199.32	374.80	88.04
ML9: Mean minimum monthly flow, September	184.74	364.80	97.47
ML10: Mean minimum monthly flow, October	261.37	352.52	34.87
ML11: Mean minimum monthly flow, November	328.84	383.15	16.52
ML12: Mean minimum monthly flow, December	522.42	483.79	-7.40
ML13: CV of minimum monthly flows	101.61	85.62	-15.74
ML14: Mean minimum daily flow / mean median annual flow	0.21	0.26	27.51
ML15: Mean minimum annual flow / mean annual flow	0.14	0.18	28.16
ML16: Median minimum annual flow / median annual flow	0.18	0.23	26.07
ML20: Ratio of baseflow volume to total flow volume	0.59	0.62	5.22
ML22: Mean annual minimum flow divided by catchment area	1.21	1.75	44.69
RA1: Mean of positive changes from one day to next (rise rate)	165.90	217.71	
RA2: CV, mean of positive changes from one day to next (rise rate)	323.51	409.84	
RA3: Mean of negative changes from one day to next (fall rate)	95.40	105.27	
RA4: CV, mean of negative changes from one day to next (fall rate)	285.00	289.26	
RA5: Ratio of days that are higher than previous day	0.36	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.05	
RA8: Number of flow reversals from one day to the next	69.05	74.00	
RA9: CV, number of flow reversals from one day to the next	22.35	23.78	

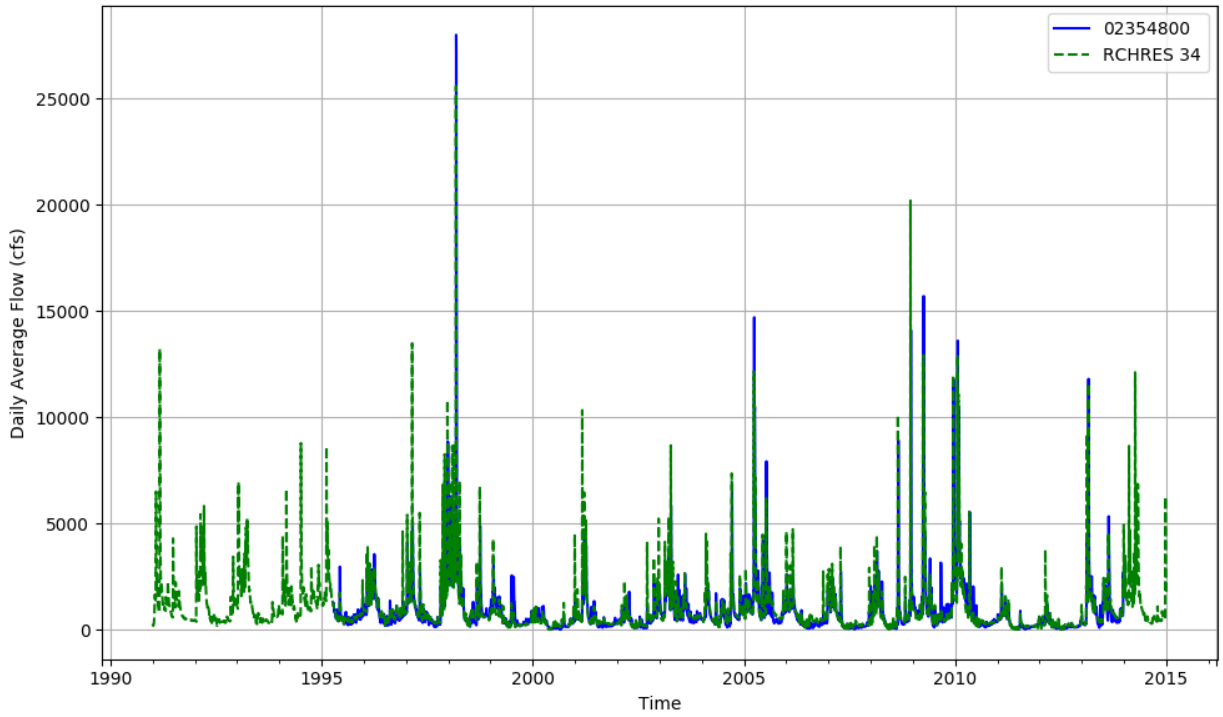


Figure T-03130009-19: Daily flow for HSFP reach 34 and USGS station 02354800.

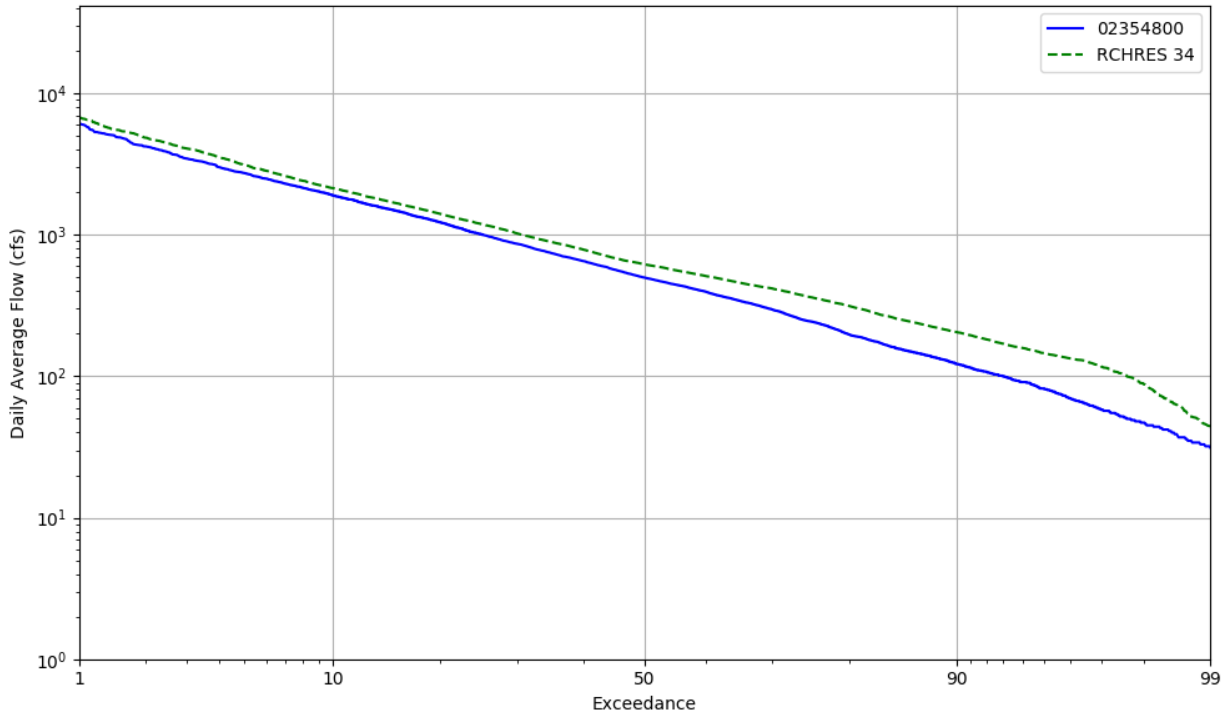


Figure T-03130009-20: Daily exceedance for HSFP reach 34 and USGS station 02354800.

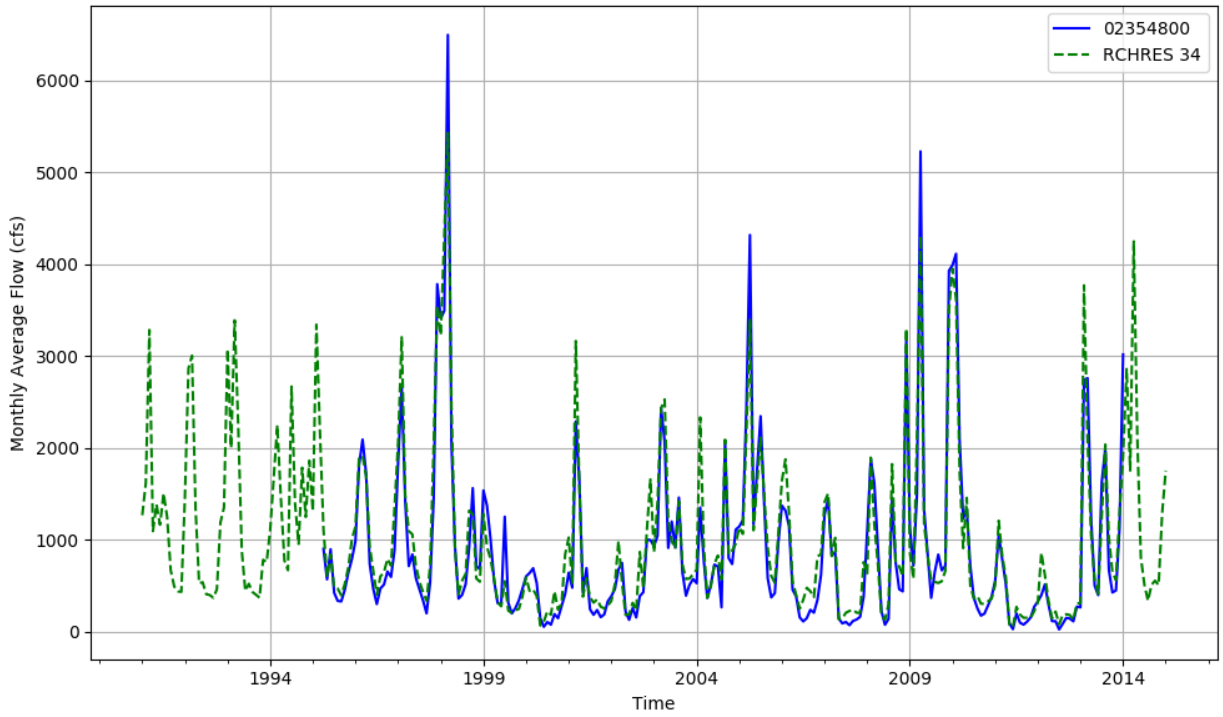


Figure T-03130009-21: Monthly flow for HSFP reach 34 and USGS station 02354800.

HSPF REACH 35, USGS GAUGE 02355350

Water-Data Report 2009
02355350 ICHAWAYNOCHAWAY CREEK BELOW NEWTON, GA
Apalachicola Basin Ichawaynochaway Subbasin

LOCATION.--Lat 311303, long 842815 referenced to North American Datum of 1983, Baker County, GA, Hydrologic Unit 03130009, on right bank 75.0 feet below steel truss bridge, approximately 1600 feet upstream from bridge on GA 91, 11.0 miles southwest of Newton.

DRAINAGE AREA.--1,040 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: October 1920 to June 1921 (discharge measurements and fragmentary gage-height record); October 1937 to September 1947 (published as 02355000 Ichawaynochaway Creek near Newton), monthly discharge only for April to September 1939 published in WSP 1301; April 1995 to current year, discharges less than 3,550 cfs only.
GAGE-HEIGHT: October 1998 to current year.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 98.67 feet above National Geodetic Vertical Datum (NGVD) of 1929. From October 9, 1920 to June 30, 1921, a non-recording gage was located at site 5.0 miles upstream at datum 15.1 feet higher. From August 10, 1937 to April 1, 1939, a non-recording gage located at present site and approximately same datum. From September 21, 1939 to November 24, 1941, a nonrecording gage was located at site 5.0 miles upstream at datum 15.1 feet higher. From November 25, 1941 to September 30 1947, a recording gage was located at site 5.0 miles upstream at datum 15.1 feet higher.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge records good. Gage-height records good. Discharges during growing season affected by undetermined amount of irrigation withdrawal. Moderate diurnal fluctuation occurs at low flow.

Table T-03130009-13: Comparison Statistics Between HSPF Reach 35 and USGS Gauge 02355350.

Statistic	Value
Bias	41.38
Standard error	294.38
Relative bias	0.05
Relative standard error	0.34
Nash-Sutcliffe coefficient	0.88
Kling-Gupta coefficient	0.87

Coefficient of efficiency	0.68
Index of agreement	0.84

Table T-03130009-14: Hydrologic Indices Between USGS Gauge 02355350 and HSPF Reach 35.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02355350	Simulated Reach 35	Percent Difference
MA1: Mean, all daily flows	820.82	861.08	4.90
MA2: Median, all daily flows	558.50	587.20	5.14
MA3: CV, all daily flows	85.74	91.76	7.02
MA4: CV, log of all daily flows	81.52	77.12	-5.41
MA5: Mean daily flow / median daily flow	1.47	1.47	-0.22
MA9: (Q10 - Q90) / median daily flow	2.82	2.66	-5.79
MA10: (Q20 - Q80) / median daily flow	1.70	1.50	-11.74
MA11: (Q25 - Q75) / median daily flow	1.33	1.14	-13.90
MA12: Mean monthly flow, January	1263.79	1165.00	-7.82
MA13: Mean monthly flow, February	1323.17	1492.59	12.80
MA14: Mean monthly flow, March	1595.60	1441.40	-9.66
MA15: Mean monthly flow, April	1080.15	1052.52	-2.56
MA16: Mean monthly flow, May	595.71	615.81	3.37
MA17: Mean monthly flow, June	509.62	515.66	1.19
MA18: Mean monthly flow, July	498.37	547.83	9.92
MA19: Mean monthly flow, August	456.59	614.30	34.54
MA20: Mean monthly flow, September	474.79	619.53	30.48
MA21: Mean monthly flow, October	447.34	500.54	11.89
MA22: Mean monthly flow, November	517.78	568.18	9.73
MA23: Mean monthly flow, December	909.72	1006.80	10.67
ML1: Mean minimum monthly flow, January	944.95	757.14	-19.87
ML2: Mean minimum monthly flow, February	942.44	825.49	-12.41
ML3: Mean minimum monthly flow, March	907.94	810.12	-10.77
ML4: Mean minimum monthly flow, April	679.95	656.77	-3.41
ML5: Mean minimum monthly flow, May	316.00	325.38	2.97
ML6: Mean minimum monthly flow, June	254.42	272.92	7.27
ML7: Mean minimum monthly flow, July	257.63	292.47	13.52
ML8: Mean minimum monthly flow, August	250.74	395.25	57.64
ML9: Mean minimum monthly flow, September	228.11	383.10	67.95
ML10: Mean minimum monthly flow, October	303.11	370.36	22.19
ML11: Mean minimum monthly flow, November	372.47	401.22	7.72
ML12: Mean minimum monthly flow, December	582.53	507.25	-12.92
ML13: CV of minimum monthly flows	96.90	83.99	-13.33
ML14: Mean minimum daily flow / mean median annual flow	0.26	0.29	9.49
ML15: Mean minimum annual flow / mean annual flow	0.20	0.21	6.54
ML16: Median minimum annual flow / median annual flow	0.22	0.27	17.91
ML20: Ratio of baseflow volume to total flow volume	0.69	0.66	-3.64
ML22: Mean annual minimum flow divided by catchment area	1.61	1.93	20.05
RA1: Mean of positive changes from one day to next (rise rate)	127.38	191.93	
RA2: CV, mean of positive changes from one day to next (rise rate)	346.42	435.16	
RA3: Mean of negative changes from one day to next (fall rate)	70.64	94.71	

RA4: CV, mean of negative changes from one day to next (fall rate)	283.15	436.19	
RA5: Ratio of days that are higher than previous day	0.35	0.33	
RA6: Median of difference in log of flows over two consecutive days of rising	0.08	0.06	
RA7: Median of difference in log of flows over two consecutive days of falling	0.06	0.04	
RA8: Number of flow reversals from one day to the next	66.55	67.10	
RA9: CV, number of flow reversals from one day to the next	23.93	24.96	

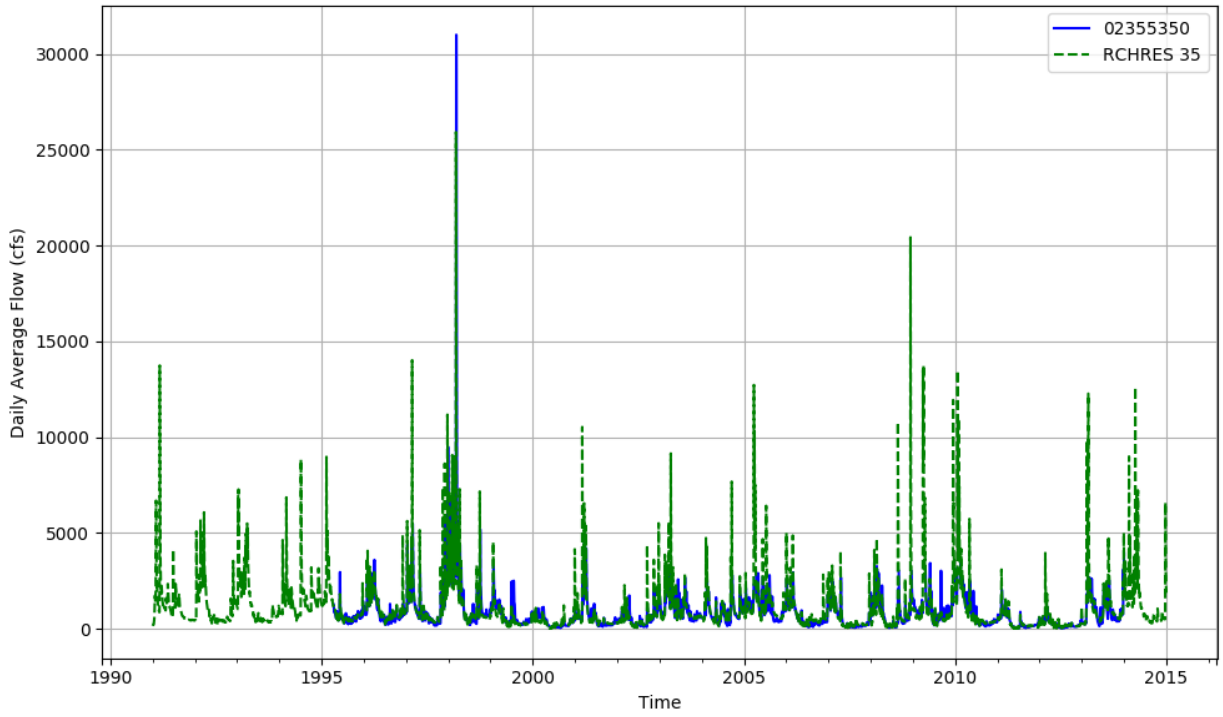


Figure T-03130009-22: Daily flow for HSFP reach 35 and USGS station 02355350.

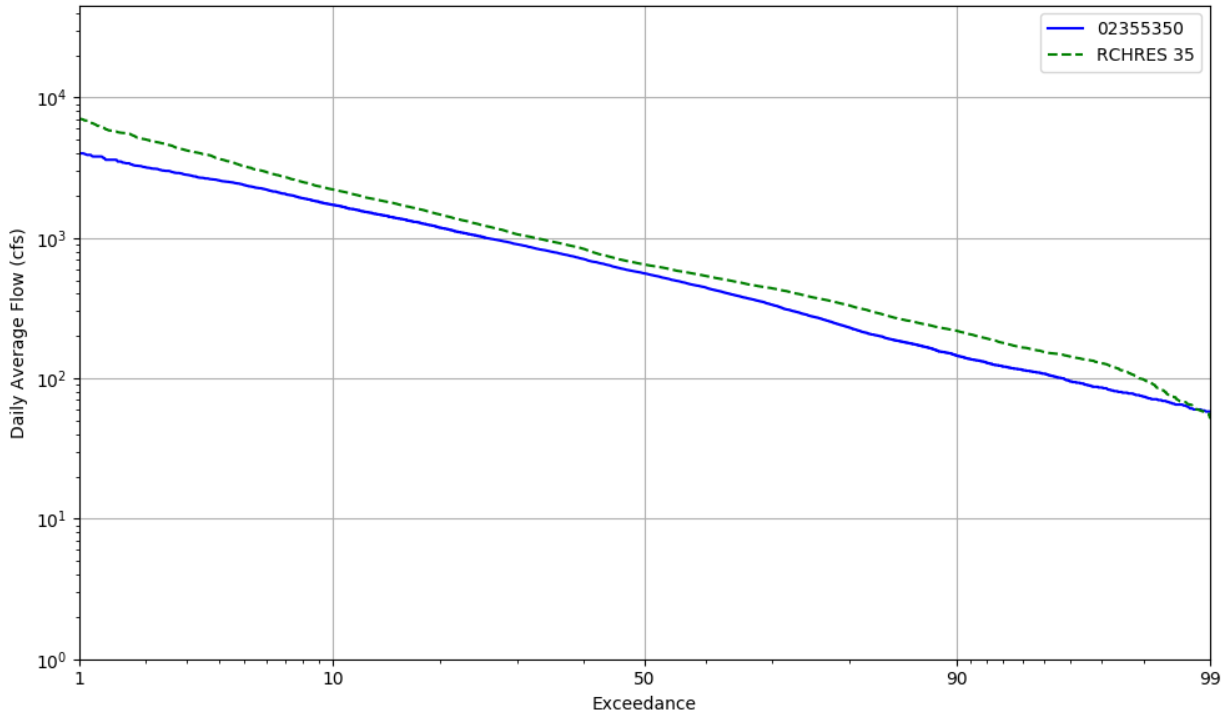


Figure T-03130009-23: Daily exceedance for HSFP reach 35 and USGS station 02355350.

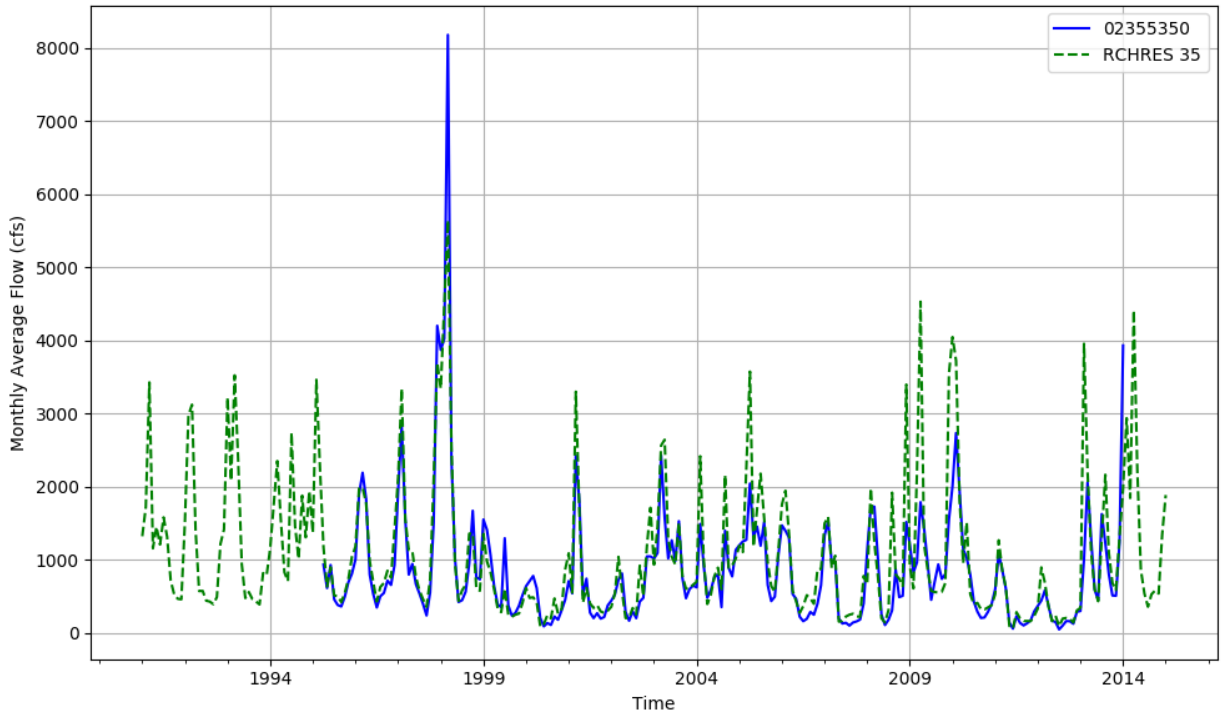


Figure T-03130009-24: Monthly flow for HSFP reach 35 and USGS station 02355350.

Table T-03130009-15: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2894	17828	2851	457	64	454	259805	14270	42112	40087	99738	109912	86	106534	7819	704910
AREA(%)	0.4	2.5	0.4	0.1	0.0	0.1	36.8	2.0	6.0	5.7	14.1	15.6	0.0	15.1	1.1	99.8
IMPERVIOUS																
AREA(ACRES)		1006	355	136	64											1561
AREA(%)		0.1	0.1	0.0	0.0											0.2
SUPY	40.1	40.7	41.2	40.8	40.6	40.8	40.4	40.6	40.6	40.6	40.8	40.5	51.4	48.2	41.2	41.6
SURLI		0.0	7.7	9.9	11.5										1.9	0.1
UZLI																0.0
LZLI		0.0	1.0	0.9	0.7									0.0	10.6	0.1
SURO: PERVIOUS	0.7	1.0	1.1	2.2	1.4	0.5	0.2	0.5	0.5	0.5	0.3	0.7	1.5	0.6	0.3	0.4
SURO: IMPERVIOUS		25.2	25.7	25.5	25.6											0.1
SURO: COMBINED	0.7	2.3	3.8	7.5	13.5	0.5	0.2	0.5	0.5	0.5	0.3	0.7	1.5	0.6	0.3	0.5
IFWO		6.4	7.5	7.0	7.8	6.5	3.4	6.3	5.1	5.3	4.1		8.8	6.2	4.5	3.7
AGWO	1.3	6.0	11.4	12.2	12.3	11.1	6.3	10.2	7.3	7.6	7.9	1.1	10.4	11.4	15.9	6.8
AGWI	2.3	8.1	13.4	14.2	14.1	13.1	8.5	12.0	9.3	9.7	10.1	1.9	9.5	13.0	17.8	8.7
IGWI	0.3	1.0	1.7	1.8	1.8	1.6	1.1	1.5	1.2	1.2	1.3	0.2	1.2	1.6	2.2	1.1
CEPE		8.8	7.9	7.8	10.9	5.4	11.6	7.9	9.0	7.9	6.0	18.5	18.1	10.6	6.4	11.1
UZET	0.2	3.0	3.7	3.7	3.0	4.0	2.1	3.7	2.8	2.8	3.2	0.1	3.0	3.4	4.0	2.3
LZET	0.2	14.5	16.3	16.6	15.3	11.4	16.9	10.6	14.9	15.6	18.4	0.1	11.3	15.0	20.4	13.8
AGWET	0.3	2.7	2.8	2.8	2.6	3.0	2.6	2.8	2.7	2.8	3.0	0.2	1.9	2.5	2.9	2.3
BASET	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.8	0.8	0.8	0.8
SURET	42.2											24.3				3.9
PERO	2.0	13.3	20.1	21.4	21.6	18.1	9.9	17.0	13.0	13.4	12.2	1.9	20.7	18.2	20.7	11.0
IGWI	0.3	1.0	1.7	1.8	1.8	1.6	1.1	1.5	1.2	1.2	1.3	0.2	1.2	1.6	2.2	1.1
TAET: PERVIOUS	43.6	29.9	31.4	31.6	32.6	24.6	34.0	25.7	30.3	29.9	31.4	43.8	35.1	32.4	34.4	34.1
IMPEV: IMPERVIOUS		15.6	15.7	15.5	15.2											0.0
ET: COMBINED	43.6	29.1	29.7	27.9	23.9	24.6	34.0	25.7	30.3	29.9	31.4	43.8	35.1	32.4	34.4	34.2
PET	43.9	43.9	43.8	43.9	43.8	44.0	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.8	43.9	43.8

Table T-03130009-16: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2894	17828	2851	457	64	454	259805	14270	42112	40087	99738	109912	86	106534	7819	704910
AREA(%)	0.4	2.5	0.4	0.1	0.0	0.1	36.8	2.0	6.0	5.7	14.1	15.6	0.0	15.1	1.1	99.8
IMPERVIOUS																
AREA(ACRES)		1006	355	136	64											1561
AREA(%)		0.1	0.1	0.0	0.0											0.2
SUPY	63.3	62.2	62.7	63.5	64.1	62.4	62.5	61.9	62.1	62.2	62.9	60.8	64.8	72.7	62.1	63.6
SURLI		0.0	6.7	8.6	10.3										1.2	0.0
UZLI																0.0
LZLI		0.0	1.0	0.9	0.6									0.0	7.3	0.1
SURO: PERVIOUS	8.3	2.0	2.2	3.5	2.3	1.2	0.5	1.3	1.2	1.1	0.7	7.6	1.6	1.3	0.8	1.9
SURO: IMPERVIOUS		43.9	44.0	44.6	45.1											0.1
SURO: COMBINED	8.3	4.3	6.8	12.9	23.7	1.2	0.5	1.3	1.2	1.1	0.7	7.6	1.6	1.3	0.8	2.0
IFWO		11.1	12.6	12.1	13.5	11.0	5.5	10.6	8.7	9.0	7.0		12.2	10.0	7.1	6.2
AGWO	1.4	8.9	14.3	15.6	16.3	15.5	11.4	14.4	11.2	11.5	12.4	1.1	9.9	17.4	18.6	10.9
AGWI	2.1	15.5	20.8	22.1	22.4	22.5	17.8	21.1	17.9	18.4	19.4	1.8	16.9	23.4	24.2	16.4
IGWI	0.3	1.9	2.6	2.8	2.8	2.8	2.2	2.6	2.2	2.3	2.4	0.2	2.1	2.9	3.0	2.1
CEPE		10.8	10.0	10.0	13.9	7.2	14.0	9.8	11.0	9.8	8.0	20.7	11.3	13.0	8.2	13.3
UZET	0.0	3.8	4.4	4.5	3.7	4.9	2.6	4.6	3.6	3.6	4.2	0.0	4.0	4.6	4.7	2.9
LZET	0.0	16.3	17.3	17.4	15.8	12.2	19.2	11.3	16.7	17.3	20.5	0.0	16.0	16.9	21.9	15.5
AGWET	0.0	3.1	3.1	3.1	2.8	3.3	2.9	3.1	3.1	3.2	3.3	0.0	3.0	2.8	3.2	2.5
BASET	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.7	0.9	0.9	1.0	0.9
SURET	49.8											29.3				4.8
PERO	9.7	22.0	29.1	31.2	32.0	27.7	17.4	26.3	21.1	21.6	20.1	8.7	23.7	28.6	26.5	19.0
IGWI	0.3	1.9	2.6	2.8	2.8	2.8	2.2	2.6	2.2	2.3	2.4	0.2	2.1	2.9	3.0	2.1
TAET: PERVIOUS	50.6	34.9	35.7	36.0	37.1	28.5	39.6	29.7	35.3	34.9	36.9	50.8	35.2	38.3	39.0	39.9
IMPEV: IMPERVIOUS		18.2	18.4	18.5	18.8											0.0
ET: COMBINED	50.6	34.0	33.8	32.0	28.0	28.5	39.6	29.7	35.3	34.9	36.9	50.8	35.2	38.3	39.0	39.9
PET	50.6	50.6	50.6	50.6	50.5	50.7	50.6	50.7	50.7	50.6	50.6	50.8	50.4	50.7	50.9	50.5

Table T-03130009-17: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2894	17828	2851	457	64	454	259805	14270	42112	40087	99738	109912	86	106534	7819	704910
AREA(%)	0.4	2.5	0.4	0.1	0.0	0.1	36.8	2.0	6.0	5.7	14.1	15.6	0.0	15.1	1.1	99.8
IMPERVIOUS																
AREA(ACRES)		1006	355	136	64											1561
AREA(%)		0.1	0.1	0.0	0.0											0.2
SUPY	41.0	41.2	41.3	41.3	41.3	41.5	41.1	41.1	41.0	41.2	41.3	41.0	57.0	51.5	42.2	42.6
SURLI		0.0	6.7	8.5	10.1										2.0	0.1
UZLI																0.0
LZLI		0.0	1.1	1.0	0.6									0.0	12.3	0.1
SURO: PERVIOUS	10.3	1.0	1.2	2.0	1.4	0.5	0.2	0.5	0.5	0.5	0.3	8.0	1.6	0.6	0.3	1.6
SURO: IMPERVIOUS		26.2	26.3	26.3	26.2											0.1
SURO: COMBINED	10.3	2.4	3.9	7.5	13.8	0.5	0.2	0.5	0.5	0.5	0.3	8.0	1.6	0.6	0.3	1.6
IFWO		7.2	7.9	7.5	8.4	7.2	4.0	6.9	6.0	6.1	5.0		9.8	6.7	5.0	4.3
AGWO	0.9	8.7	13.0	13.9	14.0	14.1	11.5	13.1	10.8	11.0	12.0	0.7	11.1	15.5	18.1	10.4
AGWI	1.9	7.9	12.4	13.2	12.8	13.1	9.6	12.0	9.3	9.6	10.2	1.7	10.7	14.2	18.5	9.2
IGWI	0.2	1.0	1.5	1.7	1.6	1.6	1.2	1.5	1.2	1.2	1.3	0.2	1.3	1.8	2.3	1.2
CEPE		8.6	7.8	7.8	11.1	5.4	11.5	7.7	8.8	7.7	6.1	17.7	21.7	10.9	6.5	11.0
UZET	0.8	2.6	3.1	3.1	2.5	3.5	1.7	3.3	2.4	2.4	2.6	0.7	2.2	3.4	3.6	2.1
LZET	0.9	14.9	16.8	17.1	15.7	11.9	16.6	11.0	15.2	15.9	18.6	0.5	10.6	16.2	22.2	14.0
AGWET	0.7	3.2	3.2	3.2	3.0	3.4	3.0	3.2	3.2	3.3	3.4	0.6	2.1	2.9	3.3	2.7
BASET	0.5	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.9	0.9	0.9	0.8
SURET	41.7											25.0				4.1
PERO	11.2	16.9	22.1	23.4	23.8	21.8	15.7	20.6	17.3	17.6	17.3	8.7	22.5	22.8	23.3	16.3
IGWI	0.2	1.0	1.5	1.7	1.6	1.6	1.2	1.5	1.2	1.2	1.3	0.2	1.3	1.8	2.3	1.2
TAET: PERVIOUS	44.6	30.2	31.8	32.1	33.2	25.1	33.8	26.2	30.6	30.3	31.6	45.0	37.5	34.3	36.5	34.7
IMPEV: IMPERVIOUS		15.2	15.2	15.2	15.3											0.0
ET: COMBINED	44.6	29.4	30.0	28.2	24.2	25.1	33.8	26.2	30.6	30.3	31.6	45.0	37.5	34.3	36.5	34.7
PET	48.6	48.7	48.6	48.6	48.5	48.7	48.7	48.7	48.7	48.7	48.7	48.8	48.4	48.7	48.8	48.6

Table T-03130009-18: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	2894	17828	2851	457	64	454	259805	14270	42112	40087	99738	109912	86	106534	7819	704910
AREA(%)	0.4	2.5	0.4	0.1	0.0	0.1	36.8	2.0	6.0	5.7	14.1	15.6	0.0	15.1	1.1	99.8
IMPERVIOUS																
AREA(ACRES)		1006	355	136	64											1561
AREA(%)		0.1	0.1	0.0	0.0											0.2
SUPY	49.6	49.7	49.7	49.6	49.4	49.7	49.7	49.7	49.7	49.7	49.7	49.8	62.3	57.0	50.7	50.7
SURLI		0.0	6.8	8.8	10.5										1.3	0.0
UZLI																0.0
LZLI		0.0	0.9	0.8	0.6									0.0	8.1	0.1
SURO: PERVIOUS	6.1	1.0	1.2	2.2	1.4	0.6	0.2	0.6	0.6	0.5	0.3	6.4	1.4	0.6	0.4	1.3
SURO: IMPERVIOUS		33.0	33.0	32.9	32.6											0.1
SURO: COMBINED	6.1	2.8	4.7	9.2	17.0	0.6	0.2	0.6	0.6	0.5	0.3	6.4	1.4	0.6	0.4	1.4
IFWO		7.2	8.2	7.6	8.3	7.1	3.0	6.8	5.4	5.6	4.0		9.9	6.2	4.7	3.7
AGWO	1.1	8.4	13.3	14.2	14.4	13.6	9.4	12.8	10.0	10.3	10.6	0.9	12.4	13.6	16.5	9.1
AGWI	2.0	12.4	17.3	18.2	18.2	17.9	13.2	16.9	14.0	14.4	14.8	1.7	15.5	17.5	20.7	12.5
IGWI	0.3	1.6	2.2	2.3	2.3	2.2	1.7	2.1	1.8	1.8	1.9	0.2	1.9	2.2	2.6	1.6
CEPE		10.0	9.1	9.1	12.4	6.6	12.9	9.1	10.2	9.1	7.3	19.3	19.9	11.3	7.5	12.2
UZET	1.4	3.2	3.7	3.7	3.0	4.0	2.1	3.8	3.0	3.0	3.3	0.6	2.9	3.6	4.0	2.5
LZET	0.7	14.3	15.9	16.1	14.8	11.2	16.5	10.4	14.7	15.3	18.1	0.3	10.8	15.5	20.2	13.7
AGWET	0.4	2.8	2.9	2.9	2.6	3.1	2.7	2.9	2.8	2.9	3.1	0.4	2.0	2.7	3.0	2.4
BASET	0.5	0.8	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.5	0.9	0.9	0.9	0.8
SURET	39.4											21.7				3.5
PERO	7.2	16.7	22.6	23.9	24.1	21.3	12.6	20.2	16.0	16.4	14.9	7.3	23.7	20.4	21.6	14.0
IGWI	0.3	1.6	2.2	2.3	2.3	2.2	1.7	2.1	1.8	1.8	1.9	0.2	1.9	2.2	2.6	1.6
TAET: PERVIOUS	42.5	31.2	32.4	32.7	33.7	25.8	35.1	27.0	31.6	31.2	32.6	42.7	36.4	34.0	35.6	35.0
IMPEV: IMPERVIOUS		16.8	16.8	16.8	16.8											0.0
ET: COMBINED	42.5	30.4	30.6	29.0	25.3	25.8	35.1	27.0	31.6	31.2	32.6	42.7	36.4	34.0	35.6	35.1
PET	46.4	46.4	46.4	46.4	46.4	46.5	46.4	46.4	46.4	46.4	46.4	46.5	46.4	46.4	46.5	46.3

Table T-03130009-19: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
2	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
3	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
4	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
5	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
6	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
7	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
8	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
9	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
10	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
11	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
12	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
13	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
14	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
15	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
16	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
17	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
18	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
19	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
20	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
21	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
22	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
23	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
24	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
25	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
26	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
27	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
28	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
29	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
30	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
31	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
32	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
33	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
34	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
35	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
36	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990
37	0.990	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.990

Table T-03130009-20: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
2	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
3	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
4	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
5	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
6	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
7	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
8	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
9	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
10	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
11	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
12	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
13	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
14	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
15	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
16	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
17	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
18	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
19	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
20	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
21	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
22	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
23	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
24	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
25	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
26	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
27	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
28	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
29	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
30	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
31	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
32	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
33	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
34	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
35	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
36	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019
37	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019

Table T-03130009-21: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
2	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
3	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
4	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
5	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
6	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
7	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
8	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
9	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
10	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
11	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
12	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
13	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
14	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
15	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
16	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
17	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
18	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
19	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
20	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
21	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
22	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
23	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
24	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
25	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
26	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
27	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
28	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
29	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
30	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
31	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
32	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
33	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
34	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
35	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
36	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300
37	0.000	0.062	0.050	0.050	0.100	0.023	0.110	0.050	0.065	0.050	0.030	0.300

Table T-03130009-22: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
2	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
3	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
4	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
5	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
6	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
7	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
8	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
9	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
10	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
11	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
12	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
13	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
14	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
15	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
16	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
17	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
18	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
19	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
20	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
21	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
22	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
23	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
24	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
25	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
26	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
27	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
28	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
29	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
30	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
31	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
32	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
33	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
34	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
35	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
36	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111
37	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111	0.111

Table T-03130009-23: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
2	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
3	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
4	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
5	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
6	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
7	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
8	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
9	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
10	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
11	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
12	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
13	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
14	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
15	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
16	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
17	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
18	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
19	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
20	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
21	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
22	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
23	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
24	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
25	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
26	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
27	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
28	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
29	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
30	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
31	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
32	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
33	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
34	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
35	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
36	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001
37	0.001	0.170	0.170	0.170	0.170	0.242	0.364	0.242	0.242	0.242	0.291	0.001

Table T-03130009-24: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
2		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
3		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
4		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
5		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
6		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
7		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
8		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
9		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
10		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
11		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
12		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
13		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
14		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
15		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
16		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
17		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
18		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
19		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
20		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
21		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
22		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
23		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
24		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
25		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
26		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
27		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
28		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
29		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	

30		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
31		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
32		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
33		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
34		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
35		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
36		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	
37		1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	1.520	

Table T-03130009-25: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
17	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
22	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
23	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
24	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
25	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
26	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
27	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
28	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
29	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
30	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
31	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
32	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
33	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
34	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
35	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
36	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
37	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03130009-26: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
2	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
3	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
4	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
5	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
6	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
7	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
8	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
9	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
10	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
11	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
12	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
13	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
14	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
15	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
16	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
17	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
18	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
19	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
20	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
21	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
22	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
23	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
24	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
25	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
26	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
27	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
28	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
29	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
30	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
31	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
32	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
33	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
34	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
35	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
36	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442
37	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442	0.442

Table T-03130009-27: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
2	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
3	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
4	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
5	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
6	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
7	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
8	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
9	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
10	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
11	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
12	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
13	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
14	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
15	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
16	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
17	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
18	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
19	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
20	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
21	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
22	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
23	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
24	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
25	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
26	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
27	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
28	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
29	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
30	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
31	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
32	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
33	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
34	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
35	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
36	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934
37	0.262	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.934

Table T-03130009-28: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
2	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
3	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
4	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
5	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
6	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
7	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
8	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
9	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
10	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
11	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
12	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
13	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
14	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
15	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
16	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
17	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
18	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
19	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
20	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
21	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
22	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
23	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
24	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
25	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
26	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
27	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
28	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
29	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
30	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
31	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
32	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
33	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
34	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
35	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
36	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100
37	0.200	2.503	2.503	2.503	2.503	2.817	3.756	2.817	2.817	2.817	3.130	0.100

Table T-03130009-29: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
22	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
23	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
24	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
25	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
26	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
27	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
28	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
29	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
30	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
31	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
32	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
33	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
34	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
35	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
36	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
37	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050

APPENDIX T-03130010

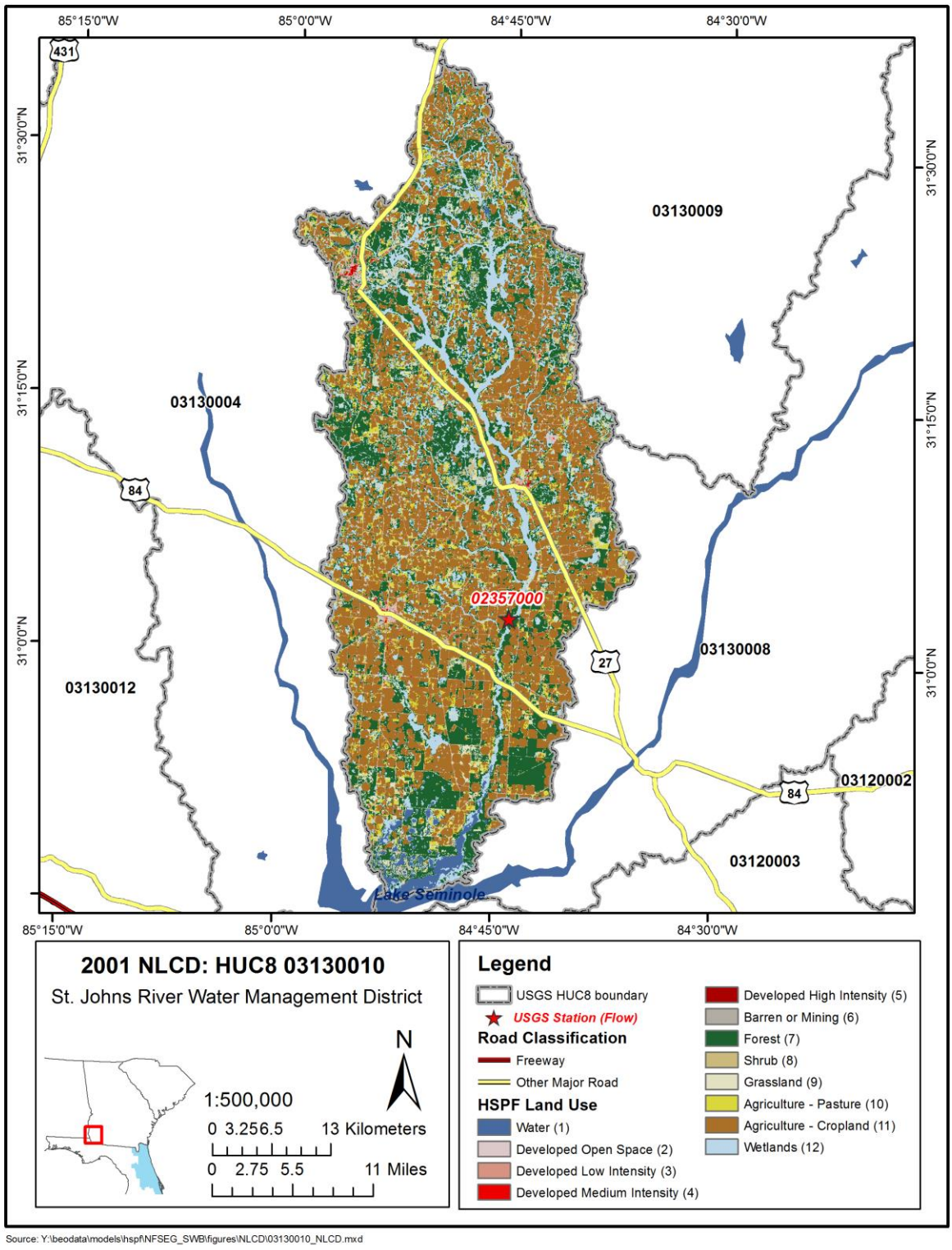


Figure T-03130010-1: Land Cover from the National Land Cover Database.

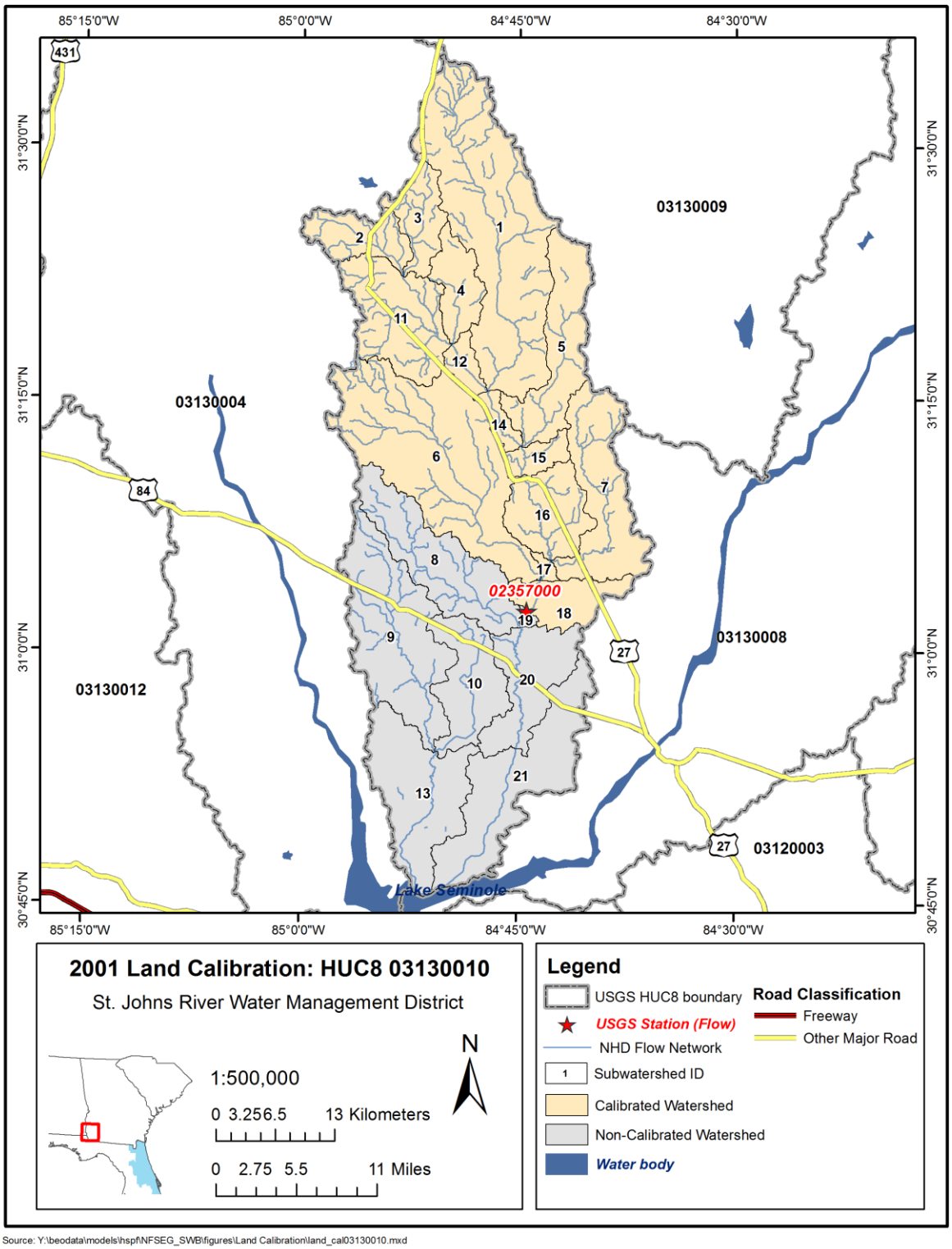


Figure T-03130010-2: Calibrated sub-watersheds.

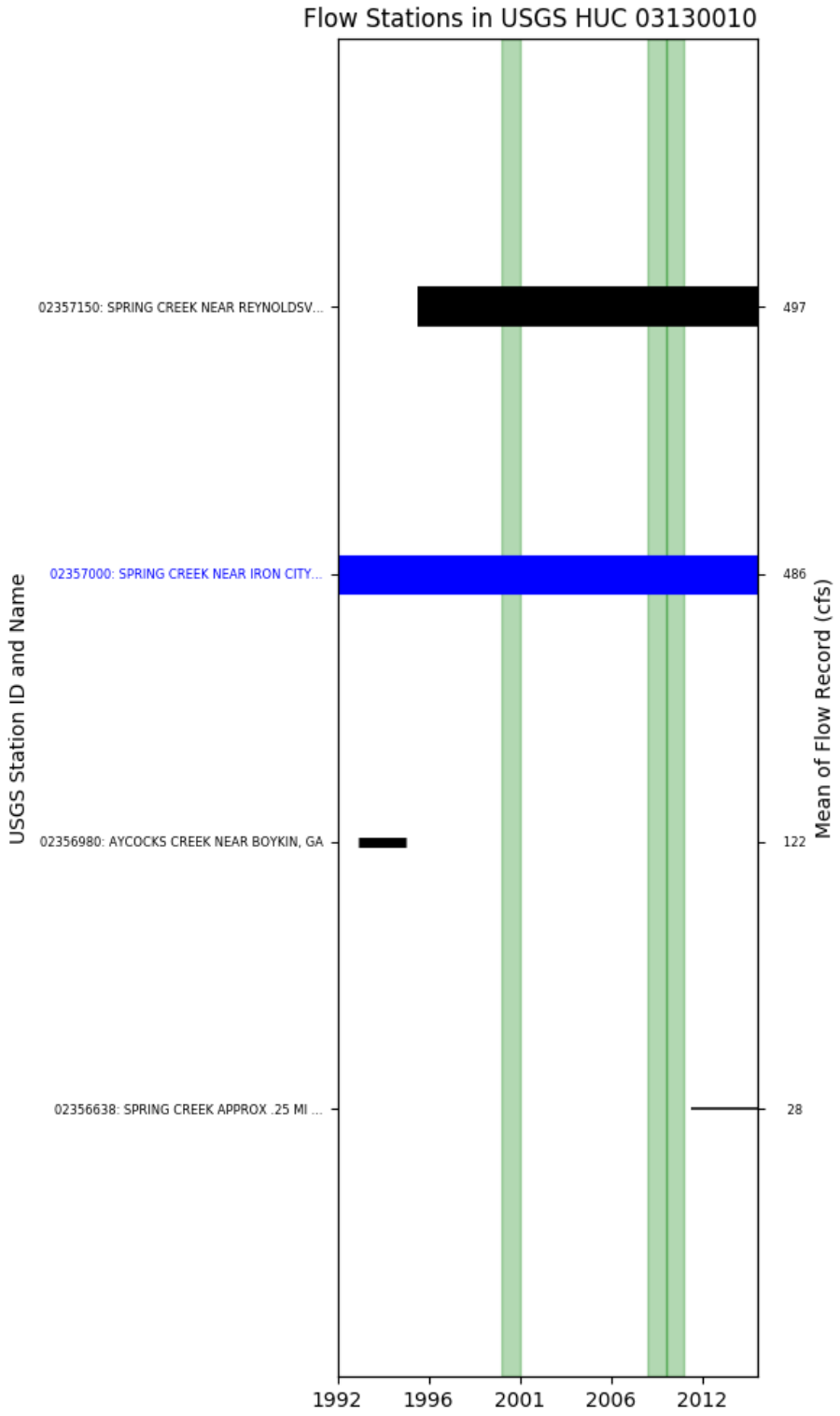


Figure T-03130010-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 18, USGS GAUGE 02357000

Water-Data Report 2009
02357000 SPRING CREEK NEAR IRON CITY, GA
Apalachicola Basin Spring Subbasin

LOCATION.--Lat 310225, long 844424 referenced to North American Datum of 1983, Decatur County, GA, Hydrologic Unit 03130010, on right bank 25.0 feet downstream from county bridge, 1.5 miles downstream from Aycock Creek, 1.5 miles upstream from Dry Creek, 5.0 miles north of Brinson, and 5.5 miles northeast of Iron City.

DRAINAGE AREA.--527 mi, revised.

SURFACE-WATER RECORDS

PERIOD OF RECORD
DISCHARGE: November 1920 to June 1921, June 1937 to April 1971, water years 1972-76 (annual maximum), December 1976 to September 1978, June 1982 to current year. Monthly discharge only for November 1920 to June 1921, published in WSP 1304.
GAGE-HEIGHT: October 1998 to current year.

REVISED RECORDS.--WDR GA-91-1: 1983-84. WDR GA-2009-1: 1960-2008: Drainage Area.

GAGE.--Satellite telemetry with a water-stage recorder. Datum of gage is 85.7 feet above National Geodetic Vertical Datum (NGVD) of 1929. From October 21, 1920 to June 30, 1921, a non-recording gage was located at site 125 feet upstream at different datum. From June 11, 1937 to October 17, 1952, a non-recording gage was located at site 125 feet upstream at present datum. From October 18, 1952 to April 1971, a recording gage was located at same site and datum as present. From May 1971 to December 1976, a non-recording gage was located at same site and datum as present.

COOPERATION.--Georgia Department of Natural Resources, Environmental Protection Division.

REMARKS.--Discharge record fair, except estimated periods which are poor. Gage-height record fair. Discharges during growing season affected by undetermined amount of irrigation withdrawal.

Table T-03130010-1: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 02357000.

Statistic	Value
Bias	-3.05
Standard error	226.91

Relative bias	-0.01
Relative standard error	0.35
Nash-Sutcliffe coefficient	0.87
Kling-Gupta coefficient	0.89
Coefficient of efficiency	0.72
Index of agreement	0.86

Table T-03130010-2: Hydrologic Indices Between USGS Gauge 02357000 and HSPF Reach 18.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02357000	Simulated Reach 18	Percent Difference
MA1: Mean, all daily flows	486.35	482.95	-0.70
MA2: Median, all daily flows	196.00	220.37	12.44
MA3: CV, all daily flows	155.87	135.97	-12.76
MA4: CV, log of all daily flows	121.51	119.64	-1.54
MA5: Mean daily flow / median daily flow	2.48	2.19	-11.68
MA9: (Q10 - Q90) / median daily flow	5.69	5.42	-4.70
MA10: (Q20 - Q80) / median daily flow	3.32	2.86	-14.05
MA11: (Q25 - Q75) / median daily flow	2.61	2.14	-17.95
MA12: Mean monthly flow, January	664.00	741.24	11.63
MA13: Mean monthly flow, February	942.40	1049.63	11.38
MA14: Mean monthly flow, March	1145.57	1160.96	1.34
MA15: Mean monthly flow, April	746.90	673.53	-9.82
MA16: Mean monthly flow, May	253.19	233.53	-7.77
MA17: Mean monthly flow, June	208.85	193.64	-7.28
MA18: Mean monthly flow, July	384.79	281.15	-26.93
MA19: Mean monthly flow, August	303.96	275.28	-9.44
MA20: Mean monthly flow, September	212.66	176.44	-17.03
MA21: Mean monthly flow, October	202.35	167.27	-17.34
MA22: Mean monthly flow, November	172.69	197.74	14.51
MA23: Mean monthly flow, December	429.28	481.08	12.07
ML1: Mean minimum monthly flow, January	320.93	310.76	-3.17
ML2: Mean minimum monthly flow, February	449.04	457.38	1.86
ML3: Mean minimum monthly flow, March	459.83	465.13	1.15
ML4: Mean minimum monthly flow, April	305.96	302.23	-1.22
ML5: Mean minimum monthly flow, May	121.55	101.09	-16.83
ML6: Mean minimum monthly flow, June	78.32	79.51	1.53
ML7: Mean minimum monthly flow, July	118.62	116.83	-1.51
ML8: Mean minimum monthly flow, August	112.06	132.95	18.64
ML9: Mean minimum monthly flow, September	73.60	81.99	11.40
ML10: Mean minimum monthly flow, October	95.48	81.92	-14.21
ML11: Mean minimum monthly flow, November	102.26	92.95	-9.11
ML12: Mean minimum monthly flow, December	196.54	207.83	5.75
ML13: CV of minimum monthly flows	118.70	116.63	-1.75
ML14: Mean minimum daily flow / mean median annual flow	0.10	0.09	-9.76
ML15: Mean minimum annual flow / mean annual flow	0.06	0.05	-18.48
ML16: Median minimum annual flow / median annual flow	0.04	0.07	59.16
ML20: Ratio of baseflow volume to total flow volume	0.54	0.59	8.31
ML22: Mean annual minimum flow divided by catchment area	0.32	0.25	-23.36
RA1: Mean of positive changes from one day to next (rise rate)	139.86	145.60	

RA2: CV, mean of positive changes from one day to next (rise rate)	445.36	453.24	
RA3: Mean of negative changes from one day to next (fall rate)	71.81	57.71	
RA4: CV, mean of negative changes from one day to next (fall rate)	465.88	465.20	
RA5: Ratio of days that are higher than previous day	0.31	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.10	0.09	
RA7: Median of difference in log of flows over two consecutive days of falling	0.07	0.06	
RA8: Number of flow reversals from one day to the next	57.46	65.71	
RA9: CV, number of flow reversals from one day to the next	22.50	20.74	

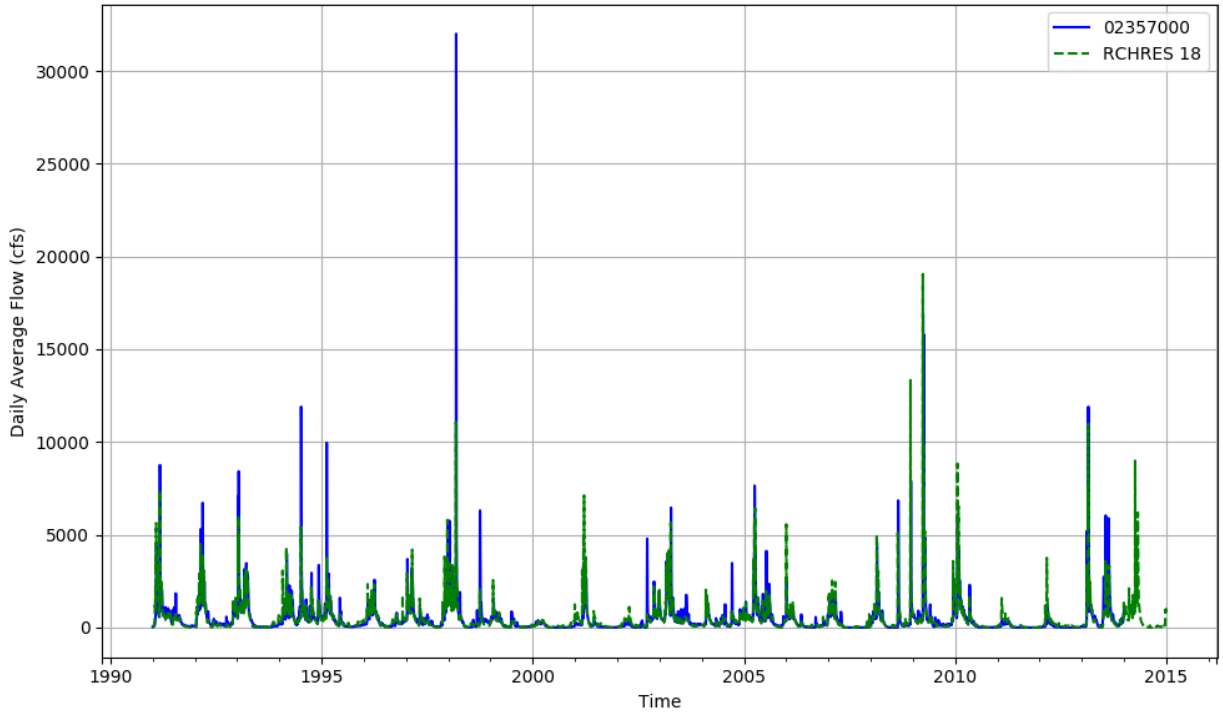


Figure T-03130010-4: Daily flow for HSFP reach 18 and USGS station 02357000.

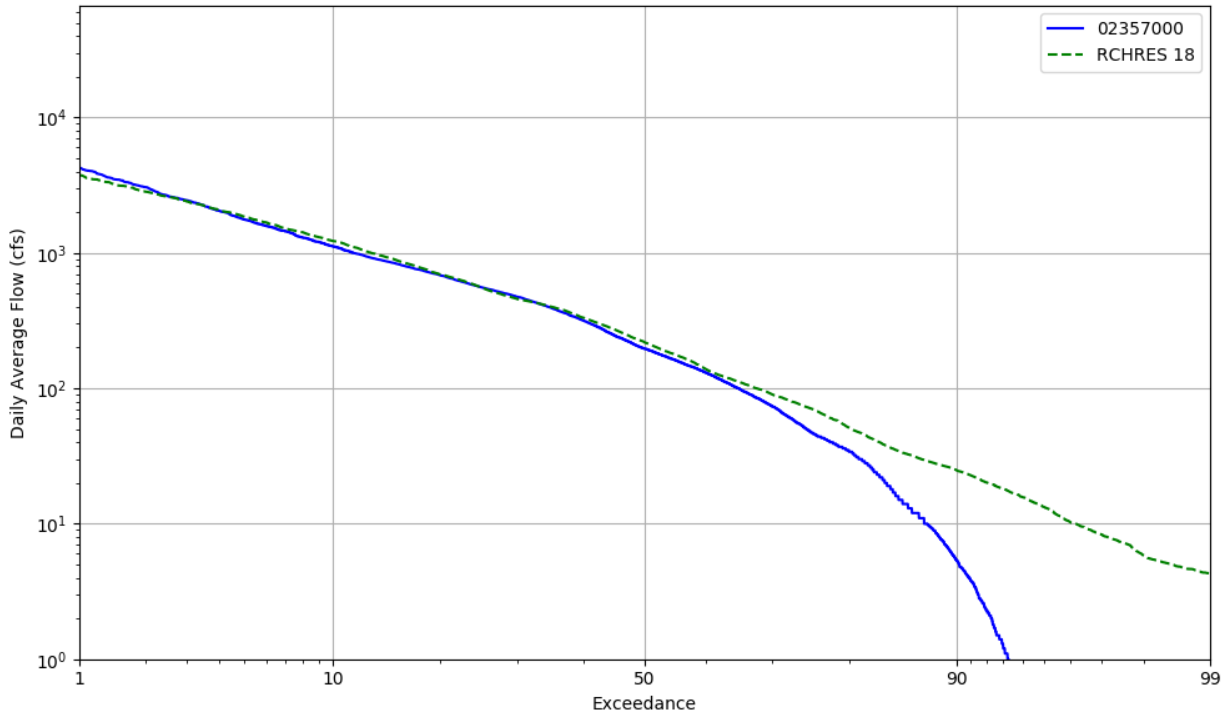


Figure T-03130010-5: Daily exceedance for HSFP reach 18 and USGS station 02357000.

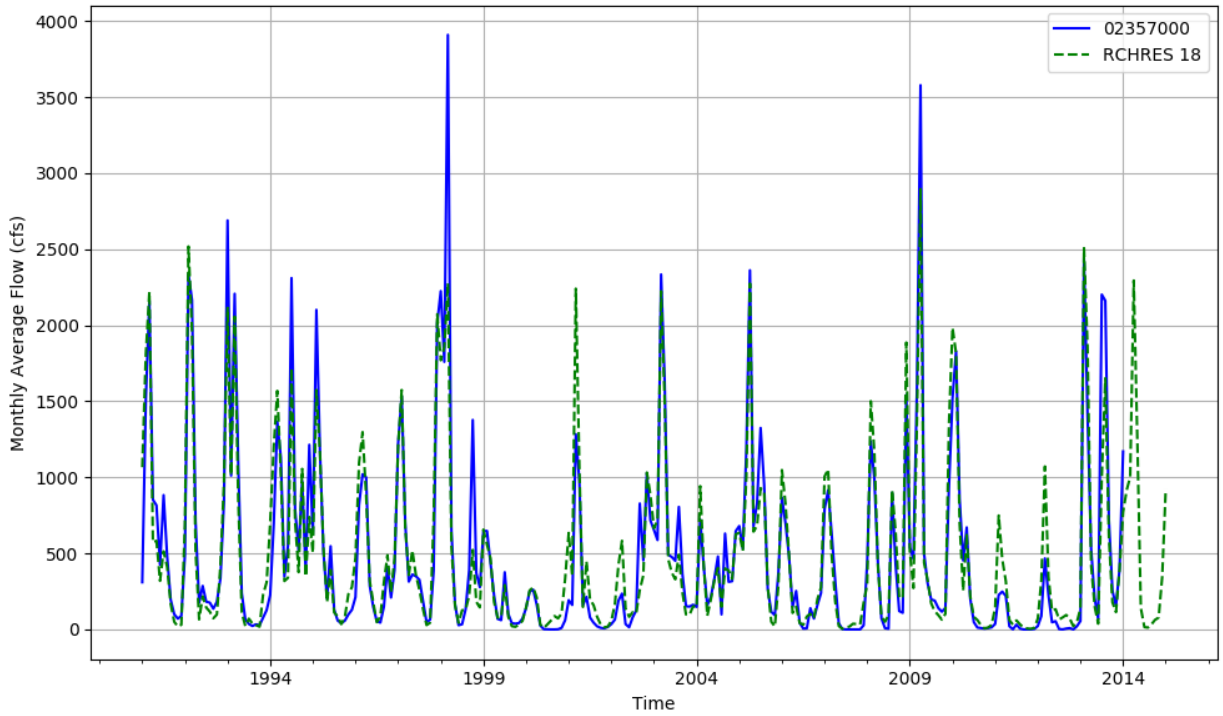


Figure T-03130010-6: Monthly flow for HSFP reach 18 and USGS station 02357000.

Table T-03130010-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7353	15557	4272	589	134	424	127212	7741	23542	26764	87842	66349	292	131509	3454	503033
AREA(%)	1.5	3.1	0.8	0.1	0.0	0.1	25.2	1.5	4.7	5.3	17.4	13.1	0.1	26.1	0.7	99.7
IMPERVIOUS																
AREA(ACRES)		896	554	175	137											1762
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	43.1	43.4	43.9	43.6	43.8	43.9	43.1	43.5	43.2	43.6	43.2	42.7	74.4	53.3	48.9	45.7
SURLI			3.8	4.3	4.9									0.0	2.6	0.1
UZLI																0.0
LZLI			1.2	0.8	0.6										1.9	0.0
SURO: PERVIOUS	6.9	1.9	2.8	2.9	2.3	1.0	0.2	1.9	1.5	1.7	0.8	8.8	5.0	2.2	1.0	2.3
SURO: IMPERVIOUS		26.9	27.2	27.2	27.2											0.1
SURO: COMBINED	6.9	3.2	5.6	8.5	14.8	1.0	0.2	1.9	1.5	1.7	0.8	8.8	5.0	2.2	1.0	2.4
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.9	11.1	13.5	13.4	13.4	16.0	9.3	14.3	11.1	10.5	11.1	1.4	23.3	15.0	15.8	10.3
AGWI	2.0	12.0	14.4	14.3	14.1	17.0	10.2	15.0	11.9	11.1	12.1	1.9	23.4	15.2	16.9	10.9
IGWI	0.7	4.0	4.9	4.8	4.8	5.7	3.4	5.1	4.0	3.8	4.1	0.7	7.9	5.1	5.7	3.7
CEPE		8.9	9.1	8.9	12.4	7.9	12.7	10.4	9.8	13.5	6.9	11.9	30.0	18.7	8.2	12.6
UZET	2.8	2.2	2.3	2.4	2.1	2.5	1.4	2.3	1.9	1.6	1.9	12.0	2.4	1.8	2.4	3.1
LZET	1.2	17.1	17.5	17.5	15.8	11.9	19.0	10.9	16.8	14.9	20.6	1.0	7.1	13.0	21.4	14.5
AGWET	0.9	2.2	2.2	2.2	2.0	2.3	2.0	2.1	2.2	1.9	2.4	0.5	0.7	1.6	2.3	1.8
BASET	0.3	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.5	0.5	0.5	0.4
SURET	33.2											11.7				2.0
PERO	7.8	13.0	16.3	16.3	15.7	17.0	9.5	16.2	12.6	12.2	11.9	10.2	28.3	17.2	16.8	12.6
IGWI	0.7	4.0	4.9	4.8	4.8	5.7	3.4	5.1	4.0	3.8	4.1	0.7	7.9	5.1	5.7	3.7
TAET: PERVIOUS	38.4	30.8	31.6	31.4	32.7	25.0	35.5	26.2	31.2	32.4	32.3	37.5	40.8	35.6	34.7	34.4
IMPEV: IMPERVIOUS		16.6	16.9	16.7	16.6											0.1
ET: COMBINED	38.4	30.0	29.9	28.1	24.6	25.0	35.5	26.2	31.2	32.4	32.3	37.5	40.8	35.6	34.7	34.5
PET	45.1	44.0	43.9	43.8	43.9	43.8	44.1	43.8	44.1	44.0	43.9	43.9	43.8	44.0	44.1	43.9

Table T-03130010-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7353	15557	4272	589	134	424	127212	7741	23542	26764	87842	66349	292	131509	3454	503033
AREA(%)	1.5	3.1	0.8	0.1	0.0	0.1	25.2	1.5	4.7	5.3	17.4	13.1	0.1	26.1	0.7	99.7
IMPERVIOUS																
AREA(ACRES)		896	554	175	137											1762
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	61.6	60.9	60.4	61.2	61.7	59.8	60.9	60.3	60.9	60.6	60.8	61.0	70.1	72.1	66.0	63.6
SURLI			4.4	5.9	6.7									0.0	1.8	0.1
UZLI																0.0
LZLI			1.0	0.7	0.5										1.2	0.0
SURO: PERVIOUS	15.5	4.3	5.6	5.9	5.1	3.2	1.1	4.2	3.4	3.6	2.3	14.4	5.7	4.1	2.4	4.5
SURO: IMPERVIOUS		41.5	41.1	41.7	42.3											0.1
SURO: COMBINED	15.5	6.3	9.6	14.1	23.9	3.2	1.1	4.2	3.4	3.6	2.3	14.4	5.7	4.1	2.4	4.6
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.0	14.4	16.8	18.0	18.4	19.5	13.5	18.0	14.8	13.8	14.6	1.6	18.1	19.0	19.1	13.6
AGWI	2.2	18.3	20.7	21.8	22.1	23.6	16.9	21.9	18.7	17.3	18.7	2.2	21.5	22.1	23.1	16.7
IGWI	0.8	6.2	7.0	7.4	7.5	8.0	5.7	7.4	6.3	5.9	6.3	0.8	7.3	7.5	7.8	5.6
CEPE		10.7	10.7	10.7	14.5	9.5	15.0	12.4	11.7	15.7	8.7	14.4	17.5	21.7	10.2	15.0
UZET	3.7	2.4	2.5	2.6	2.2	2.6	1.3	2.4	2.0	1.5	2.1	12.3	2.4	2.0	2.5	3.2
LZET	1.4	18.3	18.7	18.8	17.0	12.6	20.6	11.6	18.1	16.1	22.3	1.3	15.2	14.3	22.7	15.8
AGWET	0.9	2.5	2.5	2.5	2.3	2.6	2.3	2.4	2.5	2.3	2.7	0.5	2.1	1.8	2.6	2.0
BASET	0.3	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.5	0.5
SURET	37.6											15.1				2.5
PERO	16.4	18.7	22.4	23.9	23.5	22.7	14.6	22.3	18.3	17.4	16.9	15.9	23.7	23.1	21.5	18.1
IGWI	0.8	6.2	7.0	7.4	7.5	8.0	5.7	7.4	6.3	5.9	6.3	0.8	7.3	7.5	7.8	5.6
TAET: PERVIOUS	43.8	34.6	34.9	35.1	36.5	27.8	39.7	29.3	34.9	36.1	36.3	43.9	37.7	40.5	38.4	39.0
IMPEV: IMPERVIOUS		19.1	19.0	19.1	19.2											0.1
ET: COMBINED	43.8	33.7	33.1	31.4	27.8	27.8	39.7	29.3	34.9	36.1	36.3	43.9	37.7	40.5	38.4	39.0
PET	50.3	50.6	50.7	50.6	50.6	50.7	50.6	50.7	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.4

Table T-03130010-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7353	15557	4272	589	134	424	127212	7741	23542	26764	87842	66349	292	131509	3454	503033
AREA(%)	1.5	3.1	0.8	0.1	0.0	0.1	25.2	1.5	4.7	5.3	17.4	13.1	0.1	26.1	0.7	99.7
IMPERVIOUS																
AREA(ACRES)		896	554	175	137											1762
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	44.4	43.6	43.5	43.7	43.8	43.3	43.6	43.3	43.6	43.5	43.4	43.5	55.7	54.2	49.7	46.2
SURLI			4.3	6.0	6.7									0.0	3.0	0.1
UZLI																0.0
LZLI			1.1	0.7	0.5										2.2	0.0
SURO: PERVIOUS	11.5	2.3	3.0	3.2	2.8	1.1	0.3	1.8	1.7	1.7	0.9	10.3	3.3	2.0	1.0	2.6
SURO: IMPERVIOUS		27.5	27.4	27.6	27.8											0.1
SURO: COMBINED	11.5	3.7	5.8	8.8	15.4	1.1	0.3	1.8	1.7	1.7	0.9	10.3	3.3	2.0	1.0	2.7
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	0.8	11.3	13.1	13.7	13.8	14.8	11.4	13.5	11.7	11.1	11.9	1.5	14.9	14.7	15.6	10.9
AGWI	1.8	12.1	14.5	15.2	15.1	16.6	11.4	15.0	12.4	11.4	12.5	1.9	15.8	15.2	17.4	11.4
IGWI	0.6	4.1	4.9	5.1	5.1	5.6	3.8	5.1	4.2	3.9	4.2	0.6	5.3	5.1	5.9	3.8
CEPE		8.5	8.4	8.4	11.9	7.5	12.5	10.0	9.4	13.2	6.7	11.8	17.3	19.1	8.2	12.6
UZET	4.2	2.1	2.2	2.3	1.9	2.4	1.3	2.2	1.8	1.4	1.8	9.4	2.0	1.7	2.4	2.7
LZET	1.8	17.3	18.1	18.3	16.6	12.4	18.7	11.5	17.1	15.0	20.7	0.9	14.1	14.1	22.5	14.8
AGWET	0.9	2.5	2.6	2.6	2.4	2.6	1.8	2.5	2.5	2.1	2.5	0.4	2.0	1.9	2.6	1.8
BASET	0.2	0.4	0.5	0.5	0.5	0.5	0.3	0.5	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.4
SURET	27.8											13.6				2.2
PERO	12.3	13.6	16.1	16.9	16.6	15.9	11.7	15.3	13.4	12.9	12.7	11.8	18.3	16.6	16.5	13.5
IGWI	0.6	4.1	4.9	5.1	5.1	5.6	3.8	5.1	4.2	3.9	4.2	0.6	5.3	5.1	5.9	3.8
TAET: PERVIOUS	34.9	30.8	31.9	32.1	33.3	25.4	34.6	26.7	31.2	32.0	32.1	36.3	35.8	37.3	36.2	34.4
IMPEV: IMPERVIOUS		16.3	16.2	16.2	16.2											0.1
ET: COMBINED	34.9	30.0	30.1	28.4	24.7	25.4	34.6	26.7	31.2	32.0	32.1	36.3	35.8	37.3	36.2	34.5
PET	48.2	48.9	49.0	49.0	49.0	49.0	48.8	49.0	48.8	48.9	48.9	48.9	49.0	48.9	48.9	48.7

Table T-03130010-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	7353	15557	4272	589	134	424	127212	7741	23542	26764	87842	66349	292	131509	3454	503033
AREA(%)	1.5	3.1	0.8	0.1	0.0	0.1	25.2	1.5	4.7	5.3	17.4	13.1	0.1	26.1	0.7	99.7
IMPERVIOUS																
AREA(ACRES)		896	554	175	137											1762
AREA(%)		0.2	0.1	0.0	0.0											0.3
SUPY	53.0	51.8	51.9	51.7	51.8	51.7	51.7	51.3	51.7	51.7	51.5	51.2	72.1	59.7	56.5	53.6
SURLI			3.7	4.7	5.3									0.0	2.0	0.1
UZLI																0.0
LZLI			1.0	0.6	0.5										1.2	0.0
SURO: PERVIOUS	13.4	1.7	2.7	2.8	2.2	1.0	0.2	1.6	1.3	1.4	0.7	10.4	3.7	1.6	0.8	2.4
SURO: IMPERVIOUS		34.5	34.7	34.6	34.6											0.1
SURO: COMBINED	13.4	3.5	6.3	10.1	18.5	1.0	0.2	1.6	1.3	1.4	0.7	10.4	3.7	1.6	0.8	2.5
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
AGWO	1.0	13.3	15.7	15.8	15.9	17.9	11.3	16.3	13.3	12.6	12.9	1.6	22.5	15.7	16.9	11.7
AGWI	1.9	16.0	18.5	18.6	18.5	20.8	13.6	19.0	16.0	15.0	15.7	2.3	24.4	17.9	19.8	13.9
IGWI	0.7	5.4	6.2	6.3	6.2	7.0	4.6	6.4	5.4	5.1	5.3	0.8	8.3	6.1	6.7	4.7
CEPE		9.5	9.6	9.5	12.9	8.5	13.4	11.0	10.4	14.1	7.6	12.7	22.3	18.4	8.8	13.1
UZET	3.1	2.4	2.5	2.5	2.1	2.6	1.4	2.4	2.0	1.6	2.0	9.2	2.3	1.8	2.4	2.8
LZET	1.4	16.6	17.2	17.3	15.7	11.7	18.3	10.8	16.4	14.5	20.1	0.9	11.1	13.7	21.1	14.4
AGWET	0.7	2.2	2.3	2.3	2.1	2.4	1.9	2.2	2.2	1.9	2.4	0.4	1.4	1.7	2.3	1.8
BASET	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.4
SURET	32.5											15.0				2.4
PERO	14.4	15.0	18.3	18.6	18.1	18.9	11.6	17.9	14.7	14.0	13.6	12.0	26.2	17.3	17.8	14.1
IGWI	0.7	5.4	6.2	6.3	6.2	7.0	4.6	6.4	5.4	5.1	5.3	0.8	8.3	6.1	6.7	4.7
TAET: PERVIOUS	37.9	31.2	32.0	32.0	33.2	25.6	35.4	26.9	31.5	32.6	32.5	38.5	37.5	36.2	35.2	34.8
IMPEV: IMPERVIOUS		17.2	17.3	17.2	17.2											0.1
ET: COMBINED	37.9	30.4	30.3	28.6	25.1	25.6	35.4	26.9	31.5	32.6	32.5	38.5	37.5	36.2	35.2	34.9
PET	46.6	46.4	46.4	46.3	46.4	46.3	46.4	46.3	46.4	46.4	46.4	46.3	46.3	46.4	46.4	46.2

Table T-03130010-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
2	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
3	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
4	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
5	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
6	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
7	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
8	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
9	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
10	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
11	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
12	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
13	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
14	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
15	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
16	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
17	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
18	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
19	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
20	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990
21	0.990	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.990

Table T-03130010-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
2	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
3	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
4	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
5	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
6	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
7	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
8	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
9	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
10	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
11	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
12	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
13	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
14	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
15	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
16	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
17	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
18	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
19	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
20	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
21	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011

Table T-03130010-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
2	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
3	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
4	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
5	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
6	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
7	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
8	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
9	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
10	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
11	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
12	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
13	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
14	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
15	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
16	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
17	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
18	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
19	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
20	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100
21	0.000	0.050	0.050	0.050	0.100	0.039	0.110	0.072	0.061	0.124	0.030	0.100

Table T-03130010-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
2	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
3	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
4	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
5	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
6	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
7	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
8	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
9	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
10	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
11	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
12	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
13	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
14	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
15	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
16	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
17	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
18	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
19	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
20	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253
21	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253

Table T-03130010-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
2	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
3	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
4	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
5	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
6	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
7	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
8	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
9	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
10	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
11	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
12	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
13	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
14	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
15	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
16	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
17	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
18	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
19	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
20	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001
21	0.001	0.467	0.467	0.467	0.467	0.667	1.000	0.667	0.667	0.667	0.800	0.001

Table T-03130010-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
2		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
3		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
4		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
5		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
6		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
7		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
8		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
9		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
10		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
11		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
12		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
13		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
14		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
15		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
16		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
17		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
18		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
19		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
20		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	
21		0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	

Table T-03130010-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
12	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
13	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
14	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
15	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
16	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
17	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
18	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
19	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
20	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
21	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03130010-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
2	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
3	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
4	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
5	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
6	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
7	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
8	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
9	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
10	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
11	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
12	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
13	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
14	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
15	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
17	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
18	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
19	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
20	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
21	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000

Table T-03130010-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
10	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
11	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
12	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
13	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
14	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
15	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
16	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
17	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
18	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
19	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
20	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
21	0.227	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03130010-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
2	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
3	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
4	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
5	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
6	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
7	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
8	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
9	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
10	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
11	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
12	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
13	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
14	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
15	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
16	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
17	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
18	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
19	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
20	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100
21	0.200	4.066	4.066	4.066	4.066	4.405	5.421	4.405	4.405	4.405	4.743	0.100

Table T-03130010-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
12	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
13	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
14	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
15	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
16	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
17	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
18	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
19	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
20	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688
21	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.688

APPENDIX T-03130011

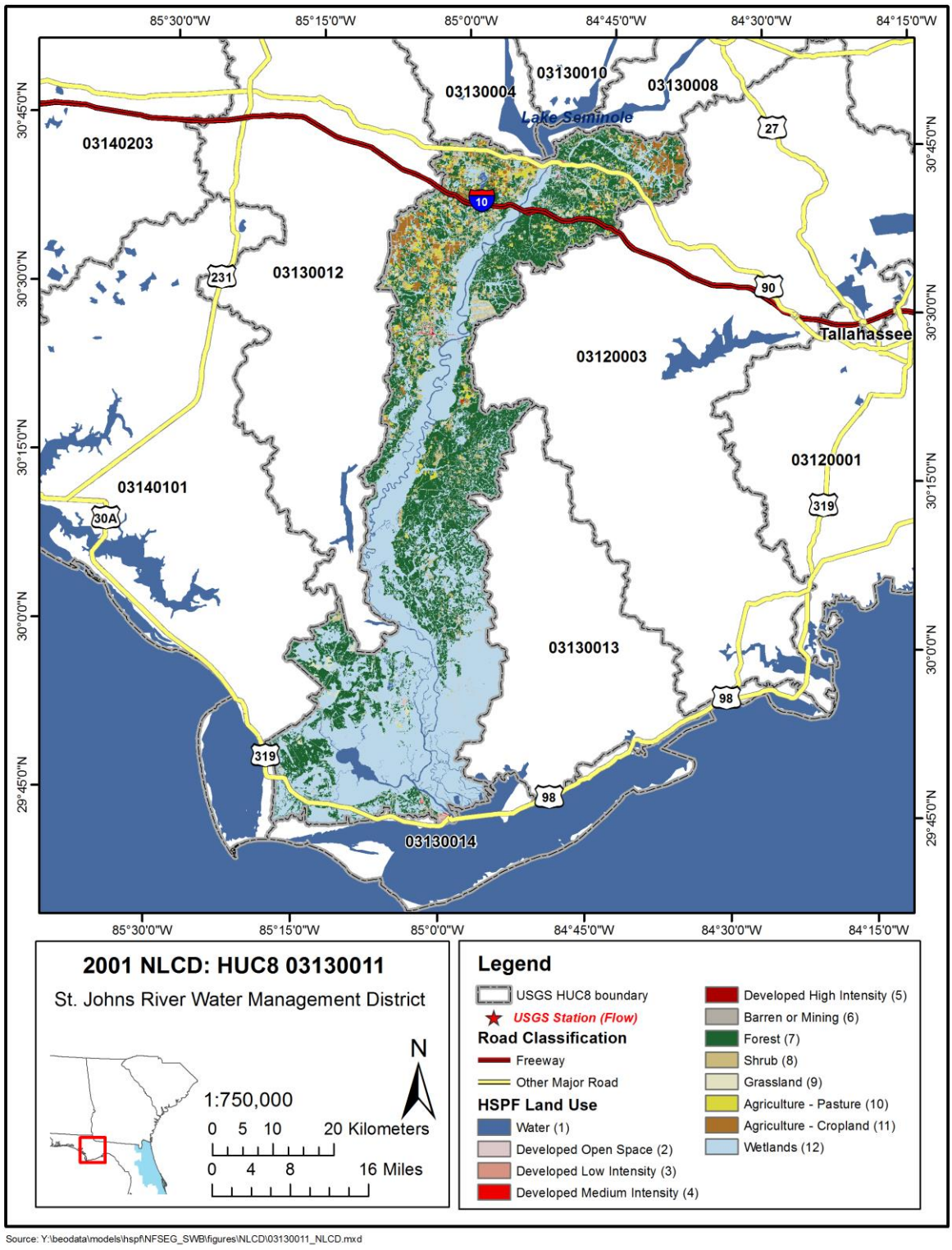
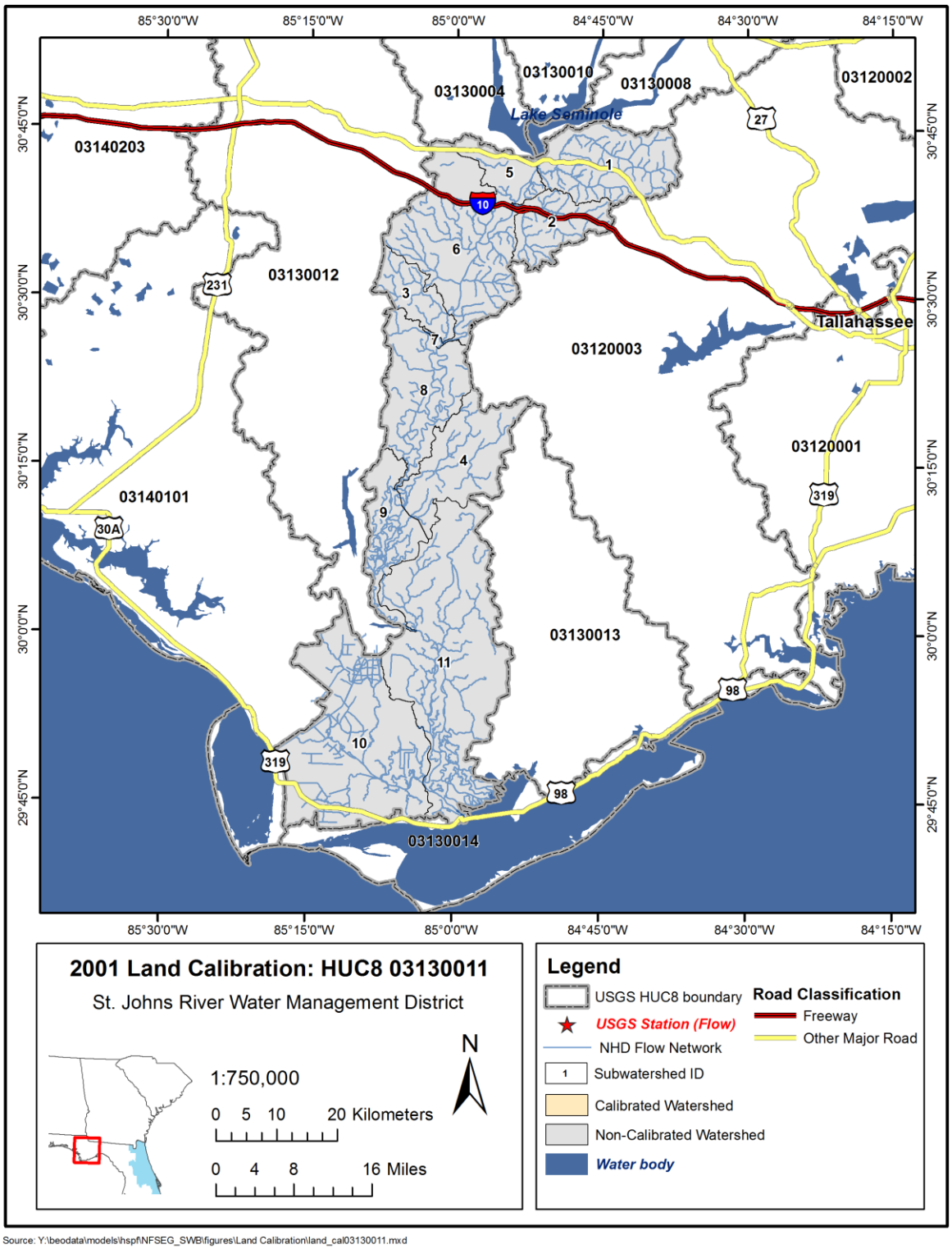


Figure T-03130011-1: Land Cover from the National Land Cover Database.



Source: Y:\beodata\models\hspf\NFSEG_SWB\figures\Land Calibration\land_cal03130011.mxd

Figure T-03130011-2: Calibrated sub-watersheds.

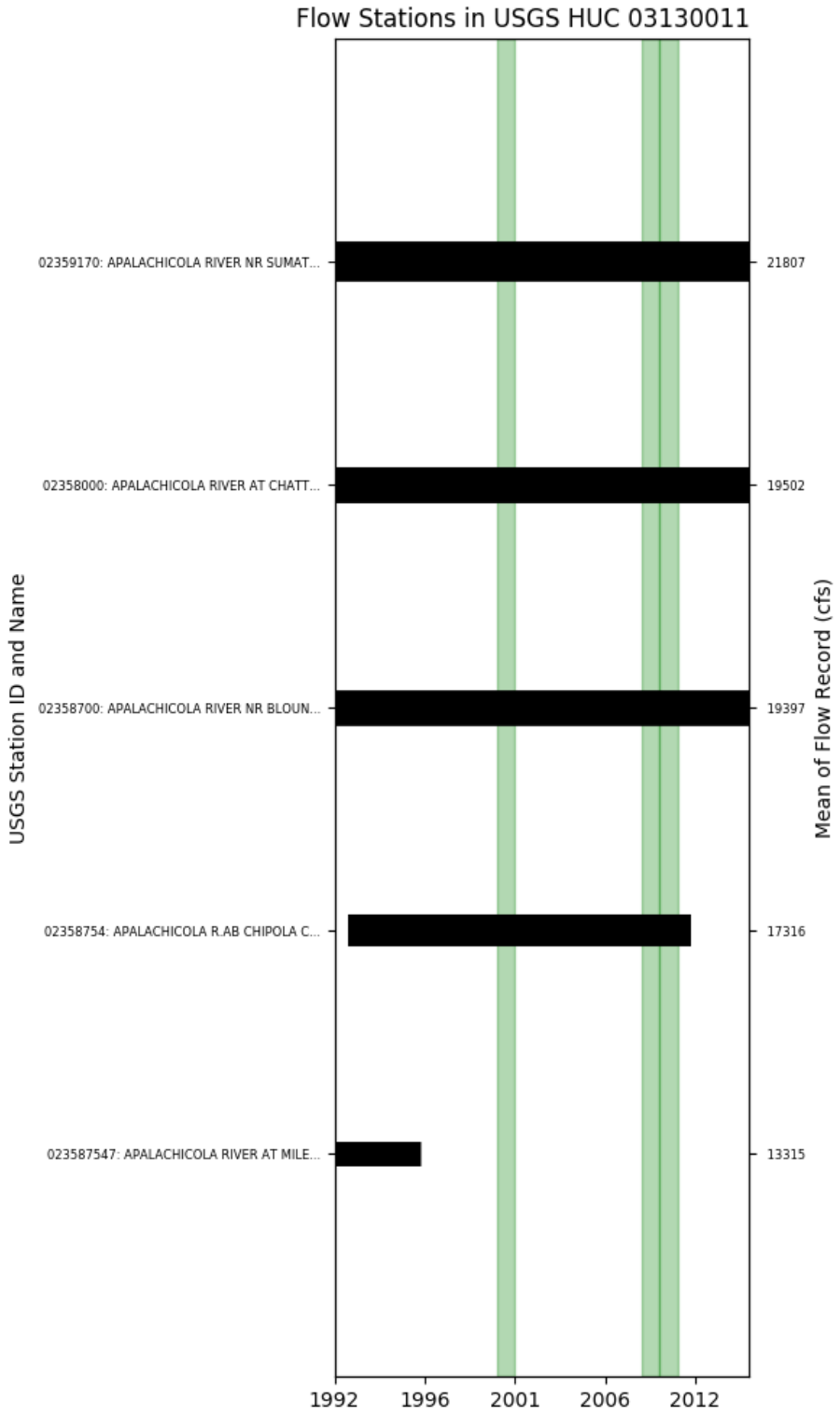


Figure T-03130011-3: Station period of record. Blue color identifies gauges used for calibration.

Table T-03130011-1: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18861	17753	2071	397	50	749	238842	35483	12633	15802	18203	348308	1702	3158	714012	
AREA(%)	2.6	2.5	0.3	0.1	0.0	0.1	33.4	5.0	1.8	2.2	2.5	48.7	0.2	0.4	99.8	
IMPERVIOUS																
AREA(ACRES)		941	234	103	50										1329	
AREA(%)		0.1	0.0	0.0	0.0										0.2	
SUPY	42.6	41.9	42.2	42.4	41.2	41.6	42.4	42.0	43.3	42.2	42.6	42.3	58.4	50.0	42.3	
SURLI			8.3	8.9	9.7								0.8	3.3	0.0	
UZLI															0.0	
LZLI			5.0	6.6	4.8									0.5	0.0	
SURO: PERVIOUS	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
SURO: IMPERVIOUS		28.4	28.7	28.7	27.7										0.1	
SURO: COMBINED	0.0	1.5	3.0	6.1	13.9	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.1	
IFWO		2.1	2.9	3.0	2.8	2.0	0.2	1.9	1.2	1.2	0.5		2.2	0.8	0.3	
AGWO	5.4	15.5	27.0	29.4	27.0	21.3	12.3	20.5	16.5	16.8	15.4	3.3	25.6	22.6	8.6	
AGWI	12.1	12.5	23.2	25.5	22.4	17.8	8.5	17.4	14.4	14.1	13.0	6.3	25.3	21.4	8.6	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CEPE		8.8	8.8	9.0	12.0	7.4	12.5	10.3	9.4	9.3	7.6	11.6	15.0	9.2	11.2	
UZET	4.7	2.2	2.6	2.6	2.2	2.4	1.2	2.2	2.0	1.8	1.7	17.3	2.5	2.3	9.3	
LZET	2.5	17.2	18.5	18.4	16.9	12.0	20.6	11.0	17.5	17.5	21.7	2.0	15.1	21.8	10.4	
AGWET	6.5	1.6	1.6	1.5	1.4	1.7	1.5	1.5	1.6	1.5	1.6	2.8	1.2	1.5	2.3	
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SURET	23.8											5.8			3.4	
PERO	5.4	17.6	30.1	32.7	29.9	23.3	12.5	22.4	17.8	18.1	15.9	3.3	27.8	23.4	8.9	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TAET: PERVIOUS	37.6	29.9	31.5	31.7	32.6	23.6	35.7	25.1	30.5	30.1	32.6	39.5	33.9	34.8	36.5	
IMPEV: IMPERVIOUS		13.6	13.6	13.8	13.5										0.0	
ET: COMBINED	37.6	29.1	29.7	28.0	23.1	23.6	35.7	25.1	30.5	30.1	32.6	39.5	33.9	34.8	36.6	
PET	48.6	47.4	47.6	47.2	47.5	48.1	47.6	46.8	47.2	46.5	46.3	48.6	45.6	46.1	47.9	

Table T-03130011-2: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18861	17753	2071	397	50	749	238842	35483	12633	15802	18203	348308	1702	3158	714012	
AREA(%)	2.6	2.5	0.3	0.1	0.0	0.1	33.4	5.0	1.8	2.2	2.5	48.7	0.2	0.4	99.8	
IMPERVIOUS																
AREA(ACRES)		941	234	103	50										1329	
AREA(%)		0.1	0.0	0.0	0.0										0.2	
SUPY	65.8	64.7	64.4	64.2	65.5	65.8	64.8	64.1	62.8	63.4	62.8	65.8	76.7	70.3	65.1	
SURLI			7.7	8.3	8.9								1.0	2.9	0.0	
UZLI															0.0	
LZLI			4.1	5.6	4.0									1.0	0.0	
SURO: PERVIOUS	4.4	0.1	0.3	0.4	0.2	0.1	0.0	0.1	0.1	0.1	0.1	1.5	0.1	0.1	0.9	
SURO: IMPERVIOUS		47.9	47.6	47.1	48.4										0.1	
SURO: COMBINED	4.4	2.5	5.1	10.0	24.3	0.1	0.0	0.1	0.1	0.1	0.1	1.5	0.1	0.1	0.9	
IFWO		5.9	6.8	6.7	7.3	5.5	1.4	5.1	3.5	3.8	2.3		5.1	2.8	1.1	
AGWO	10.8	19.1	29.1	31.1	29.5	25.9	16.5	24.4	19.7	20.6	19.1	10.9	30.7	27.7	14.4	
AGWI	15.9	25.6	35.3	36.9	35.2	33.8	23.1	31.2	26.4	26.8	25.2	13.6	37.2	34.4	19.1	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CEPE		11.5	11.4	11.6	15.3	10.0	15.4	13.0	11.5	11.7	9.6	14.5	16.3	11.1	14.0	
UZET	3.9	2.8	3.1	3.1	2.6	3.2	1.6	2.8	2.4	2.3	2.3	12.8	3.1	2.9	7.3	
LZET	1.8	17.5	18.2	18.2	16.6	12.1	21.6	11.1	17.8	17.8	22.2	1.4	15.9	22.2	10.4	
AGWET	5.1	1.6	1.6	1.6	1.5	1.7	1.5	1.6	1.6	1.6	1.7	2.5	1.3	1.6	2.1	
BASET	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	
SURET	36.4											17.9			9.7	
PERO	15.1	25.1	36.1	38.2	37.0	31.4	17.9	29.6	23.3	24.4	21.5	12.4	35.9	30.6	16.4	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TAET: PERVIOUS	47.3	33.5	34.3	34.5	36.0	27.0	40.1	28.5	33.4	33.4	35.9	49.3	36.7	37.9	43.5	
IMPEV: IMPERVIOUS		16.7	16.6	16.8	17.0										0.0	
ET: COMBINED	47.3	32.6	32.5	30.9	26.5	27.0	40.1	28.5	33.4	33.4	35.9	49.3	36.7	37.9	43.6	
PET	51.7	51.6	51.6	51.6	51.6	51.9	51.4	51.6	51.4	51.6	51.5	51.6	50.1	51.1	51.5	

Table T-03130011-3: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18861	17753	2071	397	50	749	238842	35483	12633	15802	18203	348308	1702	3158	714012	
AREA(%)	2.6	2.5	0.3	0.1	0.0	0.1	33.4	5.0	1.8	2.2	2.5	48.7	0.2	0.4	99.8	
IMPERVIOUS																
AREA(ACRES)		941	234	103	50										1329	
AREA(%)		0.1	0.0	0.0	0.0										0.2	
SUPY	55.8	53.0	52.9	52.1	54.6	55.0	53.5	51.1	50.4	49.6	48.9	55.9	64.7	57.4	54.3	
SURLI			7.6	7.9	8.9								1.1	4.9	0.1	
UZLI															0.0	
LZLI			4.1	5.5	4.0									1.0	0.0	
SURO: PERVIOUS	8.4	0.1	0.2	0.3	0.2	0.0	0.0	0.1	0.1	0.0	0.1	5.4	0.1	0.1	2.9	
SURO: IMPERVIOUS		37.9	37.8	37.0	39.2										0.1	
SURO: COMBINED	8.4	2.0	4.0	7.9	19.7	0.0	0.0	0.1	0.1	0.0	0.1	5.4	0.1	0.1	3.0	
IFWO		5.0	5.6	5.6	6.4	4.5	1.3	4.1	2.8	3.0	1.8		4.0	2.1	1.0	
AGWO	10.9	21.1	31.0	32.7	31.3	28.4	18.9	26.3	21.7	22.3	20.9	12.9	32.1	29.6	16.4	
AGWI	15.1	20.6	29.8	30.8	30.1	28.5	19.6	24.5	20.8	20.5	19.4	12.9	30.5	29.2	16.6	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CEPE		9.8	9.8	9.7	13.7	8.6	14.0	10.9	9.9	9.4	7.5	13.6	15.0	9.3	12.8	
UZET	3.1	2.9	3.2	3.2	2.9	3.4	2.0	3.0	2.6	2.3	2.4	12.6	3.0	3.0	7.3	
LZET	1.7	17.5	18.3	18.3	16.5	12.3	21.3	11.2	17.7	17.7	21.6	1.1	15.8	22.1	10.1	
AGWET	5.0	1.6	1.6	1.6	1.4	1.6	1.4	1.5	1.6	1.6	1.7	2.2	1.3	1.6	1.9	
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SURET	35.0											17.8			9.6	
PERO	19.3	26.2	36.8	38.7	37.9	33.0	20.2	30.5	24.5	25.4	22.8	18.3	36.2	31.8	20.3	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TAET: PERVIOUS	44.9	31.8	32.9	32.8	34.6	26.0	38.8	26.6	31.8	31.0	33.2	47.3	35.1	36.0	41.8	
IMPEV: IMPERVIOUS		15.1	15.1	15.0	15.5										0.0	
ET: COMBINED	44.9	31.0	31.1	29.2	25.1	26.0	38.8	26.6	31.8	31.0	33.2	47.3	35.1	36.0	41.8	
PET	49.7	49.2	49.3	49.2	49.2	49.6	49.1	49.0	49.0	49.0	48.9	49.5	47.7	48.6	49.2	

Table T-03130011-4: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	18861	17753	2071	397	50	749	238842	35483	12633	15802	18203	348308	1702	3158	714012	
AREA(%)	2.6	2.5	0.3	0.1	0.0	0.1	33.4	5.0	1.8	2.2	2.5	48.7	0.2	0.4	99.8	
IMPERVIOUS																
AREA(ACRES)		941	234	103	50										1329	
AREA(%)		0.1	0.0	0.0	0.0										0.2	
SUPY	57.5	56.7	56.7	56.7	57.7	57.5	56.7	56.2	55.4	55.7	55.3	57.4	65.2	60.3	56.9	
SURLI			8.3	8.9	9.7								0.6	2.4	0.0	
UZLI															0.0	
LZLI			4.5	6.0	4.4									0.6	0.0	
SURO: PERVIOUS	5.4	0.1	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	1.7	
SURO: IMPERVIOUS		41.1	41.0	40.9	41.9										0.1	
SURO: COMBINED	5.4	2.1	4.3	8.7	21.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	1.7	
IFWO		4.0	4.8	4.9	5.4	3.7	0.8	3.2	2.1	2.3	1.2		2.8	1.4	0.7	
AGWO	9.9	18.9	28.9	30.8	29.3	24.9	16.3	23.2	19.3	19.8	18.4	10.5	26.0	24.0	14.0	
AGWI	14.5	22.7	33.2	35.2	33.4	29.6	19.7	27.5	23.2	23.7	22.3	12.8	30.3	28.3	17.0	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CEPE		10.6	10.6	10.6	14.2	9.2	14.5	11.9	10.9	10.6	8.6	13.9	14.5	9.8	13.2	
UZET	3.3	2.7	3.0	3.1	2.7	3.0	1.7	2.8	2.4	2.2	2.2	10.8	2.6	2.6	6.3	
LZET	1.8	16.6	17.5	17.5	15.9	11.7	19.9	10.6	16.8	16.8	20.8	1.3	15.4	20.9	9.7	
AGWET	4.6	1.5	1.5	1.5	1.4	1.6	1.4	1.4	1.5	1.5	1.6	2.2	1.3	1.5	1.9	
BASET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SURET	32.6											15.7			8.5	
PERO	15.2	22.9	33.9	36.0	34.8	28.7	17.2	26.5	21.5	22.0	19.7	13.6	28.9	25.4	16.3	
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TAET: PERVIOUS	42.3	31.5	32.7	32.7	34.1	25.6	37.5	26.7	31.5	31.1	33.3	44.0	33.8	34.9	39.6	
IMPEV: IMPERVIOUS		15.6	15.6	15.7	15.8										0.0	
ET: COMBINED	42.3	30.7	30.9	29.2	24.9	25.6	37.5	26.7	31.5	31.1	33.3	44.0	33.8	34.9	39.7	
PET	48.5	47.9	48.0	47.8	47.9	48.3	47.9	47.6	47.8	47.5	47.4	48.5	46.7	47.2	48.0	

Table T-03130011-5: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
2	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
3	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
4	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
5	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
6	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
7	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
8	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
9	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
10	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990
11	0.990	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.999	0.990

Table T-03130011-6: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130011-7: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
2	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
3	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
4	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
5	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
6	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
7	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
8	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
9	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
10	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100
11	0.000	0.050	0.050	0.050	0.100	0.035	0.110	0.066	0.055	0.050	0.030	0.100

Table T-03130011-8: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130011-9: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
2	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
3	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
4	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
5	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
6	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
7	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
8	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
9	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
10	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010
11	0.010	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.010

Table T-03130011-10: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
2		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
3		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
4		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
5		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
6		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
7		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
8		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
9		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
10		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	
11		3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000	

Table T-03130011-11: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
2	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
3	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
4	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
5	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
6	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
7	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
8	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
9	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
10	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701
11	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701	0.701

Table T-03130011-12: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130011-13: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
2	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
3	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
4	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
5	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
6	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
7	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
8	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
9	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
10	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900
11	0.236	0.424	0.424	0.424	0.424	0.282	0.600	0.282	0.424	0.424	0.494	0.900

Table T-03130011-14: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
2	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
3	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
4	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
5	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
6	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
7	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
8	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
9	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
10	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100
11	0.200	6.667	6.667	6.667	6.667	7.500	10.000	7.500	7.500	7.500	6.667	0.100

Table T-03130011-15: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
10	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000
11	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	1.000

APPENDIX T-03130013

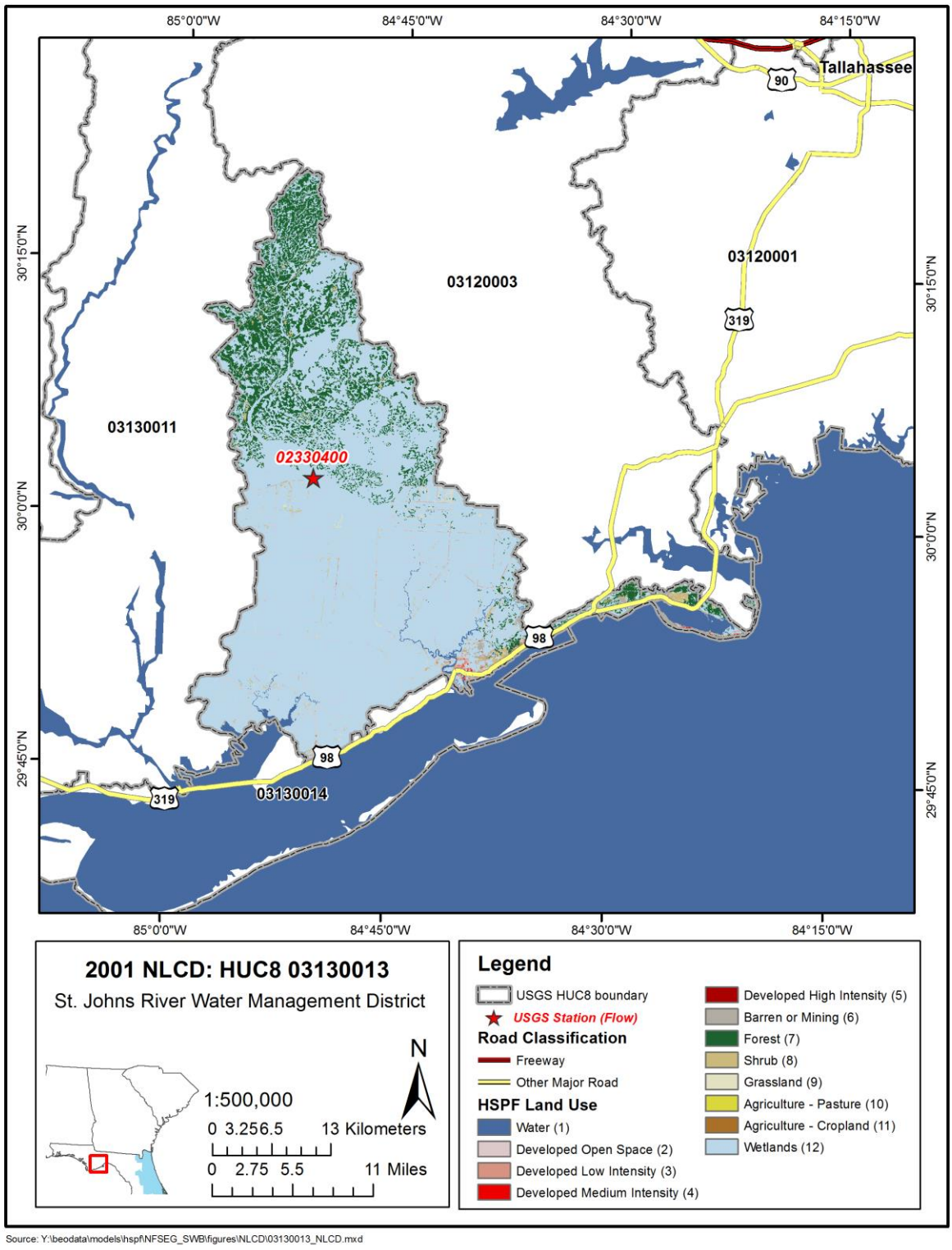


Figure T-03130013-1: Land Cover from the National Land Cover Database.

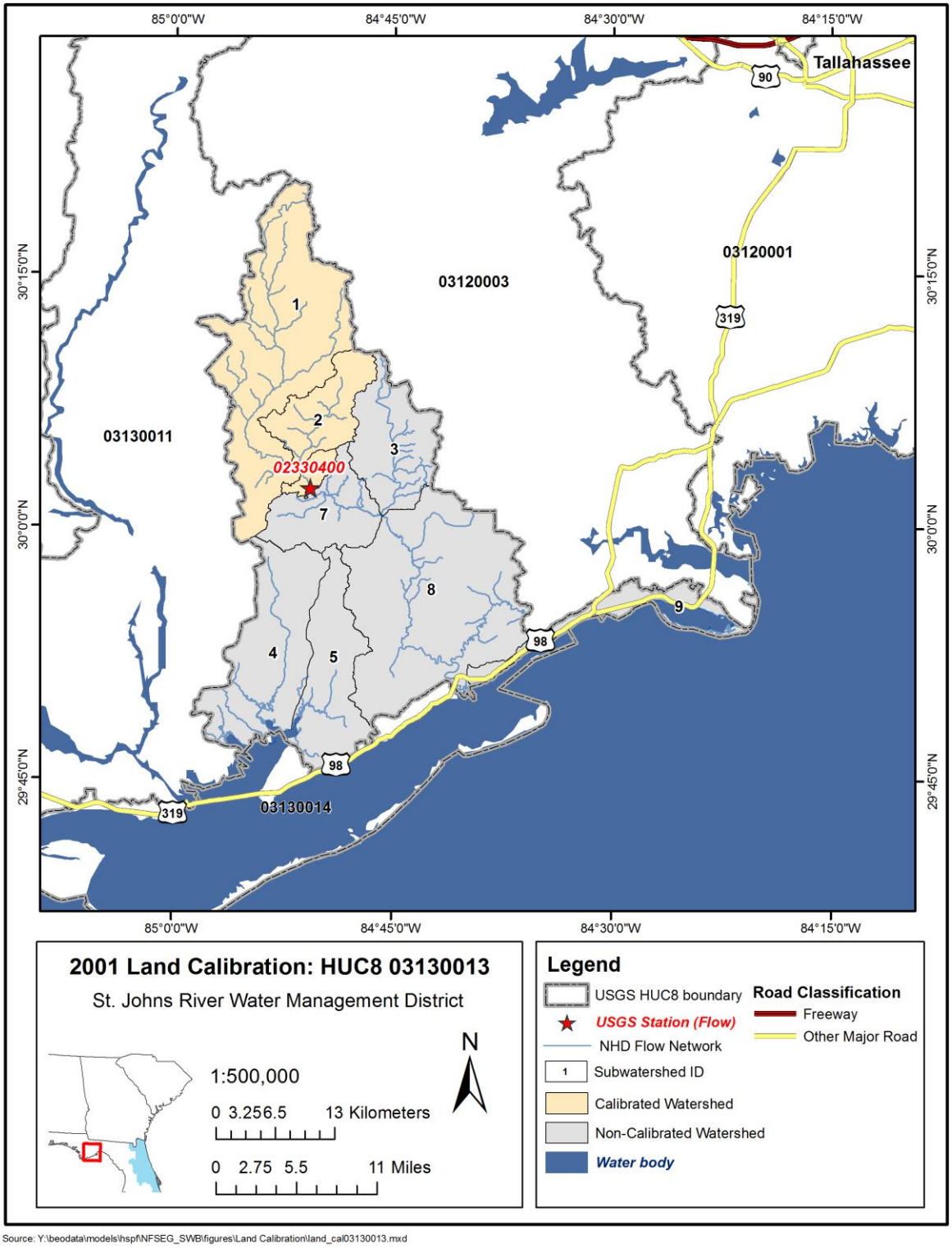


Figure T-03130013-2: Calibrated sub-watersheds.

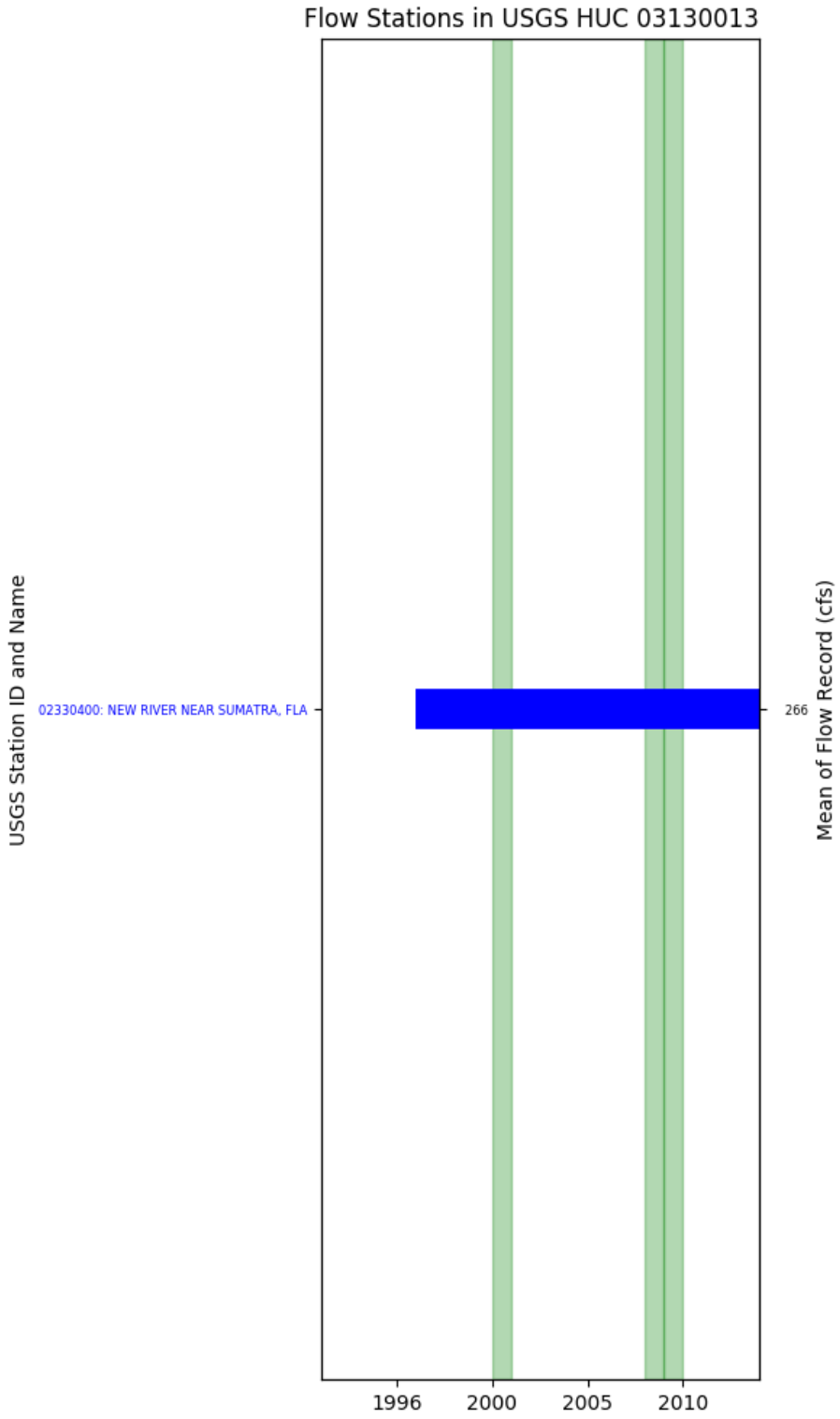


Figure T-03130013-3: Station period of record. Blue color identifies gauges used for calibration.

HSPF REACH 06, USGS GAUGE 02330400

Water-Data Report 2009
02330400 NEW RIVER NEAR SUMATRA, FL
Apalachicola Basin New River Subbasin

LOCATION.--Lat 300219, long 845038 referenced to North American Datum of 1927, in SE 1/4 1/ 1/4 4 1/4 sec.16, T.5 S., R.6 W., Liberty County, FL, Hydrologic Unit 03130013, on left bank 1,000 ft downstream from closed Owens bridge and dead ends of Forest Road 125 at river, 1.8 mi downstream from Cat Branch, 4.6 mi west of Tate Fire Tower, and 8.2 mi east of Sumatra.

DRAINAGE AREA.--157.00 mi.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1964 to October 1986 (annual maximum discharge and gage-height), December 1996 to June 1998 (fragmentary), July 1998 to current year.

REVISED RECORDS.--WRD FL-2004-4:2003

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929; from USGS Benchmark "TT 24 S"; elevation, 25.587 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records fair.

Table T-03130013-1: Comparison Statistics Between HSPF Reach 06 and USGS Gauge 02330400.

Statistic	Value
Bias	-38.14
Standard error	187.32
Relative bias	-0.15
Relative standard error	0.61
Nash-Sutcliffe coefficient	0.63
Kling-Gupta coefficient	0.70
Coefficient of efficiency	0.55
Index of agreement	0.76

Table T-03130013-2: Hydrologic Indices Between USGS Gauge 02330400 and HSPF Reach 06.

Hydrologic Index and description (Olden and Poff, 2003)	Observed 02330400	Simulated Reach 06	Percent Difference
MA1: Mean, all daily flows	259.05	215.07	-16.98
MA2: Median, all daily flows	89.00	96.94	8.92
MA3: CV, all daily flows	148.81	131.37	-11.72
MA4: CV, log of all daily flows	138.10	127.27	-7.84
MA5: Mean daily flow / median daily flow	2.91	2.22	-23.78
MA9: (Q10 - Q90) / median daily flow	8.24	6.08	-26.19

MA10: (Q20 - Q80) / median daily flow	4.82	3.40	-29.61
MA11: (Q25 - Q75) / median daily flow	3.59	2.66	-25.95
MA12: Mean monthly flow, January	265.32	276.39	4.17
MA13: Mean monthly flow, February	310.33	348.49	12.30
MA14: Mean monthly flow, March	404.31	333.16	-17.60
MA15: Mean monthly flow, April	171.96	171.29	-0.39
MA16: Mean monthly flow, May	70.03	49.71	-29.01
MA17: Mean monthly flow, June	147.24	90.05	-38.84
MA18: Mean monthly flow, July	347.16	235.53	-32.16
MA19: Mean monthly flow, August	445.70	283.95	-36.29
MA20: Mean monthly flow, September	285.07	170.85	-40.07
MA21: Mean monthly flow, October	134.33	123.23	-8.26
MA22: Mean monthly flow, November	121.83	155.12	27.32
MA23: Mean monthly flow, December	225.23	260.62	15.72
ML1: Mean minimum monthly flow, January	91.38	135.41	48.18
ML2: Mean minimum monthly flow, February	115.92	129.86	12.02
ML3: Mean minimum monthly flow, March	118.54	141.33	19.22
ML4: Mean minimum monthly flow, April	23.62	30.11	27.47
ML5: Mean minimum monthly flow, May	3.41	3.58	4.79
ML6: Mean minimum monthly flow, June	5.70	9.76	71.25
ML7: Mean minimum monthly flow, July	107.19	71.30	-33.48
ML8: Mean minimum monthly flow, August	133.63	78.68	-41.12
ML9: Mean minimum monthly flow, September	41.53	27.62	-33.51
ML10: Mean minimum monthly flow, October	15.54	23.93	54.02
ML11: Mean minimum monthly flow, November	32.01	63.00	96.84
ML12: Mean minimum monthly flow, December	61.72	95.52	54.77
ML13: CV of minimum monthly flows	178.87	165.66	-7.39
ML14: Mean minimum daily flow / mean median annual flow	0.01	0.01	125.36
ML15: Mean minimum annual flow / mean annual flow	0.00	0.01	138.08
ML16: Median minimum annual flow / median annual flow	0.00	0.00	7000.68
ML20: Ratio of baseflow volume to total flow volume	0.41	0.49	20.14
ML22: Mean annual minimum flow divided by catchment area	0.01	0.02	147.42
RA1: Mean of positive changes from one day to next (rise rate)	65.53	67.74	
RA2: CV, mean of positive changes from one day to next (rise rate)	242.71	243.48	
RA3: Mean of negative changes from one day to next (fall rate)	31.87	25.89	
RA4: CV, mean of negative changes from one day to next (fall rate)	188.20	189.88	
RA5: Ratio of days that are higher than previous day	0.31	0.28	
RA6: Median of difference in log of flows over two consecutive days of rising	0.19	0.20	
RA7: Median of difference in log of flows over two consecutive days of falling	0.15	0.13	
RA8: Number of flow reversals from one day to the next	60.22	56.94	
RA9: CV, number of flow reversals from one day to the next	25.76	31.34	

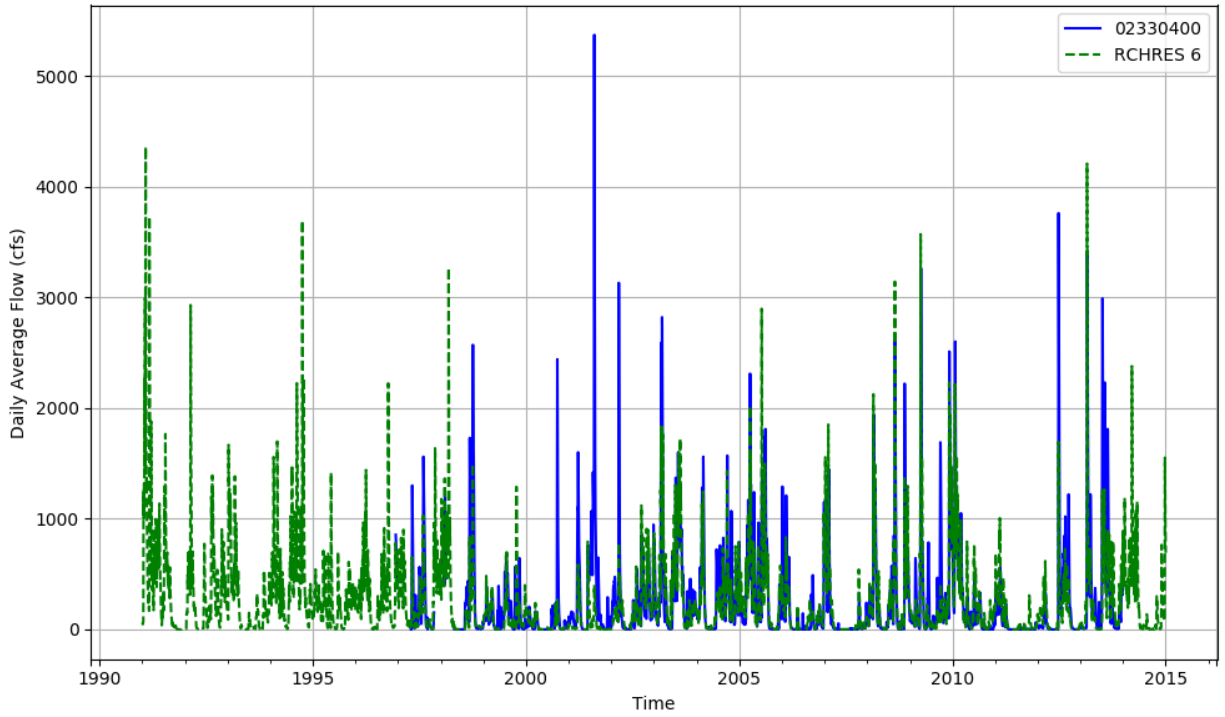


Figure T-03130013-4: Daily flow for HSFP reach 06 and USGS station 02330400.

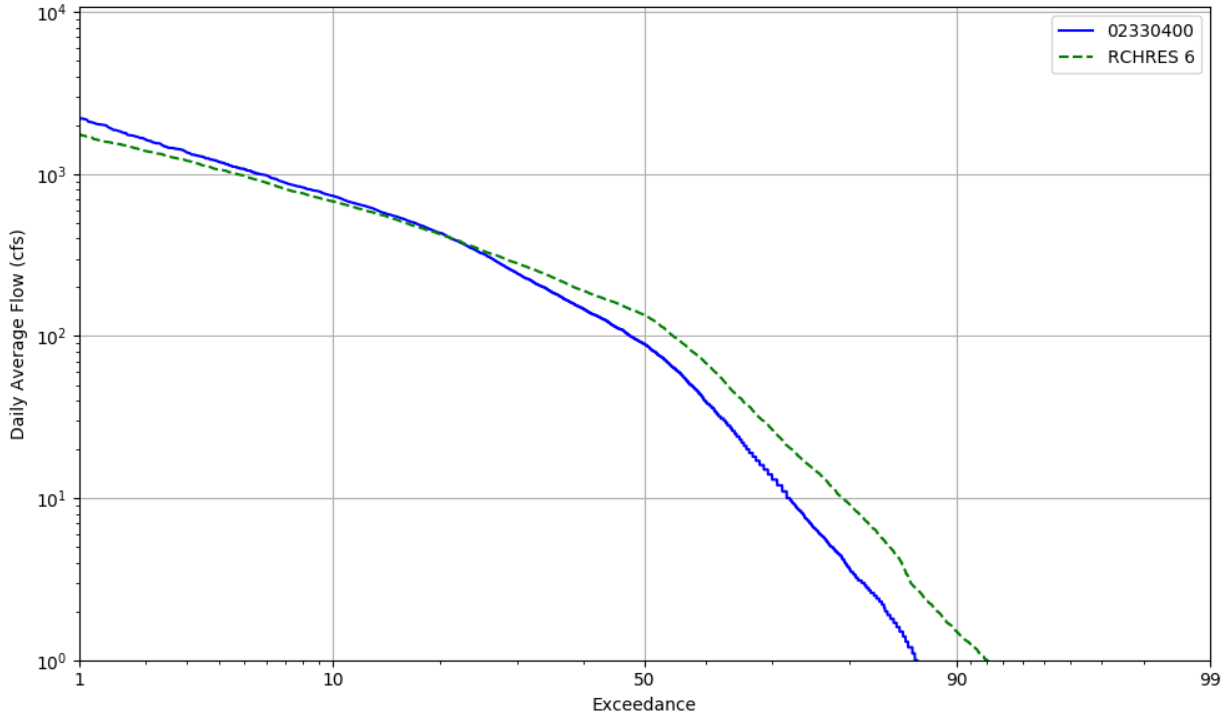


Figure T-03130013-5: Daily exceedance for HSFP reach 06 and USGS station 02330400.

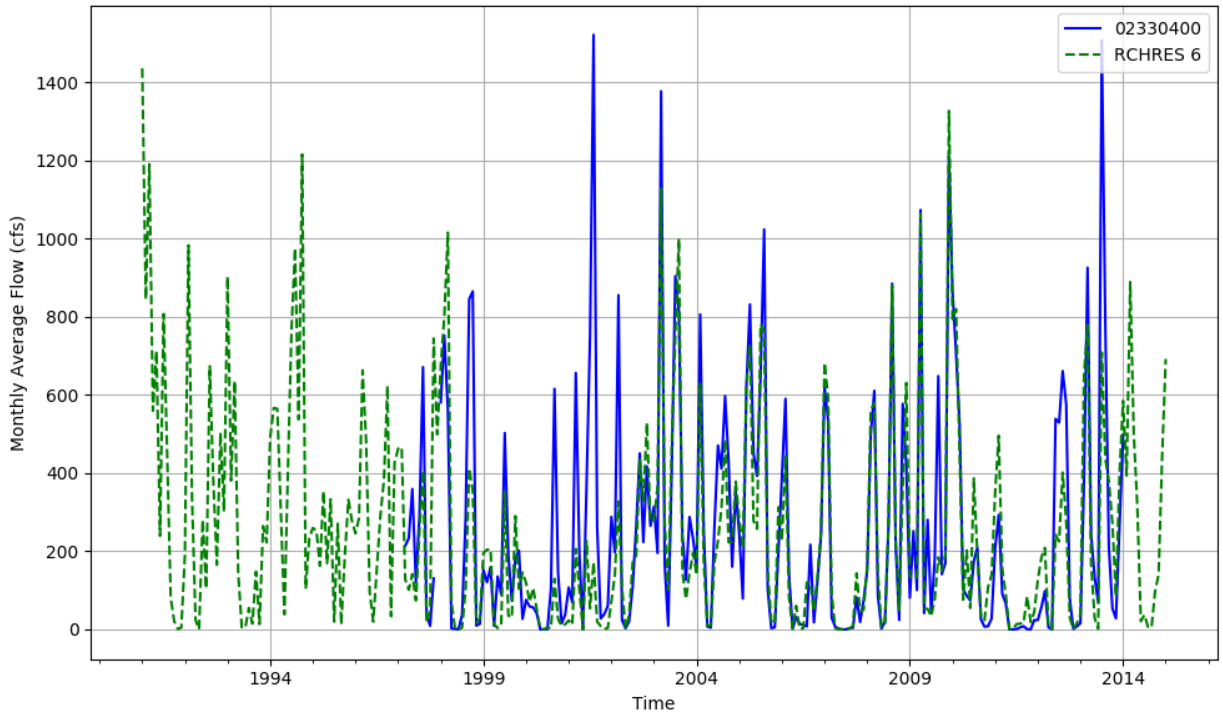


Figure T-03130013-6: Monthly flow for HSFP reach 06 and USGS station 02330400.

Table T-03130013-3: Water balance for 2001. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6821	9015	1940	228	37	2767	47498	3317	1463	8	16	254468	130	327707		
AREA(%)	2.1	2.7	0.6	0.1	0.0	0.8	14.5	1.0	0.4	0.0	0.0	77.5	0.0	99.8		
IMPERVIOUS																
AREA(ACRES)		475	216	57	37									785		
AREA(%)		0.1	0.1	0.0	0.0									0.2		
SUPY	33.8	37.3	31.4	30.7	30.5	31.9	38.7	35.0	35.2	32.5	44.3	38.7	42.6	38.3		
SURLI			2.2	2.1	1.8									0.0		
UZLI														0.0		
LZLI			0.3	0.3	0.3									0.0		
SURO: PERVIOUS	2.7	1.1	0.2	0.2	0.1	0.2	0.0	0.6	0.2	0.1	0.8	4.7	0.1	3.7		
SURO: IMPERVIOUS		21.3	15.7	15.2	15.1									0.0		
SURO: COMBINED	2.7	2.2	1.8	3.2	7.6	0.2	0.0	0.6	0.2	0.1	0.8	4.7	0.1	3.8		
IFWO		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0		
AGWO	0.3	7.2	4.7	4.2	3.3	7.9	5.8	9.6	6.4	4.6	12.9	0.4	6.4	1.6		
AGWI	2.3	8.9	6.6	6.0	4.9	9.9	7.5	11.6	8.2	6.3	14.9	2.1	8.0	3.3		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
CEPE		9.8	7.9	7.8	10.7	7.3	12.3	9.1	8.6	8.1	6.4	11.7	20.1	11.4		
UZET	3.8	1.6	1.3	1.2	1.0	1.5	1.0	1.7	1.3	1.0	2.4	2.0	1.5	1.8		
LZET	1.8	15.7	17.0	17.0	15.0	12.1	19.2	11.5	16.5	16.5	20.6	1.0	11.2	4.4		
AGWET	1.5	1.1	1.2	1.1	1.0	1.2	1.1	1.2	1.1	1.1	1.4	1.3	0.7	1.2		
BASET	0.4	0.7	0.7	0.7	0.6	0.8	0.7	0.8	0.7	0.6	0.8	0.4	0.8	0.4		
SURET	23.0											17.5		14.0		
PERO	3.0	8.3	5.0	4.4	3.4	8.1	5.9	10.3	6.6	4.7	13.7	5.1	6.5	5.3		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TAET: PERVIOUS	30.5	28.9	28.1	27.8	28.3	23.0	34.2	24.4	28.3	27.4	31.6	33.8	34.2	33.4		
IMPEV: IMPERVIOUS		16.0	15.7	15.5	15.5									0.0		
ET: COMBINED	30.5	28.2	26.8	25.3	21.9	23.0	34.2	24.4	28.3	27.4	31.6	33.8	34.2	33.4		
PET	41.1	44.0	41.5	40.8	40.3	40.7	46.7	43.0	44.0	42.8	45.7	45.0	39.6	44.9		

Table T-03130013-4: Water balance for 2009. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6821	9015	1940	228	37	2767	47498	3317	1463	8	16	254468	130	327707		
AREA(%)	2.1	2.7	0.6	0.1	0.0	0.8	14.5	1.0	0.4	0.0	0.0	77.5	0.0	99.8		
IMPERVIOUS																
AREA(ACRES)		475	216	57	37									785		
AREA(%)		0.1	0.1	0.0	0.0									0.2		
SUPY	66.2	67.9	65.7	65.4	65.6	65.8	71.7	67.7	67.4	66.5	71.2	68.8	87.4	68.9		
SURLI			1.9	1.8	1.5									0.0		
UZLI														0.0		
LZLI			0.1	0.1	0.1									0.0		
SURO: PERVIOUS	22.6	5.6	4.7	5.1	4.2	2.1	0.5	3.5	1.9	2.0	2.8	22.3	7.4	18.1		
SURO: IMPERVIOUS		47.6	45.3	45.2	45.5									0.1		
SURO: COMBINED	22.6	7.7	8.8	13.1	24.9	2.1	0.5	3.5	1.9	2.0	2.8	22.3	7.4	18.2		
IFWO		0.3	0.2	0.1	0.2	0.5	0.2	0.6	0.3	0.2	0.4		2.1	0.1		
AGWO	1.2	25.5	27.0	26.6	26.6	34.1	28.0	32.9	28.7	28.1	29.7	0.9	38.4	6.4		
AGWI	2.7	28.3	29.9	29.4	29.2	37.0	31.1	35.8	31.7	31.2	33.0	2.9	40.1	8.6		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
CEPE		13.0	10.9	10.7	13.9	10.0	16.3	12.4	11.8	11.3	9.2	15.1	28.3	14.8		
UZET	1.0	2.8	3.2	3.2	2.8	3.3	1.9	3.2	2.7	2.7	2.9	1.5	3.0	1.6		
LZET	0.3	16.9	17.9	17.8	15.9	12.0	20.3	11.3	17.8	18.2	21.8	0.8	5.8	4.4		
AGWET	0.5	1.4	1.4	1.4	1.2	1.4	1.4	1.4	1.4	1.4	1.7	1.3	0.4	1.3		
BASET	0.8	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.1	0.6	1.0	0.7		
SURET	37.8											24.1		19.5		
PERO	23.8	31.4	31.9	31.8	31.0	36.8	28.8	37.0	30.9	30.3	32.9	23.3	47.9	24.6		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TAET: PERVIOUS	40.4	35.0	34.3	34.1	34.8	27.7	41.1	29.3	34.9	34.6	36.7	43.4	38.4	42.3		
IMPEV: IMPERVIOUS		20.2	20.2	20.1	20.0									0.0		
ET: COMBINED	40.4	34.2	32.9	31.3	27.4	27.7	41.1	29.3	34.9	34.6	36.7	43.4	38.4	42.4		
PET	41.7	45.3	42.2	41.3	40.7	41.2	49.3	44.2	45.2	44.0	48.3	46.6	39.8	46.6		

Table T-03130013-5: Water balance for 2010. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6821	9015	1940	228	37	2767	47498	3317	1463	8	16	254468	130	327707		
AREA(%)	2.1	2.7	0.6	0.1	0.0	0.8	14.5	1.0	0.4	0.0	0.0	77.5	0.0	99.8		
IMPERVIOUS																
AREA(ACRES)		475	216	57	37									785		
AREA(%)		0.1	0.1	0.0	0.0									0.2		
SUPY	58.6	59.9	60.1	59.7	59.3	59.1	62.5	60.1	60.8	61.0	59.5	60.2	79.9	60.3		
SURLI			2.0	1.9	1.7									0.0		
UZLI														0.0		
LZLI			0.2	0.1	0.1									0.0		
SURO: PERVIOUS	21.3	4.5	4.6	5.1	4.6	2.6	0.5	3.4	1.6	2.1	1.7	19.6	8.4	15.9		
SURO: IMPERVIOUS		40.2	39.8	39.5	39.2									0.1		
SURO: COMBINED	21.3	6.3	8.1	12.0	21.9	2.6	0.5	3.4	1.6	2.1	1.7	19.6	8.4	16.0		
IFWO		0.6	0.2	0.1	0.3	0.6	0.7	0.8	0.6	0.4	0.5		3.3	0.1		
AGWO	1.0	22.3	25.5	24.8	24.1	30.3	25.0	28.9	26.3	26.7	24.2	1.0	31.9	5.8		
AGWI	2.4	24.3	27.5	26.7	25.9	32.4	26.9	31.0	28.4	28.7	26.4	2.6	33.0	7.6		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
CEPE		12.0	10.1	10.0	13.7	9.3	14.9	11.4	10.8	10.3	7.8	14.1	27.9	13.7		
UZET	1.5	3.5	4.0	3.9	3.3	4.0	2.8	4.1	3.8	3.6	3.6	1.3	3.1	1.6		
LZET	0.4	16.7	17.7	17.8	15.6	12.1	19.5	11.2	17.6	18.0	21.3	0.7	5.7	4.2		
AGWET	0.8	1.3	1.3	1.3	1.1	1.3	1.3	1.3	1.4	1.4	1.6	1.1	0.4	1.1		
BASET	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.7	1.0	0.7		
SURET	36.1											24.4		19.6		
PERO	22.3	27.4	30.3	30.1	28.9	33.5	26.2	33.0	28.4	29.2	26.4	20.5	43.6	21.9		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TAET: PERVIOUS	39.7	34.5	34.1	34.0	34.7	27.7	39.5	29.0	34.6	34.3	35.2	42.1	38.0	41.0		
IMPEV: IMPERVIOUS		19.8	20.4	20.3	20.2									0.0		
ET: COMBINED	39.7	33.8	32.8	31.2	27.5	27.7	39.5	29.0	34.6	34.3	35.2	42.1	38.0	41.1		
PET	41.0	43.8	41.2	40.5	40.1	40.5	46.7	42.8	43.7	42.6	46.2	44.8	39.3	44.8		

Table T-03130013-6: Water balance for entire simulation, 1990-2014 inclusive. Units are inches of depth. See Appendix S for definitions.

	WATER	OPEN	LOW	MED	HIGH	BARE	FOREST	SHRUB	GRASS	PASTURE	CROP	WETLAND	GOLF IRR	PASTURE IRR	CROP IRR	ALL
PERVIOUS																
AREA(ACRES)	6821	9015	1940	228	37	2767	47498	3317	1463	8	16	254468	130	327707		
AREA(%)	2.1	2.7	0.6	0.1	0.0	0.8	14.5	1.0	0.4	0.0	0.0	77.5	0.0	99.8		
IMPERVIOUS																
AREA(ACRES)		475	216	57	37									785		
AREA(%)		0.1	0.1	0.0	0.0									0.2		
SUPY	53.7	55.8	54.2	53.8	53.6	53.7	59.6	55.6	55.9	55.4	58.3	56.5	76.0	56.7		
SURLI			2.0	1.9	1.7									0.0		
UZLI														0.0		
LZLI			0.3	0.3	0.3									0.0		
SURO: PERVIOUS	17.5	3.1	3.0	3.3	2.6	1.3	0.3	2.1	1.0	1.2	1.4	18.3	5.1	14.7		
SURO: IMPERVIOUS		37.2	35.8	35.6	35.5									0.1		
SURO: COMBINED	17.5	4.8	6.3	9.8	19.1	1.3	0.3	2.1	1.0	1.2	1.4	18.3	5.1	14.8		
IFWO		0.3	0.2	0.1	0.2	0.3	0.2	0.4	0.2	0.2	0.2		3.5	0.0		
AGWO	0.9	20.8	22.2	21.5	21.1	26.5	22.5	26.2	23.1	22.9	23.8	0.8	31.8	5.2		
AGWI	2.5	22.8	24.2	23.5	22.9	28.6	24.5	28.3	25.1	24.9	26.0	2.4	33.2	6.9		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
CEPE		11.8	9.7	9.6	12.7	9.1	14.5	11.1	10.5	9.9	8.1	13.8	25.0	13.4		
UZET	2.0	2.5	2.7	2.7	2.3	2.8	2.0	2.8	2.5	2.3	2.8	1.5	2.0	1.6		
LZET	0.8	15.4	16.6	16.6	14.8	11.5	18.1	10.8	16.4	16.8	19.8	0.7	7.2	4.0		
AGWET	1.0	1.1	1.2	1.2	1.0	1.2	1.1	1.2	1.2	1.2	1.4	1.0	0.5	1.0		
BASET	0.6	0.8	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.8	0.9	0.5	0.9	0.6		
SURET	30.8											19.7		15.9		
PERO	18.4	24.2	25.3	25.0	24.0	28.1	22.9	28.7	24.3	24.2	25.3	19.1	40.4	20.0		
IGWI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TAET: PERVIOUS	35.2	31.6	31.1	30.9	31.5	25.5	36.5	26.8	31.5	31.1	32.9	37.3	35.6	36.6		
IMPEV: IMPERVIOUS		18.6	18.4	18.2	18.1									0.0		
ET: COMBINED	35.2	30.9	29.8	28.3	24.8	25.5	36.5	26.8	31.5	31.1	32.9	37.3	35.6	36.7		
PET	39.9	42.8	40.2	39.5	39.1	39.4	45.9	41.8	42.7	41.6	45.0	43.8	38.3	43.8		

Table T-03130013-7: AGWRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
2	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
3	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
4	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
5	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
6	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
7	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
8	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990
9	0.990	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.900	0.990

Table T-03130013-8: BASETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
2	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
3	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
4	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
5	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
6	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
7	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
8	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
9	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025

Table T-03130013-9: CEPSC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
2	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
3	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
4	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
5	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
6	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
7	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
8	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112
9	0.000	0.078	0.050	0.050	0.100	0.044	0.110	0.067	0.058	0.050	0.030	0.112

Table T-03130013-10: DEEPFR parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
6	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
9	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Table T-03130013-11: INFILT parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
2	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
3	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
4	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
5	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
6	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
7	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
8	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001
9	0.001	0.466	0.466	0.466	0.466	0.666	1.000	0.666	0.666	0.666	0.800	0.001

Table T-03130013-12: INTFW parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
2		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
3		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
4		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
5		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
6		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
7		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
8		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	
9		0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	

Table T-03130013-13: IRC parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
2	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
3	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
4	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
5	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
6	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
7	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
8	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664
9	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664	0.664

Table T-03130013-14: KVARY parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
2	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
3	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
4	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
5	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
6	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
7	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
8	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092
9	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092

Table T-03130013-15: LZETP parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
2	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
3	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
4	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
5	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
6	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
7	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
8	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900
9	0.164	0.459	0.459	0.459	0.459	0.306	0.650	0.306	0.459	0.459	0.535	0.900

Table T-03130013-16: LZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
2	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
3	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
4	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
5	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
6	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
7	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
8	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100
9	0.200	2.825	2.825	2.825	2.825	3.177	4.236	3.177	3.177	3.177	2.825	0.100

Table T-03130013-17: UZSN parameter values by land cover and subwatershed/reach. See Appendix S for definitions.

Reach	Water	Open	Low	Med	High	Bare	Forest	Shrub	Grass	Pasture	Crop	Wetland
1	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
2	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
3	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
4	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
5	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
6	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
7	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
8	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050
9	0.050	0.070	0.070	0.070	0.070	0.070	0.100	0.080	0.080	0.070	0.100	0.050