

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: September 7, 2007

RE: August 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 (93 wells), lake levels (17 lakes), and river levels (31 stations on 8 rivers).

RAINFALL

The District received, on average, 6.10 inches of rain during August. The average August rainfall is 7.39 inches. Total rainfall for the past 12 months is 40.17 inches. The long-term average annual rainfall is 55.62 inches. Nineteen of the last twenty 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 August radar-derived rainfall distribution, and Figure 3 shows the 12-month rainfall deficit. The average deficit is 15.45 inches, an improvement of 0.93 inches since last month due to the second 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. August rainfall data are provisional, and subject to revision. Statistics are updated as revised data become available.

GROUNDWATER

Groundwater levels in 93 wells monitored in August improved slightly, increasing by an average of 0.38 feet since July. Nineteen wells set new monthly lows for August, and three wells set new historic lows, compared to 34 monthly lows and 16 historic lows observed in July. Overall, levels remain extremely low, with all readings below the 50th percentile for August, 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. The District issued 90 emergency

construction permits for dry wells between April 1 and August 31. See Figure 6 for a generalized representation of District groundwater levels.

SURFACEWATER

Levels and flows in the major streams in the District fluctuated throughout the month in response to locally intense rainfall, but most remained below the 10th percentile. An exception was the Suwannee River at White Springs, where flows increased to between the 10th and 25th percentile for August, as a result of higher-than-normal rainfall in southeast Georgia. The Santa Fe River at Fort White and the Econfina River near Perry set new record monthly lows. No all-time record low river discharges or levels were observed. River levels at selected monitoring stations are provided in Table 3. Discharge statistics for selected stations are shown in Figure 7. Observed levels and discharges are provisional, subject to review by the United States Geological Survey.

Lake Crosby in Bradford County set a new record low, for the fourth month in a row. Snead's Smokehouse Lake in Jefferson County also fell below its historic low. 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 15.45 inch yearly rainfall deficit. 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, including a Home Water Use Survey and conservation tips, wastewater reuse, and xeriscape publications. 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

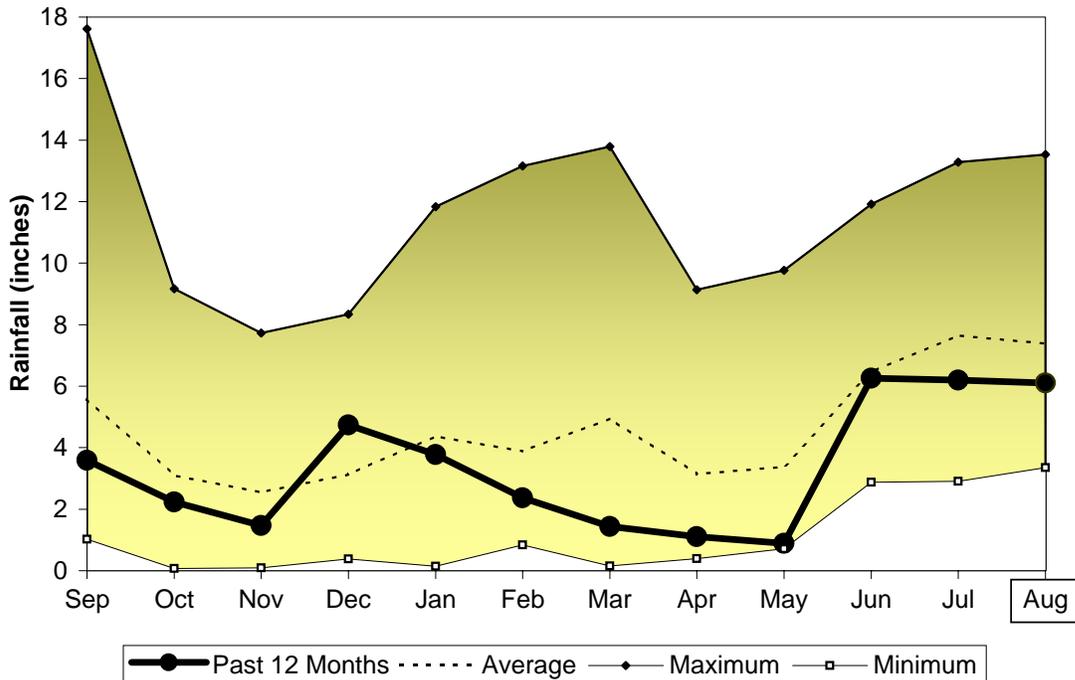
Table 1. Estimated Rainfall Totals

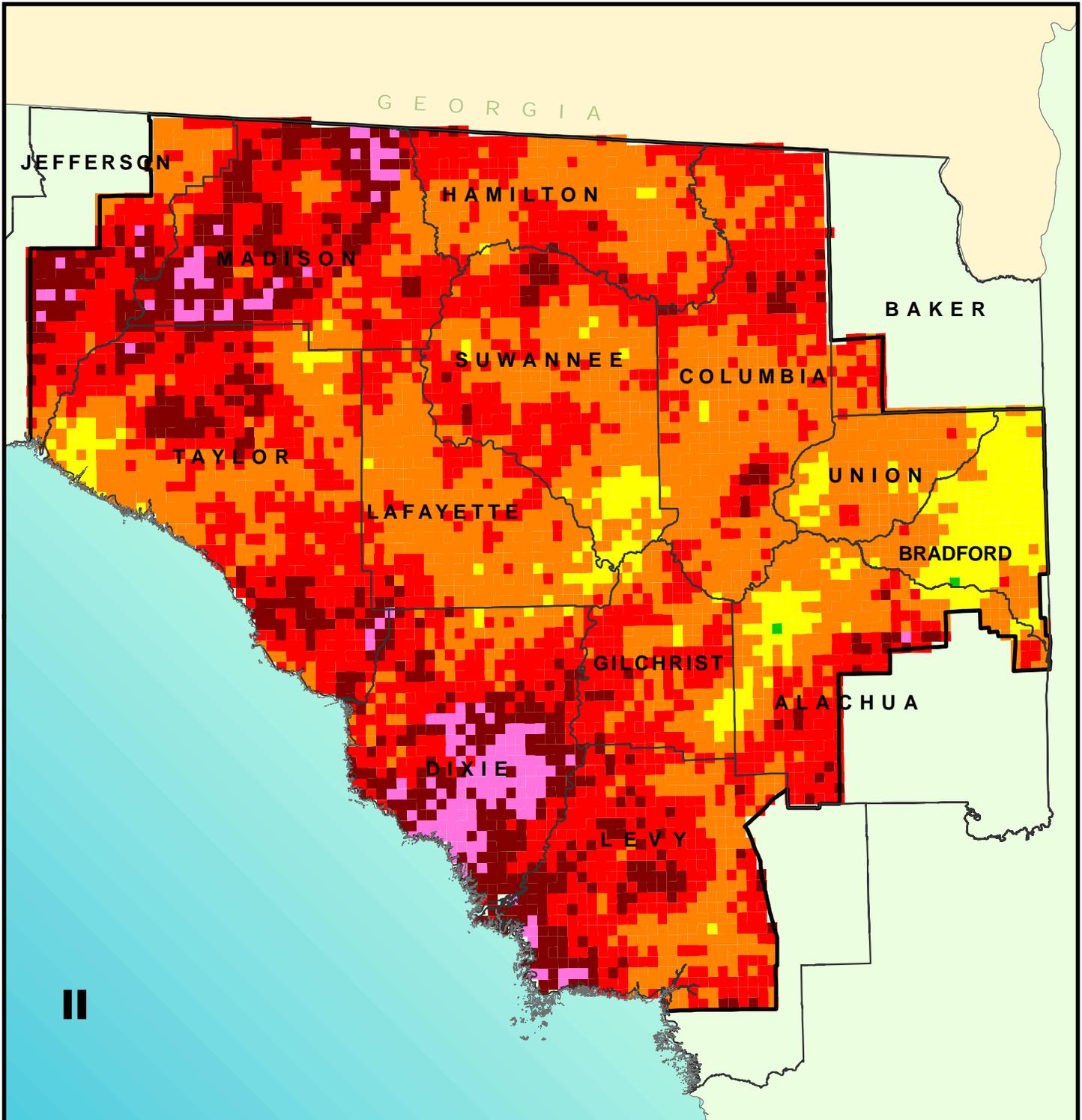
County	August-2007	Aug-2006	Last 12 Months	August Average
Alachua	5.49	5.39	36.74	7.10
Baker	5.99	4.15	38.62	6.59
Bradford	3.60	3.63	32.47	7.39
Columbia	6.02	3.83	39.03	6.63
Dixie	8.18	6.27	43.11	9.11
Gilchrist	5.99	5.47	38.87	7.83
Hamilton	5.89	4.06	40.11	6.13
Jefferson	7.22	6.06	46.44	6.46
Lafayette	5.48	3.87	38.34	7.78
Levy	6.94	6.12	44.91	9.80
Madison	7.65	5.61	46.02	6.13
Suwannee	5.75	5.10	39.45	6.40
Taylor	6.50	6.33	42.68	8.01
Union	4.66	4.36	35.22	7.77

District August 2007 Average: 6.10
 District Historical August Average: 7.39
 District Historical 12-month Average: 55.62
 District Past 12-Month Total: 40.17
 District Rainfall Deficit Since January: -12.97
 District 12-month Rainfall Deficit: -15.45

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall





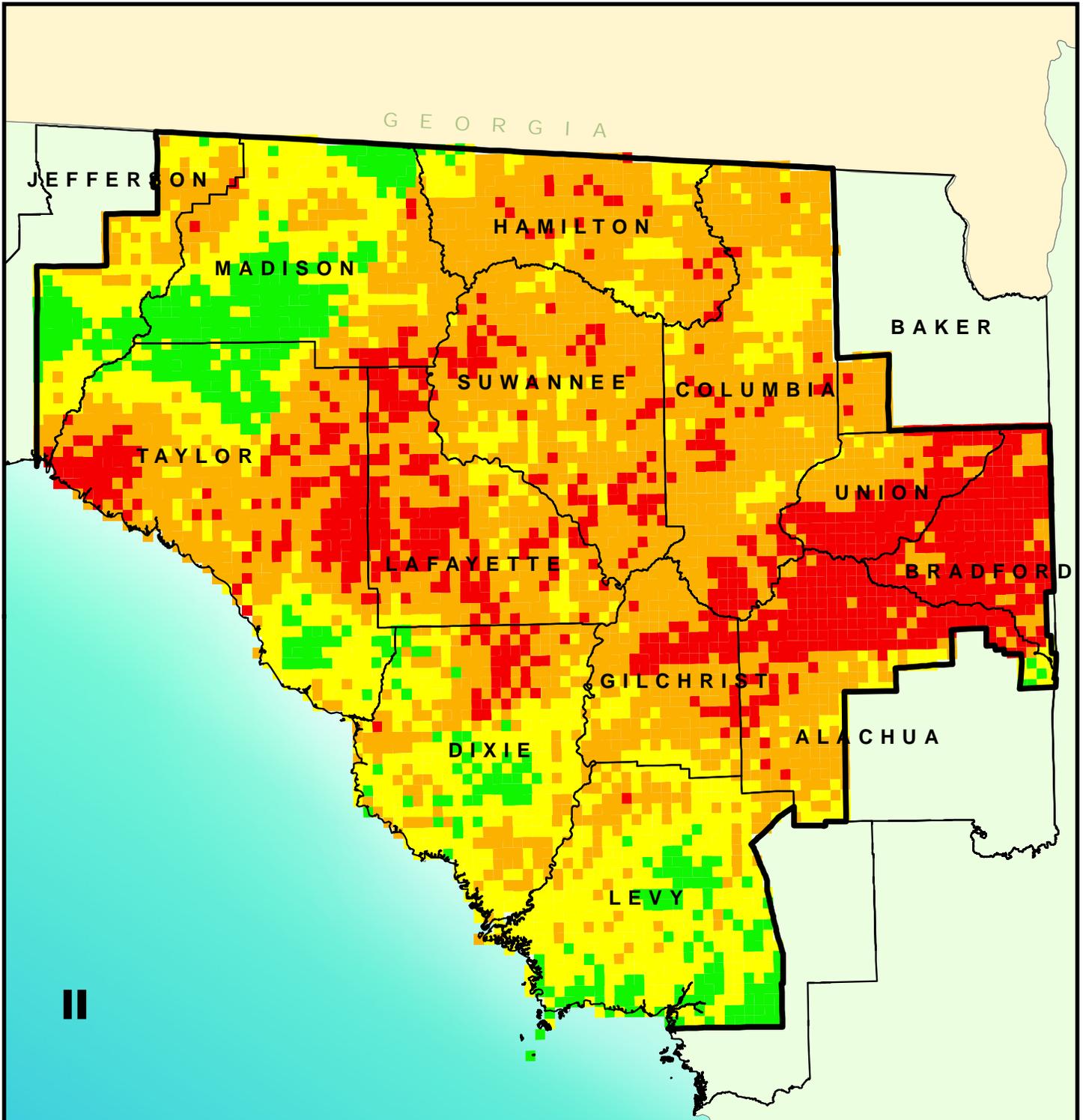
Rainfall in inches

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

**August 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
September 2006 through August 2007
Figure 3**

Rainfall below Annual Average

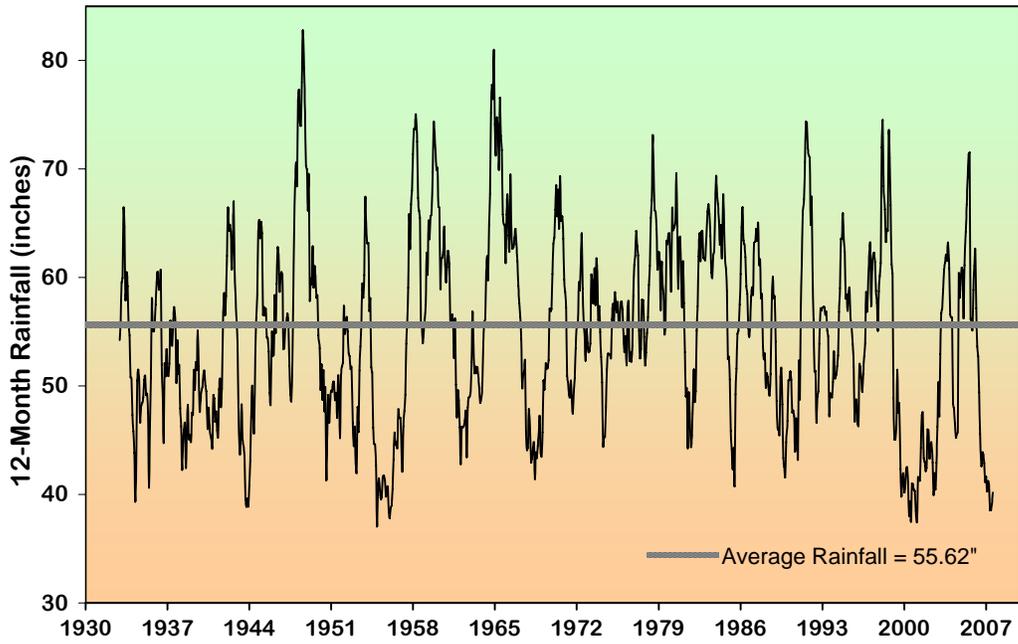
- Less than 8 inches below average
- 8 to 14 inches below average
- 14 to 20 inches below average
- More than 20 inches below average

- District Boundary
- County Boundaries

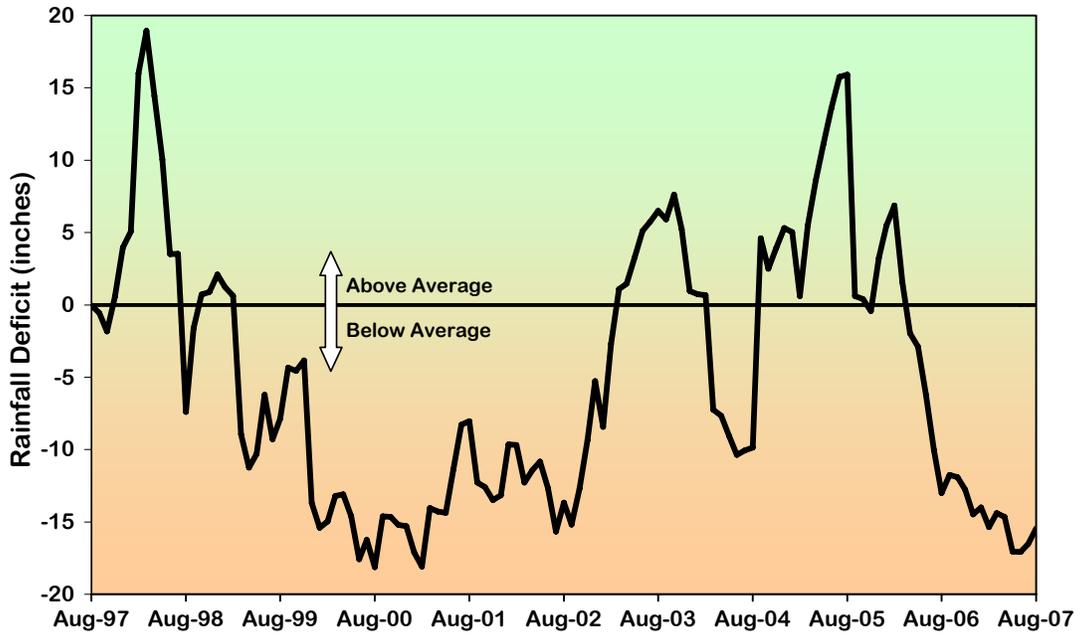


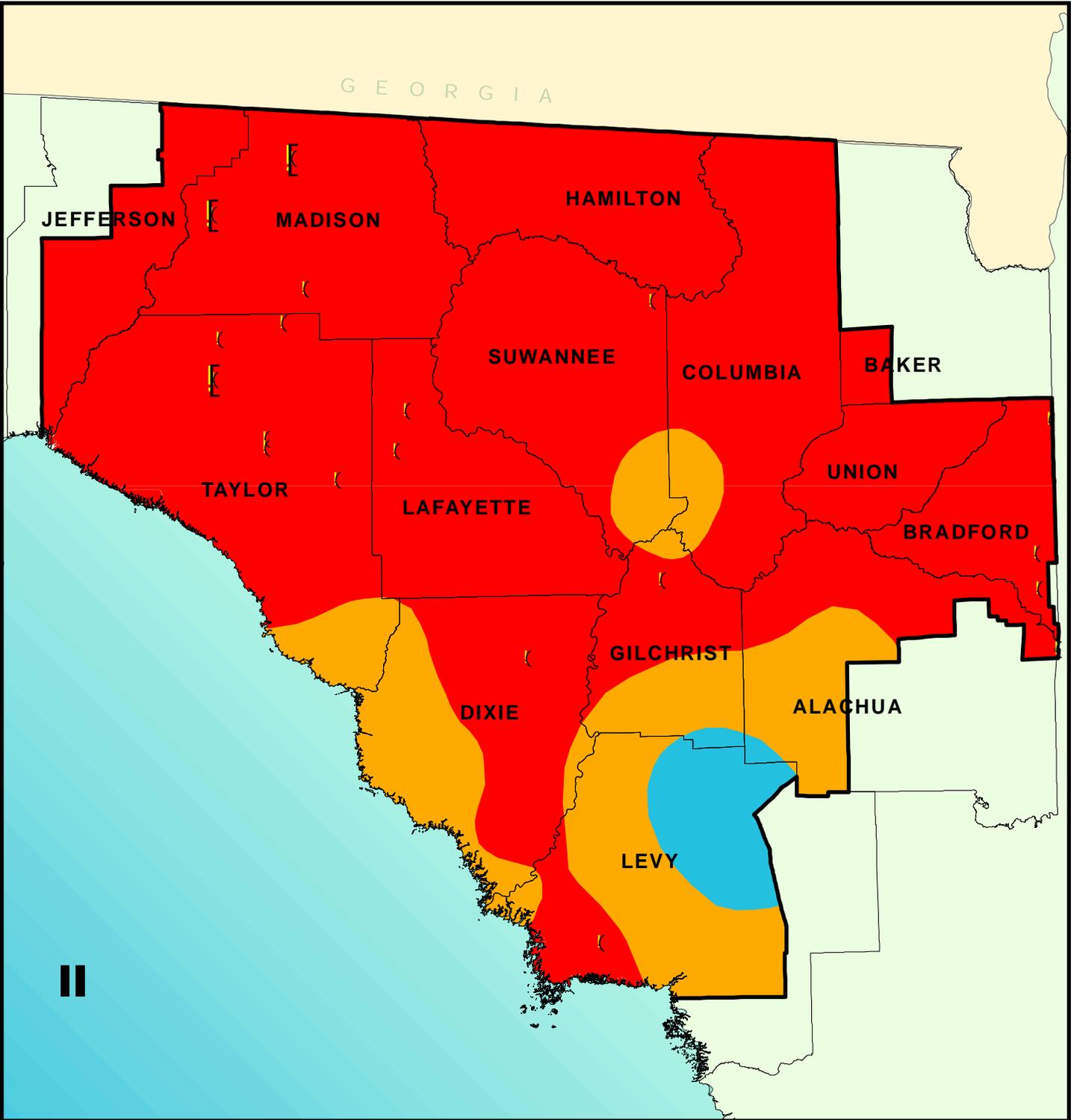
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**Figure 4: 12-Month Rainfall
December 1932 - Present**



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





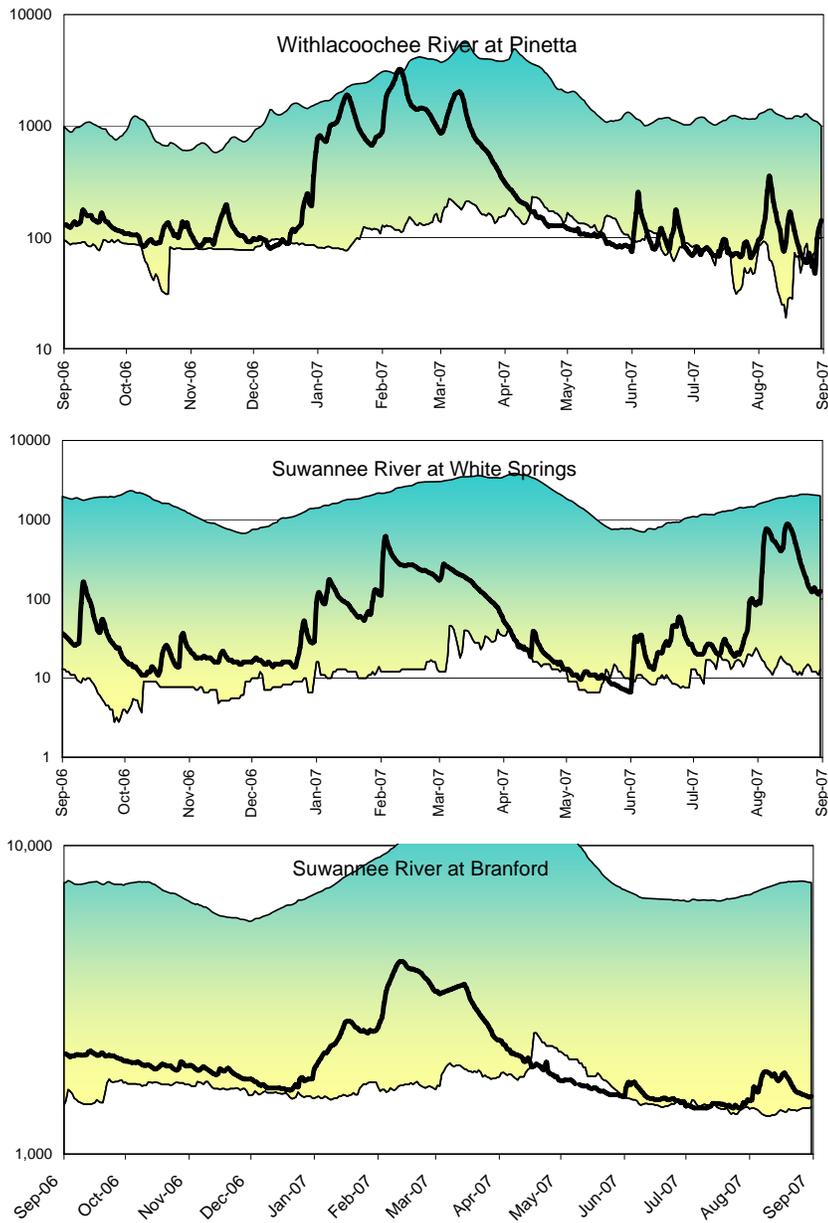
**Groundwater Levels
August 2007
Figure 6**

-  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

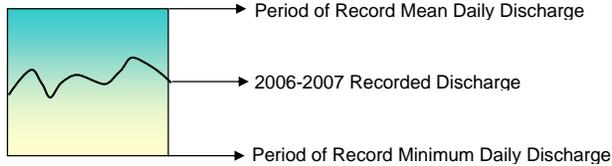


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Figure 7: Daily Discharge Statistics for Selected River Stations
 September 1, 2006 through August 31, 2007



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 August	2007 July	2007 June	2006 August	Monthly Change	Record Low	Record High
Lake Octahatchee	Nov-74	102.20	101.83	N/A	101.81	N/A	95.55 (3/89)	107.9 (3/05)
Cherry Lake	Nov-74	151.25	151.05	151.13	151.61	0.20	150.78 (05/07)	154.0 (9/75)
Andrews Lake	Nov-74	75.09	74.83	75.11	76.43	0.26	73.32 (12/01)	78.4 (12/94)
Palestine Lake	Aug-75	141.26	140.98	140.88	142.12	0.28	139.34 (10/02)	145.2 (10/92)
Ocean Pond	Dec-74	152.04	151.68	151.89	153.03	0.36	150.85 (8/02)	156.6 (2/98)
Governor Hill Lake	Nov-84	N/A	N/A	45.29	49.62	N/A	45.29 (06/07)	54.3 (2/98)
Alligator Lake	Sep-65	93.31	BG	93.37	93.93	N/A	90.23 (4/68)	100.8 (9/04)
Lake Francis	Jun-99	139.41	138.83	139.08	140.23	0.58	138.81 (05/07)	141.7 (9/04)
Lake Butler	Jul-57	127.40	127.43	127.45	129.10	-0.03	126.75 (7/02)	134.0 (9/64)
Hampton Lake	Feb-89	127.08	127.20	126.90	128.95	-0.12	124.48 (5/02)	133.4 (3/98)
Lake Sampson	Jul-57	129.55	128.28	127.92	130.54	1.27	127.87 (05/07)	136.2 (3/59)
Lake Crosby	Feb-89	127.63	127.66	127.71	129.85	-0.03	127.66 (7/07)	135.4 (10/04)
Waters Lake	Jul-72	N/A	N/A	61.56	68.12	N/A	55.10 (2/82)	79.7 (9/04)
Low Lake	Nov-74	147.88	147.08	147.22	147.41	0.80	146.80 (7/00)	150.3 (6/94)
Santa Fe Lake	Jul-58	137.58	137.75	137.69	139.35	-0.17	135.71 (10/02)	142.8 (1/98)
Lake Altho	Mar-76	137.14	136.96	136.81	138.93	0.18	136.78 (7/01)	141.5 (2/98)
Snead's Smokehouse Lake	Dec-76	78.12	78.46	78.63	79.24	-0.34	78.40 (5/96)	85.4 (4/84)

Bold indicates record measurement.

* - BG indicates lake level below gage.

N/A - Data missing

Table 3. River Levels within SRWMD.

	August 2007	Average August	August 2006	August Lowest	August Highest	Historic Low	Historic High
<u>SUWANNEE RIVER AND TRIBUTARIES</u>							
SUWANNEE RIVER @ White Springs	50.89	56.44	50.02	48.93 8/16/81	81.71 8/26/45	48.75 Jul-81	88.54 Apr-73
SUWANNEE RIVER @ Ellaville	28.82	33.27	29.24	28.56 8/12/02	64.22 8/21/28	28.48 Jun-07	67.99 Apr-48
SUWANNEE RIVER @ Branford	7.45	13.31	8.42	6.75 8/10/02	27.25 8/31/45	6.74 Jul-02	38.84 Apr-48
SUWANNEE RIVER @ Wilcox	2.20	4.38	2.47	1.69 8/29/55	10.79 8/20/91	-1.08 Sep-99	21.79 Apr-48
WITHLACOOCHEE RIVER near Pinetta	53.64	55.70	53.57	53.26 8/14/02	73.34 8/7/91	53.26 Aug-02	85.41 Apr-48
SANTA FE RIVER near Fort White	21.02 8/1/07	22.60	21.35	21.30 8/26/02	30.36 8/29/28	21.02 Nov-02	36.20 Sep-64
<u>COASTAL RIVERS</u>							
AUCILLA RIVER at Lamont	45.23	48.58	46.37	43.79 8/22/55	53.99 8/8/91	43.49 Feb-57	59.44 Apr-73
STEINHATCHEE RIVER near Cross City	10.58	13.09	10.44	9.83 8/27/83	24.58 8/15/70	9.83 Aug-83	26.55 Sep-64
ECONFINA RIVER near Perry	15.51 8/24/07	18.87	16.51	15.95 8/25/93	26.35 8/19/94	14.35 Jan-76	27.08 Sep-57
FENHOLLOWAY RIVER near Foley	54.71	56.89	54.55	54.17 8/19/77	65.17 8/12/64	54.16 May-01	68.80 Sep-64

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