

MEMORANDUM

TO: Governing Board

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

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

DATE: April 7, 2010

RE: March 2010 Hydrologic Conditions Report for the District

RAINFALL

- Average District rainfall in March was 4.09", which is 90% of the long-term monthly average of 4.52" (Table 1, Figure 1). Rainfall was below normal in every county but Levy, and below normal on all major river basins with the exception of the Econfina and Waccasassa basins. Figure 2 shows the estimated rainfall accumulation, and Figure 3 shows the rainfall totals as a percent of normal March precipitation.
- Rainfall for the past twelve months was 61.64". The twelve-month surplus was 6.96". Figure 4 depicts the 12-month surplus/deficit across the District. Figure 5 shows the change in annual deficits beginning in 1998.

SURFACEWATER

- **Rivers:** Flows at major river gages declined throughout March, but still remained near the seasonal average by the month's end. Econfina and Waccasassa flows remained above normal throughout the month, and the Aucilla River at Lamont remained in minor flood stage. The Santa Fe River at Three Rivers Estates fell below flood stage on March 2 after four weeks of minor flooding. 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 declined slightly, dropping by an average of 2 inches. Seven of the 16 monitored lakes fell or remained below their long-term average levels. Santa Fe Lake remained above average for the tenth month in a row. Levels at Waters Lake and Governor Hill Lake were still below the minimum measurable stage. Figure 8 shows levels relative to the long-term average, minimum, and maximum levels for six lakes.
- **Springs:** Average March flow relative to historical flows is shown for 5 spring systems in Figure 11. Backflow from the Suwannee River into White Springs was observed throughout the month.

GROUNDWATER

Groundwater conditions remained above average for the second month in a row, but fell to the 58th percentile from the 60th percentile observed in February. (The percentile is the percentage of historic levels for the month that are equal to or below this month's value.) Levels decreased in 38% of the District's monitored wells after increasing throughout the winter (Figure 9), but the average drop was less than three inches. Conditions in Madison, Taylor, and Jefferson counties remained much above normal for the month. 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. The PDSI indicated near normal conditions during March.
- Long-term forecasts from the National Weather Service predict above-average precipitation through June due to ongoing but declining El Niño conditions in the Pacific, and a transition to neutral conditions in early summer.

CONSERVATION

Homeowners and others within the District are asked 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 (111 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.

MW/dd

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

Table 1: Estimated Rainfall Totals

County	Mar-2010	Mar-2009	Last 12 Months	March Average
Alachua	3.40	3.93	55.25	4.21
Baker	3.21	4.10	56.73	4.36
Bradford	3.21	3.61	55.75	4.29
Columbia	2.92	3.46	56.96	4.62
Dixie	3.98	4.15	59.02	4.79
Gilchrist	3.13	3.55	54.94	4.84
Hamilton	3.65	3.76	60.45	5.17
Jefferson	5.12	5.19	71.83	5.80
Lafayette	3.64	2.50	66.87	5.03
Levy	6.24	2.76	62.08	5.03
Madison	4.80	4.62	69.10	5.72
Suwannee	3.71	2.57	61.40	5.17
Taylor	4.60	3.90	66.38	5.34
Union	2.88	2.19	53.04	4.85

March 2010 Average: 4.09
 Historical March Average (since 1932): 4.52
 Historical 12-month Average (since 1932): 54.68
 Past 12-Month Total: 61.64
 12-month Rainfall Surplus: 6.96

(Rainfall reported in inches)

Figure 1: Comparison of District Monthly Rainfall

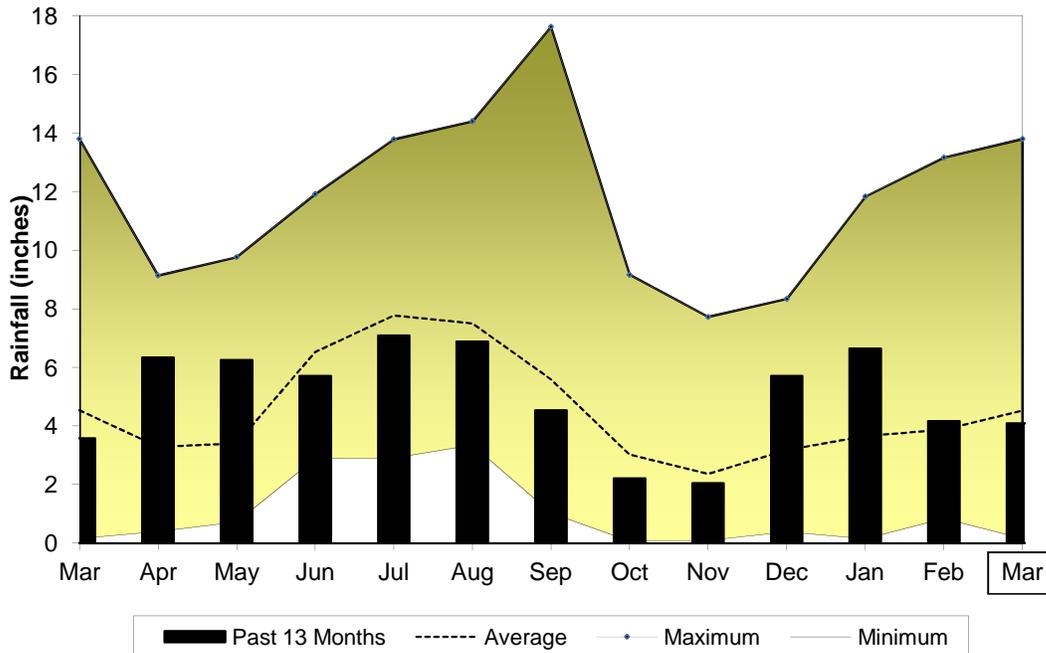


Figure 2: March 2010 Rainfall Estimate

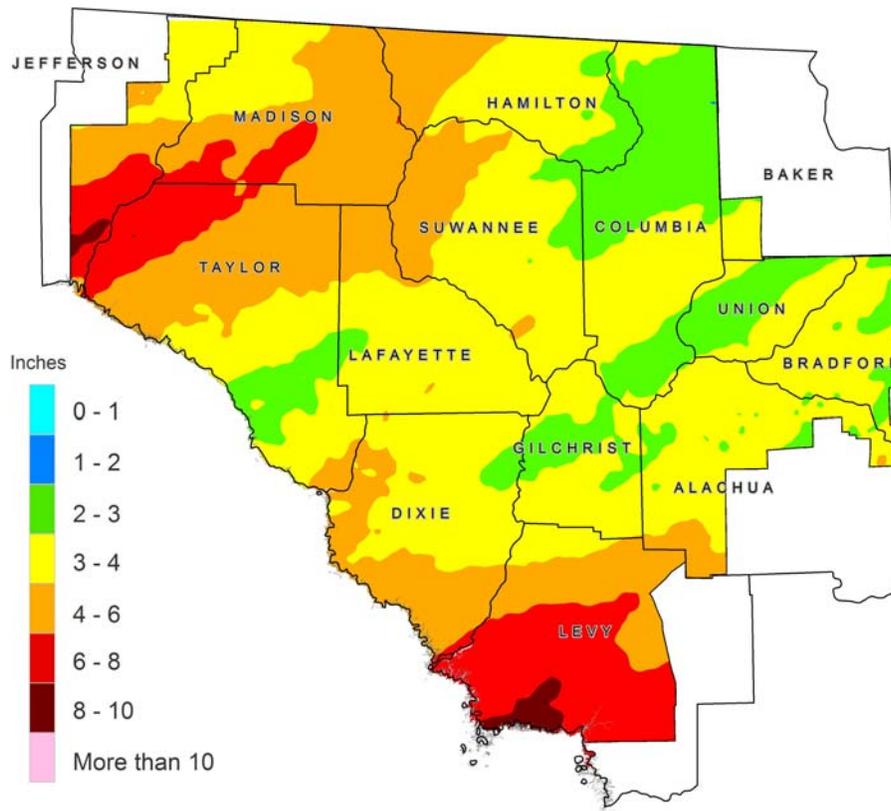


Figure 3: March 2010 Percent of Normal Rainfall

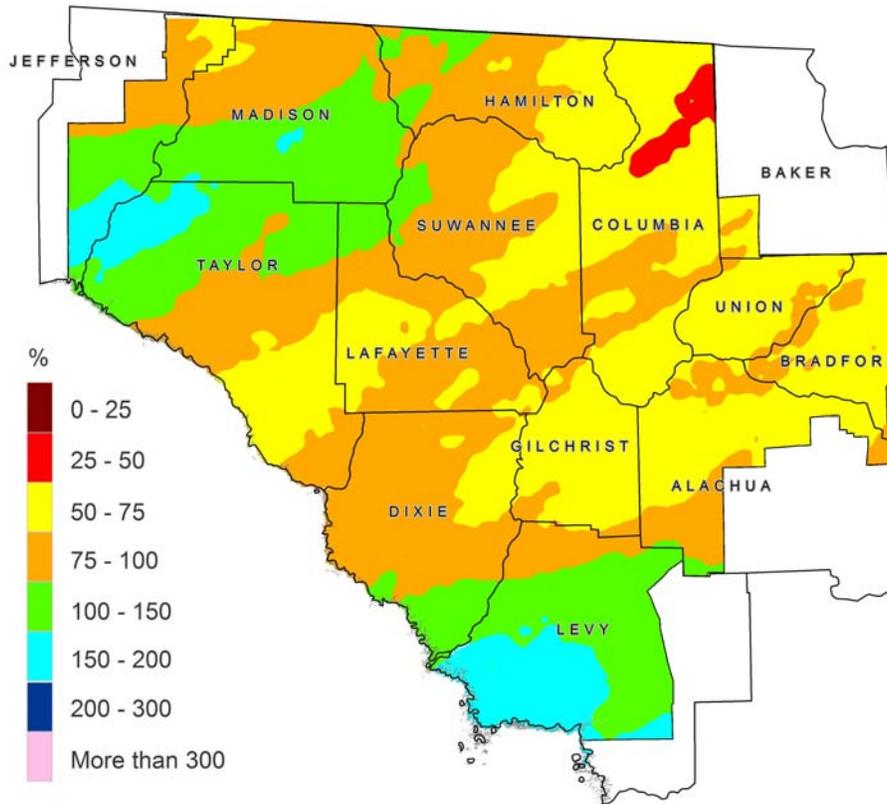


Figure 4: March 2010 Rainfall Surplus/Deficit

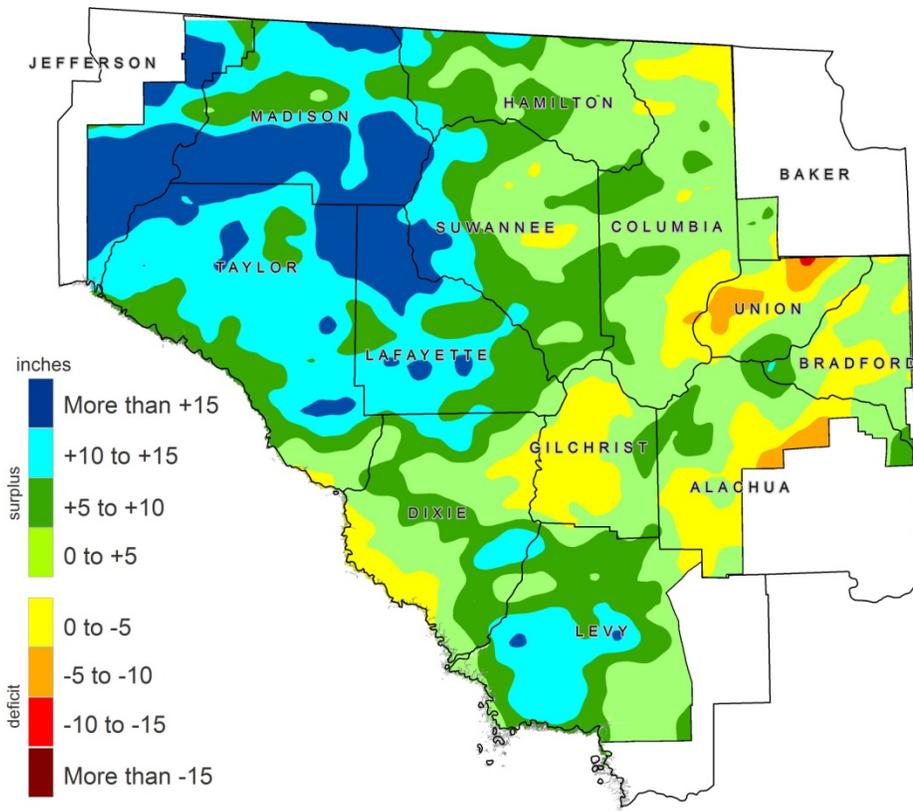


Figure 5: 12-month Rolling Rainfall Deficit Since 1998

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

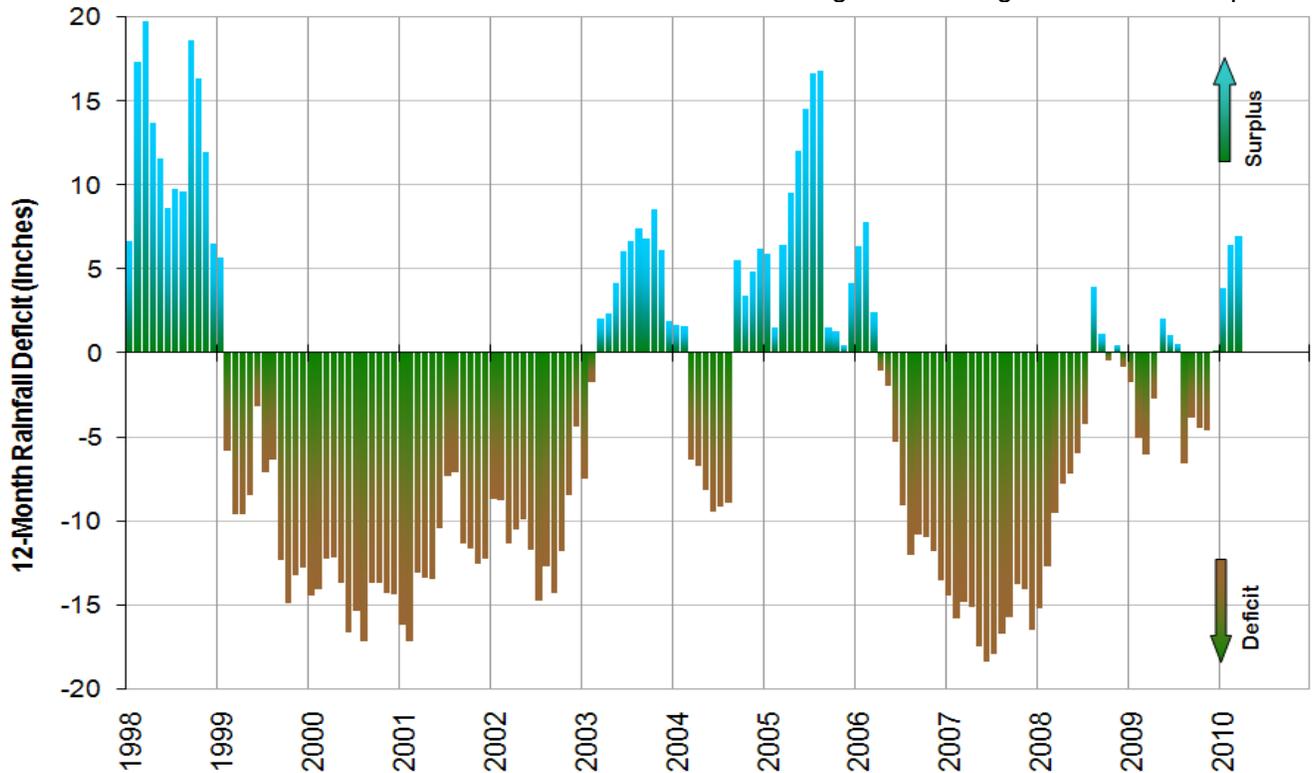
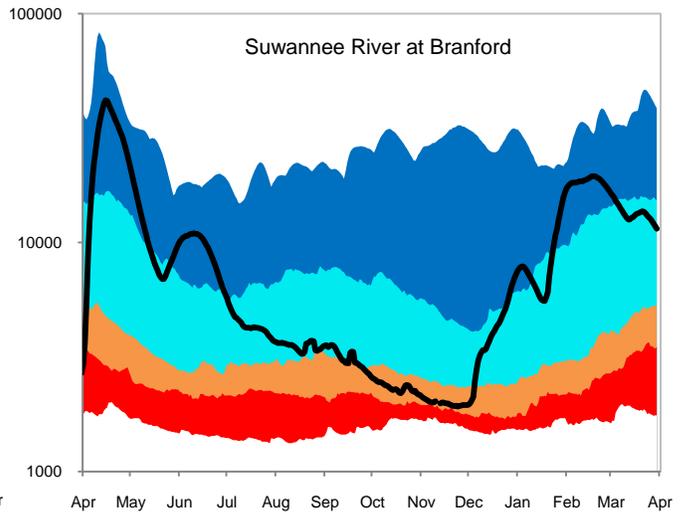
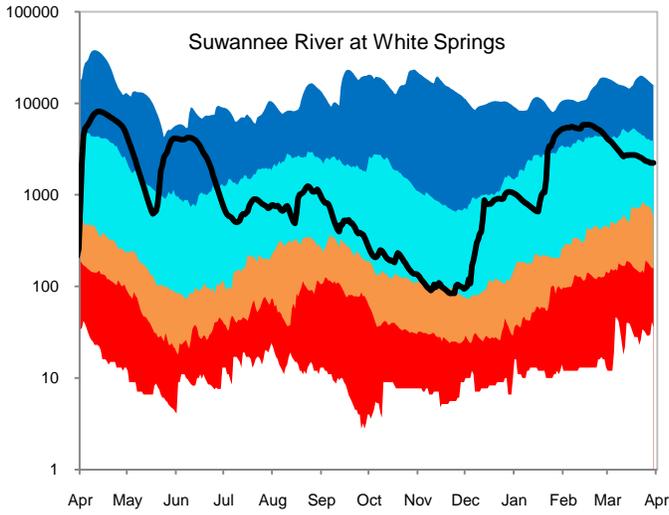
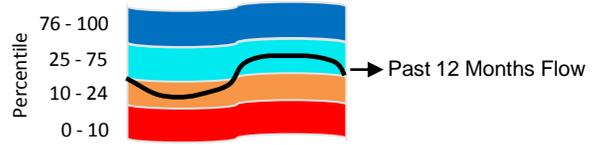


Figure 6: Daily River Flow Statistics

April 1, 2009 through March 31, 2010



RIVER FLOW, CUBIC FEET PER SECOND

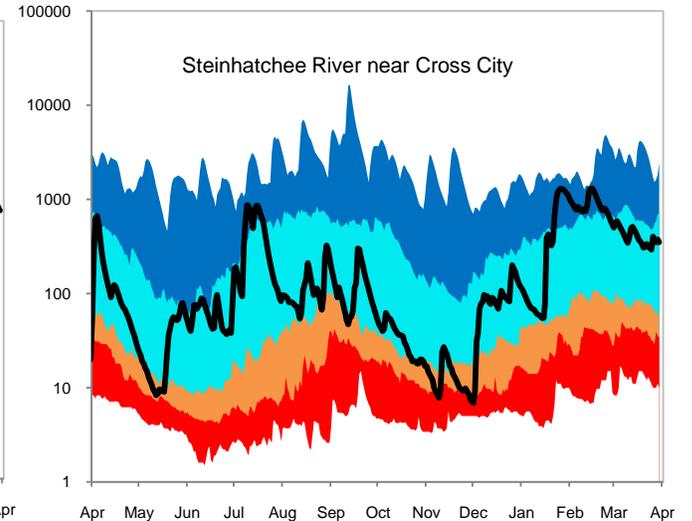
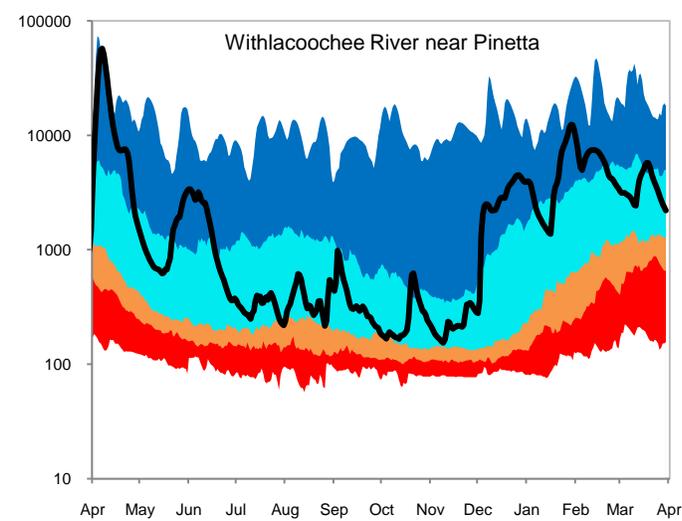
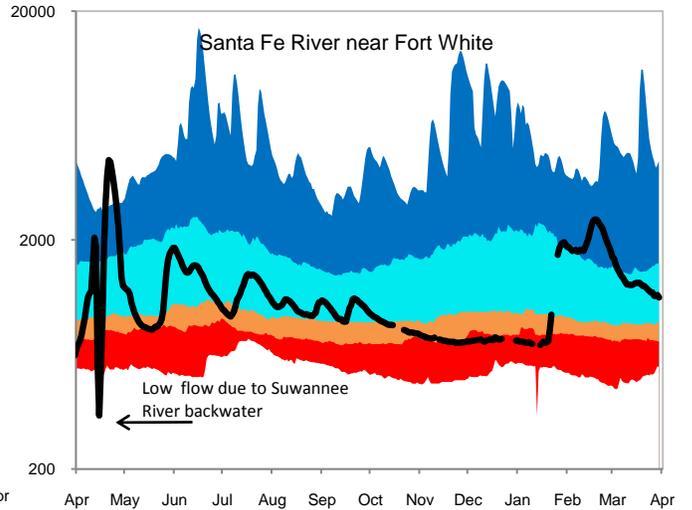
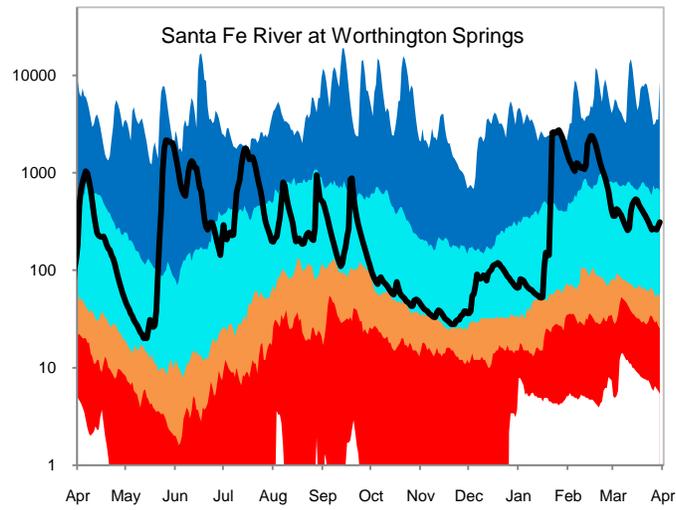


Figure 7: March 2010 Streamflow Conditions

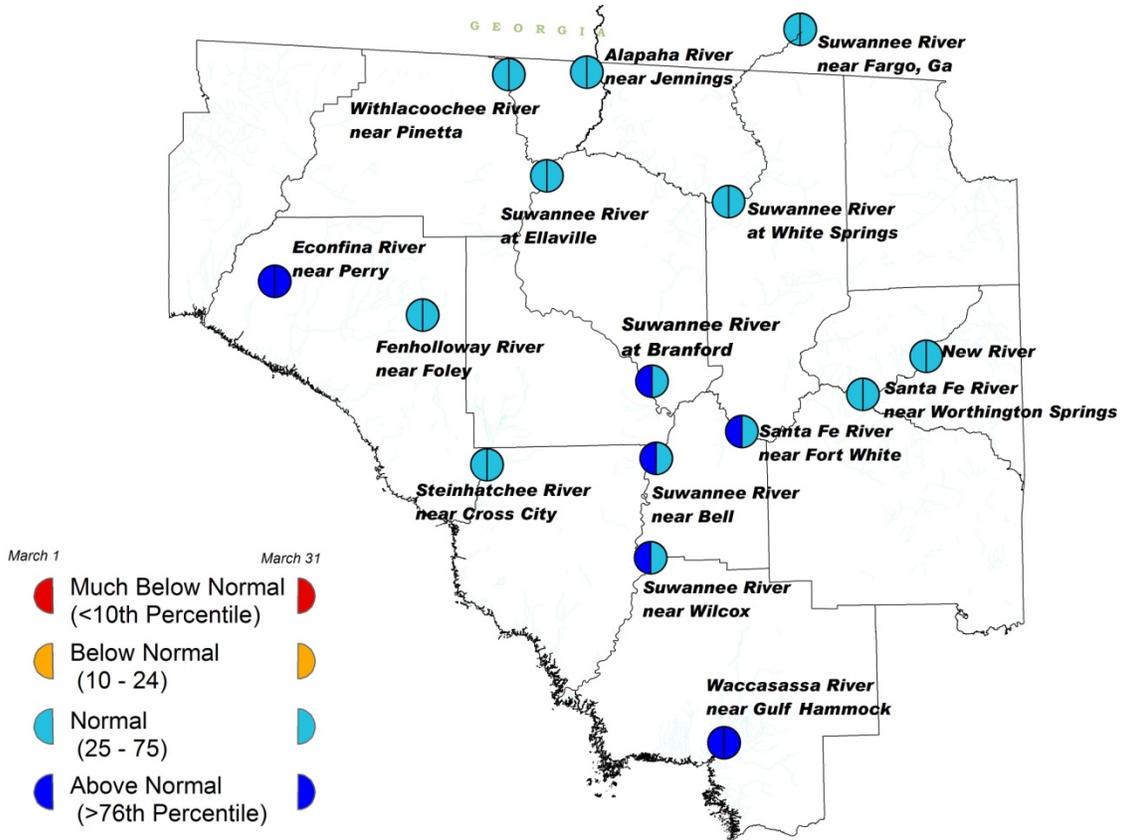
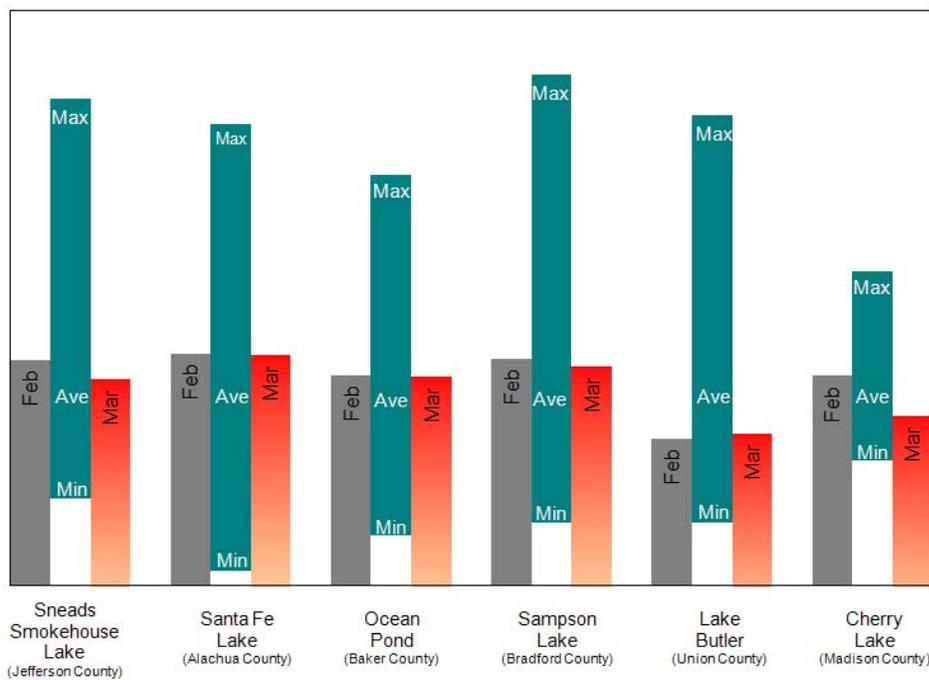


Figure 8: Lake levels, relative to historic maximum, minimum, and average levels.



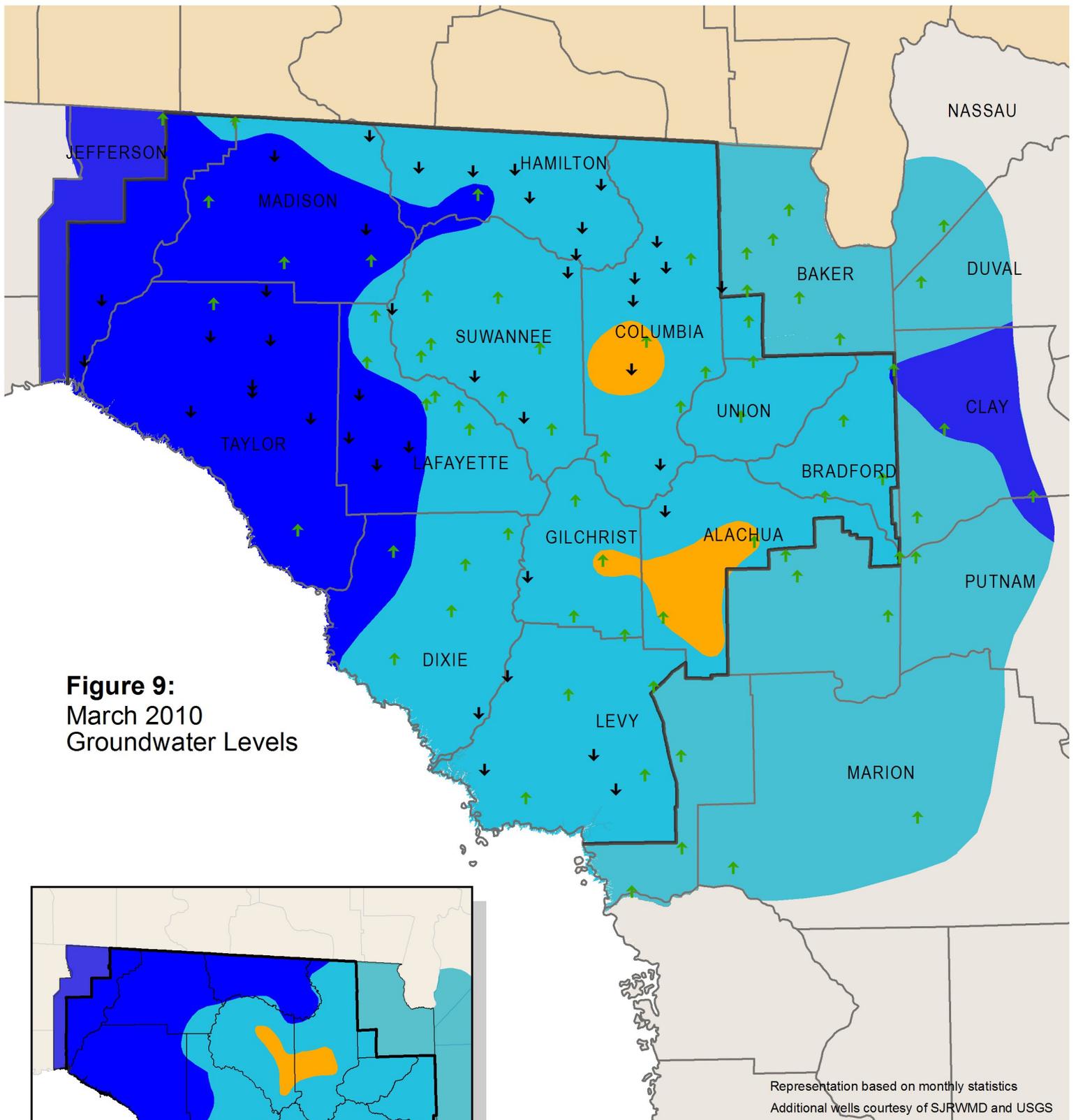
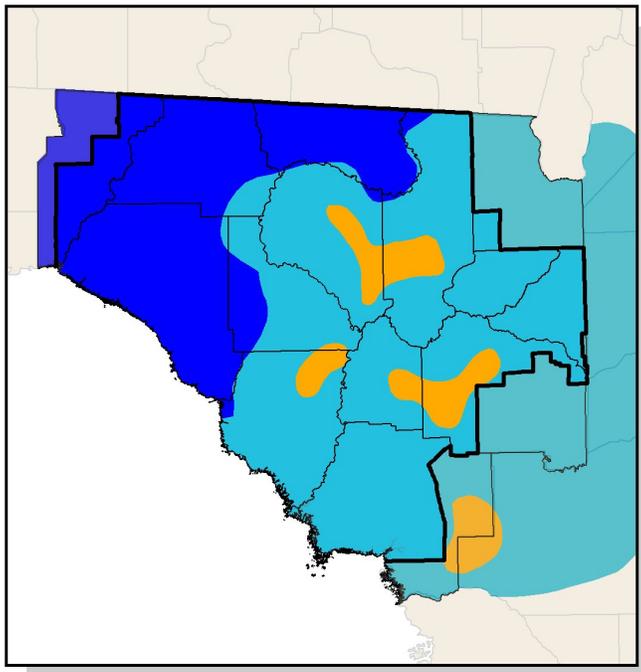


Figure 9:
 March 2010
 Groundwater Levels



Inset: February 2010 Groundwater Levels

- Representation based on monthly statistics
 Additional wells courtesy of SJRWMD and USGS
- 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

Figure 10: Monthly Groundwater Level Statistics

Levels April 1, 2009 through March 31, 2010

Period of Record Beginning 1978

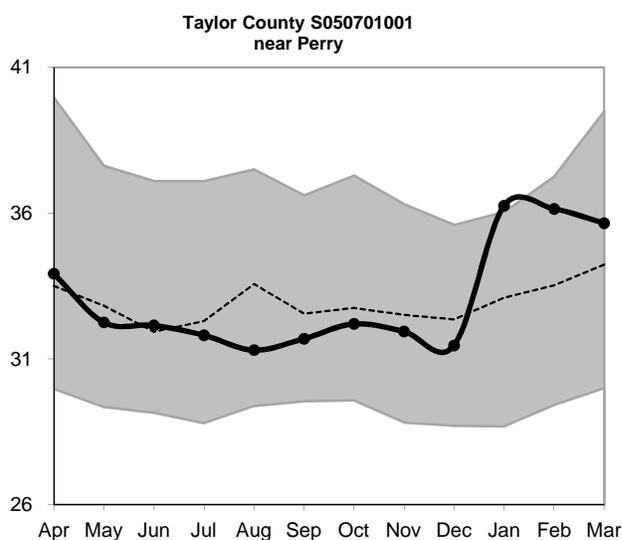
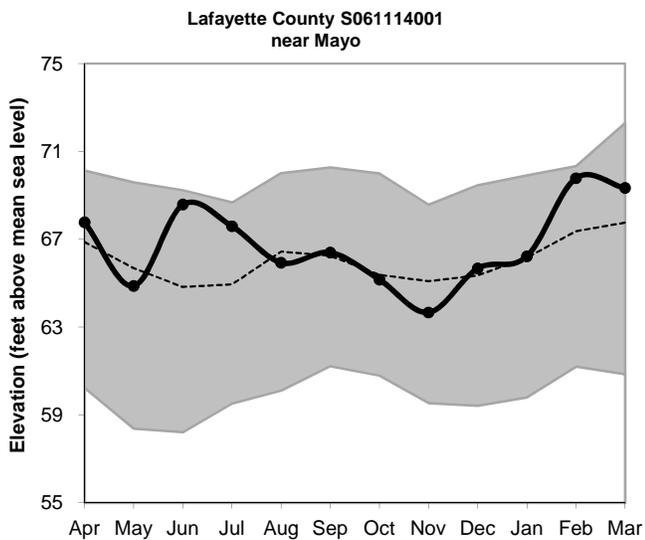
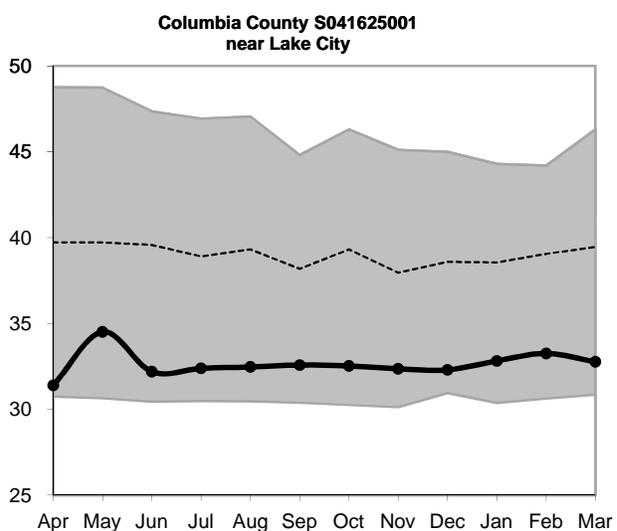
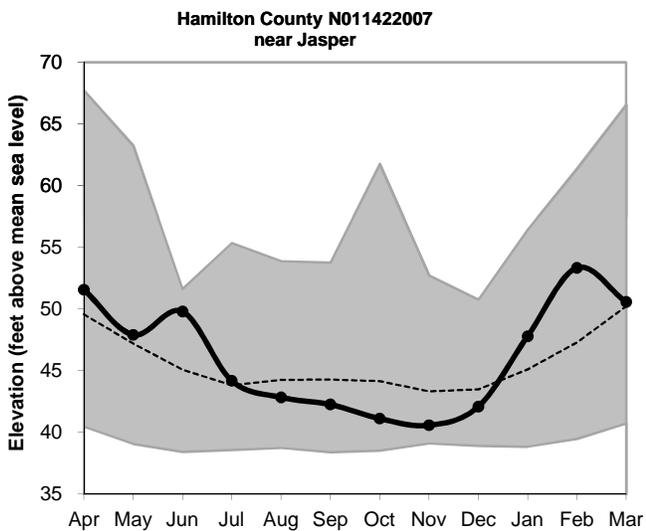
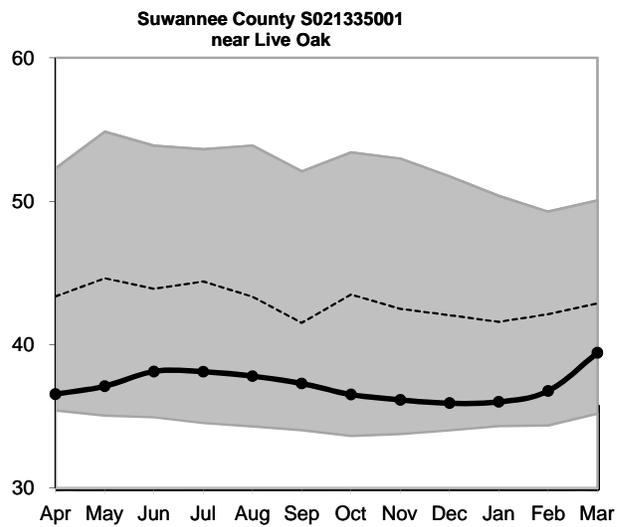
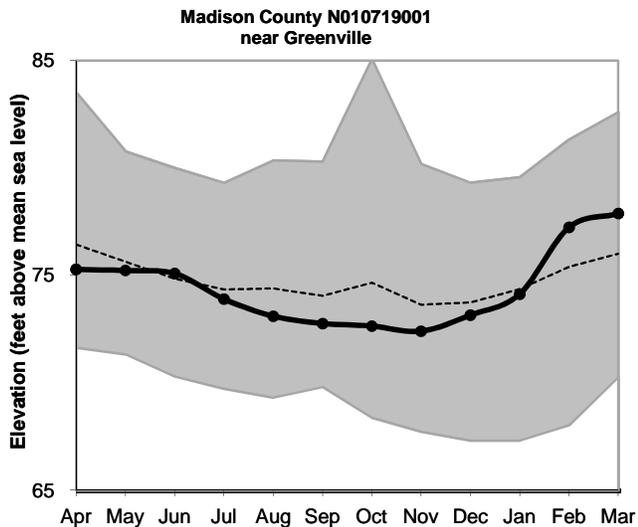
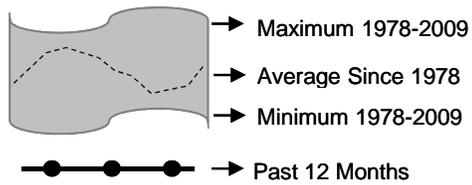


Figure 10, cont.: Monthly Groundwater Level Statistics
 Levels April 1, 2009 through March 31, 2010
 Period of Record Beginning 1978

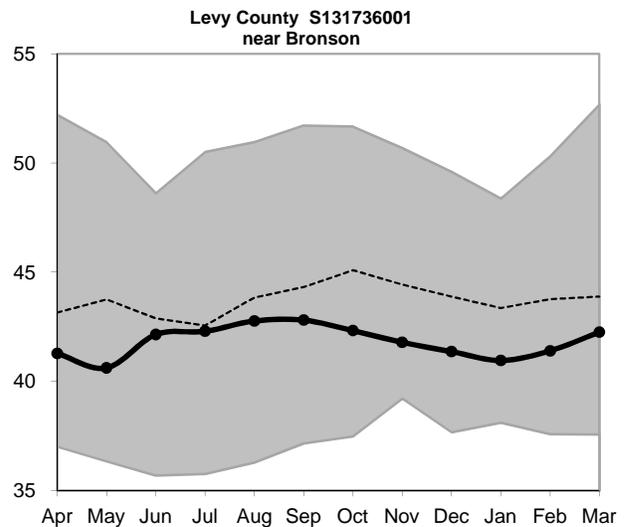
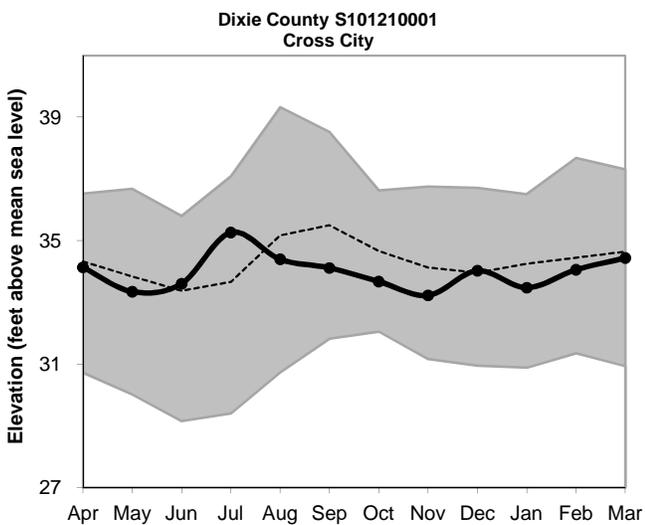
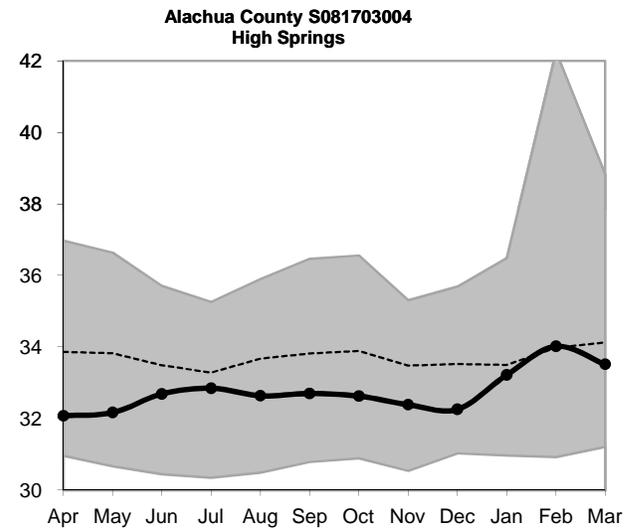
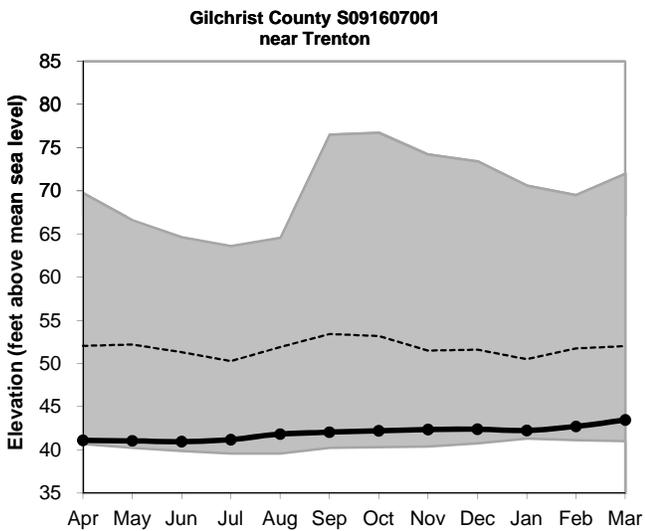
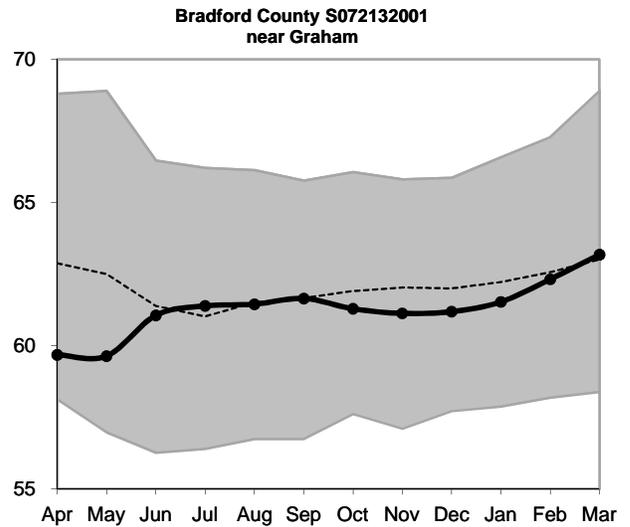
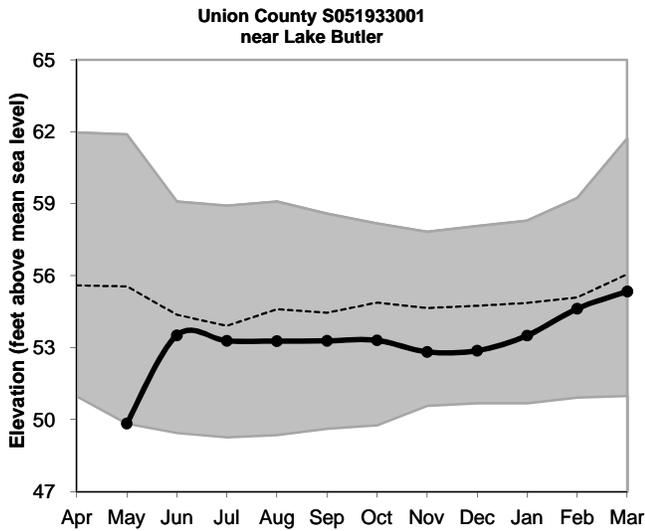
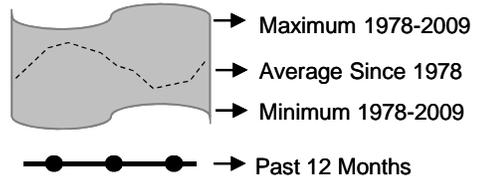
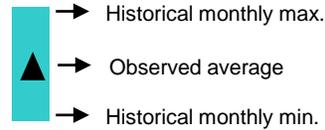


Figure 11: Monthly Springflow Statistics

Flows April 1, 2009 through March 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.

