



## Northwest Florida Water Management District

# Hydrologic Conditions Report

## May 2024

Rainfall.....	1
Drought Conditions.....	6
Climate Outlook .....	6
Surface Water.....	7
Spring Flows .....	12
Aquifer Levels .....	15



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## Summary

May 2024 was characterized by much above normal precipitation, above normal temperatures (averaging around 76.7 degrees Fahrenheit), and rising evapotranspiration rates. Generally normal aquifer levels and normal to above normal streamflow and spring flow were evident across most of the Panhandle. No drought conditions were present in the District.

## Rainfall

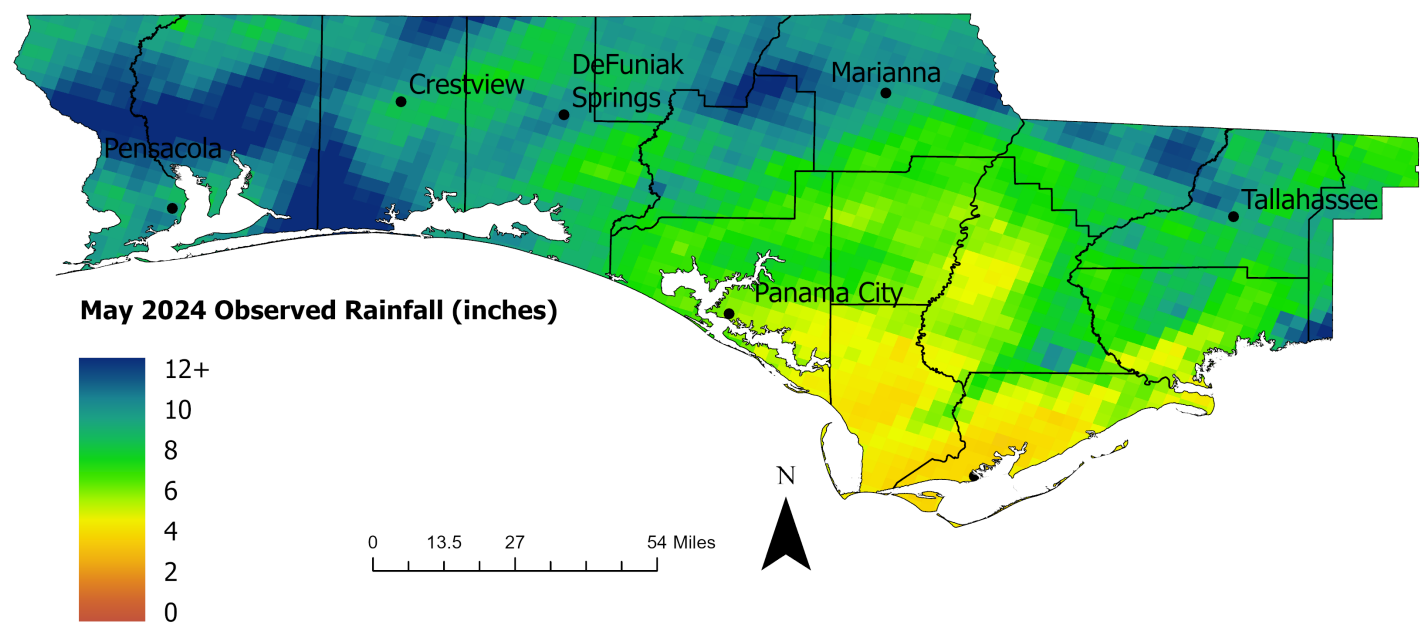
The District in May 2024 recorded an average of 7.98 inches across the panhandle. This was 4.26 inches (60.8%) above the District normal rainfall amount for the month of May, 3.72 inches. Normal rainfall is defined as average monthly rainfall for the 1991 to 2020 reference period. Although most of the District observed a surplus at least 2 inches of rain this month, rainfall varied spatially, with the highest rainfall amounts of around 12 inches occurring mostly along the Florida-Georgia border and western-most counties, and the lowest rainfall amounts of around 4 inches occurring in Gulf County and parts of the surrounding counties. (**Table 1; Figures 1 through 7**). May 2024 was a record-breaking month for Marianna, Florida and Niceville, Florida. Both cities received enough rain to set new record maximum observed rainfalls for the month of May, exceeding the previous maximums by 0.67 and 1.37 inches, respectively. There were several large rain events throughout May 2024, with a few instances of hail. The most significant storm event occurred on May 9 and 10, 2024, caused by a slow-moving trough pushing across the Panhandle from Texas, producing up to 3 inches of rain in some areas as well as spinning out at least 3 tornadoes in Gadsden and Leon County. Another significant rain event occurred on May 13 and 14, 2024, caused by a low-pressure center that developed behind a strong line of storms, producing between 1.75 and 8 inches of rain. These rain events throughout the month contributed to localized flooding in portions of Leon and Jefferson counties.

Table 1: May 2024 rainfall compared to 30-year normal monthly rainfall for Tallahassee, Marianna, Niceville, and Pensacola

Station	May Normal Rainfall (1991 to 2020)	May 2024 Observed Rainfall	Percent Difference
Tallahassee Regional Airport	3.36	7.69	78.4%
Marianna Regional Airport	3.15	9.45	100.0%
Niceville, FL	3.78	10.77	96.1%
Pensacola Regional Airport	3.90	7.38	-23.0%

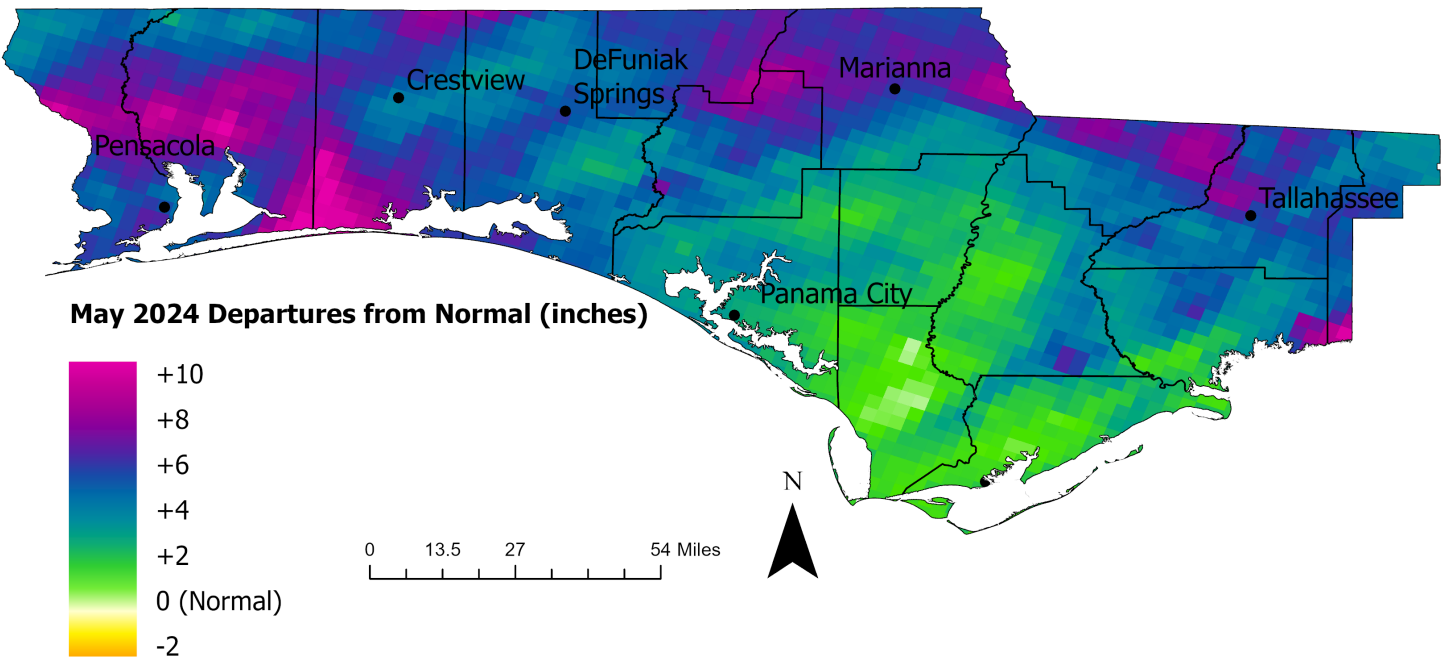
Source: <https://www.weather.gov/wrh/Climate?wfo=tae>  
<https://www.weather.gov/wrh/Climate?wfo=mob>

Figure 1: District-wide May 2024 observed rainfall



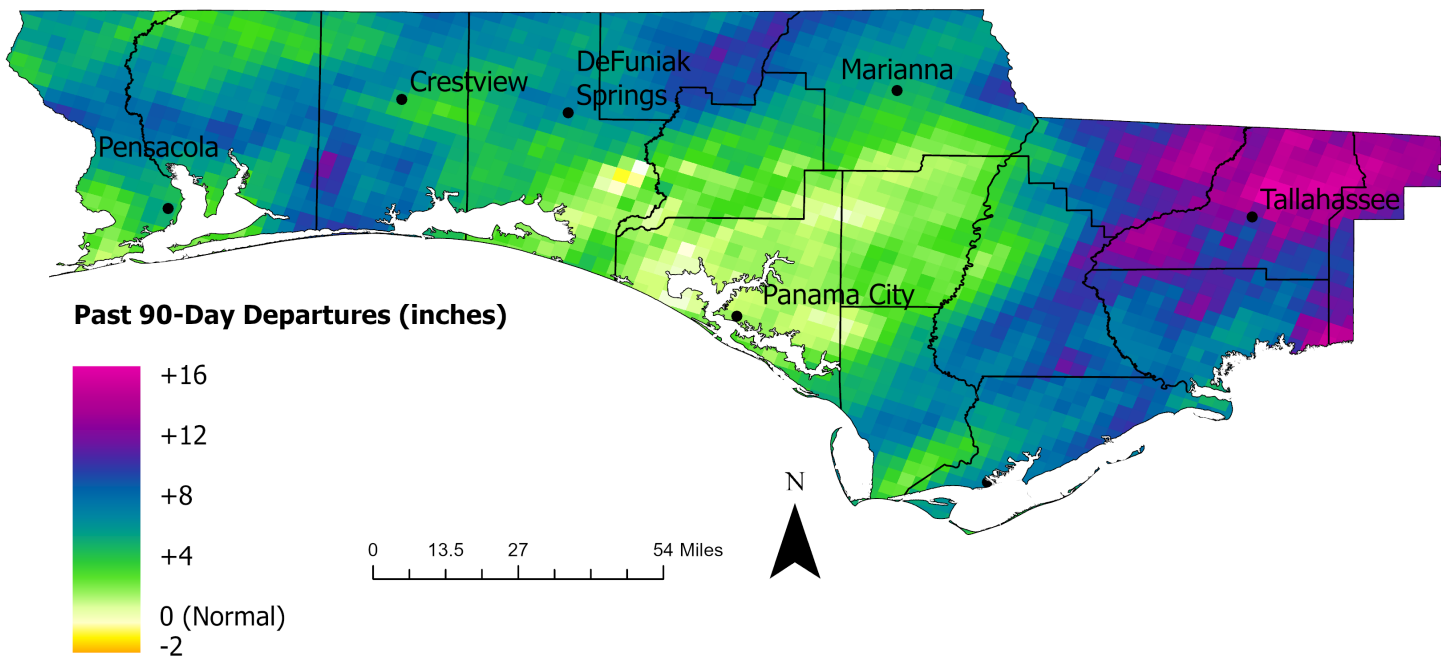
Source: <https://water.weather.gov/precip/download.php>

Figure 2: District-wide May 2024 precipitation departure from normal



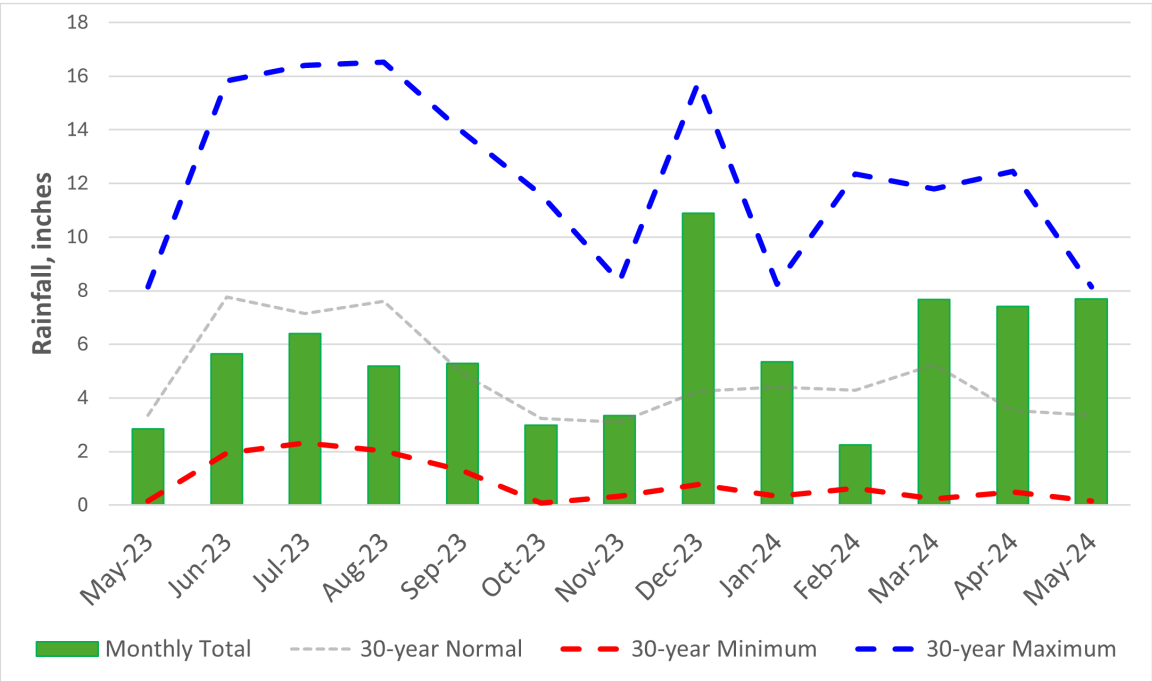
Source: <https://water.weather.gov/precip/download.php>

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



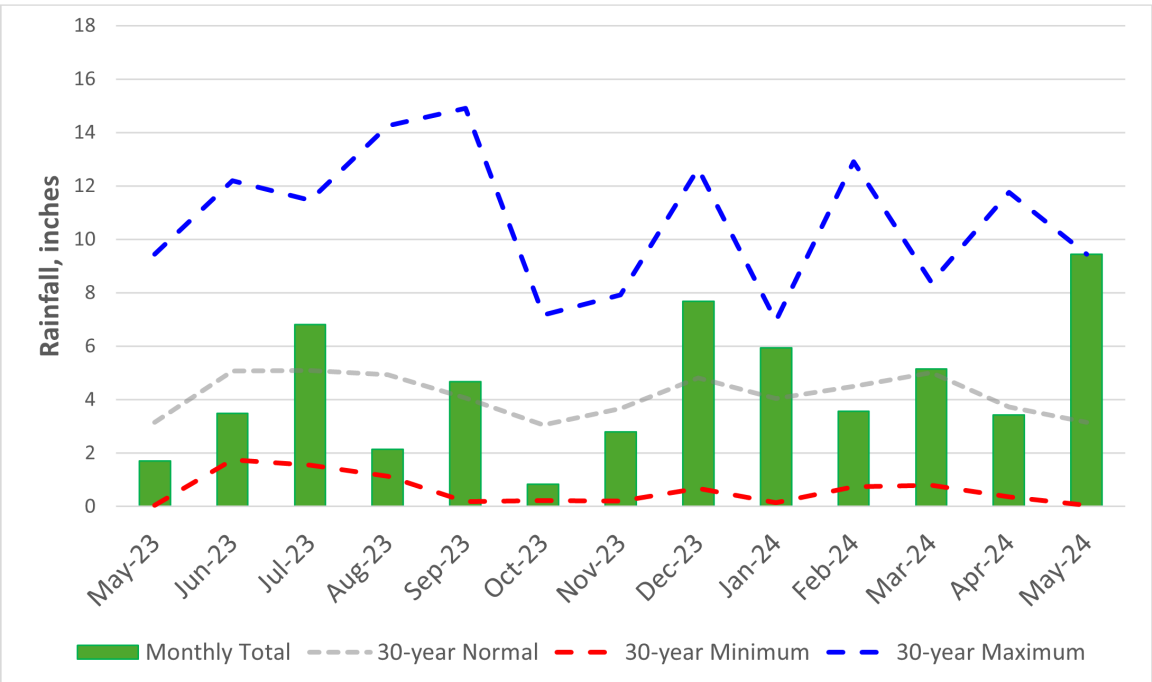
Source: <https://water.weather.gov/precip/download.php>

Figure 4: Observed rainfall at Tallahassee Regional Airport for May 2023 to May 2024 compared to the 30-year normal, minimum, and maximum precipitation for each month



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

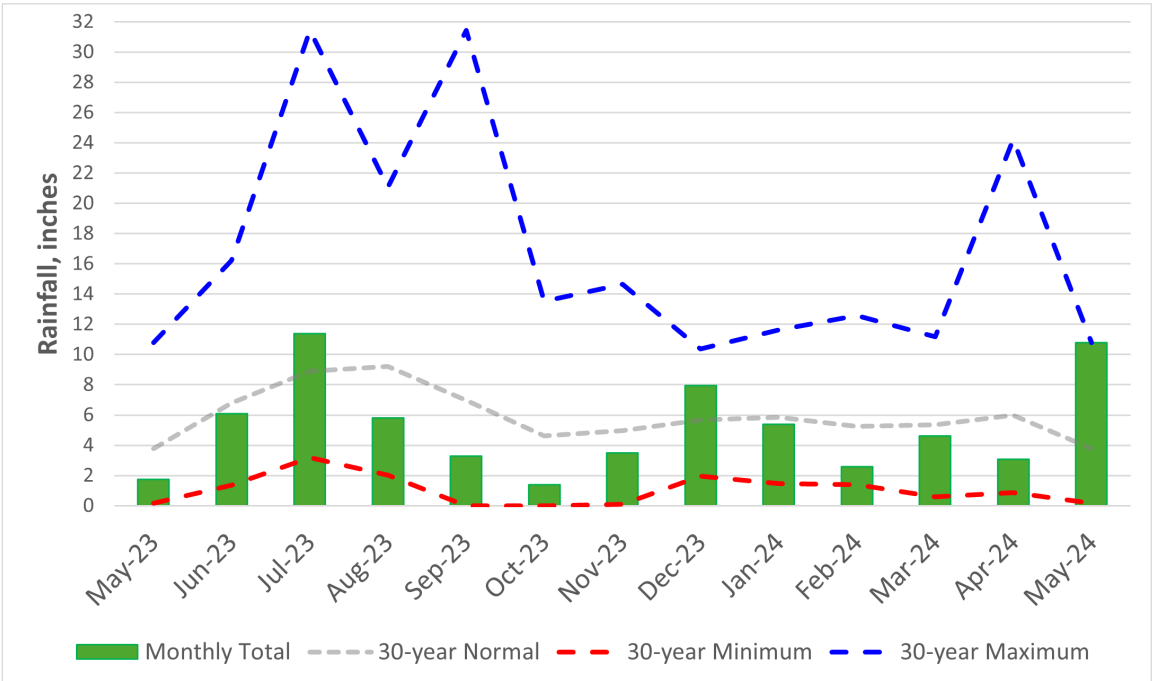
Figure 5: Observed rainfall at Marianna Regional Airport for May 2023 to May 2024 compared to the 30-year normal, minimum, and maximum precipitation for each month



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

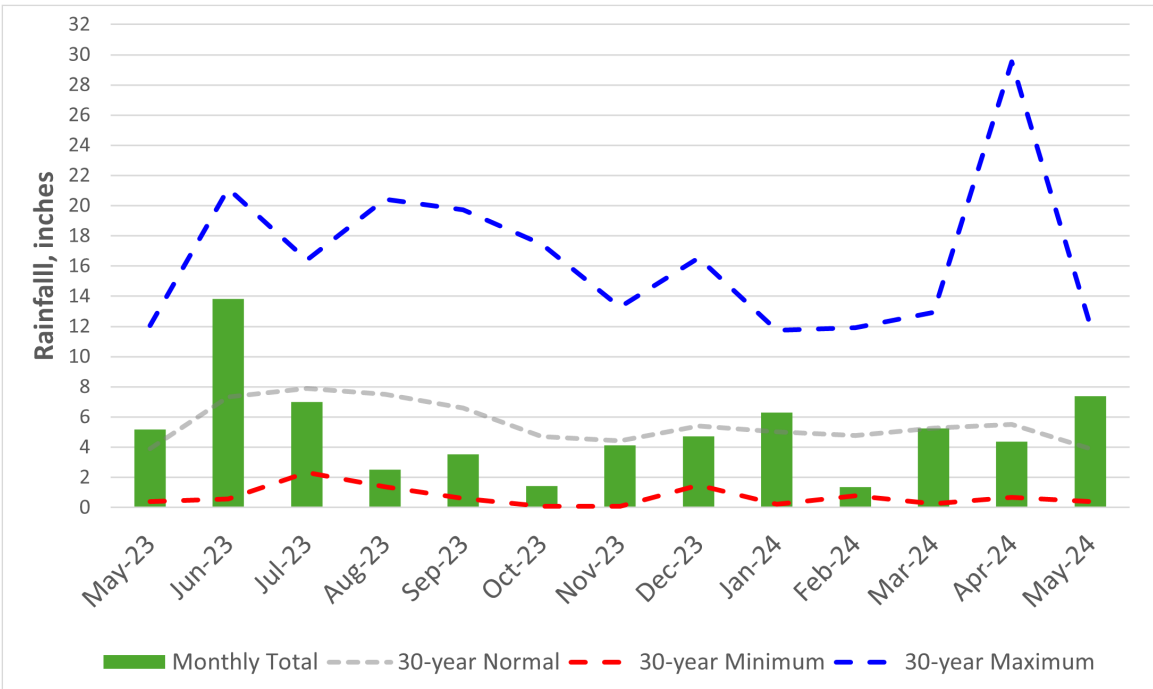


Figure 6: Observed rainfall in Niceville for May 2023 to May 2024 compared to the 30-year normal, minimum, and maximum precipitation for each month



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

Figure 7: Observed rainfall at Pensacola Regional Airport for May 2023 to May 2024 compared to the 30-year normal,



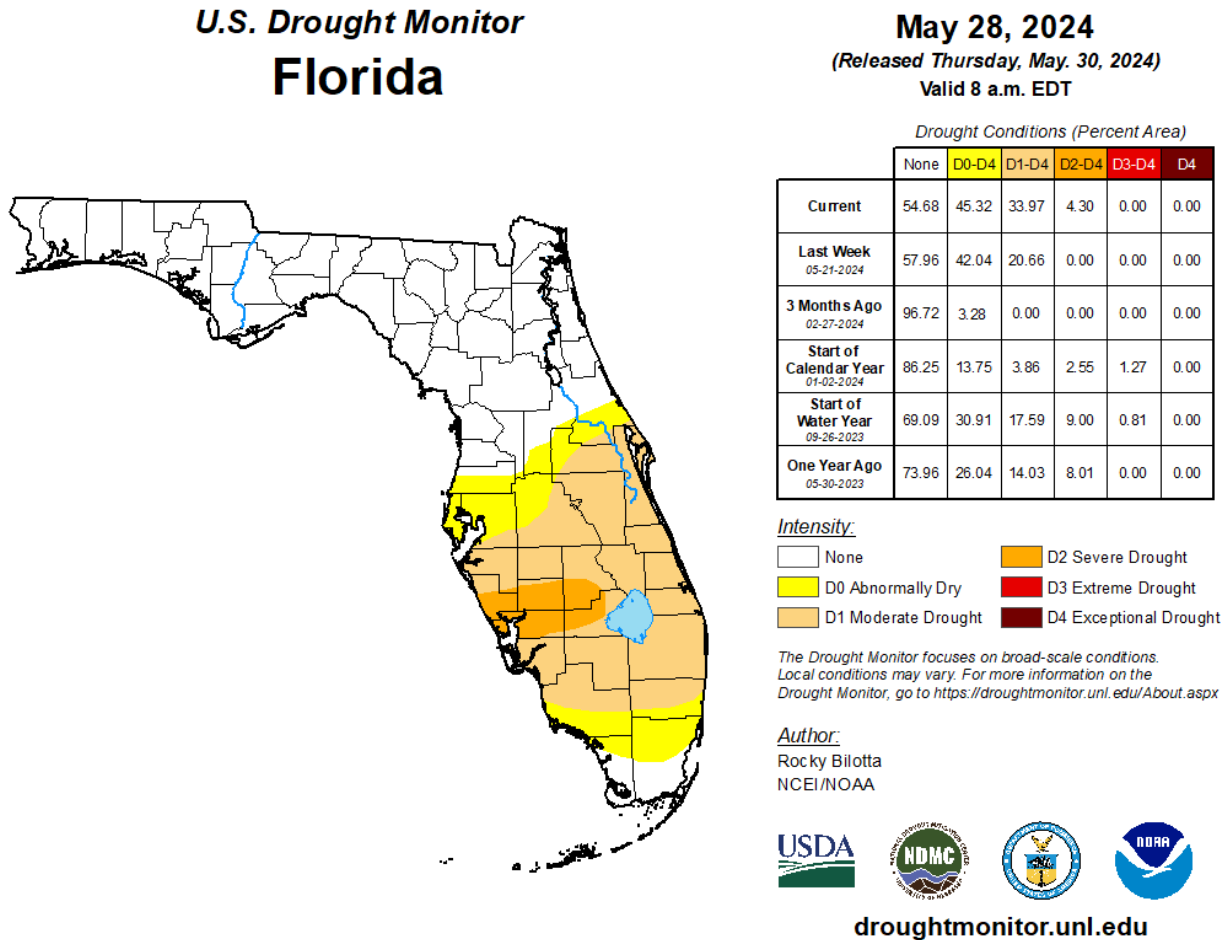
Source: <https://www.weather.gov/wrh/Climate?wfo=mob>



Drought Conditions

The U.S. Drought Monitor report released on May 28, 2024 showed that no drought conditions were present in the District at the end of May 2024 (Figure 8).

Figure 8. Florida Drought Conditions on May 28, 2024



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

Climate Outlook

According to NOAA’s climate prediction center, the forecast issued June 3, 2024 for June 2024 shows a slight probability for above normal temperatures across the District and a slight probability of above normal rainfall amounts on the western half of the District. As of June 3, 2024, El Niño conditions are weakening and a transition from El Niño to ENSO-neutral is very likely by the end of June 2024. Following the transition to ENSO-neutral, La Niña conditions may develop in June through August (49% chance) or July through September (69% chance).

Source: <https://www.climate.gov/news-features/understanding-climate/us-climate-outlook-june-2024>  
[https://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution-status-fcsts-web.pdf](https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf)



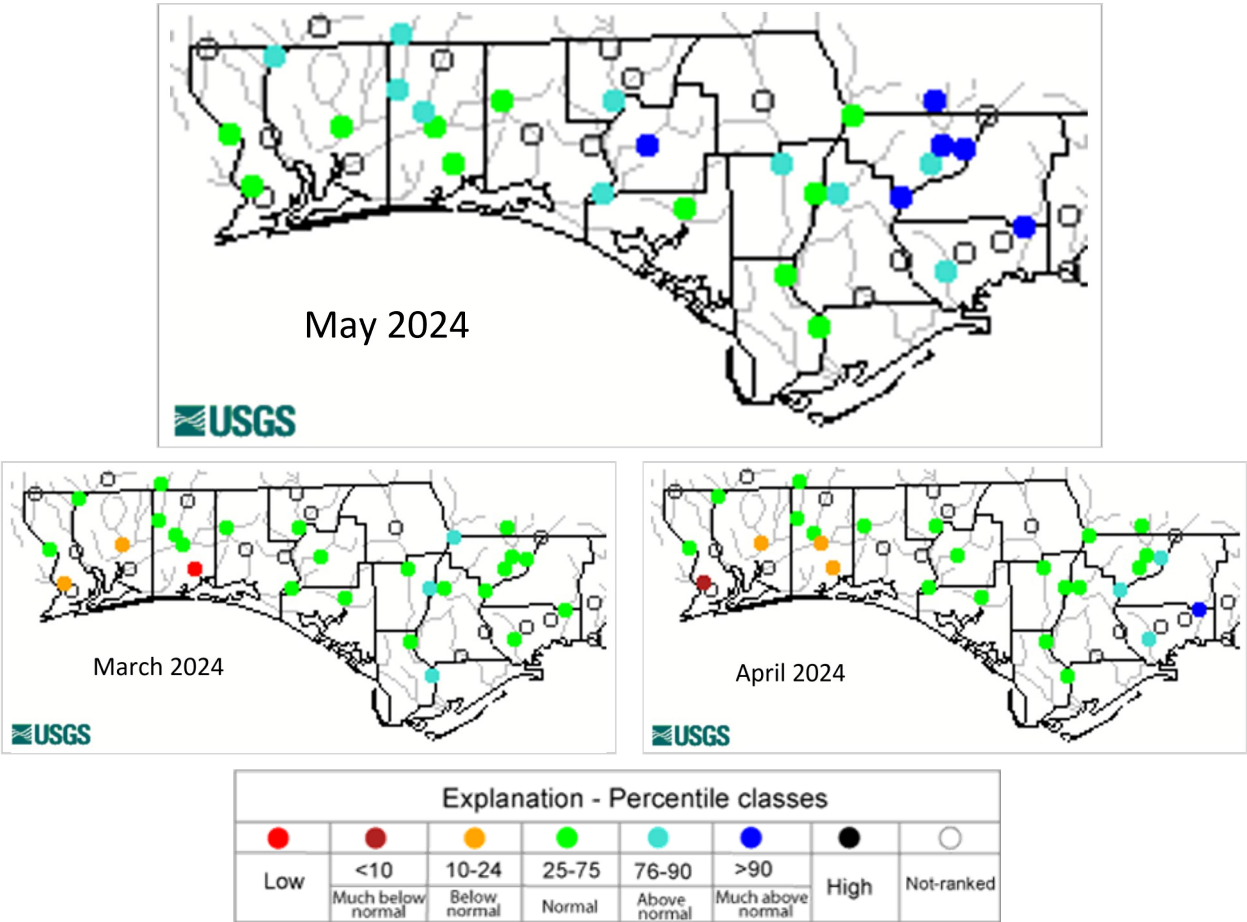


Surface Water

**Streamflows.** The District in May 2024 saw a significant pattern change in streamflow classifications since the end of April 2024, a result of the excess of rain the Panhandle received throughout the month. Flows in the eastern portion of the District as well as one station in Washington County have increased to much above normal and flows to the west around Pensacola Bay and Choctawhatchee Bay that were previously below normal or much below normal have increased into normal ranges. By the end of May 2024, none of the stations were classified as below normal flow (Figures 9 - 15).

All the depicted USGS streamflow stations exhibited peak flows that were classified as much above normal following the significant rain events in mid-May (Figures 10 - 15). Two stations, the Ochlockonee River near Havana, Florida (Figure 11) and Blackwater River near Baker, Florida (Figure 14), recorded flows that were near or at the maximum daily flows and one station, the St. Marks River near Newport, Florida (Figure 10), recorded new maximum daily flows following the rain events. By the end of May 2024, all USGS stations had recorded a decrease in flow following the peak flow in mid-May but many remain classified as above normal or much above normal elevated except for the Blackwater River near Baker, Florida which has returned to normal ranges.

Figure 9: Northwest Florida March 2024 to May 2024 monthly streamflow percentiles



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



Figure 10: Daily streamflows and percentile ranges for USGS station 02326900 St. Marks River Near Newport, Florida

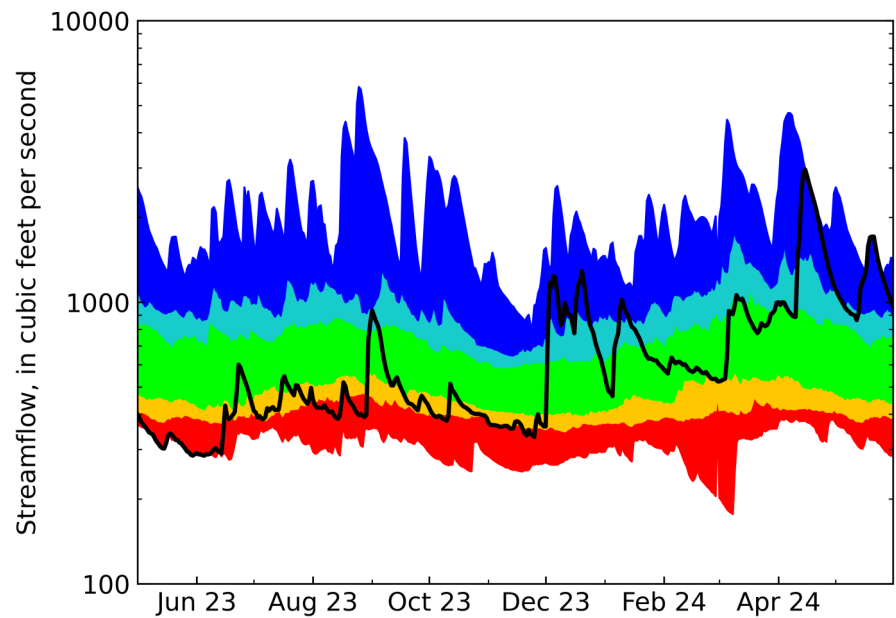
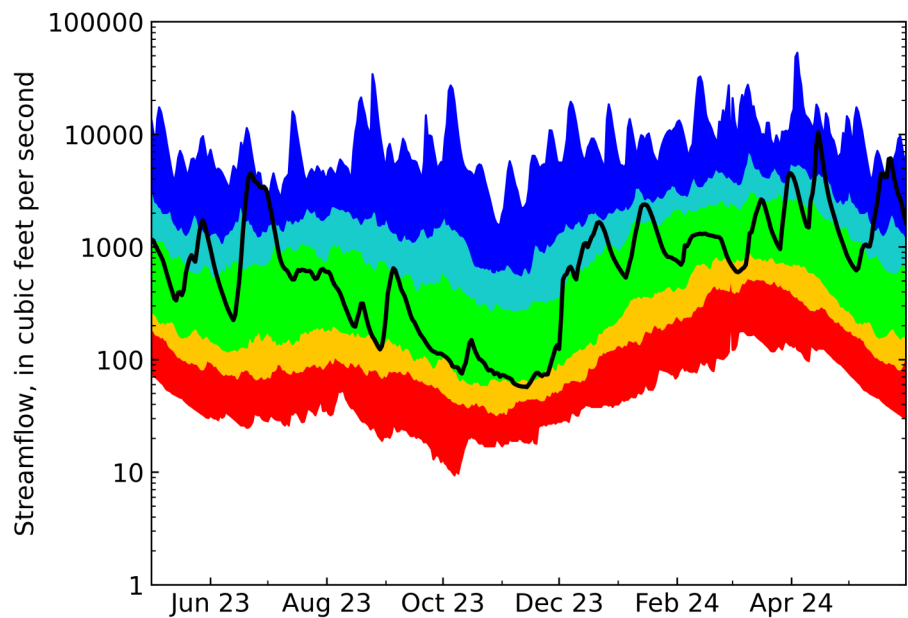


Figure 11: Daily streamflows and percentile ranges for USGS Station 02329000 Ochlockonee River Near Havana, Florida



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





Figure 12: Daily streamflows and percentile ranges for USGS Station 02358700 Apalachicola River Near Blountstown, Florida

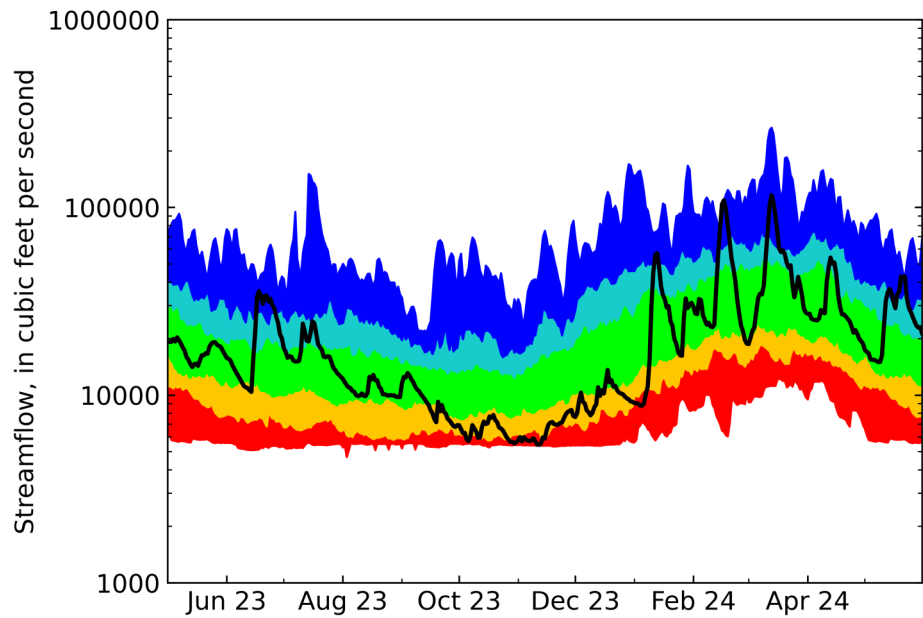
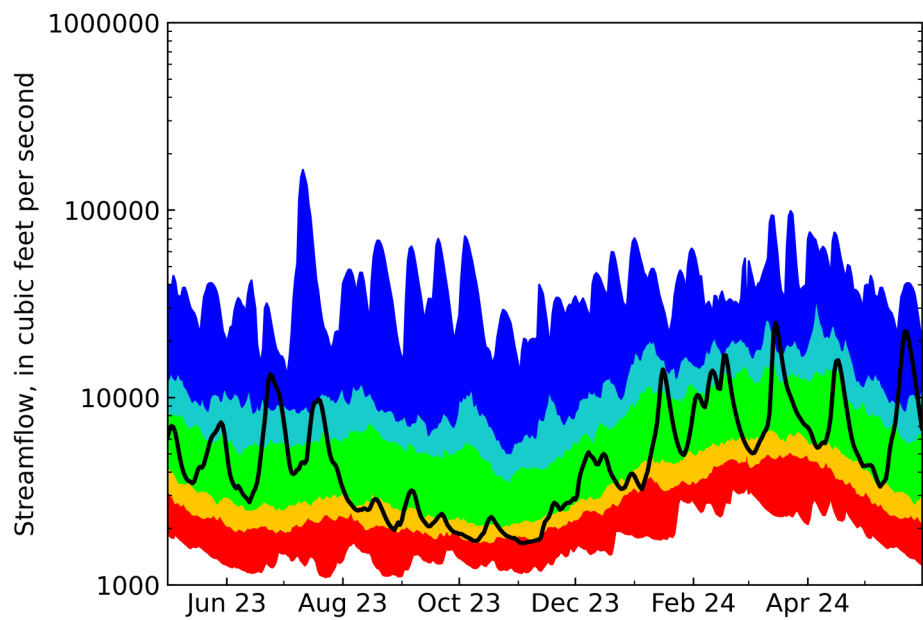


Figure 13: Daily streamflows and percentile ranges for USGS Station 02366500 Choctawhatchee River Near Bruce, Florida



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



Figure 14: Daily streamflows and percentile ranges for USGS Station 02370000 Blackwater River Near Baker, Florida

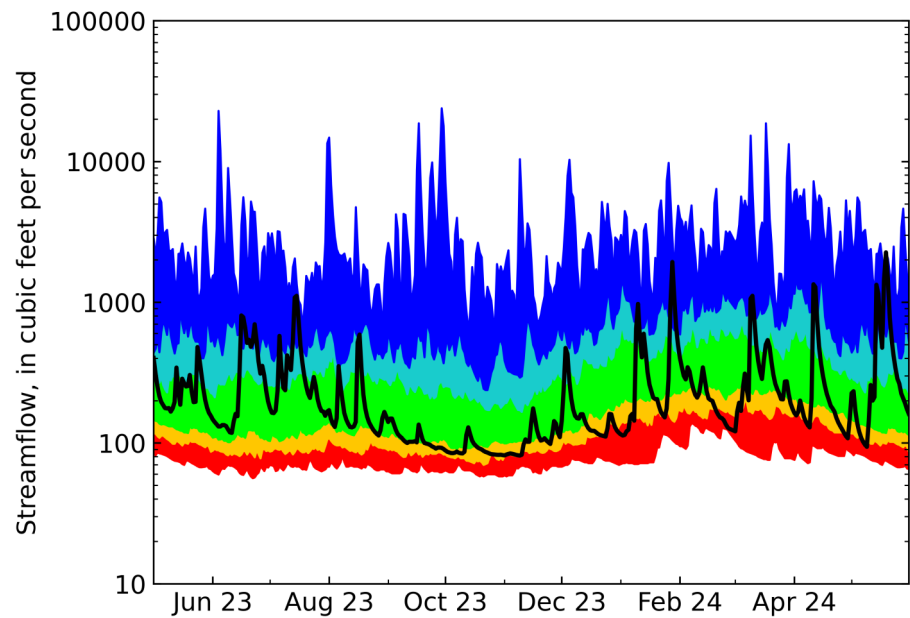
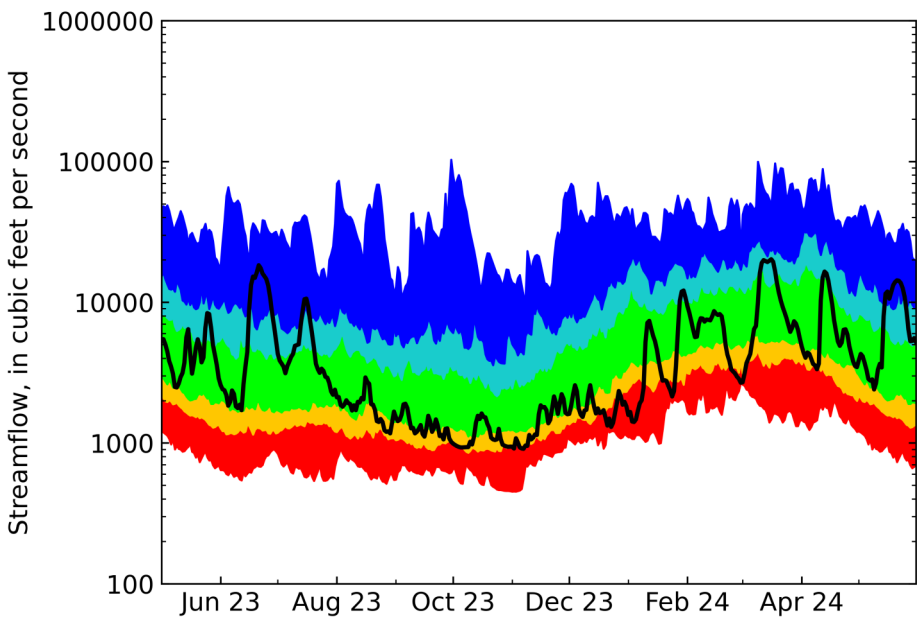


Figure 15: Daily streamflows and percentile ranges for USGS Station 02375500 Escambia River Near Century, Florida



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



**Lake Levels.** After a period of relative stability around 80 feet NAVD 1988 between January 2024 and March 2024 and a steep 1-foot increase after a significant rain event in mid-April 2024, water levels at Lake Jackson in Leon County increased again by about 1 foot after the two significant rain events in mid-May. The lake then stabilized at around 82.5 feet, NAVD 1988 (Figure 16). Lake Jackson levels remain below the full pool level of 86 feet, NAVD 1988.

Water levels at Piney Lake in southern Washington County generally continued to decrease throughout May 2024. The significant rain event on May 9 and 10, 2024, increased lake levels by about a third of a foot before the level returned to decreasing, reaching the lowest level since monitoring began during the 2022 flooding event (Figure 17).

Figure 16: Daily water levels at Lake Jackson at Miller Landing, Leon County

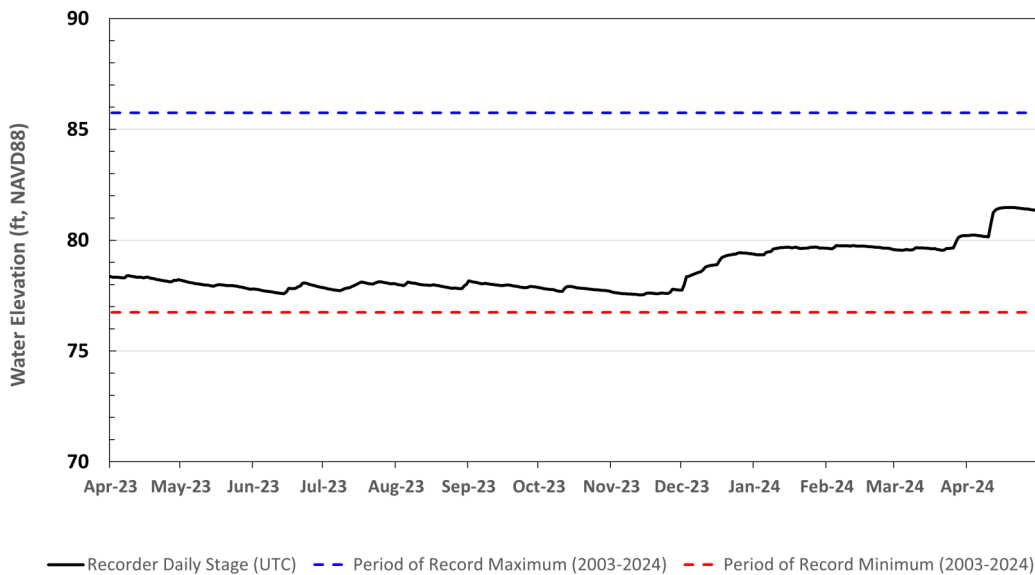
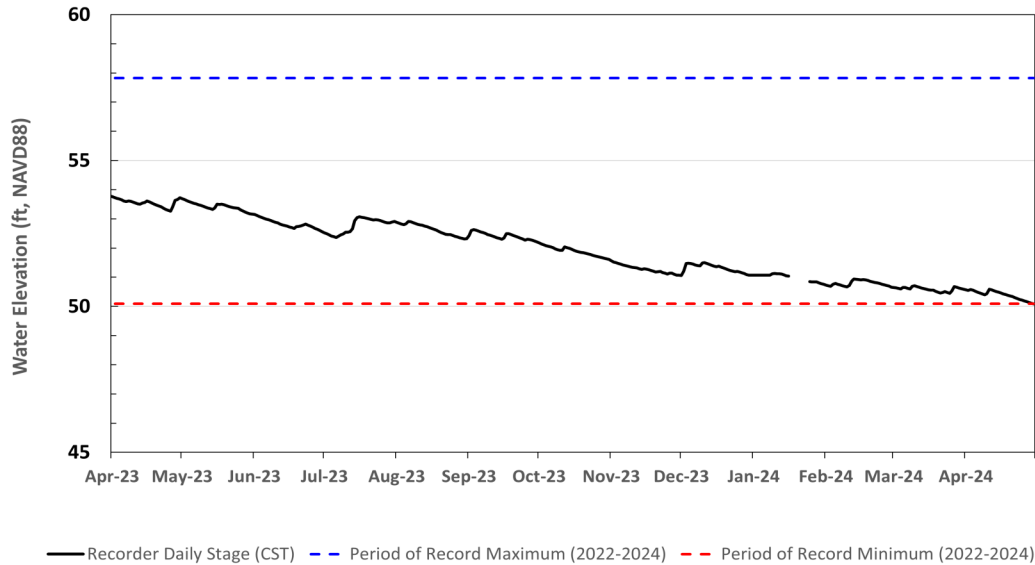


Figure 17: Daily water levels at Piney Lake, Washington County



Spring Flows

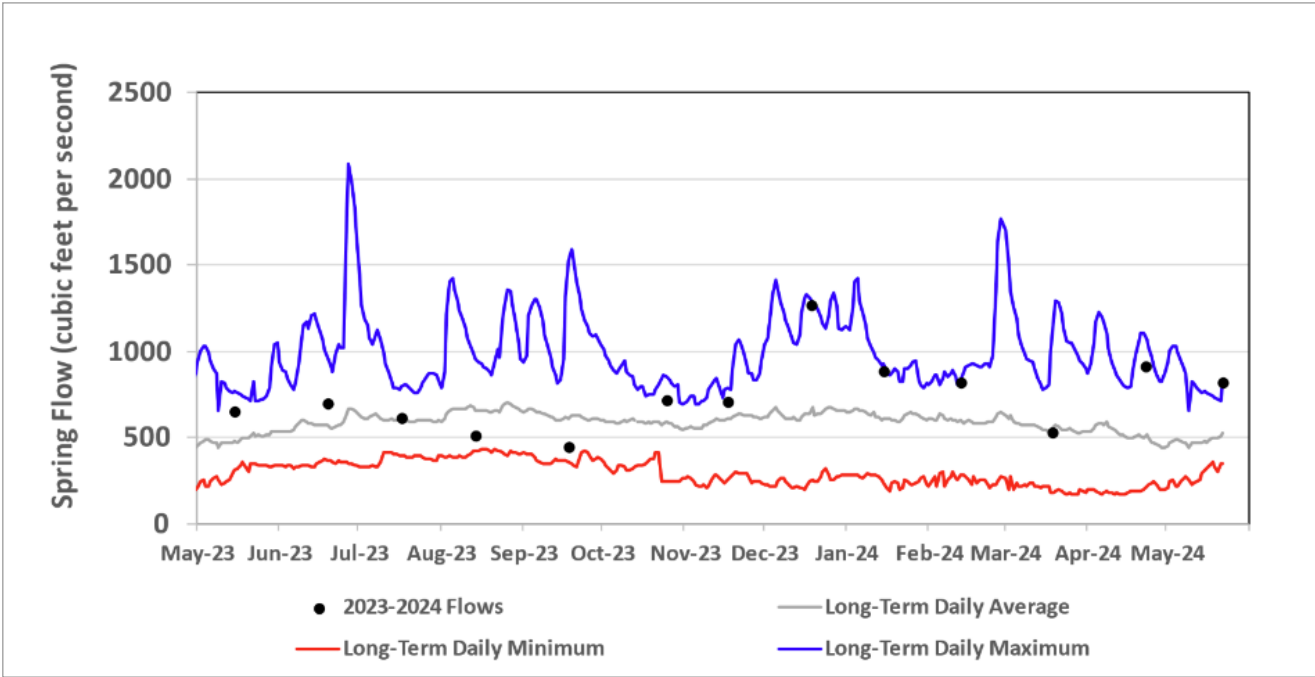
**Wakulla and Sally Ward Spring System.** After Flow at Wakulla Spring continues to be elevated near the long-term maximum flow during May 2024. The most recent flow measurement for Wakulla Spring was 823 cubic feet per second (cfs), which was collected on May 22, 2024 (Figure 18). The long-term (November 2004 to May 2024) average flow for the month of May is 488 cfs.

Flow at Sally Ward Spring decreased slightly between the measurement taken in April and the measurement taken in May but remains elevated. The most recent flow measurement for Sally Ward was 33.9 cfs on May 22, 2024, the highest value measured during the month of May. The May average and minimum Sally Ward Spring flow, based on the November 1, 2004, to present period of record were 21.8 cfs and 13.2 cfs, respectively.

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 22, 2004, through May 2024) average flows for Wakulla and Sally Ward Springs are 589 cfs and 24 cfs, respectively. The combined long-term spring flow for both systems is 613 cfs, which exceeds the established Minimum Flow of 539 cfs by 74 cfs.

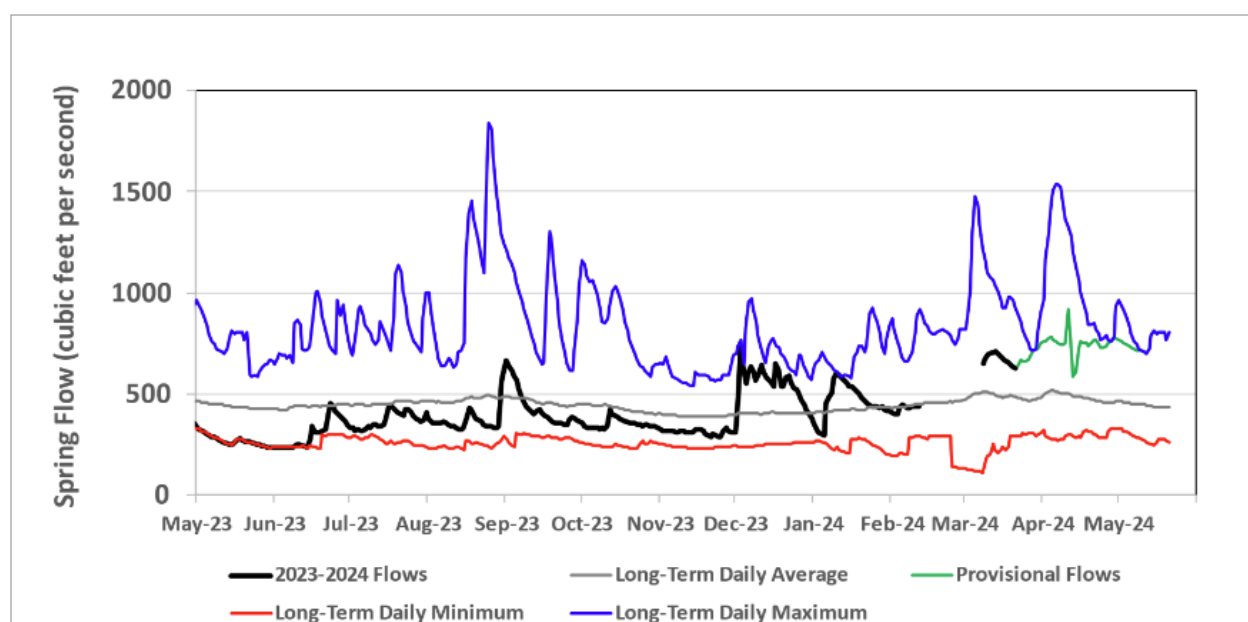
Figure 18: Daily Wakulla Spring flows

Data from May 2023 through May 2024 represent discrete measurements. Daily statistics are based on the October 23, 2004, through May 22, 2024, period of record.



**St. Marks River Rise.** The mean daily spring flow for May 2024 (May 1 through 21, 2024) at the St. Marks River Rise was 747 cfs, based on the available USGS provisional data which extends through May 21, 2024 ([Figure 19](#)). 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 November 14, 2023) is 429 cfs. If the provisional data from November 15, 2023, through May 21, 2024, are included, the 30-year moving average spring flow for the St. Marks River Rise is 429 cfs. The established Minimum Flow for the St. Marks River Rise is 419 cfs, indicating that the Minimum Flow is exceeded the 30-year moving average using both the approved and provisional data.

**Figure 19: Daily spring flows for the St. Marks River Rise**



**Jackson Blue Spring.** Daily average flows at Jackson Blue Spring for the month of May 2024 averaged 103 cfs, which is below the May monthly average of 120 cfs ([Figure 20](#)).

**Gainer Spring Group.** The average daily flow at the Gainer Spring Group was 159 cfs during May 2024 (May 1 through May 22, 2024) and represents the lowest monthly average for the period of continuous flow data, which extends from October 28, 2019, through May 22, 2024 ([Figure 21](#)). The long-term average monthly spring flow for May is 191 cfs. It should be noted that there is a relatively short period of record for this system, and spring flows among the highest and lowest on record are to be expected.

Figure 20: Daily spring flows for Jackson Blue Spring

Data represents daily averages. Long-term flows represent the daily average between December 21, 2004, and May 31, 2024.

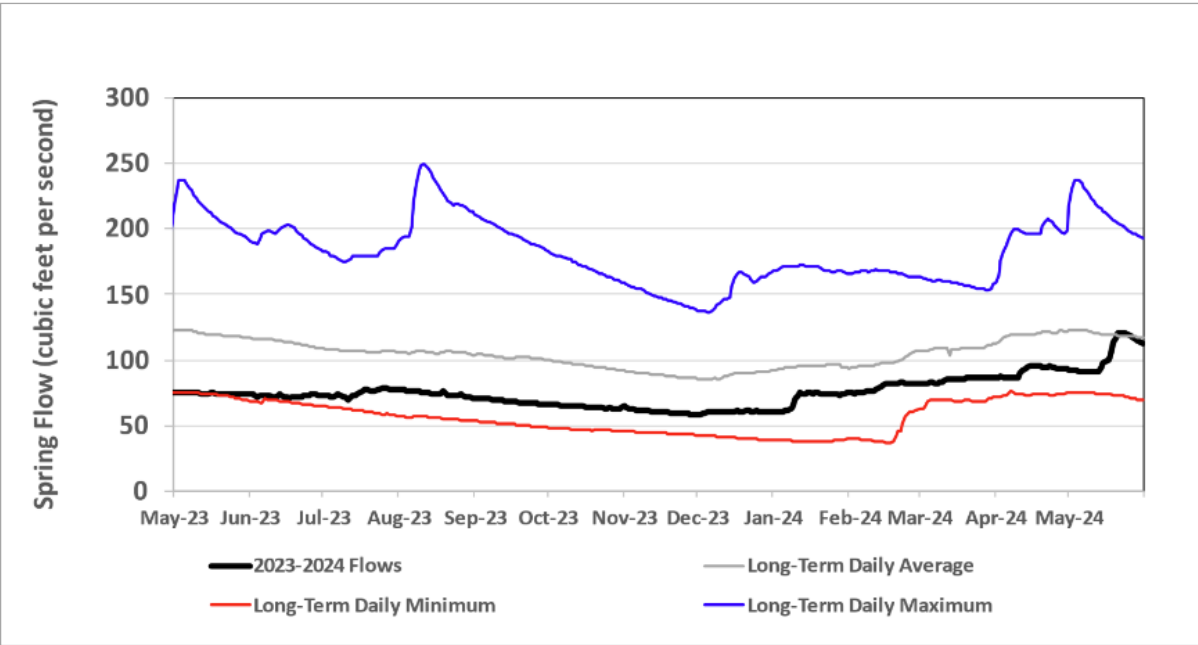
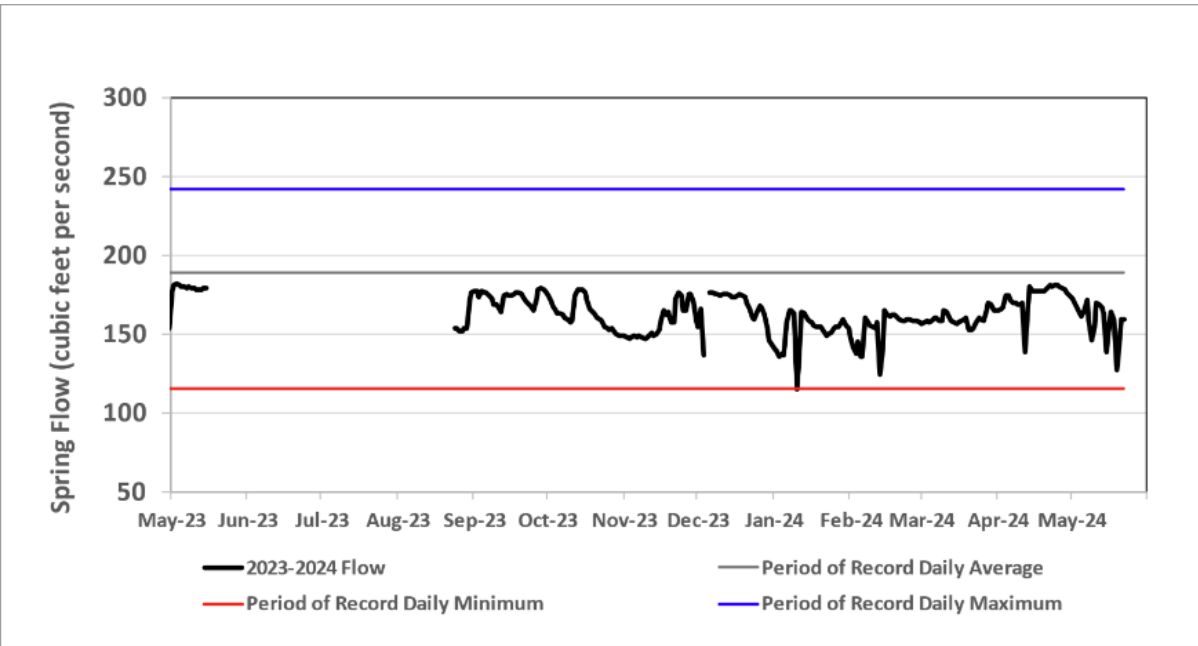


Figure 21: Gainer Spring Group flows

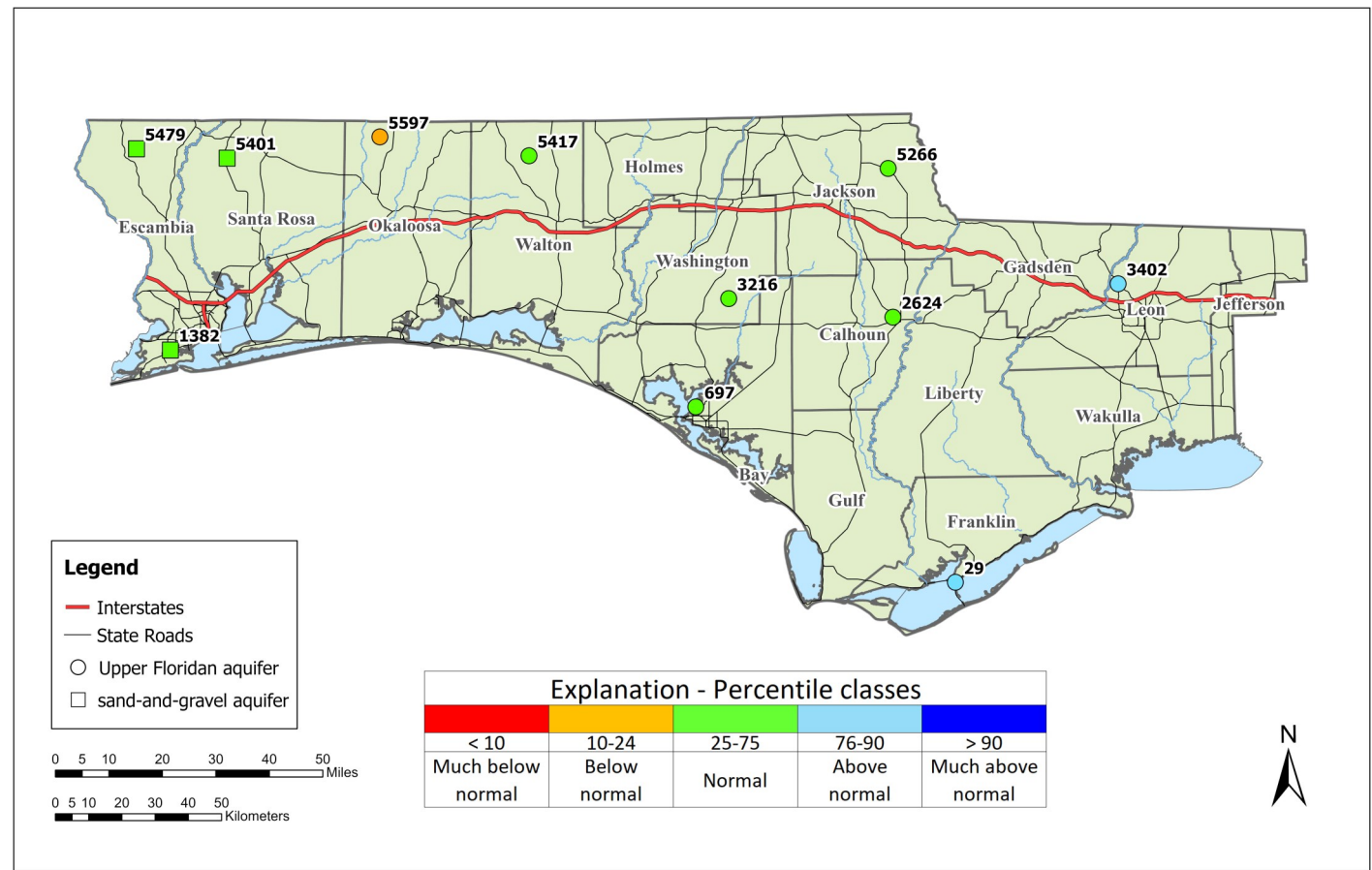
Data represents daily averages. Streamflow statistics are not shown due to the relatively short period of daily data.



Aquifer Levels

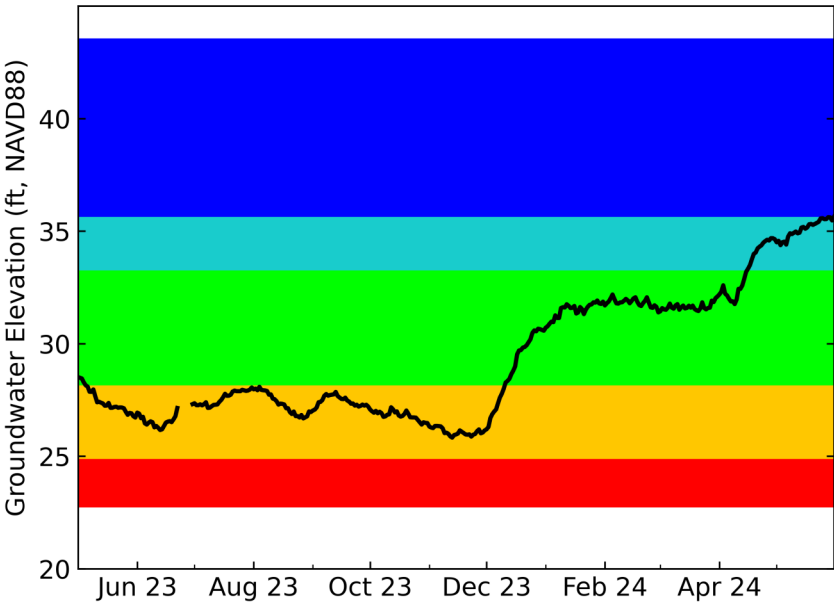
Most Floridan aquifer levels across the District were classified as within normal ranges by the middle of May 2024 except for at three stations (**Figures 22 - 27**). To the east, water levels at the McCulloch Floridan monitor well (NWFID 29) in southern Franklin County and the USGS-Lake Jackson Upper Floridan monitor well in northwest Leon County levels continue to be elevated to above normal levels (**Figure 23**). To the west, NFWMD -Sand Hill Upper Floridan monitor well in northern Okaloosa County (NWFID 5597) continues to be classified as below normal (**Figure 22**). All sand-and-gravel aquifers depicted were within normal range (**Figures 22 and 27**).

**Figure 22: Floridan aquifer monitor wells and aquifer level percentiles for May 2024**  
Percentile class rankings are based on each well’s period of record. All wells have a minimum of 20 years of data.

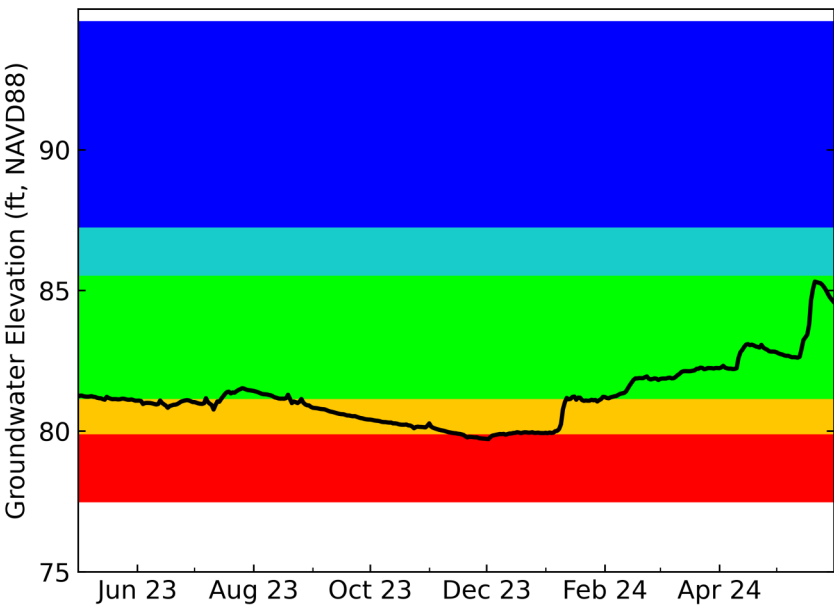




**Figure 23: Daily Upper Floridan aquifer levels at USGS-Lake Jackson well (NWFID 3402), Leon County**  
Land surface elevation is 121.40 ft, NAVD 88



**Figure 24: Daily Upper Floridan aquifer levels at NFWFMD Pittman Visa well (NWFID 5266), Jackson County**  
Land surface elevation is 127.31 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



Figure 25: Daily Upper Floridan aquifer levels at USGS-422A Near Greenhead well (NWFID 3216), Washington County

Land surface elevation is 66.75 ft, NAVD 88

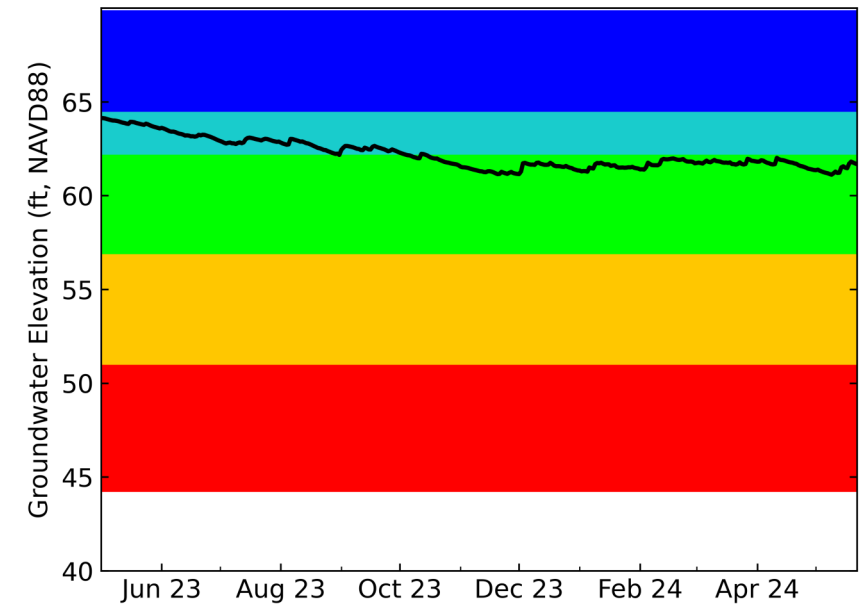
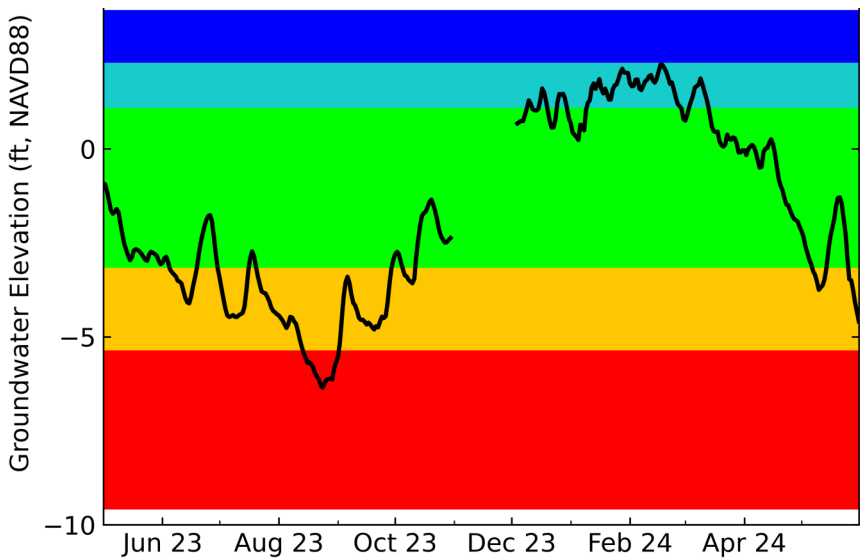


Figure 26: Daily Upper Floridan aquifer levels at Fannin Airport well (NWFID 697), Bay County

Land surface elevation is 4.05 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



Figure 27: Daily sand-and-gravel aquifer levels at Weller Ave Deep well (NWFID 1382), Escambia County

Land surface elevation is 25.09 ft, NAVD 88

