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: November 5, 2008

RE: October 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 (88 wells), surfacewater levels (16 lakes and 11 rivers), river flows (6 stations on 4 rivers), spring flows (6 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 October was 2.65", which is below the long-term monthly average of 3.03" (Table 1, Figure 1). Figure 2 shows the estimated rainfall accumulation across the District, and Figure 3 shows the rainfall totals as a percent of normal October rainfall. A locally intense storm over northern Columbia County and southern Clinch County (Georgia) brought totals of over 6" in 8 hours, exceeding the 25-year event.
- The 12-month departure from normal rainfall fell from a 1.11" surplus in September to a 0.43" deficit in October. 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 14.2".

SURFACEWATER

- **Rivers**: By mid-month, stages and flows in the middle-and-upper Suwannee River fell below average, but recovered due to intense rain in the upper basin (Figure 6). The Suwannee River at White Springs rose 4.6 feet in 3 days after the storm. In addition, heavy rains in south Georgia increased Withlacoochee River flow to above-normal. Streamflows

deteriorated elsewhere, especially in the lower Santa Fe basin, which fell to well below normal (below the 10th percentile). (The percentile is the percentage of flows or levels that are equal to or below the observed value.) Discharge statistics for six river stations are presented in Figure 8.

- **Lakes**: Monitored lakes fell by an average of 4.4 inches. Of 16 monitored lakes, only Lake Sampson and Santa Fe Lake remained above their long-term average levels. No record levels were observed. Figure 7 shows October lake levels relative to the long-term average, minimum, and maximum levels for 6 lakes.
- **Springs:** Spring flows in 5 springs (Figure 9) generally decreased in October, as groundwater levels in the springsheds declined.

GROUNDWATER

- Groundwater levels in 61 of 88 monitored wells fell since September (Figure 10). Fifty-eight percent of the levels were above the 25th percentile (normal range), compared to 75% last month. Three wells fell below the 10th percentile, considered extremely low, and one well set a new monthly low record. Monthly 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.
- As characterized by the US Geological Survey based on seven-day average streamflow, none of the District's river basins are experiencing hydrologic drought.
- Long-range outlooks from the National Weather Service Climate Prediction Center show drought development is likely through January.

WATER CONSERVATION

November is typically one of the driest months of the year, and long-term predictions show a tendency toward below normal precipitation this winter. 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

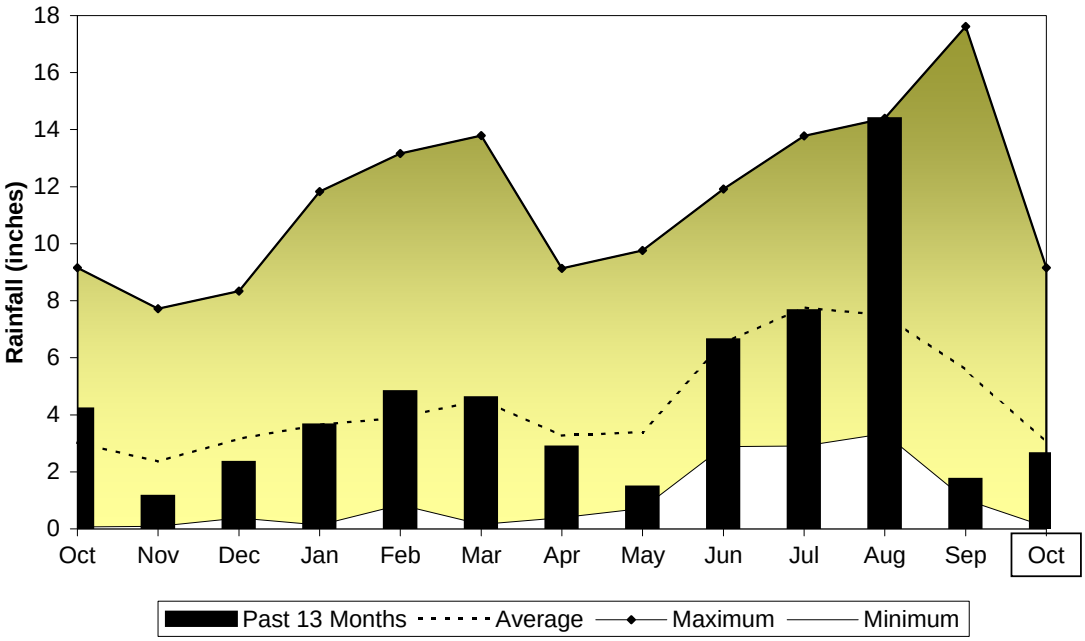
Table 1. Estimated Rainfall Totals

County	Oct-2008	Oct-2007	Last 12 Months	October Average
Alachua	3.00	4.94	49.81	3.05
Baker	1.87	3.94	57.13	3.31
Bradford	2.28	8.42	49.59	2.76
Columbia	2.58	5.20	53.01	3.06
Dixie	3.19	2.61	56.74	3.07
Gilchrist	3.17	2.41	52.74	2.98
Hamilton	3.69	4.56	51.62	3.01
Jefferson	2.67	3.15	54.45	3.07
Lafayette	2.29	2.46	57.47	3.09
Levy	1.97	4.79	56.44	3.14
Madison	3.15	2.99	59.00	3.24
Suwannee	2.02	3.45	57.29	3.22
Taylor	2.58	2.61	54.62	3.17
Union	1.81	5.14	48.67	3.27

October 2008 Average:	2.65
Historical October Average:	3.03
Historical 12-month Average:	54.68
Past 12-Month Total:	54.25
12-month Rainfall Deficit:	-0.43

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall



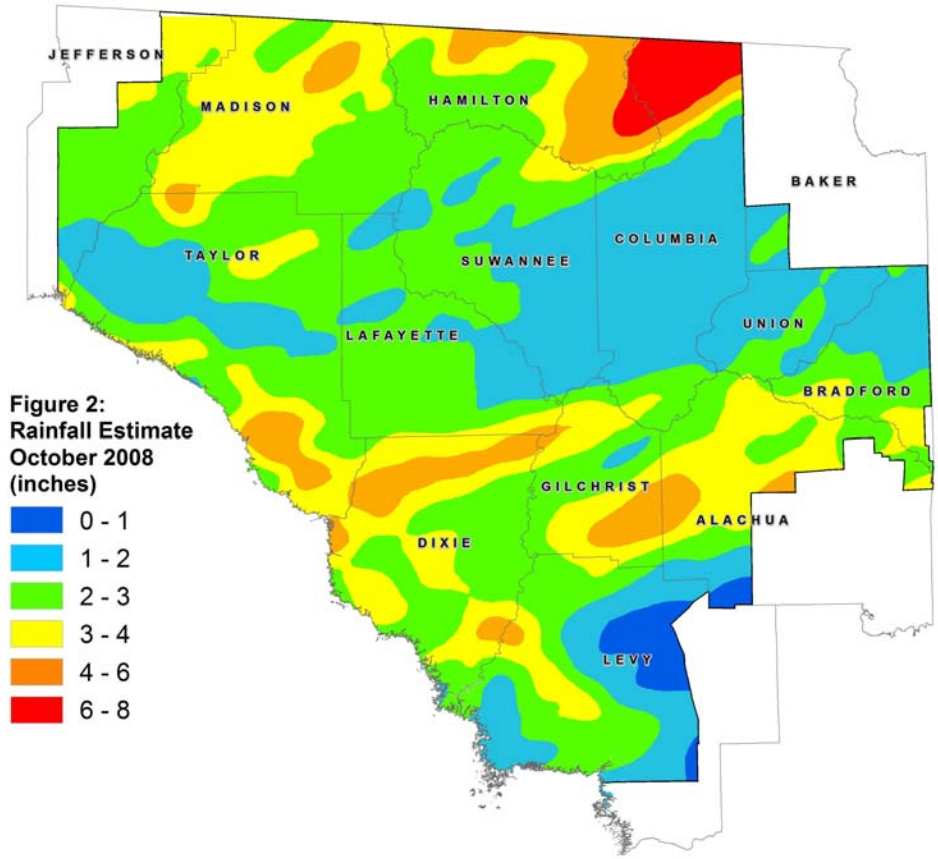


Figure 2: Rainfall Estimate October 2008 (inches)

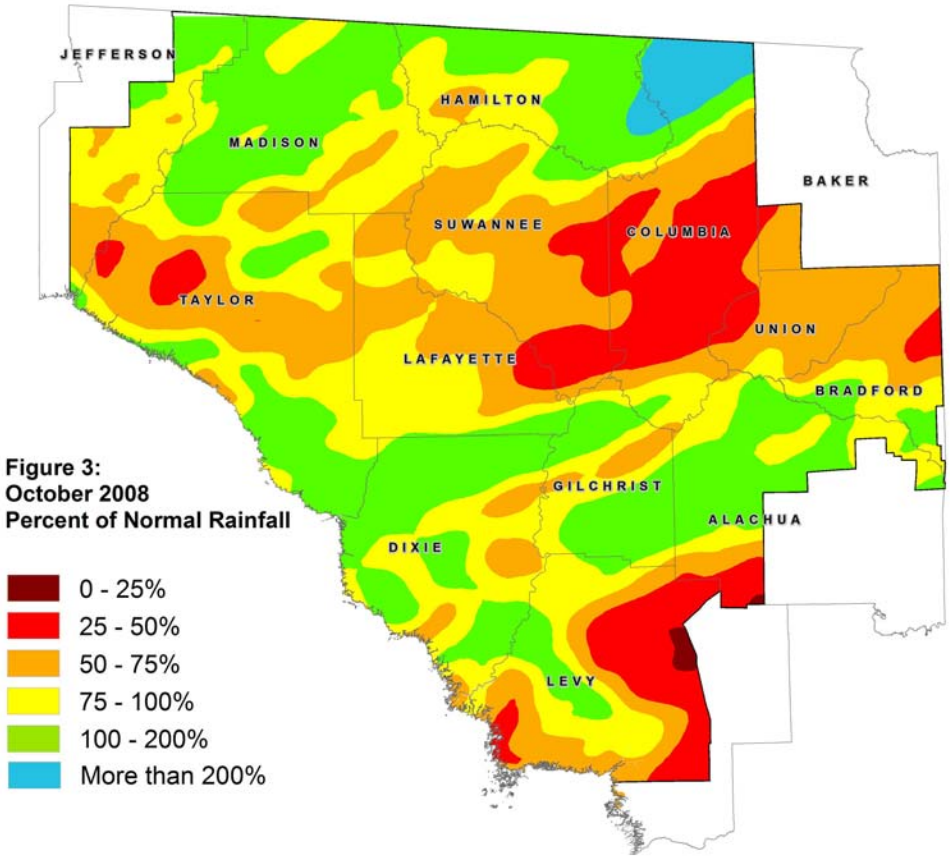
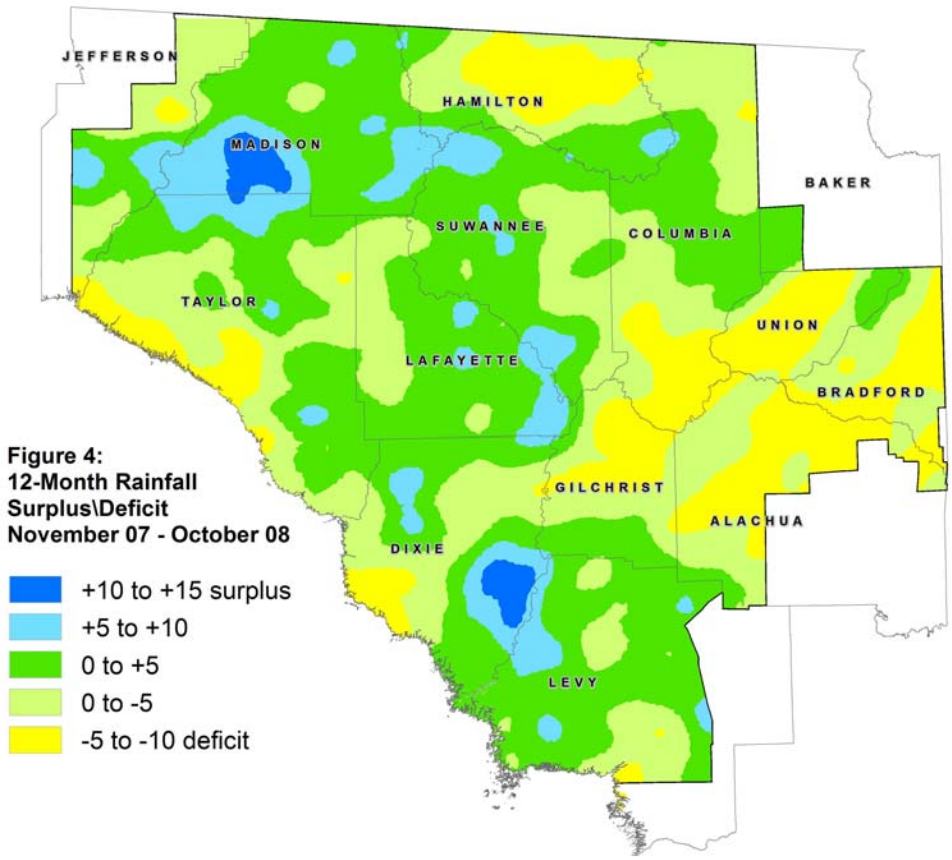


Figure 3: October 2008 Percent of Normal Rainfall



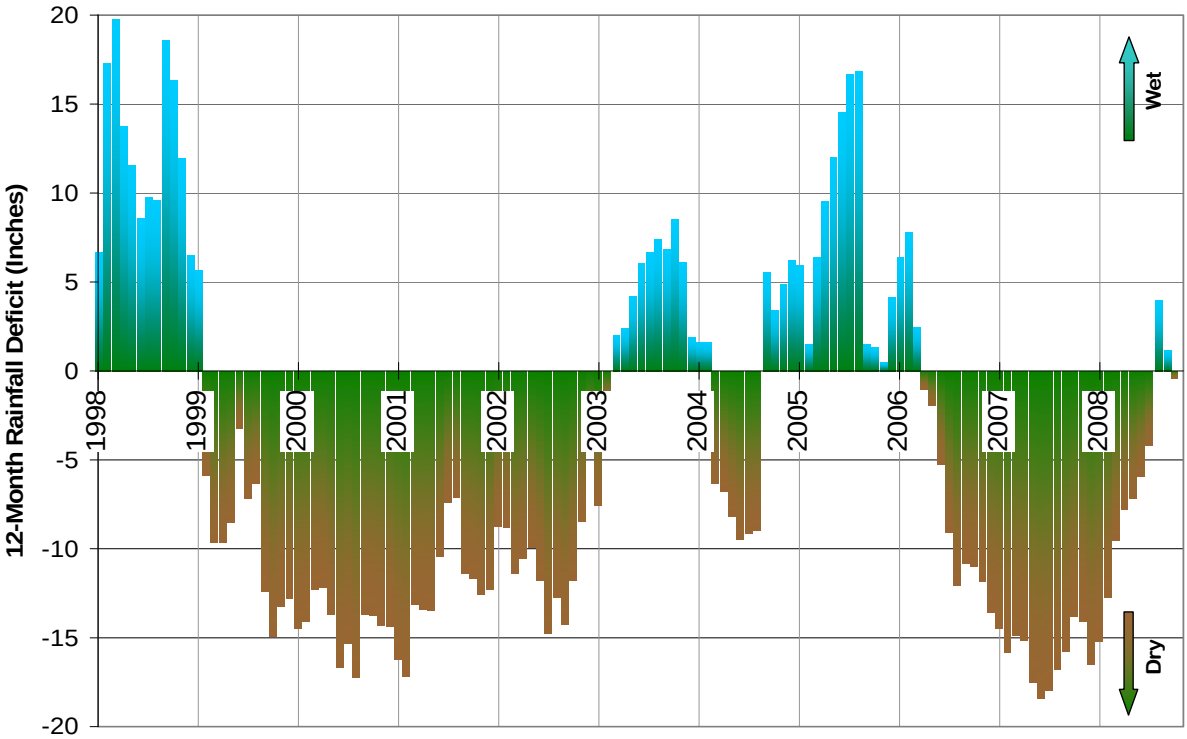


Figure 5: 12-month rolling rainfall deficit (difference between the rainfall that fell during any 12-month period and the long-term average expected over the same period, January 1998-October 2008)

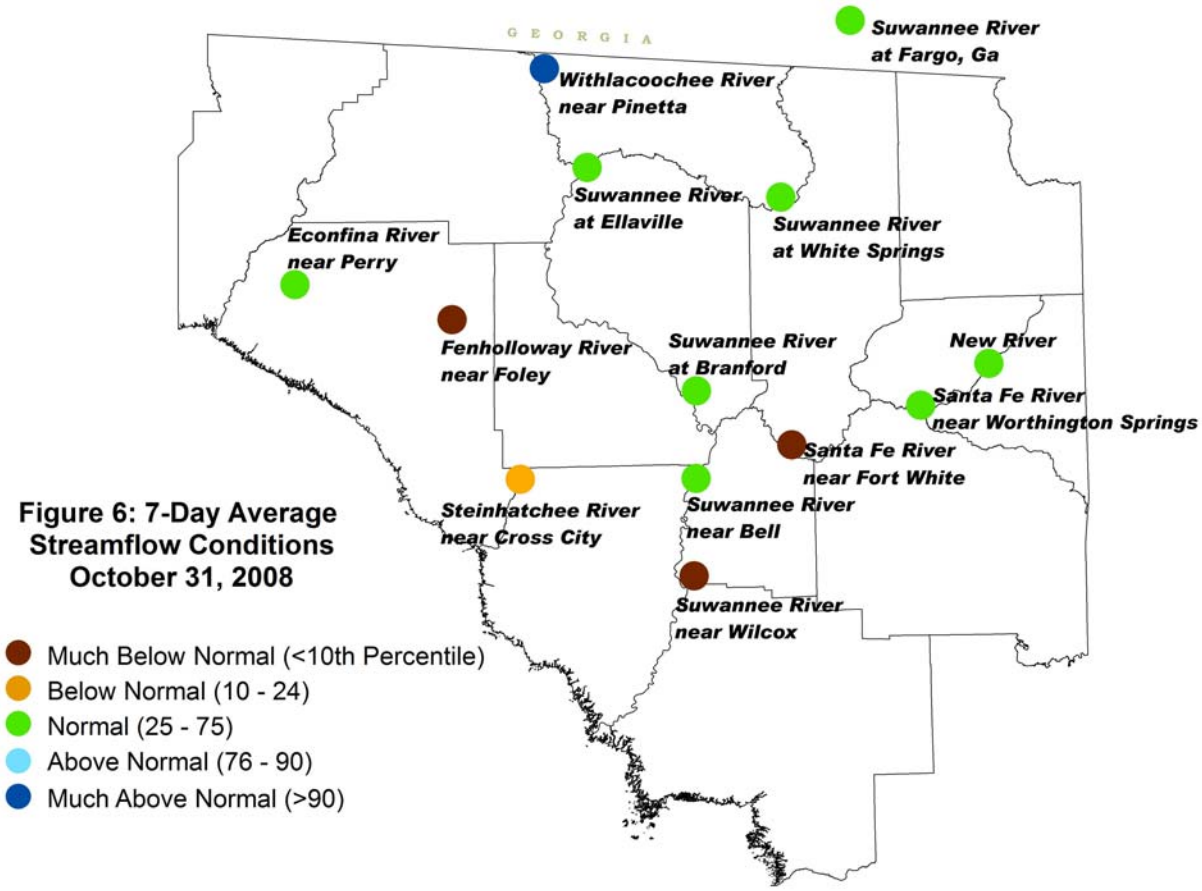


Figure 6: 7-Day Average Streamflow Conditions October 31, 2008

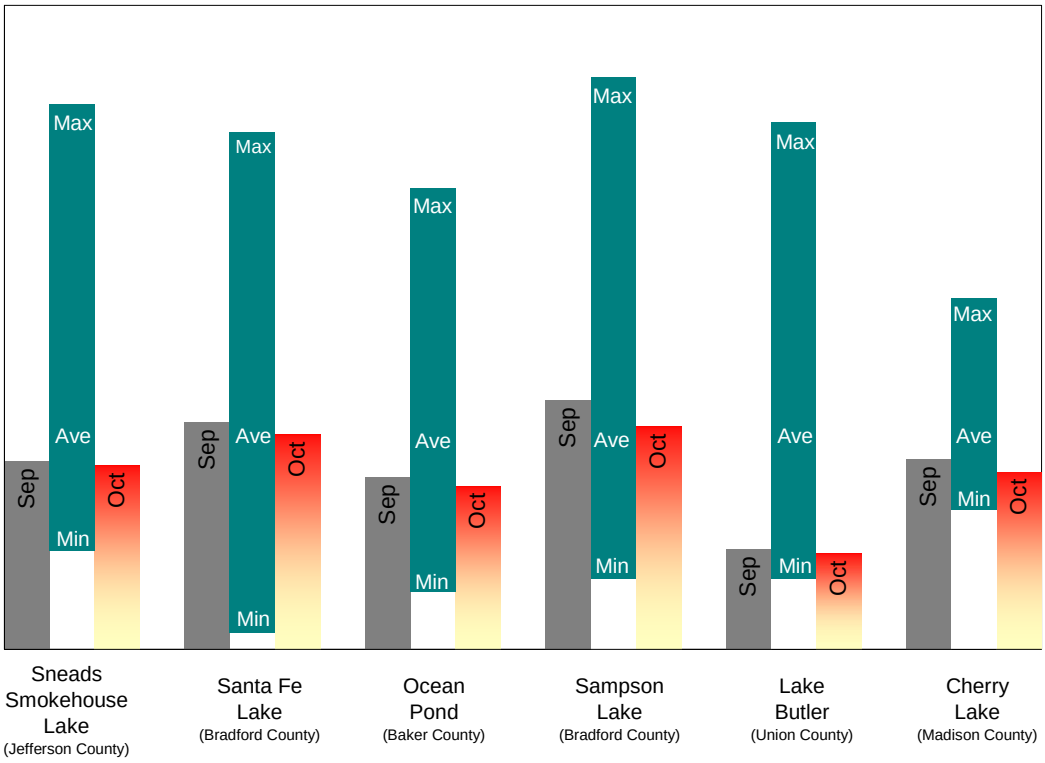


Figure 7: Lake levels, relative to historic maximum, minimum, and average levels.

Figure 8: Daily River Flow Statistics

November 1, 2007 through October 31, 2008

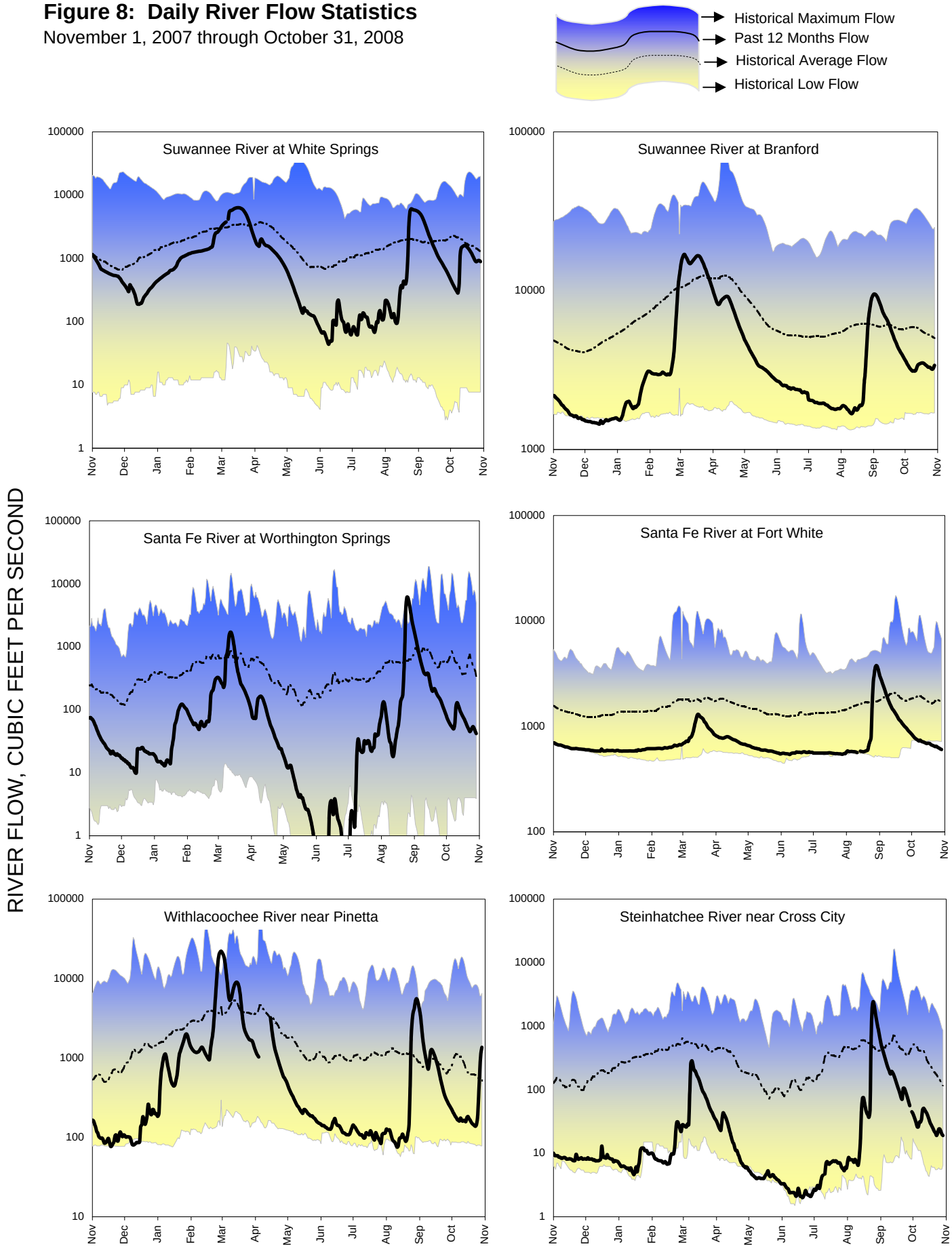
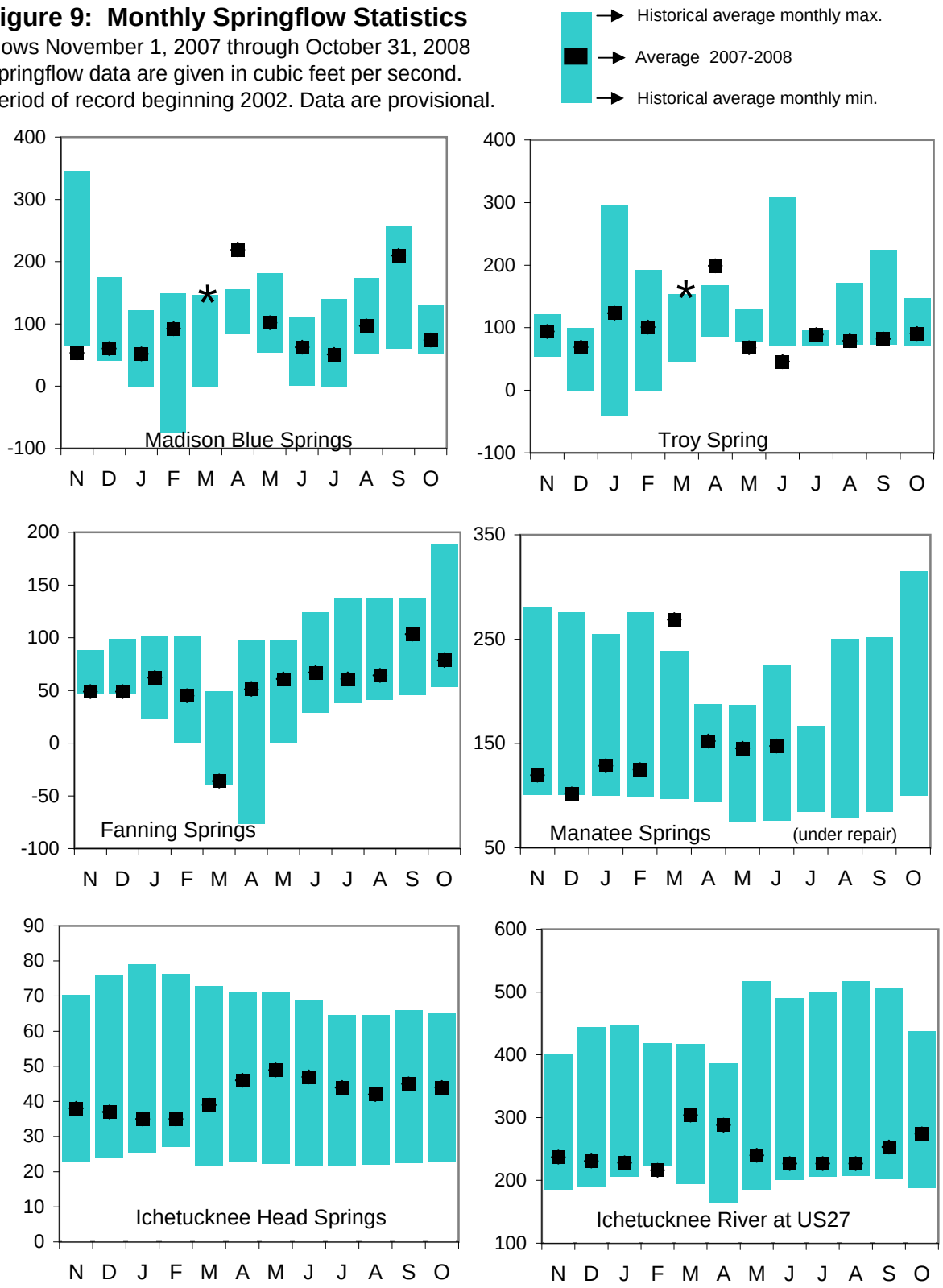


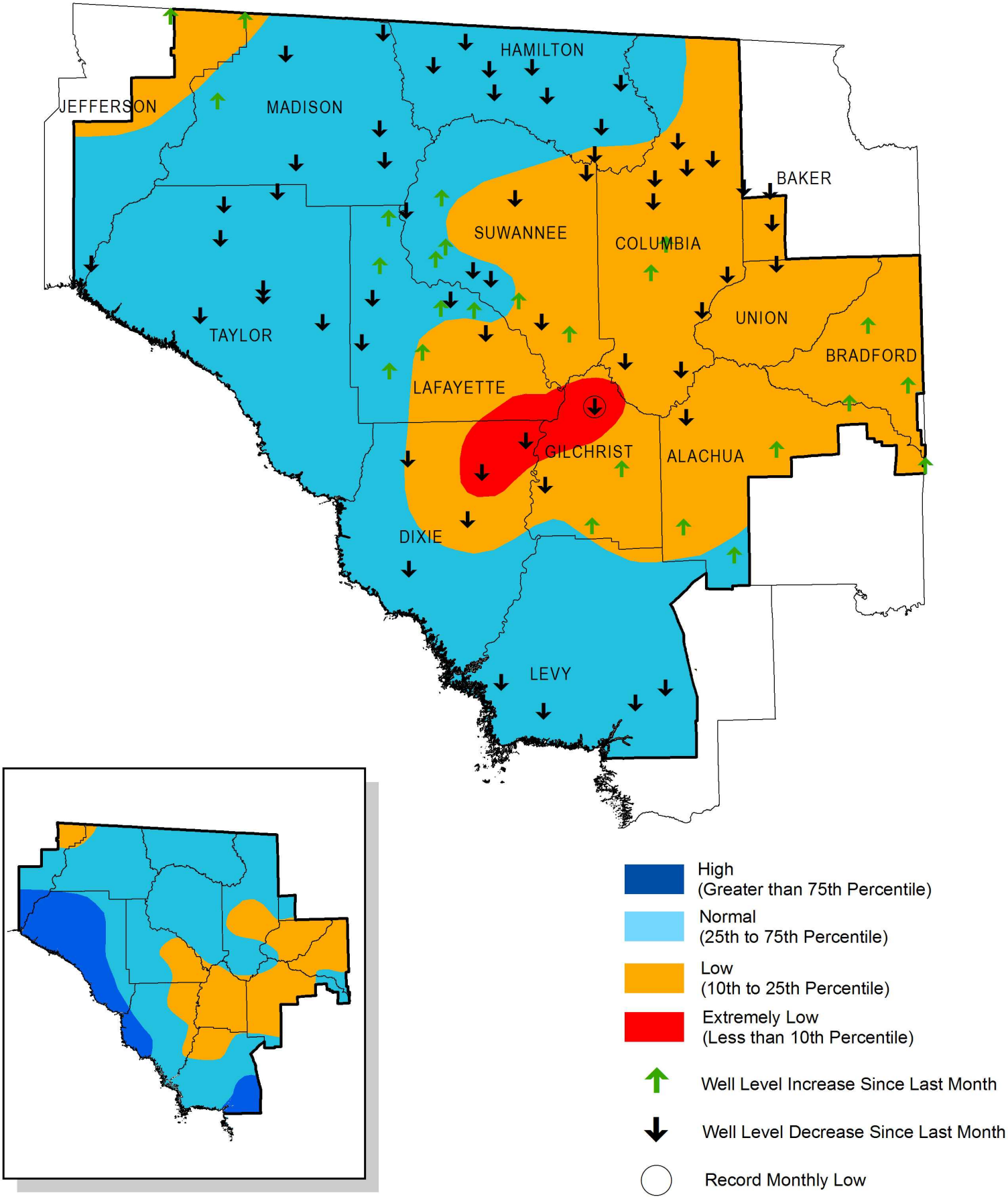
Figure 9: Monthly Springflow Statistics

Flows November 1, 2007 through October 31, 2008
Springflow data are given in cubic feet per second.
Period of record beginning 2002. Data are provisional.

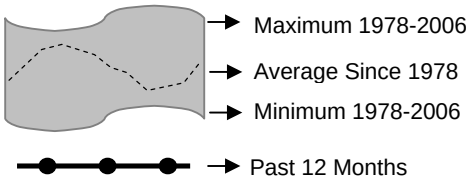
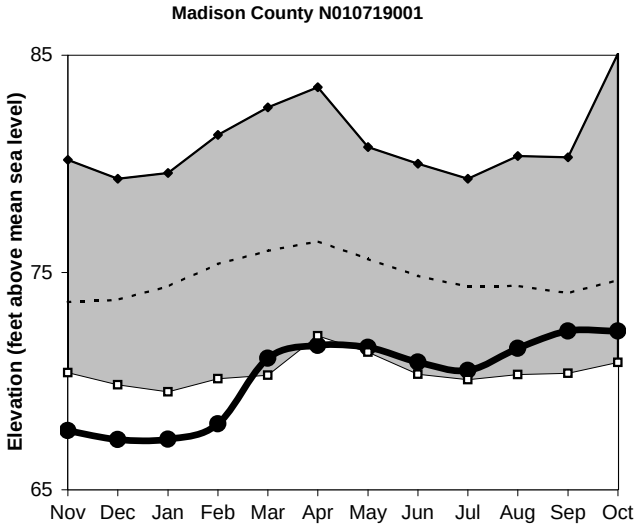
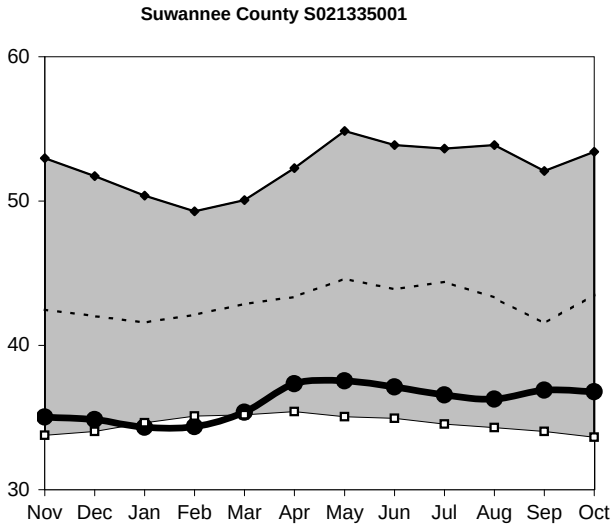
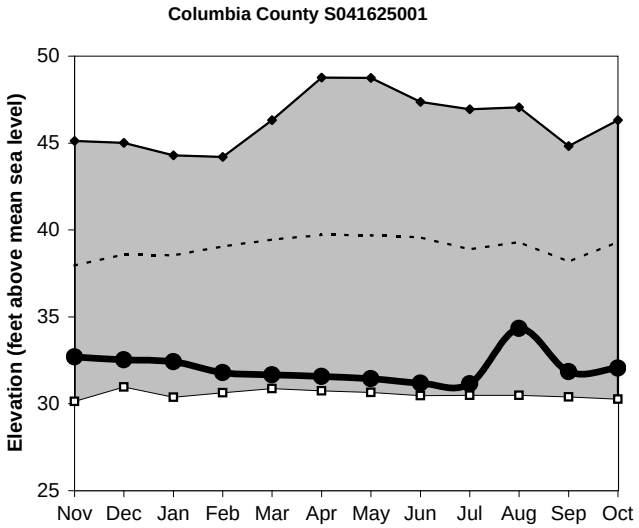
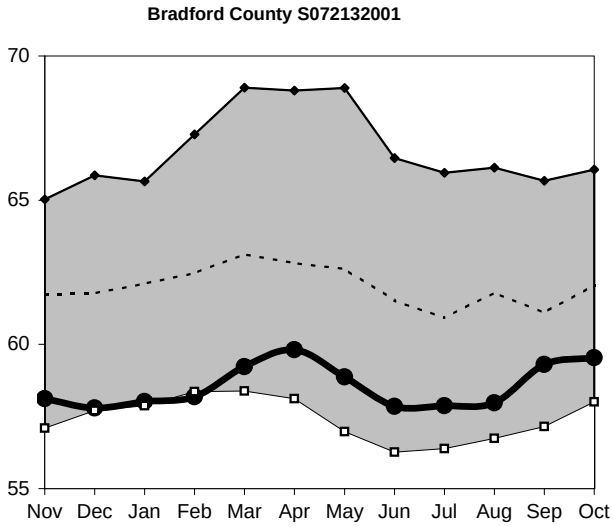
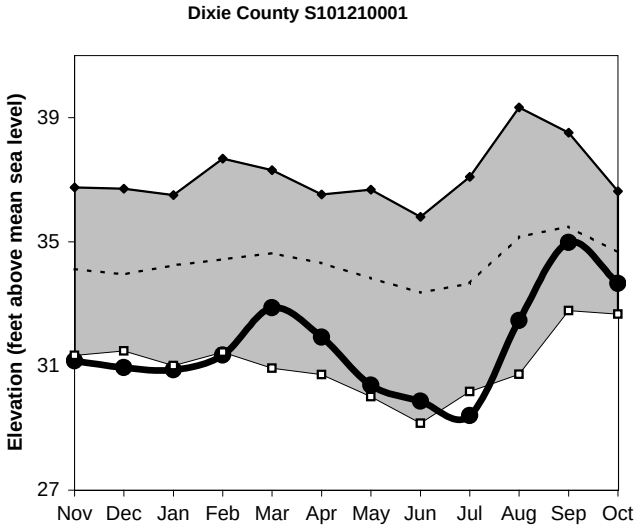
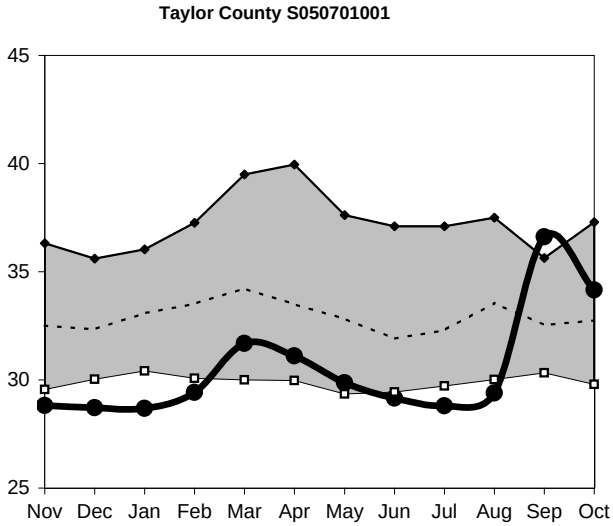


Note: River flooding can cause springflow to slow or even reverse. Springflow for months marked by an asterisk (*) was strongly affected by river conditions. Data for these months will be included once approved and published by the U.S. Geological Survey.

Figure 10: October 2008 Groundwater Levels



Inset: September 2008 Groundwater Levels

Figure 11: Monthly Groundwater Level Statistics

Levels November 1, 2007 through October 31, 2008
Period of Record Beginning 1978