

MEMORANDUM

TO: Governing Board

FROM: Megan Wetherington, P.E., Water Resources Engineer *MW*

THRU: Jerry A. Scarborough, Executive Director
Kirk B. Webster, Deputy Executive Director *KBW*

DATE: January 3, 2008

RE: December 2007 Hydrologic Conditions Report for the District

The monthly hydrologic conditions report is compiled in compliance with chapter 40B-21.211, Florida Administrative Code, using water resource data collected from the following: rainfall (radar-derived rainfall estimate), groundwater levels (94 wells), surfacewater levels (17 lakes and 11 rivers), river flows (6 stations on 4 rivers), and general hydrological/meteorological information (drought indices and weather forecasts). Rainfall and surfacewater data are provisional, and subject to revision. Statistics are updated as revised data become available.

RAINFALL

- Average District-wide December rainfall was 2.35 inches. The long-term average rainfall is 3.18 inches (Table 1, Figure 1). Rainfall was unevenly distributed, with the central region of the District receiving up to 4 inches (Figure 2).
- The 12-month average rainfall deficit is 15.1 inches (Figure 3). The 24-month rainfall deficit is 28.7 inches. This is the eighth-driest 24-month period since 1932.

GROUNDWATER

- District groundwater levels monitored in 94 wells generally remained extremely low (Figure 4), decreasing by an average of 0.23 feet. Eighty-five percent were below the 10th percentile, and 52 percent were below the 2nd percentile. The percentile is the percentage of the monthly average levels that are equal to or below this month's level.
- Forty-nine wells set new December lows, and 17 wells set new historic lows. Monthly statistics for a representative sample of wells are shown in Figure 5.

- The District issued 23 emergency permits for dry wells in December, for a total of 157 issued between April 1 and December 31. Permits for dry wells were 6.9% of the total number of water well permits issued in this period.

SURFACEWATER

- Lake levels generally remained stable (Table 2). No record lows were observed.
- River levels generally increased slightly, but remain near record lows (Table 3). The Econfina River near Perry and the Aucilla River at Lamont remained dry.
- Flows at the Withlacoochee River near Pinetta and the Suwannee River at White Springs were below average, but otherwise within the normal range for December (above the 25th percentile). All other monitored sites were below the 10th percentile, considered much below normal (Figure 6).

HYDROLOGICAL/METEOROLOGICAL INFORMATION

- U.S. Drought Monitor, as of January 1: District is abnormally dry.
- U.S. Geological Survey, as of January 2: Streamflow conditions are categorized in the Suwannee River Basin as below normal, elsewhere as moderate hydrological drought.
- The National Weather Service Climate Prediction Center predicts below-normal precipitation through April 2008, and that drought development is likely.

WATER CONSERVATION

The District urges that water conservation be an ongoing activity for all water users. The Governing Board declared a Phase I Water Shortage Advisory on November 14, 2006, requesting voluntary reductions in water use. This advisory remains in effect. The District has a variety of free water conservation information available to the public. Water is conserved by using the minimum amount needed for specific applications and by irrigating lawns, plants, and crops only when necessary and in the morning before 10 a.m. and in evening hours after 4 p.m., when lower temperature and wind velocity reduce the amount of water lost to evaporation.

/dd

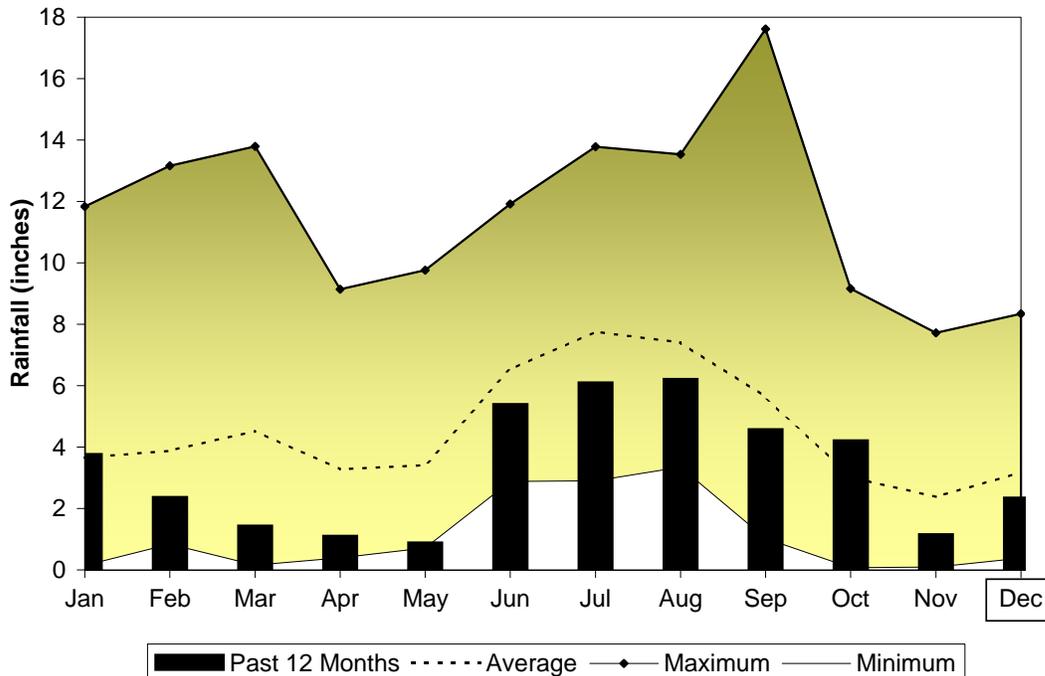
Table 1. Estimated Rainfall Totals

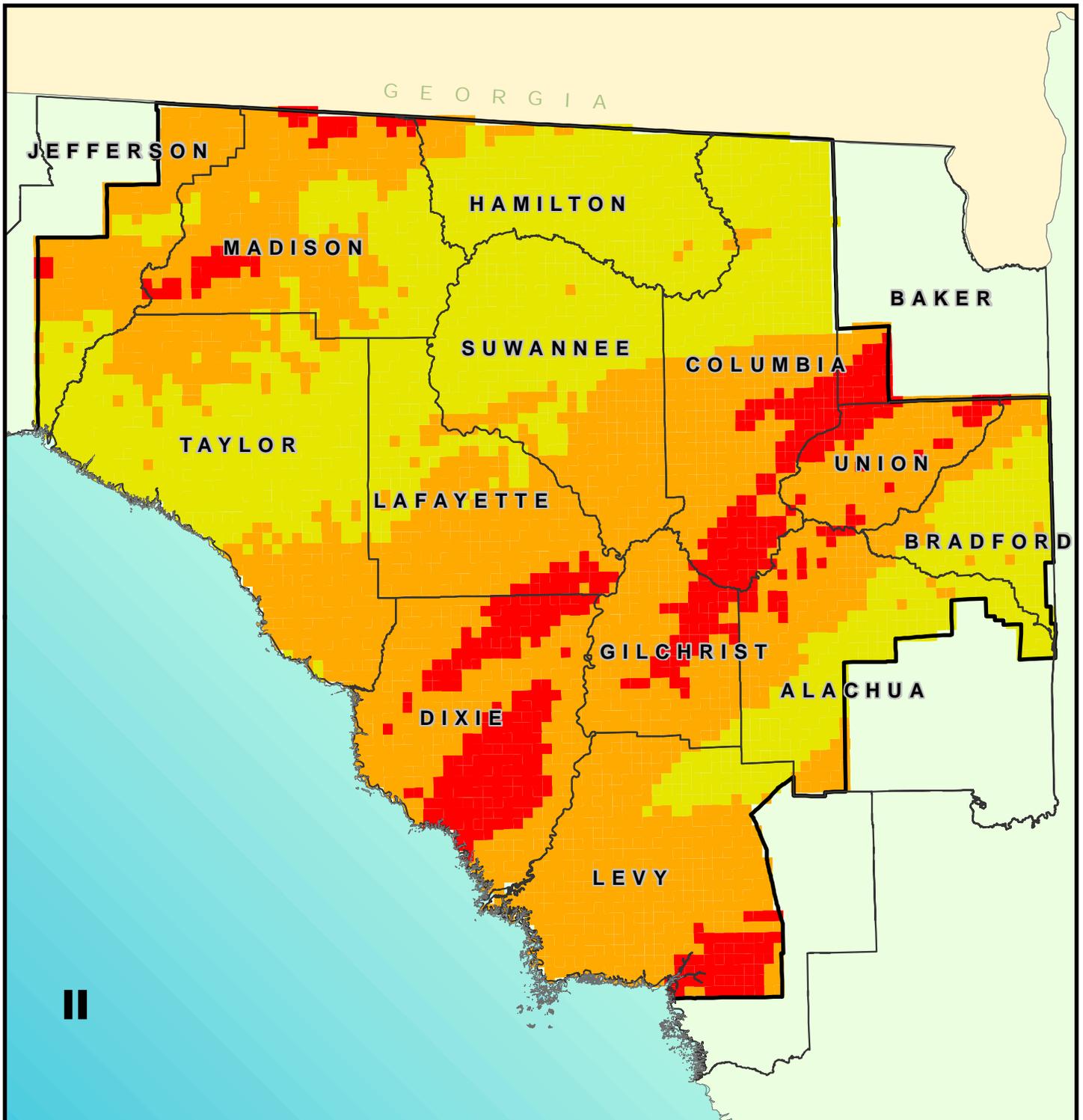
County	Dec-2007	Dec-2006	Last 12 Months	December Average
Alachua	2.18	3.83	42.11	2.65
Baker	3.47	5.04	38.37	2.92
Bradford	1.88	3.49	40.65	2.95
Columbia	2.21	4.67	37.63	2.96
Dixie	2.91	5.42	42.36	3.27
Gilchrist	2.75	4.69	39.48	3.07
Hamilton	1.58	4.59	36.40	3.43
Jefferson	2.23	5.77	42.03	3.90
Lafayette	2.20	5.40	34.32	3.23
Levy	2.46	4.13	49.78	3.22
Madison	2.29	4.65	40.90	4.07
Suwannee	1.89	4.88	35.20	3.11
Taylor	1.97	5.37	36.74	3.31
Union	2.90	4.42	38.61	2.86

District December 2007 Average: 2.35
 District Historical December Average: 3.18
 District Historical 12-month Average: 54.71
 District Past 12-Month Total: 39.61
 District 12-month Rainfall Deficit: -15.10

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall





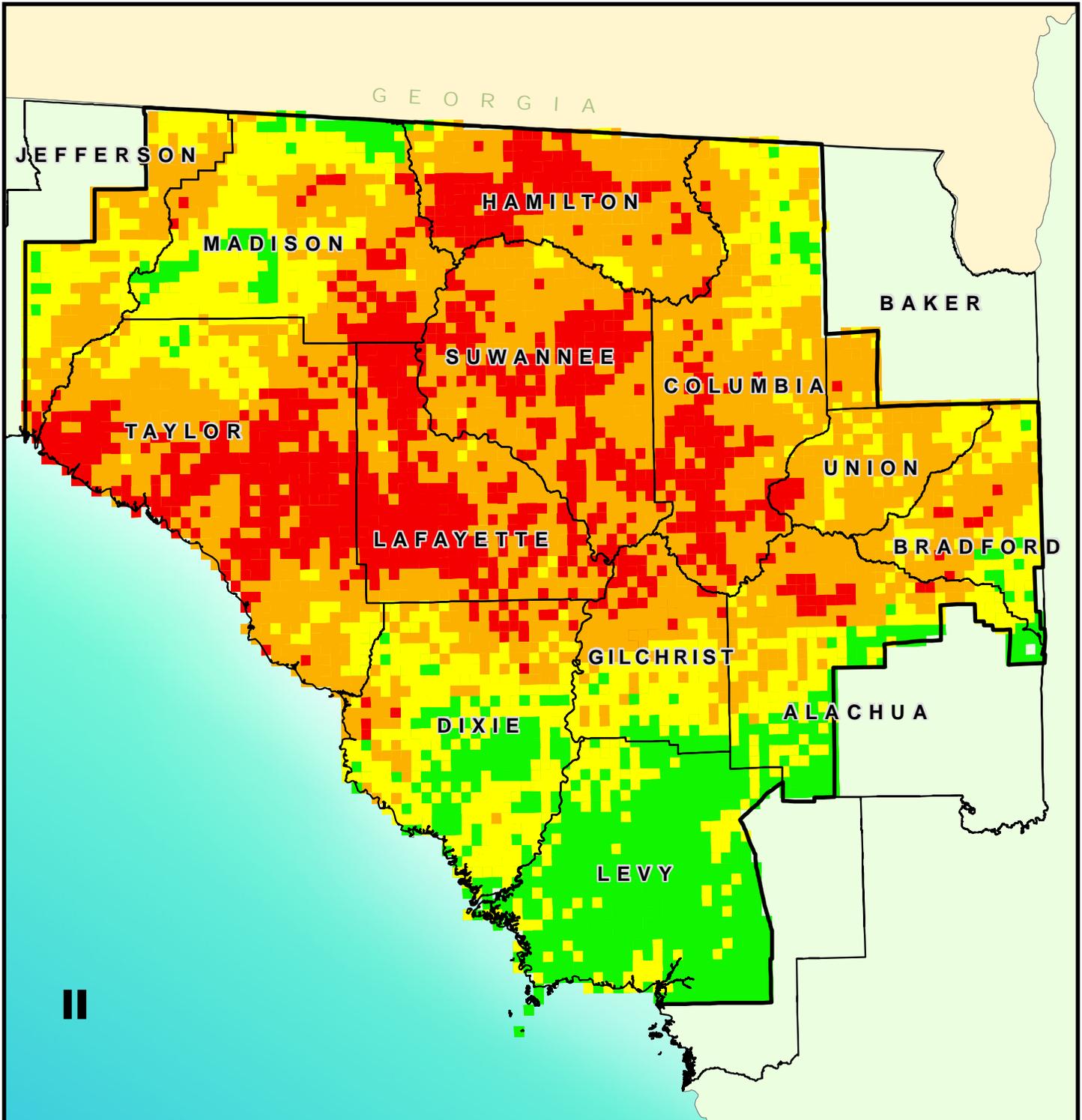
Rainfall in inches

- 1 - 2
- 2 - 3
- 3 - 4

**December 2007
Estimated Rainfall
Figure 2**



Note: This map was created by the Suwannee River Water Management District (SRWMD) to be used for planning purposes only. SRWMD shall not be held liable for any injury or damage caused by the use of data distributed as a public records request regardless of their use or application. SRWMD does not guarantee the accuracy, or suitability for any use of these data, and no warranty is expressed or implied. For more information please contact the SRWMD at 386-362-1001.



**Estimated 12-Month Rainfall Deficit
January 2007 through December 2007
Figure 3**

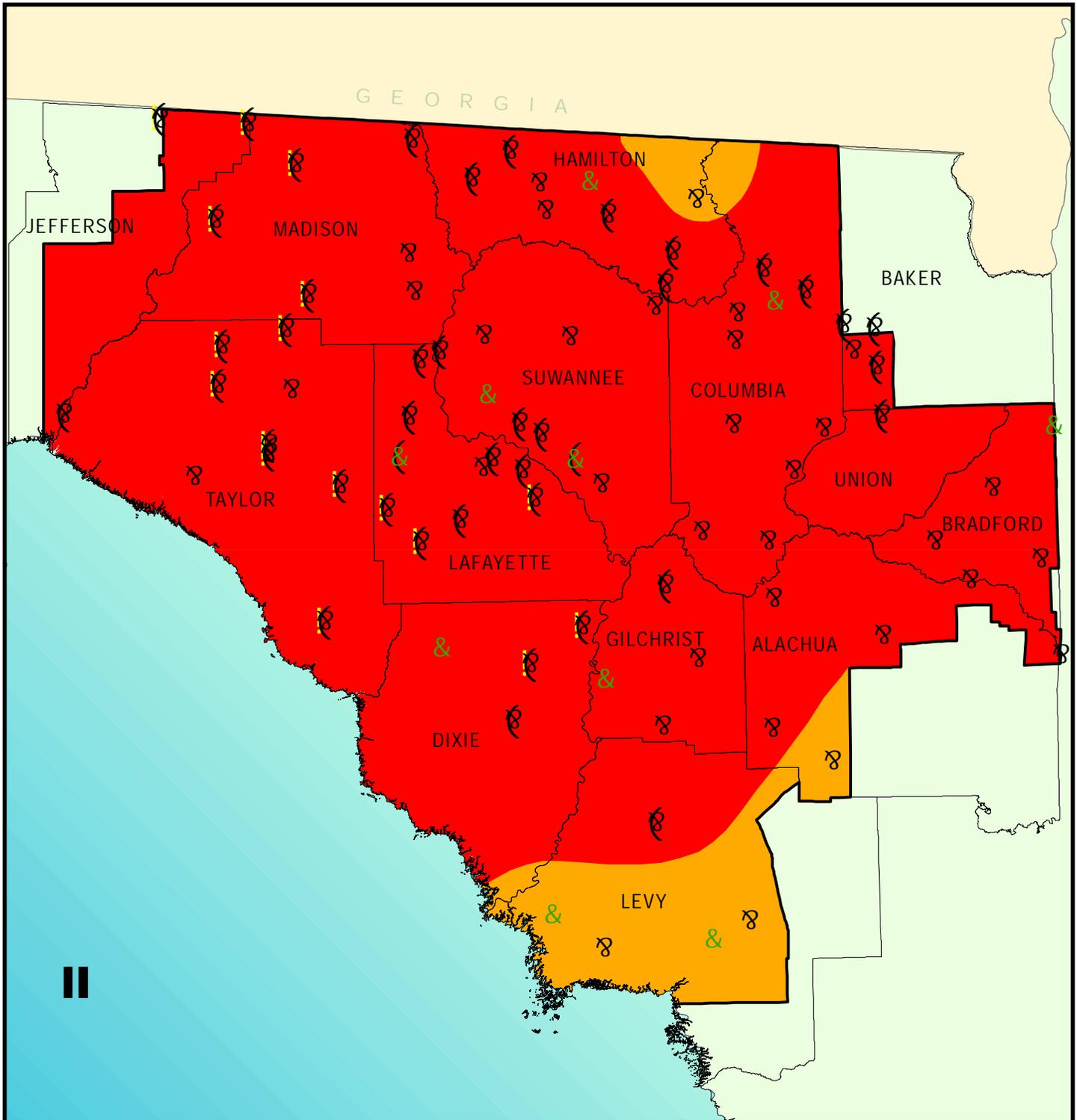
Rainfall below Annual Average

- Less than 8 inches below average
- 8 to 14 inches below average
- 14 to 20 inches below average
- More than 20 inches below average

- District Boundary
- County Boundaries



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**Groundwater Levels
December 2007
Figure 4**



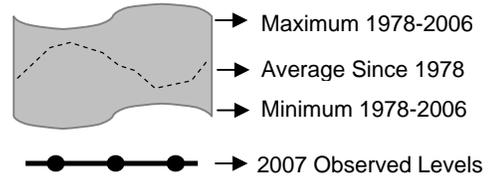
- High
(Greater than 75th Percentile)
- Normal
(25th to 75th Percentile)
- Low
(10th to 25th Percentile)
- Extremely Low
(Less than 10th Percentile)
- & Well Level Increase Since Last Month
- ⌘ Well Level Decrease Since Last Month
- (Record Monthly Low
- | Historic Low

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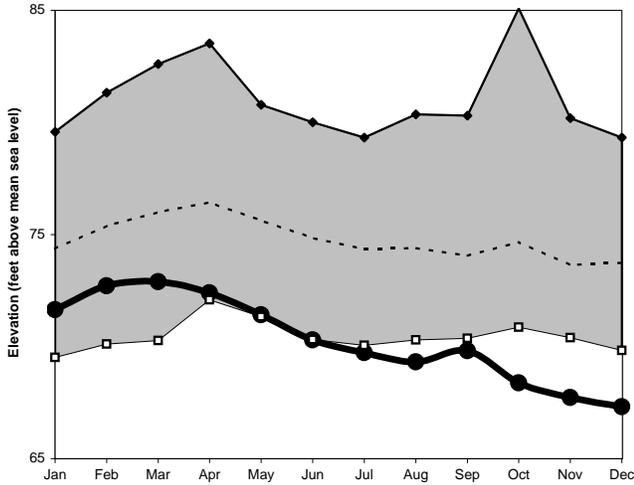
Figure 5: Monthly Groundwater Level Statistics

Levels January 1, 2007 through December 31, 2007

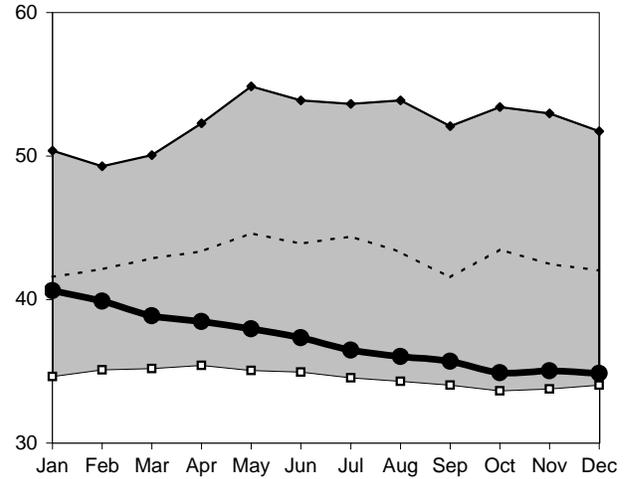
Period of Record Beginning 1978



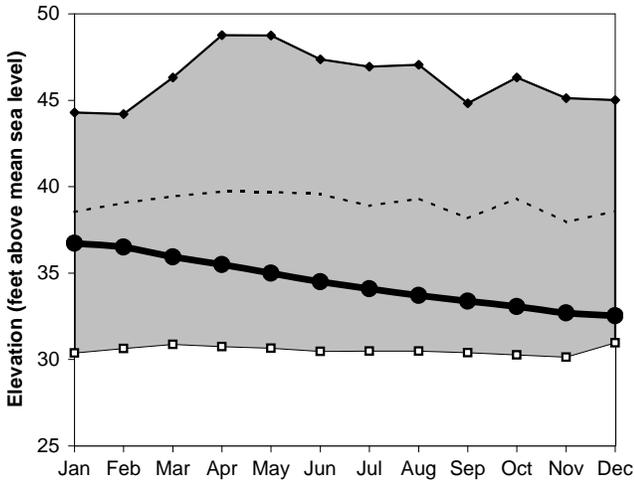
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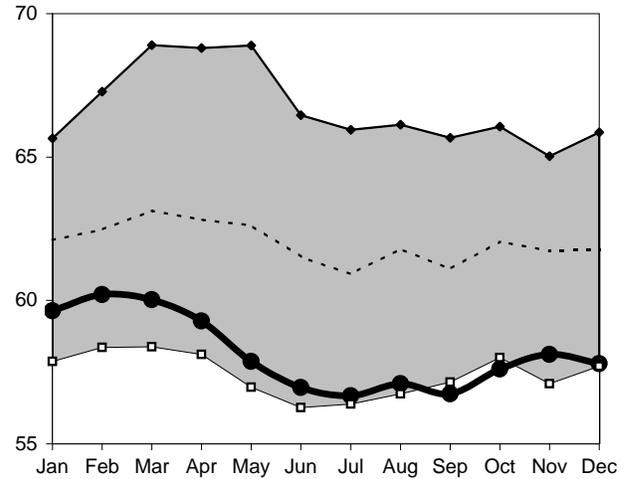
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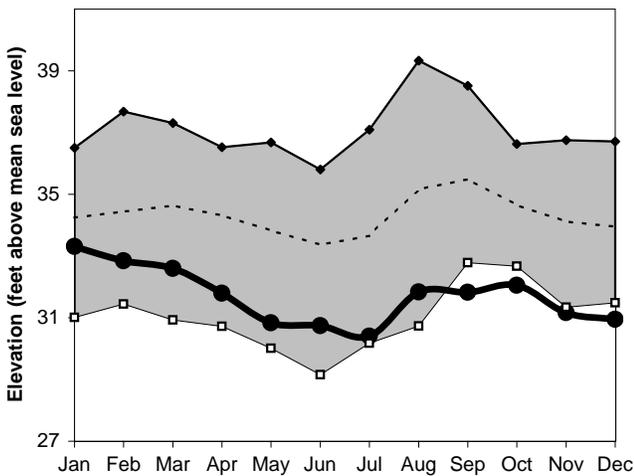
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Bradford County S072132001



Dixie County S101210001



Taylor County S050701001

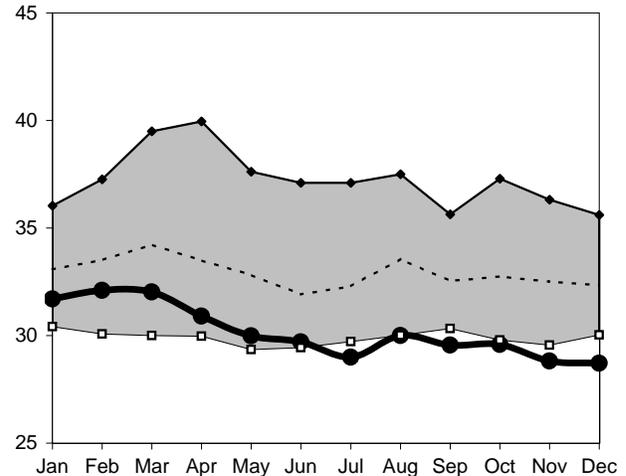
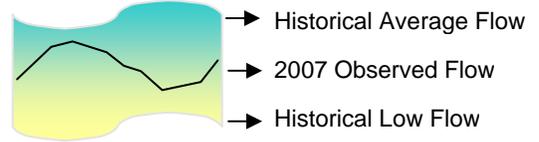


Figure 6: Daily River Flow Statistics

January 1, 2007 through December 31, 2007



RIVER FLOW, CUBIC FEET PER SECOND

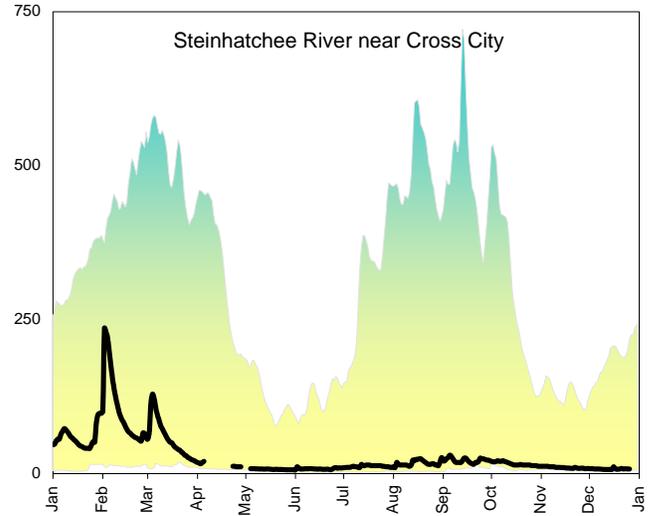
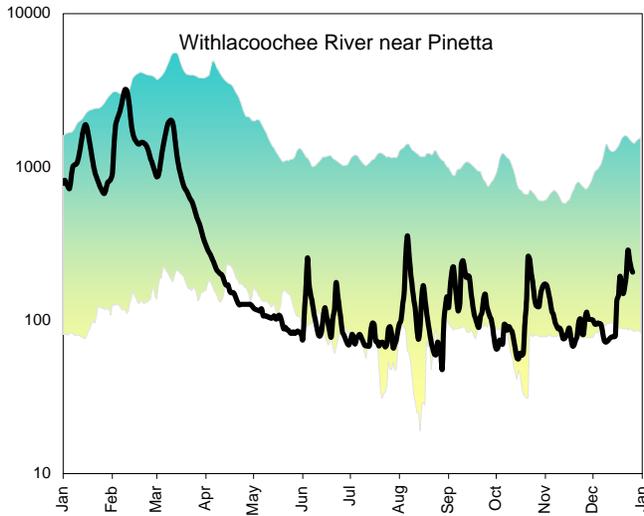
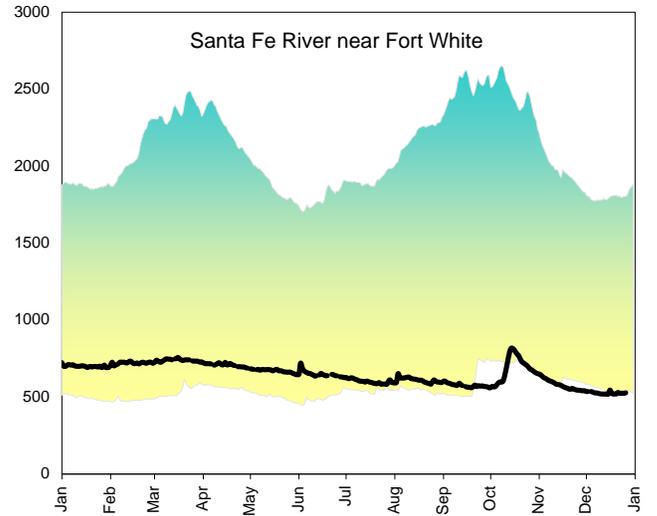
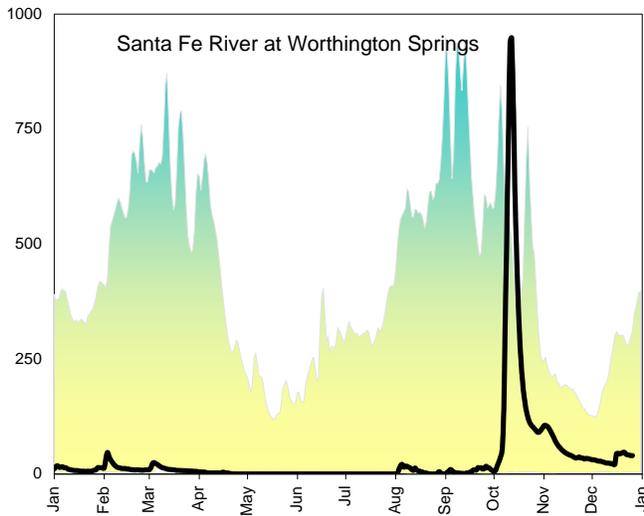
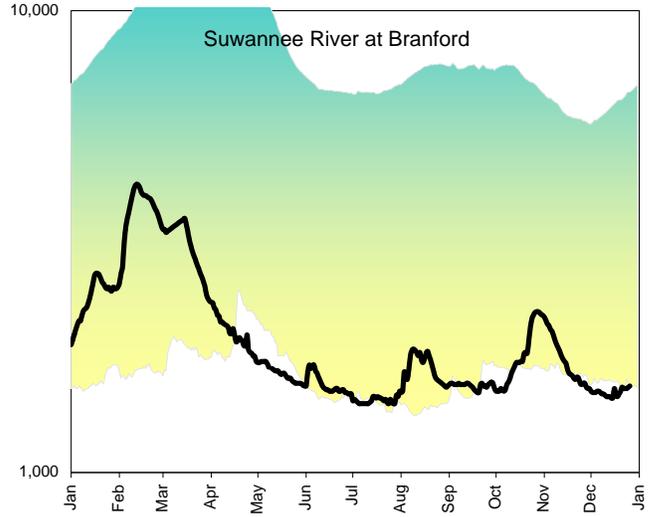
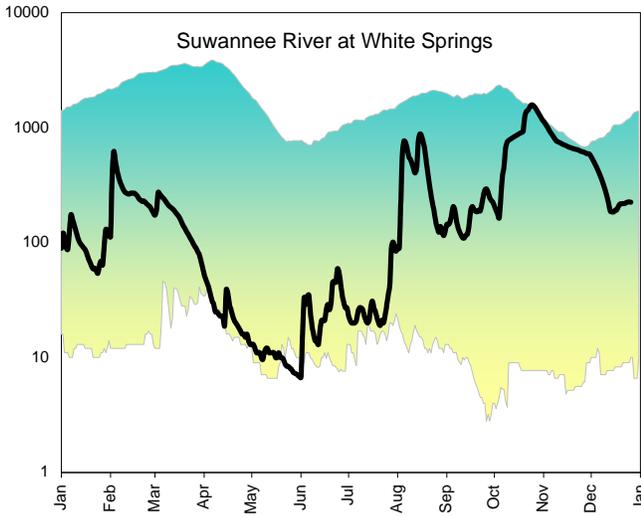


Table 2. Lake Levels

Lake	Beginning Record	2007 December	2007 November	2007 October	2006 December	Monthly Change	Record Low	Record High
Lake Octahatchee	Oct-70	N/A	102.17	102.19	BG	N/A	95.55 (3/89)	107.9 (3/05)
Cherry Lake	Oct-70	151.01	150.89	151.01	151.5	0.12	150.78 (05/07)	154.0 (9/75)
Andrews Lake	Oct-70	73.73	74.00	74.33	76.5	-0.27	73.32 (12/01)	78.4 (12/94)
Palestine Lake	Jul-71	140.46	140.48	140.68	141.8	-0.02	139.34 (10/02)	145.2 (10/92)
Ocean Pond	Dec-70	151.48	151.52	151.62	152.6	-0.04	150.85 (8/02)	156.6 (2/98)
Governor Hill Lake	Oct-80	BG	BG	BG	47.8	N/A	45.29 (06/07)	54.3 (2/98)
Alligator Lake	Sep-61	BG	BG	93.18	93.8	N/A	90.23 (4/68)	100.8 (9/04)
Lake Francis	May-95	139.30	139.44	139.61	140.2	-0.14	138.81 (05/07)	141.7 (9/04)
Lake Butler	Jun-53	127.25	127.28	127.48	N/A	-0.03	126.75 (7/02)	134.0 (9/64)
Hampton Lake	Jan-85	127.37	127.43	127.69	128.1	-0.06	124.48 (5/02)	133.4 (3/98)
Lake Sampson	Jun-53	131.40	131.41	131.75	130.0	-0.01	127.87 (05/07)	136.2 (3/59)
Lake Crosby	Jan-85	128.73	128.44	128.22	129.1	0.29	127.46 (9/07)	135.4 (10/04)
Waters Lake	Jul-68	BG	BG	BG	BG	N/A	55.10 (2/82)	79.7 (9/04)
Low Lake	Oct-70	146.96	146.85	147.04	147.9	0.11	146.80 (7/00)	150.3 (6/94)
Santa Fe Lake	Jun-54	138.43	138.53	138.61	138.6	-0.10	135.71 (10/02)	142.8 (1/98)
Lake Altho	Feb-72	137.87	137.92	138.10	138.1	-0.05	136.78 (7/01)	141.5 (2/98)
Snead's Smokehouse Lake	Dec-72	78.29	77.71	78.03	79.2	0.58	77.71 (11/07)	85.4 (4/84)

Reported in feet above mean sea level

Bold indicates record measurement.

BG- Lake level below gage.

N/A - Data missing

Table 3. River Levels

	December 2007	Average December	December 2006	December Lowest	December Highest	Historic Low	Historic High
SUWANNEE RIVER at White Springs (1927)	51.56	53.70	49.79	49.25 1981	78.20 1947	48.75 Jul-81	88.54 Apr-73
SUWANNEE RIVER at Ellaville (1927)	29.20	31.87	28.89	28.79 1968	57.62 1947	28.48 Jun-07	67.99 Apr-48
SUWANNEE RIVER at Branford (1931)	7.46	11.50	7.53	6.84 1955	31.49 1947	6.74 Jul-02	38.84 Apr-48
SUWANNEE RIVER at Wilcox (1930)	1.89	3.44	1.37	0.60 1955	14.52 1947	-1.08 Sep-99	21.79 Apr-48
WITHLACOOCHEE RIVER near Pinetta (1931)	53.89	55.72	53.47	53.40 2001	82.63 1964	53.26 Aug-02	85.41 Apr-48
SANTA FE RIVER near Fort White (1927)	20.94	22.06	21.14	21.14 2006	27.68 1947	21.02 Nov-02	36.20 Sep-64
ALAPAHA RIVER near Jennings (1976)	62.25	64.69	61.48	61.48 2006	82.69 1976	61.27 Oct-06	90.06 Feb-86
AUCILLA RIVER at Lamont (1950)	No Flow	48.54	46.11	44.12 1956	55.92 1964	43.49 Feb-57	59.44 Apr-73
STEINHATCHEE RIVER near Cross City (1950)	10.32	11.47	10.27	10.24 2005	20.28 1983	9.83 Aug-83	26.55 Sep-64
ECONFINA RIVER near Perry (1950)	No Flow	18.17	16.59	15.91 1990	25.60 1976	14.35 Jan-76	27.08 Sep-57
FENHOLLOWAY RIVER near Foley (1955)	54.47	55.81	54.64	54.33 2000	62.70 1976	54.16 May-01	68.80 Sep-64

Bold indicates new (provisional) record set during the month.
 (Year) indicates beginning of record

Levels given in feet above mean sea level
 Reported level occurred on the last day of the month, unless indicated otherwise