

MEMORANDUM

TO: Governing Board

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

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

DATE: October 5, 2007

RE: September 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 (89 wells), lake levels (17 lakes), and river levels (31 stations on 8 rivers).

RAINFALL

The District received, on average, 4.50 inches of rain during September. The average September rainfall is 5.58 inches. Total rainfall for the past 12 months is 41.08 inches. The long-term average annual rainfall is 55.62 inches. Twenty of the last 21 months had below-average precipitation. A summary of rainfall by county and a comparison of monthly rainfall versus the long-term average are provided in Table 1 and Figure 1, respectively. Figure 2 shows the September radar-derived rainfall distribution, and Figure 3 shows the 12-month rainfall deficit. The average deficit is 14.45 inches, an improvement of 0.91 inches since last month due to the third straight month of near-normal precipitation. Figure 4 shows the 12-month rainfall since 1932, and Figure 5 shows the 12-month rainfall deficit beginning in 1997. September rainfall data are provisional, and subject to revision. Statistics are updated as revised data become available.

GROUNDWATER

Groundwater levels in 89 wells monitored in September fell slightly, decreasing by an average of 0.25 feet since August. The decrease eroded a 0.38 foot average gain seen last month. Thirty-eight wells set new monthly lows for August, and seven wells set new historic lows. Levels remain extremely low, with all readings below the 50th percentile for September, and 75 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. See Figure 6 for a generalized representation of District groundwater levels. The District issued 107 emergency

construction permits for dry wells between April 1 and September 30. The number of permits declined to 17 issued in September, from a peak of 24 in May.

SURFACEWATER

Flow at the Suwannee River at White Springs increased to above the 25th percentile in the last two weeks of September, as a result of the second month of higher-than-normal rainfall in southeast Georgia. Levels and flows in the middle- and lower-Suwannee and other major streams in the District remained below the 10th percentile. The Withlacoochee River near Pinetta fell to a new monthly low level. The Econfina River near Perry also set a new monthly low, for the second consecutive month. The Econfina River, four miles below the gage on U.S. 98, was observed to be dry. The Santa Fe River near Fort White fell to an apparent historic low stage. The Aucilla River at Lamont was observed to be dry, 0.5 miles below the gage at U.S. 27. Flow was observed 15 miles downstream near Cabbage Grove. Gage readings are provisional, subject to review and approval by the United States Geological Survey, which maintains some gages in cooperation with the District (Santa Fe, 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 Crosby in Bradford County set a new record low, for the fifth month in a row. Snead's Smokehouse Lake, the headwaters of the Aucilla River, remained below its historic low for two consecutive months. Lake levels are shown compared to historic lake data on Table 2.

WATER CONSERVATION

The District is entering the typically dry fall season with extremely low surfacewater levels, groundwater levels, and a 14.45 inch yearly rainfall deficit. 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 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.

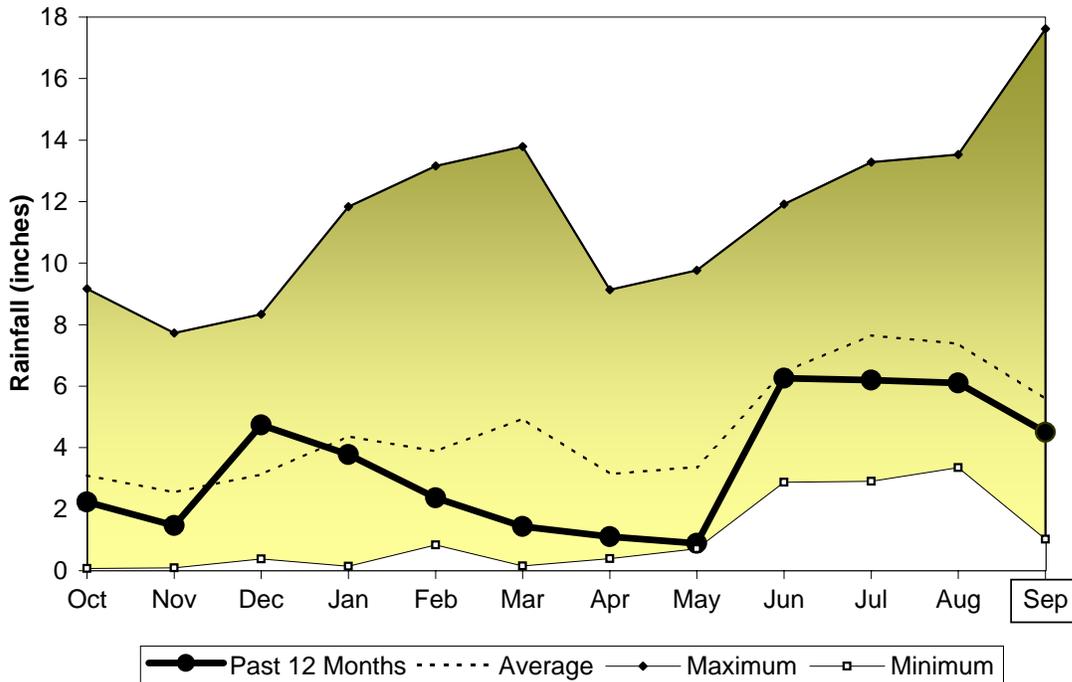
Table 1. Estimated Rainfall Totals

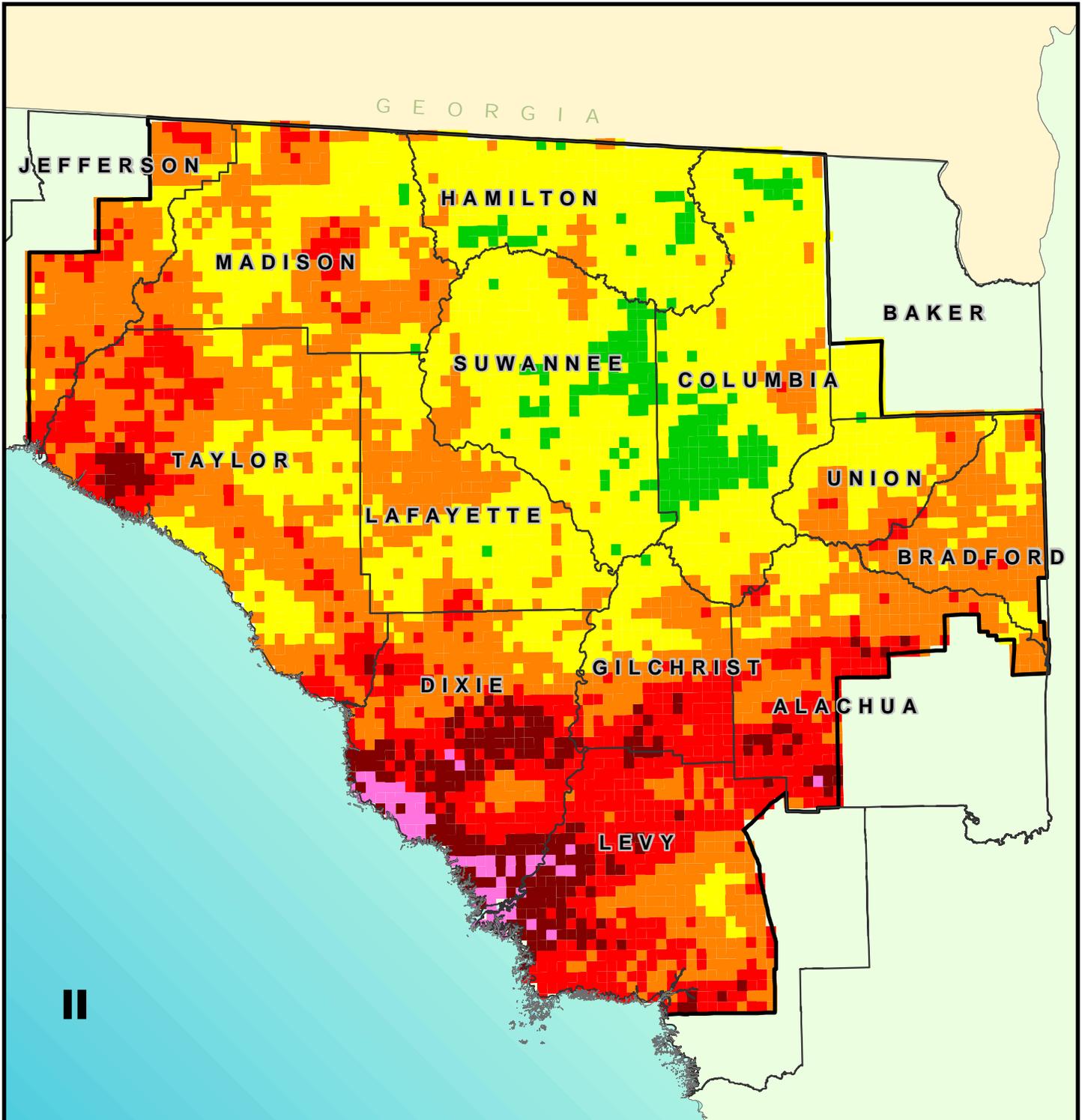
County	Sept-2007	Sep-2006	Last 12 Months	September Average
Alachua	5.62	2.57	39.80	5.36
Baker	2.79	3.62	37.79	5.44
Bradford	4.67	3.22	33.92	6.13
Columbia	2.84	4.21	37.66	4.85
Dixie	7.08	3.88	46.31	6.58
Gilchrist	5.33	2.98	41.23	5.75
Hamilton	2.94	3.69	39.35	4.63
Jefferson	5.13	3.79	47.78	5.31
Lafayette	3.80	2.91	39.24	5.46
Levy	6.71	4.35	47.28	6.70
Madison	4.23	3.33	46.92	4.62
Suwannee	2.80	4.16	38.09	5.08
Taylor	5.09	4.64	43.14	5.61
Union	4.01	2.98	36.25	4.94

District September 2007 Average: 4.50
 District Historical September Average: 5.58
 District Historical 12-month Average: 55.62
 District Past 12-Month Total: 41.08
 District Rainfall Deficit Since January: -14.05
 District 12-month Rainfall Deficit: -14.54

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall





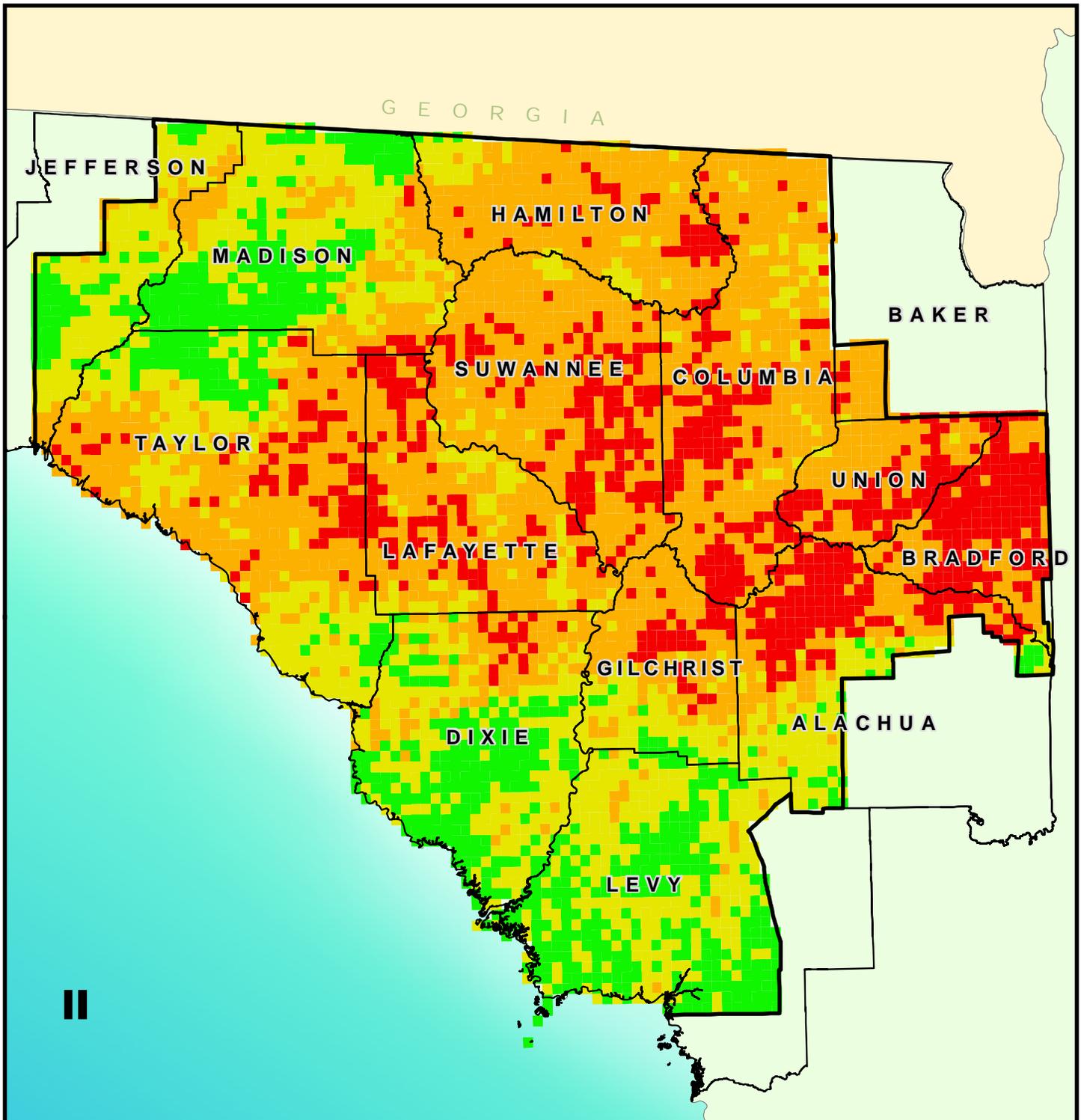
Rainfall in inches

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

**September 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
October 2006 through September 2007
Figure 3**

Rainfall below Annual Average

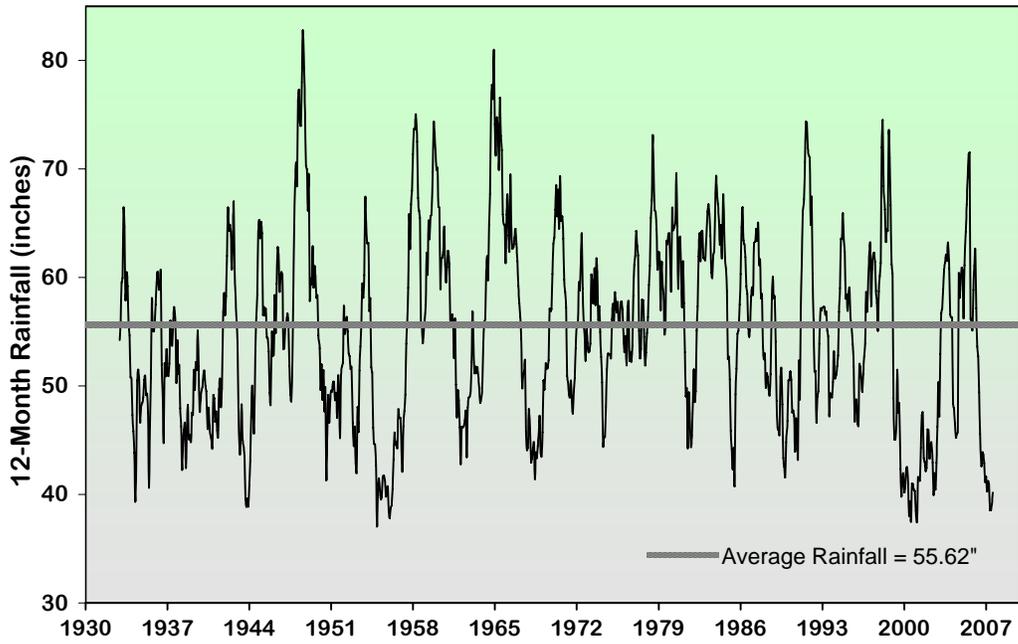
- Less than 8 inches below average
- 8 to 14 inches below average
- 14 to 20 inches below average
- More than 20 inches below average

- District Boundary
- County Boundaries

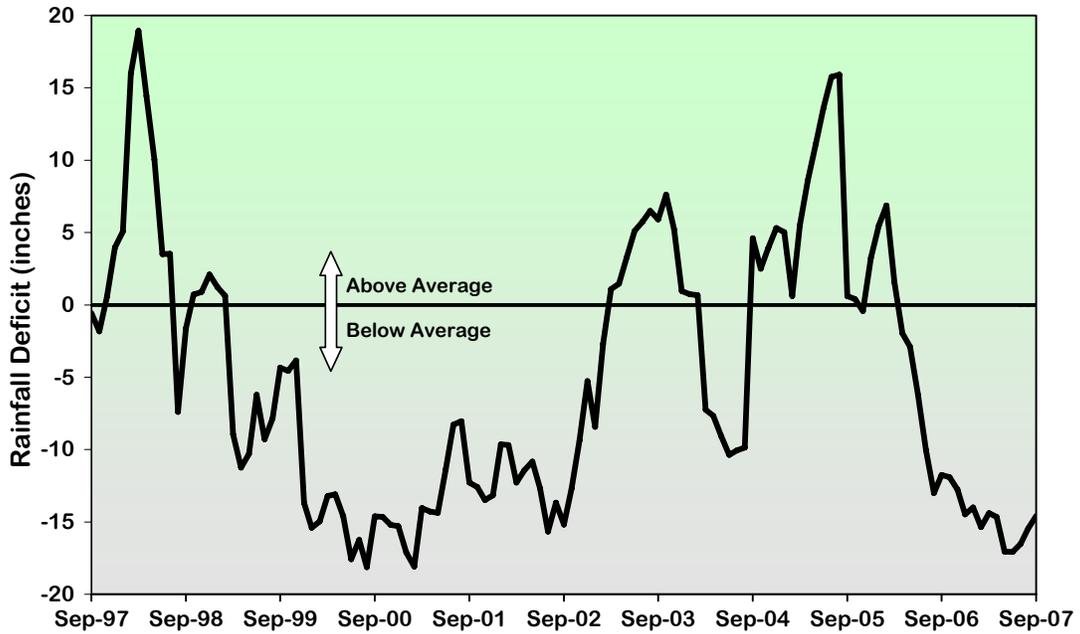


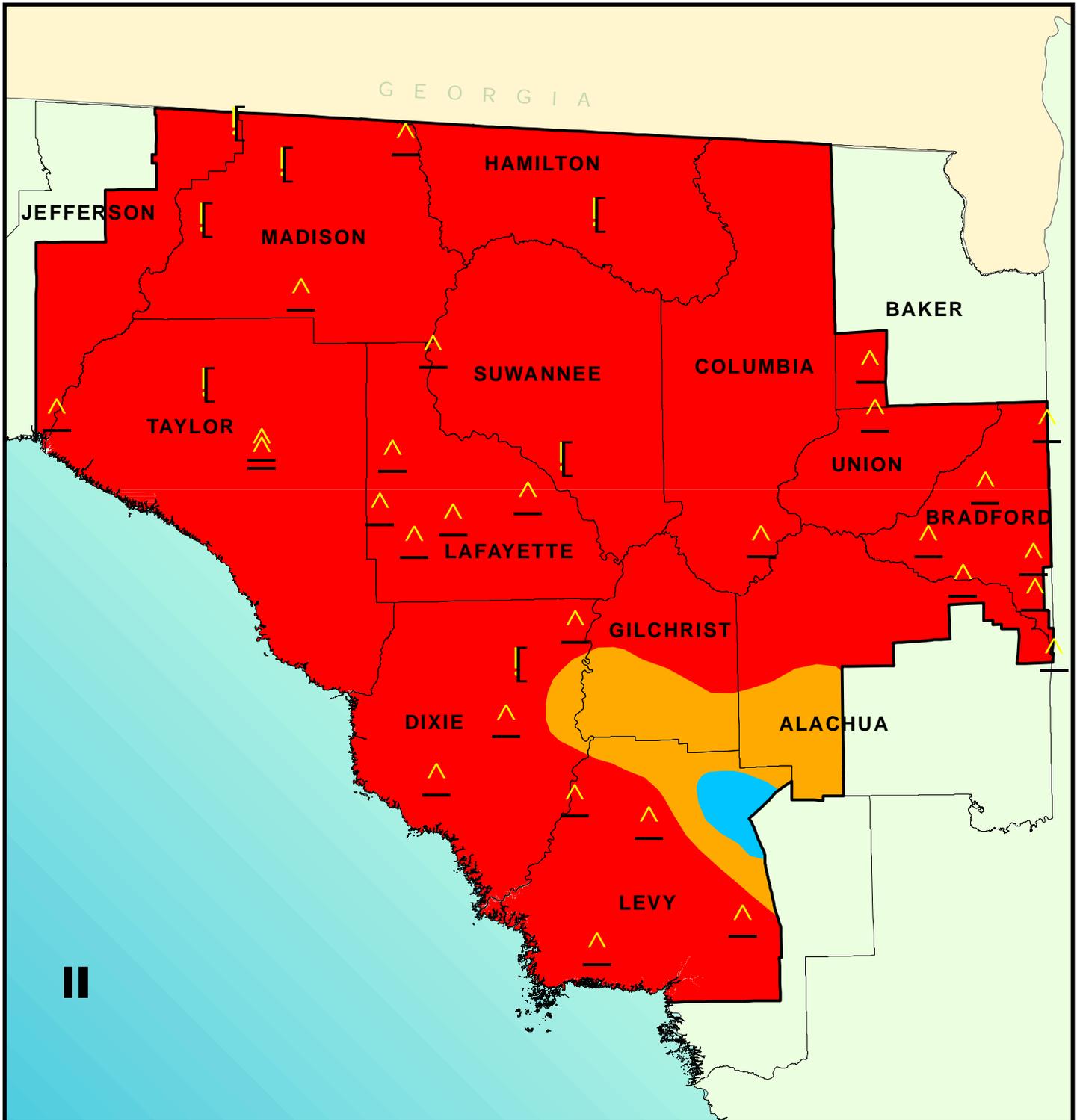
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**Figure 4: 12-Month Rainfall
December 1932 - Present**



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





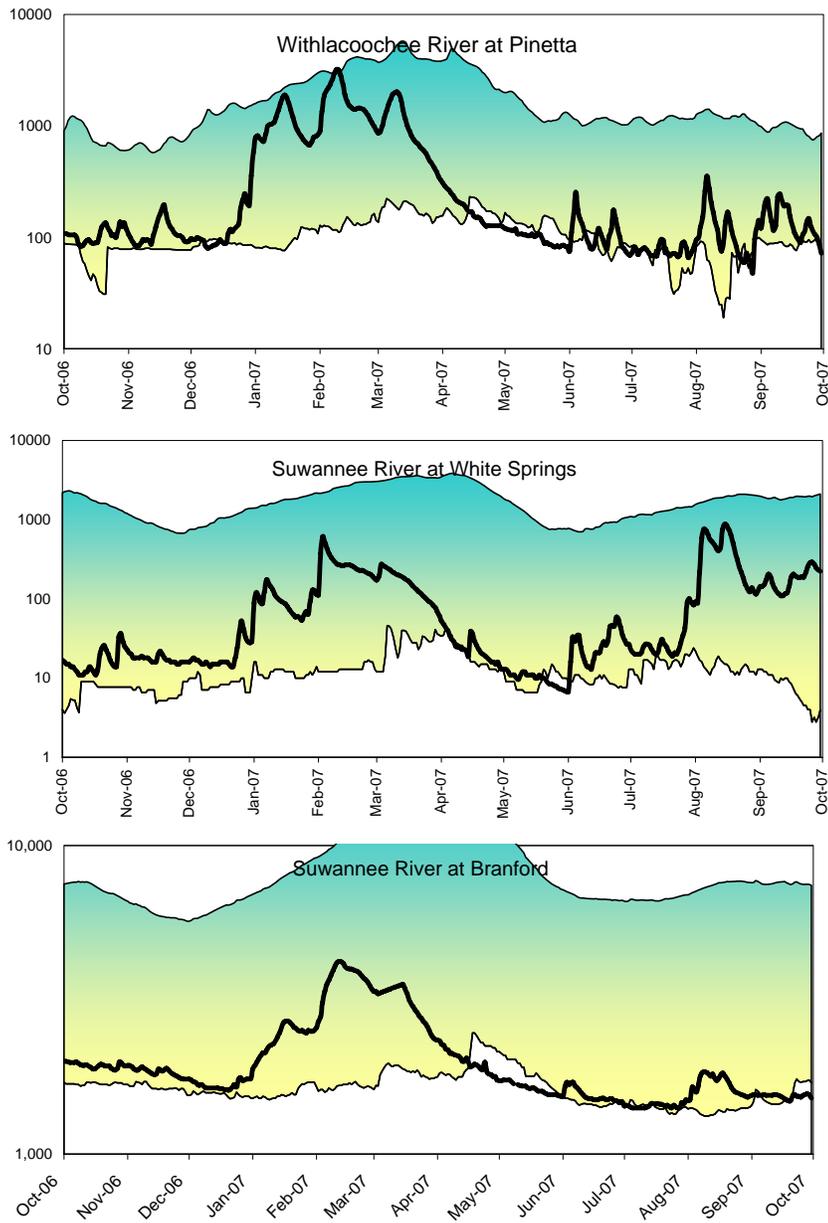
**Groundwater Levels
September 2007
Figure 6**

-  High
(Greater than 75th Percentile)
-  Normal
(25th to 75th Percentile)
-  Low
(10th to 25th Percentile)
-  Extremely Low
(Less than 10th Percentile)
-  Record Monthly Low
-  Historic Low

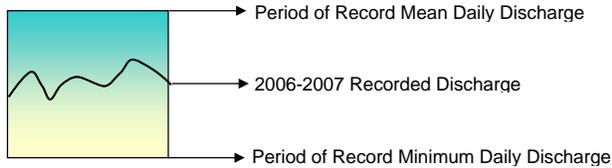


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Figure 7: Daily Discharge Statistics for Selected River Stations
 October 1, 2006 through September 30, 2007



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 September	2007 August	2007 July	2006 September	Monthly Change	Record Low	Record High
Lake Octahatchee	Nov-74	102.15	102.20	101.83	N/A	-0.05	95.55 (3/89)	107.9 (3/05)
Cherry Lake	Nov-74	151.11	151.25	151.05	151.5	-0.14	150.78 (05/07)	154.0 (9/75)
Andrews Lake	Nov-74	74.66	75.09	74.83	76.3	-0.43	73.32 (12/01)	78.4 (12/94)
Palestine Lake	Aug-75	140.78	141.26	140.98	142.1	-0.48	139.34 (10/02)	145.2 (10/92)
Ocean Pond	Dec-74	151.60	152.04	151.68	153.0	-0.44	150.85 (8/02)	156.6 (2/98)
Governor Hill Lake	Nov-84	BG	BG	BG	48.8	N/A	45.29 (06/07)	54.3 (2/98)
Alligator Lake	Sep-65	93.22	93.31	BG	93.9	-0.09	90.23 (4/68)	100.8 (9/04)
Lake Francis	Jun-99	139.81	139.41	138.83	139.5	0.40	138.81 (05/07)	141.7 (9/04)
Lake Butler	Jul-57	127.18	127.40	127.43	128.9	-0.22	126.75 (7/02)	134.0 (9/64)
Hampton Lake	Feb-89	126.88	127.08	127.20	128.7	-0.20	124.48 (5/02)	133.4 (3/98)
Lake Sampson	Jul-57	129.37	129.55	128.28	130.4	-0.18	127.87 (05/07)	136.2 (3/59)
Lake Crosby	Feb-89	127.46	127.63	127.66	129.6	-0.17	127.63 (8/07)	135.4 (10/04)
Waters Lake	Jul-72	BG	N/A	N/A	67.9	N/A	55.10 (2/82)	79.7 (9/04)
Low Lake	Nov-74	147.12	147.88	147.08	147.5	-0.76	146.80 (7/00)	150.3 (6/94)
Santa Fe Lake	Jul-58	137.41	137.58	137.75	139.2	-0.17	135.71 (10/02)	142.8 (1/98)
Lake Altho	Mar-76	137.12	137.14	136.96	138.6	-0.02	136.78 (7/01)	141.5 (2/98)
Snead's Smokehouse Lake	Dec-76	78.03	78.12	78.46	78.9	-0.09	78.12 (8/07)	85.4 (4/84)

Bold indicates record measurement.

* - BG indicates lake level below gage.

N/A - Data missing

Table 3. River Levels within SRWMD.

	September 2007	Average September	September 2006	September Lowest	September Highest	Historic Low	Historic High
<u>SUWANNEE RIVER AND TRIBUTARIES</u>							
SUWANNEE RIVER @ White Springs	51.30	56.10	49.90	49.19 9/30/81	84.34 9/18/64	48.75 Jul-81	88.54 Apr-73
SUWANNEE RIVER @ Ellaville	28.88	32.88	29.07	28.56 9/16/02	56.97 9/30/28	28.48 Jun-07	67.99 Apr-48
SUWANNEE RIVER @ Branford	7.47	13.32	8.28	7.23 9/25/90	30.13 9/24/64	6.74 Jul-02	38.84 Apr-48
SUWANNEE RIVER @ Wilcox	2.07	4.38	1.99	-1.08 9/15/99	14.42 9/22/64	-1.08 Sep-99	21.79 Apr-48
WITHLACOCHEE RIVER near Pinetta	53.44 9/30/2007	55.18	53.50	53.45 9/1/00	69.87 9/15/35	53.26 Aug-02	85.41 Apr-48
SANTA FE RIVER near Fort White	20.98 9/17/2007	22.93	21.27	21.27 9/29/06	36.08 9/16/64	21.02 Nov-02	36.20 Sep-64
<u>COASTAL RIVERS</u>							
AUCILLA RIVER at Lamont	44.72	48.55	46.06	44.09 9/3/55	57.77 9/18/57	43.49 Feb-57	59.44 Apr-73
STEINHATCHEE RIVER near Cross City	10.51	12.89	10.33	9.83 9/1/83	26.55 9/14/64	9.83 Aug-83	26.55 Sep-64
ECONFINA RIVER near Perry	15.31 9/19/2007	18.45	16.63	15.97 9/3/93	27.08 9/18/57	14.35 Jan-76	27.08 Sep-57
FENHOLLOWAY RIVER near Foley	54.68	56.65	54.49	54.24 9/1/00	68.49 9/12/64	54.16 May-01	68.80 Sep-64

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