Technical Publication SJ 91-3

24-HOUR RAINFALL DISTRIBUTIONS
FOR SURFACE WATER BASINS WITHIN THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT,
NORTHEAST FLORIDA

by

Donthamsetti V. Rao, Ph.D., P.E.

NORTHWEST FLORIDA
WATER MANAGEMENT DISTRICT

SUWANNEE RIVER
WATER MANAGEMENT DISTRICT

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT

SOUTHWEST FLORIDA
WATER MANAGEMENT DISTRICT

SOUTH FLORIDA
WATER MANAGEMENT DISTRICT
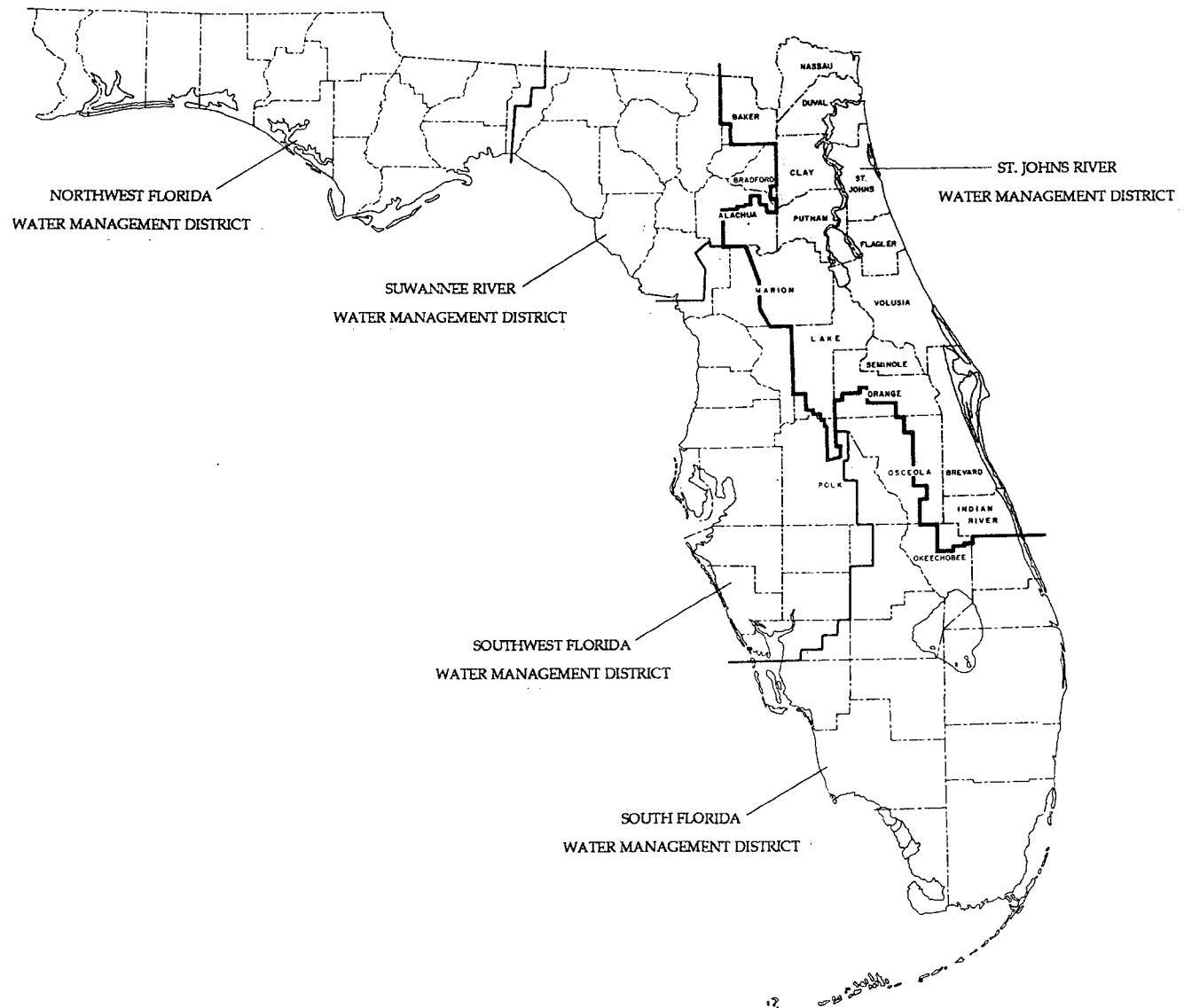
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

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. Technical reports are published to disseminate information collected by SJRWMD in pursuit of its mission.

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EXECUTIVE SUMMARY

This report presents rainfall distributions for specific surface water drainage basins in the District for the convenience of MSSW (Management and Storage of Surface Waters) permit applicants, consulting engineers, and other users.

The MSSW rules of the St. Johns River Water Management District apply a 'peak discharge criterion' in the evaluation of permit applications for land developments that interfere with natural drainage, storage, recharge, and conveyance of water. According to this criterion, the drainage systems of these developments should be designed and operated so that the post-development peak rate of discharge (from the developed area) would not exceed the pre-development peak rate of discharge.

Peak discharges for a drainage basin are often calculated by rainfall-runoff models using hypothetical or synthetic storm data. Two basic components of a hypothetical storm are the total rainfall amount during the storm event (duration) and the time distribution of rainfall (rainfall distribution). Generalized rainfall distributions, developed by the Soil Conservation Service of the U.S. Department of Agriculture, have been extensively used by agencies and consulting engineers throughout the United States for calculating design or peak discharges. Generalized distributions, however, lack accuracy because they are based on the rainfall magnitude and patterns occurring over a large region. Distributions developed for a specific drainage basin or site-specific distributions predict peak discharges more accurately. Procedures for developing site-specific hypothetical storm distributions were described in <u>Development of site-specific hypothetical storm distributions</u> (Rao 1988).

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INTRODUCTION

This report presents rainfall distributions for various surface water drainage basins for the St. Johns River Water Management District (SJRWMD) for the convenience of permit applicants, consulting engineers, and other users.

Land development, whether agricultural or residential/ commercial/industrial, may interfere with or alter natural drainage, storage, recharge, and conveyance of water. To allow for continued development of land and water resources without unduly affecting the existing hydrologic regime, Florida's water management districts have enacted a Management and Storage of Surface Waters (MSSW) rule. One of the objectives of this rule is to lessen the risk of flooding by regulating systems that manage and store surface waters. However, these rules are applied only when such systems exceed certain permit thresholds. Specifically, these systems are required to satisfy a 'peak discharge criterion.' According to this criterion, the systems should be designed and operated so that the post-development peak rate of discharge (from the developed area) would not exceed the pre-development peak rate of discharge. Various design calculations are performed using specified storm frequencies (return period, T) and storm durations (t hour).

SJRWMD specifies that permit applicants districtwide should use the 25-year return period and 24-hour duration to calculate peak discharges. In the case of some ecologically sensitive hydrologic basins (e.g., the Econlockhatchee River basin), the peak discharge criterion should also be satisfied for other storm frequencies such as the 24-hour mean annual maximum storm event or the 10-year return period. Also, some systems are required to satisfy other criteria that are based on 100-year flood elevations and runoff from a 4-day storm event. Detailed information on design storm permitting requirements is given in the SJRWMD MSSW Applicant's Handbook (SJRWMD 1991).

Peak discharges for a drainage basin are usually calculated by rainfall-runoff models using hypothetical or synthetic storm data. This procedure is particularly useful in evaluating the effects of alternative water management practices and future watershed conditions, i.e., for computing pre- and post-development peak discharges. Two basic components of a hypothetical storm are the total rainfall amount during the storm event (duration) and the time distribution of rainfall (rainfall distribution). A hypothetical storm distribution can be developed for a given basin size, location, storm duration (t), and storm frequency, i.e., return period (T). Development of such specific distributions, however, requires detailed rainfall data and entails intricate calculations (Rao 1988b).

Generalized rainfall distributions, developed by the Soil Conservation Service (SCS) of the U.S. Department of Agriculture, have been extensively used by agencies and consulting engineers throughout the United States for calculating design or peak discharges. Generalized distributions, however, lack accuracy because they are based on the rainfall magnitude and patterns occurring over a large region. For a given area and a given storm frequency, the generalized distributions may either overpredict or underpredict peak discharges. The SCS Type II distribution developed in the 1960s and applicable to Florida was modified in 1980 (for use in Florida) because the peak discharges based on this distribution were found to be unrealistically high for Florida drainage basins. In 1986, the SCS introduced a new distribution, Type III, for use in Florida and other regions (SCS 1986). A brief study conducted at SJRWMD indicated that even the Type III distribution is not uniformly applicable to the entire District (Rao 1987). Therefore, site-specific distributions or a generalized distribution developed for a specific drainage basin are desirable for accurate prediction of peak discharges.

Rao (1988b) details various procedures for developing site-specific hypothetical storm distributions with applications to basin modeling. Using these procedures, rainfall distributions are developed for various surface water drainage basins within SJRWMD and presented in this report.

SURFACE WATER BASINS IN SJRWMD

Based on major surface water divides, the U.S. Geological Survey (USGS) has subdivided all river basins and the intervening areas into planning units (known as 'Hydrologic Units'), which form a national system for cataloging hydrologic and other information (Conover and Leach 1975). Each hydrologic unit is assigned an eight-digit code as shown below:

```
     Region                    Account Unit
       |                            |
  +--------+--------+--------+--------+
  |  0 3   |  0 7   |  0 2   |  0 4   |
  +--------+--------+--------+--------+
                |                   |
            Subregion          Cataloging Unit
```
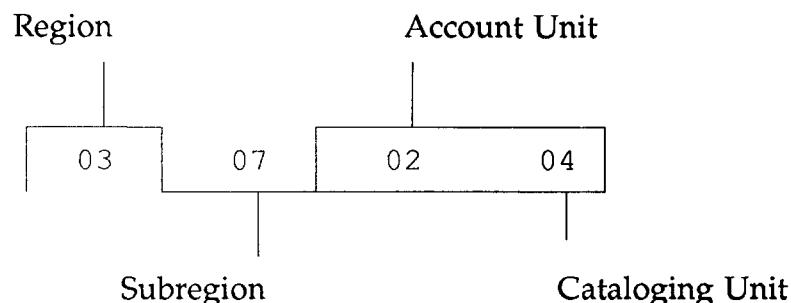
Florida is region 03. Northeast Florida has two subregions: 07 and 08. The St. Marys and Nassau River basins are subregion 07. The remainder of the basins are subregion 08. The basins are designated by the last four digits of the USGS code. For example, code number 0204 in Figure 1 is the St. Marys River basin. There are eight USGS hydrologic units for Northeast Florida (Figure 1).

The USGS hydrologic units also formed a basis for determining the boundaries of the five water management districts (WMD) of Florida, which are hydrologic in nature. However, since the WMD boundaries were drawn also from considerations of political and administrative convenience, the original USGS hydrologic unit boundaries could not be adapted as the final WMD boundaries. The SJRWMD hydrologic unit boundaries for Hydrologic Units II, III, IV, VI, VII and VIII, in Figure 2, are slightly adjusted to fit the District boundary.

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For planning various water management studies, SJRWMD has retained the USGS hydrologic units, with some adjustments (Figure 2). SJRWMD has formed 10 hydrologic units from the original 8 USGS units by subdividing USGS units 0101, 0102, and 0201 and merging units 0202 and 0203 together (Figures 1 and 2). USGS unit 0101 became the middle St. Johns River basin, the Lake George basin, and the upper St. Johns River basin. USGS unit 0102 became the Florida Ridge and Orange Lake basin and the Oklawaha River basin. The northern part of USGS unit 0201 was incorporated into the lower St. Johns River basin. USGS units 0202 and 0203 became the Indian River Lagoon basin.

SJRWMD has subdivided each hydrologic unit (basin) into a number of smaller drainage basins (subbasins) based on specific surface water features. These subbasins are mostly tributary basins to the main river or to the main river segment in a hydrologic unit. In general, rainfall distributions are developed in this report for each subbasin. However, some of the hydrologic units have extensive area with considerable rainfall variation within the unit for a given return period. For example, the 24-hour rainfall in the St. Marys River basin varies from 6.0 to more than 7.5 inches for a 10-year return period, from 7.5 to more than 9.5 inches for a 25-year return period, and from 9.5 to 13 inches for a 100-year return period (Figures 3-5). This variation in rainfall can also result in a variation of rainfall distributions. For this reason, two hydrologic units (St. Marys and Nassau) that do not have tributary basins are divided arbitrarily into subbasins, and rainfall distributions are developed separately for each subbasin. On the other hand, no major variation is seen in rainfall patterns for the three subbasins in Hydrologic Unit IX, the upper coastal basin. Thus, common rainfall distributions are developed for the whole hydrologic unit.

RAINFALL DISTRIBUTIONS FOR 10-, 25-, AND 100-YEAR STORM EVENTS

For a given location, the 24-hour hypothetical storm distribution can be developed based on a 24-hour maximum rainfall depth-duration curve. The depth-duration curve is developed from the maximum rainfall values (for a given return period) for several durations in a 24 hour period, i.e., 15 minutes, 30 minutes, 1 hour, 2 hours, 3 hours, 6 hours, etc. The rainfall depths for each time step are read from the depth-duration curve, then rearranged into a storm pattern (Rao 1988b).

The current publication presents 24-hour rainfall distributions for each subbasin at 15-minute time steps for 10-, 25-, and 100-year return periods. In addition, a generalized distribution is also presented for each subbasin which is based on the average of the 10-, 25-, and 100-year return period rainfalls. These distributions were developed with methods from Rao (1988b) using rainfall values for 15 minutes, 30 minutes, 1 hour, 3 hours, 6 hours, and 24 hours. The data used are summarized in Appendix A. These data were obtained for each subbasin by taking an average of the maximum rainfall values in the basin (or a representative value) for each duration from the rainfall charts provided by Rao (1988b).

The rainfall distributions for various subbasins are presented in Tables 1-29 together with enlarged maps of the hydrologic units (Figures 10-19). These maps show the boundaries of areas for which rainfall distributions are developed. The tables are printed in the format of PC cards for the U.S. Army Corps of Engineers (1981) HEC-1 Flood Hydrographs Package computer program. These tables also are available on a diskette, upon request, to permit applicants or consulting engineers for use on personal computers.

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RAINFALL DISTRIBUTION FOR THE MEAN ANNUAL MAXIMUM STORM EVENT

A 24-hour rainfall distribution for the mean annual maximum storm event also can be developed from a rainfall depth-duration curve using the procedures given in Rao (1988b). For a given duration (t=15 minutes, 30 minutes, 1 hour,...24 hours, etc.), the mean annual maximum storm depth is defined as the average of the most intense rainfall values of each year over the period of record. For example, if t=24 hours, the maximum 24-hour rainfall value is evaluated for each year from all storm events of the year, and an average of such values is computed for the period of record (Figure 6).

The return period for mean annual maximum hydrologic events ($T_{\bar{x}}$) varies from two years to over four years depending on the probability distribution assumed for the data and other statistical parameters, such as coefficients of variation (CV) and skew (CS) (Rao 1981, Appendix B). For the normal and Gumbel distributions, $T_{\bar{x}}$ equals 2 years and 2.33 years, respectively. These distributions, however, have a constant CS, with CS=0 for normal distribution and 1.14 for the Gumbel. The 24-hour rainfall data analyzed for SJRWMD (Rao 1988a) exhibited sample CS in the range of 0.6 to 3.9. Thus, the normal or Gumbel distribution may not be regarded as applicable to SJRWMD data. Based on a more flexible distribution, the log pearson type 3 distribution (Appendix B), $T_{\bar{x}}$ is found to be approximately 2.5 years for the SJRWMD data.

To draw a depth-duration curve, the 15-minute, 30-minute, 60-minute, 3-hour, and 6-hour rainfall values also are required. These values for the mean annual maximum event are estimated by an interpolation (on probability paper) of T=2 year and T=5 year values obtained from other sources. The 15-minute, 30-minute, and 60-minute values were obtained from Frederick et al. (1977) and 3-hour and 6-hour values from Hershfield (1961). In general, the 2-year and 5-year values for each of the preceding five durations did not show significant variation across SJRWMD. Therefore, a single distribution is developed for the entire SJRWMD. A return period of 2.5 years was assumed

for the mean annual event to obtain the rainfall values by interpolation. Figure 7 shows the resulting rainfall depth-duration curve and Table 30 gives the rainfall distribution for use by HEC-1 or other similar programs using the design storm event to generate runoff by hydrographs.

USE OF THE RAINFALL DISTRIBUTIONS

The rainfall distribution values presented in Tables 1 through 30 represent the cumulative hypothetical storm rainfall as a ratio to 24-hour rainfall, at 15-minute time steps. These data can be used with computer programs other than HEC-1 by entering the values in the format required by the program, such as SCS TR-20 format (the project formulation hydrology program, SCS 1983) (Figure 8). To compute peak discharges, permit applicants need the 25-year return period and the 24-hour duration values (Figures 3-6). The following steps should be taken in these applications.

1. Determine the location of the project area. Which hydrologic unit? Which subbasin? Use Figure 2 and Figures 10-19.

2. Mean Annual Storm Event. Obtain 24-hour rainfall value from Figure 6. Use Table 30 for the mean annual maximum storm event distributions. Table 30 can be used regardless of the location.

3. 24-Hour Duration (t) Rainfall. Obtain 24-hour rainfall value(s) for the appropriate return period (T) from maps of maximum rainfall depths (Figures 3-5) for the exact location of the project area (not an average value for the subbasin). If the size of the drainage area being modeled is large (greater than 3 square miles), the rainfall values obtained should be adjusted for the area because the rainfall maps are based on point rainfall depths. The adjustment factors can be obtained from a depth-area relationship curve (Figure 9). See Rao (1988b) for additional information.

4. Selection of a Distribution for the Subbasin. Select the rainfall distribution corresponding to the project subbasin (Tables 1-29). For example, the distribution for a project located in the St. Marys River basin between S.R. 121 and U.S. 1 (Subbasin II-2) are given in Table 4.

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5. Use specific return period distributions for computing peak discharges, especially for design purposes. Generalized distributions for a given basin underpredict 10-year peak discharges and overpredict 100-year discharges.

The generalized distributions for basins given in the current report represent approximately the 25-year distribution. The t-hour to 24-hour rainfall ratios (for t < 24 hours) used in deriving rainfall distributions for various basins have values greater than the generalized distribution values for T=10 years, and lower values for T=100 years (Appendix A). This causes an under/over prediction of peak flows by the generalized distribution when T is substantially different from 25 years. For example, for 1 to 10 square mile projects in the Little Wekiva River basin, the generalized distribution underpredicted 10-year peak flows by about 7 percent and overpredicted 100-year flows by 7 to 10 percent (Rao 1988b). Typically, these results may be expected districtwide.

FIGURES AND TABLES
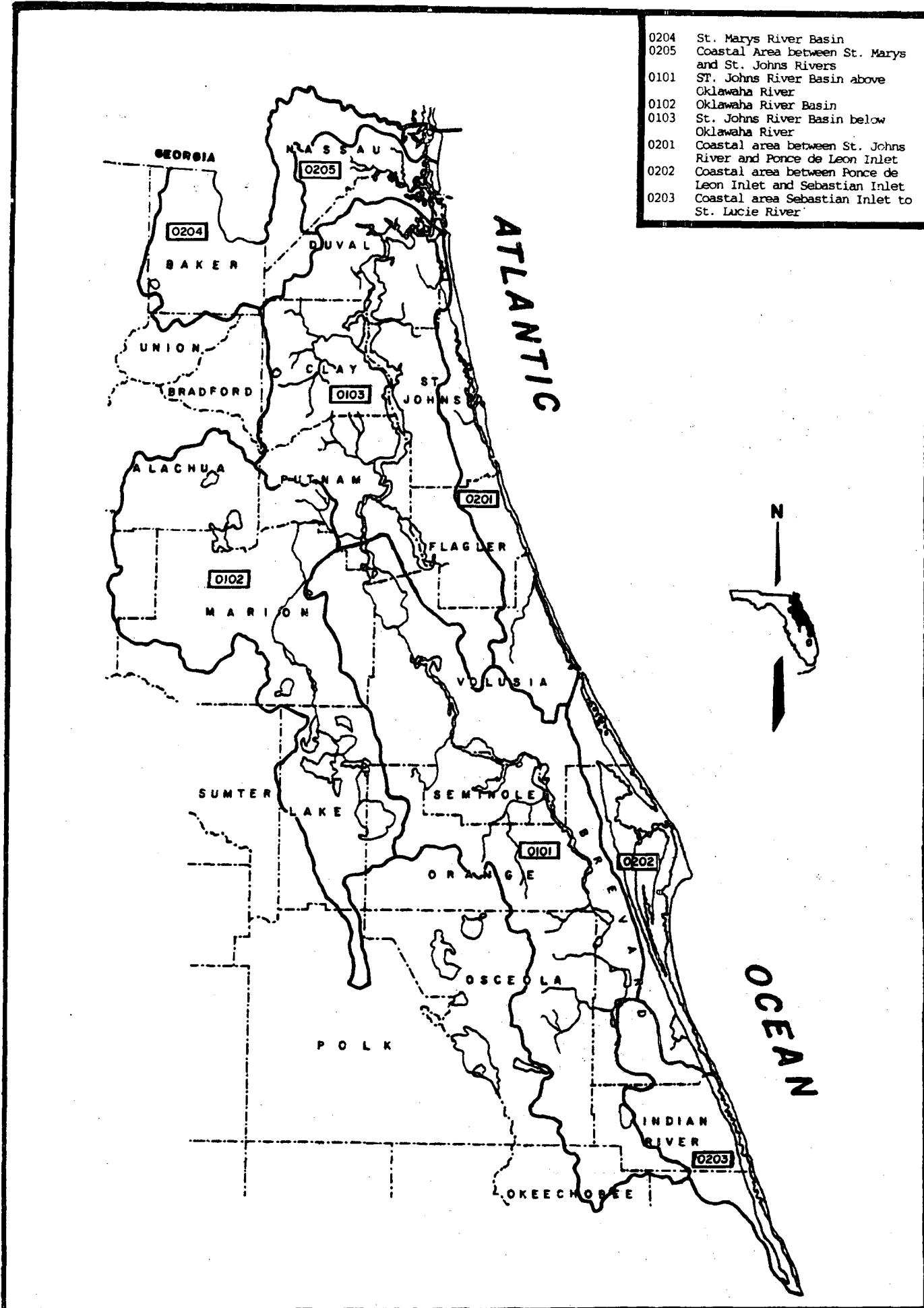
Figure 1. The U.S. Geological Survey hydrologic units in northeast Florida

Source: Conover and Leach 1975

HYDROLOGIC UNITS AND SUBBASINS WITHIN THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

I   NASSAU RIVER

II   ST MARYS RIVER

III LOWER ST JOHNS RIVER
    III-1 Crescent Lake
    III-2 Etonia Creek
    III-3 Black Creek
    III-4 Ortega River
    III-5 Trout River, Broward River and Dunn Creek
    III-6 Arlington Creek and Julington Creek
    III-7 Six Mile Creek, McCullough Creek and Deep Creek

IV   MIDDLE ST JOHNS RIVER
    IV-1 Econlockhatchee River
    IV-2 Wekiva River
    IV-3 Lake Jessup
    IV-4 St Johns River - Lake Harney to Wekiva River

V   LAKE GEORGE BASIN

VI   UPPER ST JOHNS RIVER
    VI-1 St Johns River - Headwaters to Lake Washington Weir
    VI-2 St Johns River - Lake Washington Weir to Lake Harney

VII OKLAWAHA RIVER
    VII-1 Palatlakaha River
    VII-2 Lake Apopka
    VII-3 Oklawaha River - Apopka str to Burrell str
    VII-4 Okalwaha River - Burrell str to SR 40
    VII-5 Oklawaha River - SR 40 to Rodman Reservoir

VIII FLORIDA RIDGE AND ORANGE LAKE BASIN
    VIII-1 Florida Ridge/Withlacoochee
    VIII-2 Florida Ridge
    VIII-3 Lower Oklawaha

IX   UPPER COASTAL
    IX-1 Halifax River
    IX-2 Matanzas River
    IX-3 Tolomoto River

X   INDIAN RIVER LAGOON

ST JOHNS RIVER WATER MANAGEMENT DISTRICT

LEGEND

─────── Hydrologic Unit Boundary

-------- Subbasin Boundary

─────── District Boundary

─ · ──── County Boundary

Figure 2.   Major surface water basins within the St. Johns River Water Management District

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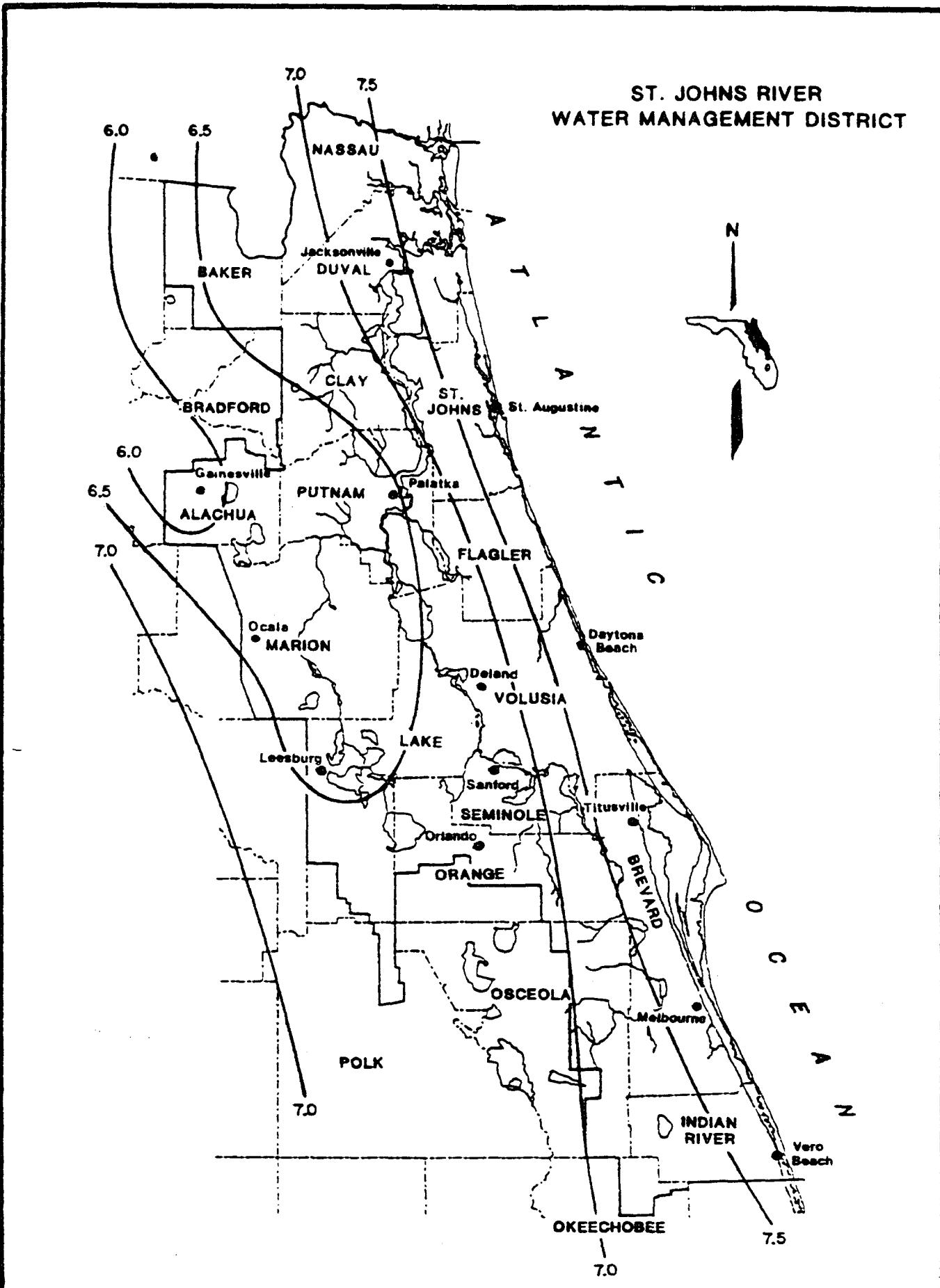
Figure 3. 10-year 24-hour maximum rainfall for northeast Florida in inches
Source: Rao 1988a
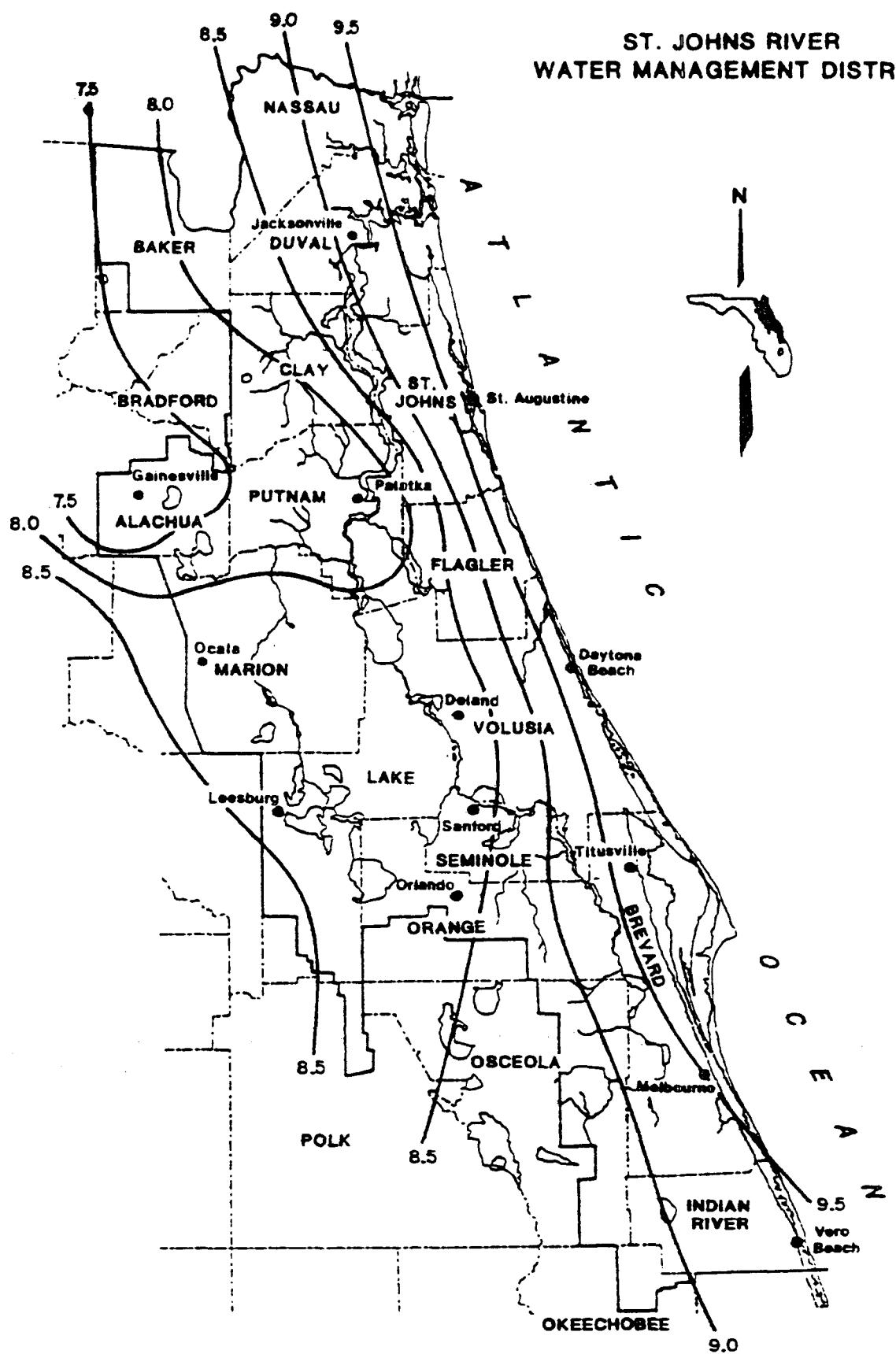
Figure 4. 25-year 24-hour maximum rainfall for northeast Florida in inches
Source: Rao 1988a
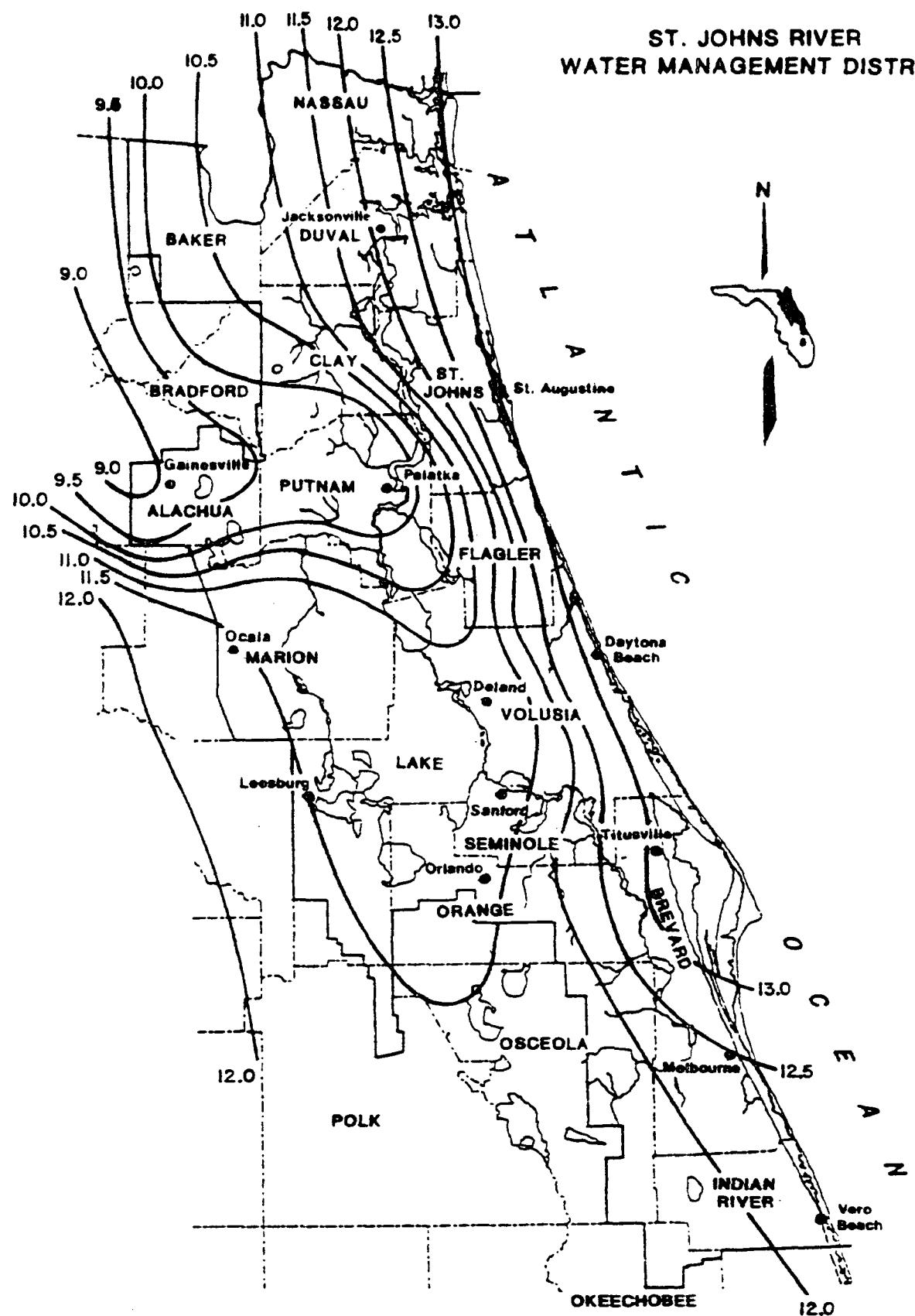
Figure 5. 100-year 24-hour maximum rainfall for northeast Florida in inches
Source: Rao 1988a
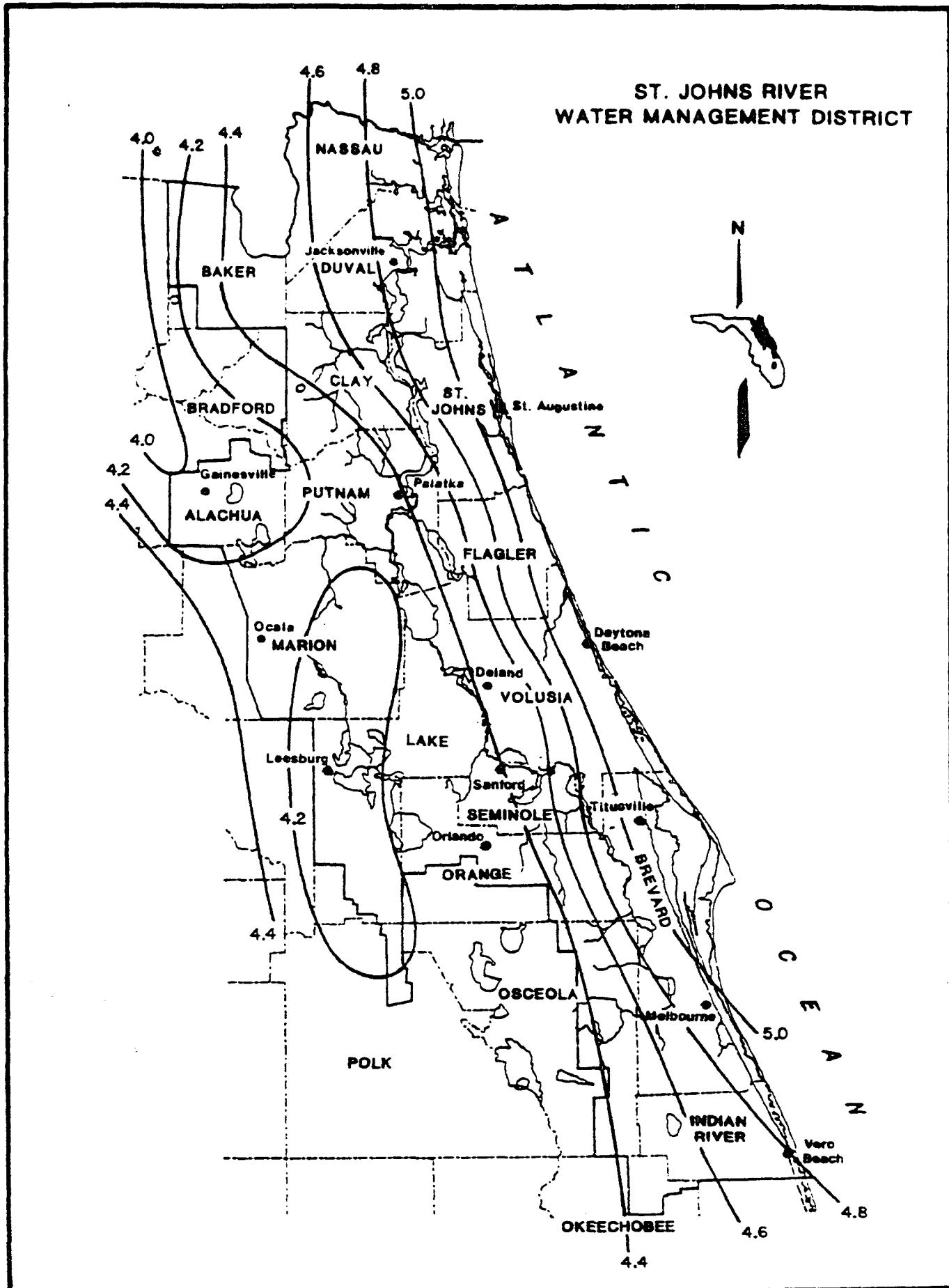
Figure 6.   Mean annual 24-hour maximum rainfall for northeast Florida in inches
Source: Rao 1988a

16
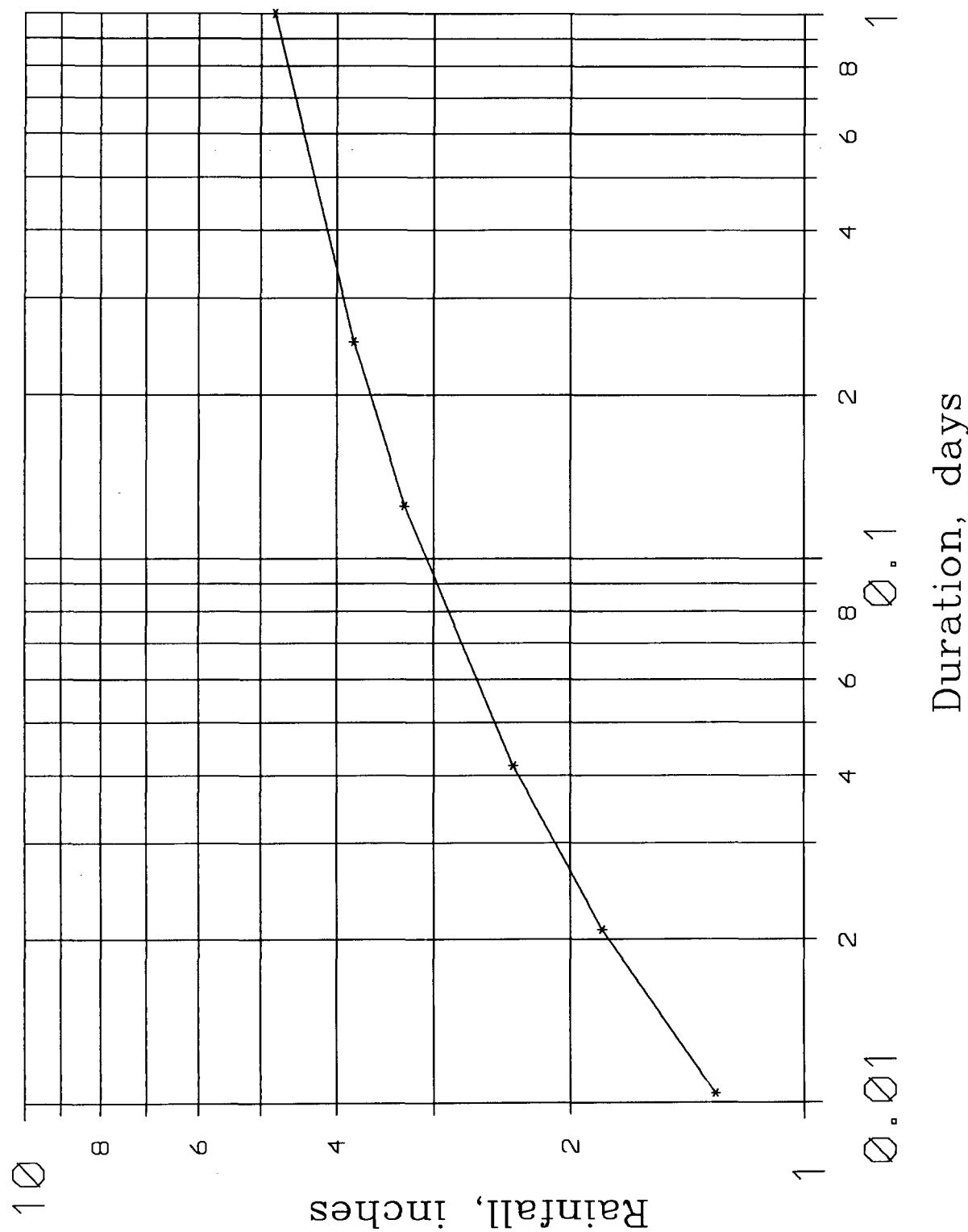
Figure 7. Rainfall depth-duration curve for the mean annual maximum storm event

```
5 RAINFL 1              .25
8        0.000   0.002   0.005   0.007   0.010
8        0.012   0.015   0.017   0.020   0.023
8        0.026   0.028   0.031   0.034   0.037
8        0.040   0.043   0.047   0.050   0.053
8        0.057   0.060   0.064   0.068   0.072
8        0.076   0.080   0.085   0.089   0.094
8        0.100   0.107   0.115   0.122   0.130
8        0.139   0.148   0.157   0.167   0.178
8        0.189   0.202   0.216   0.232   0.250
8        0.271   0.298   0.339   0.500   0.662
8        0.702   0.729   0.751   0.769   0.785
8        0.799   0.811   0.823   0.834   0.844
8        0.853   0.862   0.870   0.878   0.886
8        0.893   0.900   0.907   0.911   0.916
8        0.920   0.925   0.929   0.933   0.936
8        0.940   0.944   0.947   0.951   0.954
8        0.957   0.960   0.963   0.966   0.969
8        0.972   0.975   0.978   0.981   0.983
8        0.986   0.988   0.991   0.993   0.996
8        0.998   1.000   1.000   1.000   1.000
9 ENDTBL
```

Figure 8.   Example of 24-hour rainfall distribution data entered as per the
TR 20 program format

Source: SCS 1983
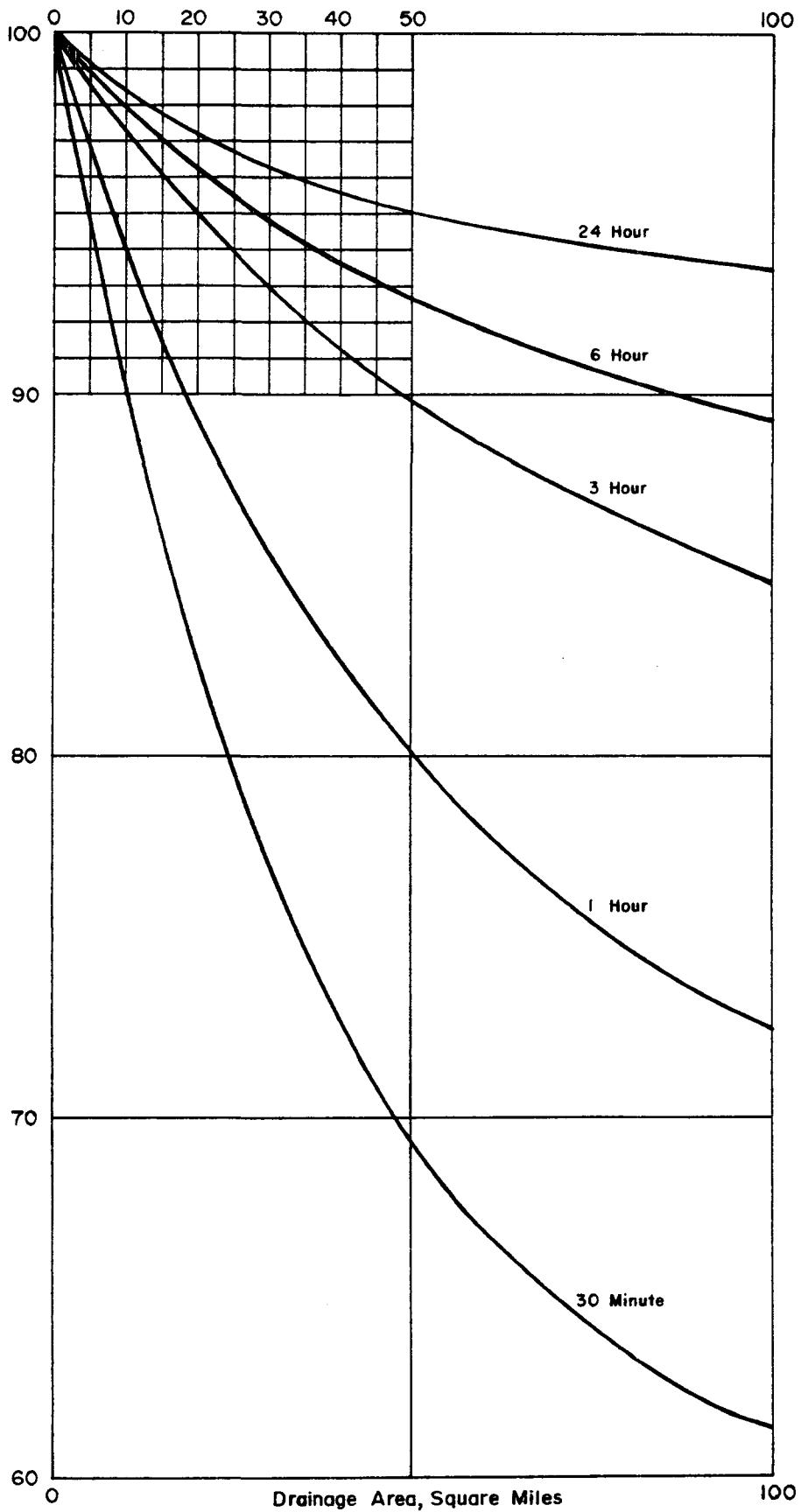
Figure 9. Precipitation depth-area relationships for 30-minute to 24-hour durations
Source: Rao 1988b

LEGEND

– – –	County boundary
▬▬▬	Hydrologic unit boundary
●●●●●●●	Subbasin boundary
═══	Roads
⌇	Waterbodies
◯ I-1	Subbasin number

5 4 3 2 1 0   5
APPROX. SCALE IN MILES
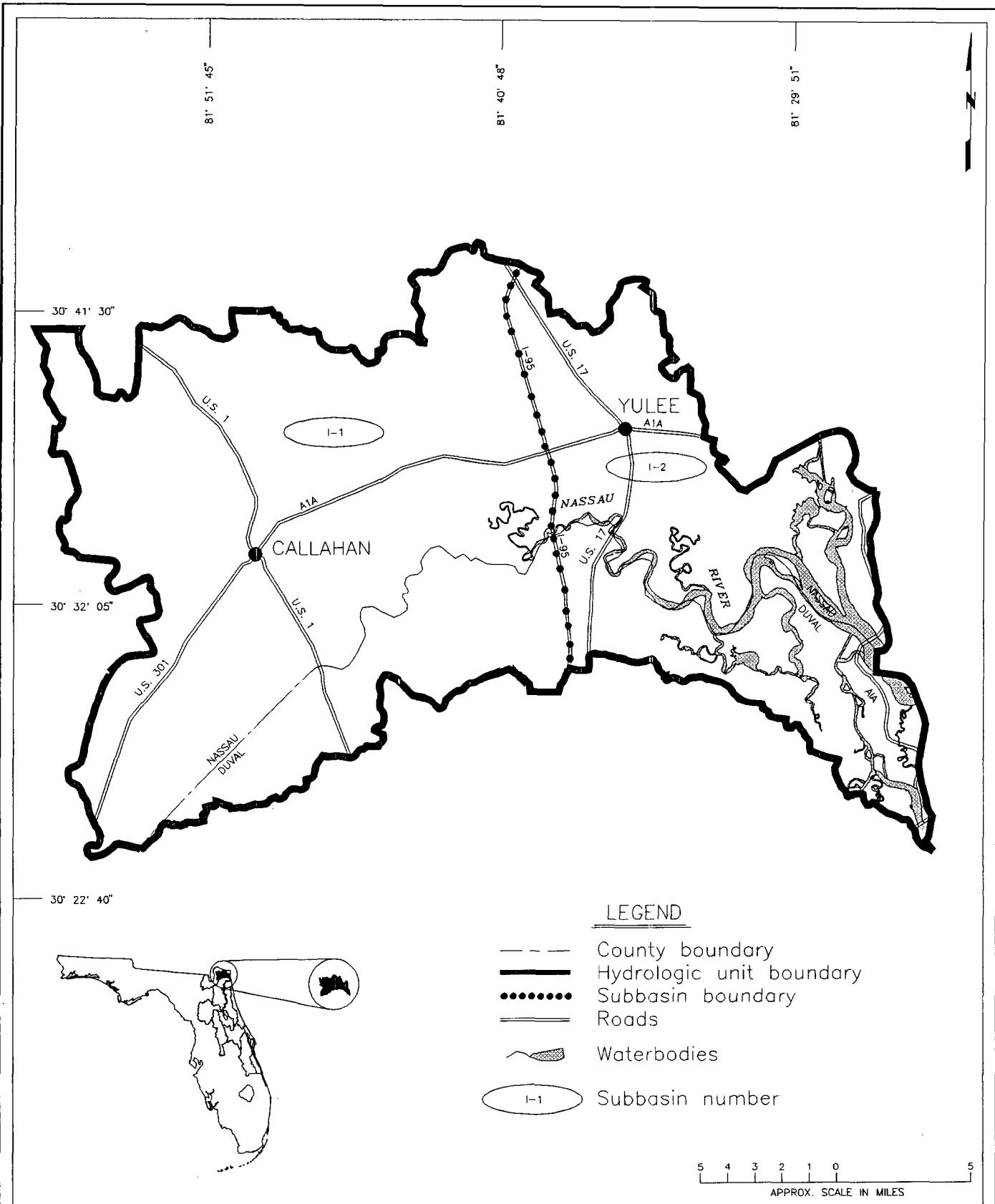
Figure 10

The Nassau River basin
(Hydrologic Unit I)

Table 1.   Rainfall distributions for Subbasin I-1, the Nassau River basin west of I-95

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.013  0.017  0.020  0.024  0.028  0.031
PC 0.035  0.039  0.043  0.047  0.051  0.055  0.059  0.064  0.068  0.073
PC 0.078  0.082  0.087  0.092  0.097  0.103  0.108  0.114  0.120  0.126
PC 0.132  0.139  0.146  0.153  0.160  0.168  0.176  0.185  0.194  0.203
PC 0.214  0.225  0.238  0.251  0.266  0.285  0.309  0.411  0.598  0.656
PC 0.703  0.724  0.741  0.755  0.767  0.779  0.790  0.800  0.809  0.818
PC 0.826  0.834  0.842  0.849  0.856  0.863  0.869  0.876  0.882  0.887
PC 0.893  0.898  0.904  0.909  0.914  0.919  0.923  0.928  0.932  0.937
PC 0.941  0.945  0.949  0.953  0.957  0.961  0.965  0.969  0.973  0.976
PC 0.980  0.983  0.987  0.990  0.993  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.012  0.015  0.018  0.021  0.024  0.027
PC 0.030  0.034  0.037  0.041  0.044  0.048  0.052  0.056  0.059  0.063
PC 0.068  0.072  0.076  0.081  0.085  0.090  0.095  0.100  0.105  0.111
PC 0.116  0.122  0.128  0.135  0.142  0.149  0.156  0.166  0.176  0.187
PC 0.199  0.212  0.227  0.239  0.253  0.271  0.294  0.401  0.608  0.668
PC 0.718  0.738  0.754  0.767  0.778  0.792  0.805  0.816  0.827  0.837
PC 0.846  0.853  0.860  0.867  0.873  0.879  0.885  0.891  0.896  0.901
PC 0.906  0.911  0.916  0.920  0.925  0.929  0.933  0.937  0.941  0.945
PC 0.949  0.952  0.956  0.960  0.963  0.966  0.970  0.973  0.976  0.979
PC 0.982  0.986  0.989  0.991  0.994  0.997  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.013  0.016  0.019  0.023  0.026  0.030
PC 0.033  0.037  0.041  0.044  0.048  0.052  0.056  0.060  0.065  0.069
PC 0.073  0.078  0.082  0.087  0.092  0.097  0.103  0.108  0.114  0.119
PC 0.125  0.132  0.138  0.145  0.152  0.160  0.168  0.176  0.186  0.195
PC 0.206  0.217  0.230  0.245  0.261  0.282  0.308  0.411  0.599  0.657
PC 0.705  0.728  0.746  0.761  0.775  0.787  0.798  0.808  0.818  0.826
PC 0.835  0.842  0.850  0.857  0.863  0.870  0.876  0.882  0.888  0.893
PC 0.899  0.904  0.909  0.914  0.918  0.923  0.927  0.932  0.936  0.940
PC 0.944  0.948  0.952  0.956  0.960  0.963  0.967  0.971  0.974  0.978
PC 0.981  0.984  0.987  0.991  0.994  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.008  0.012  0.016  0.020  0.025  0.029  0.033  0.038
PC 0.042  0.047  0.052  0.056  0.061  0.066  0.071  0.076  0.081  0.087
PC 0.092  0.098  0.104  0.109  0.115  0.122  0.128  0.134  0.141  0.148
PC 0.155  0.163  0.170  0.178  0.187  0.195  0.205  0.212  0.219  0.227
PC 0.236  0.246  0.257  0.269  0.284  0.301  0.324  0.421  0.588  0.642
PC 0.688  0.707  0.723  0.737  0.748  0.758  0.768  0.776  0.784  0.791
PC 0.798  0.807  0.816  0.824  0.832  0.839  0.846  0.853  0.860  0.867
PC 0.873  0.880  0.886  0.892  0.897  0.903  0.909  0.914  0.919  0.924
PC 0.929  0.934  0.939  0.944  0.949  0.953  0.958  0.963  0.967  0.971
PC 0.976  0.980  0.984  0.988  0.992  0.996  1.000
```

Table 2.   Rainfall distributions for Subbasin I-2, the Nassau River basin east of I-95

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.004  0.007  0.011  0.014  0.018  0.022  0.026  0.030  0.034
PC 0.038  0.042  0.046  0.050  0.055  0.059  0.063  0.068  0.073  0.078
PC 0.083  0.088  0.093  0.098  0.104  0.109  0.115  0.121  0.127  0.134
PC 0.140  0.147  0.154  0.162  0.170  0.178  0.186  0.194  0.203  0.212
PC 0.222  0.233  0.245  0.259  0.274  0.293  0.318  0.415  0.593  0.649
PC 0.695  0.716  0.733  0.747  0.760  0.771  0.782  0.791  0.800  0.808
PC 0.816  0.825  0.833  0.840  0.848  0.855  0.861  0.868  0.874  0.880
PC 0.886  0.892  0.897  0.903  0.908  0.913  0.918  0.923  0.928  0.932
PC 0.937  0.942  0.946  0.950  0.954  0.959  0.963  0.967  0.971  0.974
PC 0.978  0.982  0.986  0.989  0.993  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.008  0.011  0.014  0.017  0.020  0.024  0.027
PC 0.030  0.033  0.037  0.040  0.044  0.047  0.051  0.055  0.059  0.063
PC 0.067  0.071  0.075  0.080  0.084  0.089  0.094  0.099  0.104  0.109
PC 0.115  0.121  0.127  0.133  0.140  0.147  0.155  0.165  0.176  0.188
PC 0.200  0.214  0.229  0.242  0.258  0.276  0.301  0.404  0.604  0.663
PC 0.712  0.733  0.750  0.764  0.776  0.790  0.804  0.816  0.827  0.838
PC 0.848  0.855  0.862  0.869  0.875  0.881  0.887  0.892  0.897  0.902
PC 0.907  0.912  0.917  0.921  0.926  0.930  0.934  0.938  0.942  0.946
PC 0.949  0.953  0.957  0.960  0.964  0.967  0.970  0.973  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.994  0.997  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.011  0.014  0.018  0.022  0.026  0.029  0.033
PC 0.037  0.041  0.046  0.050  0.054  0.059  0.063  0.068  0.072  0.077
PC 0.082  0.087  0.092  0.098  0.103  0.109  0.115  0.120  0.127  0.133
PC 0.140  0.146  0.154  0.161  0.169  0.177  0.186  0.193  0.201  0.209
PC 0.218  0.228  0.239  0.254  0.271  0.291  0.318  0.416  0.594  0.649
PC 0.695  0.718  0.736  0.752  0.766  0.776  0.786  0.795  0.803  0.810
PC 0.817  0.825  0.833  0.841  0.848  0.855  0.862  0.868  0.875  0.881
PC 0.887  0.892  0.898  0.903  0.908  0.914  0.919  0.923  0.928  0.933
PC 0.937  0.942  0.946  0.950  0.955  0.959  0.963  0.967  0.971  0.975
PC 0.978  0.982  0.986  0.989  0.993  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.009  0.013  0.018  0.022  0.027  0.032  0.036  0.041
PC 0.046  0.051  0.056  0.061  0.066  0.072  0.077  0.083  0.088  0.094
PC 0.100  0.106  0.112  0.118  0.125  0.131  0.138  0.145  0.152  0.160
PC 0.167  0.175  0.183  0.191  0.200  0.209  0.219  0.225  0.232  0.240
PC 0.248  0.257  0.267  0.279  0.294  0.311  0.334  0.425  0.582  0.634
PC 0.677  0.697  0.713  0.726  0.738  0.747  0.756  0.763  0.771  0.777
PC 0.784  0.793  0.802  0.811  0.819  0.827  0.835  0.842  0.849  0.856
PC 0.863  0.870  0.876  0.883  0.889  0.895  0.901  0.907  0.912  0.918
PC 0.923  0.929  0.934  0.939  0.944  0.949  0.954  0.959  0.964  0.969
PC 0.973  0.978  0.982  0.987  0.991  0.996  1.000
```
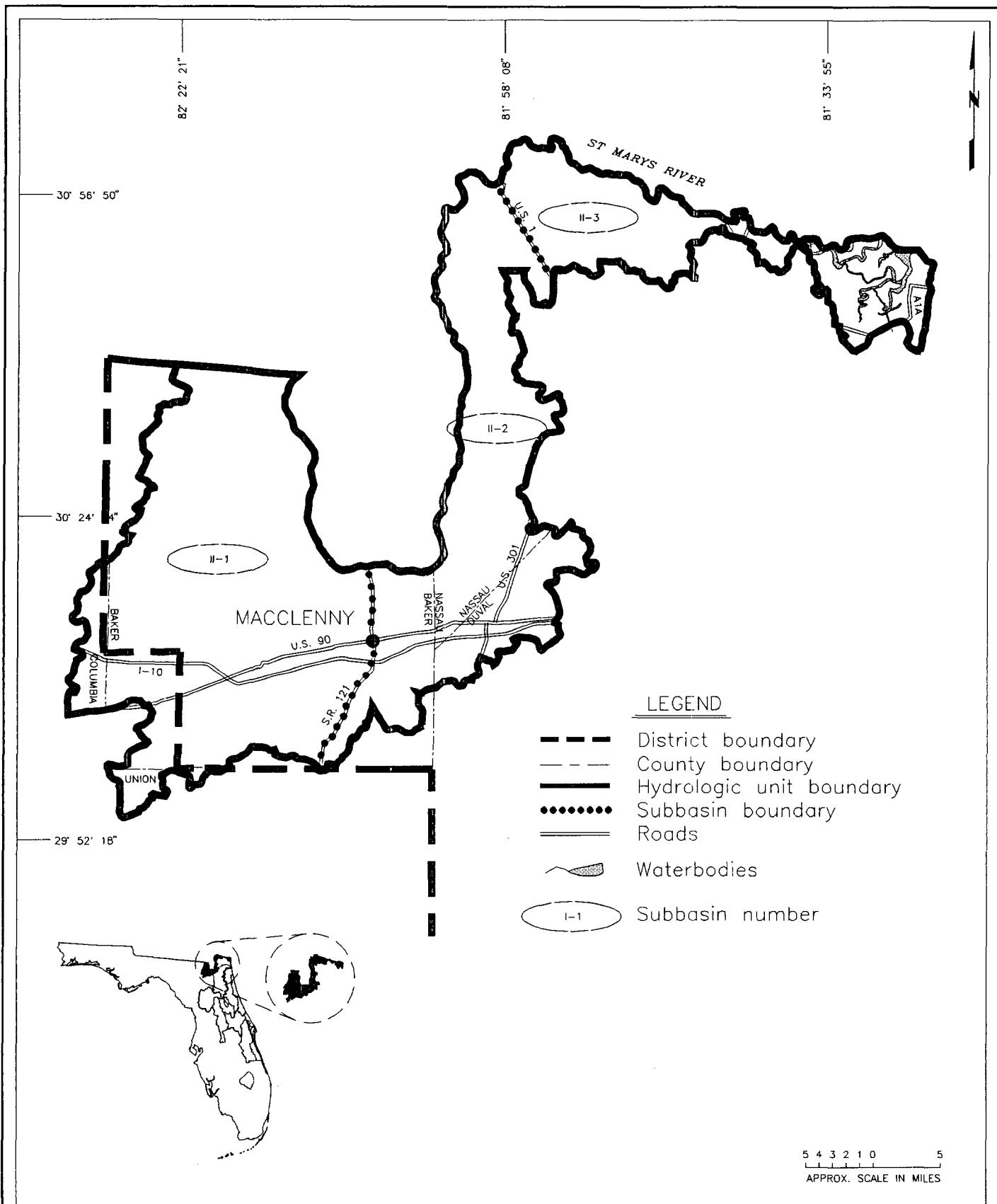
Figure 11

The St. Marys River basin
(Hydrologic Unit II)

LEGEND

- – – District boundary
- – – County boundary
- —— Hydrologic unit boundary
- •••••• Subbasin boundary
- ═══ Roads
- Waterbodies
- II-1 Subbasin number

5 4 3 2 1 0   5
APPROX. SCALE IN MILES

ST MARYS RIVER

II-3

II-2

II-1

MACCLENNY

U.S. 90

I-10

S.R. 121

U.S. 301

BAKER
NASSAU

NASSAU
DUVAL

BAKER
COLUMBIA

UNION

30° 56' 50"

30° 24' 4"

29° 52' 18"

82° 22' 21"

81° 58' 08"

81° 33' 55"

A1A

U.S. 1

Table 3.   Rainfall distributions for Subbasin II-1, the St. Marys River basin west of S.R. 121 including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.014	0.016	0.019	0.022	0.025
PC 0.028	0.031	0.035	0.038	0.041	0.045	0.048	0.052	0.055	0.059
PC 0.063	0.067	0.071	0.075	0.079	0.084	0.088	0.093	0.098	0.103
PC 0.109	0.114	0.120	0.126	0.133	0.139	0.147	0.156	0.167	0.178
PC 0.190	0.203	0.217	0.228	0.242	0.258	0.280	0.396	0.611	0.677
PC 0.732	0.751	0.765	0.778	0.788	0.802	0.814	0.826	0.836	0.846
PC 0.856	0.863	0.869	0.876	0.882	0.887	0.893	0.898	0.903	0.908
PC 0.913	0.917	0.921	0.926	0.930	0.934	0.938	0.942	0.945	0.949
PC 0.952	0.956	0.959	0.962	0.966	0.969	0.972	0.975	0.978	0.981
PC 0.984	0.987	0.989	0.992	0.995	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.010	0.013	0.016	0.018	0.021	0.024
PC 0.027	0.030	0.033	0.036	0.039	0.043	0.046	0.050	0.053	0.057
PC 0.060	0.064	0.068	0.072	0.076	0.081	0.085	0.090	0.094	0.099
PC 0.104	0.110	0.116	0.121	0.128	0.134	0.141	0.149	0.157	0.167
PC 0.176	0.187	0.199	0.212	0.227	0.245	0.270	0.388	0.618	0.686
PC 0.743	0.763	0.780	0.794	0.805	0.817	0.827	0.837	0.845	0.853
PC 0.861	0.868	0.874	0.880	0.886	0.892	0.897	0.902	0.907	0.911
PC 0.916	0.920	0.925	0.929	0.933	0.937	0.940	0.944	0.947	0.951
PC 0.954	0.958	0.961	0.964	0.967	0.970	0.973	0.976	0.979	0.982
PC 0.984	0.987	0.990	0.992	0.995	0.998	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.002	0.005	0.007	0.010	0.012	0.015	0.017	0.020	0.023
PC 0.025	0.028	0.031	0.034	0.037	0.040	0.043	0.047	0.050	0.053
PC 0.057	0.061	0.064	0.068	0.072	0.076	0.080	0.085	0.089	0.094
PC 0.099	0.104	0.109	0.115	0.121	0.127	0.134	0.146	0.158	0.171
PC 0.185	0.201	0.218	0.228	0.241	0.257	0.277	0.395	0.612	0.679
PC 0.734	0.752	0.766	0.778	0.787	0.804	0.818	0.832	0.845	0.857
PC 0.868	0.875	0.881	0.887	0.892	0.897	0.902	0.907	0.912	0.916
PC 0.921	0.925	0.929	0.933	0.936	0.940	0.944	0.947	0.951	0.954
PC 0.957	0.960	0.963	0.966	0.969	0.972	0.975	0.977	0.980	0.983
PC 0.985	0.988	0.990	0.993	0.995	0.998	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.003	0.006	0.009	0.012	0.016	0.019	0.022	0.025	0.029
PC 0.032	0.036	0.040	0.043	0.047	0.051	0.055	0.059	0.063	0.067
PC 0.072	0.076	0.081	0.085	0.090	0.095	0.100	0.106	0.111	0.117
PC 0.123	0.129	0.135	0.142	0.149	0.157	0.165	0.174	0.184	0.195
PC 0.207	0.220	0.234	0.245	0.257	0.272	0.292	0.405	0.602	0.666
PC 0.719	0.737	0.750	0.761	0.771	0.784	0.797	0.808	0.819	0.829
PC 0.838	0.846	0.853	0.860	0.866	0.873	0.879	0.884	0.890	0.895
PC 0.901	0.906	0.911	0.915	0.920	0.925	0.929	0.933	0.938	0.942
PC 0.946	0.950	0.953	0.957	0.961	0.964	0.968	0.971	0.975	0.978
PC 0.981	0.985	0.988	0.991	0.994	0.997	1.000			

Table 4.   Rainfall distributions for Subbasin II-2, the St. Marys River basin between S.R. 121 and U.S. 1 including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.006	0.009	0.012	0.015	0.018	0.022	0.025	0.028
PC 0.032	0.035	0.039	0.043	0.046	0.050	0.054	0.058	0.062	0.066
PC 0.070	0.075	0.079	0.084	0.089	0.094	0.099	0.104	0.109	0.115
PC 0.121	0.127	0.133	0.140	0.147	0.154	0.162	0.171	0.181	0.192
PC 0.203	0.216	0.229	0.241	0.254	0.271	0.292	0.403	0.605	0.667
PC 0.720	0.738	0.753	0.765	0.776	0.789	0.801	0.812	0.822	0.831
PC 0.840	0.848	0.855	0.862	0.868	0.875	0.881	0.886	0.892	0.897
PC 0.902	0.907	0.912	0.917	0.922	0.926	0.930	0.935	0.939	0.943
PC 0.947	0.950	0.954	0.958	0.961	0.965	0.968	0.972	0.975	0.978
PC 0.982	0.985	0.988	0.991	0.994	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.013	0.016	0.019	0.022	0.025
PC 0.028	0.031	0.034	0.038	0.041	0.044	0.048	0.051	0.055	0.059
PC 0.063	0.067	0.071	0.075	0.079	0.084	0.088	0.093	0.098	0.103
PC 0.108	0.114	0.120	0.126	0.132	0.139	0.146	0.155	0.165	0.175
PC 0.187	0.199	0.213	0.224	0.238	0.255	0.278	0.394	0.614	0.680
PC 0.734	0.754	0.769	0.782	0.792	0.805	0.817	0.828	0.838	0.847
PC 0.856	0.863	0.870	0.876	0.882	0.888	0.893	0.898	0.903	0.908
PC 0.913	0.917	0.922	0.926	0.930	0.934	0.938	0.942	0.945	0.949
PC 0.953	0.956	0.959	0.963	0.966	0.969	0.972	0.975	0.978	0.981
PC 0.984	0.987	0.989	0.992	0.995	0.997	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.006	0.008	0.011	0.014	0.017	0.020	0.024	0.027
PC 0.030	0.033	0.037	0.040	0.044	0.047	0.051	0.055	0.059	0.062
PC 0.067	0.071	0.075	0.079	0.084	0.089	0.093	0.098	0.104	0.109
PC 0.115	0.120	0.126	0.133	0.140	0.147	0.154	0.165	0.176	0.189
PC 0.202	0.216	0.232	0.243	0.255	0.271	0.292	0.402	0.605	0.668
PC 0.720	0.738	0.752	0.763	0.773	0.788	0.802	0.815	0.827	0.838
PC 0.848	0.856	0.862	0.869	0.875	0.881	0.887	0.892	0.898	0.903
PC 0.908	0.912	0.917	0.921	0.926	0.930	0.934	0.938	0.942	0.946
PC 0.950	0.953	0.957	0.960	0.964	0.967	0.970	0.974	0.977	0.980
PC 0.983	0.986	0.989	0.992	0.994	0.997	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.004	0.007	0.011	0.014	0.018	0.022	0.026	0.030	0.033
PC 0.038	0.042	0.046	0.050	0.054	0.059	0.063	0.068	0.073	0.077
PC 0.082	0.087	0.093	0.098	0.103	0.109	0.115	0.121	0.127	0.133
PC 0.140	0.147	0.154	0.161	0.169	0.177	0.186	0.194	0.202	0.211
PC 0.221	0.232	0.244	0.255	0.269	0.286	0.308	0.413	0.595	0.655
PC 0.704	0.723	0.738	0.751	0.762	0.773	0.783	0.792	0.801	0.809
PC 0.817	0.825	0.833	0.841	0.848	0.855	0.862	0.868	0.874	0.880
PC 0.886	0.892	0.898	0.903	0.908	0.913	0.918	0.923	0.928	0.933
PC 0.937	0.942	0.946	0.950	0.955	0.959	0.963	0.967	0.971	0.975
PC 0.978	0.982	0.986	0.989	0.993	0.997	1.000			

Table 5.   Rainfall distributions for Subbasin II-3, the St. Marys River basin east of U.S. 1

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.007	0.010	0.014	0.018	0.021	0.025	0.029	0.033
PC 0.037	0.041	0.045	0.049	0.053	0.058	0.062	0.067	0.071	0.076
PC 0.081	0.086	0.091	0.096	0.102	0.107	0.113	0.119	0.125	0.131
PC 0.138	0.145	0.152	0.159	0.167	0.175	0.183	0.192	0.202	0.212
PC 0.223	0.235	0.249	0.261	0.275	0.292	0.315	0.414	0.593	0.650
PC 0.697	0.717	0.732	0.745	0.757	0.769	0.781	0.791	0.801	0.811
PC 0.819	0.828	0.835	0.843	0.850	0.857	0.864	0.870	0.876	0.882
PC 0.888	0.894	0.899	0.905	0.910	0.915	0.920	0.924	0.929	0.934
PC 0.938	0.943	0.947	0.951	0.955	0.959	0.963	0.967	0.971	0.975
PC 0.979	0.982	0.986	0.990	0.993	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.014	0.017	0.020	0.023	0.026
PC 0.029	0.033	0.036	0.039	0.043	0.046	0.050	0.053	0.057	0.061
PC 0.065	0.069	0.073	0.078	0.082	0.087	0.091	0.096	0.101	0.107
PC 0.112	0.118	0.124	0.130	0.137	0.144	0.151	0.163	0.176	0.189
PC 0.203	0.219	0.236	0.247	0.261	0.277	0.299	0.404	0.603	0.663
PC 0.713	0.732	0.747	0.759	0.769	0.786	0.801	0.814	0.827	0.840
PC 0.851	0.858	0.865	0.872	0.878	0.884	0.889	0.895	0.900	0.905
PC 0.910	0.914	0.919	0.923	0.927	0.932	0.936	0.940	0.943	0.947
PC 0.951	0.954	0.958	0.961	0.964	0.968	0.971	0.974	0.977	0.980
PC 0.983	0.986	0.989	0.992	0.995	0.997	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.007	0.011	0.014	0.018	0.022	0.026	0.029	0.033
PC 0.037	0.041	0.046	0.050	0.054	0.059	0.063	0.068	0.072	0.077
PC 0.082	0.087	0.092	0.098	0.103	0.109	0.115	0.120	0.127	0.133
PC 0.140	0.146	0.154	0.161	0.169	0.177	0.186	0.194	0.203	0.213
PC 0.223	0.235	0.247	0.260	0.275	0.293	0.316	0.415	0.593	0.649
PC 0.696	0.716	0.732	0.746	0.758	0.770	0.781	0.791	0.800	0.809
PC 0.817	0.825	0.833	0.841	0.848	0.855	0.862	0.868	0.875	0.881
PC 0.887	0.892	0.898	0.903	0.908	0.914	0.919	0.923	0.928	0.933
PC 0.937	0.942	0.946	0.950	0.955	0.959	0.963	0.967	0.971	0.975
PC 0.978	0.982	0.986	0.989	0.993	0.997	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.004	0.008	0.013	0.017	0.021	0.026	0.031	0.035	0.040
PC 0.045	0.049	0.054	0.059	0.064	0.070	0.075	0.080	0.086	0.091
PC 0.097	0.103	0.109	0.115	0.121	0.127	0.134	0.141	0.148	0.155
PC 0.162	0.170	0.178	0.186	0.195	0.204	0.213	0.220	0.227	0.235
PC 0.243	0.252	0.262	0.275	0.289	0.307	0.330	0.424	0.584	0.637
PC 0.682	0.702	0.717	0.731	0.742	0.752	0.761	0.769	0.776	0.783
PC 0.789	0.799	0.807	0.816	0.824	0.832	0.839	0.847	0.854	0.861
PC 0.867	0.874	0.880	0.886	0.892	0.898	0.904	0.910	0.915	0.920
PC 0.926	0.931	0.936	0.941	0.946	0.951	0.956	0.960	0.965	0.970
PC 0.974	0.979	0.983	0.987	0.992	0.996	1.000			

26
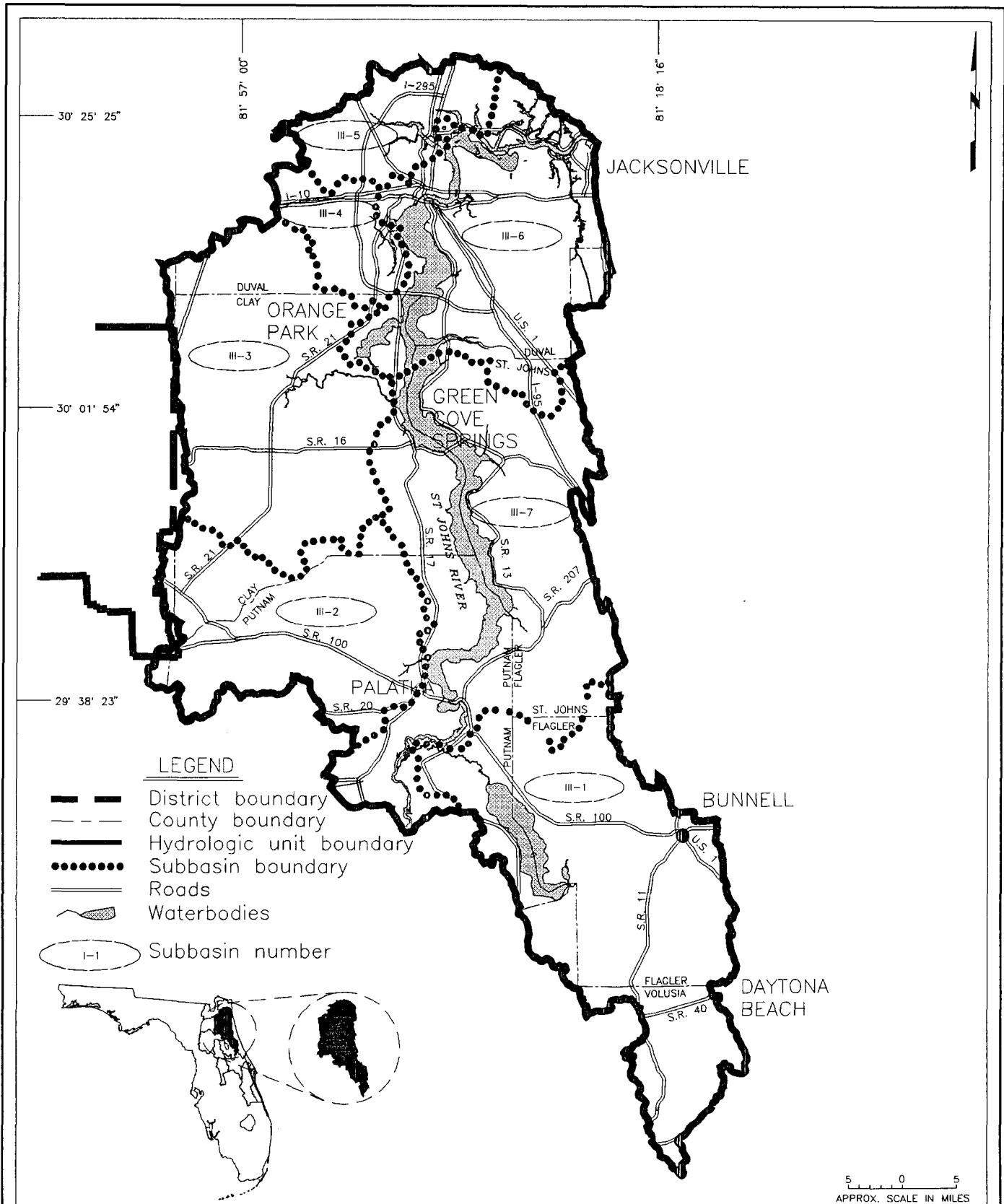
Figure 12
The lower St. Johns River basin
(Hydrologic Unit III)
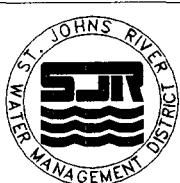
Table 6.   Rainfall distributions for Subbasin III-1, the Crescent Lake subbasin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.035  0.039  0.042  0.045  0.049  0.053  0.056  0.060
PC 0.064  0.068  0.072  0.076  0.081  0.085  0.090  0.095  0.100  0.105
PC 0.111  0.116  0.122  0.128  0.135  0.142  0.149  0.159  0.169  0.181
PC 0.193  0.206  0.221  0.235  0.250  0.269  0.294  0.400  0.608  0.668
PC 0.718  0.740  0.757  0.772  0.784  0.798  0.811  0.823  0.834  0.844
PC 0.853  0.860  0.867  0.874  0.880  0.885  0.891  0.896  0.901  0.906
PC 0.911  0.916  0.920  0.924  0.929  0.933  0.937  0.940  0.944  0.948
PC 0.952  0.955  0.958  0.962  0.965  0.968  0.971  0.975  0.978  0.981
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.009  0.011  0.013  0.016  0.018  0.021
PC 0.023  0.026  0.028  0.031  0.034  0.036  0.039  0.042  0.045  0.048
PC 0.052  0.055  0.058  0.062  0.065  0.069  0.073  0.077  0.081  0.085
PC 0.090  0.095  0.100  0.105  0.110  0.116  0.122  0.135  0.149  0.163
PC 0.178  0.195  0.213  0.227  0.242  0.261  0.286  0.391  0.616  0.677
PC 0.727  0.749  0.766  0.780  0.792  0.809  0.825  0.840  0.854  0.867
PC 0.880  0.886  0.891  0.897  0.902  0.907  0.911  0.916  0.920  0.924
PC 0.928  0.932  0.935  0.939  0.942  0.946  0.949  0.952  0.955  0.958
PC 0.961  0.964  0.967  0.969  0.972  0.975  0.977  0.980  0.982  0.984
PC 0.987  0.989  0.991  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.019  0.022  0.026
PC 0.029  0.032  0.035  0.038  0.042  0.045  0.049  0.052  0.056  0.060
PC 0.064  0.068  0.072  0.076  0.080  0.085  0.090  0.094  0.099  0.105
PC 0.110  0.116  0.121  0.128  0.134  0.141  0.148  0.158  0.169  0.180
PC 0.192  0.206  0.220  0.234  0.249  0.268  0.293  0.400  0.609  0.669
PC 0.719  0.741  0.758  0.772  0.785  0.799  0.812  0.823  0.834  0.845
PC 0.854  0.861  0.868  0.874  0.880  0.886  0.891  0.897  0.902  0.907
PC 0.912  0.916  0.921  0.925  0.929  0.933  0.937  0.941  0.945  0.948
PC 0.952  0.955  0.959  0.962  0.965  0.968  0.972  0.975  0.978  0.981
PC 0.984  0.986  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.013  0.017  0.020  0.024  0.028  0.031
PC 0.035  0.039  0.043  0.047  0.051  0.055  0.059  0.064  0.068  0.073
PC 0.077  0.082  0.087  0.092  0.097  0.103  0.108  0.114  0.120  0.126
PC 0.132  0.139  0.146  0.153  0.160  0.168  0.176  0.183  0.191  0.200
PC 0.209  0.219  0.230  0.243  0.259  0.279  0.304  0.409  0.598  0.659
PC 0.708  0.730  0.748  0.762  0.775  0.786  0.795  0.804  0.812  0.819
PC 0.826  0.834  0.842  0.849  0.856  0.863  0.869  0.876  0.882  0.887
PC 0.893  0.898  0.904  0.909  0.914  0.919  0.923  0.928  0.932  0.937
PC 0.941  0.945  0.949  0.953  0.957  0.961  0.965  0.969  0.973  0.976
PC 0.980  0.983  0.987  0.990  0.993  0.997  1.000
```

Table 7.	Rainfall distributions for Subbasin III-2, the Etonia Creek subbasin including the adjacent areas within St. Johns River Water Management District								

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.002  0.004  0.007  0.009  0.011  0.014  0.016  0.018  0.021
PC 0.024  0.026  0.029  0.032  0.034  0.037  0.040  0.043  0.046  0.049
PC 0.053  0.056  0.060  0.063  0.067  0.071  0.075  0.079  0.083  0.087
PC 0.092  0.097  0.102  0.107  0.113  0.119  0.125  0.135  0.146  0.158
PC 0.171  0.184  0.200  0.213  0.228  0.247  0.272  0.391  0.617  0.685
PC 0.741  0.762  0.779  0.793  0.805  0.820  0.833  0.845  0.857  0.867
PC 0.877  0.883  0.889  0.894  0.900  0.905  0.909  0.914  0.918  0.922
PC 0.926  0.930  0.934  0.938  0.941  0.944  0.948  0.951  0.954  0.957
PC 0.960  0.963  0.966  0.969  0.971  0.974  0.977  0.979  0.982  0.984
PC 0.987  0.989  0.991  0.993  0.996  0.998  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.008  0.010  0.012  0.014  0.016  0.018
PC 0.020  0.023  0.025  0.027  0.030  0.032  0.035  0.038  0.040  0.043
PC 0.046  0.049  0.052  0.055  0.058  0.062  0.065  0.069  0.073  0.077
PC 0.081  0.085  0.090  0.094  0.099  0.105  0.110  0.121  0.133  0.145
PC 0.159  0.174  0.190  0.203  0.218  0.237  0.262  0.382  0.624  0.694
PC 0.751  0.772  0.789  0.803  0.815  0.831  0.845  0.858  0.870  0.881
PC 0.892  0.897  0.902  0.907  0.912  0.916  0.920  0.924  0.928  0.932
PC 0.936  0.939  0.942  0.945  0.949  0.952  0.954  0.957  0.960  0.963
PC 0.965  0.968  0.970  0.973  0.975  0.977  0.980  0.982  0.984  0.986
PC 0.988  0.990  0.992  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.009  0.011  0.013  0.016  0.018  0.021
PC 0.023  0.026  0.028  0.031  0.034  0.037  0.039  0.042  0.045  0.049
PC 0.052  0.055  0.058  0.062  0.066  0.069  0.073  0.077  0.081  0.086
PC 0.090  0.095  0.100  0.105  0.111  0.117  0.123  0.134  0.145  0.157
PC 0.171  0.185  0.201  0.214  0.230  0.249  0.274  0.392  0.616  0.683
PC 0.739  0.761  0.778  0.792  0.804  0.819  0.833  0.846  0.858  0.869
PC 0.879  0.885  0.891  0.896  0.902  0.906  0.911  0.915  0.920  0.924
PC 0.928  0.932  0.935  0.939  0.942  0.946  0.949  0.952  0.955  0.958
PC 0.961  0.964  0.967  0.969  0.972  0.975  0.977  0.980  0.982  0.984
PC 0.987  0.989  0.991  0.994  0.996  0.998  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.010  0.013  0.016  0.019  0.021  0.024
PC 0.027  0.030  0.033  0.037  0.040  0.043  0.046  0.050  0.053  0.057
PC 0.061  0.065  0.069  0.073  0.077  0.081  0.086  0.090  0.095  0.100
PC 0.105  0.111  0.116  0.122  0.129  0.135  0.142  0.151  0.161  0.171
PC 0.182  0.194  0.208  0.221  0.236  0.255  0.280  0.399  0.610  0.677
PC 0.733  0.754  0.771  0.785  0.797  0.810  0.822  0.832  0.842  0.852
PC 0.860  0.867  0.873  0.880  0.885  0.891  0.896  0.901  0.906  0.911
PC 0.915  0.920  0.924  0.928  0.932  0.936  0.940  0.944  0.947  0.951
PC 0.954  0.957  0.961  0.964  0.967  0.970  0.973  0.976  0.979  0.982
PC 0.984  0.987  0.990  0.992  0.995  0.997  1.000
```

Table 8.   Rainfall distributions for Subbasin III-3, the Black Creek subbasin including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000 0.003 0.005 0.008 0.011 0.014 0.017 0.020 0.023 0.026
PC 0.029 0.032 0.036 0.039 0.043 0.046 0.050 0.053 0.057 0.061
PC 0.065 0.069 0.073 0.077 0.082 0.086 0.091 0.096 0.101 0.106
PC 0.112 0.118 0.124 0.130 0.136 0.143 0.151 0.160 0.170 0.180
PC 0.191 0.204 0.218 0.230 0.245 0.264 0.288 0.400 0.609 0.672
PC 0.725 0.745 0.762 0.776 0.787 0.800 0.812 0.823 0.833 0.843
PC 0.852 0.859 0.866 0.872 0.878 0.884 0.890 0.895 0.900 0.905
PC 0.910 0.915 0.919 0.923 0.928 0.932 0.936 0.940 0.944 0.947
PC 0.951 0.954 0.958 0.961 0.965 0.968 0.971 0.974 0.977 0.980
PC 0.983 0.986 0.989 0.992 0.995 0.997 1.000

10-YEAR DISTRIBUTION

PC 0.000 0.002 0.005 0.007 0.010 0.012 0.015 0.017 0.020 0.023
PC 0.026 0.028 0.031 0.034 0.037 0.040 0.044 0.047 0.050 0.054
PC 0.057 0.061 0.064 0.068 0.072 0.076 0.081 0.085 0.090 0.094
PC 0.099 0.104 0.110 0.115 0.121 0.128 0.134 0.144 0.155 0.166
PC 0.178 0.192 0.206 0.219 0.233 0.251 0.274 0.390 0.618 0.684
PC 0.738 0.758 0.774 0.787 0.799 0.813 0.826 0.837 0.848 0.858
PC 0.868 0.874 0.880 0.886 0.892 0.897 0.902 0.907 0.912 0.916
PC 0.920 0.925 0.929 0.932 0.936 0.940 0.944 0.947 0.950 0.954
PC 0.957 0.960 0.963 0.966 0.969 0.972 0.975 0.977 0.980 0.983
PC 0.985 0.988 0.990 0.993 0.995 0.998 1.000

25-YEAR DISTRIBUTION

PC 0.000 0.002 0.005 0.007 0.010 0.012 0.015 0.018 0.021 0.023
PC 0.026 0.029 0.032 0.035 0.038 0.041 0.044 0.048 0.051 0.055
PC 0.058 0.062 0.066 0.070 0.074 0.078 0.082 0.087 0.091 0.096
PC 0.101 0.106 0.112 0.118 0.124 0.130 0.137 0.147 0.158 0.170
PC 0.183 0.197 0.212 0.225 0.240 0.259 0.283 0.398 0.611 0.676
PC 0.730 0.751 0.767 0.781 0.793 0.807 0.821 0.833 0.845 0.855
PC 0.865 0.872 0.878 0.884 0.890 0.895 0.900 0.905 0.910 0.914
PC 0.919 0.923 0.927 0.931 0.935 0.939 0.942 0.946 0.949 0.953
PC 0.956 0.959 0.962 0.965 0.968 0.971 0.974 0.977 0.980 0.982
PC 0.985 0.988 0.990 0.993 0.995 0.998 1.000

100-YEAR DISTRIBUTION

PC 0.000 0.003 0.007 0.010 0.014 0.017 0.021 0.025 0.029 0.032
PC 0.036 0.040 0.044 0.048 0.053 0.057 0.061 0.066 0.070 0.075
PC 0.080 0.085 0.090 0.095 0.100 0.106 0.111 0.117 0.123 0.129
PC 0.136 0.143 0.149 0.157 0.164 0.172 0.181 0.188 0.196 0.204
PC 0.213 0.223 0.234 0.247 0.263 0.282 0.306 0.412 0.597 0.657
PC 0.706 0.727 0.744 0.758 0.771 0.781 0.791 0.799 0.807 0.815
PC 0.822 0.830 0.838 0.845 0.852 0.859 0.866 0.872 0.878 0.884
PC 0.890 0.895 0.901 0.906 0.911 0.916 0.921 0.926 0.930 0.935
PC 0.939 0.944 0.948 0.952 0.956 0.960 0.964 0.968 0.972 0.975
PC 0.979 0.983 0.986 0.990 0.993 0.997 1.000

Table 9. Rainfall distributions for Subbasin III-4, the Ortega River subbasin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.006  0.010  0.013  0.016  0.020  0.023  0.027  0.030
PC 0.034  0.037  0.041  0.045  0.049  0.053  0.057  0.061  0.066  0.070
PC 0.075  0.079  0.084  0.089  0.094  0.099  0.104  0.110  0.116  0.121
PC 0.128  0.134  0.141  0.147  0.155  0.162  0.171  0.179  0.188  0.198
PC 0.209  0.220  0.233  0.246  0.261  0.280  0.304  0.407  0.601  0.660
PC 0.709  0.729  0.746  0.760  0.772  0.784  0.795  0.805  0.815  0.824
PC 0.832  0.840  0.847  0.854  0.861  0.868  0.874  0.880  0.886  0.891
PC 0.897  0.902  0.907  0.912  0.917  0.922  0.926  0.931  0.935  0.939
PC 0.943  0.947  0.951  0.955  0.959  0.963  0.966  0.970  0.974  0.977
PC 0.981  0.984  0.987  0.991  0.994  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.008  0.011  0.014  0.017  0.020  0.024  0.027
PC 0.030  0.033  0.037  0.040  0.044  0.047  0.051  0.055  0.058  0.062
PC 0.066  0.071  0.075  0.079  0.084  0.088  0.093  0.098  0.103  0.109
PC 0.114  0.120  0.126  0.133  0.139  0.146  0.154  0.164  0.174  0.185
PC 0.197  0.210  0.225  0.237  0.251  0.268  0.292  0.397  0.610  0.671
PC 0.721  0.741  0.756  0.769  0.780  0.794  0.807  0.818  0.829  0.839
PC 0.848  0.856  0.863  0.869  0.875  0.881  0.887  0.893  0.898  0.903
PC 0.908  0.913  0.917  0.922  0.926  0.930  0.934  0.938  0.942  0.946
PC 0.950  0.953  0.957  0.960  0.964  0.967  0.970  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.994  0.997  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.012  0.015  0.018  0.021  0.024  0.028
PC 0.031  0.034  0.038  0.041  0.045  0.049  0.052  0.056  0.060  0.064
PC 0.069  0.073  0.077  0.082  0.086  0.091  0.096  0.101  0.107  0.112
PC 0.118  0.124  0.130  0.137  0.143  0.151  0.158  0.168  0.178  0.189
PC 0.201  0.214  0.228  0.242  0.257  0.276  0.301  0.406  0.602  0.662
PC 0.712  0.733  0.750  0.765  0.777  0.790  0.803  0.814  0.825  0.835
PC 0.844  0.852  0.859  0.865  0.872  0.878  0.884  0.889  0.895  0.900
PC 0.905  0.910  0.915  0.919  0.924  0.928  0.932  0.936  0.940  0.944
PC 0.948  0.952  0.955  0.959  0.963  0.966  0.969  0.973  0.976  0.979
PC 0.982  0.985  0.988  0.991  0.994  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.008  0.012  0.016  0.020  0.024  0.028  0.032  0.036
PC 0.041  0.045  0.050  0.054  0.059  0.064  0.069  0.074  0.079  0.084
PC 0.089  0.095  0.100  0.106  0.112  0.118  0.124  0.130  0.137  0.144
PC 0.151  0.158  0.166  0.173  0.182  0.190  0.199  0.206  0.213  0.220
PC 0.228  0.237  0.247  0.260  0.276  0.294  0.319  0.417  0.590  0.646
PC 0.693  0.714  0.731  0.745  0.758  0.767  0.776  0.783  0.791  0.797
PC 0.803  0.812  0.821  0.829  0.836  0.844  0.851  0.858  0.864  0.871
PC 0.877  0.883  0.889  0.895  0.901  0.906  0.911  0.917  0.922  0.927
PC 0.932  0.937  0.941  0.946  0.951  0.955  0.959  0.964  0.968  0.972
PC 0.976  0.980  0.984  0.988  0.992  0.996  1.000
```

Table 10.   Rainfall distributions for Subbasin III-5, the Trout River, Broward River, and Dunn Creek subbasins

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.013  0.017  0.020  0.024  0.028  0.031
PC 0.035  0.039  0.043  0.047  0.051  0.055  0.060  0.064  0.068  0.073
PC 0.078  0.082  0.087  0.092  0.098  0.103  0.109  0.114  0.120  0.126
PC 0.132  0.139  0.146  0.153  0.161  0.168  0.177  0.185  0.194  0.204
PC 0.215  0.226  0.239  0.252  0.267  0.286  0.310  0.410  0.598  0.655
PC 0.702  0.723  0.740  0.754  0.766  0.778  0.789  0.799  0.809  0.818
PC 0.826  0.834  0.842  0.849  0.856  0.863  0.869  0.875  0.881  0.887
PC 0.893  0.898  0.903  0.908  0.913  0.918  0.923  0.928  0.932  0.937
PC 0.941  0.945  0.949  0.953  0.957  0.961  0.965  0.969  0.972  0.976
PC 0.980  0.983  0.987  0.990  0.993  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.012  0.015  0.018  0.021  0.024  0.027
PC 0.031  0.034  0.037  0.041  0.044  0.048  0.052  0.056  0.060  0.064
PC 0.068  0.072  0.076  0.081  0.085  0.090  0.095  0.100  0.105  0.111
PC 0.117  0.122  0.129  0.135  0.142  0.149  0.157  0.167  0.178  0.190
PC 0.203  0.217  0.232  0.244  0.259  0.276  0.299  0.401  0.607  0.665
PC 0.714  0.733  0.749  0.762  0.773  0.788  0.801  0.813  0.825  0.836
PC 0.846  0.853  0.860  0.867  0.873  0.879  0.885  0.891  0.896  0.901
PC 0.906  0.911  0.916  0.920  0.924  0.929  0.933  0.937  0.941  0.945
PC 0.949  0.952  0.956  0.960  0.963  0.966  0.970  0.973  0.976  0.979
PC 0.982  0.986  0.988  0.991  0.994  0.997  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.013  0.016  0.019  0.023  0.026  0.030
PC 0.033  0.037  0.041  0.044  0.048  0.052  0.056  0.060  0.065  0.069
PC 0.073  0.078  0.082  0.087  0.092  0.097  0.103  0.108  0.114  0.119
PC 0.125  0.132  0.138  0.145  0.152  0.160  0.168  0.177  0.186  0.197
PC 0.208  0.220  0.233  0.247  0.263  0.282  0.307  0.410  0.600  0.657
PC 0.705  0.727  0.745  0.759  0.772  0.785  0.796  0.807  0.817  0.826
PC 0.835  0.842  0.850  0.857  0.863  0.870  0.876  0.882  0.888  0.893
PC 0.899  0.904  0.909  0.914  0.918  0.923  0.927  0.932  0.936  0.940
PC 0.944  0.948  0.952  0.956  0.960  0.963  0.967  0.971  0.974  0.978
PC 0.981  0.984  0.987  0.991  0.994  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.008  0.012  0.016  0.020  0.025  0.029  0.033  0.038
PC 0.042  0.047  0.052  0.057  0.061  0.066  0.071  0.077  0.082  0.087
PC 0.093  0.098  0.104  0.110  0.116  0.122  0.128  0.135  0.142  0.149
PC 0.156  0.163  0.171  0.179  0.188  0.196  0.206  0.212  0.219  0.226
PC 0.234  0.243  0.252  0.266  0.281  0.300  0.324  0.420  0.588  0.643
PC 0.688  0.709  0.726  0.740  0.752  0.762  0.770  0.778  0.785  0.791
PC 0.797  0.806  0.815  0.823  0.831  0.838  0.846  0.853  0.860  0.866
PC 0.873  0.879  0.885  0.891  0.897  0.903  0.908  0.914  0.919  0.924
PC 0.929  0.934  0.939  0.944  0.949  0.953  0.958  0.962  0.967  0.971
PC 0.975  0.980  0.984  0.988  0.992  0.996  1.000
```

Table 11.   Rainfall distributions for Subbasin III-6, the Arlington Creek and Julington Creek subbasins

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.007	0.010	0.014	0.017	0.021	0.025	0.028	0.032
PC 0.036	0.040	0.044	0.048	0.052	0.057	0.061	0.066	0.070	0.075
PC 0.080	0.085	0.090	0.095	0.100	0.105	0.111	0.117	0.123	0.129
PC 0.136	0.142	0.149	0.156	0.164	0.172	0.181	0.189	0.198	0.207
PC 0.217	0.228	0.241	0.254	0.270	0.289	0.314	0.413	0.596	0.652
PC 0.698	0.720	0.737	0.751	0.764	0.776	0.787	0.797	0.806	0.814
PC 0.822	0.830	0.838	0.846	0.853	0.859	0.866	0.872	0.878	0.884
PC 0.890	0.896	0.901	0.906	0.911	0.916	0.921	0.926	0.930	0.935
PC 0.939	0.944	0.948	0.952	0.956	0.960	0.964	0.968	0.972	0.975
PC 0.979	0.983	0.986	0.990	0.993	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.014	0.017	0.020	0.023	0.026
PC 0.029	0.033	0.036	0.039	0.043	0.046	0.050	0.053	0.057	0.061
PC 0.065	0.069	0.073	0.078	0.082	0.087	0.091	0.096	0.101	0.107
PC 0.112	0.118	0.124	0.130	0.137	0.144	0.151	0.163	0.176	0.189
PC 0.203	0.219	0.236	0.248	0.262	0.278	0.301	0.402	0.605	0.663
PC 0.711	0.731	0.746	0.758	0.769	0.786	0.801	0.814	0.827	0.840
PC 0.851	0.858	0.865	0.872	0.878	0.884	0.889	0.895	0.900	0.905
PC 0.910	0.914	0.919	0.923	0.927	0.932	0.936	0.940	0.943	0.947
PC 0.951	0.954	0.958	0.961	0.964	0.968	0.971	0.974	0.977	0.980
PC 0.983	0.986	0.989	0.992	0.995	0.997	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.007	0.010	0.013	0.017	0.020	0.024	0.028	0.032
PC 0.035	0.039	0.043	0.047	0.051	0.055	0.060	0.064	0.069	0.073
PC 0.078	0.083	0.088	0.093	0.098	0.103	0.109	0.114	0.120	0.126
PC 0.133	0.139	0.146	0.153	0.161	0.169	0.177	0.184	0.192	0.201
PC 0.210	0.221	0.232	0.247	0.264	0.285	0.312	0.413	0.598	0.654
PC 0.700	0.724	0.743	0.759	0.773	0.784	0.793	0.802	0.811	0.818
PC 0.826	0.834	0.841	0.849	0.856	0.862	0.869	0.875	0.881	0.887
PC 0.892	0.898	0.903	0.908	0.913	0.918	0.923	0.928	0.932	0.936
PC 0.941	0.945	0.949	0.953	0.957	0.961	0.965	0.969	0.972	0.976
PC 0.980	0.983	0.987	0.990	0.993	0.997	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.004	0.008	0.013	0.017	0.021	0.026	0.031	0.035	0.040
PC 0.045	0.049	0.054	0.059	0.064	0.070	0.075	0.080	0.086	0.091
PC 0.097	0.103	0.109	0.115	0.121	0.127	0.134	0.141	0.148	0.155
PC 0.162	0.170	0.178	0.186	0.195	0.204	0.213	0.219	0.225	0.231
PC 0.238	0.246	0.254	0.268	0.285	0.304	0.330	0.423	0.585	0.638
PC 0.682	0.704	0.722	0.737	0.750	0.758	0.766	0.772	0.778	0.784
PC 0.789	0.799	0.807	0.816	0.824	0.832	0.839	0.847	0.854	0.861
PC 0.867	0.874	0.880	0.886	0.892	0.898	0.904	0.910	0.915	0.920
PC 0.926	0.931	0.936	0.941	0.946	0.951	0.956	0.960	0.965	0.970
PC 0.974	0.979	0.983	0.987	0.992	0.996	1.000			

Table 12.   Rainfall distributions for Subbasin III-7, the Sixmile Creek, McCullough Creek, and Deep Creek subbasins

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.006	0.008	0.011	0.014	0.017	0.020	0.024	0.027
PC 0.030	0.033	0.037	0.040	0.044	0.047	0.051	0.055	0.059	0.062
PC 0.067	0.071	0.075	0.079	0.084	0.089	0.093	0.098	0.104	0.109
PC 0.115	0.120	0.127	0.133	0.140	0.147	0.154	0.164	0.174	0.184
PC 0.196	0.209	0.223	0.237	0.253	0.273	0.298	0.404	0.604	0.665
PC 0.714	0.737	0.754	0.769	0.782	0.796	0.808	0.819	0.829	0.839
PC 0.848	0.855	0.862	0.869	0.875	0.881	0.887	0.892	0.898	0.903
PC 0.908	0.912	0.917	0.921	0.926	0.930	0.934	0.938	0.942	0.946
PC 0.950	0.953	0.957	0.960	0.964	0.967	0.970	0.973	0.977	0.980
PC 0.983	0.986	0.989	0.992	0.994	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.007	0.009	0.011	0.014	0.016	0.019	0.021
PC 0.024	0.026	0.029	0.032	0.035	0.038	0.041	0.044	0.047	0.050
PC 0.053	0.057	0.060	0.064	0.067	0.071	0.075	0.079	0.084	0.088
PC 0.093	0.098	0.103	0.108	0.114	0.120	0.126	0.139	0.152	0.167
PC 0.182	0.199	0.217	0.230	0.244	0.262	0.286	0.393	0.613	0.675
PC 0.726	0.747	0.763	0.777	0.788	0.806	0.822	0.837	0.851	0.864
PC 0.876	0.882	0.888	0.894	0.899	0.904	0.909	0.913	0.917	0.922
PC 0.926	0.930	0.933	0.937	0.941	0.944	0.947	0.951	0.954	0.957
PC 0.960	0.963	0.966	0.968	0.971	0.974	0.976	0.979	0.982	0.984
PC 0.986	0.989	0.991	0.993	0.996	0.998	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.014	0.017	0.019	0.022	0.026
PC 0.029	0.032	0.035	0.038	0.042	0.045	0.049	0.052	0.056	0.060
PC 0.064	0.068	0.072	0.076	0.080	0.085	0.090	0.094	0.099	0.105
PC 0.110	0.116	0.121	0.128	0.134	0.141	0.148	0.157	0.167	0.177
PC 0.188	0.201	0.214	0.229	0.246	0.267	0.295	0.403	0.607	0.668
PC 0.718	0.742	0.761	0.777	0.791	0.804	0.815	0.826	0.836	0.845
PC 0.854	0.861	0.868	0.874	0.880	0.886	0.891	0.897	0.902	0.907
PC 0.912	0.916	0.921	0.925	0.929	0.933	0.937	0.941	0.945	0.948
PC 0.952	0.955	0.959	0.962	0.965	0.968	0.972	0.975	0.978	0.981
PC 0.984	0.986	0.989	0.992	0.995	0.997	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.004	0.007	0.011	0.015	0.018	0.022	0.026	0.030	0.034
PC 0.038	0.042	0.046	0.051	0.055	0.060	0.064	0.069	0.074	0.079
PC 0.084	0.089	0.094	0.099	0.105	0.111	0.116	0.122	0.129	0.135
PC 0.142	0.149	0.156	0.163	0.171	0.180	0.188	0.195	0.202	0.209
PC 0.218	0.227	0.237	0.251	0.268	0.288	0.314	0.416	0.593	0.651
PC 0.698	0.721	0.739	0.754	0.768	0.777	0.786	0.794	0.801	0.808
PC 0.814	0.823	0.831	0.839	0.846	0.853	0.860	0.866	0.873	0.879
PC 0.885	0.891	0.896	0.902	0.907	0.912	0.917	0.922	0.927	0.932
PC 0.936	0.941	0.945	0.950	0.954	0.958	0.962	0.966	0.970	0.974
PC 0.978	0.982	0.986	0.989	0.993	0.996	1.000			

29° 07' 57"
81° 37' 16"
81° 17' 44"
80° 58' 12"

N

S.R. 19

S.R. 44

S.R. 42

IV-2

I-4

S.R. 17

IV-4

28° 50' 48"

S.R. 44

LAKE SEMINOLE

LAKE MONROE

VOLUSIA
SEMINOLE

ST. JOHNS RIVER

S.R. 46

LAKE ORANGE

SANFORD

WEKIVA RIVER

LAKE JESSUP

S.R. 46

LAKE HARNEY

S.R. 17

I-4

IV-3

SEMINOLE ORANGE

SEMINOLE ORANGE

U.S. 441

28° 33' 39"

S.R. 50

S.R. 50

TURNPIKE

IV-1

S.R. 528

LEGEND

— — — District boundary
— — — County boundary
———— Hydrologic unit boundary
•••••• Subbasin boundary
———— Roads
        Waterbodies
  I-1   Subbasin number

ORANGE

OSCEOLA

5 4 3 2 1 0   5
APPROX. SCALE IN MILES
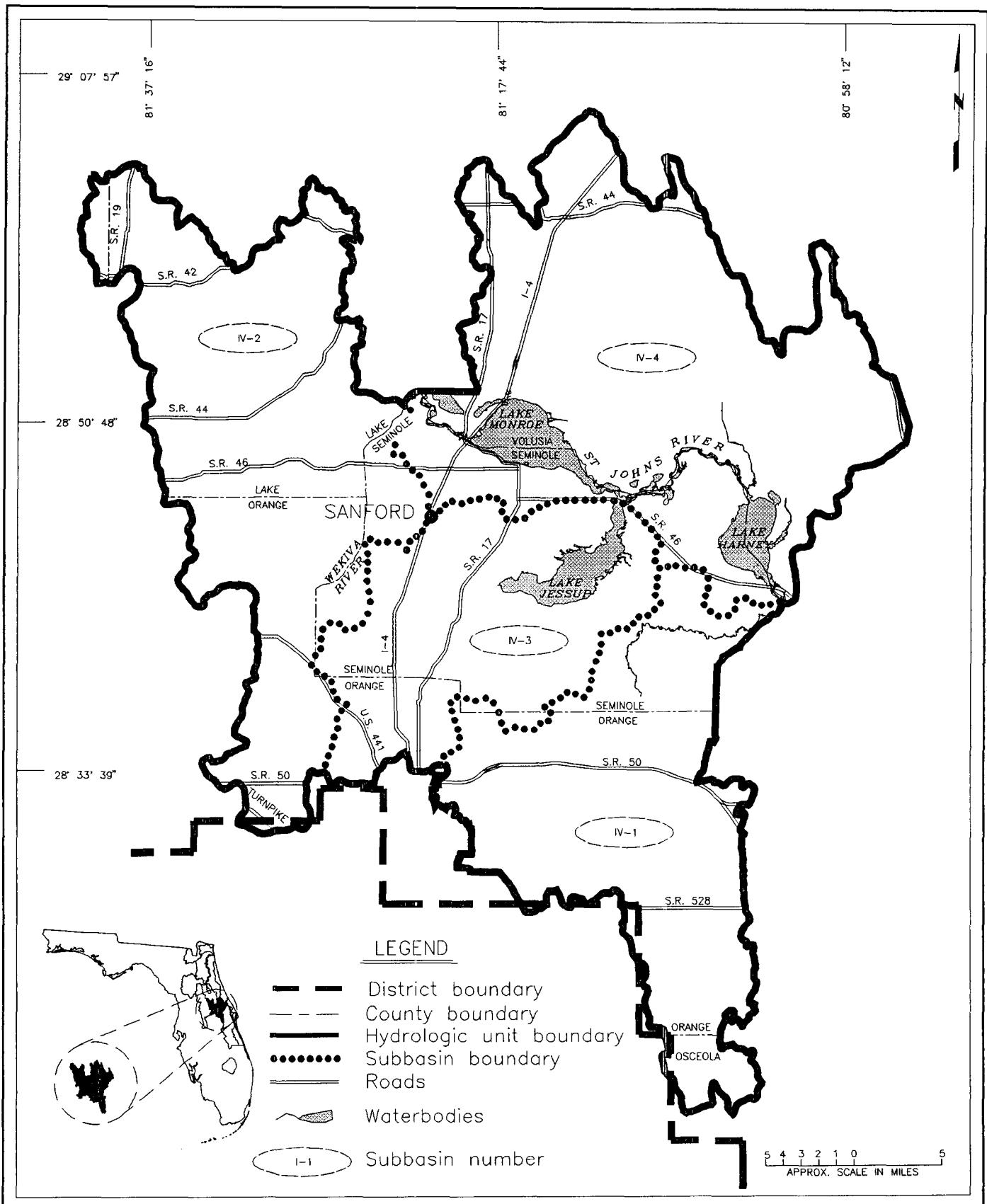
Figure 13
The middle St. Johns River basin
(Hydrologic Unit IV)

ST. JOHNS RIVER
SJR
WATER MANAGEMENT DISTRICT
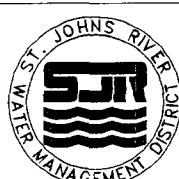
Table 13.   Rainfall distributions for Subbasin IV-1, the Econlockhatchee River subbasin including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000 0.003 0.006 0.009 0.012 0.015 0.018 0.021 0.025 0.028
PC 0.031 0.035 0.038 0.042 0.046 0.049 0.053 0.057 0.061 0.065
PC 0.070 0.074 0.078 0.083 0.088 0.092 0.098 0.103 0.108 0.114
PC 0.119 0.125 0.132 0.138 0.145 0.153 0.160 0.170 0.180 0.190
PC 0.202 0.214 0.228 0.240 0.255 0.273 0.297 0.403 0.605 0.666
PC 0.716 0.736 0.752 0.766 0.777 0.790 0.802 0.813 0.824 0.833
PC 0.842 0.850 0.857 0.864 0.870 0.876 0.882 0.888 0.893 0.898
PC 0.904 0.909 0.913 0.918 0.922 0.927 0.931 0.935 0.939 0.943
PC 0.947 0.951 0.955 0.958 0.962 0.965 0.969 0.972 0.976 0.979
PC 0.982 0.985 0.988 0.991 0.994 0.997 1.000

10-YEAR DISTRIBUTION

PC 0.000 0.002 0.005 0.007 0.009 0.012 0.014 0.017 0.019 0.022
PC 0.025 0.027 0.030 0.033 0.036 0.039 0.042 0.045 0.048 0.051
PC 0.055 0.058 0.062 0.066 0.069 0.073 0.077 0.082 0.086 0.091
PC 0.095 0.100 0.106 0.111 0.117 0.123 0.130 0.140 0.150 0.162
PC 0.174 0.188 0.203 0.216 0.232 0.251 0.277 0.390 0.617 0.682
PC 0.736 0.758 0.775 0.790 0.803 0.817 0.830 0.842 0.853 0.863
PC 0.873 0.879 0.885 0.890 0.896 0.901 0.906 0.910 0.915 0.919
PC 0.923 0.927 0.931 0.935 0.939 0.942 0.946 0.949 0.952 0.955
PC 0.959 0.962 0.965 0.967 0.970 0.973 0.976 0.978 0.981 0.983
PC 0.986 0.988 0.991 0.993 0.995 0.998 1.000

25-YEAR DISTRIBUTION

PC 0.000 0.003 0.006 0.009 0.012 0.015 0.018 0.021 0.024 0.028
PC 0.031 0.034 0.038 0.041 0.045 0.049 0.052 0.056 0.060 0.064
PC 0.069 0.073 0.077 0.082 0.086 0.091 0.096 0.101 0.107 0.112
PC 0.118 0.124 0.130 0.137 0.143 0.151 0.158 0.167 0.176 0.186
PC 0.197 0.209 0.223 0.236 0.251 0.270 0.294 0.402 0.606 0.668
PC 0.718 0.739 0.756 0.770 0.783 0.795 0.806 0.817 0.827 0.836
PC 0.844 0.852 0.859 0.865 0.872 0.878 0.884 0.889 0.895 0.900
PC 0.905 0.910 0.915 0.919 0.924 0.928 0.932 0.936 0.940 0.944
PC 0.948 0.952 0.955 0.959 0.963 0.966 0.969 0.973 0.976 0.979
PC 0.982 0.985 0.988 0.991 0.994 0.997 1.000

100-YEAR DISTRIBUTION

PC 0.000 0.004 0.007 0.011 0.015 0.019 0.023 0.027 0.031 0.035
PC 0.039 0.044 0.048 0.052 0.057 0.061 0.066 0.071 0.076 0.081
PC 0.086 0.091 0.097 0.102 0.108 0.114 0.120 0.126 0.132 0.139
PC 0.146 0.153 0.160 0.168 0.176 0.184 0.193 0.202 0.212 0.222
PC 0.233 0.245 0.259 0.270 0.282 0.298 0.319 0.416 0.591 0.647
PC 0.693 0.711 0.725 0.736 0.746 0.759 0.771 0.781 0.791 0.801
PC 0.810 0.818 0.826 0.834 0.842 0.849 0.856 0.863 0.869 0.875
PC 0.882 0.887 0.893 0.899 0.904 0.910 0.915 0.920 0.925 0.930
PC 0.934 0.939 0.944 0.948 0.952 0.957 0.961 0.965 0.969 0.973
PC 0.977 0.981 0.985 0.989 0.993 0.996 1.000

Table 14. Rainfall distributions for Subbasin IV-2, the Wekiva River and Black Water Creek subbasins including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.006  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.030  0.033  0.036  0.040  0.043  0.047  0.050  0.054  0.058  0.062
PC 0.066  0.070  0.074  0.078  0.083  0.088  0.092  0.097  0.102  0.108
PC 0.113  0.119  0.125  0.131  0.138  0.145  0.153  0.161  0.171  0.181
PC 0.192  0.204  0.217  0.229  0.244  0.262  0.286  0.398  0.610  0.673
PC 0.726  0.747  0.763  0.777  0.788  0.801  0.812  0.823  0.832  0.841
PC 0.850  0.857  0.864  0.870  0.877  0.882  0.888  0.894  0.899  0.904
PC 0.909  0.913  0.918  0.922  0.927  0.931  0.935  0.939  0.943  0.947
PC 0.950  0.954  0.957  0.961  0.964  0.967  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.009  0.011  0.013  0.015  0.018  0.020
PC 0.023  0.025  0.028  0.030  0.033  0.036  0.039  0.041  0.044  0.047
PC 0.051  0.054  0.057  0.061  0.064  0.068  0.072  0.076  0.080  0.084
PC 0.088  0.093  0.098  0.103  0.109  0.114  0.120  0.130  0.140  0.150
PC 0.162  0.175  0.189  0.203  0.220  0.240  0.267  0.385  0.622  0.690
PC 0.746  0.769  0.787  0.803  0.816  0.829  0.842  0.853  0.863  0.873
PC 0.882  0.888  0.893  0.898  0.903  0.908  0.913  0.917  0.921  0.925
PC 0.929  0.933  0.937  0.940  0.943  0.947  0.950  0.953  0.956  0.959
PC 0.962  0.965  0.967  0.970  0.973  0.975  0.978  0.980  0.982  0.985
PC 0.987  0.989  0.992  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.036  0.039  0.042  0.046  0.049  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.077  0.081  0.086  0.091  0.096  0.101  0.106
PC 0.111  0.117  0.123  0.129  0.136  0.143  0.150  0.160  0.170  0.181
PC 0.193  0.206  0.220  0.232  0.245  0.263  0.285  0.397  0.610  0.674
PC 0.727  0.746  0.762  0.774  0.785  0.799  0.811  0.823  0.833  0.843
PC 0.852  0.860  0.866  0.873  0.879  0.885  0.890  0.895  0.901  0.906
PC 0.910  0.915  0.919  0.924  0.928  0.932  0.936  0.940  0.944  0.948
PC 0.951  0.955  0.958  0.962  0.965  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.007  0.011  0.014  0.018  0.022  0.026  0.030  0.034
PC 0.038  0.042  0.046  0.050  0.055  0.059  0.064  0.068  0.073  0.078
PC 0.083  0.088  0.093  0.099  0.104  0.110  0.116  0.122  0.128  0.134
PC 0.141  0.148  0.155  0.162  0.170  0.178  0.187  0.194  0.202  0.211
PC 0.220  0.230  0.241  0.253  0.267  0.284  0.307  0.411  0.597  0.656
PC 0.705  0.724  0.740  0.752  0.764  0.774  0.784  0.793  0.801  0.808
PC 0.815  0.824  0.832  0.840  0.847  0.854  0.861  0.867  0.874  0.880
PC 0.886  0.891  0.897  0.902  0.908  0.913  0.918  0.923  0.927  0.932
PC 0.937  0.941  0.946  0.950  0.954  0.958  0.962  0.967  0.970  0.974
PC 0.978  0.982  0.986  0.989  0.993  0.996  1.000
```

Table 15.   Rainfall distributions for Subbasin IV-3, the Lake Jessup subbasin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000 0.003 0.006 0.008 0.011 0.014 0.017 0.020 0.024 0.027
PC 0.030 0.033 0.037 0.040 0.044 0.047 0.051 0.055 0.059 0.063
PC 0.067 0.071 0.075 0.080 0.084 0.089 0.094 0.099 0.104 0.109
PC 0.115 0.121 0.127 0.133 0.140 0.147 0.155 0.164 0.174 0.184
PC 0.196 0.209 0.222 0.236 0.251 0.270 0.294 0.400 0.608 0.668
PC 0.718 0.739 0.756 0.770 0.783 0.796 0.808 0.819 0.829 0.839
PC 0.848 0.855 0.862 0.869 0.875 0.881 0.887 0.892 0.897 0.902
PC 0.907 0.912 0.917 0.921 0.926 0.930 0.934 0.938 0.942 0.946
PC 0.949 0.953 0.957 0.960 0.964 0.967 0.970 0.973 0.977 0.980
PC 0.983 0.986 0.989 0.992 0.994 0.997 1.000

10-YEAR DISTRIBUTION

PC 0.000 0.002 0.004 0.007 0.009 0.011 0.013 0.016 0.018 0.021
PC 0.023 0.026 0.029 0.031 0.034 0.037 0.040 0.043 0.046 0.049
PC 0.052 0.056 0.059 0.063 0.066 0.070 0.074 0.078 0.082 0.087
PC 0.091 0.096 0.101 0.106 0.112 0.118 0.124 0.134 0.145 0.157
PC 0.169 0.183 0.198 0.213 0.230 0.251 0.279 0.389 0.620 0.683
PC 0.734 0.758 0.777 0.793 0.807 0.821 0.834 0.846 0.858 0.868
PC 0.878 0.884 0.890 0.895 0.900 0.905 0.910 0.914 0.919 0.923
PC 0.927 0.931 0.934 0.938 0.942 0.945 0.948 0.951 0.955 0.958
PC 0.960 0.963 0.966 0.969 0.972 0.974 0.977 0.979 0.982 0.984
PC 0.987 0.989 0.991 0.993 0.996 0.998 1.000

25-YEAR DISTRIBUTION

PC 0.000 0.003 0.005 0.008 0.011 0.014 0.017 0.020 0.023 0.026
PC 0.029 0.033 0.036 0.039 0.043 0.046 0.050 0.053 0.057 0.061
PC 0.065 0.069 0.073 0.078 0.082 0.087 0.091 0.096 0.101 0.107
PC 0.112 0.118 0.124 0.130 0.137 0.144 0.151 0.161 0.172 0.183
PC 0.195 0.208 0.223 0.236 0.250 0.268 0.292 0.399 0.609 0.670
PC 0.721 0.741 0.757 0.770 0.782 0.796 0.809 0.820 0.831 0.842
PC 0.851 0.858 0.865 0.872 0.878 0.884 0.889 0.895 0.900 0.905
PC 0.910 0.914 0.919 0.923 0.927 0.932 0.936 0.940 0.943 0.947
PC 0.951 0.954 0.958 0.961 0.964 0.968 0.971 0.974 0.977 0.980
PC 0.983 0.986 0.989 0.992 0.995 0.997 1.000

100-YEAR DISTRIBUTION

PC 0.000 0.004 0.007 0.011 0.015 0.018 0.022 0.026 0.030 0.034
PC 0.038 0.042 0.046 0.051 0.055 0.060 0.064 0.069 0.074 0.079
PC 0.084 0.089 0.094 0.099 0.105 0.111 0.116 0.122 0.129 0.135
PC 0.142 0.149 0.156 0.163 0.171 0.180 0.188 0.196 0.205 0.214
PC 0.223 0.234 0.246 0.258 0.272 0.290 0.312 0.412 0.595 0.652
PC 0.699 0.719 0.735 0.748 0.759 0.770 0.781 0.790 0.799 0.807
PC 0.814 0.823 0.831 0.839 0.846 0.853 0.860 0.866 0.873 0.879
PC 0.885 0.891 0.896 0.902 0.907 0.912 0.917 0.922 0.927 0.932
PC 0.936 0.941 0.945 0.950 0.954 0.958 0.962 0.966 0.970 0.974
PC 0.978 0.982 0.986 0.989 0.993 0.996 1.000

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Table 16. Rainfall distributions for Subbasin IV-4, the St. Johns River subbasin for the stretch of river between S.R. 46 south of Lake Harney and the Wekiva River

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.012  0.015  0.019  0.022  0.025  0.029
PC 0.032  0.036  0.039  0.043  0.047  0.051  0.055  0.059  0.063  0.067
PC 0.071  0.076  0.080  0.085  0.090  0.095  0.100  0.105  0.110  0.116
PC 0.122  0.128  0.135  0.141  0.148  0.156  0.164  0.173  0.183  0.194
PC 0.206  0.218  0.232  0.245  0.261  0.279  0.304  0.405  0.603  0.661
PC 0.709  0.730  0.747  0.761  0.773  0.786  0.798  0.810  0.820  0.830
PC 0.839  0.846  0.854  0.861  0.867  0.873  0.879  0.885  0.891  0.896
PC 0.901  0.906  0.911  0.916  0.921  0.925  0.930  0.934  0.938  0.942
PC 0.946  0.950  0.954  0.957  0.961  0.965  0.968  0.972  0.975  0.978
PC 0.982  0.985  0.988  0.991  0.994  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.005  0.007  0.010  0.012  0.015  0.018  0.020  0.023
PC 0.026  0.029  0.032  0.035  0.038  0.041  0.044  0.047  0.051  0.054
PC 0.058  0.061  0.065  0.069  0.073  0.077  0.081  0.086  0.090  0.095
PC 0.100  0.105  0.111  0.116  0.122  0.129  0.136  0.147  0.160  0.173
PC 0.187  0.203  0.220  0.233  0.249  0.268  0.293  0.395  0.612  0.671
PC 0.720  0.741  0.758  0.773  0.785  0.802  0.816  0.830  0.843  0.855
PC 0.867  0.873  0.879  0.885  0.891  0.896  0.901  0.906  0.911  0.915
PC 0.920  0.924  0.928  0.932  0.936  0.939  0.943  0.946  0.950  0.953
PC 0.956  0.960  0.963  0.966  0.969  0.972  0.974  0.977  0.980  0.983
PC 0.985  0.988  0.990  0.993  0.995  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.012  0.015  0.018  0.021  0.025  0.028
PC 0.031  0.035  0.038  0.042  0.046  0.049  0.053  0.057  0.061  0.065
PC 0.070  0.074  0.078  0.083  0.088  0.092  0.097  0.103  0.108  0.114
PC 0.119  0.125  0.132  0.138  0.145  0.153  0.160  0.170  0.180  0.191
PC 0.203  0.216  0.230  0.243  0.258  0.276  0.301  0.404  0.605  0.664
PC 0.712  0.733  0.749  0.763  0.775  0.789  0.801  0.812  0.823  0.833
PC 0.842  0.850  0.857  0.864  0.870  0.876  0.882  0.888  0.893  0.898
PC 0.904  0.909  0.913  0.918  0.922  0.927  0.931  0.935  0.939  0.943
PC 0.947  0.951  0.955  0.958  0.962  0.965  0.969  0.972  0.976  0.979
PC 0.982  0.985  0.988  0.991  0.994  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.007  0.011  0.015  0.019  0.023  0.027  0.031  0.035
PC 0.040  0.044  0.049  0.053  0.058  0.062  0.067  0.072  0.077  0.082
PC 0.087  0.092  0.098  0.103  0.109  0.115  0.121  0.127  0.134  0.140
PC 0.147  0.154  0.162  0.170  0.178  0.186  0.195  0.202  0.210  0.218
PC 0.227  0.236  0.247  0.260  0.275  0.293  0.317  0.415  0.592  0.649
PC 0.695  0.716  0.732  0.746  0.758  0.768  0.777  0.786  0.794  0.801
PC 0.808  0.816  0.825  0.833  0.840  0.847  0.854  0.861  0.868  0.874
PC 0.880  0.886  0.892  0.898  0.903  0.908  0.914  0.919  0.924  0.929
PC 0.934  0.938  0.943  0.947  0.952  0.956  0.961  0.965  0.969  0.973
PC 0.977  0.981  0.985  0.989  0.993  0.996  1.000
```
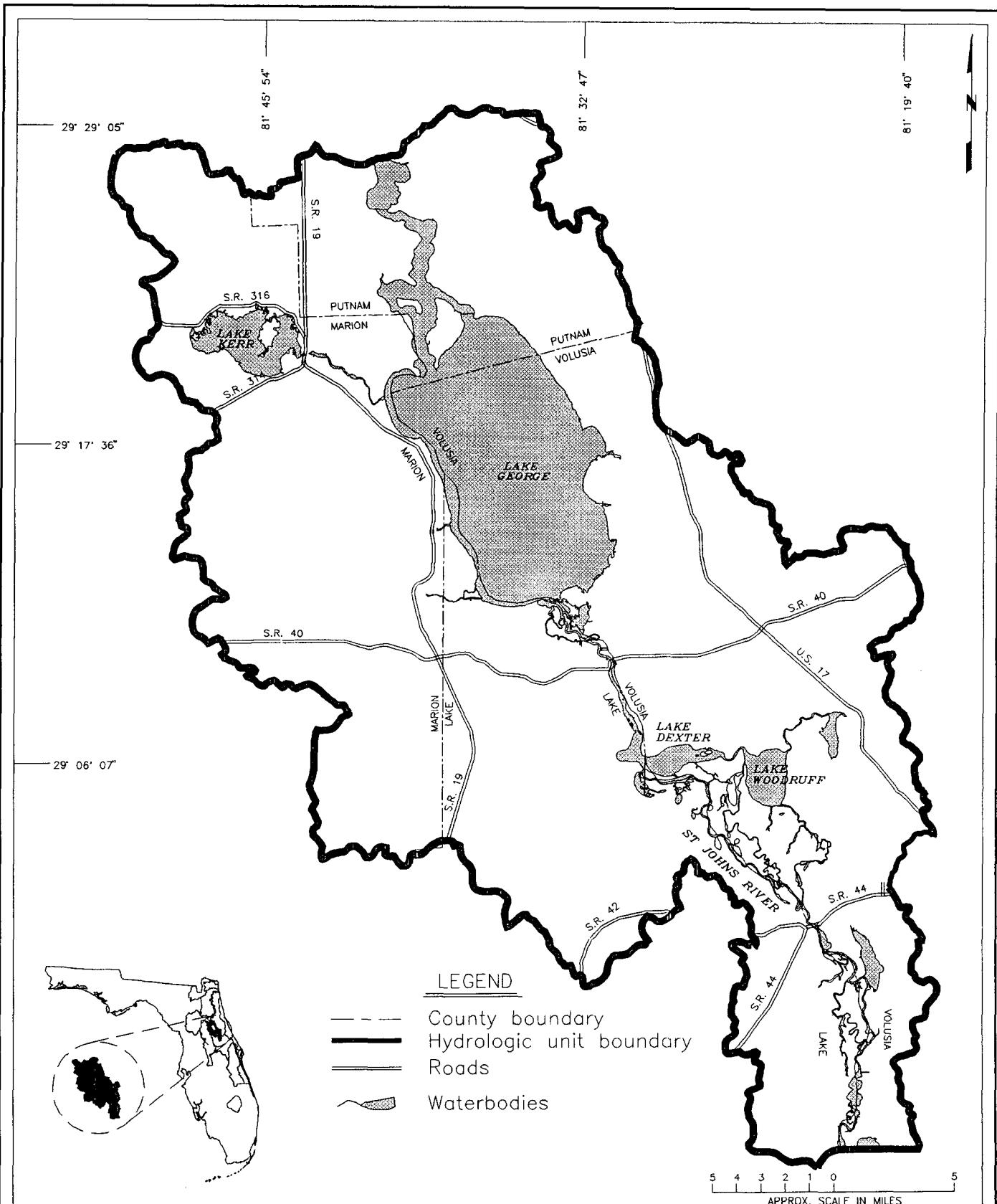
Figure 14

The Lake George basin
(Hydrologic Unit V)

Table 17. Rainfall distributions for Hydrologic Unit V, the Lake George basin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.013	0.016	0.019	0.022	0.025
PC 0.028	0.031	0.034	0.037	0.041	0.044	0.047	0.051	0.055	0.058
PC 0.062	0.066	0.070	0.074	0.078	0.083	0.087	0.092	0.097	0.102
PC 0.107	0.113	0.119	0.125	0.131	0.138	0.145	0.154	0.163	0.174
PC 0.185	0.197	0.210	0.224	0.240	0.259	0.284	0.398	0.612	0.676
PC 0.729	0.750	0.768	0.782	0.795	0.807	0.819	0.830	0.840	0.849
PC 0.858	0.864	0.871	0.877	0.883	0.889	0.894	0.899	0.904	0.909
PC 0.914	0.918	0.923	0.927	0.931	0.935	0.939	0.942	0.946	0.950
PC 0.953	0.956	0.960	0.963	0.966	0.969	0.972	0.975	0.978	0.981
PC 0.984	0.987	0.990	0.992	0.995	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.006	0.008	0.010	0.012	0.014	0.016	0.019
PC 0.021	0.023	0.026	0.028	0.031	0.033	0.036	0.038	0.041	0.044
PC 0.047	0.050	0.053	0.056	0.060	0.063	0.067	0.070	0.074	0.078
PC 0.082	0.087	0.091	0.096	0.101	0.107	0.113	0.123	0.134	0.145
PC 0.158	0.172	0.187	0.201	0.218	0.238	0.265	0.385	0.625	0.693
PC 0.748	0.771	0.789	0.805	0.818	0.832	0.846	0.858	0.869	0.880
PC 0.889	0.895	0.900	0.905	0.910	0.915	0.919	0.923	0.927	0.931
PC 0.934	0.938	0.941	0.944	0.947	0.951	0.954	0.956	0.959	0.962
PC 0.965	0.967	0.970	0.972	0.975	0.977	0.979	0.982	0.984	0.986
PC 0.988	0.990	0.992	0.994	0.996	0.998	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.010	0.013	0.016	0.018	0.021	0.024
PC 0.027	0.030	0.033	0.036	0.039	0.043	0.046	0.050	0.053	0.057
PC 0.060	0.064	0.068	0.072	0.076	0.081	0.085	0.090	0.094	0.099
PC 0.105	0.110	0.116	0.122	0.128	0.134	0.141	0.151	0.161	0.171
PC 0.183	0.196	0.210	0.223	0.239	0.258	0.284	0.397	0.612	0.676
PC 0.729	0.751	0.768	0.783	0.795	0.809	0.821	0.832	0.842	0.852
PC 0.861	0.868	0.874	0.880	0.886	0.892	0.897	0.902	0.907	0.911
PC 0.916	0.920	0.925	0.929	0.933	0.936	0.940	0.944	0.947	0.951
PC 0.954	0.958	0.961	0.964	0.967	0.970	0.973	0.976	0.979	0.982
PC 0.984	0.987	0.990	0.992	0.995	0.998	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.003	0.007	0.010	0.014	0.017	0.021	0.025	0.028	0.032
PC 0.036	0.040	0.044	0.048	0.052	0.057	0.061	0.066	0.070	0.075
PC 0.080	0.084	0.089	0.095	0.100	0.105	0.111	0.117	0.123	0.129
PC 0.135	0.142	0.149	0.156	0.164	0.172	0.180	0.188	0.195	0.204
PC 0.213	0.223	0.234	0.247	0.262	0.280	0.304	0.410	0.598	0.658
PC 0.708	0.729	0.745	0.759	0.771	0.781	0.791	0.800	0.808	0.815
PC 0.822	0.830	0.838	0.846	0.853	0.860	0.866	0.872	0.879	0.884
PC 0.890	0.896	0.901	0.906	0.911	0.916	0.921	0.926	0.931	0.935
PC 0.939	0.944	0.948	0.952	0.956	0.960	0.964	0.968	0.972	0.976
PC 0.979	0.983	0.986	0.990	0.993	0.997	1.000			

LEGEND

- – – – District boundary
- — – — County boundary
- ▬▬▬ Hydrologic unit boundary
- •••••••• Subbasin boundary
- ═══ Roads
- ⌇ Waterbodies
- ⬭ I-1 Subbasin number

5   0   5
APPROX. SCALE IN MILES
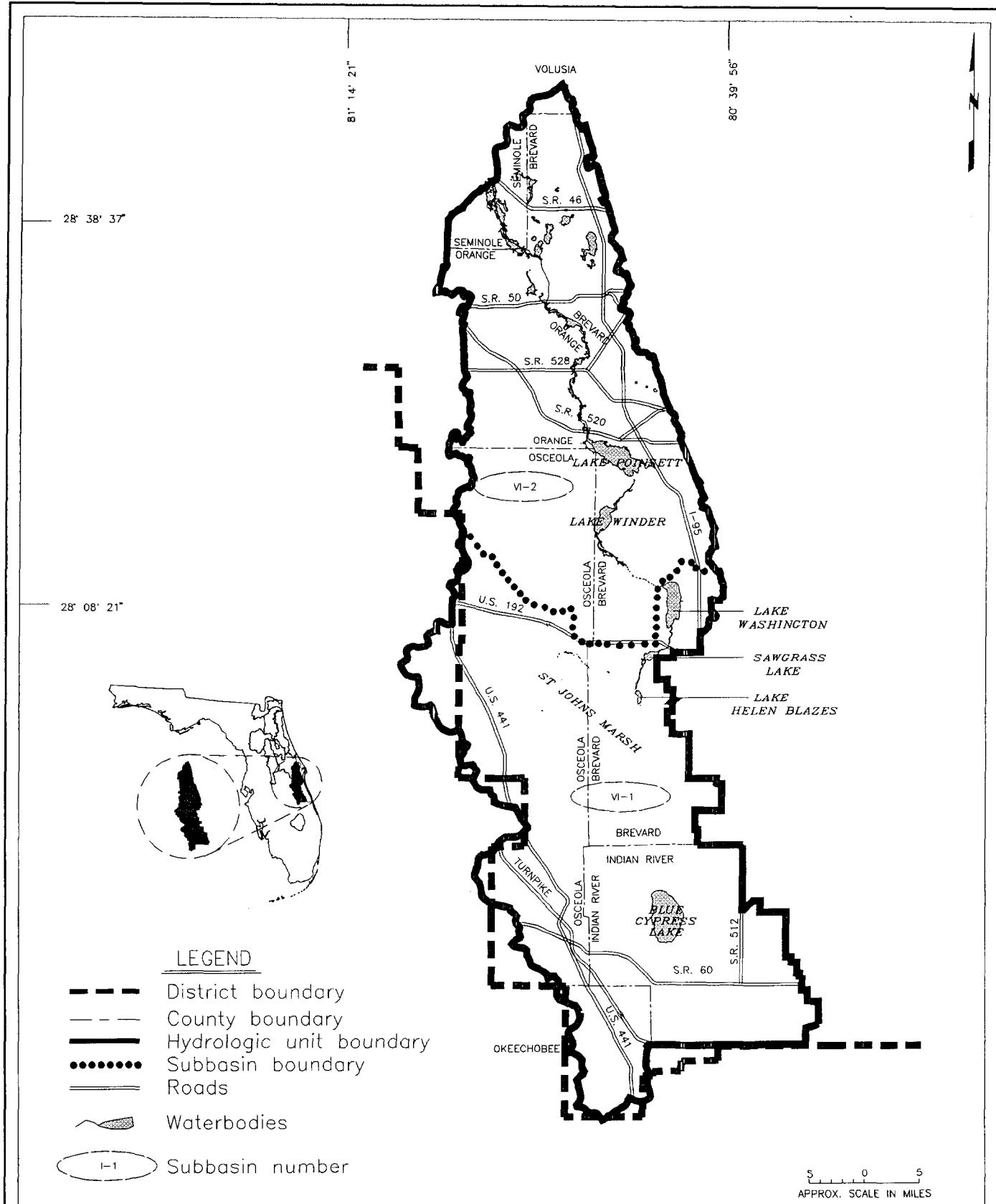
Figure 15

The upper St. Johns River basin
(Hydrologic Unit VI)

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Table 18. Rainfall distributions for Subbasin VI-1, the St. Johns River subbasin for the stretch of river south of Lake Washington weir including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.006	0.009	0.012	0.015	0.018	0.022	0.025	0.028
PC 0.032	0.035	0.039	0.043	0.046	0.050	0.054	0.058	0.062	0.066
PC 0.071	0.075	0.079	0.084	0.089	0.094	0.099	0.104	0.110	0.115
PC 0.121	0.127	0.134	0.140	0.147	0.155	0.162	0.172	0.182	0.193
PC 0.204	0.217	0.231	0.244	0.259	0.278	0.303	0.406	0.602	0.661
PC 0.710	0.731	0.748	0.762	0.774	0.788	0.800	0.811	0.821	0.831
PC 0.840	0.848	0.855	0.862	0.868	0.874	0.880	0.886	0.892	0.897
PC 0.902	0.907	0.912	0.917	0.921	0.926	0.930	0.934	0.938	0.943
PC 0.946	0.950	0.954	0.958	0.961	0.965	0.968	0.972	0.975	0.978
PC 0.982	0.985	0.988	0.991	0.994	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.010	0.013	0.016	0.019	0.022	0.024
PC 0.027	0.031	0.034	0.037	0.040	0.043	0.047	0.050	0.054	0.057
PC 0.061	0.065	0.069	0.073	0.077	0.082	0.086	0.091	0.096	0.101
PC 0.106	0.111	0.117	0.123	0.129	0.136	0.143	0.153	0.164	0.175
PC 0.187	0.201	0.215	0.229	0.245	0.264	0.290	0.396	0.611	0.673
PC 0.723	0.745	0.763	0.777	0.790	0.804	0.817	0.828	0.839	0.850
PC 0.859	0.866	0.873	0.879	0.885	0.890	0.896	0.901	0.906	0.910
PC 0.915	0.919	0.924	0.928	0.932	0.936	0.939	0.943	0.947	0.950
PC 0.954	0.957	0.960	0.964	0.967	0.970	0.973	0.976	0.979	0.981
PC 0.984	0.987	0.990	0.992	0.995	0.997	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.006	0.009	0.013	0.016	0.019	0.023	0.026	0.030
PC 0.033	0.037	0.041	0.044	0.048	0.052	0.056	0.060	0.065	0.069
PC 0.073	0.078	0.082	0.087	0.092	0.097	0.103	0.108	0.114	0.119
PC 0.125	0.132	0.138	0.145	0.152	0.160	0.168	0.176	0.184	0.193
PC 0.202	0.213	0.225	0.239	0.255	0.274	0.300	0.405	0.604	0.663
PC 0.712	0.735	0.752	0.767	0.780	0.791	0.802	0.811	0.819	0.827
PC 0.835	0.842	0.850	0.857	0.863	0.870	0.876	0.882	0.888	0.893
PC 0.899	0.904	0.909	0.914	0.918	0.923	0.927	0.932	0.936	0.940
PC 0.944	0.948	0.952	0.956	0.960	0.963	0.967	0.971	0.974	0.978
PC 0.981	0.984	0.987	0.991	0.994	0.997	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.003	0.007	0.010	0.013	0.017	0.020	0.024	0.028	0.031
PC 0.035	0.039	0.043	0.047	0.051	0.055	0.059	0.064	0.068	0.073
PC 0.077	0.082	0.087	0.092	0.097	0.103	0.108	0.114	0.120	0.126
PC 0.132	0.139	0.146	0.153	0.160	0.168	0.176	0.187	0.198	0.210
PC 0.223	0.237	0.253	0.265	0.279	0.296	0.319	0.417	0.592	0.647
PC 0.694	0.713	0.728	0.741	0.753	0.767	0.781	0.793	0.805	0.816
PC 0.826	0.834	0.842	0.849	0.856	0.863	0.869	0.876	0.882	0.887
PC 0.893	0.898	0.904	0.909	0.914	0.919	0.923	0.928	0.932	0.937
PC 0.941	0.945	0.949	0.953	0.957	0.961	0.965	0.969	0.973	0.976
PC 0.980	0.983	0.987	0.990	0.993	0.997	1.000			

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Table 19.   Rainfall distributions for Subbasin VI-2, the St. Johns River subbasin for the stretch of St. Johns River between Lake Washington weir and S.R. 46

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.013  0.017  0.020  0.024  0.028  0.031
PC 0.035  0.039  0.043  0.047  0.051  0.055  0.060  0.064  0.068  0.073
PC 0.078  0.082  0.087  0.092  0.098  0.103  0.108  0.114  0.120  0.126
PC 0.132  0.139  0.146  0.153  0.160  0.168  0.177  0.186  0.196  0.207
PC 0.218  0.231  0.245  0.257  0.272  0.289  0.313  0.409  0.599  0.654
PC 0.699  0.719  0.736  0.749  0.761  0.774  0.786  0.797  0.807  0.817
PC 0.826  0.834  0.842  0.849  0.856  0.863  0.869  0.875  0.881  0.887
PC 0.893  0.898  0.903  0.909  0.914  0.918  0.923  0.928  0.932  0.937
PC 0.941  0.945  0.949  0.953  0.957  0.961  0.965  0.969  0.973  0.976
PC 0.980  0.983  0.987  0.990  0.993  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.033  0.036  0.039  0.043  0.046  0.050  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.078  0.082  0.087  0.091  0.096  0.101  0.107
PC 0.112  0.118  0.124  0.130  0.137  0.144  0.151  0.162  0.174  0.186
PC 0.199  0.213  0.229  0.242  0.257  0.276  0.300  0.399  0.610  0.666
PC 0.712  0.733  0.750  0.764  0.776  0.791  0.805  0.818  0.829  0.841
PC 0.851  0.858  0.865  0.872  0.878  0.884  0.889  0.895  0.900  0.905
PC 0.910  0.914  0.919  0.923  0.927  0.932  0.936  0.940  0.943  0.947
PC 0.951  0.954  0.958  0.961  0.964  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.013  0.017  0.020  0.024  0.028  0.032
PC 0.035  0.039  0.043  0.047  0.051  0.055  0.060  0.064  0.069  0.073
PC 0.078  0.083  0.088  0.093  0.098  0.103  0.109  0.114  0.120  0.126
PC 0.133  0.139  0.146  0.153  0.161  0.169  0.177  0.185  0.194  0.204
PC 0.214  0.225  0.238  0.251  0.267  0.286  0.311  0.408  0.600  0.656
PC 0.702  0.723  0.740  0.755  0.767  0.779  0.790  0.800  0.809  0.818
PC 0.826  0.834  0.841  0.849  0.856  0.862  0.869  0.875  0.881  0.887
PC 0.892  0.898  0.903  0.908  0.913  0.918  0.923  0.928  0.932  0.936
PC 0.941  0.945  0.949  0.953  0.957  0.961  0.965  0.969  0.972  0.976
PC 0.980  0.983  0.987  0.990  0.993  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.008  0.012  0.016  0.020  0.024  0.028  0.033  0.037
PC 0.041  0.046  0.050  0.055  0.060  0.065  0.070  0.075  0.080  0.085
PC 0.090  0.096  0.102  0.107  0.113  0.119  0.126  0.132  0.139  0.145
PC 0.152  0.160  0.167  0.175  0.184  0.192  0.201  0.210  0.220  0.230
PC 0.241  0.253  0.267  0.278  0.291  0.307  0.328  0.420  0.588  0.640
PC 0.684  0.702  0.716  0.728  0.739  0.751  0.763  0.773  0.783  0.793
PC 0.801  0.810  0.819  0.827  0.835  0.842  0.849  0.856  0.863  0.869
PC 0.876  0.882  0.888  0.894  0.899  0.905  0.910  0.916  0.921  0.926
PC 0.931  0.936  0.941  0.945  0.950  0.954  0.959  0.963  0.968  0.972
PC 0.976  0.980  0.984  0.988  0.992  0.996  1.000
```

LEGEND

━ ━ District boundary
─ ─ County boundary
─── Hydrologic unit boundary
•••• Subbasin boundary
═══ Roads
〜 Waterbodies
◯ I-1 Subbasin number
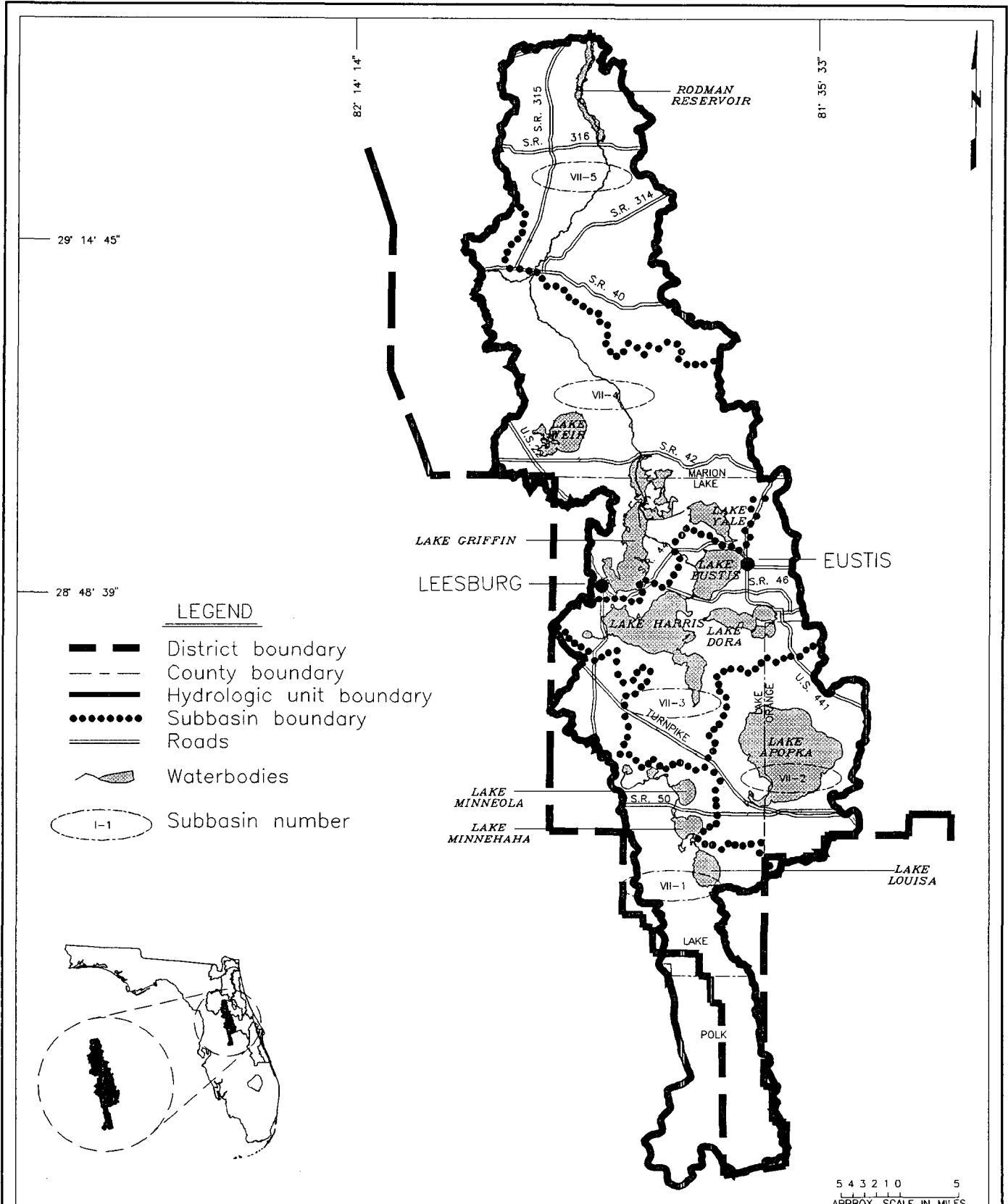
Figure 16
The Oklawaha River basin
(Hydrologic Unit VII)

Table 20. Rainfall distributions for Subbasin VII-1, the Palatlakaha River subbasin including the adjacent areas within St. Johns River Water Management District

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.036  0.039  0.043  0.046  0.050  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.078  0.082  0.087  0.091  0.096  0.101  0.107
PC 0.112  0.118  0.124  0.130  0.137  0.144  0.151  0.160  0.169  0.179
PC 0.190  0.202  0.215  0.227  0.241  0.259  0.282  0.398  0.610  0.676
PC 0.730  0.750  0.766  0.779  0.790  0.802  0.814  0.824  0.834  0.843
PC 0.851  0.859  0.865  0.872  0.878  0.884  0.889  0.895  0.900  0.905
PC 0.910  0.914  0.919  0.923  0.928  0.932  0.936  0.940  0.943  0.947
PC 0.951  0.954  0.958  0.961  0.965  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.008  0.010  0.013  0.015  0.017  0.020
PC 0.022  0.024  0.027  0.029  0.032  0.035  0.038  0.040  0.043  0.046
PC 0.049  0.052  0.056  0.059  0.063  0.066  0.070  0.074  0.078  0.082
PC 0.086  0.091  0.096  0.101  0.106  0.112  0.118  0.126  0.135  0.144
PC 0.155  0.166  0.179  0.193  0.210  0.230  0.258  0.384  0.625  0.696
PC 0.755  0.779  0.797  0.812  0.826  0.838  0.849  0.859  0.868  0.876
PC 0.884  0.890  0.896  0.901  0.906  0.911  0.915  0.919  0.923  0.927
PC 0.931  0.935  0.938  0.942  0.945  0.948  0.951  0.954  0.957  0.960
PC 0.963  0.966  0.968  0.971  0.973  0.976  0.978  0.981  0.983  0.985
PC 0.987  0.990  0.992  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.033  0.036  0.039  0.043  0.046  0.050  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.078  0.082  0.087  0.091  0.096  0.101  0.107
PC 0.112  0.118  0.124  0.130  0.137  0.144  0.151  0.161  0.171  0.182
PC 0.193  0.206  0.220  0.231  0.244  0.260  0.282  0.398  0.610  0.676
PC 0.730  0.748  0.763  0.775  0.785  0.798  0.811  0.822  0.832  0.842
PC 0.851  0.858  0.865  0.872  0.878  0.884  0.889  0.895  0.900  0.905
PC 0.910  0.914  0.919  0.923  0.927  0.932  0.936  0.940  0.943  0.947
PC 0.951  0.954  0.958  0.961  0.964  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.011  0.014  0.018  0.021  0.025  0.029  0.033
PC 0.037  0.041  0.045  0.049  0.054  0.058  0.063  0.067  0.072  0.076
PC 0.081  0.086  0.091  0.097  0.102  0.108  0.113  0.119  0.125  0.132
PC 0.138  0.145  0.152  0.160  0.167  0.175  0.184  0.192  0.201  0.211
PC 0.222  0.233  0.246  0.257  0.269  0.285  0.306  0.412  0.596  0.656
PC 0.706  0.724  0.737  0.749  0.759  0.771  0.782  0.792  0.802  0.810
PC 0.819  0.827  0.835  0.842  0.850  0.857  0.863  0.870  0.876  0.882
PC 0.888  0.893  0.899  0.904  0.909  0.914  0.919  0.924  0.929  0.934
PC 0.938  0.942  0.947  0.951  0.955  0.959  0.963  0.967  0.971  0.975
PC 0.979  0.982  0.986  0.990  0.993  0.997  1.000
```

Table 21.   Rainfall distributions for Subbasin VII-2, the Lake Apopka subbasin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.036  0.039  0.043  0.046  0.050  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.077  0.082  0.086  0.091  0.096  0.101  0.106
PC 0.112  0.118  0.124  0.130  0.136  0.143  0.151  0.160  0.169  0.180
PC 0.191  0.203  0.217  0.228  0.242  0.258  0.280  0.397  0.611  0.677
PC 0.732  0.751  0.765  0.778  0.788  0.801  0.813  0.824  0.834  0.843
PC 0.852  0.859  0.866  0.872  0.878  0.884  0.890  0.895  0.900  0.905
PC 0.910  0.915  0.919  0.923  0.928  0.932  0.936  0.940  0.944  0.947
PC 0.951  0.954  0.958  0.961  0.965  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.008  0.010  0.012  0.015  0.017  0.019
PC 0.021  0.024  0.026  0.029  0.031  0.034  0.037  0.039  0.042  0.045
PC 0.048  0.051  0.054  0.057  0.061  0.064  0.068  0.072  0.076  0.080
PC 0.084  0.088  0.093  0.098  0.103  0.109  0.115  0.124  0.133  0.143
PC 0.154  0.167  0.180  0.194  0.210  0.230  0.256  0.382  0.625  0.697
PC 0.756  0.779  0.797  0.812  0.824  0.837  0.849  0.860  0.870  0.879
PC 0.887  0.893  0.898  0.903  0.908  0.913  0.917  0.921  0.925  0.929
PC 0.933  0.936  0.940  0.943  0.946  0.950  0.953  0.956  0.958  0.961
PC 0.964  0.967  0.969  0.972  0.974  0.976  0.979  0.981  0.983  0.986
PC 0.988  0.990  0.992  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.033  0.036  0.039  0.043  0.046  0.050  0.054  0.058  0.062
PC 0.066  0.070  0.074  0.078  0.083  0.087  0.092  0.097  0.102  0.107
PC 0.113  0.119  0.125  0.131  0.138  0.145  0.152  0.162  0.172  0.183
PC 0.194  0.207  0.222  0.232  0.245  0.260  0.281  0.397  0.610  0.676
PC 0.731  0.748  0.762  0.774  0.784  0.797  0.809  0.821  0.831  0.841
PC 0.850  0.858  0.864  0.871  0.877  0.883  0.889  0.894  0.899  0.904
PC 0.909  0.914  0.918  0.923  0.927  0.931  0.935  0.939  0.943  0.947
PC 0.950  0.954  0.957  0.961  0.964  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.011  0.014  0.018  0.022  0.026  0.029  0.033
PC 0.037  0.041  0.046  0.050  0.054  0.059  0.063  0.068  0.072  0.077
PC 0.082  0.087  0.092  0.098  0.103  0.109  0.115  0.120  0.127  0.133
PC 0.140  0.146  0.154  0.161  0.169  0.177  0.186  0.194  0.203  0.213
PC 0.224  0.235  0.248  0.258  0.270  0.284  0.304  0.411  0.597  0.657
PC 0.707  0.724  0.737  0.748  0.757  0.769  0.780  0.790  0.800  0.809
PC 0.817  0.825  0.833  0.841  0.848  0.855  0.862  0.868  0.875  0.881
PC 0.887  0.892  0.898  0.903  0.908  0.914  0.919  0.923  0.928  0.933
PC 0.937  0.942  0.946  0.950  0.955  0.959  0.963  0.967  0.971  0.975
PC 0.978  0.982  0.986  0.989  0.993  0.997  1.000
```

Table 22.   Rainfall distributions for Subbasin VII-3, the Oklawaha River subbasin between the Apopka-Beauclair Canal lock and dam and the Burrell structure

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.006  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.030  0.033  0.036  0.040  0.043  0.047  0.050  0.054  0.058  0.062
PC 0.066  0.070  0.074  0.079  0.083  0.088  0.093  0.098  0.103  0.108
PC 0.114  0.119  0.125  0.132  0.138  0.145  0.153  0.162  0.172  0.182
PC 0.193  0.206  0.219  0.230  0.243  0.260  0.281  0.397  0.611  0.676
PC 0.731  0.749  0.764  0.775  0.786  0.799  0.811  0.821  0.831  0.841
PC 0.850  0.857  0.864  0.870  0.876  0.882  0.888  0.893  0.899  0.904
PC 0.909  0.913  0.918  0.922  0.927  0.931  0.935  0.939  0.943  0.946
PC 0.950  0.954  0.957  0.961  0.964  0.967  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.008  0.010  0.013  0.015  0.017  0.019
PC 0.022  0.024  0.027  0.029  0.032  0.034  0.037  0.040  0.043  0.046
PC 0.049  0.052  0.055  0.058  0.062  0.065  0.069  0.073  0.077  0.081
PC 0.085  0.090  0.095  0.100  0.105  0.110  0.116  0.126  0.136  0.147
PC 0.159  0.172  0.187  0.199  0.214  0.232  0.255  0.382  0.626  0.698
PC 0.757  0.777  0.793  0.807  0.818  0.832  0.844  0.856  0.866  0.876
PC 0.886  0.891  0.897  0.902  0.907  0.911  0.916  0.920  0.924  0.928
PC 0.932  0.935  0.939  0.942  0.946  0.949  0.952  0.955  0.958  0.961
PC 0.963  0.966  0.969  0.971  0.974  0.976  0.978  0.981  0.983  0.985
PC 0.988  0.990  0.992  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.036  0.039  0.042  0.046  0.049  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.077  0.081  0.086  0.091  0.096  0.101  0.106
PC 0.111  0.117  0.123  0.129  0.136  0.143  0.150  0.160  0.171  0.182
PC 0.194  0.208  0.223  0.233  0.246  0.261  0.282  0.398  0.611  0.676
PC 0.730  0.747  0.761  0.773  0.782  0.797  0.809  0.821  0.832  0.843
PC 0.852  0.860  0.866  0.873  0.879  0.885  0.890  0.895  0.901  0.906
PC 0.910  0.915  0.919  0.924  0.928  0.932  0.936  0.940  0.944  0.948
PC 0.951  0.955  0.958  0.962  0.965  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.007  0.011  0.015  0.019  0.023  0.027  0.031  0.035
PC 0.039  0.043  0.048  0.052  0.057  0.061  0.066  0.071  0.076  0.080
PC 0.086  0.091  0.096  0.102  0.107  0.113  0.119  0.125  0.132  0.138
PC 0.145  0.152  0.159  0.167  0.175  0.183  0.192  0.200  0.208  0.217
PC 0.226  0.237  0.248  0.259  0.271  0.286  0.306  0.411  0.596  0.655
PC 0.705  0.722  0.736  0.747  0.757  0.768  0.778  0.787  0.795  0.803
PC 0.811  0.819  0.827  0.835  0.843  0.850  0.857  0.863  0.870  0.876
PC 0.882  0.888  0.894  0.899  0.905  0.910  0.915  0.920  0.925  0.930
PC 0.935  0.939  0.944  0.948  0.953  0.957  0.961  0.965  0.969  0.974
PC 0.977  0.981  0.985  0.989  0.993  0.996  1.000
```

Table 23.   Rainfall distributions for Subbasin VII-4, the Oklawaha River subbasin between the Burrell structure and S.R. 40 including the adjacent areas within the St. Johns River Water Management District

(24-Hour Rainfall Distributions as PC Cards for the HEC-1 Input Data)

GENERALIZED DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.014	0.017	0.020	0.023	0.026
PC 0.029	0.033	0.036	0.039	0.043	0.046	0.050	0.053	0.057	0.061
PC 0.065	0.069	0.073	0.078	0.082	0.087	0.091	0.096	0.101	0.107
PC 0.112	0.118	0.124	0.130	0.137	0.144	0.151	0.160	0.170	0.181
PC 0.192	0.204	0.218	0.230	0.244	0.261	0.283	0.396	0.612	0.676
PC 0.729	0.748	0.763	0.776	0.787	0.800	0.812	0.823	0.833	0.842
PC 0.851	0.858	0.865	0.872	0.878	0.884	0.889	0.895	0.900	0.905
PC 0.910	0.914	0.919	0.923	0.927	0.932	0.936	0.940	0.943	0.947
PC 0.951	0.954	0.958	0.961	0.964	0.968	0.971	0.974	0.977	0.980
PC 0.983	0.986	0.989	0.992	0.995	0.997	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.006	0.008	0.010	0.012	0.014	0.016	0.018
PC 0.021	0.023	0.025	0.028	0.030	0.033	0.035	0.038	0.041	0.044
PC 0.046	0.049	0.052	0.056	0.059	0.062	0.066	0.069	0.073	0.077
PC 0.081	0.086	0.090	0.095	0.100	0.105	0.111	0.121	0.132	0.143
PC 0.155	0.169	0.184	0.196	0.212	0.230	0.255	0.380	0.628	0.699
PC 0.758	0.779	0.796	0.809	0.821	0.836	0.848	0.860	0.871	0.881
PC 0.891	0.896	0.902	0.906	0.911	0.916	0.920	0.924	0.928	0.931
PC 0.935	0.938	0.942	0.945	0.948	0.951	0.954	0.957	0.960	0.962
PC 0.965	0.968	0.970	0.973	0.975	0.977	0.980	0.982	0.984	0.986
PC 0.988	0.990	0.992	0.994	0.996	0.998	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.003	0.005	0.008	0.011	0.013	0.016	0.019	0.022	0.025
PC 0.028	0.031	0.034	0.038	0.041	0.044	0.048	0.051	0.055	0.059
PC 0.062	0.066	0.070	0.075	0.079	0.083	0.088	0.093	0.098	0.103
PC 0.108	0.114	0.119	0.125	0.132	0.139	0.146	0.156	0.168	0.180
PC 0.193	0.207	0.223	0.234	0.247	0.263	0.284	0.396	0.611	0.675
PC 0.728	0.746	0.761	0.772	0.783	0.798	0.811	0.824	0.835	0.846
PC 0.857	0.864	0.870	0.876	0.882	0.888	0.893	0.899	0.904	0.908
PC 0.913	0.918	0.922	0.926	0.930	0.934	0.938	0.942	0.946	0.949
PC 0.953	0.956	0.959	0.963	0.966	0.969	0.972	0.975	0.978	0.981
PC 0.984	0.987	0.989	0.992	0.995	0.997	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.004	0.008	0.011	0.015	0.019	0.023	0.027	0.032	0.036
PC 0.040	0.045	0.049	0.054	0.058	0.063	0.068	0.073	0.078	0.083
PC 0.088	0.093	0.099	0.104	0.110	0.116	0.122	0.128	0.135	0.142
PC 0.149	0.156	0.163	0.171	0.179	0.188	0.197	0.203	0.211	0.219
PC 0.228	0.237	0.248	0.259	0.273	0.289	0.311	0.412	0.596	0.653
PC 0.701	0.719	0.734	0.746	0.757	0.767	0.776	0.785	0.792	0.799
PC 0.806	0.815	0.823	0.831	0.839	0.846	0.853	0.860	0.867	0.873
PC 0.879	0.885	0.891	0.897	0.902	0.908	0.913	0.918	0.923	0.928
PC 0.933	0.938	0.942	0.947	0.951	0.956	0.960	0.964	0.969	0.973
PC 0.977	0.981	0.985	0.989	0.992	0.996	1.000			

Table 24. Rainfall distributions for Subbasin VII-5, the Oklawaha River subbasin between S.R. 40 and Rodman Reservoir

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.036  0.039  0.042  0.046  0.050  0.053  0.057  0.061
PC 0.065  0.069  0.073  0.077  0.082  0.086  0.091  0.096  0.101  0.106
PC 0.112  0.117  0.123  0.130  0.136  0.143  0.151  0.160  0.169  0.179
PC 0.191  0.203  0.216  0.228  0.242  0.259  0.281  0.395  0.613  0.677
PC 0.731  0.750  0.765  0.778  0.789  0.802  0.813  0.824  0.834  0.843
PC 0.852  0.859  0.866  0.872  0.878  0.884  0.890  0.895  0.900  0.905
PC 0.910  0.915  0.919  0.924  0.928  0.932  0.936  0.940  0.944  0.947
PC 0.951  0.954  0.958  0.961  0.965  0.968  0.971  0.974  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.995  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.006  0.008  0.010  0.012  0.014  0.016  0.019
PC 0.021  0.023  0.026  0.028  0.031  0.033  0.036  0.039  0.041  0.044
PC 0.047  0.050  0.053  0.057  0.060  0.063  0.067  0.071  0.074  0.079
PC 0.083  0.087  0.092  0.097  0.102  0.107  0.113  0.123  0.134  0.145
PC 0.158  0.171  0.187  0.198  0.212  0.230  0.253  0.378  0.629  0.701
PC 0.759  0.779  0.795  0.807  0.819  0.833  0.846  0.858  0.869  0.879
PC 0.889  0.895  0.900  0.905  0.910  0.914  0.918  0.923  0.927  0.930
PC 0.934  0.937  0.941  0.944  0.947  0.950  0.953  0.956  0.959  0.962
PC 0.964  0.967  0.970  0.972  0.974  0.977  0.979  0.981  0.984  0.986
PC 0.988  0.990  0.992  0.994  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.013  0.016  0.019  0.022  0.025
PC 0.028  0.031  0.034  0.037  0.041  0.044  0.048  0.051  0.055  0.058
PC 0.062  0.066  0.070  0.074  0.079  0.083  0.088  0.092  0.097  0.102
PC 0.108  0.113  0.119  0.125  0.131  0.138  0.145  0.155  0.165  0.176
PC 0.187  0.200  0.214  0.226  0.241  0.259  0.282  0.395  0.612  0.677
PC 0.730  0.750  0.766  0.779  0.791  0.804  0.817  0.828  0.838  0.848
PC 0.857  0.864  0.871  0.877  0.883  0.888  0.894  0.899  0.904  0.909
PC 0.913  0.918  0.922  0.926  0.931  0.935  0.938  0.942  0.946  0.949
PC 0.953  0.956  0.960  0.963  0.966  0.969  0.972  0.975  0.978  0.981
PC 0.984  0.987  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.007  0.011  0.015  0.019  0.023  0.027  0.031  0.035
PC 0.039  0.044  0.048  0.052  0.057  0.062  0.066  0.071  0.076  0.081
PC 0.086  0.091  0.097  0.102  0.108  0.114  0.120  0.126  0.132  0.139
PC 0.146  0.153  0.160  0.168  0.176  0.184  0.193  0.201  0.209  0.217
PC 0.226  0.237  0.248  0.259  0.272  0.287  0.308  0.411  0.597  0.655
PC 0.703  0.721  0.735  0.747  0.757  0.768  0.777  0.786  0.795  0.802
PC 0.809  0.818  0.826  0.834  0.842  0.849  0.856  0.862  0.869  0.875
PC 0.881  0.887  0.893  0.899  0.904  0.909  0.915  0.920  0.925  0.929
PC 0.934  0.939  0.943  0.948  0.952  0.957  0.961  0.965  0.969  0.973
PC 0.977  0.981  0.985  0.989  0.993  0.996  1.000
```
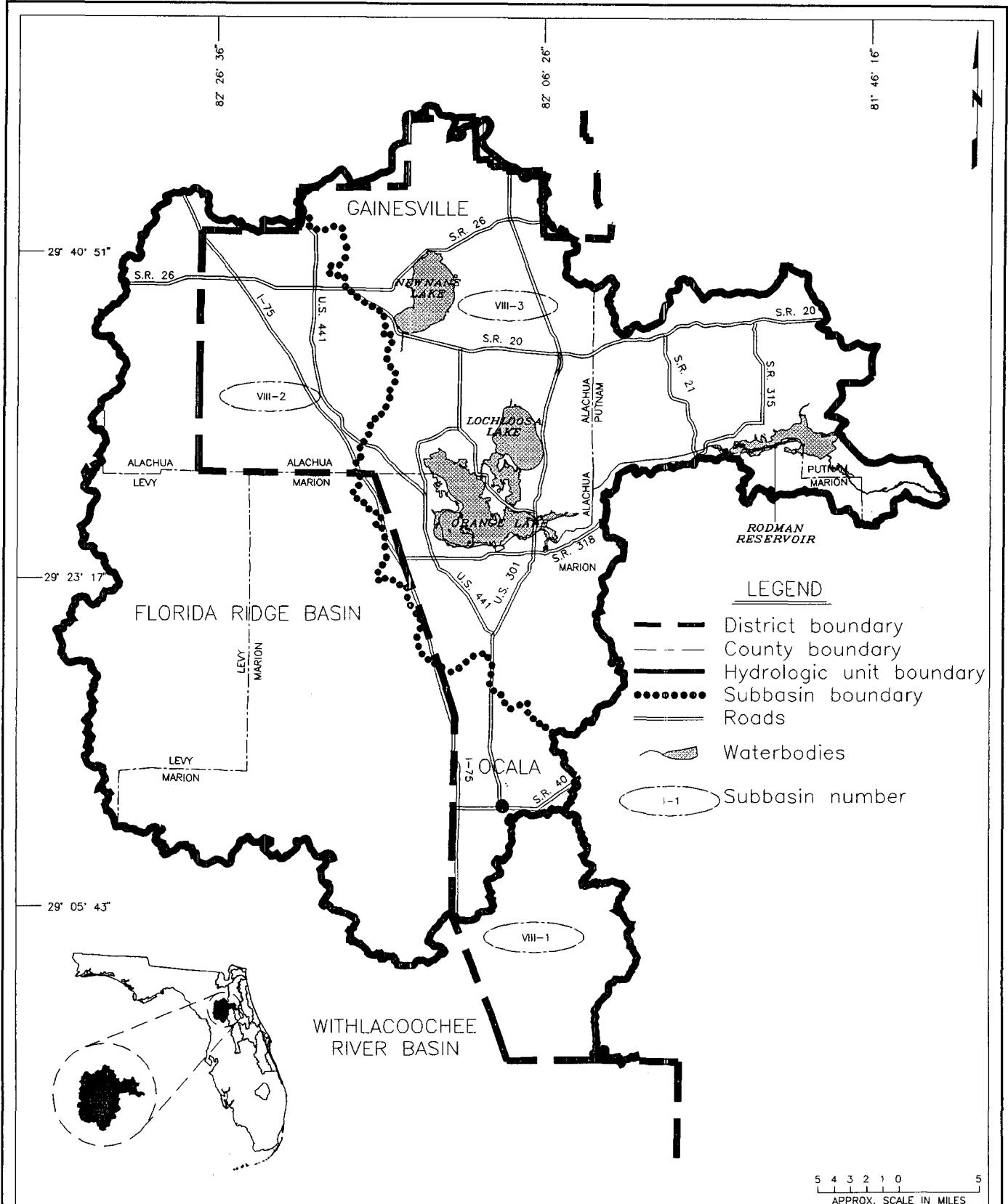
Figure 17

The Florida ridge and Orange Lake
basins   (Hydrologic Unit VIII)
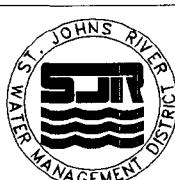
Table 25.   Rainfall distributions for Subbasin VIII-1, the St. Johns River Water Management District portions of the Withlacoochee River and Florida Ridge subbasins, Marion County

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.012  0.015  0.018  0.021  0.024  0.027
PC 0.031  0.034  0.038  0.041  0.045  0.048  0.052  0.056  0.060  0.064
PC 0.068  0.072  0.077  0.081  0.086  0.091  0.096  0.101  0.106  0.112
PC 0.117  0.123  0.129  0.136  0.143  0.150  0.158  0.166  0.176  0.186
PC 0.197  0.209  0.222  0.233  0.247  0.264  0.286  0.398  0.610  0.674
PC 0.726  0.745  0.760  0.772  0.783  0.796  0.807  0.818  0.827  0.836
PC 0.845  0.852  0.859  0.866  0.872  0.878  0.884  0.890  0.895  0.900
PC 0.905  0.910  0.915  0.920  0.924  0.928  0.933  0.937  0.941  0.945
PC 0.948  0.952  0.956  0.959  0.963  0.966  0.970  0.973  0.976  0.979
PC 0.982  0.985  0.988  0.991  0.994  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.004  0.007  0.009  0.011  0.013  0.016  0.018  0.021
PC 0.023  0.026  0.029  0.031  0.034  0.037  0.040  0.043  0.046  0.049
PC 0.052  0.056  0.059  0.063  0.066  0.070  0.074  0.078  0.082  0.087
PC 0.091  0.096  0.101  0.106  0.112  0.118  0.124  0.134  0.144  0.155
PC 0.167  0.180  0.195  0.207  0.220  0.238  0.261  0.382  0.625  0.695
PC 0.752  0.771  0.787  0.799  0.810  0.824  0.837  0.848  0.859  0.869
PC 0.878  0.884  0.890  0.895  0.900  0.905  0.910  0.915  0.919  0.923
PC 0.927  0.931  0.935  0.938  0.942  0.945  0.948  0.951  0.955  0.958
PC 0.961  0.963  0.966  0.969  0.972  0.974  0.977  0.979  0.982  0.984
PC 0.987  0.989  0.991  0.993  0.996  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.005  0.008  0.011  0.014  0.017  0.020  0.023  0.026
PC 0.029  0.032  0.035  0.038  0.042  0.045  0.049  0.052  0.056  0.060
PC 0.064  0.068  0.072  0.076  0.081  0.085  0.090  0.095  0.100  0.105
PC 0.110  0.116  0.122  0.128  0.135  0.141  0.149  0.158  0.168  0.178
PC 0.190  0.202  0.216  0.229  0.243  0.260  0.284  0.397  0.610  0.675
PC 0.728  0.748  0.764  0.777  0.789  0.802  0.814  0.825  0.835  0.845
PC 0.854  0.861  0.867  0.874  0.880  0.886  0.891  0.896  0.901  0.906
PC 0.911  0.916  0.920  0.925  0.929  0.933  0.937  0.941  0.944  0.948
PC 0.952  0.955  0.959  0.962  0.965  0.968  0.972  0.975  0.978  0.981
PC 0.984  0.986  0.989  0.992  0.995  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.008  0.012  0.016  0.020  0.024  0.028  0.032  0.037
PC 0.041  0.045  0.050  0.055  0.059  0.064  0.069  0.074  0.079  0.084
PC 0.090  0.095  0.101  0.106  0.112  0.118  0.124  0.131  0.137  0.144
PC 0.151  0.158  0.166  0.174  0.182  0.191  0.200  0.207  0.215  0.224
PC 0.233  0.243  0.255  0.265  0.277  0.292  0.312  0.414  0.594  0.651
PC 0.699  0.716  0.729  0.741  0.750  0.761  0.771  0.780  0.788  0.796
PC 0.803  0.812  0.820  0.828  0.836  0.843  0.851  0.857  0.864  0.871
PC 0.877  0.883  0.889  0.895  0.900  0.906  0.911  0.916  0.922  0.927
PC 0.932  0.936  0.941  0.946  0.950  0.955  0.959  0.964  0.968  0.972
PC 0.976  0.980  0.984  0.988  0.992  0.996  1.000
```

Table 26. Rainfall distributions for Subbasin VIII-2, the portion of the Florida Ridge subbasin within St. Johns River Water Management District, Alachua County

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.002	0.004	0.006	0.008	0.010	0.012	0.014	0.016	0.018
PC 0.020	0.023	0.025	0.028	0.030	0.032	0.035	0.038	0.040	0.043
PC 0.046	0.049	0.052	0.055	0.058	0.062	0.065	0.069	0.073	0.077
PC 0.081	0.085	0.090	0.094	0.099	0.105	0.110	0.121	0.132	0.144
PC 0.158	0.172	0.188	0.200	0.215	0.232	0.256	0.384	0.623	0.696
PC 0.756	0.777	0.793	0.806	0.817	0.832	0.846	0.859	0.870	0.881
PC 0.892	0.897	0.902	0.907	0.912	0.916	0.920	0.924	0.928	0.932
PC 0.936	0.939	0.942	0.945	0.949	0.952	0.954	0.957	0.960	0.963
PC 0.965	0.968	0.970	0.973	0.975	0.977	0.980	0.982	0.984	0.986
PC 0.988	0.990	0.992	0.994	0.996	0.998	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.002	0.003	0.005	0.006	0.008	0.010	0.012	0.013	0.015
PC 0.017	0.019	0.021	0.023	0.025	0.027	0.029	0.032	0.034	0.036
PC 0.039	0.041	0.044	0.047	0.049	0.052	0.055	0.058	0.062	0.065
PC 0.068	0.072	0.076	0.080	0.084	0.089	0.094	0.105	0.116	0.128
PC 0.141	0.156	0.172	0.184	0.199	0.217	0.241	0.372	0.634	0.710
PC 0.772	0.792	0.808	0.822	0.833	0.848	0.862	0.875	0.886	0.897
PC 0.908	0.912	0.917	0.921	0.925	0.929	0.933	0.936	0.939	0.943
PC 0.946	0.948	0.951	0.954	0.957	0.959	0.962	0.964	0.966	0.969
PC 0.971	0.973	0.975	0.977	0.979	0.981	0.983	0.985	0.987	0.988
PC 0.990	0.992	0.994	0.995	0.997	0.998	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.006	0.008	0.010	0.012	0.014	0.016	0.018
PC 0.020	0.022	0.025	0.027	0.030	0.032	0.035	0.037	0.040	0.043
PC 0.045	0.048	0.051	0.054	0.058	0.061	0.064	0.068	0.072	0.076
PC 0.080	0.084	0.088	0.093	0.098	0.103	0.109	0.120	0.133	0.146
PC 0.160	0.175	0.192	0.204	0.219	0.237	0.261	0.387	0.622	0.693
PC 0.752	0.772	0.788	0.802	0.813	0.829	0.844	0.857	0.870	0.882
PC 0.893	0.898	0.903	0.908	0.913	0.917	0.921	0.925	0.929	0.933
PC 0.936	0.940	0.943	0.946	0.949	0.952	0.955	0.958	0.961	0.963
PC 0.966	0.968	0.971	0.973	0.975	0.978	0.980	0.982	0.984	0.986
PC 0.988	0.990	0.992	0.994	0.996	0.998	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.007	0.009	0.012	0.014	0.016	0.019	0.022
PC 0.024	0.027	0.030	0.032	0.035	0.038	0.041	0.044	0.048	0.051
PC 0.054	0.058	0.061	0.065	0.069	0.072	0.076	0.081	0.085	0.090
PC 0.094	0.099	0.104	0.110	0.116	0.122	0.128	0.138	0.148	0.160
PC 0.172	0.185	0.200	0.212	0.226	0.244	0.267	0.393	0.614	0.686
PC 0.745	0.765	0.781	0.794	0.805	0.819	0.832	0.844	0.854	0.865
PC 0.874	0.880	0.886	0.892	0.897	0.902	0.907	0.912	0.916	0.920
PC 0.924	0.928	0.932	0.936	0.940	0.943	0.946	0.950	0.953	0.956
PC 0.959	0.962	0.965	0.968	0.971	0.973	0.976	0.979	0.981	0.984
PC 0.986	0.989	0.991	0.993	0.996	0.998	1.000			

Table 27.   Rainfall distributions for Subbasin VIII-3, the lower Oklawaha River subbasin, i.e., Orange Creek and the Rodman Reservoir subbasins

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

PC 0.000	0.002	0.005	0.007	0.009	0.012	0.014	0.017	0.020	0.022
PC 0.025	0.028	0.030	0.033	0.036	0.039	0.042	0.046	0.049	0.052
PC 0.056	0.059	0.063	0.067	0.070	0.074	0.079	0.083	0.087	0.092
PC 0.097	0.102	0.107	0.113	0.119	0.125	0.131	0.141	0.151	0.162
PC 0.174	0.187	0.201	0.213	0.227	0.244	0.267	0.389	0.618	0.688
PC 0.746	0.765	0.780	0.793	0.804	0.817	0.830	0.841	0.852	0.862
PC 0.871	0.877	0.883	0.889	0.894	0.900	0.905	0.909	0.914	0.918
PC 0.922	0.926	0.930	0.934	0.938	0.941	0.945	0.948	0.952	0.955
PC 0.958	0.961	0.964	0.967	0.970	0.973	0.975	0.978	0.981	0.983
PC 0.986	0.988	0.991	0.993	0.995	0.998	1.000			

10-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.006	0.008	0.010	0.012	0.014	0.016	0.018
PC 0.021	0.023	0.025	0.028	0.030	0.033	0.035	0.038	0.041	0.043
PC 0.046	0.049	0.052	0.055	0.059	0.062	0.066	0.069	0.073	0.077
PC 0.081	0.085	0.090	0.095	0.100	0.105	0.111	0.120	0.129	0.140
PC 0.151	0.163	0.177	0.190	0.205	0.224	0.249	0.377	0.631	0.704
PC 0.764	0.785	0.802	0.816	0.828	0.841	0.852	0.863	0.873	0.883
PC 0.891	0.897	0.902	0.907	0.912	0.916	0.920	0.924	0.928	0.932
PC 0.935	0.939	0.942	0.945	0.948	0.951	0.954	0.957	0.960	0.963
PC 0.965	0.968	0.970	0.973	0.975	0.977	0.980	0.982	0.984	0.986
PC 0.988	0.990	0.992	0.994	0.996	0.998	1.000			

25-YEAR DISTRIBUTION

PC 0.000	0.002	0.004	0.007	0.009	0.011	0.014	0.016	0.018	0.021
PC 0.023	0.026	0.029	0.031	0.034	0.037	0.040	0.043	0.046	0.049
PC 0.052	0.056	0.059	0.063	0.066	0.070	0.074	0.078	0.082	0.087
PC 0.091	0.096	0.101	0.107	0.112	0.118	0.124	0.135	0.147	0.160
PC 0.173	0.188	0.204	0.215	0.229	0.245	0.268	0.390	0.617	0.687
PC 0.744	0.763	0.778	0.791	0.801	0.817	0.831	0.844	0.856	0.867
PC 0.878	0.884	0.890	0.895	0.900	0.905	0.910	0.914	0.919	0.923
PC 0.927	0.931	0.934	0.938	0.941	0.945	0.948	0.951	0.954	0.957
PC 0.960	0.963	0.966	0.969	0.972	0.974	0.977	0.979	0.982	0.984
PC 0.987	0.989	0.991	0.993	0.996	0.998	1.000			

100-YEAR DISTRIBUTION

PC 0.000	0.003	0.006	0.009	0.012	0.015	0.018	0.021	0.024	0.028
PC 0.031	0.034	0.038	0.041	0.045	0.049	0.053	0.057	0.060	0.065
PC 0.069	0.073	0.077	0.082	0.087	0.091	0.096	0.102	0.107	0.112
PC 0.118	0.124	0.130	0.137	0.144	0.151	0.159	0.167	0.177	0.187
PC 0.198	0.209	0.223	0.233	0.246	0.262	0.283	0.400	0.606	0.673
PC 0.728	0.747	0.761	0.772	0.783	0.795	0.806	0.817	0.826	0.835
PC 0.844	0.851	0.858	0.865	0.871	0.877	0.883	0.889	0.894	0.900
PC 0.905	0.910	0.914	0.919	0.923	0.928	0.932	0.936	0.940	0.944
PC 0.948	0.952	0.955	0.959	0.962	0.966	0.969	0.973	0.976	0.979
PC 0.982	0.985	0.988	0.991	0.994	0.997	1.000			

LEGEND

--- County boundary
— Hydrologic unit boundary
═ Roads
Waterbodies

ST. AUGUSTINE

S.R. 16
S.R. 207
I-95
U.S. 1
ST. JOHNS
FLAGLER

ATLANTIC OCEAN

FLAGLER
VOLUSIA
U.S. 1

S.R. 40
I-95

DAYTONA BEACH

U.S. 92
I-4

S.R. 44

30° 05' 01"

29° 36' 23"

81° 36' 29"

81° 03' 30"

N

5 4 3 2 1 0   5
APPROX. SCALE IN MILES
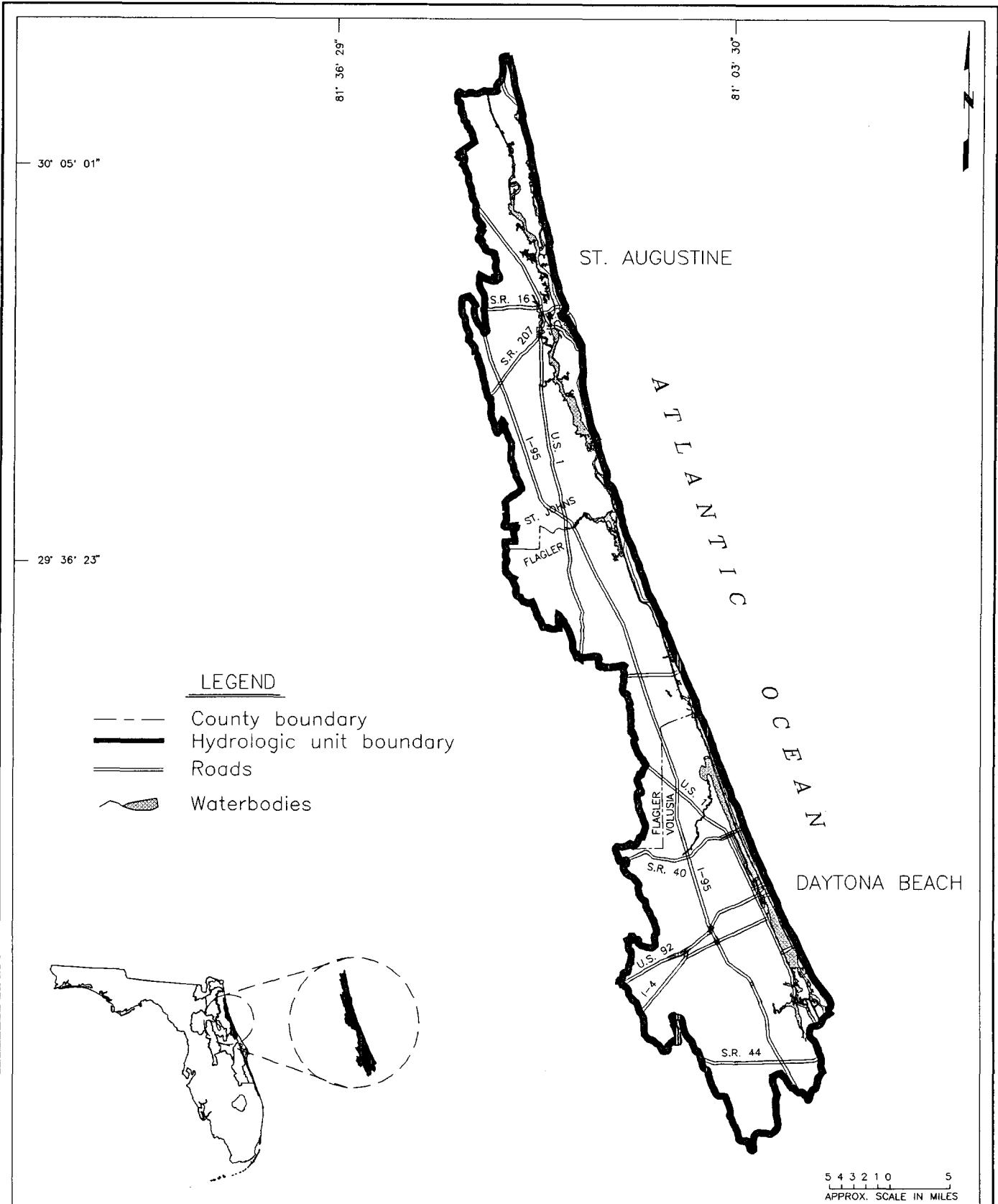
Figure 18

The upper coastal basin
(Hydrologic Unit IX)

ST. JOHNS RIVER
WATER MANAGEMENT DISTRICT
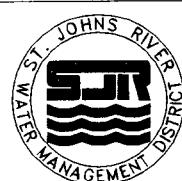
Table 28. Rainfall distributions for Hydrologic Unit IX, the upper coastal basin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.014  0.017  0.021  0.025  0.029  0.032
PC 0.036  0.040  0.044  0.048  0.053  0.057  0.061  0.066  0.070  0.075
PC 0.080  0.085  0.090  0.095  0.100  0.106  0.111  0.117  0.123  0.129
PC 0.136  0.143  0.149  0.157  0.164  0.172  0.181  0.190  0.200  0.211
PC 0.222  0.235  0.249  0.261  0.276  0.293  0.317  0.413  0.595  0.650
PC 0.696  0.716  0.731  0.745  0.756  0.770  0.782  0.793  0.803  0.813
PC 0.822  0.830  0.838  0.845  0.852  0.859  0.866  0.872  0.878  0.884
PC 0.890  0.895  0.901  0.906  0.911  0.916  0.921  0.926  0.930  0.935
PC 0.939  0.944  0.948  0.952  0.956  0.960  0.964  0.968  0.972  0.975
PC 0.979  0.983  0.986  0.990  0.993  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.002  0.005  0.008  0.010  0.013  0.015  0.018  0.021  0.024
PC 0.027  0.030  0.033  0.036  0.039  0.042  0.045  0.049  0.052  0.056
PC 0.059  0.063  0.067  0.071  0.075  0.079  0.084  0.088  0.093  0.098
PC 0.103  0.108  0.114  0.120  0.126  0.132  0.139  0.154  0.169  0.185
PC 0.202  0.220  0.240  0.251  0.264  0.281  0.303  0.403  0.605  0.662
PC 0.709  0.728  0.743  0.755  0.766  0.785  0.802  0.819  0.834  0.849
PC 0.863  0.870  0.876  0.882  0.888  0.893  0.898  0.903  0.908  0.913
PC 0.917  0.922  0.926  0.930  0.934  0.938  0.941  0.945  0.948  0.952
PC 0.955  0.958  0.962  0.965  0.968  0.971  0.974  0.976  0.979  0.982
PC 0.985  0.987  0.990  0.993  0.995  0.998  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.014  0.017  0.021  0.025  0.028  0.032
PC 0.036  0.040  0.044  0.048  0.052  0.057  0.061  0.065  0.070  0.075
PC 0.079  0.084  0.089  0.095  0.100  0.105  0.111  0.117  0.123  0.129
PC 0.135  0.142  0.149  0.156  0.164  0.172  0.180  0.188  0.197  0.206
PC 0.216  0.227  0.239  0.254  0.270  0.290  0.316  0.413  0.596  0.651
PC 0.697  0.719  0.737  0.752  0.766  0.777  0.788  0.797  0.806  0.815
PC 0.822  0.831  0.838  0.846  0.853  0.860  0.866  0.873  0.879  0.885
PC 0.890  0.896  0.901  0.906  0.911  0.916  0.921  0.926  0.931  0.935
PC 0.939  0.944  0.948  0.952  0.956  0.960  0.964  0.968  0.972  0.976
PC 0.979  0.983  0.986  0.990  0.993  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.009  0.013  0.018  0.023  0.028  0.032  0.037  0.042
PC 0.047  0.052  0.057  0.063  0.068  0.073  0.079  0.085  0.090  0.096
PC 0.102  0.108  0.115  0.121  0.127  0.134  0.141  0.148  0.155  0.163
PC 0.170  0.178  0.187  0.195  0.204  0.213  0.223  0.229  0.235  0.242
PC 0.250  0.258  0.267  0.279  0.293  0.309  0.331  0.423  0.584  0.636
PC 0.680  0.699  0.714  0.727  0.738  0.746  0.754  0.761  0.768  0.774
PC 0.780  0.789  0.798  0.807  0.815  0.823  0.831  0.839  0.846  0.853
PC 0.860  0.867  0.874  0.880  0.886  0.893  0.899  0.905  0.910  0.916
PC 0.922  0.927  0.932  0.938  0.943  0.948  0.953  0.958  0.963  0.968
PC 0.973  0.977  0.982  0.987  0.991  0.996  1.000
```

NEW SMYRNA BEACH

ATLANTIC OCEAN

CAPE KENNEDY

COCOA BEACH

SEBASTIAN INLET

VERO BEACH

81° 06' 34"

80° 29' 01"

28° 52' 30"

28° 19' 32"

U.S. 1

MOSQUITO LAGOON

INTRACOASTAL WTY

S.R. 406

S.R. 3

HARBOR

S.R. 405

BANANA RIVER

INDIAN RIVER

U.S. 192

I-95

BREVARD

INDIAN RIVER

S.R. 512

I-95

U.S. 1

S.R. 60

VOLUSIA

BREVARD

LEGEND

– – – County boundary

———— Hydrologic unit boundary

════ Roads

Waterbodies

5   0   5
APPROX. SCALE IN MILES
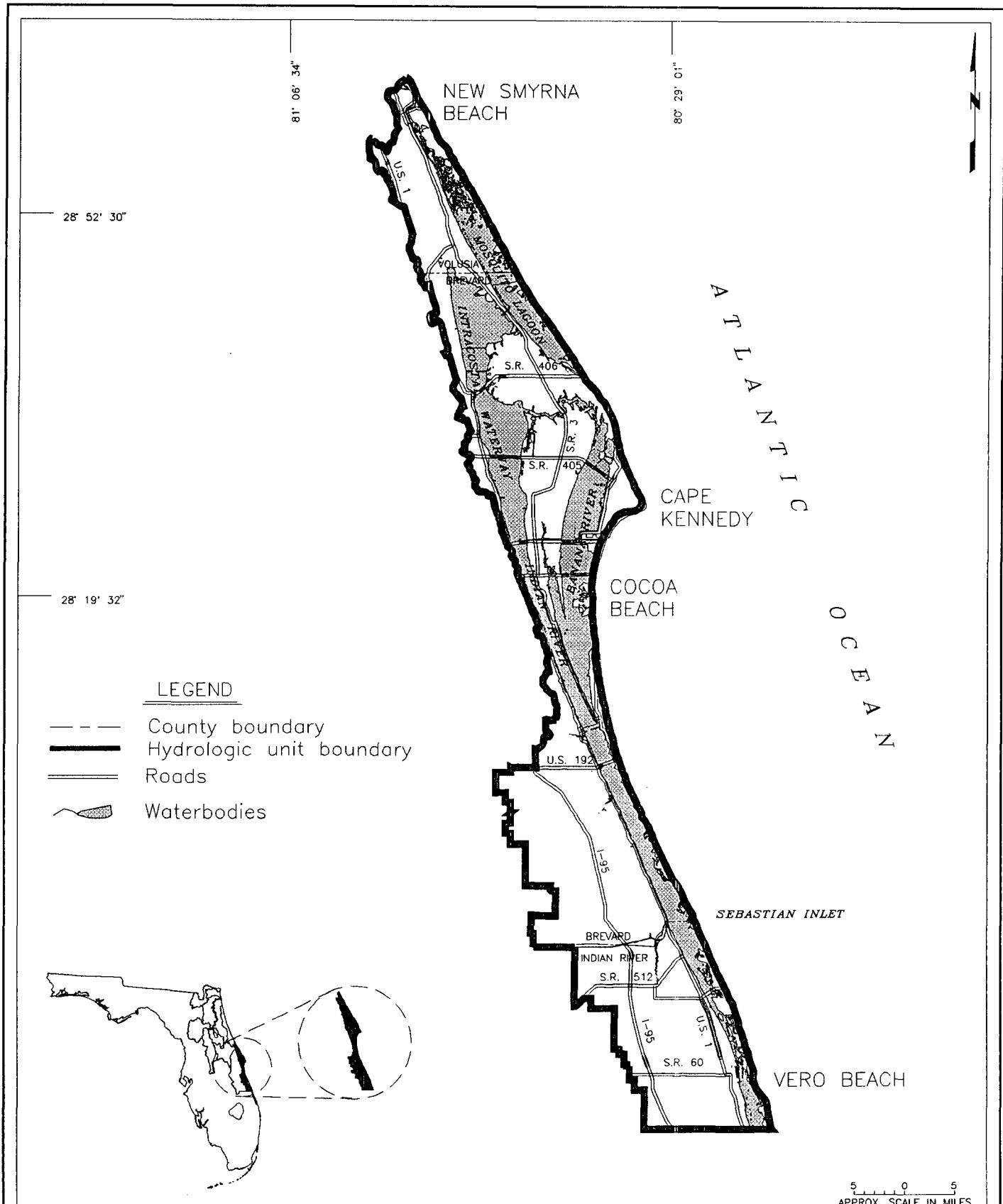
Figure 19

The Indian River Lagoon basin
(Hydrologic Unit X)

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

SJR

Table 29.   Rainfall distributions for Hydrologic Unit X, the Indian River Lagoon basin

(24-Hour rainfall distributions as PC cards for the HEC-1 input data)

GENERALIZED DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.014  0.017  0.021  0.025  0.029  0.032
PC 0.036  0.040  0.044  0.049  0.053  0.057  0.061  0.066  0.071  0.075
PC 0.080  0.085  0.090  0.095  0.101  0.106  0.112  0.118  0.124  0.130
PC 0.136  0.143  0.150  0.157  0.165  0.173  0.181  0.191  0.202  0.213
PC 0.225  0.238  0.253  0.265  0.279  0.296  0.318  0.412  0.596  0.650
PC 0.694  0.713  0.729  0.741  0.753  0.766  0.779  0.791  0.801  0.812
PC 0.821  0.829  0.837  0.845  0.852  0.859  0.865  0.872  0.878  0.884
PC 0.889  0.895  0.900  0.906  0.911  0.916  0.921  0.925  0.930  0.935
PC 0.939  0.943  0.948  0.952  0.956  0.960  0.964  0.968  0.972  0.975
PC 0.979  0.983  0.986  0.990  0.993  0.997  1.000
```

10-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.006  0.009  0.011  0.014  0.017  0.021  0.024  0.027
PC 0.030  0.033  0.037  0.040  0.044  0.047  0.051  0.055  0.059  0.063
PC 0.067  0.071  0.075  0.080  0.084  0.089  0.094  0.099  0.104  0.109
PC 0.115  0.121  0.127  0.133  0.140  0.147  0.155  0.167  0.180  0.194
PC 0.208  0.224  0.241  0.253  0.266  0.282  0.304  0.401  0.606  0.662
PC 0.708  0.727  0.741  0.754  0.764  0.781  0.796  0.810  0.823  0.836
PC 0.848  0.855  0.862  0.868  0.875  0.881  0.886  0.892  0.897  0.902
PC 0.907  0.912  0.917  0.921  0.925  0.930  0.934  0.938  0.942  0.946
PC 0.949  0.953  0.957  0.960  0.963  0.967  0.970  0.973  0.977  0.980
PC 0.983  0.986  0.989  0.992  0.994  0.997  1.000
```

25-YEAR DISTRIBUTION

```
PC 0.000  0.003  0.007  0.010  0.014  0.017  0.021  0.025  0.028  0.032
PC 0.036  0.040  0.044  0.048  0.052  0.057  0.061  0.065  0.070  0.075
PC 0.079  0.084  0.089  0.095  0.100  0.105  0.111  0.117  0.123  0.129
PC 0.135  0.142  0.149  0.156  0.164  0.172  0.180  0.189  0.199  0.209
PC 0.220  0.231  0.245  0.258  0.273  0.291  0.316  0.411  0.598  0.652
PC 0.697  0.718  0.734  0.748  0.760  0.773  0.784  0.795  0.805  0.814
PC 0.822  0.831  0.838  0.846  0.853  0.860  0.866  0.873  0.879  0.885
PC 0.890  0.896  0.901  0.906  0.911  0.916  0.921  0.926  0.931  0.935
PC 0.939  0.944  0.948  0.952  0.956  0.960  0.964  0.968  0.972  0.976
PC 0.979  0.983  0.986  0.990  0.993  0.997  1.000
```

100-YEAR DISTRIBUTION

```
PC 0.000  0.004  0.008  0.012  0.017  0.021  0.025  0.030  0.034  0.039
PC 0.043  0.048  0.053  0.058  0.063  0.068  0.073  0.078  0.084  0.089
PC 0.095  0.100  0.106  0.112  0.118  0.125  0.131  0.138  0.144  0.152
PC 0.159  0.166  0.174  0.182  0.191  0.200  0.209  0.218  0.227  0.237
PC 0.247  0.259  0.272  0.283  0.297  0.313  0.335  0.424  0.584  0.635
PC 0.677  0.695  0.710  0.723  0.733  0.745  0.757  0.767  0.776  0.785
PC 0.794  0.803  0.811  0.820  0.828  0.835  0.843  0.850  0.857  0.864
PC 0.870  0.877  0.883  0.889  0.895  0.901  0.906  0.912  0.917  0.922
PC 0.928  0.933  0.938  0.943  0.947  0.952  0.957  0.962  0.966  0.970
PC 0.975  0.979  0.983  0.988  0.992  0.996  1.000
```

Table 30.   Rainfall distribution for the mean annual maximum storm event (districtwide)

(24-Hour rainfall distribution as PC cards for the HEC-1 input data)

PC 0.000 0.002 0.004 0.005 0.007 0.009 0.011 0.013 0.015 0.017
PC 0.019 0.022 0.024 0.026 0.028 0.031 0.033 0.036 0.038 0.041
PC 0.044 0.046 0.049 0.052 0.055 0.059 0.062 0.065 0.069 0.073
PC 0.077 0.081 0.085 0.090 0.095 0.100 0.105 0.113 0.121 0.129
PC 0.139 0.150 0.162 0.180 0.201 0.227 0.260 0.369 0.639 0.703
PC 0.754 0.783 0.806 0.826 0.843 0.854 0.864 0.873 0.882 0.890
PC 0.897 0.902 0.907 0.912 0.916 0.920 0.924 0.928 0.932 0.935
PC 0.939 0.942 0.945 0.948 0.951 0.954 0.957 0.960 0.962 0.965
PC 0.967 0.970 0.972 0.974 0.976 0.979 0.981 0.983 0.985 0.987
         PC 0.989 0.991 0.993 0.995 0.996 0.998 1.000

Appendix A

RAINFALL MAXIMUMS FOR VARIOUS SURFACE WATER BASINS WITHIN THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

(The rainfall ratios shown in the tables are t-hour to 24-hour values, where t ≤ 24 hours)

Table 1A. Rainfall maximums for the Nassau River basin
           west of I-95 (Subbasin I-1)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.500	2.270	3.070	4.000	5.000	7.250
25 YR	1.690	2.620	3.570	4.900	6.000	9.000
100 YR	2.000	3.160	4.360	5.900	7.120	12.000

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.207	0.313	0.423	0.552	0.690	1.000
25 YR	0.188	0.291	0.397	0.544	0.667	1.000
100 YR	0.167	0.263	0.363	0.492	0.593	1.000
AVG	0.187	0.289	0.394	0.529	0.650	1.000

Table 2A. Rainfall maximums for the Nassau River basin
           east of I-95 (Subbasin I-2)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.500	2.270	3.080	4.100	5.200	7.500
25 YR	1.690	2.620	3.580	5.000	6.000	9.500
100 YR	2.000	3.160	4.375	6.000	7.200	12.750

*** RAINFALL RATIO ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.200	0.303	0.411	0.547	0.693	1.000
25 YR	0.178	0.276	0.377	0.526	0.632	1.000
100 YR	0.157	0.248	0.343	0.471	0.565	1.000
AVG	0.178	0.275	0.377	0.515	0.630	1.000

Table 3A. Rainfall maximums for the St. Marys River basin
           west of S.R. 121 including the adjacent areas
           within SJRWMD (Subbasin II-1)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.520	2.300	3.120	4.000	4.750	6.600
25 YR	1.710	2.640	3.610	4.500	5.800	7.900
100 YR	2.020	3.170	4.375	5.500	6.900	10.250

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.230	0.348	0.473	0.606	0.720	1.000
25 YR	0.216	0.334	0.457	0.570	0.734	1.000
100 YR	0.197	0.309	0.427	0.537	0.673	1.000
AVG	0.215	0.331	0.452	0.571	0.709	1.000

Table 4A. Rainfall maximums for the St. Marys River
           basin between S.R. 121 and U.S. 1 including the
           adjacent areas within SJRWMD (Subbasin II-2)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.520	2.320	3.150	4.000	4.900	6.900
25 YR	1.720	2.660	3.640	4.600	5.900	8.500
100 YR	2.025	3.190	4.400	5.750	7.000	11.100

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.220	0.336	0.457	0.580	0.710	1.000
25 YR	0.202	0.313	0.428	0.541	0.694	1.000
100 YR	0.182	0.287	0.396	0.518	0.631	1.000
AVG	0.202	0.312	0.427	0.546	0.678	1.000

Table 5A. Rainfall maximums for the St. Marys River basin
           east of U.S. 1 (Subbasin II-3)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.490	2.280	3.110	4.000	5.250	7.500
25 YR	1.690	2.630	3.610	4.850	6.000	9.500
100 YR	2.000	3.180	4.400	6.000	7.200	12.500

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.199	0.304	0.415	0.533	0.700	
25 YR	0.178	0.277	0.380	0.511	0.632	
100 YR	0.160	0.254	0.352	0.480	0.576	
AVG	0.179	0.278	0.382	0.508	0.636	

Table 6A. Rainfall maximums for the Crescent Lake
           subbasin (Subbasin III-1)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.570	2.310	3.090	4.050	5.300	7.000
25 YR	1.770	2.680	3.620	4.800	6.000	8.500
100 YR	2.080	3.240	4.450	6.000	7.150	11.000

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.224	0.330	0.441	0.579	0.757	
25 YR	0.208	0.315	0.426	0.565	0.706	
100 YR	0.189	0.295	0.405	0.545	0.650	
AVG	0.207	0.313	0.424	0.563	0.704	

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Table 7A. Rainfall maximums for the Etonia Creek subbasin including the adjacent areas within SJRWMD (Subbasin III-2)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.550	2.320	3.130	4.000	5.000	6.400
25 YR	1.750	2.670	3.630	4.700	5.900	7.800
100 YR	2.060	3.220	4.420	5.750	7.000	9.750

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.242	0.363	0.489	0.625	0.781	
25 YR	0.224	0.342	0.465	0.603	0.756	
100 YR	0.211	0.330	0.453	0.590	0.718	
AVG	0.226	0.345	0.469	0.606	0.752	

Table 8A. Rainfall maximums for the Black Creek subbasin including the adjacent areas within SJRWMD (Subbasin III-3)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.540	2.320	3.130	4.000	4.950	6.750
25 YR	1.730	2.660	3.620	4.700	5.900	8.100
100 YR	2.040	3.200	4.400	5.900	7.050	11.000

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.228	0.344	0.464	0.593	0.733	
25 YR	0.214	0.328	0.447	0.580	0.728	
100 YR	0.185	0.291	0.400	0.536	0.641	
AVG	0.209	0.321	0.437	0.570	0.701	

Table 9A. Rainfall maximums for the Ortega River subbasin (Subbasin III-4)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.530	2.290	3.090	4.000	5.000	7.200
25 YR	1.720	2.640	3.600	4.800	6.000	8.750
100 YR	2.030	3.190	4.400	6.000	7.100	11.750

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.212	0.318	0.429	0.556	0.694	
25 YR	0.197	0.302	0.411	0.549	0.686	
100 YR	0.173	0.271	0.374	0.511	0.604	
AVG	0.194	0.297	0.405	0.538	0.661	

Table 10A. Rainfall maximums for the Trout River, Broward River, and Dunn Creek subbasins (Subbasin III-5)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.520	2.280	3.070	4.000	5.100	7.400
25 YR	1.710	2.630	3.580	4.850	6.000	9.000
100 YR	2.020	3.170	4.370	6.000	7.100	12.000

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.205	0.308	0.415	0.541	0.689	
25 YR	0.190	0.292	0.398	0.539	0.667	
100 YR	0.168	0.264	0.364	0.500	0.592	
AVG	0.188	0.288	0.392	0.526	0.649	

Table 11A. Rainfall maximums for the Arlington Creek and Julington Creek subbasins (Subbasin III-6)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.520	2.280	3.080	4.000	5.250	7.500
25 YR	1.710	2.640	3.590	5.000	6.000	9.250
100 YR	2.020	3.190	4.400	6.200	7.200	12.500

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.203	0.304	0.411	0.533	0.700	
25 YR	0.185	0.285	0.388	0.541	0.649	
100 YR	0.162	0.255	0.352	0.496	0.576	
AVG	0.183	0.282	0.384	0.523	0.642	

Table 12A. Rainfall maximums for the Sixmile Creek, McCullough Creek and Deep Creek subbasins (Subbasin III-7)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.540	2.290	3.080	4.000	5.250	7.000
25 YR	1.730	2.650	3.600	4.900	6.000	8.500
100 YR	2.040	3.210	4.420	6.100	7.200	11.500

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.220	0.327	0.440	0.571	0.750	
25 YR	0.204	0.312	0.424	0.576	0.706	
100 YR	0.177	0.279	0.384	0.530	0.626	
AVG	0.200	0.306	0.416	0.559	0.694	

Table 13A. Rainfall maximums for the Econlockhatchee River
            subbasin including the adjacent areas within
            SJRWMD (Subbasin IV-1)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.590	2.380	3.210	4.200	5.200	7.000
25 YR	1.790	2.730	3.710	4.900	6.000	8.750
100 YR	2.100	3.270	4.490	5.850	7.400	12.000

*** RAIFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.227	0.340	0.459	0.600	0.743	
25 YR	0.205	0.312	0.424	0.560	0.686	
100 YR	0.175	0.272	0.374	0.488	0.617	
AVG	0.202	0.308	0.419	0.549	0.682	

Table 14A. Rainfall maximums for the Wekiva River and
            Black Water Creek subbasins (Subbasin IV-2)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.590	2.380	3.210	4.200	5.100	6.700
25 YR	1.790	2.730	3.710	4.750	5.900	8.400
100 YR	2.100	3.280	4.500	5.900	7.100	11.300

*** RAIFALL RAOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.237	0.355	0.479	0.627	0.761	
25 YR	0.213	0.325	0.442	0.565	0.702	
100 YR	0.186	0.290	0.398	0.522	0.628	
AVG	0.212	0.323	0.440	0.571	0.697	

Table 15A. Rainfall maximums for the Lake Jessup
            subbasin (Subbasin IV-3)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.590	2.350	3.140	4.200	5.200	6.900
25 YR	1.790	2.700	3.650	4.750	5.950	8.500
100 YR	2.100	3.250	4.450	5.900	7.200	11.500

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.230	0.341	0.455	0.609	0.754	
25 YR	0.211	0.318	0.429	0.559	0.700	
100 YR	0.183	0.283	0.387	0.513	0.626	
AVG	0.208	0.314	0.424	0.560	0.693	

Table 16a. Rainfall maximums for the St. Johns River
            subbasin between S.R. 46 and the Wekiva
            River (Subbasin IV-4)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.570	2.310	3.090	4.100	5.300	7.250
25 YR	1.770	2.680	3.620	4.800	6.000	8.800
100 YR	2.080	3.240	4.450	6.000	7.200	11.750

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.217	0.319	0.426	0.566	0.731	
25 YR	0.201	0.305	0.411	0.545	0.682	
100 YR	0.177	0.276	0.379	0.511	0.613	
AVG	0.198	0.300	0.405	0.541	0.675	

Table 17A. Rainfall maximums for the Lake George basin
            (Hydrologic Unit V)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.560	2.340	3.140	4.100	5.050	6.500
25 YR	1.760	2.690	3.650	4.800	5.900	8.200
100 YR	2.070	3.240	4.450	5.900	7.060	11.000

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.240	0.360	0.483	0.631	0.777	
25 YR	0.215	0.328	0.445	0.585	0.720	
100 YR	0.188	0.295	0.405	0.536	0.642	
AVG	0.214	0.328	0.444	0.584	0.713	

Table 18A. Rainfall maximums for the St.Johns River subbasin
            south of Lake Washington weir including the
            adjacent areas within SJRWMD (Subbasin VI-1)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.590	2.380	3.210	4.250	5.300	7.400
25 YR	1.790	2.730	3.710	5.000	6.000	9.000
100 YR	2.100	3.280	4.500	6.000	7.800	12.000

*** RAIFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.215	0.322	0.434	0.574	0.716	
25 YR	0.199	0.303	0.412	0.556	0.667	
100 YR	0.175	0.273	0.375	0.500	0.650	
AVG	0.196	0.299	0.407	0.543	0.678	

Table 19A. Rainfall maximums for the St. Johns River subbasin between Lake Washington weir and S.R. 46 (Subbasin VI-2)

*** RAINFALL IN INCHES ***

10 YR	1.580	2.320	3.090	4.100	5.250	7.500
25 YR	1.780	2.680	3.620	4.900	6.000	9.250
100 YR	2.100	3.250	4.450	5.900	7.500	12.500

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.211	0.309	0.412	0.547	0.700	
25 YR	0.192	0.290	0.391	0.530	0.649	
100 YR	0.168	0.260	0.356	0.472	0.600	
AVG	0.190	0.286	0.386	0.516	0.650	

Table 20A. Rainfall maximums for the Palatlakaha River subbasin including the adjacent areas within SJRWMD (Subbasin VII-1)

*** RAINFALL IN INCHES ***

10 YR	1.600	2.440	3.310	4.300	5.100	6.650
25 YR	1.800	2.790	3.810	4.800	5.950	8.500
100 YR	2.120	3.340	4.600	5.900	7.300	11.500

*** RAIFALL RAOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.241	0.367	0.498	0.647	0.767	
25 YR	0.212	0.328	0.448	0.565	0.700	
100 YR	0.184	0.290	0.400	0.513	0.635	
AVG	0.212	0.329	0.449	0.575	0.701	

Table 21A. Rainfall maximums for the Lake Apopka subbasin (Subbasin VII-2)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.600	2.430	3.300	4.250	5.100	6.600
25 YR	1.800	2.780	3.800	4.750	5.900	8.450
100 YR	2.120	3.340	4.600	5.800	7.200	11.400

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.242	0.368	0.500	0.644	0.773	
25 YR	0.213	0.329	0.450	0.562	0.698	
100 YR	0.186	0.293	0.404	0.509	0.632	
AVG	0.214	0.330	0.451	0.572	0.701	

Table 22A. Rainfall maximums for the Oklawaha River subbasin between Apopka-Beauclair Canal lock and dam and Burrell structure (Subbasin VII-3)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.590	2.410	3.260	4.100	5.000	6.500
25 YR	1.790	2.760	3.760	4.700	5.900	8.400
100 YR	2.105	3.300	4.550	5.800	7.050	11.400

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.245	0.371	0.502	0.631	0.769	1.000
25 YR	0.213	0.329	0.448	0.560	0.702	1.000
100 YR	0.185	0.289	0.399	0.509	0.618	1.000
AVG	0.214	0.330	0.449	0.566	0.697	1.000

Table 23A. Rainfall Maximums for the Oklawaha River subbasin between Burrell structure and S.R. 40 including the adjacent areas within the SJRWMD (Subbasin VII-4)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.580	2.370	3.190	4.050	4.950	6.350
25 YR	1.780	2.710	3.680	4.650	5.900	8.300
100 YR	2.095	3.250	4.450	5.800	6.950	11.400

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.249	0.373	0.502	0.638	0.780	1.000
25 YR	0.214	0.327	0.443	0.560	0.711	1.000
100 YR	0.184	0.285	0.390	0.509	0.610	1.000
AVG	0.216	0.328	0.445	0.569	0.700	1.000

Table 24A. Rainfall maximums for the Oklawaha River subbasin between S.R. 40 and Rodman Reservoir (Subbasin VII-5)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.570	2.350	3.160	3.950	4.850	6.250
25 YR	1.770	2.690	3.650	4.700	5.800	8.150
100 YR	2.080	3.230	4.425	5.700	6.900	11.200

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.251	0.376	0.506	0.632	0.776	
25 YR	0.217	0.330	0.448	0.577	0.712	
100 YR	0.186	0.288	0.395	0.509	0.616	
AVG	0.218	0.331	0.450	0.573	0.701	

Table 25A. Rainfall maximums for the SJRWMD portions of the Withlacoochee River and Florida Ridge subbasins, Marion County (Subbasin VIII-1)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.580	2.370	3.190	4.000	4.900	6.500
25 YR	1.770	2.710	3.690	4.750	5.850	8.300
100 YR	2.085	3.260	4.480	5.750	7.000	11.600

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.243	0.365	0.491	0.615	0.754	
25 YR	0.213	0.327	0.445	0.572	0.705	
100 YR	0.180	0.281	0.386	0.496	0.603	
AVG	0.212	0.324	0.441	0.561	0.687	

Table 26A. Rainfall maximums for the portion of Florida Ridge subbasin within SJRWMD in Alachua County (Subbasin VIII-2)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.550	2.320	3.130	3.900	4.800	5.900
25 YR	1.740	2.670	3.630	4.600	5.800	7.400
100 YR	2.050	3.210	4.420	5.600	6.900	9.250

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.263	0.393	0.531	0.661	0.814	
25 YR	0.235	0.361	0.491	0.622	0.784	
100 YR	0.222	0.347	0.478	0.605	0.746	
AVG	0.240	0.367	0.500	0.629	0.781	

Table 27A. Rainfall maximums for the lower Oklawaha River subbasin, i.e., Orange Creek and the Rodman Reservoir subbasins (Subbasin VIII-3)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.560	2.350	3.170	4.000	4.800	6.150
25 YR	1.750	2.690	3.670	4.600	5.800	7.700
100 YR	2.060	3.230	4.450	5.600	6.850	10.000

*** RAIN FALL RATIOS***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.254	0.382	0.515	0.650	0.780	
25 YR	0.227	0.349	0.477	0.597	0.753	
100 YR	0.206	0.323	0.445	0.560	0.685	
AVG	0.229	0.351	0.479	0.603	0.740	

Table 28A. Rainfall maximums for the upper coastal basin (Hydrologic Unit IX)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.540	2.300	3.090	4.000	5.500	7.600
25 YR	1.740	2.660	3.620	5.000	6.100	9.500
100 YR	2.045	3.220	4.450	6.000	7.100	12.750

*** RAIN FALL RATIOS***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.203	0.303	0.407	0.526	0.724	
25 YR	0.183	0.280	0.381	0.526	0.642	
100 YR	0.160	0.253	0.349	0.471	0.557	
AVG	0.182	0.278	0.379	0.508	0.641	

Table 29A. Rainfall maximums for the Indian River Lagoon basin (Hydrologic Unit X)

*** RAINFALL IN INCHES ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	1.570	2.310	3.090	4.000	5.300	7.650
25 YR	1.770	2.680	3.620	4.900	6.100	9.500
100 YR	2.080	3.240	4.450	6.000	7.600	13.000

*** RAINFALL RATIOS ***

T	15 MIN	30 MIN	60 MIN	3 HR	6 HR	24 HR
10 YR	0.205	0.302	0.404	0.523	0.693	

Appendix B

RETURN PERIOD FOR MEAN ANNUAL HYDROLOGIC EVENT

(Technical Paper)

JOURNAL OF THE HYDRAULICS DIVISION

RETURN PERIOD FOR MEAN ANNUAL HYDROLOGIC EVENT

By Donthamsetti V. Rao,[1] M. ASCE

INTRODUCTION

Engineering hydrologists sometimes wish to assign a return period (T) to the mean annual hydrologic event. The value of the mean annual event is usually the arithmetic average $(\bar{X})$ of annual series of data, such as annual flood flows, annual low flows, etc. The value of T is not a constant for this event $(\bar{X})$, but depends upon the probability distribution (PD) assumed for the data sample. If F represents the nonexceedance probability for $\bar{X}$ based on the assumed PD, T for $\bar{X}$ $(T_{\bar{x}})$ is given by $1/(1 - F)$ if data are annual largest events (ALE), such as flood flows and by $1/F$ if data are annual smallest events (ASE), such as low flows. For the normal and Gumbel distributions which have a constant skewness coefficient (γ), $T_{\bar{x}}$ is also a constant; for the normal distribution $T_{\bar{x}} = 2$ yr for both ALE and ASE, and for the Gumbel $T_{\bar{x}} = 2.33$ yr when it is applied to ALE. For other PDs, the value of $T_{\bar{x}}$ depends on the statistical parameters of the random variable. This paper presents $T_{\bar{x}}$ values for some commonly used PDs in a generalized fashion.

METHOD OF EVALUATION

Given data can be made dimensionless by the transform $K_i = X_i/\bar{X}$ in which K_i represents a dimensionless variate corresponding to the ith data item X_i. The mean of dimensionless data is $\bar{K} = 1.0$. Different PDs can be evaluated in terms of K by assuming the population mean of the random variable as unity. The variance of K, σ_k^2, is equivalent to η_x^2, in which $\eta_x =$ population

coefficient of variation of X. The coefficient of skewness (γ) being dimensionless, is common for X and K. The two- and three-parameter lognormal (LN), gamma (GA), and Weibull (WB) distributions and log Pearson Type 3 (LP) distribution were evaluated for a wide range of σ_k^2 and γ. The value of F was determined at $K = 1.0$ and values of T_x were then calculated for ALE and ASE. Note

TABLE 1.—Values of T_x for Two Parameter Probability Distributions

σ_k^2 or η_x^2 (1)	Annual Largest Events			Annual Smallest Events		
	Lognormal (2)	Gamma (3)	Weibull (4)	Lognormal (5)	Gamma (6)	Weibull (7)
0.05	2.19	2.13	1.92	1.84	1.89	2.09
0.10	2.28	2.18	2.00	1.78	1.84	2.00
0.20	2.41	2.27	2.12	1.71	1.79	1.89
0.30	2.51	2.34	2.22	1.66	1.75	1.82
0.40	2.59	2.40	2.31	1.63	1.71	1.76
0.50	2.67	2.46	2.39	1.60	1.68	1.72
0.60	2.73	2.52	2.46	1.58	1.66	1.68
0.70	2.79	2.57	2.53	1.56	1.64	1.65
0.80	2.85	2.62	2.60	1.54	1.62	1.63
0.90	2.90	2.67	2.66	1.53	1.60	1.60
1.00	2.95	2.72	2.72	1.51	1.58	1.58
2.00	3.33	3.15	3.20	1.43	1.46	1.46
3.00	3.60	3.54	3.56	1.39	1.39	1.39
4.00	3.80	3.90	3.86	1.36	1.34	1.35
5.00	3.97	4.25	4.11	1.34	1.31	1.32

TABLE 2.—Values of T_x for Three Parameter Probability Distributions

Skewness coefficient γ (1)	Annual Largest Events			Annual Smallest Events		
	Lognormal (2)	Gamma (3)	Weibull (4)	Lognormal (5)	Gamma (6)	Weibull (7)
0.50	2.14	2.14	2.15	1.88	1.88	1.87
1.00	2.29	2.31	2.33	1.78	1.77	1.75
1.50	2.43	2.50	2.52	1.70	1.67	1.66
2.00	2.55	2.72	2.72	1.64	1.58	1.58
3.00	2.78	3.25	3.08	1.56	1.44	1.48
4.00	2.95	3.90	3.41	1.51	1.34	1.41
5.00	3.10	4.66	3.70	1.48	1.27	1.37
7.00	3.33	6.44	4.20	1.43	1.18	1.31
9.00	3.50	8.54	4.62	1.40	1.13	1.28

that the three-parameter GA is equivalent to the Pearson Type 3 distribution. For brevity, no equations of PDs are presented herein. Different relations for the four distributions are available in Ref. 1. (For LN, GA, and WB, the equations of three-parameter distributions can be converted into the equations of two-parameter distributions by setting the location parameter, $c = 0$.)

For two-parameter LN, GA, and WB, values of $T_{\bar{x}}$ are tabulated as a function of σ_k^2 or η_x^2 (Table 1). For the three-parameter versions of the preceding three PDs, $T_{\bar{x}}$ is a function of γ only (Table 2). For LP, $T_{\bar{x}}$ depends on both σ_k^2

TABLE 3.—Values of $T_{\bar{x}}$ for Log Pearson Type 3 Distribution

σ_k^2 or η_x^2 (1)	Skewness Coefficient (γ)						
	0.50 (2)	1.00 (3)	1.50 (4)	2.00 (5)	3.00 (6)	6.00 (7)	9.00 (8)
(a) Annual Largest Events							
0.05	2.14	2.28	2.41	2.54	2.78	3.19	3.78
0.10	2.15	2.28	2.41	2.52	2.71	3.01	3.39
0.20	2.17	2.31	2.42	2.52	2.68	2.90	3.14
0.30	2.19	2.33	2.45	2.54	2.68	2.87	3.06
0.40	2.21	2.36	2.48	2.57	2.70	2.87	3.03
0.50	2.23	2.39	2.51	2.60	2.73	2.88	3.03
0.60	2.26	2.43	2.55	2.63	2.75	2.90	3.03
0.70	U	2.46	2.58	2.67	2.79	2.92	3.04
0.80	U	2.50	2.62	2.70	2.82	2.95	3.06
0.90	U	2.53	2.66	2.74	2.85	2.97	3.08
1.00	U	2.57	2.70	2.78	2.89	3.00	3.10
2.00	U	U	U	3.21	3.26	3.31	3.35
3.00	U	U	U	U	3.67	3.62	3.60
4.00	U	U	U	U	4.14	3.95	3.85
5.00	U	U	U	U	4.69	4.29	4.09
(b) Annual Smallest Events							
0.05	1.88	1.78	1.71	1.65	1.56	1.46	1.36
0.10	1.87	1.78	1.71	1.66	1.58	1.50	1.42
0.20	1.86	1.77	1.70	1.66	1.60	1.53	1.47
0.30	1.84	1.75	1.69	1.65	1.59	1.54	1.49
0.40	1.83	1.73	1.68	1.64	1.59	1.54	1.49
0.50	1.81	1.72	1.66	1.63	1.58	1.53	1.49
0.60	1.80	1.70	1.65	1.61	1.57	1.53	1.49
0.70	U	1.68	1.63	1.60	1.56	1.52	1.49
0.80	U	1.67	1.62	1.59	1.55	1.51	1.48
0.90	U	1.65	1.60	1.57	1.54	1.51	1.48
1.00	U	1.64	1.59	1.56	1.53	1.50	1.48
2.00	U	U	U	1.45	1.44	1.43	1.43
3.00	U	U	U	U	1.37	1.38	1.38
4.00	U	U	U	U	1.32	1.34	1.35
5.00	U	U	U	U	1.27	1.30	1.32

Note: U = U-shaped distribution.

(or η_x^2) and γ (Table 3). For ALE, $T_{\bar{x}}$ increases with σ_k^2 or η_x^2 and γ, or both, but for ASE it decreases as the latter are increased (with some exceptions in the case of LP). For practical application of Tables 1–3 one may first determine the sample statistics mean ($\bar{X}$), variance (S_x^2), and the skewness coefficient

(CS). Then, the sample coefficient of variation is given by, $CV = S_x / \bar{X}$. With $\eta_x^2 = CV^2$ and $\gamma = CS$ one may enter Tables 1–3 and obtain an approximate value for T_y. When γ is negative, T_y values of ALE and ASE in Table 2 represent the T_y values of ASE and ALE, respectively, for LN and GA.

In the case of LP, for some combinations of σ_k^2 and γ the parameter values do not permit evaluation of F values, and for some combinations the form of LP is U shaped. In both instances T_y values are not shown in Table 3.

An application of the results presented in this paper is as follows: Different regulatory agencies apply certain criteria in allowing development within the riverine floodplains. Assume that one of such agencies does not permit any development activity within the mean annual floodplain of rivers in its jurisdiction. The structures built before the enactment of such regulations escape the law. Suppose a river within the jurisdiction of the agency has $CV^2 = 1.0$ and $CS = 2.0$ for its floods. Property located within the mean annual floodplain will be inundated, on the average, once in 2.95 yr if floods are distributed as the two-parameter LN, but once in 2.55 yr if distributed as the three-parameter LN. An insurance agency accepting flood insurance may charge more to insure such property if it assumes the three-parameter LN in determining its premium rates.

Appendix.—Reference

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