

Northwest Florida Water Management District

Hydrologic Conditions Update July 2018 – December 2018 April 1, 2019

Executive Summary

Cumulative average rainfall for the last six months was well above normal for the District. After experiencing a wetter-than-normal spring and early summer, significant amounts of rainfall during the second half of the 2018 calendar year resulted in high groundwater recharge and very high streamflow. Rivers and streams of the District are generally in the well above normal to high flow levels.

Precipitation Summary

Rainfall totals, compared to current National Weather Service Climate Normals (1981-2010 reference period), from July to December were above normal across the District at 49.33 inches (normal cumulative rainfall for this period is 31.04 inches). Rainfall in July was 8 percent above normal at 7.69 inches. August rainfall totals were 57 percent above normal at 10.28 inches. September rainfall totals were 38 percent above normal at 7.48 inches. Rainfall in October was 37 percent above normal at 5.00 inches. Rainfall in November was 57 percent above normal at 6.61 inches. Rainfall totals in December were 200 percent above normal at 12.27 inches.

Significant Events

Heavy Rainfall and Minor Riverine Flooding – August 01-03, 2018

Heavy rainfall was observed after a frontal system passed across the Panhandle. Several inches of rainfall were observed in isolated areas of the coastal counties and minor flooding was observed in the St. Marks River.

Tropical Storm Gordon – September 05, 2018

Tropical Storm Gordon impacted the western Panhandle and brought several inches of rainfall to Escambia and Santa Rosa counties. The Perdido River reached minor flood stage and quickly returned to normal levels within a several days.

Hurricane Michael – October 10, 2018

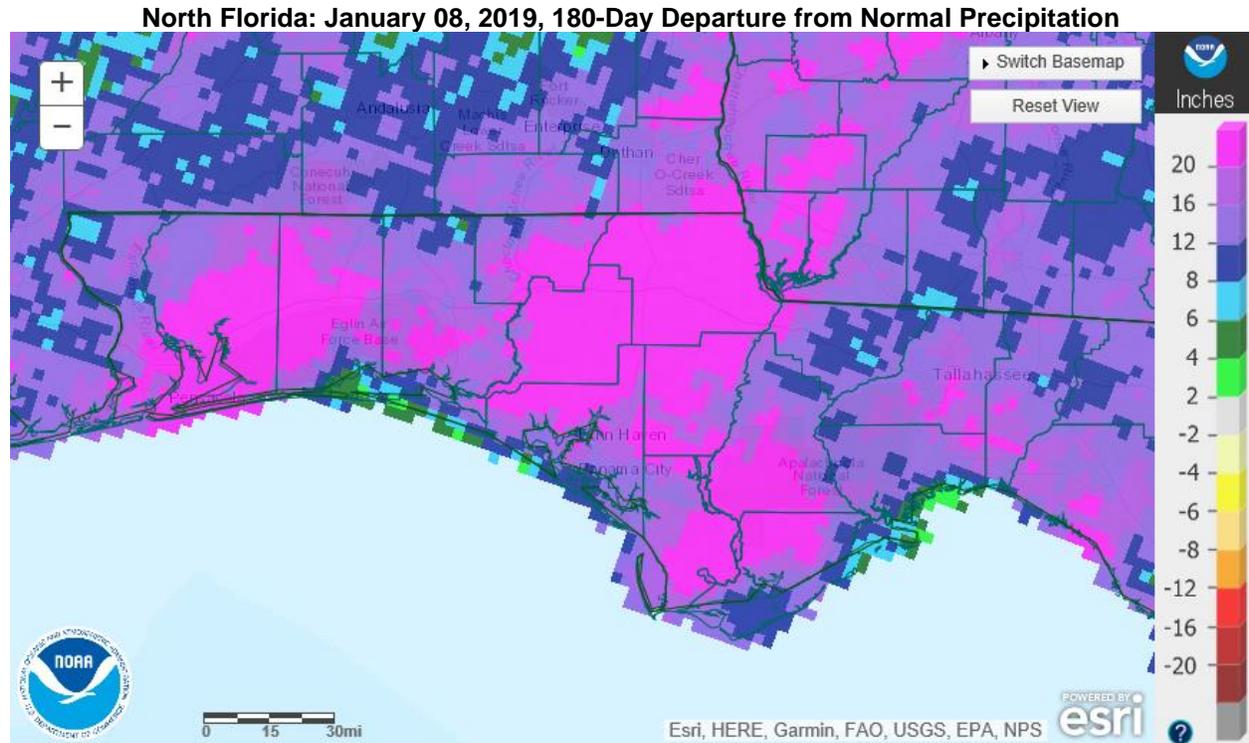
Hurricane Michael made landfall near Mexico Beach, Florida as a Category 4 Hurricane with sustained winds up to 155 miles per hour, causing catastrophic damage near the coast in Bay, Gulf, and Franklin counties. As Hurricane Michael proceeded inland, extensive damage was observed in Washington, Calhoun, Liberty, Gadsden, and Jackson counties. Debris from Hurricane Michael has caused impacts to many rivers and creeks in the Panhandle by affecting flood frequency, slowing the water down and causing flood waters to recede very slowly.

Riverine Flooding – December 03, 2018

A severe cold front brought several inches of widespread rainfall to the Panhandle, causing riverine flooding for several counties of the District. Moderate riverine flooding was observed on the Ochlockonee River, Chipola River, and Econfina Creek. Minor riverine flooding was observed on the Apalachicola River, Shoal River, and Choctawhatchee River.

Riverine Flooding – December 13, 2018

A severe cold front brought 3-5 inches of widespread rainfall to the several counties of the eastern Panhandle, causing riverine flooding for several counties of the District. Moderate flooding was observed on the Chipola River. Minor flooding was observed on the Apalachicola, Ochlockonee, and St. Marks.



Source: <http://water.weather.gov/precip/>

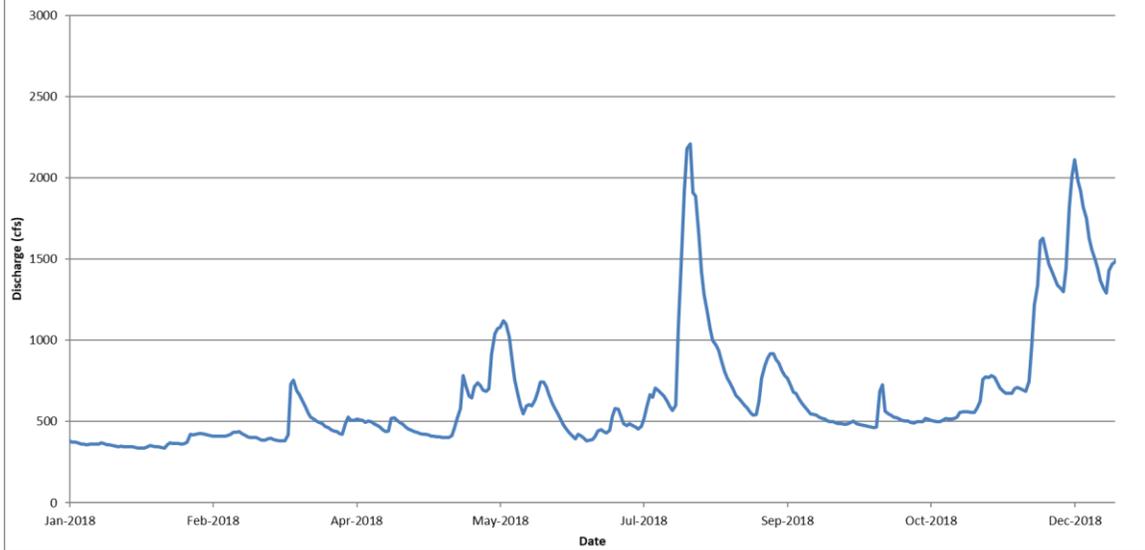
Surface Water Levels and Streamflow

Most river and streamflow monitoring stations in the western and central Panhandle are in the above normal range (between the 76th and 90th percentiles). The Apalachicola River streamflow is well above normal near Chattahoochee and Blountstown. The Apalachicola River station at Sumatra is in the above normal range (between the 76th and 90th percentile). Streamflow of Econfinia Creek in Washington and Bay counties is very high as a result of impacts from Hurricane Michael. Lake levels are generally high throughout the District. Many lakes monitored by the District have water levels higher than the top of the staff gauge and water level readings are not available for most of the period. Lake Jackson in Leon County rose sharply by more than three feet between early November and the end of December.

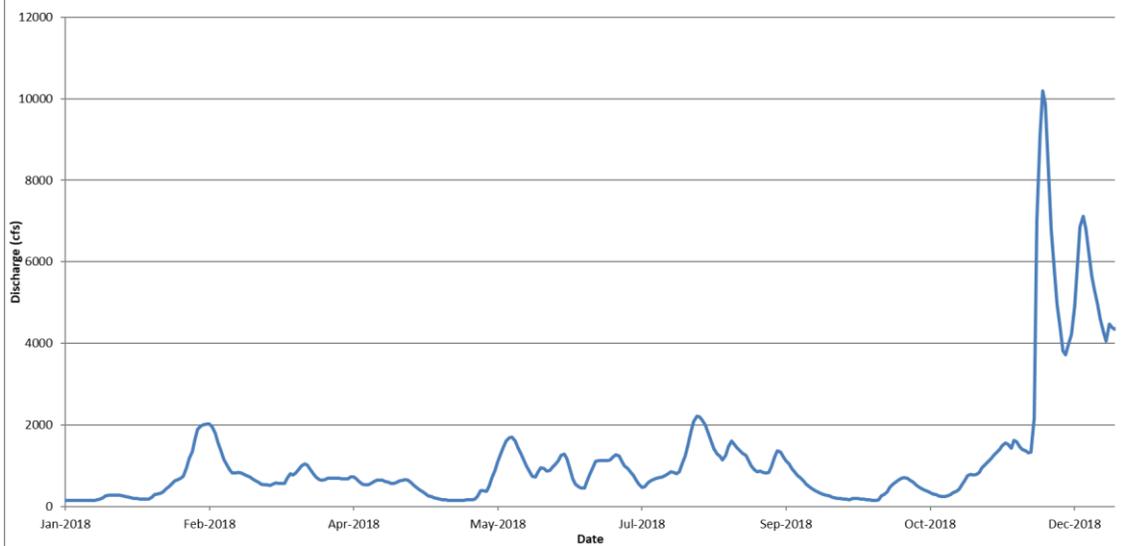
Lake Jackson, Leon County

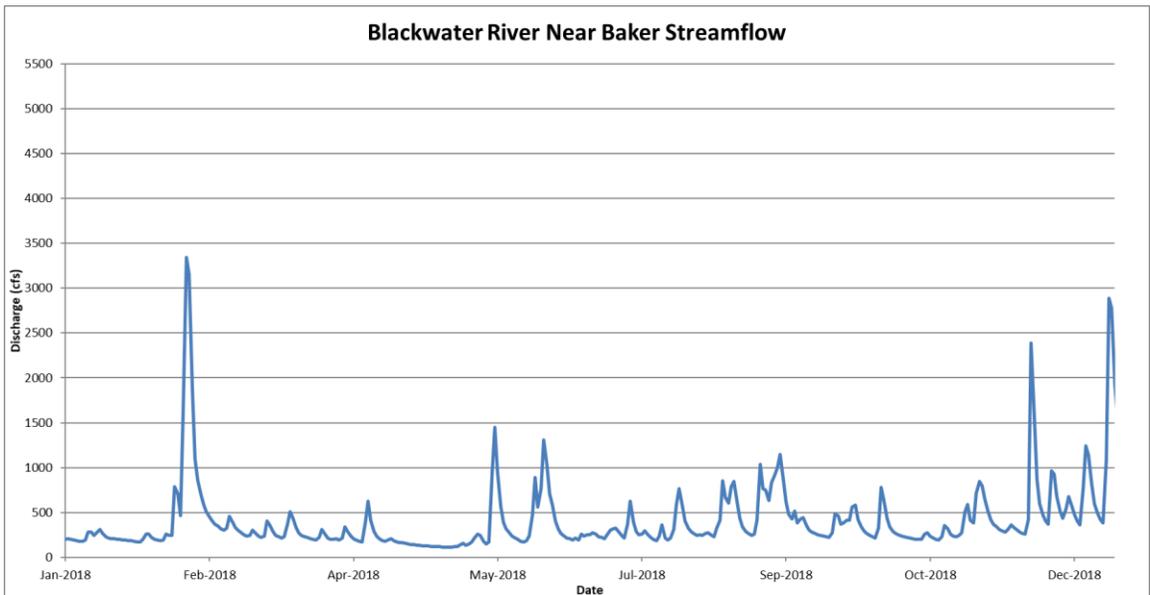
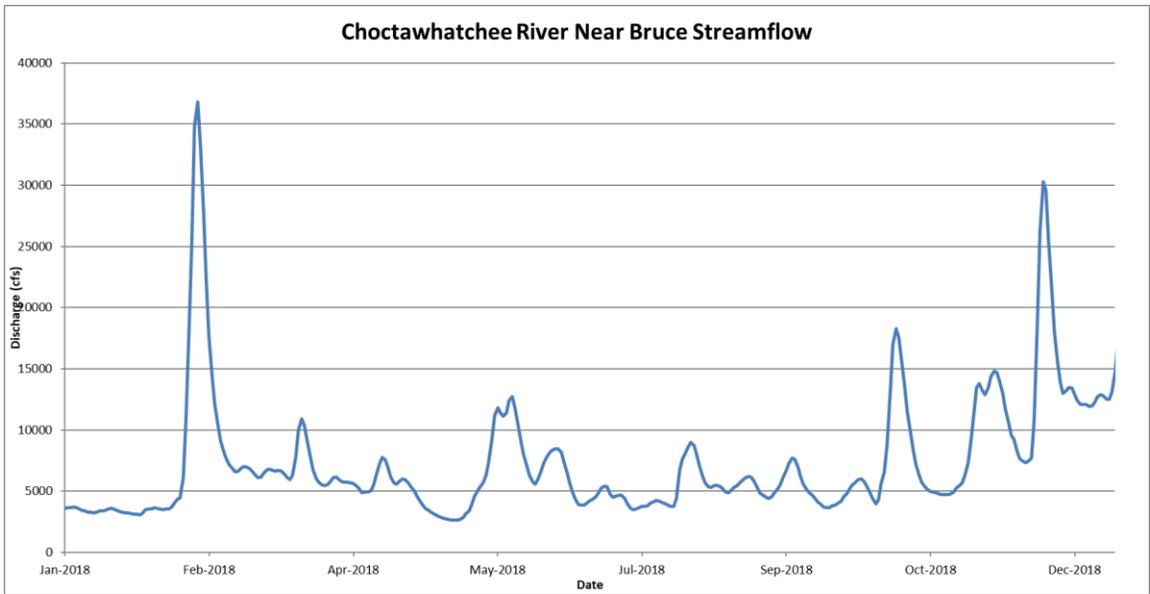
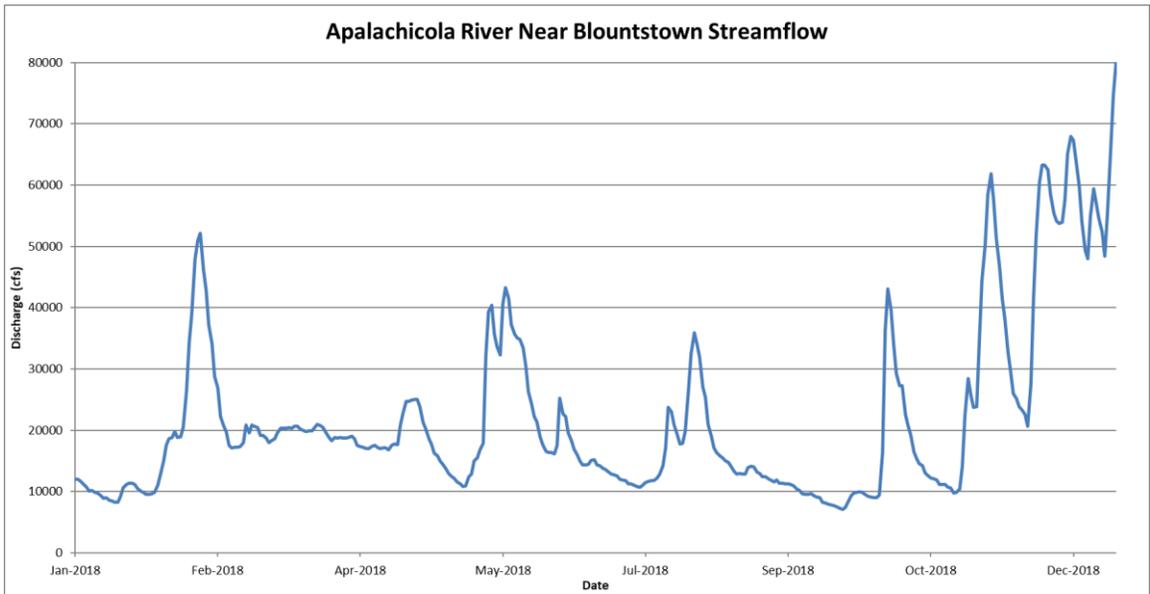


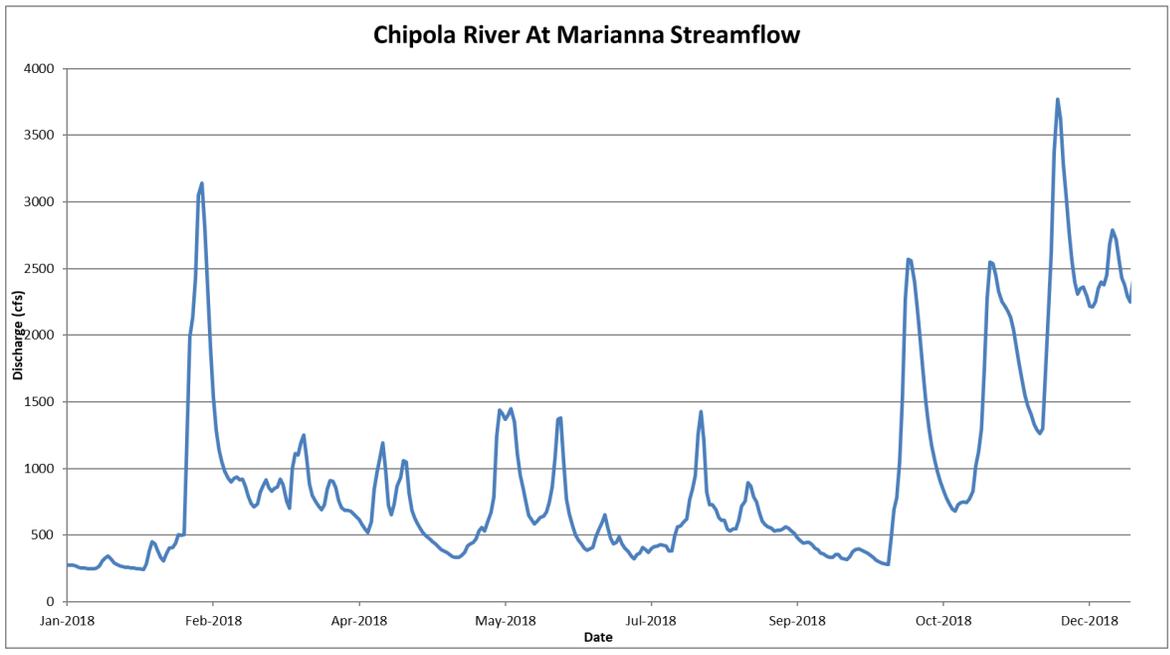
St. Marks River Near Newport Streamflow



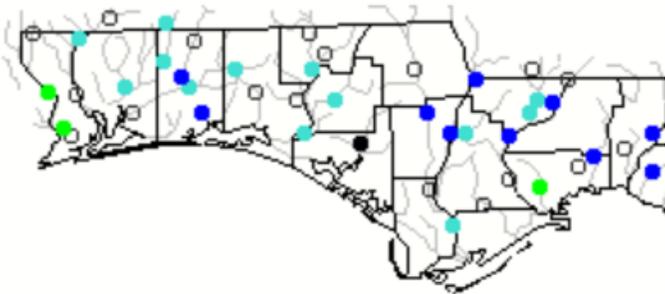
Ochlockonee River Near Havana Streamflow







**Month of January streamflow compared to historical streamflow for the month of the year (NFWMD)
January 2019**

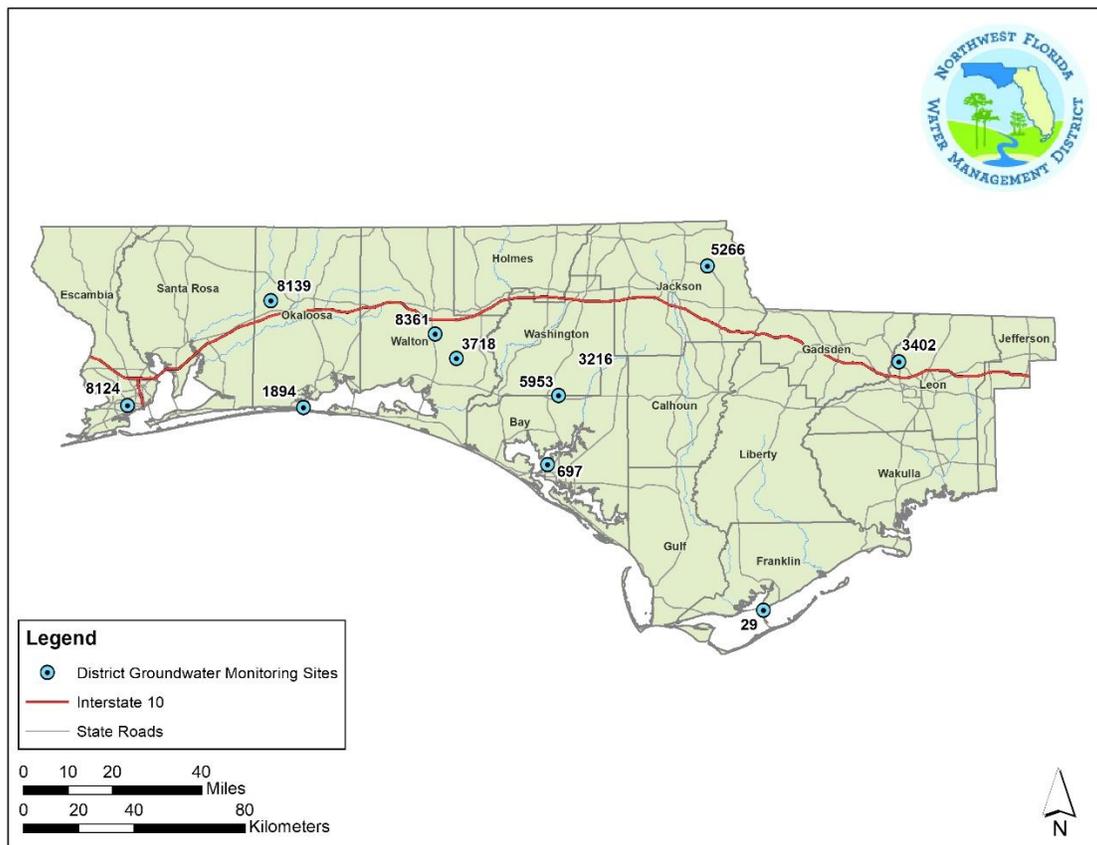


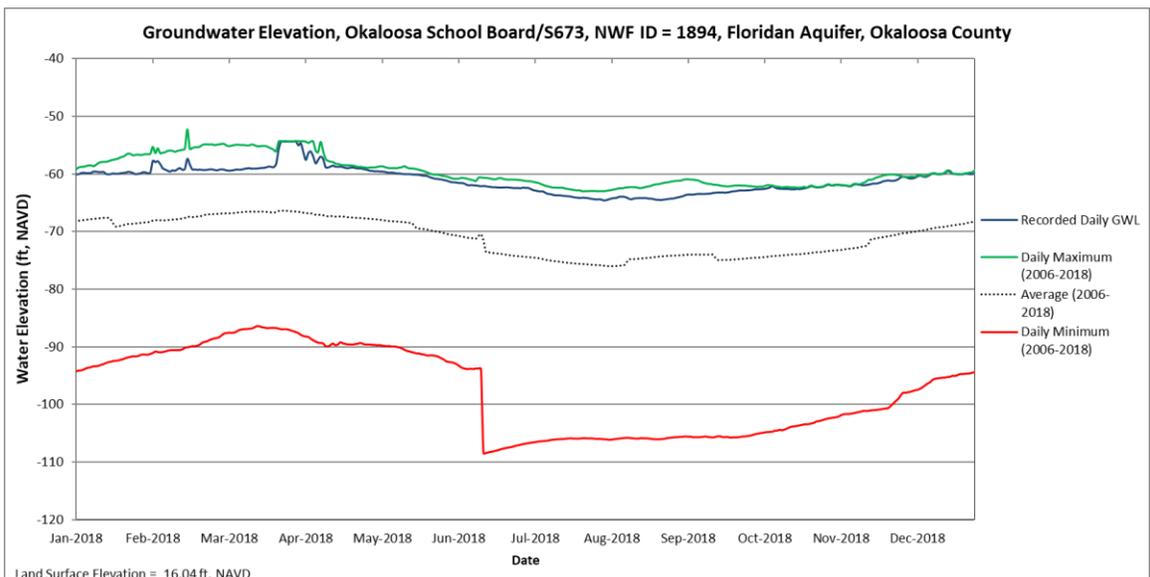
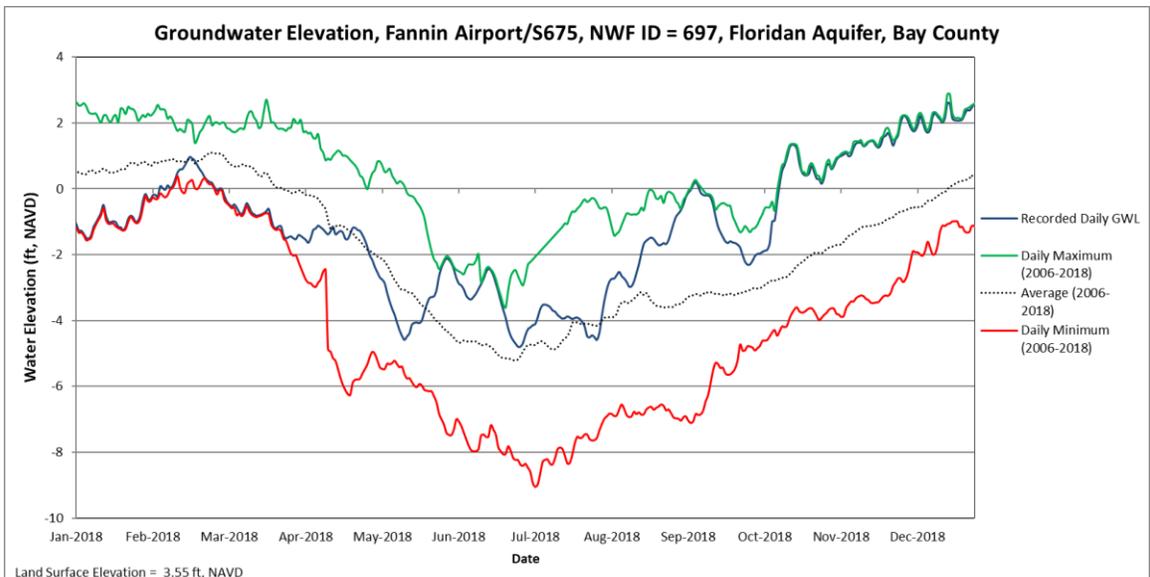
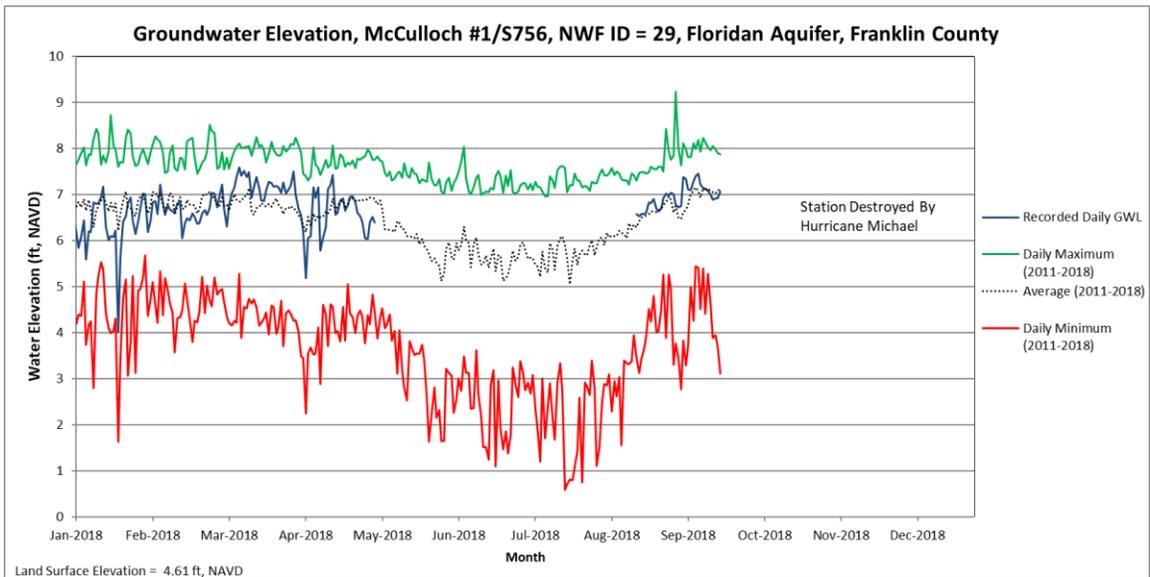
Explanation - Percentile classes							
	●	●	●	●	●	●	○
Low	<10 <small>Much below normal</small>	10-24 <small>Below normal</small>	25-75 <small>Normal</small>	76-90 <small>Above normal</small>	>90 <small>Much above normal</small>	High	Not-ranked

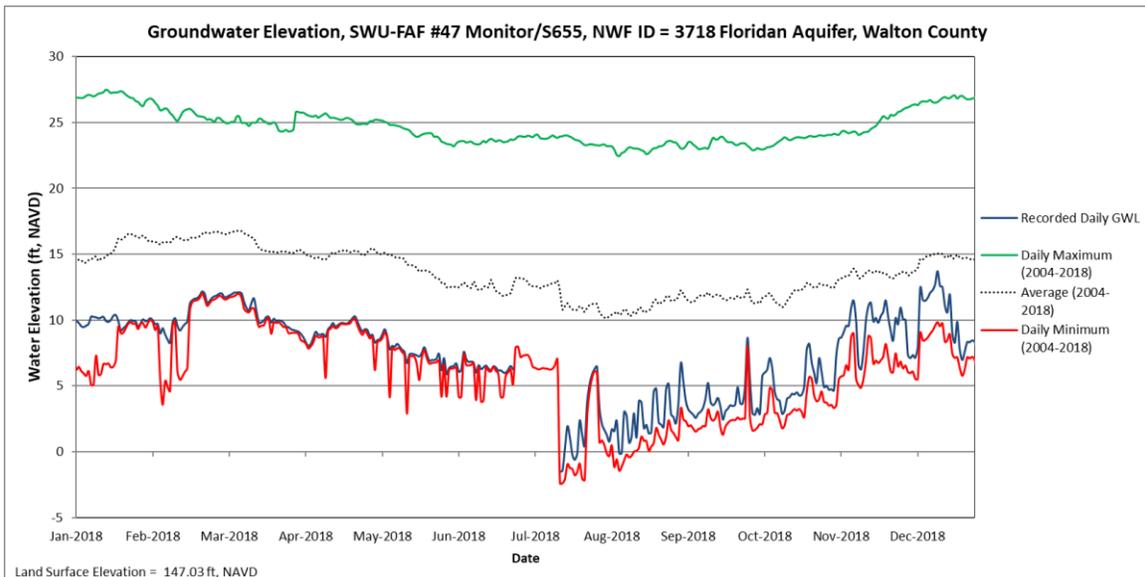
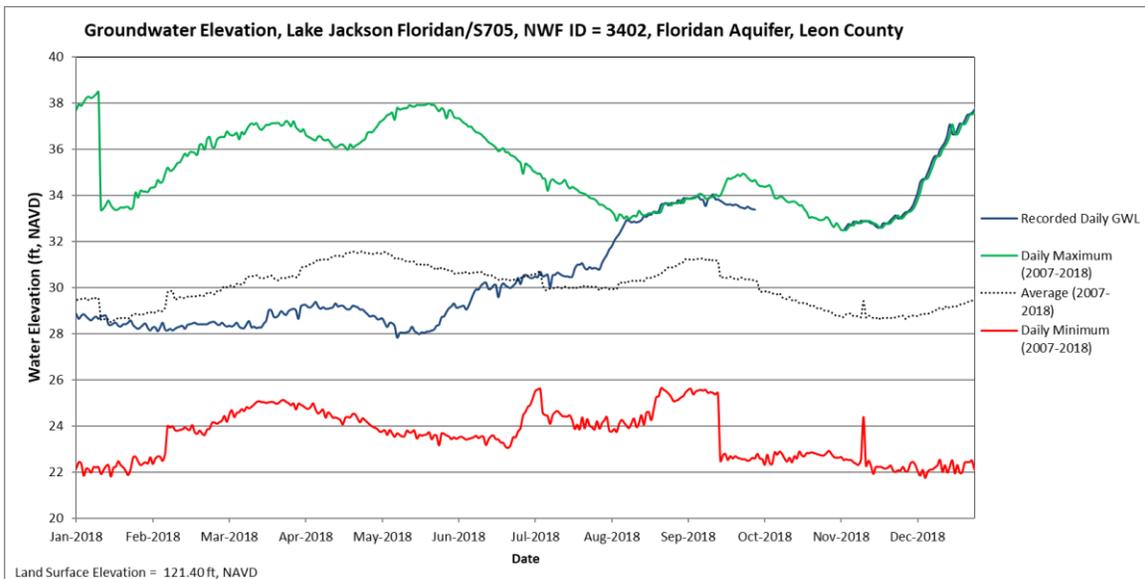
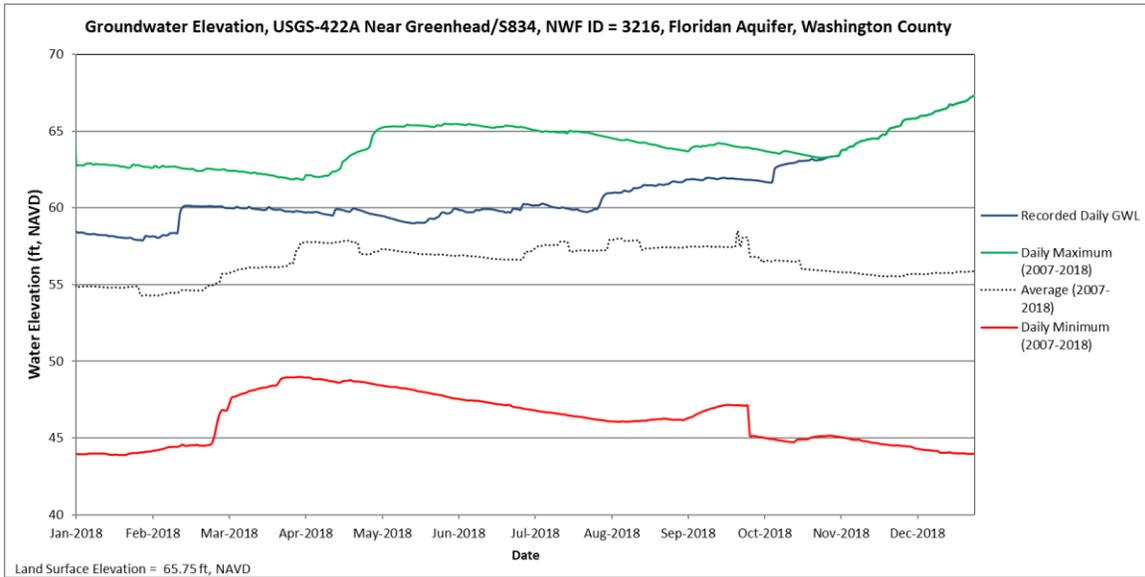
Groundwater Levels

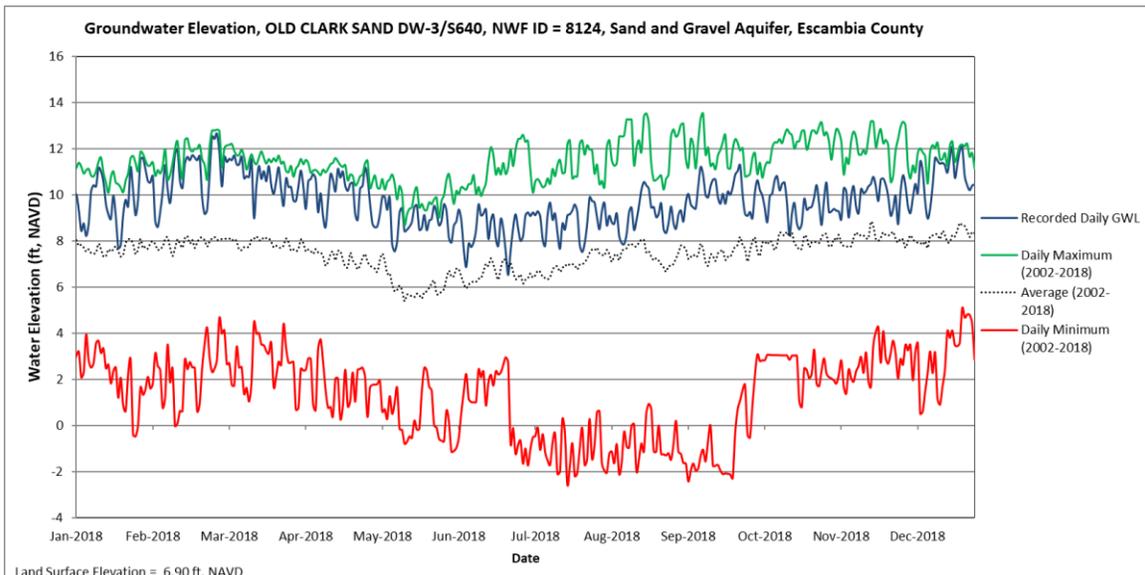
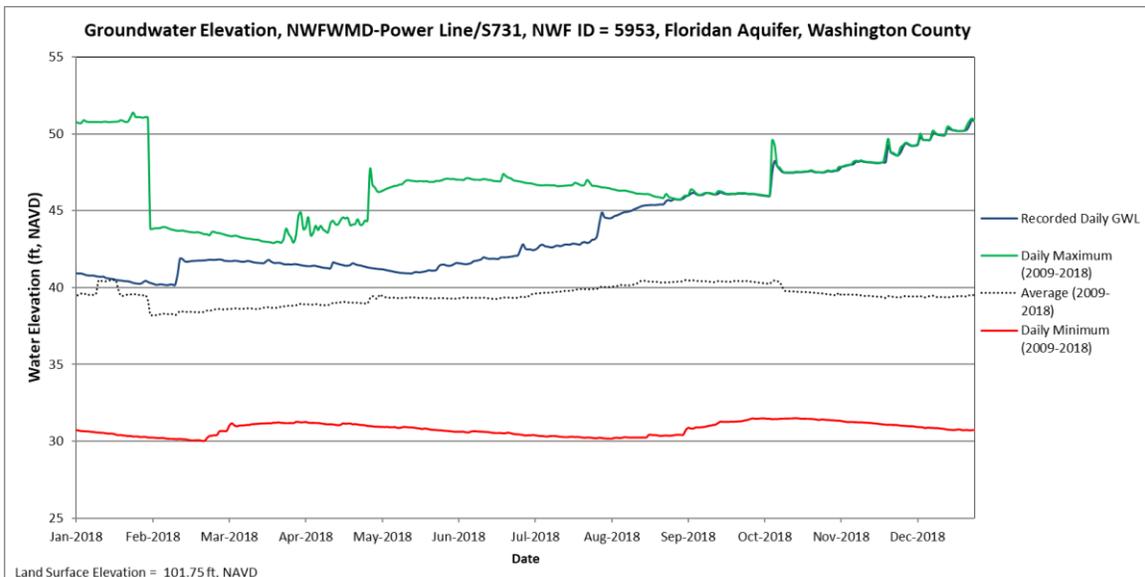
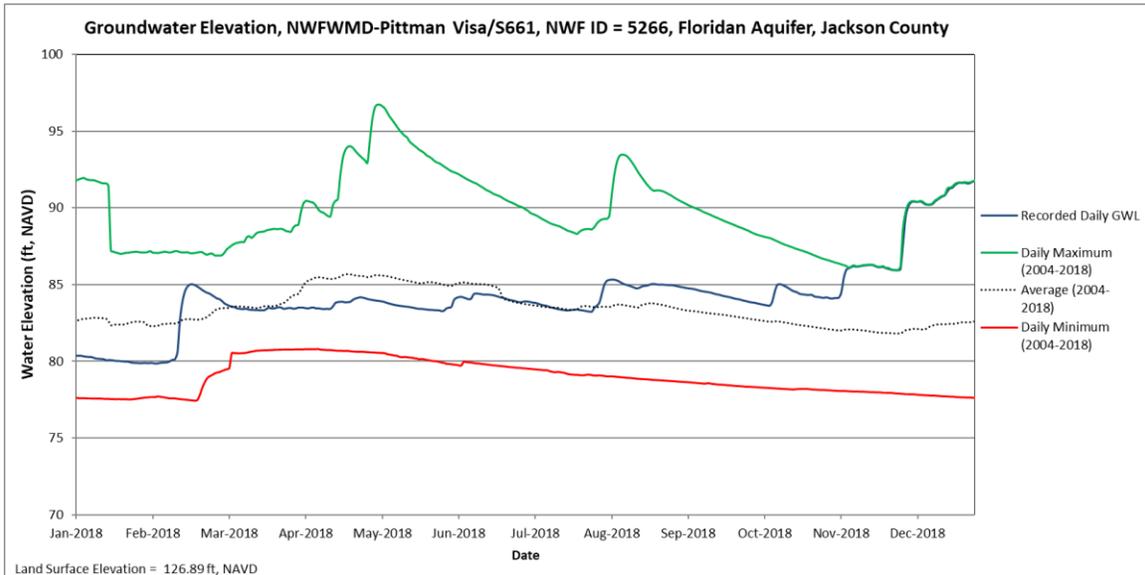
Groundwater levels across the District are among the highest observed since monitoring began apart from the groundwater monitoring wells in Walton County. The SWU-FAF #47 monitor well in Walton County, NWF ID = 3718, has been recording its lowest levels on record over the past several months. The RU Monitor/Cedar Street monitor well in Walton County, NWF ID = 8361 has returned to the average range after several months of the lowest levels observed in the period of record. The Okaloosa School Board well in Okaloosa County, NWF ID = 1894, has been at its highest level since monitoring began in 2006, and continues to rise.

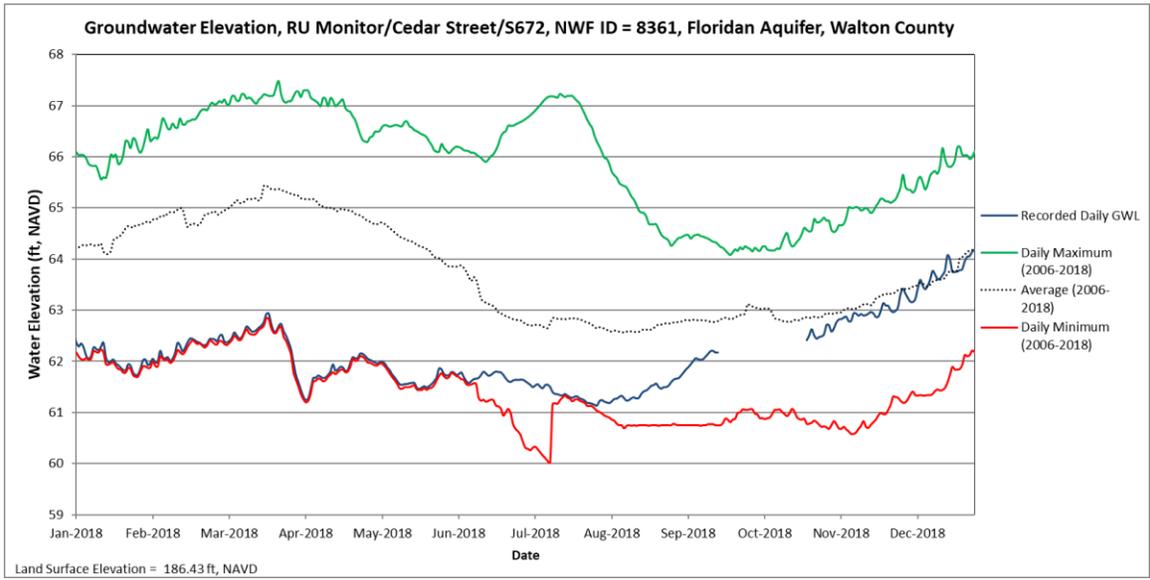
In the western Panhandle, groundwater levels in the Sand and Gravel aquifer remain higher than the period of record average. The groundwater level in Escambia County has been recovering over the past several years, the Old Clark Sand DW-3 well, NWF ID = 8124, is near its highest levels since monitoring began in 2002. Daily minimum and daily maximum groundwater levels represent the lowest or highest recorded value for that day throughout the period of record, respectively.









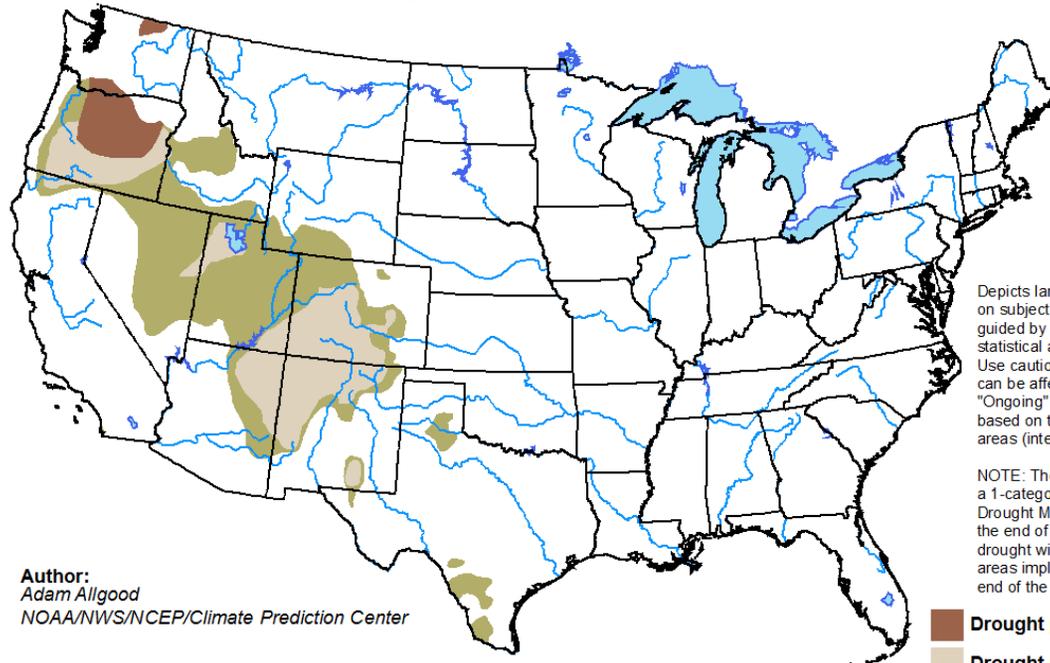


Drought Report

The U.S. Drought Monitor currently classifies some counties across the District as within normal precipitation conditions. The NOAA seasonal forecast for late February to late May predicts an above normal rainfall pattern for all 16 counties within the District. The next three months have a 40% chance for precipitation to be above the 1981-2010 rainfall normal.

U.S. Seasonal Drought Outlook **Drought Tendency During the Valid Period**

Valid for February 21 - May 31, 2019
Released February 21

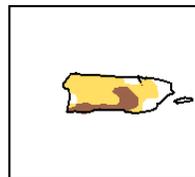
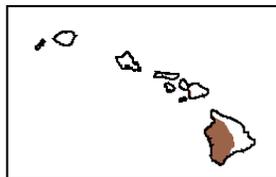
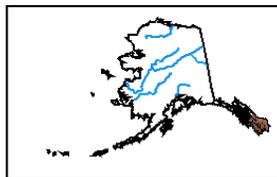


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

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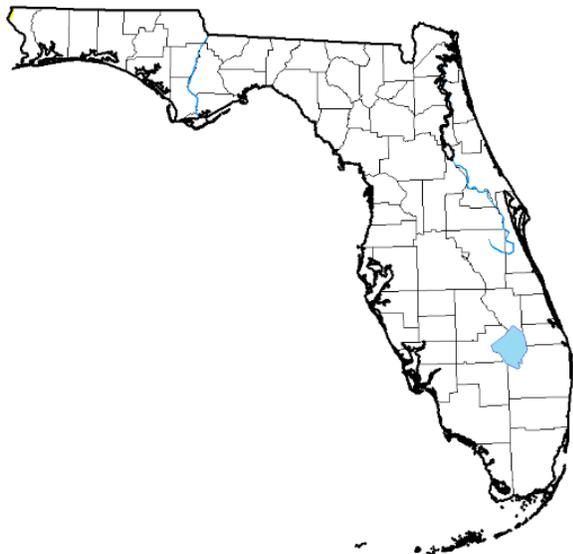
-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely



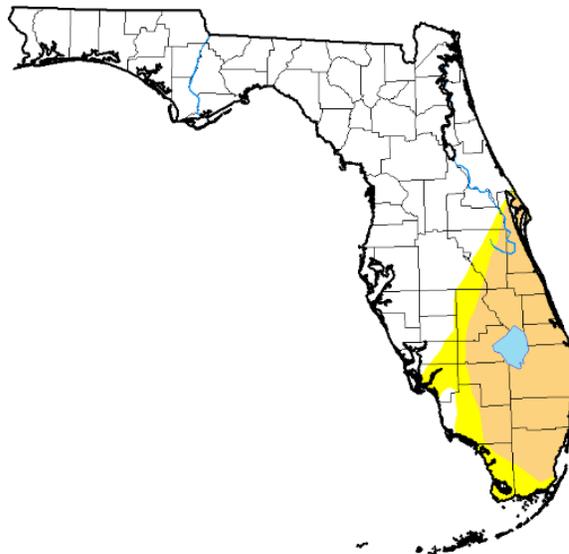
<http://go.usa.gov/3eZ73>

U.S. Drought Monitor

Florida



July 3, 2018



January 1, 2019

Drought Classification

None
 D0 (Abnormally Dry)
 D1 (Moderate Drought)
 D2 (Severe Drought)
 D3 (Extreme Drought)
 D4 (Exceptional Drought)

Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2018-01-02	72.59	27.41	22.39	0.00	0.00	0.00	50
2018-07-03	99.95	0.05	0.00	0.00	0.00	0.00	0
Change	27.36	-27.36	-22.39	0.00	0.00	0.00	-50

<http://droughtmonitor.unl.edu/Maps/CompareTwoWeeks.aspx>