

MEMORANDUM

TO: Governing Board

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

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

DATE: May 5, 2008

RE: April 2008 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 (93 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). Rainfall and surfacewater data are provisional, and subject to revision. Statistics are updated as revised data become available.

RAINFALL

- Average District-wide rainfall in April was 2.88 inches. The long-term April average is 3.33 inches (Table 1, Figure 1). Northern counties received above-average rainfall, while southern counties received below-average rainfall. Figure 2 shows the estimated rainfall accumulation across the District.
- The average twelve-month deficit through April 30 was 7.8 inches (Figure 3). This is the lowest deficit since June 2006. The 24-month rainfall deficit was 21.6 inches.

GROUNDWATER

- Groundwater levels monitored in 93 wells (Figure 4) decreased by an average of 0.37 feet since March. Twenty-two percent of the levels were below the 10th percentile, compared to 31% in March and 72% in February. The percentile is the percentage of the monthly levels that are equal to or below this month's level.
- Seven wells set new April lows. No all-time lows were observed. Monthly statistics for a representative sample of wells are shown in Figure 5.
- The District issued 3 emergency permits for dry wells, for a total of 191 issued since April 1, 2007 (Figure 6).

SURFACEWATER

- Streamflow conditions fell to below normal on the Santa Fe River and lower Suwannee River. Flow decreased throughout the month on the middle- and upper-Suwannee River and Withlacoochee River, but remained within the normal range for this time of year (Figure 7). The Fenholloway and Econfina Rivers were much below normal (less than 10th percentile), while the Steinhatchee River flow improved slightly to below normal (10th-24th percentile). An apparent record low level for April was observed at the Econfina River near Perry. Discharge statistics for six river stations are presented in Figure 8.
- Lake levels decreased by an average of 0.13 feet. Only Lake Francis and Cherry Lake in Madison County saw levels rise since last month. All lake levels were below the long-term mean. No record lows were observed.

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 in the near-normal range throughout April.
- The 12-month Standardized Precipitation Index (SPI), based on long-term precipitation patterns that impact streamflow and groundwater conditions, indicated moderate to extreme dryness in western and southwestern counties, while the remainder of the District was near normal. The 6-month SPI, which reflects medium-term precipitation, was near normal for the entire District.
- Seven-day average streamflow conditions ending April 30 were categorized in the Coastal Rivers Basin and the Waccasassa River Basin as moderate hydrologic drought (6th-9th percentile) by the US Geological Survey. Suwannee River Basin streamflow conditions were categorized as normal.
- Long-range outlooks from the National Weather Service Climate Prediction Center show no apparent trend toward below-normal or above-normal precipitation through June.

WATER CONSERVATION

On March 11, 2008, the Governing Board issued an amended Phase II Water Shortage Order that includes mandatory water restrictions for all use categories including residential, commercial, industrial and agricultural.

The District urges that water conservation be an ongoing activity for all water users, and 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

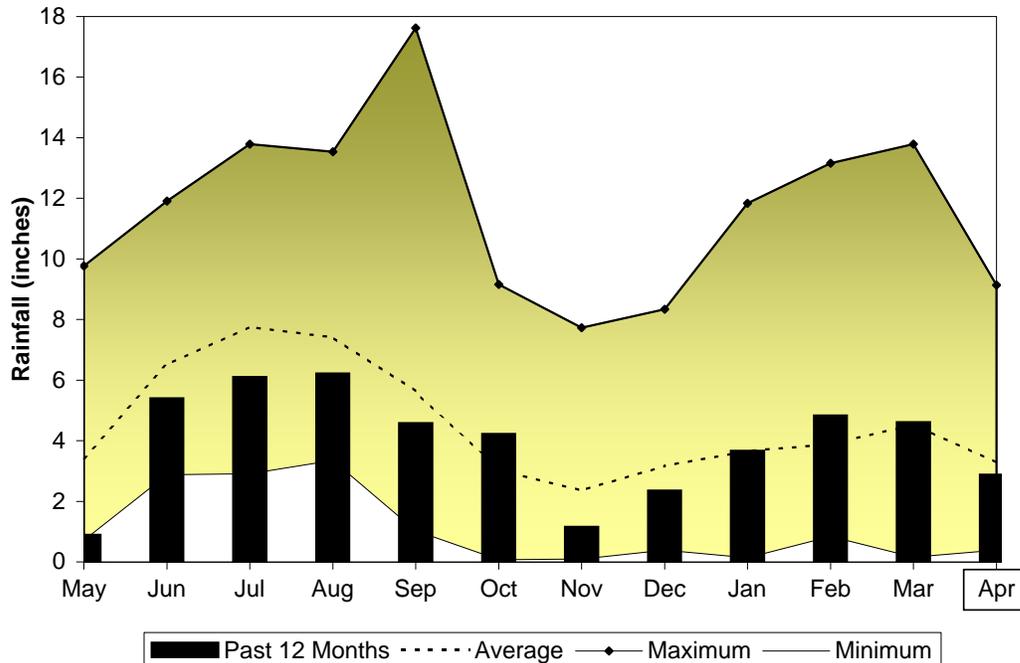
Table 1. Estimated Rainfall Totals

County	Apr-2008	Apr-2007	Last 12 Months	April Average
Alachua	2.00	1.21	47.52	3.35
Baker	4.06	0.90	46.76	3.07
Bradford	2.53	0.73	47.49	3.16
Columbia	3.62	0.95	46.15	3.10
Dixie	1.40	1.25	47.05	3.35
Gilchrist	1.99	1.19	44.30	3.58
Hamilton	4.06	1.21	46.01	3.21
Jefferson	3.20	0.82	47.85	4.04
Lafayette	2.21	1.20	42.44	3.24
Levy	1.60	1.48	54.33	3.11
Madison	4.77	1.23	50.43	3.23
Suwannee	3.49	1.25	45.12	3.24
Taylor	2.53	1.33	43.87	3.35
Union	2.82	0.77	44.78	3.65

April 2008 Average: 2.88
 Historical April Average: 3.33
 Historical 12-month Average: 54.71
 Past 12-Month Total: 46.90
 12-month Rainfall Deficit: -7.81

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall



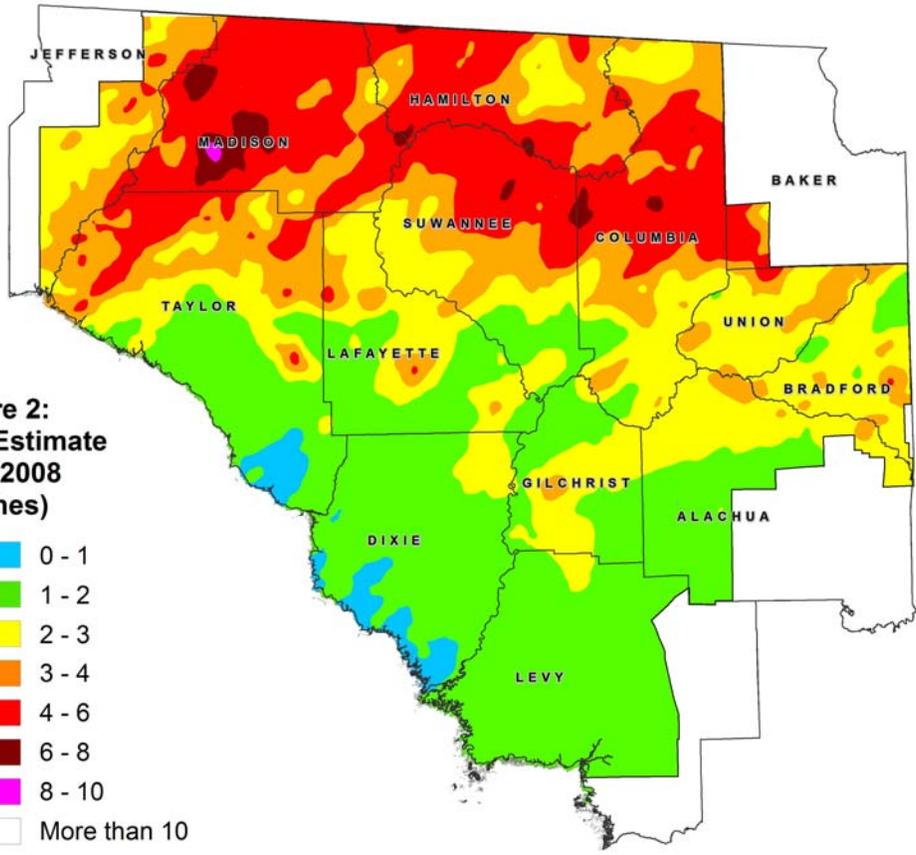


Figure 2: Rainfall Estimate April 2008 (inches)

- Blue 0 - 1
- Light Green 1 - 2
- Yellow 2 - 3
- Orange 3 - 4
- Red 4 - 6
- Dark Red 6 - 8
- Magenta 8 - 10
- White More than 10

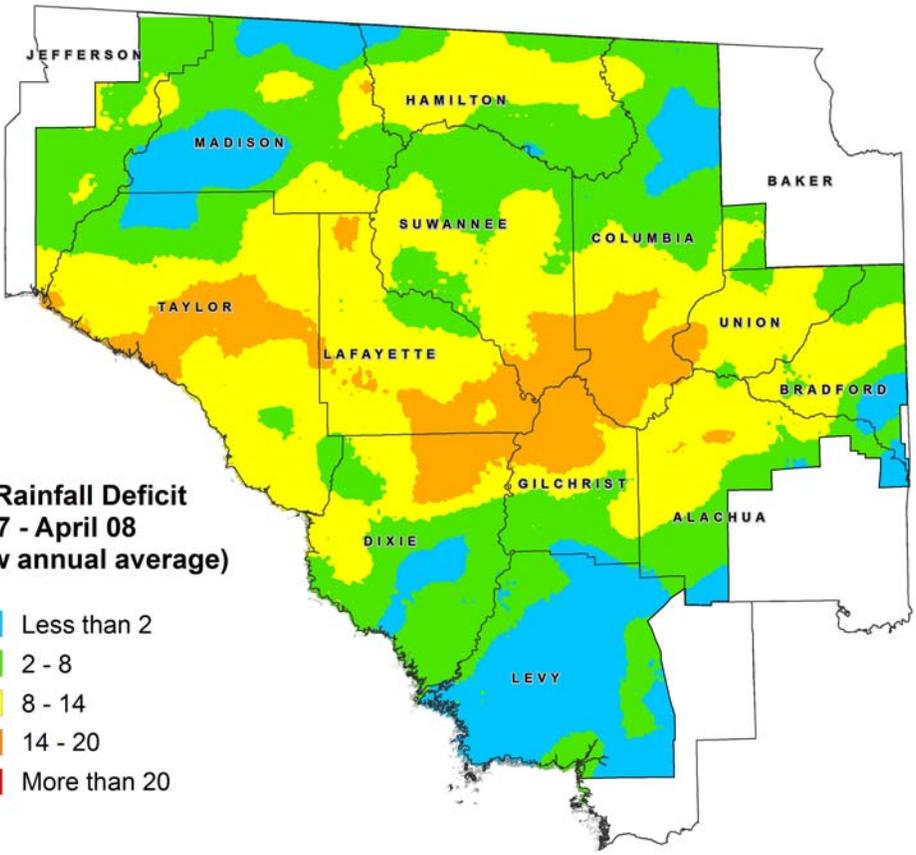
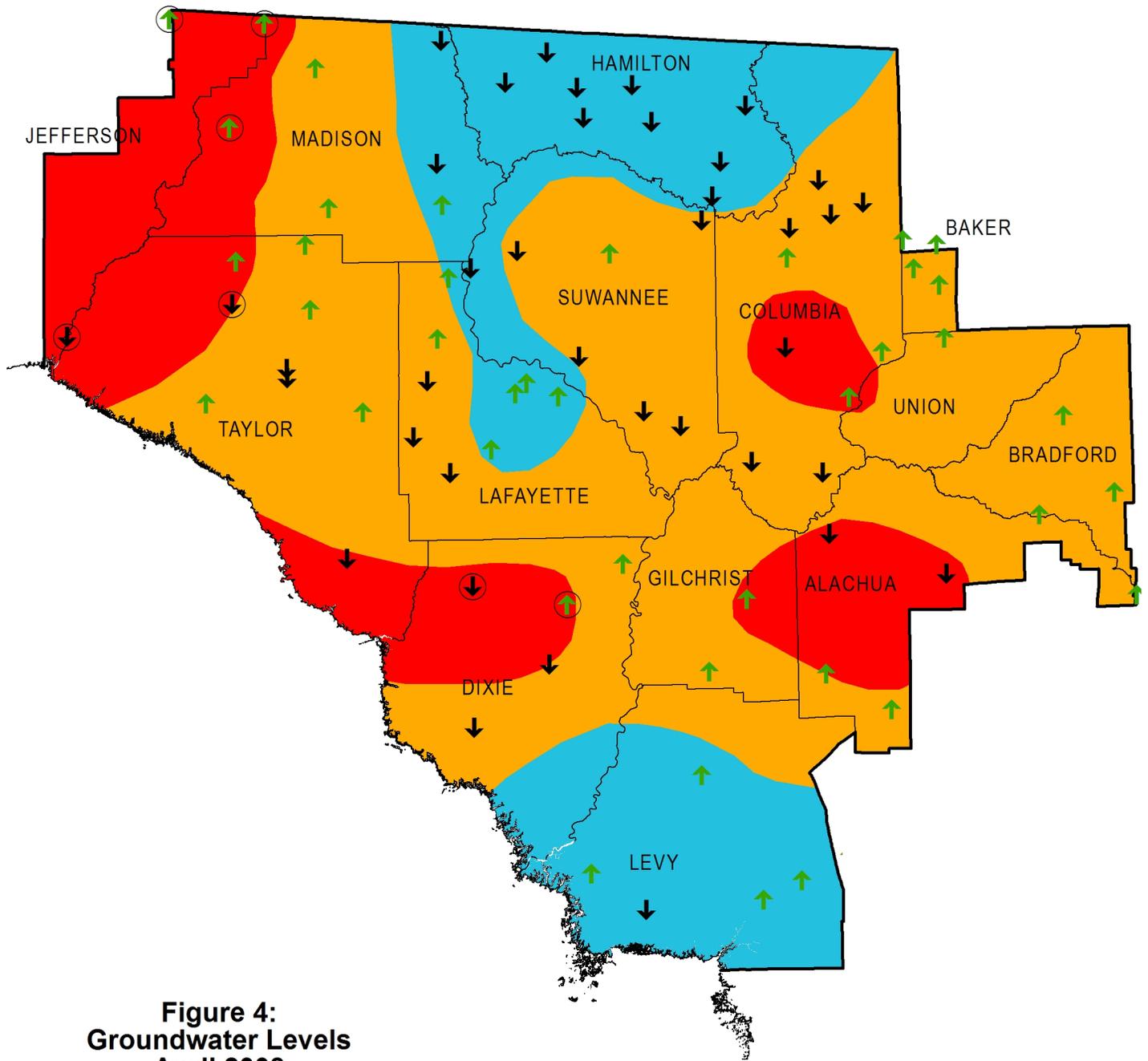


Figure 3: Rainfall Deficit May 07 - April 08 (inches below annual average)

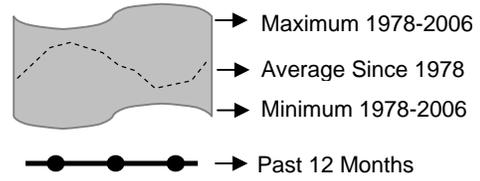
- Blue Less than 2
- Light Green 2 - 8
- Yellow 8 - 14
- Orange 14 - 20
- Red More than 20



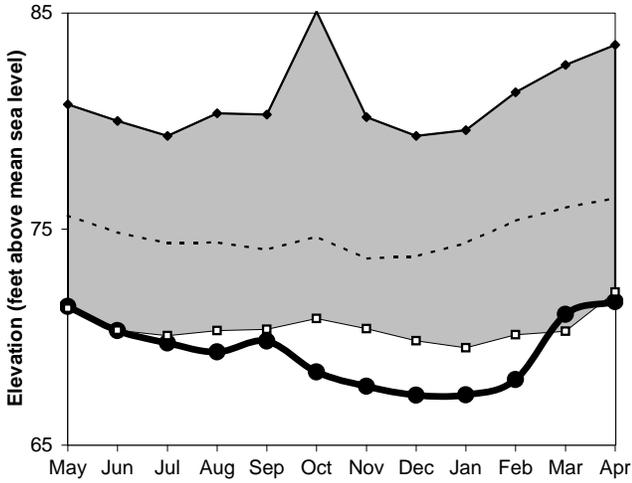
- | | | | |
|---|--|---|--------------------------------------|
|  | High
(Greater than 75th Percentile) |  | Well Level Increase Since Last Month |
|  | Normal
(25th to 75th Percentile) |  | Well Level Decrease Since Last Month |
|  | Low
(10th to 25th Percentile) |  | Record Monthly Low |
|  | Extremely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

Figure 5: Monthly Groundwater Level Statistics

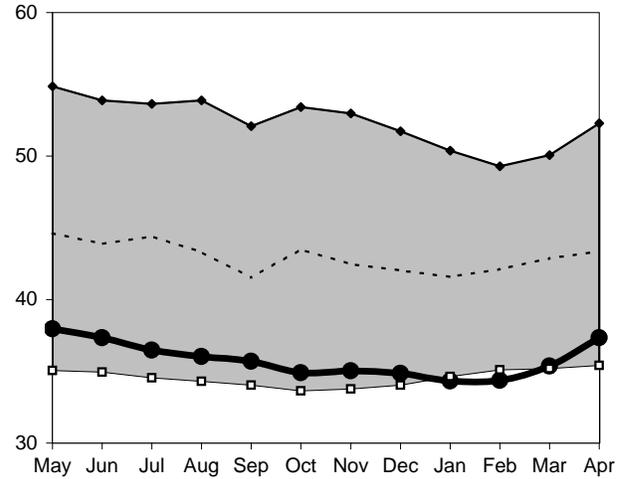
Levels May 1, 2007 through April 30, 2008
 Period of Record Beginning 1978



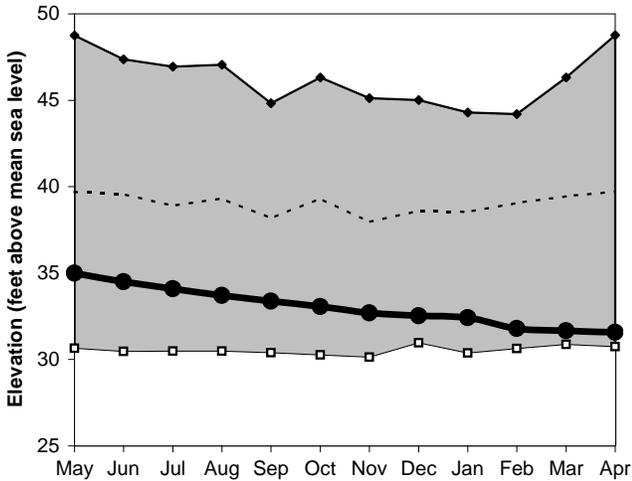
Madison County N010719001



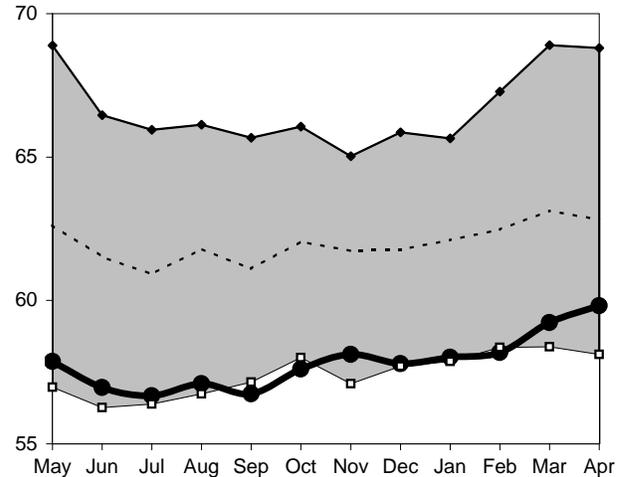
Suwannee County S021335001



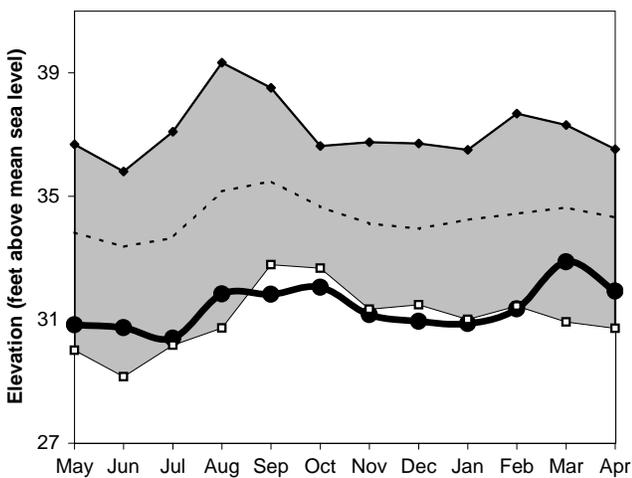
Columbia County S041625001



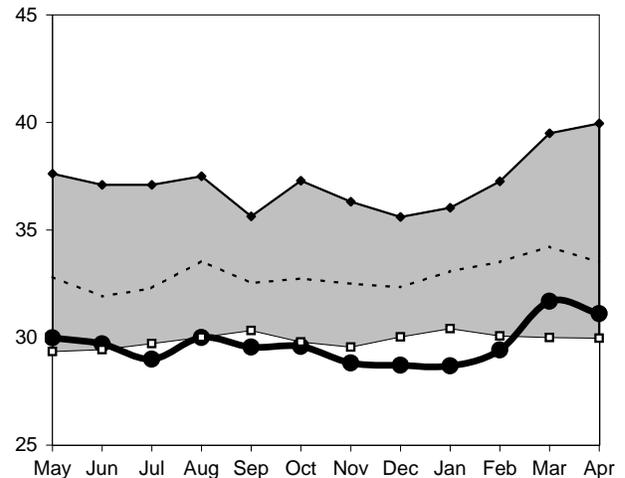
Bradford County S072132001

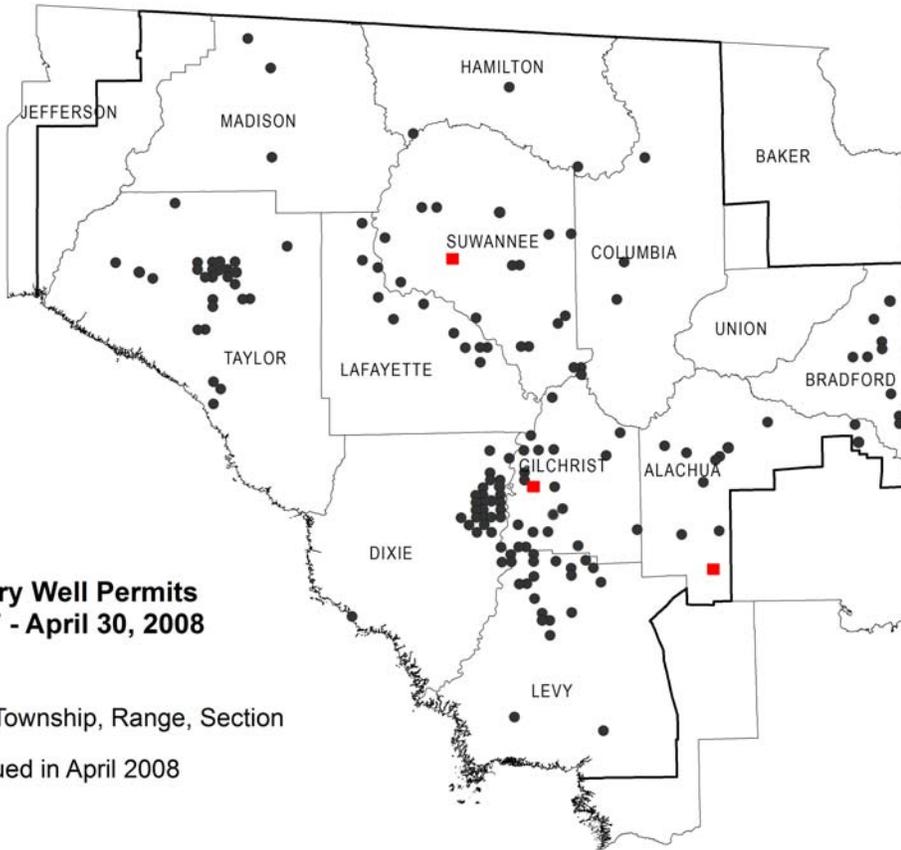


Dixie County S101210001



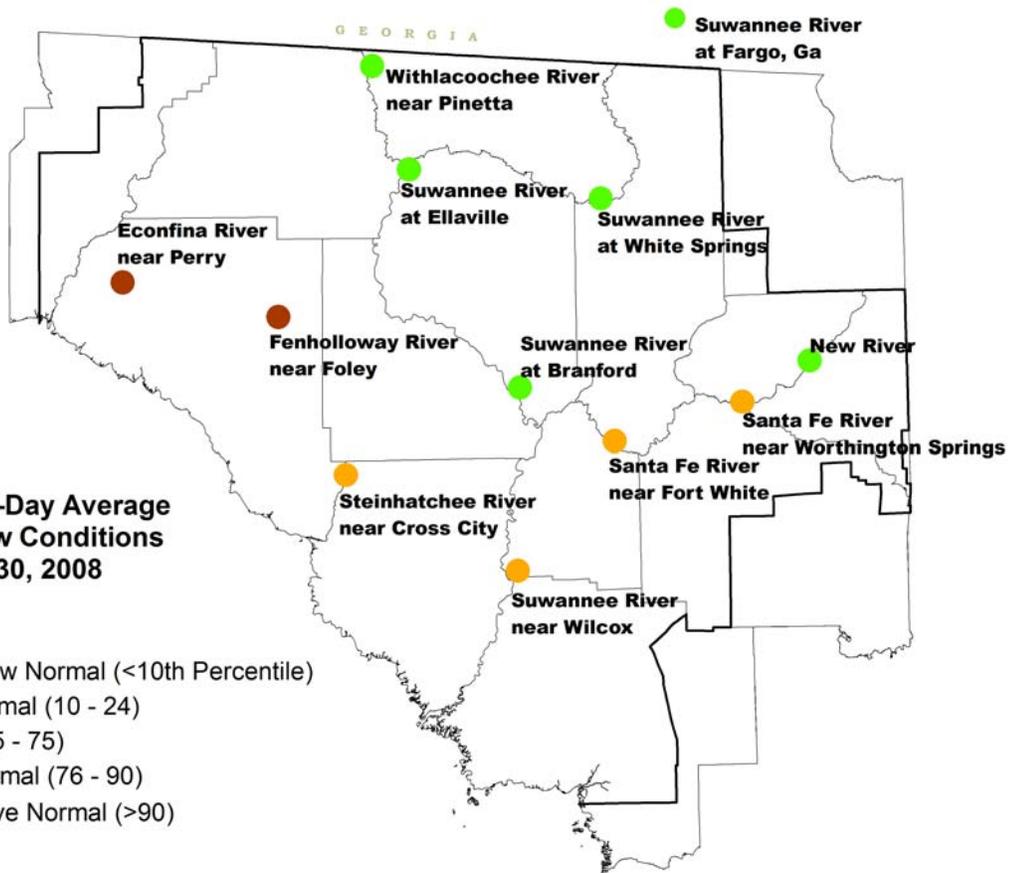
Taylor County S050701001





**Figure 6: Dry Well Permits
April 1, 2007 - April 30, 2008**

- Permits by Township, Range, Section
- Permits Issued in April 2008

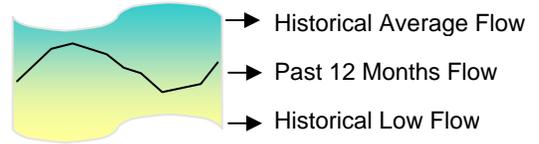


**Figure 7: 7-Day Average
Streamflow Conditions
April 30, 2008**

- Low
- Much Below Normal (<10th Percentile)
- Below Normal (10 - 24)
- Normal (25 - 75)
- Above Normal (76 - 90)
- Much Above Normal (>90)
- High

Figure 8: Daily River Flow Statistics

May 1, 2007 through April 30, 2008



RIVER FLOW, CUBIC FEET PER SECOND

