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1991 SWIM PRIORITY PLANNING PROCESS FOR THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, FLORIDA

by

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Prepared in compliance with the Surface Water Improvement and Management (SWIM) Act Chapter 87-97, Laws of Florida and Rule 17-43.030, F.A.C.

> St. Johns River Water Management District Palatka, Florida

> > 1992



The ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD) was created by the Florida Legislature in 1972 to be one of five water management districts in Florida. It includes all or parts of 19 counties in northeast Florida. The mission of SJRWMD is to manage water resources to ensure their continued availability while maximizing environmental and economic benefits. It accomplishes its mission through regulation; applied research; assistance to federal, state, and local governments; operation and maintenance of water control works; and land acquisition and management.

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EXECUTIVE SUMMARY

This report is a detailed explanation of the methods for determining the St. Johns River Water Management District's 1991 Surface Water Improvement and Management (SWIM) priorities. It is a supplement to an earlier report (Adamus 1991) which introduced the 1991 SWIM Priority List, and summarized the methods by which it was developed.

The SWIM Priority List presents surface water basins in priority order. Priorities one through four are the current SWIM projects: the Indian River Lagoon, the Lower St. Johns River, Lake Apopka, and the Upper Ocklawaha River. The highest priority after these is the Middle St. Johns River, followed by Lake George, and the Halifax River.

The goal of the SWIM program is to protect or restore significant waterbodies. The SWIM legislation required each water management district to prepare a prioritized list of regionally significant waterbodies in need of restoration or preservation. This list will guide the selection of waterbodies for SWIM programs.

The water management districts must submit a priority waterbody list annually to DER and update the list every three years, or more often if necessary.

THE SIGNIFICANCE ANALYSIS

The Priority List was developed from the results of a quantitative analysis. The goal of the analysis was to identify the most significant surface water subbasins in the District.

Significance was evaluated using socioeconomic and ecological criteria, in conjunction with criteria that defined the need for management action based on water quality concerns. The criteria were grouped in the following categories:

Socioeconomic significance

- Public use
- Economic importance
- Public importance (i.e., specially designated lands)

Ecological significance

- Natural and wildlife significance
- Environmental potential (amount of water resources available)

Need for action

- Degree of impairment (or need for restoration)
- Degree of endangerment (or need for preservation)

A numerical assessment of each subbasin was conducted based on these criteria. Total scores for each subbasin were calculated and used to rank the subbasins impartially.

Additional Considerations

The preliminary 1991 SWIM priority list was based on the results of the significance analysis. However, the District made a series of decisions which altered the order and nature of the list:

- 1. Existing SWIM programs were given the highest priority.
- 2. Before making a final determination of priority order, the non-SWIM subbasins were aggregated into groups called management units. These units were then assigned a priority order based on the total score of the most significant subbasin in each unit. Using this approach, the Lake George management unit was given the highest non-SWIM significance score.
- 3. The management unit priority order was altered. The District recognized that the best way to further protect the Lake

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George area was to focus management efforts on the Middle St. Johns River management unit. The District decided to give the Middle St. Johns River management unit higher priority than Lake George on the SWIM priority list for the following reasons:

- Lake George is already the focus of extensive preservation activity.
- The quality of the St. Johns River as it enters the Lake George Basin largely determines the conditions downstream.
- The significance analysis results suggest that the Middle St. Johns River unit is in greater need of immediate action, even though Lake George scored higher in overall significance.

One other modification was made: the Upper St. Johns River was given the lowest priority on the SWIM priority list, because the District is already implementing a major non-SWIM restoration program there.

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INTRODUCTION

This report details the methods, data, analysis, and additional considerations used to construct the 1991 Surface Water Improvement and Management (SWIM) Priority List (Adamus 1991). The priority list (Table 1) will guide the selection of surface water basins for future SWIM programs. The four existing SWIM programs have the highest priorities. The Middle St. Johns River Basin has the next highest priority for SWIM program initiation.

BACKGROUND

Priority List required by the SWIM Legislation

The Florida Legislature enacted the Surface Water Improvement and Management Act (Chapter 87-97, Laws of Florida) in response to the state's declining surface water quality. The purpose of the SWIM program is to correct or prevent problems through surface water improvement and management. The regional water management districts design and implement these programs, which are subject to approval by the Florida Department of Environmental Regulation (DER). The SWIM Act specifically designated Lake Apopka, the Lower St. Johns River, and the Indian River Lagoon as the first SWIM programs in the St. Johns River Water Management District.

The SWIM legislation required each water management district to prepare a prioritized list of regionally significant waterbodies in need of restoration or preservation. This list was to be prepared in cooperation with DER, the Department of Agriculture and Consumer Services, the Department of Community Affairs, the Game and Fresh Water Fish Commission (GFC), the Department of Natural Resources (DNR), and local governments. Also, the legislation instructed DER to develop criteria for determining priorities among waterbodies.

Priority List Criteria Adopted by DER

As directed by the SWIM Act, DER adopted by rule criteria to be considered when developing priority waterbody lists. These criteria, which are contained in Chapter 17-43, *Florida Administrative Codes* (F.A.C.), are

17-43.030 Preparation, Submittal, and Review of Surface Water Priority Lists.

(1)...Each District shall consider the following criteria in preparing the list and priority ranking:(a) The degree to which state water quality standards are violated...

(b) An evaluation of the nature and extent of conditions that adversely affect the water body...(c) Threats to water supplies, especially agricultural and urban supplies, and recreational opportunities...

(d) Threats to or need for long-term protection of those exceptional or outstanding water bodies which are currently in good condition.

(e) The extent to which the plans, ordinances, and policies of local governmental units with jurisdiction over the water body are consistent with a District's efforts to restore or protect the water body.

(f) The feasibility of monitoring the success of restoration or protection efforts in the water body.(g) The economic and environmental feasibility of accomplishing the restoration or protection goals.

The water management districts must annually submit a priority waterbody list to DER. The list must be updated at least every three years.

Previous District Priority Lists

The first St. Johns River Water Management District (District) priority waterbody list was submitted to DER and approved in 1988 (Lowe, Campbell, and Hendrickson 1988). It comprised the following five surface water systems:

- 1. Lower St. Johns River Basin
- 2. Indian River Lagoon
- 3. Lake Apopka
- 4. Upper Ocklawaha River Basin
- 5. Lake George

METHODS

The District developed a method for determining priorities that addressed many of the criteria recommended by DER. This method was based on the following concepts:

- The analysis focused on surface water subbasins, rather than on waterbodies. There are ten major hydrologic units, or basins, in the District (Figure 1). These basins were divided into 55 subbasins (Figure 2, Table 2, Appendix Table A1, and Appendix Figure A1). In this report, the Orange Lake (8-004) and Lochloosa Lake (8-003) subbasins will be considered as one unit (8-003/4), rather than two.
- All the subbasins in the District were included in the analysis.
- The goal of the analysis was to quantify the environmental significance of each subbasin in the District. In addition, the need for restoration or preservation of each subbasin was measured.

A set of quantifiable criteria that described or defined significance was chosen, and methods for measuring each criterion were devised. Each criterion was then assigned a weight according to its perceived importance. Subbasin scores for each criterion were multiplied by these weights and then summed.

The summed scores for each subbasin determined the preliminary order of the new priority list. The preliminary order was then modified, based on additional considerations.

Criteria

The first step toward measuring environmental significance was to identify its components. These included criteria from the 1988 SWIM priority project as well as criteria addressing elements of significance not previously considered. Seven main criteria were identified and grouped into three categories (Figure 3):

Socioeconomic significance

- Public use
- Economic importance
- Public importance (i.e., specially designated lands)

Ecological significance

- Natural and wildlife significance
- Environmental potential (amount of water resources available)

Need for action

- Degree of impairment (or need for restoration)
- Degree of endangerment (or need for preservation)

Most criteria were divided into multiple subcriteria (Table 3). Subcriteria selection was influenced by the previous SWIM priority process (Lowe, Campbell, and Hendrickson 1988); DER guidelines; perceived relevance; and measurability, which reduced bias.

Calculating Scores

A scoring system was created to calculate a significance score for each subbasin. First, it was necessary to describe the relationship between each subcriterion and significance. In most cases, the relationship could be represented by a simple linear function with positive slope: i.e., *more is better*.

For any given subcriterion, the input for this function consisted of measured values for each subbasin. The output (scores) consisted of numbers, from 0.00 to 1.00, which represent the degree of significance. For the simple linear relationship, the subbasin with the highest input value for that criterion received the highest score, 1.00.

For example, in economic terms, importance increased as the number of water-dependent businesses increased (Figure 4). Therefore, the subbasin with the most businesses got the highest score (1.00), and all others got scores equal to the number of businesses in the subbasin divided by the number of businesses in the highest scoring subbasin.

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This approach converted all the different types of data and units of measurement to the same scale, allowing subcriterion scores to be compared and combined. Each subbasin's individual subcriterion scores were then summed using the previously assigned weights, and the total scores were used to rank the subbasins.

The next three chapters discuss the exact manner in which each criterion was analyzed. The information is presented in three sec-





tions for each criterion or subcriterion: data used in the evaluation, methods by which data were evaluated, and results of the evaluation.

The data sections introduce the type of data used to evaluate each criterion or subcriterion. There were constraints on potential sources of information which limited the ways in which each criterion could be assessed. In order to be used in the prioritization process, data had to be available for the entire District, and be amenable to spatial division or aggregation by subbasin. These restrictions prohibited the use of some seemingly obvious data choices for some criteria.

The methods sections explain the manner in which the data were analyzed, and the results sections examine the results of the analyses.

Table 1.1991 St. Johns River Water Management District SWIM Priori-
ty List. These are the District's priorities for Surface Water
Improvement and Management (SWIM) programs. Numbers one
through four are current SWIM programs. Any future SWIM
programs will be initiated in the order listed, beginning with num-
ber five.

Priority Number	Program
1	Indian River Lagoon Basin
2	Lower St. Johns River Basin
3	Lake Apopka
4	Upper Ocklawaha River Basin
5	Middle St. Johns River*
6	Lake George*
7	Halifax River*
8	Nassau River*
9	St. Marys River*
10	Palatlakaha River*
11	Lower Ocklawaha River*
12	St. Augustine*
13	Florida Ridge*
14	Wekiva River*
15	Orange Creek*
16	Upper St. Johns River*

* These items are management units. Management units are groups of subbasins which would be managed as a unit, rather than individually. The subbasins which comprise each management unit are listed on page 100.

Source: modified from Adamus 1991

2.		St. Johns River Water Management District SWIM Priority Planning E and Subbasins (see Figure 2). There are 10 basins and 55 subbasins.					
1 NA	\SSA	U RIVER Nassau Biver	6 UPPER	ST. JOHNS RIVER			
	000	143340 111461	6-102	Blue Cypress Creek			
			6-102	St. Johns Marsh			
2 ST	. MA	RYS RIVER	6-104	Lake Washington			
2-	001	Upper St. Marys River	6-201	Lake Poinsett			
2-	002	Lower St. Marys River	6-202	Tosahatchee			
			6-203	Puzzle Lake			
3 LO	WEF	R ST. JOHNS RIVER					
3-	100	Crescent Lake	7 OCKLA	WAHA RIVER			
3-	200	Etonia Creek	7-100	Palatlakaha River			
3-	300	Black Creek	7-200	Lake Apopka			
3-	400	Ortega River	7-300	Lake Harris			
3-	501	Trout River	7-401	Lake Griffin			
3-	502	Broward River	7-402	Marshall Swamp			
3-	503	Dunn Creek	7-500	Eureka Dam			
3-	601	Arlington Creek					
3-	602	Julington Creek					
3-	603	North Lower St. Johns Hiver	8 FLOHID				
3-	701	Sixmile Creek	8-001	Florida Ridge			
3-	702	McCullough Creek	8-002	Newnans Lake			
	703	South Lower St. Johns Biver	8-003	Orango Lako			
5-	704	South Lower St. Johns River	8-005	Orange Creek			
			8-006	Sweetwater Creek			
4 Mi	וחס	ST. JOHNS BIVER	8-007	Rodman Reservoir			
4-	100	Econlockhatchee River					
4-	201	Little Wekiya River					
4-	202	Wekiva River	9 UPPER	COASTAL			
4-	203	Blackwater Creek	9-100	Halifax River			
4-	301	Howell Creek	9-200	Matanzas River			
4-	302	Lake Jesup	9-300	Tolomato River			
4-	401	Lake Harney					
4-	402	Deep Creek					
4-	403	Lake Monroe	10 INDIAN	RIVER LAGOON			
			10-001	North Indian River Lagoon			
			10-002	N Central Indian River Lagoon			
5 LA	KE C	EORGE	10-003	S Central Indian River Lagoon			
5-	001	Lake Beresford					
5-	.002	Lake Woodruff					
5-	-003	Lake George					

Source: Adamus 1991

	priorities.			
Criteria	Subcriteria	Description		
Dublic Lico	Public Access	The degree of existing public access in each subbasin		
	Potential Recreational Demand	The demand for use of waterbodies in each subbasin in terms of local population		
Economic Importance	Water-dependent Businesses	The number of marinas, fish camps, and resorts in each sub- basin, which is a reflection of recreational economic impact		
	Commercial Fisheries	The amount of harvesting supported by each subbasin		
Public	Special Designations	An inventory of publicly owned or specially designated lands or waters, such as state and national parks and aquatic preserves		
	Ground Water Recharge Areas	The locations of high ground water recharge areas		
Natural & No Subcriteria Wildlife Significance		The occurrences of endangered or threatened plants, animals, and communities; species of special concern; bird rookeries; and manatee occurrence sites		
Environmen- tal Potential	No Subcriteria	The acreage of open water and wetlands in each subbasin		
	Water Quality	A summary of subbasin water quality, to determine which sub- basins had the poorest water quality		
	Point Source Discharges	An inventory of point source pollution		
Degree of Impairment	Fish Kills	An inventory of fish kills caused by poor water quality		
	Aquatic Plant Control	A measure of impairment of important public waterways		
	Meets Designated Use Assessments	An assessment of waterbody use impairment		
	Land Use	A determination of which watersheds had the most extensive urban development		
	Water Quality	A summary of subbasin water quality, to determine which ones had the best water quality		
Degree of	Land Use	A determination of which subbasins might be most susceptible to damage from future development		
Endanger- ment	Population Growth	A measure of potential development pressure		
	Population Density	A supplement to the population growth subcriterion		

 Table 3.
 SWIM Priority Planning Subcriteria. There are 19 subcriteria used to determine SWIM priorities.

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Figure 3. Surface Water Improvement and Management (SWIM) Priority Planning Criteria. The St. Johns River Water Management District determined priorities among subbasins by comparing their environmental significance.

SOCIOECONOMIC SIGNIFICANCE

Socioeconomic significance was composed of three criteria: *Public Use, Economic Importance,* and *Public Importance.*

CRITERION A—PUBLIC USE

The first socioeconomic criterion was *Public Use*, an estimate of the actual and potential recreational use of waterbodies. Greater public use indicates greater significance from a human perspective, as well as a greater need for management.

Public Use had two subcriteria:

- 1. *Public access*—a measure of actual recreational use
- 2. *Potential recreational demand*—a measure of the potential for recreational use in terms of local population

Subcriterion A1—Public Access

Recreational public use can be estimated in part by the degree of public access; i.e., popular waterbodies generally have more facilities (boat ramps, parks, fishing piers) than unpopular waterbodies. Heavily used waterbodies also tend to attract businesses such as marinas and fish camps, which afford additional access. For these reasons, the number of access sites in each subbasin was used to estimate public use.

Data. Data for this analysis was compiled from a number of sources. The 1989 DNR recreational site survey (DNR 1989a) inventoried boat ramps, waterfront parks, fishing piers and bridges, fish camps, marinas, beaches, and other access points to estuarine waters. Bellamy (1988) listed ramps, fish camps, and marinas for freshwater lakes and rivers. Other sources included county comprehensive plans and parks department brochures, GFC brochures (GFC 1988c and 1988d), and the *Florida Atlas and Gazetteer* (DeLorme Mapping Company 1987).

Existing statewide assessments of recreational use of waterbodies, such as that conducted by DNR (DNR 1989b), did not have sufficient spatial resolution for use in this analysis.

Methods. The surface water access points in each subbasin, including boat ramps, waterfront parks, beaches, fishing piers and bridges, marinas, and fish camps, were enumerated (Appendix Table B1).

In addition, the analysis considered access points in adjacent subbasins, to account for boat travel between subbasins. This allowed more accurate assessment of waterbodies such as Lake Jesup, where the primary access points are in the adjacent St. Johns River (outside of the subbasin boundaries).

Those boat ramps, marinas, and fish camps located on a waterway which was continuous across subbasins were noted. Then, to determine the total number of access points available in each subbasin, half the number of boat ramps, marinas, and fish camps located on continuous waterways of adjacent subbasins (*extra points*) were added to the number of all access points actually located within the subbasin (Table 4 and Appendix Table B3). An exception was for subbasins 10-001, 3-603, and 3-704. Due to the large size of these subbasins, only one-fourth of the appropriate access points were added to adjacent subbasin access determinations.

The subbasin with the maximum number of access points within and adjacent to it was given a score of 1.00. The scores for all other subbasins were calculated by dividing the total number of access points assigned to the subbasin by the maximum number of access points.

Results. In general, coastal and estuarine subbasins scored high, along with Lake George subbasins and Ocklawaha chain of lakes subbasins (Table 4). The North Indian River Lagoon subbasin (10-001) received a score of 1.00, with 105 internal or adjacent access points. It was followed by the Halifax River (9-100), North Central Indian River Lagoon (10-002), Lake George (5-003), North

Lower St. Johns River (3-603), and Lake Harris (7-300) subbasins, with 0.78, 0.62, 0.56, 0.50, and 0.49 points respectively.

Subcriterion A2—Potential Recreational Demand

The second *Public Use* subcriterion was *potential recreational demand*, which is the potential for recreational use of waterbodies. Potential recreational demand was equated with the size of the local population. This subcriterion accounted for those waterbodies that had great potential for use, even if access facilities were lacking. For example, some waterbodies such as Lake Apopka are so degraded that they are no longer used, and access is limited. However, the lake represents a significant potential resource for recreational activity.

Data. Data for this analysis was partially derived in-house. The District's Division of Policy and Planning estimated the total 1989 population for each of the ten major drainage basins in the District (Figure 5), using data from the Bureau of Economic and Business Research of the University of Florida (Smith and Bayya 1990).

Methods. In this analysis, local population was defined as the number of people located within 25 miles of a subbasin's center or primary waterbody. Computation of total recreational potential, therefore, required an estimation of the local population within the subbasin plus the contributing population, which was defined as the number of people outside of the subbasin but within a 25 mile radius.

Each subbasin population estimate was derived from the major basin estimates in the following manner:

- The populations of all incorporated areas located within the subbasin were summed.
- The unincorporated subbasin population was estimated:

(percent of the major basin's area that is occupied by the subbasin) x (the major basin's unincorporated population)

• The total incorporated population and the unincorporated population were summed (Appendix Table B4).

The population representing the total recreational potential was then estimated in the following manner:

- A circle of radius 25 miles was drawn around each subbasin's center. If the major waterbodies were clustered in a particular section of the subbasin, this area was considered the center.
- The total population of all subbasins located within the circle was calculated (Appendix Table B4). If a subbasin fell only partially within the circle, only the populations of its incorporated areas located within the circle were included.

The subbasin with the maximum total recreational potential was given a score of 1.00. The scores for all other subbasins were calculated by dividing the subbasin population by the maximum subbasin population.

Results. Subbasins in the Orlando area had the highest scores (Table 5). The Little Wekiva River (4-201), Wekiva River (4-202), and Blackwater Creek (4-203) subbasins each received the maximum score of 1.00, and the Econlockhatchee River (4-100), Howell Creek (4-301), and Lake Jesup (4-302) subbasins were second with scores of 0.93. Other Orlando area subbasins and Jacksonville area subbasins also scored high (0.78).

Combining Subcriteria Scores

Methods. The subbasin scores for the *public access* and *potential recreational demand* subcriteria were combined to create total subbasin scores for the *Public Use* criterion. *Public access* was a measure of existing demand and conditions; *potential recreational demand* was principally a measure of potential. To emphasize

current conditions over potential demand, *public access* and *potential recreational demand* were combined using the following formula:

2 x (*public access* score)

+ 1 x (potential recreational demand score)

= Public Use score

After the total scores for this criterion were calculated, they were adjusted to maintain the zero to one scoring convention.

Results. Four of the five highest scoring subbasins were coastal (Table 6 and Figure 6). The North Indian River Lagoon (10-001) had the maximum score (1.00), followed by the Halifax River (9-100), North Lower St. Johns River (3-603), and North Central Indian River Lagoon (10-002), with scores of 0.74, 0.70, and 0.63 respectively. The next high-scoring subbasins were freshwater: Lake Harris (7-300) and Wekiva River (4-202), with scores of 0.54 and 0.53. Even though subbasins in the Orlando area scored very high on potential recreational demand, they did not have as many public access sites as the coastal subbasins, and therefore scored somewhat lower for the public use criterion as a whole.

CRITERION B—ECONOMIC IMPORTANCE

The second socioeconomic criterion was *Economic Importance*. Surface water resources within the District contribute significantly to local and regional economies. Two primary components of this economic benefit are recreational activities and commercial fish and shellfish harvesting. Therefore, *Economic Importance* had two subcriteria:

- 1. *Water-dependent businesses*—a measure of recreational activities such as fishing and boating
- 2. *Commercial fisheries*—a measure of the commercial harvesting of freshwater and estuarine fish and shellfish

Subcriterion B1—Water-Dependent Businesses

Data. A manifestation of the recreational economic importance of a subbasin is the number of water-dependent businesses supported by its waterbodies. In this analysis, water-dependent businesses included marinas, fish camps, waterfront resorts, and similar businesses. For estuarine waters, the primary source of information was the DNR recreational site survey (DNR 1989a). The data for fresh waters originated from Bellamy (1988) and GFC brochures (GFC 1988c and 1988d). When available, county comprehensive plans were also consulted.

Direct estimates of the value in dollars of the water-based recreation industry (such as Bell et al. 1982) could not be used in this analysis since data were only available for a few isolated areas in the District. Assessments of recreational supply and demand (for example, DNR 1989b) also could not be used because these studies were performed on a regional scale, and the data could not be assigned to specific subbasins.

Methods. Fish camps, marinas, resorts, and other water-dependent businesses were inventoried, and the subbasins in which they were located were identified (Appendix Tables B5 and B6).

The subbasin containing the maximum number of businesses was assigned a score of 1.00. The scores for the other subbasins were calculated by dividing the number of businesses in each subbasin by the number of businesses in the subbasin with a score of 1.00.

Results. The North Indian River Lagoon (10-001) had the maximum score of 1.00 (Table 7). It had 37 water-dependent businesses located within its boundaries. Lake George (5-003), the North Lower St. Johns River (3-603), and the Halifax River (9-001) also had high scores, with 0.62, 0.59, and 0.57 respectively.

Subcriterion B2—Commercial Fisheries

Data. This subcriterion was used to determine the relative importance of each subbasin to the commercial fishing industry.

The initial choice of data was landings reports, which are summaries of the amounts, types, and values of fish species caught by commercial harvesters. However, there were three major limitations which precluded the use of this information:

- 1. The spatial resolution was insufficient.
- 2. The data were recorded at point of sale; the actual catch locations were unknown.
- 3. The saltwater and freshwater landings data had very different spatial resolution and completeness; combining them was problematic.

To avoid these problems, data on the distribution of the harvesters themselves were used. It was assumed that commercial harvesters live near the waterbodies that they utilize the most. In addition, waterbodies with the greatest resources were expected to be used by the largest number of harvesters. Thus, the distribution of the harvesters' residences was expected to correspond to the location of waterbodies most significant to commercial harvesting. Also, the consistent format simplified the integration of salt- and freshwater fisheries data.

DNR issues saltwater products licenses to commercial harvesters of saltwater species and maintains a computerized listing that includes the complete address of each licensee. GFC issues licenses to freshwater commercial harvesters. These data are available as numbers of licensees per county.

Methods. There were four steps involved in the process.

• Step 1—The numbers of license holders living in each subbasin or county were determined. The 1989 saltwater products license listing was obtained from DNR for all licensees living within the District. The city and zip code indicated the subbasin in which each licensee was located. Additional details about data allocation methods are in Appendix Table B6. The total number of saltwater products licensees living in each subbasin was determined (Figure 7).

Also, a listing of the numbers of commercial freshwater fishing licenses issued in each county (in 1989) was obtained from the GFC. These were totaled by county (Figure 8).

- Step 2—Waters which support commercial harvesting were identified. Since commercial harvesting does not occur in all waterbodies, those subbasins which actually support harvesting activities were identified (Appendix Table B7). Legal boundaries for freshwater harvesting, GFC information, and knowledge of the occurrences of harvestable species (District personal communications and GFC 1990) were the basis for this determination. All subbasins not listed in Appendix Table B7 received a score of zero for this subcriterion.
- Step 3—A surrounding travel zone for each subbasin in which harvesting occurs was identified. For each of the subbasins identified in Step 2, a zone was delineated which defined the areas from which fishermen are likely to travel. The zones consisted of surrounding subbasins for saltwater license holders, and surrounding counties for freshwater license holders.

These zones were not mutually exclusive; they overlapped due to the mobility of the average commercial harvester. For example, an individual living in Palatka, which is in the South Lower St. Johns River subbasin (3-704), may harvest in 3-704 or in subbasins to the north or south, depending on resource availability. Therefore, subbasin 3-704 was part of zones contributing to harvesting in other Lower St. Johns River subbasins and Lake George subbasins, as well as for itself. Greater detail on how these zones were delineated is in Appendix Table B8.

• Step 4—The number of licensees living within each subbasin's travel zone was determined (Appendix Table B9). The subbasin containing the maximum number of commercial licenses within its travel zone was assigned a score of 1.00. The scores for the other subbasins were calculated by dividing the number of commercial licenses in each subbasin by the number of commercial licenses in the subbasin with a score of 1.00.

Results. The three Indian River Lagoon subbasins had the highest score (Table 8). This area supports saltwater harvesting only, but to such a large extent that it scored considerably higher than subbasins with both salt- and freshwater harvesting.

Areas of secondary importance were the South Lower St. Johns River subbasin (3-704) and the Lake George subbasins (5-002 and 5-003), from which both salt- and freshwater species are harvested.

Combining Subcriteria Scores

Methods. To derive a total score for the *Economic Importance* criterion, scores from the *water-dependent businesses* (recreational economic importance) and *commercial fisheries* subcriteria were combined. In order to do this, some estimate of the relative economic contribution of recreation versus commercial fishing activities was needed. Bell et al. (1982) estimated that the primarry economic impact of saltwater recreational fishing is five to six times greater than that of saltwater commercial fishing in Florida. Another report by Bell (1987) concludes that the economic impact of recreational fishing in Lake Okeechobee exceeds that of commercial harvesting by three to four times.

Based on this information, the two subcriteria were combined using the following formula:

4 x (water-dependent businesses score) + 1 x (commercial harvesting score) = Economic Importance score These totals were then adjusted to maintain a zero to one scale for category scores.

Results. The North Indian River Lagoon (10-001) had the highest *Economic Importance* score (1.00), followed by Lake George (5-003), the North Lower St. Johns River (3-603), and the Halifax River (9-100), with 0.60, 0.55, and 0.52 respectively (Table 9). With the exception of Lake George, coastal subbasins dominated (Figure 9).

CRITERION C-PUBLIC IMPORTANCE

The third socioeconomic criterion was *Public Importance*. The purpose of the *Public Importance* analysis was to distribute significance scores to subbasins containing areas such as state parks or aquatic preserves. These areas have been recognized as having exceptional water quality, or wildlife, scenic, recreational, or economic value. Others are geologically, botanically, or ecologically unique, or are hydrologically critical, such as ground water recharge areas.

Public Importance had two subcriteria:

- 1. *Special designations*—the acreage of specially designated areas in each subbasin
- 2. *Ground water recharge areas*—the acreage of ground water recharge areas in each subbasin

Subcriterion C1—Special Designations

Data. Because of their importance, many areas have been designated for special use or management by national, state, or local governments. The following specially designated areas were considered in this subcriterion:

- Aquatic preserves
- Class I waters (public water supply)
- Class II waters (shellfish harvesting areas)

- National forests (including wilderness areas and recreation areas)
- National parks
- National wildlife refuges
- Privately owned preserves (e.g., Nature Conservancy lands)
- State reserves and preserves
- State geological sites and historic sites
- State ornamental gardens
- State parks and recreation areas
- Other DNR Division of Recreation and Parks holdings
- GFC Fish management areas
- GFC Wildlife management areas
- Lands included in the Volusia County parks and environmentally sensitive lands acquisition program
- Miscellaneous county-owned lands
- District Upper St. Johns River Basin project land acquisitions
- Other District acquisitions (Save Our Rivers, SWIM, miscellaneous)

Appendix Table B11 contains a complete listing of these areas and the sources consulted to obtain this information.

Since many of the areas listed above provide protection for wildlife, this subcriterion is significant for wildlife and habitat protection.

Methods. The specially designated lands listed above were inventoried, and the total acreage of these lands in each subbasin was determined (Appendix Table B10). If designated areas overlapped, the acreage was only counted once.

The subbasin with the maximum acres of specially designated lands was given a score of 1.00. The scores for all other subbasins were calculated by dividing the total acreage of specially designated lands in each subbasin by the maximum number of acres.

Results. The North Indian River Lagoon (10-001), with a score of 1.00, was the most significant subbasin in terms of specially

designated areas (Table 10). Most of its surface water is either an aquatic preserve or shellfish harvesting area, and much of the land area is occupied by the Canaveral National Seashore and Merritt Island National Wildlife Refuge.

The next two subbasins, Lake George (5-003) and the Upper St. Marys River (2-001), contain national forests and important wilderness areas. They scored 0.59 and 0.42 respectively. The Lake George subbasin also contains an 18,000 acre tract purchased by the District. The Nassau River subbasin (1-000) was fourth with a score of 0.39, followed by the Lake Woodruff subbasin (5-002), with a score of 0.36.

Subcriterion C2—Ground Water Recharge Areas

Protection and management of primary aquifer recharge areas is critical, not only for the protection of drinking water supplies, but also for maintaining the hydrologic balance of some surface waterbodies. A ground water recharge subcriterion was included in the analysis in recognition of this fact.

Data. For this analysis, the most comprehensive information on ground water recharge areas in the District was a U.S. Geological Survey (USGS) map (Phelps 1984) which identifies approximate areas of high ground water recharge (10-20 inches per year) to the Floridan aquifer. The actual extent or degree of recharge could not be precisely determined. The District is in the process of identifying in detail the areal and volumetric extent of its ground water recharge areas (Boniol, Munch, and Williams 1990).

Methods. The boundaries of the high recharge areas from the Phelps map were digitized and overlaid onto the subbasin boundaries (Figure 10). This process identified the subbasins which contained these recharge areas. All subbasins with ground water recharge areas within their boundaries received a score of 1.00 for this subcriterion, and all subbasins with no recharge areas received a score of zero. **Results.** Twenty subbasins contained ground water recharge areas (Table 11).

Combining Subcriteria Scores

Methods. Subbasin scores for the *Public Importance* criterion were derived by combining the *special designations* and *ground water recharge areas* subcriteria. Since the focus of the SWIM priority analysis was surface water, and the *ground water recharge* subcriterion was of secondary importance to surface water resources, the two subcriteria were combined using the following formula:

4 x (special designations score) + 1 x (ground water recharge areas score) = Public Importance score

The total scores obtained from this equation were then adjusted to maintain the zero to one scoring convention.

Results. The North Indian River Lagoon subbasin (10-001) had the highest *Public Importance* score (Table 12). The number of specially designated areas in this subbasin is a reflection of the fact that both the land and water resources have been recognized as being ecologically important, scenic, and unique. Furthermore, the designation of most of the estuary as shellfish harvesting area and aquatic preserve means that continued protection is crucial for public health and economic and ecological reasons.

Other highly significant subbasins in terms of the *Public Importance* criterion are two of the Lake George area subbasins: Lake George (5-001), with a score of 0.84, and Lake Woodruff (5-002), with 0.61.

The Eureka Dam (7-500) and Lake Griffin (7-401) subbasins of the Ocklawaha River were fourth and fifth, with scores of 0.59 and 0.46 (Figure 11).

Socioeconomic Significance

Socioeconomic significance
A. PUBLIC USE
->> 1. public access
2. potentiai recreationai demand
B. ECONOMIC IMPORTANCE
C. PUBLIC IMPORTANCE
Ecological significance

Need for action

Table 4. Public access subcriterion scores

Access	Extra Pointe*	Total Pointe	Score	Subbasin	Subbasin Name	
91	14.0	105.0	1.00	10-001	North Indian River Lacoon	
64	18.0	82.0	0.78	9-100	Halifax River	
36	29.5	65.5	0.62	10-002	N Central Indian River Lacoon	
37	21.5	58.5	0.56	5-003	Lake George	
45	8.0	53.0	0.50	3-603	North Lower St. Johns River	
42	9.5	51.5	0.49	7-300	Lake Harris	
26	21.5	47.5	0.45	9-200	Matanzas River	
28	19.0	47.0	0.45	5-002	Lake Woodruff	
27	18.5	45.5	0.43	7-401	Lake Griffin	
35	9.0	44.0	0.42	3-704	South Lower St. Johns River	
27	14.0	41.0	0.39	10-003	S Central Indian River Lacoon	
21	8.0	29.0	0.28	3-100	Crescent Lake	
22	5.0	27.0	0.26	1-000	Nassau River	
19	5.0	24.0	0.23	7-500	Eureka Dam	
10	13.5	23.5	0.22	5-001	Lake Beresford	
9	12.0	21.0	0.20	7-402	Marshall Swamp	
12	8.5	20.5	0.20	2-002	Lower St. Marys River	
12	8.5	20.5	0.20	4-403	Lake Monroe	
19	0.0	19.0	0.18	7-100	Palatlakaha River	
8	11.0	19.0	0.18	9-300	Tolomato River	
10	8.0	18.0	0.17	3-200	Etonia Creek	
9	9.0	18.0	0.17	3-501	Trout River	
9	9.0	18.0	0.17	4-202	Wekiva River	
9	8.0	17.0	0.16	3-300	Black Creek	
7	9.0	16.0	0.15	3-400	Ortega River	
15	0.0	15.0	0.14	8-003/4	Orange/Lochioosa lakes	
5	9.0	14.0	0.13	3-602	Julington Creek	
5	7.5	12.5	0.12	4-402	Deep Creek	
6	5.5	11.5	0.11	4-302	Lake Jesup	
8	2.5	10.5	0.10	8-007	Rodman Reservoir	
1	9.0	10.0	0.10	3-503	Dunn Creek	
1	9.0	10.0	0.10	3-601	Arlington Creek	
2	8.0	10.0	0.10	3-701	Sixmile Creek	
7	3.0	10.0	0.10	4-100	Econlockhatchee River	
0	9.0	9.0	0.09	3-502	Broward River	
1	8.0	9.0	0.09	3-703	Deep Creek	
6	3.0	9.0	0.09	6-203	Puzzle Lake	
6	2.5	8.5	0.08	6-201	Lake Poinsett	
0	8.0	8.0	0.08	3-702	McCullough Creek	
8	0.0	8.0	0.08	7-200	Lake Apopka	
3	4.5	7.5	0.07	6-202	Tosahatchee	
2	5.0	7.0	0.07	2-001	Upper St. Marys River	
3	3.5	6.5	0.06	6-104	Lake Washington	
3	3.0	6.0	0.06	4-203	Blackwater Creek	
4	2.0	6.0	0.06	4-301	Howell Creek	
3	3.0	6.0	0.06	4-401	Lake Harney	
2	3.5	5.5	0.05	6-103	St. Johns Marsh	
4	1.0	5.0	0.05	6-102	Blue Cypress Creek	
4	0.0	4.0	0.04	4-201	Little Wekiva River	
4	0.0	4.0	0.04	8-002	Newnans Lake	
4	0.0	4.0	0.04	8-005	Orange Creek	
3	0.0	3.0	0.03	8-001	Florida Ridge	
3	0.0	3.0	0.03	8-006	Sweetwater Creek	
ō	1.5	1.5	0.01	6-101	Fort Drum Creek	
*Extra points are one-half of the number of marinas, fish camps, and boat ramps in continu-						

St. Johns River Water Management District 25



Table 5. Potential recreational demand subcriterion scores

Totai Recreationai	Score	Subbasin Number	Subbasin Name
Potential (Deputation)			
(Population)			
962,790	1.00	4-201	Little Wekiva River
982,790	1.00	4-202	Wekiva River
962,790	1.00	4-203	Blackwater Creek
897,776	0.93	4-100	Econlockhatchee River
891,104	0.93	4-301	Howell Creek
891,104	0.93	4-302	Lake Jesup
751,410	0.78	4-401	Lake Harney
751,410	0.78	4-402	Deep Creek
748,261	0.78	3-400	Ortega River
748,261	0.78	3-501	Trout River
748,261	0.78	3-502	Broward River
748,261	0.78	3-503	Dunn Creek
748,261	0.78	3-601	Arlington Creek
748,261	0.78	3-602	Julington Creek
748,261	0.78	3-603	North Lower St. Johns River
741,649	0.77	4-403	Lake Monroe
702,375	0.73	1-000	Nassau River
702,375	0.73	2-002	Lower St. Marys River
677,335	0.70	3-300	Black Creek
666,764	0.69	7-200	Lake Apopka
618,596	0.64	5-001	Lake Beresford
608,925	0.63	6-203	Puzzle Lake
518,413	0.54	10-001	North Indian River Lagoon
406,188	0.42	3-704	South Lower St. Johns River
375,854	0.39	7-100	Palatlakaha River
362,232	0.38	7-300	Lake Harris
359,531	0.37	10-002	N Central Indian River Lagoon
316,215	0.33	6-104	Lake Washington
307,168	0.32	9-100	Halifax River
294,975	0.31	6-201	Lake Poinsett
285,062	0.30	6-102	Blue Cypress Creek
285,020	0.30	6-103	St. Johns Marsh
276,144	0.29	8-003/4	Orange/Locnicosa lakes
261,217	0.27	6-202	I osanatchee
252,194	0.26	10-003	S Central Indian River Lagoon
244,413	0.25	5-002	Lake woodrun
230,429	0.24	9-200	Malanzas Hiver
218,189	0.23	8-001	Fionda Ridge
205,653	0.21	7-401	Lake Grinn
181,431	0.19	3-702	Deen Creek
181,431	0.19	3-703	Sizmilo Crook
172,007	0.10	0.200	Tolomato Piver
156,700	0.10	9-300	Euroka Dam
100,000	0.10	8-002	Nownans Lake
140,421	0.15	5-002	Lake George
123 755	0.15	7-402	Marshall Swamp
120,700	0.13	8-007	Bodman Beservoir
04 705	0.10	6-101	Fort Drum Creek
04 040	0.10	3-100	Crescent Lake
91,249 00 404	0.09	3-200	Etonia Creek
09,404	0.09	9 AAE	Orange Creek
DJ,104	0.07	8-005	Sweetwater Creek
· 00,104	0.07	2-000	Upper St. Marvs River
Socioeconomic Significance



Table 6. Total Public Use criterion scores

Score	Subbasin	Subbasin Name		
	Number			
1.00	10.001	North Indian Diversity and		
1.00	10-001	North Indian River Lagoon		
0.74	3-603	North Lower St. Johns River		
0.70	10-002	N Centrel Indian Biver Lacoon		
0.54	7-300	Lake Harris		
0.53	4-202	Wekiya River		
0.50	5-003	Lake George		
0.50	3-704	South Lower St Johns River		
0.49	1-000	Nassau River		
0.46	4-403	Lake Monroe		
0.45	4-302	Lake Jesup		
0.45	5-002	Lake Woodruff		
0.45	9-200	Matanzas River		
0.44	2-002	Lower St. Marys River		
0.44	4-100	Econlockhatchee River		
0.44	3-501	Trout River		
0.44	4-203	Blackwater Creek		
0.43	3-400	Ortega River		
0.43	4-201	Little Wekiva River		
0.43	5-001	Lake Beresford		
0.42	7-401	Lake Griffin		
0.41	4-301	Howell Creek		
0.41	3-602	Julington Creek		
0.41	10-003	S Central Indian River Lagoon		
0.40	3-300	Black Creek		
0.40	4-402	Deep Creek		
0.39	3-503	Dunn Creek		
0.39	3-601	Arlington Creek		
0.38	3-502	Broward River		
0.35	4-401	Lake Harney		
0.33	7-200	Lake Apopka		
0.32	6-203	Puzzle Lake		
0.30	7-100	Palatiakana River		
0.26	3-100	Crescent Lake		
0.24	7-500	Eureka Dam		
0.22	8-003/4	Orange/Lochioosa lakes		
0.21	7-402	Marshall Swamp		
0.20	9-300	I olomato River		
0.19	0-201	Lake Woshington		
0.18	0-104	Etapia Crock		
0.17	3-200	Tossbatchee		
0.10	6 102	Rive Cypross Crock		
0.10	6 102	St. Johns Marsh		
0.16	3-701	Sizmile Creek		
0.15	3-707	Deen Creek		
0.15	3-703	McCullough Croek		
0.19	8-002	Rodman Reservoir		
0.10	8-001	Florida Ridge		
0.09	8-002	Newnans Lake		
0.00	2-001	Lipper St. Marys River		
0.06	8-005	Orange Creek		
0.00	8-005	Sweetwater Creek		
0.05	6-101	Fort Drum Creek		
0.00	0.01			



Table 7. Water-dependent businesses subcriterion scores

	Score	Number of	Subbasin Number	Subbasin Name	
l	—	DAPILIASAS			
	1.00	37	10-001	North Indian River Lagoon	
	0.62	23	5-003	Lake George	
	0.59	22	3-603	North Lower St. Johns River	
	0.57	21	9 -100	Halifax River	
	0.43	16	7-300	Lake Harris	
	0.38	14	7-401	Lake Griffin	
	0.35	13	9-200	Matanzas River	
	0.32	12	8-003/4	Orange/Lochloosa lakes	
	0.30	11	3-704	South Lower St. Johns River	
	0.27	10	5-002		
	0.27	0	10-003	S Central Indian River Lagoon	
	0.22	7	3-100	Delatiskaba Divor	
	0.19	7	10-002	N Central Indian Diver Lacoon	
	0.16	6	3-400	Ortega River	
	0.14	5	1-000	Nassau River	
	0.14	5	5-001	Lake Beresford	
	0.14	5	7-500	Eureka Dam	
	0.11	4	3-300	Black Creek	
l	0.11	4	3-501	Trout River	
	0.11	4	4-202	Wekiva River	
	0.11	4	4-403	Lake Monroe	
	0.11	4	9-300	Tolomato River	
	0.08	3	2-002	Lower St. Marys River	
	0.08	3	3-602	Julington Creek	
	0.05	2	3-701	Sixmile Creek	
	0.05	2	4-302	Lake Jesup	
	0.05	2	6-103	St. Johns Marsh	
	0.05	2	6-201	Lake Poinsett	
∥	0.05	2	8-002	Newnans Lake	
	0.03	1	3-200	Etonia Creek	
	0.03	1	3-503	Dunn Creek	
	0.03	1	4-401	Lake Harney	
	0.03	1	4-402	Deep Creek Blue Cuprens Creek	
	0.03	1	6 102	Lake Washington	
	0.03	1	6-204		
ł	0.03	4	7.200	lake Anonka	
	0.03	1	7-402	Marshall Swamp	
	0.00	, o	2-001	Upper St. Marys River	
ļ	0.00	õ	3-502	Broward River	
	0.00	0	3-601	Arlington Creek	
	0.00	0	3-702	McCullough Creek	
	0.00	0	3-703	Deep Creek	
	0.00	0	4-100	Econlockhatchee River	
	0.00	0	4-201	Little Wekiva River	
	0.00	0	4-203	Blackwater Creek	
	0.00	0	4-301	Howell Creek	
	0.00	0	6-101	Fort Drum Creek	
	0.00	0	6-202	Tosahatchee	
	0.00	0	8-001	Florida Ridge	
Ĩ	0.00	0	8-005	Orange Creek	
	0.00	0	8-006	Sweetwater Creek	
	0.00	0	8-007	Hodman Reservoir	

Socioeconomic Significance



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Table 8. Commercial fisheries subcriterion scores

Total	Number	Subbasin	Subbasin Name
Score	of	Number	
	Licenses		······································
1.00	2464	10-001	North Indian River Lanoon
1.00	2464	10-002	N Central Indian River Lacoon
1.00	2464	10-003	S Central Indian River Lagoon
0.69	1711	3-704	South Lower St. Johns River
0.53	1295	5-002	Lake Woodruff
0.53	1295	5-003	Lake George
0.40	995	3-501	Trout River
0.40	995	3-502	Broward River
0.40	995	3-503	Dunn Creek
0.40	995	3-603	North Lower St. Johns River
0.35	873	4-302	Lake Jesup
0.35	873	4-401	Lake Harney
0.35	873	4-402	Deep Creek
0.35	873	4-403	Lake Monroe
0.35	873	5-001	Lake Berestord
0.34	831	9-100	Halifax River
0.34	831	9-200	Matanzas River
0.34	831	9-300	Creasent Lake
0.29	217	7 200	Lake Aponka
0.13	203	1-200	Lake Apopka Nassau Biyor
0.12	200	2-002	Lower St Marve River
0.07	165	8-003/4	Orange/Lochioosa Jakes
0.00	0	2-001	Upper St. Marvs River
0.00	ŏ	3-200	Etonia Creek
0.00	Ō	3-300	Black Creek
0.00	0	3-400	Ortega River
0.00	0	3-601	Arlington Creek
0.00	0	3-602	Julington Creek
0.00	0	3-701	Sixmile Creek
0.00	0	3-702	McCullough Creek
0.00	0	3-703	Deep Creek
0.00	0	4-100	Econlockhatchee River
0.00	0	4-201	Little Wekiva River
0.00	0	4-202	Wekiva River
0.00	0	4-203	Blackwater Creek
0.00	0	4-301	Howell Creek
0.00	0	6-101	Fort Drum Greek
0.00	0	6-102	Blue Cypress Creek
0.00	0	6-103	St. Johns Marsh
0.00	0	6 201	Lake Poinsett
0.00	0	6.202	Tarabatchee
0.00	0	6-202	Duzzla I aka
0.00	0	7.100	Puzzie Lane Dalatlakaha Divor
0.00	0	7-100	Lako Harris
0.00	0	7-401	Lake Griffin
0.00	0	7-402	Marshall Swamp
0.00	0	7-500	Eureka Dam
0.00	ő	8-001	Florida Ridge
0.00	ő	8-002	Newnans Lake
0.00	ō	8-005	Orange Creek
0.00	0	8-006	Sweetwater Creek
0.00	ō	8-007	Rodman Reservoir
	•		



Table 9. Total Economic Importance scores

sadi madal sa sa

Score	Subbasin Number	Subbasin Name
1.00	10-001	North Indian River Lagoon
0.60	5-003	Lake George
0.55	3-603	North Lower St. Johns River
0.52	9-100	Halifax River
0.42	10-003	S Central Indian River Lagoon
0.38	3-704	South Lower St. Johns River
0.35	10-002	N Central Indian River Lagoon
0.35	9-200	Matanzas River
0.34	7-300	Lake Harris
0.02	5-002	Lake Woodrun
0.30	8-003/4	Orango/Loobloose lakes
0.23	3-100	Crescent Lake
0.18	5-001	Lake Beresford
0.17	3-501	Trout River
0.16	4-403	Lake Monroe
0.16	9-300	Tolomato River
0.15	7-100	Palatiakaha River
0.14	1-000	Nassau River
0.13	3-400	Ortega River
0.11	7-500	Eureka Dam
0.11	4-302	Lake Jesup
0.10	3-503	Dunn Creek
0.09	4-401	Lake Harney
0.09	4-402	Deep Creek
0.09	3-300	Black Creek
0.09	4-202	Wekiva River
0.09	2-002	Lower St. Marys River
0.08	3-502	Broward River
0.06	3-602	Julington Creek
0.05	7-200	Lake Apopka
0.04	3-701	Sixmile Creek
0.04	6-103	St. Johns Marsh
0.04	6-201	Lake Poinsett
0.04	8-002	Newnans Lake
0.02	3-200	Etonia Creek
0.02	6-102	Blue Cypress Creek
0.02	6-104	Lake washington
0.02	7 402	Marshell Swamp
0.02	2.001	Unper St Marve River
0.00	3-601	Arlington Creek
0.00	3-702	McCullouch Creek
0.00	3-703	Deep Creek
0.00	4-100	Econlockhatchee River
0.00	4-201	Little Wekiya River
0.00	4-203	Blackwater Creek
0.00	4-301	Howell Creek
0.00	6-101	Fort Drum Creek
0.00	6-202	Tosahatchee
0.00	8-001	Florida Ridge
0.00	8-005	Orange Creek
0.00	8-006	Sweetwater Creek
0.00	8-007	Rodman Reservoir

.



Table 10. Special designations subcriterion scores

209. Q 20

	Score	Subbasin	Subbasin Name
		<u>Number</u>	
	1 00	10-001	North Indian River Lasson
	0.59	5-003	Lake George
	0.42	2-001	Linner St. Marys River
1	0.39	1-000	Nassau River
	0.36	5-002	Lake Woodruff
	0.34	7-500	Eureka Dam
	0.21	7-401	Lake Griffin
	0.20	6-203	Puzzle Lake
	0.20	3-300	Black Creek
	0.19	8-003/4	Orange/Lochioosa lakes
	0.14	6-103	St. Johns Marsh
	0.13	4-402	Deep Creek
- [0.13	7-402	Marshall Swamp
	0.12	9-300	Tolomato River
	0.12	3-100	Crescent Lake
	0.12	6-202	Tosahatchee
	0.09	3-200	Etonia Creek
	0.09	4-202	Wekiva River
	0.08	4-203	Blackwater Creek
	0.08	6-101	Fort Drum Creek
ł	0.07	10-002	N Central Indian River Lagoon
	0.07	6-102	Blue Cypress Creek
	0.07	8-001	Florida Ridge
	0.07	9-100	Halifax River
	0.07	8-007	Rodman Reservoir
	0.06	5-001	Lake Beresford
	0.05	7-100	Palatlakaha River
	0.04	10-003	S Central Indian River Lagoon
	0.04	2-002	Lower St. Marys River
	0.03	9-200	Matanzas River
	0.03	8-002	Newnans Lake
	0.03	3-603	North Lower St. Johns River
	0.03	3-704	South Lower St. Johns River
	0.02	6-104	Lake Washington
	0.01	4-401	Lake Harney
	0.01	6-201	Lake Poinsett
	0.01	3-703	Deep Creek
ł	0.01	7-200	Laке Арорка
	0.01	3-501	I rout Hiver
	0.01	4-403	Lake Monroe
	0.00	4-201	
	0.00	8-005	Drange Creek
	0.00	3-502	Ortoga River
	0.00	3-400	Ortega River
	0.00	3-503	Adinaton Crook
	0.00	3-601	Anington Creek
	0.00	3-002	Sizmila Creek
	0.00	3-701	McCullough Creek
	0.00	4,100	Foonlockhatchee River
ľ	0.00	4-100	Howell Creek
	0.00	4-301	taka lasun
	0.00	7,200	l aka Harris
		8-006	Sweetwater Creek
	L		



Table 11. Ground water recharge areas subcriterion scores

1.00 3-100 Grescent Lake				
1.00 3-200 Elonia Creek				
1.00 4-203 Blackwater Creek				
1.00 4-301 Howell Creek				
1.00 4-302 Lake Jesup				
1.00 4-402 Deep Creek				
1.00 4-403 Lake Monroe				
1.00 5-001 Lake Beresford				
1.00 5-002 Lake Woodruff				
1.00 5-003 Lake George				
1.00 7-100 Palatlakaha River				
1.00 7-200 Lake Apopka				
1.00 7-300 Lake Harris				
1.00 7-401 Lake Griffin				
1.00 7-402 Marshall Swamp				
1.00 7-500 Eureka Dam				
1.00 8-001 Florida Ridge				
1.00 8-003/4 Orange/Lochloosa lakes				
0.00 1-000 Nassau River				
0.00 2-001 Upper St. Marys River				
0.00 2-002 Lower St. Marys River				
0.00 3-300 Black Creek				
0.00 3-400 Ortega River				
0.00 3-501 Trout River				
0.00 3-502 Broward River				
0.00 3-503 Dunn Creek				
0.00 3-601 Arlington Creek	Arlington Creek			
0.00 3-602 Julington Creek	Julington Creek			
0.00 3-603 North Lower St. Johns River	North Lower St. Johns River			
0.00 3-701 Sixmile Creek	Sixmile Creek			
0.00 3-702 McCullough Creek	McCullough Creek			
0.00 3-703 Deep Creek	Deep Creek			
0.00 3-704 South Lower St. Johns River	South Lower St. Johns River			
0.00 4-100 Econlockhatchee River	Econlockhatchee River			
0.00 4-401 Lake Harney				
0.00 6-101 Fort Drum Creek				
0.00 6-102 Blue Cypress Creek				
0.00 6-103 St. Johns Marsh				
0.00 B-104 Lake Washington				
0.00 6-201 Lake Poinsett				
0.00 6-202 losanatchee				
0.00 6-203 Puzzle Lake				
0.00 8-005 Orange Creek				
0.00 8-008 Sweetwater Creek				
0.00 8-007 Rodman Reservoir	Kodman Heservoir			
0.00 9-100 Hamax Hiver	Hailiax Hiver Meteoren Biver			
0.00 9-200 Watdhizas River	Tolometo River			
0.00 40.001 North Indian Biver Lagoon	North Indian River Leason			
0.00 10-001 Noter Indian River Lagoon	North Indian River Lagoon			
0.00 10-002 N Central Indian River Lagoon	N Central Indian River Lagoon			
*1.00=high ground water recharge (10-20 in. per year) in su	b-			
0.00=low or no recharge in subbasin				

Socioeconomic significance A. PUBLIC USE B. ECONOMIC IMPORTANCE DEC. PUBLIC IMPORTANCE 1. special designations 2. ground water recharge areas Ecological significance Need for action

Table 12. Total Public Importance criterion scores

Score	Subbasin	Subbasin Name
	Number	
1.00	10-001	North Indian River Lagoon
0.84	5-003	Lake George
0.61	5-002	Lake Woodruff
0.59	7-500	Eureka Dam
0.46	7-401	Lake Griffin
0.44	8-003/4	Orange/Lochloosa lakes
0.42	2-001	Upper St. Marys River
0.39	1-000	Nassau River
0.38	4-402	Deep Creek
0.38	7-402	Marshall Swamp
0.37	3-100	Crescent Lake
0.34	3-200	Etonia Creek
0.34	4-202	Wekiva River
0.33	4-203	Blackwater Creek
0.32	8-001	Florida Ridge
0.31	5-001	Lake Beresford
0.30	7-100	Palatlakaha River
0.26	7-200	Lake Apopka
0.26	4-403	Lake Monroe
0.25	4-201	Little Wekiva River
0.25	4-301	Howell Creek
0.25	4-302	Lake Jesup
0.25	7-300	Lake Harris
0.20	6-203	Puzzle Lake
0.20	3-300	Black Creek
0.14	6-103	St. Johns Marsh
0.12	9-300	Tolomato River
0.12	6-202	Tosahatchee
0.08	6-101	Fort Drum Creek
0.07	10-002	N Central Indian River Lagoon
0.07	6-102	Blue Cypress Creek
0.07	9-100	Halifax River
0.07	8-007	Rodman Reservoir
0.04	10-003	S Central Indian River Lagoon
0.04	2-002	Lower St. Marvs River
0.03	9-200	Matanzas River
0.03	8-002	Newnans Lake
0.03	3-603	North Lower St. Johns River
0.03	3-704	South Lower St. Johns River
0.02	6-104	Lake Washington
0.01	4-401	Lake Harney
0.01	6-201	Lake Poinsett
0.01	3-703	Deep Creek
0.01	3-501	Trout River
0.00	3-400	Ortega River
0.00	3-502	Broward River
0.00	3-503	Dunn Creek
0.00	3-601	Arlington Creek
0.00	3-602	Julington Creek
0.00	3-701	Sixmile Creek
0.00	3-702	McCullough Creek
0.00	4-100	Econlockhatchee River
0.00	8-005	Orange Creek
0.00	8-006	Sweetwater Creek















ECOLOGICAL SIGNIFICANCE

Ecological significance was composed of two criteria: Natural and Wildlife Significance and Environmental Potential.

CRITERION D—NATURAL AND WILDLIFE SIGNIFICANCE

The Natural and Wildlife Significance criterion was the first of the two ecological significance criteria. The purpose was to assess the unique natural and wildlife value of each subbasin. There were no subcriteria for this criterion.

Data. The Florida Natural Areas Inventory (FNAI), a statewide data base for ecological information, was consulted to locate species and communities which are endangered, threatened, or unique in some way. The FNAI was established jointly by DNR and the Nature Conservancy, a non-profit conservation organization. The inventory contains information on "the status and distribution of exemplary natural communities, rare and endangered plant and animal species, and other significant natural features" (FNAI and DNR 1990).

This criterion emphasized the elements which contribute to biotic diversity. It was complementary to both the *Public Importance* criterion, which accounted for protected areas, and the *Environmental Potential* criterion, which accounted for the magnitude of surface water resources.

Methods. District data was retrieved from the FNAI in September 1990. The retrieval included all occurrences of:

- Endangered plants, animals, and communities
- Threatened plants, animals, and communities
- Plants, animals, and communities of special concern
- Manatee occurrence sites
- Bird rookeries

The data retrieval included the latitude and longitude of each occurrence. However, when the occurrence covered a broad area, such as for a wide-ranging mammal or a community, the location of the center of the occurrence was provided. With this information, the subbasin in which each occurrence was located could be determined (Appendix Table C1).

In order to compute an occurrence total for each subbasin, the following weights were used

- 3 x (number of endangered species and communities)
- 2 x (number of threatened species or communities)
- 1 x (number of species and communities of special concern)
- 3 x (number of manatee occurrence sites)
- 2 x (number of bird rookeries)

The subbasin with the largest total was given a score of 1.00. The score for all other subbasins was calculated by dividing the subbasin total by the largest total.

Results. The Lake George subbasin (5-003), which supports a large number of threatened species and communities, received a score of 1.00 (Table 13). The North Indian River Lagoon subbasin (10-001) was second (0.80), with an abundance of both endangered and threatened species and communities. Etonia Creek (3-200), the Florida Ridge (8-001), and the Eureka Dam segment of the Ocklawaha River (7-500) subbasins were third, fourth, and fifth, with scores of 0.46, 0.45, and 0.42 respectively (Figure 12).

CRITERION E—ENVIRONMENTAL POTENTIAL

Environmental Potential was the second of the two ecological significance criteria. The purpose of this criterion was to evaluate the general environmental potential of the water resources in each subbasin. Subbasins which harbor an abundance of surface water and wetlands are more ecologically significant from a water resources management perspective, particularly when they contain the headwaters of larger systems. Environmental potential, therefore, was measured as the actual amount of surface water

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resources available, weighted by location within the overall drainage scheme of the District. It included lakes, rivers, estuaries, and wetlands. There were no subcriteria for this criterion.

Data. For this criterion, detailed Districtwide wetlands and waterbodies data were needed. The District's wetlands and land use mapping projects were in progress, but were not complete in time for this analysis. Therefore, a U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory map of Florida was used (USFWS 1985). This 1:500,000 scale map was compiled from a series of high altitude aerial photographs taken between 1977 and 1980. Six habitat categories were shown:

- deepwater
- estuarine unvegetated
- estuarine vegetated
- freshwater forested
- freshwater herbaceous
- upland

Methods. The first step was to determine the total acreage of water and wetlands in each subbasin. The USFWS wetlands map was digitized and imported into the District's Geographic Information System (GIS). This digital map was then overlaid onto the subbasin boundaries, and the GIS software was used to calculate the acreage of each habitat type in each subbasin (Appendix Table C2). Subsequently, the total acreage of water and wetlands in each subbasin was determined by adding the acreage of all the habitats except uplands.

The next step was to determine the location of each subbasin relative to the larger drainage system with which it is associated. Each subbasin was designated as one of the following: headwaters, estuarine, middle basin, lower basin, or isolated (Figure 13). Weights were then assigned to each subbasin based on its relative location:

- weight of 4—headwaters
- weight of 3—estuarine or middle subbasin

- weight of 2—lower subbasin
- weight of 1—isolated subbasin

Environmental Potential was calculated by multiplying the water and wetland acreage in each subbasin by the subbasin location weight. The subbasin with the highest resulting weighted acreage was given a score of 1.00. All other subbasin scores were calculated by dividing the weighted acreage by the highest weighted acreage.

Results. The Crescent Lake subbasin (3-100) had a score of 1.00 (Table 14, Figure 14). This subbasin contains extensive freshwater forested wetlands, as defined by the USFWS national wetlands inventory, as well as the approximately 16,000 acre Crescent Lake. The North Indian River Lagoon subbasin (10-001), with its large estuary and related wetlands, had a score of 0.93. The St. Johns Marsh subbasin (6-103), which is dominated by wetlands, scored 0.92.

Other high-scoring subbasins included the Nassau River (1-000), which has a complex system of streams and riparian wetlands; Blue Cypress Creek (6-102), in the Upper St. Johns River Basin; and the Upper St. Marys River (2-001), which contains riparian wetlands as well as the larger bays and swamps common in the Osceola National Forest area (including Pinhook Swamp and Big Gum Swamp). These subbasins had scores of 0.74, 0.71, and 0.66 respectively.



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Table 13. Natural and Wildlife Significance criterion scores

Sum	Score Subbasin		Subbasin Name		
_	<u>Number</u>				
304	1.00	5-003	Lake George		
243	0.80	10-001	North Indian River Lagoon		
139	0.46	3-200	Etonia Creek		
137	0.45	8-001	Florida Ridge		
128	0.42	7-500	Eureka Dam		
115	0.38	3-300	Black Creek		
105	0.35	10-003	S Central Indian River Lagoon		
97	0.32	9-100	Halifax River		
90	0.30	10-002	N Central Indian River Lagoon		
88	0.29	7-300	Lake Harris		
88	0.29	7-401	Lake Griffin		
87	0.29	8-003/4	Orange/Lochioosa Lakes		
77	0.25	2-001	Upper St. Marys River		
70	0.25	4-403			
72	0.24	4-203	Blackwater Creek		
70	0.23	5-002	Lake woodrum		
68	0.22	3-603	North Lower St. Johns River		
50	0.22	2-002	Lower St. Marys River		
09 57	0.19	9-200	Matarizas niver		
57 55	0.19	7 100	Puzzie Lake Bolotiskoho Divor		
55 47	0.18	7-100	South Lower St. Johns Diver		
47	0.15	1 000	Noscou Divor		
40	0.15	7-200	i ske Anonka		
40	0.15	5-001	Lake Beresford		
42	0.14	3-100	Crescent Lake		
40	0.10	4-402	Deen Creek		
36	0.10	3-701	Six Mile Creek		
34	0.11	4-202	Wekiya River		
34	0.11 8-002		Newnans Lake		
33	0.11 8-005		Orange Creek		
32	0.11 8-007		Rodman Reservoir		
27	0.09 4-302		Lake Jesup		
26	0.09	9-300	Tolomato River		
25	0.08	4-100	Econlockhatchee River		
25	0.08	6-103	St. Johns Marsh		
25	0.08	7-402	Marshall Swamp		
24	0.08	3-602	Julington Creek		
24	0.08	6-102	Blue Cypress Creek		
21	0.07	6-201	Lake Poinsett		
21	0.07	8-006	Sweetwater Creek		
16	0.05	6-202	Tosahatchee		
13	0.04	4-401	Lake Harney		
8	0.03	4-301	Howell Creek		
5	0.02	3-703	Deep Creek		
3	0.01	3-400	Ortega River		
2	0.01	3-702	McCullough Creek		
2	0.01 4-201		Little Wekiva River		
2	0.01 6-101		Fort Drum Creek		
2	0.01	6-104	Lake Washington		
1	0.00	3-501	Trout River		
1	0.00	3-601	Arlington Creek		
0	0.00	3-502	Broward River		
0	0.00	3-503	Dunn Creek		



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Acres	SLD*	Acres x SLD	Score	Subbasin Number	Subbasin Name
178,133	4	712,533	1.00	3-100	Crescent Lake
221,947	3	665,841	0.93	10-001	North Indian River Lagoon
163,302	4	653,210	0.92	6-103	St. Johns Marsh
130,995	4	523,980	0.74	1-000	Nassau River
126,673	4	506,692	0.71	6-102	Blue Cypress Creek
118,330	4	473,320	0.66	2-001	Upper St. Marys River
131,424	3	394,271	0.55	9-100	Halifax River
93,456	4	373,822	0.52	7-100	Palatlakaha River
85,585	4	342,340	0.48	3-300	Black Creek
109,384	3	328,152	0.46	5-003	Lake George
96,164	3	288,492	0.40	2-002	Lower St. Marys R.
87,249	3	261,747	0.37	3-603	North Lower St Johns River
62,302	4	249,209	0.35	3-200	Etonia Creek
82,623	3	247,868	0.35	6-201	Lake Poinsett
78,854	3	236,562	0.33	5-002	Lake Woodruff
77,222	3	231,666	0.33	7-300	Lake Harris
112,609	2	225,217	0.32	3-704	South Lower St.Johns River
52,640	4	210,562	0.30	7-200	Lake Apopka
52,412	4	209,647	0.29	4-402	Deep Creek
48,516	4	194,062	0.27	6-101	Fort Drum Creek
63,900	3	191,699	0.27	6-202	Tosahatchee
59,176	3	177,529	0.25	6-203	Puzzle Lake
43,222	4	172,886	0.24	4-203	Blackwater Creek
50,463	3	151,389	0.21	7-500	Eureka Dam
48,558	3	145,674	0.20	7-401	Lake Griffin
34,813	4	139,253	0.20	4-100	Econlockhatchee River
44,343	3	133,028	0.19	10-002	N Central Indian River Lagoon
32,856	4	131,425	0.18	4-202	Wekiva River
41,803	3	125,409	0.18	8-003/4	Orange/Lochloosa lakes
41,079	3	123,238	0.17	10-003	S Central Indian River Lagoon
40,691	3	122,072	0.17	9 -200	Matanzas River
29,601	4	118,403	0.17	3-602	Julington Creek
35,433	3	106,299	0.15	4-403	Lake Monroe
35,418	3	106,254	0.15	8-005	Orange Creek
25,866	4	103,463	0.15	8-002	Newnans Lake
24,731	4	98,923	0.14	3-701	Sixmile Creek
30,492	3	91,476	0.13	4-302	Lake Jesup
23,810	3	71,431	0.10	7-402	Marshall Swamp
23,486	3	70,459	0.10	9-300	Tolomato River
16,449	4	65,797	0.09	3-400	Ortega River
13,660	4	54,639	0.08	3-501	Trout River
17,405	3	52,216	0.07	5-001	Lake Beresford
11,813	4	47,253	0.07	4-301	Howell Creek
15,515	3	46,544	0.07	4-401	Lake Harney
13,744	3	41,231	0.06	6-104	Lake Washington
13,646	3	40,939	0.06	8-007	Rodman Reservoir
10,185	4	40,741	0.06	8-006	Sweetwater Creek
9,721	4	38,883	0.05	4-201	Little Wekiva River
7,819	4	31,276	0.04	3-703	Deep Creek
22,505	1	22,505	0.03	8-001	Florida Ridge
4,902	4	19,610	0.03	3-503	Dunn Creek
4,649	'4	18.596	0.03	3-702	McCullough Creek
4,374	4	17,495	0.02	3-502	Broward River
3,710	4	14.839	0.02	3-601	Arlington Creek
* SI D-4	ubbasi	in location	designatio	n:	
4-heady	4-headwaters: 3-middle or estuarine subbasin: 2-lower subbasin: 1-isolated				

Table 14. Environmental Potential criterion scores





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NEED FOR ACTION

Need for action was composed of two criteria: *Degree of Impairment* and *Degree of Endangerment*. Together they indicated which subbasins were most in need of management action, either restoration or preservation. When combined with the socioeconomic and ecological criteria, they provided the required management emphasis in the significance analysis.

Each subbasin was evaluated based on all subcriteria within *Degree of Impairment* and *Degree of Endangerment*. A weighted scheme was developed to prevent a low *Degree of Impairment* score for a subbasin from negating a high *Degree of Endangerment* score and vice versa. In addition, the weighted scheme would prevent subbasins with mid-range scores from becoming highest ranked. More information about each weighted formula can be found on pages 61 and 70.

CRITERION F—DEGREE OF IMPAIRMENT

The first need for action criterion was *Degree of Impairment*. The *Degree of Impairment* criterion directly addressed the statutory requirement that water management districts determine which surface waters require restoration (Section 373.453, *Florida Statutes* (F.S.) and Section 17-43.030, F.A.C.). In this analysis, need for restoration was equated with degree of impairment, which was measured using water quality and general subbasin conditions. The degree of impairment criterion contains many of the water quality criteria listed in DER's guidelines for development of the prioritized waterbody list.

The *Degree of Impairment* criterion was composed of six subcriteria:

- 1. Water quality
- 2. *Point source discharges*—a measure of direct pollution inputs to waterbodies

- 3. Fish kills—an indicator of persistently poor water quality
- 4. Aquatic plant control—an indicator of the degree to which human use of the resource and native habitat are harmed by aquatic plant growth
- 5. "Meets designated use" assessments—the degree to which the use of a waterbody has been impaired by poor water quality
- 6. *Land use*—a measure of the degree of urban development in the watershed

The *Degree of Impairment* score was derived from the scores for these six subcriteria.

Subcriterion F1—Water Quality

The goal in using this subcriterion was to establish which subbasins had the most impaired water quality. Water quality was measured using standard water quality indexes. A water quality index is the integration of several water quality parameters into a single variable which serves as a relative measure of water quality. One example is the trophic state index (TSI), which is applied to lakes and estuaries and is a measure of the degree of eutrophication, or nutrient enrichment, of a waterbody. The stream water-quality index (WQI) developed by DER is applied to rivers as an indicator of general water quality conditions.

The *water quality* subcriterion was used in two ways: as a direct measure of the degree of impairment and as a screen to determine which subbasins would receive a total score for the *Degree of Impairment* criterion. Only those subbasins which had indexes reflecting poor water quality received a score for the *Degree of Impairment* criterion as a whole.

Data. The primary source of water quality data was the 1990 DER *Florida water quality assessment*, 305(*b*) *technical appendix* (Hand et al. 1990). This report used 1980 through 1989 data to calculate TSIs for lakes and estuaries and WQIs for rivers. The TSI was developed specifically for Florida lakes (Huber et al. 1982), and the WQI was developed by DER as a means to compare river water quality throughout the state. The WQI summarizes data on water clarity, dissolved oxygen, oxygen demanding substances, nutrients, bacteria, and macroinvertebrate diversity (Hand et al. 1990).

Other data sources included the District scientific data base, SWIM documents, and various other reports. All sources are listed in Appendix Table D1.

Methods. TSI and WQI data were compiled from the existing sources, or, in some instances, calculated from raw data to ensure complete subbasin coverage. Appendix Table D1 contains the TSIs and WQIs for individual waterbodies.

For each subbasin, acres-weighted average TSIs were calculated for lakes and estuaries, and river mile-weighted average WQIs were calculated for rivers. This resulted in one, two, or three average values for each subbasin, depending on the types of surface water it contained (Appendix Table D2).

Subbasins with average values indicative of good water quality were assigned a score of zero for this subcriterion. For the remaining subbasins, the average TSIs and WQIs were converted to scores based on a common scale, and then combined to create one score for each subbasin. A detailed description of these methods is in the Appendix on page 202. Those subbasins with the worst overall water quality (highest TSIs and WQIs) received the highest scores. The subbasin with the worst water quality was given a score of 1.00. All other subbasin scores were calculated by dividing the total water quality score by the highest water quality score.

Results. Nineteen of the 55 subbasins had poor water quality as defined by this analysis (Table 15). The Lake Apopka subbasin (7-200), in which Lake Apopka is the primary waterbody, had the poorest water quality as measured by the water quality indexes. The Lake Jesup subbasin (4-302) also scored very high, with 0.82.

However, the next highest-scoring subbasin, Lake Monroe (4-403), had a much lower score of 0.31. As measured by this subcriterion, Lakes Apopka and Jesup were considerably more impaired than the other subbasins.

Due to the nature of the analysis, some subbasins containing degraded waterbodies, such as Lakes Dora and Beauclair in the Lake Harris subbasin (7-300), did not score very high because other waterbodies within the same subbasin lowered the subbasin average. This analysis identified subbasins dominated by impaired surface waters.

The analysis also emphasized shortcomings inherent in the TSI and WQI methods. If a waterbody is severely impacted, but the excess nutrients are stored in extensive areas of macrophytes, the water quality index may not reflect poor conditions. Also, since the TSI was not specifically developed for estuarine waters, its application to them is not entirely appropriate. There is currently, however, no acceptable substitute.

Subcriterion F2—Point Source Discharges

One of the criteria recommended by DER for determining the priority ranking of surface waters was an assessment of the nature and extent of pollution loading from point sources. This subcriterion was used to assess point source discharges, including industrial, domestic waste, and agricultural discharges, in each subbasin.

Data. Discharge data were supplied by DER and the District. DER issues permits for domestic waste, industrial, and certain agricultural point source discharges, and maintains the permit information in computer files. The District regulates point source discharges from pumped agricultural drainage systems. However, discharges from gravity-drained agricultural networks were not required to have permits; as a result, related discharge information was not available. **Methods.** A complete list of permitted point source discharges to surface waterbodies in the District was compiled from DER and District records. The number of discharges in each subbasin was determined using outfall location information (Appendix Table D5).

A simple unweighted count was used for several reasons. The permitted discharges were of widely varying natures. Domestic discharges received various levels of treatment while other types received none. The pollutants present in the wastestreams were very different, and complete data on the actual pollutants discharged were not available. Also, the volume of discharge does not necessarily reflect the quality of the discharge or the impact it has on the waterbody. For these reasons, a simple approach was deemed best for this analysis.

The subbasin with the maximum number of surface water discharges was given a score of 1.00. The scores for all other subbasins were calculated by dividing the number of discharges in each subbasin by the maximum number of discharges.

Results. The greatest concentration of point source discharges in the District is in Duval County. No other area exhibited a similar density of permitted point source discharges (Table 16). The highest-scoring subbasins were the Ortega River (3-400) and the North Lower St. Johns River (3-603), which scored 1.00 and 0.97 respectively. The next two subbasins, with intermediate scores, were also in the lower basin: Arlington Creek (3-601) with 0.56 and Trout River (3-501) with 0.47.

A limitation of this analysis was that the true effect of agricultural discharges was not adequately assessed, since permits were not required on gravity-drained agricultural systems. Also, in other subbasins such as Lake Apopka, a relatively small number of point source discharges are associated with significant water quality changes. Other subcriteria, such as *water quality*, more adequately assessed impairment in those subbasins. However, the *point source discharge* subcriterion was better for assessing

impairment in estuarine subbasins, which are not well characterized by water quality indexes.

Subcriterion F3—Fish Kills

Fish kills can indicate persistently poor water quality conditions such as low dissolved oxygen levels associated with nutrient enrichment. With this subcriterion, subbasin impairment was measured using the frequency and severity of fish kills which occurred as a result of poor water quality.

Data. The GFC lists occurrences of freshwater fish kills in the annual fish management reports issued by each GFC district office (GFC 1987a, 1987b, 1988a, 1988b, 1989a, and 1989b). These reports contain information on the location, date(s), severity (heavy, moderate, or light), and cause (if known) of each occurrence.

In estuarine waters, county agencies collect fish kill data, in particular Duval County's Bio-Environmental Services Division (Duval County 1990) and Brevard County's Office of Natural Resources Management (Brevard County 1990).

Methods. Fish kills which occurred during the 3-year period of July 1, 1986 through June 30, 1989 were included in the analysis. GFC staff reviewed freshwater fish kills (GFC 1990) and determined which kills were symptomatic of poor water quality conditions. Fish kills caused by chemical spills, spawning stress, and cold weather were eliminated from consideration. The same was done for the estuarine kills, using the causes cited by the reporting agency. Appendix Table D6 lists the fish kills included in this analysis. The majority of fish kills were in freshwater subbasins (Appendix Table D7).

To calculate subbasin scores for this subcriterion, the numbers of fish kill occurrences were weighted according to severity and then summed.

- weight of 3—fish kills considered heavy relative to the waterbody in which they occurred
- weight of 2—fish kills considered moderate relative to the waterbody in which they occurred
- weight of 1—fish kills considered light relative to the waterbody in which they occurred

Totals were calculated, and the subbasin with the maximum total was given a score of 1.00. The scores for all other subbasins were calculated by dividing the total number of points for fish kills by the maximum number of points.

Results. The subbasins with the highest scores were Lake Jesup (4-302), Lake Poinsett (6-201), Lake Harris (7-300), and the Marshall Swamp segment of the Ocklawaha River (7-402) (Table 17), with scores of 1.00 each. In general, Ocklawaha River subbasins and Middle and Upper St. Johns River subbasins were most prone to fish kills caused by persistently poor water quality.

Subcriterion F4—Aquatic Plant Control

The extensive invasion of waterbodies by nuisance aquatic vegetation, which often results from nutrient enrichment, causes habitat degradation, loss of important native species, and reduced navigability.

This subcriterion focused on aquatic plant control activities, which were seen as both an indicator of impairment and a measure of perceived importance, since the areas most important to the public have the highest priority for action. Subbasin scores were directly related to the extent of aquatic plant control activities—the more activity, the higher the score.

Data. DNR funds the majority of aquatic plant control activities performed by the District. Detailed data on the acres of aquatic plants controlled (by spraying or mechanical means) in each waterbody are available through DNR's Bureau of Aquatic Plant Management. The U.S. Army Corps of Engineers (COE) maintains the mainstem of the St. Johns River and its instream lakes

for navigation purposes. In addition, the District has recently funded and implemented plant control activities in the Upper St. Johns River Basin. In all cases, the acreage of aquatic plants treated was available (DNR 1989d; COE 1990).

Methods. Aquatic plant control data were compiled for the three years between October 1, 1986 and September 30, 1989. Appendix Table D8 contains a complete list by waterbody. For each of the three years, the total acres of surface water treated in each subbasin was determined (Appendix Table D9).

To determine scores for this subcriterion, the acreage sprayed during each of the three years were averaged. The subbasin with the maximum average was given a score of 1.00. The scores for all other subbasins were calculated by dividing the subbasin averages by the maximum average.

Results. The Orange/Lochloosa Lake subbasin (8-003/4), with an average of 1,977 acres of aquatic plants controlled during the last three years, scored 1.00 (Table 18). The next five subbasins with scores were from the main stem of the St. Johns River: in the vicinity of Lake George (5-002 and 5-003) or in the Upper St. Johns River Basin (6-202, 6-203, and 6-102).

Subcriterion F5---"Meets Designated Use" Assessments

In this subcriterion, a subbasin was considered impaired if its water quality did not meet the standards set for its designated uses. DER classifies waterbodies in Florida by their intended use, from public water supply (Class I) to navigation and industrial use (Class V). Water quality standards are increasingly stringent from Class V to Class I. The majority of the waterbodies in the District are Class III, which is intended for recreation and the propagation and management of fish and wildlife.

Data. A component of the DER 305(b) Florida water quality assessments (Hand et al. 1990) is the *meets designated use* determination. DER determines whether or not a waterbody meets its designated use based on current water quality conditions and

other factors. The determination is listed as yes, partial, no, or unknown, and reflects the degree to which the waterbody has been impaired.

Methods. There were four steps involved in this assessment.

- Step 1—For each District waterbody included in the 305(b) report (Hand et al. 1990), the meets designated use (MDU) determination was noted (Appendix Table D1). These designations were then equated with numbers: no = 3, partial = 2, and yes = 1.
- Step 2—For each subbasin, one, two, or three area-weighted averages were calculated from the individual waterbody numbers: one average for estuaries, one for lakes, and one for rivers (weighted by river mile) (Appendix Table D10).
- Step 3—The averages were then combined into one value for each subbasin, using the method described in the Appendix on page 204, step 5 (water quality indexes methods) and Appendix Table D10.
- Step 4—The subbasin with the maximum average value was given a score of 1.00 for the subcriterion. The scores for all other subbasins were calculated by dividing the subbasin average by the maximum average.

Results. The Little Wekiva River subbasin (4-201) had the highest score, 1.00; none of its waterbodies met the designated Class III use (Table 19). In the next four subbasins with high scores, the primary waterbody did not meet its designated uses, but other waterbodies within the subbasin met or partially met their designated uses. These subbasins were: Lake Apopka (7-200), Lake Monroe (4-403), Lake Jesup (4-302), and the North Lower St. Johns River (3-603), with scores of 0.95, 0.91, 0.89, and 0.89 respectively. Other areas with high scores for this subcriterion included Upper Ocklawaha River subbasins (7-401, 7-300), the Econlockhatchee River (4-100), coastal subbasins (9-100, 10-001, 10-003), and many Lower St. Johns River subbasins.

Subcriterion F6—Land Use

In this subcriterion, impairment was equated with the degree of urban development (residential, commercial, and industrial land uses). In the previous impairment subcriteria conditions in the waterbodies were examined. With this subcriterion, the watershed was examined, since the degree of development in the watershed has a great impact on water quality.

Data. Although complete and detailed land use information was being compiled by the District, the only source of Districtwide data available in time for use in this analysis was the Florida Summary Mapping System (FSMS). This land-use data base and software package (ARMASI 1990) was developed using the Florida Department of Revenue tax tapes, which are compiled from information supplied by county tax assessors.

Each parcel assessed for tax purposes is assigned a land use code by the county tax assessor's office. There are 100 land use codes divided among seven general categories: residential, commercial, industrial, agricultural, governmental, institutional, and miscellaneous. In the FSMS data base, this parcel information is aggregated by township, range, and section. The data resolution, therefore, is the size of a section—one square mile. The available data included the acreage of the various parcels recorded in each section and their associated land use codes.

Variations in the land use coding methods used by different county tax assessors precluded the separation of silviculture from other forms of agriculture. Because of this, impairment could not be equated with the degree of development, except as the degree of urban development. This shortcoming will be corrected in the next iteration of the SWIM priority planning process, when the District land-use data base is complete.

Methods. Subbasin scores were derived using 1988 FSMS land use data and the following calculations:

- Step 1—The total acreage in each section of each of the seven general land use categories was calculated.
- Step 2—Using the District's GIS software to relate sections to subbasins, the total acreage in each subbasin for each of the seven land use categories was calculated.
- Step 3—Urban land use in each subbasin was calculated by adding the residential, commercial, and industrial acreages (Appendix Table D11).
- Step 4—The fraction of each subbasin's area occupied by urban development was calculated by dividing the acreage of urban land use by the total acreage of all seven land uses (Appendix Table D11).
- Step 5—Impairment was considered to be directly related to degree of development. Therefore, the subbasin with the largest fraction of its area devoted to urban land uses was given a score of 1.00. The scores for all other subbasins were calculated by dividing the fraction of urban development by the largest fraction.

Results. As expected, subbasins within the metropolitan areas of Jacksonville and Orlando had the highest scores for this subcriterion (Table 20). The Arlington Creek subbasin (3-601), located in the Jacksonville area, was the most densely developed subbasin in the District, according to the FSMS data base. Residential, commercial, and industrial land uses covered 92 percent of its area. Among the Orlando area subbasins, the Little Wekiva River (4-201) and Howell Creek (4-301) were the most densely developed, followed by Lake Jesup (4-302) and Lake Monroe (4-403), with scores of 0.82, 0.76, 0.60, and 0.58 respectively. Some subbasins with large urban areas, such as the Halifax River subbasin (9-100), which contains the Daytona Beach area, did not score as high (0.28) since the development is highly localized within a largely undeveloped subbasin.

Combining the Subcriteria Scores

Methods. The first subcriterion, *water quality*, had a dual function. First, it served as a filter: only subbasins which had a nonzero score for the *water quality* subcriterion were considered impaired and were subsequently included in the overall impairment criterion scoring. Subbasins which had a score of zero for the *water quality* subcriterion were assigned a zero for the impairment criterion as a whole. Second, the *water quality* subcriterion was the primary contributor to the total *Degree of Impairment* score.

For those subbasins with a nonzero *water quality* subcriterion score, the total *Degree of Impairment* score was calculated using the following weighted formula:

- $3 \times (water quality score)$
- + 1 x (point source discharges score)
- $+ .5 \times (fish kills score)$
- $+ .5 \times$ (aquatic plant control score)
- + 1 x ("meets designated use" assessment score)
- $+ 1 \times (land use score)$
- = Degree of Impairment score

The *water quality* subcriterion was given a weight of three in response to its primary role in the *Degree of Impairment* criterion. The *fish kills* and *aquatic plant control* subcriteria were given a reduced weight because they are primarily applicable to freshwater systems, and are not truly Districtwide measures.

Subbasin totals were calculated using the above formula. They were then adjusted to maintain the zero to one scoring convention, with the highest total given a score of 1.00 for the criterion.

Results. Nineteen of the 55 subbasins were impaired based on the criteria used in this analysis (Table 21, Figure 15). The majority of impaired subbasins were located in one of three major basins: the Middle St. Johns River, the Ocklawaha River, and the

Lower St. Johns River. Each basin contained four impaired subbasins.

The Lake Jesup (4-302) and Lake Apopka (7-200) subbasins were significantly more impaired than any other subbasin in the District; both had total scores of 1.00. Lake Jesup had high *water quality* (0.82), *fish kills* (1.00), and *meets designated use* (0.89) scores and an intermediate *land use* score (0.60) (Figure 16). Lake Apopka had high *water quality* (1.00) and *meets designated use* (0.95) scores.

There were three subbasins with intermediate total scores. Lake Monroe (4-403), with a total score of 0.59, had a high *meets designated use* score (0.91) and intermediate *land use* (0.58) and *water quality* (0.31) scores. The North Lower St. Johns River (3-603) and Ortega River (3-400) subbasins, with total scores of 0.56 and 0.54 respectively, had a different score distribution than the previous three subbasins: the *point source discharges* (0.97 and 1.00) scores replaced the *water quality* (0.01 and 0.08) scores as a primary contributor. The *meets designated use* (0.89 and 0.63) and *land use* (0.57 and 0.54) scores were also important.

CRITERION G—DEGREE OF ENDANGERMENT

The second need for action criterion was Degree of Endangerment. The Degree of Endangerment criterion was used to address the statutory requirement that water management districts determine which surface waters require conservation (Section 373.453, F.S. and Section 17-43.030, F.A.C.). In this analysis, need for conservation was equated with the degree of endangerment. An endangered subbasin was defined as one wherein the water quality is fair or good but which is at risk of deterioration due to changes in the watershed. Endangerment was measured by water quality and by watershed parameters such as population growth and density and development pressure.

The *Degree of Endangerment* criterion included some of the same subcriteria used in *Degree of Impairment*. However, the methods of scoring, or the valuations placed on the subcriteria, were

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different. The *Degree of Endangerment* criterion consisted of the following five subcriteria:

- 1. Water quality
- 2. Land use—a measure of the degree of urban development in the watershed
- 3. *Population growth—*a measure of future development pressures
- 4. *Population density*—a supplement to population growth, to refine the measurement of development pressures
- 5. *Point source discharges*—a measure of direct pollution inputs to waterbodies

The *Degree of Endangerment* score was derived from the scores for these five subcriteria.

Subcriterion G1—Water Quality

The goal of this subcriterion was to establish which subbasins had the best water quality. It utilized the same data and general methodology as the *water quality* subcriterion in *Degree of Impairment* (see page 51), but had opposite scoring emphasis.

This subcriterion also served as a screen to determine which subbasins would receive an overall score for the endangerment criterion. Only those subbasins with indexes reflecting good water quality received a score for this subcriterion and the endangerment criterion as a whole.

Data. The data sources are the same as those identified on page 51.

Methods. The methods for this analysis were identical to those described on page 52, with one exception: in this analysis, the highest scores were given to subbasins with the best water

quality, whereas for the *Degree of Impairment* criterion, the highest scores were given to subbasins with the worst water quality.

Subbasins with average values indicative of poor water quality were assigned a score of zero for this subcriterion. For the remaining subbasins, the average TSIs and WQIs were converted to scores based on a common scale, and then combined to create one score for each subbasin. A detailed description of these methods is in the Appendix on page 202. Those subbasins with the best overall water quality (lowest TSIs and WQIs) received the highest scores. The subbasin with the best overall water quality was given a score of 1.00. All other subbasin scores were calculated by dividing the total water quality score by the highest water quality score.

Results. Forty of the 55 subbasins had good water quality as defined by this analysis (Table 22). The subbasin with the highest score was Orange Creek (8-005), which is tributary to Rodman Reservoir. This subbasin, which had the lowest average WQI in the District, contained two rivers with WQIs indicative of very good water quality: Orange Creek and Cabbage Creek. There was also good water quality among lakes in the subbasin, although the fraction of lake surface area sampled was insufficient to include the lake TSI data in the score calculations (Appendix, page 202).

Two other subbasins scored relatively high: Rodman Reservoir (8-007) and Black Creek (3-300), with 0.78 and 0.77 respectively. The Rodman Reservoir subbasin scored well for two reasons: the Ocklawaha River downstream of the reservoir is part of the subbasin, and it had a very low WQI. Rodman Reservoir itself also had a very low TSI, indicative of only minor nutrient enrichment of the water column. However, the reservoir is plagued by excessive aquatic plants, which act as a nutrient sink. This suggests that the reservoir is actually impaired. This result illustrates one of the shortcomings of applying the TSI approach to this analysis. The Black Creek subbasin score is less questionable. The creek and the majority of its tributaries have good water quality.

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Subbasins with the highest intermediate scores included Eureka Dam (7-500), the Palatlakaha River (7-100), and the Upper St. Marys River (2-001), with 0.58, 0.52, and 0.51 respectively. The Eureka Dam subbasin is in the lower Ocklawaha River. It contains many low-nutrient lakes and the segment of the Ocklawaha River downstream of its confluence with the Silver River.

Some subbasins, such as the North Lower St. Johns River (3-603) and Lake Monroe (4-403), had both good water quality as defined in this subcriterion, and poor water quality as defined in the *Degree of Impairment water quality* subcriterion. This is because different surface water components of each subbasin, such as lakes and rivers, had different water quality. However, a subbasin in which all the components had good water quality would score higher for this subcriterion than one with mixed water quality.

Subcriterion G2—Land Use

Land use was used to allocate points to subbasins in which urbanization is already significant but not yet prevalent. Subbasins which have only minor levels of development were considered less endangered. Those subbasins with moderate levels of development were considered to be the most endangered because this is where additional development is likely and where it would cause the greatest harm. Subbasins that are predominantly urban, such as those which had the highest scores for the *land use* subcriterion in *Degree of Impairment*, are not endangered since little additional development is possible.

Data. The accuracy, format, scale, projection dates, and availability of future land use projections by counties and municipalities vary widely throughout the District, precluding Districtwide application. As a result, the same land use data that was used in the *Degree of Impairment* analysis (see page 59) was used for *Degree of Endangerment*, but in a different manner.

Methods. The goal of the analysis was to allocate the highest points to those subbasins with moderate levels of development.

The pertinent information was the fraction of each subbasin occupied by urban land uses (see Appendix Table D11). The methods by which these numbers were calculated are identified on page 59.

Urban development occupied 70 percent or more of the surface area of three subbasins (Table 20). The remaining subbasins were 55 percent or less developed; the more developed of these were located at the edges of high-growth urban areas (i.e., Orlando and Jacksonville).

The subbasin with 55 percent of its area occupied by urban development was given the highest score of 1.00, while the scores for those with lower levels of development were calculated by dividing the percent development by 55 percent. The three subbasins with higher levels of urban development were given a score of 0.00 for this subcriterion.

Results. Subbasins with the highest *land use* scores were Lake Jesup (4-302), Lake Monroe (4-403), the North Lower St. Johns River (3-603), North Central Indian River Lagoon (10-002), and Ortega River (3-400), with 1.00, 0.97, 0.96, 0.92, and 0.90 respectively (Table 23). In general, subbasins located in the Orlando, Jacksonville, or coastal areas had the highest scores.

Subcriterion G3—Population Growth

The third component of *Degree of Endangerment* was *population* growth. This subcriterion and the next, *population density*, were used to measure the stress placed on waterbodies by growing populations. In this analysis, the scoring was based on rates of population growth, with higher growth rates assumed to represent greater potential for endangerment.

Data. The District's Division of Policy and Planning developed estimates of population growth rates for each of the ten major drainage basins in the District, using data supplied by the Bureau of Economic and Business Research at the University of Florida

(Smith and Bayya 1990). The growth rates were calculated for the period 1989 through 2010 (Appendix Table D12).

Methods. The population growth rates were estimated for major basins only; the data did not support differentiation between the subbasins in each basin. For expediency, subbasin population growth rates were assumed to be identical to the growth rate for the major basin in which each was located.

The subbasins with the highest projected population growth rate were given a score of 1.00. The scores of all other subbasins were calculated by dividing the subbasin growth rate by the maximum growth rate.

Results. Coastal subbasins (9- and 10-) had the largest projected population growth for the years 1989 through 2010 and, therefore, the highest score for this subcriterion (Table 24). Coastal areas were closely followed by subbasins in the Upper St. Johns River Basin, which adjoins the Indian River Lagoon Basin. Much of this development may be overflow development from the adjacent Indian River Lagoon Basin.

In general, growth rates and corresponding scores were fairly high throughout the District. The lowest rates were in the northern portion of the District.

Subcriterion G4—Population Density

The fourth *Degree of Endangerment* component was *population density*. It was designed to supplement the *population growth* subcriterion, since population growth is more meaningful to the concept of endangerment if the existing population density also is taken into account.

Data. In this subcriterion, subbasin population data and subbasin land surface area were used to derive density. The population estimates were introduced in the *potential recreational demand* subcriterion (page 14), and were derived by the District as de-

scribed on page 14. Only subbasin population was used—not contributing population.

Methods. Subbasin surface areas (not including waterbodies) were calculated using the District's GIS software. For each subbasin, the population was divided by the total surface area to determine average population density (Appendix Table D13).

The subbasin with the highest population density was given a score of 1.00. The scores for all other subbasins were calculated by dividing the subbasin population density by the maximum density.

Results. The Howell Creek subbasin (4-301), which is tributary to Lake Jesup, had the highest population density in the District (Table 25). This was followed by two other Orlando area subbasins: the Little Wekiva River (4-201) and Lake Jesup (4-302), with scores of 0.87 and 0.77 respectively.

Scores for the Jacksonville area subbasins were also high, since average population densities for the combined Jacksonville/Duval County region are high. Some of the individual subbasins, such as Arlington Creek (3-601), may actually have a greater population density than reported here, and others may be less densely populated.

Subcriterion G5—Point Source Discharges

Point source discharges was the fifth component of the Degree of Endangerment analysis. It was also one of the Degree of Impairment subcriterion (page 53). It was relevant to the concept of endangerment because the potential for degradation is greater in a waterbody which receives point source discharges, even if it is currently in good condition. The existence of such pollution inputs suggests a need for management as well. For these reasons, a point source discharges subcriterion was added to the endangerment analysis. **Data.** Domestic, industrial, and pumped agricultural discharge data were obtained from DER and District permit files (see page 53).

Methods. The methods for conducting this analysis were the same as in the *Degree of Impairment* criterion (page 54).

The resulting scores were the same as for the *Degree of Impairment* criterion. However, the scores were applied differently. In this analysis, the *point source discharge* scores enhanced only the scores of those subbasins which qualified for *endangerment* status, as defined in the *water quality* subcriterion. In the *Degree of Impairment* analysis, only subbasins with poor water quality received scores for the criterion as a whole; therefore, no duplication occurred.

Results. The highest scores went to subbasins in the Jacksonville area, where there are many point source discharges (Table 26). The four highest scoring subbasins were the Ortega River (3-400), the North Lower St. Johns River (3-603), Arlington Creek (3-601), and Trout River (3-501), with 1.00, 0.97, 0.56, and 0.47 respectively.

Combining Subcriteria Scores

Methods. The method for combining the *Degree of Endangerment* subcriteria was identical to that used for the *Degree of Impairment* category. The first subcriterion, *water quality*, had two functions: first, it was used to determine which subbasins received a score for the criterion as a whole, and second, it was the primary contributor to the total *Degree of Endangerment* score. All subbasins which scored zero for the *water quality* subcriterion were assigned a total criterion score of zero.

For all subbasins with a nonzero *water quality* score, the total *Degree of Endangerment* score was calculated using the following weighted formula:

3 x (water quality score)

 $+ 1 \times (land use score)$

+ 1 x (population growth score)

+ 1 x (population density score)

<u>+1 x (point source discharges score)</u>

= Degree of Endangerment score

Subbasin totals were calculated and then adjusted to maintain the zero to one scoring convention, with the highest total given a score of 1.00 for the criterion.

Results. Forty of the 55 subbasins had water quality indexes indicative of good water quality, and therefore had a score greater than zero for the *Degree of Endangerment* criterion (Table 27, Figure 17).

The Orange Creek subbasin (8-005) had the highest endangerment score (1.00); the *water quality* subcriterion score was the primary contributor (Figure 18). Black Creek (3-300), with a total score of 0.85, had a similar score profile, indicative of good water quality and a moderate potential for degradation. The North Lower St. Johns River (3-603) had a very low *water quality* score, but had consistently high scores for the remaining endangerment subcriteria (total score = 0.83). Even though the water quality in this subbasin has already been degraded, there is considerable potential for further impact.

Other high-scoring subbasins included Rodman Reservoir (8-007) and the Wekiva River (4-202), with scores of 0.76 and 0.75 respectively. Rodman's high score was primarily a result of its *water quality* score, while the Wekiva River had somewhat lower scores for *water quality* but higher scores for the subcriteria related to development pressures (Figure 18).

Some subbasins, such as the North Lower St. Johns River (3-603), Lake Monroe (4-403), and Lake Harris (7-300), had nonzero scores for both the *Degree of Impairment* and *Degree of Endangerment* criteria (Tables 21 and 27). This may seem to be contradictory, since only those subbasins which had water quality indexes

reflective of poor water quality received scores for *Degree of Impairment*, and only subbasins with good water quality received scores for *Degree of Endangerment*. The reason for this lies in the methods for calculating an average subbasin score for the *water quality* subcriteria (Appendix page 202). If the lakes in a given subbasin exhibited good water quality but the rivers had poor water quality, the subbasin received a score for both the *Degree of Endangerment* and *Degree of Impairment water quality* subcriteria. But each score was low because the subbasin's water quality did not totally support either impairment or endangerment. The water quality analysis ensured that a subbasin with good water quality among all its surface water components would get a higher score for *Degree of Endangerment* than one with mixed water quality.



Table 15.Water quality subcriterion scores
(Degree of Impairment criterion)

	Score	Subbasin <u>Number</u>	Subbasin Name
	1.00	7-200	Lake Apopka
1	0.82	4-302	Lake Jesup
	0.31	4-403	Lake Monroe
	0.25	1-000	Nassau River
	0.22	3-704	South Lower St. Johns River
	0.19	8-002	Newnans Lake
	0.09	10-001	North Indian River Lagoon
	0.08	9-100	Halifax River
ł	0.08	3-400	Ortega River
	0.08	5-003	Lake George
	0.07	4-402	Deep Creek
	0.06	3-602	Julington Creek
	0.06	4-100	Econlockhatchee Hiver
- {	0.05	5-001	Lake Berestord
	0.04	6-104	Lake washington
	0.01	3-603	North Lower St. Johns River
	0.01	7-300	Lake Hams Marthall Swome
	0.01	7-402	Lake Griffin
- İ	0.01	10-002	N Central Indian River Lacoon
	0.00	10-002	S Central Indian River Lagoon
	0.00	2-001	Upper St. Marys River
	0.00	2-002	Lower St. Marys River
	0.00	3-100	Crescent Lake
- 11	0.00	3-200	Etonia Creek
	0.00	3-300	Black Creek
	0.00	3-501	Trout River
	0.00	3-502	Broward River
	0.00	3-503	Dunn Creek
- 11	0.00	3-601	Arlington Creek
	0.00	3-701	Sixmile Creek
	0.00	3-702	McCullough Creek
	0.00	3-703	Deep Creek
	0.00	4-201	Little Wekiva River
- 1	0.00	4-202	Wekiva River
	0.00	4-203	Blackwater Creek
	0.00	4-301	Howell Creek
ļ	0.00	4-401	Lake Harney
	0.00	5-002	Lake woodrum
- 11	0.00	6-101	Port Drum Creek
	0.00	6 102	St. Johns Marsh
	0.00	6-201	l ske Doinsett
	0.00	6-207	Tosebetchee
	0.00	6-202	
- 1	0.00	7-100	Palatlakaha River
	0.00	7-500	Eureka Dam
	0.00	8-001	Florida Ridge
	0.00	8-003/4	Orange/Lochloosa lakes
	0.00	8-005	Orange Creek
	0.00	8-006	Sweetwater Creek
	0.00	8-007	Rodman Reservoir
	0.00	9-200	Matanzas River
- [0.00	9-300	Tolomato River



Table 16.Point source discharges subcriterion
scores (Degree of Impairment criteri-
on)

Total	Score	Subbasin	Subbasin Name
Numbe	r	Number	
88	1.00	3-400	Ortega River
85	0.97	3-603	North Lower St. Johns River
49	0.56	3-601	Arlington Creek
41	0.47	3-501	Trout River
20	0.23	10-001	North Indian River Lagoon
16	0.18	10-003	S Central Indian River Lagoon
15	0.17	3-602	Julington Creek
15	0.17	3-502	Broward River
14	0.16	2-002	Lower St. Marys River
13	0.15	3-704	South Lower St. Johns River
12	0.14	9-200	Matanzas River
11	0.13	6-102	Blue Cypress Creek
10	0.11	1-000	Nassau River
10	0.11	6-103	St. Johns Marsh
10	0.11	7-401	Lake Griffin
9	0.10	9-100	Halifax River
9	0.10	7-200	Lake Apopka
8	0.09	3-300	Black Creek
7	0.08	4-403	Lake Monroe
6	0.07	10-002	N Central Indian River Lagoon
6	0.07	7-300	Lake Harris
5	0.06	8-001	Florida Ridge
4	0.05	6-201	Lake Poinsett
4	0.05	3-701	Sixmile Creek
4	0.05	3-100	Crescent Lake
4	0.05	4-100	Econlockhatchee River
4	0.05	4-201	Little Wekiva River
3	0.03	6-101	Fort Drum Creek
3	0.03	5-003	Lake George
2	0.02	9-300	I olomato River
2	0.02	3-503	Dunn Creek
2	0.02	8-003/4	Orange/Locnicosa lakes
2	0.02	2-001	Opper St. Marys River
2	0.02	4-302	Crappa Crack
2	0.02	8-005	Delatiskehe Biver
	0.01	7-100	ralaliakaria niver
	0.01	7.402	Lane Washington
4	0.01	2 702	Naishan Swamp Deep Creek
	0.01	8-202	Tosabatchee
	0.01	3-202	Etonia Creek
	0.01	8-002	Nownans Laka
	0.01	5.002	Lake Woodruff
ň	0.00	4-402	Deep Creek
ň	0.00	4.401	Lake Harney
lõ	0.00	6-203	Puzzle Lake
Ň	0.00	4-301	Howell Creek
ň	0.00	8-006	Sweetwater Creek
	0.00	4.203	Blackwater Creek
۱ ñ	0.00	7.500	Eureka Dam
l õ	0.00	8-007	Bodman Beservoir
	0.00	5-001	Lake Beresford
	0.00	4-202	Wekiya River
ŏ	0.00	3-702	McCullough Creek



Total	Score	Subbasin	Subbasin Name
		Number	
6	1.00	4-302	Lake Jesup
6	1.00	6-201	Lake Poinsett
6	1.00	7-300	Lake Harris
6	1.00	7-402	Marshall Swamp
5	0.83	8-003/4	Orange/Lochloosa lakes
4	0.67	6-203	Puzzle Lake
3	0.50	7-401	Lake Griffin
2	0.33	2-002	Lower St. Marys River
2	0.33	4-201	Little Wekiva River
2	0.33	6-202	losahatchee
2	0.33	7-200	Lake Apopka
2	0.33	7-500	Eureka Dam
2	0.33	8-001	Florida Hidge
2	0.33	8-002	Newnans Lake
2	0.33	10-001	North Indian River Lagoon
1	0.17	4-301	Howell Creek
1	0.17	6-103	St. Johns Marsh
0	0	1-000	Nassau River
0	0	2-001	Opper St. Marys River
0	0	3-100	Crescent Lake
0	0	3-200	Etonia Creek Black Creek
0	0	3-300	Ditack Creek
0	0	3-400	Ortega Hiver Traut Biyor
0	0	3-501	Broward Biver
0	Ň	3-502	Dunn Crock
ŏ	Ň	3-503	Arlington Crock
Ň	õ	3-602	Julington Creek
õ	õ	3-603	North Lower St. Johns River
õ	Ň	3-701	Sizmile Creek
õ	õ	3-702	McCullough Creek
õ	õ	3-703	Deen Creek
ŏ	ō	3-704	South Lower St. Johns River
ō	ō	4-100	Econlockhatchee River
ō	õ	4-202	Wekiya River
õ	ō	4-203	Blackwater Creek
0	0	4-401	Lake Harney
ŏ	ŏ	4-402	Deep Creek
Ō	Ō	4-403	Lake Monroe
Ō	0	5-001	Lake Beresford
Ō	Ó	5-002	Lake Woodruff
Ó	0	5-003	Lake George
0	0	6-101	Fort Drum Creek
0	0	6-102	Blue Cypress Creek
0	0	6-104	Lake Washington
0	0	7-100	Palatlakaha River
0	0	8-005	Orange Creek
0	0	8-006	Sweetwater Creek
0	0	8-007	Rodman Reservoir
0	0	9 -100	Halifax River
0	0	9-200	Matanzas River
0	0	9-300	Tolomato River
0	0	10-002	N Central Indian River Lagoon
Ō	0	10-003	S Central Indian River Lagoon

Table 18. Aquatic plant control subcriterion scores

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Average Acres <u>Treated*</u>	Score	Subbasin Number	Subbasin Name
1.977	1.00	8-003/4	Orange/Lochloosa lakes
1.274	0.64	5-002	Lake Woodruff
1,179	0.60	6-202	Tosahatchee
1,105	0.56	6-203	Puzzie Lake
920	0.47	5-003	Lake George
875	0.44	6-102	Blue Cypress Creek
637	0.32	3-704	South Lower St. Johns River
521	0.26	3-100	Crescent Lake
512	0.26	4-403	Lake Monroe
472	0.24	5-001	Lake Beresford
424	0.21	7-200	Lake Apopka
397	0.20	7-300	Lake Harris
375	0.19	4-402	Deep Creek
299	0.15	6-201	Lake Poinsett
240	0.12	7-401	Lake Griffin
194	0.10	4-401	Lake Harney
149	0.08	3-603	North Lower St. Johns River
96	0.05	6-103	St. Johns Marsh
89	0.05	7-100	Palatlakaha River
88	0.04	7-500	Eureka Dam
65	0.03	6-104	Lake Washington
55	0.03	4-301	Howell Creek
16	0.01	4-100	Econlockhatchee River
14	0.01	8-005	Orange Creek
12	0.01	1-000	Nassau River
12	0.01	7-402	Marshall Swamp
10	0.00	8-002	Newnans Lake
3	0.00	4-201	Little Wekiva River
3	0.00	3-200	Etonia Creek
2	0.00	4-203	Blackwater Creek
	0	-	all other subbasins
* average acres treated=annual average, October 1986 through September 1989			



Table 19. "Meets designated use" (MDU) assessment subcriterion scores

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Combined MDU	Score	Subbasin Number	Subbasin Name
3.00	1.00	4-201	Little Wekiva River
2.90	0.95	7-200	Lake Apopka
2.83	0.91	4-403	Lake Monroe
2.78	0.89	4-302	Lake Jesup
2.77	0.89	3-603	North Lower St. Johns River
2.57	0.78	7-401	Lake Griffin
2.49	0.75	9-100	Halifax River
2.48	0.74	7-300	Lake Harris
2.29	0.65	4-100	Econlockhatchee River
2.25	0.63	3-400	Ortega Hiver
2.20	0.60	10-001	North Indian River Lagoon
2.01	0.51	10-003	S Central Indian River Lagoon
2.00	0.50	3-501	Broward Divor
2.00	0.50	3-601	Adinaton Creek
2.00	0.50	3-602	Julington Creek
2.00	0.50	6-101	Fort Drum Creek
2.00	0.50	8-001	Florida Bidoe
1 94	0.47	4-301	Howell Creek
1.93	0.47	4-401	Lake Harney
1.88	0.44	8-002	Newnans I ake
1.88	0.44	5-003	Lake George
1.85	0.43	1-000	Nassau River
1.85	0.43	9-200	Matanzas River
1.65	0.33	3-100	Crescent Lake
1.50	0.25	9-300	Tolomato River
1.42	0.21	3-701	Sixmile Creek
1.38	0.19	10-002	N Central Indian River Lagoon
1.37	0.19	2-002	Lower St. Marys River
1.37	0.19	4-203	Blackwater Creek
1.34	0.17	3-200	Etonia Creek
1.32	0.16	5-002	Lake Woodruff
1.23	0.11	4-402	Deep Creek
1.19	0.09	7-402	Marshall Swamp
1.06	0.03	3-300	Black Creek
1.05	0.02	6-103	St. Johns Marsh
1.00	0.00	2-001	Upper St. Marys River
1.00	0.00	3-503	Dunn Creek
•	0.00	3-702	McCullough Creek
1.00	0.00	3-703	Deep Creek
1.00	0.00	3-704	South Lower St. Johns River
1.00	0.00	4-202	wekiva Kiver
1.00	0.00	5-001	Lake Berestora
1.00	0.00	6-102	Blue Cypress Creek
1.00	0.00	0-104	Lane Washington
1.00	0.00	6 201	
1.00	0.00	6-202	Puzzie Lake
1.00	0.00	7.100	Palatiakaha River
1.00	0.00	7-500	Fureka Dam
1.00	0.00	8-003/4	Orange/I ochlogea lakes
1.00	0.00	8,005	Orance Creek
*	0.00	8,000	Sweetwater Creek
1.00	0.00	8-007	Rodman Reservoir
*No MDU dat	a availab	le for these s	ubbasins

Need for Action



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Table 20.	Land use subcriterion scores (Degree
	of Impairment criterion)

Percent Develop	Score ed	Subbasin Number	Subbasin Name
0.92	1.00	3-601	Arlington Creek
0.76	0.82	4-201	Little Wekiva Hiver
0.70	0.78	4-301	Howell Creek
0.55	0.00	4-302	Lake Jesup
0.54	0.50	4-403	North Lower St. Johns Diver
0.50	0.57	10 002	N Control Indian Divor Langon
0.30	0.55	3-400	Ortoga Biver
0.49	0.34	0-200	Matanzas Biver
0.41	0.43	10-001	North Indian River Lacoon
0.40	0.44	10-003	S Centrel Indian River Lagoon
0.39	0.40	6-104	Lake Washington
0.35	0.38	8-002	Newnans I ake
0.33	0.36	4-202	Wekiya Biyer
0.32	0.34	4-100	Econlockhatchee River
0.31	0.34	3-501	Trout River
0.31	0.34	6-203	Puzzle Lake
0.31	0.33	6-202	Tosabatchee
0.27	0.29	4-401	Lake Harney
0.27	0.29	3-602	Julinaton Creek
0.26	0.28	9-100	Halifax River
0.25	0.27	7-300	Lake Harris
0.24	0.27	8-001	Florida Ridge
0.24	0.27	3-704	South Lower St. Johns River
0.24	0.26	5-001	Lake Beresford
0.24	0.26	8-006	Sweetwater Creek
0.23	0.25	7-402	Marshall Swamp
0.23	0.25	3-300	Black Creek
0.22	0.23	9-300	Tolomato River
0.20	0.22	1-000	Nassau River
0.20	0.22	8-005	Orange Creek
0.19	0.21	3-503	Dunn Creek
0.18	0.19	6-201	Lake Poinsett
0.16	0.18	3-200	Etonia Creek
0.15	0.17	4-203	Blackwater Creek
0.15	0.16	3-502	Broward River
0.14	0.15	5-003	Lake George
0.13	0.14	7-200	Lake Apopka
0.13	0.14	8-003/4	Orange/Lochioosa lakes
0.11	0.12	4-402	Deep Creek
0.10	0.11	2-002	Lower St. Marys River
0.10	0.11	7-401	Lake Griffin
0.09	0.10	7-100	Palatlakaha River
0.07	0.08	3-703	Deep Creek
0.07	0.08	5-002	Lake Woodruff
0.07	0.08	3-701	Sixmile Creek
0.06	0.07	3-100	Crescent Lake
0.05	0.06	7-500	Eureka Dam
0.04	0.04	3-702	McCullough Greek
0.03	0.03	6-102	Blue Cypress Creek
0.02	0.03	2-001	Upper St. Marys River
0.02	0.02	8-007	Rodman Reservoir
0.01	0.01	6-103	St. Johns Marsh
0.01	0.01	6-101	Fort Drum Creek



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Table 21. Total Degree of Impairment criterion scores

Score	Subbasin	Subbasin Name
	Nutriber	
1.00	4-302	Lake Jesup
1.00	7-200	Lake Apopka
0.59	4-403	Lake Monroe
0.56	3-603	North Lower St. Johns River
0.54	3-400	Ortega River
0.38	7-300	Lake Harris
0.38	10-001	North Indian River Lagoon
0.35	8-002	Newnans Lake
0.34	1-000	Nassau River
0.31	9-100	Halifax River
0.30	7-401	Lake Griffin
0.28	3-704	South Lower St. Johns River
0.27	4-100	Econlockhatchee River
0.26	3-602	Julington Creek
0.24	5-003	Lake George
0.20	7-402	Marshall Swamp
0.13	6-104	Lake Washington
0.12	4-402	Deep Creek
0.12	5-001	Lake Beresford
0.00	2-001	Upper St. Marys River
0.00	2-002	Lower St. Marys River
0.00	3-100	Crescent Lake
0.00	3-200	Etonia Creek
0.00	3-300	Black Creek
0.00	3-501	Trout River
0.00	3-502	Broward River
0.00	3-503	Dunn Creek
0.00	3-601	Arlington Creek
0.00	3-701	Sixmile Creek
0.00	3-702	McCullough Creek
0.00	3-703	Deep Creek
0.00	4-201	Little Wekiva River
0.00	4-202	Wekiva River
0.00	4-203	Blackwater Creek
0.00	4-301	
0.00	4-401	Lake Harney
0.00	5-002	Eart Drum Crock
0.00	6 100	Port Drum Crook
0.00	6 102	St. Johns Marsh
0.00	6-103	St. Johns Marsh
0.00	6-201	
0.00	6 202	Puzzla Laka
0.00	7 100	Polatiakaha Divar
0.00	7-100	Fureka Dam
0.00	7-500	Elorida Dam
0.00	8-002/4	Orange/Lochionee tekee
0.00	0.005	Orango Crook
0.00	9 009	Sweetwater Creek
0.00	9-007	Bodman Reservoir
0.00	0.007	Matanzae River
0.00	9-200	Tolomoto Divor
0.00	9-300	N Control Indian Diver Lacoon
0.00	10-002	S Central Indian Diver Lagoon
0.00	10-003	o contrat inutati nivor cayuuti

Need for Action



Table	22.	Water	q

Water quality subcriterion scores (Degree of Endangerment criterion)

Score Subbasin Number		Subbasin Name
		Ourse Ourst
1.00	8-005	Orange Creek
0.70	0-007	Rodman Reservoir
0.58	3-300	Euroka Dam
0.50	7-100	Palatlakaha River
0.51	2-001	Linner St. Marvs River
0.44	7-402	Marshall Swamp
0.38	4-202	Wekiya River
0.38	8-001	Florida Ridge
0.37	6-104	Lake Washington
0.33	2-002	Lower St. Marvs River
0.32	9-200	Matanzas River
0.31	6-202	Tosahatchee
0.25	5-002	Lake Woodruff
0.25	8-003/4	Orange/Lochloosa lakes
0.23	6-201	Lake Poinsett
0.23	4-203	Blackwater Creek
0.18	3-503	Dunn Creek
0.17	6-203	Puzzle Lake
0.17	9-300	Tolomato River
0.14	3-200	Etonia Creek
0.13	7-401	Lake Griffin
0.13	4-402	Deep Creek
0.13	4-401	Lake Harney
0.10	3-704	South Lower St. Johns River
0.09	3-601	Arlington Creek
0.09	4-201	Little Wekiva River
0.09	6-102	Blue Cypress Creek
0.08	3-501	I rout Hiver
80.0	10-002	N Central Indian River Lagoon
0.07	8-002	Newnans Lake
0.07	9-100	Crease at Loke
0.06	3-100	McCullouch Crook
0.00	3-702	Deen Creek
0.06	4-301	Howell Creek
0.00	7-300	Lake Harris
0.00	3-603	North Lower St. Johns River
0.03	10-003	S Central Indian River Lacoon
0.01	4-403	Lake Monroe
0.00	1-000	Nassau River
0.00	3-400	Ortega River
0.00	3-502	Broward River
0.00	3-602	Julington Creek
0.00	3-701	Sixmile Creek
0.00	4-100	Econlockhatchee River
0.00	4-302	Lake Jesup
0.00	5-001	Lake Beresford
0.00	5-003	Lake George
0.00	6-101	Fort Drum Creek
0.00	6-103	St. Johns Marsh
0.00	7-200	Lake Apopka
0.00	8-006	Sweetwater Creek
0.00	10-001	North Indian River Lagoon



Table 23.	Land use subcriterion scores (Degree
	of Endangerment criterion)

Fraction Developed	Score	Subbasin	Subbasin Name
<u>perceptu</u>		<u>Hambor</u>	
0.55	1.00	4-302	Lake Jesup
0.54	0.97	4-403	Lake Monroe
0.53	0.96	3-603	North Lower St. Johns River
0.50	0.92	10-002	N Central Indian River Lagoon
0.49	0.90	3-400	Ortega River
0.41	0.74	9-200	Matanzas River
0.41	0.74	10-001	North Indian River Lagoon
0.40	0.72	10-003	S Central Indian River Lagoon
0.39	0.71	6-104	Lake Washington
0.35	0.64	8-002	Newnans Lake
0.33	0.60	4-202	Wekiva River
0.32	0.58	4-100	Econlockhatchee River
0.31	0.57	3-501	Trout River
0.31	0.57	6-203	Puzzle Lake
0.31	0.56	6-202	Tosahatchee
0.27	0.49	4-401	Lake Harney
0.27	0.48	3-602	Julington Creek
0.26	0.48	9-100	Halifax River
0.25	0.45	7-300	Lake Harris
0.24	0.44	8-001	Florida Ridge
0.24	0.44	3-704	South Lower St. Johns River
0.24	0.44	5-001	Lake Berestord
0.24	0.43	8-006	Sweetwater Creek
0.23	0.42	7-402	Marshall Swamp
0.23	0.41	3-300	Black Creek
0.22	0.39	9-300	Tolomato River
0.20	0.37	1-000	Nassau Hiver
0.20	0.37	8-005	Orange Creek
0.19	0.35	3-503	Dunn Creek
0.18	0.33	3 200	Etopio Crock
0.16	0.30	3-200	Elonia Creek
0.15	0.20	9-200	Broward Divor
0.15	0.27	5-002	Lake George
0.14	0.20	7-200	Lake Anonka
0.13	0.24	8-003/4	Orange/Lochlogsa lakes
0.10	0.20	4.402	Deen Creek
0.11	0.10	2.002	Lower St Marys River
0.10	0.15	7-401	Lake Griffin
0.10	0.15	7-100	Palatiskaba River
0.03	0.13	3-703	Deen Creek
0.07	0.13	5-002	Lake Woodruff
0.07	0.13	3-701	Sixmile Creek
0.07	0.10	3-100	Crescent Lake
0.05	0.12	7-500	Fureka Dam
0.04	0.10	3-702	McCullough Creek
0.03	0.05	6-102	Blue Cypress Creek
0.02	0.04	2-001	Upper St. Marys River
0.02	0.04	8-007	Rodman Reservoir
0.01	0.02	6-103	St. Johns Marsh
0.01	0.02	6-101	Fort Drum Creek
0.01	0.02	3-601	Arlington Creek
0.52	0.00	4-201	Little Wekiya River
0.70	0.00	4-301	Howell Creek

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Percent Increase	Score	Subbasin Number	Subbasin Name
67	1.00	9-100	Helifer River
57	1.00	0-200	Matanzas Bivor
57	1.00	0-900	Tolomato River
57	1.00	10-001	North Indian River Lancon
57	1.00	10-001	N Central Indian River Lagoon
57	1.00	10-002	S Control Indian River Lagoon
56	0.00	6-101	S Central Indian River Lagoon
56	0.90	6-107	Port Drum Creek
56	0.50	6-102	St Johns Marsh
56	0.90	6-103	Lake Washington
56	0.90	6-201	Lake Roinsett
56	0.30	6.202	Tosahatchee
56	0.00	6-202	Puzzle I ake
54	0.95	4-100	Fconlockhatchee River
54	0.95	4-201	Little Wekiya River
54	0.95	4-202	Wekiya River
54	0.95	4-203	Blackwater Creek
54	0.95	4-301	Howell Creek
54	0.95	4-302	Lake Jesup
54	0.95	4-401	Lake Harney
54	0.95	4-402	Deep Creek
54	0.95	4-403	Lake Monroe
51	0.89	7-100	Palatlakaha River
51	0.89	7-200	Lake Apopka
51	0.89	7-300	Lake Harris
51	0.89	7-401	Lake Griffin
51	0.89	7-402	Marshall Swamp
51	0.89	7-500	Eureka Dam
48	0.84	5-001	Lake Beresford
48	0.84	5-002	Lake Woodruff
48	0.84	5-003	Lake George
42	0.74	8-001	Florida Ridge
42	0.74	8-002	Newnans Lake
42	0.74	8-003/4	Orange/Lochloosa lakes
42	0.74	8-005	Orange Creek
42	0.74	8-006	Sweetwater Creek
42	0.74	8-007	Rodman Reservoir
41	0.72	2-001	Upper St. Marys River
41	0.72	2-002	Lower St. Marys River
39	0.68	1-000	Nassau River
38	0.67	3-100	Crescent Lake
38	0.67	3-200	Etonia Creek
38	0.67	3-300	Black Creek
38	0.67	3-400	Ortega River
38	0.67	3-501	Frout River
38	0.67	3-502	Broward Hiver
38	0.67	3-503	Dunn Creek
38	0.67	3-601	Anington Greek
38	0.67	3-602	Julington Creek
38	0.67	3-603	North Lower St. Johns Hiver
38	0.6/	3-/01	
38	0.67	3-702	Moullough Creek
38	0.67	3-703	Deep Creek
38	0.67	3-704	South Lower St. Johns Hiver

Table 24. Population growth subcriterion scores



Table 25. Population density subcriterion scores

Average Density	Score	Subbasin Number	Subbasin Name
<u>per Acre</u>			
2 24	1.00	4-301	Howell Creek
1.96	0.87	4-201	Little Wekiya River
1.75	0.78	3-400	Ortega River
1.75	0.78	3-501	Trout River
1.75	0.78	3-502	Broward River
1.75	0.78	3-503	Dunn Creek
1.75	0.78	3-601	Arlington Creek
1.75	0.78	3-602	Julington Creek
1.75	0.78	3-603	North Lower St. Johns River
1.73	0.77	4-302	Lake Jesup
1.25	0.56	4-403	Lake Monroe
1.04	0.47	10-002	N Central Indian River Lagoon
0.99	0.44	10-001	North Indian River Lagoon
0.96	0.43	9-100	Halifax River
0.91	0.41	4-202	Wekiva River
0.65	0.29	4-100	Econlockhatchee River
0.65	0.29	4-203	Blackwater Creek
0.65	0.29	4-401	Lake Harney
0.65	0.29	4-402	Deep Creek
0.51	0.23	7-300	Lake Harris
0.47	0.21	10-003	S Central Indian River Lagoon
0.35	0.16	8-001	Florida Ridge
0.33	0.15	9-200	Matanzas River
0.29	0.13	7-200	Lake Apopka
0.25	0.11	7-401	Lake Griffin
0.24	0.11	9-300	Tolomato River
0.22	0.10	7-100	Palatlakaha River
0.18	0.08	3-704	South Lower St. Johns River
0.17	0.07	7-402	Marshall Swamp
0.17	0.07	7-500	Eureka Dam
0.13	0.06	5-003	Lake George
0.13	0.06	8-003/4	Orange/Lochioosa lakes
0.13	0.06	8-006	Sweetwater Creek
0.11	0.05	2-002	Lower St. Marys River
0.11	0.05	3-100	Deep Greek
0.11	0.05	3-703	Lete Beresferd
0.12	0.05	5-001	Lake Meedruff
0.12	0.05	5-002 6-102	Riuo Cypross Croek
0.11	0.05	6-102	St Johns Marsh
0.12	0.05	8-002	Nownans Lake
0.12	0.00	1-000	Nesseu Biver
0.08	0.04	2-001	Lipper St. Marys River
0.00	0.04	3-200	Etonia Creek
0.10	0.04	3-300	Black Creek
0.10	0.04	3-701	Sixmile Creek
0.08	0.04	3-702	McCullough Creek
0.09	0.04	6-101	Fort Drum Creek
0.09	0.04	6-104	Lake Washington
0.09	0.04	6-201	Lake Poinsett
0.00	0.04	6-207	Tosahatchee
0.03	0.04	6-202	Puzzie I ake
0.09	0.04	8.005	Orange Creek
0.10	0.04	8-007	Bodman Reservoir
0.10	0.04	5 007	



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Table	26.	Point source
		scores (Degr

Point source discharges subcriterion scores (Degree of Endangerment criterion)

Total	Score	Subbasin	Subbasin Name
Number	·	<u>Number</u>	
88	1.00	3-400	Ortega River
85	0.97	3-603	North Lower St. Johns River
49	0.56	3-601	Arlington Creek
41	0.47	3-501	Trout River
20	0.23	10-001	North Indian River Lagoon
16	0.18	10-003	S Central Indian River Lagoon
15	0.17	3-602	Julington Creek
15	0.17	3-502	Broward River
14	0.16	2-002	Lower St. Marys River
13	0.15	3-704	South Lower St. Johns River
12	0.14	9-200	Matanzas River
11	0.13	6-102	Blue Cypress Creek
10	0.11	1-000	Nassau River
10	0.11	6-103	St. Johns Marsh
10	0.11	7-401	Lake Griffin
9	0.10	9-100	Halifax River
9	0.10	7-200	Lake Apopka
8	0.09	3-300	Black Creek
7	0.08	4-403	Lake Monroe
6	0.07	10-002	N Central Indian River Lagoon
6	0.07	7-300	Lake Harris
5	0.06	8-001	Florida Ridge
4	0.05	6-201	Lake Poinsett
4	0.05	3-701	Sixmile Creek
4	0.05	3-100	Crescent Lake
4	0.05	4-100	Econlockhatchee River
4	0.05	4-201	Little Wekiva River
3	0.03	6-101	Fort Drum Creek
3	0.03	5-003	Lake George
2	0.02	9-300	Lolomato Hiver
2	0.02	3-503	Dunn Creek
2	0.02	0-003/4	Unner St. Menre Diver
2	0.02	2-001	Lake losup
2	0.02	4-302	Crance Grack
2	0.02	0-000	Dalatiskaba Diver
4	0.01	6-107	Lake Washington
	0.01	7-402	Marchall Swamn
	0.01	1-402 9-709	Doop Crock
4	0.01	6-202	Tosphatchee
	0.01	9-202	Etonia Crack
4	0.01	8-002	Newnans Lake
	0.01	5-002	Lake Woodruff
0	0.00	4-402	
ο · ·	0.00	4-402	l ske Harnev
0 0	0.00	6-202	Puzzle Lake
0 A	0.00	4-301	Howell Creek
~	0.00	9-001 8-008	Sweetwater Creek
	0.00	4 000	Plackwater Crock
0	0.00	4-203	Biackwater Creek
0	0.00	7-500	Eureta Darri Dedmon Reconvoir
0	0.00	5-007	nouman neservoir
	0.00	5-001	Wakiya Diyar
	0.00	4-202	MaCullough Creak
0	0.00	3-702	MICCUIIOUGH CIBBK

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Score	Subbasin	Subbasin Name			
	Number				
	0.007	Orange Orach			
1.00	8-005	Orange Creek Block Creek			
0.85	3-300	Diack Ureek			
0.63	3-003	North Lower St. Johns River			
0.76	4 202	Moking Diver			
0.75	9-202	Matenzas Diver			
0.69	6-104	Lake Washington			
0.67	7-500	Eureka Dam			
0.66	3-501	Trout River			
0.66	7-100	Palatlakaha River			
0.65	7-402	Marshall Swamp			
0.65	10-002	N Central Indian River Lagoon			
0.62	4-403	Lake Monroe			
0.61	8-001	Florida Ridge			
0.61	6-202	Tosahatchee			
0.57	3-503	Dunn Creek			
0.56	2-001	Upper St. Marys River			
0.55	3-601	Arlington Creek			
0.53	9-100	Halifax River			
0.53	4-203	Biackwater Creek			
0.53	10-003	S Central Indian River Lagoon			
0.51	4-201	Little Wekiva River			
0.51	4-301	Howell Creek			
0.51	4-401	Lake Harney			
0.51	2-002	Lower St. Marys River			
0.50	6-203	Puzzle Lake			
0.50	6-201	Lake Poinsett			
0.49	9-300	I DIOMAIO HIVEr			
0.44	4-402	Deep Creek			
0.43	8-003/4	Urange/Lochioosa lakes			
0.43	5-002	Lake Woodrun			
0.42	7-300	Lake Griffin			
0.41	7-401	Lake Grinn Nownang Lake			
0.40	3.704	Nownalls Lake South Lower St. Johns Biver			
0.39	0-704 6-102	Blue Cypress Creek			
0.00	3-200	Etonia Creek			
0.00	3-100	Crescent Lake			
0.25	3-703	Deep Creek			
0.23	3-702	McCullough Creek			
0.00	1-000	Nassau River			
0.00	3-400	Ortega River			
0.00	3-502	Broward River			
0.00	3-602	Julington Creek			
0.00	3-701	Sixmile Creek			
0.00	4-100	Econlockhatchee River			
0.00	4-302	Lake Jesup			
0.00	5-001	Lake Beresford			
0.00	5-003	Lake George			
0.00	6-101	Fort Drum Creek			
0.00	6-103	St. Johns Marsh			
0.00	7-200	Lake Apopka			
0.00	8-006	Sweetwater Creek			
0.00	10-001	North Indian River Lagoon			

Table 27. Total Degree of Endangerment criterion scores

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Weighted scores:

- The water quality subcriterion had a weight of three (maximum score=3.00); fish kills and aquatic plant control each had weights of 0.5 (maximum score=0.5); all other subcriteria had weights of one (maximum score=1.00).
- The total weighted scores were later adjusted to fit a zero to one scale.

Figure 16. Degree of Impairment criterion: distribution of subcriteria scores for the five subbasins with the highest total scores

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- The *water quality* subcriterion had a weight of three (maximum score=3.00); all other subcriteria had weights of one (maximum score=1.00).
- The total weighted scores were later adjusted to fit a zero to one scale.

Figure 18.Degree of Endangerment criterion: distribution of subcriteria
scores for the five subbasins with the highest total scores

THE PRIORITY LIST

COMBINING CRITERIA SCORES-PRELIMINARY LIST

Methods

The total score for each subbasin was derived from the seven criteria scores. These seven criteria were conceptually divided into three categories:

Socioeconomic significance

- Public use
- Economic importance
- Public importance

Ecological significance

- Natural and wildlife significance
- Environmental potential

Need for action

- Degree of impairment
- Degree of endangerment

To determine an overall weighting scheme, each category was first assigned a weight according to its perceived importance:

- weight of 4—Socioeconomic significance
- weight of 6—Ecological significance
- weight of 4—Need for action

Each category weight was then divided. Each criterion was assigned a weight according to its perceived importance to the category:

- Socioeconomic significance
 - 1 x Public Use score
 - 2 x Economic Importance score
 - 1 x Public Importance score
- Ecological significance
 - 3 x Natural and Wildlife Significance score
 - 3 x Environmental Potential score
- Need for action
 - 2 x Degree of Impairment score
 - 2 x Degree of Endangerment score

Using these weights, category scores were calculated for each subbasin. Total subbasin scores were calculated by summing the three category scores.

Results

Socioeconomic significance. The North Indian River Lagoon subbasin (10-001) scored significantly higher than the other subbasins (4.00) (Table 28). It had the maximum score for all three component criteria: *Public Use, Economic Importance*, and *Public Importance* (Figure 19). The second and fifth subbasins, Lake George (5-003) and Lake Woodruff (5-002), had similar score distributions to North Indian River Lagoon (Figure 19); all three criteria scores contributed significantly to the total scores (2.54 and 1.70 respectively) (Table 28). The more urban Halifax River (9-100) and North Lower St. Johns River (3-603) subbasins had high *Public Use*, moderate *Economic Importance*, and low *Public Importance* scores (Figure 19), with totals of 1.86 and 1.83 respectively.

Ecological significance. The North Indian River Lagoon (10-001) and Lake George (5-003) subbasins had the highest ecological significance scores (5.19 and 4.38 respectively, Table 29). The

North Indian River Lagoon had high scores for both Natural and Wildlife Significance, and Environmental Potential, while Lake George had the highest score for the Natural and Wildlife Significance criterion and a moderate score for Environmental Potential (Table 29, Figure 20). The Crescent Lake (3-100), St. Johns Marsh (6-103), and Upper St. Marys River (2-001) subbasins had lower scores for Natural and Wildlife Significance, but high Environmental Potential scores (Figure 20). Their total ecological significance scores were 3.39, 3.00, and 2.73 respectively (Table 29).

In general, subbasins with the highest scores in the ecological significance category were those which are largely undeveloped and contain extensive wetland systems. There was also a strong correlation between scores and subbasin size.

Need for action. The two subbasins most in need of management action were the North Lower St. Johns River (3-603) and Lake Monroe (4-403), with scores of 2.79 and 2.42 respectively (Table 30). They had scores for both *Degree of Impairment* and *Degree of Endangerment* (Figure 21), because they contain surface waters that are already degraded, as well as surface waters that remain in good condition but are in danger of becoming impaired. Each of the next three subbasins had a score of 2.00: Orange Creek's (8-005) score was derived solely from the *Degree of Endangerment* criterion, while the scores for Lake Jesup (4-302) and Lake Apopka (7-200) were derived from the *Degree of Impairment* criterion.

Seven of the top ten subbasins in the need for action category were part of the Lower St. Johns River, Middle St. Johns River, or Upper Ocklawaha River (7-300 to 7-402) basins.

Total scores. The North Indian River Lagoon subbasin (10-001) was the highest-scoring subbasin in the District (Table 31). Its total score (9.95) was the result of high socioeconomic and ecologic significance scores and a lower need for action score. The Lake George subbasin (5-003), which was second with 7.41, had a similar score distribution (Figure 22).

The next three high-scoring subbasins were: North Lower St. Johns River (3-603), Halifax River (9-100), and Black Creek (3-300), with scores of 6.39, 6.15, and 5.05 respectively. The need for action score contributed more significantly to the total scores of these subbasins (Figure 22). Black Creek's need for action score was due solely to the *Degree of Endangerment* criterion, while the North Lower St. Johns River and Halifax River had both *Degree of Impairment* and *Degree of Endangerment* scores.

Three of these top five subbasins are estuarine: North Indian River Lagoon, North Lower St. Johns River, and Halifax River (Figure 23). They have considerable urban development, but also considerable ecological resources. The remaining two subbasins, Lake George and Black Creek, are freshwater systems that are still relatively unimpacted.

ALTERING THE PRELIMINARY LIST

The 1991 SWIM priority list was based on the results of the significance analysis. However, the final priority list is not identical to the final significance scores list (Table 31). A series of decisions about priorities were made; as a result, the order and nature of the list were altered.

Existing SWIM Programs Were Given the Highest Priority

Currently, SWIM programs are underway in the Indian River Lagoon Basin, Lower St. Johns River Basin, Lake Apopka (7-200), and the Upper Ocklawaha River (7-300 to 7-402). These were still considered to be the highest SWIM priorities. The first three programs, which were legislatively mandated, were assigned priority one through three on the 1991 list; the order was determined by the results of the significance analysis. The Upper Ocklawaha River SWIM program was initiated as a result of the 1988 SWIM priority list. It was assigned priority number four on the 1991 list.

Management Units Were Created and Prioritized

Before determining the priority order of the rest of the subbasins in the District, the non-SWIM subbasins were aggregated into groups called management units. From a management perspective, it may be appropriate to develop a SWIM program for a group of subbasins rather than an individual subbasin. For example, a management plan for Lake Monroe would also need to address problems occurring in the subbasins immediately upstream, such as Lakes Harney and Jesup, and Deep Creek. Therefore, all the non-SWIM subbasins were aggregated into groups, based on their hydrologic association.

To create the management units, the non-SWIM subbasins were listed by total score (Table 32) and hydrologically related subbasins were grouped together maintaining the overall priority (Table 33). Subbasin aggregation created a total of twelve units, which were then assigned a priority order based on the total score of the most significant subbasin in each unit. The most significant management unit without a current SWIM program is the Lake George unit, followed by the Halifax River, the Middle St. Johns River, and the Nassau River management units.

The Management Unit Priority Order was Altered

Based on the results of the significance analysis, the Lake George management unit had the highest priority after existing SWIM programs. However, the District decided to give the Middle St. Johns River management unit higher priority than the Lake George management unit on the SWIM priority list, for the following reasons:

 Lake George is already the focus of extensive preservation activity. The District recently acquired approximately 19,000 acres along the east shore of Lake George, and the Ocala National Forest occupies most of the western half of the subbasin. The Lake Woodruff subbasin is dominated by the Lake Woodruff National Wildlife Refuge. Consequently the majority of the management unit is publicly owned, and there are relatively few direct threats to Lake George within its own basin.

- The primary detrimental input to Lake George is the St. Johns River, and any program concerned with the management of Lake George must address the problems found in the Middle St. Johns River management unit.
- When Degree of Impairment was evaluated, Lake Jesup scored highest among the non-SWIM subbasins, and Lake Monroe second (Table 30). These results suggest that the Middle St. Johns River management unit is in greater need of immediate action, even though Lake George scored higher in overall significance.

Essentially, the District recognized that the best way to protect the Lake George area was to focus management efforts on the Middle St. Johns River management unit.

One other modification was made—the Upper St. Johns River Basin was given the lowest priority on the SWIM priority list, because the District is already implementing a major non-SWIM restoration program there.

The Final Priority List was Compiled

The current SWIM projects are priorities one through four on the 1991 St. Johns River Water Management District SWIM priority list (Table 34). These are followed by the remaining management units in the order determined above. The highest priority after existing SWIM programs is the Middle St. Johns River management unit. The subbasins included in this management unit are listed in Table 33.

The priority list will be reviewed and updated as additional data become available. The priority order resulting from this procedure prescribes the order of initiation of new SWIM programs but not necessarily the order of completion of these programs.

The Priority List

-	Socioeconomic significance					
	B. ECONOMIC IMPORTANCE					
	C. PUBLIC IMPORTANCE					
Ecological significance						
Need for action						

Table 26. Sucioeconomic significance scores	Table :	28.	Socioeconomic significance scores
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Criterion	Criterion B	Criterion C	A + 2B + C	Subbasin Number	Subbasin Name
Public	Feonomie	Public	ŤŬ	Hamber	
Use	Importance	Importance			+
1.00	1.00	1.00	4.00	10-001	North Indian River Lagoon
0.50	0.60	0.84	2.54	5-003	Lake George
0.74	0.52	0.07	1.86	9-100	Hallfax River
0.70	0.55	0.03	1.83	3-603	North Lower St Johns River
0.45	0.32	0.61	1.70	5-002	Lake Woodruff
0.42	0.30	0.46	1.49	7-401	Lake Griffin
0.54	0.34	0.25	1.47	7-300	Lake Harris
0.63	0.35	0.07	1.41	10-002	N Central Indian River Lagoon
0.41	0.42	0.04	1.28	10-003	S Central Indian River Lagoon
0.50	0.38	0.03	1.28	3-704	South Lower St Johns River
0.22	0.27	0.44	1.20	8-003/4	Orange/Lochioosa lake
0.45	0.35	0.03	1.17	9-200	Matanzas River
0.49	0.14	0.39	1.15	1-000	Nassau River
0.43	0.18	0.31	1.10	5-001	Lake Beresford
0.26	0.23	0.37	1.09	3-100	Crescent Lake
0.24	0.11	0.59	1.06	7-500	Eureka Dam
0.53	0.09	0.34	1.04	4-202	Wekiva River
0.46	0.16	0.26	1.03	4-403	Lake Monroe
0.40	0.09	0.38	0.97	4-402	Deep Creek
0.45	0.11	0.25	0.92	4-302	Lake Jesup
0.30	0.15	0.30	0.90	7-100	Palatlakaha River
0.44	0.17	0.01	0.78	3-501	Trout River
0.40	0.09	0.20	0.77	3-300	Black Creek
0.44	0.00	0.33	0.77	4-203	Blackwater Creek
0.33	0.05	0.26	0.69	7-200	Lake Apopka
0.43	0.13	0.00	0.68	3-400	Ortega River
0.43	0.00	0.25	0.68	4-201	Little Wekiva River
0.41	0.00	0.25	0.66	4-301	Howell Creek
0.44	0.09	0.04	0.66	2-002	Lower St. Marys River
0.20	0.16	0.12	0.64	9-300	Tolomato River
0.21	0.02	0.38	0.64	7-402	Marshall Swamp
0.39	0.10	0.00	0.60	3-503	Dunn Creek
0.32	0.02	0.20	0.57	6-203	Puzzie Lake
0.17	0.02	0.34	0.56	3-200	Etonia Creek
0.35	0.09	0.01	0.56	4-401	Lake Harney
0.38	0.08	0.00	0.54	3-502	Broward Hiver
0.41	0.06	0.00	0.54	3-602	Juington Creek
0.07	0.00	0.42	0.49	2-001	Opper St. Marys Filver
0.44	0.00	0.00	0.44	4-100	Econiocknatchee hiver
0.11	0.00	0.32	0.43	0-001	Arlington Crock
0.39	0.00	0.00	0.00	8 102	St. Johns March
0.10	0.04	0.14	0.00	6 201	Lako Doinsott
0.19	0.04	0.01	0.20	6.000	Torshatchoo
0.10	0.00	0.12	0.20	6 102	Riuo Cyprose Croek
0.10	0.02	0.07	0.20	6.104	Lake Washington
0.10	0.02	0.02	0.24	2 701	Siverila Crock
0.15	0.04	0.00	0.20	8,002	Nownans Lake
0.09	0.04	0.03	0.20	8-007	Rodman Reservoir
0.15	0.00	0.01	0.16	3-703	Deen Creek
0.14	0.00	0.00	0 14	3-702	McCullough Creek
0.05	0.00	0.00	0.12	6-101	Fort Drum Creek
0.00	0.00	0.00	0.06	8.005	Orange Creek
0.05	0.00	0.00	0.05	8-006	Sweetwater Creek
	0.00	0.00	5.00		



Table 29. Ecological significance scores

Criterion D Natural & Wildlife	Criterion E Environment Potential	3D + 3E al	Subbasin Number	Subbasin Name
Significance		·		
0.80	0.03	5 10	10-001	North Indian Biyer Lacoon
1.00	0.46	4.38	5-003	Lake George
0.13	1.00	3.39	3-100	Crescent Lake
0.08	0.92	3.00	6-103	St Johns Marsh
0.25	0.66	2.73	2-001	Upper St. Marys River
0.15	0.74	2.67	1-000	Nassau River
0.32	0.55	2.61	9-100	Halifax River
0.38	0.48	2.58	3-300	Black Creek
0.46	0.35	2.43	3-200	Etonia Creek
0.08	0.71	2.37	6-102	Blue Cypress Creek
0.18	0.52	2.10	7-100	Palatlakaha River
0.42	0.21	1.89	7-500	Eureka Dam
0.22	0.40	1.86	2-002	Lower St. Marys River
0.29	0.33	1.86	7-300	Lake Harris
0.22	0.37	1.77	3-603	N. Lower St. Johns River
0.23	0.33	1.68	5-002	Lake Woodruff
0.35	0.17	1.56	10-003	S Central Indian River Lagoon
0.29	0.20	1.47	7-401	Lake Griffin
0.30	0.19	1.47	10-002	N Central Indian River Lagoon
0.24	0.24	1.44	4-203	Blackwater Creek
0.45	0.03	1.44	8-001	Florida Ridge
0.15	0.32	1.41	3-704	South Lower St. Johns River
0.29	0.18	1.41	8-003/4	Orange/Lochloosa lakes
0.15	0.30	1.35	7-200	Lake Apopka
0.19	0.25	1.32	6-203	Puzzle Lake
0.13	0.29	1.26	4-402	Deep Creek
0.07	0.35	1.26	6-201	Lake Poinsett
0.25	0.15	1.20	4-403	Lake Monroe
0.19	0.17	1.08	9-200	Matanzas River
0.05	0.27	0.96	6-202	I osanatchee
0.11	0.18	0.87	4-202	Wekiva Hiver
0.08	0.20	0.84	4-100	Econlockhatchee River
0.01	0.27	0.84	6-101	Fort Drum Creek
0.12	0.14	0.78	3-701	
0.11	0.15	0.78	8-002	Newnans Lake
0.11	0.15	0.78	8-005	Uninge Creek
0.08	0.17	0.75	3-002	Lake Josup
0.09	0.13	0.00	4-302 5 001	Lake Jesup
0.14	0.07	0.03	0 2001	Tolomato Piver
0.09	0.10	0.57	7-402	Morehall Swamp
0.08	0.10	0.54	A-002	Rodman Reservoir
0.11	0.06	0.30	8-006	Sweetwater Creek
0.07	0.00	0.33	4-401	Lake Harney
0.04	0.07	0.30	4-301	Howell Creek
0.00	0.07	0.30	3-400	Ortega Biver
0.00	0.08	0.24	3-501	Trout River
0.00	0.06	0.21	6-104	Lake Washington
0.01	0.05	0.18	4-201	Little Wekiva River
0.02	0.04	0.18	3-703	Deep Creek
0.01	0.03	0.12	3-702	McCullough Creek
0.00	0.03	0.09	3-503	Dunn Creek
0.00	0.02	0.06	3-502	Broward River
0.00	0.02	0.06	3-601	Arlington Creek

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Socioeconomic significance
Ecological significance
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 Need for action
F. DEGREE OF IMPAIRMENT
G. DEGREE OF ENDANGER- MENT

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Table 30. Need for action scores

Criterion F	Criterion G	2F + 2G	Subbasin	Subbasin Name
Degree of	Degree of		Number	
Impairment	Endangerment			······································
0.56	0.83	2 70	3.603	North Lower St. Johns Pivor
0.59	0.62	2.42	4-403	Lake Monroe
0.00	1.00	2.00	8-005	Orange Creek
1.00	0.00	2.00	4-302	Lake Jesup
1.00	0.00	2.00	7-200	Lake Apopka
0.20	0.65	1.70	7-402	Marshall Swamp
0.00	0.85	1.69	3-300	Black Creek
0.31	0.53	1.68	9-100	Halifax River
0.13	0.69	1.62	6-104	Lake Washington
0.38	0.42	1.60	7-300	Lake Harris
0.00	0.76	1.52	8-007	Rodman Reservoir
0.35	0.40	1.49	8-002	Newnans Lake
0.00	0.75	1.49	4-202	Wekiva River
0.00	0.72	1.44	9-200	Matanzas River
0.30	0.41	1.41	7-401	Lake Griffin
0.00	0.67	1.35	7-500	Euroka Dam
0.28	0.39	1.34	3-704	South Lower St. Johns River
0.00	0.00	1.31	3-501	Polotickobo Divor
0.00	0.65	1.31	10-002	N Central Indian River Lacoon
0.00	0.65	1.00	9 001	Florida Didea
0.00	0.61	1.22	6.202	Torebatchee
0.00	0.57	1.21	3.503	Dupp Creek
0.00	0.57	1.10	2.001	Upper St. Manus River
0.00	0.50	1 12	4-402	Deep Creek
0.00	0.55	1 10	3-601	Arlington Creek
0.54	0.00	1.08	3-400	Ortega Biver
0.00	0.53	1.06	4-203	Blackwater Creek
0.00	0.53	1.06	10-003	S Central Indian River Lacoon
0.00	0.51	1.03	4-201	Little Wekiva River
0.00	0.51	1.02	4-301	Howell Creek
0.00	0.51	1.02	4-401	Lake Harney
0.00	0.51	1.01	2-002	Lower St. Marys River
0.00	0.50	1.01	6-203	Puzzle Lake
0.00	0.50	1.00	6-201	Lake Poinsett
0.00	0.49	0.98	9-300	Tolomato River
0.00	0.43	0.87	8-003/4	Orange/Lochloosa lakes
0.00	0.43	0.85	5-002	Lake Woodruff
0.38	0.00	0.76	10-001	North Indian River Lagoon
0.00	0.36	0.71	6-102	Blue Cypress Creek
0.00	0.35	0.69	3-200	Etonia Creek
0.34	0.00	0.68	1-000	Nassau River
0.27	0.00	0.55	4-100	Econlockhatchee River
0.00	0.26	0.51	3-100	Crescent Lake
0.26	0.00	0.51	3-602	Julington Creek
0.00	0.25	0.50	3-703	Deep Creek
0.24	0.00	0.49	5-003	Lake George
0.00	0.23	0.46	3-702	Noculibugh Creek
0.12	0.00	0.24	0-001	Lave Delesion
0.00	0.00	0.00	3-502	Sizmila Crock
0.00	0.00	0.00	3-701	Sixmile Creek
0.00	0.00	0.00	6-101	Fon Drum Creek
0.00	0.00	0.00	0-103 8_006	SL JUINS Marsh Sweetwater Creek
0.00	0.00	0.00	0000	Chosmalo, Cidan

-

Socio- economic	Ecological Significance	Need for Action	Total Score	Subbasin Number	Subbasin Name
Significance			<u> </u>		
4.00	5.19	0.76	9.95	10-001	North Indian River Lagoon
2.54	4.38	0.49	7.41	5-003	Lake George
1.83	1.77	2.79	6.39	3-603	North Lower St. Johns River
1.86	2.61	1.68	6.15	9-100	Halifax River
0.77	2.58	1.69	5.05	3-300	Biack Creek
1.09	3.39	0.51	5.00	3-100	Crescent Lake
1.47	1.86	1.60	4.93	7-300	Lake Harris
1.03	1.20	2.42	4.66	4-403	Lake Monroe
1.15	2.67	0.68	4.50	1-000	Nassau River
1.49	1.47	1.41	4.37	7-401	Lake Griffin
0.49	2.73	1.13	4.35	2-001	Upper St. Marys River
0.90	2.10	1.31	4.31	7-100	Palatlakaha River
1.06	1.89	1.35	4.30	7-500	Eureka Dam
1.70	1.68	0.85	4.23	5-002	Lake Woodruff
1.41	1.47	1.30	4.18	10-002	N Central Indian River Lagoon
0.69	1.35	2.00	4.04	7-200	Lake Apopka
1.28	1.41	1.34	4.03	3-704	South Lower St. Johns River
1.28	1.56	1.06	3.90	10-003	S Central Indian River Lagoon
1.17	1.08	1.44	3.69	9-200	Matanzas River
0.56	2.43	0.69	3.68	3-200	Etonia Creek
0.92	0.66	2.00	3.58	4-302	Lake Jesup
0.66	1.86	1.01	3.53	2-002	Lower St. Marys River
1.20	1.41	0.87	3.48	8-003/4	Orange/Lochloosa lakes
1.04	0.87	1.49	3.40	4-202	Wekiva River
0.38	3.00	0.00	3.38	6-103	St. Johns Marsh
0.97	1.26	1.12	3.36	4-402	Deep Creek
0.28	2.37	0.71	3.36	6-102	Blue Cypress Creek
0.77	1.44	1.06	3.27	4-203	Blackwater Creek
0.43	1.44	1.22	3.09	8-001	Florida Ridge
0.57	1.32	1.01	2.90	6-203	Puzzie Lake
0.64	0.54	1.70	2.88	7-402	Marshall Swamp
0.06	0.78	2.00	2.85	8-005	Urange Creek
0.28	1.26	1.00	2.54	6-201	Lake Poinsell
0.20	0.78	1.49	2.47	8-002	Tasabatahaa
0.28	0.96	1.21	2.40	0-202	Trout Divor
0.78	0.24	1.01	2.04	9.007	Rodman Bosonicir
0.20	0.51	1.52	2.20	0-007	Tolometo River
0.04	0.07	1 60	2.10	6.104	Lake Washington
0.24	0.21	1.02	2.07	3-400	Ortega River
0.00	0.30	1.00	1 99	4-301	Howell Creek
1.10	0.00	0.24	1 97	5-001	Lake Beresford
0.56	0.00	1 02	1 01	4-401	Lake Harney
0.50	0.03	1.02	1.80	4-201	Little Wekiya River
0.00	0.84	0.55	1.83	4-100	Econlockhatchee River
0.60	0.04	1.13	1.82	3-503	Dunn Creek
0.54	0.75	0.51	1.80	3-602	Julinaton Creek
0.39	0.06	1.10	1.54	3-601	Arlington Creek
0.23	0.00	0.00	1.01	3-701	Sixmile Creek
0.12	0.84	0.00	0.96	6-101	Fort Drum Creek
0.12	0.04	0.00	0.00	3.703	Deep Creek
0.10	0.10	0.30	0.04	3_702	McCullough Creek
0.14	0.12	0.40	0.60	3.502	Broward River
0.54	0.00	0.00	0.00	8-005	Sweetwater Creek
0.05	0.59	0.00	0.44	0-000	onounder oroun
Total <u>Score</u>	Subbasin <u>Number</u>	Subbasin Name			
-----------------------	---------------------------	------------------------			
7.41	5-003	Lake George			
6.15	9-100	Halifax River			
4.66	4-403	Lake Monroe			
4.50	1-000	Nassau River			
4.35	2-001	Upper St. Marys River			
4.31	7-100	Palatlakaha River			
4.30	7-500	Eureka Dam			
4.23	5-002	Lake Woodruff			
3.69	9-200	Matanzas River			
3.58	4-302	Lake Jesup			
3.53	2-002	Lower St. Marys River			
3.48	8-003/4	Orange/Lochloosa lakes			
3.40	4-202	Wekiva River			
3.38	6-103	St. Johns Marsh			
3.36	4-402	Deep Creek			
3.36	6-102	Blue Cypress Creek			
3.27	4-203	Blackwater Creek			
3.09	8-001	Florida Ridge			
2.90	6-203	Puzzle Lake			
2.85	8-005	Orange Creek			
2.54	6-201	Lake Poinsett			
2.47	8-002	Newnans Lake			
2.45	6-202	Tosahatchee			
2.23	8-007	Rodman Reservoir			
2.18	9-300	Tolomato River			
2.07	6-104	Lake Washington			
1.99	4-301	Howell Creek			
1.97	5-001	Lake Beresford			
1.91	4-401	Lake Harney			
1.89	4-201	Little Wekiva River			
1.83	4-100	Econlockhatchee River			
0.96	6-101	Fort Drum Creek			
0.44	8-006	Sweetwater Creek			

Table 32.Total significance scores of subbasins in SJRWMD that are
not part of ongoing SWIM programs

Table 33.SWIM priority planning management units in order of significance. The
order was determined by the total score of the most significant subbasin in
each unit (in boldface type).

Management unit	Contributing subbasins
1. Lake George:	5-003 - Lake George 5-001 - Lake Beresford 5-002 - Lake Woodruff
2. Halifax River:	9-100 - Halifax River
3. Middle St. Johns River:	4-403 - Lake Monroe 4-100 - Econlockhatchee River 4-301 - Howell Creek 4-302 - Lake Jesup 4-401 - Lake Harney 4-402 - Deep Creek
4. Nassau River:	1-000 - Nassau River
5. St. Marys River:	2-001 - Upper St. Marys River 2-002 - Lower St. Marys River
6. Palatlakaha River:	7-100 - Palatlakaha River
7. Lower Ocklawaha River:	7-500 - Eureka Dam 8-006 - Sweetwater Creek 8-007 - Rodman Reservoir
8. St. Augustine:	9-200 - Matanzas River 9-300 - Tolomato River
9. Florida Ridge:	8-003/4 - Orange/Lochloosa lakes 8-001 - Florida Ridge 8-002 - Newnans Lake
10. Wekiva River:	4-202 - Wekiva River 4-201 - Little Wekiva River 4-203 - Blackwater Creek
11. Upper St. Johns:	6-103 - St. Johns Marsh 6-101 - Fort Drum Marsh 6-102 - Blue Cypress Creek 6-104 - Lake Washington 6-201 - Lake Poinsett 6-202 - Tosahatchee 6-203 - Puzzle Lake
12. Orange Creek:	8-005 - Orange Creek

Table 34.1991 St. Johns River Water Management District SWIM
Priority List. These are the District's priorities for Surface Water
Improvement and Management (SWIM) programs. Numbers one
through four are current SWIM programs. Any future SWIM
programs will be initiated in the order listed, beginning with num-
ber five.

Priority Number	Program		
1	Indian River Lagoon Basin		
2	Lower St. Johns River Basin		
3	Lake Apopka		
4	Upper Ocklawaha River Basin		
5	Middle St. Johns River*		
6	Lake George*		
7	Halifax River*		
8	Nassau River*		
9	St. Marys River*		
10	Palatlakaha River*		
11	Lower Ocklawaha River*		
12	St. Augustine*		
13	Florida Ridge*		
14	Wekiva River*		
15	Orange Creek*		
16	Upper St. Johns River*		

* These items are management units. Management units are groups of subbasins which would be managed as a unit, rather than individually. The subbasins which comprise each management unit are listed on page 100.

Source: modified from Adamus 1991



Weighted scores:

The *Economic Importance* criterion had a weight of two (maximum score=2.00); the other criteria had weights of one (maximum score=1.00).

Figure 19. Socioeconomic significance category: distribution of criteria scores for the five subbasins with the highest total scores

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The Priority List



Weighted scores:

Both criteria had a weight of three (maximum score=3.00).

Figure 20.Ecological significance category: distribution of criteria scoresfor the five subbasins with the highest total scores

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Weighted scores:

Both criteria had a weight of two (maximum score=2.00).

Figure 21. Need for action category: distribution of criteria scores for the five subbasins with the highest total scores

St. Johns River Water Management District 104

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The Priority List



Category scores:

- Socioeconomic significance maximum score=4.00
- Ecological significance maximum score=6.00
- Need for action maximum score=4.00

Figure 22. Total significance scores: distribution of category scores for the five subbasins with the highest total scores

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APPENDIX A: MISCELLANEOUS INFORMATION

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1 NASSAU RIVER	6 UPPER ST. JOHNS RIVER
1-000 Nassau River	6-101 Fort Drum Creek
	6-102 Blue Cypress Creek
	6-103 St. Johns Marsh
2 ST. MARTS RIVER	6-104 Lake Washington
2-002 Lower St. Marys River	6 202 Tasshotohaa
2-002 LOWER St. Marys River	6-203 Puzzle Lako
	0-200 T UZZIE LANE
3 LOWER ST. JOHNS RIVER	
3-100 Crescent Lake	7 OCKLAWAHA RIVER
3-200 Etonia Creek	7-100 Palatlakaha River
3-300 Black Creek	7-200 Lake Apopka
3-400 Ortega River	7-300 Lake Harris
3-501 Trout River	7-401 Lake Griffin
3-502 Broward River	7-402 Marshall Swamp
3-503 Dunn Creek	7-500 Eureka Dam
3-601 Arlington Creek	
3-602 Julington Creek	
3-603 North Lower St. Johns River	8 FLORIDA RIDGE & ORANGE LAKE
3-701 Sixmile Creek	8-001 Florida Ridge
3-702 McCullough Creek	8-002 Newnans Lake
3-703 Deep Creek	8-003 Lochioosa Lake
3-704 South Lower St. Johns River	8-004 Orange Lake
	8-005 Orange Creek
	8-006 Sweetwater Creek
4 MIDDLE ST. JOHNS RIVER	8-007 Rodman Reservoir
4-100 Econiocknatchee River	
4-201 Little Wekiva River	
4-202 Werliva River	9-100 Halifay River
A-301 Howell Creek	9-200 Matanzas River
	9-300 Tolomato River
4-402 Deep Creek	
4-403 Lake Monroe	10 INDIAN RIVER LAGOON
	10-001 North Indian River Lagoon
	10-002 N Central Indian River Lagoon
5 LAKE GEORGE	10-003 S Central Indian River Lagoon
5-001 Lake Beresford	-
5-002 Lake Woodruff	
5-003 Lake George	

 Table A1.
 St. Johns River Water Management District SWIM Priority Planning Basins and Subbasins (see Figure A1). There are 10 basins and 55 subbasins.

Source: Adamus 1991

NOTES: In many sections of the Appendix, the hyphens in the subbasin numbers are replaced by a 0. For example, 1-000 is listed as 10000, and 10-002 is listed as 100002. Subbasin number 0 denotes lakes that are within District boundaries, but not within any of the subbasins listed above.



Table A2.Codes Used to Denote Countles within the St. Johns River Water Manage-
ment District. Codes are from the Federal Information Processing System (FIPS).

	COUNTY
001	Alachua
003	Baker
007	Bradford
009	Brevard
019	Clay
031	Duval
035	Flagler
061	Indian River
069	Lake
083	Marion
089	Nassau
093	Okeechobee
095	Orange
097	Osceola
105	Polk
107	Putnam
109	St. Johns
117	Seminole
127	Volusia

Category	Criteria	Subcriteria	Description
	Public Use	Public Access	The degree of existing public access in each subbasin
		Potential Recreational Demand	The demand for use of waterbodies in each subbasin in terms of local population
Socioeconomic	Economic Importance	Water-dependent Businesses	The number of marinas, fish camps, and resorts in each subbasin, which is a reflection of recre- ational economic impact
Significance		Commercial Fisheries	The amount of harvesting supported by each subbasin
	Public Importance	Special Designations	An inventory of publicly owned or specially des- ignated lands or waters, such as state and na- tional parks and aquatic preserves
		Ground Water Recharge Areas	The locations of high ground water recharge areas
Ecological Significance	Natural & Wildlife Significance	No Subcriteria	The occurrences of endangered or threatened plants, animals, and communities; species of special concern; bird rookeries; and manatee occurrence sites
	Environmental Potential	No Subcriteria	The acreage of open water and wetlands in each subbasin
		Water Quality	A summary of subbasin water quality, to deter- mine which subbasins had the poorest water quality
	Degree of Impairment	Point Source Discharges	An inventory of point source pollution
		Fish Kills	An inventory of fish kills caused by poor water quality
		Aquatic Plant Control	A measure of impairment of important public waterways
		"Meets Designated Use" Assessments	An assessment of waterbody use impairment
Need for Action		Land Use	A determination of which watersheds had the most extensive urban development
		Water Quality	A summary of subbasin water quality, to deter- mine which ones had the best water quality
	Degree of Endangerment	Land Use	A determination of which subbasins might be most susceptible to damage from future devel- opment
	~	Population Growth	A measure of potential development pressure
		Population Density	A supplement to the population growth subcri- terion
		Point Source Discharges	An inventory of point source pollution

 Table A3.
 SWIM Priority Planning Subcriteria. There are 19 subcriteria used to determine SWIM priorities.

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APPENDIX B: SOCIOECONOMIC SIGNIFICANCE

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Table B1.Number of public access sites in each subbasin (see Table B2, on page 130,
for a complete list of these sites)

Busi- nesses"	Boat ramps	Parks & miscella- neous items	Total access sites	Subbasin number	Subbasin name
			Nassa	u River	
5	10	7	22	1-000	Nassau River
			St. Mar	ys River	
0	2	0	2	2-001	Upper St. Marys River
3	7	2	12	2-002	Lower St. Marys River
		L.	ower St	lohns River	
8	10	3	21	3-100	Crescent Lake
1	8	1	10	3-200	Etonia Creek
4	5	0	9	3-300	Black Creek
6	1	0	7	3-400	Ortega River
4	5	0	9	3-501	Trout River
0	0	0	0	3-502	Broward River
1	0	0	1	3-503	Dunn Creek
0	1	0	1	3-601	Arlington Creek
3	2	0	5	3-602	Julington Creek
22	14	9	45	3-603	North Lower St. Johns River
2	0	0	2	3-701	Sixmile Creek
0	0	0	0	3-702	McCullough Creek
0	1	0	1	3-703	Deep Creek
11	22	2	35	3-704	South Lower St. Johns River
		Mi	ddle St	lohns River	
0	4	3	7	4-100	Econlockhatchee River
0	3	1	4	4-201	Little Wekiva River
4	4	1	9	4-202	Wekiva River
0	2	1	3	4-203	Blackwater Creek
0	3	1	4	4-301	Howell Creek
2	2	2	6	4-302	Lake Jesup
1	2	0	3	4-401	Lake Harney
1	4	0	5	4-402	Deep Creek
4	5	3	12	4-403	Lake Monroe

* Businesses are marinas, fish camps, and shoreline resorts

Busi- nesses*	Boat ramps	Parks & miscella- neous items	Total access sites	Subbasin number	Subbasin name		
Lake George							
5	5	0	10	5-001	Lake Beresford		
10	16	2	28	5-002	Lake Woodruff		
23	14	0	37	5-003	Lake George		
		U	pper St	lahns River			
0	0	0	0	6-101	Fort Drum Creek		
1	3	0	4	6-102	Blue Cypress Creek		
2	0	0	2	6-103	St. Johns Marsh		
1	2	0	3	6-104	Lake Washington		
2	3	1	6	6-201	Lake Poinsett		
0	2	1	3	6-202	Tosahatchee		
1	5	0	6	6-203	Puzzle Lake		
			Ocklawa	ha River			
7	6	6	19	7-100	Palatlakaha River		
1	5	2	8	7-200	Lake Apopka		
16	20	6	42	7-300	Lake Harris		
14	12	1	27	7-401	Lake Griffin		
1	7	1	9	7-402	Marshall Swamp		
5	14	0	19	7-500	Eureka Dam		
		Florid	a Ridge	8 Orange La	ke		
0	1	2	3	8-001	Florida Ridge		
2	2	0	4	8-002	Newnans Lake		
12	3	0	15	8-003/4	Orange/Lochioosa lakes		
0	4	0	4	8-005	Orange Creek		
0	1	2	3	8-006	Sweetwater Creek		
0	8	0	8	8-007	Rodman Reservoir		
			Upper	Coastal			
21	16	27	64	9-100	Halifax River		
13	9	4	26	9-200	Matanzas River		
4	4	0	8	9-300	Tolomato River		

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* Businesses are marinas, fish camps, and shoreline resorts

Busi- nesses*	Boat ramps	Parks & miscella- neous items	Total acces sites	Subbasin number	Subbasin name
		I	ndian F	liver Lagoon	
37	35	19	91	10-001	North Indian River Lagoon
7	21	8	36	10-002	N Central Indian River Lagoon
10	13	4	27	10-003	S Central Indian River Lagoon

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* Businesses are marinas, fish camps, and shoreline resorts

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Table B2.Detailed Listing of Public Access Points in Each Subbasin (Public Use Criterion, Public Access Subcriterion).Public accesspoints include boat ramps, waterfront parks, beaches, fishing piers
and bridges, marinas, and fish camps.The list is organized by sub-
basin.

Explanation of column headings:

SUBBASIN:	See Notes on Table A1 (page 121)						
COUNTY:	See Table A2 (page 123)						
TYPE:	 B = Miscellaneous business (usually fish camp) M = Marina O = Other access—bridges, piers, catwalks P = Public park R = Paved boat ramp U = Unpaved boat ramp 						
CON:	Connected? Y if the item is located on a waterbody which is hydrologically connected to waterbodies in adjacent subbasins. This parameter is used only for boat ramps, marinas, and fish camps, to account for travel across subbasin boundaries.						
SOURCE:	 DNR = Florida Department of Natural Resources' recreational site survey computer printout (DNR 1989a) FIF = Fishing inside Florida (includes maps) (Bell-amy 1988) ATL = Florida atlas and gazetteer (DeLorme Mapping Compared 1997) 						

GFC = Ramps constructed by Florida Game and Fresh Water Fish Commission (GFC 1989c)

---See next page for start of table---

SUB-						
BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
0	95	R	LAKE CONWAY		FIF,CO	BOAT RAMP, PERKINS ROAD EAST OF S.R. 527, BELLE ISLE
0	95	Р	LAKE CONWAY		CO	WARREN PARK, OFF DAETWYLER RD
0	69	R	LAKE DAVID		FIF,CO	LAKE DAVID PARK, LAKE & MAGNOLIA ST, GROVELAND
0	95	R	LAKE IVANHOE		FIF,CO	BOAT RAMP, W OF S.R. 527
Ō	95	- u	LAKE JESSAMINE		FIF	BOAT BAMP, SE COBNER OF LAKE
õ	95	Ř	LAKE JESSAMINE		FIF CO	BOAT BAMP LUESSAMINE DE FAST OF U.S. 17/92
ŏ	05	ö				BOAT DAMP EEDICK DDIVE EAST OF S D 577
0	95					
U	95	n	LIT LAKE CONVAT		FIF,00	BOAT RAMP, RANDOLPH ST, EAST OF S.R. 527
40000	00	~				
10000	89	õ	BLACKR		UNR	BLACK RIVER BRIDGES, S OF YULEE
10000	89	В	BLACK R	Ŷ	DNR	CHARLES FISH CAMP, S OF YULEE
10000	89	R	CUSHING CK	Y	CO	CR 200, NEAR CALLAHAN
10000	31	В	FORT GEORGE R	Ý	DNR	CAMP ALAMACANI FISH CAMP, FORT GEORGE INLET
10000	31	Р	FORT GEORGE R		DNR	KINGSLEY PLANTATION STATE HISTORIC SITE, FT GEORGE ISLAND
10000	31	U	FORT GEORGE R	Y	DNR,CO	HUGUENOT PARK, FORT GEORGE
10000	89	R	LOFTON CK	Y	DNR	WILSON NECK LANDING, YULEE
10000	89	R	LOFTON CK	Y	DNR	LOFTON CREEK BOAT BAMP
10000	89	0	LOFTON CK	-	DNR	LOFTON CREEK BANKS, YULFE
10000	80	Ř	MUISCK	v	FIE	BOAT BAMP, BOAD 57 LIPSTREAM OF BOAD 24 DAMP
10000	80	D	MILLS CK	, v	CIC	
10000	09		NACCALLD	v		
10000	89	n n	NASSAU R		DNR	HOLLY POINT COMMUNITY PARK, NASSAGVILLE
10000	89	н	NASSAU R	Ŷ	DNR	NASSAU LANDING, S OF YULEE
10000	89	P	NASSAU R		DNR	AMELIA ISLAND STATE REC AREA
10000	89	R	NASSAU SOUND	Ŷ	DNR	NASSAU SOUND COUNTY BOAT RAMP
10000	31	В	SAWPIT CK	Ŷ	DNR	BUDDYS FISH CAMP, JAX
10000	31	Р	SAWPIT CK		DNR	BIG TALBOT ISLAND STATE PARK
10000	31	Ρ	SIMPSON CK		DNR	UTTLE TALBOT ISLAND STATE PARK
10000	31	Ρ	SIMPSON CK		DNB	SIMPSON CREEK PARK
10000	89	B	THOMAS CK	Y	FIF	BOAT BAMP SMITHS POINT
10000	80	B	THOMAS CK	v	FIF	
10000	09	0	THOMAS CK	, v		
10000	69	D	THOMASUK	r	UNR	THOMAS BOAT MAINE & BAIT, NASSAUVILLE
00004	•	-		v	A TI	
20001	3	н	SIMARYSH	Y .	AIL	BOAT RAMP, NE OF MACCLENNY
20001	3	н	ST MARYS R	Ŷ	GFC	BOAT HAMP, ON S.H. 121
20002	89	R	AMELIA R	Ŷ	DNR	FORT CLINCH STATE PARK
20002	89	М	AMELIA R	Y	DNR	AMELIA ISLAND YACHT BASIN, FERNANDINA BEACH
20002	89	Р	AMELIA R		DNR	OLD TOWN PARK, FERNANDINA BEACH
20002	89	М	AMELIA R	Ŷ	DNR	FERNANDINA BEACH MARINA
20002	89	Р	EGANS CK		DNR	EGANS CREEK PARK, FERNANDINA BEACH
20002	89	i.	EGANS CK	Y	DNR	
20002	80	м	EGANS CK	Ý		FOUDTEENTH ST MARINA FERMANDINA REACH
20002	09			÷		
20002	69			- V		
20002	89	н	SIMARISR			BOAT RAMP, IN GEORGIA, OFF U.S. 17
20002	89	н	ST MARYS R	Ŷ	GFC	BOAT RAMP, WALKERS LANDING
20002	89	R	ST MARYS R	Y	ATL	BOAT RAMP, ORANGE BLUFF
20002	89	R	ST MARYS R	Y	FIF	BOAT RAMP, OFF U.S. 1-23-301, BOULOGNE
30100	127	R	BLUE LAKE		со	BOAT RAMP, DELAND
30100	107	в	CRESCENT LAKE	Y	DNR,FIF.GFC	TANGERINE COVE FISHING RESORT, CRESCENT CITY
30100	35	R	CRESCENTLAKE	Ŷ	FIF.CO	SHELL BLUFF LAUNCH, OFF S.R. 100
30100	107	P	CRESCENTIAKE	v	DNR FIF	C AND M FISH CAMP, CRESCENT CITY
20100	107	P	ODESCENT LAVE	v.		LAKE ODESCENT DESCOT ODESCENT OTV
30100	107	5	ODEQUENT LAKE	T V		DITNAM COUNTY BOAT DAMB #1.1 OPESCENT CITY
30100	107	н	CRESCENTLAKE		GFC, DNR, FIF	PUINAM COUNTY BOAT RAMP #1, CRESCENT CITY
30100	107	M	CRESCENTLAKE	Ŷ	UNH	BUENA VISTA MARINA, CRESCENT CITY
30100	35	в	DEAD LAKE	Ŷ	GFC,CO	DEAD LAKE FISH CAMP, ST. JOHNS PARK
30100	107	В	DUNNS CK	Ý	DNR,FIF,GFC	DUNNS CREEK FISHING RESORT, SATSUMA
30100	107	В	DUNNS CK	Y	DNR,FIF	BELCHERS FISH CAMP, SATSUMA
30100	107	в	DUNNS CK	Y	DNR,FIF,GFC	GEORGIA BOY FISH CAMP, SATSUMA
30100	35	R	HAW CREEK	Y	CO	RUSSELL LANDING, HAW CK COUNTY ACQUISITION
30100	127	B	INDIAN LAKE		GFC.CO	BOAT RAMP. 8 MI NE OF DELAND
30100	107	p	LAKE BROWARD		DNR	CITY SWIMMING AREA, POMONA PARK
30100	107	P	LAKE DIAS		GEC	BOAT RAMP #2
30100	107	P				
30100	121	- 11	LAKE DIRETON		EIE	BOAT BAMP WASHINGTON AVE E FROM DIEDSON
30100	35		LAKE DIGGTON			
30100	35	Ŭ	LAKE DISSION			DUTINAN COUNTY DOAT DAND #D.E. ODECCENT CITY
30100	107	R	LAKESTELLA		GFC,DNR,FIF	PUTNAMI COUNTY BOAT HAMP #H-5, CHESCENT CITY
30100	107	Р	LAKE STELLA		DNR	DEXTER BEACH BICENTENNIAL PARK, CRESCENT CITY
30100	107	Р	LAKE STELLA		DNR	WEST SIDE PARK, CRESCENT CITY

SUB.						,
BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
30200 30200 30200 30200 30200 30200 30200 30200 30200 30200	19 107 107 19 19 19 19 19 19	~ B ~ C ~ C ~ C ~ C	BLUE POND GEORGES LAKE GOODSON PRAIRIE LAKE BROOKLYN LAKE GENEVA LAKE GENEVA LAKE JOHNSON MAGNOLIA LAKE SANDHILL-LOWRY LK		GFC DNR,FIF GFC,DNR,FIF PUTNAM CO. DNR,GFC,CO DNR,FIF,CO CO ATLAS GFC,FIF GFC,FIF	BOAT RAMP LAKESIDE HILLS FISH CAMP, FLORAHOME PUTNAM COUNTY BOAT RAMP #R-21, ON NW SIDE PUTNAM CO BOAT RAMP, N OF GRANDIN COUNTY BOAT RAMP, KEYSTONE HEIGHTS, OFF SR 100 COUNTY BOAT RAMP, SE OF KEYSTONE HEIGHTS ON SR 100 KEYSTONE BEACH GOLD HEAD BRANCH STATE PARK BOAT RAMP, TROUT RD OFF S.R.21, NE OF KEYSTONE HTS BOAT RAMP, OFF S.R. 21
30300 30300 30300 30300 30300 30300 30300 30300 30300	19 19 19 19 19 19 19 19	R R M B R B M R R	BLACK CK BLACK CK BLACK CK BLACK CK BLACK CK KINGSLEY LAKE KINGSLEY LAKE KINGSLEY LAKE LAKE ASBURY	Y Y Y Y	CO GFC,FIF,CO DNR,CO DNR GFC,DNR,FIF,CO DNR,CO DNR,GFC,CO GFC DNR	BOAT RAMP, AT US 17 BOAT RAMP, OFF 209 BLACK CREEK MARINA, GREEN COVE SPRINGS THE RAVINES RESORT, MIDDLEBURG BOAT RAMP #L-2, MIDDLEBURG NEW KINGSLEY BEACH, STARKE STRICKLANDS LANDING, STARKE CAMP BLANDING, S.R. 16 RIDAUGHT LANDING, MIDDLEBURG
30400 30400 30400 30400 30400 30400 30400	31 31 31 31 31 31 31	M M M R M M	CEDAR R CEDAR R CEDAR R ORTEGA R ORTEGA R ORTEGA R ORTEGA R	Y Y Y Y Y Y	DNR DNR DNR DNR DNR,FIF,CO DNR DNR	CHUCKS BOAT YARD, JAX LIGHTHOUSE MARINE, JAX SADDLER POINT MARINA, JAX LAMBS YACHT CENTER, JAX STEVENS BOAT RAMP, JAX SEA JAYS BOAT STORAGE, JAX HUCKINS YACHT DOCK, JAX
30501 30501 30501 30501 30501 30501 30501 30501 30501	31 31 31 31 31 31 31 31	R R M M M R M R	RIBAULT R RIBAULT R RIBAULT R TROUT R TROUT R TROUT R TROUT R TROUT R TROUT R	Y Y Y Y Y Y Y Y Y	DNR,CO DNR,CO DNR DNR DNR DNR DNR,CO DNR,CO	STOKES BOAT LANDING, RIVERVIEW AVE, JAX HARBOR VIEW BOAT RAMP, HARBOR VIEW DR, JAX WASHINGTON HEIGHTS BOAT LANDING, KEN KNIGHT DR, JAX OASIS MARINA, JAX EDWARDS MARINA, JAX TROUT RIVER MARINA, JAX DINSMORE BOAT RAMP, JAX SEAFARERS MARINA, JAX BERT MAXWELL BOAT RAMPS, AT I-95, JAX
30503	31	в	DUNNS CK	Y	DNR	DUNNS CREEK FISH CAMP
30601	31	R	POTTSBURG CK	Y	DNR,CO	BEACH BLVD BOAT RAMP, JAX
30602 30602 30602 30602 30602	31 31 31 31 31	R M B R M	JULINGTON CK JULINGTON CK JULINGTON CK JULINGTON CK JULINGTON CK	Y Y Y Y	DNR,FIF,CO DNR DNR,FIF FIF DNR	HOOD LANDING, JAX MANDARIN HOLIDAY MARINA, JAX CLARKS FISH CAMP, JAX BOAT RAMP, OFF U.S.13 JULINGTON CK MARINA, MANDARIN
30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603 30603	31 31 19 19 31 31 31 31 31 31 31 31 31 31 31 31	808888 2 288888888	DHOWINS CK BROWINS CK CLAPBOARD CK DOCTORS LAKE DOCTORS LAKE ICW, PABLO CK ICW, PABLO CK ICW, PABLO CK PABLO CK PABLO CK PABLO CK PABLO CK PABLO CK PABLO CK PABLO CK PABLO CK PABLO CK SISTERS CK SISTERS CK SISTERS CK SJR	* *** * *** * ************************	UNH DNR DNR,FIF,GFC GFC DNR,FIF,CO CO DNR,CO DNR,CO DNR DNR DNR DNR DNR DNR DNR DNR DNR DNR	BROWINS CK FISH CAMP, JAX BROWNS CREEK FISHING CATWALK, JAX PALMS FISH CAMP, JAX WHITEYS FISH CAMP, ORANGE PARK BOAT RAMP, LAKESHORE DR PABLO CK PARK, ATLANTIC BEACH INLAND WATERWAY BOAT LANDING, JAX BEACH OAK HARBOR PARK, MAYPORT INLAND WATERWAY MARINA, JAX THE MOORINGS, JAX BEACH JAX YACHT BASIN (MARINER COVE), JAX BEACH DILLMONS MARINA, JAX BEACH PELICAN CREEK BOATYARD & MARINA, JAX SAN PABLO RIVER PARK, JAX BEACH SISTERS CREEK FISH CAMP, JAX SISTERS CREEK FISH CAMP, JAX BOAT RAMP AT FERRY STATION, JAX
30603 30603	31 31	R M	SJR SJR	Y Y	DNR,CO DNR	ARLINGTON ROAD BOAT RAMP, JAX FLORIDA YACHT CLUB, JAX

SUB- BASIN	COUNTY .	TYPE	WATEBBODY	CON	SOURCE	COMMENTS
	0001111			0011	0001102	
30603	31	М	SJR	Y	DNR	GOODBYS LAKE MARINA, JAX
30603	31	B	SJR	Ŷ	DNR	OYSTER SHELL FISH CAMP, FORT GEORGE ISLAND
30603	31	н	SJR	Ŷ	DNR,CO	
30603	31	2	SJR		DNR	
30603	31	0	SJR	v		HECKSHER DRIVE FISHING PIEK, JAX
30003	31	0	SJH	r		BOAT RAMP, OFF MANDARIN RUAD, JAX
30603	21	B				
30603	31	M		v		
30603	31	U U	SIR	Ý	DNR	MAYPORT BOAT LANDING
30603	31	й	SJR	Ý	DNR	BUDDER CLUB OF JAX, ORANGE PARK
30603	31	B	SJR	Ý	DNB	CLAPBOARD CREEK FISH CAMP. JAX
30603	31	Ř	SJR	Ý	CO	ARLINGTON LIONS CLUB BOAT RAMP, R.G. GATLIN RD. JAX
30603	19	M	SJR	Ŷ	DNR	INLET MARINA, ORANGE PARK
30603	31	Ρ	SJR		DNR	RIVERVIEW PARK, JAX
30603	31	М	SJR	Y	DNR	JARRELL CLAPBOARD CREEK MARINA, JAX
30603	31	Μ	SJR	Y	DNR	MONTYS MARINA, MAYPORT
30603	31	R	SJR	Y	CO	NEW BERLIN RAMP, FREDERICK RD
30603	31	R	SJR	Y	DNR,CO	LONNIE WURN BOAT RAMP, FERBER RD, JAX
30603	31	В	SJR	Y	DNR	PIRATES COVE FISH CAMP, JAX
30603	31	Р	SJR		DNR	NORTH SHORE PARK, JAX
30603	31	R	SJR	Ŷ	DNR,CO	SJR PARK & MARINA, GULF LIFE DR., JAX
30603	31	М	SJR	Ŷ	DNR	ORTEGA BAY MARINA, JAX
30603	31	м	SJR	Ŷ	DNR	MANDARIN MARINA, JAX
30701	109	м	SIX MILE CK	Y	DNR,FIF	SIX MILE FISH CAMP & MARINA, GREEN COVE SPRINGS
30701	109	м	THOUT CK	Ŷ	DNR,FIF,GFC	PACETTIS MAHINA & CAMPGHOUND, OHANGEDALE
30703	109	R	DEEP CK	Y	DNR,CO	HASTINGS BOAT RAMP, S.R. 207
30704	19	М	GOVERNORS CK	Y	CO	GREEN COVE MARINA
30704	19	R	GOVERNORS CK	Y	FIF,CO	BOAT RAMP, NORTH OF GREEN COVE SPRINGS
30704	19	Р	GOVERNORS CK	v	DNR DUONE DK	GOVERNORS CREEK PARK, GREEN COVE SPHINGS
30704	10/	M	SJH	Ŷ	PHONE BK	BUATHOUSE MARINA, PALATKA
30704	109	н	SJR	Ŷ	GFC, DNR, FIF, CO	TRAIL DOCC FICH CAMP, PALMO COVE
30704	107	в	SJR	v		THAIL BUSS FISH CAMP, WELANA DUTNAM CO DOAT DAMD #1 4 SD 200 % EDONT STREET MELAKA
30704	107	M	SIN	, v		SUELI HADROD MADINA WELAKA
20704	107			v		
30704	10/	R	SIR	Ý	GEC EIF	OLD SHANDS BRIDGE WEST SIDE GREEN COVE SPRINGS
30704	107	R	SJR	Ý	DNR FIE GEC	NORTONS PLACE WELAKA
30704	107	Ř	SJR	Ý	DNR	SPORTSMANS PARADISE, WEI AKA
30704	107	บั	SJR	Ý	FIF	BOAT RAMP, STOKES LANDING ROAD, S OF PALATKA
30704	107	Ř	SJR	Ý	DNR,FIF	COUNTY BOAT LAUNCH AREA, S OF BRIDGEPORT, OFF FISH CK & SR 209
30704	107	В	SJR	Ý	DNR.GFC	WOLFES FISH CAMP, WELAKA
30704	109	0	SJR		DNR	SR 16 CATWALK, ORANGEDALE
30704	107	₿	SJR	Y	DNR,FIF,GFC	BASS HAVEN LODGE, WELAKA
30704	19	R	SJR	Y	GFC	BOAT RAMP, GREEN COVE SPRINGS
30704	109	R	SJR	Y	DNR,FIF,CO	RIVERDALE PARK, TOCOL
30704	107	R	SJR	Y	GFC,DNR,FIF	PUTNAM CO. BOAT RAMP #69, OFF S.R. 209A, PALMETTO BLUFF
30704	107	R	SJR	Y	GFC,DNR,FIF	PUINAM CO. BOAT RAMP #L-37, SHELL HARBOR RD, OFF SR 309, NASHUA
30704	107	В	SJR	Y	DNR,FIF,GFC	SUNSET LANDING, WELAKA
30704	109	R	SJR	Y	UNR	TOCOLBOAT HAMP & CLOSED FISH CAMP (AS OF 10/89)
30704	107	м	SJR	Ý	PHONE BK	CHYSTAL COVE MARINA, PALATKA
30704	107	М	SJH	Ŷ		ACUSTA CHEEK MARINA AND LOUGE, N OF WELAKA
30704	107	M	SJH	Y		
30/04	107	H	SJH	, v		
30704	109	D D	SID	v		
30704	107	n 11	SIR	Ý	DNR CO	OLD SHANDS BRIDGE FISHING PIER, ORANGEDALE
30704	109	R	SIB	Ý	FIF	DBIFTWOOD MOTEL. W/ BOAT DOCKS. F PALATKA
30704	10/	R	SJR	Ý	DNR.CO	WILLIAMS COUNTY PARK. 6 MIS OF GREEN COVE SPRINGS
30704	107	R	SJR	Ý	GFC.DNR	BOAT RAMP, OFF S.R. 100, PALATKA
30704	107	R	SJR	Ý	DNR,FIF	BROWNS LANDING, PUTNAM COUNTY BOAT RAMP, LUNDY ROAD
30704	107	R	SJR	Y	DNR,FIF	J C GOODWIN RIVERFRONT PARK, DOCK, AND PUTNAM CO. RAMP, PALATKA
40100	95	Р	LAKE DOWNEY		со	DOWNEY PARK, IN UNION PARK
40100	117	P	LAKE MILLS		со	L MILLS COUNTY PARK
40100	95	U	LAKE PICKETT		FIF	BOAT RAMP, NEAR S.R. 419 & S.R. 420
40100	95	U	LAKE SUSANNAH		FIF.CO	BOAT RAMP, JAMA JO BLVD N OF S.R. 50

SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
40100	95	R	LAKE UNDERHILL		FIF.CO	
40100	95	R	LIT ECON RIVER	Y	co	BOAT RAMP, OFF N ECON TRAIL
40100	95	Р	LIT ECON RIVER		со	BLANCHARD PARK, DEAN RD N OF SR 50
40201	05	D				
40201	117	R	LAKE PEARL		CO	BOAT RAMP, SE OF U.S. 441 AND LEE ROAD BOAT RAMP (INFO FROM ORANGE COUNTY)
40201	95	R	LAWNE LAKE		GFC,FIF	BOAT RAMP, COUNTRY CLUB DR. OFF MERCY ROAD
40201	95	Р	LAWNE LAKE		co	BARNETT PARK
40202	95	Р	BOCK SPRINGS		co	KELLY PARK
40202	95	R	STARKE LAKE		FIF,CO	BOAT RAMP, OAKLAND AVE, OCOEE, E OF S.R. 439
40202	117	R	SYLVAN LAKE		CO	SYLVAN L COUNTY PARK, OFF S.R. 46
40202	117	U		Ŷ		BOAT HAMP, AT S.R. 46 WEKIMA FALLS RESOLT
40202	117	В	WEKIVA R	Ý	FIF.GFC	WEKIVA TALLS RESORT
40202	117	M	WEKIVA R	Ý	FIF,GFC	WEKIVA MARINA
40202	117	U	WEKIVA R	Ŷ		BOAT RAMP, WEKIVA SPGS STATE PARK
40202	117	в		Ŷ	FIF,GFC	KATIES WERIVA LANDING
40203	69	Ρ	CLEARWATER LAKE		со	OCALA NATL FOREST, OFF S.R. 42
40203	69	R	LAKE DALHOUSIE		GFC,FIF,CO	BOAT RAMP, S.R. 450, SE OF UMATILLA
40203	69	н	LAKE DORH		GFC,FIF,CO	LAKE DORH REC AREA, ONF, S.R. 19, N OF ALTOONA
40301	95	Ρ	HOWELL CK		со	HOWELL BRANCH PARK
40301	95	R	LAKE KILLARNEY		CO	BOAT RAMP, CAMBRIDGE BLVD
40301	95	н			FIF,CO	BOAT RAMP, SE OF U.S. 17/92 AND VENTHIS AVE
40501	35	п			11,00	BOAT HAWF, FAIRBAING AVE E OF U.S. 17/82
40302	117	B	LAKE JESSUP	Y	FIF	BLACK HAMMOCK FISH CAMP, WILLOW COVE
40302	117	8	LAKE JESSUP	Ŷ	FIF,GFC	HILEYS FISH CAMP, WHITES LANDING
40302	117	P	RED BUG LAKE	T	CO,FIF	RED BUG L COUNTY PARK, N SIDE OF LAKE, SANFORD AVE.
40302	117	R	SJR	Y	CO,FIF	CAMERON WIGHT COUNTY PARK, S.R. 46, MOUTH OF LAKE JESSUP
40302	117	Ρ	SOLDIERS CREEK		CO	SOLDIERS CK COUNTY PARK, S.R. 419
40401	117	U	LAKE HARNEY	Y	FIF	BOAT RAMP, LAKE HARNEY ROAD, N OF S.R. 46
40401	117	R	SJR	Y	CO,FIF	C.S. LEE COUNTY PARK, AT S.R. 46, SOUTH OF LAKE HARNEY
40401	117	в	SJR	Y	FIF,GFC	LINDSAY FISH CAMP, SOUTH OF LAKE HARNEY
40402	127	R	CYPRESS LAKE		CO,GFC,FIF	BOAT RAMP, NEAR DAYTONA PARK ESTATES
40402	127	R	LAKE ASHBY		CO,GFC,FIF	L ASHBY PARK, S OF S.R. 415
40402	117	R	MULLET LAKE	Ŷ	CO,FIF,GFC	MULLET L COUNTY PARK, N OF S.R. 46
40402	127	В	SJR	Ý	FIF.GFC.CO	LEMON BLUFF FISH CAMP. UPSTREAM OF MULLET LAKE
		_				
40403	127	U			FIF	BOAT RAMP, DELTONA
40403	127	p	LAKE COLBY		co	L COLBY COUNTY PARK, CASSADAGA
40403	127	P	LAKE GLEASON		co	L GLEASON COUNTY PARK, DELTONA
40403	127	R		Ŷ	CO,GFC,FIF	BOAT RAMP, DELTONA, ENTERPRISE ROAD
40403	117	H		Ŷ		BOAT HAMP, SOUTH SIDE OF LAKE, SANFORD MONROE HARBOR MARINA, SANFORD
40403	117	В	SJR	Ý	FIF	BILLS FISH CAMP, NORTH OF LAKE JESSUP
40403	117	В	SJR	Y	FIF,GFC	OSTEEN BRIDGE FISH CAMP, OFF S.R. 415
40403	117	В	SJR	Ŷ	FIF,GFC	MARINA ISLE FC, S.R. 46 NORTH OF LAKE JESSUP
40403	117	R	SJR	Ŷ	CO.GFC.FIF	L MONROE COUNTY PARK, U.S. 17/92, N SIDE OF RIVER
		_				
50001	127	В	LAKE BERESFORD	Y V	FIF,CO	SUNHISE FISHING CLUB, WEST SIDE OF LAKE KYPS FISH CAMP & MARINA
50001	127	M	LAKE BERESFORD	Ý	FIF.GFC.CO	TROPICAL APT. AND MARINA, BERESFORD
50001	127	M	LAKE BERESFORD	Y	со	LAKE BERESFORD MARINA
50001	127	М	SJR	Y	FIF,CO	HIGH BANKS MARINA AND R.V. CAMP RESORT
50001	127 127	R	SJR	Y	CO.GFC.FIF	BOAT RAMP. AT HIGH BANKS
50001	127	ü	SJR	Ŷ	FIF	BOAT RAMP, BLUE SPRINGS STATE PARK
50001	127	М	SJR	Y	FIF,GFC,CO	HONTOON LANDING MARINA
50001	127	М	SJH	Y	FIF,CO	HIVIERA REJUKI MAHINA
50002	69	U	ALEXANDER SPGS CK	Y	GFC,FIF	OCALA NATL FOREST, F.R. 39, E OF F.R. 38, N OF PAISLEY

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SUE BAS	3- 1N C		TYPE	WATERBODY	CON	SOURCE	COMMENTS
50	002	69	R	ALEXANDER SPGS CK	Y	со	ALEX SPGS REC AREA, C.R.445
50	002	69	U	ALEXANDER SPGS CK	Y	FIF	OCALA NATL FOREST, F.R. 52B, OFF S.R. 445
50	002	69	R	BEAKMAN LAKE		FIF	OCALA NATL FOREST, S.R. 19, S OF S.R. 40
50	002	83	н			GFC	OCALA NATL FOREST, S OF F.R. 95
50	002	83	R	EARLES LAKE			OCALA NATE FOREST, F.R. 52, W OF S.R. 19, 4 WHEEL DRIVE ONLY
50	002	83	B	FARLES PRAIRIE		GFC	OCALA NATL FOREST, P.H. 95 W OF S.H. 19
50	002	127	P	LAKE WOODRUFF		CO	L WOODRUFF NATL WILDLIFE REFUGE
50	002	127	в	NORRIS DEAD R	Υ	FIF,GFC,CO	HIGHLAND PARK FISH CAMP
50	002	69	U	SELLERS LAKE		FIF,CO	OCALA NATL FOREST, SE END OF LAKE, F.R. 95 OFF S.R. 19
50	002	83	U	SELLERS LAKE	v	GFC,FIF	OCALA NATL FOREST, SW END OF LAKE, F.R. 95, W OF S.R. 19
50	002	127	R	SIR	v	CEC	
500	002	69	Ř	SJR	Ý	FIE.CO	2ND BOAT BAMP S OF S.B. 40 ASTOR
500	002	127	R	SJR	Ŷ	CO,FIF	ED STONE COUNTY PARK, AT S.R. 44, W OF DELAND
500	002	69	R	SJR	Y	GFC,FIF,CO	BOAT RAMP, S OF S.R. 40, ASTOR
500	002	127	M	SJR	Y	CO	SHOWBOAT FISH CAMP & MARINA
500	002	69	M	SJR	Ŷ	FIF,GFC	POWELLS CAMPGROUND, S OF ASTOR
500	002	107	В	SJR	Ŷ	GFC	ALLENS COTTAGES, ASTOR (NO HAMP)
500	002	69	M	SIR	Ý	FIF	HALLS LODGE INC., ASTON BUCKLEVS EISH CAMP ASTON
500	002	69	P	SJR	•	co	RIVER FOREST REC AREA. S.R. 44
500	002	69	M	SJR	Y	GFC	ASTOR/ST JOHNS MARINA, ASTOR
500	002	69	М	SJR	Y	WALT	CROWS BLUFF MARINA
500	002	127	В	SPRING GARDEN L.	Y	FIF,GFC	TEDDERS FISH CAMP
500	002	127	R	SPRING GARDEN L.	Ŷ	ATLAS,CO	DELEON SPRINGS STATE REC AREA (INCLUDES ADDITION)
500	002	127	в	ZEIGLER DEAD R	T	FIF,GFC,CO	NORTH SHELL FISH CAMP
500	003	83	R	HOPKINS PRAIRIE		GFC,FIF	OCALA NATL FOREST, ON F.R. 86, W OF S.R. 19
500	003	83	U	JUNIPER CK	Y	FIF	OCALA NATL FOREST, OFF S.R. 19
500	003	83	В	LAKE DELANCY		FIF	CAMP NEWBERN FISH CAMP, OCALA NATL FOREST
500	003	127	M		Ŷ	FIF,GFC,CO	PINE ISLAND FISH CAMP, EAST SHORE, S.R. 305
500	103	83	N		Ŷ	FIF CEC	LAKE GEORGE MARINA CADTAIN MODCANS EISH CAMP
500	103	127	R		Ý	GEC FIE	BOAT BAMP, NINEMILE PT BOAD, SW OF SEVILLE
500	003	69	R	LAKE GEORGE	Ý	GFC.FIF.CO	BOAT RAMP, N OF S.R. 40
500	003	127	U	LAKE GEORGE	Υ	FIF	BOAT RAMP, NINEMILE PT ROAD, SW OF SEVILLE
500	003	83	R	LAKE KERR		GFC,FIF,CO	MOORHEAD PARK, OFF F.R. 88, S OF S.R. 316
500	003	83	В	LAKE KERR		FIF,GFC	ANCHOR INN COTTAGES & FC, OCALA NATL FOREST
500	203	83	В			FIF,GFC	KERR CITY COTTAGES & FC, OCALA NATL FOREST
500	203	127				GFC,CO	PORESTAURES DUAT RAMP, SUP S.R. 310
500	003	69	Ř	S GRASSHOPPER L.		GEC.FIF.CO	OCALA NATL FOREST, OFF S.R. 19, S OF S.R. 40
500	003	83	R	SALT SPRINGS	Y	ONF	OCALA NATL FOREST, CAMPGROUND AT SALT SPRINGS
500	003	83	В	SALT SPRINGS RUN	Y	FIF,GFC	CARROLLS FISH CAMP
500	003	107	В	SJR	Y	DNR,FIF,GFC	LUNKER LODGE, GEORGETOWN
500	003	107	В	SJR	Ŷ	DNR,FIF,GFC	BASS WORLD, GEORGETOWN
500	203	12/	R	5JR 5 IB	v v	DNR FIE GEC	VOLUSIA DAR FISHING RESORT GEORGETOWN
500	003	107	B	SJR	Ý	DNR.FIF.GFC	TROPHY BASS LODGE, GEORGETOWN
500	003	127	B	SJR	Ý	FIF,GFC,CO	SOUTH MOON FISH CAMP, S OF LAKE GEORGE
500	003	107	R	SJR	Y	FIF	PUTNAM CO. BOAT RAMP, FORT GATES FERRY LANDING, W SHORE
500	003	107	R	SJR	Y	GFC,FIF	PUTNAM CO. BOAT RAMP #L-38, DRAYTON I FERRY LANDING, GEORGETOWN
500	003	107	В	SJR	Ŷ	DNR,FIF,GFC	ANGLERS PARADISE LODGE, N OF GEORGETOWN
500	103	107	ы Б	SJH	v	DINH, FIF, GFC	IVIENUND LAIVUING, GEUNGETUWN
500	103	107	м	SIR	v	FIF GFC CO	BLAIRS JUNGLE DEN SOF LAKE GEORGE
500	003	107	B	SJR	Ý	FIF	DUKES LAKEVIEW LODGE, GEORGETOWN
500	003	107	B	SJR	Ý	FIF	PORT COVE FISH CAMP, GEORGETOWN
500	003	127	М	SJR	Y	FIF,GFC,CO	PARRAMORES FISH CAMP, S OF LAKE GEORGE
500	003	107	В	SJR	Y	DNR	TRIPLE B LODGE, ON SJR, CRESCENT CITY
500	003	107	8	SJR	Ŷ	DNR,FIF,GFC	GATEWAY FISHING CAMP, ON SJR, CRESCENT CITY
500	103 103	69 107	н в	SIR	v		
500	003	69	Ř	WILDCAT LAKE	•	FIF,CO	OCALA NATL FOREST, ON S.R. 40 E OF S.R. 19
	-						
601	102	61	В	BLUE CYPRESS LAKE	Ŷ	FIF,GFC	MIDDLETONS FISH CAMP, WEST SHORE
601	102	61 61	н	BLUE CYPRESS LAKE	v	CO FIF STAFF	BOAT RAMP. AT C.R. 512, E & W SIDES
601	102	61	R	ST JOHNS R. WMA	Ý	STAFF	BOAT RAMP, FELLSMERE GRADE

SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
	0001111			0011	COUNCE	
60103 60103	9 9	8 8	SJR SJR	Y Y	GFC,CO FIF,CO	SWEETWATER RESORT, U.S. 192, E SHORE CAMP HOLLY, U.S. 192, NORTH OF SAWGRASS LAKE
60104 60104 60104	9 9 9	B B R	LAKE WASHINGTON LAKE WASHINGTON LAKE WASHINGTON	Y Y Y	FIF,CO CO FIF,CO	LAKE WASHINGTON RESORT WEST OF TOWN FISH CAMP LAKE WASHINGTON ROAD BOAT RAMP
60201 60201 60201 60201 60201 60201	9 9 9 9 9	P U M U B R	CLEAR LAKE LAKE FLORENCE LAKE POINSETT LAKE POINSETT SJR SJR	Y Y Y Y	CO STAFF FIF,CO STAFF FIF,CO FIF,CO	TRAVIS PARK, COCOA UNIMPROVED BOAT RAMP, NE SHORE LAKE POINSETT LODGE AND MARINA UNIMPROVED BOAT RAMP, S OF L POINSETT LODGE LONE CABBAGE FISH CAMP, AT S.R. 520 J.G. BOURBEAU PARK, S.R. 520, SE SIDE OF BRIDGE
60202 60202 60202	95 9 95	R P R	SJR SJR SJR	Y Y	FIF,CO CO FIF	BOAT RAMP, S SIDE OF S.R. 50 LONG BLUFF COUNTY PARK, UNDEVELOPED, T23R34S13 BOAT RAMP, AT S.R. 520, NW SIDE OF BRIDGE
60203 60203 60203 60203 60203 60203	9 95 9 9 9	R R B U U U U	FOX LAKE SIX MILE CK SJR SJR SJR SOUTH LAKE	Y Y Y	GFC,FIF,CO FIF,CO FIF STAFF GFC,FIF,CO FIF	FOX LAKE PARK W OF TITUSVILLE SIX MILE CREEK PARK, AT S.R. 46 MIDWAY FISH CAMP, AT S.R. 50 UNIMPROVED ACCESS, N SIDE OF S.R. 50 HATBILL PARK, WEST OF RUTH LAKE, HATBILL ROAD BOAT RAMP, WEST OF TITUSVILLE, OFF CARPENTER ROAD
70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70100 70200 70200 70200 70200	105 105 105 105 105 105 69 69 69 69 69 69 69 105 105 69 69 69 69 69 59	RBBPBBUBPPPORPMUBRR RRRR	BONNET LAKE LAKE JULIANA LAKE JULIANA LAKE JULIANA LAKE LOUISA LAKE LOWERY LAKE MINNEHAHA LAKE MINNEHAHA LAKE MINNEOLA LAKE MINNEOLA LAKE MINNEOLA LAKE MINNEOLA LAKE MINNEOLA LAKE SUSAN LAKE TENNESSEE LAKE VAN PALATLAKAHA R PALATLAKAHA R PALATLAKAHA R APOPKA-BEAUCLAIRE C JOHNS LAKE LAKE APOPKA LAKE APOPKA	Y Y Y CANAL	FIF FIF CO FIF FIF FIF,GFC CO CO CO CO FIF,CO CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO FIF,CO	BOAT RAMP, WEST SHORE FISH HAVEN LODGE, OLD BERKELEY ROAD LUNDYS COTTAGES AND FISH CAMP LAKE LOUISA STATE PARK, LAKE NELLIE RD FLETCHERS FISH CAMP, SOUTH SHORE OAK HARBOR CAMPGROUND (W/RAMP), WEST SHORE BOAT RAMP, SOUTH END CYPRESS COVE RESORT, WEST SIDE INDIAN HILLS PARK, W. LAKESHORE DR, CLERMONT MINNEOLA BEACH, OFF MAIN AVE, MINNEOLA L PALATLAKAHA REC AREA, 12TH ST, CLERMONT 8TH ST PIER, L MINNEOLA DR & 8TH, CLERMONT BTH ST PIER, L MINNEOLA DR & 4TH, CLERMONT WEST BEACH, CLERMONT LAKE SUSAN LODGE AND MARINA, N SIDE BOAT RAMP, OLD BERKELY ROAD FISH CAMP PALATLAKAHA PARK, JUST N OF LAKE LOUISA BOAT RAMP, S.R. 19, N OF GROVELAND LAKE JEM PARK & BOAT RAMP, OFF C.R. 448 BOAT RAMP, OFF S.R. 50 BOAT RAMP, MONTVERDE KILLARNEY MOBILE HOME AND RY PARK
70200 70200 70200 70200 70200	95 95 69 95 69	B R P R O	LAKE APOPKA LAKE APOPKA LAKE APOPKA LAKE APOPKA LAKE FLORENCE		FIF GFC,FIF,CO CO FIF CO	KILLARNEY MOBILE HOME AND RV PARK MAGNOLIA PARK, OFF S.R. 437 TRUSKETT PARK, MONTVERDE BOAT RAMP, N OF WINTER GARDEN LAKE FLORENCE FISHING PIER, MONTVERDE
70300 70300 70300 70300 70300 70300 70300 70300 70300 70300 70300 70300 70300	69 69 69 69 69 69 69 95 95 95 69 69	~~~	APOPKA-BEAUCLAIRE C DORA CANAL DORA CANAL HAINES CK HAINES CK HAINES CK HAINES CK HAINES CK HELENA RUN LAKE BEAUCLAIRE LAKE CARLTON LAKE DORA LAKE DORA LAKE DORA	CANAL Y Y Y Y Y Y Y Y Y Y Y	GFC,FIF,CO CO FIF,GFC FIF,GFC FIF,GFC FIF,GFC FIF,GFC FIF,GFC FIF FIF,CO GFC FIF FIF,CO GFC,FIF,CO CO	LAKE JEM PARK & BOAT RAMP, OFF C.R. 448 TAVARES REC PARK, AT US 441, TAVARES SUMMERALL CITY PARK, WELLS & LAKE AVENUES, TAVARES BLACK BASS RESORT SPILLWAY PARK & TAVERN (NO RAMP) WINTONS MARINA SPARKYS FISH CAMP BAY ISLAND COTTAGES HOLIDAY TRAVEL PARK, S.R. 33 TRIMBLE PARK, SOUTH SIDE OF LAKE BOAT RAMP, TRIMBLE PARK FISH CAMP, SE SHORE SUMMERALL COUNTY PARK, WELLS AVE, SW TAVARES PALM ISLAND PARK, TREMAIN ST, MOUNT DORA ELIZ. EVANS PARK, DONNELLY ST, MOUNT DORA

SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
70300	69	R		v	GEC CO	
70300	69	R	LAKE DORA	Ý	FIF.CO	WOOTEN PARK, OFF MAIN STREET, TAVARES
70300	69	M	LAKE DORA	Ý	GFC	MOUNT DORA MARINA
70300	69	R	LAKE EUSTIS	Y	CO	LAKE SHORE DR RAMP & PIER, LAKE SHORE DR & KING ST, EUSTIS
70300	69	R	LAKE EUSTIS	Y	GFC,FIF,CO	UNNAMED RAMP, OFF S.R. 19, AT CONNECTION TO TROUT CK, EUSTIS
70300	69	Р	LAKE EUSTIS		CO	PENDLETON MEM. PARK, E BATES & BAY ST, EUSTIS
70300	69	M		Ŷ		
70300	60	5	LARE EUSTIS	, v		PALM GARDEN FISH CAMP, AT DEAD RIVER
70300	69	R	LAKE EUSTIS	Ý	FIF CO	FERRAN PARK WRAY & ORANGE FUSTIS
70300	69	ö	LAKE FRANKLIN	•	CO	LIONS MEMORIAL PARK FISHING PIER, MOUNT DORA
70300	69	R	LAKE HARRIS	Y	FIF	BOAT RAMP, LEESBURG, LAKE SHORE DR
70300	69	В	LAKE HARRIS	Y	FIF,GFC	FISHERMANS COVE, LANE PARK
70300	69	В	LAKE HARRIS	Y	FIF,GFC	FLORIDA ANGLERS RESORT, OFF U.S. 441
70300	69	В	LAKE HARRIS	Y	FIF,GFC	KLEISER FISH CAMP, LANE PARK
70300	69	Р		~	CO	HERLONG PARK, OFF US 441, LEESBURG
70300	69	н		Ŷ		SINGLETARY PARK, OFF U.S. 27, S OF LEESBURG
70300	60			, v		MAYSIDE DARK US 441 & DORA LAKE LEESRUDG
70300	69	в	LAKE HABBIS	Ý	FIF	LAKE HARRIS LODGE LANE PARK
70300	69	Ř	LAKE UMATILLA	Ý	GFC.FIF.CO	GUERRANT PARK, E LAKEVIEW ST. UMATILLA
70300	69	Р	LIT LAKE HARRIS		co	GRIFFIN PARK, LAKESHORE & E CENTRAL BLVD, HOWEY-IN-THE-HILLS
70300	69	R	LIT LAKE HARRIS	Ŷ	GFC,FIF,CO	BOAT RAMP, S.R. 48, ASTATULA
70300	69	М	LIT LAKE HARRIS	Ŷ	FIF	CRACKER COVE RESTAURANT AND MARINA, HOWEY IN THE HILLS
70300	69	0	LIT LAKE HARRIS		CO	LAKE HARRIS CATWALK, S.R. 19
70300	69	M		v v	GFC	HOWEY BOAT BASIN & FISH CAMP, HOWEY IN THE HILLS
70300	69	n	LIT LAKE HARRIS	T	FIF	DUAT RAIMP, UFF S.R. 19
70401	83	R	DOE LAKE		GFC.FIF	OCALA NATL FOREST, OFF F.R. 73 & F.R. 8
70401	69	Р	FOUNTAIN LAKE		CO	VETERANS MEM. PARK, BERCKMAN ST, FRUITLAND PARK
70401	83	U	LAKE CATHERINE		GFC,FIF	OCALA NATL FOREST, F.R. 91, OFF F.R. 8
70401	83	U	LAKE FAY		FIF	BOAT RAMP
70401	69	в	LAKE GRIFFIN	Y	FIF,GFC	AL JANA TRAILER PARK AND FISH CAMP, TOMATO HILL
70401	69	В	LAKE GRIFFIN	Ŷ	FIF,GFC	FISHERMANS WHARF, EAGLES NEST
70401	69	н		Ŷ		BOAT RAMP, LAKE GRIFFIN STATE REC AREA
70401	60	0		v		LAZY VANS RESORT, FRUITLAND PARK
70401	60	B		Ý	FIF GEC	MORGANS FISH CAMP AND TRAILER PARK FRUITI AND PARK
70401	69	Ř	LAKE GRIFFIN	Ý	FIF	BOAT RAMP. LEESBURG
70401	69	в	LAKE GRIFFIN	Y	FIF,GFC	SHADY ACRES FISHING RESORT, S OF TREASURE ISLAND
70401	69	8	LAKE GRIFFIN	Y	FIF,GFC	PINE ISLAND FISH CAMP, NORTH END OF LAKE
70401	69	в	LAKE GRIFFIN	Y	FIF,GFC	BIG CYPRESS COTTAGES, NE LEESBURG
70401	69	В	LAKE GRIFFIN	Ŷ	FIF,GFC	LAKE GRIFFIN RESORT, ACROSS LAKE FROM HAINES CK
70401	69	в		Y	FIF,GFC	I WIN PALMS RESORT, PICCIOLA ISLAND
70401	09	н ()				DOAT RAIVE, OFF S.R. 450 OCALA NATE FODEST E D OL OFF F D R
70401	83	Ř			GEC FIE	OCALA NATI FOREST OFE'S R 42
70401	83	В	LAKE NICOTOON		FIF	OCALA FOREST KOA
70401	69	R	LAKE YALE	Y	GFC,FIF,CO	MARSH PARK & BOAT RAMP, OFF S.R. 452, YALE RETREAT ROAD
70401	69	в	LAKE YALE	Y	FIF	PALM SHORE FISHING RESORT
70401	69	R	LAKE YALE	Y	FIF,CO	BOAT RAMP, OFF S.R. 450
70401	69	U	LAKE YALE	Ŷ	GFC,FIF,CO	BOAT RAMP, WEST SIDE, OFF S.R. 452
70401	83	В	OKLAWAHA H	Ŷ	FIF,GFC	FISHERMANS COVE, ON SR 42
70401	83	8		Ŷ	FIF,GFC	NELSONS FISH CAMP, ON SH 42 MOSS RILLEE SOUTH REC AREA S OF 464 & 314-A SOUTH RANK
70401	63	n			FIF,00	WOSS BEDT SOUTH RECKNER, SOF FOR WITTER, SOUTH DAMK
70402	83	В	BOWERS LAKE		FIF,GFC	TALL PINES PARK & FC
70402	83	R	LAKE WEIR		FIF,CO	HAMPTON BEACH PARK, EASTLAKE WEIR
70402	83	P	LAKE WEIR		CO	OXNERS PARK, .5 MI E OF OKLAWAHA
70402	83	R	LAKE WEIR		GFC,FIF,CO	JOHNSONS BEACH BOAT HAMP, OKLAWAHA
70402	83	H			FIF,CU	HUPE PARK, 3 MILE OF SUNSET HARDON, S SIDE OF LARE
70402	83 00	p p			FIF	BOAT RAMP. OFF BUICK CITY ROAD
70402	83	B	OKLAWAHA R	Y	FIF,CO	RAY-DAVIDSON PARK, AT SR 40 BRIDGE, W SIDE OF RIVER
70402	83	R	OKLAWAHA R	Ý	FIF,CO	MOSS BLUFF NORTH REC AREA, S OF 464 & 314-A, NORTH BANK
70500	83	U	CHURCH LAKE		FIF	OCALA NATL FOREST, OFF S.R. 40, W OF LYNNE
70500	83	R			GFC,FIF	UGALA NATE FOREST, F.H. 190, S OF S.H. 40 LAKE REVANT FISH CAMP. OCALA NATE FOREST
70500	83	ы	LARE CHADLES			OCALA NATI FOREST OFFE B. 56. NOFS R. 40
70500	63	U	LARE UNAALED			

SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
70500 70500 70500 70500 70500 70500 70500 70500 70500 70500 70500 70500 70500	83 83 83 83 83 83 83 83 83 83 83 83 83 8	UBUBBRUURRRUBRU	LAKE EATON LAKE JUMPER LAKE LOU LAKE WALDENA MILL DAM LAKE MUD LAKE NORTH LAKE OKLAWAHA R OKLAWAHA R OKLAWAHA R REDWATER LAKE RODMAN RESERVOIR RODMAN RESERVOIR ZAY PRAIRIE	Y Y Y Y	FIF FIF,GFC FIF GFC FIF,GFC GFC,FIF FIF FIF FIF,CO FIF,CO FIF,CO FIF,FIF FIF FIF	OCALA NATL FOREST, ON F.R. 96, OFF S.R. 314A LAKE JUMPER FISH CAMP, OCALA NATL FOREST OCALA NATL FOREST, OFF F.R. 79A & S.R. 314A LAKE WALDENA RESORT, S.R. 40 HALF MOON CAMPGROUND & RAMP, OCALA NATL FOREST, OFF S.R. 40 OCALA NATL FOREST, S.R. 40 & F.R. 79 OCALA NATL FOREST, OFF F.R. 77, 4 WHEEL DRIVE ONLY OCALA NATL FOREST, OFF S.R. 40, E OF 314A EUREKA EAST PARK, S OF SR 316 EUREKA WEST PARK, N OF 316 GORES LANDING, OFF 315 BETWEEN 316 AND 40 (NE 105TH) OCALA NATL FOREST, OFF S.R. 314A, N OF S.R. 40 CYPRESS BAYOU FISH CAMP, E OF BAY LAKE BOAT RAMP, NEAR CYPRESS BAYOU FISH CAMP OCALA NATL FOREST, ON F.R. 79, N OF S.R. 40
80001 80001 80001	1 1 1	P P R	BIVANS ARM PAYNES PRAIRIE WAUBERG LAKE		CO CO CO	BIVANS ARM PARK, GAINESVILLE PAYNES PRAIRIE STATE RESERVE AT PAYNES PRAIRIE STATE PRESERVE
80002 80002 80002 80002	1 1 1	B R B R	NEWNANS LAKE NEWNANS LAKE NEWNANS LAKE NEWNANS LAKE		FIF FIF,CO FIF,GFC FIF,CO	KATES FISH CAMP EARL POWERS COUNTY PARK, OFF S.R. 20 MCGILVRAYS FISH CAMP OWENS-ILLINOIS COUNTY PARK, E SHORE, OFF S.R.234/325
80003 80003 80003 80003 80003 80003	1 1 1 1 1	B B B B R B R B	CROSS CREEK CROSS CREEK LOCHLOOSA LAKE LOCHLOOSA LAKE LOCHLOOSA LAKE LOCHLOOSA LAKE	Y Y Y Y Y	FIF,GFC FIF,GFC FIF,GFC FIF FIF,CO FIF	CROSS CREEK FISH CAMP PALMETERS CROSS CREEK LODGE TWIN LAKES FISH CAMP FINWAY FISH CAMP BOAT RAMP, SE SHORE, OFF U.S. 301 CARRAWAY LANDING FISH CAMP
80004 80004 80004 80004 80004 80004 80004 80004 80004 80004	83 83 83 83 83 83 83 83 83	B B B B B B B B B R	ORANGE LAKE ORANGE LAKE ORANGE LAKE ORANGE LAKE ORANGE LAKE ORANGE LAKE ORANGE LAKE ORANGE LAKE ORANGE LAKE	Y Y Y Y Y Y Y	GFC FIF,GFC GFC,FIF,CO FIF,GFC FIF,GFC FIF,GFC FIF,GFC FIF,CO	HEAGYS FISH CAMP, U.S. 441 SPORTSMAN COVE FISH CAMP MIKES FISH CAMP HEAGY-BURRY PARK, MCINTOSH, OFF U.S. 441 MCINTOSH FISH CAMP ORANGE LAKE FISH CAMP CITRA FISH CAMP SOUTHSHORE FISH CAMP M.K.RAWLINGS COUNTY PARK, OFF S.R. 325
80005 80005 80005 80005	107 1 1 1	R R R R	COWPEN LAKE HOLDENS POND JOHNSON LAKE LIT ORANGE LAKE		GFC,DNR,FIF FIF,CO CO FIF	PUTNAM COUNTY BOAT RAMP #121, OFF SR 20 HOLDEN POND COUNTY PARK, OFF U.S. 301 LINDSEY-PHILLIPS COUNTY PARK, US 301, HAWTHORNE BOAT RAMP, OFF U.S. 301
80006 80006 80006	107 107 107	P R P	LAKE CHIPCO LAKE IDA LAKE LAGONDA		DNR DNR DNR	BUTLER BEACH, INTERLACHEN BOAT RAMP, INTERLACHEN LAKES ESTATES LAKE LAGONDA PICNIC AREA, INTERLACHEN
80007 80007 80007 80007 80007 80007 80007	107 107 107 107 83 107 107 107	R R R R R R R U	OKLAWAHA R OKLAWAHA R RODMAN RESERVOIR RODMAN RESERVOIR RODMAN RESERVOIR RODMAN RESERVOIR RODMAN RESERVOIR RODMAN RESERVOIR	Y Y Y Y Y Y Y	DNR DNR,FIF FIF DNR,FIF DNR,FIF DNR,FIF	OKLAWAHA BOAT RAMP, OFF SR 19 JOHNSON FIELD BOAT RAMP, ON SR 19 RODMAN RECREATION AREA - BELOW DAM RODMAN RESERVOIR CAMPGROUND, OFF S.R. 19 BOAT RAMP, ORANGE SPRINGS KENWOOD RECREATION AREA RODMAN RECREATION AREA PUTNAM COUNTY BOAT RAMP #L-38, OFF US 19 ON NF#77
90100 90100 90100 90100 90100 90100 90100 90100 90100 90100	35 127 127 127 127 127 127 127 127 127	RMRPOMOOPP	BULOW CK HALIFAX R HALIFAX R HALIFAX R HALIFAX R HALIFAX R HALIFAX R HALIFAX R HALIFAX R	Y Y Y	DNR,CO DNR CO DNR DNR DNR DNR CO,DNR DNR CO,DNR CO	BULOW CK STATE PARK, ORMOND BEACH PERRYS MARINA & BOAT WORKS, DAYTONA BEACH HIGHBRIDGE COUNTY PARK, 7 MILES N OF ORMOND BEACH VOLUSIA COUNTY UNDESIGNATED, HOLLY HILL HALIFAX DOCK #1, ORMOND BEACH CRITTERS FLEET MARINA, DAYTONA BEACH MAIN STREET BRIDGE, DAYTONA BEACH HALIFAX DOCK #4, SAN JOSE & ANDERSON, ORMOND BEACH ROSS POINT PARK, HOLLY HILL SEABRIDGE RIVERFRONT COUNTY PARK, N OF ORMOND BEACH

SUB-						
BASIN	COUNTY .	TYPE	WATERBODY	CON	SOURCE	COMMENTS
004.00	407	•			0110	
90100	12/	Р П			DNR	
90100	127	M		v		NURTH UCEAN RIVERFRONT PARK, URMONU BEACH
90100	127			T		INLET HARDOR WARINA, PONCE INLET DIVEDEDONT DADK DAVTONA DEACH
90100	127	R	HALIFAX R	v	DNR CO	
90100	127	P	HALIFAX B	•	DNR	BIO VISTA PARK ORMOND BEACH
90100	127	P	HALIFAX B		DNR	N PENINSULA SEARRIDGE WATERERONT PARK, ORMOND REACH
90100	127	M	HALIFAX R	Y	DNR	SEA LOVE MARINA, PONCE INI ET
90100	127	Р	HALIFAX R		DNR	ORMOND RIVERFRONT PARK, ORMOND BEACH
90100	127	М	HALIFAX R	Ŷ	DNR	ALOHA MARINA, HOLLY HILL
90100	127	Ρ	HALIFAX R		DNR	CASEMENTS, ORMOND BEACH
90100	127	М	HALIFAX R	Ŷ	DNR	PERRYS SOUTH PENINSULA MARINA, PONCE INLET
90100	127	P	HALIFAX R		DNR	CITY ISLAND PARK, DAYTONA BEACH
90100	127	P	HALIFAX R		DNR	UNNAMED COUNTY PARK, HARBOR OAKS
90100	127	н		Ŷ	DNH	RIVERFRONT PARK, SOUTH DAYTONA
90100	127	۳ D		v	DNR	BEACH STREET PARK, DAYTONA BEACH
00100	127	M		v'		DAVIONA MADINA & BOAT WORKS, DAVIONA DEACH
90100	127	M	HALIFAX B	Ý	DNR	SOUTH PENINSULA MARINA DAVIONA REACH
90100	127	В	HALIFAX B	Ý	DNR	RIVERERONT I UNCH RESTAURANT (AND BAIT) PORT ORANGE
90100	127	ũ	HALIFAX R	Ý	DNR	HUGUENOT PARK. ORMOND BEACH
90100	127	Р	HALIFAX R		DNR	BETHUNE POINT REC AREA. DAYTONA BEACH
90100	127	М	HALIFAX R	Y	DNR	INLET COVE MARINA, PONCE INLET
90100	127	М	HALIFAX R	Ŷ	DNR	PELICAN ISLAND MARINA & FISH CAMP, DAYTONA BEACH
90100	127	М	HALIFAX R	Y	DNR,CO	ORMOND MARINA, ORMOND BEACH
90100	127	0	HALIFAX R		CO,DNR	HALIFAX DOCK #2, ROBERT & ANDERSON, ORMOND BEACH
90100	127	В	HALIFAX R	Y	DNR	LIGHT-HOUSE LANDING, PONCE INLET
90100	127	R	HALIFAX R	Y	DNR	SEABREEZE PARK & BOAT RAMP, DAYTONA BEACH
90100	127	R	HALIFAX R	Ŷ	DNR	ELEVENTH STREET PARK, HOLLY HILL
90100	127	н	HALIFAX R	Ŷ	DNH	ORANGE ST PUBLIC BOAT RAMP, DAYTONA BEACH
90100	127	2		v	UNH	UNNAMED PARK, HOLLY HILL
90100	127			, r		THE DIVIEUUEEN LANDING & MARINA, DAYTUNA BEACH
90100	127	M		r V		DAVIONA PEACH MUNICIDAL VACHT DAGIN
90100	127	$\tilde{\mathbf{O}}$	HALIFAX R	T		HALLEAN DOCK #3 BRIGGS & ANDERSON ORMOND REACH
90100	127	R	HALIFAX B	Y	DNR	MARINA POINT AT HALLEAX HARBOR, DAYTONA REACH
90100	127	м	HALIFAX R	Ý	DNR	FISHERMANS WHARF RESTAURANT & MARINA, PONCE INI FT
90100	127	M	HALIFAX R	Ý	DNR	SEVEN SEAS MARINA & BOAT YARD, DAYTONA BEACH
90100	127	Ρ	HALIFAX R		DNR	DIX RIVERFRONT PARK, ORMOND BEACH
90100	127	М	HALIFAX R	Y	DNR	DAYTONA RECREATIONAL MARINA, ORMOND BEACH
90100	127	Р	HALIFAX R		CO	NORTH PENINSULA SRA, N OF ORMOND BEACH
90100	127	Р	HALIFAX R		DNR	BIG TREE PARK, HOLLY HILL
90100	127	M	HALIFAX R	Ŷ	DNR	LIGHTHOUSE BOAT YARD, PONCE INLET
90100	127	н	HALIFAX H	Ŷ	DNH	PORT ORANGE CAUSEWAY, PORT ORANGE
90100	35	н	DONOF IN CT	Y	DNR	FLAGLER BEACH STATE RECAREA, FLAGLER BEACH
90100	127	P D		v		SMITRINA DUINES PARN, IN OF INEW SMITRINA BEAUN LIGHTHOUSE DOINT DARK BONGE INI ET
90100	107	н О		T		DOSE RAV RDIDGE HARROR OAKS
90100	127	p	SPRUCE CK		CO	SPRUCE CREEK PARK M DAIRY RD S OF PORT ORANGE
90100	127	U	SPRUCE CK	Y	DNR	SPRUCE CREEK BOAT RAMP AND BRIDGES. HARBOR OAKS
90100	127	ŭ	TOMOKA R	Ý	DNR	SANCHEZ PARK. ORMOND BEACH
90100	127	Ř	TOMOKA R	Ý	DNR.FIF.CO	TOMOKA STATE PARK, ORMOND BEACH
90100	127	R	TOMOKA R	Y	CO,FIF	BOAT RAMP, NE OF U.S. 1
90100	127	Ρ	TOMOKA R		DNR	TOMOKA RIVER NATURE PARK, ORMOND BEACH
						· · · · · · · · · · · · · · · · · · ·
90200	35	в	BULOW CK	Ŷ	FIF	DAYTONA NORTH/BULOW KOA & FISH CAMP
90200	35	R	ICW	Ŷ	co	EAST BRIDGE COUNTY HAMP, ST. JOE HD, PALM COAST
90200	35	н		Ŷ		BINGS LANDING COUNTY PARK, PALM COAST
90200	35	К	ICW, SMITH CK	Y		DALM COAST MADINA
90200	35	M	MATANZAS R	Y		FALM COAST MARINA FORT MATANZAS NATIONAL MONUMENT MATANZAS INLET
90200	109	P	MATANZAS R		DNR	WASHINGTON OAKS STATE GARDENS
90200	35	M	MATANZAS R	v	DNR	MARINELAND MARINA
90200	100	P	MATANZAS R	1	DNR.CO	CASTILLO DE SAN MARCOS NATL MONUMENT
90200	109	, B	MATANZAS R	Y	DNR,CO	GREEN ROAD COUNTY BOAT RAMP, CRESCENT BEACH
90200	109	M	MATANZAS R	Ý	DNR	FISH ISLAND MARINA, ST AUGUSTINE
90200	109	R	MATANZAS R	Ý	DNR,CO	PALMETTO ROAD COUNTY BOAT RAMP, ST AUGUSTINE BEACH
90200	109	R	MATANZAS R	Ý	DNR,CO	FRANK R BUTLER STATE REC AREA, ST AUGUSTINE BEACH
90200	109	М	MATANZAS R	Y	DNR	ST AUGUSTINE MARINA
90200	35	В	MATANZAS R	Y	DNR,GFC	PALM VALLEY FISH CAMP, S.R. 210 & ICWW

SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
90200	109	м	MATANZAS D	v		
90200	35	M	MATANZAS R	Ý	DNR GEC	ELAGI ER REACH MARINA
90200	109	В	MATANZAS R	Ý	DNR	DEVILS ELBOW FISH CAMP, CRESCENT BEACH
90200	35	В	MATANZAS R	Ŷ	DNR,GFC	BINGS FISHERMANS RESORT FISH CAMP, 3 MI S OF MARINELAND
90200	109	R	PELLICER CK	Y	FIF	BOAT RAMP OFF U.S. 1, PRIVATE, FEE
90200	109	R	PELLICER CK	Y	DNR,CO	FAVOR-DYKES STATE PARK
90200	35	В	PELLICER CK	Υ	DNR,FIF,GFC	PELLICER CREEK CAMPING PARK
90200	109	R	SALT RUN	Y	DNR,CO	LIGHTHOUSE PARK, ST AUGUSTINE
90200	109	M	SALTRUN	Y	DNR	CONCHS BY-THE-SEA MARINA, ST AUGUSTINE
90200	109	Н	SALI RUN	v	DNR,CO	ANASTASIA STATE REC AREA, ST AUGUSTINE BEACH
90200	109	IVI	SAN SEDAS HAN H	T	UNR	COASTAL MARINE OF ST AUGUSTINE
90300	109	U	GUANA LAKE		GFC.FIF	BOAT RAMP
90300	109	U	GUANA LAKE		GFC, DNR, FIF, CO	GUANA RIVER STATE PARK, PONTE VEDRA BEACH
90300	109	В	TOLOMATO R	Υ	DNR,GFC	NORTH BEACH CAMP RESORT, ST AUGUSTINE
90300	109	R	TOLOMATO R	Y	DNR,CO	BOATING CLUB ROAD BOAT RAMP, ST AUGUSTINE
90300	109	В	TOLOMATO R	Y	DNR	USINA FISH CAMP, ST AUGUSTINE
90300	109	В	TOLOMATO R	Y	GFC	RIVERSIDE FISH CAMP, ST. AUGUSTINE
90300	109	м	TOLOMATO R	Y	DNR	CAMACHEE COVE YACHT HARBOR, ST AUGUSTINE
90300	109	н	TOLOMATO R	Ŷ	DNR,CO	VILANO BOAT RAMP, ST. AUGUSTINE
100001	9	м	BANANA B	Y	00	HIDDEN HABBOB MARINA MERRITT ISI
100001	, Q	R	BANANA R	Ý	DNR CO	KELLY PARK NE MERRISI
100001	9	P	BANANA R	•	CO	HALL ISLAND BIRD SANCTUARY
100001	9	М	BANANA R	Υ	CO	SKYLINES ANCHORAGE YACHT BASIN, SAT, BEACH
100001	9	Р	BANANA R		CO	BANANA R ISLANDS, S MERRITT ISL
100001	9	М	BANANA R	Y	DNR,CO	BANANA RIVER MARINA, MERRITT ISLAND
100001	9	М	BANANA R	Y	CO	FUN TIME BOATS, MERRITT ISLAND
100001	9	R	BANANA R	Ŷ	DNR	
100001	9	U	BANANA R	Ŷ	DNH,CO	BANANA R WAYSIDE PARK, MERK, ISLAND
100001	9	М		v	00	SAMSONS ISLAND PARK, SATELLITE BEACH
100001	9	M		v		SKYLINES INDIAN HARBOR MADINA SAT REACH
100001	ğ	M	BANANA R	Ý	CO	BOYS BAIT HOUSE MERBITT ISI
100001	ğ	R	BANANA B	Ý	DNR	BAMP BOAD PARK, COCOA BEACH
100001	9	м	BANANA R	Ŷ	DNR,CO	ORANGE COVE MARINA, COCOA BEACH
100001	9	м	BANANA R	Y	CO	PATRICK AIR FORCE BASE MARINA
100001	9	М	BANANA R	Y	CO	COCOA BEACH MARINA
100001	9	М	BARGE CANAL	Y	CO	ABBEYS MARINA
100001	9	M	BARGE CANAL	Ŷ	DNR	MARINE HARBORS, MERRITT ISLAND
100001	9	M	BARGE CANAL	Ŷ		
100001	9		INDIAN RIVER LAGOON	v	DNR CO	PORT ST IOHN ROAT RAMP
100001	9	м	INDIAN RIVER LAGOON	Ý	DNR CO	SUN HARBOR MARINA NOF PINEDA CAUSEWAY
100001	ĝ	P	INDIAN RIVER LAGOON	•	DNR.CO	SAND POINT PARK, TITUSVILLE
100001	9	Ù	INDIAN RIVER LAGOON	Y	DNR,CO	HUMPHREY BRIDGE PARK, COCOA BEACH
100001	9	0	INDIAN RIVER LAGOON		DNR	TITUSVILLE MEMORIAL PIER
100001	9	R	INDIAN RIVER LAGOON	Y	DNR	BENNETT CAUSEWAY, TITUSVILLE
100001	9	P	INDIAN RIVER LAGOON		CO	KENNEDY POINT PARK, THUSVILLE
100001	9	R	INDIAN HIVER LAGOON	Ŷ	UNH,CO	MAKINA PAKK, ITTUSVILLE
100001	9	2	INDIAN HIVEH LAGOON	v	DNH,CO	
100001	9	n D	INDIAN RIVER LAGOON	v	DNRCO	
100001	9	м	INDIAN RIVER LAGOON	Ý	DNR CO	TINGLYS MARINA & FISH CAMP, MERRITT ISLAND
100001	, 9	B	INDIAN RIVER LAGOON	Ý	DNR.CO	SCOTTSMOOR BOAT RAMP
100001	9	M	INDIAN RIVER LAGOON	Ŷ	DNR,CO	DIAMOND 99 MARINA, MELBOURNE
100001	9	М	INDIAN RIVER LAGOON	Υ	DNR	KENNEDY POINT MARINA, TITUSVILLE
100001	9	М	INDIAN RIVER LAGOON	Y	DNR,CO	WHITLEY MARINA, COCOA
100001	9	М	INDIAN RIVER LAGOON	Y	CO	NORWOOD ENTERPRISES MARINA, COCOA
100001	9	м	INDIAN RIVER LAGOON	Y	DNR,CO	JAYS HARBOR LIGHTS MARINA, MEHHITT ISLAND
100001	9	P	INDIAN RIVER LAGOON	v	UNH,CO	VALENGIA HOAD UUGK, HUGKLEUGE MIMS ROAT RAMP
100001	9	ρ	INDIAN RIVER LAGOON	T	CO	NEIL JONES N TROPICAL TRAIL PARK MERRITT ISI
100001	а Э	R	INDIAN RIVER LAGOON	Y	DNR.CO	PARRISH PARK. TITUSVILLE
100001	9	м	INDIAN RIVER LAGOON	Ŷ	CO	INDIAN RIVER YACHT CLUB, COCOA
100001	9	Р	INDIAN RIVER LAGOON	•	co	RIVERFRONT PARK, TITUSVILLE
100001	9	в	INDIAN RIVER LAGOON	Υ	ME,S.BELL	SUN COVE FISH CAMP, N OF PINEDA CAUSEWAY
100001	9	М	INDIAN RIVER LAGOON	Y	DNR,CO	INDIAN COVE MARINA, MERRITT ISLAND
100001	9	Р	INDIAN RIVER LAGOON		CO	BIG PINE ISLAND PARK, S MERRITT ISL
100001	9	М	INDIAN RIVER LAGOON	Y	DNR,CO	WESTLAND MARINA, TITUSVILLE

SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
100001	٩	м	INDIAN RIVER LAGOON	v	DNR CO	
100001	ģ	R	INDIAN RIVER LAGOON	Ý	DNR.CO	MCFARLAND PARK. COCOA
100001	9	Μ	INDIAN RIVER LAGOON	Ŷ	DNR,CO	ISLAND PT MARINA, MERRITT ISLAND
100001	9	М	INDIAN RIVER LAGOON	Y	DNR	MIKE'S MARINA, MIMS
100001	127	М	INDIAN RIVER NORTH	Y	DNR	SEAFARERS MARINA, NEW SMYRNA BEACH
100001	127	M	INDIAN RIVER NORTH	Ŷ	DNR	SEA HARVEST MARINA, NEW SMYRNA BEACH
100001	127	н		Ŷ		GEORGE KENNEDY MEMORIAL PARK, EDGEWATER
100001	127	M	INDIAN RIVER NORTH	v	DNR	CAMERONS MARINA EDGEWATER
100001	127	Ű	INDIAN RIVER NORTH	Ý	DNR	MENARD-MAY PARK, EDGEWATER
100001	127	Ŭ	INDIAN RIVER NORTH	Ŷ	DNR	CALLALISA PARK, NEW SMYRNA BEACH
100001	127	М	INDIAN RIVER NORTH	Υ	DNR	GERRYS MARINA, NEW SMYRNA BEACH
100001	127	М	INDIAN RIVER NORTH	Y	DNR	RIVERSIDE MARINE, NEW SMYRNA BEACH
100001	127	R	INDIAN RIVER NORTH	Y	DNR	NEW SMYRNA BEACH PUBLIC BOAT RAMP
100001	127	н		Y	DNR	NORTH CAUSEWAY BOAT HAMP, NEW SMYRNA BEACH
100001	12/	Р В		v		MARY MULEOD BETHUNE COUNTY PARK & PIER, S OF NEW SMYRNA BEACH
100001	127	M	INDIAN RIVER NORTH	v.	DNR	CALISEWAY MARINA NEW SMYRNA BEACH
100001	127	B	INDIAN RIVER NORTH	Ý	DNR	REDS BAIT & TACKLE, NEW SMYRNA BEACH
100001	127	P	INDIAN RIVER NORTH	•	DNR	BUENA VISTA PARK, NEW SMYRNA BEACH
100001	127	8	INDIAN RIVER NORTH	Y	DNR	BLUE HOLE FISH CAMP, EDGEWATER
100001	127	8	MOSQUITO LAGOON	Y	DNR	RIVERWOOD PARK CAMPGROUND (FISH CAMP), OAK HILL
100001	127	R	MOSQUITO LAGOON	Y	DNR,CO	CANAVERAL NATIONAL SEASHORE
100001	127	В	MOSQUITO LAGOON	Y	DNR	BISSETT BAY FISH CAMP, OAK HILL
100001	12/	В	MOSQUITO LAGOON	Ϋ́.		J B'S FISH CAMP, NEW SMYRNA BEACH
100001	127	D II	MOSQUITO LAGOON	v		INDIAN MOUND FISH CAMP, OAN MILL CANAVEDAL NATIONAL SEASHODE THOTLE MOUND
100001	127	ŭ	MOSQUITO LAGOON	Ý	CO	MERBITT ISLAND NATI WILDLIFF REFUGE
100001	127	B	MOSQUITO LAGOON	Ý	DNR	LOPEZ FISH CAMP. OAK HILL
100001	127	8	MOSQUITO LAGOON	Ŷ	DNR	THOMPSONS FISH CAMP, OAK HILL
100001	127	В	MOSQUITO LAGOON	Y	DNR	LE FILS FISH CAMP, OAK HILL
100001	9	R	NEWFOUND HARBOR	Y	DNR,CO	KIWANIS I. PARK, MERR. ISL.
100001	9	Ρ	NEWFOUND HARBOR		CO	BADGER PARK, MERRITT ISL
100001	9	P	NEWFOUND HARBOR	~	CO	THOMAS WATTS PARK, MERRITT ISL
100001	9	M		Ŷ	DNH,CO	COGHILL MAHINA, POHT CANAVERAL
100001	9	M	PORT CANAVERAL	v.	DNR CO	
100001	9	R	PORT CANAVERAL	Ý	DNR	PORT CANAVERAL BOAT RAMP
100001	9	ö	SYKES CK	•	DNR	SYKES CK PARKWAY BRIDGE
100001	9	U	SYKES CK	Y	DNR,CO	ULUMAY WILDLIFE REFUGE
100001	9	Р	SYKES CK		DNR,CO	KINGS PARK, MERR. ISL.
100001	9	Р	WICKHAM PK LAKES		CO	WICKHAM PARK, MELBOURNE
100002	9	R	C-54 CANAL	Y	DNR	C-54 BOAT RAMP
100002	9	М	EAU GALLIE R	Y	CO	EAU GALLIE HARBOR CLUB
100002	9	н	EAU GALLIE HVIHL	Ŷ	DNH,CO	BALLARD PARK, MELBOURNE
100002	9	M	INDIAN RIVER LAGOON	v		INDIAN R MARINE BASIN, MELDOORNE MINEDS MADINA GRANT
100002	q	M	INDIAN RIVER LAGOON	Ý	DNR CO	KEELS & WHEELS MARINA MELBOURNE
100002	ĝ	R	INDIAN RIVER LAGOON	Ý	DNR	OUTDOOR RESORTS, MEL BEACH
100002	9	М	INDIAN RIVER LAGOON	Υ	DNR,CO	PALM BAY MARINA
100002	9	R	INDIAN RIVER LAGOON	Y	DNR,CO	JORGENSEN LANDING, GRANT
100002	9	R	INDIAN RIVER LAGOON	Y	DNR,CO	LONG POINT PARK (BREVARD COUNTY)
100002	9	М	INDIAN RIVER LAGOON	Y	CO	INDIAN R MARINA, PORT MALABAR
100002	9	В	INDIAN RIVER LAGOON	Ŷ	00	
100002	9	D	INDIAN RIVER LAGOON	v	DNRCO	EIRST ST ROAT RAMP GRANT
100002	9	p	INDIAN RIVER LAGOON	1	CO	RYCKMAN PARK & FISHING PIER, MELBOURNE BCH
100002	9	ò	INDIAN RIVER LAGOON		co	MELBOURNE BCH FISHING PIER
100002	9	М	INDIAN RIVER LAGOON	Y	co	MELBOURNE HARBOR MARINA
100002	9	В	INDIAN RIVER LAGOON	Y	DNR,CO	HONEST JOHNS FISH CAMP, MULLET CK
100002	9	М	INDIAN RIVER LAGOON	Ŷ	CO	EAU GALLIE YACHT BASIN
100002	9	н	INDIAN RIVER LAGOON	Ŷ		SEB INLET STATE HEU AHEA
100002	9	M	INDIAN RIVER LAGOON	Ý	DNR CO	SOUTH BEACH MARINA, CAMPBELL POCKET, MEL BEACH
100002	9	В	INDIAN RIVER LAGOON	Ý	CO	HATTS BAIT & TACKLE, MELBOURNE
100002	9	Ř	INDIAN RIVER LAGOON	Ŷ	DNR,CO	FRONT ST PARK, MELBOURNE
100002	9	м	INDIAN RIVER LAGOON	Y	со	WILLIAMS MARINA, S MEL BCH
100002	9	R	INDIAN RIVER LAGOON	Y	DNR,CO	EAU GALLIE CAUSEWAY PARK
100002	9	М	INDIAN HIVER LAGOON	Y	00	MELBOURNE YACHT GLUB

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SUB- BASIN	COUNTY	TYPE	WATERBODY	CON	SOURCE	COMMENTS
100002 100002 100002 100002 100002 100002 100002	9 9 9 9 9	P M P P P M M	INDIAN RIVER LAGOON INDIAN RIVER LAGOON KNECHT PARK LAKE MICCO PARK LAKE ROACH PARK LAKE SEBASTIAN R TURKEY CK	Y Y Y	CO DNR,CO CO DNR,CO CO CO DNR,CO	PINEAPPLE AVE PARK, MELBOURNE SUMMIT LANDING MARINA, MICCO KNECHT PARK, PALM BAY MICCO PARK F.E. ROACH PARK, PALM BAY SEBASTIAN R MARINA PELICAN HARBOR MARINA, PALM BAY
100002	9	R		Y	CO	A. GOODE PARK, PALM BAY TURKEY CREEK SANCTUARY, PALM BAY
100003 100003	61 61 61 61 61 61 61 61 61 61 61 61 61 6	- 	INDIAN RIVER LAGOON INDIAN RIVER LAGOON	¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥¥	DNR CO,DNR DNR DNR DNR CO DNR CO,DNR	A W YOUNG PARK, VERO BEACH OSLO ROAD BOAT RAMP VERO BEACH MUNICIPAL MARINA & YACHT CLUB JACKS MARINA, VERO BEACH INDIAN RIVER MARINA, SEBASTIAN VERO MARINE CENTER, VERO BEACH ROUND ISLAND COUNTY PARK MARKER 88 MARINA, SEBASTIAN WCWILLIAMS PARK, VERO BEACH SEBASTIAN INLET MARINA, SEBASTIAN WABASSO ISLAND COUNTY PARK & RAMP SEAFARI MARINA, VERO BEACH BOB SUMMERS PARK, VERO BEACH RIOMAR BAY YACHT CLUB, VERO BEACH REMORIAL ISLAND PARK, VERO BEACH SEBASTIAN INLET STATE REC AREA JORDAN PARK & MAIN ST RIVERSIDE PARK, SEBASTIAN BOAT RAMP, C.R. 510, WABASSO SEBASTIAN SOCIAL CLUB PARADISE MARINA & YACHT CLUB, SEBASTIAN BANKS NEAR MAYS MARINA, SEBASTIAN BANKS NEAR MAYS MARINA, SEBASTIAN BANKS NEAR MAYS MARINA, SEBASTIAN BANKS NEAR MAYS MARINA, SEBASTIAN DONALD MCDONALD COUNTY PARK, SEBASTIAN DONALD MCDONALD COUNTY PARK, SEBASTIAN
100003 100003 100003 100003	61 61 61	R P P P	SEBASTIAN R SEBASTIAN R SEBASTIAN R SEBASTIAN R	Y	CO,FIF CO, DNR DNR CO	DALE WIMBROW COUNTY PARK & RAMP, SEBASTIAN ROSELAND RIVERFRONT COUNTY PARK SEBASTIAN CREEK BRIDGE WAYSIDE PARK, SEBASTIAN U.S. 1 ROADSIDE COUNTY PARK

Subbasin	Contiguous subbasin(s)	Subbasin	Contiguous subbasin(s)
1-000	2-002	5-002	5-001, 5-003
2-001	2-002	5-003	5-002, 3-704, 8-007
2-002	1-000, 2-001	6-101	6-102
3-100	3-704	6-102	6-101, 6-103
3-200	3-704	6-103	6-102, 6-104
3-300	3-704	6-104	6-103, 6-201
3-400	3-603	6-201	6-104, 6-202
3-501	3-603	6-202	6-201, 6-203
3-502	3-603	6-203	6-202, 4-401, 4-100
3-503	3-603	7-100	None
3-601	3-603	7-200	None
3-602	3-603	7-300	7-401
3-603	3-704	7-401	7-300, 7-402
3-701	3-704	7-402	7-401, 7-500
3-702	3-704	7-500	7-402, 8-007
3-703	3-704	8-001	None
3-704	3-603	8-002	None
4-100	4-401, 5-001	8-003/4	None
4-201	None	8-005	None
4-202	4-403, 5-001	8-006	None
4-203	4-202	8-007	7-500
4-301	4-302	9-100	10-001
4-302	4-301, 4-402, 4-403	9-200	9-100, 9-300
4-401	6-203, 4-402	9-300	9-200
4-402	4-401, 4-302, 4-403	10-001	10-002
4-403	4-302, 4-402, 5-001	10-002	10-001, 10-003
5-001	4-403, 5-002	10-003	10-002

Table B3.Determination of Extra Points for the Public Access Subcriterion. Subbasins
which were considered to be hydrologically contiguous get extra points.

Table B4. Estimated subbasin populations, 1989

Subbasin population	Contributing population*	Total recre- ational potential	Subbasin number	Subbasin name
		Nase	au River	
24,182	678,193	702,375	1-000	Nassau River
		St. M	arys River	
26,016	0	26,016	2-001	Upper St. Marys River
30,753	671,622	702,375	2-002	Lower St. Marys River
		Lower St	. Johns River	
38,670	52,579	91,249	3-100	Crescent Lake
21,186	68,298	89,484	3-200	Etonia Creek
29,895	647,440	677,335	3-300	Black Creek
#	748,261	748,261	3-400	Ortega River
#	748,261	748,261	3-501	Trout River
#	748,261	748,261	3-502	Broward River
#	748,261	748,261	3-503	Dunn Creek
#	748,261	748,261	3-601	Arlington Creek
#	748,261	748,261	3-602	Julington Creek
#	748,261	748,261	3-603	North Lower St. Johns River
7,687	164,969	172,657	3-701	Sixmile Creek
3,075	178,356	181,431	3-702	McCullough Creek
5,222	176,209	181,431	3-703	Deep Creek
35,944	370,243	406,188	3-704	South Lower St. Johns River
		Middle St	. Johns River	
112,917	784,859	897,776	4-100	Econlockhatchee River
56,115	906,676	962,790	4-201	Little Wekiva River
85,086	877,704	962,790	4-202	Wekiva River
78,751	884,040	962,790	4-203	Blackwater Creek
62,041	829,063	891,104	4-301	Howell Creek
94,005	797,099	891,104	4-302	Lake Jesup
16,557	734,853	751,410	4-401	Lake Harney
89,461	661,949	751,410	4-402	Deep Creek

* The population of other subbasins (or portions of subbasins) within a 25 mile radius

The total population for these subbasins is 649,184, which is the sum of Jacksonville, Orange Park, and Jacksonville area beaches population.

*

Subbasin population	Contributing population*	Total recre- ational potential	Subbasin number	Subbasin name
112,513	629,136	741,649	4-403	Lake Monroe
		Lake	e George	
4,956	613,640	618,596	5-001	Lake Beresford
19,113	225,300	244,413	5-002	Lake Woodruff
29,081	112,523	141,604	5-003	Lake George
		Upper St	. Johns River	
9,175	85,530	94,705	6-101	Fort Drum Creek
21,253	263,809	285,062	6-102	Blue Cypress Creek
32,868	252,152	285,020	6-103	St. Johns Marsh
1,709	314,506	316,215	6-104	Lake Washington
19,252	275,723	294,975	6-201	Lake Poinsett
11,628	249,589	261,217	6-202	Tosahatchee
12,523	596,402	608,925	6-203	Puzzle Lake
		Ocklay	vaha River	
40,377	335,477	375,854	7-100	Palatlakaha River
24,448	642,316	666,764	7-200	Lake Apopka
59,762	302,471	362,232	7-300	Lake Harris
31,518	174,135	205,653	7-401	Lake Griffin
16,510	107,245	123,755	7-402	Marshall Swamp
29,914	125,719	155,633	7-500	Eureka Dam
		Florida Ridge	a & Orange La	ke
183,125	35,064	218,189	8-001	Florida Ridge
7,603	138,818	146,421	8-002	Newnans Lake
15,665	260,479	276,144	8-003/4	Orange/Lochloosa lakes
11,796	51,308	63,104	8-005	Orange Creek
4,507	58,597	63,104	8-006	Sweetwater Creek
2,346	118,180	120,526	8-007	Rodman Reservoir

The population of other subbasins (or portions of subbasins) within a 25 mile radius

Subbasin population	Contributing population*	Total recre- ational potential	Subbasin number	Subbasin name
		Uppe	ir Coastal	
217,707	89,461	307,168	9-100	Halifax River
56,602	173,828	230,429	9-200	Matanzas River
13,045	145,656	158,700	9-300	Tolomato River
		Indian F	liver Lagoon	
209,794	308,619	518,413	10-001	Nonth Indian River Lagoon
157,489	202,042	359,531	10-002	N Central Indian River Lagoon
64,277	187,917	252,194	10-003	S Central Indian River Lagoon

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* The population of other subbasins (or portions of subbasins) within a 25 mile radius

Table B5. Number of water-dependent businesses

Businesses	Subbasin number	Subbasin name
	Nas	sau River
5	1-000	Nassau River
	SL N	larys River
0	2-001	Upper St. Marys River
3	2-002	Lower St. Marys River
	Lower S	t. Johns River
8	3-100	Crescent Lake
1	3-200	Etonia Creek
4	3-300	Black Creek
6	3-400	Ortega River
4	3-501	Trout River
0	3-502	Broward River
1	3-503	Dunn Creek
0	3-601	Arlington Creek
3	3-602	Julington Creek
22	3-603	North Lower St. Johns River
2	3-701	Sixmile Creek
0	3-702	McCullough Creek
0	3-703	Deep Creek
11	3-704	South Lower St. Johns River
	Middle S	t Johns River
0	4-100	Econlockhatchee River
0	4-201	Little Wekiva River
4	4-202	Wekiva River
0	4-203	Blackwater Creek
0	4-301	Howell Creek
2	4-302	Lake Jesup
1	4-401	Lake Harney
1	4-402	Deep Creek
4	4-403	Lake Monroe

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Table B5.

Continued

Businesses	Subbasin number	Subbasin name			
	Lak	e George			
5	5-001	Lake Beresford			
10	5-002	Lake Woodruff			
23	5-003	Lake George			
	Upper S	t. Johns River			
0	6-101	Fort Drum Creek			
1	6-102	Blue Cypress Creek			
2	6-103	St. Johns Marsh			
1	6-104	Lake Washington			
2	6-201	Lake Poinsett			
0	6-202	Tosahatchee			
1	6-203	Puzzle Lake			
	Ocklar	waha River			
7	7-100	Palatlakaha River			
1	7-200	Lake Apopka			
16	7-300	Lake Harris			
14	7-401	Lake Griffin			
1	7-402	Marshall Swamp			
5	7-500	Eureka Dam			
	Florida Ridg	e & Orange Lake			
0	8-001	Florida Ridge			
2	8-002	Newnans Lake			
12	8-003/4	Orange/Lochloosa lakes			
0	8-005	Orange Creek			
0	8-006	Sweetwater Creek			
0	8-007	Rodman Reservoir			
	Uppe	ar Coastal			
21	9-100	Halifax River			
13	9-200	Matanzas River			
4	9-300	Tolomato River			

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Businesses	Subbasin number	Subbasin name		
	Indian	River Lagoon		
37	10-001	North Indian River Lagoon		
7	10-002	N Central Indian River Lagoon		
10	10-003	S Central Indian River Lagoon		

Table B6. Inventory of water-dependent businesses

Explanation of column headings:

SUBBASIN:	See Notes on Table A1 (page 121)					
COUNTY:	See 1	Fabl	e A2 (page 123)			
TYPE:	B M	=	Miscellaneous business (usually fish camp) Marina			
SOURCE:	DNR	=	Florida Department of Natural Resources' recreational site survey computer printout (DNR 1989a)			
	FIF	=	Fishing inside Florida (includes maps) (Bellamy 1988)			
	GFC	=	Florida Game and Fresh Water Fish Commis- sion fishing brochures (GFC 1988c and 1988d)			
	co	=	County comprehensive plans, brochures, or re- sponses to requests for information			

-See next page for start of table-

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SUB-			WATERDOON		0014451150	
BASIN	<u> </u>	1192	WATERBODY	SUURCE	COMMENTS	
10000	89	в	BLACK R	DNR	CHARLES FISH CAMP, S OF YULEE	
10000	31	В	FORT GEORGE R	DNR	CAMP ALAMACANI FISH CAMP, FORT GEORGE INLE	т
10000	31	В	SAWPIT CK	DNR	BUDDYS FISH CAMP, JAX	
10000	89	В	THOMAS CK	FIF	THOMAS CREEK FISH CAMP	
10000	89	в	THOMAS CK	DNR	THOMAS BOAT RAMP & BAIT, NASSAUVILLE	
20002	89	м	AMELIA R	DNR	AMELIA ISLAND YACHT BASIN, FERNANDINA BEACH	
20002	89	М	AMELIA R	DNR	FERNANDINA BEACH MARINA	
20002	89	М	EGANS CK	DNR	FOURTEENTH ST MARINA, FERNANDINA BEACH	
30100	107	в	CRESCENT LAKE	DNR,FIF,GFC	LAKE CRESCENT RESORT, CRESCENT CITY	
30100	107	в	CRESCENT LAKE	DNR,FIF,GFC	TANGERINE COVE FISHING RESORT, CRESCENT CI	TY
30100	107	В	CRESCENT LAKE	DNR,FIF	C AND M FISH CAMP, CRESCENT CITY	
30100	107	м	CRESCENT LAKE	DNR	BUENA VISTA MARINA, CRESCENT CITY	
30100	35	В	DEAD LAKE	GFC,CO	DEAD LAKE FISH CAMP, ST. JOHNS PARK	
30100	107	В	DUNNS CK	DNR,FIF,GFC	DUNNS CREEK FISHING RESORT, SATSUMA	
30100	107	B	DUNNS CK	DNR,FIF,GFC	GEORGIA BOY FISH CAMP, SATSUMA	
30100	107	В	DUNNS CK		BELCHERS FISH CAMP, SATSUMA	
30200	107	в	GEORGES LAKE	DNR,FIF	LAKESIDE HILLS FISH CAMP, FLORAHOME	
30300	19	в	BLACK CK	DNR	THE RAVINES RESORT, MIDDLEBURG	
30300	19	M	BLACK CK	DNR,CO	BLACK CREEK MARINA, GREEN COVE SPRINGS	
30300	19	В		DNR,CO	NEW KINGSLEY BEACH, STARKE	
30300	19	М	KINGSLEY LAKE	DNH,GFC,CO	STRICKLANDS LANDING, STARKE	
30400	31	М	CEDAR R	DNR	LIGHTHOUSE MARINE, JAX	
30400	31	м	CEDAR R	DNR	CHUCKS BOAT YARD, JAX	
30400	31	М	CEDAR R	DNR	SADDLER POINT MARINA, JAX	
30400	31	М	ORTEGA R	DNR	HUCKINS YACHT DOCK, JAX	
30400	31	М	ORTEGA R	DNR	SEA JAYS BOAT STORAGE, JAX	
30400	31	М	ORTEGA R	DNR	LAMBS YACHT CENTER, JAX	
30501	31	М	TROUT R	DNR	EDWARDS MARINA, JAX	
30501	31	М	TROUT R	DNR	SEAFARERS MARINA, JAX	
30501	31	М	TROUT R	DNR	OASIS MARINA, JAX	
30501	31	М	TROUT R	DNR	TROUT RIVER MARINA, JAX	
30503	31	В	DUNNS CK	DNR	DUNNS CREEK FISH CAMP	
30602	31	М	JULINGTON CK	DNR	JULINGTON CK MARINA, MANDARIN	
30602	31	М	JULINGTON CK	DNR	MANDARIN HOLIDAY MARINA, JAX	
30602	31	В	JULINGTON CK	DNR,FIF	CLARKS FISH CAMP, JAX	
30603	31	в	BROWNS CK	DNR	BROWNS CK FISH CAMP, JAX	
30603	31	в	CLAPBOARD CK	DNR	PALMS FISH CAMP, JAX	
30603	19	В	DOCTORS LAKE	GFC	WILFORDS FISH CAMP, ORANGE PARK	
30603	19	В	DOCTORS LAKE	DNR,FIF,GFC	WHITEYS FISH CAMP, OHANGE PARK	
30603	31	M				
30603	31	IVI M				
30603	31	IVI M			IAY VACHT BASIN (MADINED COVE) LAY BEACH	
30603	31	M		DNR	PELICAN CREEK BOATYARD & MARINA JAX	
30603	31	M	SISTERS CK	DNR	SISTERS CREEK MARINA, JAX	
30603	31	В	SISTERS CK	DNR	SISTERS CREEK FISH CAMP. JAX	
30603	31	B	SJR	DNR	CLAPBOARD CREEK FISH CAMP, JAX	
30603	31	M	SJR	DNR	FLORIDA YACHT CLUB, ORTEGA, JAX	
30603	31	М	SJR	DNR	ORTEGA BAY MARINA, JAX	
30603	31	М	SJR	DNR	RUDDER CLUB OF JAX, ORANGE PARK	
30603	31	М	SJR	DNR	MAYPORT BOAT LANDING	
30603	31	В	SJR	DNR	OYSTER SHELL FISH CAMP, FORT GEORGE ISLAND	
30603	31	М	SJR		MANDAHIN MAHINA, NEAR GOUDBYES CK, JAX	
30603	31	в	2JK	UNH	FINALES OVE FISH DAME, JAA	a # a

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SUB- BASIN		TYPE	WATERBODY	SOURCE	COMMENTS
30603	19	M	SJR	DNR	INLET MARINA, ORANGE PARK
30603	31	M	SJR	DNR	MONTYS MARINA, MAYPORT
30603	31	M	SJR	DNR	JARRELL CLAPBOARD CREEK MARINA, JAX
30603	31	М	SJR	DNR	GOODBYS LAKE MARINA, JAX
30701	109	М	SIX MILE CK	DNR,FIF	SIX MILE FISH CAMP & MARINA, GREEN COVE SPRINGS
30701	109	м	TROUT CK	UNR, FIF, GFC	PACETTIS MARINA & CAMPGROUND, ORANGEDALE
30704	19	М	GOVERNORS CK	со	GREEN COVE MARINA
30704	107	в	SJR	DNR,FIF,GFC	TRAIL BOSS FISH CAMP, WELAKA
30704	107	В	SJR	FIF	DRIFTWOOD MOTEL, W/ BOAT DOCKS, E PALATKA
30704	107	M	SJR	DNH	PALATKA HOLIDAY INN MARINA
30704	107	в	SJR	DNR,GFC	
30704	107	В	SJR	DNR,FIF,GFC	SUNSET LANDING, WELAKA
30704	107	B			BASS HAVEN LODGE WELAKA
30704	107	м	SIB	PHONE BK	CRYSTAL COVE MARINA PALATKA
30704	107	M	SJR	PHONE BK	BOATHOUSE MARINA, PALATKA
30704	107	M	SJR	DNR,FIF,GFC	SHELL HARBOR MARINA, WELAKA
30704	107	М	SJR	FIF	ACOSTA CREEK MARINA AND LODGE, N OF WELAKA
30704	107	В	SJR	DNR,FIF,GFC	NORTONS PLACE, WELAKA
40202	117	в	WEKIVA R	FIF GFC	WEKIVA RIVER HAVEN
40202	69	B	WEKIVA R	FIF	WEKIVA FALLS RESORT
40202	117	в	WEKIVA R	FIF GFC	KATIES WEKIVA LANDING
40202	117	М	WEKIVA R	FIF,GFC	WEKIVA MARINA
40302	117	В	LAKE JESSUP	FIF	BLACK HAMMOCK FISH CAMP, WILLOW COVE
40401	117	В	SJR	FIF,GFC	LINDSAY FISH CAMP, SOUTH OF LAKE HARNEY
40402	127	В	SJR	FIF,GFC,CO	LEMON BLUFF FISH CAMP, UPSTREAM OF MULLET LAKE
40403	117	М	LAKE MONROE	FIF	MONROE HARBOR MARINA, SANFORD
40403	117	в	SJR	FIF	BILLS FISH CAMP, NORTH OF LAKE JESSUP
40403	117	В	SJR	FIF,GFC	MARINA ISLE FC, S.R. 46 NORTH OF LAKE JESSUP
40403	117	В	SJR	FIF,GFC	OSTEEN BRIDGE FISH CAMP, OFF S.R. 415
50001	127	в	LAKE BERESFORD	FIF,CO	SUNRISE FISHING CLUB, WEST SIDE OF LAKE
50001	127	м	LAKE BERESFORD	FIF,GFC,CO	TROPICAL APT. AND MARINA, BERESFORD
50001	127	М	LAKE BERESFORD	со	LAKE BERESFORD MARINA
50001	127	М	LAKE BERESFORD	co	KYPS FISH CAMP & MARINA
50001	127	M	SJR	FIF,CO	HIGH BANKS MARINA AND R.V. CAMP RESORT
50001	127	M	SJR	FIF,GFC,CO	
50001	127	w	SJR .	FIF,00	
50002	127	в	NORRIS DEAD R	FIF,GFC,CO	HIGHLAND PARK FISH CAMP
50002	69	М	SJR		CROWS BLUFF MARINA
50002	69	М	SJR	GFC	ASTOR/ST JOHNS MARINA, ASTOR
50002	69	В	SJR	GFC	ALLENS GUTTAGES, ASTUR (NU KAMP)
50002	127	M	SIK		
50002	127	IVI NA	SUR		
50002	127	M	SJR	0	SHOWBOAT FISH CAMP & MARINA
50002	69	M	SJR	FIF.GFC	POWELLS CAMPGROUND, S OF ASTOR
50002	127	В	SJR	GFC	SHADY OAK FISH CAMP, S.R. 44
50002	127	в	SPRING GARDEN LAKE	FIF,GFC	TEDDERS FISH CAMP
50002	127	в	ZEIGLER DEAD R	FIF,GFC,CO	NORTH SHELL FISH CAMP
50003	83	в	LAKE DELANCY	FIF	CAMP NEWBERN FISH CAMP, OCALA NATL FOREST
50003	83	М	LAKE GEORGE	FIF	
50003	83	в	LAKE GEORGE	GFC	UAP TAIN MUNGANS FISH CAMP

SUB-		TVDE		SOURCE	COMMENTS
DAOIN				SOUNCE	COMMENTS
50003	127	М	LAKE GEORGE	FIF,GFC,CO	PINE ISLAND FISH CAMP, EAST SHORE, S.R. 305
50003	83	B	LAKE KERR	FIF,GFC	ANCHOR INN COTTAGES & FC, OCALA NATL FOREST
50003	83	В	LAKE KERR	FIF,GFC	KERR CITY COTTAGES & FC, OCALA NATL FOREST
50003	83	В	SALT SPRINGS RUN	FIF,GFC	CARROLLS FISH CAMP
50003	107	В	SJR	DNR,FIF,GFC	BASS WORLD, GEORGETOWN
50003	107	в	SJR	DNR,FIF,GFC	CAMP HENRY FISHING RESORT, GEORGETOWN
50003	127	M	SJR	FIF,GFC,CO	PARRAMORES FISH CAMP, S OF LAKE GEORGE
50003	107	В	SJR		
50003	107	D			RIPLE BLODGE, UN SJR, URESUENT UTT SOUTH MOON EIGH CAMP, S OF LAVE OF OPOF
50003	107	D			
50003	107	B	SIR	DNR FIE GEC	MERCKS LANDING GEORGETOWN
50003	107	B	SJR	DNR FIE GEC	TROPHY BASS LODGE GEORGETOWN
50003	127	м	SIR	EIF GEC CO	BLAIBS JUNGLE DEN SOFLAKE GEORGE
50003	127	M	SJR	FIF.GFC.CO	VOLUSIA BAR FISH CAMP. S OF LAKE GEORGE
50003	107	В	SJR	DNR.FIF.GFC	ANGLERS PARADISE LODGE. N OF GEORGETOWN
50003	107	в	SJR	DNR, FIF, GFC	LUNKER LODGE, GEORGETOWN
50003	107	в	SJR	DNR, FIF, GFC	GATEWAY FISHING CAMP, ON SJR, CRESCENT CITY
50003	107	В	SJR	FIF	FISH INN RESORT, N OF GEORGETOWN
50003	107	В	SJR	FIF	DUKES LAKEVIEW LODGE, GEORGETOWN
60102	61	в	BLUE CYPRESS LAKE	FIF,GFC	MIDDLETONS FISH CAMP, WEST SHORE
60103	9	в	SJR	FIF.CO	CAMP HOLLY, U.S. 192, NORTH OF SAWGRASS LAKE
60103	9	В	SJR	GFC,CO	SWEETWATER RESORT, U.S. 192, E SHORE
60104	9	в	LAKE WASHINGTON	co	WEST OF TOWN FISH CAMP
60104	9	в	LAKE WASHINGTON	FIF,CO	LAKE WASHINGTON RESORT
60201	9	M	LAKE POINSETT	FIF,CO	LAKE POINSETT LODGE AND MARINA
00201	3	5	SUN	FIF,00	
60203	95	в	SJR	FIF	MIDWAY FISH CAMP, AT S.R. 50
70100	105	в	LAKE JULIANA	FIF	FISH HAVEN LODGE, OLD BERKELEY ROAD
70100	105	в	LAKE JULIANA	FIF	LUNDYS COTTAGES AND FISH CAMP
70100	105	в	LAKE LOWERY	FIF	FLETCHERS FISH CAMP, SOUTH SHORE
70100	105	В	LAKE LOWERY	FIF	OAK HARBOR CAMPGROUND (W/RAMP), WEST SHORE
70100	69	В	LAKE MINNEHAHA	FIF,GFC	CYPRESS COVE RESORT, WEST SIDE
70100	69	м	LAKE SUSAN	FIF,GFC	LAKE SUSAN LODGE AND MARINA, N SIDE
70100	105	В	LAKE VAN	FIF	FISH CAMP
70200	95	В	LAKE APOPKA	FIF	KILLARNEY MOBILE HOME AND RV PARK
70300	69	в	HAINES CK	FIF,GFC	BAY ISLAND COTTAGES
70300	69	в	HAINES CK	FIF,GFC	BLACK BASS RESORT
70300	69	в	HAINES CK	FIF,GFC	SPARKYS FISH CAMP
70300	69	в	HAINES CK	FIF,GFC	SPILLWAY PARK & TAVERN (NO RAMP)
70300	69	М	HAINES CK	FIF, GFC	WINTONS MARINA
70300	69	в	HELENA RUN	FIF	HOLIDAY TRAVEL PARK, S.R. 33
70300	95	в	LAKE CARLTON	FIF	FISH CAMP, SE SHORE
70300	69	М	LAKE DORA	GFC	MOUNT DORA MARINA
70300	69	В	LAKE EUSTIS	FIF,GFC	PALM GARDEN FISH CAMP, AT DEAD RIVER
70300	69	М	LAKE EUSTIS	FIF	
70300	69	B		FIF,GFC	FLORIDA ANGLERS RESORT, OFF U.S. 441
70300	69	8		FIF,GFU	RLEISER FISH VAMP, LANE PARK
70300	69	8		FIF,GFU	
70300	69	ы			
70300	69	M	LIT LAKE HADDIG	GEC	HOWEY BOAT BASIN & FISH CAMP HOWEY IN THE HILLS
70300	60			EIE GEO	TWIN PALMS RESORT PICCIOLA ISLAND
70401	69	D			

SUB-	COUN				
BASIN	TY	TYPE	WATERBODY	SOURCE	COMMENTS
70401	69	в	LAKE GRIFFIN	FIF,GFC	PINE ISLAND FISH CAMP, NORTH END OF LAKE
70401	69	В	LAKE GRIFFIN	FIF,GFC	LAZY OAKS RESORT, FRUITLAND PARK
70401	69	В	LAKE GRIFFIN	FIF,GFC	AL JANA TRAILER PARK AND FISH CAMP, TOMATO HILL
70401	69	В	LAKE GRIFFIN	FIF	JACKS COTTAGES, EAGLES NEST
70401	69	В	LAKE GRIFFIN	FIF,GFC	BIG CYPRESS COTTAGES, NE LEESBURG
70401	69	В	LAKE GRIFFIN	FIF,GFC	SHADY ACRES FISHING RESORT, S OF TREASURE ISLAND
70401	69	В	LAKE GRIFFIN	FIF,GFC	MORGANS FISH CAMP AND TRAILER PARK, FRUITLAND PARK
70401	69	В	LAKE GRIFFIN	FIF,GFC	LAKE GRIFFIN RESORT, ACROSS LAKE FROM HAINES CK
70401	69	В		FIF,GFC	FISHERMANS WHARF, EAGLES NEST
70401	83	В	LAKE NICOTOON	FIF	OCALA FOREST KOA
70401	69	В			PALM SHORE FISHING RESORT
70401	03	B			FISHERMANS COVE, ON SH 42 NELSONG FIGU CAMP, ON SH 42
70401	63	Ð		rir,Gru	NELSONS FISH CAMP, ON SR 42
70402	83	В	BOWERS LAKE	FIF,GFC	TALL PINES PARK & FC
70500	83	В	LAKE BRYANT	FIF,GFC	LAKE BRYANT FISH CAMP, OCALA NATL FOREST
70500	83	В	LAKE JUMPER	FIF,GFC	LAKE JUMPER FISH CAMP, OCALA NATL FOREST
70500	83	В		GFC	LAKE WALDENA RESORT, S.R. 40
70500	83	В		FIF,GFC	HALF MOON CAMPGHOUND & RAMP, OCALA NATL FOREST, S.R. 40
70500	83	в	RODMAN RESERVOIR	FIF	CYPRESS BAYOU FISH CAMP, E OF BAY LAKE
80002	1	в	NEWNANS LAKE	FIF	KATES FISH CAMP
80002	1	в	NEWNANS LAKE	FIF.GFC	MCGILVRAYS FISH CAMP
80003	1	в	CROSS CREEK	FIF,GFC	CROSS CREEK FISH CAMP
80003	1	В	CROSS CREEK	FIF,GFC	PALMETERS CROSS CREEK LODGE
80003	1	В	LOCHLOOSA LAKE	FIF	FINWAY FISH CAMP
80003	1	В	LOCHLOOSA LAKE	FIF	
80003	1	в	LOCHLOOSA LAKE	FIF,GFC	TWIN LAKES FISH CAMP
80004	83	в	ORANGE LAKE	FIF.GFC	ORANGE LAKE FISH CAMP
80004	83	в	ORANGE LAKE	FIF,GFC	MIKES FISH CAMP
80004	83	в	ORANGE LAKE	FIF,GFC	CITRA FISH CAMP
80004	83	в	ORANGE LAKE	GFC	HEAGYS FISH CAMP, U.S. 441
80004	83	в	ORANGE LAKE	FIF,GFC	MCINTOSH FISH CAMP
80004	83	в	ORANGE LAKE	FIF,GFC	SPORTSMAN COVE FISH CAMP
80004	83	в	ORANGE LAKE	FIF,GFC	SOUTHSHORE FISH CAMP
80007	107	в	RODMAN RESERVOIR		RODMAN RESERVOIR CAMPGROUND, OFF S.R. 19
90100	127	М	HALIFAX R	DNR	DAYTONA RECREATIONAL MARINA, ORMOND BEACH
90100	127	М	HALIFAX R	DNR	INLET COVE MARINA, PONCE INLET
90100	127	М	HALIFAX R	DNR	INLET HARBOR MARINA, PONCE INLET
90100	127	М	HALIFAX R	DNR	SOUTH PENINSULA MARINA, DAYTONA BEACH
90100	127	В	HALIFAX R	DNR	LIGHT-HOUSE LANDING, PONCE INLET
90100	127	M	HALIFAX R	DNR	FISHERMANS WHARF RESTAURANT & MARINA, PONCE INLET
90100	127	В		DNR	
90100	127	M		DNR	CEVEN SEAS MARINA & BOAT WORKS, DATIONA BEACH
90100	127	M			CRITTERO ELEET MARINA & DUAT TARU, DATTUNA DEAUR
90100	127				
90100	127	P		DNR CO	BRIGADOON FISH CAMP HARBOR OAKS
90100	127	м		DNR	PELICAN ISLAND MARINA & FISH CAMP. DAYTONA BEACH
90100	127	M	HALIFAX R	DNR	THE DIXIEQUEEN LANDING & MARINA, DAYTONA BEACH
90100	127	M	HALIFAX R	DNR	PERRYS MARINA & BOAT WORKS, DAYTONA BEACH
90100	127	M	HALIFAX R	DNR	DAYTONA BEACH MUNICIPAL YACHT BASIN
90100	127	М	HALIFAX R	DNR	PERRYS SOUTH PENINSULA MARINA, PONCE INLET
90100	127	М	HALIFAX R	DNR	LIGHTHOUSE BOAT YARD, PONCE INLET
90100	127	М	HALIFAX R	DNR	SEA LOVE MARINA, PONCE INLET
90100	127	М	HALIFAX R	DNR	ALOHA MARINA, HOLLY HILL
90100	127	в	HALIFAX R	DNR	RIVERFRONT LUNCH RESTAURANT (AND BAIT), PORT ORANGE

SUB-	COUN	-			
BASIN	TY	TYPE	WATERBODY	SOURCE	COMMENTS
90200	35	в	BUIOWCK	FIF	
90200	35	B	MATANZAS B	DNR GEC	PALM VALLEY FISH CAMP S. R. 210 & ICWW
90200	35	м	MATANZAS R	DNR	MARINELAND MARINA
90200	109	M	MATANZAS R	DNR	ST AUGUSTINE CITY MARINA
90200	109	M	MATANZAS R	DNR	ST AUGUSTINE MARINA
90200	109	B	MATANZAS R	DNR	DEVILS ELBOW FISH CAMP. CRESCENT BEACH
90200	35	M	MATANZAS R	DNR	PALM COAST MARINA
90200	35	В	MATANZAS R	DNR.GFC	BINGS FISHERMANS RESORT FISH CAMP. 3 MI S OF MARINELAND
90200	109	М	MATANZAS R	DNR	FISH ISLAND MARINA, ST AUGUSTINE
90200	35	М	MATANZAS R	DNR,GFC	FLAGLER BEACH MARINA
90200	35	в	PELLICER CK	DNR,FIF,GFC	PELLICER CREEK CAMPING PARK
90200	109	М	SALT RUN	DNR	CONCHS BY-THE-SEA MARINA, ST AUGUSTINE
90200	109	М	SAN SEBASTIAN R	DNR	COASTAL MARINE OF ST AUGUSTINE
90300	109	м		DNR	CAMACHEE COVE VACHT HAPBOR ST AUGUSTINE
90300	109	B	TOLOMATO B	GEC	
90300	109	B	TOLOMATO B	DNR GEC	NORTH BEACH CAMP RESORT ST AUGUSTINE
90300	109	B	TOLOMATO R	DNR	USINA FISH CAMP. ST AUGUSTINE
		-		D	
100001	9	М	BANANA R	со	SKYLINES ANCHORAGE YACHT BASIN, SAT. BEACH
100001	9	М	BANANA R	CO	FUN TIME BOATS, MERRITT ISLAND
100001	9	М	BANANA R	со	EAU GALLIE YACHT CLUB, SAT. BEACH
100001	9	М	BANANA R	CO	HIDDEN HARBOR MARINA, MERRITT ISL
100001	9	M	BANANA R	DNR,CO	BANANA RIVER MARINA, MERRITT ISLAND
100001	9	М	BANANA R	co	PATRICK AIR FORCE BASE MARINA
100001	9	М	BANANA R	CO	ROYS BAIT HOUSE, MERRITT ISL
100001	9	М	BANANA R	co	COCOA BEACH MARINA
100001	9	М	BANANA R	DNR,CO	SKYLINES INDIAN HARBOR MARINA, SAT. BEACH
100001	9	M	BANANA R	DNR,CO	ORANGE COVE MARINA, COCOA BEACH
100001	9	M	BARGE CANAL	DNR	TRADEWINDS CENTER MARINA, PORT CANAVERAL
100001	9	M	BARGE CANAL	DNR	MARINE HARBORS, MERRITT ISLAND
100001	9	M	BARGE CANAL	CO	ABBEYS MARINA
100001	127	в		DNR	FREDDIES SEAFOOD (AND BAIT), NEW SMYRNA BEACH
100001	127	M			SEA HARVEST MARINA, NEW SMYRNA BEACH
100001	127	IVI M			
100001	127	IVI M			CERTIS MARINA, NEW SMITHNA DEACH
100001	127	M			
100001	127				DEDS RAIT & TACKLE NEW SMYRINA BEACH
100001	127	M			CAMERONS MARINA EDGEWATER
100001	127	B		DNR	
100001	127	м	IRI	DNR CO	WHITI EY MARINA COCOA
100001	ğ	M	IBI	DNR CO	WESTLAND MARINA, TITUSVILLE
100001	9	M	IBL	DNR.CO	TITUSVILLE MARINA
100001	9	M	IBL	DNR.CO	DIAMOND 99 MARINA, MELBOURNE
100001	9	M	IBL	DNR.CO	ISLAND PT MARINA, MERRITT ISLAND
100001	9	M	IRL	DNR,CO	INDIAN COVE MARINA, MERRITT ISLAND
100001	9	M	IRL	DNR,CO	TINGLYS MARINA & FISH CAMP, MERRITT ISLAND
100001	9	М	IRL	co	INDIAN RIVER YACHT CLUB, COCOA
100001	9	М	IRL	DNR,CO	JAYS HARBOR LIGHTS MARINA, MERRITT ISLAND
100001	9	М	IRL	DNR,CO	SUN HARBOR MARINA, N OF PINEDA CAUSEWAY
100001	9	М	IRL	CO	NORWOOD ENTERPRISES MARINA, COCOA
100001	9	М	IRL	DNR	MIKE'S MARINA, MIMS
100001	9	М	IRL	DNR	KENNEDY POINT MARINA, TITUSVILLE
100001	9	В	IRL	SO.BELL	SUN COVE FISH CAMP, N OF PINEDA CAUSEWAY
100001	9	M	IKL	SO.BELL	
100001	127	В	MUSQUITOLAGOON		BIDDELLI BAY FIDH VAMP, VAN HILL
100001	127	R	MUSQUITOLAGOON		LUFEL FIOH VAIVIE, VAN TILL DIVEDWOOD DADK CAMDODOLIND (EIGH CAMD), OAK HILL
100001	12/	B	MOSQUITOLAGUUN		TUOMDSONS FISH CAMP OAK HILL
100001	127	Þ	MOSQUITOLAGOON		INDIAN MOUND FISH CAMP. OAK HILL
100001	12/	₽	MODGOTTO ENGOON		

SUB- BASIN		TYPE	WATERBODY	SOURCE	COMMENTS
100001	127	В		DNR	J B'S FISH CAMP, NEW SMYRNA BEACH
100001	127	В	MOSQUITO LAGOON	DNH	LE FILS FISH CAMP, OAK HILL
100001	9	M			
100001	9	M	PORT CANAVERAL	DNR.CO	
	-				
100002	9	М	EAU GALLIÉ R	со	EAU GALLIE HARBOR CLUB
100002	9	в	IRL	DNR,CO	HONEST JOHNS FISH CAMP, MULLET CK
100002	9	М	IRL	CO	MELBOURNE YACHT CLUB
100002	9	M	IRL	DNR,CO	SOUTH BEACH MARINA, CAMPBELL POCKET, MEL BEACH
100002	9	M	IRL	CO	INDIAN R MARINE BASIN, MELBOURNE
100002	9	M		DNR,CO	
100002	9	M			WILLIAMS MARINA, S MEL BOH
100002	9				
100002	9	B	IBI	00	NOEL ENTERPRISES
100002	ğ	м	IRL	co	MELBOURNE HARBOR MARINA
100002	9	M	IRL	DNR.CO	KEELS & WHEELS MARINA, MELBOURNE
100002	9	M	IRL	CO	INDIAN R MARINA, PORT MALABAR
100002	9	М	IRL	DNR,CO	MINERS MARINA, GRANT
100002	9	М	IRL	co	EAU GALLIE YACHT BASIN
100002	9	М	SEBASTIAN R	CO	SEBASTIAN R MARINA
100002	9	М	TURKEY CK	DNR,CO	PELICAN HARBOR MARINA, PALM BAY
100003	61	м	IBL	DNB	SEBASTIAN OFFSHORE MARINE, SEBASTIAN
100003	61	M	IBL	co	RIOMAR BAY YACHT CLUB, VERO BEACH
100003	61	М	IRL	DNR	BANKS NEAR MAYS MARINA, SEBASTIAN
100003	61	М	IRL	DNR	SEAFARI MARINA, VERO BEACH
100003	61	М	IRL	DNR	JACKS MARINA, VERO BEACH
100003	61	М	IRL	DNR	SEBASTIAN INLET MARINA, SEBASTIAN
100003	61	М	IRL	CO	PARADISE MARINA & YACHT CLUB, SEBASTIAN
100003	61	M	IRL	DNR	MARKER 88 MARINA, SEBASTIAN
100003	61	M	IRL	DNR	INDIAN RIVER MARINA, SEBASTIAN
100003	61	M	IRL	DNR	VERO BEACH MUNICIPAL MARINA & YACHT CLUB
100003	61	м	IHL	DNR	VERO MARINE CENTER, VERO BEACH

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Sal	twater species harvesting	Freshwater species harvesting		
Subbasin number	Subbasin name*	Subbasin number	Subbasin name*	
1-000	Nassau River	1-000	Nassau River	
2-002	Lower St. Marys River	2-002	Lower St. Marys River	
3-501	Trout River	3-100	Crescent Lake	
3-502	Broward River	3-704	South Lower St. Johns River	
3-503	Dunn Creek	4-302	Lake Jesup	
3-603	North lower St. Johns River	4-401	Lake Harney	
3-704	South lower St. Johns River	4-402	Deep Creek	
4-302	Lake Jesup	4-403	Lake Monroe	
4-401	Lake Harney	5-001	Lake Beresford	
4-402	Deep Creek	5-002	Lake Woodruff	
4-403	Lake Monroe	5-003	Lake George	
5-001	Lake Beresford	7-200	Lake Apopka	
5-002	Lake Woodruff	8-003	Orange Lake	
5-003	Lake George	8-004	Lochloosa Lake	
9-001	Halifax River			
9-002	Matanzas River			
9-003	Tolomato River			
10-001	North Indian River Lagoon			
10-002	N Central Indian River Lagoon			
10-003	S Central Indian River Lagoon			

Table B7. Subbasins with commercial harvesting activities

* Subbasins are named after unique features within them; 5-001 refers not only to Lake Beresford itself but to that segment of the St. Johns River that is adjacent to Lake Beresford

Table B8. Detail of methods for Commercial fisheries subcriterion (Economic Importance criterion)

Steps 1 and 3 correspond to steps 1 and 3 in the main body of the report (see pages 18-19).

• Step 1—Allocation of saltwater products license address data:

The 1989 saltwater products license listing was obtained from DNR for use in the commercial fisheries analysis of the *Economic Importance* criterion.

The subbasin in which each licensee lived was determined, based on the city and zip code. In some cases, assignment to one particular subbasin was impossible or inappropriate, such as for major urban centers. Where further spatial clarification was helpful, the following temporary "subbasins" were created in addition to the 55 original subbasins:

- Marion County, subbasin 0 (outside of other subbasin boundaries but within the District)
- Orange County, subbasin 0
- Jacksonville
- Jacksonville Beach
- Northeast Jacksonville (Duval County northeast of Jacksonville)
- Gainesville
- Ocala
- St. Augustine

The resulting distribution of licensees was used to estimate the degree of harvesting activity in subbasins with commercial fisheries, as described in Steps 2-4 on page 19.

• **Step 3**—Delineation of travel zones surrounding subbasins with commercial fisheries:

The area from which a commercial harvester is likely to travel in order to harvest from a particular subbasin was called the travel zone. The following table lists the travel zones which correspond to each of the subbasins supporting commercial harvesting. Due to the nature of the license data, travel zones were comprised of subbasins for saltwater harvesting (including the temporary subbasins listed in step 1, above), and counties for freshwater harvesting.

Name	Subbasins with commercial har- vesting	Travel zone	Number of licensees
	Salt water		
North subbasins	1-000	Northeast Jacksonville	88
	2-002	1-000	60
		2-001	2
		2-002	89
		TOTAL	239
Lower St. Johns River	3-501	Jacksonville	412
	3-502	Northeast Jacksonville	88
	3-503	Jacksonville Beach	252
	3-603	3-200	10
	3-704	3-300	13
		3-400	25
		3-602	22
		3-603	35
		3-701	0
		3-702	6
		3-703	12
		3-704	120
		TOTAL	995
Lake George and St. Johns River	5-002	Ocala	40
	5-003	Gainesville	84
		Marion County	9
		3-100	48
		3-200	10
		3-703	13
		3-704	120
		4-203	3
		4-302	39

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Name	Subbasins with commercial har- vesting	Travel zone	Number of licensees
Lake George and St. Johns		4-402	6
Hiver-Continued		4-403	66
		5-001	27
		5-002	1
		5-003	36
		7-401	21
		7-402	15
		7-500	15
		8-003	4
		8-004	13
		8-005	4
		8-006	5
		8-007	0
		TOTAL	579
Middle St. Johns River	. 4-302	TOTAL Orange County	579 25
Middle St. Johns River	. 4-302 4-401	TOTAL Orange County 4-100	579 25 27
Middle St. Johns River	. 4-302 4-401 4-402	TOTAL Orange County 4-100 4-201	579 25 27 10
Middle St. Johns River	4-302 4-401 4-402 4-403	TOTAL Orange County 4-100 4-201 4-202	579 25 27 10 22
Middle St. Johns River	4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203	579 25 27 10 22 3
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-301	579 25 27 10 22 3 27
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-301 4-302	579 25 27 10 22 3 27 39
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-301 4-302 4-401	579 25 27 10 22 3 27 39 4
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-301 4-302	579 25 27 10 22 3 27 39 4 6
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-301 4-302 4-401 4-403	579 25 27 10 22 3 27 39 4 6 66
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-301 4-302 4-401 4-402 4-403 5-001	579 25 27 10 22 3 27 39 4 6 66 27
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-203 4-301 4-302 4-401 4-402 4-403 5-001 6-203	579 25 27 10 22 3 27 39 4 6 6 66 27 27 2
Middle St. Johns River	. 4-302 4-401 4-402 4-403 5-001	TOTAL Orange County 4-100 4-201 4-202 4-203 4-203 4-301 4-302 4-401 4-402 4-403 5-001 6-203 7-100	579 25 27 10 22 3 27 39 4 6 6 66 27 2 2 6

Name	Subbasins with commercial har- vesting	Travel zone	Number of licensees
Middle St. Johns		7-300	30
River—Continued		7-401	21
		TOTAL	324
Indian River Lagoon	10-001	4-100	27
	10-002	4-201	10
	10-003	4-202	22
		4-203	3
		4-301	27
		4-302	39
		4-401	4
		4-402	6
		4-403	66
		5-001	27
		6-203	2
		7-100	6
	•	7-200	9
		7-300	30
		9-100	338
		10-001	900
		10-002	640
		10-003	308
		TOTAL	2,464
Upper Coastal	9-100	St. Augustine	252
	9-200	3-100	48
	9-300	3-602	22
		3-701	0
		3-702	6
		3-703	12

Name	Subbasins with commercial har- vesting	Travel zone	Number of licensees
Upper Coastal—Continued		3-704	120
		9-100	338
		9-200	13
		9-300	<u>,</u> 20
		TOTAL	831
	Fresh water		
North subbasins	1-000	Baker	6
	2-002	Nassau	16
		Duval	,32
		TOTAL	54
Lower St. Johns River and Lake	3-704	Clay	102
George	3-100	Putnam	255
	5-003	Marion	106
	5-002	Lake	111
		Volusia	106
		Flagler	9
		St. Johns	27
		TOTAL	716
Middle St. Johns River	5-001	Marion	106
	4-403	Lake	111
	4-402	Orange	101
	4-401	Seminole	105
	4-302	Brevard	20
		Volusia	106
		TOTAL	549

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Name	Subbasins with commercial har- vesting	Travel zone	Number of licensees
Lake Apopka	7-200	Lake	111
		Orange	101
	·	Seminole	105
		TOTAL	317
Orange/Lochloosa lakes	8-003	Alachua	59
	8-004	Marion	106
		TOTAL	165

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Table B9.Numbers of Commercial Harvesting Licenses in Each Subbasin's Travel Zone.A travel zone is defined as the subbasin from which a harvester is likely to travel
(detailed zone delineation is on page 158).

Numt	oer of lice	nsees	Subbasin	Subbasin Name		
Salt	Fresh	Total				
	Nassau River					
239	54	293	1-000	Nassau River		
			St. Marys	River		
0	0	0	2-001	Upper St. Marys River		
239	54	293	2-002	Lower St. Marys River		
			Lower St. Joł	nns River		
0	716	716	3-100	Crescent Lake		
0	0	0	3-200	Etonia Creek		
0	0	0	3-300	Black Creek		
0	0	0	3-400	Ortega River		
995	0	995	3-501	Trout River		
995	0	995	3-502	Broward River		
995	0	995	3-503	Dunn Creek		
0	0	0	3-601	Arlington Creek		
0	0	0	3-602	Julington Creek		
995	0	995	3-603	North Lower St. Johns River		
0	0	0	3-701	Sixmile Creek		
0	0	0	3-702	McCullough Creek		
0	0	0	3-703	Deep Creek		
995	716	1711	3-704	South Lower St. Johns River		
			Viddle St. Jol	nns River		
0	0	0	4-100	Econlockhatchee River		
0	0	0	4-201	Little Wekiva River		
0	0	0	4-202	Wekiva River		
0	0	0	4-203	Blackwater Creek		
0	0	0	4-301	Howell Creek		
324	549	873	4-302	Lake Jesup		
324	549	873	4-401	Lake Harney		
324	549	873	4-402	Deep Creek		

Numb	er of lice	nsees	Subbasin	Subbasin Name
Salt	Fresh	Total		
324	549	873	4-403	Lake Monroe
			Lake Ge	orge
324	549	873	5-001	Lake Beresford
579	716	1295	5-002	Lake Woodruff
579	716	1295	5-003	Lake George
			Upper St. Jol	nns River
0	0	0	6-101	Fort Drum Creek
0	0	0	6-102	Blue Cypress Creek
0	0	0	6-103	St. Johns Marsh
0	0	0	6-104	Lake Washington
0	0	0	6-201	Lake Poinsett
0	0	0	6-202	Tosahatchee
0	0	0	6-203	Puzzle Lake
			Ocklawaha	River
0	0	0	7-100	Palatlakaha River
0	317	317	7-200	Lake Apopka
0	0	0	7-300	Lake Harris
0	· 0	0	7-401	Lake Griffin
0	0	0	7-402	Marshall Swamp
0	0	0	7-500	Eureka Dam
		Flor	ida Ridge & (Drange Lake
0	0	0	8-001	Florida Ridge
0	0	0	8-002	Newnans Lake
0	165	165	8-003/4	Orange/Lochloosa lakes
0	0	0	8-005	Orange Creek
0	0	0	8-006	Sweetwater Creek
0	0	0	8-007	Rodman Reservoir
			Upper Co	astal
831	0	831	9-100	Halifax River
831	0	831	9-200	Matanzas River

Numt	oer of lice	nsees	Subbasin	Subbasin Name
Salt	Fresh	Total		
831	0	831	9-300	Tolomato River
			Indian River	Lagoon
2464	0	2464	10-001	North Indian River Lagoon
2464	0	2464	10-002	N Central Indian River Lagoon
2464	0	2464	10-003	S Central Indian River Lagoon

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Table B10.Acres of Specially Designated Lands. Specially designated lands are areas that
have been designated for special use or management by national, state, or local
governments (e.g., aquatic preserves or state parks). Table B11 (page 170)
contains a complete list of these areas in the District.

Acres	Subbasin number	Subbasin name
	Na	issau River
103,465	1-000	Nassau River
	St.	Marys River
111,525	2-001	Upper St. Marys River
10,412	2-002	Lower St. Marys River
	Lower	St. Johns River
31,529	3-100	Crescent Lake
24,758	3-200	Etonia Creek
51,771	3-300	Black Creek
0	3-400	Ortega River
1,718	3-501	Trout River
6	3-502	Broward River
0	3-503	Dunn Creek
0	3-601	Arlington Creek
0	3-602	Julington Creek
7,390	3-603	North Lower St. Johns River
0	3-701	Sixmile Creek
0	3-702	McCullough Creek
3,758	3-703	Deep Creek
6,965	3-704	South Lower St. Johns River
	Middle	St. Johns River
0	4-100	Econlockhatchee River
909	4-201	Little Wekiva River
23,307	4-202	Wekiva River
20,114	4-203	Blackwater Creek
0	4-301	Howell Creek
0	4-302	Lake Jesup
3,895	4-401	Lake Harney
35,173	4-402	Deep Creek

Acres	Subbasin number	Subbasin name
1,624	4-403	Lake Monroe
	La	ke George
16,390	5-001	Lake Beresford
94,209	5-002	Lake Woodruff
155,012	5-003	Lake George
	Upper	St. Johns River
19,955	6-101	Fort Drum Creek
18,478	6-102	Blue Cypress Creek
36,878	6-103	St. Johns Marsh
4,362	6-104	Lake Washington
3,790	6-201	Lake Poinsett
30,642	6-202	Tosahatchee
52,655	6-203	Puzzle Lake
	Ocki	awaha River
12,491	7-100	Palatlakaha River
1,850	7-200	Lake Apopka
0	7-300	Lake Harris
55,337	7-401	Lake Griffin
34,330	7-402	Marshall Swamp
90,596	7-500	Eureka Dam
	Florida Rid	ge & Orange Lake
18,126	8-001	Florida Ridge
7,427	8-002	Newnans Lake
50,332	8-003/4	Orange/Lochloosa lakes
812	8-005	Orange Creek
0	8-006	Sweetwater Creek
18,000	8-007	Rodman Reservoir
	Up	per Coastal
18,051	9-100	Halifax River
7,474	9-200	Matanzas River
32,444	9-300	Tolomato River

Acres	Subbasin number	Subbasin name
	India	in River Lagoon
264,767	10-001	North Indian River Lagoon
18,822	10-002	N Central Indian River Lagoon
11,185	10-003	S Central Indian River Lagoon

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Table B11.Areas designated by national, state, or local government for
special use or management (the list is organized by subbasin)

Explanation of column headings:

SUBBASIN:	See N	otes on Table A1 (page 121)		
TYPE:	AP = = = = = = = = = = = = = = = = = = =	Aquatic preserve Class I waters (public supply) Class II waters (shellfish areas) Miscellaneous county lands Florida Game and Fresh Water Fish Commis- sion management area (FMA) Florida Game and Fresh Water Fish Commis- sion wildlife management area (WMA) National forest wilderness area National forest wilderness area National forest wilderness area National forest recreation area National park National forest recreation area National wildlife refuge (NWR) Privately owned preserve State reserve or preserve State reserve or preserve State delogical site State historic site (SHS) State ornamental gardens State park State recreation area (SRA) Florida Department of Natural Resources, Division of Recreation & Parks, undecided designation Volusia County parks and environmentally sensitive lands acquisition program District owned lands, miscellaneous projects District's Upper St. Johns River Basin project		
OVERLAP ACRES:	Area e the acr	nclosed within another designation. Therefore, reage is not counted towards the subbasin total		
CNTY:	See Table A2 (page 123)			
OFW?:	Is the related waterbody an Outstanding Florida Water (OFW)?			
Table B.11 Continued

Information sources:

Florida leisure resource directory (DNR 1989c) National forests in Florida, recreation area directory (USDA 1988) Florida Game and Fresh Water Fish Commission fish and wildlife management area brochures (GFC no date a and no date b) Florida Department of Natural Resources, Division of Recreation & Parks

jurisdiction list, 1/1/90 Chapter 17-3.041, Florida Administrative Code (for OFW listing)

Aquatic preserve management plans and status list (DNR 1985a, 1985b, 1986a, 1986b, 1987a, and 1987b) District real property acquisition summary (as of 1/11/90)

District Teal property acquisition summary (as of 171790) District Save our rivers five year plan (SJRWMD 1990) Volusia County comprehensive plan (Volusia County 1990)

-See next page for start of table-

SUB-			ACRE	OVERLAP)			
BASIN	TYPE	NAME	-AGE	ACRES	CNTY (DFW?	LOCATION	WATERBODY
10000	AP	NASSAU R/SJR MARSH AQ PRESERVE	50000		89	Y	NASS SOUND UPSTREAM	NASSAU AMELIA R
10000	C2	DUVAL COUNTY SHA	7378		31	-	FORT GEORGE	SISTERS, MYRTLE, & SIMPSON CREEKS,
	~~~						85.465.W.1.5	FORT GEORGE RIVER & SOUND
10000	GW	NASSAU WMA (CARY STATE FOREST)	40168		89 89		E OF CALLAHAN	THOMAS CK ALLIGATOR THOMAS ROCCY MILLS
								& TOM MANN CREEKS
10000	SH	KINGSLEY PLANTATION SHS	10		31		FORT GEORGE	FT GEORGE R
10000	SP	LITTLE TALBOT ISLAND SP	2633		31	Ŷ.	N OF FT. GEORGE	SIMPSON & MYRTLE CKS, ATLANTIC
10000	SR	AMELIA ISLAND SRA	229		89	Ý	N OF FIL GEORGE	AMELIA R
10000	SU	FT GEORGE ISLAND	187		31	•	FORT GEORGE	FORT GEORGE R
	~							
20001		LAKE BUILER WMA BIG GUM SWAMP WILDERNESS	34100	12600	3		SW OF MACCLENNY	SOUTH PRONG SWAMP
20001	NF	PINHOOK SWAMP PRESERVE (USFS)	22639	10000	3		NE OF LAKE CITY	PINHOOK SWAMP
20001	NF	OSCEOLA NATL FOREST & GFC WMA	63825		3		W OF MACCLENNY	BIG GUM SWAMP
20002	40		0000					
20002	GF	POPE DUVALUAX URBAN POND PROJECT	23		31	T	E OF BALDWIN	AMELIA & SI MARTS R FAST & WEST POND
20002	GW	CARY WMA (CARY STATE FOREST)	270		89		BRYCEVILLE	
20002	SP	FT CLINCH SP	1119		89	Y	FERNANDINA BCH	ST MARYS R, AMELIA R (ICWW)
20100	<b>6</b> 5		711		107		DELEON SPRINGS	LAKE DIAG
30100	GW	TIGER BAY WMA & STATE FOREST	2290		127	Y	NE OF DELAND	SCOGGIN & INDIAN LAKES
30100	GW	RELAY WMA	25463		35		CODYS CORNER	MIDDLE HAW CREEK
30100	SE	HAW CREEK STATE PRESERVE	3065		35	Y		HAW CREEK
20200	CE.		1460		10			
30200	GW	CAMP BLANDING WMA	10580		19		CAMP BLANDING	KINGSLEY LOWERY & MAGNOLIA LAKES
30200	GW	GEORGIA-PACIFIC WMA	11149		107		W OF PALATKA	RICE CREEK
30200	PP	ORDWAY/SWISHER PRES (TNC&UofF)	9622		107		S OF PUTNAM HALL	LAKES SUGGS, GOOSE, ENSLOW, BRANTLEY, OTHERS
30200	SP	M R GOLD HEAD BRANCH SP	1561		19	Y	KEYSTONE HEIGHTS	LAKES SHEELAR, JOHNSON, PEBBLE
30300 (	GE	LEE ADAMS EMA(LUBB POND PROJECT	11		31		NR CECH FIELD NAS	LEE ADAMS BOND
30300	GW	CAMP BLANDING WMA	51760		19		CAMP BLANDING	KINGSLEY, LOWERY & MAGNOLIA LAKES
30501	GF	BETHESDA FMA/JAX URB POND PROJECT	18		31		JAX N.SIDE REC COMPLEX	BETHESDA POND
30501 0	GW	CART WMA (CART STATE FOREST)	1700		89		BRYCEVILLE	
30502 0	GF	OCEANWAY FMA/JAX URB POND PROJECT	6		31		JAX	OCEANWAY POND
30603 /	AP OF	NASSAU R/SJR MARSH AQ PRESERVE	7000		31	Ŷ	NASS SOUND UPSTREAM	
30603 0	GF GE		40		31			ST AUGUSTINE ED BOND
30603 1	NP	ET CAROLINE NATI MEMORIAI	138		31		JAX	SIR
30603 1	PP	THEO ROOS, PRESERVE (TNC)	1183		31		NR MAYPORT	SJR
30603 \$	SH	KINGSLEY PLANTATION SHS	10		31		FORT GEORGE	FT GEORGE R
30603 \$	su	FT GEORGE ISLAND	186		31		FORT GEORGE	SISTERS CK
30703 1	MM		3104		109		HASTINGS	DEED CREEK
30703 \	WM	WONDERLIC DEEP CREEK PURCHASE	564		109		HASTINGS	DEEP CREEK
		N						
30704 (		WATSON ISLAND	275		109		BETWEEN TOCOL & PIC.	SJR SJR
30704 0	00	JACK WRIGHT ISLAND DAVINE STATE CARDENS	108		109	v	OFF SH 13	SJR
30704 3	WM		6503		107	r	FACATIVA	SIR OKI AWAHA R
30704 \	WM	SEVEN SISTERS ISLANDS PURCHASE	280		107			SJR
40201 /	AP	WEKIVA R AQUATIC PRESERVE	909		117	Y		LITTLE WEKIVA R
40202	AP	WEKIVA B AQUATIC PRESERVE (2)	3378		95	Y		ROCK SPGS RUN. WEKIVA R
40202 0	GW	BOCK SPGS BUN ST RESERVE WMA	9000		95	Ŷ	N OF WEKIVA SPGS	WEKIVA R. ROCK SPGS RUN, WEKIVA SWAMP
40202 5	SE	LOWER WEKIVA R STATE RESERVE	4532		117	Ŷ	SANFORD	WEKIVA R, SJR
40202 \$	SP	WEKIVA SPRINGS SP	6397		95	Y	APOPKA	WEKIVA R, ROCK SPRINGS RUN, L PREVATT
40000			714		60	v		
402037			19400		83	•	OCALA NATL FOREST	FOREST WATERBODIES
40203 1	NR	CI FARWATER LAKE BEC AREA	13400		69		OCALA NAT FOREST	CLEARWATER LAKE
40203 1	NR	LAKE DORR REC AREA			69	Y	OCALA NAT FOREST	LAKE DORR
					407			
40401 (	we	FAHMION WMA	3895		127		NE OF LAKE HAKNEY	BLAUK UTPHEDD DWAMP
40402 (	GW	FARMTON WMA	31925		127		NE OF LAKE HARNEY	DEEP & COW CREEKS
40402	vo	LAKE ASHBY	64		127		E OF DELTONA	
40402 \	WM	OSTEEN RANCH PURCHASE	3248		127		USTEEN	2JM
40403	AP	WEKIVA R AQUATIC PRESERVE	1624		117			SJR
40403	vo	MARINERS COVE	47		127		S OF DELTONA	LAKE MONROE
40403 \	vo	LAKE MONROE PARK	42		127		S OF DEBARY	SJR, L MONROE
50001	۸P	WEKIVA B AQUATIC PRESERVE	12277		127	v		SJR. L BERESFORD, BLUE SPRINGS
50001 9	SP	HONTOON ISLAND SP	1650		127	Ŷ	ORANGE CITY	SJR
50001 \$	SP	BLUE SPRINGS SP	2463		127	Y	ORANGE CITY	BLUE SPG, SJR

SUB-	TYPE	NAME	ACRE	OVERLAP	י ראודע נ	2010		WATERDODY
UNUIN			AGE	ACHES (			LOCATION	WATERBODY
50002	NA	ALEX SPRINGS CK WILDERNESS		7700	69	Y	OCALA NAT FOREST	ALEX SPGS & GETOUT CKS; SJR; STAGGERMUD,
								KIMBALL, & LEE LAKES
50002	NA	BILLIES BAY WILDERNESS		3120	69		OCALA NAT FOREST	ALEX SPGS & NINEMILE CKS, BILLIES BAY
50002		DUCK LAKE DEC ADEA	63880		83		OCALA NATL FOREST	FOREST WATERBODIES
50002	NR	ALEXANDER SPRINGS OK REC AREA			83	v	OCALA NAT FOREST	
50002	NR	FARLES LAKE REC AREA			83	•	OCALA NAT FOREST	FARIES LAKE & PRAIRIE
50002	NW	LAKE WOODRUFF NWR	18506		127	Y	DELEON SPRINGS	L WOODRUFF SIR
50002	SR	DELEON SPRINGS SRA	603		127	Ŷ	DELEON SPGS	SPRING GARDEN LAKE
50002	WM	BARKER/EVANS PURCHASE	400		127		W OF DELAND	SJR
50003	NA	LIT LAKE GEORGE WILDERNESS		2500	107		OCALA NAT FOREST	LITTLE LAKE GEORGE
50003		JUNIPER PRAIRIE WILDERNESS	120740	13260	83		OCALA NATI FOREST	JUNIPER PRAIRIE
50003		SALT SPRINGS REC ADEA	120740		83	v	OCALA NATEODEST	FOREST WATERBODIES
50003	NR	HOPKINS PRAIRIE REC AREA			03 83	,	OCALA NAT FOREST	UOPKING DANDIE
50003	NR	WILDCAT LAKE BEC ABEA			69		OCALA NAT FOREST	
50003	NR	JUNIPER SPRINGS REC AREA			83	Y	OCALA NAT FOREST	JUNIPER SPRINGS
50003	NR	GRASSY POND REC AREA			83		OCALA NAT FOREST	GRASSY POND (AKA PRAIRIE POND)
50003	NR	LAKE DELANCY REC AREA			83		OCALA NAT FOREST	LAKE DELANCY
50003	WM	SILVER GLEN SPRINGS PURCHASE	512		69			SILVER GLEN SPGS & RUN
50003	WM	L GEORGE/UNION CAMP PURCHASE	19000		127			LAKE GEORGE, JUMPING GULLY BR,
60101	WU	EVANS PURCHASE	5035		61			FT DRUM MARSH TYPE I WILDLIFE MGMT AREA
60101	WU	LATT MAXCY PURCHASE	9820		61			FT DRUM MARSH TYPE I WILDLIFE MGMT AREA
60101	WU	D C SCOTT PURCHASE	5100		61			FT DRUM MARSH TYPE I WILDLIFE MGMT AREA
60102	GF	BLUE CYPRESS LAKE FMA	6555		61		FELLSMERE	BILLE CYPRESS LAKE
60102	WU	FELLSMERE/FARM 13 PURCHASE	1912		61		FELLOWERE	LIPPER SIR BASIN
60102	WÜ	M&R ASSOCIATES/LAKE MIAMI/	2818		61			UPPER SJR BASIN
		GARCIA RANCH PURCHASE						
60102	WU	TASHKEDE JFL & WEALDON PURCHASE	870		61			UPPER SJR BASIN
60102	WU .	ANSIN PURCHASE	6323		61			UPPER SJR BASIN
60103	GW	THREE LAKES WMA	9755		97	Y	NE OF L MARIAN	PAGETT BR (BULL CK)
60103	GW	BULL CREEK WMA		22206	97		HOLOPAW	BULL, CRABGRASS, & JANE GREEN CKS
60103	WU		5822		9			UPPER SJR BASIN
60103	WU		3407		9			UPPER SJR BASIN
60103	WI 1		3693		9			LIDDED SID DAGIN
60103	WII	SARTORI PURCHASE	4202		9			UPPER SUR BASIN
60103	WIE	EVERETT PURCHASE	10		å			LIPPER SIR BASIN
60103	WU	IDA HOOKER PURCHASE	10		g			LIPPER SIR BASIN
60103	wu .	GILBERT TUCKER PURCHASE	2089		ě			UPPER SJR BASIN
60103 1	WÜ	SARTORI PURCHASE ADDITION	1306		9			UPPER SJR BASIN
60104 0	C1	LAKE WASHINGTON (CLASS I)	4362		9		MELBOURNE	LAKE WASHINGTON
		ODEENBALINA DUDOUACE	0700		•			
60201	WM	GREENBAUM PURCHASE	3790		â		SE OF LAKE POINSETT	LAKES FLORENCE & BARNETT
60202 0	GW	TOSOHATCHEE STATE RESERVE WMA	28000		95	Y	NW OF COCOA	TOSOHATCHEE CK. ST JOHNS RIVER
60202 \	WM	CANAVERAL INDUST PARK PURCHASE	2349		9	•	E OF TOSAHATCHEE	SJR
60202	WM	TRANSFER FROM SFWMD	293		95		W SIDE OF CANAVERAL IND PAI	RK
60203	GF	SOUTH LAKE FMA	1101		9		TITUSVILLE	SOUTH LAKE
60203 (	GF		165		9		1110SVILLE	FOX LAKE
60203 0	ui₩ .	FARMIUN WMA	16350	6000	12/			
60203 0		SEMINULE HANCH WMA	6054	6000	90 0	v		
602031	WM	SEMINOLE RANCH/REDDITT PROPERTY	28785		å	•	WOFCOCOA	SJB
00203			20,00					
70100 (	GF	CLERMONT CHAIN OF LAKES FMA	8679		69	Y	CLERMONT	COOK, WINONA, PALAT, CRESCENT, LOUISA, MINN
70100 0	GF	LAKE JULIANA FMA	925		105		NE OF LAKELAND	LAKE JULIANA
70100 0	GF	LAKE MATTIE FMA	1097		105		NE OF LAKELAND	LAKE MATTIE
70100 \$	SP	LAKE LOUISA SP	1790		69	Y	CLERMONT	LAKE LOUISA
			4.05.0		~			
70200	WM	HOOPER/DUDA/CLAY ISLAND PUHCHASES	1850		69		LAKE APOPKA	LARE APOPRA
70300	DD .		146		69			TROUT LAKE
70300 1	r r	THOUT DAKE (ONE TALL. NODODON)	140					
70401 (	GF	LAKE GRIFFIN FMA	10688		69		LEESBURG	LAKE GRIFFIN
70401	NF	OCALA NATL FOREST & GFC WMA	40300		83		OCALA NATL FOREST	FOREST WATERBODIES
70401 I	NR	BIG SCRUB REC AREA			83		OCALA NAT FOREST	
70401	NR	BIG BASS LAKE REC AREA			83		OCALA NAT FOREST	
70401	NR	LAKE CATHERINE REC AREA			83		OUALA NAT FOREST	
70401	SR I		427		69	Y	FRUITLAND PARK	CARE GRIFFIN, DEAD HIVEN
70401 \	NM 3	SUNNTHILL FARMS PURCHASE	3922		83			
70402		LAKE WEIR AQUATIC PRESERVE (4)	6380		83			
70402	AP	OKLAWAHA R AQUATIC PRESERVE			83	Y		
70402	AP (	OKLAWAHA R AQUATIC PRESERVE			83	Y		
70402	GF	LAKE WEIR FMA		5685	83			LAKE WEIR
70402 1	NF	OCALA NATL FOREST & GFC WMA	23500		83		OCALA NATL FOREST	FOREST WATERBODIES
70402 \$	SP :	SILVER RIVER SP (1)	4450		83	Y	OCALA	SILVER HIVER

SUB-		ACRE	OVERLA	р 			
BASIN TY	PE NAME	-AGE	ACRES	CNTY	OFW	? LOCATION	WATERBODY
70500 AP	OKLAWAHA R AQUATIC PRESERVE			83	Y		
70500 GV	V FT MCCOY WMA	11096		83		FORT MCCOY	
70500 NF	OCALA NATL FOREST & GFC WMA	79500		83		OCALA NATL FOREST	FOREST WATERBODIES
70500 NF	HALFMOON LAKE REC AREA			83		OCALA NAT FOREST	HALFMOON LAKE
70500 NF	FORE LAKE REC AREA			83		OCALA NAT FOREST	FORE LAKE
70500 NF	MILL DAM REC AREA			83		OCALA NAT FOREST	MILL DAM LAKE
70500 NF	LAKE EATON REC AREA			83		OCALA NAT FOREST	LAKE EATON
80001 SE	PAYNES PRAIRIE STATE PRESERVE	18063		1	Y	MICANOPY	PAYNES PRAIRIE 1 WAURERG SAWGRASS POND
80001 SG	DEVILS MILLHOPPER	63		1		GAINESVILLE	
80002 GE		7407					
80002 GF	NEWNANS LAKE FMA	/42/		1			NEWNANS LAKE
80003 GF	LOCHLOOSA LAKE FMA	5705		1	Y		LOCHLOOSA LAKE
80003 GV	V LOCHLOOSA WMA	16730		1			LOCHLOOSA & ORANGE LKS, R.STYX, WATSON PRAIRIE
80004 GE	OBANGE LAKE FMA	12706		1	v		ODANGE LAKE
80004 GV		15021		- i	•		
80004 PP	ORANGE LAKE CYPRESS (TNC)	112		83		NE OF CITRA	WETLANDS
80004 SH	MARJORIE K RAWLINGS SHS	13		1		CBOSS CREEK	CROSS CREEK
80004 WM	A ROSENBERGALEWIS PURCHASE	157		Ť			PRAIRIE CREEK
80005 GV		812		83		FORT MCCOY	
80007 NF	OCALA NATL FOREST & GFC WMA	18000		83		OCALA NATL FOREST	FOREST WATERBODIES
00100 AP	TOMOKA MARSH ACHATIC PRESERVE	8000		107	v		
90100 GV	TIGED DAY WIMA & STATE FOREST	4455		107	T		TICED DAY
90100 PP	SPRUCE CREEK (TNC)	150		127		PORT ORANGE	
90100 SH	BULOW PLANTATION BUINS SHS	109		35		BUNNELL	BULOW CK
90100 SH	ADDISON BLOCKHOUSE SHS	5		127		ORMOND BEACH	TOMOKA B
90100 SP	TOMOKA SP	917		127	Y	OBMOND BEACH	TOMOKA B HALIFAX B
90100 SP	BULOW CREEK SP	3231		127	Ý	ORMOND BEACH	BULOW CK
90100 SR	LIGHTHOUSE POINT SRA	136		127	Ý	PONCE INLET	HALIFAX R. PONCE INLET
90100 SR	FLAGLER BEACH SRA	145		35	Ý	FLAGLER BEACH	SMITH CK (ICWW), ATLANTIC
90100 SR	NORTH PENINSULA SRA	1400		127	Y	S OF FLAGLER BCH	HALIFAX R (WITH VOL CO PURCHASE ADDITION)
90100 SU	SPRUCE CREEK	611		127	Y	PORT ORANGE	SPRUCE CREEK
90100 VO	JOHNS ISLAND (ADJ TO TOMOKA SP)	642		127			TOMOKA R
90100 VO	STRICKLAND BAY BUFFER	569		127		S OF PORT ORANGE	SPRUCE CK HEADWATERS
90200 AP	PELLICER CK AQUATIC PRESERVE	505		35	Y		
90200 C2	SOUTH ST JOHNS CO SHA (3)	4000		109		CRESCENT BEACH	MATANZAS R
90200 NP	FT MATANZAS NATL MONUMENT	298		109		MATANZAS INLET	MATANZAS RIVER
90200 NP	CASTILLO DE SAN MARCOS NAT MON	20		109		ST. AUGUSTINE	MATANZAS RIVER
90200 SO	WASHINGTON OAKS STATE GARDENS	390		35	Y	PALM COAST	MATANZAS R. ATLANTIC
90200 SP	FAVER-DYKES SP	752		109	Y	ST. AUGUSTINE	PELLICER CK
90200 SR	ANASTASIA SRA	1509		109	Y	ST. AUGUSTINE	SALT RUN, ATLANTIC
90300 AP	GUANA BAQUATIC PRESERVE	11500		109	v	S PONTE VEDRA BEACH	
90300 C2	NORTH ST JOHNS CO SHA	9846		109	'		TOLOMATO B
90300 GW	GUANA RIVER WMA	8700		109		S PONTE VEDBA BEACH	GUANA & TOLOMATO BIVEBS LAKE PONTE VEDBA
90300 SP	GUANA RIVER SP	2398		109	Y	PONTE VEDRA BCH	GUANA RIVER, TOLOMATO RIVER
100004 40		00704		~	v	00004	BANANA B
100001 AP		29/00		407	1 V		
100001 AP		36000		127	Ŷ		
100001 C2	BODY B, BREVARD CO SHA	14947		a		ITTUSVILLE	IRL
100001 C2	BOUY C, BREVARD CO SHA	5847	17500	107			IRL MOSCILITO I AGOON
100001 C2		00048	17500	12/			
100001 C2	BODY A, BREVARD CO SHA	29048		9			
100001 02	HUMAY WILDHEE DECLICE	470		3		MERRITTISI AND	
100001 CO		4/8				CADE CANAVEDAI	IN DANANA RIVER
100001 ND			57627	å	v	BREV A/OL COUNTIES	MOSOUITO LAGOON ATLANTIC
100001 NP		120205	57027	å	ÿ	MERRITT ISLAND	INDIAN & RANANA RIVERS
100001 SH	N SMVRNA SUGAR MUL RUINS SHS	132303		127	•	NEW SMYRNA BEACH	
100001 WM	TURNBULL HAMMOCK PURCHASE	1167		127		W OF OAK HILL	
400000 45		10500		^	v		IDI
100002 AP		18533	12057	о Э	1	S OF MELBOURNE	19)
100002 02	TURKEY CREEK SANCTUARY	60	12007	å		PALMBAY	
100002 SR	SEBASTIAN INLET SRA	289		9	Y	S MELBOURNE BEACH	INDIAN RIVER, SEBASTIAN INLET
				<i>.</i>			101
100003 AP	IRL AQ PRESERVES (5) INDIAN BIVER CO SHA (3)	6500	5000	61 61	Ŷ	VEHO BEACH WABASSO	IRL III
100003 NW	PELICAN ISLAND NWR (no access)	4396		61	Y	SEBASTIAN	INDIAN RIVER
100003 SR	SEBASTIAN INLET SRA	289		61	Ŷ	S MELBOURNE BEACH	INDIAN RIVER, SEBASTIAN INLET

NOT YET OPEN AS OF 1/31/90
 THE AQUATIC PRESERVE WITHIN SUBBASIN 40403 IS NOT AN OFW
 ACREAGE IS AN ESTIMATE - DNR LISTS NO OFFICIAL ACREAGE
 NOT YET AN OFW
 IRL AQ PRESERVES IN I.R. CO.: MALABAR-V.BEACH AND
 V.BEACH-FT.PIERCE. ACREAGE FROM I.R. CO. COMP PLAN

**APPENDIX C: ECOLOGICAL SIGNIFICANCE** 

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Plants	and a	nimals*		Communitie	96	Manatee	Wading	Subbasin	Subbasin name
E	T	S	Critically imperiled statewide	Imperiled statewide	Very rare or restricted	sites	bird rookeries	number	
					Nassa	u River			
4	5	3		. 9	3			1-000	Nassau River
					St. Mar	ys River			
10	13	9		6				2-001	Upper St. Marys River
	11	1		20	1	1		2-002	Lower St. Marys River
					Lower St.	Johns River			
4	7	3		5	1			3-100	Crescent Lake
6	34	37		8				3-200	Etonia Creek
26	14	4		2	1			3-300	Black Creek
1								3-400	Ortega River
		1						3-501	Trout River
								3-502	Broward River
								3-503	Dunn Creek
		1						3-601	Arlington Creek
7	1	1						3-602	Julington Creek
7	8	11		5	1	3		3-603	North Lower St. Johns River
12								3-701	Sixmile Creek
	1							3-702	McCullough Creek
1	1							3-703	Deep Creek
7	10	4		1				3-704	South Lower St. Johns River
					Middle St.	Johns River			
3	5			3				4-100	Econlockhatchee River
				1				4-201	Little Wekiva River
	10	5		3	3 3			4-202	Wekiva River
1	20	3		11 2			1	4-203	Blackwater Creek
	3			1			1	4-301	Howell Creek

#### Table C1. Florida natural areas inventory occurrences in the St. Johns River Water Management District

E=endangered; T=threatened; S=species of special concern
 NOTE: A blank cell indicates no data in the data base at the time this table was created

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Plants	and a	nimals*		Communitie	36	Manatee	Wading	Subbasin	Subbasin name
E	т	S	Critically	Imperiled	Very rare or	Bites	oird rookeries	number	
			statewide	Sidenios	169716460				
1	9			3				4-302	Lake Jesup
1	4			1				4-401	Lake Harney
4	8			4	1	1		4-402	Deep Creek
1	19	3		123		1	1	4-403	Lake Monroe
					Lake (	George			
	2	4		14		2		5-001	Lake Beresford
3	19	7		6	1	1		5-002	Lake Woodruff
6	115	7		11	24	1		5-003	Lake George
					Upper St	lohns River			
	1							6-101	Fort Drum Creek
1	8	3		1				6-102	Blue Cypress Creek
3	5			1			2	6-103	St. Johns Marsh
	1							6-104 ·	Lake Washington
	8	1		2				6-201	Lake Poinsett
1	4	1		2				6-202	Tosahatchee
6	11	3		7				6-203	Puzzle Lake
					Ocklawa	ha River			
9	8	3		3	3			7-100	Palatlakaha River
9	5	3		2	1			7-200	Lake Apopka
8	23	8		5				7-300	Lake Harris
4	20	6		14			1	7-401	Lake Griffin
1	4	10		2				7-402	Marshall Swamp
4	31	11		21	1			7-500	Eureka Dam
	Florida {		Florida Ridge i	s Orange Lak	0				
2	41 31 1 4 1			3	8-001	Florida Ridge			
	13 6			1 8-00			Newnans Lake		
1	31	11	1	2			2	8-003/4	Orange/Lochloosa lakes

E=endangered; T=threatened; S=species of special concern
 NOTE: A blank cell indicates no data in the data base at the time this table was created

Plants	and a	nimais*		Communitie	98	Manatee	Wading	Subbasin	Subbasin name
E	т	S	Critically imperiled statewide	Imperiled statewide	Very rare or restricted	occurrence sites	bird rookeries	number	
	7	13		2	2			8-005	Orange Creek
2	7	1						8-006	Sweetwater Creek
	10	6		3				8-007	Rodman Reservoir
					Upper	Coastal			
6	11	16		18	5			9-100	Halifax River
4	8	9		8	4		1	9-200	Matanzas River
2	5	2		2	2		1	9-300	Tolomato River
					Indian Riv	er Lagoon			
26	34	40		13	10	5	3	10-001	North Indian River Lagoon
9	19	7		6	6			10-002	N Central Indian River Lagoon
13	12	16		8	4	2		10-003	S Central Indian River Lagoon

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#### Table C1. Continued

* E=endangered; T=threatened; S=species of special concern
 NOTE: A blank cell indicates no data in the data base at the time this table was created

		Acres of I	nabitat type	•		Subbasin	Subbasin name			
DH	EU	EV	FF	FH	UP	number				
				Nas	sau River					
0	17,522	28,473	85,000	0	140,852	1-000	Nassau River			
				S1. N	larys River					
1,556	0	0	116,774	0	189,782	2-001	Upper St. Marys River			
0	8,549	12,033	75,582	0	167,737	2-002	Lower St. Marys River			
				Lower S	t. Johns Ri	/er				
25,355	0	0	151,165	1,613	201,930	3-100	Crescent Lake			
16,279	0	0	40,615	5,408	164,976	3-200	Etonia Creek			
4,458	0	0	81,127	0	226,570	3-300	Black Creek			
0	1,070	0	15,379	0	46,247	3-400	Ortega River			
0	2,041	1,203	10,416	0	45,677	3-501	Trout River			
0	626	0	3,748	0	12,070	3-502	Broward River			
0	595	697	3,610	0	9,895	3-503	Dunn Creek			
0	499	0	3,211	0	16,762	3-601	Arlington Creek			
830	0	0	28,770	0	36,768	3-602	Julington Creek			
9,137	37,046	19,635	21,432	0	118,146	3-603	North Lower St. Johns River			
647	0	0	24,084	Q	52,352	3-701	Sixmile Creek			
541	0	0	4,108	0	34,889	3-702	McCullough Creek			
108	0	0	7,711	0	40,551	3-703	Deep Creek			
51,953	0	0	60,015	641	134,963	3-704	South Lower St. Johns River			
				Middle S	t. Johns Ri	ver				
4,145	0	0	29,826	842	142,097	4-100	Econlockhatchee River			
2,999	0	0	5,881	841	21,142	4-201	Little Wekiva River			
3,586	0	0	23,377	5,893	64,417	4-202	Wekiva River			
4,604	0	0	34,770	3,847	82,296	4-203	Blackwater Creek			
5,155	0	0	6,658	0	18,983	4-301	Howell Creek			
11,082	0	0	18,218	1,191	35,913	4-302	Lake Jesup			
7,135	0	0	3,808	4,572	17,461	4-401	Lake Harney			
4,237	0	0	46,762	1,413	88,006	4-402	Deep Creek			
19,781	0	0	5,263	10,389	66,976	4-403	Lake Monroe			

Table C2. Wetlands and surface water acreage

* DH=deepwater; EU=estuarine, unvegetated; EV=estuarine, vegetated; FF=freshwater, forested; FH=freshwater, 180 herbaceous; UP=upland

		Acree of I	abitat tua	•		Subbaein	Subbasia name			
DH	EU	EV	FF	FH	UP	number				
		<u></u>	1	Lak	e Georde	1	<u> </u>			
4,109	0	0	12,725	571	25,803	5-001	Lake Beresford			
12,386	0	0	63,569	2,899	92,406	5-002	Lake Woodruff			
56,967	0	0	49,590	2,827	176,600	5-003	Lake George			
				Upper S	t. Johns Ri	ver				
0	0	0	28,177	20,339	50,899	6-101	Fort Drum Creek			
6,658	0	0	59,591	60,424	90,050	6-102	Blue Cypress Creek			
3,638	0	0	107,370	52,295	193,766	6-103	St. Johns Marsh			
2,839	0	0	7,904	3,001	9,137	6-104	Lake Washington			
12,049	0	0	45,477	25,096	135,526	6-201	Lake Poinsett			
3,318	0	0	26,948	32,989	62,398	6-202	Tosahatchee			
10,400	0	0	11,597	37,179	81,343	6-203	Puzzle Lake			
				Ockia	waha Rive	•				
17,937	0	0	45,818	29,700	107,026	7-100	Palatlakaha River			
33,772	0	0	12,332	6,536	67,136	7-200	Lake Apopka			
37,380	0	0	19,949	19,892	77,496	7-300	Lake Harris			
16,038	0	0	10,793	21,728	98,327	7-401	Lake Griffin			
6,477	0	0	16,296	1,038	79,949	7-402	Marshall Swamp			
4,978	0	0	44,216	1,268	132,614	7-500	Eureka Dam			
			F	lorida Ridg	e & Orang	a Lake				
125	0	0	3,803	18,577	394,383	8-001	Florida Ridge			
5,909	0	0	19,788	169	47,432	8-002	Newnans Lake			
13,985	0	0	19,431	8,387	104,650	8-003/4	Orange/Lochloosa lakes			
6,042	0	0	24,035	5,341	88,487	8-005	Orange Creek			
1,795	0	0	8,390	0	24,931	8-006	Sweetwater Creek			
3,114	0	0	8,976	1,557	23,082	8-007	Rodman Reservoir			

#### Table C2. Continued

* DH=deepwater; EU=estuarine, unvegetated; EV=estuarine, vegetated; FF=freshwater, forested; FH=freshwater, herbaceous; UP=upland 181

.

#### Table C2.Continued

DH	EU	Acres of I EV	nabitat type FF	Subbasin number	Subbasin name								
	Upper Coastal												
800	8,805	7,535	114,280	5	101,372	9-100	Halifax River						
0	9,307	11,907	19,372	105	131,630	9-200	Matanzas River						
0	7,146	9,163	6,499	678	32,655	9-300	Tolomato River						
				indian I	River Lago	on							
192	149,253	49,575	15,640	7,286	149,070	10-001	North Indian River Lagoon						
528	21,012	1,984	7,493	13,326	48,039	10-002	N Central Indian River Lagoon						
66	15,070	8,953	2,965	14,027	98,066	10-003	S Central Indian River Lagoon						

Source: U.S. Fish and Wildlife Service national wetlands inventory map (USFWS 1985), in digital form

* DH=deepwater; EU=estuarine, unvegetated; EV=estuarine, vegetated; FF=freshwater, forested; FH=freshwater, herbaceous; UP=upland

# APPENDIX D: NEED FOR ACTION

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.

# Table D1.Trophic state index (TSI) and water quality index (WQI)data by waterbody

The table is in three sections:

- 1. Lakes
- 2. Rivers
- 3. Estuaries

Each section is sorted first by subbasin and then by waterbody name in alphabetical order. Some waterbodies were represented by more than one reach in the DER 305b report (Hand et al. 1990), resulting in multiple TSIs or WQIs. In these cases, an average waterbody TSI or WQI was calculated for use in this analysis.

Explanation of column headings:

SUBBASIN:	See Notes on Table A1 (page 121)								
PCO:	Primary county code. See Table A2 (page 123)								
SCO:	Secondary county code. See Table A2 (page 123)								
TYPE:	L = Lake R = River E = Estuary								
SJR DB?:	Y if there are data for the waterbody in the District scientific data base as of February 1990								
STORET?:	Y if there are data for the waterbody in STORET as of February 1990								
DER 305b 1990: WQI: TSI: MDU?:	River water quality index Lake or estuary trophic state index Whether or not the lake meets its designated use Y = Yes N = No P = Partial								
OTHER TSI or WQI:	Water quality index (TSI for lakes and estuaries, WQI for rivers), from sources other than the DER 305b report (see next item)								

REF:

Reference where non-305b TSI or WQI was found

- 1 = Rao et al. 1991
- 2 = Fulton et al. 1989
- 3 = SJRWMD 1987
- 4 = Dierberg et al. 1988
- 5 = Greis 1985 (Note: The TSIs listed in this report were not derived using the same equations as in the 305(b) reports (original source: Huber et al. 1982). For this analysis, therefore, TSIs for the Ocala National Forest lakes were calculated using the original data from the report along with the equations developed by Huber et al. (1982))
- 6 = SJRWMD scientific data base, 1990
- 7 = Florida Department of Environmental Regulation Florida lakes assessment project data—in SJRWMD scientific data base

-See next page for start of table-

******								
0110			Ŷ	0.15	070	DER 3	305(b)	OTHER
SUB-	PCO :	SCO NAME	P 	SJR	S10-	]	1990	
BASIN			E	DB?	RET?	WQI		
0	69	CATHERINE	L	Y		1		36
0	95	GATLIN	L	Y		1		52
0	95	HOLDEN	L	Y				71
0	69	LADY	L	Y				42
0	95	WARREN	L	Y		1		51
20002	89	HAMPTON WALKER	L	Y				47
30100	107	35 CRESCENT	L	Y	Y	42	65 P	1
30100	127	DAUGHARTY	L	Ŷ		i		j 37
30100	127	DIAS	L	Y	Y	Ì		i 50
30100	35	DISSTON	L	Y	Y	,   14	53 Y	1
30100	35	GORE	L	Ŷ		Ì		i 32
30100	127	MAMIE	L	Y		i I		24
30100	127	NORTH TALMADGE	L	Y		i		i 50
30100	107	OMEGA	L	Y		İ		52
30200	7	BEDFORD	L	Y		!		54
30200	19	CRYSTAL	L	Y		ł		49
30200	107	CUE	L	Y				38
30200	19	GENEVA	L	Y	Y	25	32 Y	
30200	107	GEORGES	L	Y	Y	1		27
30200	19	HALL	L	Y		ļ		j 39
30200	19	JOHNSON	L	Y		1		j 48
30200	107	LONG-LONS	L	Y		1		j 31
30200	7	PARADISE	Ł	Y		1		22
30200	107	ROSS-ADAHO	L	Y		[		65
30200	19	SMITH	L	Y				23
30200	107	TWOMILE POND	L	Υ				41
30300	19	KINGSLEY	L	Y	Y	23	33 Y	l.
30300	19	VARNES	L	Y		ł		31
30300	19	WHITMORE	L	Y		1		26
30603	19	DOCTORS	L	Y	Y	54	67 N	I
40100	95	CORRINE/BALDWIN	L	Y	Y	1		51
40100	95	UNDERHILL	L	Y	Y	1		1 59

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********	******	*****	**											
Section 1.	Lakes													
********	*******	*****	**	Т									_	
				Y				1	DER 3	305(b)	)	1	OTHER	R
SUB-	PCO	SCO	NAME	Р	5	SJR	STO-		1	990			TSI or	Ε
BASIN				E	[	DB?	RET?		WQI	TSI	MDU		WQI	F
40201	117		BEAR	L		Y	Y	I				I	36	1
40201	95		FAIRVIEW	L		Y	Y	i				i	35	1
40201	95		LAWNE	L		Y	Y	İ				i	57	1
40202	95		HIAWASSE	,		v		1				1	30	7
40202	95			L 1		v							64	7
40202	95		MCCOV	L		v		1					70	7
40202	95		ROSE	L 1		v							75	7
40202	90		NUGL	L.		1		I				I	75	'
40203	83		BAPTIST	L			Y	Т					44	5
40203	69		CLAY	L			Y	j				j	31	5
40203	69		CLEARWATER	L				Ì				İ	29	5
40203	69		COWPEN POND	L			Y	Ì				Ì	32	5
40203	69		DALHOUSIE	L		Y		1				Ì	39	7
40203	69		DEERHAVEN	L			Y	1					28	5
40203	69		DORR	L		Y	Y	1				1	43	5
40203	69		NORRIS	L		Y		1				1	56	7
40201	05			1		v		1					24	7
40301	90			L 1		T V	v		56	70	NI		72	1
40301	05			L 1		T V	r V		12	19		1	12	4
40301	90			L .		T V	T		10	47	T		64	7
40301	95			L		T V							55	7
40301	90			L. 1		T	v						13	1
40301	95		SYBELIA	L			Y	Ι				I	43	4
40302	117		ADA	L		Y		1				ł	64	7
40302	117		JESSUP	L		Y	Y		55	83	Ν			
40302	117		KATHRYN	L		Y	Y		37	60	Y			
40302	117		WILDMERE	L			Y	I				I	49	4
40401	127	117	HARNEY	L		Y	Y	I	45	60	Ρ	l		
							Ň			04	V			
40402	127		ASHBY	L .		Y V	Ŷ	1	22	01	Y	1	02	7
40402	127			L		Y V							03 75	7
40402	117		MULLEI	L		Ŷ		I				ļ	75	1
40403	127		BETHEL	L		Y						Ι	53	7

Section 1.	Lakes			_								
0			· · · · · ·	T Y				DER 3	305(b)	)	OTHER	R
SUB-	PCO	SCO	NAME	P	SJR	STO-		1	990		TSI or	Ē
BASIN				E	DB?	RET?		WQI	TSI	MDU	WQI	
40403	127	117	MONBOE	1	v	v	1	52	73	N	,	
40403	127	•••	THORNHILL	1	Ŷ			JL	70		1 78	7
				-	•		ł				1 70	'
50001	127		THE LAGOON	L	Y						80	7
50002	69		AKRON	L	Y		1				50	7
50002	69		BEAKMAN	L		Y	Ì				23	5
50002	69		BOYD	L		Y	1				46	5
50002	83		BUCK	L		Y	1				27	5
50002	69		BUNCH GROUND POND	L		Y	1				48	5
50002	69		EAGLE NEST POND	L		Y	l				32	5
50002	127		EMPORIA	L	Y		I				48	3
50002	83		FARLES	L		Y	I.				20	5
50002	69		HORSESHOE MUD	L	Y		1				78	7
50002	69		LULU	L	Y						58	7
50002	127		PURDOM/INEZ	L	Y						34	3
50002	69	83	SELLERS	L	Y	Y	1	5	19	Y	13	5
50002	127		SHAW	L	Y		I				61	3
50002	69		STAGGER MUD	L	Y						69	7
50002	127		TICK ISL MUD	L	Y						81	7
50002	127		WOODRUFF	L		Y		38	63	Р		
50002	83		YEARLING POND	L		Y	I				18	5
50002	83		ECHO	L		Y					24	5
50002	83		CHAIN O LAKES	L		Y	L				33	5
50002	69		SKINNY DIP POND	L		Y	ł				21	5
50003	83		BUCKSKIN	L		Y					29	5
50003	69		CROOKED	L		Y					32	5
50003	83		DELANCY	L		Υ					36	5
50003	127		GEORGE	L	Y	Y		42	69	Р		
50003	69		GOBBLER	L		Υ	l				47	5
50003	83		KERR	L	Y	Υ	1	11	27	Y		
50003	83		LITTLE KERR/WARNER	L	Y		ł				38	7
50003	107		LITTLE GEORGE	L	Y		I				72	7
50003	69		NORTH GRASSHOPPER	L		Y	I				15	5
50003	127		PIERSON	L	Y		1				53	3
50003	69		SOUTH GRASSHOPPER	L	Y	Y	ŀ				21	7
50003	69		WILDCAT	L		Υ					23	5

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Section 1. Lakes

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					Y			I	DER :	305(b)	I	10	DTHER	R
	SUB-	PCO	SCO	NAME	Ρ	SJR	STO-	Ì	'	1990		٦	rsi or	Е
_	BASIN			<u> </u>	E	DB?	RET?	1	WQI	TSI	MDU		WQI	F
	50003	107		LAURA/CATHEAD POND	L		Y	l				1	61	5
	50003	69		LAW BREAKER POND	L		Y	1				1	13	5
	60102	61		BLUE CYPRESS	L	Y	Y		34	61	Y			
	00100	•			,	V	V		70	75	-	,		
	60103	9		HELL'N BLAZES	Ľ	Ŷ	Ŷ	I	73	/5	۲	I		
	60104	٩		WASHINGTON	I	v	v	ł	28	48	v	ł		
	00104			WASHINGTON	L.	•	•	ł	20	40	•	I		
	60201	9		FLORENCE	L	Y		I				I	60	7
	60201	9		POINSETT	L	Ŷ	Y	1	42	53	Y	i		·
	60201	9		WINDER	L	Ŷ	Y	1	56	61	Y	i		
		-						•				'		
	60203	9		BUCK	L	Y		I					64	7
	60203	9		CLARK	L	Y		I				ł	62	7
	60203	95		CONE	L	Y	Y	Ì					48	6
	60203	9		ELLIS	L	Y		Ì				Ι	67	7
	60203	9		FOX	L	Y		1				Ι	58	6
	60203	9		LOUGHMAN	L	Y		1					82	7
	60203	117	127	PUZZLE	L	Y		I				1	48	7
	60203	9		RUTH	L	Y		I				1	51	7
	60203	9		SALT	L	Y		1				1	90	7
	60203	9		SOUTH	L	Y	Y						48	6
														_
	70100	105		BONNET	L	Y						I	70	7
	70100	105		CRYSTAL	L	Y		1					31	/
	70100	69		FLAT	L	Y							23	/
	70100	69		GLONA	L	Y							35	/
	70100	69		GRASSY	Ĺ	Y		1					33	/
	70100	69		JACKS	L	Y		ļ					31	7
	70100	69		KIRKLAND	L	Ŷ		ļ	4.0	40			25	1
	70100	69		LOUISA	L	Y	Y	1	16	48	Y		65	c
	70100	105		LOWERY	L	Y	Y	1	4 5	40	V		55	0
	70100	69		MINNEHAHA	L.	Y	Y	ļ	15	43	r V			
	70100	69		MINNEOLA	L I	Y V	ť		11	30	T		25	7
	/0100	69			L	r V		1				1	25 45	7
	70100	69			۲. ۱	r V						1		7
	70100	105		IUWER	L	T		J.				1	<b>U</b> 1	•

Section 1.	Lakes	******	**	т							
				I V				005/h)			D
SUB-	PCO	sco		P	SIR	STO-		1000 1000			
BASIN	100	000		F	DR2	BET2		TSI			F
BAOIN							1 44 621	101			
70200	95	69	АРОРКА	L	Y	Y	59	8 <del>9</del>	Ν	l	
70200	95		AVALON	L	Y		1			38	7
70200	95	69	JOHNS	L	Y	Y	24	65	Y	I	
70300	69		BEAUCLAIR	L	Y	Y	1			ı 80	2
70300	69		BLANCHESTER	L	Y		1			32	7
70300	69		CHURCH	Ļ	Y		1			33	7
70300	69		DORA	L	Y	Y	59	84	Ν	75	2
70300	69		ELDORADO	L	Y		1			22	7
70300	69		EUSTIS	L	Y	Y	45	65	Ν	63	2
70300	69		GERTRUDE	L	Y		Ì			24	7
70300	69		HARRIS	L	Y	Y	34	61	Р	53	2
70300	69		IDAMERE	L	Y					36	7
70300	69		JOANNA	L	Y					34	7
70300	69		LITTLE HARRIS	L	Y	Y	1			52	2
70300	69		SAUNDERS	L	Y					34	7
70300	69		TROUT	L	Y		I			82	7
70401	83		BIG BASS	L		Y	1			.) 30	5
70401	83		BIG STEEP POND	L		Y	•			28	5
70401	83		CATHERINE	L		Y	l			i 20	5
70401	83		DINNERS POND	L	Y		, 			í <b>48</b>	7
70401	83		DOE	L		Y				i 19	5
70401	83		DOE POND	L	Y		1			j 27	7
70401	69	83	ELLA/JUANITA	L	Y		}			45	7
70401	69		GRIFFIN	L	Y	Y	55	72	Ν	69	2
70401	69		ISLAND	L	Y					21	7
70401	83		LONG POND	L		Y	ļ			25	5
70401	83		MARY	L		Y				18	5
70401	83		NICOTOON	L		Y	1			37	5
70401	83		ROUND POND	L		Y	[			28	5
70401	69		SILVER	L	Y		I			39	7
70401	83		SWIM POND	L		Y	1			30	5
70401	83		TROUT	L		Y				25	5
70401	83		WEST CLEARWATER	L		Y	I			23	5
70401	69		YALE	L	Y	Y	17	40	Y	35	2

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Section 1. Lakes

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				Y			DER :	305(b)		OTHER	R
SUB-	PCO	SCO	NAME	Р	SJR	STO-	j '	1990		TSI or	Ε
BASIN				Е	DB?	RET?	WQI	TSI MDU	J	WQI	F
70402	83		LITTLE BRYANT	L		Y	1			25	5
70402	83		ROUND	Ĺ		Y	1			20	5
70402	83		SHOESOLE	L		Y	1			18	5
70402	83		SUNRISE	L		Y	1			28	5
70402	83		TOMAHAWK	L		Y				18	5
70402	83		WEIR	L	Y	Y	22	41 Y		40	2
70500	83		CHARLES	L		Y	1			56	5
70500	83		CHURCH	L		Y	Ì			54	5
70500	83		CLEAR	L	Y		i			28	7
70500	83		DEER	L		Y	i			22	5
70500	83		EATON	L		Y	Ì			56	5
70500	83		FORE	L		Y	Ì			36	5
70500	83		HALFMOON	L		Y	1			31	5
70500	83		ISLAND	L	Y		1			30	7
70500	83		JOES	L	Y		1			25	7
70500	83		JUMPER	L		Y	Í			71	5
70500	83		LOU	L		Y	İ			44	5
70500	83		MILL DAM	L		Y	1			25	5
70500	83		MUD	L	Y		Ì			53	7
70500	83		NORTH	L	Y		1			41	7
70500	83		REDWATER	L		Y	Ì			59	5
70500	83		TOBE	L		Y	Ì			31	5
70500	83		UNNAMED	L	Y		1			48	7
70500	83		WALDENA	L		Y	Ì			29	5
70500	83		WELLS POND	L		Y	Ì			24	5
80001	1		ALICE	1	Y		1			1 75	7
80001	1		BIVANS ARM	L	Ŷ	Y	45				•
80001	1		KANAPAHA	L	Ŷ	·				78	7
80002	4			1	v	v	1 12	69 P		1	
00002	1			L	,	·	72	00 1		1	
80003	1		JEFFORDS	L	Y		1			44	7
80003	1		LOCHLOOSA	L	Y	Y	32	57 Y			
80004	1		ORANGE	L	Y	Y	30	54 Y		I	

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Section 1. Lakes

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				Y			1	DER	305(b)		10	OTHER	R
SUB-	PCO	SCO	NAME	Р	SJR	STO-	·	·	1990 -	• -	17	TSI or	Ε
BASIN			····	E	DB?	RET?	'	WQI	TSI	MDU		WQI	_ F
80005	107		GALILEE	L	Y							26	7
80005	107		HIGGINBOTHAM	L	Y							31	7
80005	1		HOLDENS POND	L	Y						1	64	7
80005	1	107	LITTLE ORANGE	L	Y						1	61	7
80005	107		MORRIS	L	Y							25	7
80005	107		MOSS LEE	L	Y		Í				İ	59	7
80005	107		REDWATER	L	Y						Ì	58	7
80005	107		SOUTH BULL POND	L	Y		1				Ì	44	7
80005	107		STAR	L	Y		1				Ì	45	7
80005	107		WINNOT	L	Y		1				1	40	7
00007	407					Ň				.,			
80007	107	83	OKLAWAHA/RODMAN	L		Ŷ			32	Y	I		_
80007	107		PENNER PONDS	L		Y	1				1	42	5

* - not within District boundaries, but

within the Palatlakaha River subbasin

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Section 2. Rivers

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SUB- BASIN	PCO S	SCO NAME	T Y P E	SJR DB?	STO RET?		DER 3	305(b) 1990 TSI MDU	OTH-   ER   WQI	R E F
10000	89	ALLIGATOR CK/MILLS	R	Ŷ			73	51 N		
10000	31	EDWARDS CK	Е	Y	Y		53	51 Y		
10000	31	FORT GEORGE R	E	Y	Y		35	53 Y		
10000	31	ICWW	Е		Y	I	34	56 Y		
10000	89	LOFTON CK	R	Y	Y	1	53	57 Y	1	
10000	89	MILLS CK/BOGGY	R	Y	Y	1	46	36 Y		
10000	31	89 NASSAU R	R	Y	Y	1	57	50 P		
10000	89	SOUTH AMELIA R	E	Y	Y	1	49	56 P	1	
10000	31	89 THOMAS CK	R	Y	Y	ļ	59	58 P	I	
20001	3	MID PRONG ST MARYS	R	Y	Y	ł	34	52 Y	1	
									193	

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Section 2. Rivers

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			Y			Т	DER 3	305(b)		ł
SUB-	PCO SCO	NAME	Р	SJR	STO-	i	1	1990		
BASIN			F	DB?	RET?	÷	WOI	TSU	MDU	ł
			<u> </u>					101		
20001	3	N PRONG ST MARYS	R	v	v	I	28	18	v	ı
20001	3			v	1		20	40 E0	r V	1
20001	3	ST MADYS D		T	V		10	59	T V	
20001	3	SI MARISR	R	~	Y		18	52	Y	ļ
20001	3	TURKEY CK	к	Y	Ŷ	I	40	60	Ŷ	I
20002	89	AMELIA R	Е	Y	Y	1	44	53	N	
20002	89	LIT ST MARYS R	R		Y	İ	64		Ν	i
20002	89	ST MARYS R	R	Y	Y	i	37	52	Y	i
20002				•	•	I		02	•	1
30100	107	DUNNS CK	R	Y	Y	ſ	42	60	Y	1
30100	35	HAW CK	R	Y	Y	Ì	49	62	Y	İ
30100	35	MIDDLE HAW CK	R	Y	Y	i	57	70	Y	İ
				·	·	•	•.		•	ı
30200	107	ETONIA CK	R	Y	Y		52	67	Р	1
30200	107	RICE CK (major)	R	Y	Y	1	64	65	Ν	1
30200	107	RICE CK (minor)	R		Y	i	31		Y	i
30200	107	SIMMS CK	R	Y	Y	i	30	44	Ŷ	i
00200			••	•	·	,		••	•	1
30300	19	ATES CK	R	Y	Y	ļ	59	61	Y	1
30300	19	BLACK CK	R	Y	Y	Ì	43	42	Y	Ì
30300	19	GREENS CK	R	Y	Y	Ì	59	84	Y	İ
30300	19	N FORK BLACK CK	R	Y	Y	i	41	49	Y	i
30300	19	PETERS CK	R	Y	Y	i	51	57	Р	i
30300	19	S FORK BLACK CK	R	Y	Y	i	42	39	Ŷ	i
00000	10			•	•	1	,_	00	•	1
30400	31	CEDAR R	R	Y	Y		68	70	Ν	
30400	31	MCGIRTS CK	R	Y			24	45	Р	
30400	31	ORTEGA R	R	Y	Y	1	59	51	Ρ	
30501	31	RIBAULT R	R		Y	I	56	50	Ρ	
30501	31	TROUT R	R	Y		Ì	47	54	Р	Ì
						•				
30502	31	CEDAR CK	R		Y	I	48	55	Р	
						•				•
30503	31	DUNN CK	R		Y	ł	46	48	Y	1
						•				•
30601	31	ARLINGTON R	R	Y	Y	I	56	67	Р	1
30601	31	POTTSBURG CK	R	Y	Ŷ	į	47	54	Р	ļ
20001	- ·					•				·

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Section 2.	Rivers	5									
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				Y			ļ	DER 3	805(b)		
SUB-	PCO	sco	NAME	P	SJR	STO-	I	1	990		
BASIN				E	DB?	RET?		WQI	TSI	MDU	
30602	31		DURBIN CK	R		Y	1	60	54	Р	I
30602	31		JULINGTON CK	R	Y	Y	Ì	49	58	Р	Í
30603	31		ICWW	E	Y		ł	51	54	Y	I
30603	31		PABLO CK	Ē	Ŷ	Y	1	42	55	Ŷ	1
30603	31		SISTERS CK	B	Ŷ			40	52	Ŷ	i
30603	31		ST JOHNS R	Е	Y	Y	İ	45	54	N	Ì
				_							
30701	109		SIXMILE CK	R	Ŷ	Y	1	50	53	Y	1
30701	109		TROUT CK	R	.Y	Y	I	50	56	Р	
30702	109		MCCULLOUGH CK	R	Y		1				ł
30703	109		DEEP CK	R	Y	Y	ļ	50	44	Y	
30704	107		CROSS FL BG CANAL	R		Y	I	15	34	Y	I
30704	109	19	ST JOHNS R	R	Y	Y	i	38	62	Ŷ	1
						•	1			·	4
40100	95	117	ECONLOCKHATCHEE R	R	Y	Y		48	64	Р	
40100	95	117	LIT ECON R	R	Y	Y	I	64	74	Ν	I
40201	117		LIT WEKIVA R	R	Y	Y	ļ	49	64	N	Ι
40202	117	95	WEKIVA R	R	Y	Y	I	39	55	Y	1
40203	69		BLACK WATER CK	R	Y	Y		43	61	Y	I
40203	69		SEMINOLE CK	R		Y	1	68		Ν	
40203	69		TRACY CANAL	R		Y		91	14	Y	Ì
40301	117		HOWELL CK	R	Y	Y		50	78	Ρ	ł
40302	117		GEE CK	R	Y	Y	1	59	90	Р	ļ
40401	127	117	ST JOHNS R	R	Y	Y	1	44	70	Y	ł
40402	127		COW CK	R	Y	Y	ļ	33	41	Y	1
40402	127		DEEP CK	R	Y	Y	1	53	73	Y	I

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Section 2. Rivers

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				Ŷ			1	DER :	305(b)		
SUB-	PCO	SCO	NAME	Р	SJR	STO-		[·]	1990		
BASIN				Ε	DB?	RET?	1	WQI	TSI	MDU	
40402	127	117	ST JOHNS R	R	Y	Y	I	46	65	Р	1
					•	•	1			•	1
40403	117		SMITH CANAL	R	v	v	Т	65	62	N	T
40400	107	447			, V	ı V		40	74		
40403	127	117	ST JOHNS R	н	Ŷ	Ŷ	I	49	71	Р	ļ
				_					_		
50001	69	127	ST JOHNS R	R	Ŷ	Ŷ		52	67	Y	
50002	127	69	ST JOHNS R	R	Y	Y		48	67	Y	
50003	83		SALT SPRINGS RUN	R		Y	I	4		Y	1
50003	69	127	ST JOHNS B	R	Y	Y	1	44	66	Y	i
00000	00			••	•	•	I		00	•	1
60101	02			р	v	v		50	57	•	
00101	93	,		п	T	Ť	I	59	57	F	1
				_							
60102	97	61	BLUE CYPRESS CK	R	Y	Y		58	49	Y	
60103	97		BULL CK	R	Y	Y		43	58	Y	
60103	97	9	JANE GREEN CK	R	Y	Y	1	68	61	Y	
60103	9		ST JOHNS R	R	Y	Y	i	66	65	Y	i
•••••	•				•		I			•	i
60104	٩		ST IOHNS B	B	v		T	66	65	v	Т
00104	5				•		ł	00	00	•	I
00001	07	•			V	V		47	50	V	
60201	97	9	ST JOHNS R	н –	Ŷ	Y		47	58	Y	1
60201	95		TAYLOR CK	R	Y	Y		42	57	Y	
60202	95		JIM CK	R	Y	Y		39	34	Y	Ι
60202	95	9	ST JOHNS R	R	Y	Y		45	59	Y	
60202	95		TOOTOOSAHATCHEE CK	R	Y	Y	Ì	41	36	Y	1
							•				•
60203	117	127	ST IOHNS B	R	Y	Y	I	39	59	Y	I
00200	117	121		••	•	•	1	00	00	•	I
70100	~~			п	v	v	ī	50	66	v	
70100	69				T V	T		50	00	T V	1
70100	105		LITTLE CK	R	Ŷ	Y	1	57	61	Y	1
70100	69	105	PALATLAKAHA R	R	Y	Y		31	48	Y	Ι
70200	69		APOPKA-BEAUCLAIR C	R	Y	Y		68	87	Ν	
70300	69		DEAD R	R	Y	Y	I	48	61	Ρ	J
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Section 2. Rivers

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PCO	9022		D	C 1D	OT0		DENT	1000(0)		1
100	000			000	010-	1	 WOI	1990		
			C.	DB	REI!		WQI	151	MDU	
00			-	Ň	v			~~~	-	
69			н	Y	Y	ļ	68	82	P	I
69		HAINES CK	н	Ŷ	Y	1	57	65	Р	1
69		HELENA RUN	R		Ŷ	I	50	69	Y	
83	69	OKLAWAHA R	R	Y	Y	]	52	69	Ν	ļ
83		OKLAWAHA R	R	Y	Y	Ι	59	61	Р	1
83		SILVER R	R	Y	Y	I	31	32	Y	
83		OKLAWAHA R	R	Y	Y	I	29	39	Y	l
1		HOGTOWN CK	R	Y	Y	ł	39		Ρ	1
1		HATCHET CK	R	Y	Y	1	27		Y	Т
1		LIT HATCHETT CK	R	Y	Ŷ	1	35		Y	
			_		.,					
1		CAMPS CANAL	R		Y		45		Y	
1		PRAIRIE CK	R	Ŷ	Y		45		Y	I
107		CABBAGE CK	R	Y	Y		15	24	Y	I
107	83	ORANGE CK	R	Y	Y		20	42	Y	I
107		SWEETWATER CK	R	Y		I				
83		OKLAWAHA R	R	Y	Y		27	32	Y	I
127		ICWW	E	Y	Y	1	43	61	Ν	I
127		SPRUCE CK	R	Y	Y		45	67	Y	1
127		TOMOKA R	R	Y	Y	İ	55	58	Ρ	İ
109		ICWW	E	Y	Y	I	43	61	N	1
109	35	MATANZAS R	F	Y	Y	Ì	40	52	Р	i
100	00	MOULTRIFCK	P	· v	Ŷ	1	43	48	Ŷ	i
100	0E			' V	v	I I	<u>/</u> 1	56	· Y	I I
109	30		п	Ĭ	1	I	-+ 1	50	•	I
109		CASA COLA CK	R	Y		I				l
109		GUANA R	R	Y		Ι				
109		ICWW	R		Y	l	48	49	Р	1
	PCO 69 69 69 83 83 83 83 1 1 1 1 1 1 1 1 1 1 1 1 1	PCO SCO 69 69 69 83 83 83 1 1 1 1 1 1 1 1 1 1 1 1 1	PCOSCONAME69DORA CANAL HAINES CK HELENA RUN69OKLA CANAL HAINES CK HELENA RUN836983OKLAWAHA R83OKLAWAHA R83OKLAWAHA R1HOGTOWN CK1HATCHET CK LIT HATCHETT CK1CAMPS CANAL PRAIRIE CK107SWEETWATER CK83OKLAWAHA R127ICWW SPRUCE CK TOMOKA R10935109CASA COLA CK GUANA R IO9109CASA COLA CK GUANA R	PCOSCONAMEP69DORA CANALR69HAINES CKR69HELENA RUNR8369OKLAWAHA RR8369OKLAWAHA RR83OKLAWAHA RR83OKLAWAHA RR83OKLAWAHA RR1HOGTOWN CKR1HATCHET CKR1LIT HATCHETT CKR1CAMPS CANALR1PRAIRIE CKR107CABBAGE CKR107SWEETWATER CKR107SWEETWATER CKR127ICWWE127SPRUCE CKR109S5 MATANZAS RE109S5 PELLICER CKR109GUANA RR109GUANA RR109ICWWR	PCOSCONAMEY PSJR E69DORA CANAL HAINES CK 69RY69HAINES CK RRY8369OKLAWAHA RRY83OKLAWAHA RRY83OKLAWAHA RRY83OKLAWAHA RRY83OKLAWAHA RRY1HOGTOWN CKRY1HATCHET CK PRAIRIE CKRY1CAMPS CANAL PRAIRIE CKRY107CABBAGE CK RYY107SWEETWATER CKRY107SWEETWATER CKRY127ICWW TOMOKA REY109ICWWEY109ST MATANZAS R MOULTRIE CKFY109CASA COLA CK RRY109ICWWRY109ICWWRY109ICWWRY109ICWWRY109ICWWRY	PCOSCONAMEY PSJRSTO- RET?69DORA CANAL HAINES CK 69RYY Y F69HELENA RUN RRYY Y8369OKLAWAHA R RRYY Y83OKLAWAHA R SILVER RRYY Y83OKLAWAHA R RRYY83OKLAWAHA R RRYY1HOGTOWN CKRYY1HATCHET CK PRAIRIE CKRYY1CAMPS CANAL PRAIRIE CKRYY107CABBAGE CK RRYY107SWEETWATER CK RRYY107SWEETWATER CK RRYY107SPRUCE CK R RRYY109ICWW MOULT RIE CKRYY109CASA COLA CK RRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRYY109ICWWRY109ICWW </td <td>PCO       SCO       NAME       P       SJR       STO- DB?       I         69       DORA CANAL       R       Y       Y       I         69       HAINES CK       R       Y       Y       I         83       69 OKLAWAHA R       R       Y       Y       I         83       69 OKLAWAHA R       R       Y       Y       I         83       0KLAWAHA R       R       Y       Y       I         83       OKLAWAHA R       R       Y       Y       I         83       OKLAWAHA R       R       Y       Y       I         1       HOGTOWN CK       R       Y       Y       I         1       HATCHET CK       R       Y       Y       I         1       HATCHET CK       R       Y       Y       I         1       CAMPS CANAL       R       Y       Y       I         107       CABBAGE CK       R       Y       Y       I         107       CABBAGE CK       R       Y       Y       I         107       SWEETWATER CK       R       Y       Y       I         127</td> <td>PCO       SCO       NAME       P       SJR       STO- E       DER DB?       RET?       DER WQI         69       DORA CANAL       R       Y       Y       I       68         69       HAINES CK       R       Y       Y       I       68         69       HELENA RUN       R       Y       Y       I       50         83       69       OKLAWAHA R       R       Y       Y       I       52         83       OKLAWAHA R       R       Y       Y       I       59         83       OKLAWAHA R       R       Y       Y       I       31         83       OKLAWAHA R       R       Y       Y       I       39         1       HOGTOWN CK       R       Y       Y       I       29         1       HATCHET CK       R       Y       Y       I       35         1       CAMPS CANAL       R       Y       Y       I       45         107       CABBAGE CK       R       Y       Y       I       45         107       SWEETWATER CK       R       Y       Y       I       45         127<td>PCO         SCO         NAME         P         SJR         STO- DB?         DER 305(b) RET?         J        1990 RET?         J         MQI         TSI           69         DORA CANAL         R         Y         Y         I         68         82           69         HAINES CK         R         Y         Y         I         57         65           69         HELENA RUN         R         Y         I         50         69           83         69 OKLAWAHA R         R         R         Y         I         52         69           83         OKLAWAHA R         R         R         Y         Y         I         31         32           83         OKLAWAHA R         R         R         Y         Y         I         39           1         HOGTOWN CK         R         Y         Y         I         35           1         CAMPS CANAL         R         Y         Y         I         45           107         CABBAGE CK         R         Y         Y         I         45           107         SUBAGE CK         R         Y         Y         I         42</td><td>PCO         SCO         NAME         P         SJR         STO- DB7         I         DER 305(b) P         1990         1 WQI         TSI MDU           69         DORA CANAL 69         R         Y         Y         I         68         82         P           69         HAINES CK         R         Y         Y         I         57         65         P           69         HELENA RUN         R         Y         Y         I         52         69         N           83         69 OKLAWAHA R         R         R         Y         Y         I         59         61         P           83         OKLAWAHA R         R         R         Y         Y         I         31         32         Y           83         OKLAWAHA R         R         Y         Y         I         39         P           1         HOGTOWN CK         R         Y         Y         I         35         Y           1         CAMPS CANAL         R         Y         Y         I         35         Y           1         CAMPS CANAL         R         Y         Y         I         45         Y</td></td>	PCO       SCO       NAME       P       SJR       STO- DB?       I         69       DORA CANAL       R       Y       Y       I         69       HAINES CK       R       Y       Y       I         83       69 OKLAWAHA R       R       Y       Y       I         83       69 OKLAWAHA R       R       Y       Y       I         83       0KLAWAHA R       R       Y       Y       I         83       OKLAWAHA R       R       Y       Y       I         83       OKLAWAHA R       R       Y       Y       I         1       HOGTOWN CK       R       Y       Y       I         1       HATCHET CK       R       Y       Y       I         1       HATCHET CK       R       Y       Y       I         1       CAMPS CANAL       R       Y       Y       I         107       CABBAGE CK       R       Y       Y       I         107       CABBAGE CK       R       Y       Y       I         107       SWEETWATER CK       R       Y       Y       I         127	PCO       SCO       NAME       P       SJR       STO- E       DER DB?       RET?       DER WQI         69       DORA CANAL       R       Y       Y       I       68         69       HAINES CK       R       Y       Y       I       68         69       HELENA RUN       R       Y       Y       I       50         83       69       OKLAWAHA R       R       Y       Y       I       52         83       OKLAWAHA R       R       Y       Y       I       59         83       OKLAWAHA R       R       Y       Y       I       31         83       OKLAWAHA R       R       Y       Y       I       39         1       HOGTOWN CK       R       Y       Y       I       29         1       HATCHET CK       R       Y       Y       I       35         1       CAMPS CANAL       R       Y       Y       I       45         107       CABBAGE CK       R       Y       Y       I       45         107       SWEETWATER CK       R       Y       Y       I       45         127 <td>PCO         SCO         NAME         P         SJR         STO- DB?         DER 305(b) RET?         J        1990 RET?         J         MQI         TSI           69         DORA CANAL         R         Y         Y         I         68         82           69         HAINES CK         R         Y         Y         I         57         65           69         HELENA RUN         R         Y         I         50         69           83         69 OKLAWAHA R         R         R         Y         I         52         69           83         OKLAWAHA R         R         R         Y         Y         I         31         32           83         OKLAWAHA R         R         R         Y         Y         I         39           1         HOGTOWN CK         R         Y         Y         I         35           1         CAMPS CANAL         R         Y         Y         I         45           107         CABBAGE CK         R         Y         Y         I         45           107         SUBAGE CK         R         Y         Y         I         42</td> <td>PCO         SCO         NAME         P         SJR         STO- DB7         I         DER 305(b) P         1990         1 WQI         TSI MDU           69         DORA CANAL 69         R         Y         Y         I         68         82         P           69         HAINES CK         R         Y         Y         I         57         65         P           69         HELENA RUN         R         Y         Y         I         52         69         N           83         69 OKLAWAHA R         R         R         Y         Y         I         59         61         P           83         OKLAWAHA R         R         R         Y         Y         I         31         32         Y           83         OKLAWAHA R         R         Y         Y         I         39         P           1         HOGTOWN CK         R         Y         Y         I         35         Y           1         CAMPS CANAL         R         Y         Y         I         35         Y           1         CAMPS CANAL         R         Y         Y         I         45         Y</td>	PCO         SCO         NAME         P         SJR         STO- DB?         DER 305(b) RET?         J        1990 RET?         J         MQI         TSI           69         DORA CANAL         R         Y         Y         I         68         82           69         HAINES CK         R         Y         Y         I         57         65           69         HELENA RUN         R         Y         I         50         69           83         69 OKLAWAHA R         R         R         Y         I         52         69           83         OKLAWAHA R         R         R         Y         Y         I         31         32           83         OKLAWAHA R         R         R         Y         Y         I         39           1         HOGTOWN CK         R         Y         Y         I         35           1         CAMPS CANAL         R         Y         Y         I         45           107         CABBAGE CK         R         Y         Y         I         45           107         SUBAGE CK         R         Y         Y         I         42	PCO         SCO         NAME         P         SJR         STO- DB7         I         DER 305(b) P         1990 1 WQI         TSI MDU           69         DORA CANAL 69         R         Y         Y         I         68         82         P           69         HAINES CK         R         Y         Y         I         57         65         P           69         HELENA RUN         R         Y         Y         I         52         69         N           83         69 OKLAWAHA R         R         R         Y         Y         I         59         61         P           83         OKLAWAHA R         R         R         Y         Y         I         31         32         Y           83         OKLAWAHA R         R         Y         Y         I         39         P           1         HOGTOWN CK         R         Y         Y         I         35         Y           1         CAMPS CANAL         R         Y         Y         I         35         Y           1         CAMPS CANAL         R         Y         Y         I         45         Y

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Section 2. Rivers

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				Ŷ			I	DER	305(b)	)	ł
SUB-	PCO	sco	NAME	Р	SJR	STO-	İ		1990		i
BASIN				Е	DB?	RET?	j	WQI	TSI	MDU	i
								<u></u>			!_
90300	109		TOLOMATO R	R	Y	Y	I	41	50	Y	I
100001	127			E	Ŷ			37		Р	
100001	9		SYKES CK	E	Y	Y	ł	51	61	Р	1
100002	9		CRANE CK	R	Y	Y	I	63	62	Ν	1
100002	9		EAU GALLIE R	R	Y	Y		49	71	Ρ	
100002	9		GOAT CK	R	Y	Y	1	54		Y	- 1
100002	9		N PRONG SEBASTIAN	R	Y	Y	ł	63	60	Ν	
100002	9		TURKEY CK	R	Y	Y	1	38	53	Ρ	1
100003	61		MAIN CANAL	R	Y	Y		41	61	Y	I
100003	61		S PRONG SEBASTIAN	R	Y	Y	I	62	63	Ν	I
							1				I
********	******	******	****								
Section 3.	Estua	ries									
*********	******	******	****								
				Т							
				Y				DER :	305(b)		
SUB-	PCO	SCO	NAME	Р	SJR	STO	J		1990		ļ
BASIN				E	DB?	RET?		WQI	TSI	MDU	
30603	31		ST JOHNS R	Е	Y	Y	1	45	54	Ν	ł
30704	109	19	ST JOHNS R	R	Y	Y	I	38	62	Y	I
90100	127		HALIFAX R	E	Y	Y	ļ	43	61	N	1
100001	9		BANANA R LAGOON	Е	Y	Y	1	61	61	Y	1
100001	9		INDIAN R LAGOON (N)	Е	Y	Υ		45	57	Ν	
100001	9		MOSQUITO LAGOON	E	Y	Y		47	50	Ρ	I
100002	9	,	INDIAN R LAGOON (NC)	E	Y	Y	I	50	52	Y	I
100003	61	111	INDIAN R LAGOON (SC)	Е	Y	Y	1	49	54	Р	1

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Table D2.Weighted Averages of Subbasin Trophic State Index (TSI) and Water Quality<br/>Index (WQI). These subbasin averages were derived from individual lake TSIs,<br/>estuary TSIs, and river WQIs (see Table D1). The TSI averages are weighted by<br/>surface area. The WQI averages are weighted by river mile.

	T	SI*		W	QI*	Subbasin	Subbasin name		
La	ike	Est	uary	R	ver	number			
Weighted average	Percent of surface area	Weighted average	Percent of surface area	Weighted average	Percent of river mile				
				Nassau F	River				
NA		ND		56.9	63	1-000	Nassau River		
				St. Marys River					
NA		ND		34.7	57	2-001	Upper St. Marys River		
47.0	84	ND		41.0 51		2-002	Lower St. Marys River		
			l	ower St. Joh	ns River				
62.4	86	NA		49.8	49.8 35		Crescent Lake		
34.8	37	NA		47.1	82	3-200	Etonia Creek		
32.2	83	NA	<u> </u>	46.4	46	3-300	Black Creek		
NA		NA		53.0	53.0 63 3-4		Ortega River		
NA		NA		49.6	49	3-501	Trout River		
NA		NA		48.0	40	3-502	Broward River		
NA		NA		46.0	59	3-503	Dunn Creek		
NA		NA		48.8	59	3-601	Arlington Creek		
NA		NA		52.5	68	3-602	Julington Creek		
67.0	97	54.0	100	45.3	48	3-603	North Lower St. Johns River		
NA		NA		50.0	27	3-701	Sixmile Creek		
NA		NA		50.0	100	3-702	McCuilough Creek		
NA		NA		50.0	60	3-703	Deep Creek		
NA		62.0	100	35.7	50	3-704	South Lower St. Johns River		
			N	Aiddle St. Joh	ins River				
54.5	11	NA		52.7	68	4-100	Econlockhatchee River		
39.3	40	NA		49.0	100	4-201	Little Wekiva River		

TSI—lakes	0-59 (Good)	60-69 (Fair)	70-100 (Poor)
TSI—estuaries	0-49 (Good)	50-59 (Fair)	60-100 (Poor)
WQI-rivers	0-44 (Good)	45-59 (Fair)	60-90 (Poor)

NOTES: NA=not appropriate; ND=no data

	T	Si*		W	ai•	Subbasin	Subbasin name		
La	ake	Est	Estuary		var	number			
Weighted average	Percent of surface area	Weighted average	Percent of surface area	Weighted Percent of average river mile					
59.9	14	NA		39.0	58	4-202	Wekiva River		
47.1	73	NA		51.3	89	4-203	Blackwater Creek		
59.1	39	NA		50.0	64	4-301	Howell Creek		
82.6	84	NA		59.0	24	4-302	Lake Jesup		
60.0	81	NA		44.0	100	4-401	Lake Harney		
68.9	75	NA		45.7	53	4-402	Deep Creek		
72.7	78	NA		49.9	77	4-403	Lake Monroe		
				Lake Ge	Lake George				
80.0	04	NA		52.0	60	5-001	Lake Beresford		
48.2	60	NA		48.0 24		5-002	Lake Woodruff		
65.6	97	NA		39.6 48 5		5-003	Lake George		
			l	Jpper St. Joh	ns River				
NA		NA		59.0	38	6-101	Fort Drum Creek		
61.0	100	NA		58.0	29	6-102	Blue Cypress Creek		
75.0	41	NA		56.2	40	6-103	St. Johns Marsh		
48.0	100	NA		66.0	100	6-104	Lake Washington		
55.1	62	NA		46.1	28	6-201	Lake Poinsett		
ND		NA		-41.8	83	6-202	Tosahatchee		
58.1	95	NA		39.0	32	6-203	Puzzle Lake		
				Ocklawaha	River				
42.7	54	NA		35.7	100	7-100	Palatlakaha River		
87.0	96	NA		68.0	63	7-200	Lake Apopka		
63.7	86	NA		56.1	100	7-300	Lake Harris		
58.7	85	NA		52.0	100	7-401	Lake Griffin		
40.1	84	NA		51.6	100	7-402	Marshall Swamp		

TSI—lakes 0-59 (Good) 60-69 (Fair) 70-100 (Poor) TSI—estuaries 0-49 (Good) 50-59 (Fair) 60-100 (Poor) WQI—rivers 0-44 (Good) 45-59 (Fair) 60-90 (Poor)

NOTES: NA=not appropriate; ND=no data

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	т	31*		W	ar	Subbasin	Subbasin name		
Lake		Est	uary	Ri	ver	number			
Weighted average	Percent of surface area	Weighted average	Percent of surface area	Weighted Percent of average river mile					
45.9	65	NA		29.0 56 7		7-500	Eureka Dam		
			Flor	ida Ridge & (	Orange Lake				
77.2	03	NA		39.0	92	8-001	Florida Ridge		
69.0	100	NA		30.3	100	8-002	Newnans Lake		
54.8	84	NA		45.0	27	8-003/4	Orange/Lochloosa lakes		
51.2	48	NA		18.4	65	8-005	Orange Creek		
ND		NA		36.0	12	8-006	Sweetwater Creek		
32.0	100	NA		27.0	70	8-007	Rodman Reservoir		
				Upper Co	estal				
ND		61.0	69	48.5	71	9-100	Halifax River		
ND		ND		41.3	56	9-200	Matanzas River		
ND		ND		46.3	62	9-300	Tolomato River		
				Indian River	Lagoon				
ND		56.5	100	44.3	24	10-001	North Indian R Lagoon		
NA		52.0	100	55.9	45	10-002	N Central Indian River Lagoon		
NA		54.0	100	52.1	36	10-003	S Central Indian River Lagoon		

TSIlakes	0-59 (Good)	60-69 (Fair)	70-100 (Poor)
TSI-estuaries	0-49 (Good)	50-59 (Fair)	60-100 (Poor)
WQI-rivers	0-44 (Good)	45-59 (Fair)	60-90 (Poor)

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NOTES: NA=not appropriate; ND=no data

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# DETAILED METHODS FOR CALCULATING WATER QUALITY SUBCRITERION FOR THE DEGREE OF IMPAIRMENT AND DEGREE OF ENDANGERMENT CRITERIA.

The following is a description of the methods used to calculate the water quality subcriterion scores for both the Degree of Impairment and Degree of Endangerment criteria. The steps were identical for both analyses, except for Step 4, where the differences are noted.

There were several problems encountered when comparing water quality within and between subbasins. For each subbasin, there may be one, two, or three measures of water quality (indexes): one for estuaries, one for lakes, and one for rivers. Not only do these measures incorporate different parameters, they have different scales corresponding to poor or good water quality. In addition, it was necessary to develop a method for comparing river miles to lake or estuary surface area. To overcome these problems and allow calculation of a single comparable score per subbasin, the following methods were developed.

# Step 1

All available trophic state indexes (TSI) for lakes and estuaries and water quality indexes (WQI) for rivers were compiled from the data sources (Table D1, page 185). TSIs and WQIs were calculated from raw data when necessary, using the same technique referenced in Hand et al. (1990). Only data from January 1980 through March 1990 were used.

# STEP 2

Average lake TSIs, estuary TSIs, and river WQIs were calculated for each subbasin:

- The total area of lakes with TSI data was determined.
- An acres-weighted average lake TSI was calculated.
- The total area of estuaries with TSI data was determined.
- An acres-weighted average estuary TSI was calculated.
- The total length of river miles with WQI data was determined.
- An average WQI was calculated, weighted by river mile.
- Any TSI which represented less than one-half of the total lake or estuary surface area in the subbasin was discarded. Any WQI which

represented less than one-half of the total subbasin river mile length was discarded. Each subbasin then had one, two, or three index values (Table D2, page 199).

#### Step 3

All possible index values were split into two categories, good and poor. Values of TSIs or WQIs related to water quality conditions are in the box below. The fair range for all three indexes was split in half; the upper half was considered poor, the lower half considered good.

#### Step 4

Preliminary scores were calculated from each average TSI or WQI depending on the criterion.

TSI-lakes	Good 0-59 0-49	Fair 60-69 50-59	Poor 70-100 60-100	
WQI-rivers	0-44	45-59	60-90	

#### Degree of Impairment Criterion

All index values in the redefined good range (lake TSIs less than 65, estuary TSIs less than 55, and river WQIs less than 52) were converted to a preliminary score of zero (Table D3, page 206).

All index values in the redefined poor range were given a score as follows. Since different ranges of values are considered poor for the three indexes, each subbasin average was normalized with respect to the poor range. This conversion was calculated as the difference between the TSI or WQI value and the lower end of the adjusted poor range, divided by the difference between the upper and lower end of the adjusted poor range. This conversion yielded preliminary scores between zero and one (Table D3).

For example, the adjusted poor range of lake TSIs is 65-100, a range of 36 points. Therefore, a TSI value of 83 (midway between 65 and 100) would convert to a preliminary score of .50. This means that a lake TSI of 83, an estuary TSI of 78, and a river WQI of 71 each equal 0.50.

#### Degree of Endangerment Criterion

All index values in the redefined poor range (lake TSIs greater than or equal to 65, estuary TSIs greater than or equal to 55, and river WQIs greater than or equal to 52) were converted to a preliminary score of zero (Table D4, page 210).

All index values in the redefined good range were given a score as follows: Since different ranges of values are considered good for the three indexes, each subbasin average was normalized with respect to the good range. This conversion was calculated as the difference between the TSI or WQI value and the upper end of the adjusted good range, divided by the difference between the upper and lower end of the adjusted good range. This conversion yielded preliminary scores between zero and one (Table D4).

# Step 5

Preliminary scores were combined to arrive at one preliminary score per subbasin. The preliminary scores, weights, and combined scores are discussed below.

If a subbasin only had one average index value, and therefore only one preliminary score, that score was considered to be the combined subbasin score.

If a subbasin had two or three index values (including any that resulted in a preliminary score of zero), they were weighted according to the abundance of lakes, estuaries, and rivers in the subbasin relative to the District as a whole, and then combined.

The following statistics were compiled:

- The total lake surface area, river miles, and estuary surface area in the District
- The total lake surface area, river miles, and estuary surface area in each subbasin
- The fraction of the District surface area or river miles total represented by each subbasin surface area or river miles total (Tables D3 and D4)

For each subbasin, ratios between its fractions of lake area, estuary area, and river miles were used as weights to combine the preliminary scores (Tables D3 and D4).

An example calculation for a hypothetical subbasin:

TSI (lake) preliminary score = .50 TSI (estuary) preliminary score = .20

WQI (river) preliminary score = 0.00

Fraction of District lake area in subbasin= .05Fraction of District estuary area in subbasin= .10Fraction of District river miles in subbasin= .15

combined score =  $\left(\frac{.50 \times .05}{tot\%} + \frac{.20 \times .10}{tot\%} + \frac{0.0 \times .15}{tot\%}\right)$ 

where tot% = .05 + .10 + .15

This procedure was designed to avoid directly comparing river length to lake or estuary surface area when combining preliminary scores. It also prevented a combined subbasin score from being overly influenced by a high score for an index that did not represent a significant fraction of the subbasin's surface water.

#### STEP 6

The subbasin with the highest combined score was assigned a score of 1.00. All other subbasin scores were calculated by dividing the combined score by the maximum combined score (Tables D3 and D4).

# Table D3.Preliminary and final adjusted scores for the water quality subcriterion of the Degree of Impairment criterion (see<br/>page 202 for detailed methods)

L	akes	Est	uaries	R	ivers	Fraction of District		Fraction of District		Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQP	Preliminary score	Lake area	Estuary area	River area	score	adjusted score	number	
NA		ND		56.9	0.16	0.000	0.004	0.080	0.16	0.25	1-000	Nassau River
NA		NA		34.7	0.00	0.000		0.040	0.00	0.00	2-001	Upper St. Marys River
47.0	0.00	ND		41.0	0.00	0.000	0.005	0.083	0.00	0.00	2-002	Lower St. Marys River
62.4	0.00	NA				0.060		0.023	0.00	0.00	3-100	Crescent Lake
-		NA		47.1	0.00	0.039		0.023	0.00	0.00	3-200	Etonia Creek
32.2	0.00	NA		_		0.007		0.070	0.00	0.00	3-300	Black Creek
NA		NA		53.0	0.05	0.000		0.017	0.05	0.08	3-400	Ortega River
NA		NA		49.6	0.00	0.000		0.019	0.00	0.00	3-501	Trout River
NA		NA		-		0.000		0.005	0.00	0.00	3-502	Broward River
NA		NA		46.0	0.00	0.000		0.004	0.00	0.00	3-503	Dunn Creek
NA		NA		48.8	0.00	0.000		0.006	0.00	0.00	3-601	Arlington Creek
NA		NA		52.5	0.04	0.000		0.006	0.04	0.06	3-602	Julington Creek
67.0	0.09	54.0	0.00	_		0.010	0.147	0.043	0.01	0.01	3-603	North Lower St. Johns River
NA		NA				0.000		0.011	0.00	0.00	3-701	Sixmile Creek
NA		NA		50.0	0.00	0.000		0.001	0.00	0.00	3-702	McCullough Creek
NA		NA		50.0	0.00	0.000		0.006	0.00	. 0.00	3-703	Deep Creek
NA		62.0	0.18	35.7	0.00	0.000	0.170	0.044	0.14	0.22	3-704	South Lower St. Johns River

* TSI = trophic state index

WQI = water quality index

NOTES: NA=not appropriate; ND=no data; ---=data represented less than 50% of the subbasin's lake or estuary surface area or river miles
#### Table D3. Continued

L	akes	Est	uaries	R	ivers	Fra	ction of Dis	atrict	Combined	Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQI*	Preliminary score	Lake area	Estuary area	River area	score	adjusted	number	
_		NA		52.7	0.04	0.008		0.026	0.04	0.06	4-100	Econlockhatchee River
—		NA		49.0	0.00	0.006		0.004	0.00	0.00	4-201	Little Wekiva River
_		NA		39.0	0.00	0.010		0.009	0.00	0.00	4-202	Wekiva River
47.1	0.00	NA		51.3	0.00	0.012		0.011	0.00	0.00	4-203	Blackwater Creek
_		NA		50.0	0.00	0.008		0.006	0.00	0.00	4-301	Howell Creek
82.6	0.53	NA		—		0.033		0.009	0.53	0.82	4-302	Lake Jesup
60.0	0.00	NA		44.0	0.00	0.020		0.002	0.00	0.00	4-401	Lake Harney
68.9	0.14	NA		45.7	0.00	0.007		0.016	0.04	0.07	4-402	Deep Creek
72.7	0.25	NA		49.9	0.00	0.034		0.008	0.20	0.31	4-403	Lake Monroe
		NA		52.0	0.03	0.003		0.011	0.03	0.05	5-001	Lake Beresford
48.2	0.00	NA		48.0	0.00	0.023	0.000	0.026	0.00	0.00	5-002	Lake Woodruff
65.6	0.05	NA		—		0.146		0.020	0.05	0.08	5-003	Lake George
NA		NA		-		0.000		0.010	0.00	0.00	6-101	Fort Drum Creek
61.0	0.00	NA		—		0.018		0.012	0.00	0.00	6-102	Blue Cypress Creek
_		NA		_		0.003		0.052	0.00	0.00	6-103	St. Johns Marsh
48.0	0.00	NA		66.0	0.39	0.012		0.001	0.03	0.04	6-104	Lake Washington
55.1	0.00	NA				0.026		0.030	0.00	0.00	6-201	Lake Poinsett

* TSI ≈ trophic state index WQI = water quality index

NOTES: NA=not appropriate; ND=no data; ---=data represented less than 50% of the subbasin's lake or estuary surface area or river miles

#### Table D3. Continued

L	akes	Est	uanes	R	ivers	Fra	ction of Dis	trict	Combined	Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQI*	Preliminary score	Lake area	Estuary area	River area	score	adjusted	number	
ND		NA		41.8	0.00	0.001		0.016	0.00	0.00	6-202	Tosahatchee
<b>5</b> 8.1	0.00	NA		-		0.013		0.022	0.00	0.00	6-203	Puzzle Lake
42.7	0.00	NA		35.7	0.00	0.054		0.012	0.00	0.00	7-100	Palatlakaha River
87.0	0.66	NA		68.0	0.45	0.094		0.004	0.65	1.00	7-200	Lake Apopka
63.7	0.00	NA		56.1	0.13	0.100		0.003	0.00	0.01	7-300	Lake Harris
58.7	0.00	NA		52.0	0.03	0.055		0.008	0.00	0.01	7-401	Lake Griffin
40.1	0.00	NA		51.6	0.02	0.020		0.007	0.00	0.01	7-402	Marshall Swamp
45.9	0.00	NA		29.0	0.00	0.014		0.018	0.00	0.00	7-500	Eureka Dam
<b>—</b>		NA		39.0	0.00	0.027		0.003	0.00	0.00	8-001	Florida Ridge
69.0	0.14	NA		30.3	0.00	0.020		0.003	0.13	0.19	8-002	Newnans Lake
54.8	0.00	NA		_		0.061		0.009	0.00	0.00	8-003/4	Orange/Lochloosa lakes
		NA		18.4	0.00	0.013		0.008	0.00	0.00	8-005	Orange Creek
ND		NA				0.003		0.007	0.00	0.00	8-006	Sweetwater Creek
32.0	0.00	NA		27.0	0.00	0.036		0.005	0.00	0.00	8-007	Rodman Reservoir
ND		61.0	0.16	48.5	0.00	0.000	0.020	0.037	0.05	0.08	<del>9</del> -100	Halifax River
ND		ND		41.3	0.00	0.000		0.033	0.00	0.00	<del>9</del> -200	Matanzas River
ND		ND		46.3	0.00	0.003		0.014	0.00	0.00	9-300	Tolomato River

* TSI = trophic state index WQI = water quality index

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#### Table D3. Continued

Lakes		Estuaries		Rivers		Fra	ction of Dis	trict	Combined Final		Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQP	Preliminary score	Lake area	Estuary area	River area	SCORE	adjusted	number	
ND		56.5	0.06			0.001	0.528	0.012	0.06	0.09	10-001	North Indian River Lagoon
NA		52.0	0.00			0.000	0.063	0.023	0.00	0.00	10-002	N Central Indian River Lagoon
NA		54.0	0.00	-		0.001	0.062	0.013	0.00	0.00	10-003	S Central Indian River Lagoon

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* TSI = trophic state index WQI = water quality index

NOTES: NA=not appropriate; ND=no data; ---=data represented less than 50% of the subbasin's lake or estuary surface area or river miles

L	akes	Est	uaries	F	livers	Fra	tion of Dis	strict	Combined	Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQ!*	Preliminary score	Lake area	Estuary area	River miles	score	adjusted score	number	
NA		ND		56.9	0.00	0.000	0.004	0.080	0.00	0.00	1-000	Nassau River
NA		NA		34.7	0.33	0.000		0.040	0.33	0.51	2-001	Upper St. Marys River
47.0	0.28	ND		41.0	0.21	0.000	0.005	0.083	0.21	0.33	2-002	Lower St. Marys River
62.4	0.04	NA		_		0.060		0.023	0.04	0.06	3-100	Crescent Lake
_		NA		47.1	0.09	0.039		0.023	0.09	0.14	3-200	Etonia Creek
32.2	0.50	NA		-		0.007		0.070	0.50	0.77	3-300	Black Creek
NA		NA		<b>5</b> 3.0	0.00	0.000		0.017	0.00	0.00	3-400	Ortega River
NA		NA		49.6	0.05	0.000		0.019	0.05	0.08	3-501	Trout River
NA		NA		_		0.000		0.005	0.00	0.00	3-502	Broward River
NA		NA		46.0	0.12	0.000		0.004	0.12	0.18	3-503	Dunn Creek
NA		NA		48.8	0.06	0.000		0.006	0.06	0.09	3-601	Arlington Creek
NA		NA		52.5	0.00	0.000		0.006	0.00	0.00	3-602	Julington Creek
67.0	0.00	54.0	0.02			0.010	0.147	0.043	0.02	0.03	3-603	North Lower St. Johns River
NA		NA		-		0.000		0.011	0.00	0.00	3-701	Sixmile Creek
NA		NA		50.0	0.04	0.000		0.001	0.04	0.06	3-702	McCullough Creek
NA		NA		50.0	0.04	0.000		0.006	0.04	0.06	3-703	Deep Creek
NA		62.0	0.00	35.7	0.31	0.000	0.170	0.044	0.06	0.10	3-704	South Lower St. Johns River

# Table D4.Preliminary and final adjusted scores for the water quality subcriterion of the Degree of Endangerment criterion<br/>(see page 202 for detailed methods)

* TSI = trophic state index

WQI = water quality index

#### Table D4. Continued

L	akes	Est	uaries	P	livers	Frac	tion of Dis	strict	Combined	Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WOI*	Preliminary score	Lake area	Estuary area	Aiver miles	score	adjusted score	number	
_		NA		52.7	0.00	0.008		0.026	0.00	0.00	4-100	Econlockhatchee River
_		NA		49.0	0.06	0.006		0.004	0.06	0.09	4-201	Little Wekiva River
_		NA		39.0	0.25	0.010		0.009	0.25	0.38	4-202	Wekiva River
47.1	0.28	NA		51.3	0.01	0.012		0.011	0.15	0.23	4-203	Blackwater Creek
_		NA		50.0	0.04	0.008		0.006	0.04	0.06	4-301	Howell Creek
82.6	0.00	NA		—		0.033		0.009	0.00	0.00	4-302	Lake Jesup
60.0	0.08	NA		44.0	0.15	0.020		0.002	0.08	0.13	4-401	Lake Harney
68.9	0.00	NA		45.7	0.12	0.007		0.016	0.08	0.13	4-402	Deep Creek
72.7	0.00	NA		49.9	0.04	0.034		0.008	0.01	0.01	4-403	Lake Monroe
_		NA		52.0	0.00	0.003		0.011	0.00	0.00	5-001	Lake Beresford
48.2	0.26	NA		48.0	0.08	0.023	0.000	0.026	0.16	0.25	5-002	Lake Woodruff
65.6	0.00	NA		_		0.146		0.020	0.00	0.00	5-003	Lake George
NA		NA		_		0.000		0.010	0.00	0.00	6-101	Fort Drum Creek
61.0	0.06	NA				0.018		0.012	0.06	0.09	6-102	Blue Cypress Creek
		NA				0.003		0.052	0.00	0.00	6-103	St. Johns Marsh
48.0	0.26	NA		66.0	0.00	0.012		0.001	0.24	0.37	6-104	Lake Washington
55.1	0.15	NA				0.026		0.030	0.15	0.23	6-201	Lake Poinsett

* TSI = trophic state index WQI = water quality index

#### Table D4. Continued

L	akes	Est	uaries	F	livers	Fra	tion of Dis	strict	Combined	Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQI*	Preliminary score	Lake area	Estuary area	River miles	SCORE	adjusted score	number	
ND		NA		41.8	0.20	0.001		0.016	0.20	0.31	6-202	Tosahatchee
58.1	0.11	NA		_		0.013		0.022	0.11	0.17	6-203	Puzzle Lake
42.7	0.34	NA		35.7	0.31	0.054		0.012	0.34	0.52	7-100	Palatlakaha River
87.0	0.00	NA		68.0	0.00	0.094		0.004	0.00	0.00	7-200	Lake Apopka
63.7	0.02	NA		56.1	0.00	0.100		0.003	0.02	0.03	7-300	Lake Harris
58.7	0.10	NA		52.0	0.00	0.055		0.008	0.08	0.13	7-401	Lake Griffin
40.1	0.38	NA		51.6	0.00	0.020		0.007	0.29	0.44	7-402	Marshall Swamp
45.9	0.29	NA		29.0	0.44	0.014		0.018	0.38	0.58	7-500	Eureka Dam
_		NA		39.0	0.25	0.027		0.003	0.25	0.38	8-001	Florida Ridge
69.0	0.00	NA		30.3	0.42	0.020		0.003	0.05	0.07	8-002	Newnans Lake
54.8	0.16	NA				0.061		0.009	0.16	0.25	8-003/4	Orange/Lochloosa lakes
		NA		18.4	0.65	0.013		0.008	0.65	1.00	8-005	Orange Creek
ND		NA		_		0.003		0.007	0.00	0.00	8-006	Sweetwater Creek
32.0	0.51	NA		27.0	0.48	0.036		0.005	0.50	0.78	8-007	Rodman Reservoir
ND		61.0	0.00	48.5	0.07	0.000	0.020	0.037	0.04	0.07	9-100	Halifax River
ND		ND		41.3	0.21	0.000		0.033	0.21	0.32	9-200	Matanzas River
ND		ND		46.3	0.11	0.003		0.014	0.11	0.17	9-300	Tolomato River

* TSI = trophic state index

WQI = water quality index

#### Table D4. Continued

.

Lakes		Estuaries		Rivers		Frac	tion of Dis	strict	Combined	Final	Subbasin	Subbasin name
Average TSI*	Preliminary score	Average TSI*	Preliminary score	Average WQI*	Preliminary score	Lake area	Estuary area	River miles	SCORE	adjusted	number	
ND		56.5	0.00	-		0.001	0.528	0.012	0.00	0.00	10-001	North Indian River Lagoon
NA		52.0	0.05			0.000	0.063	0.023	0.05	0.08	10-002	N Central Indian River Lagoon
NA		54.0	0.02			0.001	0.062	0.013	0.02	0.03	10-003	S Central Indian River Lagoon

* TSI = trophic state index WQI = water quality index

NOTES: NA=not appropriate; ND=no data; ---=data represented less than 50% of the subbasin's lake or estuary surface area or river miles

## Table D5. Number of permitted point source discharges

Domestic waste	Industrial waste	Agricultural waste	Total	Subbasin number	Subbasin name
			Nassau	River	
9	1	0	10	1-000	Nassau River
			St. Marys	River	
2	0	0	2	2-001	Upper St. Marys River
8	6	0	14	2-002	Lower St. Marys River
		Lo	wer St. Jo	hns River	
4	0	0	4	3-100	Crescent Lake
0	1	0	1	3-200	Etonia Creek
7	1	0	8	3-300	Black Creek
85	3	0	88	3-400	Ortega River
35	6	0	41	3-501	Trout River
9	6	0	15	3-502	Broward River
2	0	0	2	3-503	Dunn Creek
49	0	0	49	3-601	Arlington Creek
15	0	0	15	3-602	Julington Creek
67	18	0	85	3-603	North Lower St. Johns River
4	0	0	4	3-701	Sixmile Creek
0	0	0	0	3-702	McCullough Creek
. 1	0	0	1	3-703	Deep Creek
10	3	0	13	3-704	South Lower St. Johns River
		Mic	idie St. Jo	hns River	
4	0	0	4	4-100	Econlockhatchee River
3	1	0	4	4-201	Little Wekiva River
0	0	0	0	4-202	Wekiva River
0	0	0	0	4-203	Blackwater Creek
0	0	0	0	4-301	Howell Creek
0	2	0	2	4-302	Lake Jesup
0	0	0	0	4-401	Lake Harney
0	0	0	0	4-402	Deep Creek
3	4	0	7	4-403	Lake Monroe

## Table D5. Continued

Domestic waste	Industrial waste	Agricultural waste	Total	Subbasin number	Subbasin name
			Lake G	eorge	
0	0	0	0	5-001	Lake Beresford
0	0	0	0	5-002	Lake Woodruff
. 1	2	0	3	5-003	Lake George
		Up	per St. Jo	hns River	
0	0	3	3	6-101	Fort Drum Creek
0	3	8	11	6-102	Blue Cypress Creek
0	1	9	10	6-103	St. Johns Marsh
0	0	1	1	6-104	Lake Washington
0	1	3	4	6-201	Lake Poinsett
0	0	1	1	6-202	Tosahatchee
0	0	0	0	6-203	Puzzle Lake
			Ocklawah	a River	
0	0	1	1	7-100	Palatlakaha River
1	3	5	9	7-200	Lake Apopka
0	1	5	6	7-300	Lake Harris
0	5	5	10	7-401	Lake Griffin
0	0	1	1	7-402	Marshall Swamp
0	0	0	0	7-500	Eureka Dam
		Florida	Ridge &	Orange Lake	1
4	1	0	5	8-001	Florida Ridge
1	0	0	1	8-002	Newnans Lake
2	0	0	2	8-003/4	Orange/Lochioosa lakes
0	1	1	2	8-005	Orange Creek
0	0	0	0	8-006	Sweetwater Creek
0	0	0	0	8-007	Rodman Reservoir
			Upper C	oastal	
6	3	0	9	9-100	Halifax River
12	0	0	12	9-200	Matanzas River
2	0	0	2	9-300	Tolomato River

## Table D5. Continued

Domestic waste	Industrial waste	Agricultural waste	Total	Subbasin number	Subbasin name
		Ir	idian Rive	r Lagoon	
10	10	0	20	10-001	North Indian River Lagoon
1	4	1	6	10-002	N Central Indian River Lagoon
2	12	2	16	10-003	S Central Indian River Lagoon

Table D6.	Fish kill occurrences, July 1986 through June 1989
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Subbasin number	County*	Waterbody	Date	Number killed	Severity
2-002	3	Branch of Little St. Marys	07-25-86	154	Moderate#
4-201	117	Lake Orienta	06-24-87	1,000	Light
	95	Little Lake Fairview	04-25-87	602	Light
4-301	95	Park Lake	04-27-87	404	Light
4-302	117	Lake Jesup	06-11-87	44,400	Moderate
			01-22-87	120	Light
			08-11-87	3,221,700	Heavy
6-103	9	St. Johns River, Sweet- water Canal	09-11-87	50	Light
6-201	9	St. Johns River	07-13-86	198	Moderate
			08-27-86	285	Moderate
			08-26-86	206	Moderate
6-202	9	St. Johns River at S.R. 50	09-18-87	1,950	Moderate
6-203	9	St. Johns River at S.R. 50	09-18-87	1,950	Moderate
		St. Johns River, canal north of S.R. 50	09-14-87	300	Moderate
7-200	95	Lake Apopka	08-0 <del>9</del> -87	40,000	Light
			02-12-87	2,500	Light
7-300	95	Lake Carlton	07-23-86	1,000	Light
	69	Haines Creek	09-27-88	400	Light
		Lake Dora	07-17-86	3,000	Light
			09-27-88	2,970	Light
		Lake Harris	12-12-87	10,000	Moderate
7-401	69	Lake Griffin	05-1 <del>9</del> -88	100	Light
		Yale Canai	06-1 <del>9</del> -88	124	Light
	83	Ocklawaha River	08-02-87	44	Light
7-402	83	Duck Pond	07-24-86	1,000	Moderate
		Ocklawaha River	08-02-87	44	Light
			05-04-88	167	Light

* See Table A2 (page 123) # Severity not listed by GFC—assumed to be moderate

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#### Table D6. Continued

niasddu2 redmun	County*	Waterbody	Date	Number killed	Severity
7-500	83	Ocklawaha River	08-02-87	44	Light
			10-12-86	400	Light
8-001	1	Lake Wauberg	12-19-86	1,500	Moderate#
8-002	1	Newnans Lake	07-30-88	150	Light
			06-08-87	50	Light
8-003	1	Little Lochloosa Lake	07-24-86	3,575	Moderate#
		Lochloosa Lake	11-01-86	16,042	Heavy
10-001	9	Banana River	0 <del>9</del> -11-86	1,500	Moderate

Florida Game and Fresh Water Fish Commission regional fish management progress reports (GFC 1987a, 1987b, 1988a, 1988b, 1989a, and 1989b) and Brevard County 1990 Sources:

* See Table A2 (page 123) # Severity not listed by GFC—assumed to be moderate

Table D7. Number of fish kill occurrences, Ju	uly 1986 through June 1989
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Severity*			Subbasin	Subbasin name				
Light	Moderate	Heavy	numper					
		5	st. Marys Riv	rer				
0	1	0	2-002	Lower St. Marys River				
		Midc	lle St. Johns	River				
2	0	0	4-201	Little Wekiva River				
1	0	0	4-301	Howell Creek				
1	1	1	4-302	Lake Jesup				
	Upper St. Johns River							
1	0	0	6-103	St. Johns Marsh				
0	3	0	6-201	Lake Poinsett				
0	1	0	<b>6</b> -202	Tosahatchee				
0	2	0	6-203	Puzzle Lake				
		0	cklawaha Ri	ver				
2	0	0	7-200	Lake Apopka				
4	1	0	7-300	Lake Harris				
3	0	0	7-401	Lake Griffin				
2	1	0	7-402	Marshall Swamp				
2	0	0	7-500	Eureka Dam				
		Florida	Ridge & Oral	nge Lake				
0	1	0	8-001	Florida Ridge				
2	0	0	8-002	Newnans Lake				
0	1	1	8-003/4	Orange/Lochloosa lakes				
		Ind	ian River Lag	goon				
0	1	0	10-001	North Indian River Lagoon				

* See Table D6, page 217

 Table D8.
 Aquatic Plant Control Activities, October 1986 Through September 1989.
 Measured in acres of aquatic plants controlled by the St. Johns River Water Management District and the U.S. Army Corps of Engineers (COE).
 COE waterbody units did not match the subbasin boundaries, and therefore the acres treated by the COE in each subbasin were estimated.

Subbasin*	County#		Waterbody@	Acres treated		
	Primary	Secondary		FY 1986-87	FY 1987-88	FY 1988-89
10000	31	89	Nassau River	-	36	1
30100	107		COE 1100	1,356	66	121
30100	107	35	COE 1110	0	1	0
30100	127		Lake Dias	2	4	1
30100	35		Lake Disston		4	2
30100	107		Lake Stella	4	1	2
30200	107		Georges Lake	5		4
30603	31		COE 1010	61	98	289
30704	109	19	COE 1010	30	49	145
30704	109	19	COE 1020	60	709	526
30704	107		COE 1030	54	88	249
40100	95		Lake Louise	17	30	
40201	95		Lawne Lake	10		
40203	69		Lake Dorr			6
40301	95	_	Lake Maitland	1	74	
40301	95		Lake Minnehaha	14	30	
40301	95		Lake Mizell		5	
40301	95		Lake Osceola		5	
40301	95		Lake Virginia	10	27	
40401	127	117	COE 1070	162	190	229
40402	127		Lake Ashby	46	4	40

* See Notes on Table A1 (page 121)

# See Table A2 (page 123)

COE 1010 - St Johns River, Jacksonville to Highway 16 bridge
 COE 1020 - St Johns River, Highway 16 to Memorial Bridge at Palatka
 COE 1030 - St Johns River, Memorial Bridge to Little Lake George
 COE 1040 - St Johns River, Little Lake George to Highway 40 at Astor
 COE 1050 - St Johns River, Highway 40 to Highway 44 (Crow's Bluff)
 COE 1060 - St Johns River, Highway 44 to Interstate 4 (Lake Monroe)
 COE 1070 - St Johns River, Interstate 4 to Highway 46
 COE 1080 - St Johns River, Highway 46 to Highway 520 (Puzzle Lake)
 COE 1090 - St Johns River, Highway 520 to Lake Washington (through FY 87)
 COE 1100 - Dunns Creek

220 COE 1110 - Lake Crescent

Subbasin*	County#		Waterbody@	Acres treated		
	Primary	Secondary		FY 1986-87	FY 1987-88	FY 1988-89
40402	127	117	COE 1070	289	338	407
40403	127	117	COE 1060	447	185	389
40403	127	117	COE 1070	144	168	203
50001	127	69	COE 1060	621	256	540
50002	127	69	COE 1050	1,061	1,164	1,596
50003	127	107	COE 1040	2	1,360	1,291
50003	83		Lake Kerr	73	4	30
60102	61		Blue Cypress Lake	146		ŀ
60102	61		Blue Cypress canals		20	
60102	61		Farm 13	0	0	2,266
60102	61		St. Johns River canals	0	4	189
60103	97		Elbow Branch		2	
60103	9		Sawgrass Lake		118	
60103	9		St. Johns River canals	0	37	131
60104	9		COE 1090	171	0	0
60104	9		Lake Washington		24	
60201	9		COE 1090	738	0	. 0
60201	9		Lake Poinsett		100	
60201	9		Lake Winder		60	
60202	9	95	COE 1080	115	1,422	1,999
60203	9	127	COE 1080	105	1,303	1,831
60203	9		Fox Lake	15		5
60203	9		South Lake	15	20	20
70100	105		Bonnet Lake	2		

#### Table D8. Continued

* See Notes on Table A1 (page 121)

# See Table A2 (page 123)

@ COE 1010 - St Johns River, Jacksonville to Highway 16 bridge

COE 1020 - St Johns River, Highway 16 to Memorial Bridge at Palatka

COE 1030 - St Johns River, Memorial Bridge to Little Lake George

COE 1040 - St Johns River, Little Lake George to Highway 40 at Astor

COE 1050 - St Johns River, Highway 40 to Highway 44 (Crow's Bluff)

COE 1060 - St Johns River, Highway 44 to Interstate 4 (Lake Monroe)

COE 1070 - St Johns River, Interstate 4 to Highway 46

COE 1080 - St Johns River, Highway 46 to Highway 520 (Puzzle Lake)

COE 1090 - St Johns River, Highway 520 to Lake Washington (through FY 87)

COE 1100 - Dunns Creek

COE 1110 - Lake Crescent

#### Table D8. Continued

Subbasin*	sin* County#		Waterbody@	Acres treated			
	Primary	Secondary		FY 1986-87	FY 1987-88	FY 1988-89	
70100	69		Lake Hiawatha	6	7	4	
70100	105		Lake Juliana	2	3	10	
70100	69		Lake Louisa		4	3	
70100	105		Lake Lowery	12	2	13	
70100	105		Lake Mattie	45	17	40	
70100	69		Lake Minnehaha	3	3	1	
70100	69		Lake Minneola	9	. 1	2	
70100	69		Lake Palatlakaha		2	8	
70100	69	105	Palatlakaha River	14	20	29	
70100	69		Lake Susan		1	1	
70100	69		Lake Wilson			1	
70100	69		Lake Winona	2		1	
70200	95	69	Lake Apopka	50	48	249	
70200	69		Apopka-Beauclair canal	18	33	23	
70200	95	69	Johns Lake	436	229	185	
70300	69		Lake Beauclair	20	6	7	
70300	69		Bugg Spring	7	4	5	
70300	95	69	Lake Carlton	1	1		
70300	69		Cook Lake			1	
70300	69		Dead River		3	2	
70300	69		Lake Denham	1		1	
70300	69		Lake Dora	8	12	9	
70300	69		Lake Eustis	17	2	22	
70300	69		Haines Creek	2	3	5	

* See Notes on Table A1 (page 121)

# See Table A2 (page 123)

COE 1010 - St Johns River, Jacksonville to Highway 16 bridge
 COE 1020 - St Johns River, Highway 16 to Memorial Bridge at Palatka
 COE 1030 - St Johns River, Memorial Bridge to Little Lake George
 COE 1040 - St Johns River, Little Lake George to Highway 40 at Astor
 COE 1050 - St Johns River, Highway 40 to Highway 44 (Crow's Bluff)
 COE 1060 - St Johns River, Highway 44 to Interstate 4 (Lake Monroe)
 COE 1070 - St Johns River, Interstate 4 to Highway 46
 COE 1080 - St Johns River, Highway 46 to Highway 520 (Puzzle Lake)
 COE 1090 - St Johns River, Highway 520 to Lake Washington (through FY 87)
 COE 1100 - Dunns Creek

.

COE 1110 - Lake Crescent

Subbasin*	Subbasin* County#		Waterbody@		Acres treated		
	Primary	Secondary		FY 1986-87	FY 1987-88	FY 1988-89	
70300	69		Lake Harris	941	47	23	
70300	69		Helena Run	12	8	10	
70300	69		Trout Lake	3	4	4	
70300	69		Lake Umatilla			1	
70401	83		Catherine Lake		6		
70401	69		Lake Griffin	536	48	83	
70401	69		Lake Holly			1	
70401	69		Lake Yale	9	16	21	
70402	83		Lake Weir	13	18	4	
70500	83		Lake Bryant	32		2	
70500	83		Eaton Lake	120	86	18	
70500	83		Halfmoon Lake	2	1	ì	
70500	83		North Lake	2			
80002	1		Newnans Lake	21	1	7	
80003	1		Lochloosa Lake	323	259	540	
80004	1		Orange Lake	1,437	1,386	1,986	
80005	1		Holdens Pond	1		2	
80005	1		Lake Johnson	4	5	5	
80005	1	107	Little Orange Lake	19	4	3	

* See Notes on Table A1 (page 121)

- # See Table A2 (page 123)
- @ COE 1010 St Johns River, Jacksonville to Highway 16 bridge
  - COE 1020 St Johns River, Highway 16 to Memorial Bridge at Palatka
  - COE 1030 St Johns River, Memorial Bridge to Little Lake George
  - COE 1040 St Johns River, Little Lake George to Highway 40 at Astor
  - COE 1050 St Johns River, Highway 40 to Highway 44 (Crow's Bluff)

COE 1060 - St Johns River, Highway 44 to Interstate 4 (Lake Monroe)

- COE 1070 St Johns River, Interstate 4 to Highway 46
- COE 1080 St Johns River, Highway 46 to Highway 520 (Puzzle Lake)
- COE 1090 St Johns River, Highway 520 to Lake Washington (through FY 87)
- COE 1100 Dunns Creek
- COE 1110 Lake Crescent

	cres per year		Subbasin	Subbasin name
FY 1986-87	FY 1987-88	FY 1988-89	number	
		1	lassau River	
0	36	0	1-000	Nassau River
		Lowe	r St. Johns River	
1,362	76	126	3-100	Crescent Lake
5	0	4	3-200	Etonia Creek
61	98	289	3-603	North Lower St. Johns River
144	846	920	3-704	South Lower St. Johns River
		Middl	e St. Johns River	
17	30	0	4-100	Econlockhatchee River
10	0	0	4-201	Little Wekiva River
0	0	6	4-203	Blackwater Creek
25	141	0	4-301	Howell Creek
162	190	229	4-401	Lake Harney
335	342	447	4-402	Deep Creek
591	353	592	4-403	Lake Monroe
		1	ake George	
621	256	540	5-001	Lake Beresford
1,061	1,164	1,596	5-002	Lake Woodruff
75	1,364	1,321	5-003	Lake George
		Uppe	r St. Johns River	
146	24	2,455	6-102	Blue Cypress Creek
0	157	131	6-103	St. Johns Marsh
171	24	0	6-104	Lake Washington
738	160	0	6-201	Lake Poinsett
115	1,422	1,999	6-202	Tosahatchee
135	1,323	1,856	6-203	Puzzle Lake
		O	klawaha River	
95	60	112	7-100	Palatlakaha River
504	310	457	7-200	Lake Apopka
1,012	90	90	7-300	Lake Harris

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# Table D9.Acres of aquatic plants controlled by spraying and/or mechanical harvesting,<br/>October 1986 through September 1989

#### Table D9. Continued

,	Acres per year		Subbasin	Subbasin name	
FY 1986-87	FY 1987-88	FY 1988-89	number		
545	70	105	7-401	Lake Griffin	
13	18	4	7-402	Marshall Swamp	
156	87	20	7-500	Eureka Dam	
		Florida F	Ridge & Orange La	ake	
21	1	7	8-002	Newnans Lake	
1,760	1,645	2,526	8-003/4	Orange/Lochloosa lakes	
24	9	10	8-005	Orange Creek	
		All	other subbasins		
0	0	0			

**Table D10.** Numerical Assessment of "Meets Designated Use" (MDU) Assessments. Individual scores for a waterbody were based on a rating scheme of 3=no, 2=partial, and 1=yes.

Average MDU*		Combined Subbasin		Subbasin name	
Lakes	Estuaries	Rivers	average#	number	
			Nas	sau River	
NA	ND	1.85	1.85	1-000	Nassau River
			St. M	arys River	
NA	NA	1.00	1.00	2-001	Upper St. Marys River
ND	ND	1.37	1.37	2-002	Lower St. Marys River
			Lower St	. Johns Rive	ar
1.90	NA	1.00	1.65	3-100	Crescent Lake
1.00	NA	1.91	1.34	3-200	Etonia Creek
1.00	NA	1.07	1.06	3-300	Black Creek
NA	NA	2.25	2.25	3-400	Ortega River
NA	NA	2.00	2.00	3-501	Trout River
NA	NA	2.00	2.00	3-502	Broward River
NA	NA	1.00	1.00	3-503	Dunn Creek
NA	NA	2.00	2.00	3-601	Arlington Creek
NA	NA	2.00	2.00	3-602	Julington Creek
3.00	3.00	1.94	2.77	3-603	North Lower St. Johns River
NA	NA	1.42	1.42	3-701	Sixmile Creek
NA	NA	ND	0.00	3-702	McCullough Creek
NA	NA	1.00	1.00	3-703	Deep Creek
NA	1.00	1.00	1.00	3-704	South Lower St. Johns River
			Middle S	t Johns Riv	91
ND	NA	2.29	2.29	4-100	Econlockhatchee River
ND	NA	3.00	3.00	4-201	Little Wekiva River
ND	NA	1.00	1.00	4-202	Wekiva River
ND	NA	1.37	1.37	4-203	Blackwater Creek

* Subbasin averages derived from individual waterbody determinations; weighted by area for lakes and estuaries or river miles for rivers

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A combination of the average MDUs, weighted by the abundance of lakes, estuaries, or rivers in the subbasin relative to the District as a whole (see page 204)

NOTES: NA=not appropriate; ND=no data

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#### Table D10. Continued

Average MDU*		Combined	Subbasin	Subbasin name	
Lakes	Estuaries	Rivers	average#	number	
1.90	NA	2.00	1.94	4-301	Howell Creek
3.00	NA	2.00	2.78	4-302	Lake Jesup
2.00	NA	1.00	1.93	4-401	Lake Harney
1.00	NA	1.33	1.23	4-402	Deep Creek
3.00	NA	2.06	2.83	4-403	Lake Monroe
			Lake	e George	
ND	NA	1.00	1.00	5-001	Lake Beresford
1.70	NA	1.00	1.32	5-002	Lake Woodruff
2.00	NA	1.00	1.88	5-003	Lake George
			Upper St	. Johns Rive	ər
NA	NA	2.00	2.00	6-101	Fort Drum Creek
1.00	NA	1.00	1.00	6-102	Blue Cypress Creek
2.00	NA	1.00	1.05	6-103	St. Johns Marsh
1.00	NA	1.00	1.00	6-104	Lake Washington
1.00	NA	1.00	1.00	6-201	Lake Poinsett
ND	NA	1.00	1.00	6-202	Tosahatchee
ND	NA	1.00	1.00	6-203	Puzzle Lake
			Ocklav	vaha River	
1.00	NA	1.00	1.00	7-100	Palatlakaha River
2.90	NA	3.00	2.90	7-200	Lake Apopka
2.50	NA	1.82	2.48	7-300	Lake Harris
2.50	NA	3.00	2.57	7-401	Lake Griffin
1.00	NA	1.74	1.19	7-402	Marshali Swamp
ND	NA	1.00	1.00	7-500	Eureka Dam
			Florida Ridg	e & Orange	Lake
ND	NA	2.00	2.00	8-001	Florida Ridge
2.00	NA	1.00	1.88	8-002	Newnans Lake

Subbasin averages derived from individual waterbody determinations; weighted by area for lakes and estuaries or river miles for rivers

A combination of the average MDUs, weighted by the abundance of lakes, estuaries, or rivers in the subbasin relative to the District as a whole (see page 204)

NOTES: NA=not appropriate; ND=no data

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#### Table D10. Continued

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Average MDU*		Combined	Subbasin	Subbasin name		
Lakes	Estuaries	Rivers	average#	number		
1.00	NA	ND	1.00	8-003/4	Orange/Lochloosa lakes	
ND	NA	1.00	1.00	8-005	Orange Creek	
ND	NA	ND	0.00	8-006	Sweetwater Creek	
1.00	NA	1.00	1.00	8-007	Rodman Reservoir	
			Uppe	er Coastal		
ND	3.00	2.23	2.49	9-100	Halifax River	
ND	ND	1.85	1.85	9-200	Matanzas River	
ND	ND	1.50	1.50	9-300	Tolomato River	
			Indian F	River Lagoon	1	
ND	2.20	2.00	2.20	10-001	North Indian River Lagoon	
NA	1.00	2.42	1.38	10-002	N Central Indian River Lagoon	
NA	2.00	2.06	2.01	10-003	S Central Indian River Lagoon	

Subbasin averages derived from individual waterbody determinations; weighted by area for

lakes and estuaries or river miles for rivers A combination of the average MDUs, weighted by the abundance of lakes, estuaries, or rivers in the subbasin relative to the District as a whole (see page 204)

NOTES: NA=not appropriate; ND=no data

Commercial acres	Industrial acres	Residential acres	Total acres	FSMS* acres	Fraction of urban development in subbasin	Subbasin number	Subbasin name	
Nasseu River								
12,701	350	40,902	53,953	264,718	0.20	1-000	Nassau River	
				St. Ma	rys River	·		
211	51	5,926	6,188	259,505	0.02	2-001	Upper St. Marys River	
3,544	1,283	22,714	27,541	263,416	0.10	2-002	Lower St. Marys River	
				Lower St.	Johns River			
992	361	23,473	24,826	383,213	0.06	3-100	Crescent Lake	
1,011	3,591	36,532	41,134	250,354	0.16	3-200	Etonia Creek	
1,603	2,77 <del>9</del>	74,518	78,900	349,578	0.23	3-300	Black Creek	
3,77 <del>9</del>	1,671	19,874	25,324	51,413	0.49	3-400	Ortega River	
1,768	2,212	9,096	13,076	41,616	0.31	3-501	Trout River	
225	232	490	947	6,453	0.15	3-502	Broward River	
202	925	1,033	2,160	11,362	0.19	3-503	Dunn Creek	
2,969	203	26,986	30,158	32,931	0.92	3-601	Arlington Creek	
1,062	621	14,665	16,348	61,658	0.27	3-602	Julington Creek	
10,324	6,385	87,885	04,594	198,727	0.53	3-603	North Lower St. Johns River	
360	110	4,866	5,336	74,052	0.07	3-701	Sixmile Creek	
42	16	1,182	1,240	34,390	0.04	3-702	McCullough Creek	
77	215	2,792	3,084	41,875	0.07	3-703	Deep Creek	
4,458	2,125	52,019	58,602	239,661	0.24	3-704	South Lower St. Johns River	
				Middle St.	Johns Aiver			
5,361	2,585	28,279	36,225	114,364	0.32	4-100	Econlockhatchee River	
3,352	1,697	15,962	21,011	27,708	0.76	4-201	Little Wekiva River	
2,403	1,777	21,780	25,960	78,981	0.33	4-202	Wekiva River	
1,000	457	16,309	17,766	116,350	0.15	4-203	Blackwater Creek	
9,554	324	25,336	35,214	50,134	0.70	4-301	Howell Creek	
3,457	8,849	27,338	39,644	72,145	0.55	4-302	Lake Jesup	
12	7	7,043	7,062	26,216	0.27	4-401	Lake Harney	

 Table D11. Urban Land Use for 1988, In Acres.
 Urban land use is defined as all commercial, industrial, and residential land use types.

* Florida Survey Mapping System (FSMS) total acreage for all land uses in the subbasin, from the FSMS data base

#### Table D11. Continued

Commercial acres	Industrial acres	Residential acres	Total acres	FSMS* acres	Fraction of urban development	Subbasin number	Subbasin name
372	235	16,431	17,038	148,331	0.11	4-402	Deep Creek
11,371	4,765	34,651	50,787	94,746	0.54	4-403	Lake Monroe
				Lake	George		
354	22	10,080	10,456	43,623	0.24	5-001	Lake Beresford
744	106	9,227	10,077	137,524	0.07	5-002	Lake Woodruff
596	52	19,410	20,058	142,476	0.14	5-003	Lake George
				Upper St.	Johns River		
0	0	559	559	56,548	0.01	6-101	Fort Drum Creek
22	2,129	1,897	4,048	146,278	0.03	6-102	Blue Cypress Creek
4	0	3,583	3,587	283,418	0.01	6-103	St. Johns Marsh
5,900	273	3,626	9,799	25,254	0.39	6-104	Lake Washington
26,021	3,78 <del>9</del>	17,741	47,551	265,906	0.18	6-201	Lake Poinsett
5,651	1,426	18,034	25,111	81,522	0.31	6-202	Tosahatchee
9,218	4,358	41,369	54,945	175,652	0.31	6-203	Puzzle Lake
				Ocklaw	aha River		
988	364	8,822	10,174	109,660	0.09	7-100	Palatlakaha River
1,691	1,060	6,650	9,401	72,274	0.13	7-200	Lake Apopka
2,685	1,388	26,222	30,295	123,130	0.25	7-300	Lake Harris
741	460	12,436	13,637	132,184	0.10	7-401	Lake Griffin
1,940	384	22,375	24,699	107,986	0.23	7-402	Marshall Swamp
295	17	8,688	9,000	165,805	0.05	7-500	Eureka Dam
			Fk	orida Ridge	& Orange Lake		
18,097	4,892	73,540	96,529	394,742	0.24	8-001	Florida Ridge
1,096	5,703	10,187	16,986	48,091	0.35	8-002	Newnans Lake
401	46	10,641	11,088	86,407	0.13	8-003/4	Orange/Lochloosa lakes
414	235	23,059	23,708	117,235	0.20	8-005	Orange Creek
128	138	9,996	10,262	43,387	0.24	8-006	Sweetwater Creek
10	0	611	621	31,886	0.02	8-007	Rodman Reservoir

* Florida Survey Mapping System (FSMS) total acreage for all land uses in the subbasin, from the FSMS data base

#### Table D11. Continued

Commercial acres	industrial acras	Residential acres	Totai acres	FSMS* acres	Fraction of urban development in subbasin	Subbasin number	Subbasin name
				Upper	Coastal		
11,597	2,241	51,380	65,218	249,167	0.26	9-100	Halifax River
5,006	1,116	94,500	00,622	245,633	0.41	9-200	Matanzas River
1,309	66	9,156	10,531	48,844	0.22	9-300	Tolomato River
				Indian Ri	ver Lagoon		
32,463	23,071	65,802	21,336	297,485	0.41	10-001	North Indian River Lagoon
36,621	19,498	69,210	25,329	248,969	0.50	10-002	N Central Indian River Lagoon
14,832	4,023	39,633	58,488	147,968	0.40	10-003	S Central Indian River Lagoon

Source: ARMASI 1990

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* Florida Survey Mapping System (FSMS) total acreage for all land uses in the subbasin, from the FSMS data base

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Table D12. Projected population growth rates by major basin, 1989 through 2010

Percent increase	Basin number*	Basin name
39	1	Nassau River
41	2	St. Marys River
38	3	Lower St. Johns River
54	4	Middle St. Johns River
48	5	Lake George
6	6	Upper St. Johns River
51	7	Ocklawaha River
42	8	Florida Ridge & Orange Lake
57	9	Upper Coastal
57	10	Indian River Lagoon

Source: Basin estimates derived by the District's Division of Policy and Planning. Original data from Smith and Bayya 1990.

* See Table A1 (page 121)

## Table D13. Subbasin population density, 1989

Population	Surface area (acres)*	Average population density#	Subbasin number	Subbasin name
		N	lassau River	
24, 182	270,747	0.09	1-000	Nassau River
		St	Marys River	
26,016	330,676	0.08	2-001	Upper St. Marys River
30,753	269,411	0.11	2-002	Lower St. Marys River
		Lowei	r St. Johns A	liver
38,670	357,890	0.11	3-100	Crescent Lake
21,186	213,102	0.10	3-200	Etonia Creek
29,895	309,613	0.10	3-300	Black Creek
0	62,697	1.75	3-400	Ortega River
0	59,337	1.75	3-501	Trout River
0	16,444	1.75	3-502	Broward River
0	14,798	1.75	3-503	Dunn Creek
0	20,472	1.75	3-601	Arlington Creek
0	66,369	1.75	3-602	Julington Creek
0	157,354	1.75	3-603	North Lower St. Johns River
7,687	77,082	0.10	3-701	Sixmile Creek
3,075	39,538	0.08	3-702	McCullough Creek
5,222	48,370	0.11	3-703	Deep Creek
35,944	196,241	0.18	3-704	South Lower St. Johns River
		Middle	) St. Johns P	liver
112,917	173,925	0.65	4-100	Econlockhatchee River
56,115	28,669	1.96	4-201	Little Wekiva River
85,086	93,715	0.91	4-202	Wekiva River
78,751	121,299	0.65	4-203	Blackwater Creek
62,041	27,743	2.24	4-301	Howell Creek
94,005	54,370	1.73	4-302	Lake Jesup
16,557	25,502	0.65	4-401	Lake Harney

* Including waterbodies

# @ Persons per acre The total population for these subbasins is 649,184, which is the sum of Jacksonville, Orange Park, and Jacksonville beaches populations.

#### Table D13. Continued

Population	Surface area (acres)*	Average population density#	Subbasin number	Subbasin name
89,461	137,796	0.65	4-402	Deep Creek
112,513	89,777	1.25	4-403	Lake Monroe
		L	ake George	
4,956	42,197	0.12	5-001	Lake Beresford
19,113	162,585	0.12	5-002	Lake Woodruff
29,081	232,436	0.13	5-003	Lake George
		Upper	St. Johns R	iver
9,175	99,415	0.09	6-101	Fort Drum Creek
21,253	193,101	0.11	6-102	Blue Cypress Creek
32,868	278,489	0.12	6-103	St. Johns Marsh
1,709	18,519	0.09	6-104	Lake Washington
19,252	208,607	0.09	6-201	Lake Poinsett
11,628	125,994	0.09	6-202	Tosahatchee
12,523	135,698	0.09	6-203	Puzzle Lake
		Od	dawaha Rive	r
40,377	180,577	0.22	7-100	Palatlakaha River
24,448	85,188	0.29	7-200	Lake Apopka
59,762	118,234	0.51	7-300	Lake Harris
31,518	126,640	0.25	7-401	Lake Griffin
16,510	98,285	0.17	7-402	Marshall Swamp
29,914	178,086	0.17	7-500	Eureka Dam
		Florida R	dge & Orang	je Lako
183,125	521,543	0.35	8-001	Florida Ridge
7,603	65,871	0.12	8-002	Newnans Lake
15,665	124,222	0.13	8-003/4	Orange/Lochloosa lakes
11,796	119,118	0.10	8-005	Orange Creek
4,507	34,093	0.13	8-006	Sweetwater Creek
2,346	23,694	0.10	8-007	Rodman Reservoir

Including waterbodies Persons per acre

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#### Table D13. Continued

Population	Surface area (acres)*	Average population density#	Subbasin number	Subbasin name
		U	pper Coast	ai
217,707	227,241	0.96	9-100	Halifax River
56,602	172,265	0.33	9-200	Matanzas River
13,045	55,006	0.24	9-300	Tolomato River
		India	n River Lag	joon
209,794	211,264	0.99	10-001	North Indian River Lagoon
157,489	150,877	1.04	10-002	N Central Indian River Lagoon
64,277	137,181	0.47	10-003	S Central Indian River Lagoon

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Source:

Subbasin population estimates were derived by the District, as described on page 68 using population data from Smith and Bayya (1990)

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Including waterbodies Persons per acre