Northwest Florida Water Management District

Hydrologic Conditions Report

March 2025

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Summary

March 2025 was characterized by near-normal precipitation and normal temperatures (averaging around 61.0 degrees Fahrenheit) that contributed to generally normal or below normal hydrologic conditions across the Panhandle. Though there were no drought conditions present in the District during March 2025, the rainfall deficit built over the past several months continued to affect aquifer levels and streamflows in the western portion of the Panhandle.

Rainfall

In March 2025, an average of 5.52 inches of rain was recorded across the Panhandle. This amount was 0.18 inches (3.3%) above the District normal rainfall amount for the month of March, which is 5.34 inches (**Table 1; Figures 1 - 7**). Normal rainfall is defined as average monthly rainfall for the 1991-2020 reference period.

During March 2025, the District received much of its rain from frontal systems. This led to an irregular pattern of rain distribution that generally resulted in a horizontal band through the middle of the Panhandle receiving the highest sums of rain for the month (**Figure 1**). The regularly occurring rain events in the Panhandle during March 2025 decreased the rain deficit that accumulated between December 2024 and February 2025 (**Figure 3**), and a large percentage of the District ended the month with a surplus of rain compared to the previous month (**Figure 2**).

There were two significant rain events in March 2025. The first occurred on March 9, 2025, when a front passed through the Panhandle. Tallahassee received 4.25 inches of rain from this event, which was 68% of the rainfall total for the month. Pensacola received 1.58 inches of rain from the event. The second significant precipitation event occurred on March 30, 2025, when an occluded front over the Midwest states created ideal conditions for strong multicell thunderstorm development in the Panhandle. These thunderstorms produced the most rain in Escambia County, where Pensacola received 6.09 inches of rain, which was 63% of the total rainfall for the month.

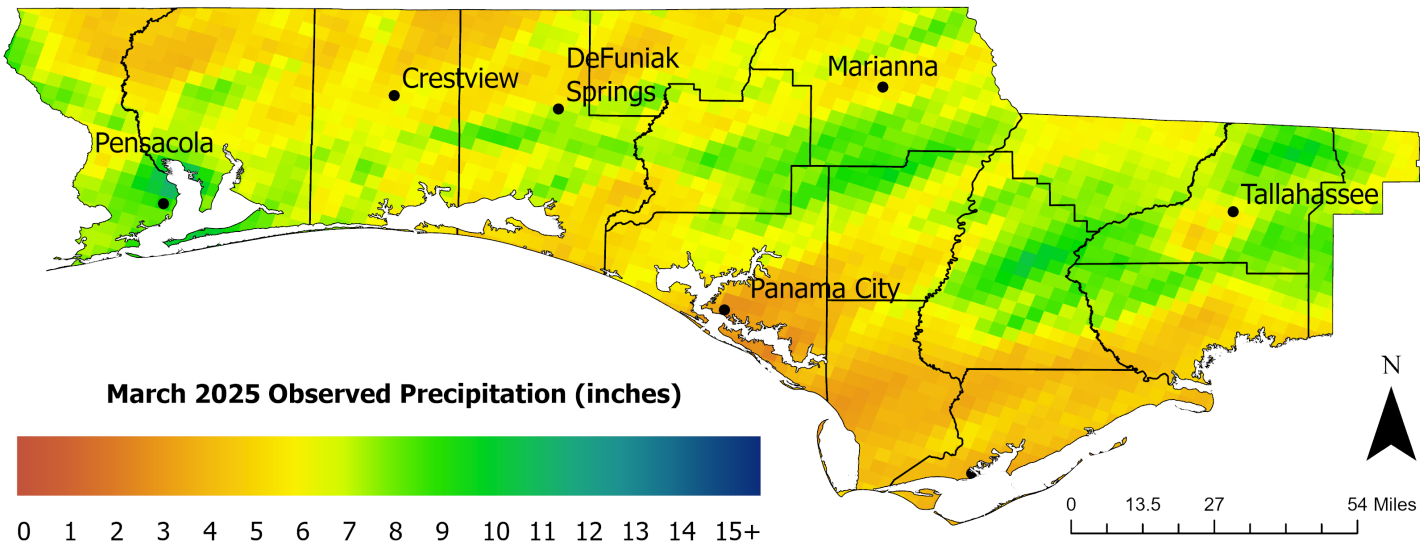
Source: https://www.cpc.ncep.noaa.gov/products/predictions/30day/

Table 1: March 2025 rainfall compared to 30-year normal monthly rainfall for Tallahassee, Marianna, Niceville, and Pensacola

Station	March Normal Rainfall (1991 to 2020)	March 2025 Observed Rainfall	Percent Difference
Tallahassee Regional Airport	5.24	6.26	17.7%
Marianna Regional Airport	5.01	5.00	-0.20%
Niceville, FL	5.35	6.14	13.8%
Pensacola Regional Airport	5.25	9.66	59.2%

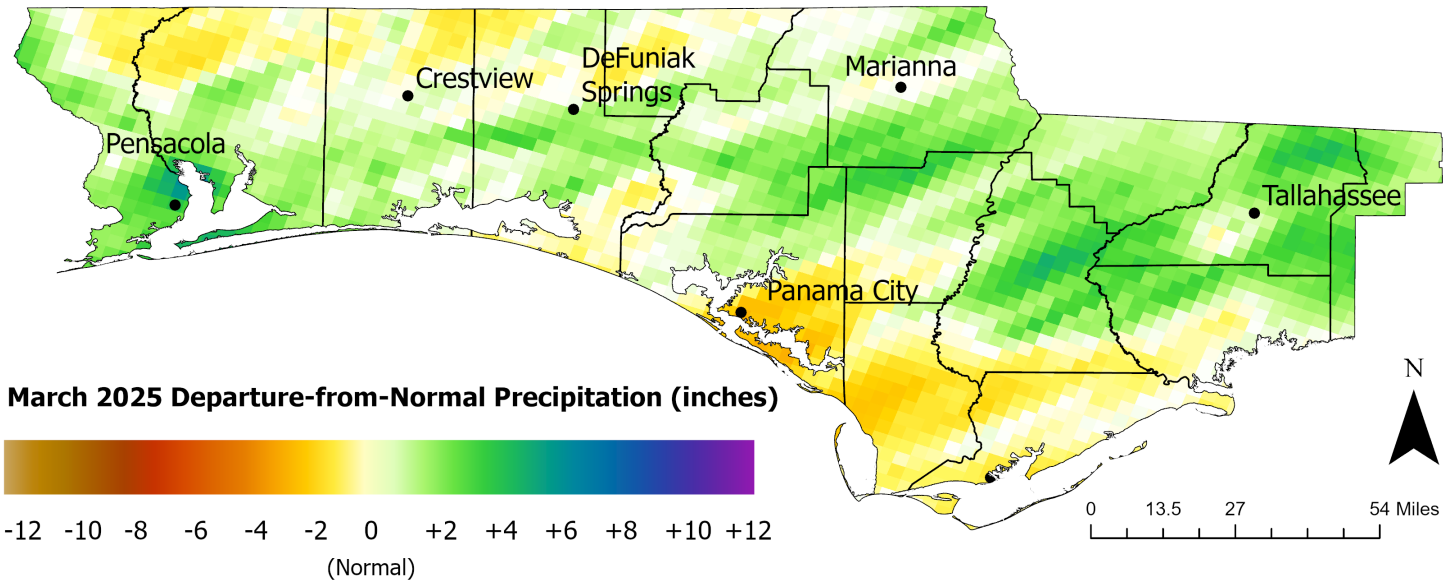
Source: https://www.weather.gov/wrh/Climate?wfo=tae
https://www.weather.gov/wrh/Climate?wfo=mob

Figure 1: District-wide March 2025 observed rainfall



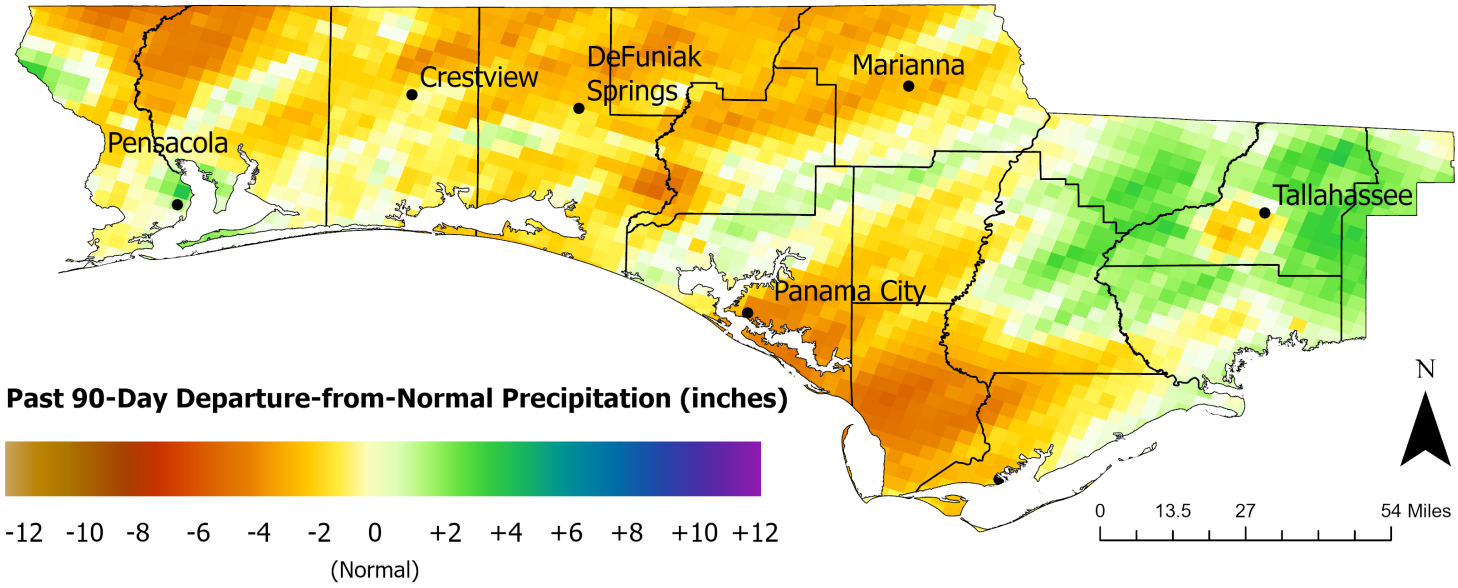
Source: https://water.weather.gov/precip/download.php

Figure 2: District-wide March 2025 precipitation departure from normal



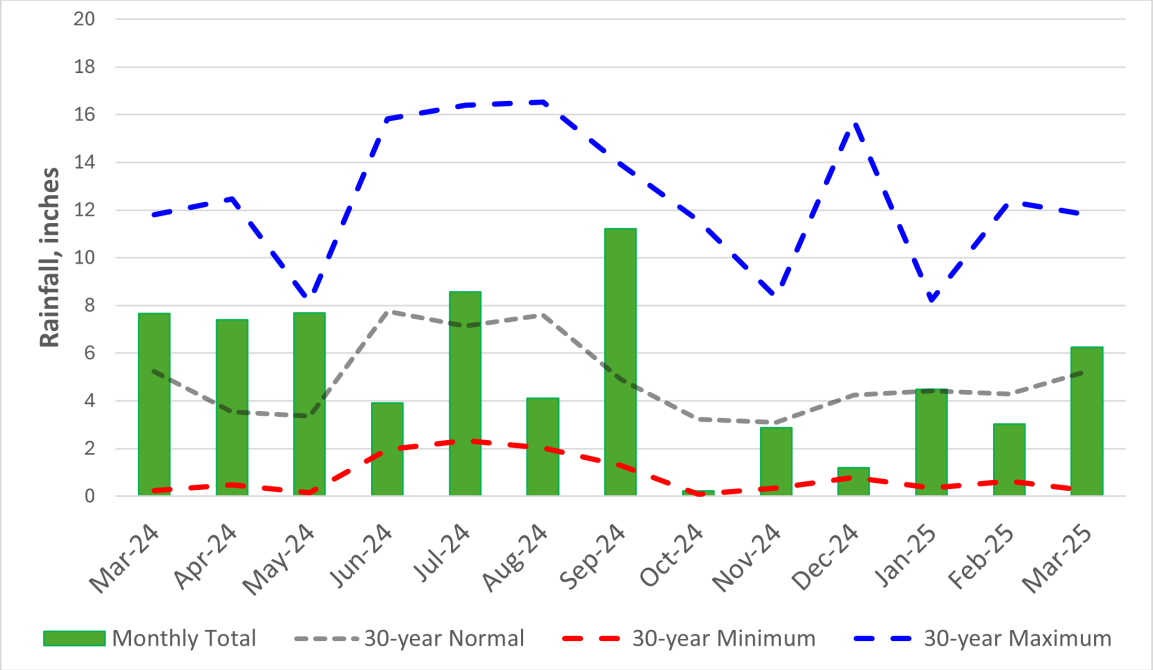
Source: https://water.weather.gov/precip/download.php

Figure 3: District-wide precipitation departure from normal precipitation for the previous 90 days



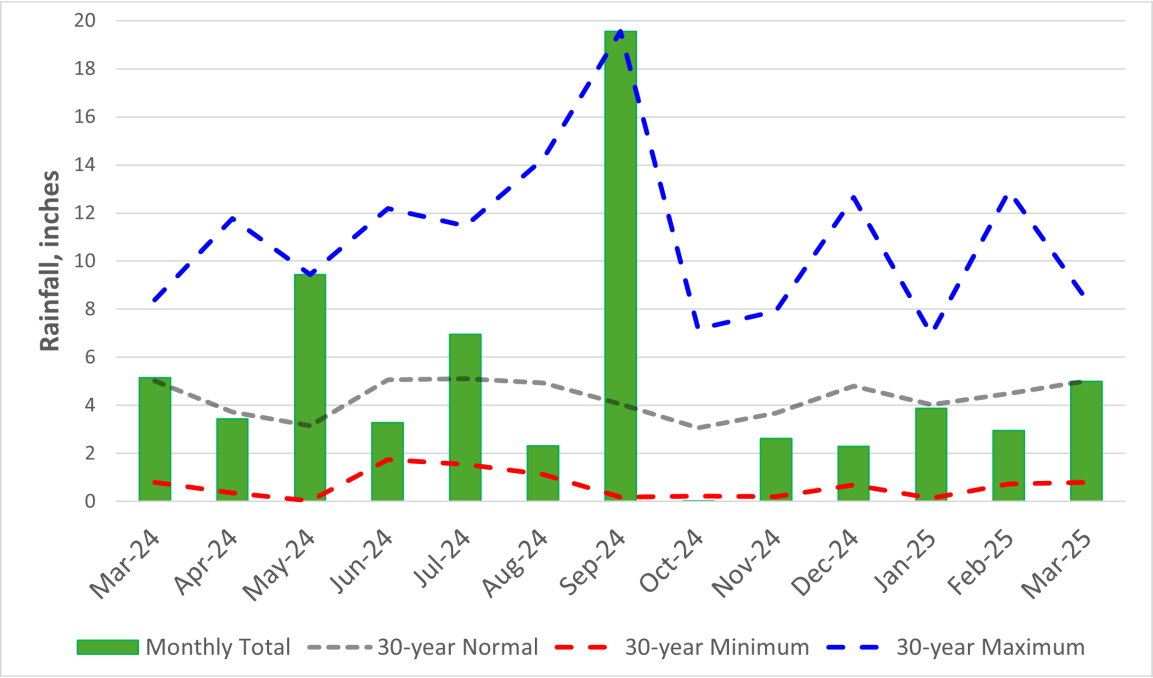
Source: https://water.weather.gov/precip/download.php

Figure 4: Observed rainfall at Tallahassee Regional Airport for March 2024 to March 2025 compared to the 30-year normal, minimum, and maximum precipitation for each month



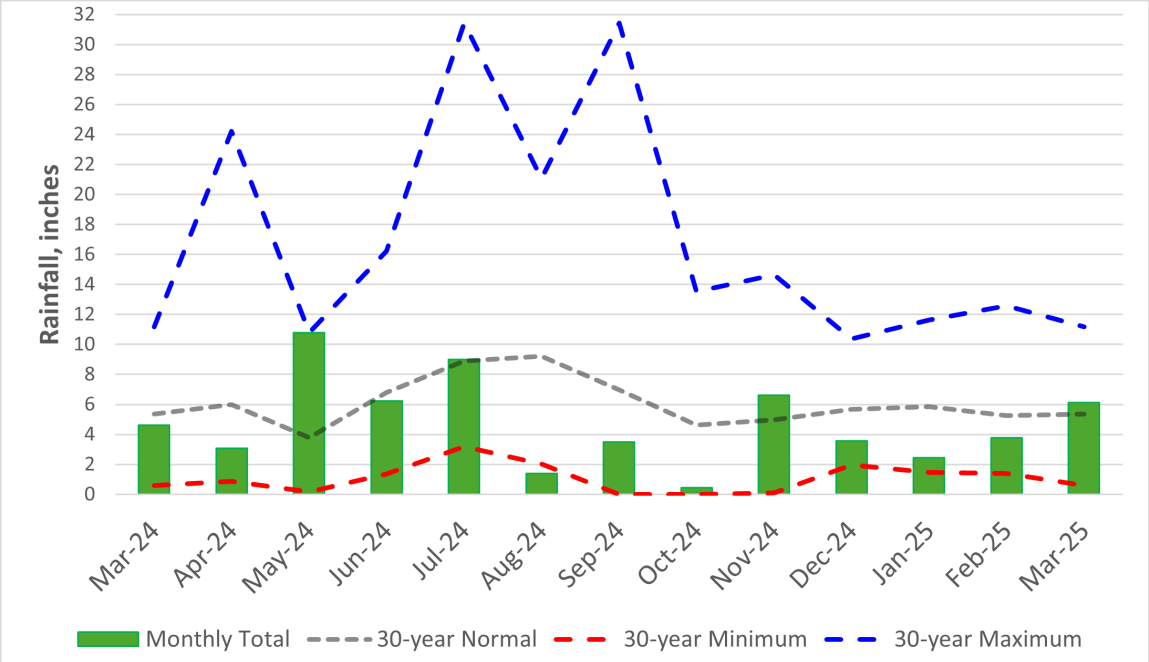
Source: https://www.weather.gov/wrh/Climate?wfo=tae

Figure 5: Observed rainfall at Marianna Regional Airport for March 2024 to March 2025 compared to the 30-year normal, minimum, and maximum precipitation for each month



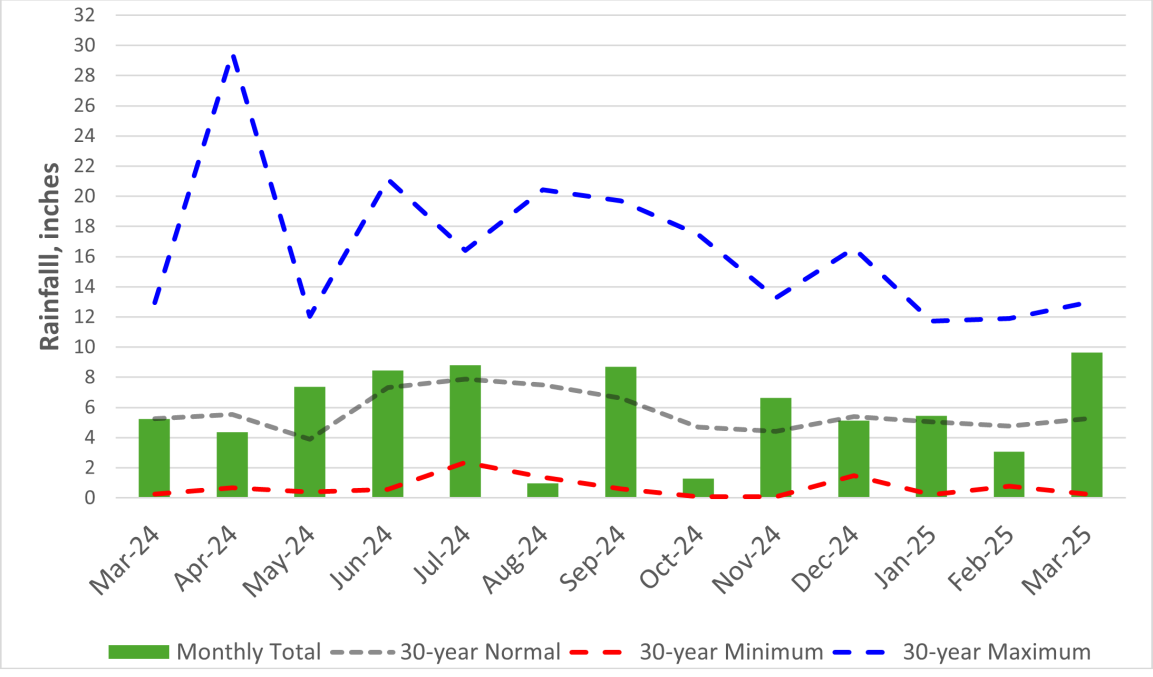
Source: https://www.weather.gov/wrh/Climate?wfo=tae

Figure 6: Observed rainfall in Niceville for March 2024 to March 2025 compared to the 30-year normal, minimum, and maximum precipitation for each month



Source: https://www.weather.gov/wrh/Climate?wfo=mob

Figure 7: Observed rainfall at Pensacola Regional Airport for March 2024 to March 2025 compared to the 30-year normal, minimum, and maximum precipitation for each month



Source: https://www.weather.gov/wrh/Climate?wfo=mob

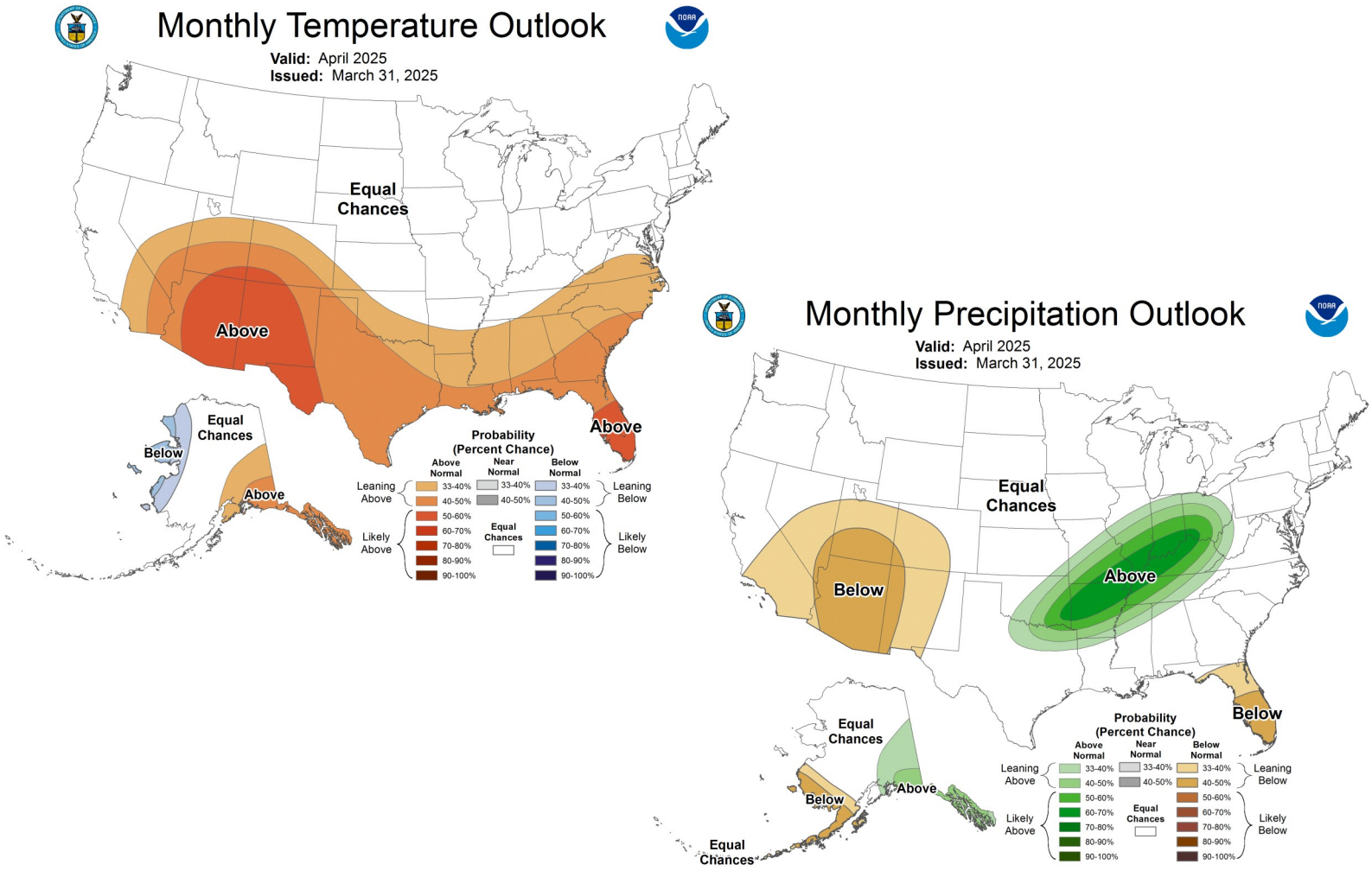
Climate Outlook

According to NOAA's Climate Prediction Center, the forecast issued March 31, 2025, for April 2025 shows a slight chance for above-normal temperatures across the Panhandle. There are equal chances for above- or below-normal rainfall amounts across most of the Panhandle. Close to the Gulf coast in the eastern portion of the District, there is a slight chance of below-normal rainfall amounts (**Figure 8**).

As of April 7, 2025, La Niña conditions are present and a transition to ENSO-neutral is likely sometime in April 2025. Once the transition to ENSO-neutral occurs, it is favored to persist through the summer months (62% chance). In the spring, La Niña is associated with warmer and drier conditions than usual for the southern United States.

Source: https://www.cpc.ncep.noaa.gov/products/predictions/30day/
https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

Figure 8: March 2025 Temperature and Precipitation Outlooks for the United States



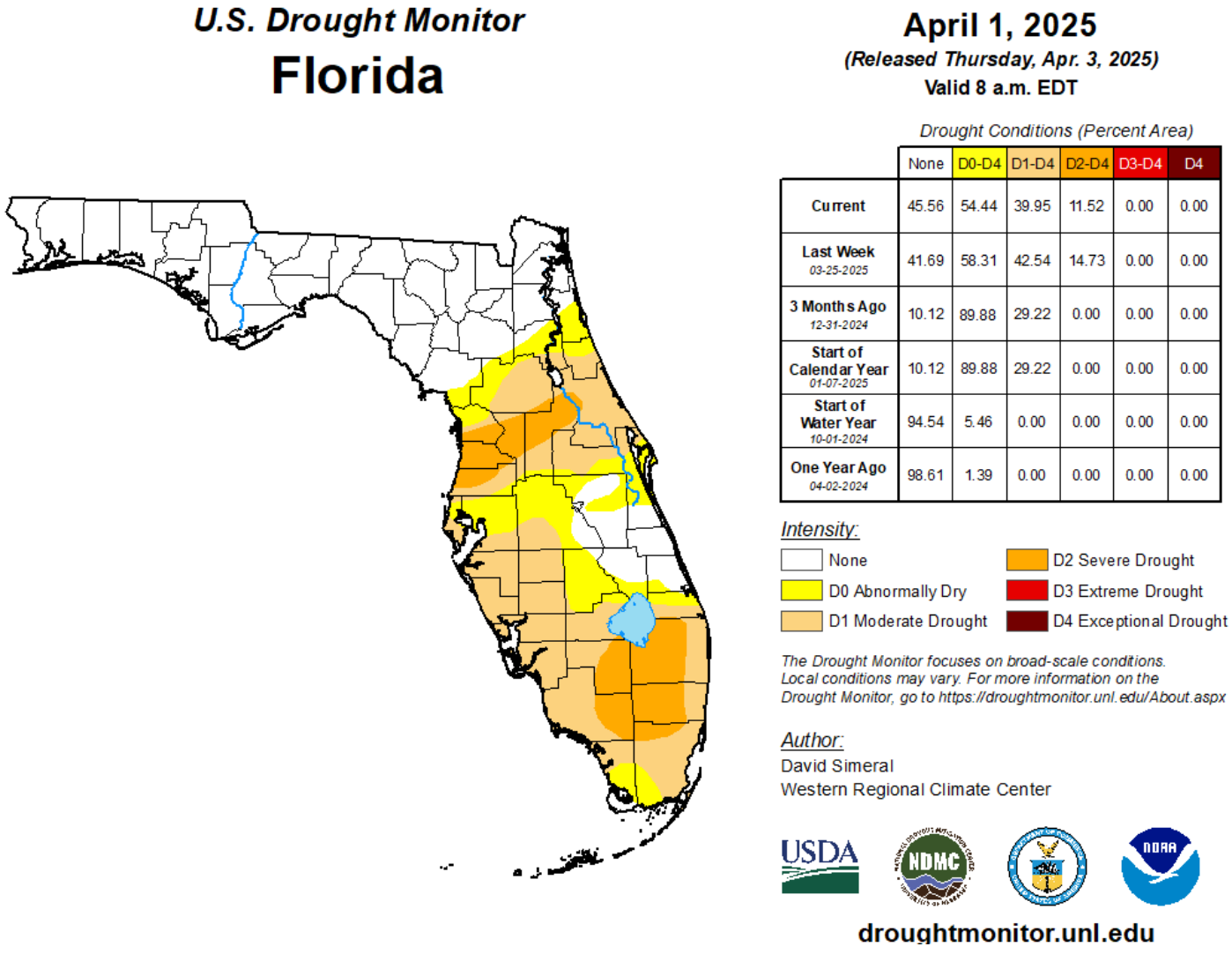
Source: https://www.cpc.ncep.noaa.gov/products/predictions/30day/

Drought Conditions

The U.S. Drought Monitor report released for April 1, 2025, showed no drought conditions present in the District (Figure 9). The District did not experience any drought conditions for the duration of March 2025.

According to the U.S. Monthly Drought Outlook for April 2025, drought is not expected to develop in the District.

Figure 9: Florida Drought Conditions on April 1, 2025

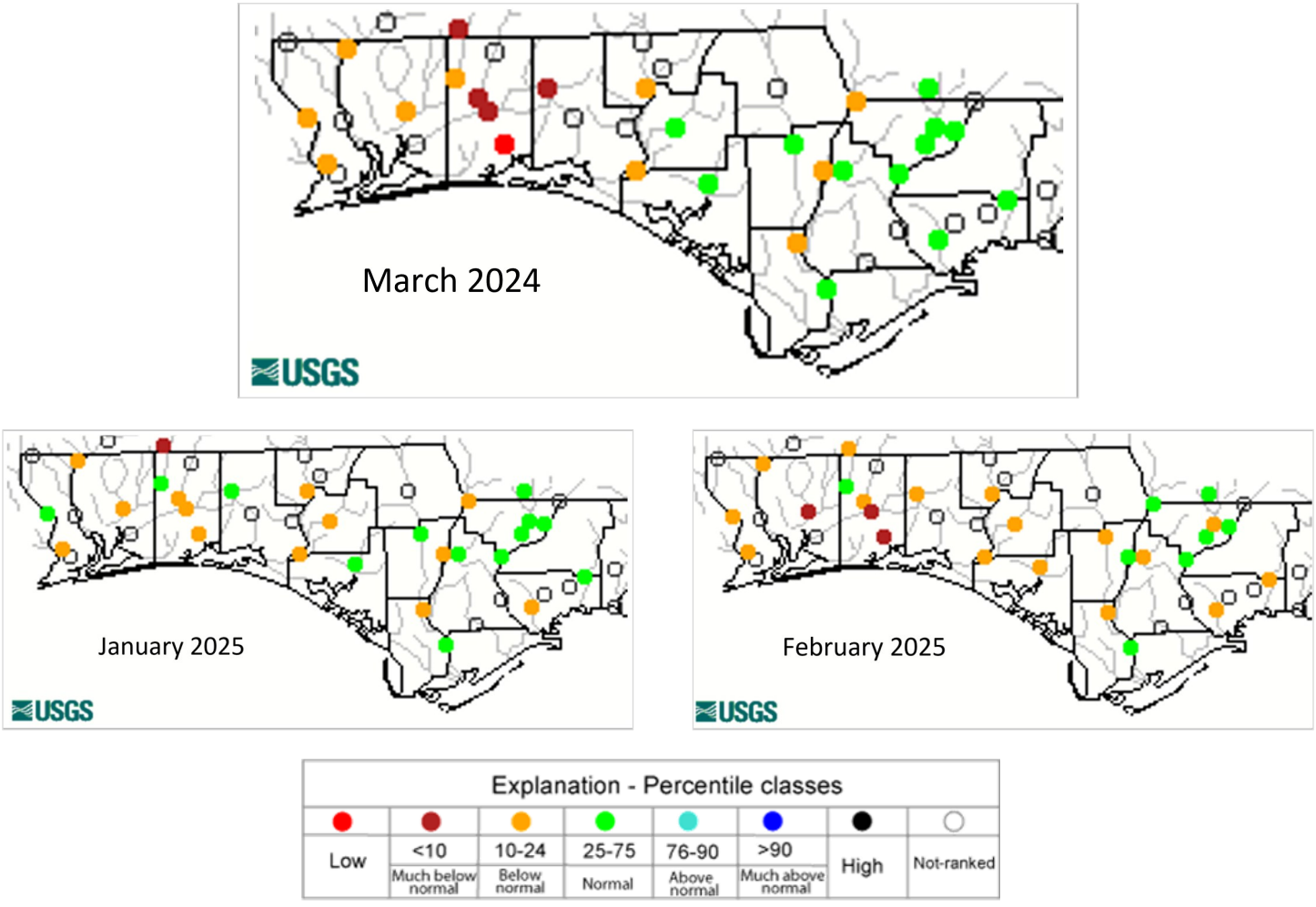


Source: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?FL

Surface Water

Streamflows. During March 2025, streamflow stations toward the eastern portion of the District recorded flows mostly within normal ranges while stations within the western portion of the District recorded flows classified as below normal, much below normal, or low (**Figures 10 – 16**). This is likely due to the precipitation deficit that remains in the District, particularly in the western portion of the District (**Figure 3**), even after there was an increase in both rain amounts and rain event frequency in March 2025 (**Figure 1**). The continued low aquifer levels in the western portion of the District (**Figure 23**) also contributed to the low streamflows recorded in March 2025.

Figure 10: Northwest Florida January 2025 to March 2025 monthly streamflow percentiles



Source: http://waterwatch.usgs.gov/index.php

Figure 11: Daily streamflows and percentile ranges for USGS station 02326900 St. Marks River Near Newport, Florida

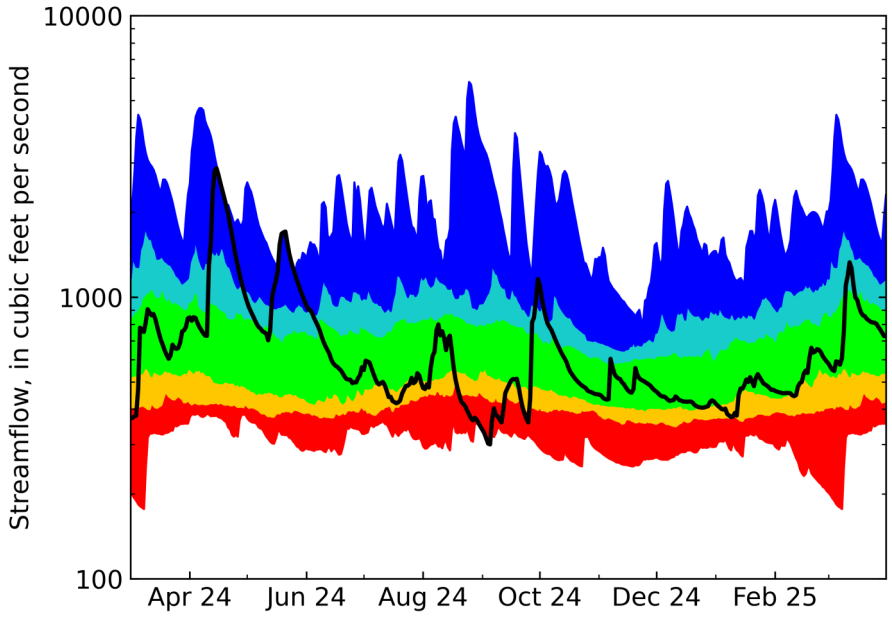


Figure 12: Daily streamflows and percentile ranges for USGS Station 02329000 Ochlockonee River Near Havana, Florida

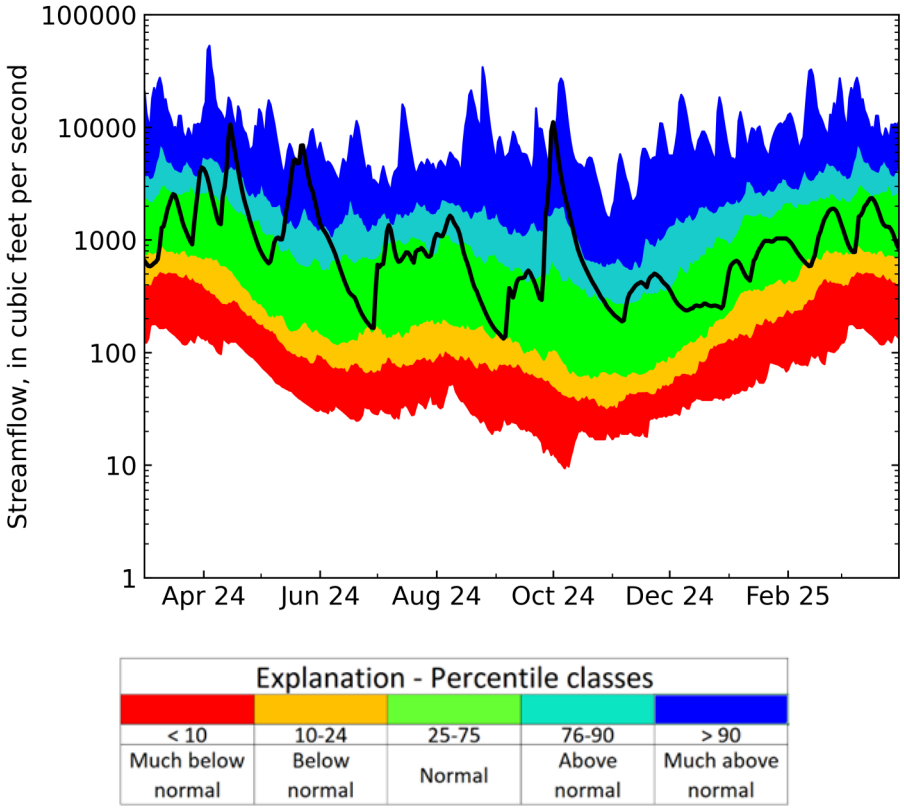


Figure 13: Daily streamflows and percentile ranges for USGS Station 02358700 Apalachicola River Near Blountstown, Florida

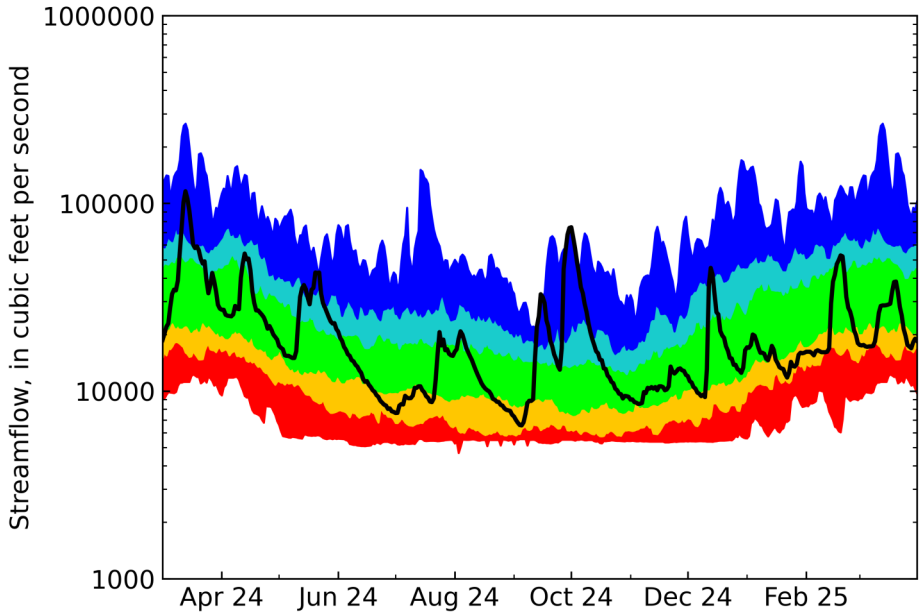
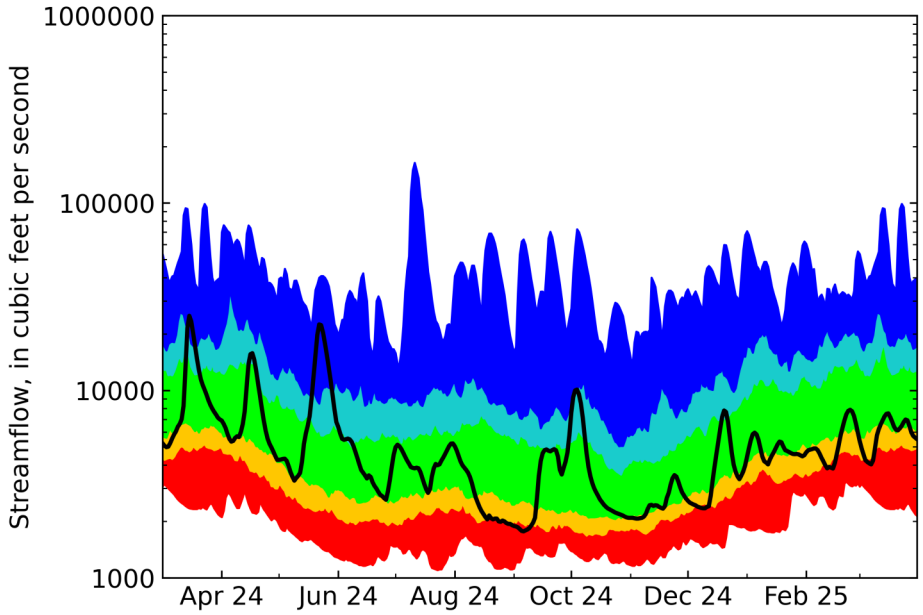


Figure 14: Daily streamflows and percentile ranges for USGS Station 02366500 Choctawhatchee River Near Bruce, Florida



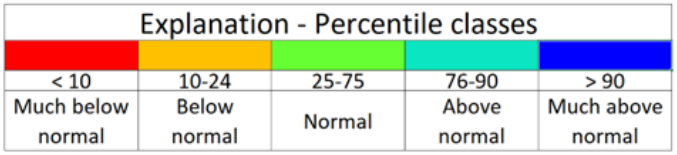


Figure 15: Daily streamflows and percentile ranges for USGS Station 02370000 Blackwater River Near Baker, Florida

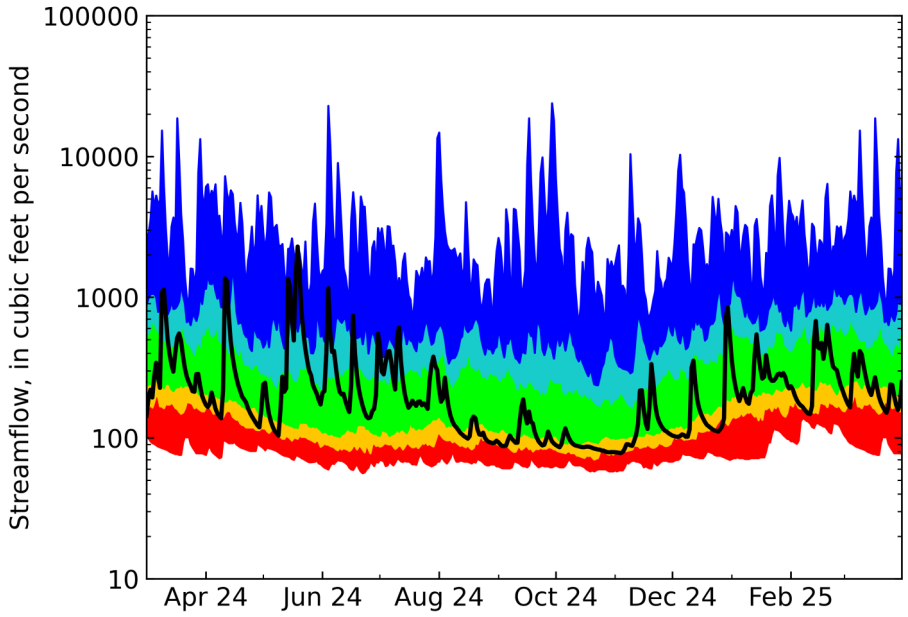
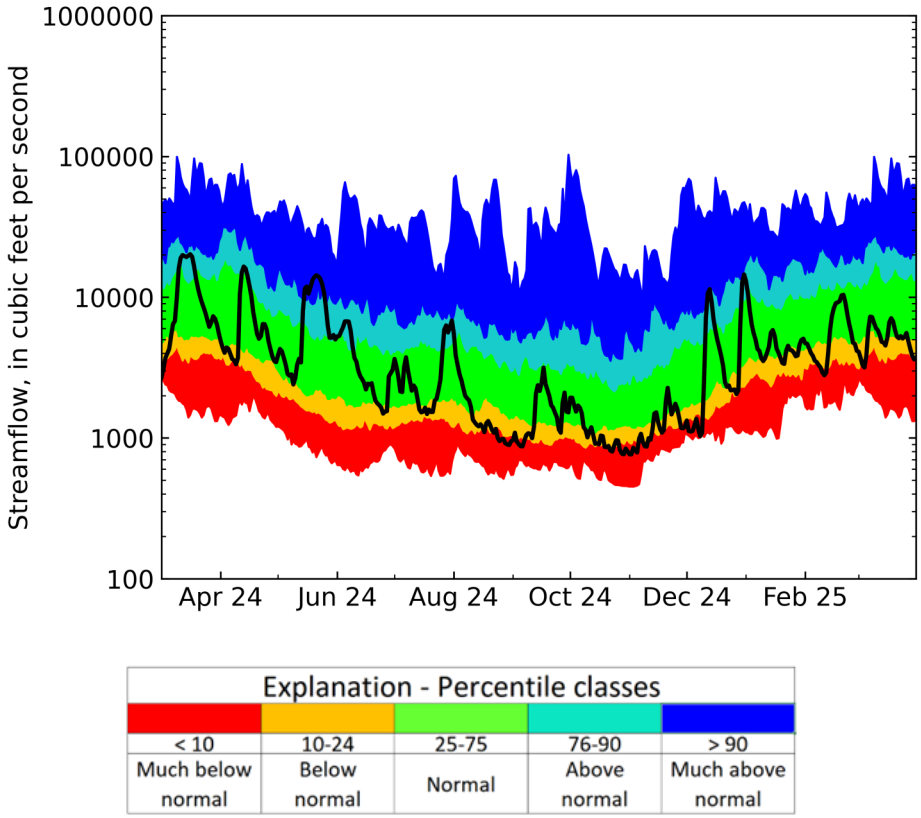


Figure 16: Daily streamflows and percentile ranges for USGS Station 02375500 Escambia River Near Century, Florida



Lake Levels. Water levels at Lake Jackson in Leon County remained generally stable around 81.40 feet, NAVD 1988 from February 2025 into the beginning of March 2025. The lake stage then quickly increased 0.55 feet with the significant rain event on March 9, 2025, and remained generally stable around 82.08 feet, NAVD 1988 throughout the rest of the month (Figure 17). The long-term (January 29, 2003, to March 31, 2025) average stage level for Lake Jackson is 80.89 feet, NAVD 1988, and the full pool level is 85.74 feet, NAVD 1988.

At Piney Lake in southern Washington County, water levels decreased by 0.10 feet in the beginning of March 2025, reaching the lowest level since monitoring began during the 2022 flooding event. The lake stage then quickly increased 0.38 feet with the significant rain event on March 9, 2025, and then generally decreased by 0.10 ft during the remainder of the month. Piney Lake ended the month with a stage level of 48.75 feet, NAVD 1988 (Figure 18).

Figure 17: Daily water levels at Lake Jackson at Miller Landing, Leon County

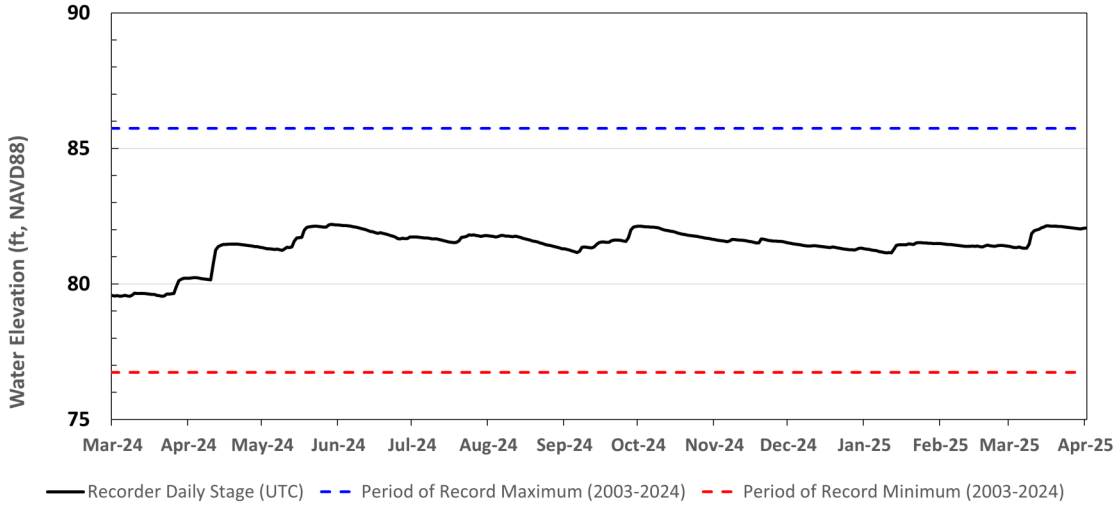
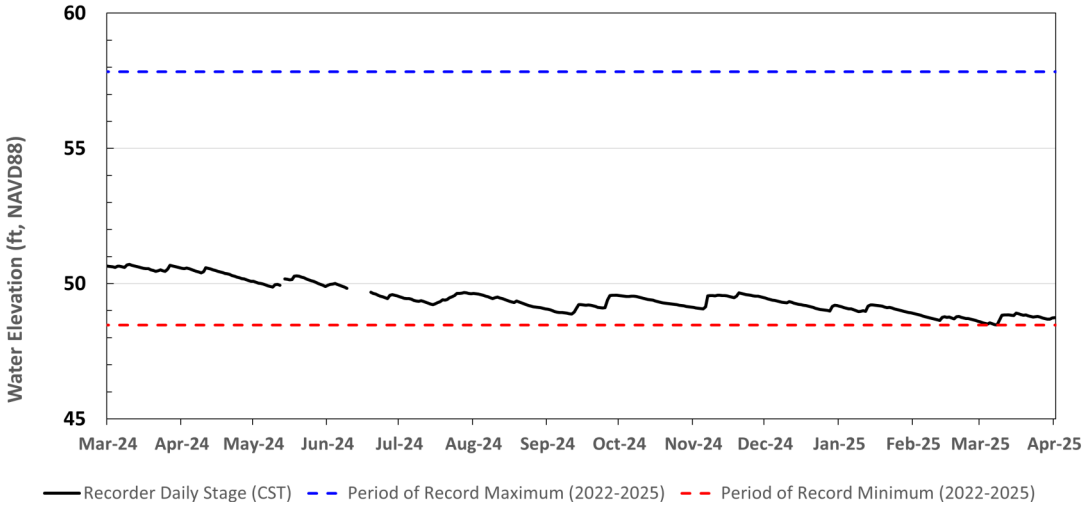


Figure 18: Daily water levels at Piney Lake, Washington County



Spring Flows

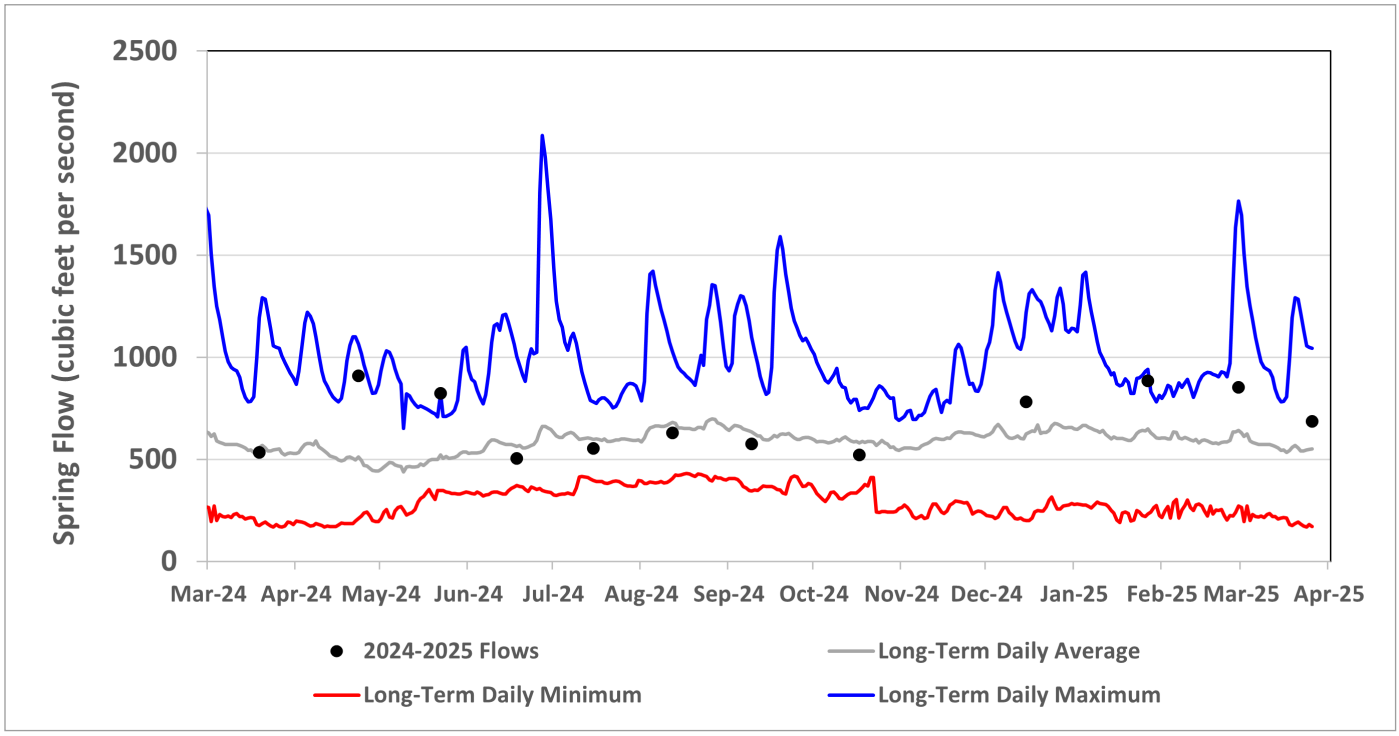
Wakulla and Sally Ward Spring System. Flow at Wakulla Spring decreased 166 cubic feet per second (cfs) between the measurements taken in February and March 2025, but remains above the long-term average flow for this time of year. The most recent flow measurement for Wakulla Spring was 686 cfs, which was conducted on March 26, 2025 (Figure 19). The long-term (October 23, 2024, to March 26, 2025) average flow for the month of March is 561 cfs.

Flow at Sally Ward Spring increased by 0.6 cfs between the measurements taken February and March 2025. The most recent flow measurement for Sally Ward was 28.1 cfs on March 26, 2025. This measurement was 2.6 cfs lower than the long-term (November 1, 2024, to March 26, 2025) average flow of 30.7 cfs for the month of March.

The Minimum Flow established for the combined Wakulla and Sally Ward Spring System under Florida Administrative Code chapter 40A-8.041 continues to be met. The long-term (October 23, 2004, through March 26, 2025) average flows for Wakulla and Sally Ward springs are 589 cfs and 24.3 cfs, respectively. The combined long-term spring flow for both systems is 613 cfs, which exceeds the established Minimum Flow of 539 cfs by 73 cfs.

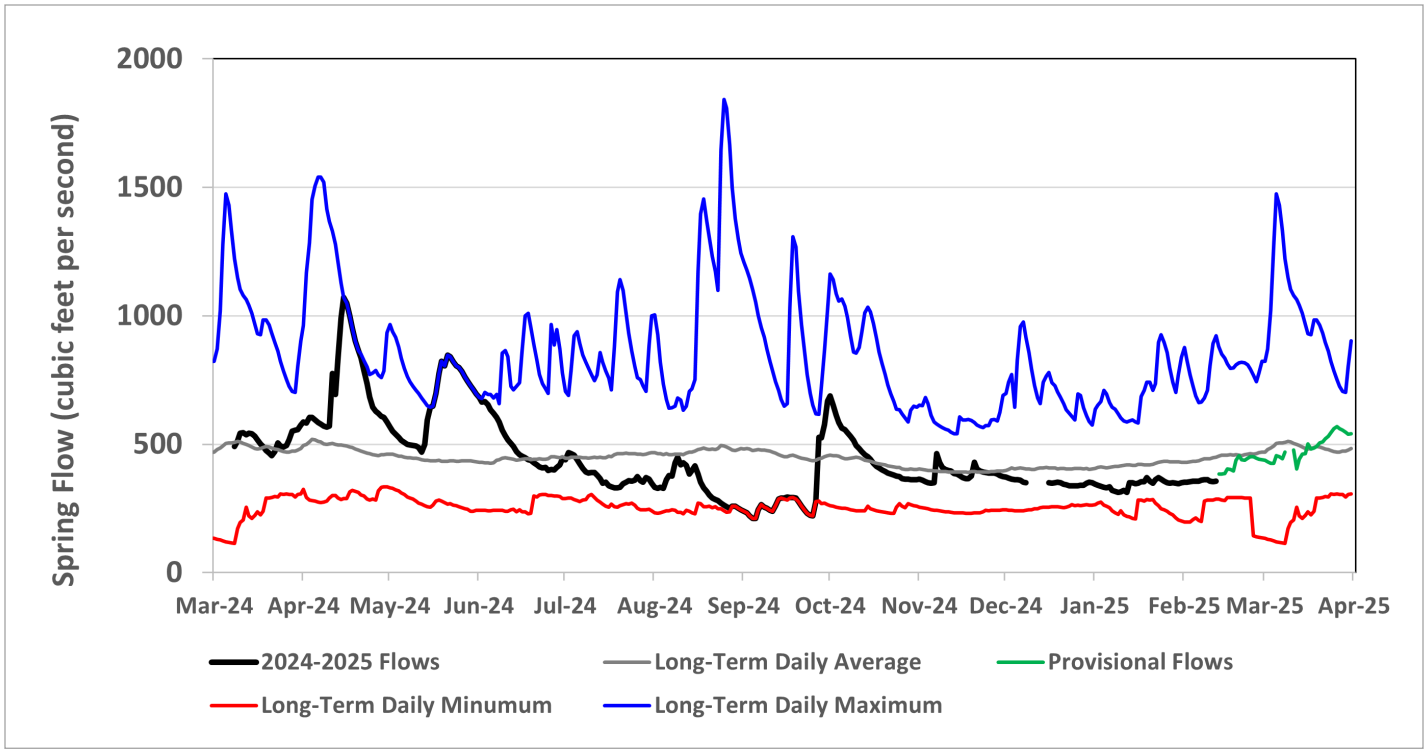
Figure 19: Daily Wakulla Spring flows

Data from November 1, 2023, through March 26, 2024, represent discrete measurements. Daily statistics are based on the October 23, 2004, through February 28, 2025 period of record.



St. Marks River Rise. The mean daily spring flow for March 2025 at the St. Marks River Rise was 491 cfs, based on the available USGS provisional data which extends through March 31, 2025 (**Figure 20**). The current 30-year moving average spring flow for the St. Marks River Rise based on the most recent approved USGS data (November 15, 1993, through December 3, 2024) is 423 cfs. If the provisional data from December 4, 2024, through February 28, 2025, are included, the 30-year moving average spring flow for the St. Marks River Rise is 422 cfs. The established Minimum Flow for the St. Marks River Rise is 419 cfs. Whether using the approved or provisional data, the 30-year moving average flow exceeded the established Minimum Flow for the St. Marks River Rise by 4 cfs and 3 cfs, respectively.

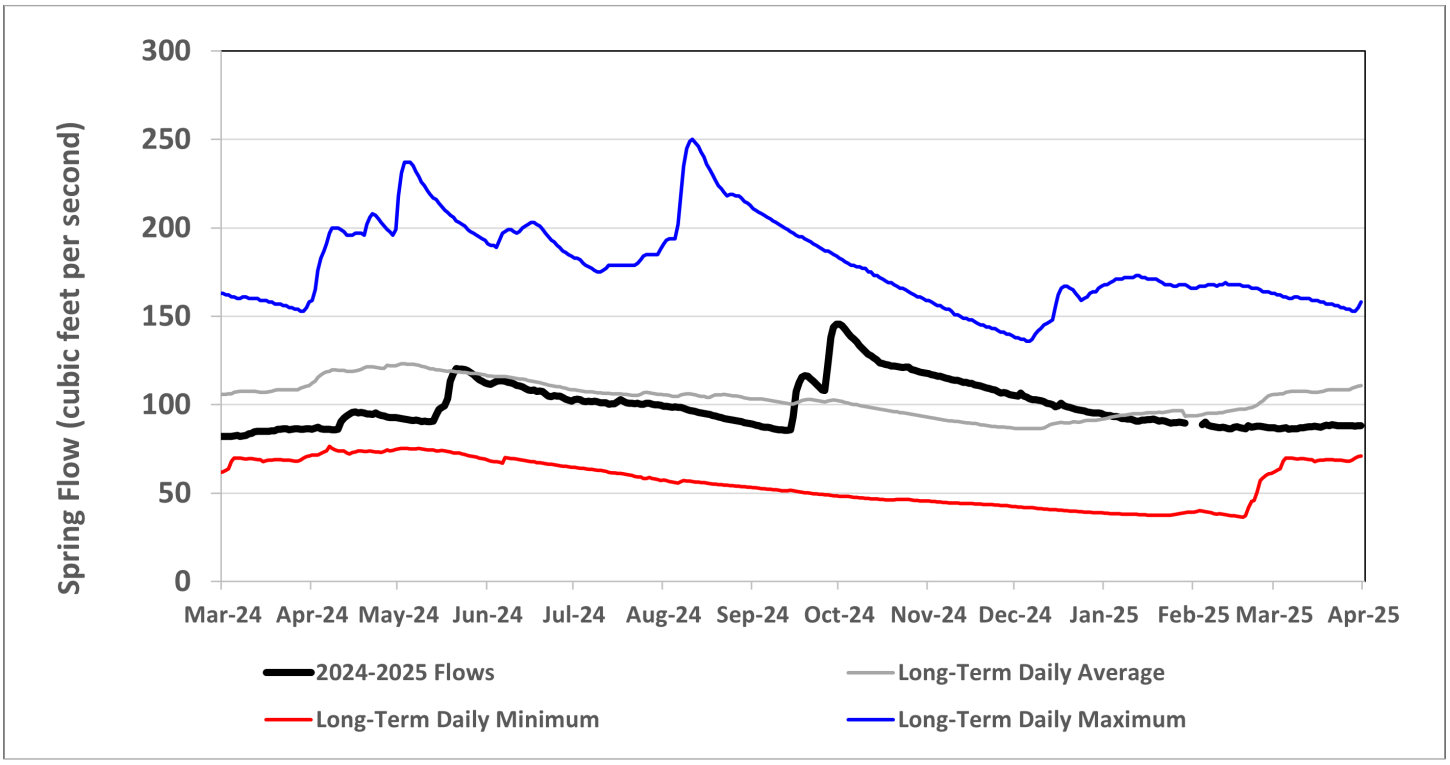
Figure 20: Daily spring flows for the St. Marks River Rise



Jackson Blue Spring. Daily flows at Jackson Blue Spring for the month of March 2025 averaged 87.5 cfs. This was below the long-term (December 21, 2004, through March 31, 2025) average flow for the month of March of 107.7 cfs (**Figure 21**).

Figure 21: Daily spring flows for Jackson Blue Spring

Data represents daily averages. Long-term flows represent the daily average between December 21, 2004, and March 31, 2025

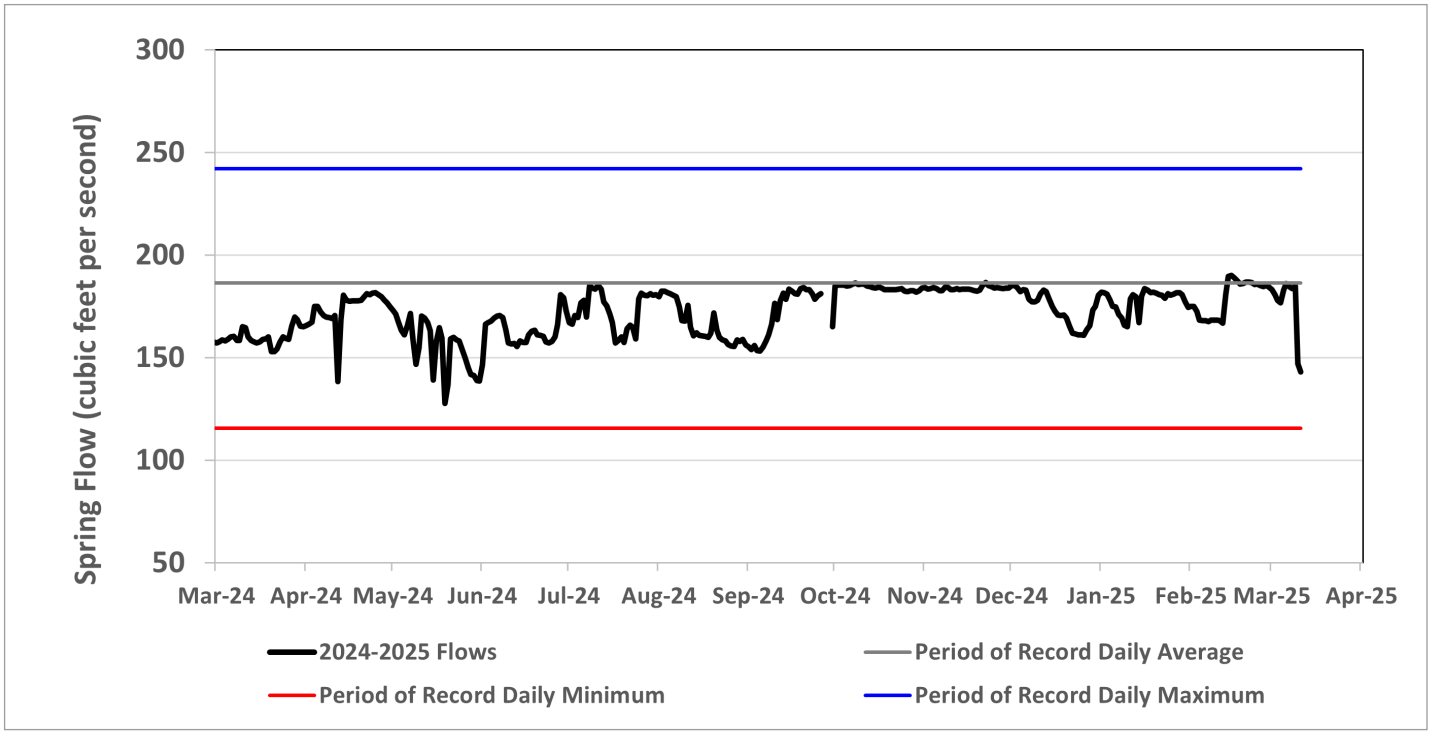


Gainer Spring Group. During March 2025 (March 1 to March 11, 2024), flow at the Gainer Spring Group was 176 cfs (Figure 22). The period of record (October 28, 2019, through March 11, 2025) average monthly spring flow for March is 175 cfs. It should be noted there is a relatively brief period of record for this system, and spring flows among the highest and lowest on record are to be expected.

Throughout the time-series, there are several drops and recoveries in the spring flow. This is caused by Econfina Creek spiking in stage adjacent to the spring group after rain events. The extra pressure exerted on the groundwater by the surface water in the stream slows flow from the spring group. Since Econfina Creek does not tend to stay high for long after the conclusion of a rain event as the stage level quickly drops, the flow from the spring group recovers since there is less pressure from the stream.

Figure 22: Gainer Spring Group flows

Data represents daily averages. Streamflow statistics are not shown due to the relatively short period of daily data.



Aquifer Levels

In the middle of March 2025, all depicted Floridan aquifer monitor wells were classified as within normal ranges except for four wells; two wells that were below normal and two wells that were above normal ranges (**Figures 23 – 29**). The Floridan wells classified as below normal were Jackson Still Floridan monitor well (NWFID 5417) in northern Walton County and Sand Hill Upper Floridan monitor well (NWFID 5597) in northwestern Okaloosa County, which have continued to have low water levels for several months. The Floridan wells classified as above normal were the Blountstown Floridan monitor well (NWFID 2624) in eastern Calhoun County and the USGS-Benchmark monitor well (NWFID 392) in central Wakulla County. The USGS-Benchmark monitor well (NWFID 392) recorded an increase in water level after the significant rain event on March 9, 2025, contributing to it being classified as above normal in the middle of March 2025, but returned to normal ranges by the end of the month (**Figure 25**). Water levels at McCulloch #1 well were previously classified as below normal ranges during mid-February 2025 but have since increased to be within normal ranges.

All depicted sand-and-gravel aquifer monitor wells have continued to record below normal groundwater levels except for the Weller Ave Deep monitor well (NWFID 1382) in southern Escambia County (**Figure 23**), which has been classified as above normal since the end of November 2024 (**Figure 29**).

Figure 23: Floridan aquifer monitor wells and aquifer level percentiles for mid-February 2025

Percentile class rankings are based on each well's period of record. All wells have a minimum of 20 years of data.

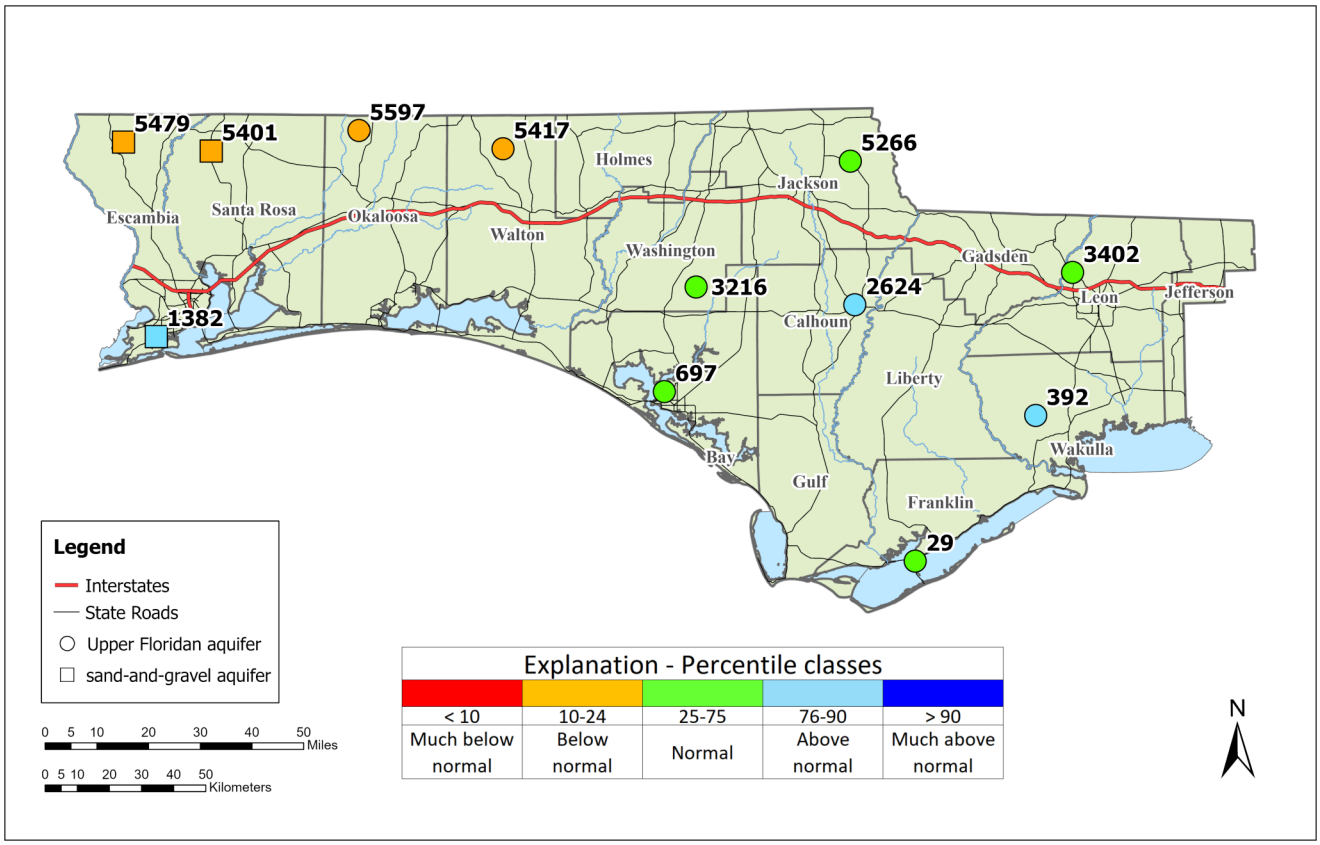


Figure 24: Daily Upper Floridan aquifer levels at USGS-Lake Jackson well (NWFID 3402), Leon County

Land surface elevation is 121.40 ft, NAVD 88

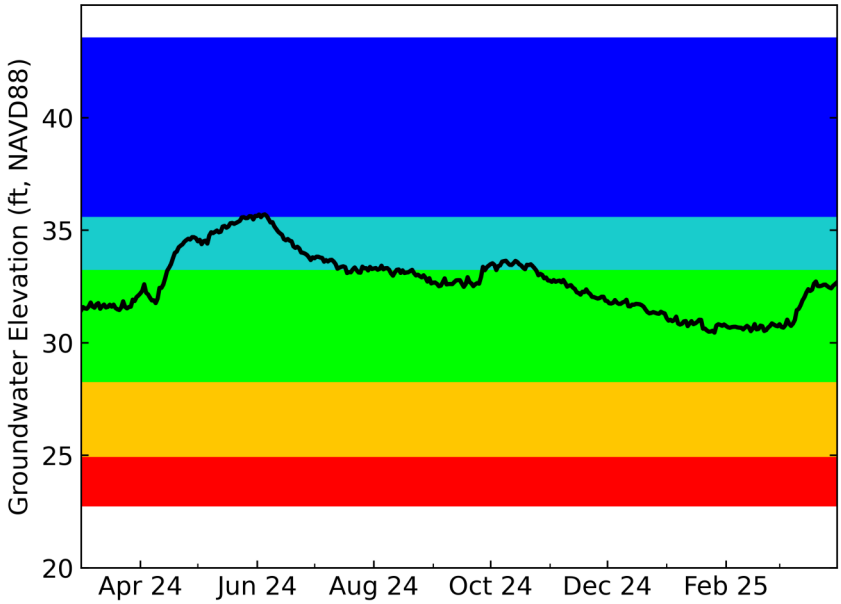
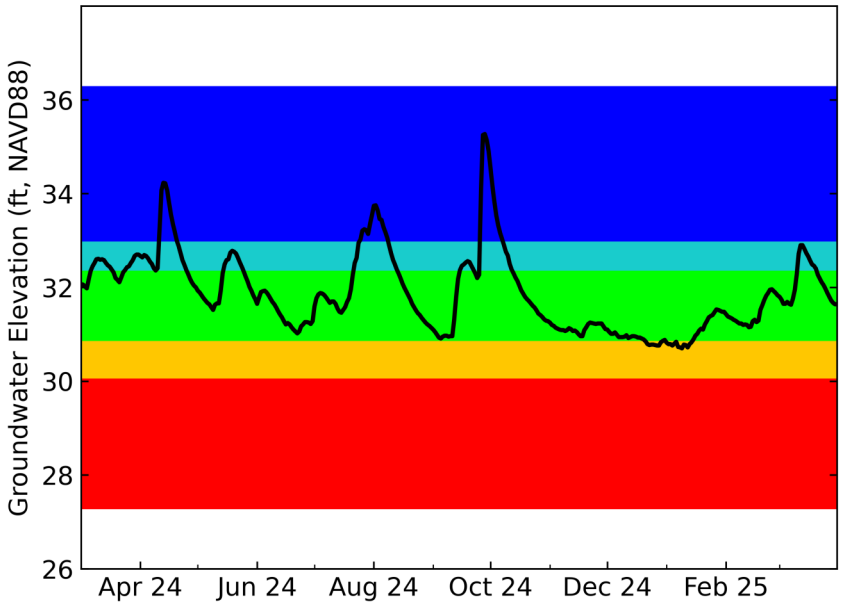


Figure 25: Daily Upper Floridan aquifer levels at USGS Benchmark well (NWFID 392), Wakulla County

Land surface elevation is 46.27 ft, NAVD 88



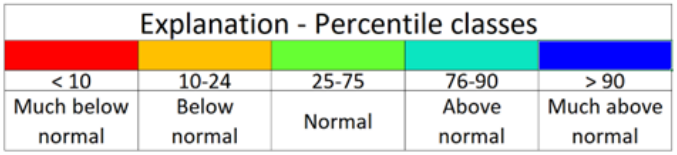


Figure 26: Daily Upper Floridan aquifer levels at NWFWMD Pittman Visa well (NWFID 5266), Jackson County

Land surface elevation is 127.31 ft, NAVD 88

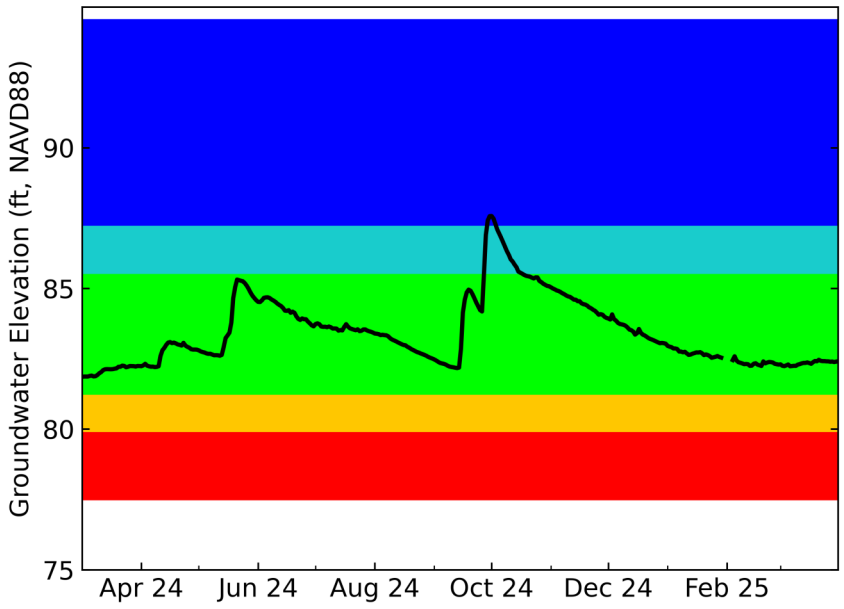


Figure 27: Daily Upper Floridan aquifer levels at USGS-422A Near Greenhead well (NWFID 3216), Washington County

Land surface elevation is 66.75 ft, NAVD 88

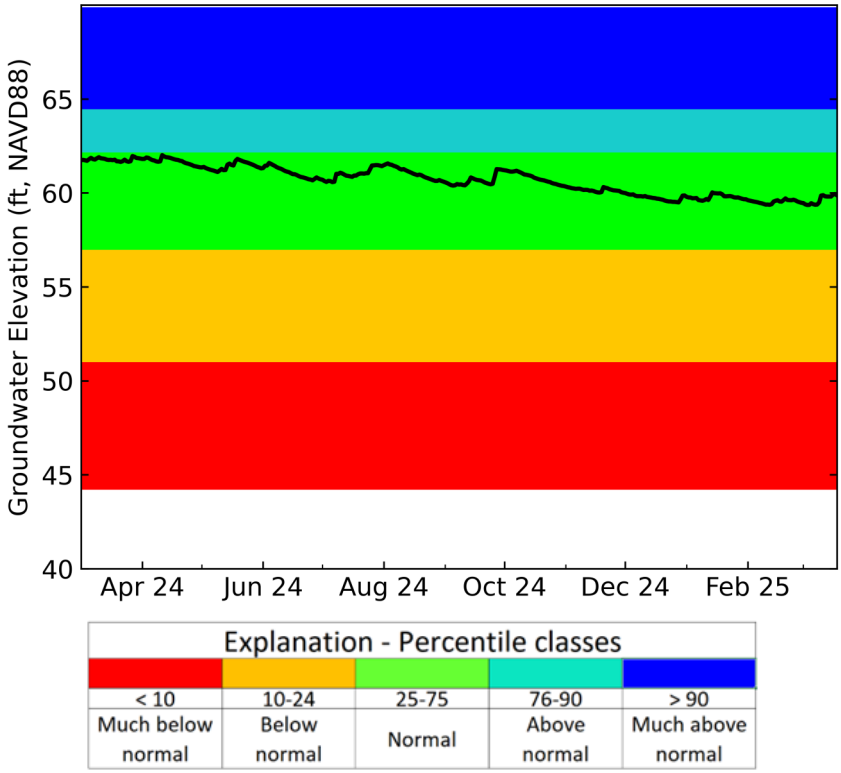


Figure 28: Daily Upper Floridan aquifer levels at Fannin Airport well (NWFID 697), Washington County

Land surface elevation is 4.05 ft, NAVD 88

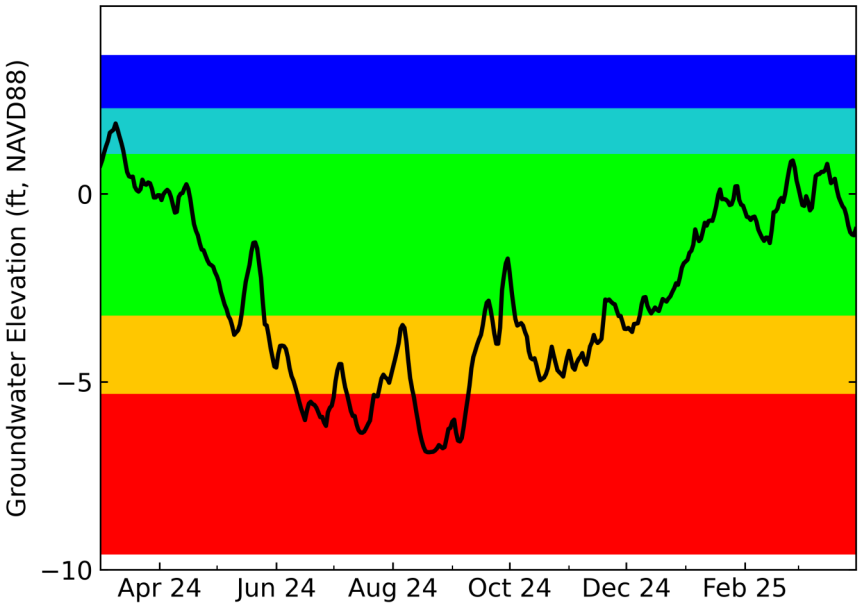


Figure 29: Daily sand-and-gravel aquifer levels at NWFWMD Weller Ave Deep well (NWFID 1382), Escambia County

Land surface elevation is 25.09 ft, NAVD 88