

SUWANNEE RIVER WATER MANAGEMENT DISTRICT

MEMORANDUM

TO: Governing Board

FROM: Robbie McKinney, Hydrologic Program Manager, Office of Water Resources

THRU: Hugh Thomas, Executive Director

DATE: April 30, 2025

RE: April 2025 Hydrologic Conditions Report

RAINFALL

- Districtwide average rainfall for the month was 1.13", which was about 67 percent lower than the 1932-2024 average of 3.40" (Table 1, Figure 1). The 12-month period ending April 30 reflected a Districtwide rainfall deficit of 2.54", which was a marked degradation to the 0.51" surplus seen at the end of March. District counties ranged from <1" to 2" of rainfall on average, with parts of Taylor, Jefferson, Madison, Lafayette, Suwannee, Hamilton, Gilchrist, Alachua, and Levy counties receiving more than 2.5" of rainfall (Figure 2).
- Overall, a 12-month rainfall deficit was present in 4 of the basins, with the Waccasassa Basin maintaining a small surplus at the end of April (Figure 3). Areas of 12-month surpluses greater than 10" were represented in the Waccasassa Basin, while deficits greater than 10" were observed throughout each of the 5 river basins. Only the Aucilla Basin showed an overall 3-month rainfall surplus, and each of the other 4 basins transitioned from a surplus to a deficit by the end of April (Figure 4). Over the past 3 months, the Aucilla, Coastal, and Suwannee basins showed small portions with surpluses greater than 3", while areas with greater than 5" of rainfall deficits were concentrated in each of the basins except the Aucilla.

SURFACE WATER

- **Rivers:** Many of the river gages in Figure 5 finished the month in the normal (25th – 75th percentile) range, with the Pinetta and Statenville gages showing flows in the below normal (10th – 25th percentile) category. Most of the monitored river gages in South Georgia had below normal flows to end April. The North Florida gages, however, had flows mostly in the normal range except for Graham and North Prong St. Marys, which were both much below normal (<10th percentile) this month (Figure 6).
- **Lakes:** Water levels decreased at a majority of the monitored lakes in the District this month (Figure 7). The median decrease in stage across all measured lakes was about 0.4', with 7 of the monitored lakes ending the month of April below their respective long-term average. Alligator Lake represented the largest water level decrease with a drop of 1.9' since last month.
- **Springs:** Flow measurements were made at 21 springs in April by the U.S. Geological Survey (USGS), District staff, and contractors. Madison Blue Springs saw flows in the above normal (75th – 100th percentile) and normal categories throughout April (Figure 8). Blue Hole, on the other hand, showed normal flows throughout the month of April (Figure 9).

GROUNDWATER

Upper Floridan Aquifer (UFA) levels across the District reflected normal, high, and very high (>90th percentile) levels this month (Figure 10). Overall, groundwater levels decreased by a median about 0.8' since the end of March and ended April with a Districtwide average around the 67th percentile.

Each of the index wells except Jasper, Mayo, Perry, and Cross City was higher than its respective historical monthly average level at the end of the month (Figure 11). Long-term District UFA well levels ended April in the normal or above normal categories (Figure 12a). Monitored long-term wells with records that extend back to at least 1964 showed mostly decreasing water levels this month relative to last month (Figure 12b).

CLIMATE AND DROUGHT OUTLOOK

El Niño Southern Oscillation neutral conditions currently present and favored through the summer (74% chance from June to August) and chances exceed 50% through August to October.

The NOAA three-month seasonal outlook suggests above normal temperatures along with slightly above normal precipitation throughout the District from May to July 2025.

The U.S. Drought Monitor report released on Thursday, May 8th, shows the District covered with either Abnormally Dry (D0) or Moderate Drought (D1) designations.

CONSERVATION

Water conservation continues to be necessary to sustain healthy groundwater levels and flows in District springs and rivers. All users are urged to eliminate unnecessary uses. Landscape irrigation during Daylight Saving Time (March 9, 2025, to November 2, 2025) is limited to twice per week based on a District water conservation rule that applies to residential landscaping, public or commercial recreation areas, and businesses that are not regulated by a District-issued water use permit. Information about SRWMD's year-round conservation measures is available at <http://www.srwmd.org/index.aspx?NID=337>.

ACKNOWLEDGMENTS

The Hydrologic Conditions Report is a monthly combined effort between the Offices of Water Resources and Hydrologic Data Services data collection and review programs. Acknowledgment is made to the following staff for their contributions to the timely production of this report:

- Data Collection: Matthew Jordan, Dylan Mock, Kevin Posada, and Vince Robinson
- QA/QC and Reporting: Susie Hetrick, Robbie McKinney, Brandi Sistrunk, and Mitch Valerio
- Administrative Support/Document Preparation/IT: Paul Buchanan, Bo Cameron, Tyler Jordan, Andrew Neel, and April Olive

This report is compiled in compliance with Chapter 40B-21.211, Florida Administrative Code, using rainfall (gage-adjusted radar-derived estimates), groundwater (122 wells), surface water (35 stations), and general information such as drought indices and forecasts. Data are provisional and updated as revised data become available. Data are available at <http://www.mysuwanneeriver.com/507/Water-Data-Portal> or upon request.

Table 1: Nexrad Monthly Rainfall Totals by County (inches)

County	April 2025	April Average*	Month % of Normal	Total Last 12 Months	Annual % of Normal*
Alachua	0.88	3.15	28%	46.18	88%
Baker	0.91	3.39	27%	48.44	92%
Bradford	0.80	2.98	27%	47.54	92%
Columbia	0.79	3.46	23%	50.09	95%
Dixie	0.51	3.36	15%	54.58	94%
Gilchrist	0.91	3.30	27%	52.30	96%
Hamilton	1.31	3.68	35%	49.58	95%
Jefferson	2.00	4.04	50%	50.26	90%
Lafayette	1.38	3.52	39%	56.34	102%
Levy	1.14	3.07	37%	54.45	97%
Madison	2.22	3.84	58%	53.18	99%
Suwannee	0.64	3.65	18%	53.86	101%
Taylor	1.31	3.61	36%	51.05	90%
Union	0.87	3.24	27%	47.98	91%

*Based on PRISM LT81 monthly rainfall averages by county (1927-2023)

April 2025 District Average	1.13
April Long-Term Average (1932-2024)	3.40
Historical 12-month Average (1932-2024)	54.76
Past 12-Month Total	52.22
12-Month Rainfall Surplus/Deficit	-2.54

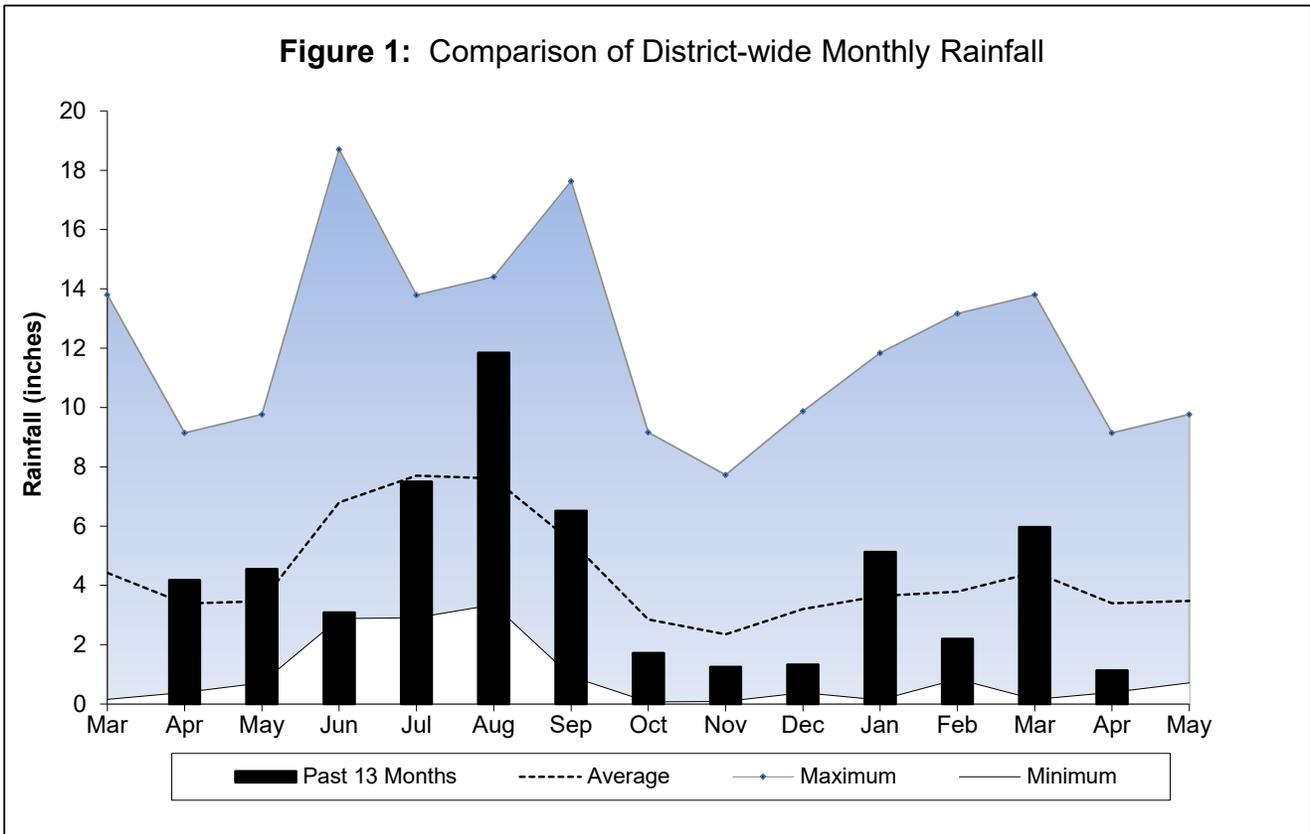


Figure 2: April 2025 SRWMD Gage-adjusted Radar Rainfall

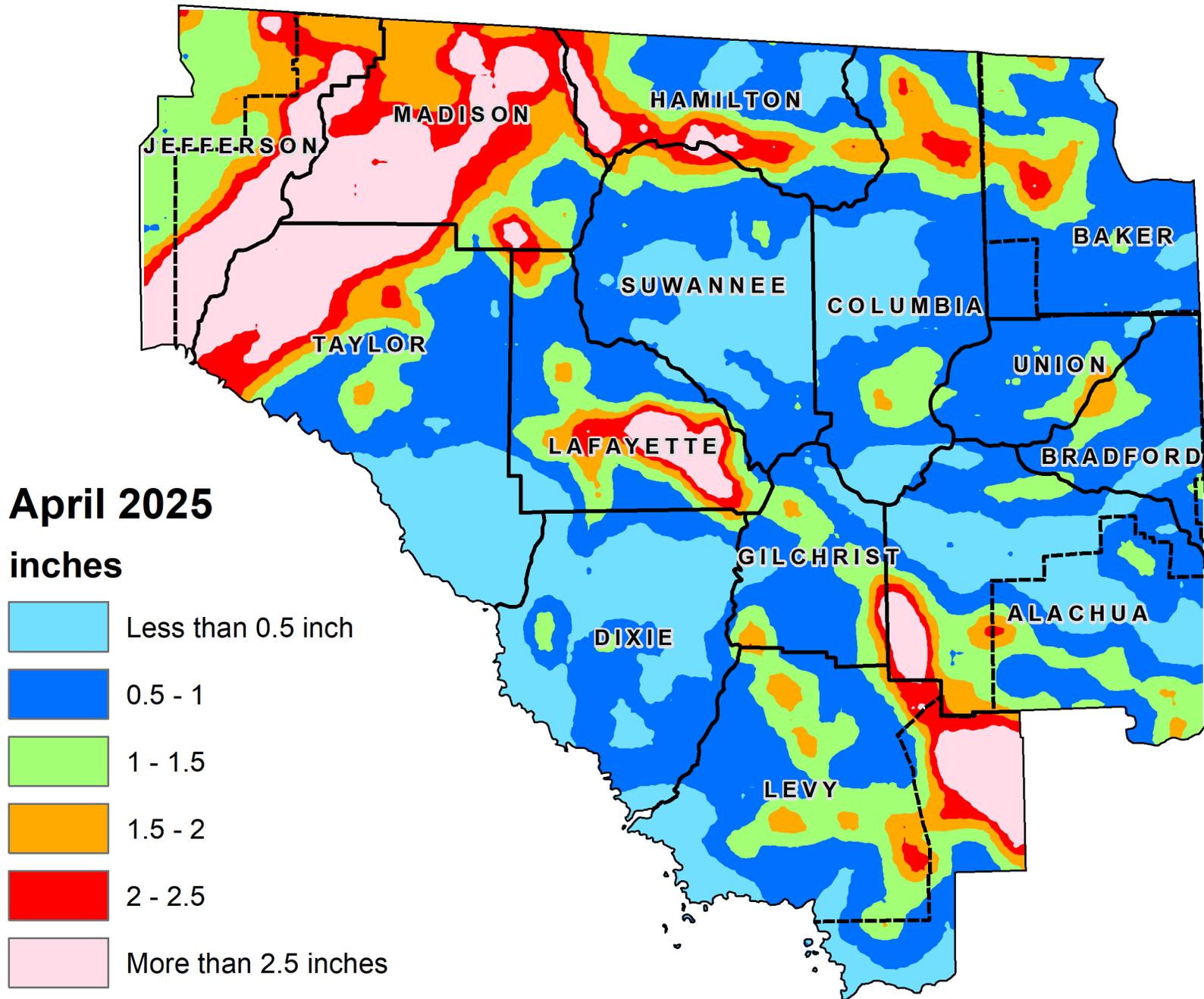


Figure 3: 12 - Month Rainfall Surplus/Deficit by River Basin through April 30, 2025

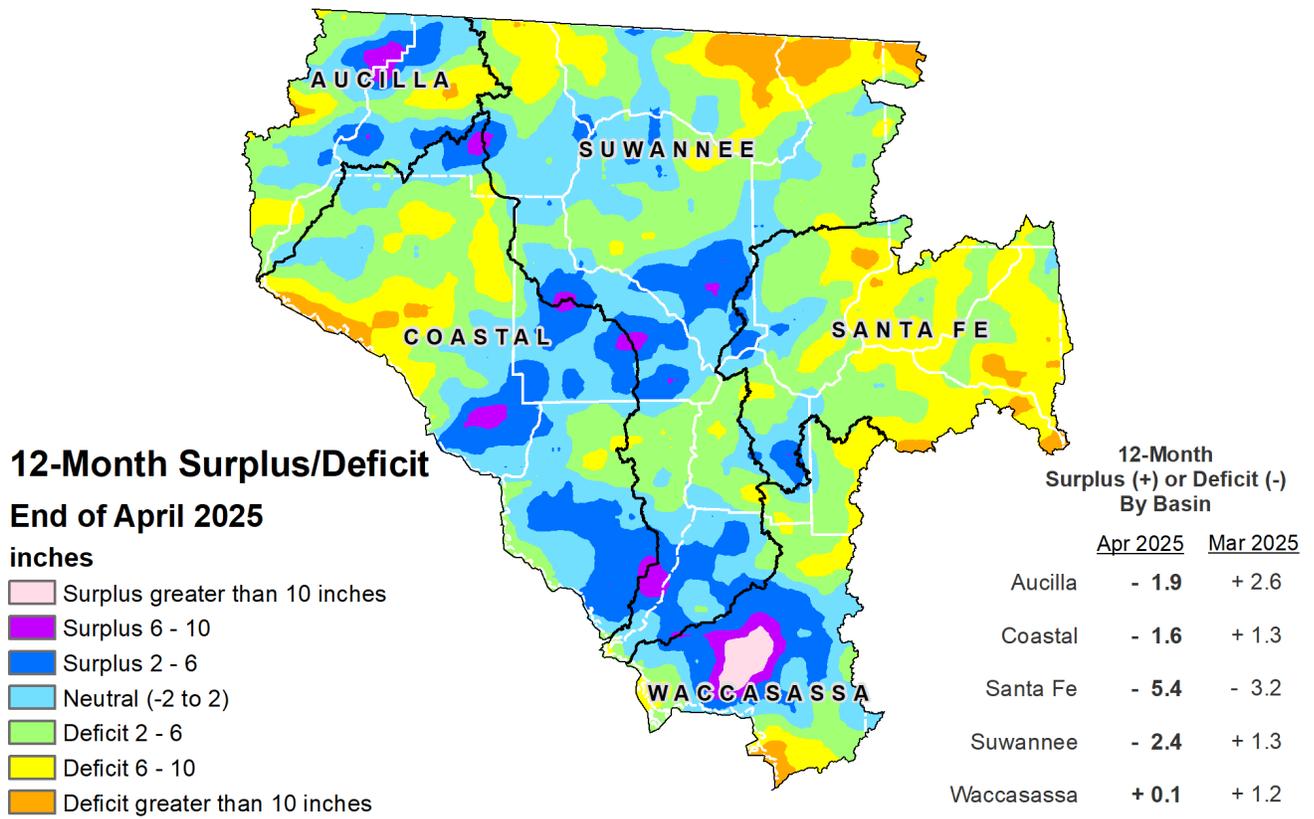


Figure 4: 3 - Month Rainfall Surplus/Deficit by River Basin through April 30, 2025

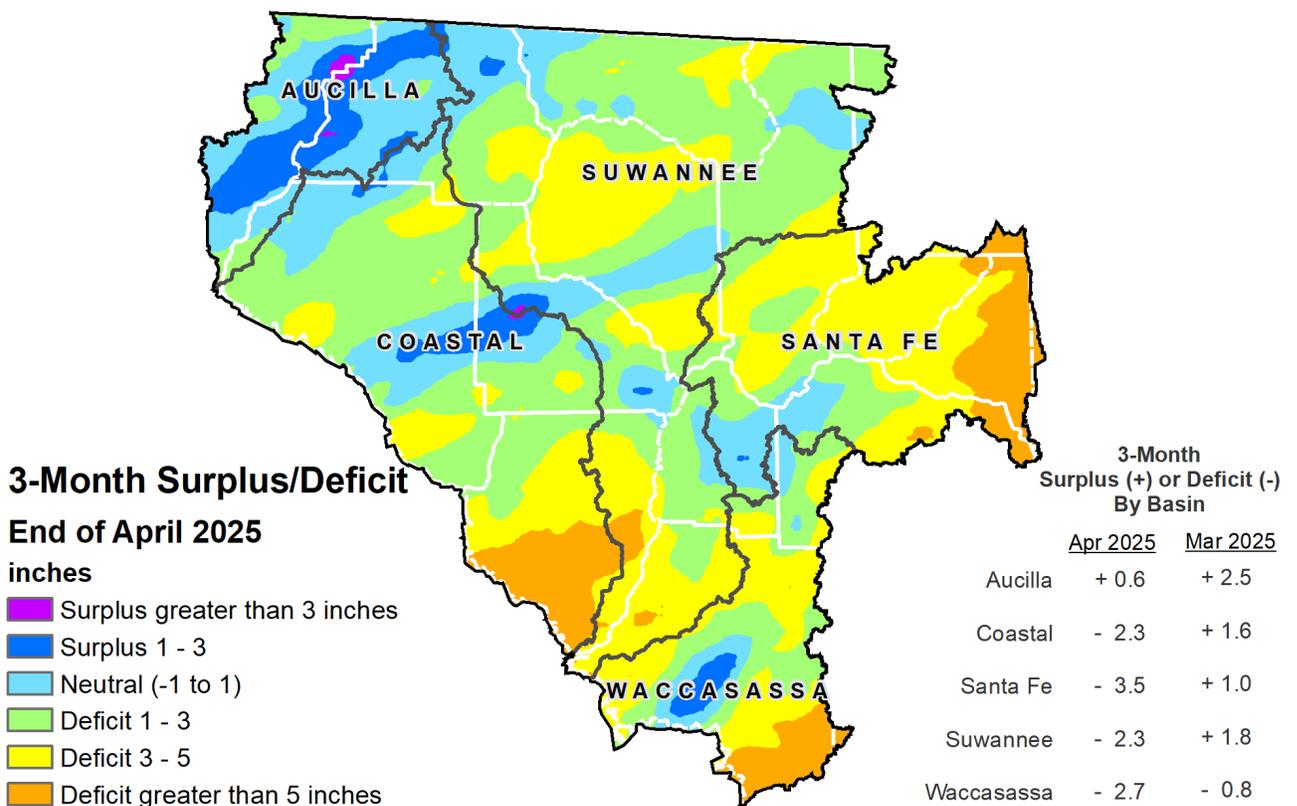


Figure 5: Daily River Flow Statistics

May 1, 2024 through April 30, 2025

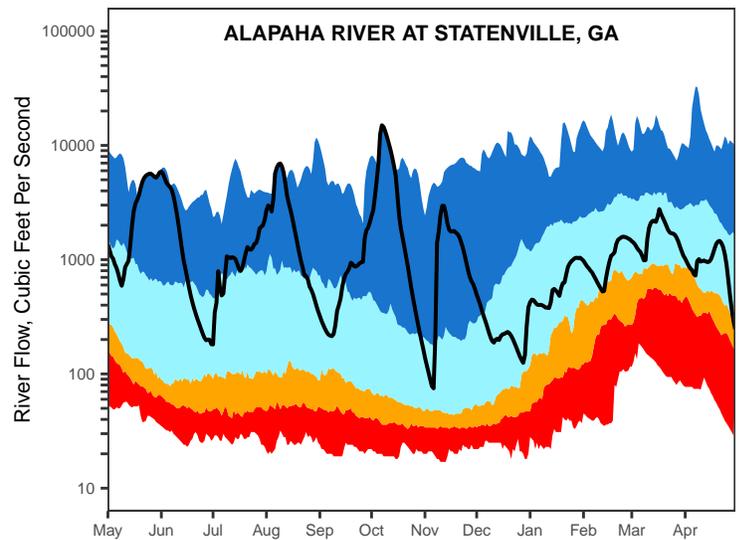
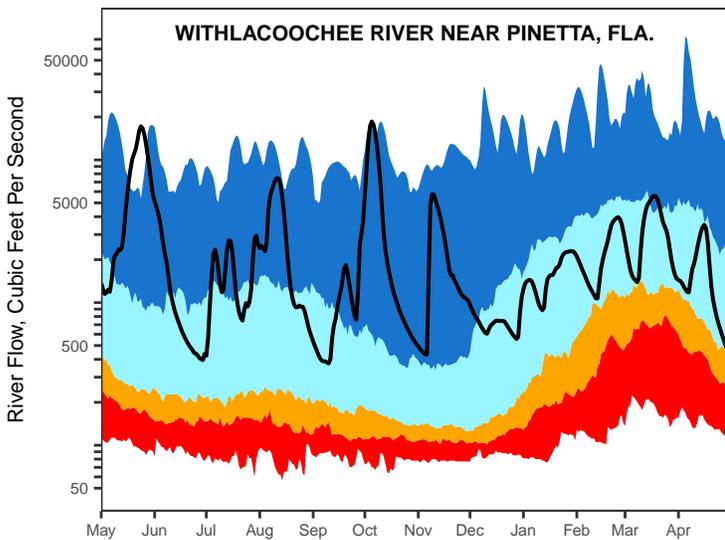
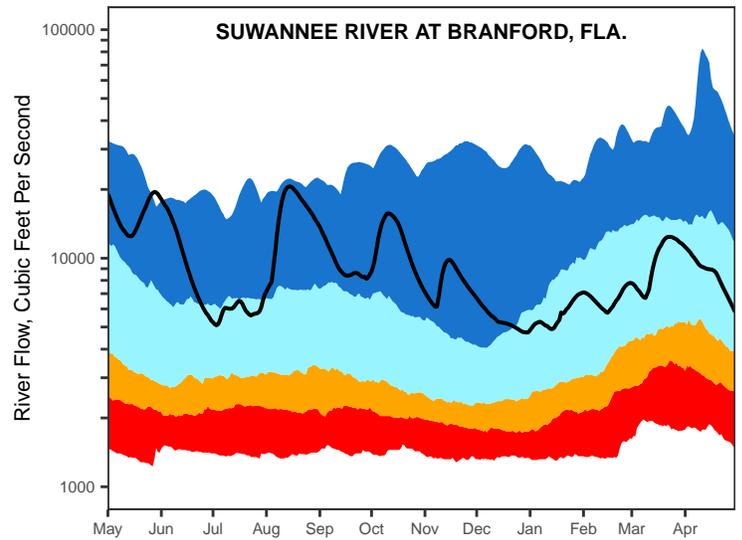
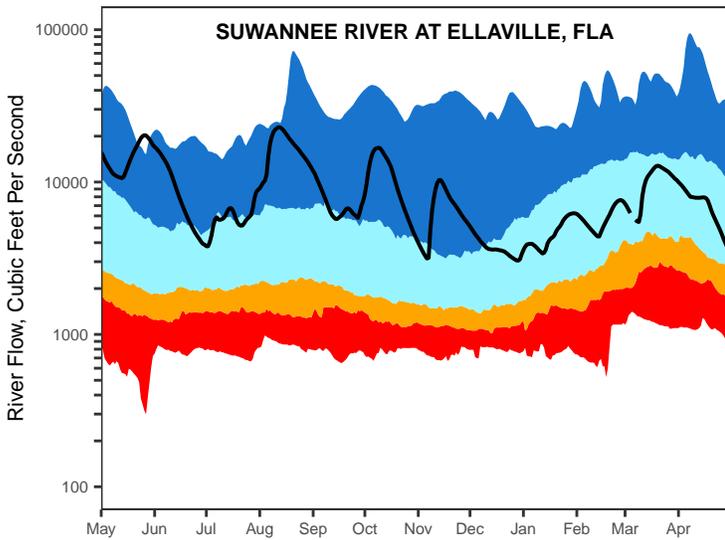
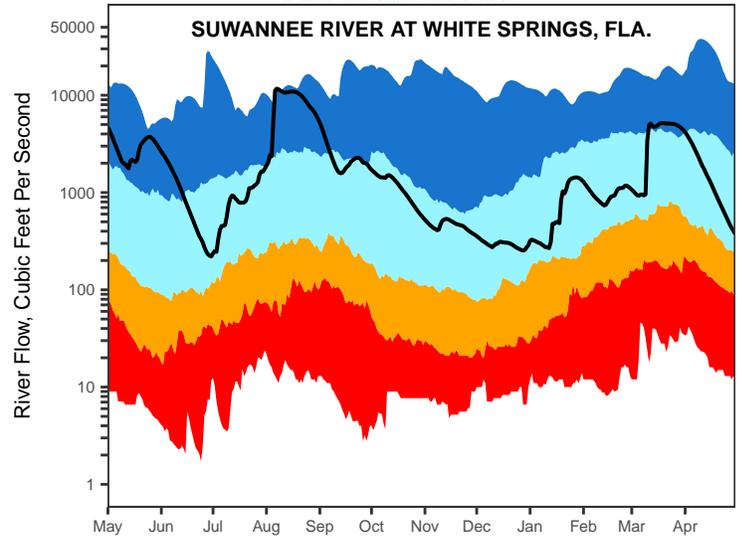
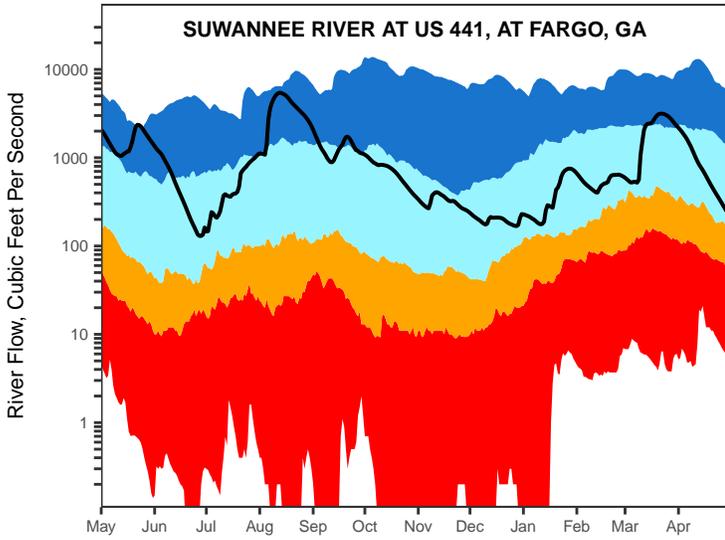
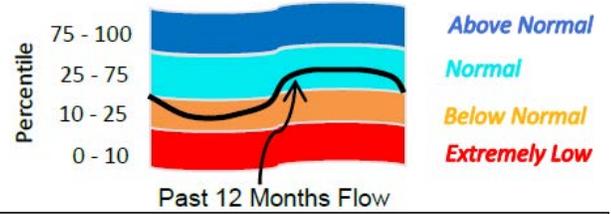
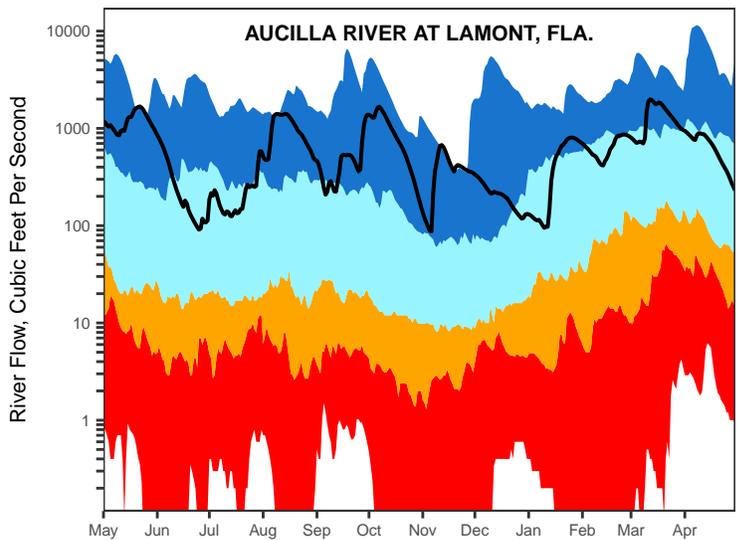
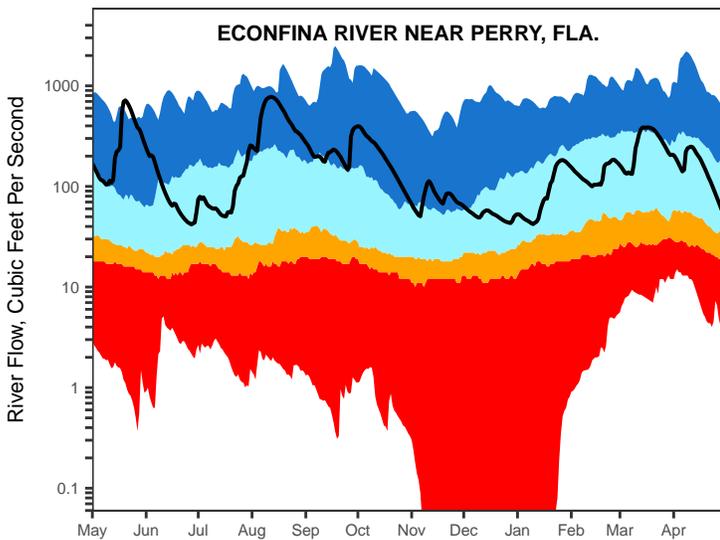
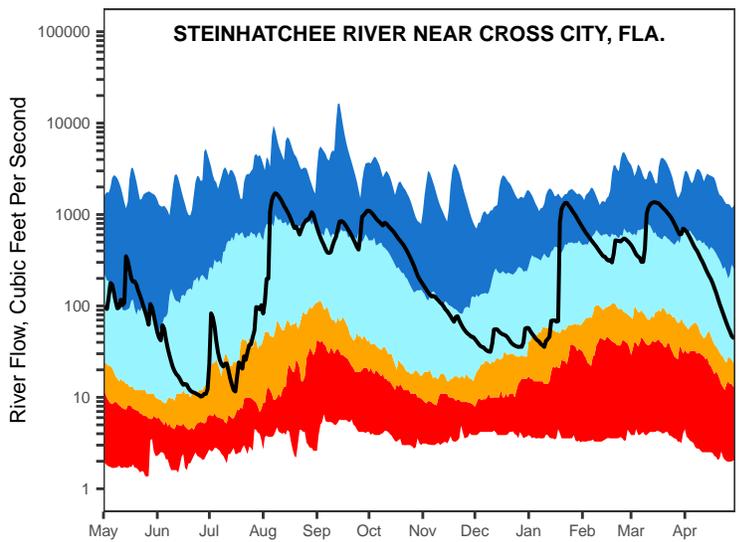
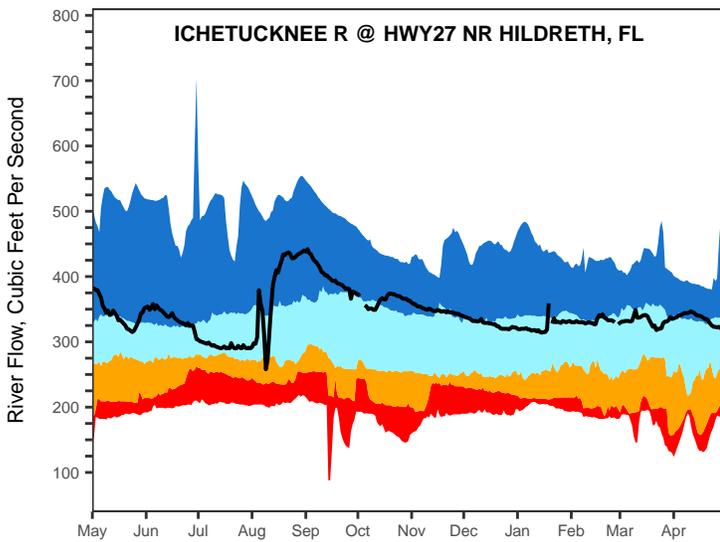
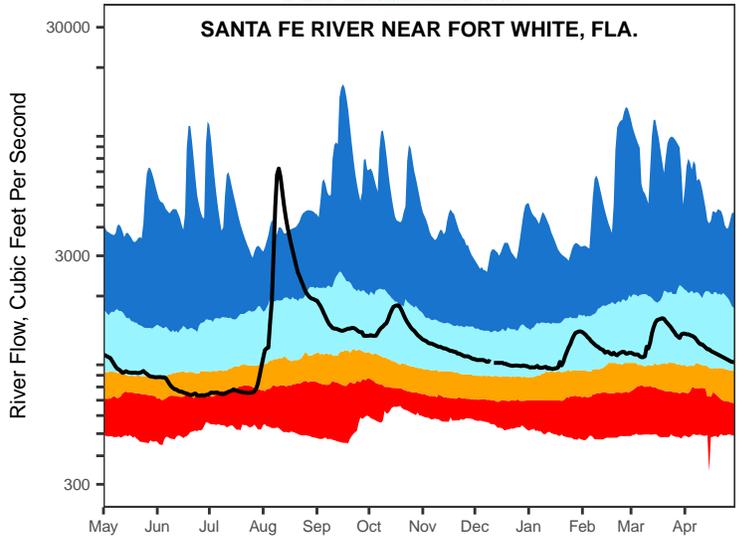
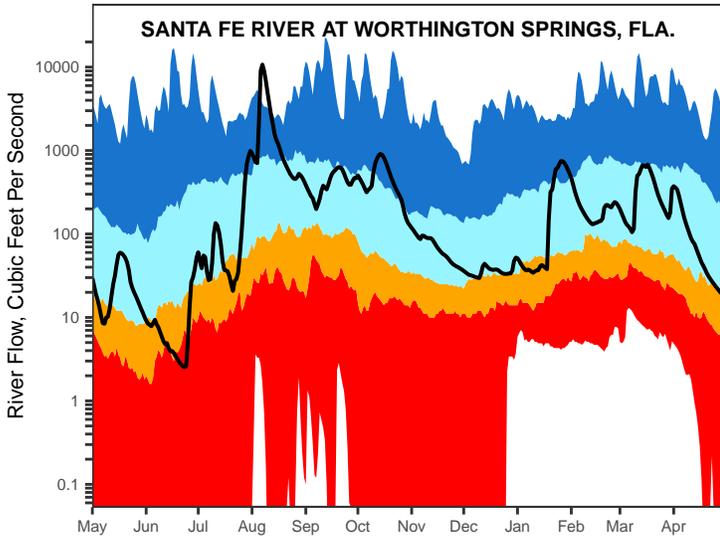
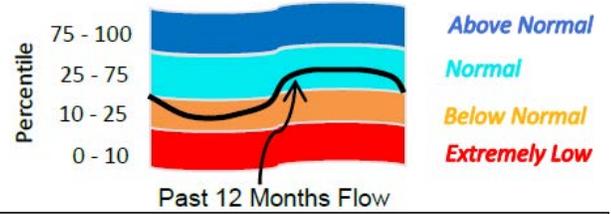


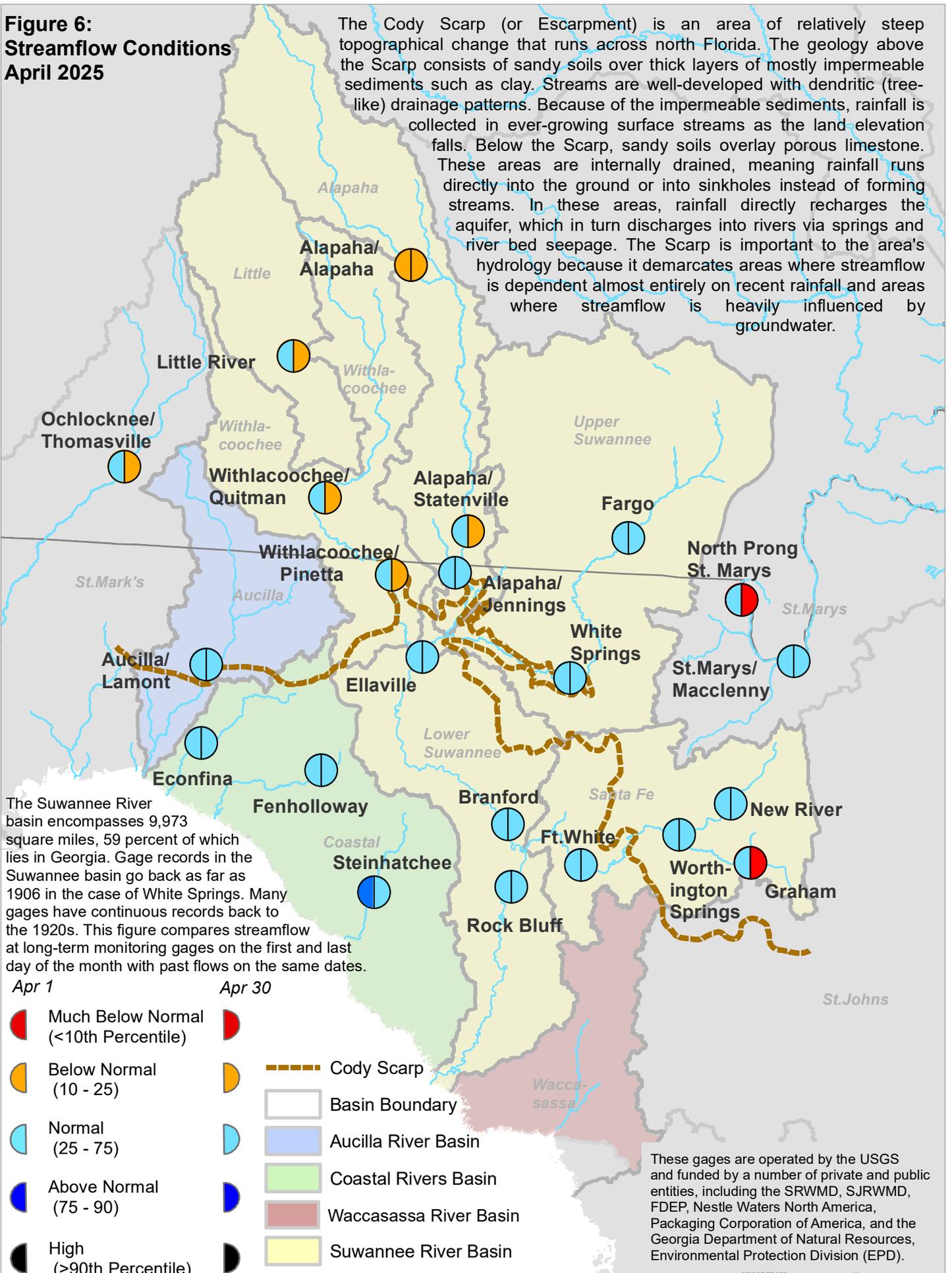
Figure 5, cont.: Daily River Flow Statistics

May 1, 2024 through April 30, 2025



**Figure 6:
Streamflow Conditions
April 2025**

The Cody Scarp (or Escarpment) is an area of relatively steep topographical change that runs across north Florida. The geology above the Scarp consists of sandy soils over thick layers of mostly impermeable sediments such as clay. Streams are well-developed with dendritic (tree-like) drainage patterns. Because of the impermeable sediments, rainfall is collected in ever-growing surface streams as the land elevation falls. Below the Scarp, sandy soils overlay porous limestone. These areas are internally drained, meaning rainfall runs directly into the ground or into sinkholes instead of forming streams. In these areas, rainfall directly recharges the aquifer, which in turn discharges into rivers via springs and river bed seepage. The Scarp is important to the area's hydrology because it demarcates areas where streamflow is dependent almost entirely on recent rainfall and areas where streamflow is heavily influenced by groundwater.



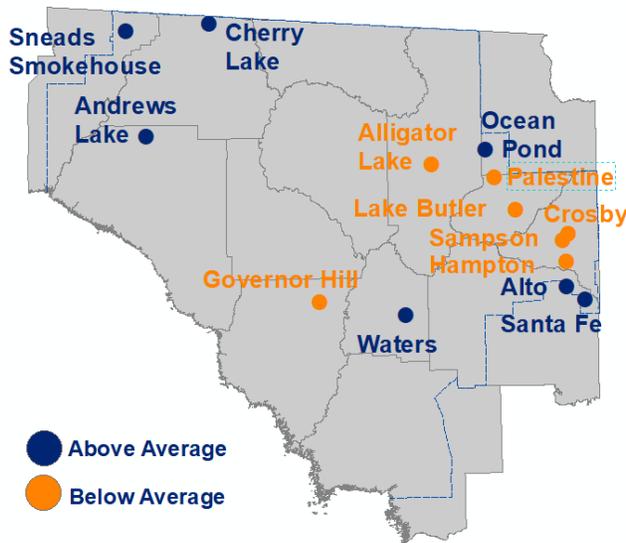
The Suwannee River basin encompasses 9,973 square miles, 59 percent of which lies in Georgia. Gage records in the Suwannee basin go back as far as 1906 in the case of White Springs. Many gages have continuous records back to the 1920s. This figure compares streamflow at long-term monitoring gages on the first and last day of the month with past flows on the same dates.

- | | |
|--------------------------------------|--------|
| Apr 1 | Apr 30 |
| | |
| Much Below Normal (<10th Percentile) | |
| | |
| Below Normal (10 - 25) | |
| | |
| Normal (25 - 75) | |
| | |
| Above Normal (75 - 90) | |
| | |
| High (>90th Percentile) | |

- Cody Scarp
- Basin Boundary
- Aucilla River Basin
- Coastal Rivers Basin
- Waccasassa River Basin
- Suwannee River Basin

These gages are operated by the USGS and funded by a number of private and public entities, including the SRWMD, SJRWMD, FDEP, Nestle Waters North America, Packaging Corporation of America, and the Georgia Department of Natural Resources, Environmental Protection Division (EPD).

Figure 7: April 2025 Lake Levels



SRWMD lakes react differently to climatic changes depending on their location in the landscape. Some lakes, in particular in the eastern part of the District, are embedded in a surficial or intermediate aquifer over relatively impermeable clay deposits. These lakes rise and fall according to local rainfall and surface runoff. They retain water during severe droughts since most losses occur from evaporation. Other lakes, such as Governor Hill and Waters Lake, have porous or “leaky” bottoms that interact with the Floridan aquifer. These lakes depend on groundwater levels to stay high. If aquifer levels are low, these lakes go dry even if rainfall is normal.

The District currently monitors 14 lakes on a long-term basis; much of the data was originally provided by volunteer observers. Monitoring records began in the 1970s, except for Lakes Butler, Sampson, and Santa Fe, which started in 1957.

Feet Above or Below Historic Average

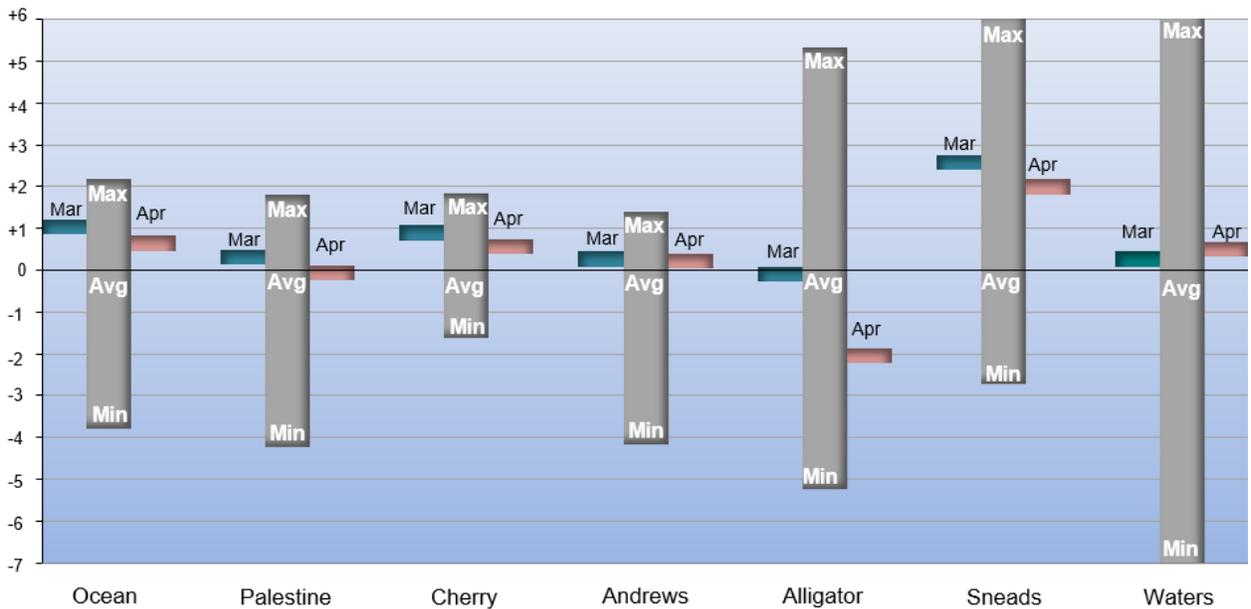
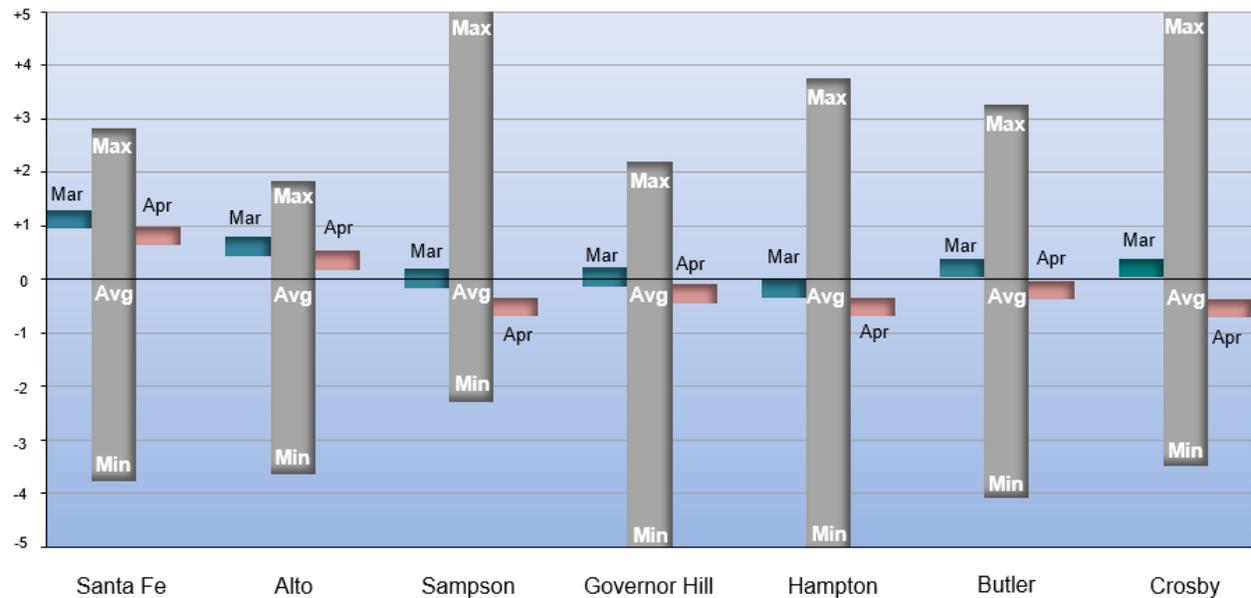


Figure 9: Flow Over the Past 12 Months, Blue Hole (cubic feet per second)

Note: This graph is based on provisional data that are subject to revision

Period 12 Month 05/01/2024 to 05/01/2025

2024-25

Percentile statistics are calculated using data from 05/01/1946 to 09/30/2023

Blue_Hole

■ Max-Q75

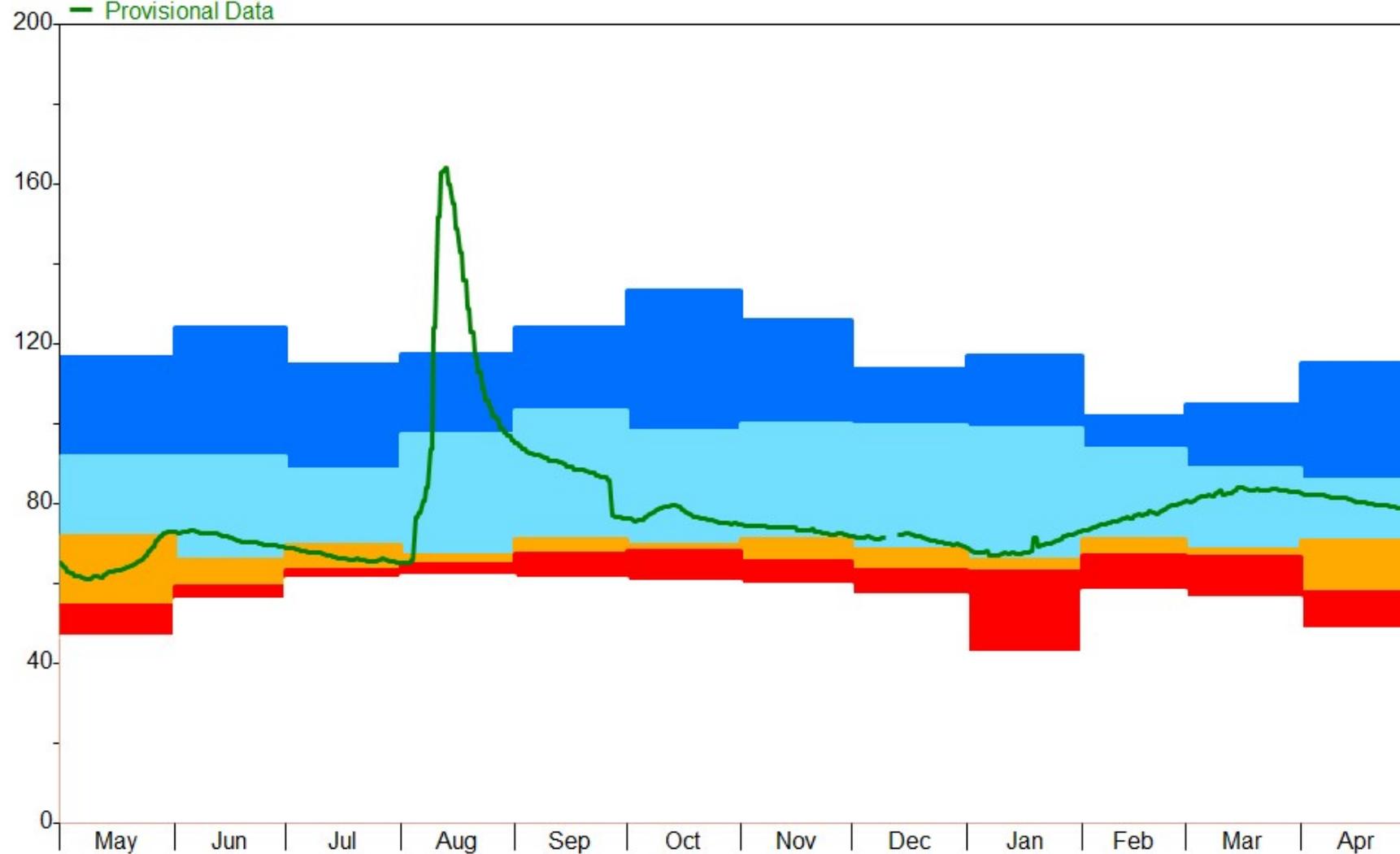
■ Q75-Q25

■ Q25-Q10

■ Q10-Min

— Archived Data

— Provisional Data



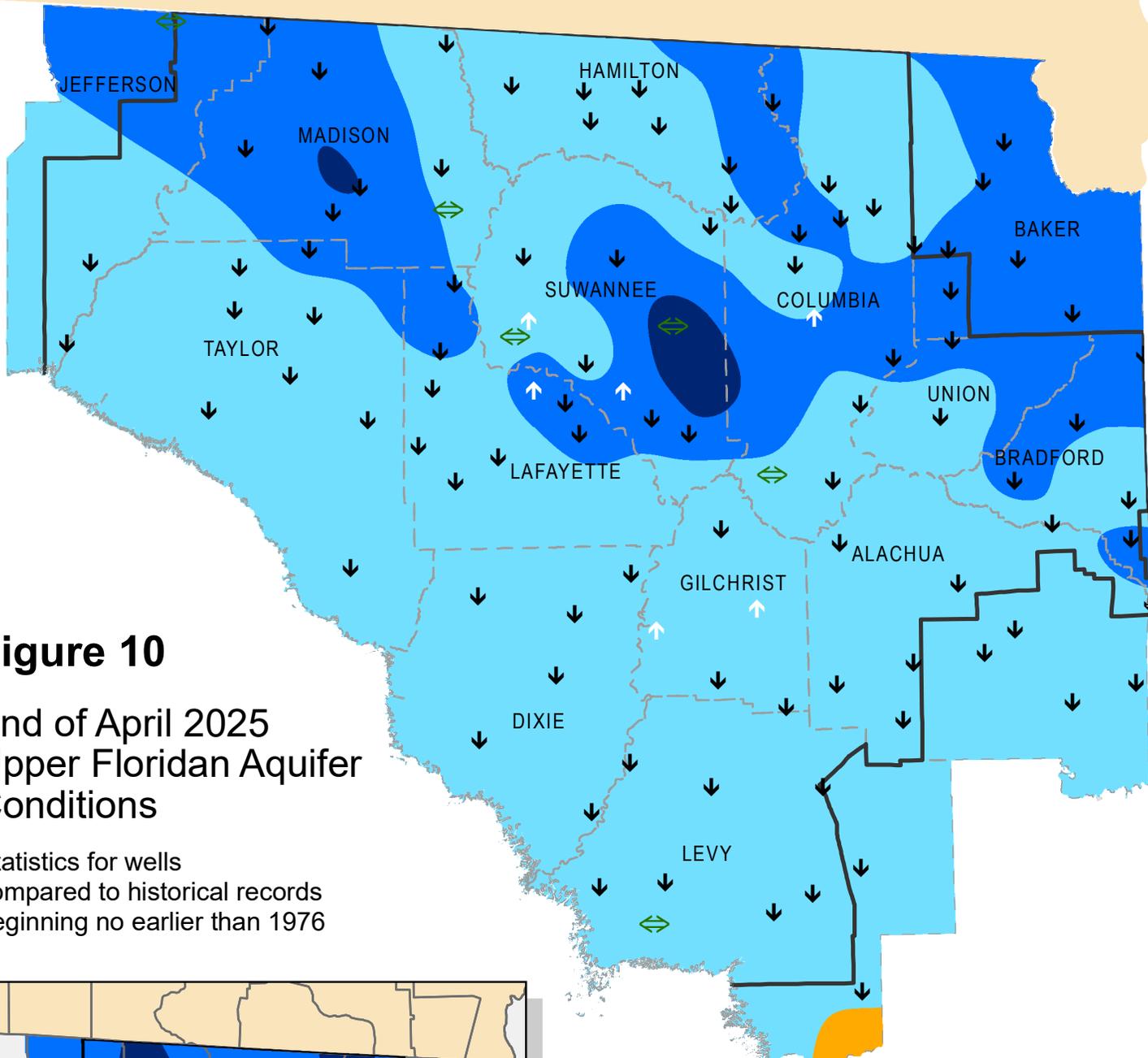
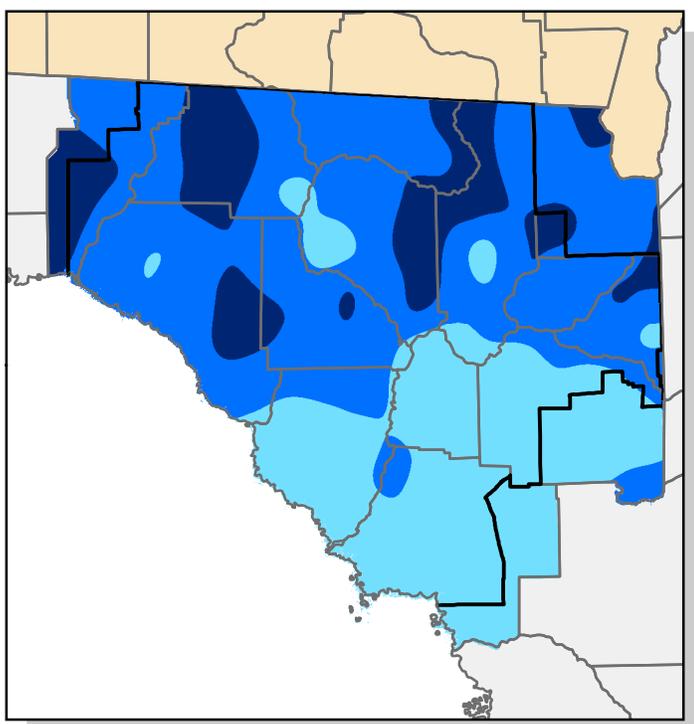


Figure 10

End of April 2025 Upper Floridan Aquifer Conditions

Statistics for wells compared to historical records beginning no earlier than 1976



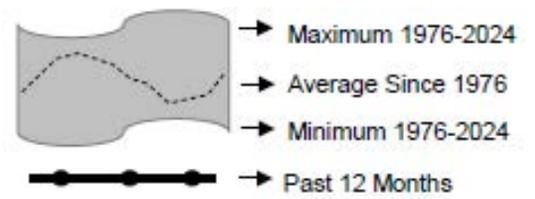
Inset: March Groundwater Percentiles

Additional wells courtesy of SJRWMD, SWFWMD and USGS

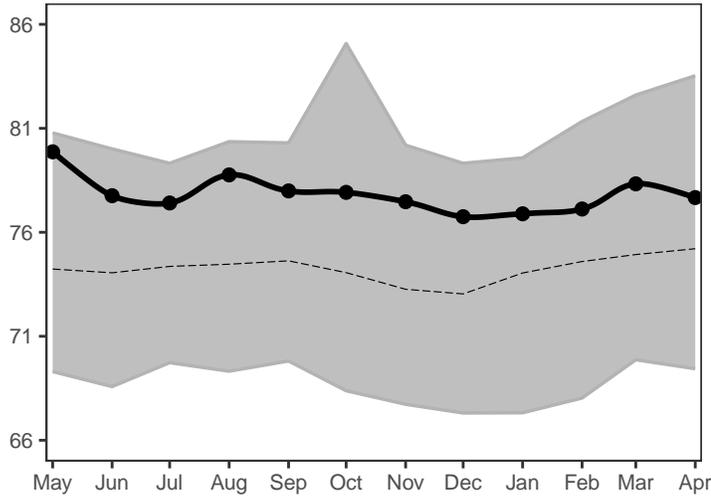
- Extremely High
(Greater than 90th Percentile)
- High
(75th to 90th Percentile)
- Normal
(25th to 75th Percentile)
- Low
(10th to 25th Percentile)
- Extremely Low
(Less than 10th Percentile)
- ↑ ↓ Increase/decrease in level since last month
- ↔ Increase/decrease since last month less than one percent of historic range
- District Boundary

Figure 11: Monthly Groundwater Statistics

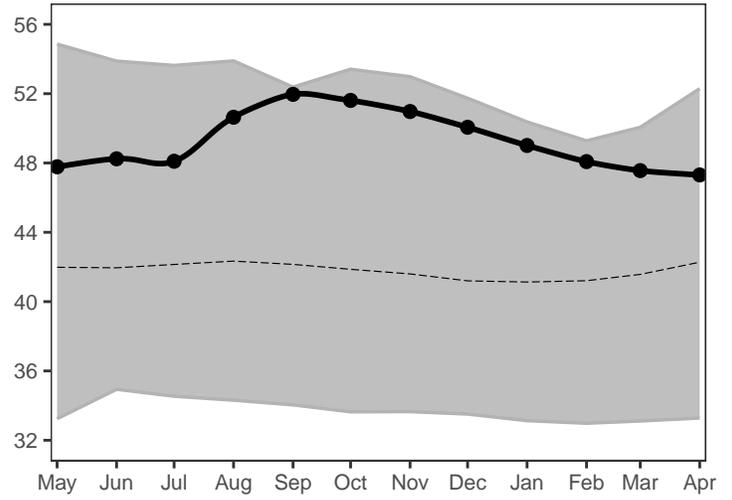
Levels May 2024 through April 2025
 Period of Record Beginning 1976



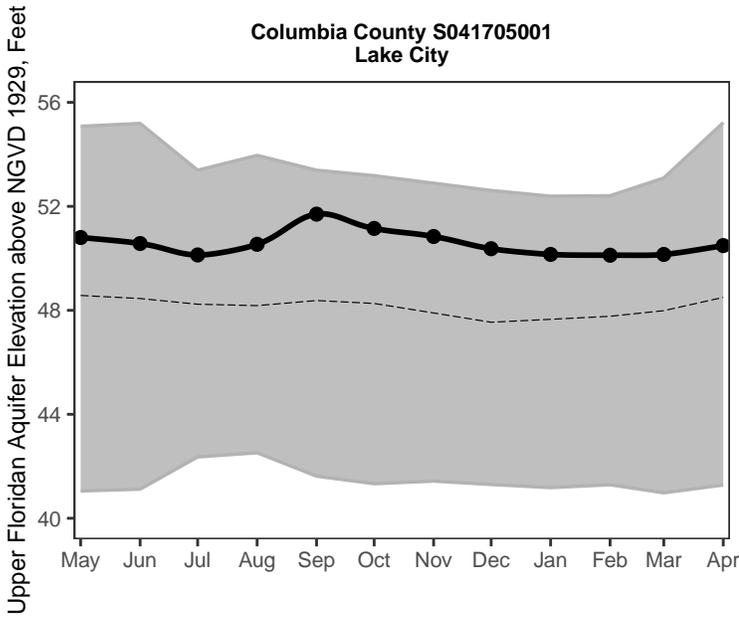
Madison County N010719001
near Greenville



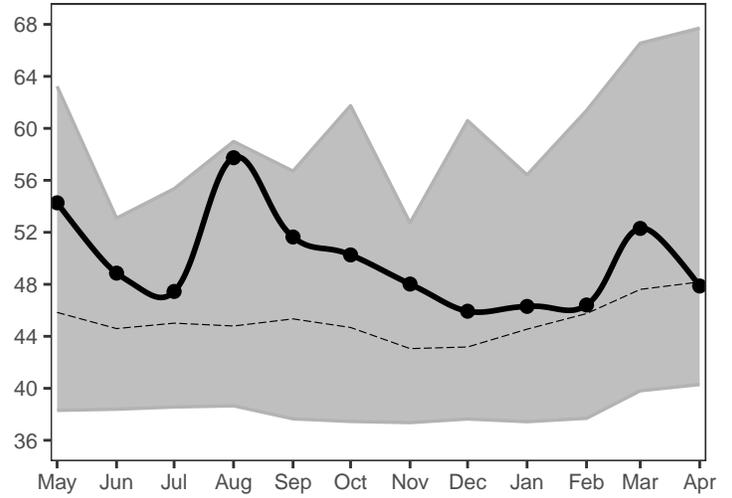
Suwannee County S021335001
near Live Oak



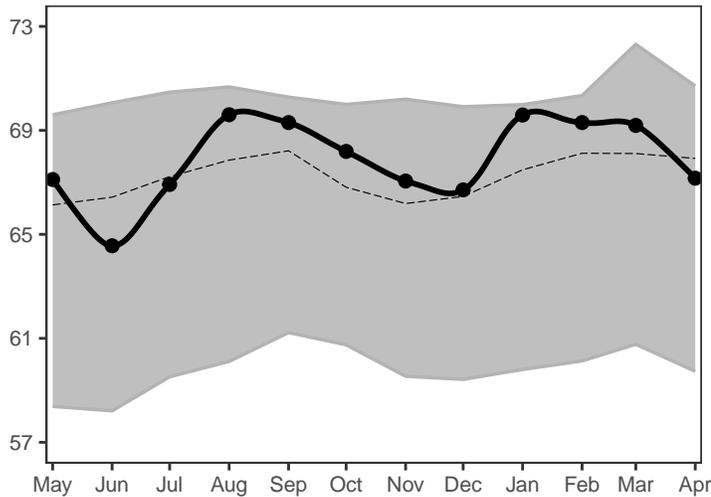
Columbia County S041705001
Lake City



Hamilton County N011422007
near Jasper



Lafayette County S061114001
near Mayo



Taylor County S040736005
Perry

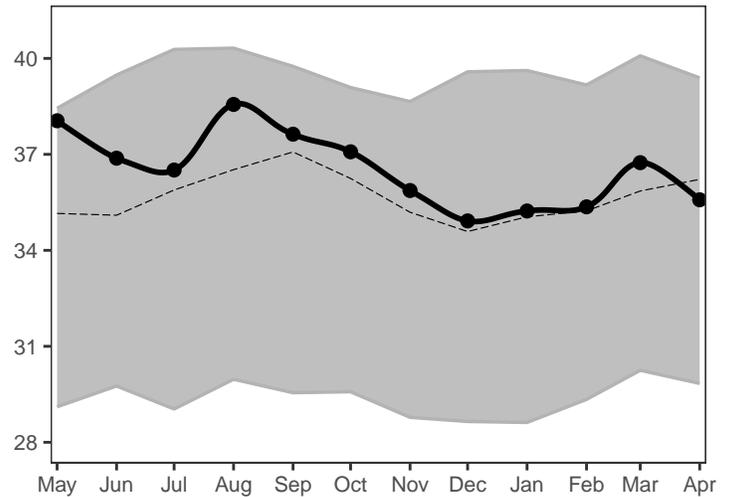
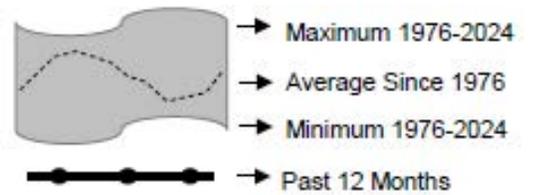
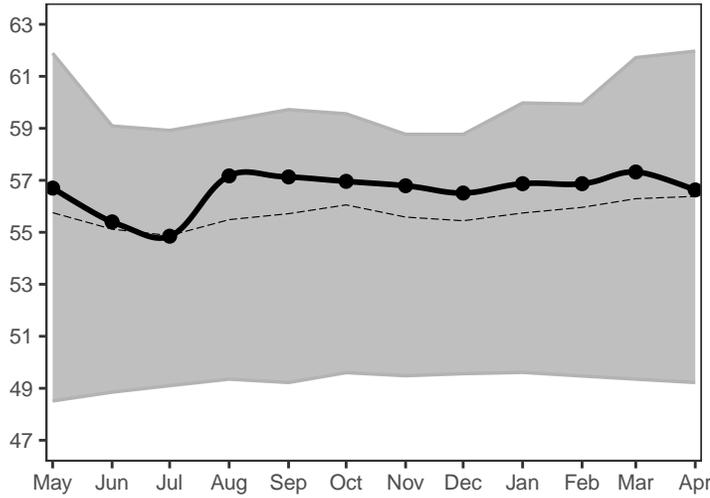


Figure 11, cont.: Monthly Groundwater Statistics

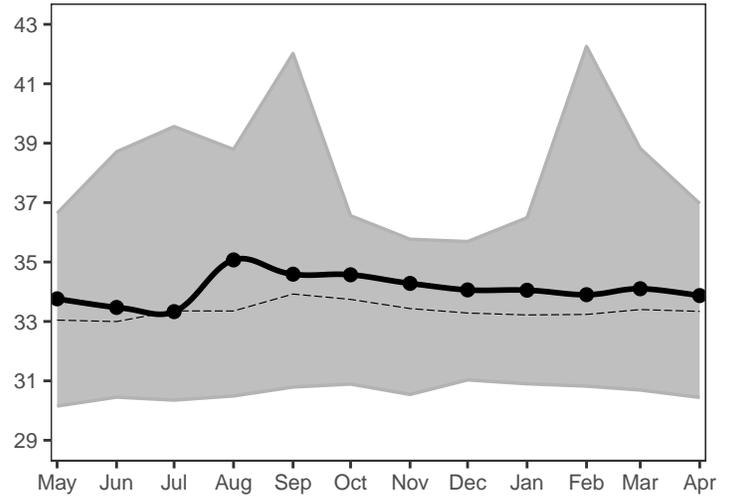
Levels May 2024 through April 2025
 Period of Record Beginning 1976



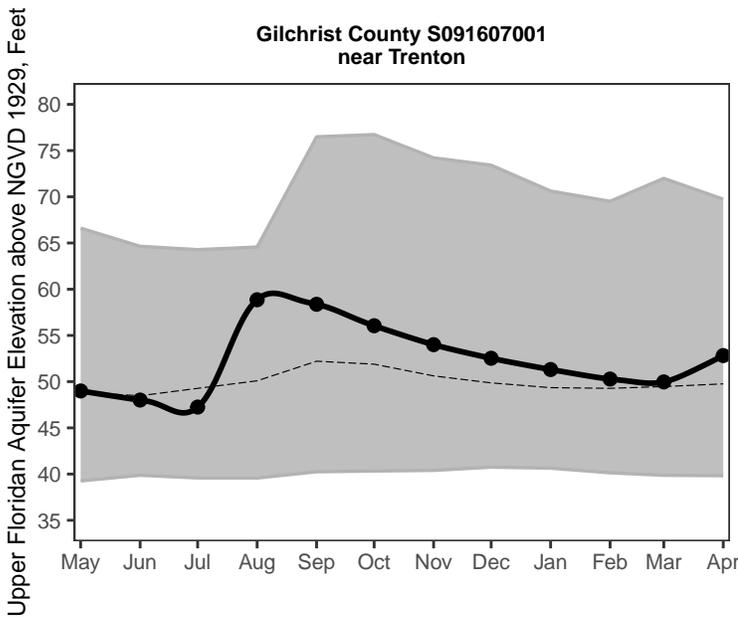
Union County S051933001
near Lake Butler



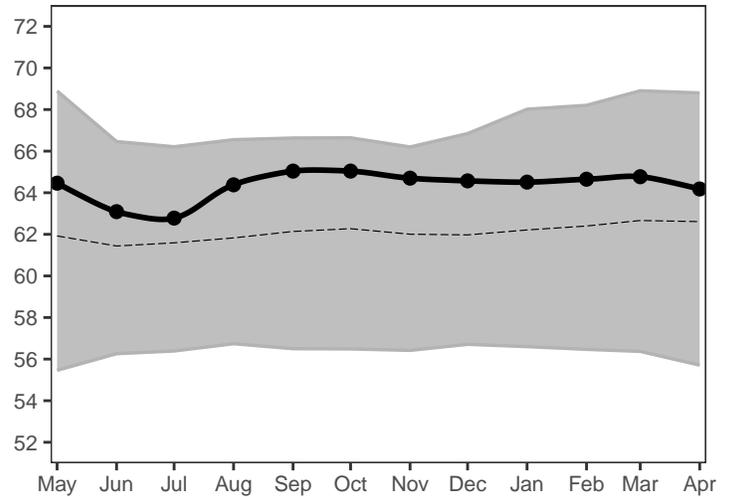
Alachua County S081703001
at High Springs



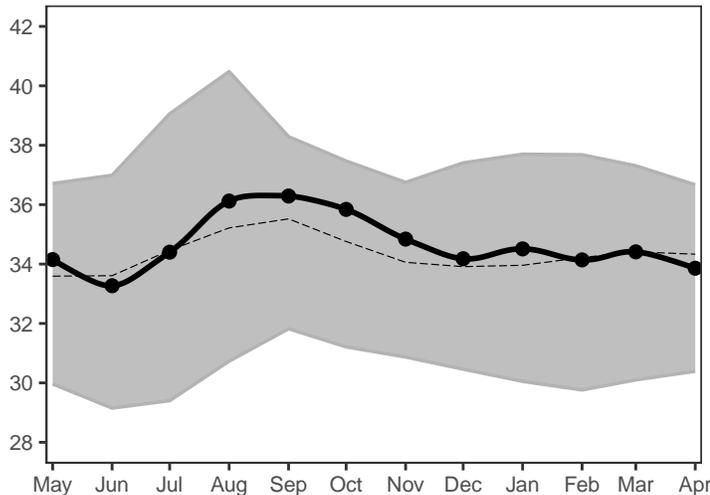
Gilchrist County S091607001
near Trenton



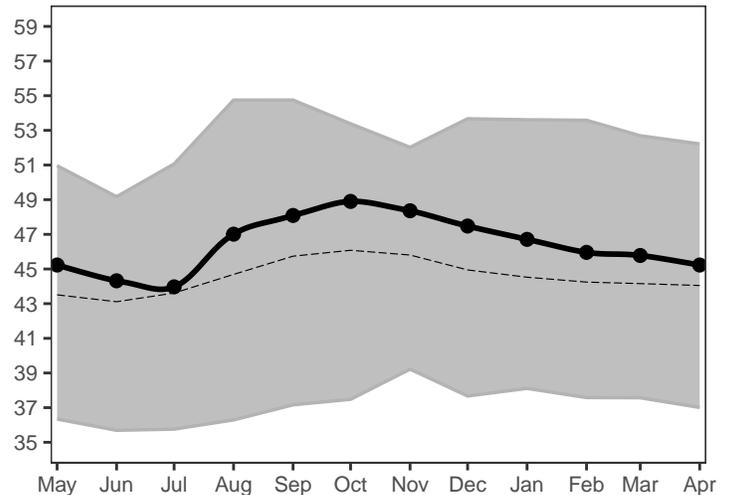
Bradford County S072132001
near Graham

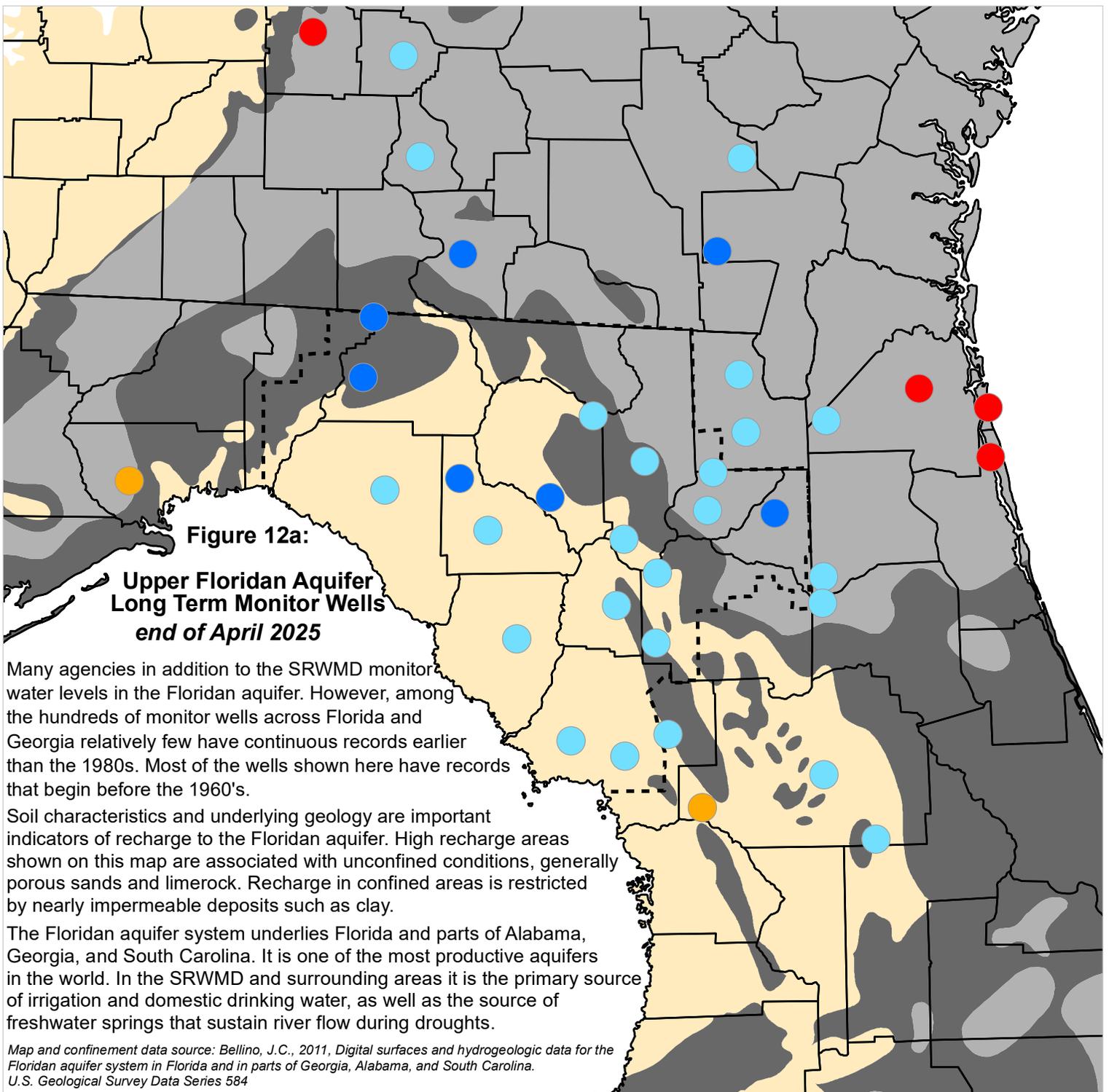


Dixie County S101210001
at Cross City



Levy County S131736001
near Bronson





Occurrence of Confined and Unconfined Conditions in the Upper Floridan Aquifer

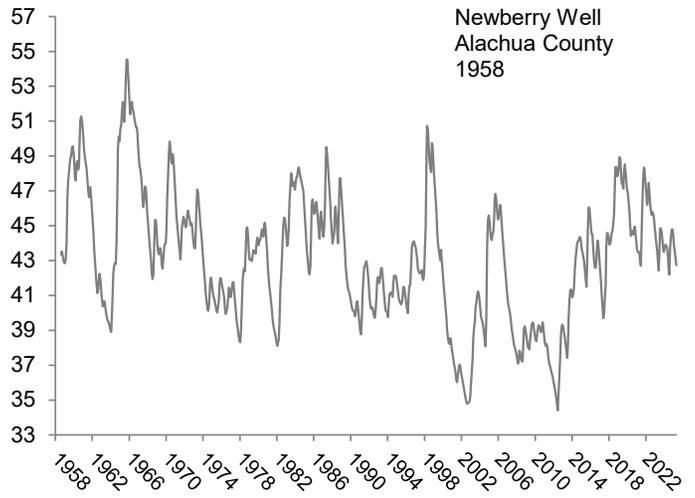
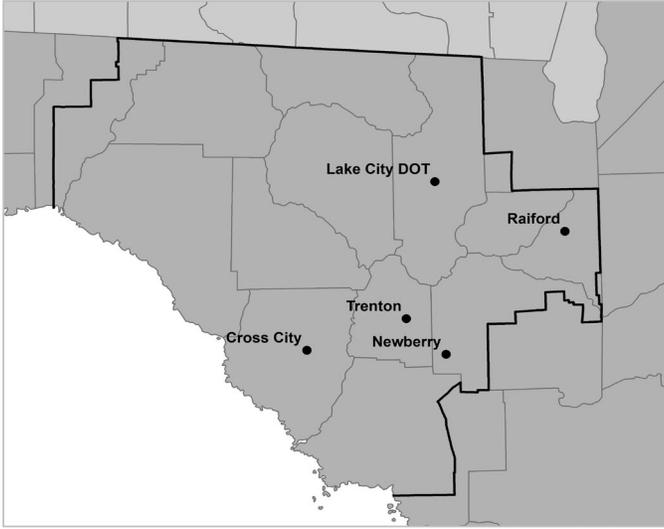
-  Confined: Upper confining unit is generally greater than 100 feet thick and unbreached. Recharge is low.
-  Semi-confined: Upper confining unit is generally less than 100 feet thick, breached, or both. Recharge is moderate.
-  Unconfined: Upper confining unit is absent or very thin. Recharge is high.
-  SRWMD Boundary

Percentile of Most Recent Water Level Relative to Entire Record

-  Very High (Greater than 90th Percentile)
-  High (75th to 90th Percentile)
-  Normal (25th to 75th Percentile)
-  Low (10th to 25th Percentile)
-  Very Low (Less than 10th Percentile)
-  Data Not Available

Figure 12b: Regional Long Term Upper Floridan Aquifer Levels

Data through April 2025



Upper Floridan Aquifer Elevation above NGVD 1929, Feet

