

MEMORANDUM

TO: Governing Board

FROM: Megan Wetherington, P.E., Senior Professional Engineer *MW*

THRU: David Still, Executive Director *DA* for
Jon Dinges, Department Director *JND*

DATE: June 3, 2010

RE: May 2010 Hydrologic Conditions Report for the District

RAINFALL

- Average District rainfall in May was 5.31", which is 154 percent of the long-term monthly average of 3.44". Above-normal rainfall was widespread and occurred during multiple events throughout the month. The highest one-day accumulation was 3.58" at Louis Hill Tower in Bradford County. Only Madison and Jefferson counties had rainfall below their long-term averages (Table 1, Figure 1). Figure 2 shows the estimated rainfall accumulation, and Figure 3 shows the rainfall totals as a percent of normal May precipitation.
- Rainfall for the past twelve months was 57.80". The twelve-month surplus was 3.12". Figure 4 depicts the 12-month surplus/deficit across the District. Figure 5 shows the change in annual deficits beginning in 1998.

SURFACEWATER

- **Rivers:** Conditions at most Suwannee and Santa Fe River gages increased to above normal by mid-month, then declined to near average. Coastal rivers (the Fenholloway, Econfina, Steinhatchee, and Waccasassa) remained significantly above normal all month. Discharge statistics for six river stations are presented in Figure 6 and streamflow conditions for major gages are shown in Figure 7.
- **Lakes:** Levels at most monitored lakes fell slightly, continuing a gradual decline since February. Ten of the 16 monitored lakes fell or remained below their long-term average levels, compared to eight in April. Levels at Waters Lake and Governor Hill Lake remained below the minimum measurable stage. Alligator Lake in Lake City, however, rose 1.3 feet to its highest level since October 2008. Figure 8 shows levels relative to the long-term average, minimum, and maximum levels for six lakes.
- **Springs:** Average May flow relative to historical flows is shown for four spring systems in Figure 11. Flows declined since April. Tannic water

continued to flow sporadically out of White Sulphur Springs after sustained reverse flow from the Suwannee River throughout the winter.

GROUNDWATER

Groundwater levels dropped by an average of 6", with 74 percent of monitored wells falling since April. Only Taylor County saw increasing levels, with three wells reporting record high levels for May (Figure 9). On average, conditions remained about the 50th percentile based on records beginning in 1978. (The percentile is the percentage of historic levels or flows for the month that are equal to or below the month's observed values). Statistics for a representative sample of wells are shown in Figure 10.

HYDROLOGICAL/METEOROLOGICAL INFORMATION

- The Palmer Drought Severity Index (PDSI), a climatological tool produced by the National Weather Service, evaluates the scope, severity, and frequency of prolonged periods of abnormally dry or wet weather using precipitation, temperature, and soil moisture data. The PDSI indicated near normal conditions during May.
- Long-term forecasts from the National Weather Service predict equal chances of above- or below-normal rainfall through the summer.

CONSERVATION

Homeowners and others within the District are required to limit landscape irrigation to two days per week, based on a year-round water conservation rule that applies to residential landscaping, public or commercial recreation areas, and public and commercial businesses that aren't regulated by a District-issued permit. The District offers a variety of free water conservation information to the public via its website and by request.

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 (116 wells), surfacewater levels (16 lakes and 11 rivers), river flows (15 stations), spring flows (4 stations), 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.

MW/bmp

cc: Charles H. Houder, III, Assistant Executive Director

Table 1: Estimated Rainfall Totals

County	May-2010	May-2009	Last 12 Months	May Average
Alachua	4.90	8.00	51.89	2.27
Baker	5.55	9.89	48.19	1.89
Bradford	4.19	9.25	49.43	2.22
Columbia	7.05	8.97	51.68	3.21
Dixie	4.77	5.03	56.95	3.43
Gilchrist	4.07	6.54	51.21	3.36
Hamilton	6.00	5.67	54.25	3.16
Jefferson	4.11	4.52	65.71	5.88
Lafayette	6.14	7.72	63.60	3.33
Levy	5.83	6.34	60.95	2.67
Madison	4.17	5.26	60.42	4.73
Suwannee	5.52	5.95	57.68	3.24
Taylor	5.03	4.21	65.05	4.16
Union	5.87	7.76	49.91	2.21

May 2010 Average: 5.31
 Historical May Average (since 1932): 3.44
 Historical 12-month Average (since 1932): 54.68
 Past 12-Month Total: 57.80
 12-month Rainfall Surplus: 3.12

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall

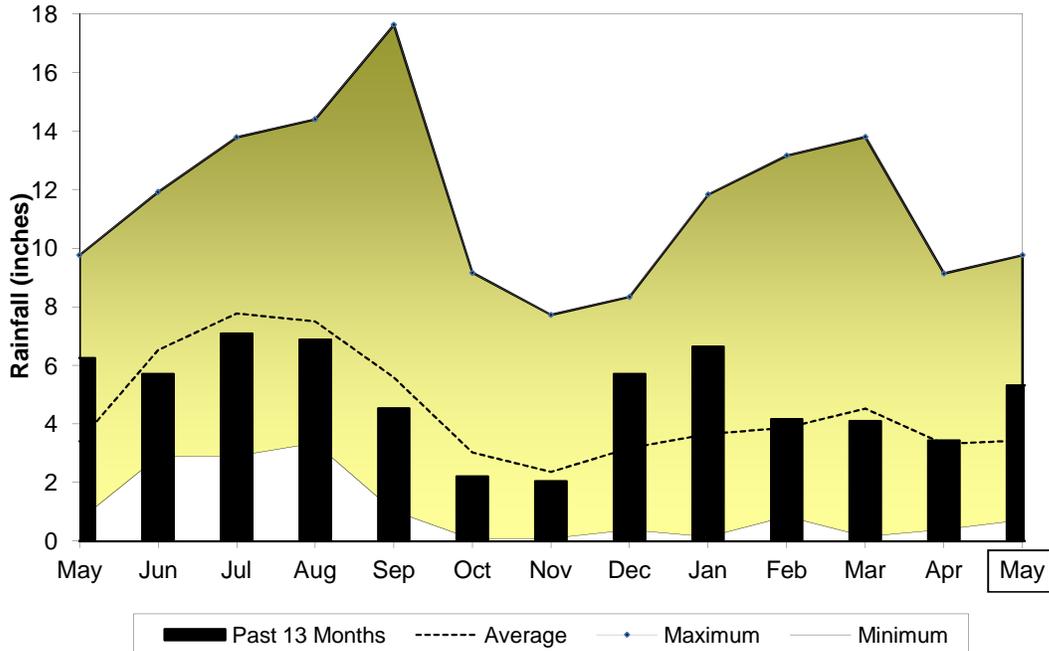


Figure 2: May 2010 Rainfall Estimate

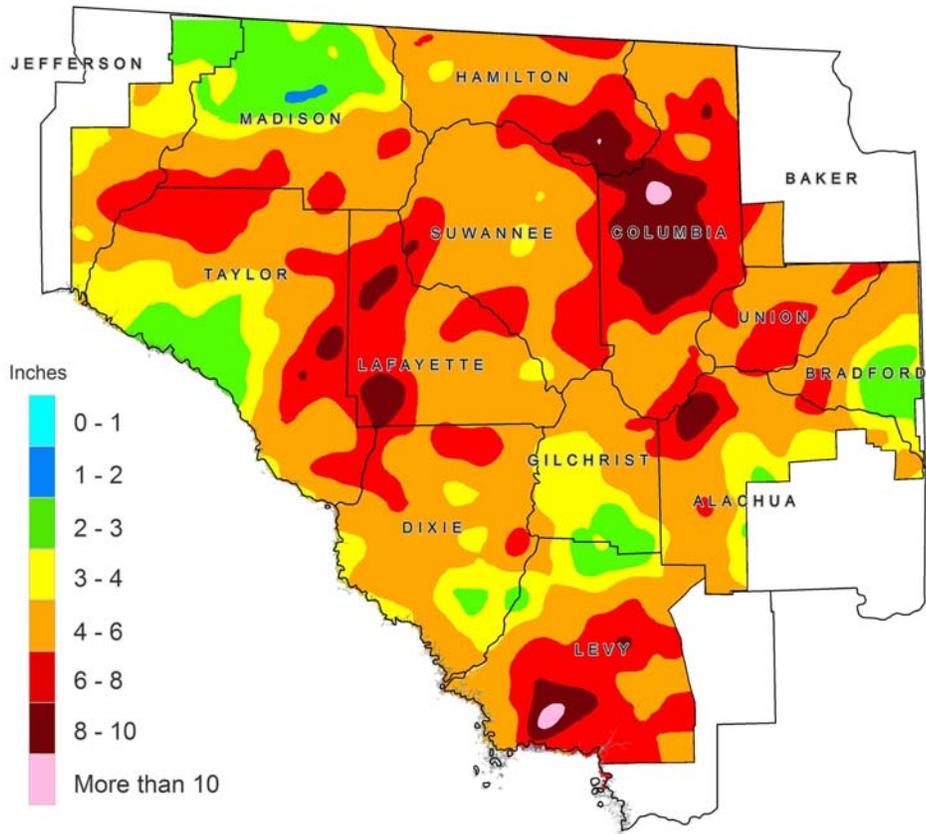


Figure 3: May 2010 Percent of Normal Rainfall

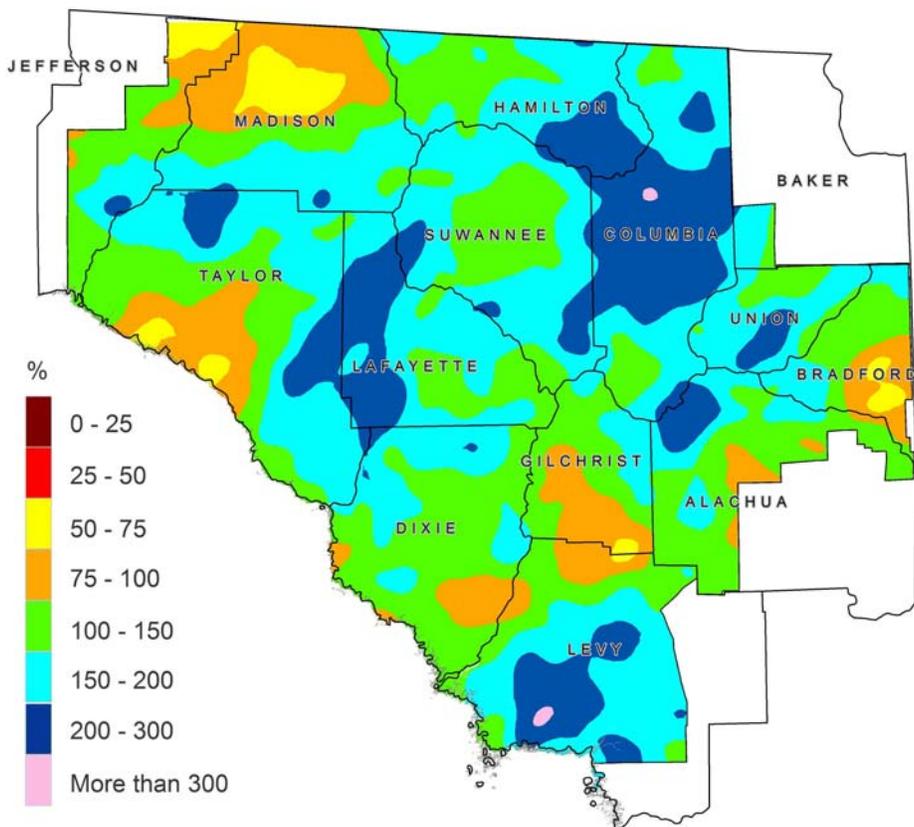


Figure 4: May 2010 Rainfall Surplus/Deficit

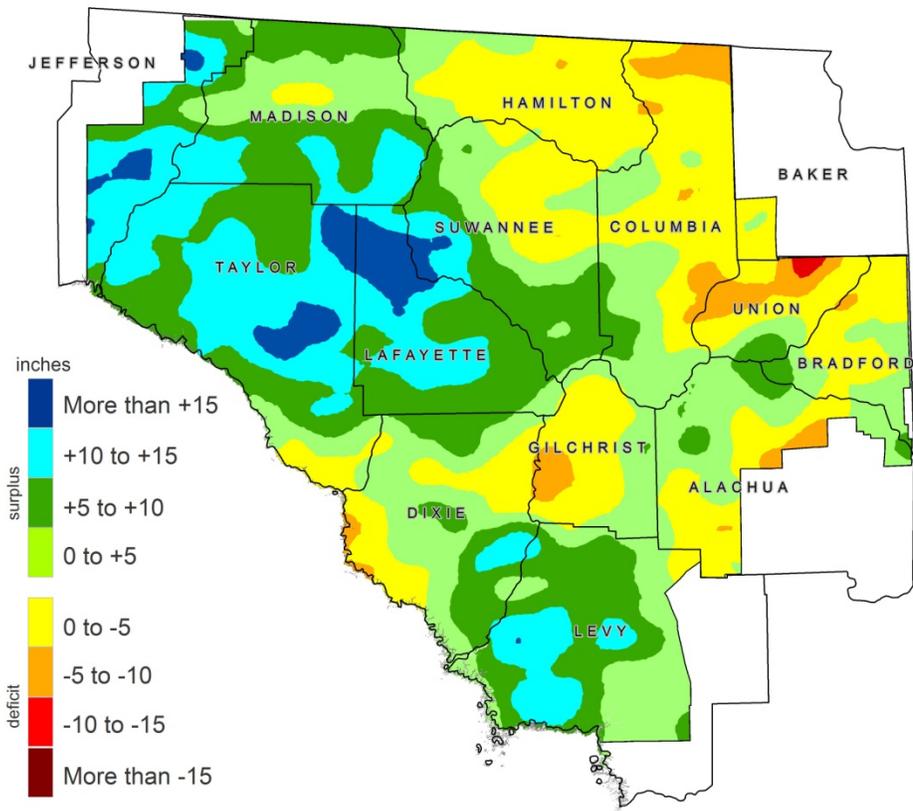


Figure 5: 12-month Rolling Rainfall Deficit Since 1998

Difference between observed 12-month rainfall and the long-term average over the same period

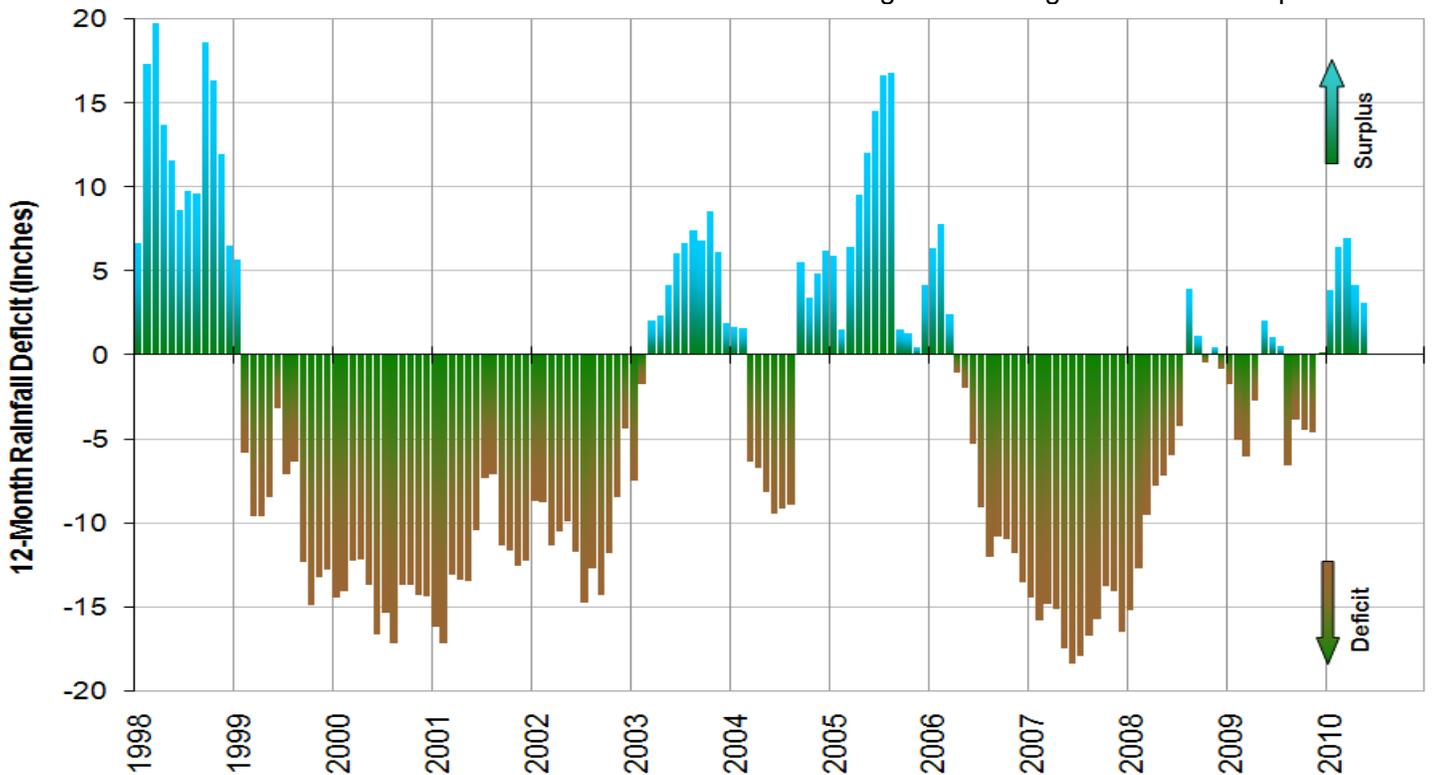
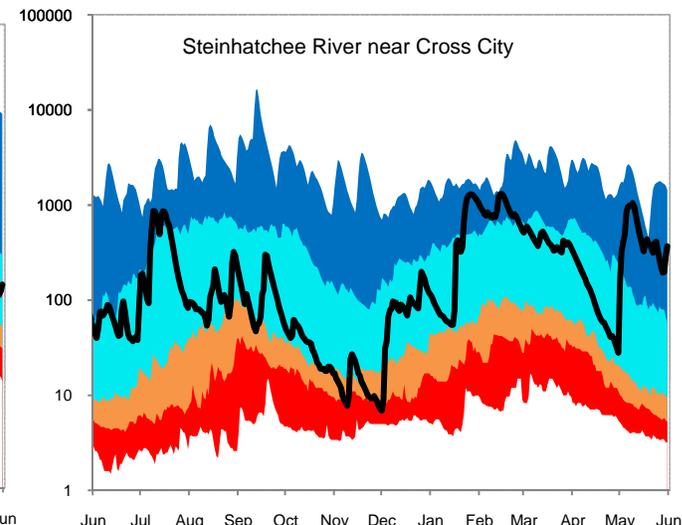
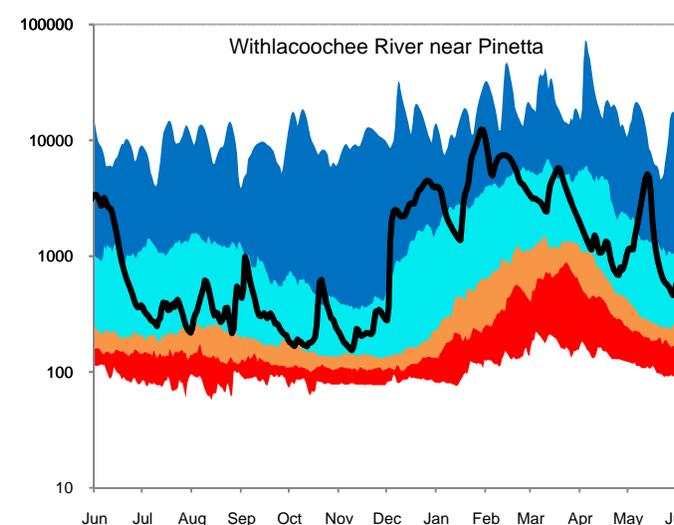
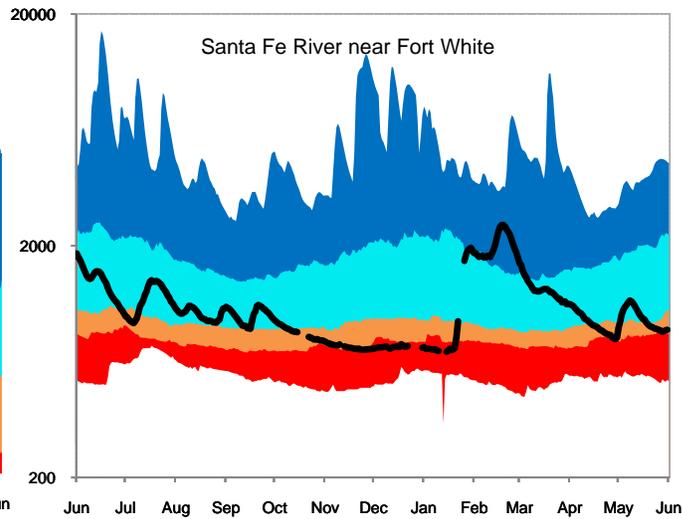
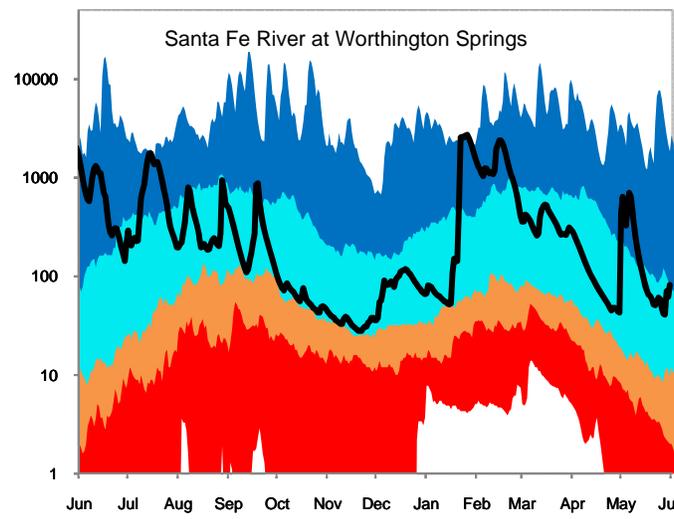
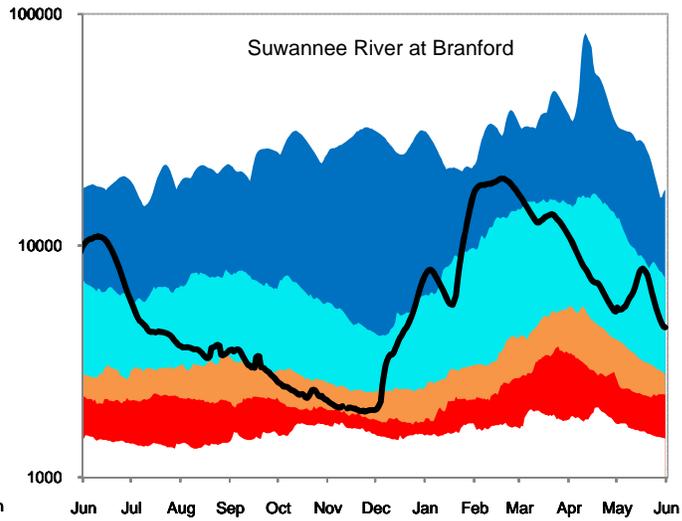
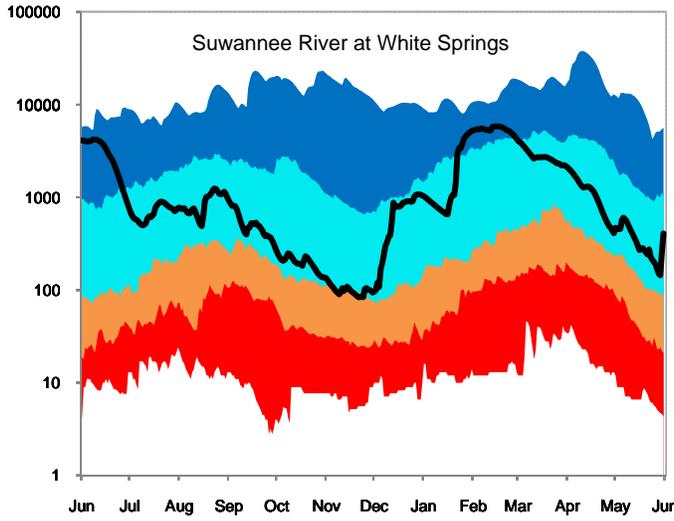
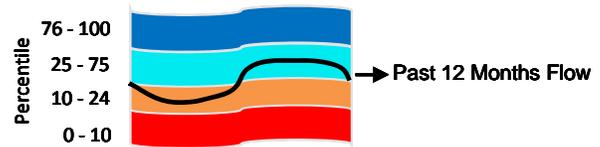


Figure 6: Daily River Flow Statistics

June 1, 2009 through May 31, 2010



RIVER FLOW, CUBIC FEET PER SECOND

Figure 7: May 2010 Streamflow Conditions

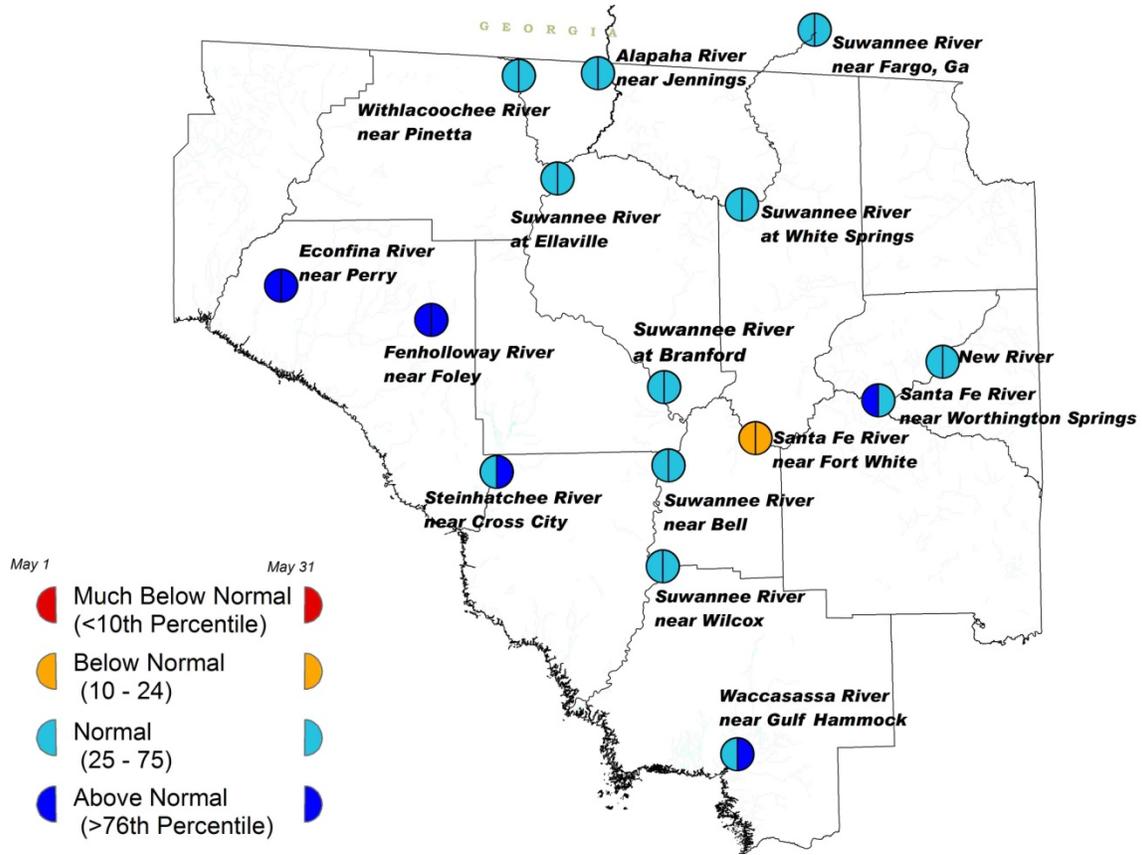
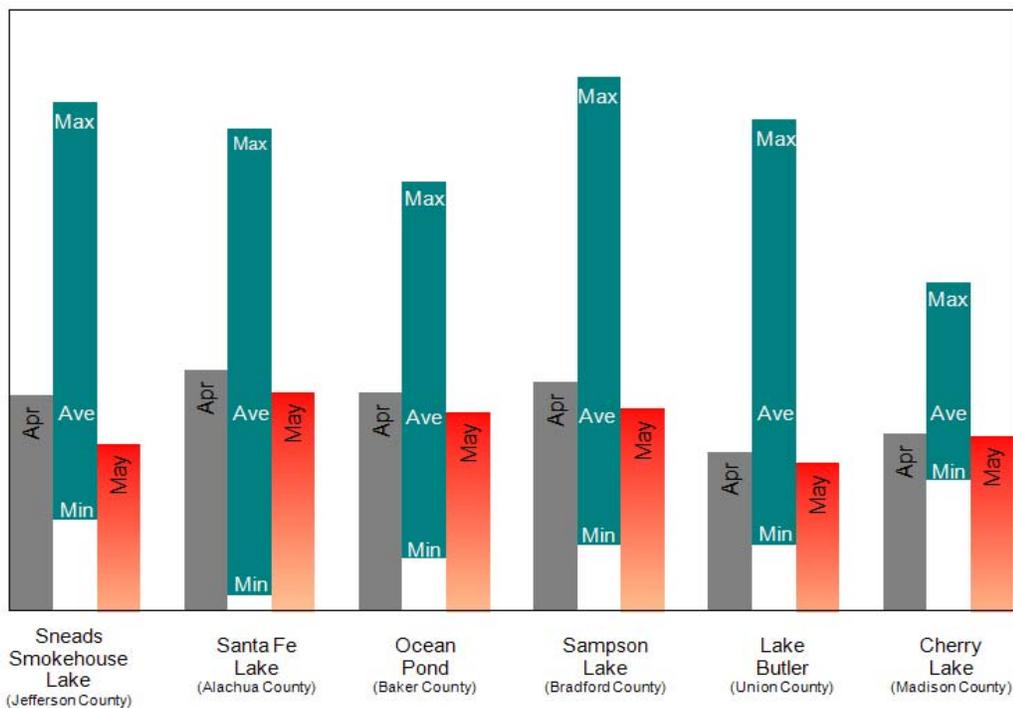


Figure 8: Lake levels, relative to historic maximum, minimum, and average levels.



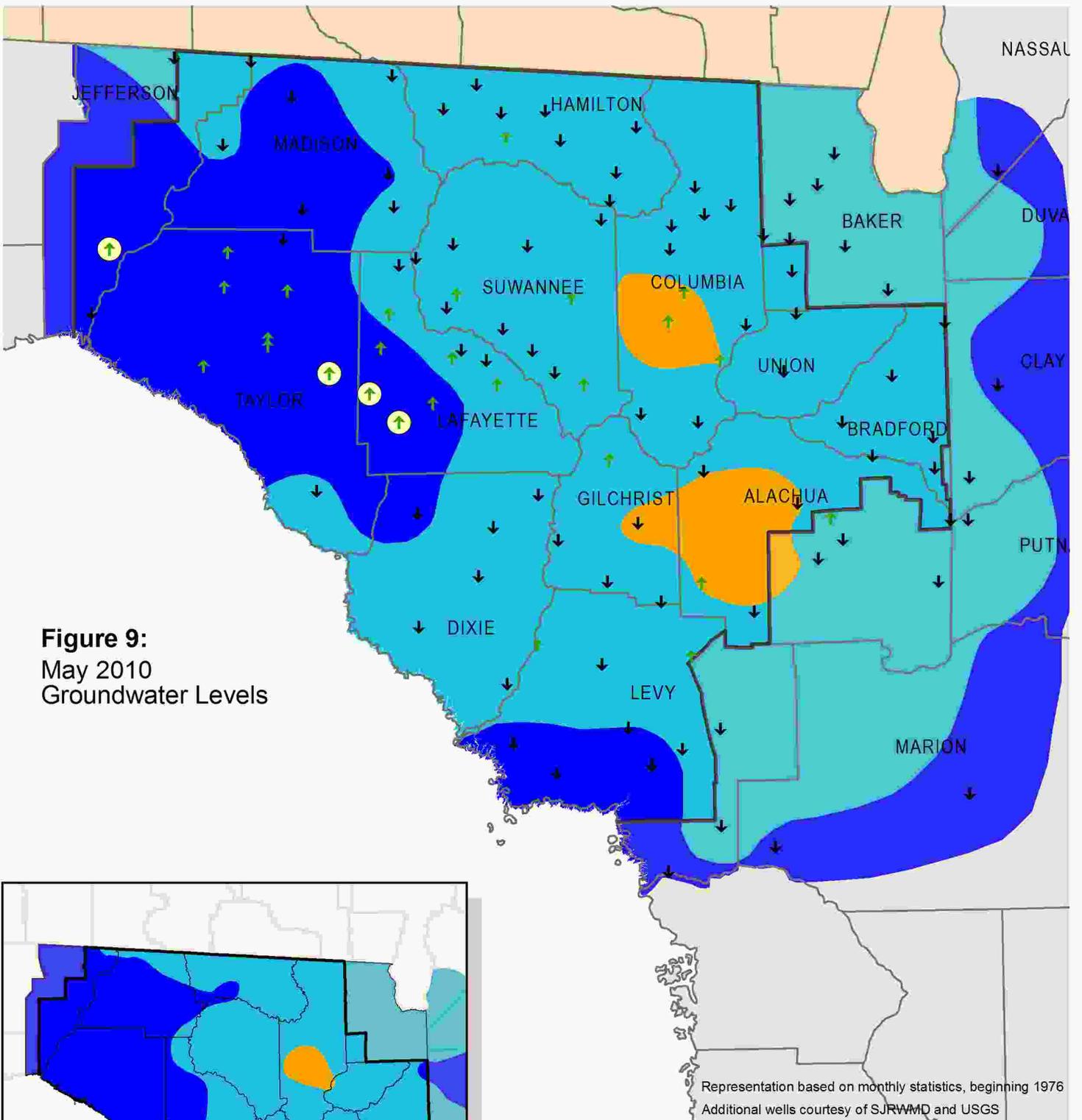
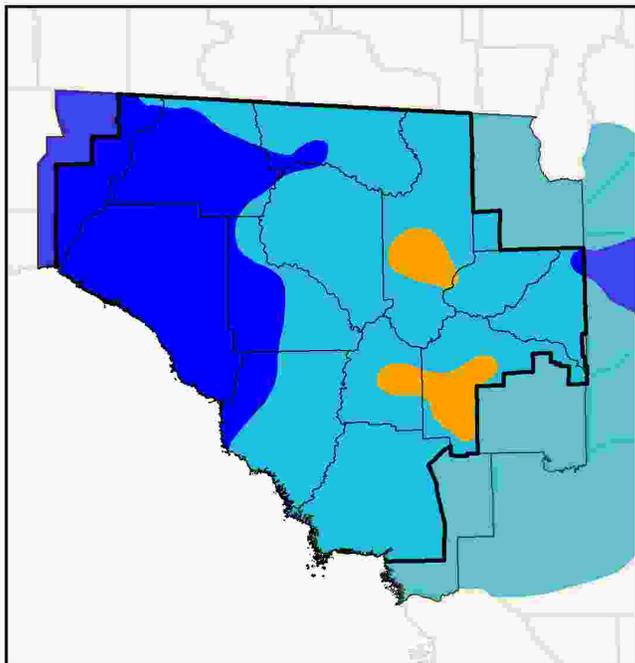


Figure 9:
May 2010
Groundwater Levels



Inset: April 2010 Groundwater Levels

- High
(Greater than 75th Percentile)
- Normal
(25th to 75th Percentile)
- Low
(10th to 25th Percentile)
- Extremely Low
(Less than 10th Percentile)
- Increase/decrease in level since last month
- District Boundary
- Record high level for month

Figure 10: Monthly Groundwater Level Statistics

Levels June 1, 2009 through May 31, 2010

Period of Record Beginning 1978

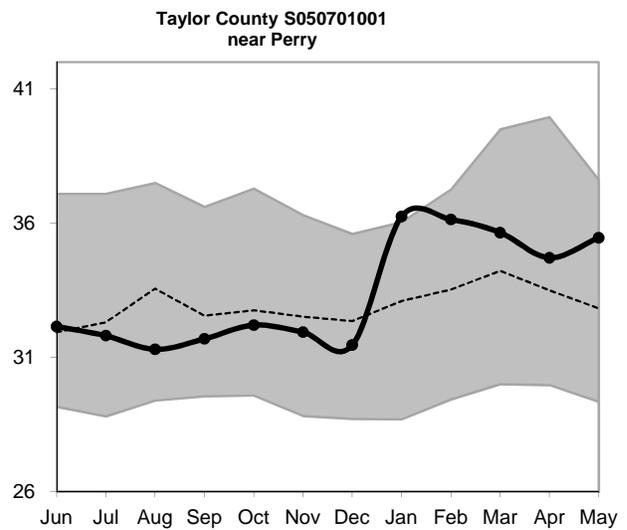
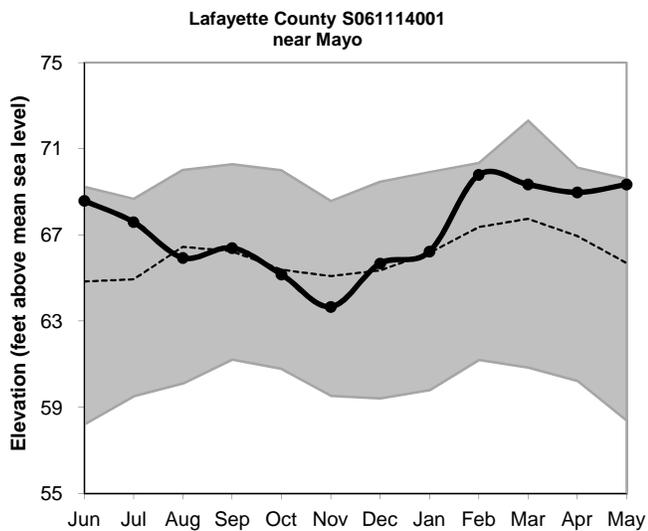
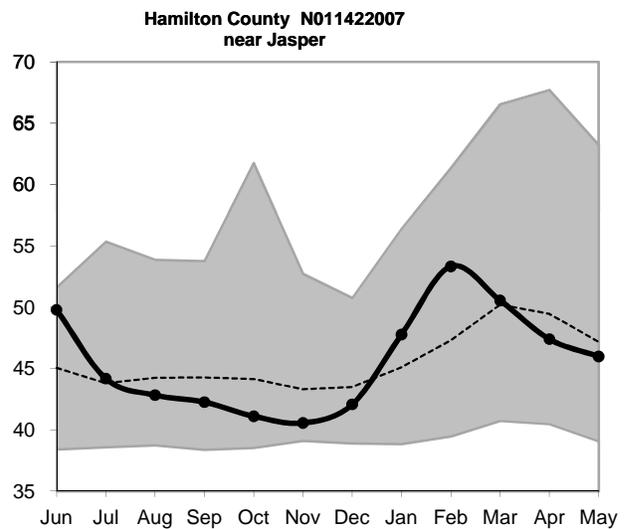
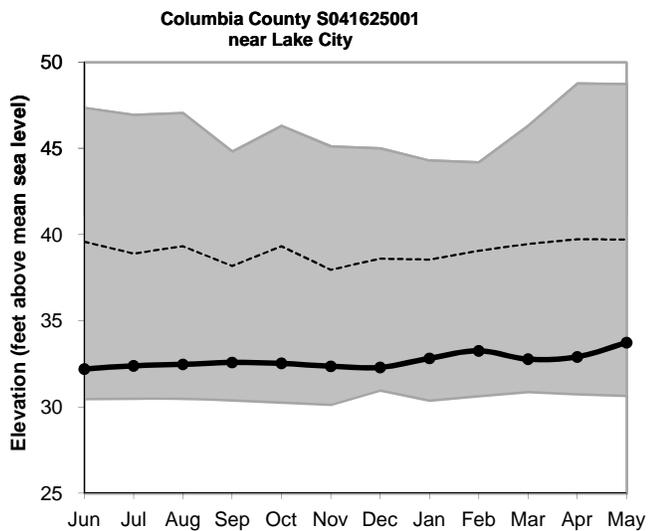
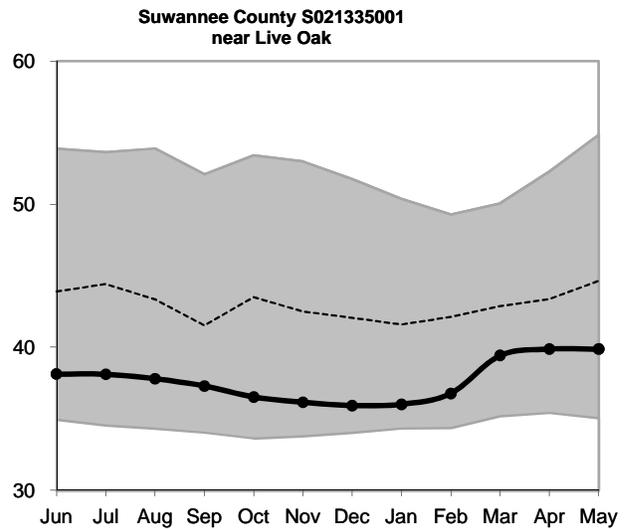
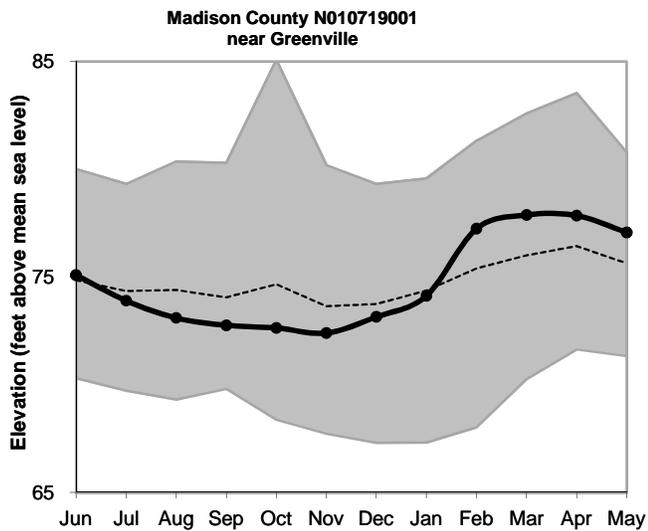
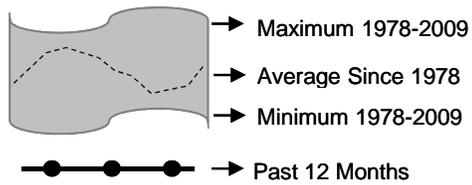


Figure 10, cont.: Monthly Groundwater Level Statistics
 Levels June 1, 2009 through May 31, 2010
 Period of Record Beginning 1978

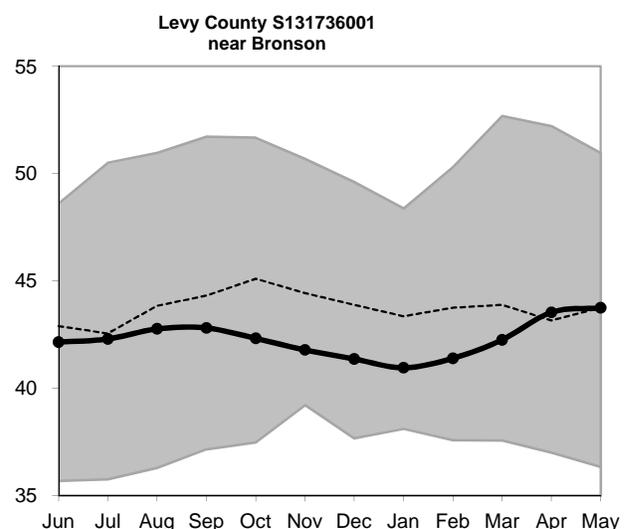
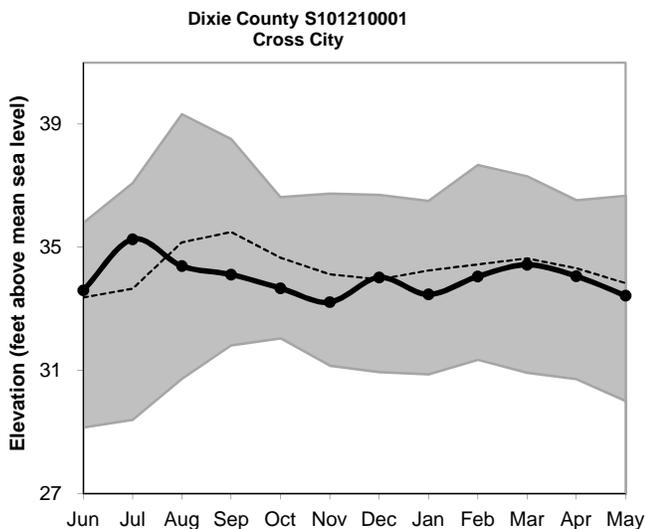
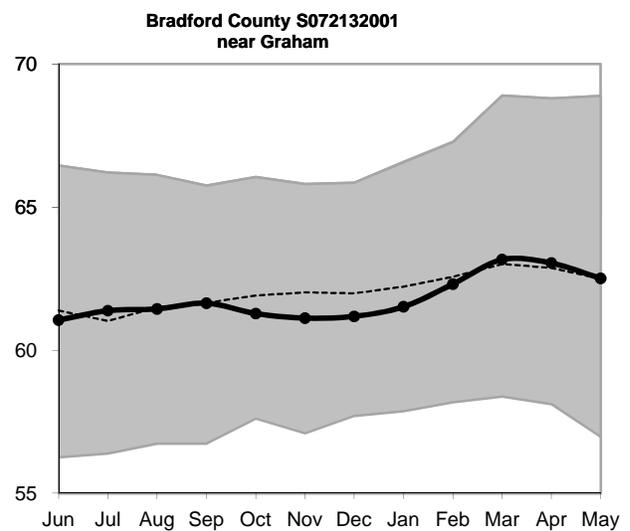
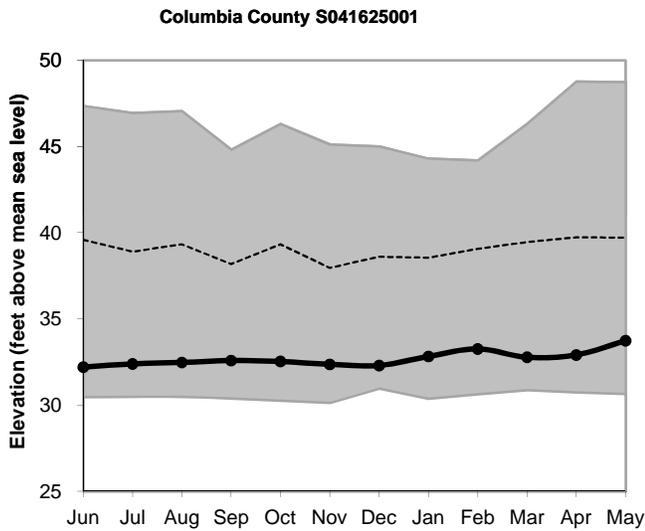
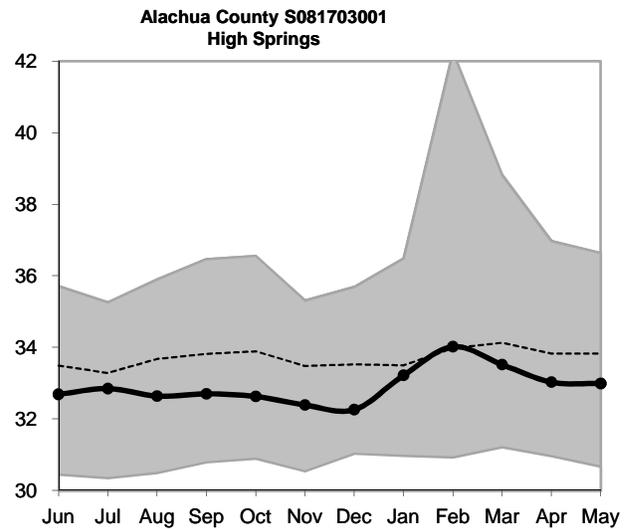
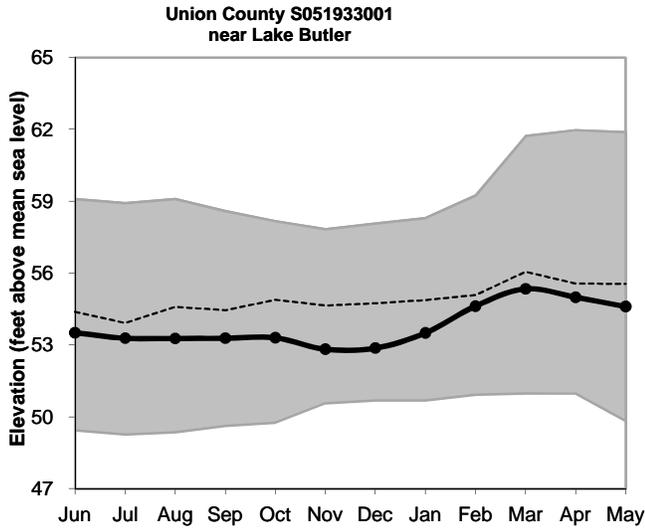
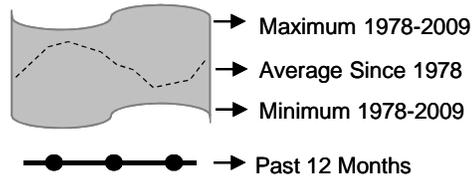
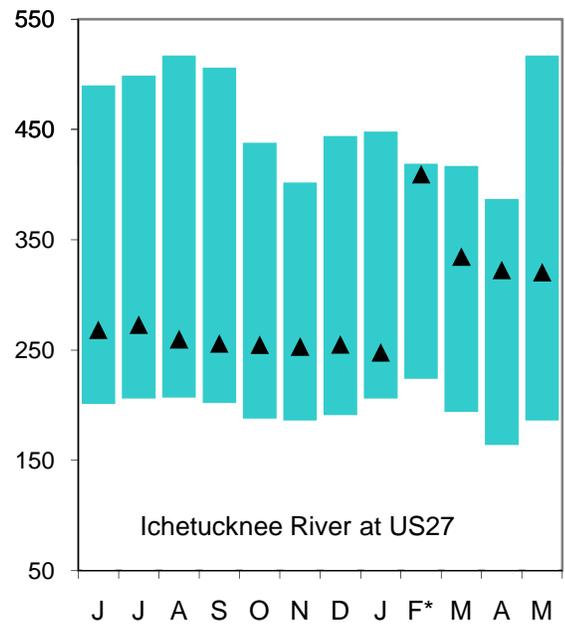
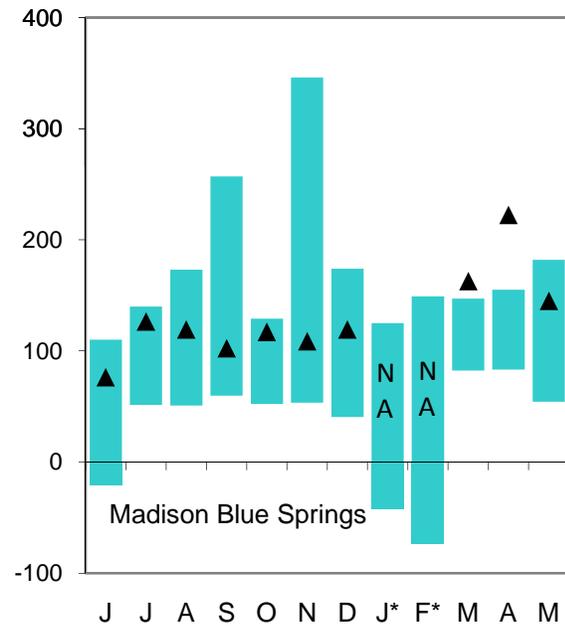
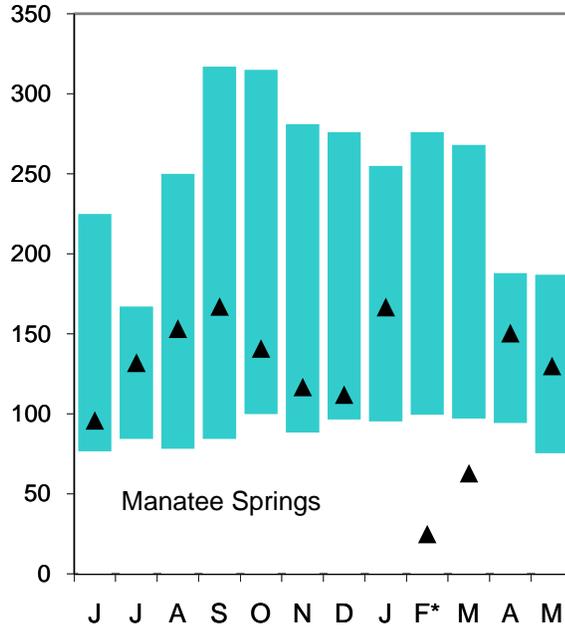
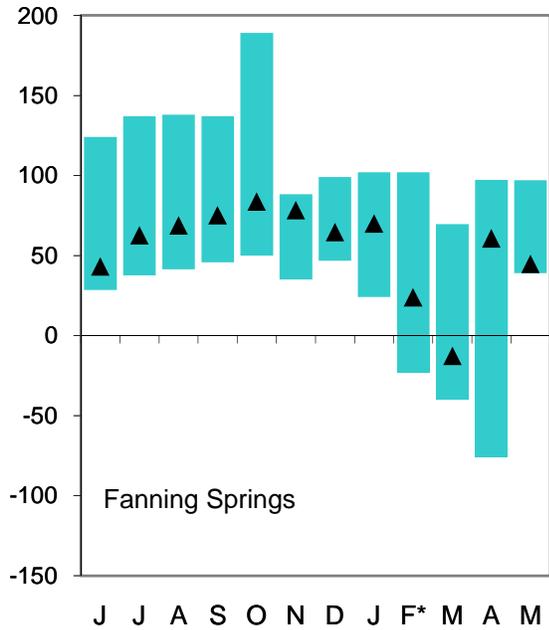
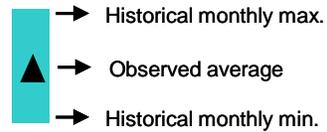


Figure 11: Monthly Springflow Statistics

Flows June 1, 2009 through May 31, 2010
 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 will be revised once approved and published by the U.S. Geological Survey.