Northwest Florida Water Management District

Hydrologic Conditions Report

April 2025

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Summary

April 2025 was characterized by below-normal precipitation and above-normal temperatures (averaging around 69.6 degrees Fahrenheit) that contributed to generally normal or below normal hydrologic conditions across the Panhandle. Abnormally dry and moderate drought conditions affected the majority of the District this month except for in northern Escambia County, where they received 7.00 to 10.00 inches of rainfall over the month.

Rainfall

In April 2025, an average of 2.86 inches of rain was recorded across the Panhandle. This amount was 1.93 inches (50.5%) below the District normal rainfall for the month of April, which is 4.79 inches (**Table 1; Figures 1 - 7**). Normal rainfall is defined as average monthly rainfall for the 1991-2020 reference period.

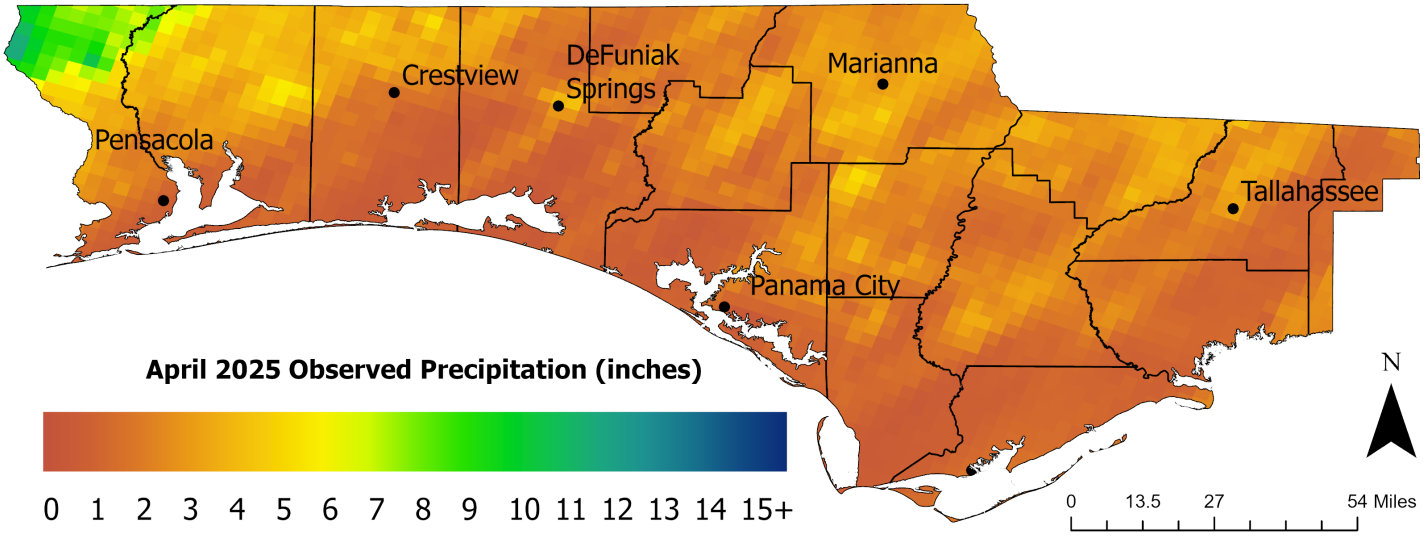
There was one significant rain event in April 2025. The rain event occurred April 7-8, 2025, when a front passed through the Panhandle. The highest rain amounts were recorded in northern Escambia County where they received between 6.00 and 10.00 inches. A large percentage of the total rainfall observed this month came from this rain event. Tallahassee received 2.47 inches of rain from this event, only 0.01 inch shy of total observed rainfall for the month (**Table 1**).

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

Station	April Normal Rainfall (1991 to 2020)	April 2025 Observed Rainfall	Percent Difference
Tallahassee Regional Airport	3.53	2.48	-34.9%
Marianna Regional Airport	3.72	2.90	-24.8%
Niceville, FL	5.99	0.96	-145%
Pensacola Regional Airport	5.52	1.20	-129%

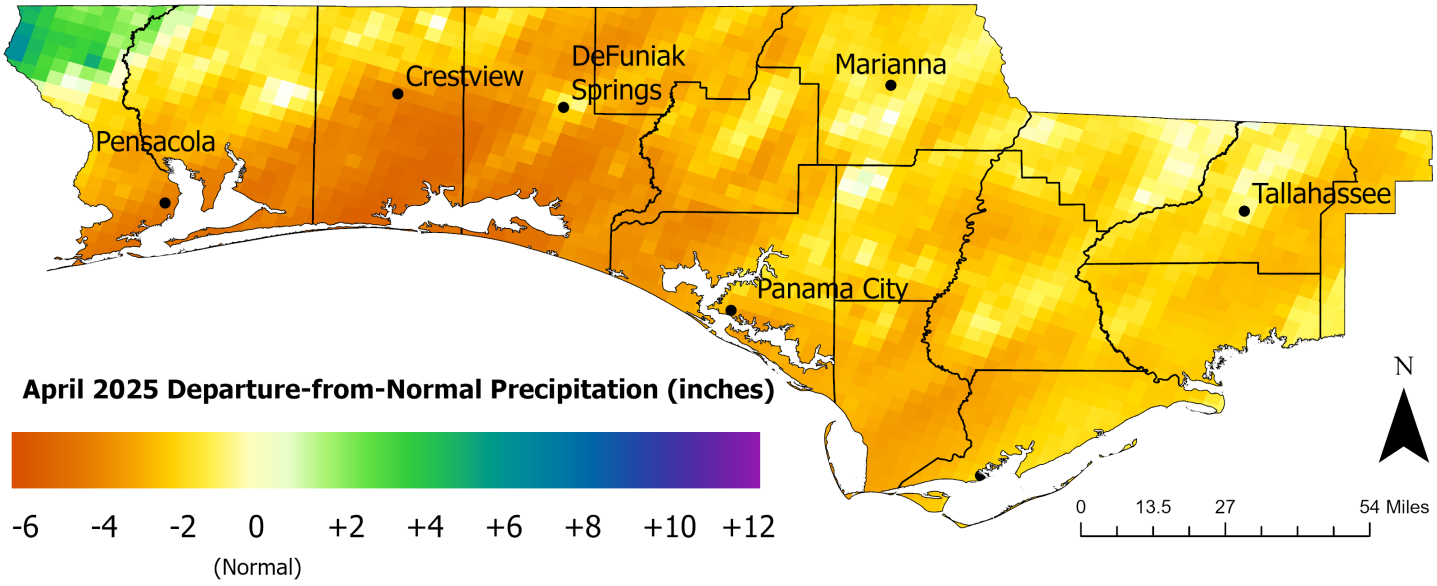
Source: https://www.weather.gov/wrh/Climate?wfo=tae
https://www.weather.gov/wrh/Climate?wfo=mob

Figure 1: District-wide April 2025 observed rainfall



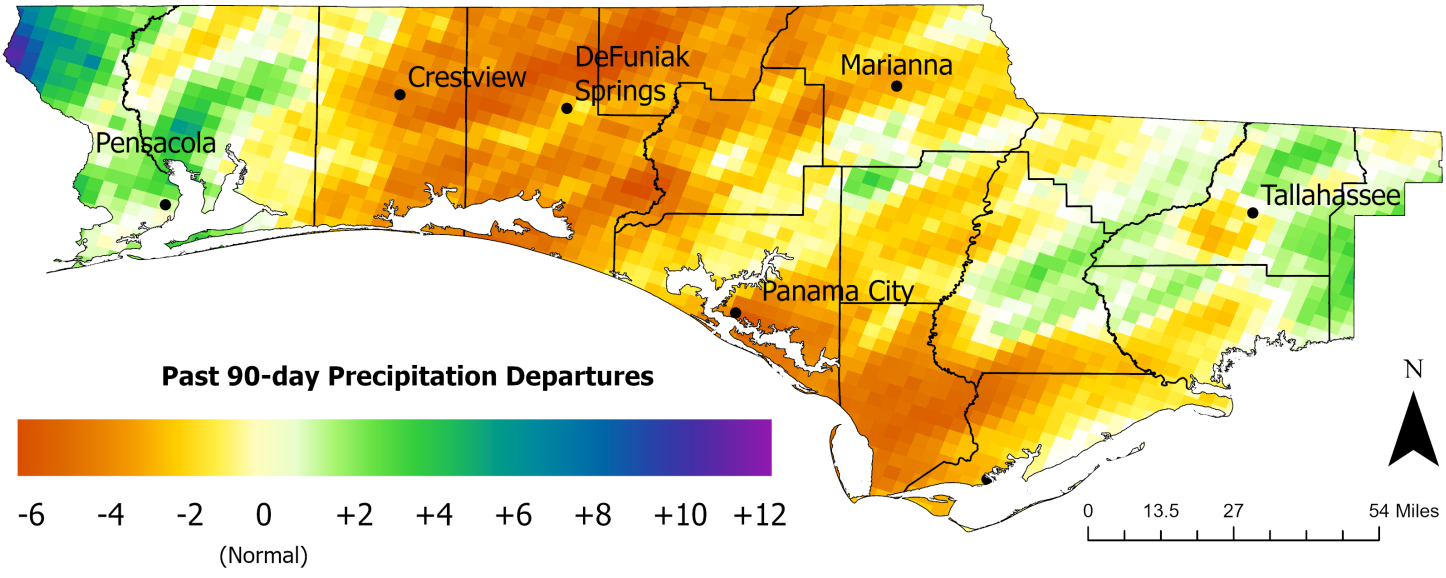
Source: https://water.weather.gov/precip/download.php

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



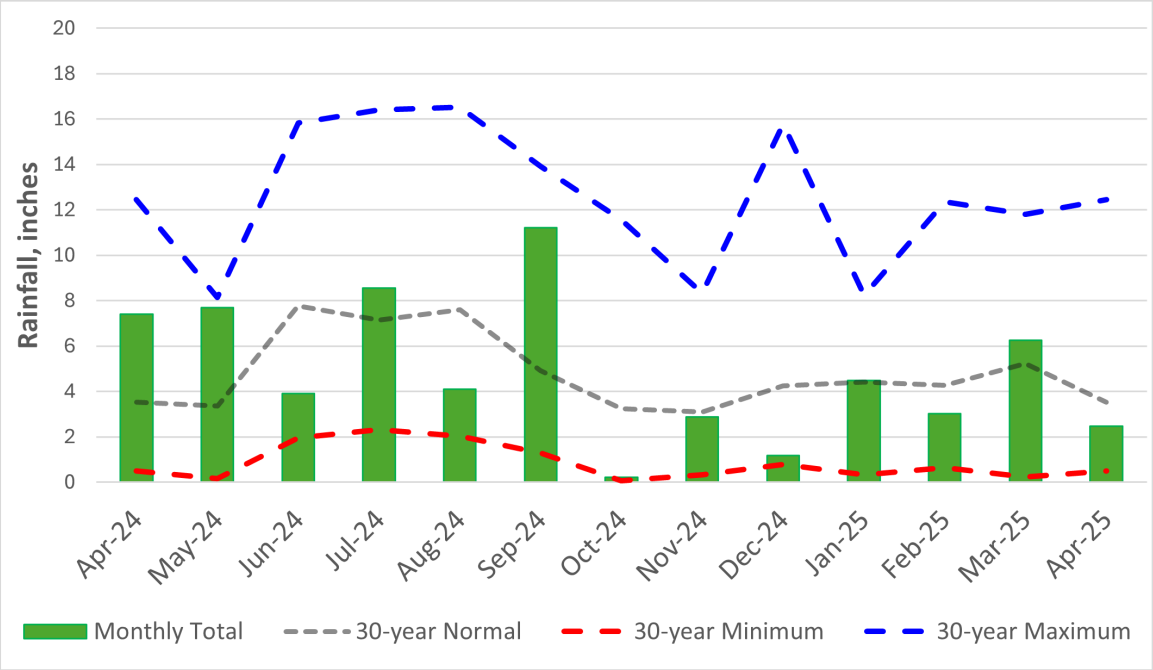
Source: https://water.weather.gov/precip/download.php

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



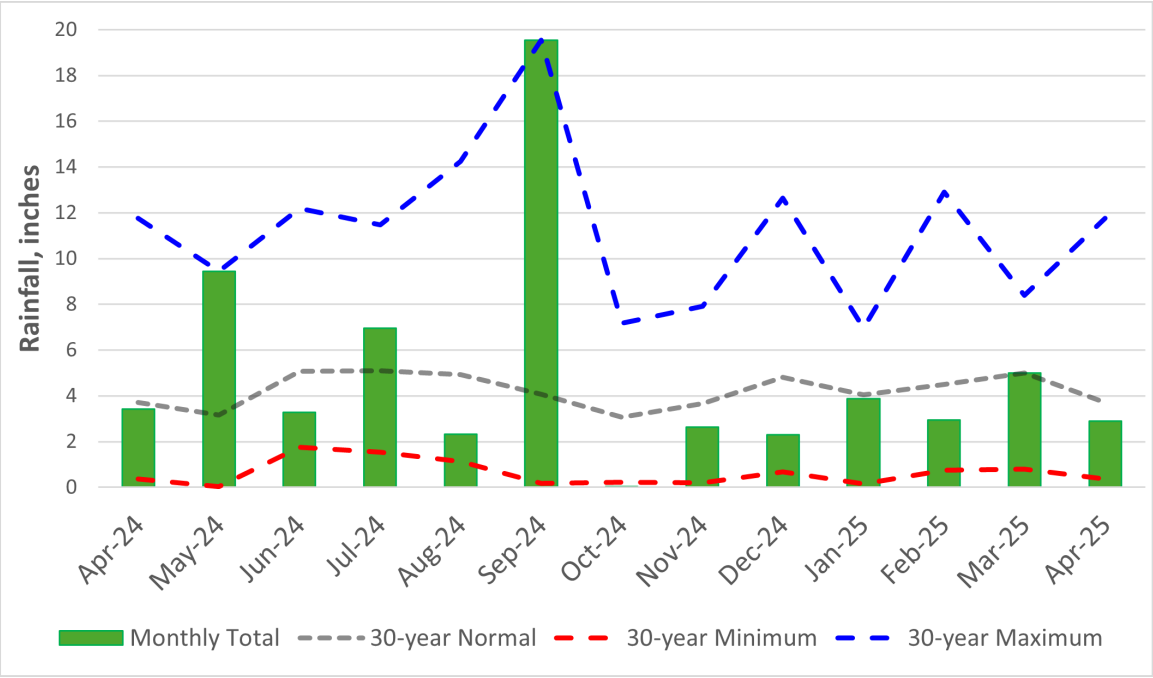
Source: https://water.weather.gov/precip/download.php

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



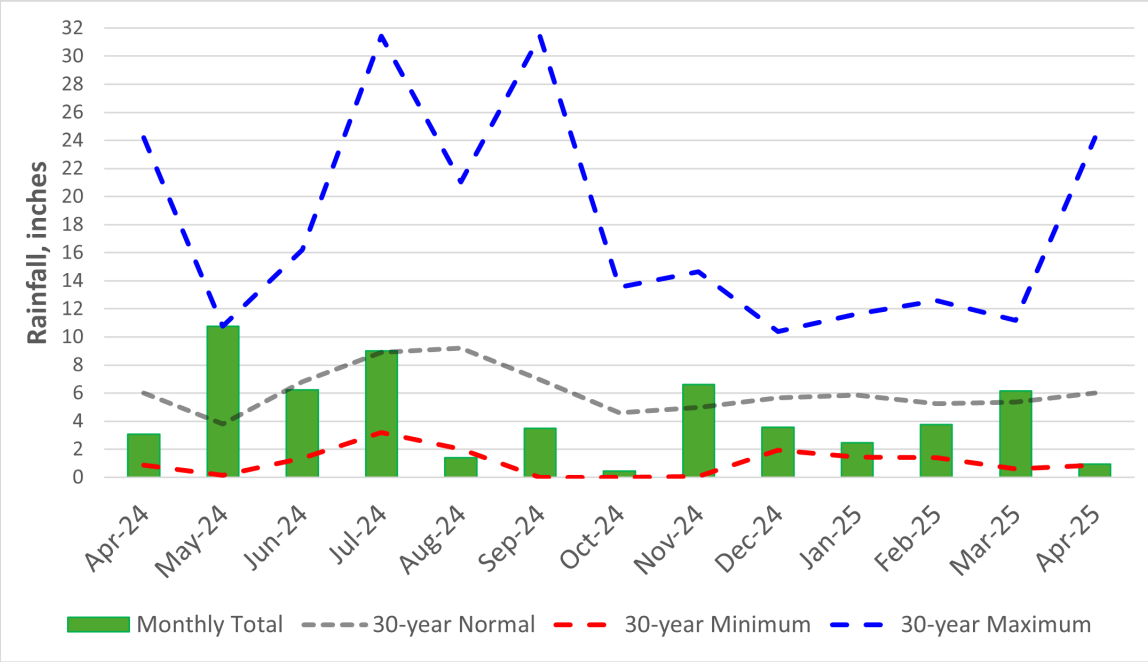
Source: https://www.weather.gov/wrh/Climate?wfo=tae

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



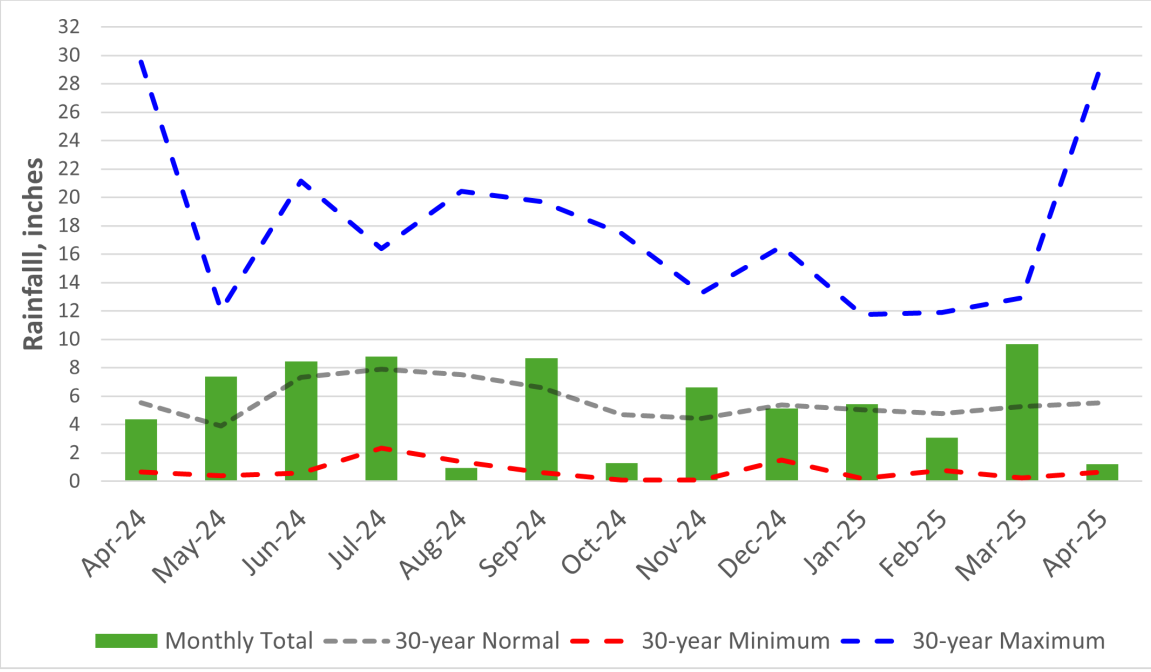
Source: https://www.weather.gov/wrh/Climate?wfo=tae

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



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

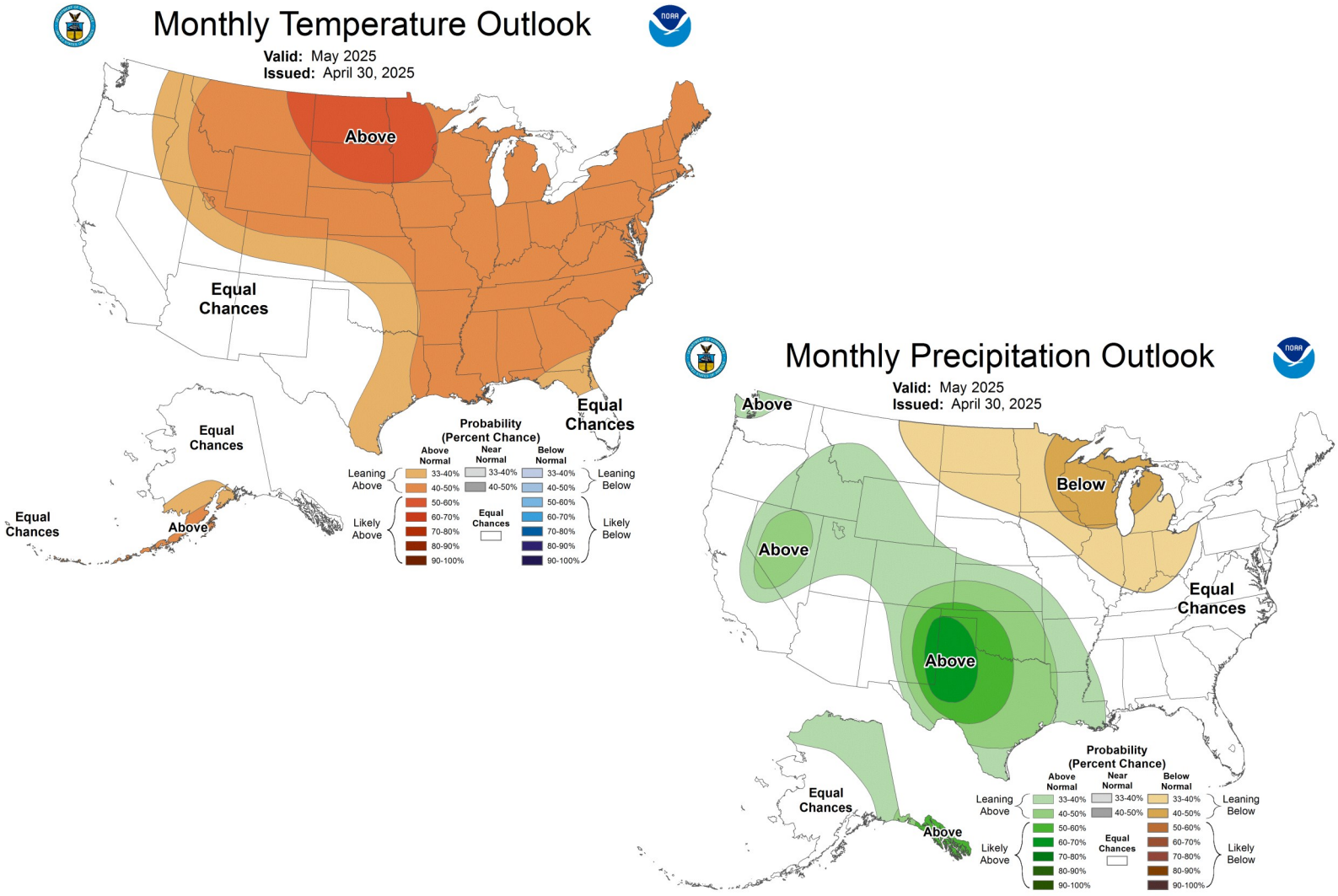
Climate Outlook

According to NOAA's Climate Prediction Center, the forecast issued April 30, 2025, for May 2025 shows a slight chance for above-normal temperatures across the Panhandle, with chances slightly higher in the western portion of the District. There are equal chances for above- or below-normal rainfall amounts across the Panhandle (Figure 8).

As of May 19, 2025, ENSO-neutral conditions are present and are favored to persist through the summer months (74% chance). During the summer months, ENSO-neutral conditions tend to produce less vertical wind shear which is favorable for hurricane development.

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: May 2025 Temperature and Precipitation Outlooks for the United States



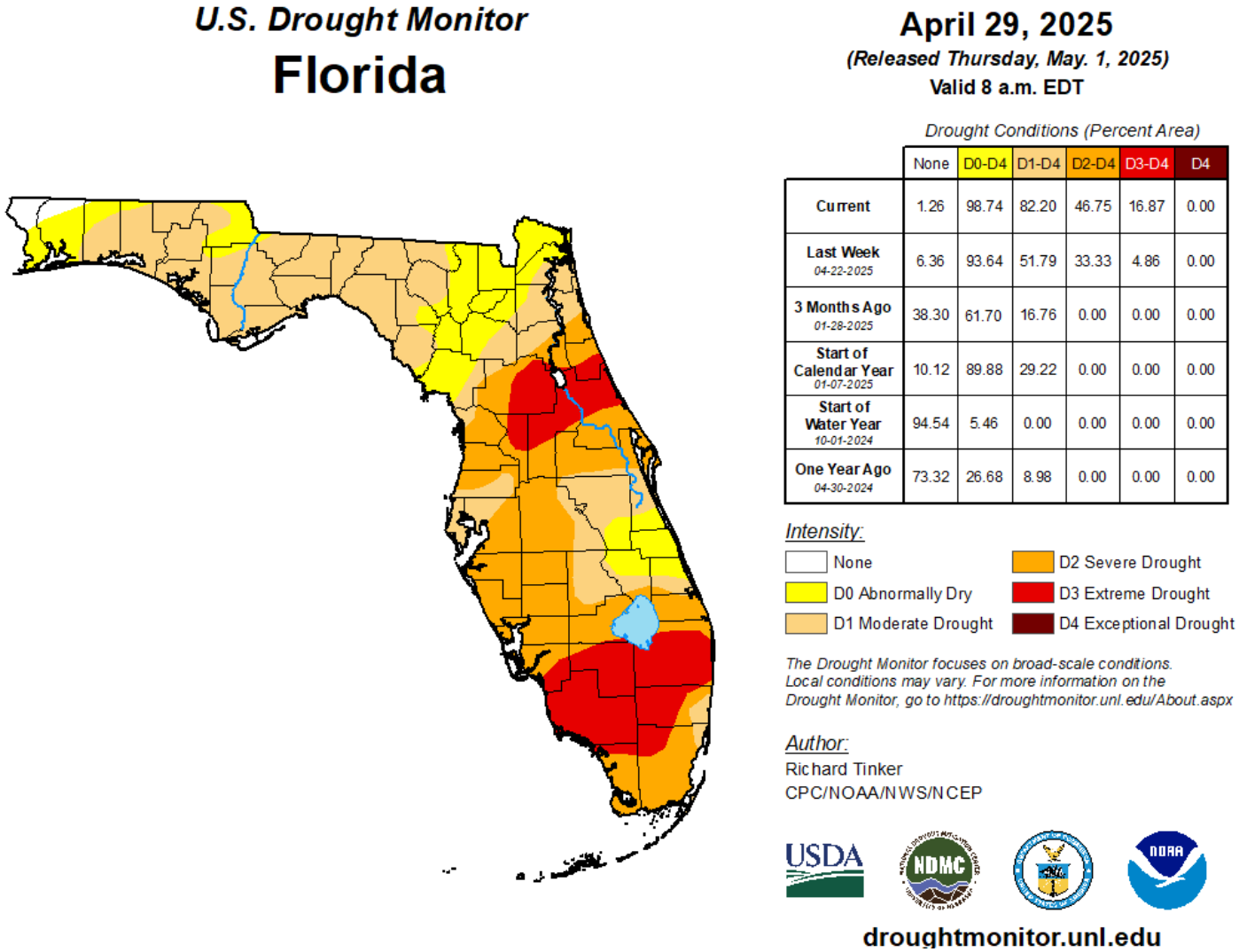
Source: https://www.cpc.ncep.noaa.gov/products/predictions/30day/

Drought Conditions

The U.S. Drought Monitor report released for April 29, 2025, showed abnormally dry and moderate drought conditions present in the District (**Figure 9**). The only portion of the District not affected by drought conditions was northern Escambia County and a small portion of northern Santa Rosa County, where they received about 10.00 inches of rain for the month (**Figure 1**).

According to the U.S. Monthly Drought Outlook for May 2025, drought is not expected to significantly develop in the District. However, due to the dry conditions in April and lack of a clear signal of coming wet conditions, substantial drought relief is unlikely in May 2025 and more likely once the summer seabreeze circulation regime is in full tilt.

Figure 9: Florida Drought Conditions on April 29, 2025



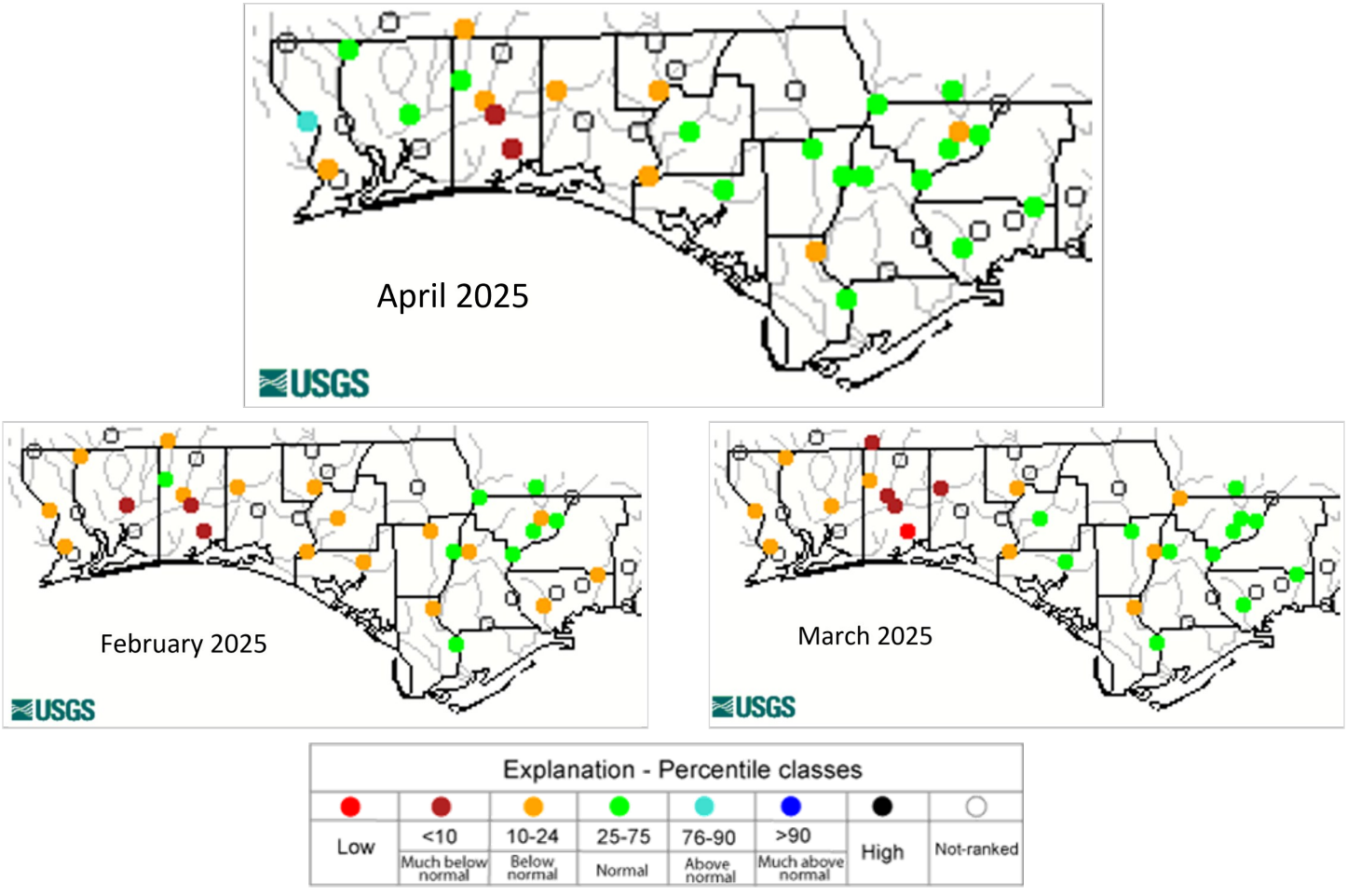
Source: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?FL

Surface Water

Streamflows. During April 2025, streamflow stations in the eastern and a small part of the northwestern regions of the District generally recorded flows within normal ranges while stations within the central portion of the District recorded flows classified as below normal or much below normal (**Figures 10 – 16**). This spatial variation is likely due to the precipitation deficit that remains in the District, particularly in the central portion of the District (**Figure 3**). Stations in northern Escambia and Santa Rosa Counties increased from below normal ranges to normal or above normal ranges following the significant rain event on April 7-8, 2025 (**Figure 1**).

All depicted time-series plots recorded an increase in flow following the rain event before decreasing for the remainder of the month (**Figures 11 – 16**). The Choctawhatchee River near Bruce, Florida (**Figure 14**), Blackwater River near Baker, Florida (**Figure 15**), and Escambia River near Century, Florida (**Figure 16**) decreased to below normal ranges toward the end of the month.

Figure 10: Northwest Florida February 2025 to April 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

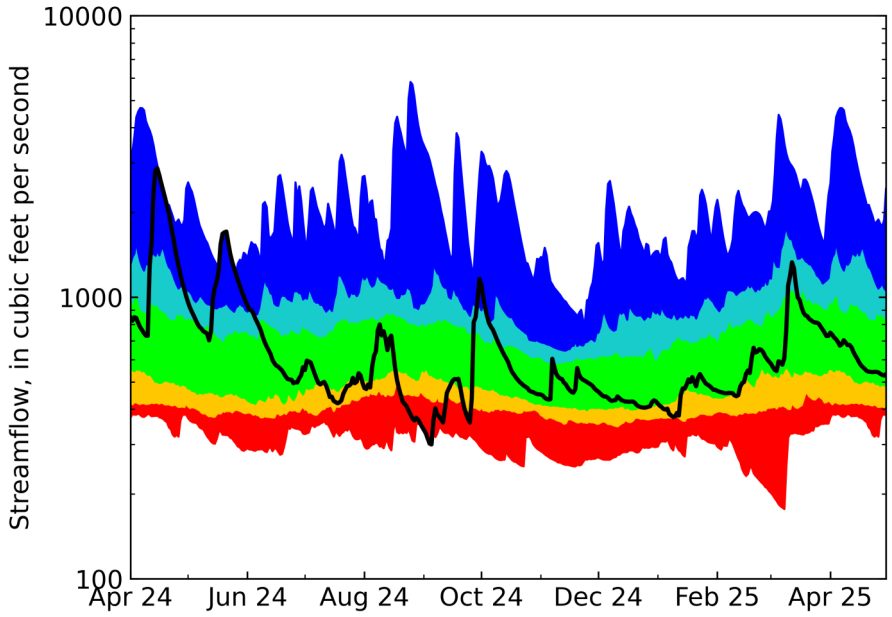


Figure 12: Daily streamflows and percentile ranges for USGS Station 02329000 Ochlockonee River Near Havana, Florida

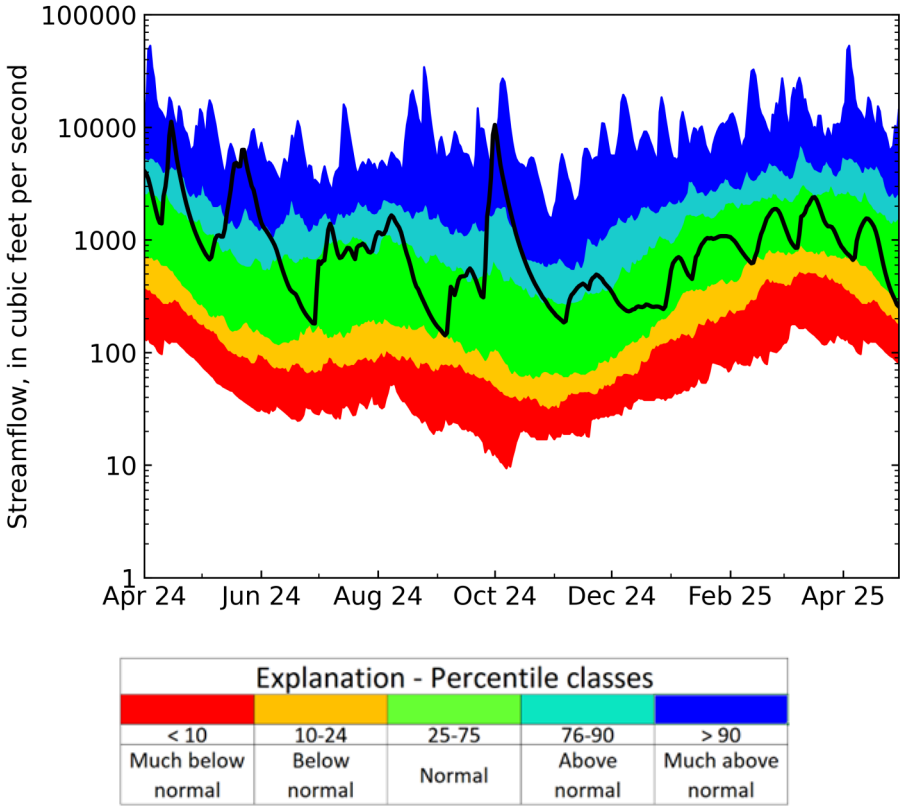


Figure 13: Daily streamflows and percentile ranges for USGS Station 02358700 Apalachicola River Near Blountstown, Florida

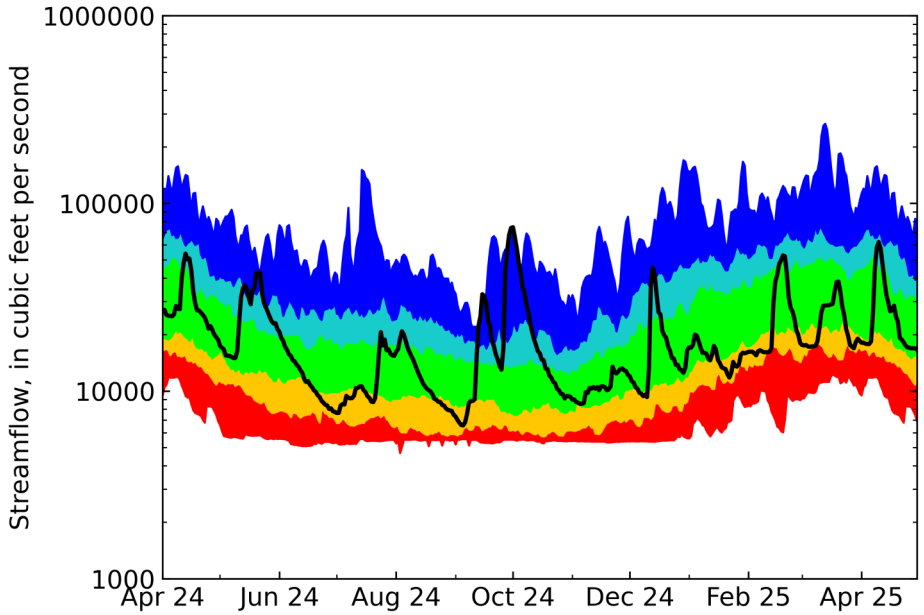
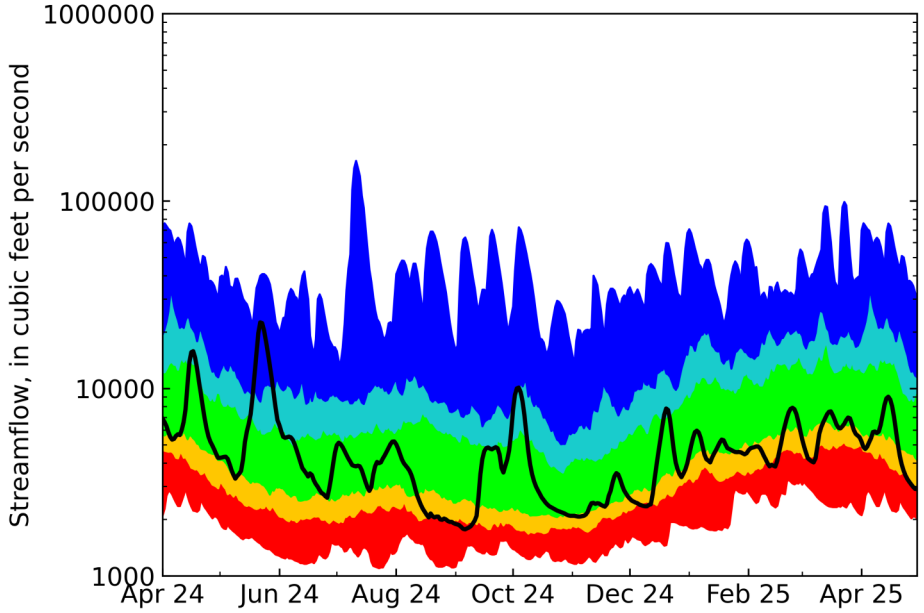


Figure 14: Daily streamflows and percentile ranges for USGS Station 02366500 Choctawhatchee River Near Bruce, Florida



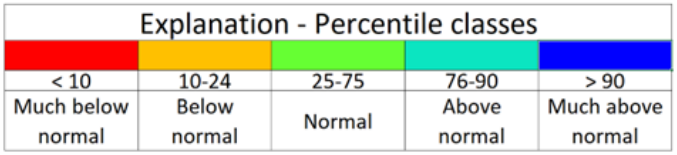


Figure 15: Daily streamflows and percentile ranges for USGS Station 02370000 Blackwater River Near Baker, Florida

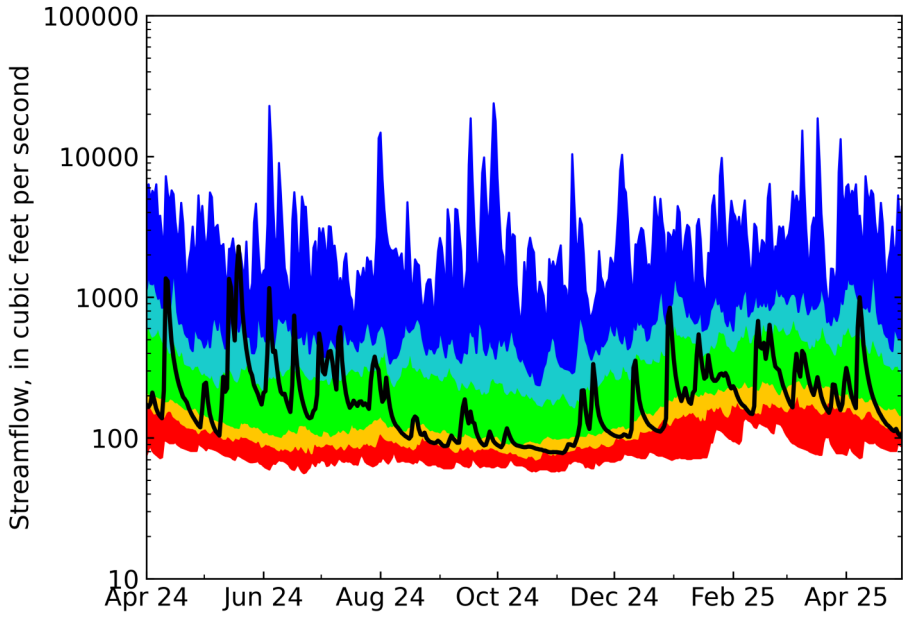
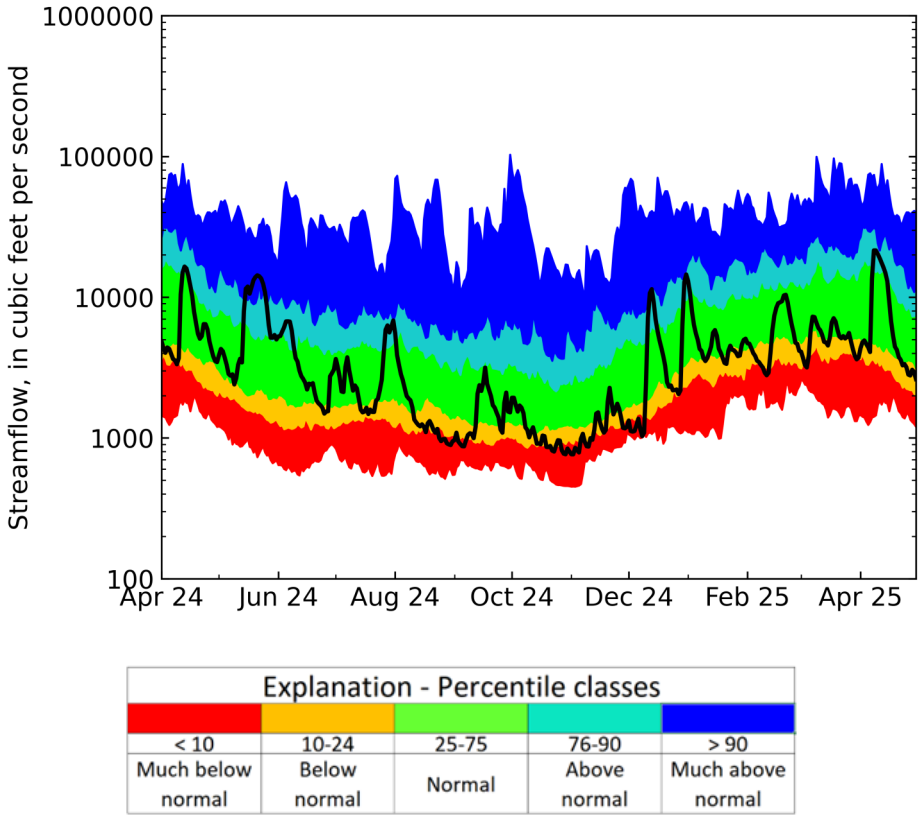


Figure 16: Daily streamflows and percentile ranges for USGS Station 02375500 Escambia River Near Century, Florida



Lake Levels. In the beginning of April 2025, water levels at Lake Jackson in Leon County increased slightly with the rainfall received from the significant rain event on April 8, 2025. The lake level then gradually decreased for the remainder of the month, ending the month with a stage level of 81.73 feet, NAVD 1988. (**Figure 17**). The long-term (January 29, 2003, to April 30, 2025) average stage level for Lake Jackson is 80.90 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 0.67 feet during April 2025, reaching the lowest level since monitoring began during the 2022 flooding event. Piney Lake ended the month with a stage level of 48.22 feet, NAVD 1988 (**Figure 18**).

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

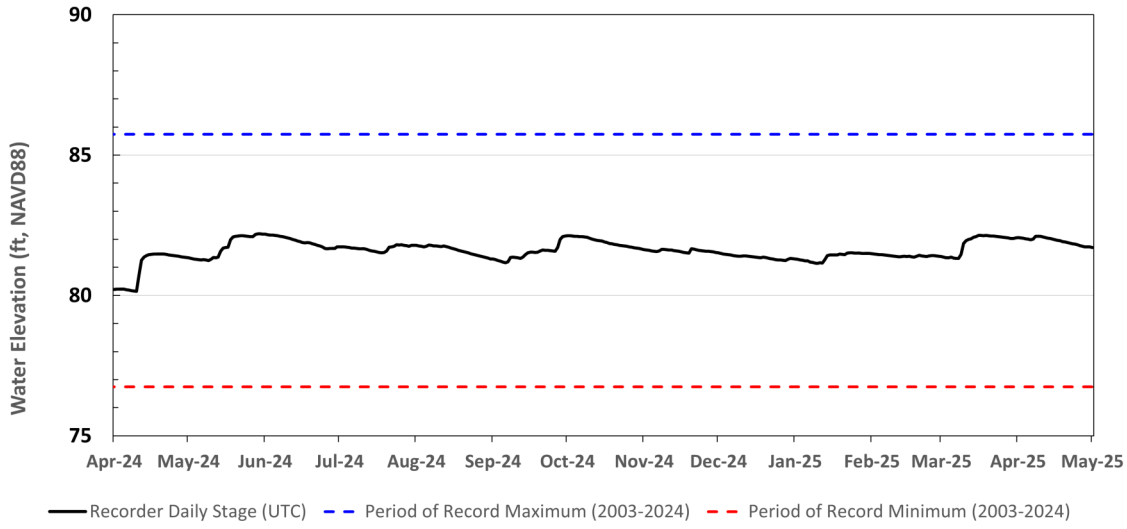
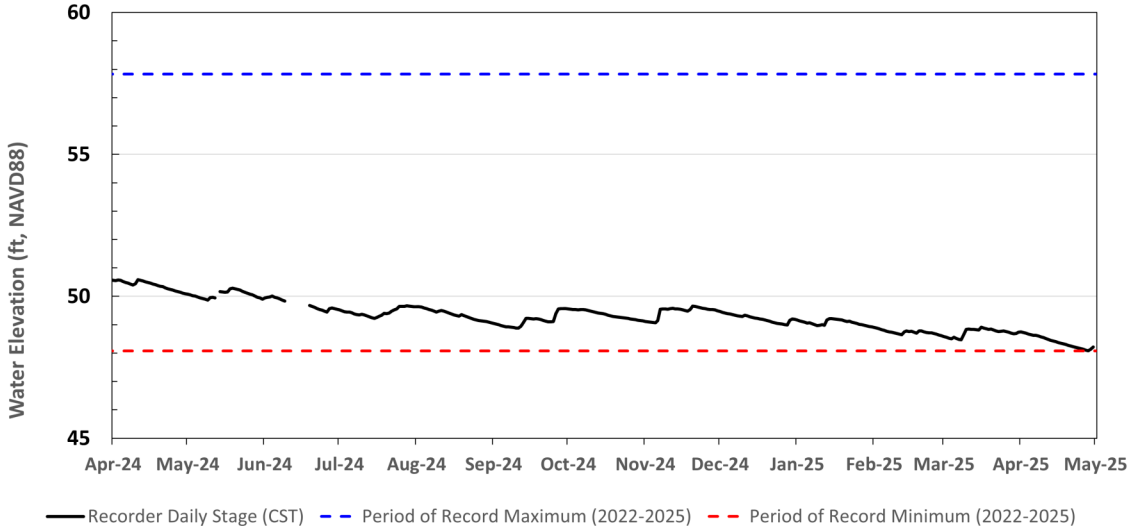


Figure 18: Daily water levels at Piney Lake, Washington County



Spring Flows

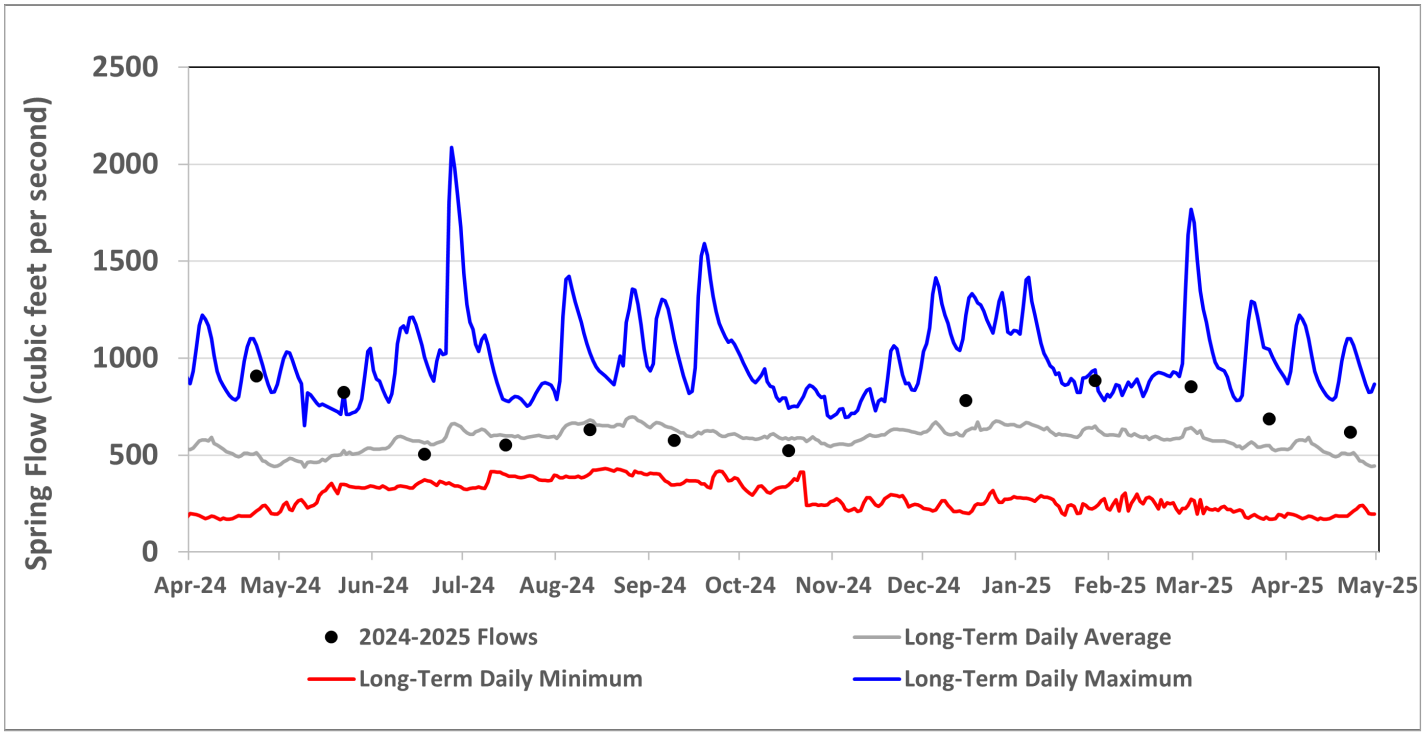
Wakulla and Sally Ward Spring System. Flow at Wakulla Spring decreased 68 cubic feet per second (cfs) between the measurements taken in March and April 2025 but remains above the long-term average flow for this time of year. The most recent flow measurement for Wakulla Spring was 618 cfs, which was conducted on April 22, 2025 (Figure 19). The long-term (October 23, 2024, to April 22, 2025) average flow for the month of April is 516 cfs.

Flow at Sally Ward Spring decreased by 7.7 cfs between the measurements taken in March and April 2025. The most recent flow measurement for Sally Ward was 20.4 cfs on April 22, 2025. This measurement was 0.7 cfs lower than the long-term (November 1, 2024, to April 22, 2025) average flow of 21.1 cfs for the month of April.

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 April 22, 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 April 22, 2025, represent discrete measurements. Daily statistics are based on the October 23, 2004, through April 22, 2025 period of record.

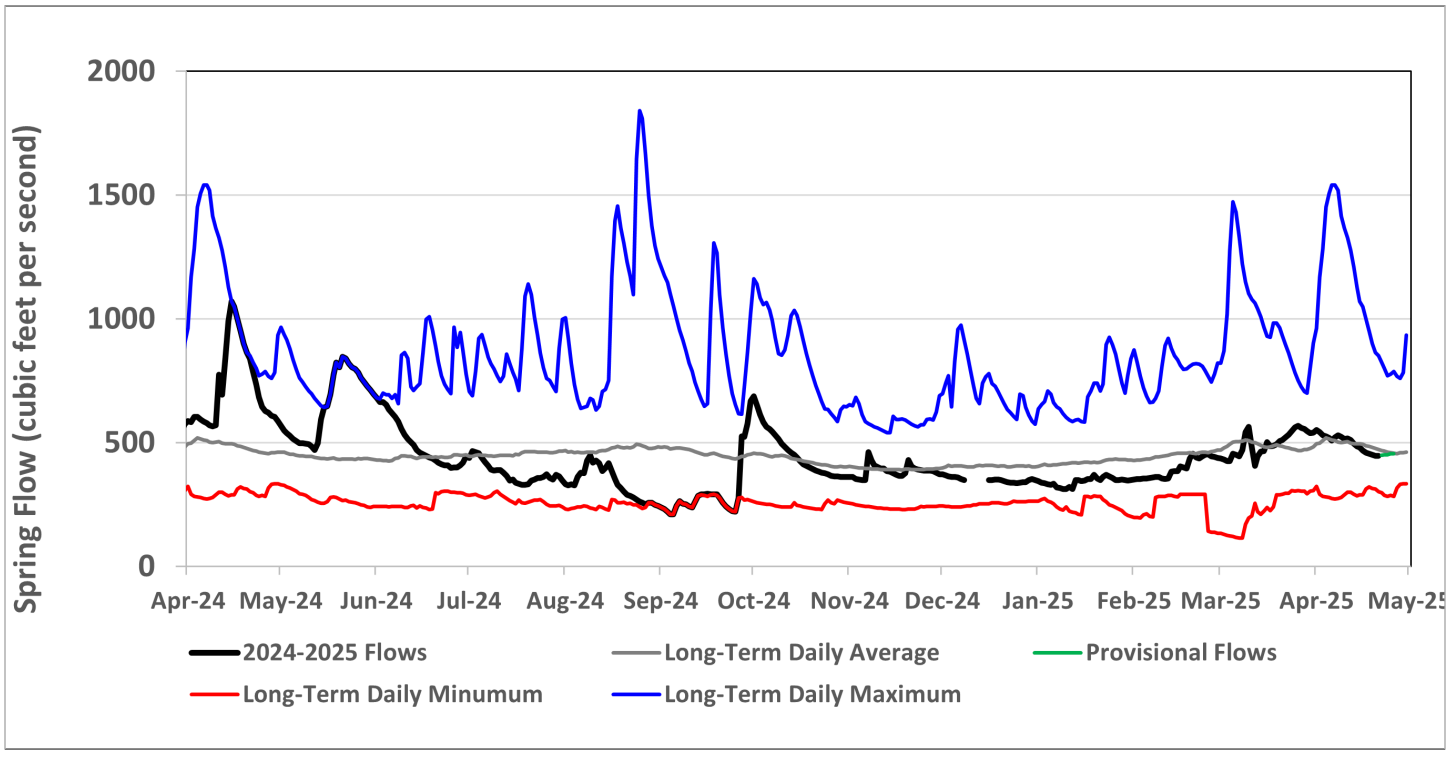


St. Marks River Rise. The mean daily spring flow for April 2025 at the St. Marks River Rise was 491 cfs, based on the available USGS provisional data which extends through April 26, 2025 (**Figure 20**). This was above the long-term (October 1, 1956 through April 26, 2025) average flow for the month of April of 487 cfs.

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 April 26, 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.

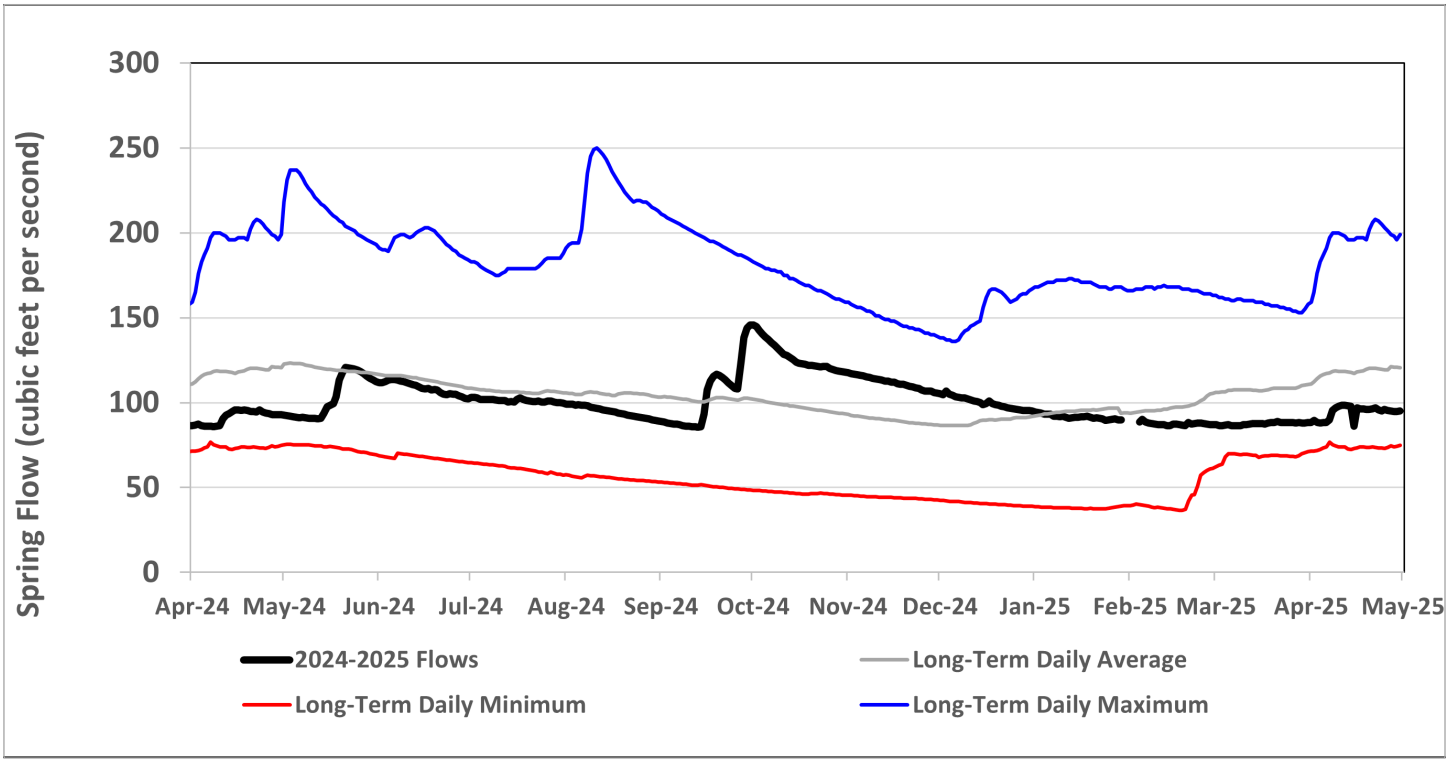
Figure 20: Daily spring flows for the St. Marks River Rise



Jackson Blue Spring. Daily flows at Jackson Blue Spring for the month of April 2025 averaged 94.0 cfs. This was below the long-term (December 21, 2004, through April 30, 2025) average flow for the month of April of 118 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 April 30, 2025

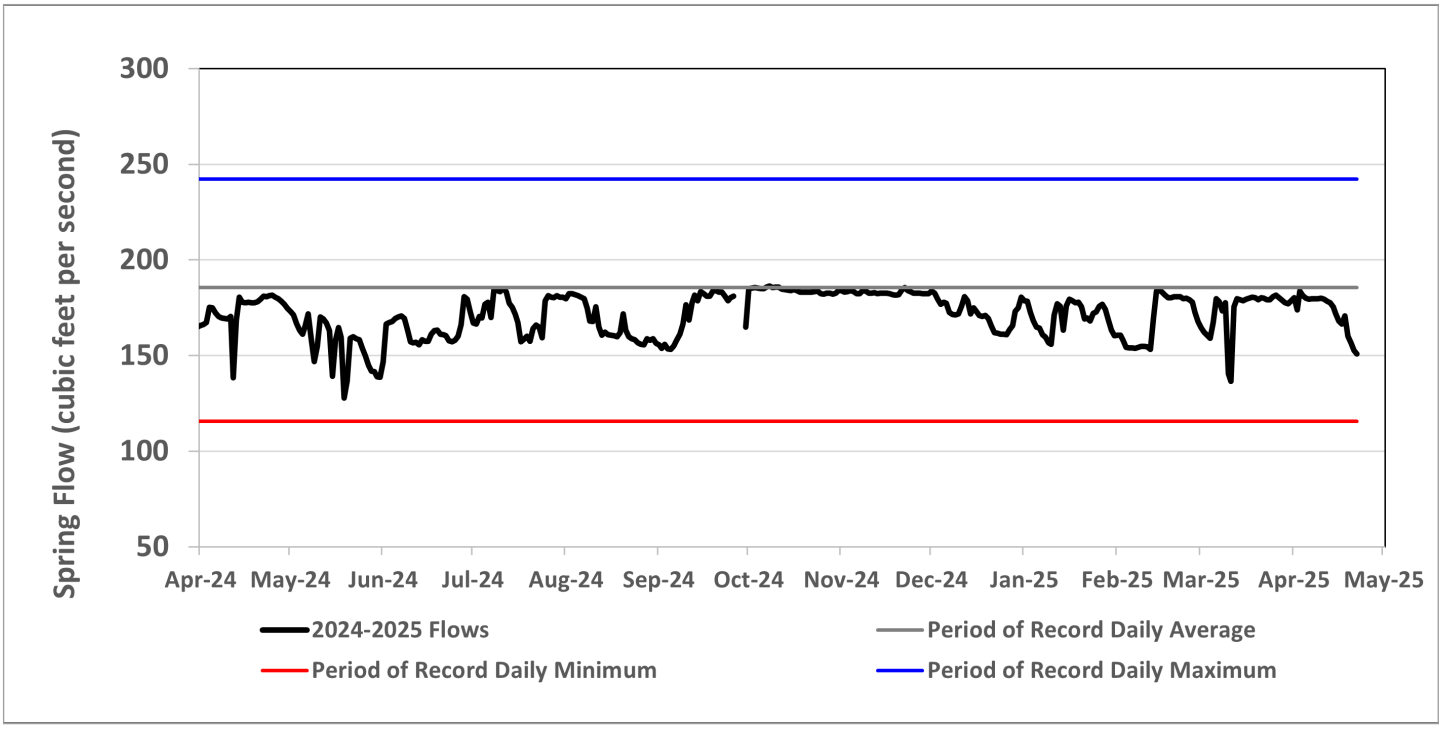


Gainer Spring Group. During April 2025 (April 1 to April 22, 2025), flow at the Gainer Spring Group was 173 cfs (**Figure 22**). The record period (October 28, 2019, through April 22, 2025) average monthly spring flow for April is 188 cfs. It should be noted there is a relatively brief period of record 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 April 2025, all depicted Floridan aquifer monitor wells were classified as within normal ranges except for two wells that were below 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. All depicted groundwater level time-series hydrographs recorded a decrease in groundwater levels in the second half of April, likely due to the lacking rainfall during the month.

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 had been classified as above normal for several months. At the end of April 2025, Weller Ave Deep monitor well decreased into normal ranges for the first time since November 2024 (**Figure 29**).

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

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

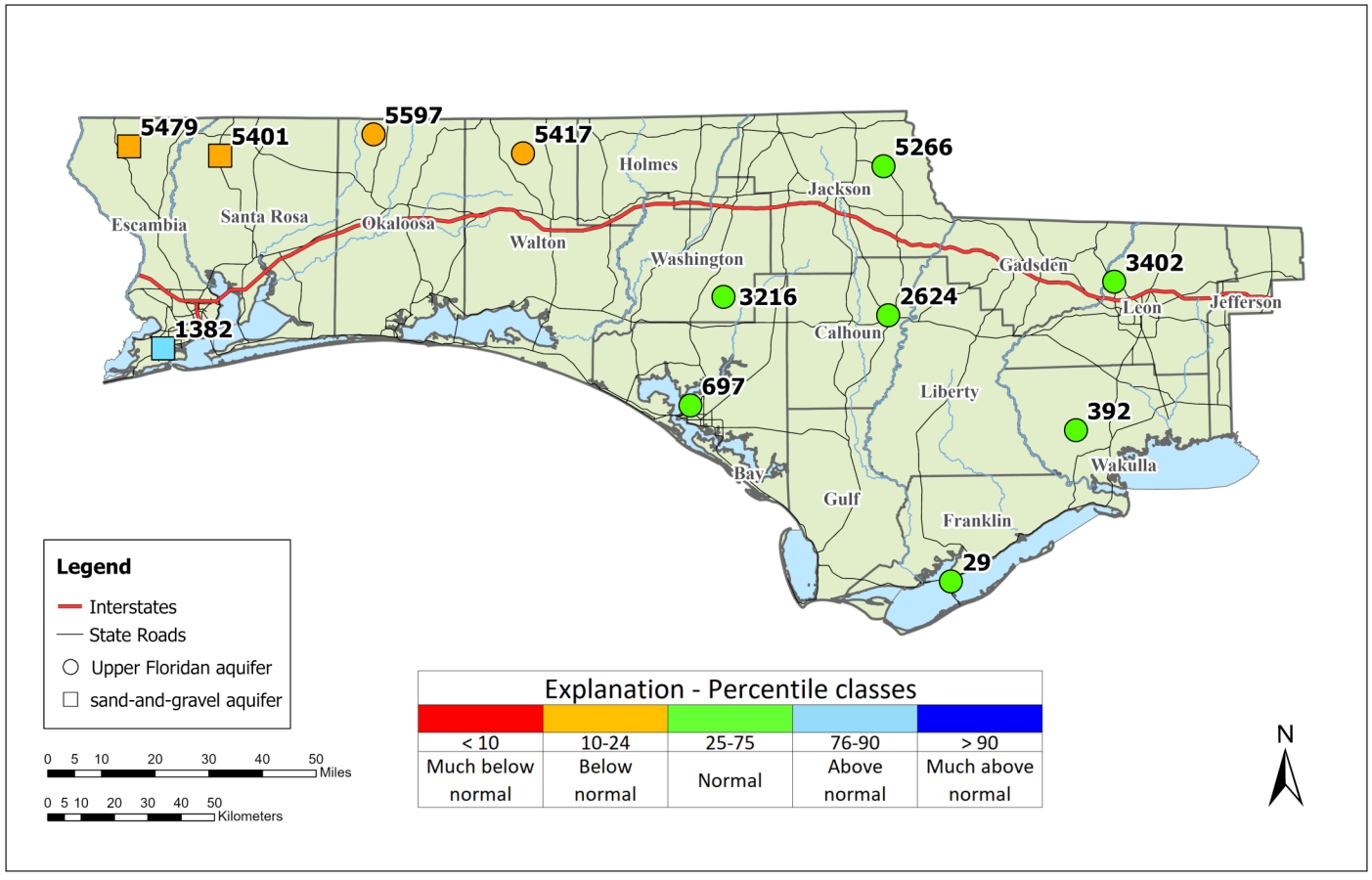


Figure 24: Daily Upper Floridan aquifer levels at USGS-Lake Jackson well (NWFID 3402), Leon County

Land surface elevation is 121.40 ft, NAVD 88

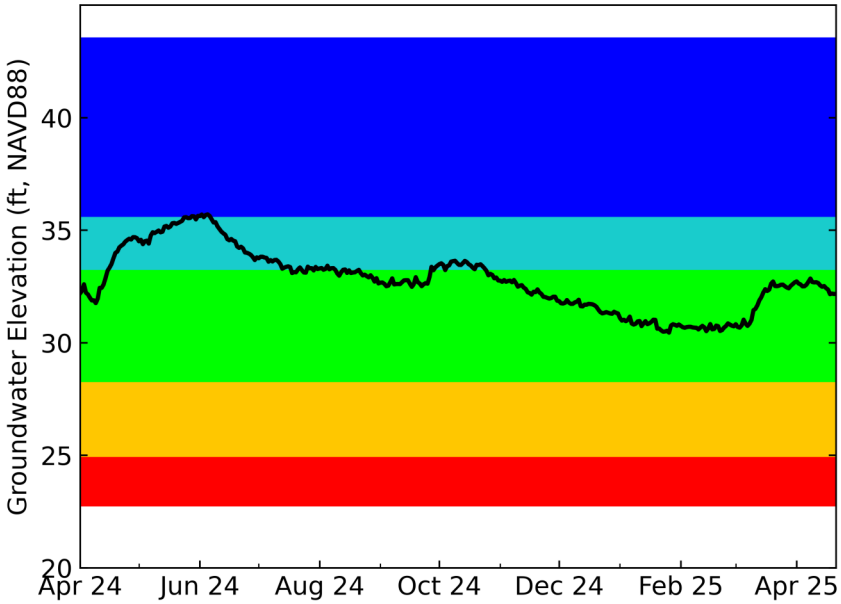
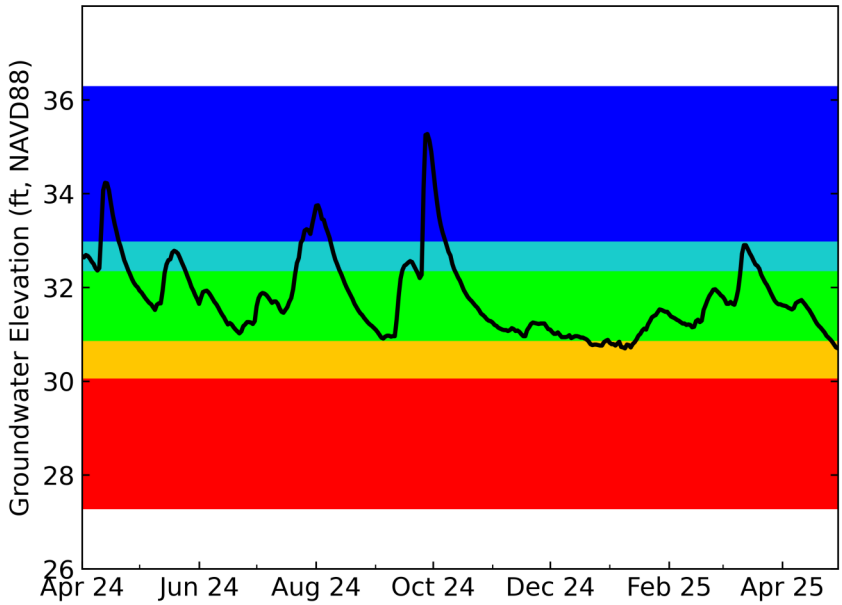


Figure 25: Daily Upper Floridan aquifer levels at USGS Benchmark well (NWFID 392), Wakulla County

Land surface elevation is 46.27 ft, NAVD 88



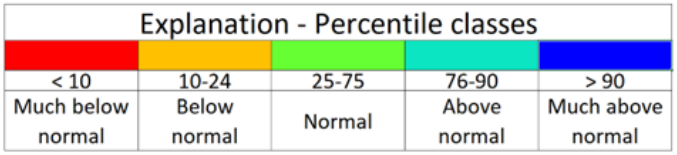


Figure 26: Daily Upper Floridan aquifer levels at NWFWMD Pittman Visa well (NWFID 5266), Jackson County

Land surface elevation is 127.31 ft, NAVD 88

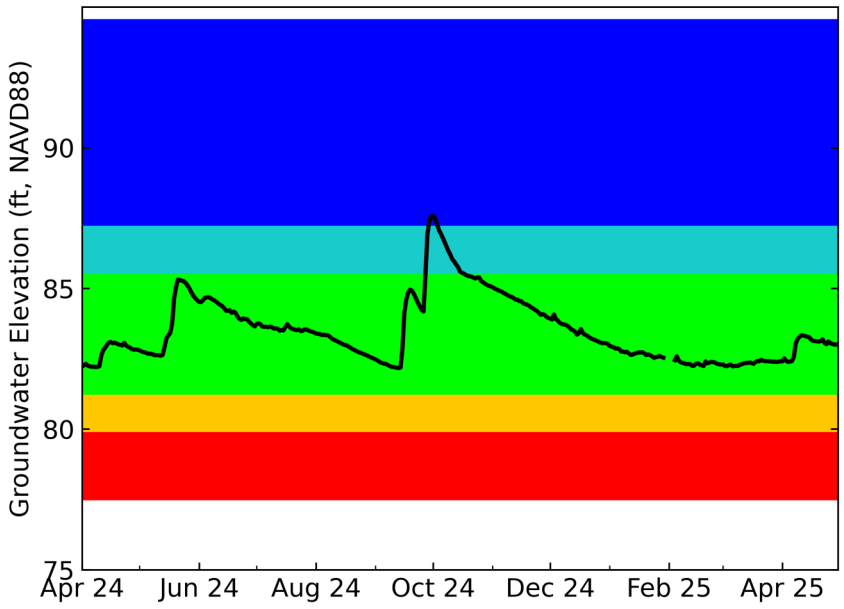


Figure 27: Daily Upper Floridan aquifer levels at USGS-422A Near Greenhead well (NWFID 3216), Washington County

Land surface elevation is 66.75 ft, NAVD 88

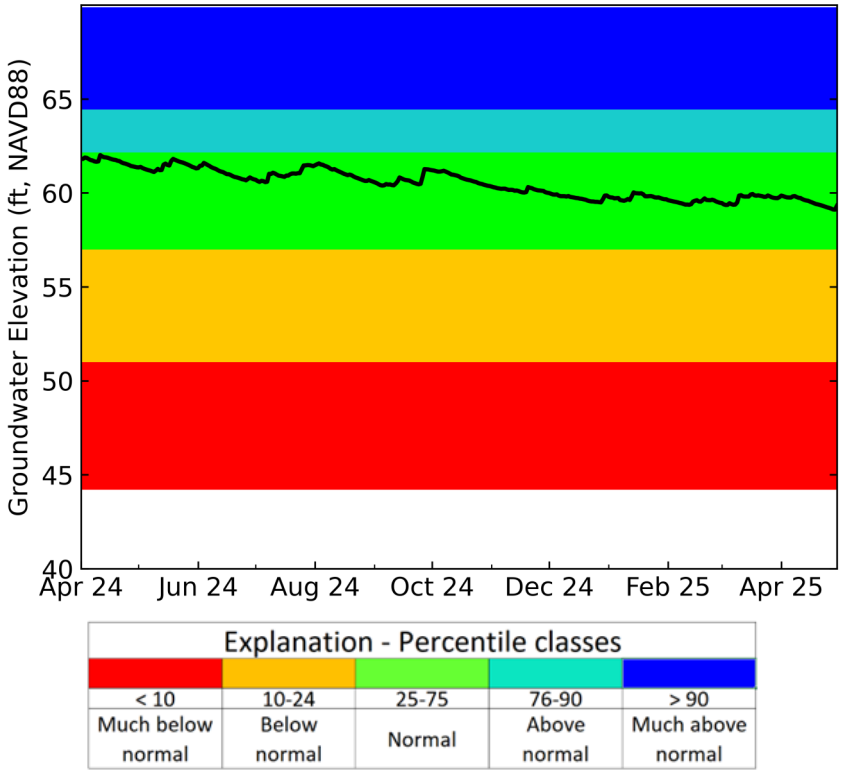


Figure 28: Daily Upper Floridan aquifer levels at Fannin Airport well (NWFID 697), Washington County

Land surface elevation is 4.05 ft, NAVD 88

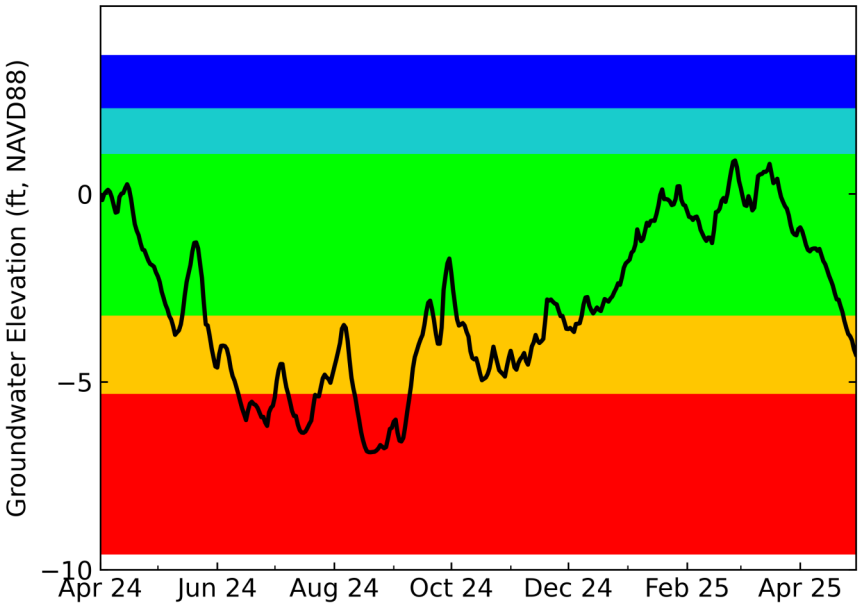
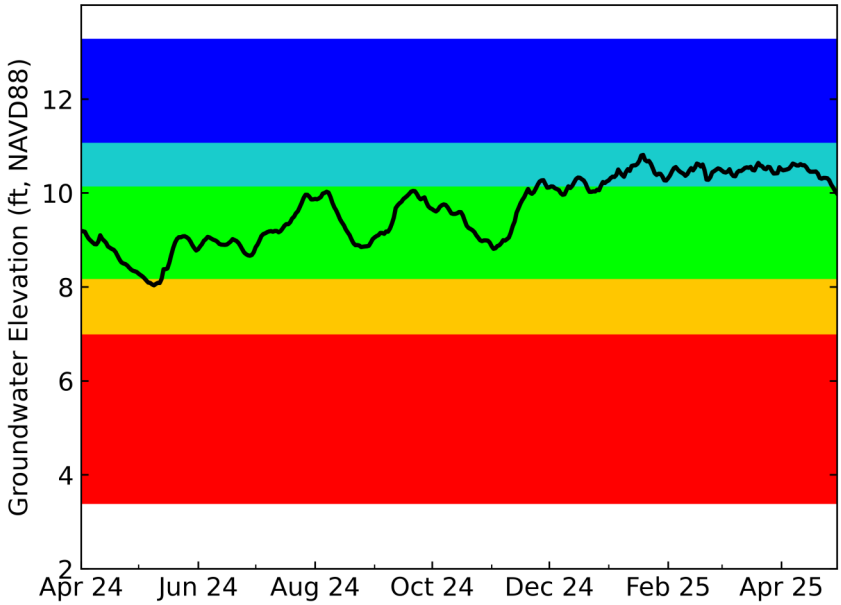


Figure 29: Daily sand-and-gravel aquifer levels at NWFWMD Weller Ave Deep well (NWFID 1382), Escambia County

Land surface elevation is 25.09 ft, NAVD 88



Explanation - Percentile classes				
< 10	10-24	25-75	76-90	> 90
Much below normal	Below normal	Normal	Above normal	Much above normal