

## MEMORANDUM

TO: Governing Board

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

THRU: David Still, Executive Director  
Kirk B. Webster, Deputy Executive Director

DATE: August 6, 2008

RE: July 2008 Hydrologic Conditions Report for the District

The 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 estimate), groundwater levels (87 wells), surfacewater levels (16 lakes and 11 rivers), river flows (6 stations on 4 rivers), and general hydrological/meteorological information (drought indices and weather forecasts). Data are provisional, and subject to revision. Statistics are updated as revised data become available.

### RAINFALL

- Average District-wide rainfall was 7.67 inches, only slightly below the long-term July average of 7.77 inches (Table 1, Figure 1). Locally intense storms caused accumulations of over 10 inches in Bradford, Dixie, and Levy counties. Hamilton, Madison, Jefferson, and Taylor counties received less than normal rainfall. Figure 2 shows the estimated rainfall accumulation across the District.
- The twelve-month average deficit through July 31 was 4.4 inches, the lowest annual deficit since May 2006. The 24-month deficit was 22.3 inches. Figure 3 depicts the 12-month deficit across the District. Figure 4 shows the change in annual deficits beginning in 1998.

### SURFACEWATER

- By July 31, seven-day average streamflow was below the 10<sup>th</sup> percentile in the Withlacoochee River, middle- and lower- Suwannee River, and the lower Santa Fe River (Figure 5). (The percentile is the percentage of flows or levels that are equal to or below the observed value.) The upper Santa Fe River and New River improved to normal flow conditions (above the 25<sup>th</sup> percentile), but remained below long-term average flow. Near-record low flows for July were observed in the Coastal Rivers (Steinhatchee, Fenholloway, and Econfinia). Discharge statistics for six river stations are presented in Figure 6.

- An apparent record low level for the month was observed at the Econfina River near Perry, for the fourth month in a row.
- Santa Fe Lake and the Bradford County lakes responded well to above-normal rainfall, with levels rising between 0.3 and 0.6 feet. All lake levels were below their long-term averages. No record lows were observed.

## GROUNDWATER

- Groundwater levels monitored in 87 wells (Figure 7) decreased by an average of 0.3 feet since June. Twenty-six percent of the levels were below the 10<sup>th</sup> percentile, compared to 32% in June and 27% in May. Seventeen percent of the levels were above the 25<sup>th</sup> percentile (normal range), compared to 13% in June.
- Six wells set new July lows, and three all-time lows were recorded. Monthly statistics for a representative sample of wells are shown in Figure 8.
- The District received three requests for emergency dry well permits in June. A total of 196 have been issued since April 1, 2007 (Figure 7).

## HYDROLOGICAL/METEOROLOGICAL INFORMATION

- The Palmer Drought Severity Index, which uses temperature, precipitation, and soil moisture to indicate prolonged and abnormal moisture deficiency or excess, remained at mild drought for the second month in a row.
- The 12-month Standardized Precipitation Index (SPI), based on long-term precipitation patterns that impact streams and groundwater, indicated moderate to severe dryness in western and southwestern counties, while the remainder of the District was near normal.
- Seven-day average streamflow conditions ending July 31 were categorized in the Suwannee basin as severe hydrologic drought and elsewhere as moderate hydrologic drought by the US Geological Survey.
- Long-range outlooks from the National Weather Service Climate Prediction Center show an increased probability of above-normal precipitation for Florida through October.

## WATER CONSERVATION

A Phase I Water Shortage Advisory requesting voluntary reductions in water use remains in effect. Normal summer rainfall will not significantly recharge surfacewater and groundwater because of increased evaporation and uptake by vegetation. The District urges all water users to eliminate wasteful and inefficient water use. Water is conserved by using the minimum amount needed and by irrigating 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. The District offers a variety of free water conservation information to the public via its website and by request.

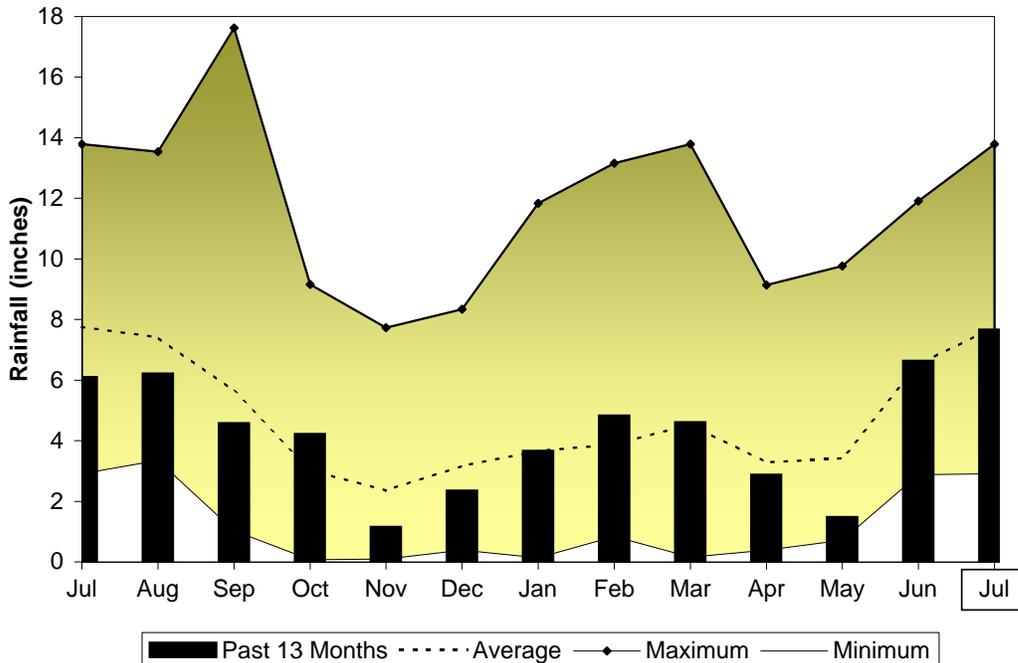
**Table 1. Estimated Rainfall Totals**

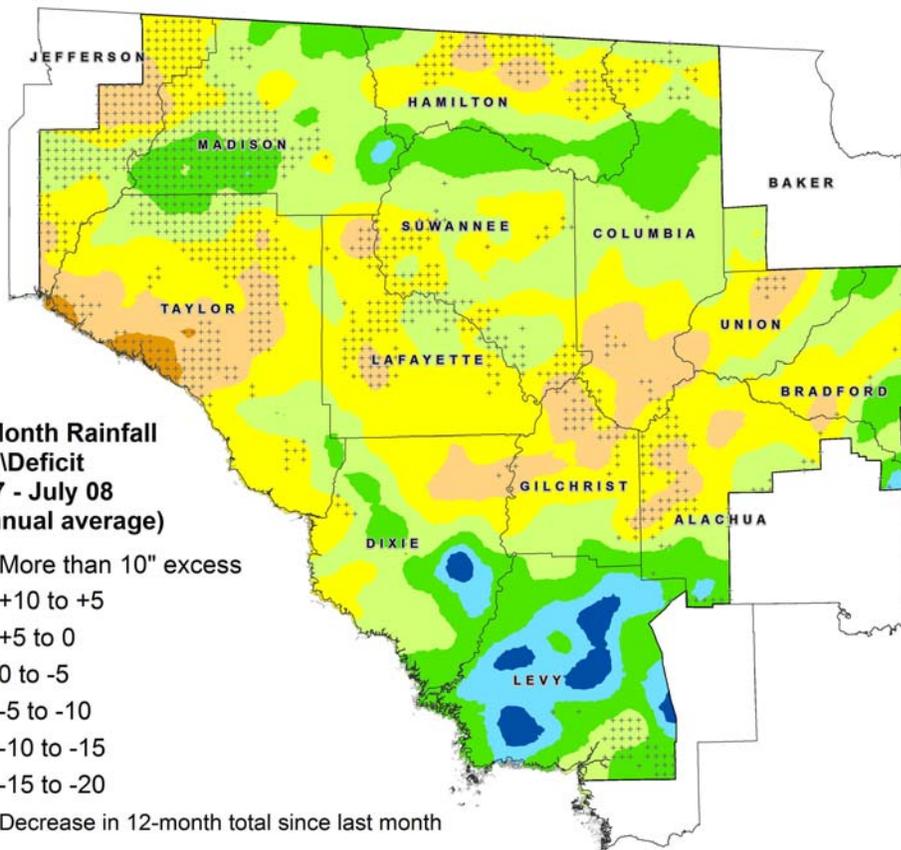
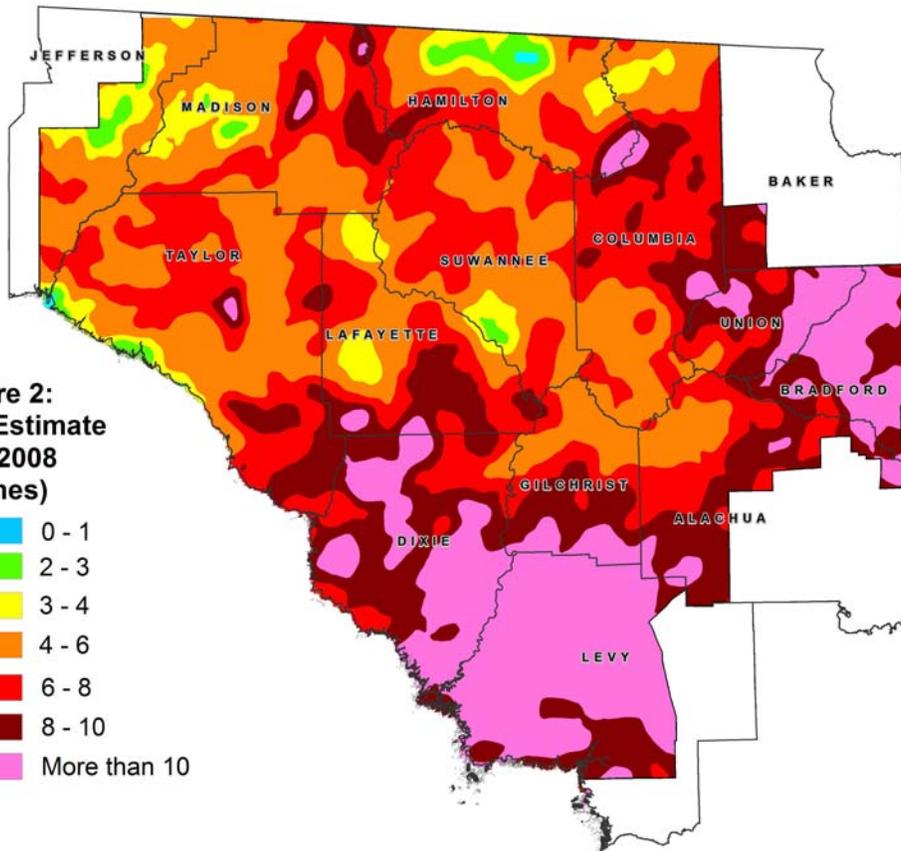
County	July-2008	July-2007	Last 12 Months	July Average
Alachua	7.90	6.75	49.77	6.82
Baker	8.60	5.56	50.87	6.33
Bradford	10.68	7.76	50.38	6.92
Columbia	6.68	5.09	49.97	6.74
Dixie	10.01	5.69	52.02	8.92
Gilchrist	7.80	6.23	47.85	8.03
Hamilton	5.51	4.64	49.36	5.62
Jefferson	4.54	6.76	47.23	6.50
Lafayette	6.55	5.38	47.58	7.60
Levy	11.90	7.76	59.08	8.55
Madison	5.89	5.81	52.90	6.18
Suwannee	5.83	5.51	50.17	6.35
Taylor	6.19	6.16	46.70	8.39
Union	9.35	6.28	47.92	7.49

July 2008 Average: 7.67  
 Historical July Average: 7.77  
 Historical 12-month Average: 54.71  
 Past 12-Month Total: 50.30  
 12-month Rainfall Deficit: -4.41

(Rainfall reported in inches)

**Figure 1: Comparison of District Monthly Rainfall**





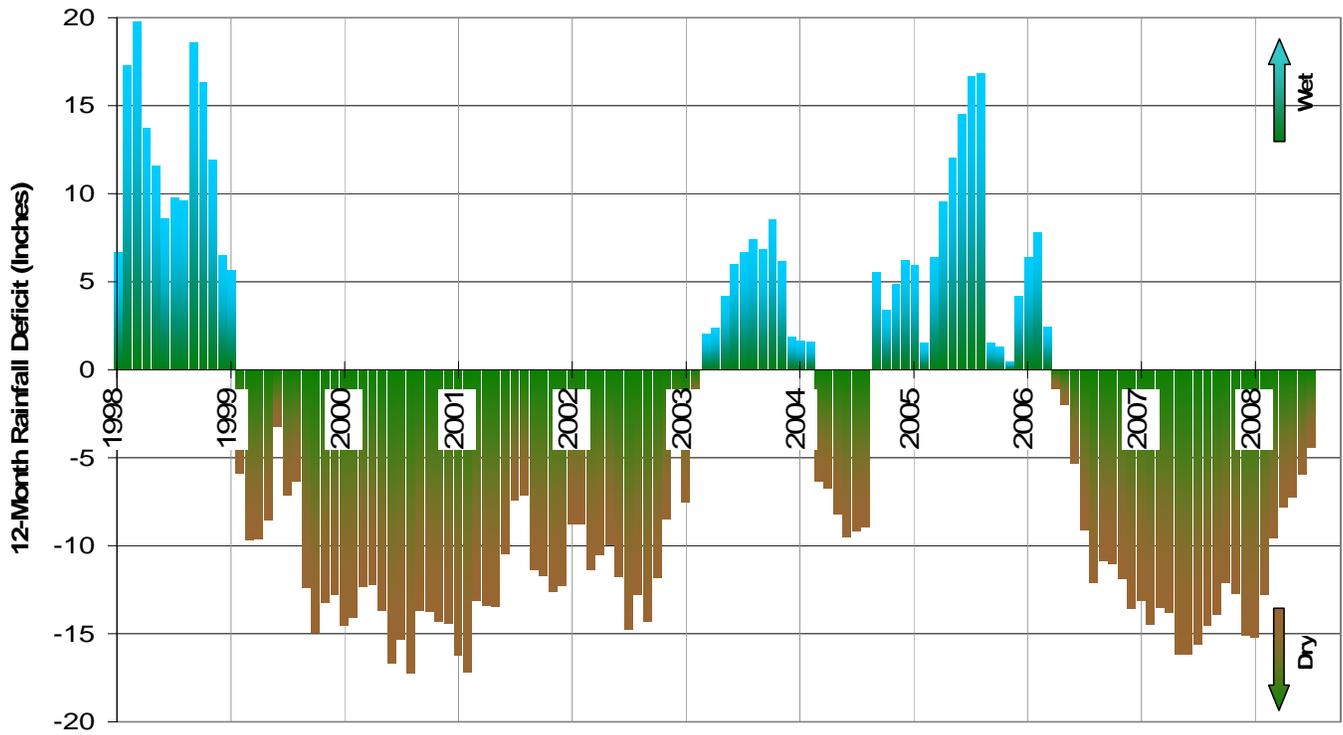
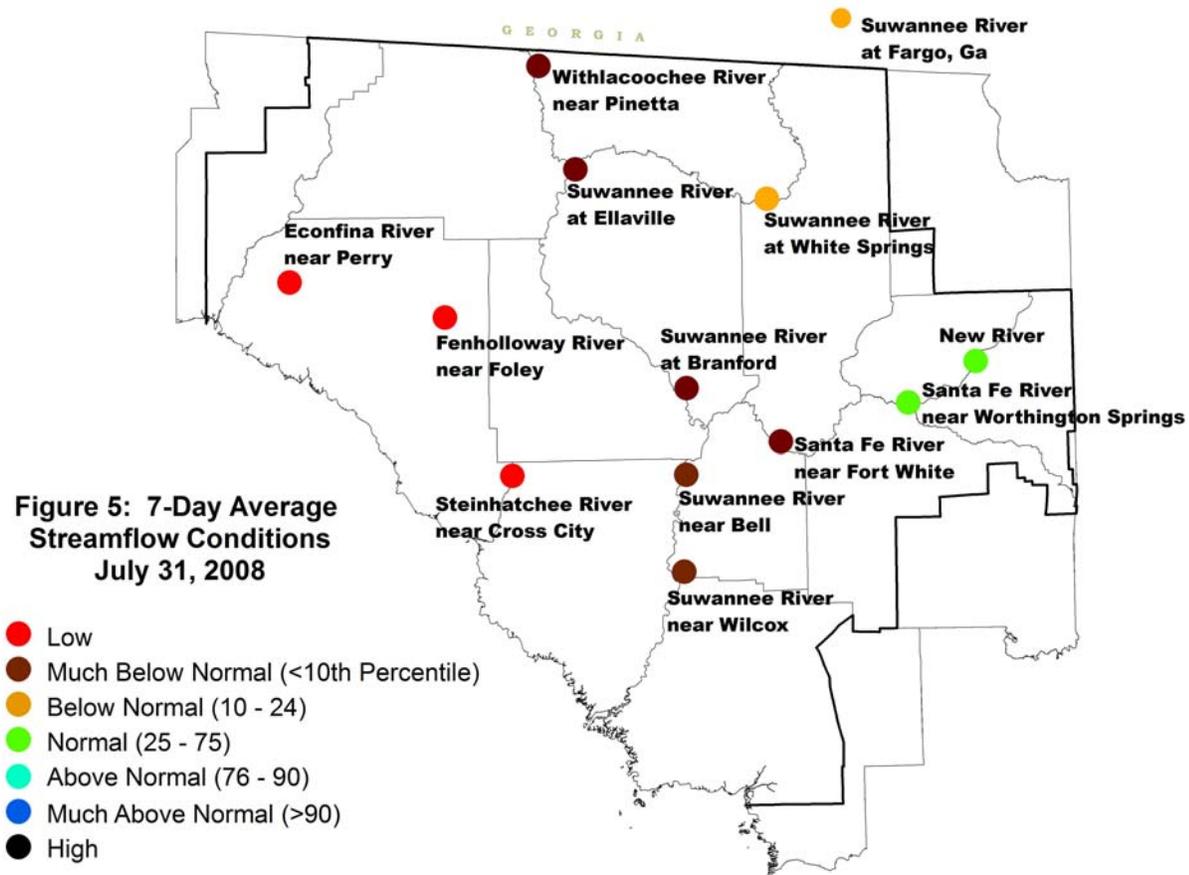
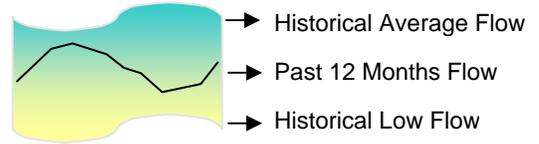


Figure 4: 12-month rolling rainfall deficit (difference between the rainfall that fell during any 12-month period and the long-term average expected over the same period, January 1998-July 2008)

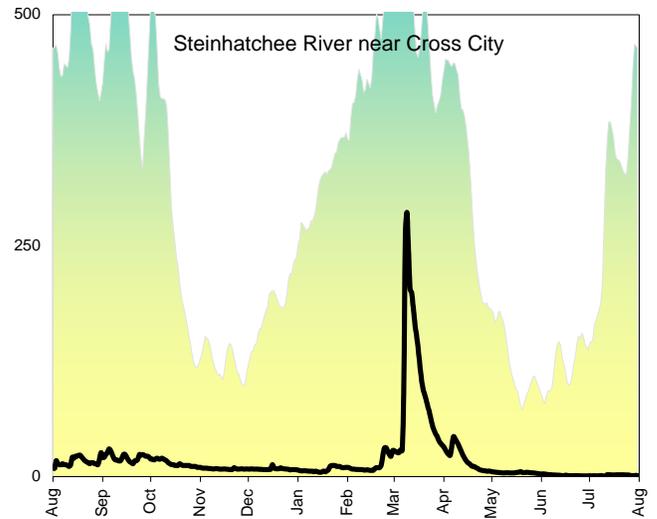
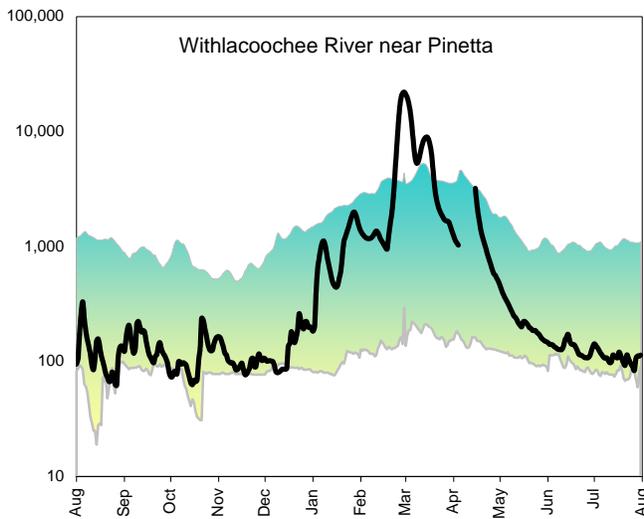
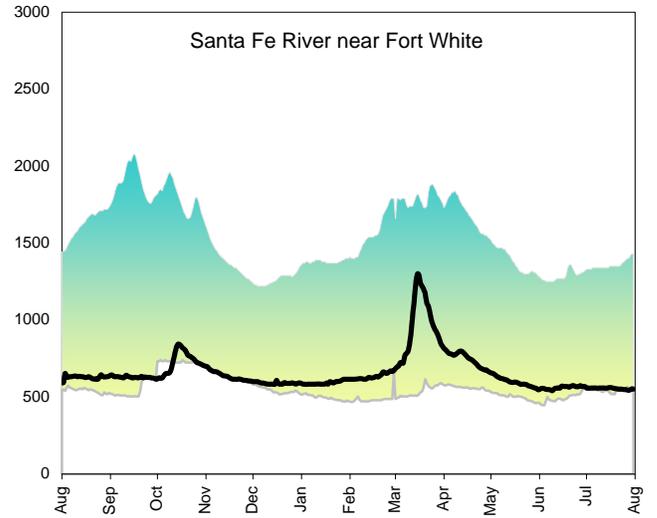
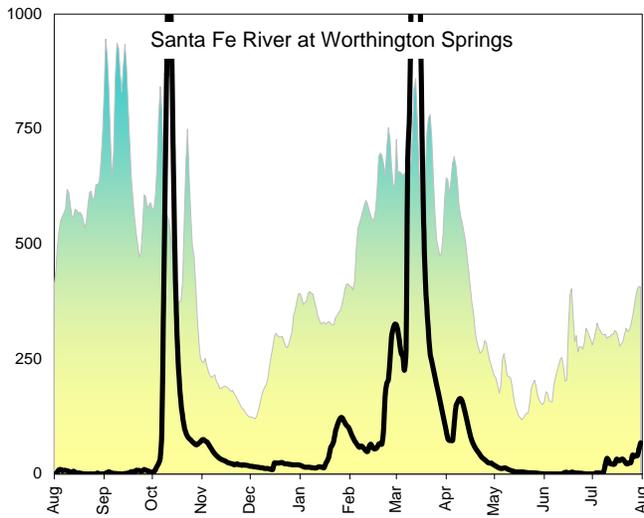
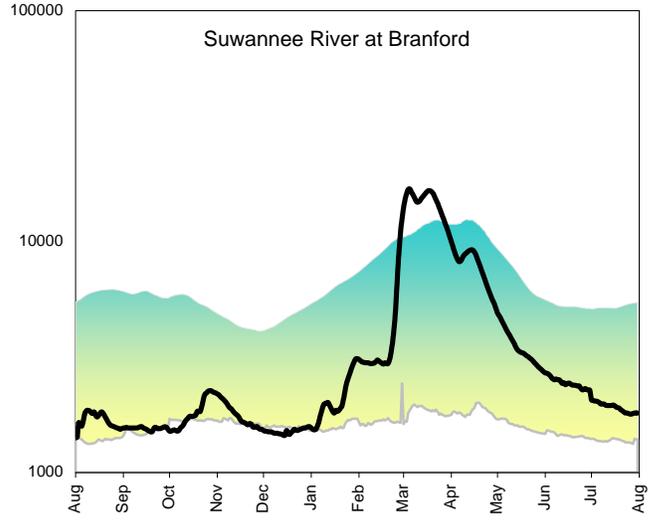
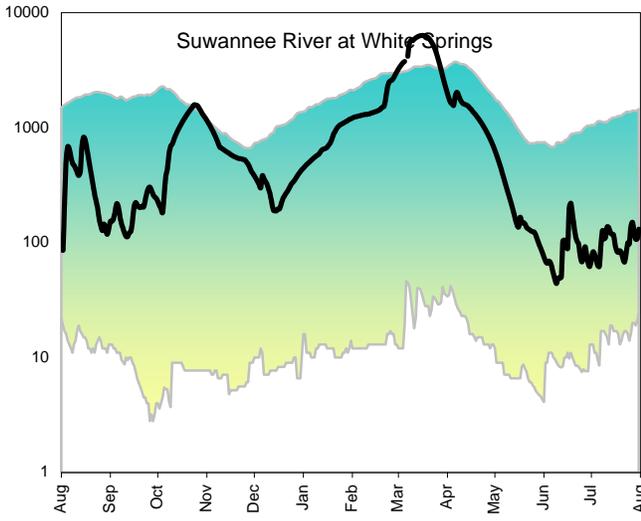


### Figure 6: Daily River Flow Statistics

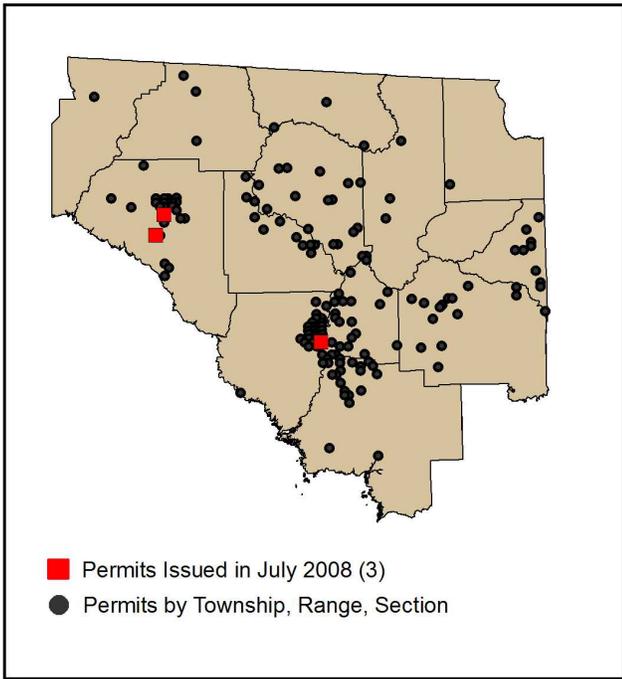
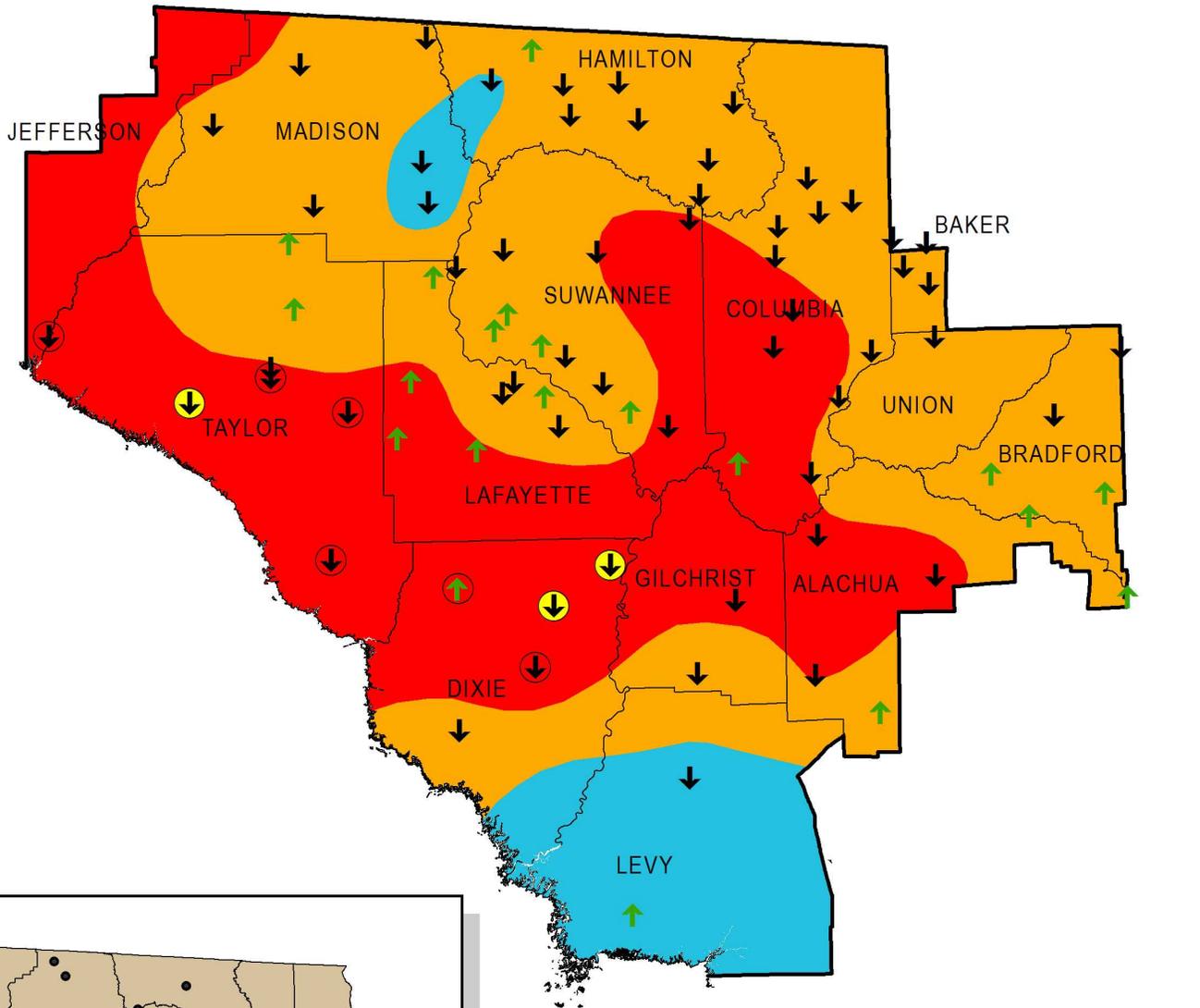
August 1, 2007 through July 31, 2008



RIVER FLOW, CUBIC FEET PER SECOND



# Figure 7: July 2008 Groundwater Levels



Inset: Emergency Dry Well Permits  
April 1, 2007 - July 31, 2008

- 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

# Figure 8: Monthly Groundwater Level Statistics

Levels August 1, 2007 through July 31, 2008  
 Period of Record Beginning 1978

