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

Summer 2021 Weather Summary

Near Normal Temperature and Rainfall

September 10th, 2021: Now that meteorological summer (June-August) has concluded, here's a look back at the observed temperatures and precipitation across South Florida.

It was a normal summer as far as temperature and precipitation across South Florida is concerned. As opposed to the past couple of summers and many since 2010, there were relatively few high temperature extremes. The only noteworthy temperature statistic was the number of days with low temperatures of 80 degrees or greater which exceeded the normal at all 4 main climate sites, and most of these occurred in August.

The highest recorded temperature at any of the NWS ASOS and Cooperative sites was 98 degrees set in the following locations and dates: Oasis Ranger Station on July 22nd, Miles City on July 4th, July 22nd, and August 20th, and Homestead General Airport and Big Cypress Reservation on July 3rd.

Summer 2021 temperature summaries for the 4 main climate sites are below:

- ***Miami International Airport*** had an average summer temperature of 83.7 degrees Fahrenheit. This equals the 30-year normal. Miami observed 60 days of temperatures at or above 90 degrees this summer, which is below the normal total of 64 days. The highest temperature was 94 degrees on June 13th, July 3rd, July 22nd, and August 31st, and the lowest was 71 degrees on July 12th.

- ***Palm Beach International Airport*** had an average summer temperature of 83.5 degrees Fahrenheit. This is 0.8 degrees above the 30-year normal. West Palm Beach observed 51 days of temperatures at or above 90 degrees, which is below the normal total of 55 days. The highest temperature was 93 degrees on June 12th, June 20th, and

from July 29th through August 2nd. The lowest temperature was 71 degrees on August 3rd.

- ***Fort Lauderdale/Hollywood International Airport*** had an average summer temperature of 83.3 degrees Fahrenheit. This is 0.1 degrees below the 30-year normal. Fort Lauderdale observed 49 days of temperatures at or above 90 degrees, which equals the normal total. The highest temperature was 96 degrees on July 3rd, and the lowest was 70 degrees on July 1st[t].

- ***Naples Municipal Airport*** had an average summer temperature of 83.0 degrees Fahrenheit. This is 0.2 degrees above the 30-year normal. Naples observed 64 days of temperatures at or above 90 degrees, which equals the normal total. The highest temperature was 95 degrees on August 13th and August 18th, and the lowest was 70 degrees on June 2nd.

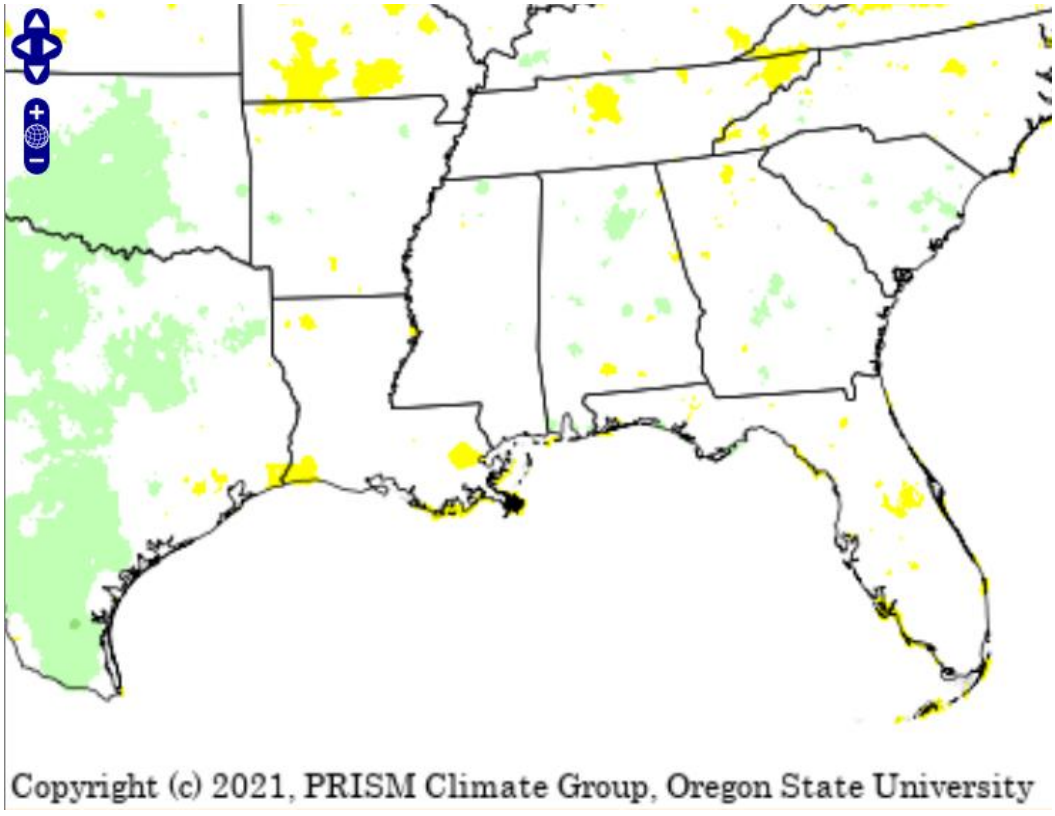


Figure 1 - Summer 2021 temperature departure from normal

Summer 2021 Precipitation

Most locations didn't deviate much from the normal summer precipitation, staying within a couple of inches of normal (Figure 2). A prevailing easterly wind pattern for much of the summer (Figure 3) meant that the highest rainfall amounts were focused over western sections of southern Florida where the Gulf seabreeze and prevailing east wind converged, as well as about 5-7 miles inland from the east coast in Broward County. The lowest rainfall amounts relative to normal were in the central and southern Everglades.

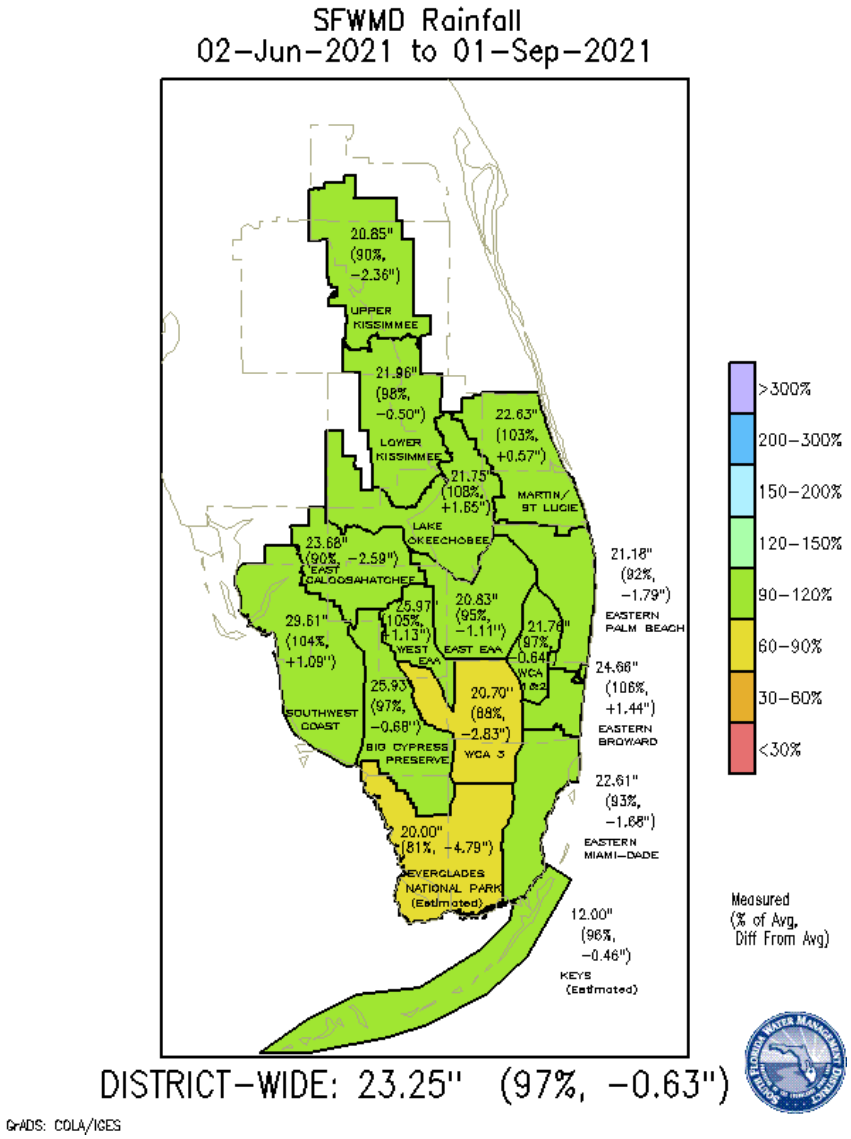


Figure 2: Summer 2021 rainfall and departure from normal courtesy of South Florida Water Management District

The highest measured summer rainfall was at Naples East/Golden Gate with a total of 32.63 inches, while the lowest was 16.88 inches at the Hollywood Waste Water Plant.

Below are images of August rainfall and departure from normal, as well as a table and corresponding images of summer rainfall and departure from normal for official reporting sites across South Florida:

Location	Summer 2021 Rainfall (inches)	Departure from Normal
Naples East/Golden Gate	32.63	+2.40
Marco Island	29.46	+5.34
Muse	29.41	+1.39
Miami International Airport	27.91	-0.46
Fort Lauderdale Dixie Water Plant	27.82	+2.55
Palm Beach Gardens	26.53	+1.80
NWS Miami - FIU	26.00	-3.88
Miami-Tamiami Executive Airport	25.75	+1.46
The Redland	25.72	-2.31
Naples Municipal Airport	24.74	+0.67
Loxahatchee NWR	23.69	-1.01
Homestead General Airport	23.21	-3.44
Cape Florida	23.06	+3.00
Palm Beach International Airport	22.41	-0.38
North Miami Beach	21.54	-5.07
Okeelanta	21.51	n/a
Opa-Locka Airport	21.46	-3.67
Fort Lauderdale/Hollywood Int'l Airport	17.84	-5.01
Pompano Beach Airpark	17.56	-2.05
Hollywood Waste Water Plant	16.88	-6.16

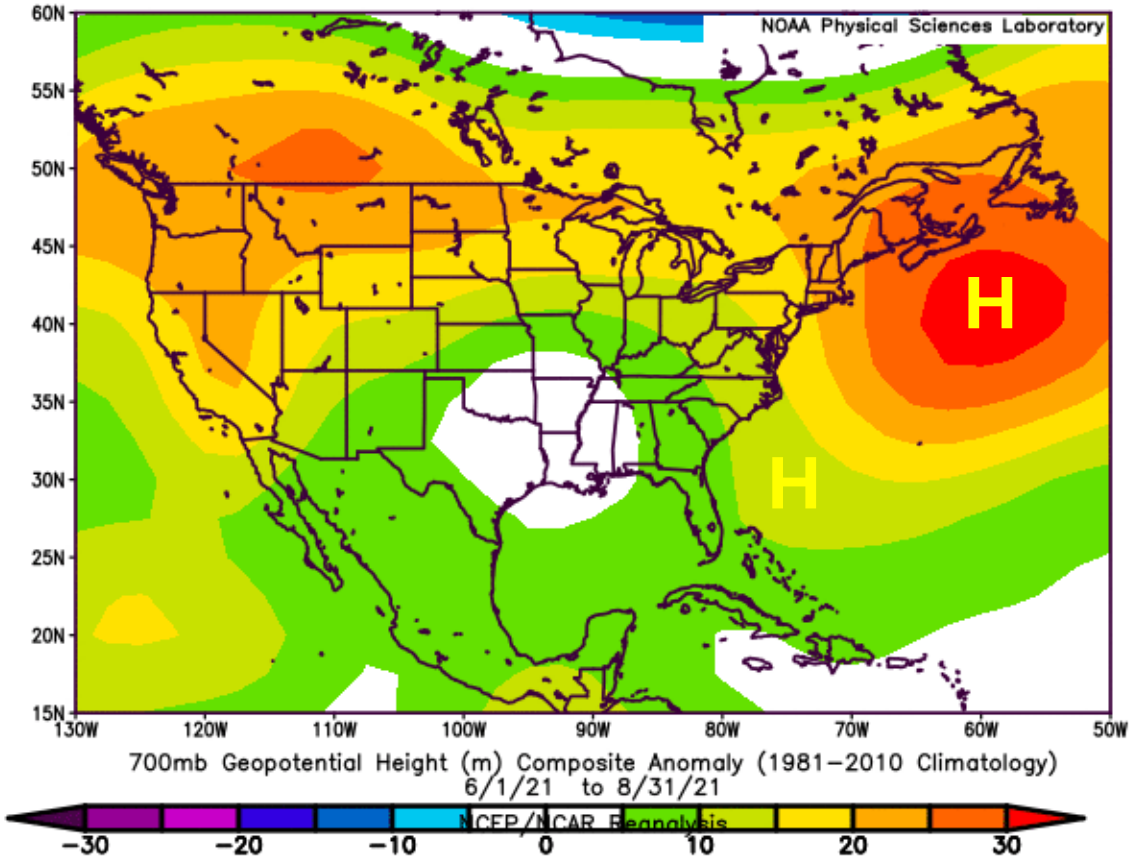


***Figure 3**:Mid-tropospheric height departure from normal from June 1 through August 31. Higher than normal pressure over the western North Atlantic (depicted by the yellow H) extended into Florida and resulted in a prevailing east wind flow across South Florida*

Severe/Hazardous Weather Summary

Significant/severe weather events affecting South Florida this summer included:

June 14-16: thunderstorm downburst winds measured as high as 73 mph damaged school portable buildings and manufactured homes in Davie and Plantation, along with tree damage in Margate. Flooding was also observed in the Oakland Park, Miami, and Miami Beach areas.

June 20th: thunderstorm downburst winds of at least 50 mph led to tree damage in Weston and Coconut Creek.

June 28th: significant street flooding in West Kendall and Cutler Bay with rainfall amounts of as high as 4.5 inches in less than 2 hours.y 5-7

July 5-7: Tropical Storm Elsa moved over the Straits of Florida and eastern Gulf of Mexico. Wind gusts of 40-50 mph affected most of South Florida, and rainfall of 3-5 inches was observed across Collier, Hendry, and Glades counties.

July 12th: Flooding observed over large parts of Miami Beach. Wind gusts of 40-58 mph measured at several locations in SE Florida.

July 17th: A 17-year-old boy was struck by lightning in Marco Island. The boy unfortunately died of his injuries on July 28th.

July 26th: Two people were struck by lightning at Clam Pass Beach in Naples.

August 2-4: Thunderstorm wind gusts measured at 56 mph at Fort Lauderdale Executive Airport on August 2nd, and more widespread 40-50 mph wind gusts on the evening of August 3rd. A wind gust of 58 mph measured at Turkey Point on August 4th.

August 7th: A likely "landspout" tornado was sighted near US 441 in Delray Beach and Boynton Beach. No damage was noted.

August 12th: Significant street flooding in the mid-beach section of Miami Beach.

August 13-15: Tropical Depression Fred passed over the eastern Gulf of Mexico and outer bands produced wind gusts of 40-45 mph over parts of South Florida, along with rainfall of 2-4 inches over Collier County as well as far south Miami-Dade County.

August 25th: an outflow boundary from thunderstorms over the western Bahamas swept across much of South Florida, producing measured wind gusts of 40-55 mph. A kitesurfer was killed when gusty winds blew him off course and he struck the side of a building on Fort Lauderdale Beach.

Fall 2021 Outlook (September to November)

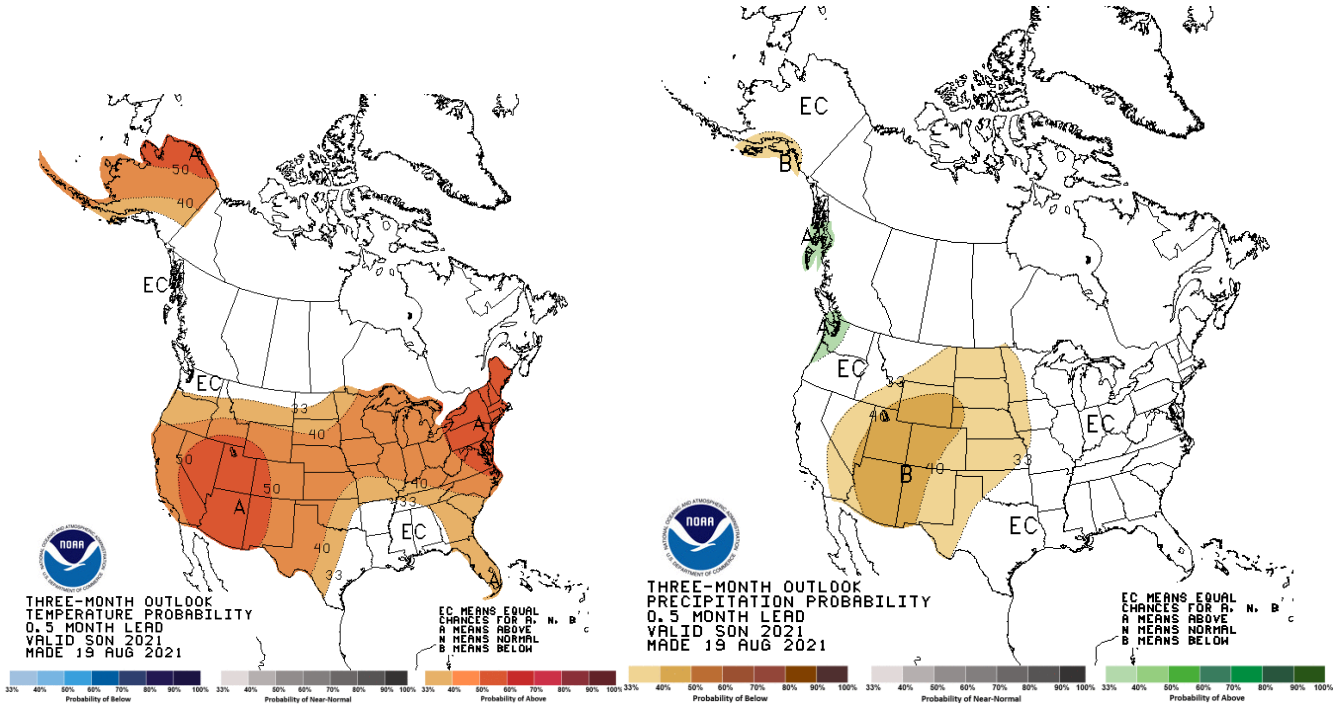
Latest outlooks by the NOAA Climate Prediction Center (CPC, Figures 4 and 4) are for equal chances of above, below, or near-normal precipitation for the September to November period. This is the period in which South Florida transitions from the wet season to the dry season, with the end of the rainy season on October 15th. Predicting

this transition period well in advance is quite difficult, with some years experiencing a quick transition of only a few days while others going through a gradual transition spanning a few weeks. This transition period can be largely influenced by tropical systems during what is typically the most active part of hurricane season.

The CPC outlook for September to November also calls for an increased likelihood of above normal temperatures. Those looking for relief from the summer-long heat and humidity typically have to wait until early or mid-October for the first noticeable cold front to bring cooler and less humid air into the region, with more substantial lowering of temperatures into the 50s not normally observed until late October or early November.

September and October represent the two most hurricane prone months for South Florida. Therefore, it is important that we continue to keep a close eye on the tropics and make sure that our personal hurricane plans are in place for this season.

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 4 and 5**: September-November temperature probability (left) and precipitation probability (right) from NOAA's Climate Prediction Center (CPC).*