MEMORANDUM

TO: Governing Board

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

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

DATE: March 4, 2009

RE: February 2009 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 (92 wells), surfacewater levels (16 lakes and 11 rivers), river flows (6 stations on 4 rivers), spring flows (5 stations, courtesy of the Florida Department of Environmental Protection and the U.S. Geological Survey), and general hydrological and 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 rainfall in February was 1.52", which is below the long-term monthly average of 3.90" (Table 1, Figure 1). Most of the District received less than 50% of normal rainfall. February was the sixth consecutive month of below-normal rainfall, and the past six months were the third-driest such period since 1932. Figure 2 shows the estimated rainfall accumulation across the District, and Figure 3 shows the rainfall totals as a percent of normal February precipitation.
- The average 12-month deficit grew from 1.76" last month to 4.79". Figure 4 depicts the 12-month surplus/deficit across the District. Figure 5 shows the change in annual deficits beginning in 1998. The District's 24-month deficit was 17.51".

SURFACEWATER

- **Rivers**: Streamflow in the Withlacoochee River and upper and middle Suwannee River declined during the first half of the month, but recovered after locally intense storms and areas of above-normal rainfall in southern Georgia. Suwannee River streamflow remained below the 25th percentile throughout the month (Figure 6). (The percentile is the percentage of levels that are equal to or below the observed value.) Coastal rivers

remained below normal to well below normal. Flow at the Santa Fe River near Fort White has not risen above the 5th percentile since October. Discharge statistics for six river stations are presented in Figure 8.

- **Lakes**: Levels at most monitored lakes showed little change since January. However, Sampson and Crosby lakes in Bradford County rose to slightly above their long-term average, while Alligator Lake in Lake City fell by 0.64 feet. Figure 7 shows levels relative to the long-term average, minimum, and maximum levels for six lakes.
- **Springs:** Average February springflow relative to historical flows is shown for 5 systems in Figure 9.

GROUNDWATER

- Groundwater levels decreased in 66% of the District's monitored wells, dropping by an average of 0.18 feet (Figure 10). Twenty-four percent of the levels were above the 25th percentile (normal range), compared to 54% last month. Eighteen percent were below the 10th percentile, considered extremely low. Three record monthly lows were observed. Statistics for a representative sample of wells are shown in Figure 11.

HYDROLOGICAL/METEOROLOGICAL INFORMATION

- The 12-month Standardized Precipitation Index (SPI), based on long-term precipitation patterns that impact streams and groundwater, indicated near-normal conditions throughout the District. The 3-month SPI, which better describes soil moisture deficits, indicated moderately dry to severely dry conditions.
- As characterized by the US Geological Survey based on seven-day average streamflow, the Waccasassa basin and Coastal Rivers basins (Aucilla, Econfina, and Steinhatchee rivers) are in moderate hydrologic drought. The Suwannee River basin is below normal.
- Long-range outlooks from the National Weather Service Climate Prediction Center show drought development is likely through May, and that below-normal precipitation is likely through June.

WATER CONSERVATION

A Phase I Water Shortage Advisory requesting voluntary reductions in water use remains in effect. 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.

/dd

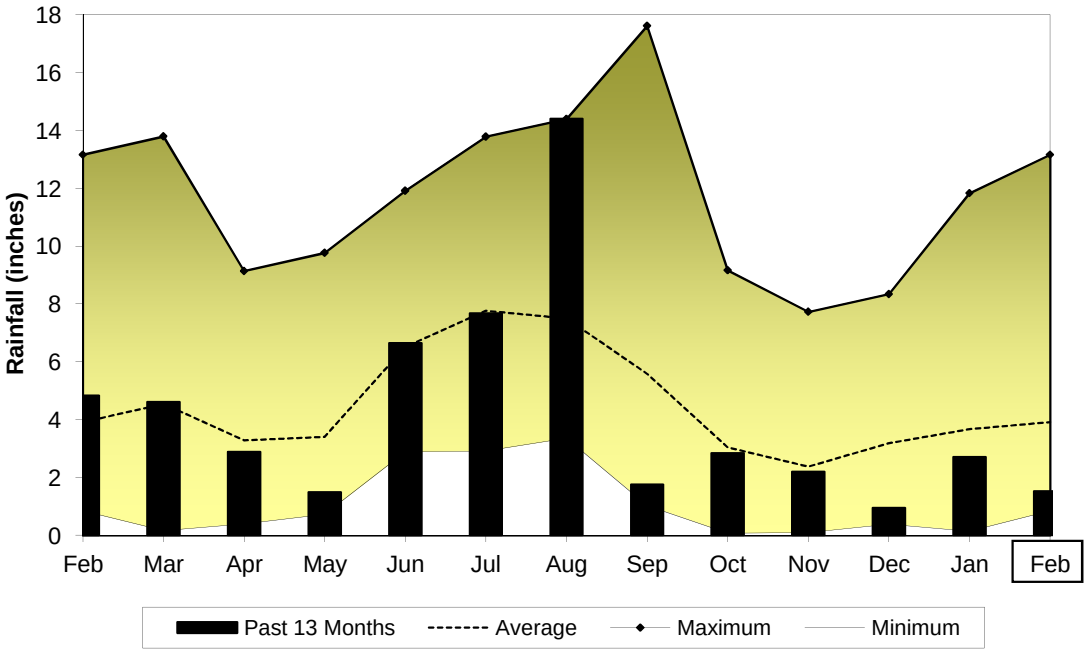
Table 1. Estimated Rainfall Totals

County	Feb-2009	Feb-2008	Last 12 Months	February Average
Alachua	1.49	4.36	46.85	3.54
Baker	1.25	5.34	51.59	3.41
Bradford	1.36	3.98	48.24	3.64
Columbia	1.31	4.97	47.84	3.61
Dixie	1.42	2.32	55.33	3.54
Gilchrist	1.37	3.35	49.94	4.18
Hamilton	2.08	6.40	46.57	4.13
Jefferson	1.85	7.08	49.52	4.64
Lafayette	1.20	4.50	52.66	3.66
Levy	1.68	3.31	53.17	3.39
Madison	1.87	7.64	52.64	4.11
Suwannee	1.36	5.29	52.24	4.01
Taylor	1.54	5.02	50.75	3.90
Union	1.09	4.02	45.53	3.63

February 2009 Average:	1.52
Historical February Average:	3.90
Historical 12-month Average:	54.68
Past 12-Month Total:	49.89
12-month Rainfall Deficit:	-4.79

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall



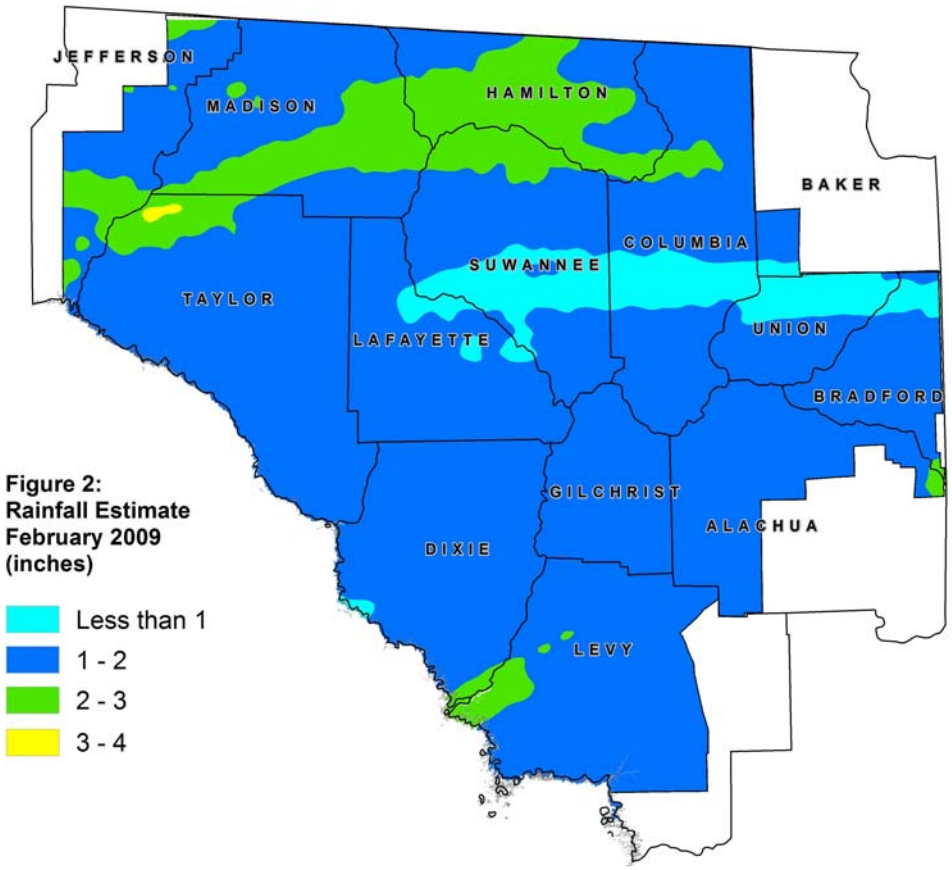


Figure 2:
Rainfall Estimate
February 2009
(inches)

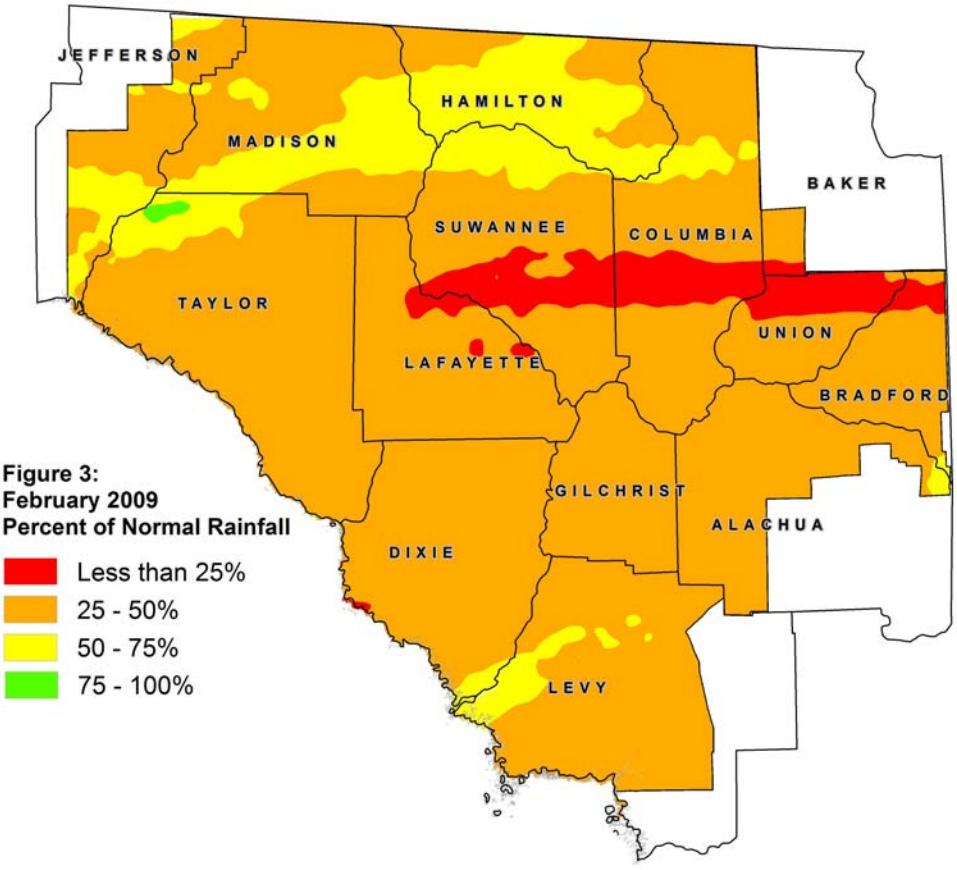
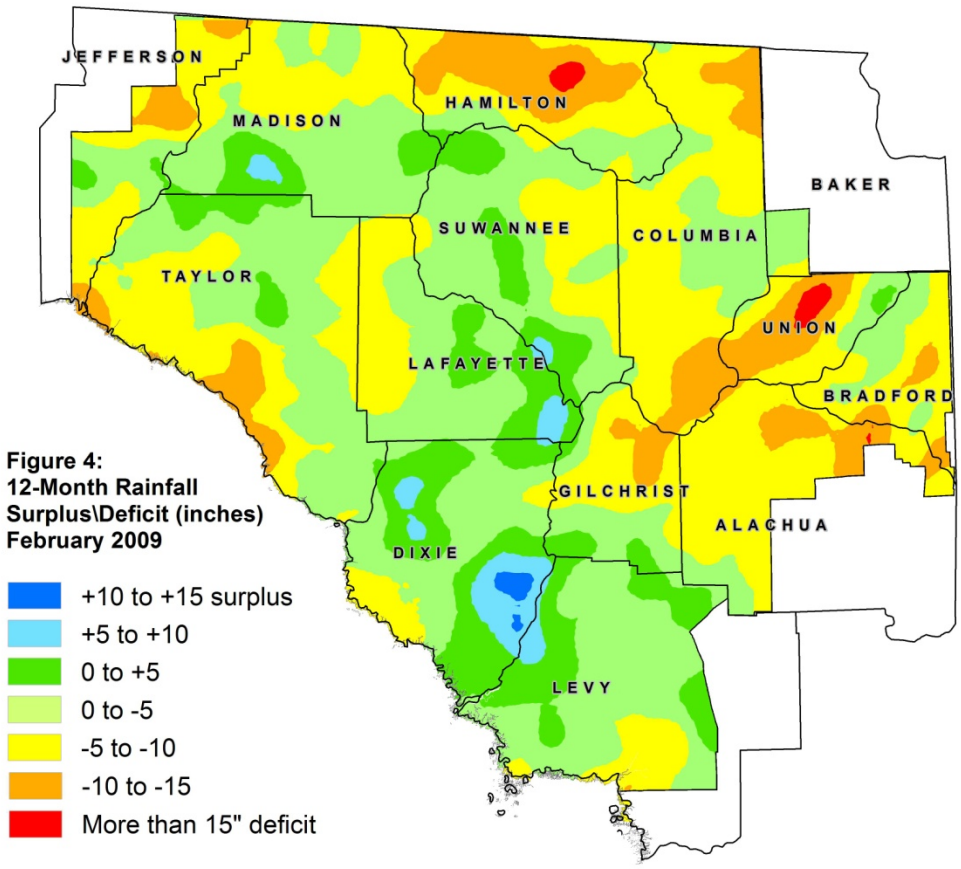


Figure 3:
February 2009
Percent of Normal Rainfall



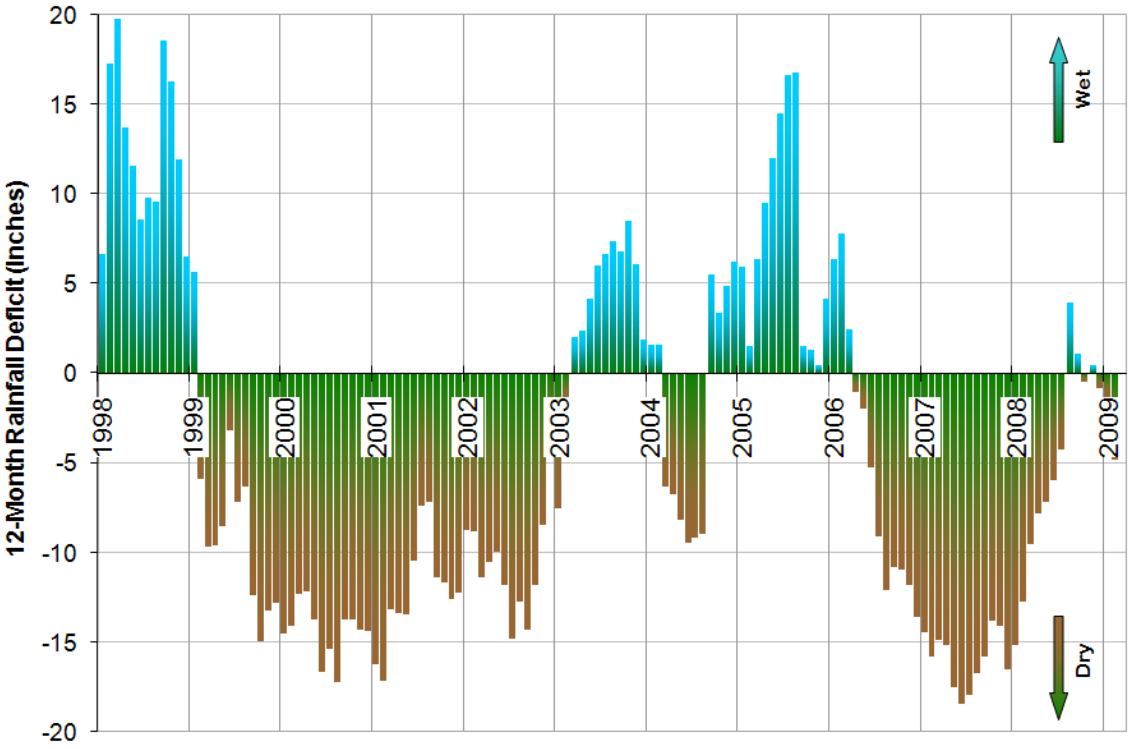
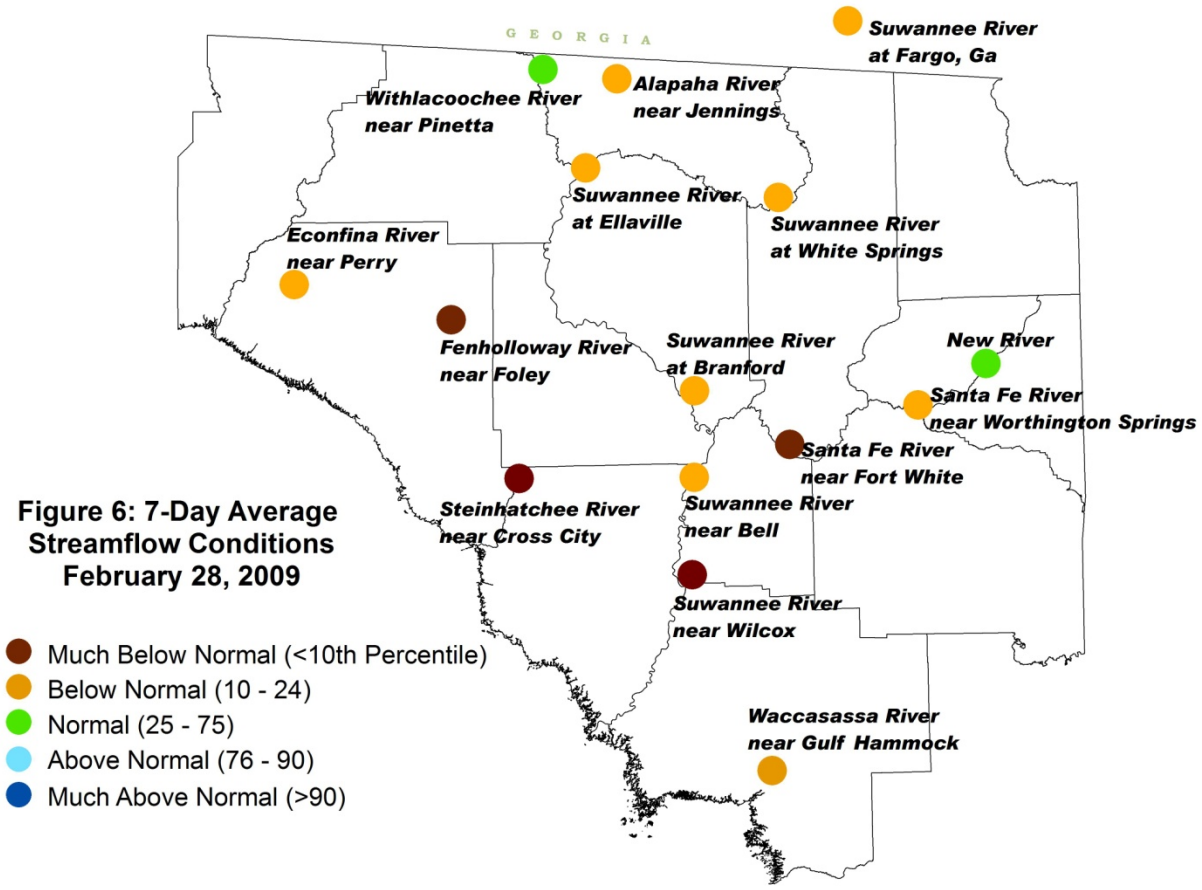


Figure 5: 12-month rolling rainfall deficit (difference between the rainfall that fell during any 12-month period and the long-term average expected over the same period, January 1998-February 2009)



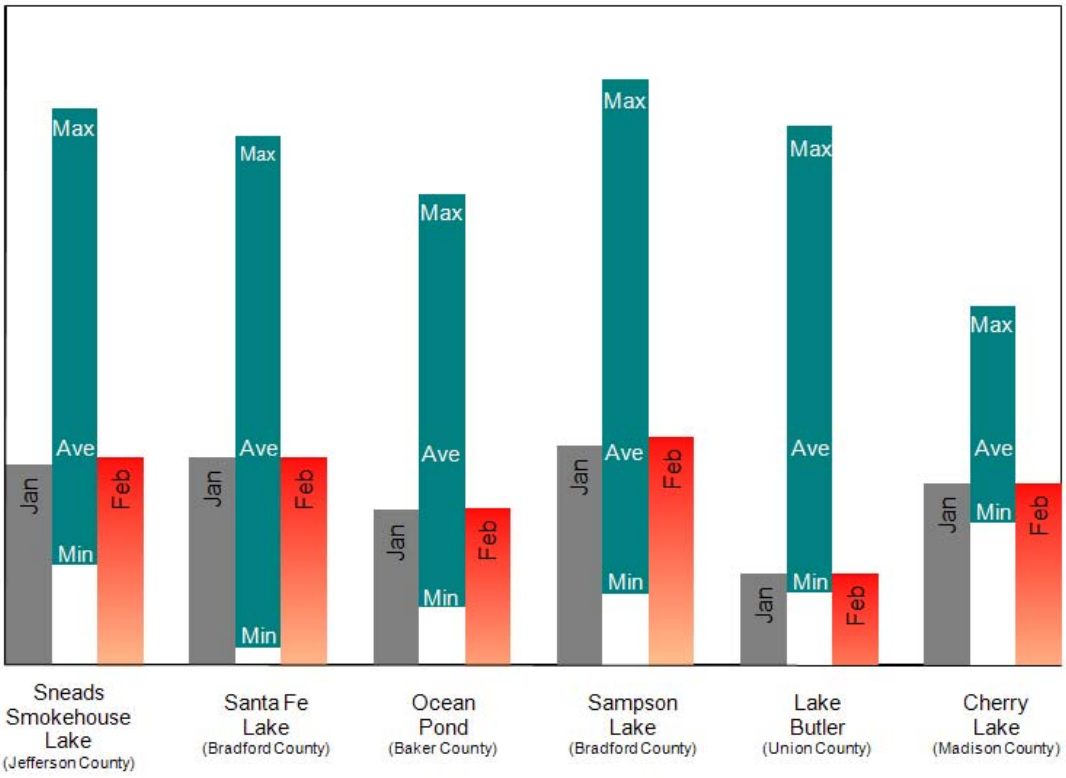
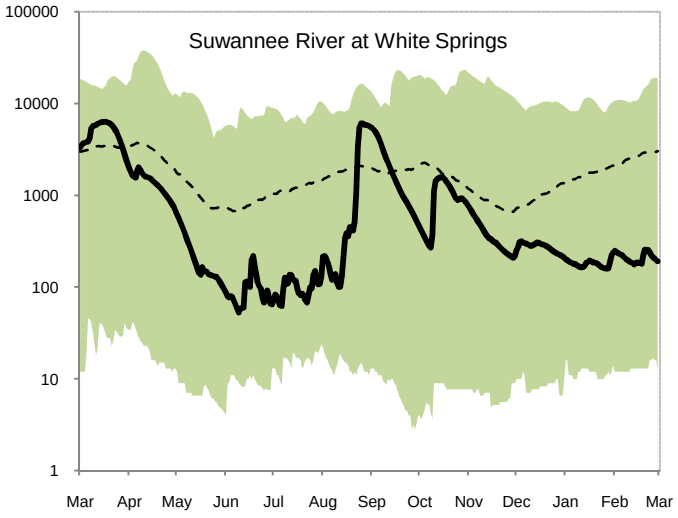


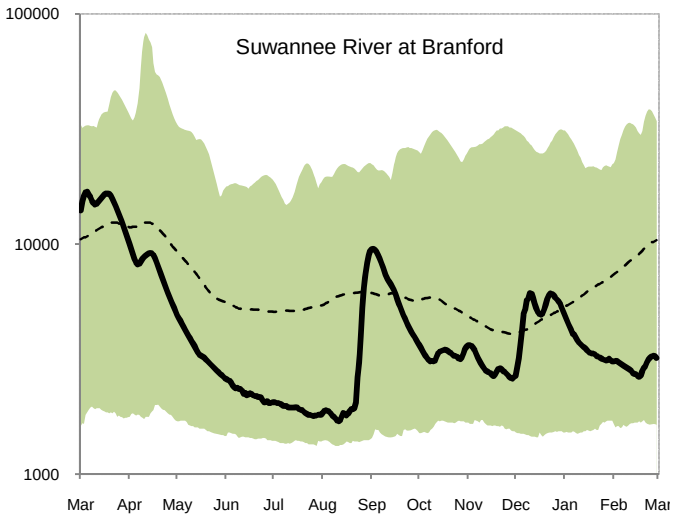
Figure 7: Lake levels, relative to historic maximum, minimum, and average levels.

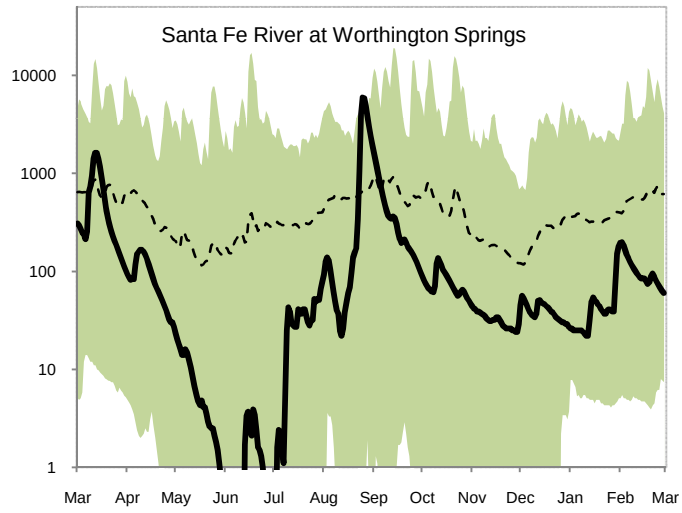
Figure 8: Daily River Flow Statistics

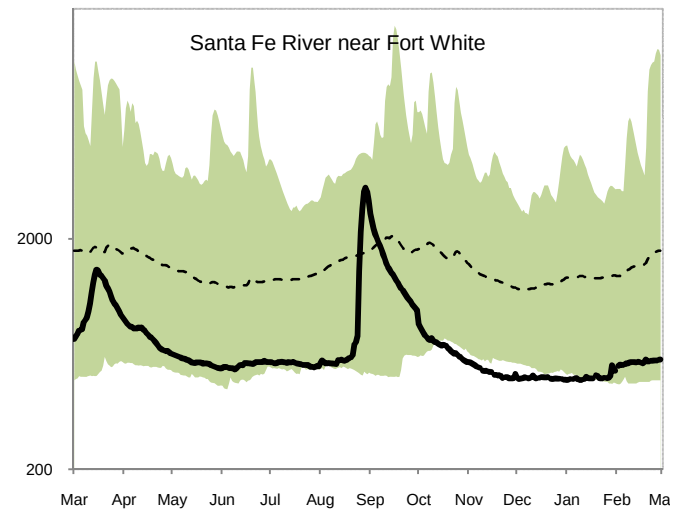
March 1, 2008 through February 28, 2009

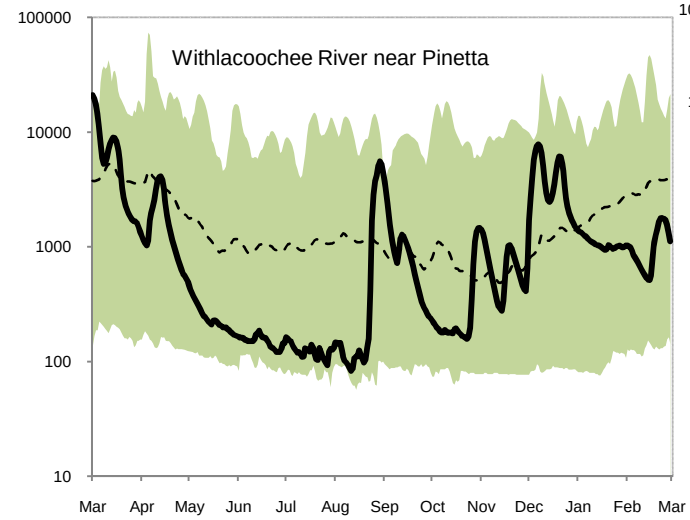
RIVER FLOW, CUBIC FEET PER SECOND











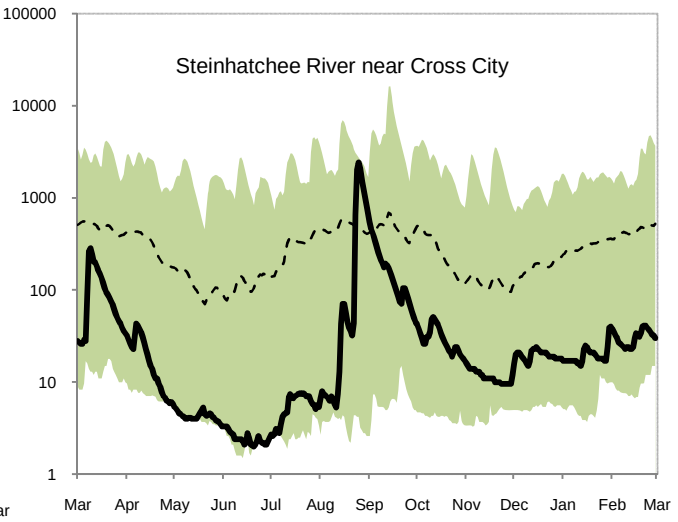
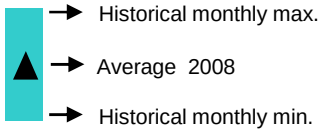
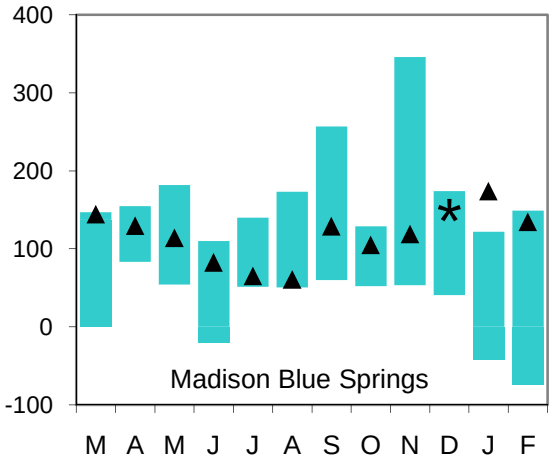


Figure 9: Monthly Springflow Statistics

Flows March 1, 2008 through February 28, 2009
Springflow data are given in cubic feet per second.
Period of record beginning 2002. Data are provisional.

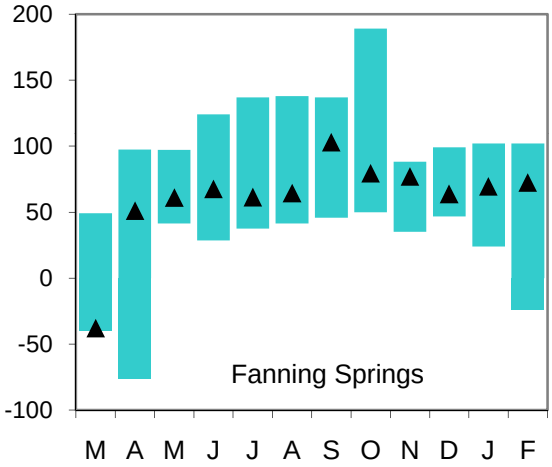


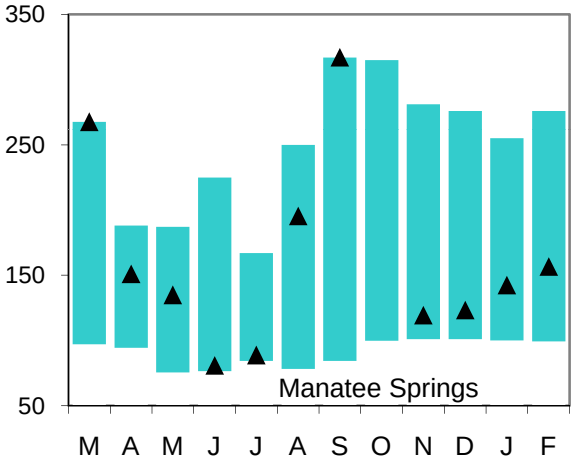


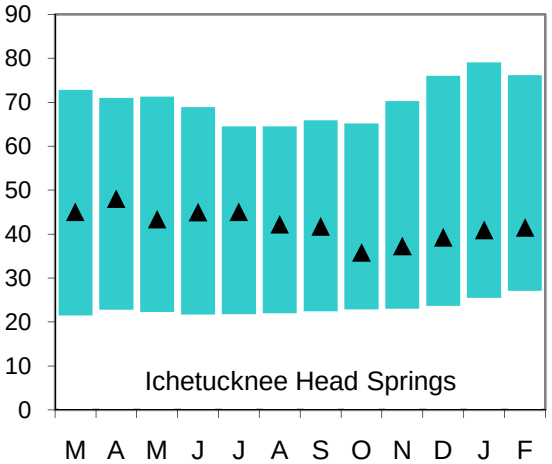
Note: Rising river levels caused by high tides or flooding can cause springflow to slow or reverse.

Springflow for months marked by an asterisk (*) was strongly affected by river conditions.

Data for these months will be included once approved and published by the U.S. Geological Survey.







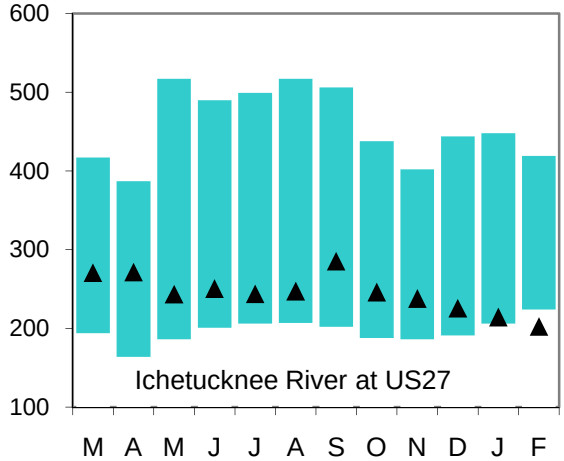
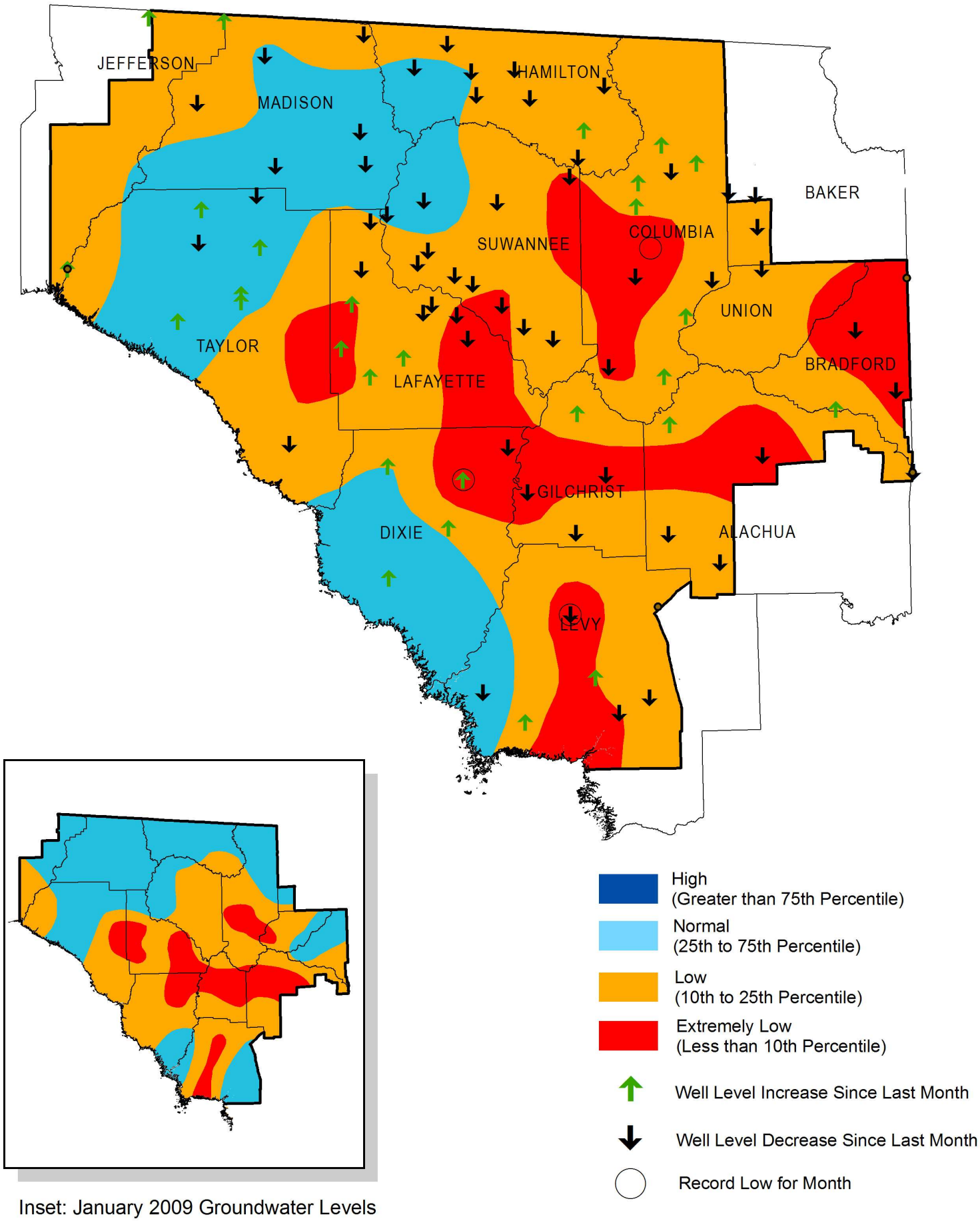


Figure 10: February 2009 Groundwater Levels



Inset: January 2009 Groundwater Levels

Figure 11: Monthly Groundwater Level Statistics

Levels March 1, 2008 through February 28, 2009
Period of Record Beginning 1978