MIAMI-SOUTH FLORIDA
National Weather Service
Forecast Office
http://www.weather.gov/miami

Fall 2019 Weather Summary

Dry and Abnormally Warm

Record Warmest Fall in Miami and Naples

December 5th, 2019: A record-warm September and October at several South Florida reporting sites was enough to make Fall 2019 the warmest on record at both Miami and Naples, and the 3rd warmest on record at Fort Lauderdale and West Palm Beach. See the temperature summary and tables below for details.

Through the end of October, only one cold front completely moved through South Florida (September 20th), and it wasn't until November 9th that the second cold front moved through. Unusually strong and persistent high pressure in the middle and upper troposphere (Figure 1) prevented cold fronts from penetrating into Florida, keeping a summer-like tropical airmass over the region for almost all of September and October, as well as much of the first half of November. It wasn't until the second half of November when the weather pattern shifted, allowing for cold fronts to make it through Florida and delivering an extended period of below-normal temperatures to South Florida.

The strong high pressure for most of the fall also made the atmosphere more stable, leading to drier-than-normal conditions across South Florida (more details in the precipitation section below).

South Florida received a big scare from Hurricane Dorian at the beginning of September, passing less than 100 miles east of the SE Florida coast. Impacts from Dorian in South Florida were limited to sustained tropical storm force winds along the Palm Beach County coast, as well as higher-than-normal tides which resulted in coastal flooding, and 2-3 inches of rainfall.

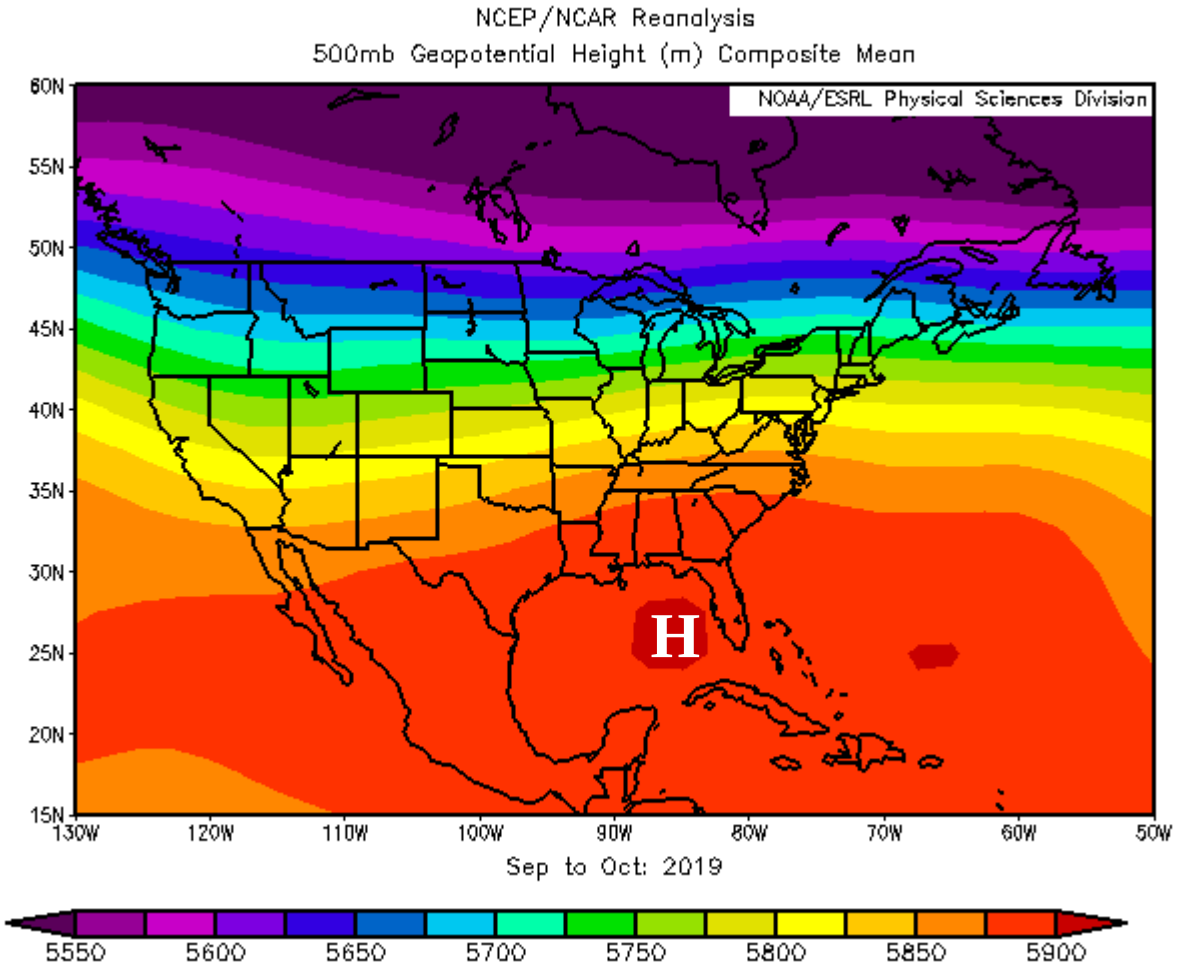


Figure 1: September-October mean 500 mb (mid-tropospheric) heights. High pressure denoted by H over the Gulf of Mexico

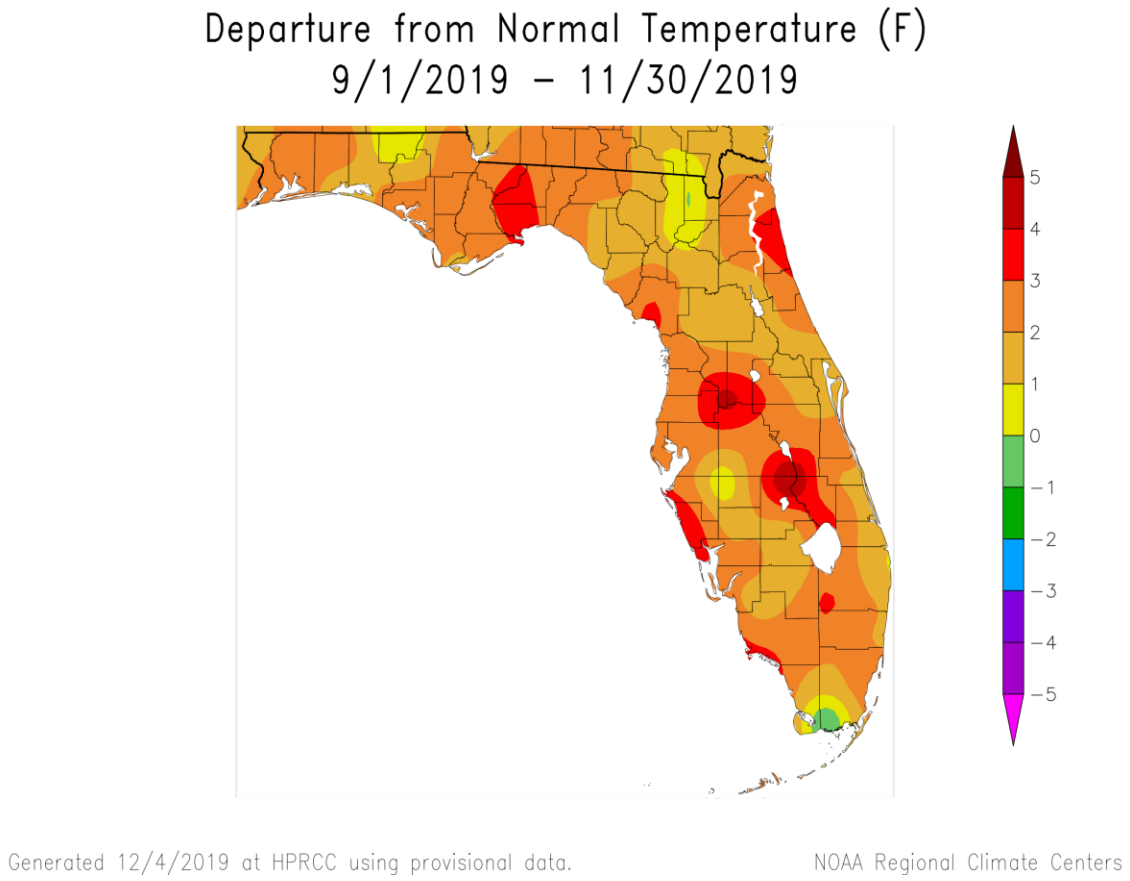


Figure 2: Fall 2019 Temperature Departure from Normal

Fall 2019 Temperatures

- ***Miami International Airport*** had an average fall temperature of 81.6 degrees Fahrenheit. This is 2.4 degrees above the 30-year normal and is the **warmest fall on record**. The previous warmest fall on record was 81.0F in 2017. The average high temperature was 88F and the average low temperature was 75F. The warmest fall temperature was 96 degrees on September 6th, and the coolest was 57 degrees on November 17th.

- ***Palm Beach International Airport*** had an average fall temperature of 79.3 degrees Fahrenheit. This is 1.7 degrees above the 30-year normal and **equals the 3rd warmest fall on record**. The average high temperature was 85F and the average low temperature was 73F. The warmest fall temperature was 95 degrees on September 6th, and the coolest was 53 degrees on November 25th.

- ***Fort Lauderdale/Hollywood International Airport*** had an average fall temperature of 80.2 degrees Fahrenheit. This is 0.4 degrees above the 30-year normal and **equals the 3rd warmest fall on record**. The average high temperature was 86F and the average low temperature was 75F. The warmest fall temperature was 91 degrees on September 20th, and the coolest was 56 degrees on November 17th and 25th.

- ***Naples Municipal Airport*** had an average fall temperature of 80.8 degrees Fahrenheit. This is 3.1 degrees above the 30-year normal and is the **warmest fall on record**. The previous warmest fall on record was 80.5F in 2015. The average high temperature was 89F and the average low temperature was 73F. The warmest fall temperature was 97 degrees on September 10th, and the coolest was 56 degrees on November 18th, 20th, and 21st.

Fall Monthly Temperature Records:

Miami: 85.2F in September and 83.5F in October

Naples: 85.1F in September and 83.5F in October

West Palm Beach: 81.6F in October

Fall 2019 Precipitation

Rainfall totals ranged from as little as 5 to 8 inches west of Lake Okeechobee to northern Collier County, to 12 to 14 inches over portions of metro Broward and Palm Beach counties (Figure 3). All of South Florida received well-below-normal rainfall (Figure 4), especially in Miami-Dade County where rainfall was as much as 10 to 12 inches below normal. Several stations (included in the table below) ranked among the top 20 driest fall seasons on record, including Miami with its 2nd driest fall on record, and Naples with its 8th driest.

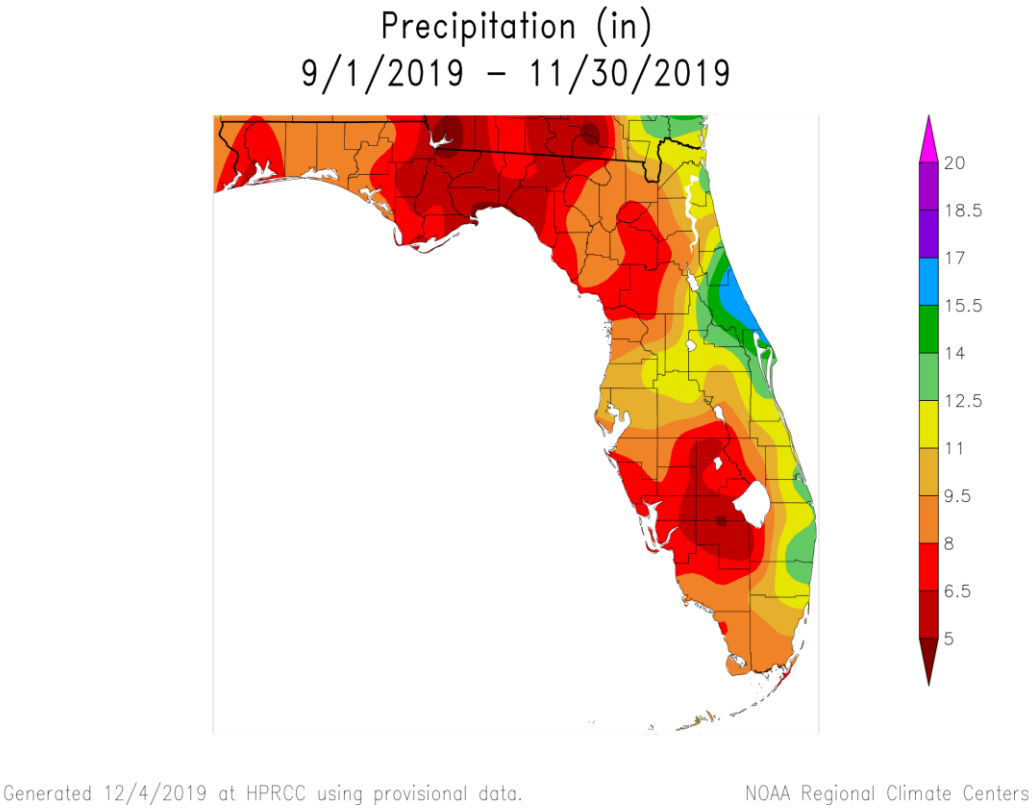


Figure 3: Fall 2019 Rainfall

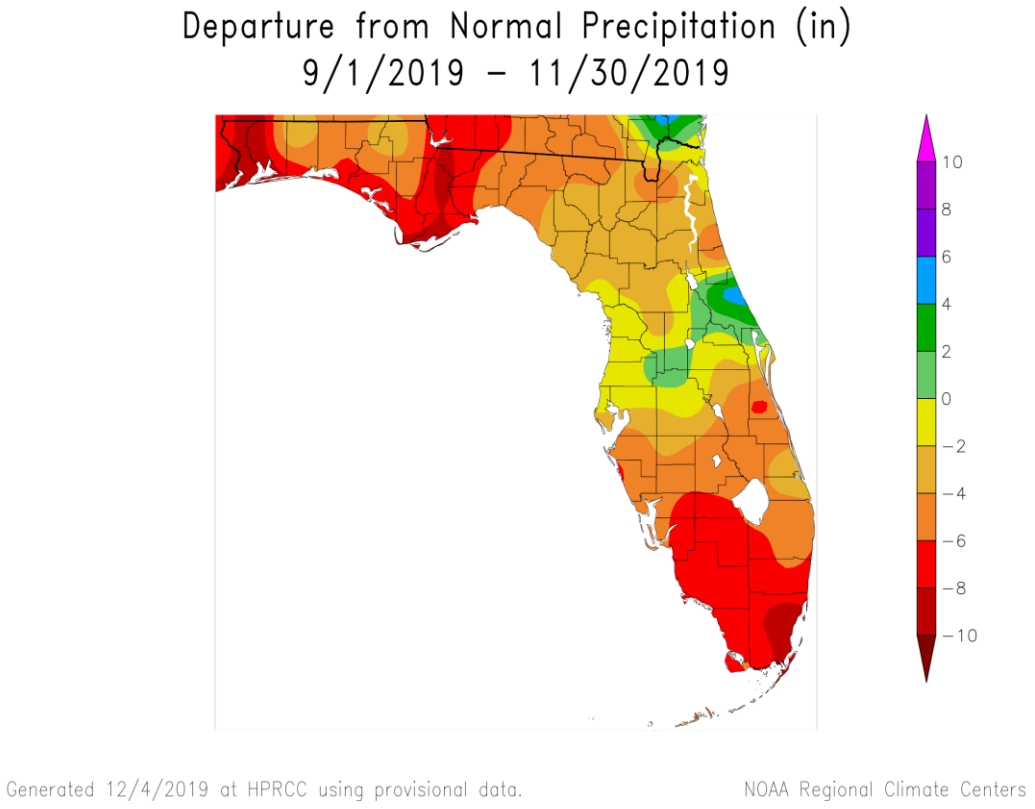


Figure 4: Fall 2019 Rainfall Departure from Normal

These low rainfall totals relative to normal has led to the development of moderate drought conditions over the southern Everglades, with abnormally dry conditions elsewhere except for portions of metro Broward and Palm Beach counties (Figure 5).

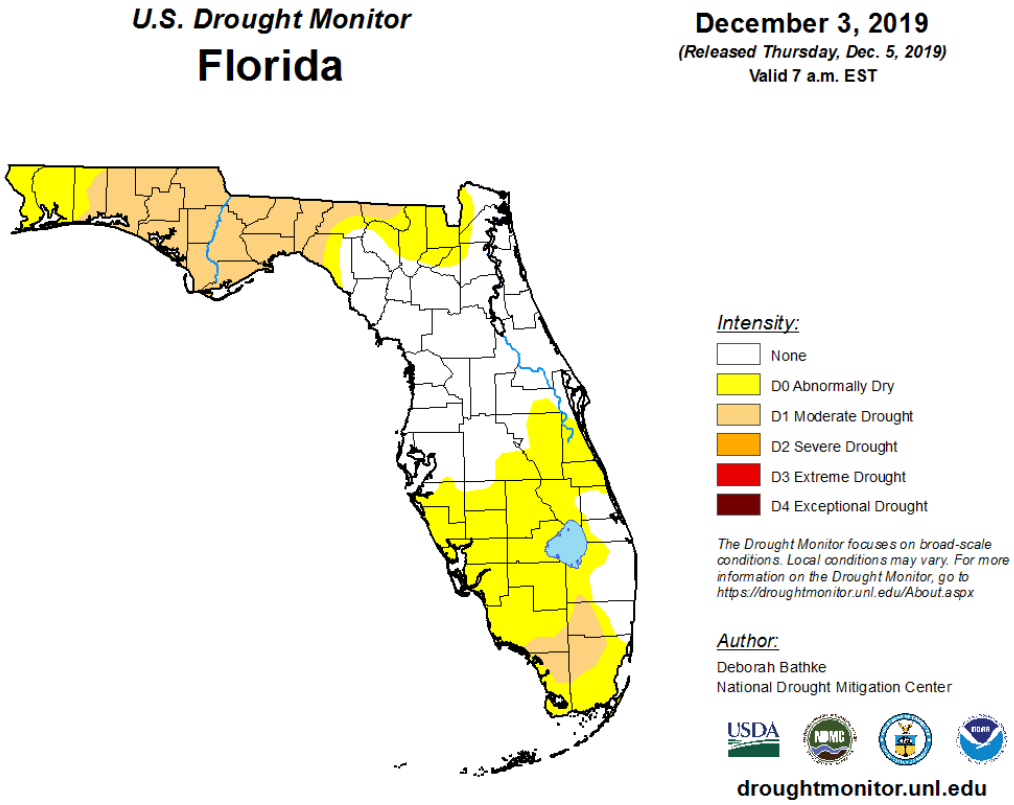


Figure 5: U.S. Drought Monitor for December 3rd, 2019

Below is a table of rainfall and departure from normal for official reporting sites across South Florida:

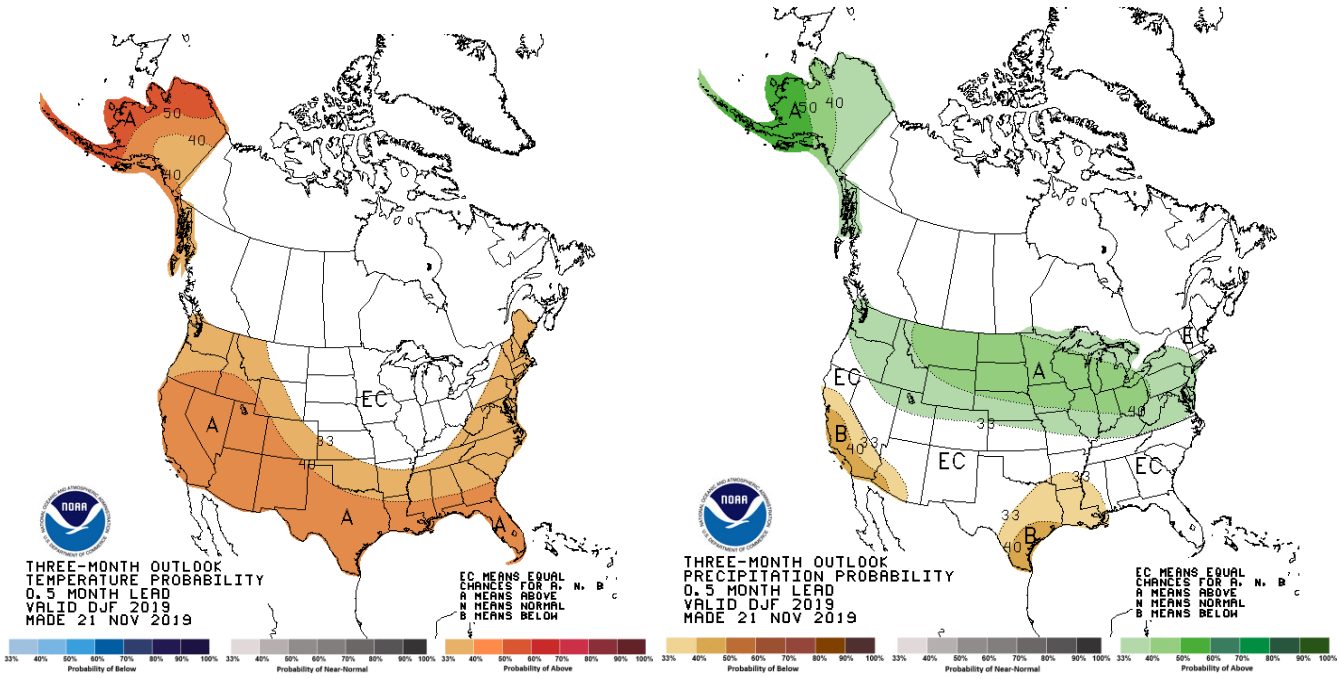
Location (Beginning of Period of Record)	Fall 2019 Rainfall (inches)	Departure from Normal	Rank (top 20)
Canal Point (1941)	9.27	-4.07	19th driest
Devils Garden (Hendry County) (1956)	6.53	-6.04	5th driest
Fort Lauderdale/Hollywood Int'l Airport (1913)	10.57	-8.08	11th driest
Fort Lauderdale Dixie Water Plant	13.30	-6.45	
Fort Lauderdale Executive Airport	12.26	-5.02	
Hollywood Waste Water Plant	11.86	-7.03	

Juno Beach	**16.97**	**-1.42**	
Marco Island	**7.91**	**-6.49**	
Miami Beach (1927)	**11.76**	**-3.33**	
Miami International Airport (1911)	**8.08**	**-11.38**	**2nd driest**
Moore Haven (1918)	**6.19**	**-4.12**	**12th driest**
Muse	**7.15**		
Naples Municipal Airport (1942)	**7.80**	**-6.12**	**8th driest**
North Miami Beach	**11.54**	**-7.80**	
NWS Miami – University Park	**11.16**	**-7.17**	
Opa Locka Airport	**14.28**	**-3.89**	
Palm Beach Int'l Airport (1888)	**12.50**	**-5.73**	
Pompano Beach Airpark	**11.02**	**-7.62**	
The Redland - Miami-Dade County (1942)	**8.89**	**-9.76**	**3rd driest**
South Bay/Okeelanta	**7.52**		
West Kendall – Miami Executive Airport	**9.75**	**-8.63**	

Winter Outlook (December – February)

Latest outlooks by the NOAA Climate Prediction Center (CPC, Figures 6 and 7) for December through February are for increased odds of above normal temperatures, and equal chances of precipitation above, near, or below normal. Due to the lack of a strong El Niño signal, confidence in this outlook is rather low.

For the latest south Florida weather information, including the latest watches, advisories and warnings, please visit the National Weather Service Miami Forecast Office's web site at weather.gov/southflorida.



Figures 6 and 7: December-February temperature probability (left) and precipitation probability (right) from NOAA's Climate Prediction Center (CPC)