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: October 8, 2008

RE: September 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 (94 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 September was 1.75", the third lowest September average since 1932. The long-term monthly average is 5.63" (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 September rainfall.
- District surplus rainfall for the last 12 months is 1.11". 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 increased from 13.4" last month to 14.6" this month.

SURFACEWATER

- **Rivers**: Stages and flows fell steadily throughout September, but most remained within the normal range by the month's end (Figure 6). Exceptions were Santa Fe River stations and the Suwannee River near Wilcox, which declined to below-normal flows (below the 25th percentile), and the Fenholloway River, which fell to 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 0.3 feet. Snead's Smokehouse Lake in Jefferson County fell 2.8 feet since last month's storm. Twelve of 16 monitored lakes remained below their long-term average level. No record levels were observed. Figure 7 shows September lake levels relative to the long-term average, minimum, and maximum levels for 6 lakes.
- **Springs:** Spring flows in 5 springs (Figure 9) increased in September, the result of improved groundwater conditions.

GROUNDWATER

- Groundwater levels monitored in 94 wells (Figure 10) increased by an average of 2.9 feet over pre-Tropical Storm Fay levels. Only one well showed a decrease in level since last month. Seventy-five percent of the levels were above the 25th percentile (normal range), compared to 18% in August.
- Three wells in Taylor County and one in Levy County set new record highs for September. 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 or below-normal conditions.
- Long-range outlooks from the National Weather Service Climate Prediction Center show no trend toward above-normal or below-normal precipitation for Florida through December.

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

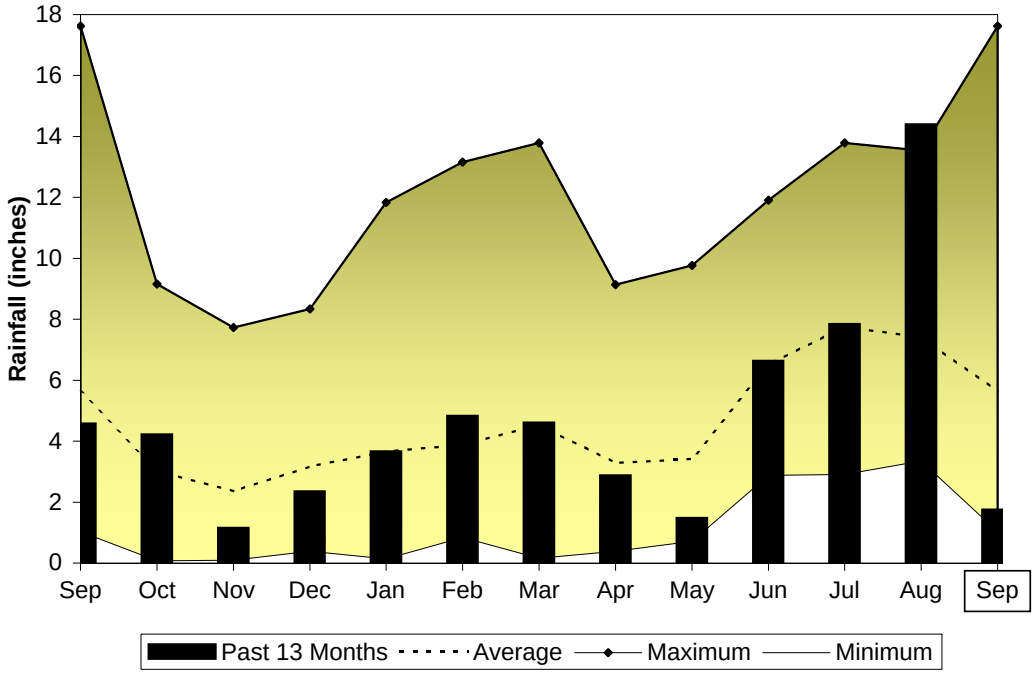
Table 1. Estimated Rainfall Totals

County	Sep-2008	Sep-2007	Last 12 Months	September Average
Alachua	2.36	6.35	51.75	4.47
Baker	2.01	3.34	59.20	5.36
Bradford	2.22	6.08	55.74	6.13
Columbia	1.58	3.02	55.63	4.67
Dixie	1.73	6.62	56.16	6.10
Gilchrist	1.87	5.47	51.98	5.75
Hamilton	1.57	2.73	52.48	4.20
Jefferson	1.37	4.64	54.94	4.70
Lafayette	1.78	3.63	57.64	5.07
Levy	1.47	6.61	59.27	6.61
Madison	1.57	3.57	58.84	3.94
Suwannee	1.54	2.61	58.72	4.64
Taylor	1.44	4.84	54.64	5.19
Union	1.94	4.61	52.00	4.94

September 2008 Average:	1.75
Historical September Average:	5.63
Historical 12-month Average:	54.71
Past 12-Month Total:	55.82
12-month Rainfall Surplus:	1.11

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall



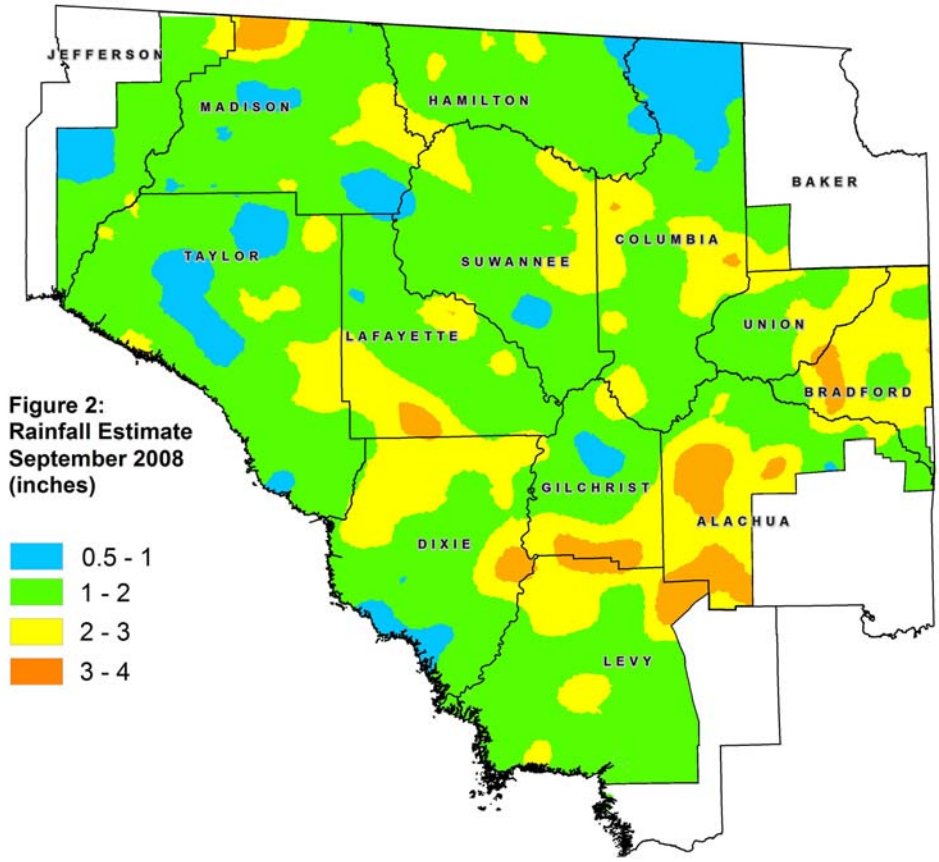


Figure 2:
Rainfall Estimate
September 2008
(inches)

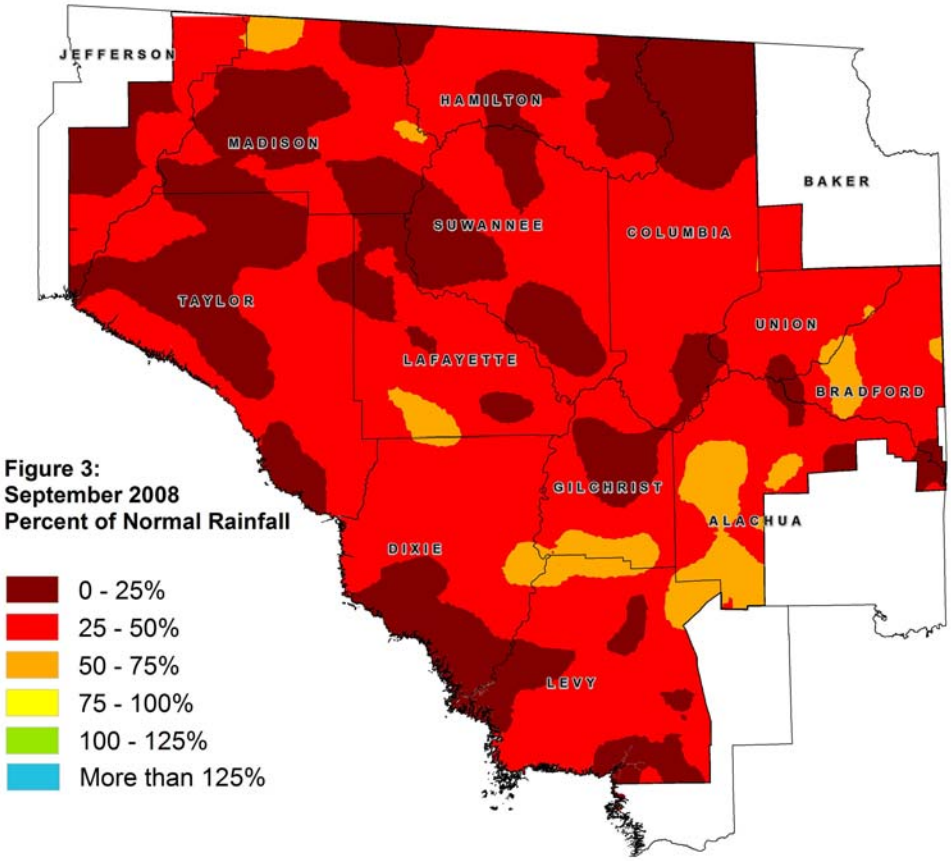
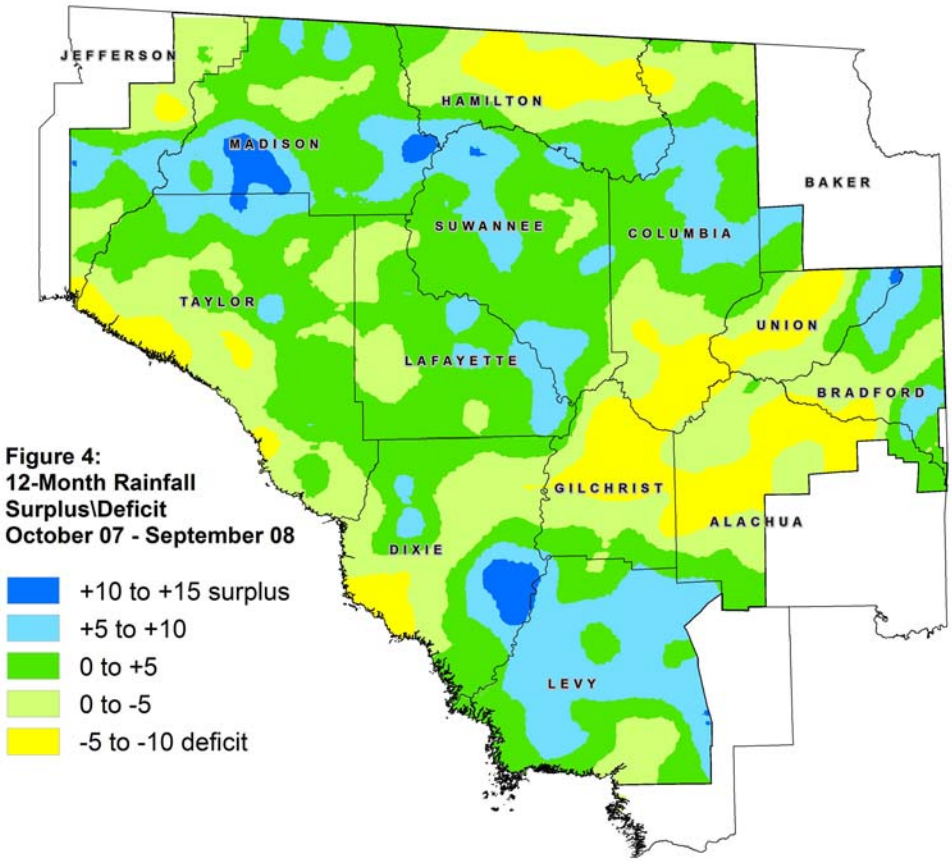


Figure 3:
September 2008
Percent of Normal Rainfall



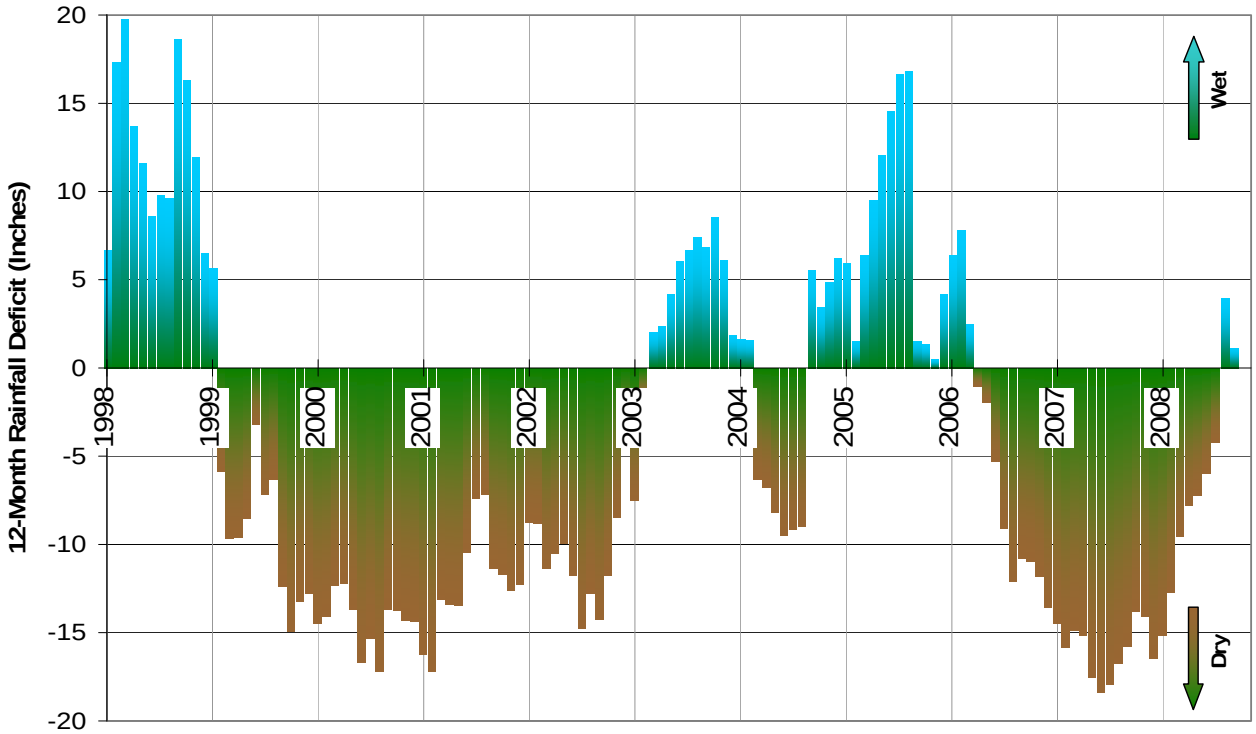
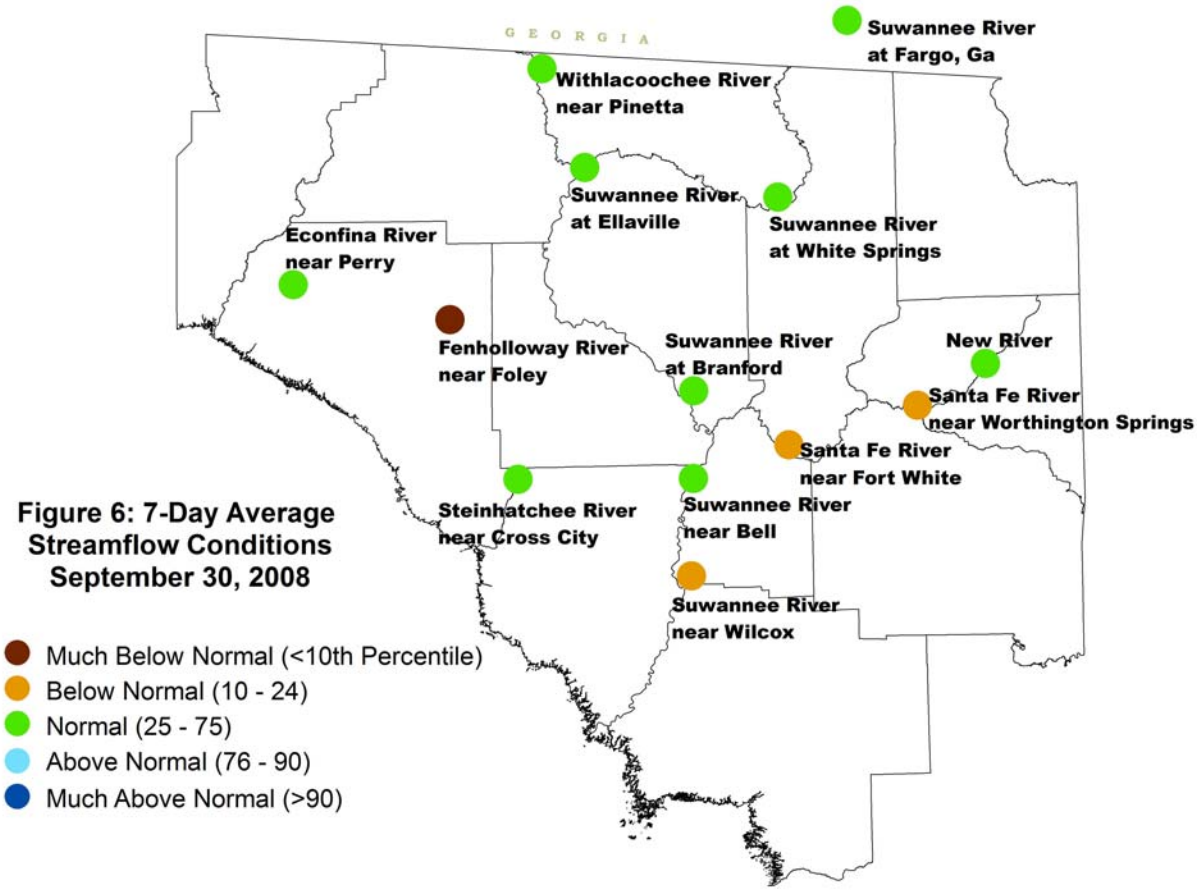


Figure 5: 12-month rolling rainfall deficit (difference between the rainfall that fell during any 12-month period and the long-term average expected over the same period, January 1998-September 2008)



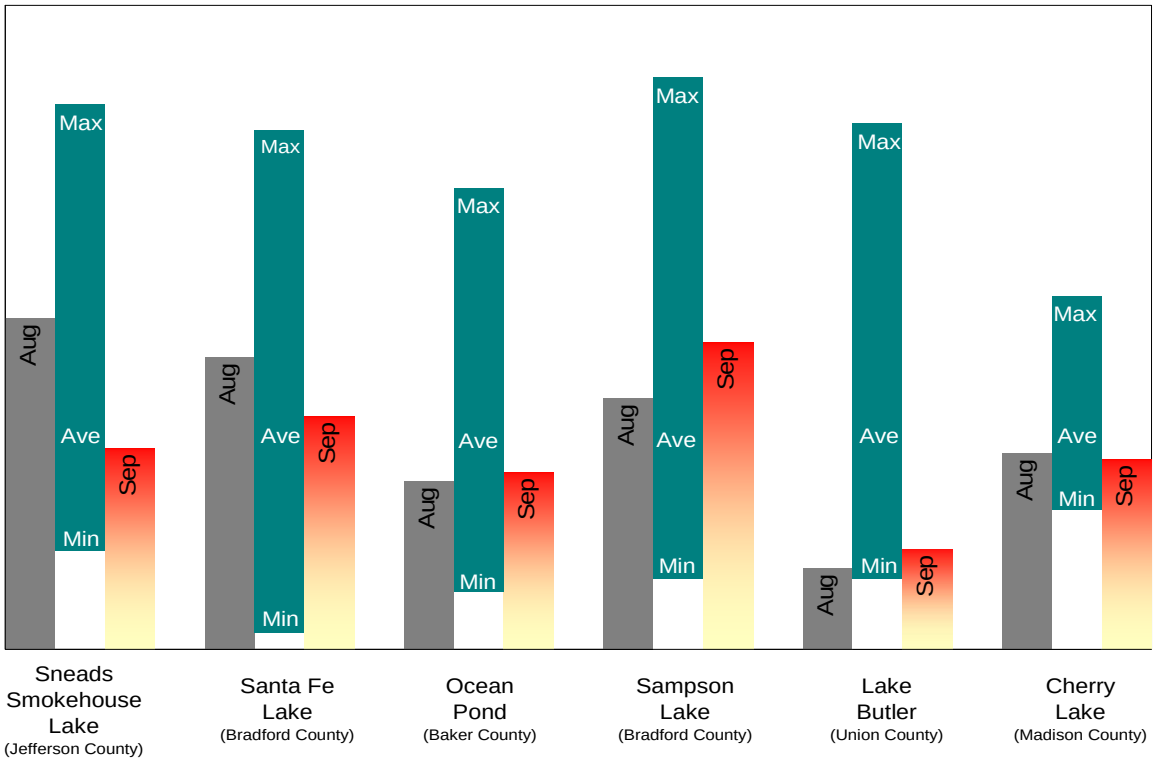


Figure 7: Lake levels, relative to historic maximum, minimum, and average levels.

Figure 8: Daily River Flow Statistics

October 1, 2007 through September 30, 2008

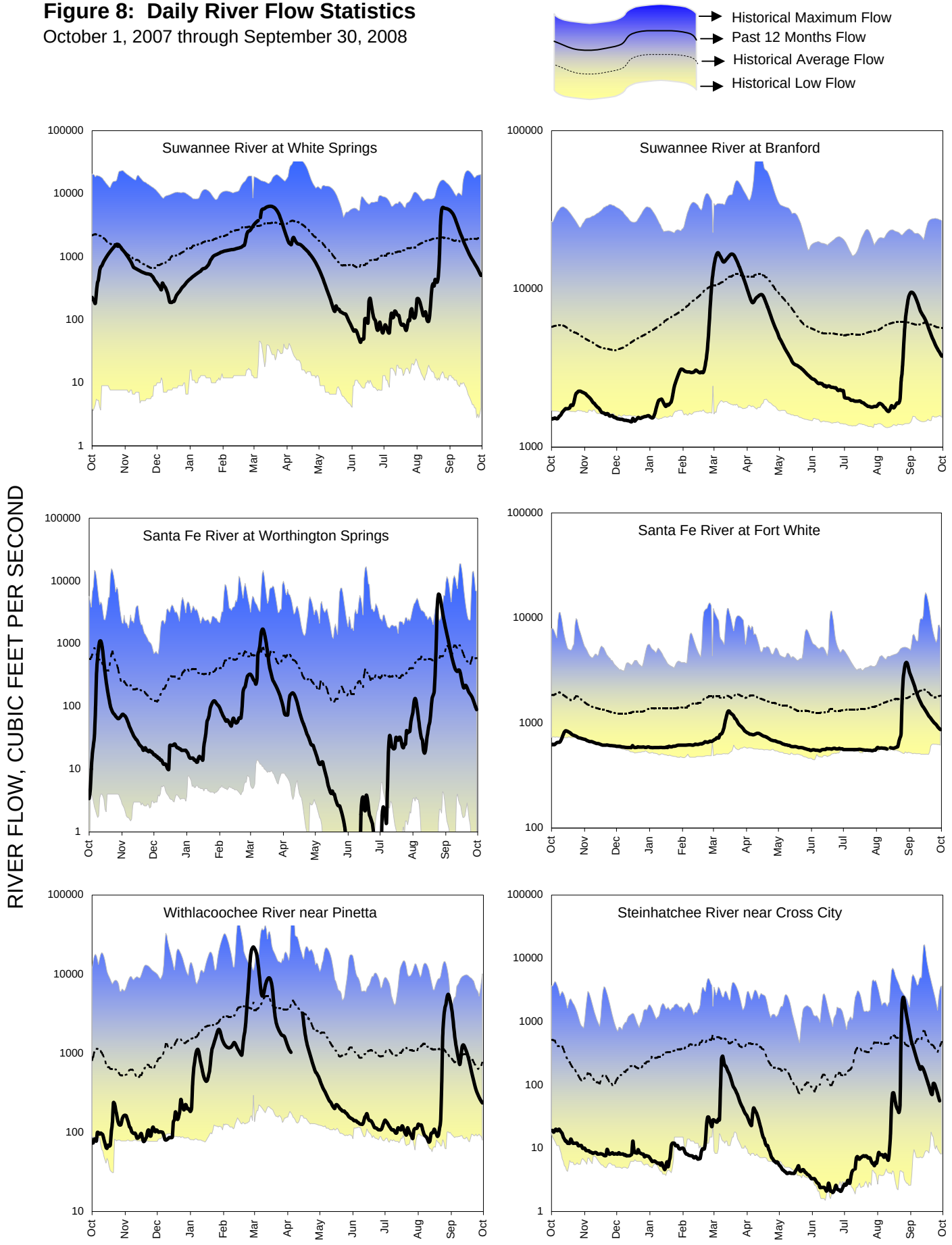
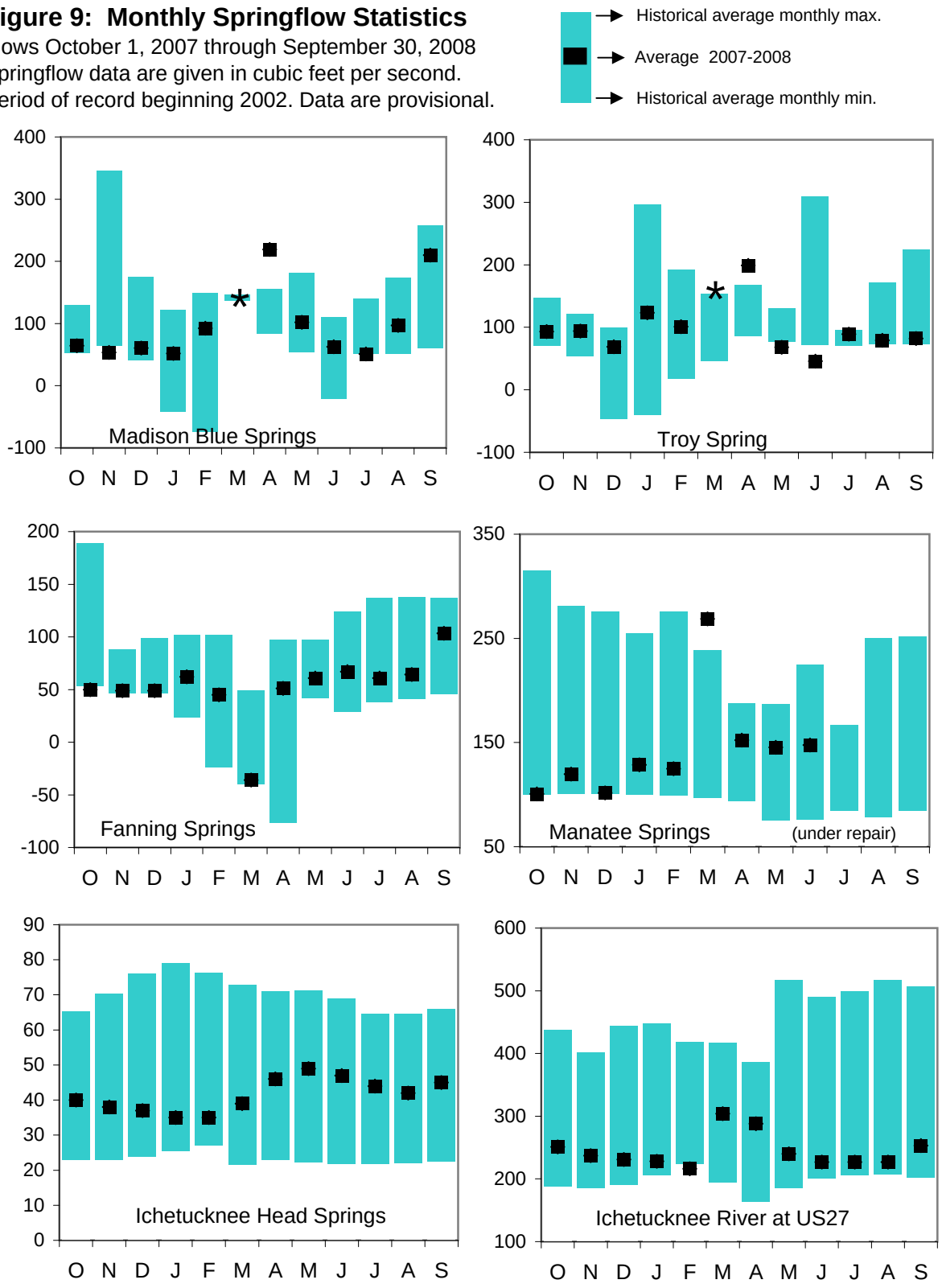


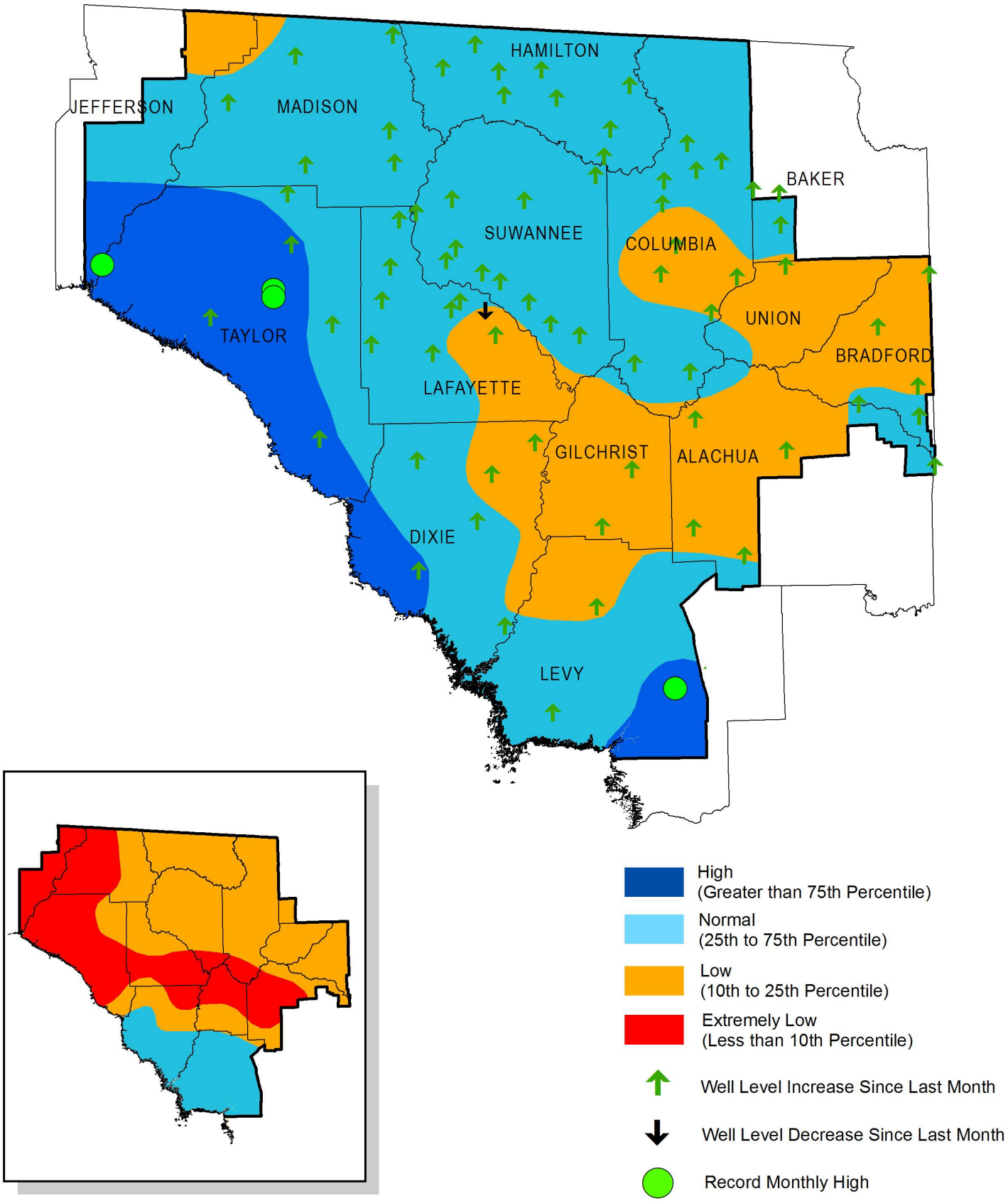
Figure 9: Monthly Springflow Statistics

Flows October 1, 2007 through September 30, 2008
Springflow data are given in cubic feet per second.
Period of record beginning 2002. Data are provisional.

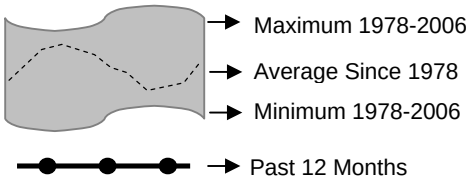
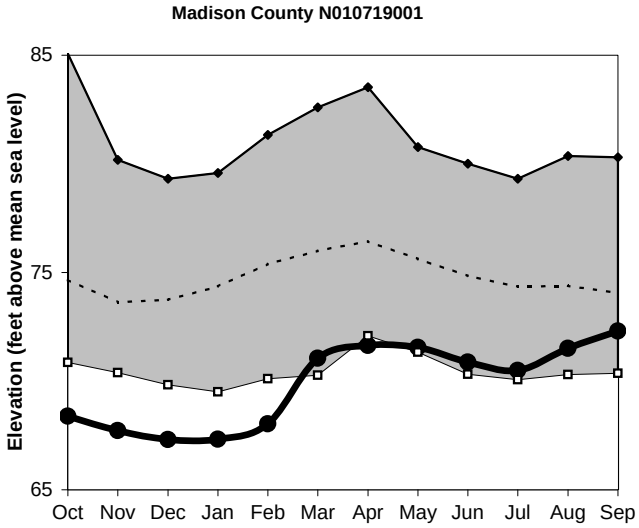
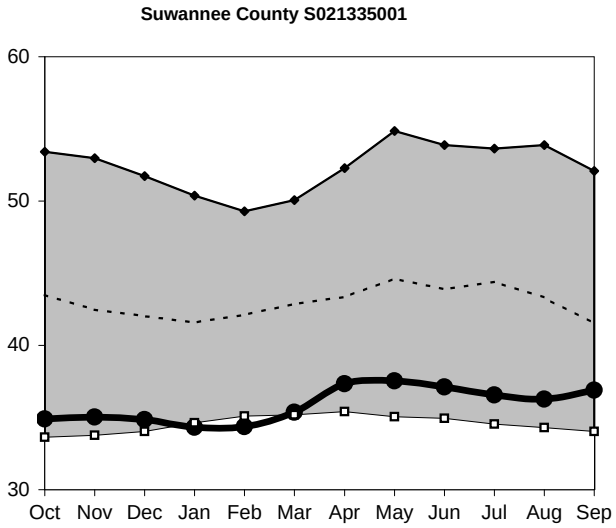
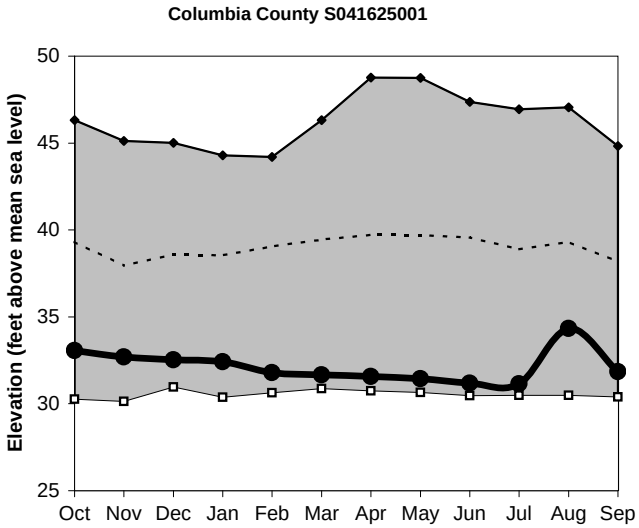
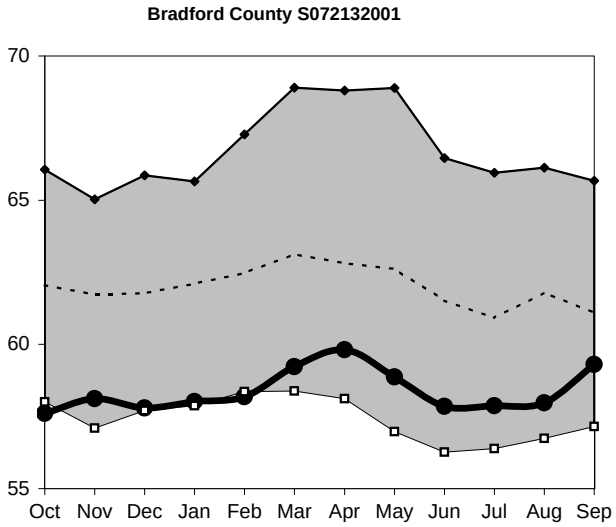
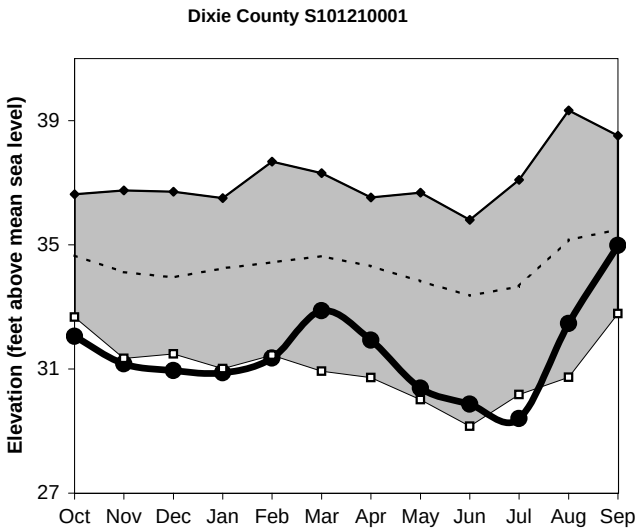
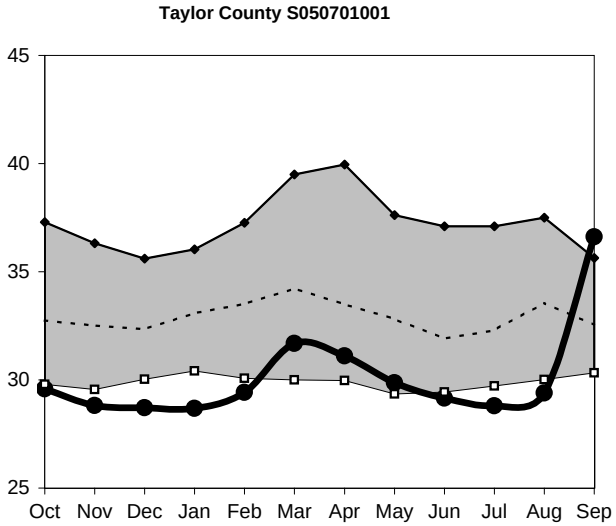


Note: River flooding can cause springflow to slow or even reverse. Springflow for months marked by an asterisk (*) was strongly affected by river conditions. Data for these months will be included once approved and published by the U.S. Geological Survey.

Figure 10: September 2008 Groundwater Levels



Inset: August 2008 Groundwater Levels

Figure 11: Monthly Groundwater Level Statistics

Levels October 1, 2007 through September 30, 2008
Period of Record Beginning 1978