Northwest Florida Water Management District

Hydrologic Conditions Update January 2020 – June 2020
August 30, 2020

Executive Summary

Cumulative average rainfall for the last six months was below normal for the District. Even after experiencing a wet February (2020), groundwater levels were relatively below normal for half of the counties of the District. Despite lower than normal cumulative rainfall over the past six months, discharge was above normal in rivers and streams, with the end of the period seeing a slow return to normal streamflow range.

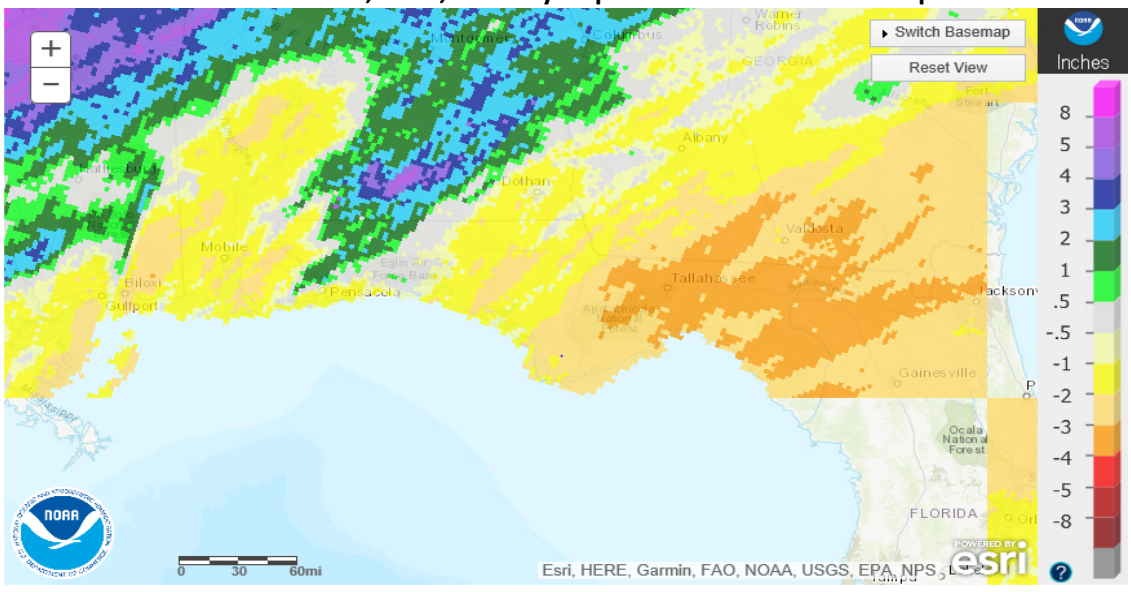
Precipitation Summary

Rainfall totals, compared to current National Weather Service Climate Normals (1981-2010 reference period), from January to June were below normal across the District at 26.56 inches (normal cumulative rainfall for this period is 29.67 inches). Rainfall in January was 29 percent below normal at 3.57 inches. February rainfall totals were 24 percent above normal at 6.01 inches. March rainfall totals were 77 percent below normal at 1.32 inches. Rainfall in April was 44 percent above normal at 5.69 inches. Rainfall in May was 12 percent below normal at 3.29 inches. Rainfall totals in June were 5 percent above normal at 6.68 inches.

Significant Events

Heavy Rainfall – June 6-19, 2020
Heavy rainfall from tropical storm Cristobal was observed over a few days in early June. Areas of the western panhandle received 2-10 inches of rainfall with locally heavier totals, while areas further east received 7-14 inches with locally heavier totals. Flash flood warnings were issued for the entire district.

North Florida: June 30, 2020, 180-Day Departure from Normal Precipitation

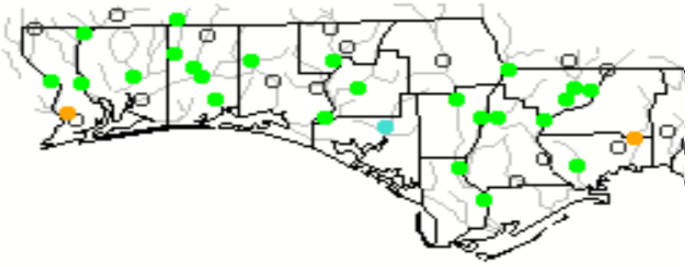


Source: http://water.weather.gov/precip/

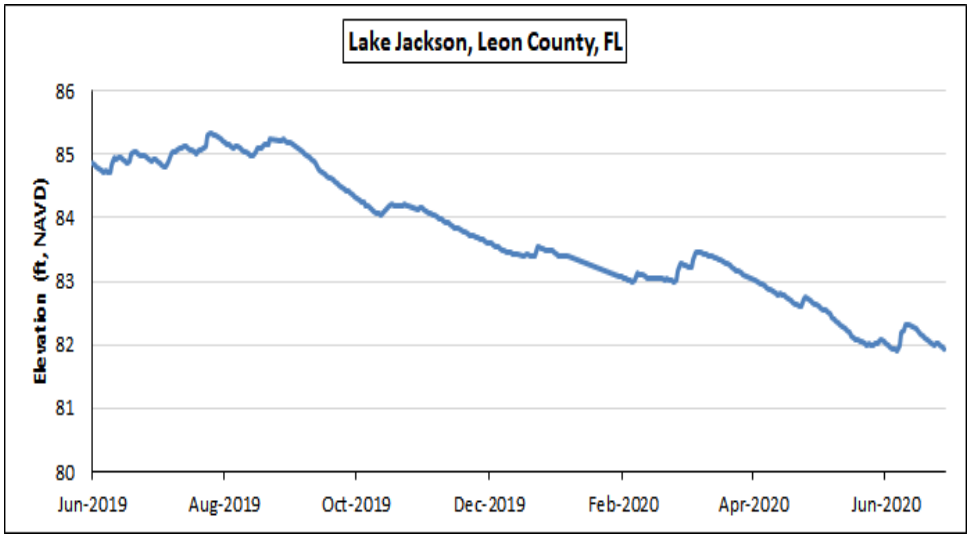
Surface Water Levels and Streamflow

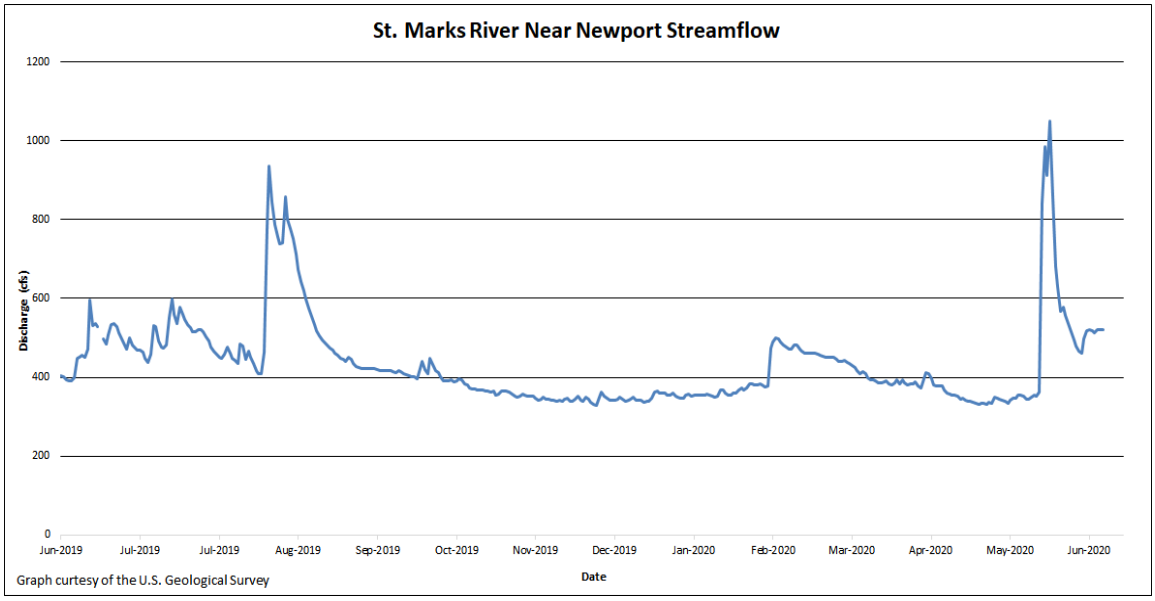
Most river and streamflow monitoring stations in the western and central Panhandle are within the normal range (between the 25th and 75th percentiles). The Apalachicola River streamflow is within the normal range for all gages (between the 25th and 75th percentiles). Streamflow of Econfina Creek in Washington and Bay counties is above-normal. Lake levels are generally declining and returning to normal pool levels throughout the District as drier conditions persist. Lake Jackson in Leon County remains at slightly lower levels than what is typically seen during this time of the year.

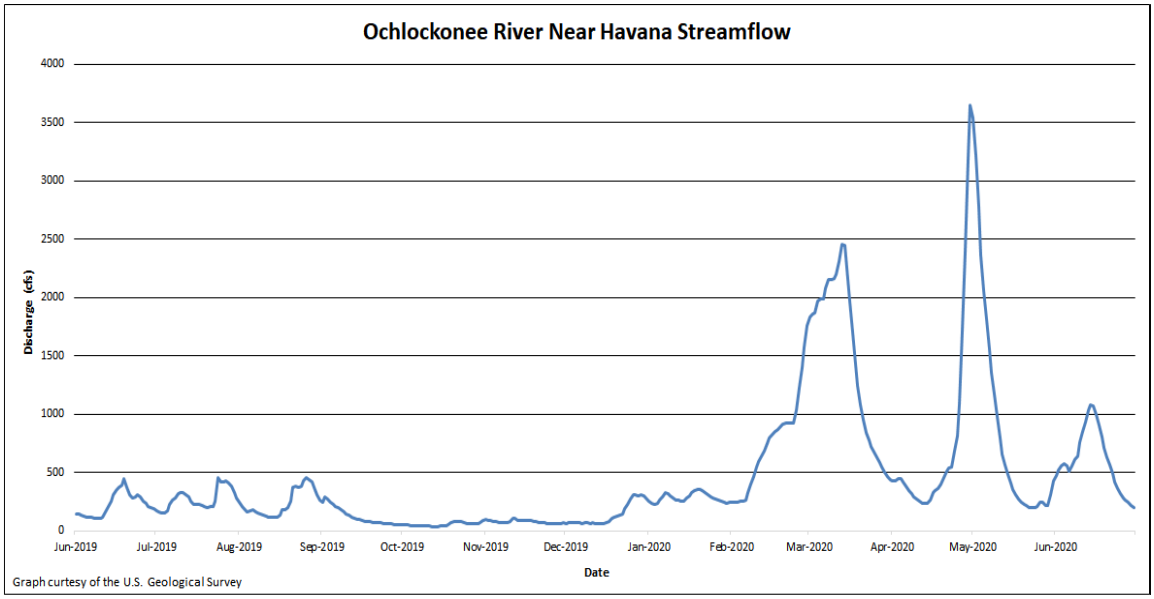
Month of June streamflow compared to historical streamflow for the month of the year (NWFWMD)
June 2020

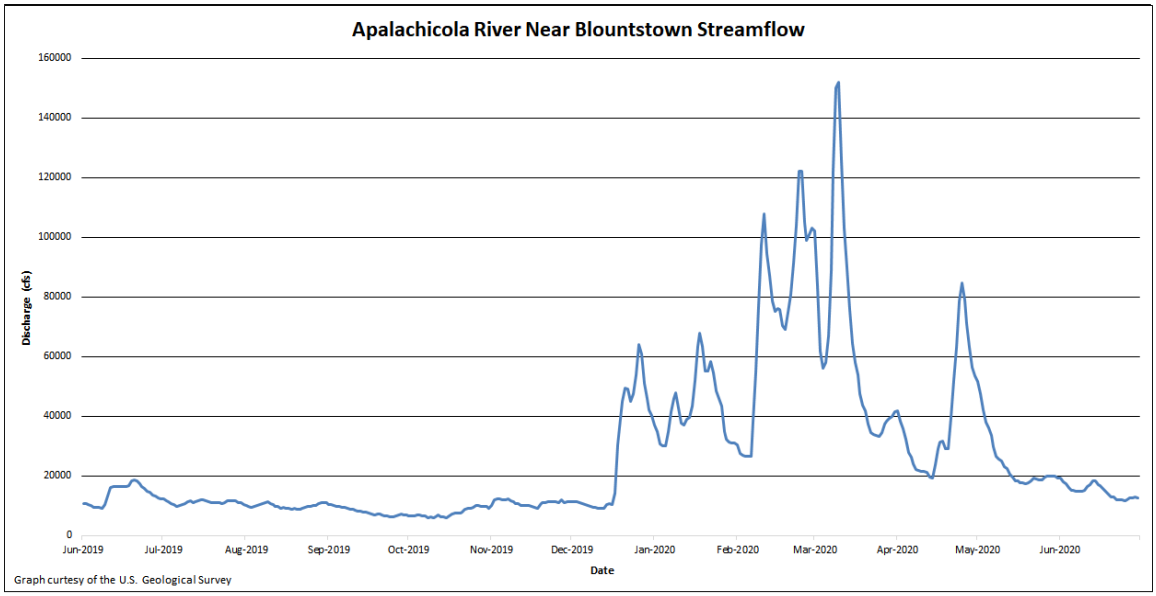


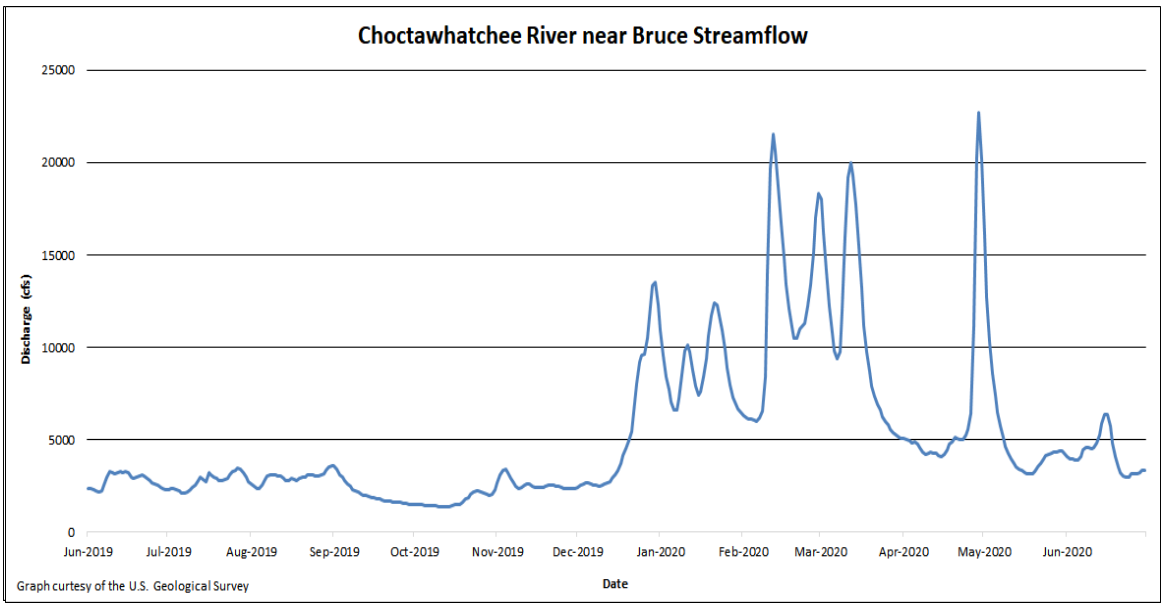
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

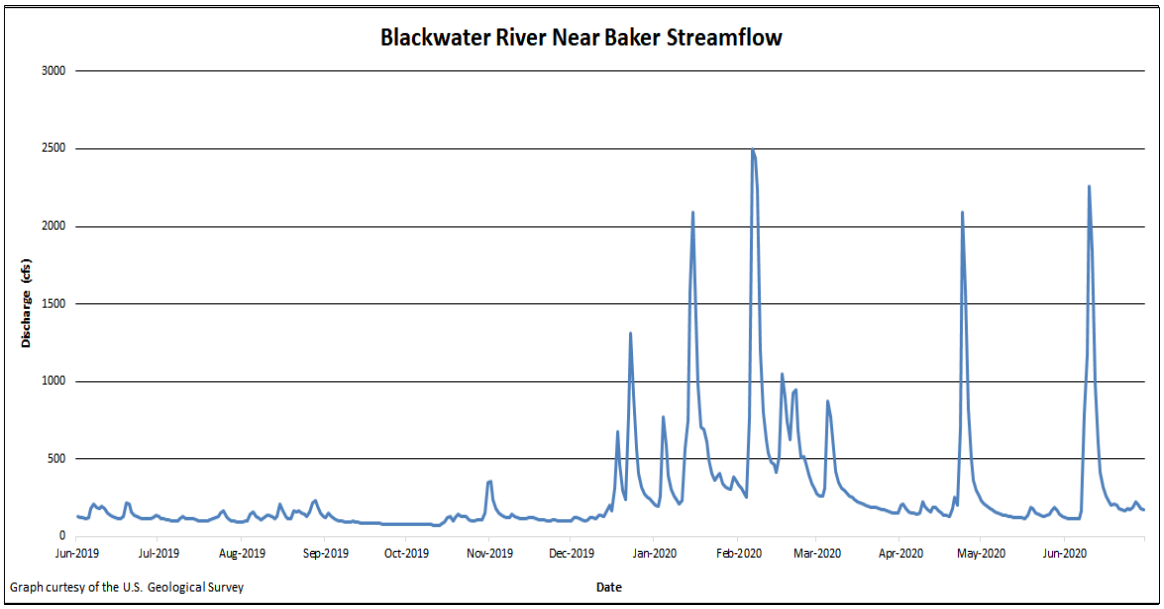


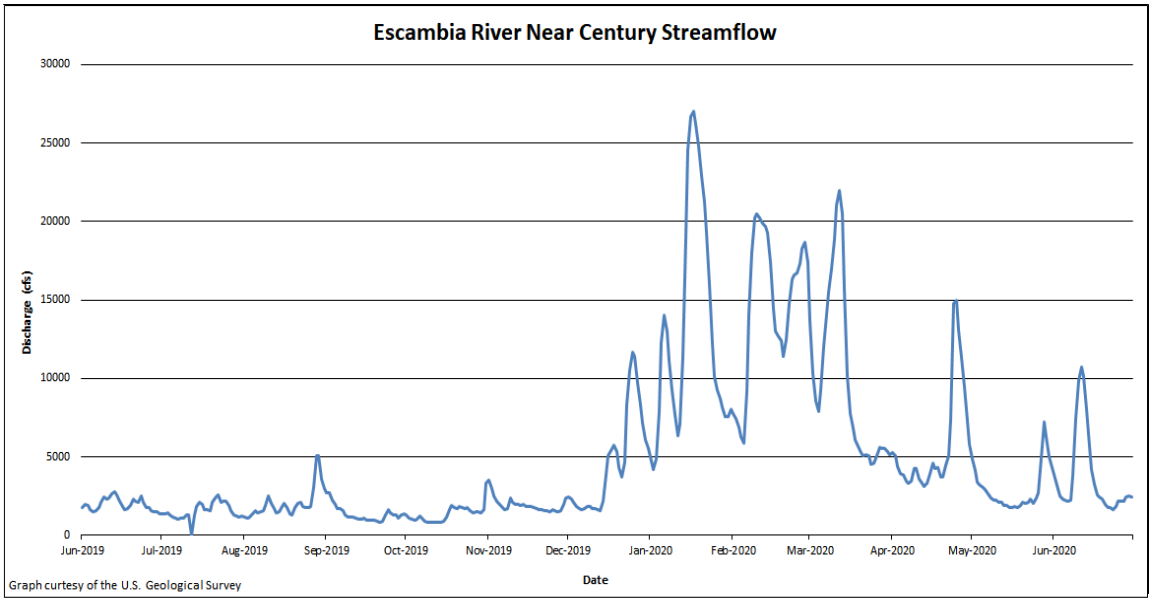

St. Marks River Near Newport Streamflow
1200
1000
800
600
400
200
0
Discharge (cfs)
Jun-2019
Jul-2019
Jul-2019
Aug-2019
Sep-2019
Oct-2019
Nov-2019
Dec-2019
Jan-2020
Feb-2020
Mar-2020
Apr-2020
May-2020
Jun-2020
Date
Graph curtesy of the U.S. Geological Survey


Ochlockonee River Near Havana Streamflow
4000
3500
3000
2500
2000
1500
1000
500
0
Discharge (cfs)
Jun-2019
Jul-2019
Aug-2019
Sep-2019
Oct-2019
Nov-2019
Dec-2019
Jan-2020
Feb-2020
Mar-2020
Apr-2020
May-2020
Jun-2020
Date
Graph curtesy of the U.S. Geological Survey


Apalachicola River Near Blountstown Streamflow
160000
140000
120000
100000
80000
60000
40000
20000
0
Discharge (cfs)
Jun-2019
Jul-2019
Aug-2019
Sep-2019
Oct-2019
Nov-2019
Dec-2019
Jan-2020
Feb-2020
Mar-2020
Apr-2020
May-2020
Jun-2020
Date
Graph curtesy of the U.S. Geological Survey


Choctawhatchee River near Bruce Streamflow
25000
20000
15000
10000
5000
0
Discharge (cfs)
Jun-2019
Jul-2019
Aug-2019
Sep-2019
Oct-2019
Nov-2019
Dec-2019
Jan-2020
Feb-2020
Mar-2020
Apr-2020
May-2020
Jun-2020
Date
Graph curtesy of the U.S. Geological Survey

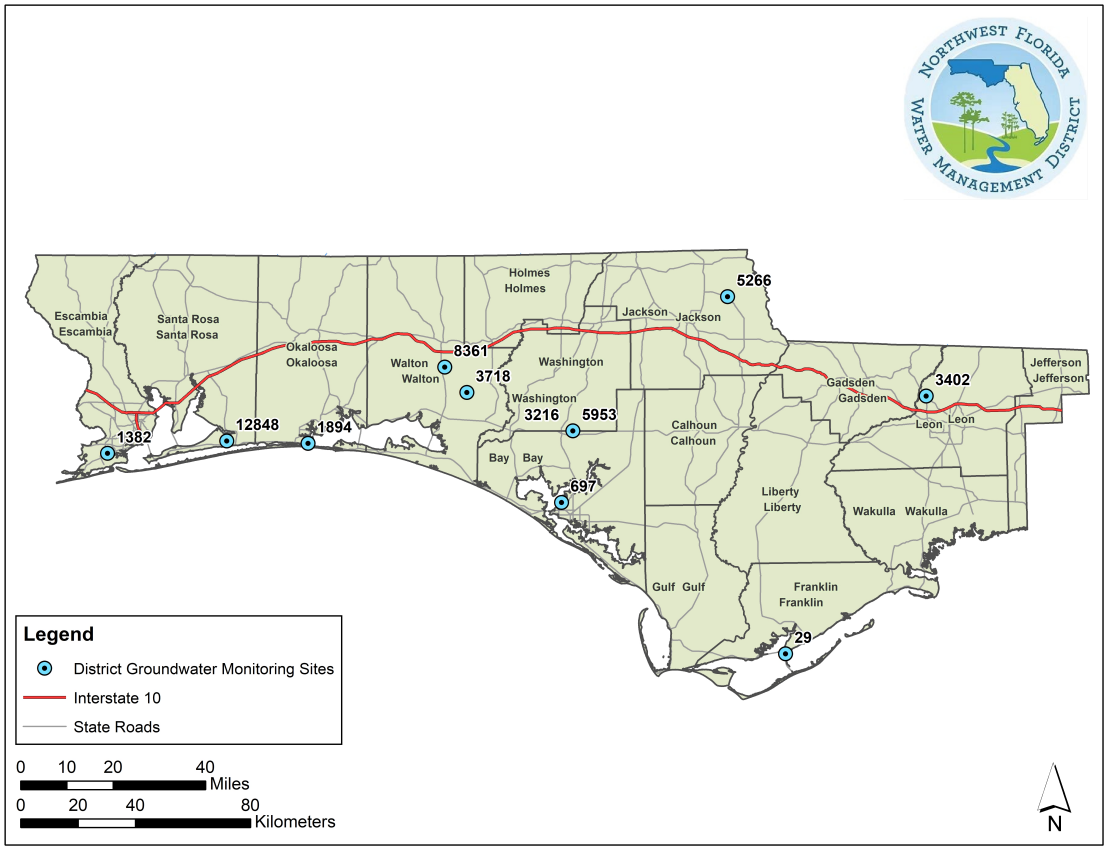

Blackwater River Near Baker Streamflow
3000
2500
2000
1500
1000
500
0
Discharge (cfs)
Jun-2019
Jul-2019
Aug-2019
Sep-2019
Oct-2019
Nov-2019
Dec-2019
Jan-2020
Feb-2020
Mar-2020
Apr-2020
May-2020
Jun-2020
Date
Graph curtesy of the U.S. Geological Survey

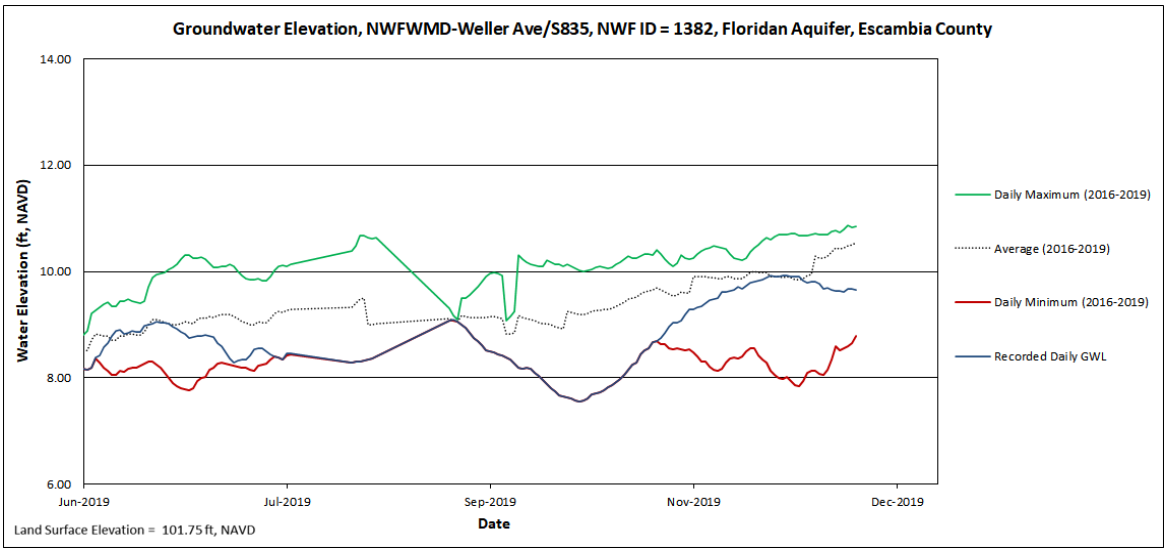

Escambia River Near Century Streamflow
30000
25000
20000
15000
10000
5000
0
Discharge (cfs)
Jun-2019
Jul-2019
Aug-2019
Sep-2019
Oct-2019
Nov-2019
Dec-2019
Jan-2020
Feb-2020
Mar-2020
Apr-2020
May-2020
Jun-2020
Date
Graph curtesy of the U.S. Geological Survey

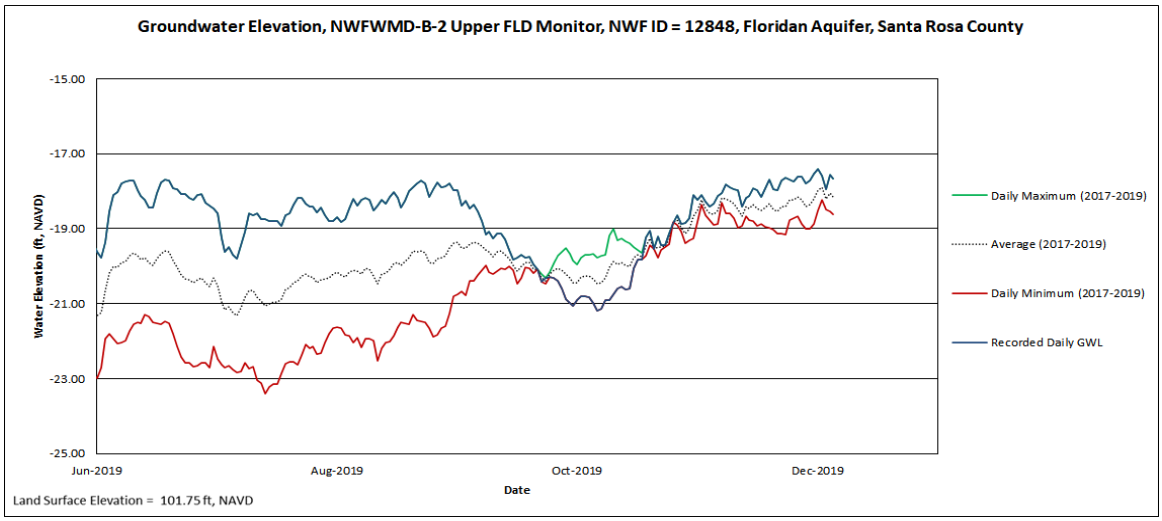
Groundwater Levels

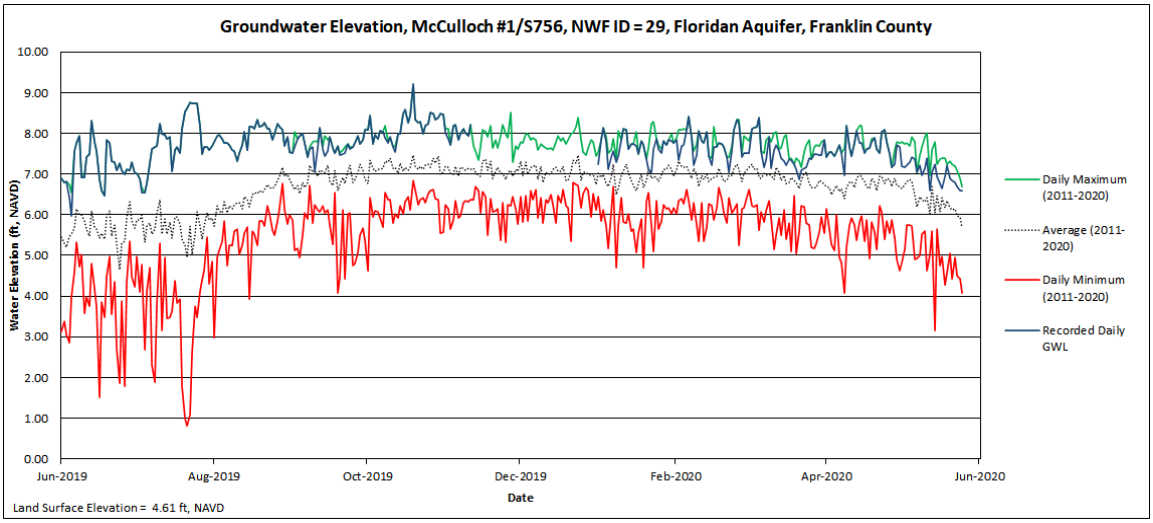
Groundwater levels across the District are generally higher than normal for more than 50% of the stations. In particular areas of Santa Rosa, Okaloosa, Washington and Franklin counties had groundwater levels that were above normal. Groundwater levels are generally lower for the western counties in the sand/gravel aquifer and highly influenced by rainfall, whereas eastern counties in the superficial aquifer had higher groundwater levels .

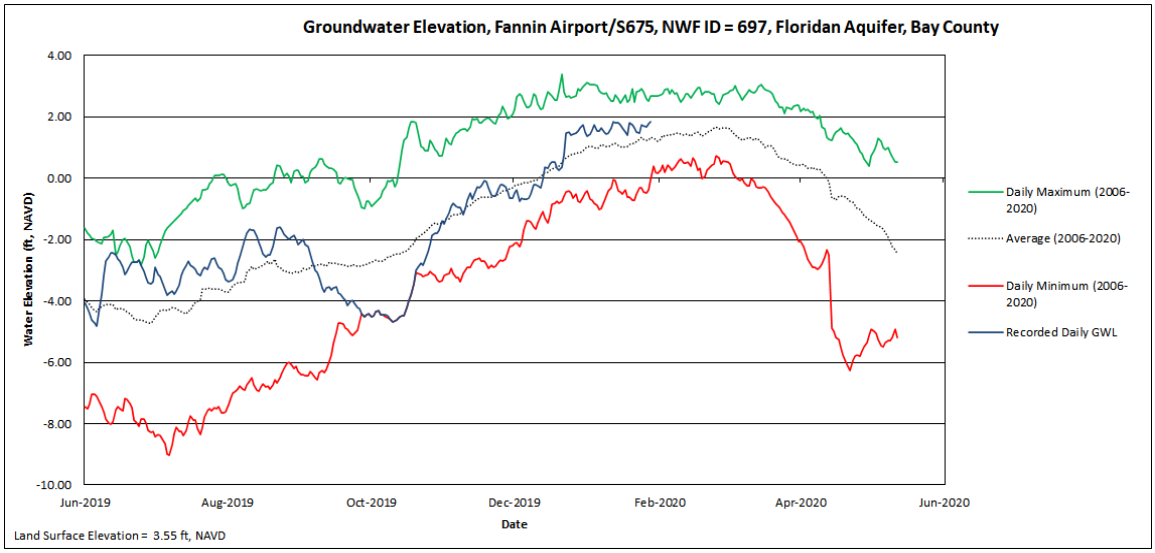
Groundwater levels in Bay county remained higher than normal despite cumulative rainfall totals through the 2019 - 2020 calendar year being below normal, likely due to wetter conditions in February and April. Water levels in the Greenhead well, NWF 3216, have remained significantly above average throughout the period. The McCulloch well, NWF 29, also remained consistently high through most of the six month period. Groundwater levels in Leon County were below normal due to drier conditions during the six month period. Groundwater levels in the western counties of the District are experiencing below normal levels, with the South Walton Utility (SWU-FAF #47) well, NWF 3718, recording consistently below average water levels. The Cedar Street/Regional Utilities (RU) Monitor well in Walton county, NWF 8361, is significantly below normal, recording minimum water levels from January onward.

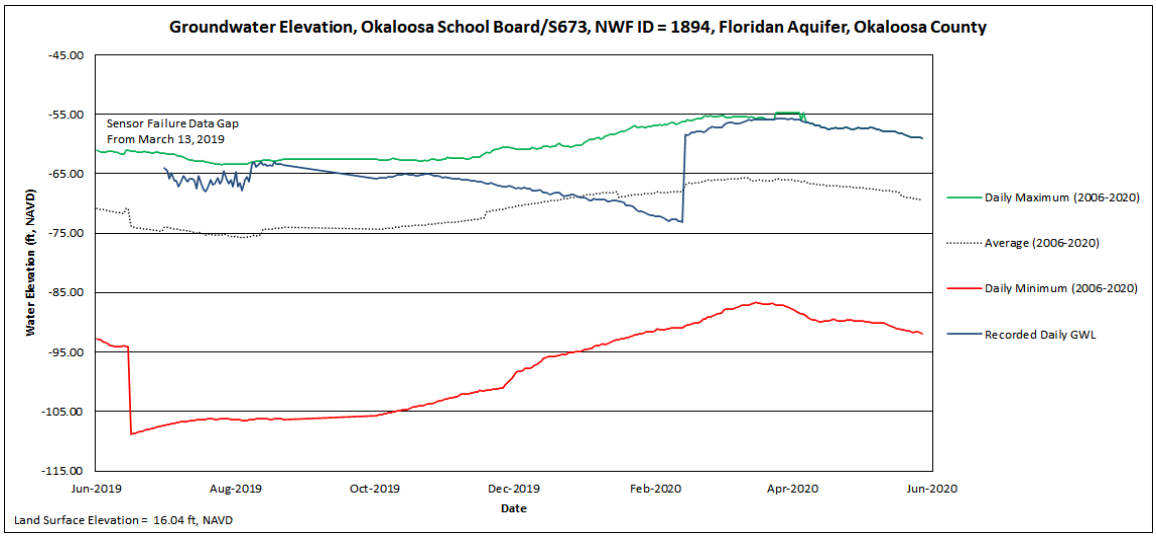


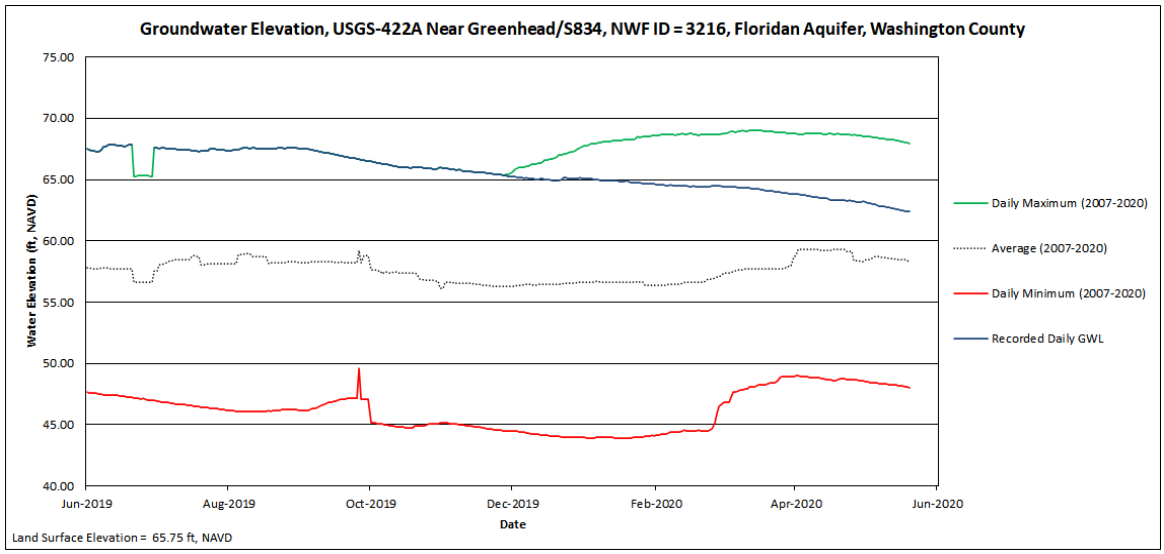

Groundwater Elevation, NWFWMD-Weller Ave/S835, NWF ID = 1382, Floridan Aquifer, Escambia County
14.00
12.00
10.00
8.00
6.00
Water Elevation (ft, NAVD)
Jun-2019
Jul-2019
Sep-2019
Nov-2019
Dec-2019
Date
Land Surface Elevation = 101.75 ft, NAVD
Daily Maximum (2016-2019)
Average (2016-2019)
Daily Minimum (2016-2019)
Recorded Daily GWL

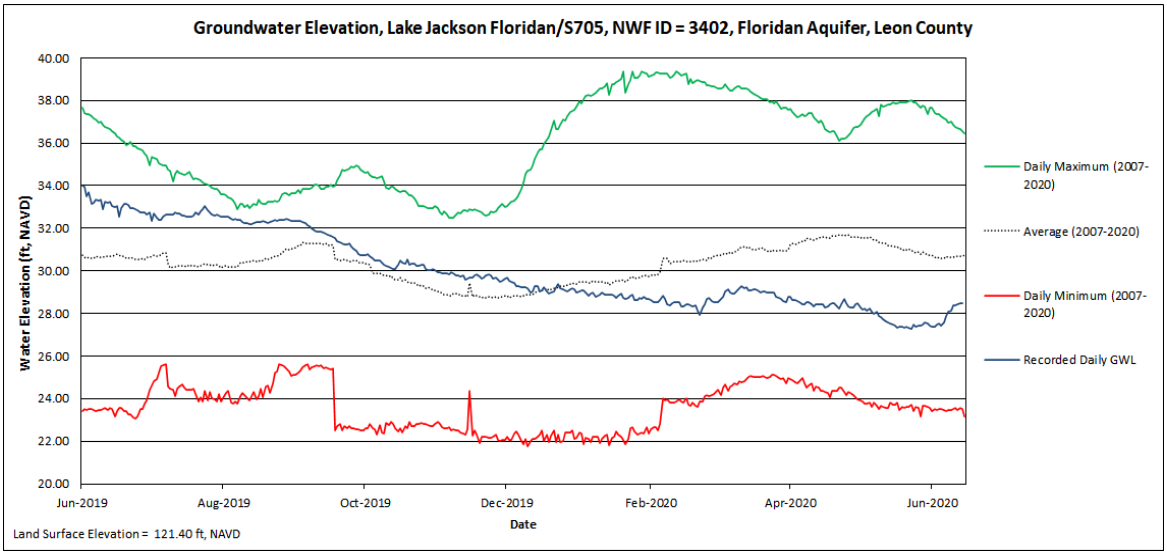

Groundwater Elevation, NWFWMD-B-2 Upper FLD Monitor, NWF ID = 12848, Floridan Aquifer, Santa Rosa County
-15.00
-17.00
-19.00
-21.00
-23.00
-25.00
Water Elevation (ft, NAVD)
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Date
Land Surface Elevation = 101.75 ft, NAVD
Daily Maximum (2017-2019)
Average (2017-2019)
Daily Minimum (2017-2019)
Recorded Daily GWL

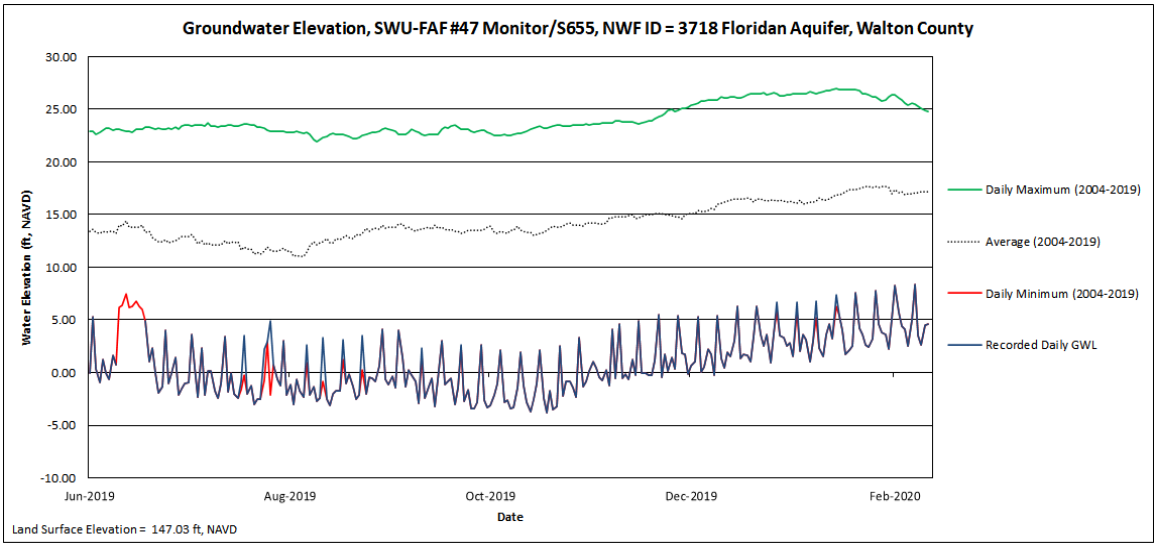

Groundwater Elevation, McCulloch #1/S756, NWF ID = 29, Floridan Aquifer, Franklin County
Water Elevation (ft, NAVD)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Daily Maximum (2011-2020)
Average (2011-2020)
Daily Minimum (2011-2020)
Recorded Daily GWL
Land Surface Elevation = 4.61 ft, NAVD

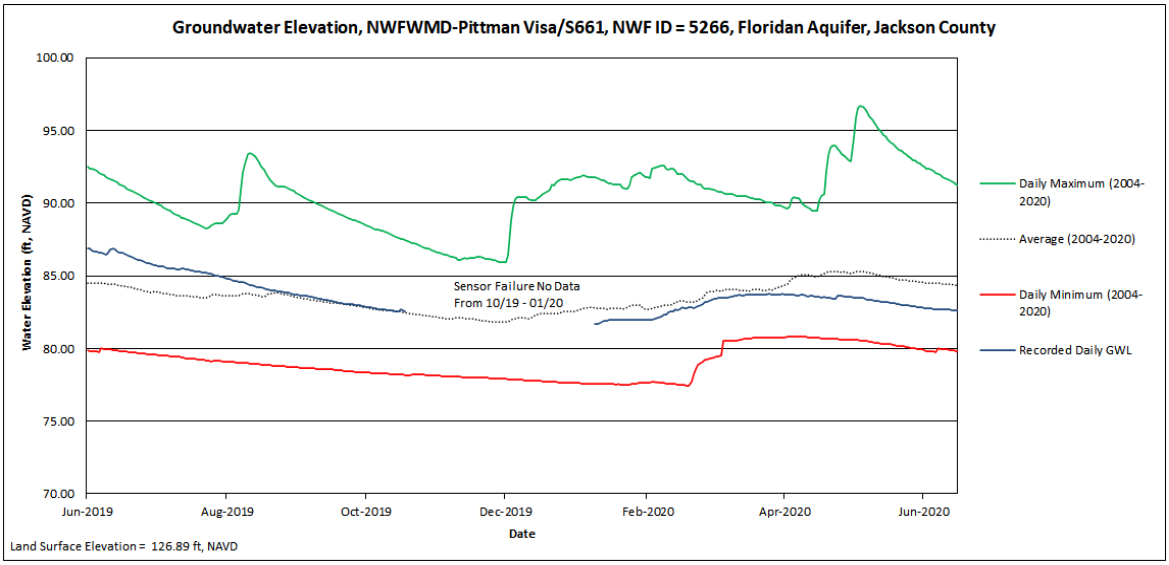

Groundwater Elevation, Fannin Airport/S675, NWF ID = 697, Floridan Aquifer, Bay County
Water Elevation (ft, NAVD)
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
-10.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Daily Maximum (2006-2020)
Average (2006-2020)
Daily Minimum (2006-2020)
Recorded Daily GWL
Land Surface Elevation = 3.55 ft, NAVD

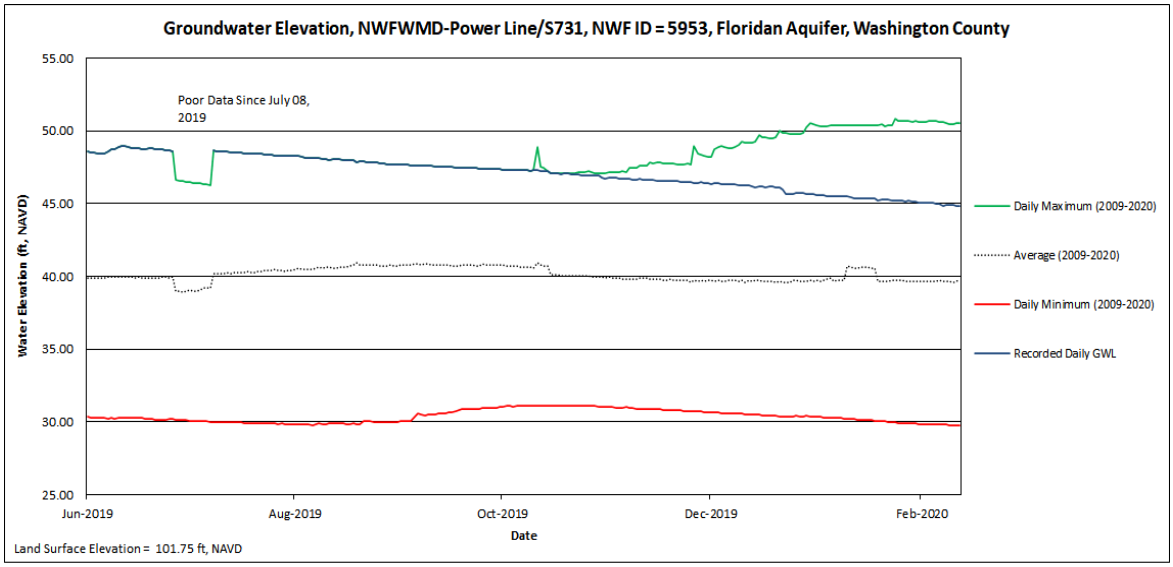

Groundwater Elevation, Okaloosa School Board/S673, NWF ID = 1894, Floridan Aquifer, Okaloosa County
Water Elevation (ft, NAVD)
-45.00
-55.00
-65.00
-75.00
-85.00
-95.00
-105.00
-115.00
Sensor Failure Data Gap
From March 13, 2019
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Daily Maximum (2006-2020)
Average (2006-2020)
Daily Minimum (2006-2020)
Recorded Daily GWL
Land Surface Elevation = 16.04 ft, NAVD

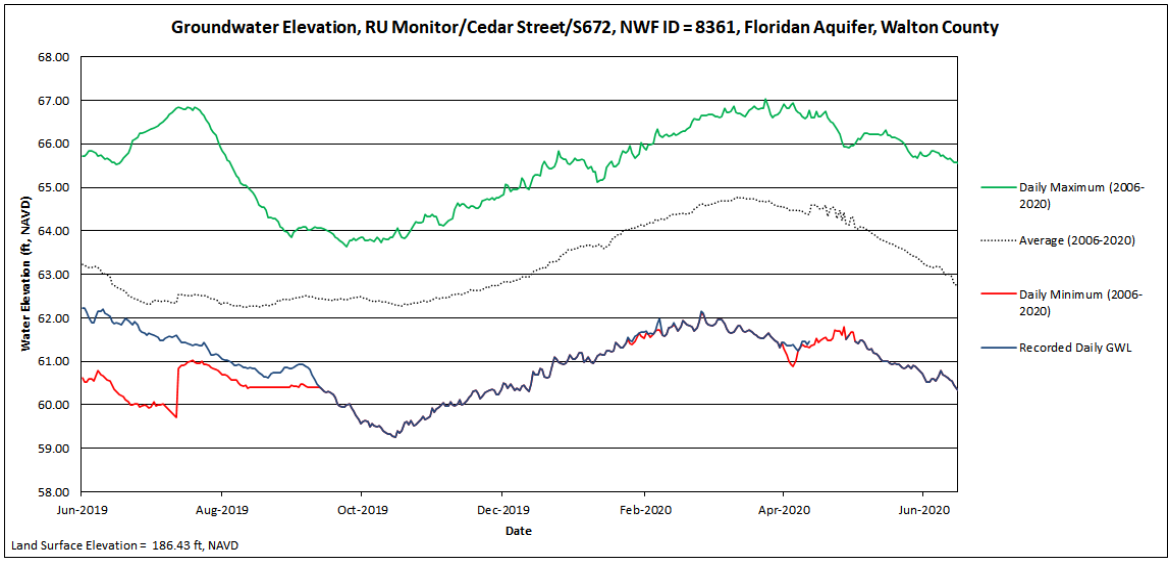

Groundwater Elevation, USGS-422A Near Greenhead/S834, NWF ID = 3216, Floridan Aquifer, Washington County
Water Elevation (ft, NAVD)
75.00
70.00
65.00
60.00
55.00
50.00
45.00
40.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Daily Maximum (2007-2020)
Average (2007-2020)
Daily Minimum (2007-2020)
Recorded Daily GWL
Land Surface Elevation = 65.75 ft, NAVD


Groundwater Elevation, Lake Jackson Floridan/S705, NWF ID = 3402, Floridan Aquifer, Leon County
Water Elevation (ft, NAVD)
40.00
38.00
36.00
34.00
32.00
30.00
28.00
26.00
24.00
22.00
20.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Daily Maximum (2007-2020)
Average (2007-2020)
Daily Minimum (2007-2020)
Recorded Daily GWL
Land Surface Elevation = 121.40 ft, NAVD


Groundwater Elevation, SWU-FAF #47 Monitor/S655, NWF ID = 3718 Floridan Aquifer, Walton County
Water Elevation (ft, NAVD)
30.00
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Date
Daily Maximum (2004-2019)
Average (2004-2019)
Daily Minimum (2004-2019)
Recorded Daily GWL
Land Surface Elevation = 147.03 ft, NAVD

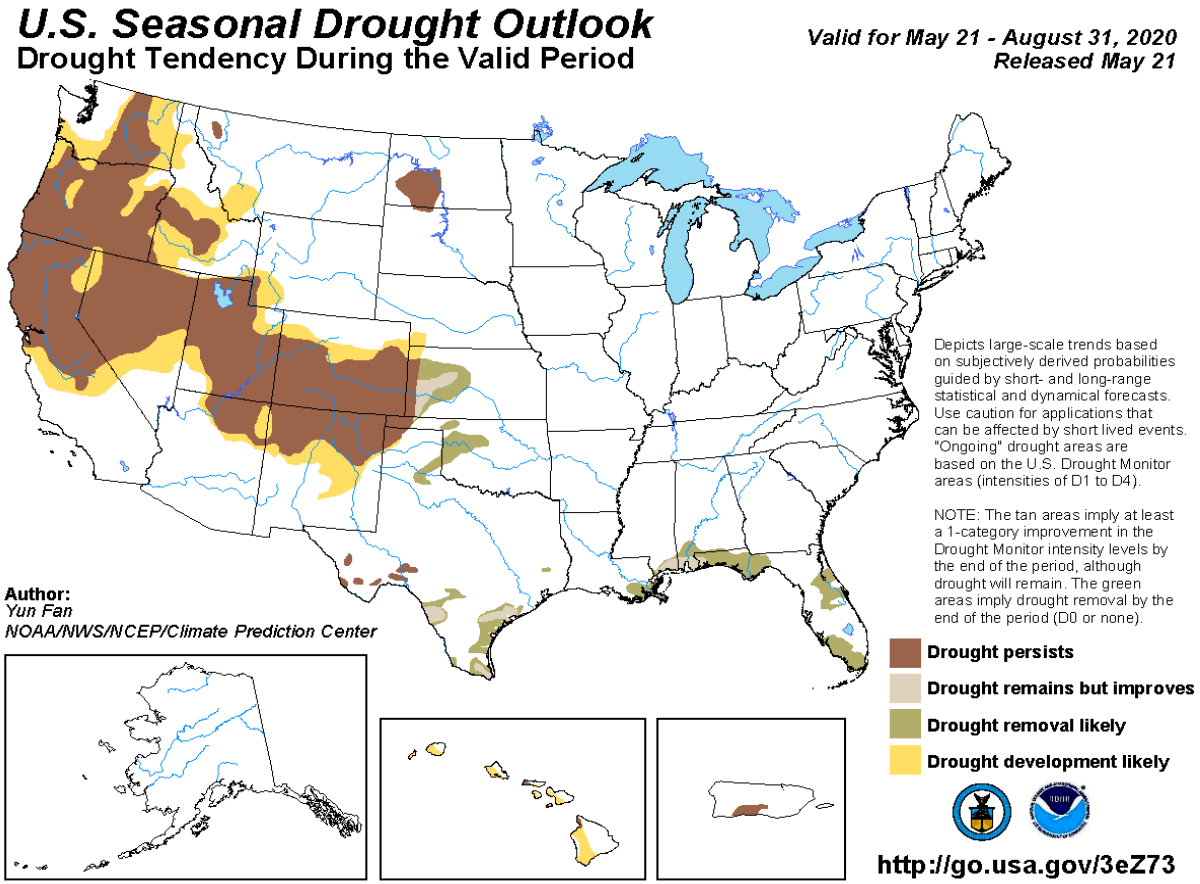

Groundwater Elevation, NWFWMD-Pittman Visa/S661, NWF ID = 5266, Floridan Aquifer, Jackson County
Water Elevation (ft, NAVD)
100.00
95.00
90.00
85.00
80.00
75.00
70.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Sensor Failure No Data From 10/19 - 01/20
Daily Maximum (2004-2020)
Average (2004-2020)
Daily Minimum (2004-2020)
Recorded Daily GWL
Land Surface Elevation = 126.89 ft, NAVD


Groundwater Elevation, NWFWMD-Power Line/S731, NWF ID = 5953, Floridan Aquifer, Washington County
Water Elevation (ft, NAVD)
55.00
50.00
45.00
40.00
35.00
30.00
25.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Date
Poor Data Since July 08, 2019
Daily Maximum (2009-2020)
Average (2009-2020)
Daily Minimum (2009-2020)
Recorded Daily GWL
Land Surface Elevation = 101.75 ft, NAVD


Groundwater Elevation, RU Monitor/Cedar Street/S672, NWF ID = 8361, Floridan Aquifer, Walton County
Water Elevation (ft, NAVD)
68.00
67.00
66.00
65.00
64.00
63.00
62.00
61.00
60.00
59.00
58.00
Jun-2019
Aug-2019
Oct-2019
Dec-2019
Feb-2020
Apr-2020
Jun-2020
Date
Daily Maximum (2006-2020)
Average (2006-2020)
Daily Minimum (2006-2020)
Recorded Daily GWL
Land Surface Elevation = 186.43 ft, NAVD

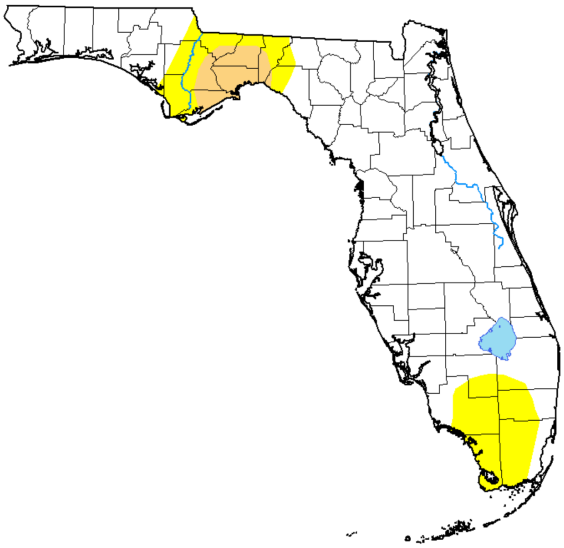
Drought Report

The U.S. Drought Monitor classifies several counties within the District as under abnormally dry to moderate drought conditions. The NOAA seasonal forecast for late May to late August predicts a normal rainfall pattern for most of the 16 counties within the District, with a likely chance of drought removal. According to NOAA, the next three months have a probability for near-normal precipitation. Normal rainfall is defined as average monthly rainfall for the 1981-2010 period of reference.

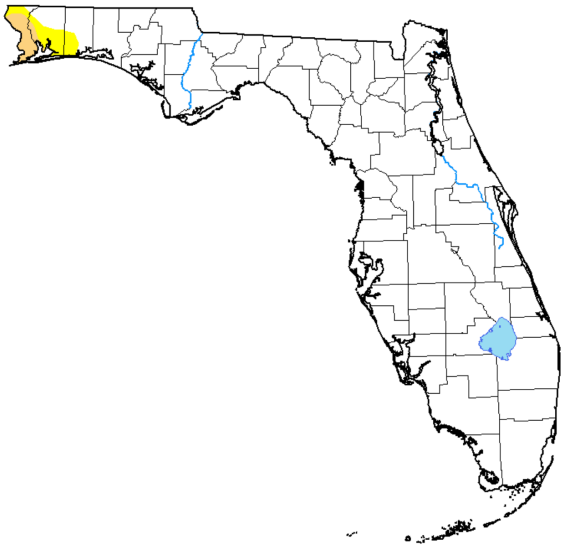


U.S. Drought Monitor

Florida



January 14, 2020



June 16, 2020

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
2019-01-01	68.86	31.14	22.51	0.00	0.00	0.00	54
2019-07-02	84.45	15.55	7.16	0.22	0.00	0.00	23
Change	15.59	-15.59	-15.35	0.22	0.00	0.00	-31

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