

MEMORANDUM

TO: Governing Board

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

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

DATE: November 6, 2007

RE: October 2007 Hydrologic Conditions Report for the District

The Hydrologic Conditions Report is compiled from data collected from four water resource-monitoring networks. The four networks are rainfall (radar-derived rainfall estimate), groundwater levels (86 wells), lake levels (17 lakes), and river levels (31 stations on 8 rivers).

RAINFALL

The District received, on average, 4.05 inches of rain during October, more than one inch above the long-term October average of 3.03 inches. October was the first month since December 2006 to receive above-average rain (See Figure 1). Twenty of the last 22 months had below-average rainfall. The above-normal rainfall fell near the eastern boundaries of the District, while Dixie, Gilchrist, Jefferson, Lafayette, Madison, Taylor, and Suwannee counties received normal or below normal precipitation (Table 1 and Figure 2). Total District-wide rainfall for the past 12 months is 42.64 inches, while the long-term average annual rainfall is 54.71 inches. The 12-month deficit is 12.07 inches. Figure 3 shows the 12-month rainfall deficit distribution. Figure 4 shows 12-month rainfall since 1932, and Figure 5 shows the 12-month rainfall deficit beginning in 1997. October rainfall data are provisional, and subject to revision. Statistics are updated as revised data become available.

GROUNDWATER

Groundwater levels in 86 wells monitored in October increased by an average of 0.11 feet since September. Twenty-six wells set new monthly lows for October, and three wells set new historic lows. Levels remain extremely low, with all but one reading below the 25th percentile for the month, and 77 percent below the 10th percentile. The percentile is the percentage of the monthly average levels that are equal to or below this month's level. Groundwater levels generally increased in areas that received above-average rainfall, in the upper Suwannee

and Santa Fe River basins. See Figure 6 for a generalized representation of District groundwater levels. The District issued 10 emergency construction permits for dry wells in October, for a total of 117 issued between April 1 and October 31.

SURFACEWATER

Streamflow conditions in the upper Suwannee and Santa Fe Rivers improved in October. The Suwannee River at White Springs rose by 5.5 feet, and the Santa Fe River at Worthington Springs by over 7 feet. However, levels and flows in the middle and lower Suwannee River and other major streams in the District generally remained at or near extreme lows. For the second month in a row, the Santa Fe River near Fort White fell to an apparent historic low stage, before rising by 0.31 feet in response to rains in the upper basin. The Withlacoochee River near Pinetta set a new monthly low level for the second month; the stage fell to an inch above the historic low at the gage before rising 8 inches in the last week of October. The Econfina River near Perry also set a new apparent monthly low, for the third consecutive month, and four miles below the gage the river remained dry. The Aucilla River at Lamont, 0.5 miles below the gage at U.S. 27, also remained dry. Gage readings are provisional, subject to review and approval by the United States Geological Survey, which maintains some gages in cooperation with the District (Fort White, Pinetta) and the Florida Department of Environmental Protection (Econfina). River levels at selected monitoring stations are provided in Table 3. Discharge statistics for selected stations are shown in Figure 7.

Lake levels increased in Bradford and Alachua counties, with the greatest gain (2.38 feet) observed at Lake Sampson. Lakes elsewhere in the District remained stable or declined slightly. Snead's Smokehouse Lake, the headwaters of the Aucilla River, remained below its historic low for the third consecutive month. Lake levels are shown compared to historic lake data on Table 2.

WATER CONSERVATION

In September, climatologists in Florida, Georgia, and Alabama issued a La Niña "watch", indicating that conditions are favorable for drier, warmer conditions in the winter and early spring. The 30-day precipitation forecast for November predicts less-than-normal rainfall. 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

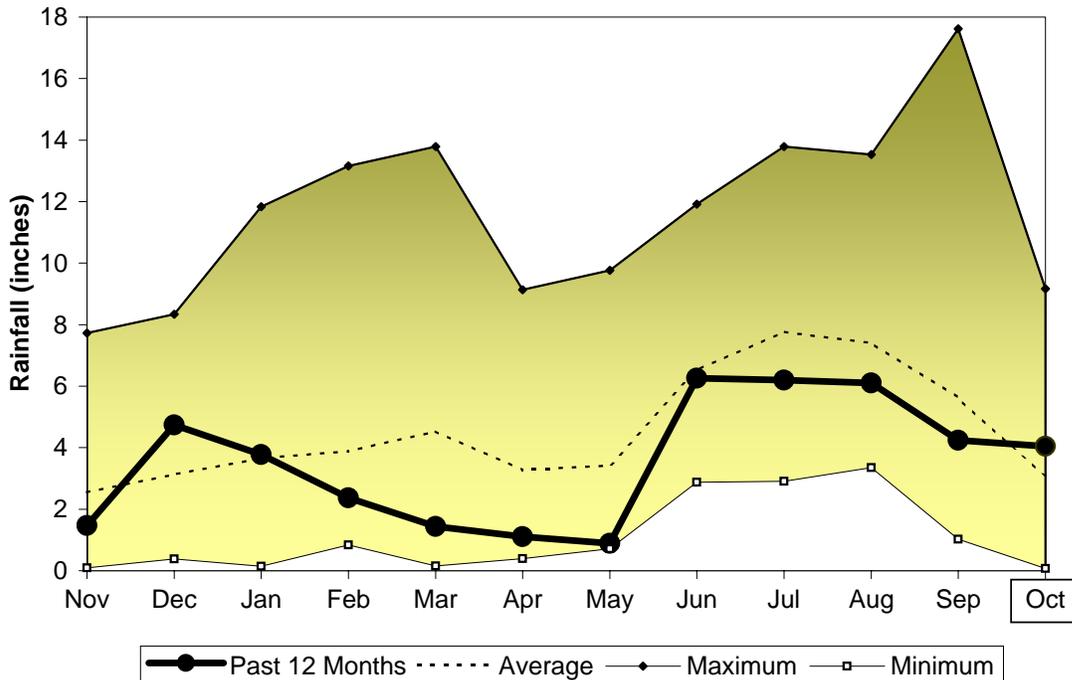
Table 1. Estimated Rainfall Totals

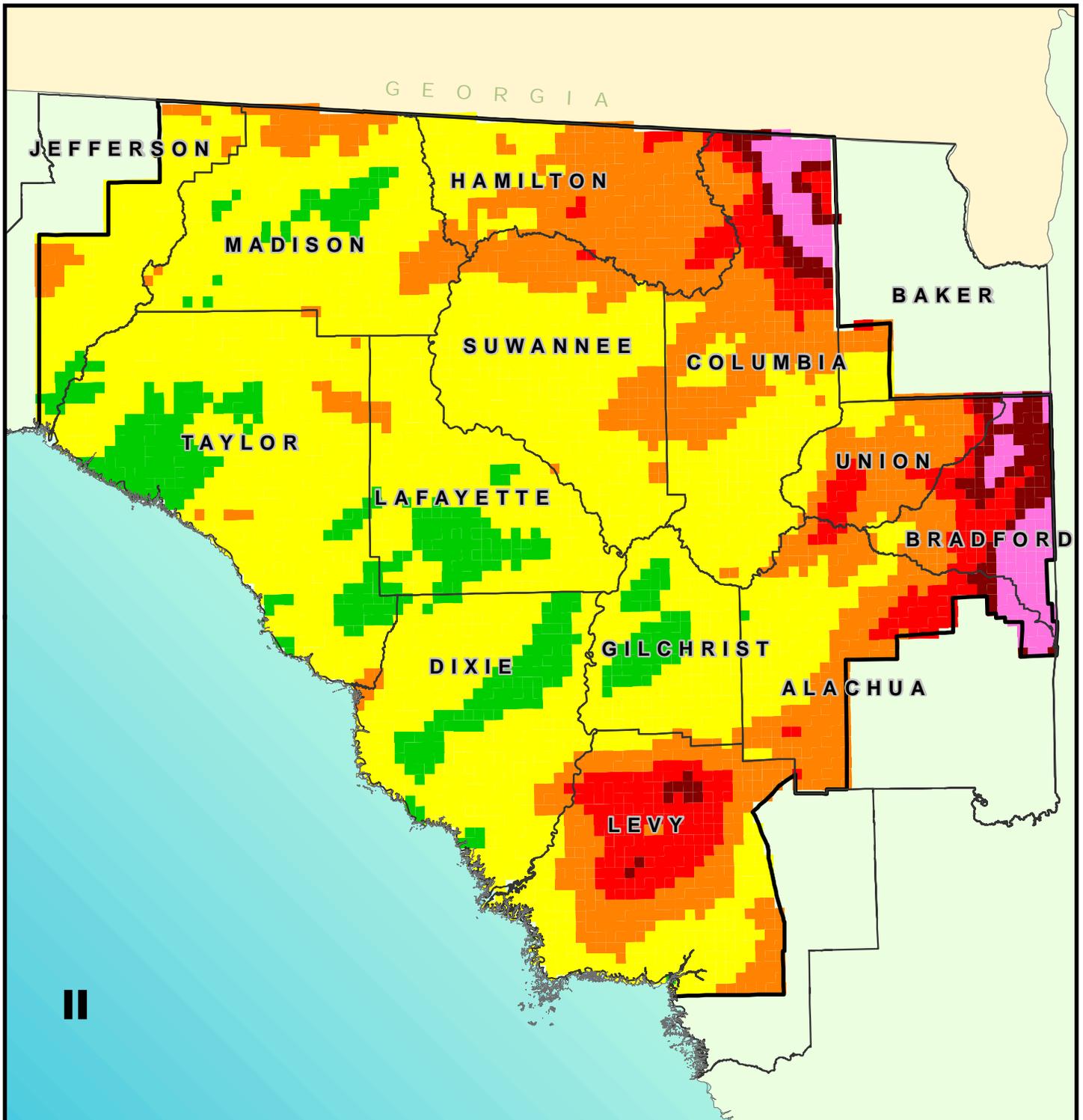
County	Oct-2007	Oct-2006	Last 12 Months	October Average
Alachua	4.94	1.83	42.76	3.05
Baker	3.94	1.82	40.88	3.31
Bradford	8.42	1.95	41.50	2.76
Columbia	5.20	1.98	41.29	3.06
Dixie	2.61	1.85	45.62	3.07
Gilchrist	2.41	1.65	41.43	2.98
Hamilton	4.56	3.02	40.58	3.01
Jefferson	3.15	4.08	45.96	3.07
Lafayette	2.46	1.83	39.73	3.09
Levy	4.79	1.76	48.59	3.14
Madison	2.99	3.63	45.29	3.24
Suwannee	3.45	1.90	39.52	3.22
Taylor	2.61	2.40	42.86	3.17
Union	5.14	1.53	40.59	3.27

District October 2007 Average: 4.05
 District Historical October Average: 3.03
 District Historical 12-month Average: 54.71
 District Past 12-Month Total: 42.64
 District Rainfall Deficit Since January: -12.58
 District 12-month Rainfall Deficit: -12.07

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall





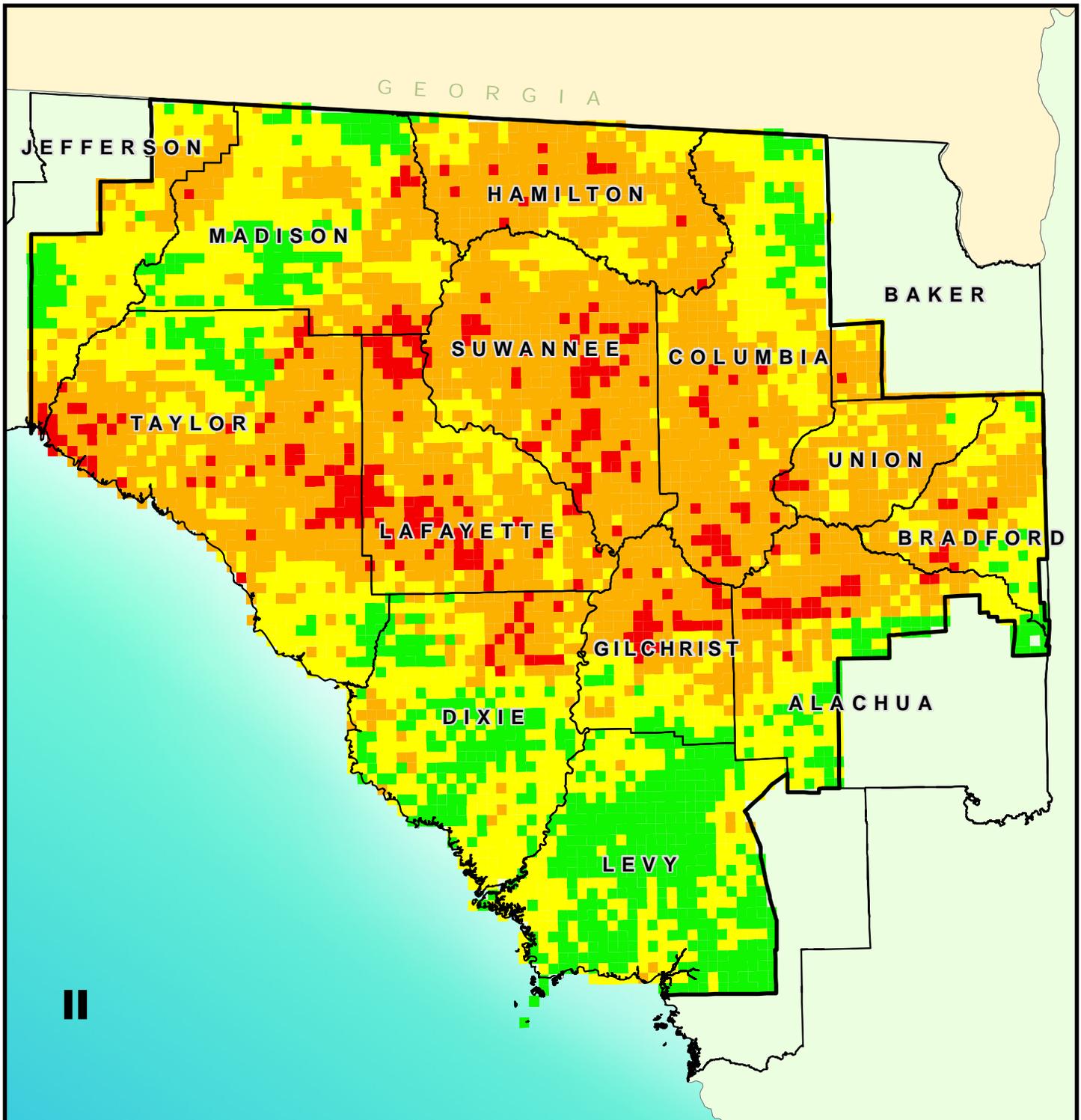
Rainfall in inches

- Less than 2
- 2 - 4
- 4 - 6
- 6 - 8
- 8 - 10
- More than 10

**October 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
November 2006 through October 2007
Figure 3**

Rainfall below Annual Average

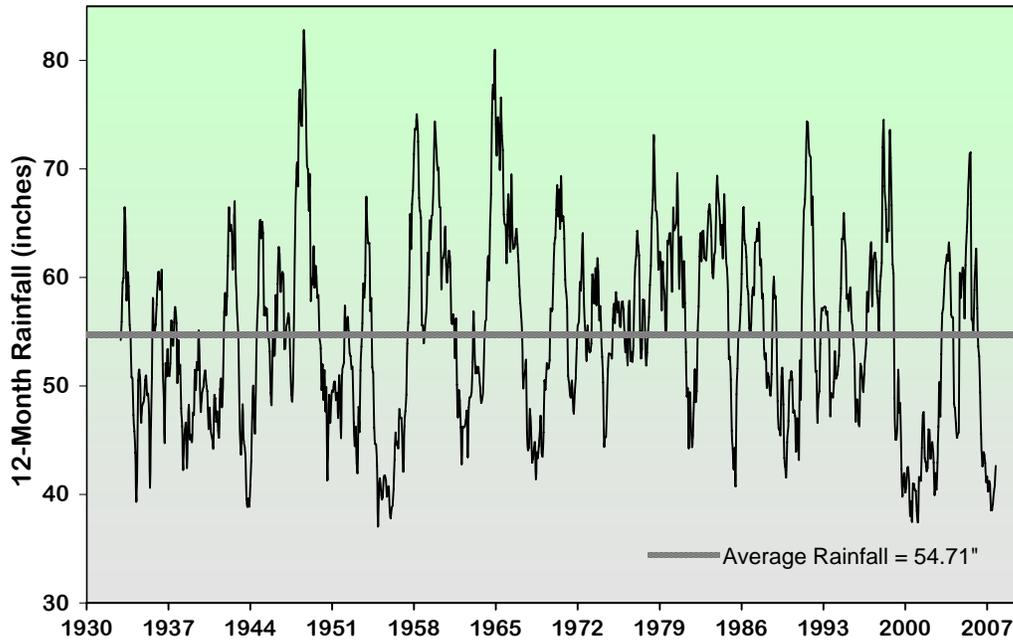
- Less than 8 inches below average
- 8 to 14 inches below average
- 14 to 20 inches below average
- More than 20 inches below average

- District Boundary
- County Boundaries

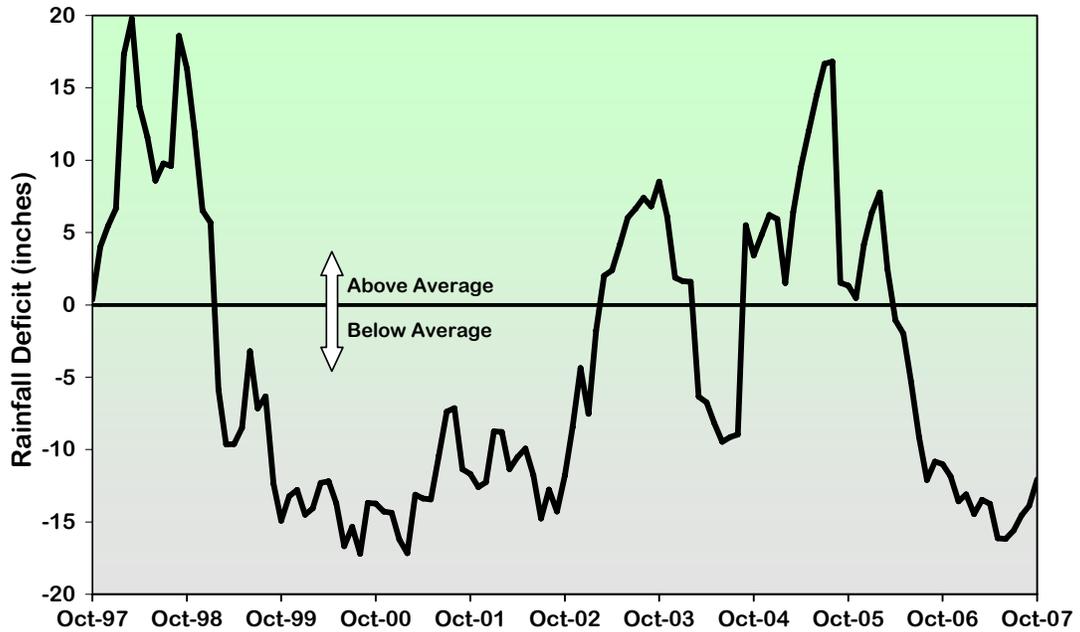


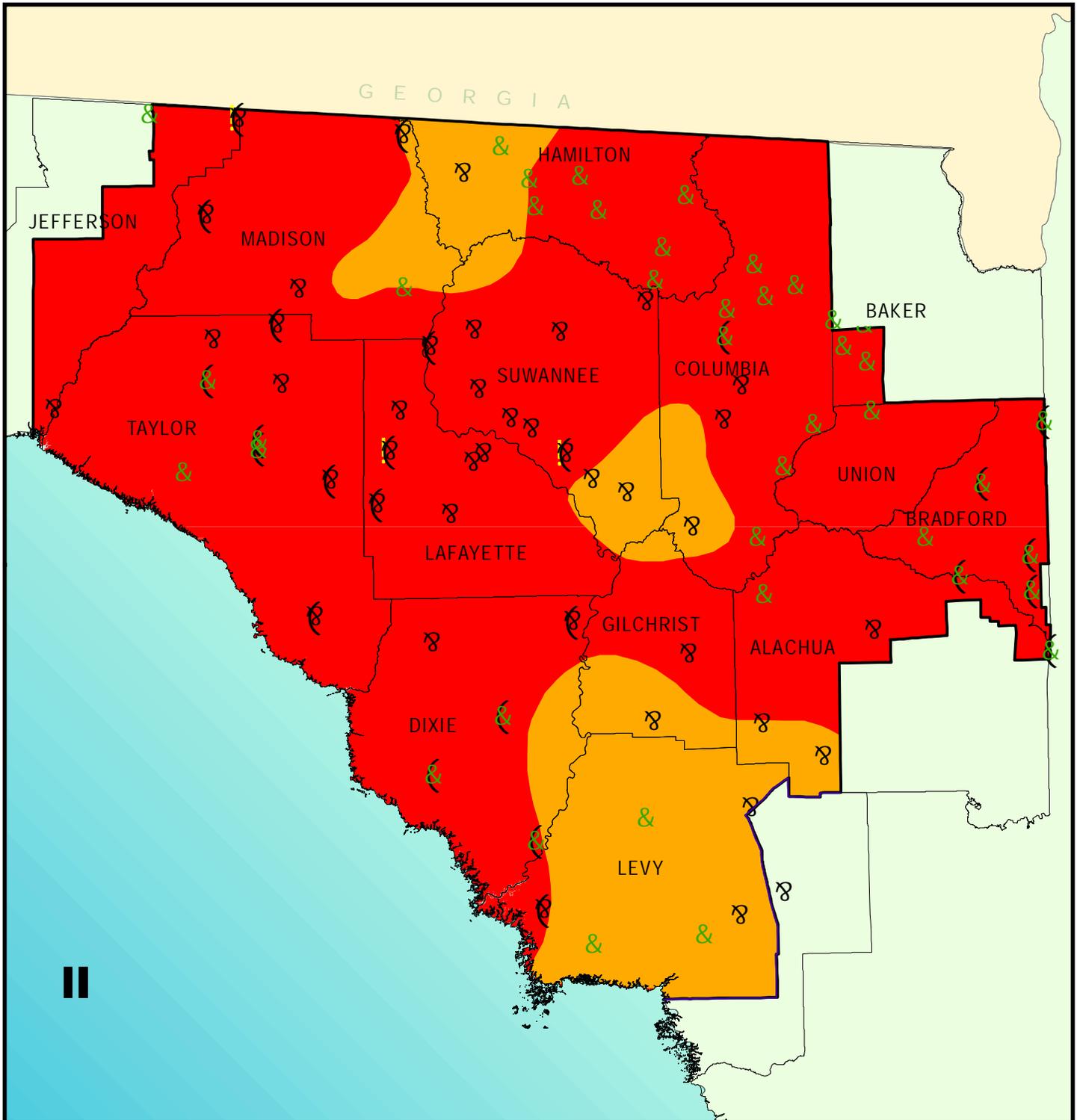
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**Figure 4: 12-Month Rainfall
December 1932 - Present**



**Figure 5: 12-Month Cumulative Rainfall Deficit
October 1997 - Present**





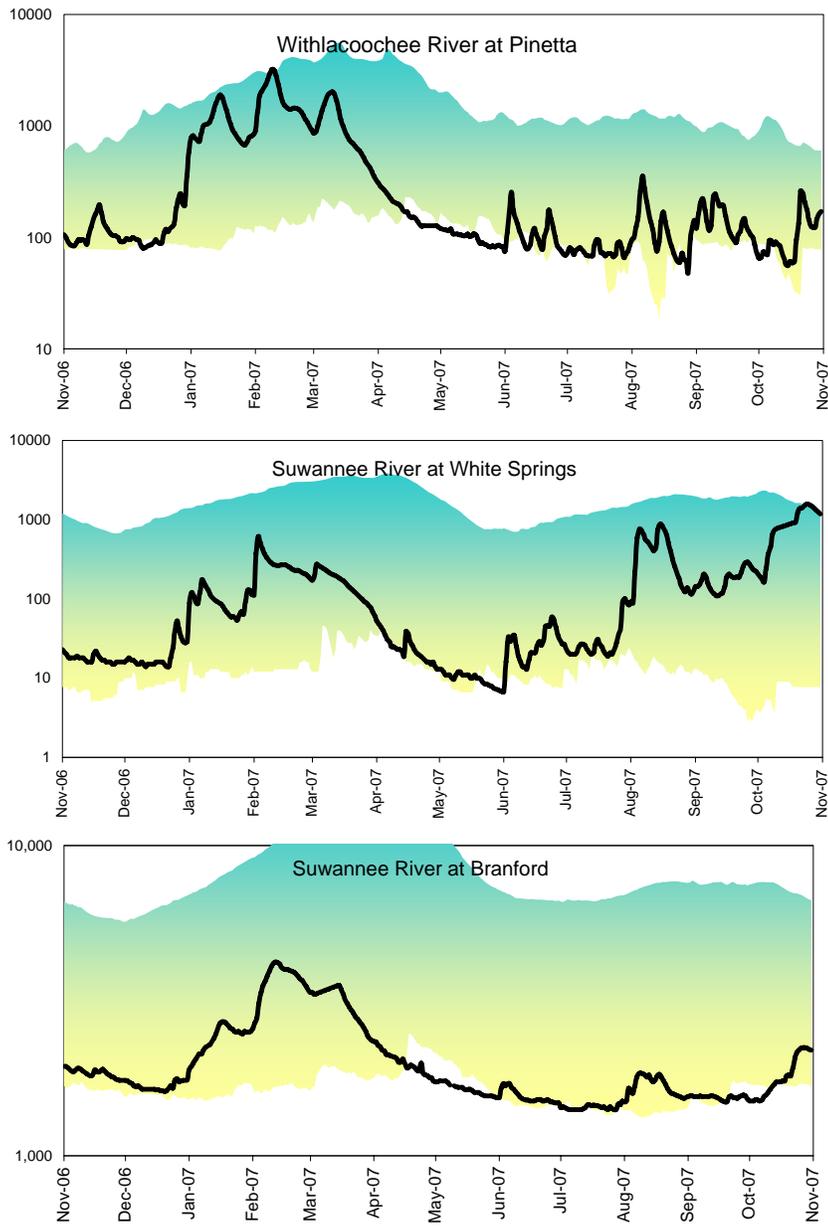
**Groundwater Levels
October 2007
Figure 6**



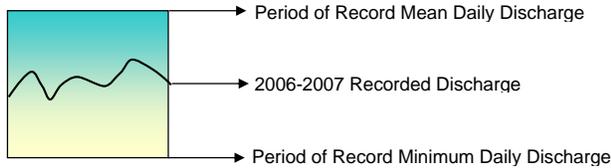
- High
(Greater than 75th Percentile)
- Normal
(25th to 75th Percentile)
- Low
(10th to 25th Percentile)
- Extremely Low
(Less than 10th Percentile)
- & Well Level Increase Since Last Month
- & Well Level Decrease Since Last Month
- (Record Monthly Low
- (Historic Low

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Figure 7: Daily Discharge Statistics for Selected River Stations
 November 1, 2006 through October 31, 2007



LEGEND



Discharge reported in cubic feet per second (cfs)

Data are provisional and subject to revision

Station	Period of Record
Withlacoochee River at Pinetta	1932-2007
Suwannee River at White Springs	1907-2007
Suwannee River at Branford	1932-2007

Table 2. Lake Levels within SRWMD

Lake	Beginning Record	2007 October	2007 September	2007 August	2006 October	Monthly Change	Record Low	Record High
Lake Octahatchee	Nov-74	102.19	102.15	102.20	BG	0.04	95.55 (3/89)	107.9 (3/05)
Cherry Lake	Nov-74	151.01	151.11	151.25	151.2	-0.10	150.78 (05/07)	154.0 (9/75)
Andrews Lake	Nov-74	74.33	74.66	75.09	76.2	-0.33	73.32 (12/01)	78.4 (12/94)
Palestine Lake	Aug-75	140.68	140.78	141.26	141.6	-0.10	139.34 (10/02)	145.2 (10/92)
Ocean Pond	Dec-74	151.62	151.60	152.04	152.7	0.02	150.85 (8/02)	156.6 (2/98)
Governor Hill Lake	Nov-84	BG	BG	BG	48.5	N/A	45.29 (06/07)	54.3 (2/98)
Alligator Lake	Sep-65	93.18	93.22	93.31	93.5	-0.04	90.23 (4/68)	100.8 (9/04)
Lake Francis	Jun-99	139.61	139.81	139.41	139.5	-0.20	138.81 (05/07)	141.7 (9/04)
Lake Butler	Jul-57	127.48	127.18	127.40	128.5	0.30	126.75 (7/02)	134.0 (9/64)
Hampton Lake	Feb-89	127.69	126.88	127.08	128.4	0.81	124.48 (5/02)	133.4 (3/98)
Lake Sampson	Jul-57	131.75	129.37	129.55	130.0	2.38	127.87 (05/07)	136.2 (3/59)
Lake Crosby	Feb-89	128.22	127.46	127.63	129.2	0.76	127.46 (9/07)	135.4 (10/04)
Waters Lake	Jul-72	BG	BG	BG	BG	N/A	55.10 (2/82)	79.7 (9/04)
Low Lake	Nov-74	147.04	147.12	147.88	147.3	-0.08	146.80 (7/00)	150.3 (6/94)
Santa Fe Lake	Jul-58	137.61	137.41	137.58	138.7	0.20	135.71 (10/02)	142.8 (1/98)
Lake Altho	Mar-76	138.10	137.12	137.14	138.2	0.98	136.78 (7/01)	141.5 (2/98)
Snead's Smokehouse Lake	Dec-76	78.03	78.03	78.12	78.7	0.00	78.03 (9/07)	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 within SRWMD.

	October 2007	Average October	October 2006	October Lowest	October Highest	Historic Low	Historic High
<u>SUWANNEE RIVER AND TRIBUTARIES</u>							
SUWANNEE RIVER @ White Springs	55.34	55.53	50.04	48.75 10/21/81	84.01 10/4/04	48.75 Jul-81	88.54 Apr-73
SUWANNEE RIVER @ Ellaville	29.89	32.55	29.14	28.62 10/14/02	58.59 10/5/28	28.48 Jun-07	67.99 Apr-48
SUWANNEE RIVER @ Branford	8.56	12.64	8.18	7.19 10/9/90	30.35 10/11/04	6.74 Jul-02	38.84 Apr-48
SUWANNEE RIVER @ Wilcox	1.72	4.12	2.29	0.95 10/28/01	13.83 10/15/04	-1.08 Sep-99	21.79 Apr-48
WITHLACOOCHEE RIVER near Pinetta	53.38 10/14/2007	54.99	53.61	53.41 10/21/02	78.77 10/10/94	53.26 Aug-02	85.41 Apr-48
SANTA FE RIVER near Fort White	20.98 10/1/2007	22.84	21.21	21.07 10/31/02	30.27 10/24/44	21.02 Nov-02	36.20 Sep-64
<u>COASTAL RIVERS</u>							
AUCILLA RIVER at Lamont	44.71	48.14	46.19	44.19 10/16/55	56.70 10/5/98	43.49 Feb-57	59.44 Apr-73
STEINHATCHEE RIVER near Cross City	10.40	11.93	10.24	10.17 10/21/58	23.66 10/4/57	9.83 Aug-83	26.55 Sep-64
ECONFINA RIVER near Perry	15.33 10/30/2007	18.09	16.68	15.92 10/28/93	26.29 10/3/57	14.35 Jan-76	27.08 Sep-57
FENHOLLOWAY RIVER near Foley	54.46	56.08	54.49	54.18 10/27/77	66.95 10/2/57	54.16 May-01	68.80 Sep-64

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

Levels given in feet above mean sea level

Reported level occurred on the last day of the month, unless indicated otherwise