

MIAMI-SOUTH FLORIDA National Weather Service Forecast Office

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October 2016 Weather Summary Warmer Than Normal with Variable Rainfall Near-Miss from Major Hurricane Matthew

November 3, 2016: October finished off the wet season with a mixed bag of weather, including a near-miss from Hurricane Matthew, thunderstorms with flooding in the days leading up to Matthew, and the first fall frontal passage on October 22nd which brought drier and cooler air into South Florida.

Hurricane Matthew

The main weather story this past month was Hurricane Matthew's close call on October 6th. The center of the Category 4 hurricane passed about 60 miles east of the northern Palm Beach County coast late on the 6th while on a NW track. The center of the storm was far enough offshore to keep the hurricane force winds from impacting the coast, but sustained tropical storm force winds (39 mph or greater) impacted most of coastal Palm Beach County, including a measured peak wind gust of 67 mph at the Juno Beach Pier. Gusts to tropical storm force were also felt across Broward County and parts of Miami-Dade County. Impacts were almost exclusively confined to eastern sections of South Florida and primarily in the form of downed trees and power lines, awning/siding damage and moderate beach erosion.

Hurricane Matthew Post-Storm Report for South Florida

Other October Weather Impacts

October 1-4: preceding Hurricane Matthew, unstable conditions associated with an upper level low pressure system over the Gulf of Mexico led to periods of thunderstorms with gusty winds and heavy rainfall across parts of South Florida. Several

locations across the area reported daily rainfall amounts in excess of 3 inches which led to street flooding.

October 12-20: persistent and strong easterly wind was one of the contributing factors leading to tidal flooding during the annual spring (or king) tide. The main impacts were noted along and near bays, inlets and canals along the East coast in the form of street flooding near the times of the high tide.

October 22: first noticeable cold front of the season passed through South Florida, introducing cooler and drier air. Low temperatures dropped into the 50s over interior and western sections of South Florida and lower to mid 60s across southeast Florida.

October 27-30: surface easterly winds combined with low pressure aloft led to periods of showers and gusty winds, mainly across Miami-Dade and Broward counties. Heavy showers produced wind gusts in the 40-50 mph range across large parts of metro Miami-Dade and Broward counties during the pre-dawn hours of October 27th.

October Temperatures

Warmer than normal temperatures were the rule across South Florida during the month of October, with only October 22nd through 25th having below normal temperatures. Temperatures were mostly above average across South Florida by about 1 to 2 degrees F.

- *Miami International Airport* had an average October temperature of 80.7 degrees Fahrenheit. This is 0.8 degrees above the 30-year normal and ties the 7th warmest October on record. The average high temperature was 87F and the average low temperature was 75F. The warmest October temperature was 92 degrees on the 8th and the coolest was 67 on the 23rd.

- *Palm Beach International Airport* had an average October temperature of 80.1 degrees Fahrenheit. This is 1.8 degrees above the 30-year normal and ties the 12th warmest October on record. The average high temperature was 85F and the average low temperature was 75F. The warmest October temperature was 91 degrees on the 8th and the coolest was 61 on the 23rd.

- *Fort Lauderdale/Hollywood International Airport* had an average October temperature of 80.1 degrees Fahrenheit. This is 0.5 degrees below the 30-year normal

but ties the 16th warmest October on record. The average high temperature was 85F and the average low temperature was 75F. The warmest October temperature was 90 degrees on the 8th and the coolest was 64 on the 23rd.

- *Naples Municipal Airport* had an average October temperature of 79.3 degrees Fahrenheit. This is 0.8 degrees above the 30-year normal but ties the 9th warmest October on record. The average high temperature was 87F and the average low temperature was 71F. The warmest October temperature was 92 degrees on the 1st, 2^{nd} , 4^{th} and 5^{th} , and the coolest was 58 on the 23^{rd} .

October Precipitation

Despite the wet season lingering through the middle of the month and impacts from Hurricane Matthew, rainfall in October was below normal in many areas (Figure 1). Several communities on the western shore of Lake Okeechobee as well as parts of the Everglades and Southwest Florida registered less than 2 inches of rain, with Ortona measuring the least amount of rain at only 1.1 inches.

Rainfall was more variable in Palm Beach, Broward and Miami-Dade counties. Both western and eastern sections of Palm Beach County received above-normal rainfall, with the eastern areas receiving most of their rainfall from Hurricane Matthew's outermost rain bands. Other areas of above normal precipitation were noted across northern metro Miami-Dade County as well as the far southern portion of that same county, resulting largely from more persistent showers moving onshore in the predominant easterly flow. Outside of these areas, rainfall was near to slightly below normal.

Below are images of October 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:



Figure 1



Figure 2

Location (Beginning of Period of Record)	October 2016 Rainfall	Departure from	Rank (top 20)
	(inches)	Normal	
Brighton Reservation – Glades County	1.84		
Canal Point (1941)	2.75	-1.07	
Cape Florida	5.02		
Everglades (1924)	2.03	-1.59	
Fort Lauderdale/Hollywood Int'l Airport (1913)	3.32	-3.50	
Fort Lauderdale Beach	6.77		
Fort Lauderdale Dixie Water Plant	3.76	-2.64	
Fort Lauderdale Executive Airport	6.48		
Hialeah (1940)	8.27	+1.35	
Hollywood Waste Water Plant	7.31	+0.49	
Homestead General Airport (1990)	4.86	-0.50	-1.65
Immokalee (1970)	1.79	-1.23	19 th driest
Juno Beach	5.05		
LaBelle (1929)	2.80	-0.62	
Loxahatchee NWR	6.08		
Marco Island	1.99		
Miami Beach (1927)	11.20	+6.73	8 th wettest
Miami International Airport (1911)	9.62	+3.29	
Moore Haven (1918)	1.21	-1.47	
Muse	1.51		
Naples East/Golden Gate	2.30		
Naples Municipal Airport (1942)	4.60	+0.41	
North Miami Beach	8.65		
NWS Miami – Sweetwater	9.36		
Oasis Ranger Station (1978)	2.50	-1.73	15 th driest
Opa-Locka Airport	6.23		
Ortona	1.10	-2.58	8 th driest
Palm Beach Gardens	5.96		
Palm Beach Int'l Airport (1888)	4.37	-0.76	
Pembroke Pines – North Perry Airport	6.67		
Pompano Beach Airpark	4.91		

The Redland - Miami-Dade County (1942)	6.78	+0.09	
South Bay/Okeelanta	4.38		
West Kendall – Miami Executive Airport	5.97		

Outlook for November - January

Latest outlooks by the <u>NOAA Climate Prediction Center</u> (CPC, Figures 3 and 4) are for increased odds of above normal temperatures and below normal precipitation for the November to January period. The developing La Niña pattern is one of the main factors leading to these possible conditions. Click on the link below for full details on the dry season outlook for South Florida.

Dry Season Outlook for South Florida

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 <u>weather.gov/southflorida</u>.



Figures 3 and 4: November- January temperature probability (left) and precipitation probability (right) from NOAA's Climate Prediction Center (CPC).