



MIAMI-SOUTH FLORIDA

National Weather Service

Forecast Office

<http://www.weather.gov/miami>

South Florida 2023 Weather Summary

Top 5 Warmest Year on Record

Wetter than Normal SE Florida and Interior

Drier than Normal SW Florida

December 29th, 2023: Record heat and rainfall were the main South Florida weather stories in 2023. What seemed like almost continuous heat in 2023 was defined by a record hot summer which shattered not only temperature records but also the duration of high heat index values.

South Florida experienced a very large range of rainfall amounts in 2023, from a record-dry year and prolonged drought conditions in Naples and western Collier County to record highest yearly rainfall and a historic April flash flood in Fort Lauderdale.

April and June were the stormiest months in South Florida. In April, two frontal systems and a couple of mid/upper-level disturbances contributed to 6 episodes of flooding, severe thunderstorms, and tornadoes (see below for more information on these events). June events were caused by deep moisture across South Florida from Tropical Storm Arlene in the NE Gulf of Mexico, a stalled front in mid-month, and deep moisture combined with low pressure aloft in late June.

Aside from a glancing blow from Hurricane Idalia in August, South Florida did not feel any significant impacts from tropical systems in 2023, a welcome relief after a very active 2022 hurricane season in Florida.

Details on some of these events is provided below, as well as an overview of 2023 temperatures and rainfall.

2023 Temperatures

Each season in 2023 (except for Fall in Ft. Lauderdale) ended up among the top 10 warmest at each of the 4 main climate sites. Average temperatures for the year were 2-3 degrees above the 1991-2020 normal. **As of December 28th, Miami and Naples have their warmest year on record, and West Palm Beach and Ft. Lauderdale as the 2nd warmest on record.** This is no small feat considering that each of the 6 warmest years on record have occurred since 2015.

The highest recorded temperature at any of the NWS sites (ASOS, RAWS, Cooperative) was **102F** at the Miles City RAWS station in interior Collier County on July 11th. Four other locations hit 100F, including Miami-Tamiami Executive Airport on July 12th and Homestead General Airport on July 9th and August 10th.

Besides the air temperature, the higher-than-normal dewpoints (indication of moisture/humidity) contributed to prolonged periods of very high heat index values rarely if ever observed on record in South Florida. There was a total of 43 days with heat advisories in effect, and 7 days with excessive heat warnings. Most locations had anywhere from 30-50 days with at least 2 hours of heat index values of 105F or higher, with Naples topping out at 53 days. Miami-Kendall Executive Airport had a staggering 7 days with at least 2 hours of heat index values of 113F or higher!

The prolonged and intense heat contributed to a death in Homestead in July, as well as the hospitalization of 26 people at an outdoor festival in Lauderhill in October.

Why was it so oppressively hot in summer 2023? At least two factors likely played a big role: a weaker than normal subtropical high which led to weaker east winds/stronger southwest/west winds, and record warm sea surface temperatures.

On the flip side, the lowest recorded temperature of 2023 at NWS sites was **31F** in Brighton Reservation on January 15th. Freezing temperatures were recorded over portions of inland SW Florida and far western Palm Beach County on January 15th and 16th.

Here are the 2023 temperature summaries for the 4 main climate sites **as of December 28th**:

- **Miami International Airport** had an average 2023 temperature of 79.9 degrees Fahrenheit. This is 2.5F above the 30-year normal, and ranks as the **warmest year on record** (going back to 1895). The highest temperature was 98 degrees on July 23rd, and the lowest was 44 degrees on January 16th.

- **Palm Beach International Airport** had an average 2023 temperature of 78.1 degrees Fahrenheit. This is 2.3F above the 30-year normal, and ranks as the **2nd warmest year on record** (going back to 1888). The highest temperature was 97 degrees on July 6th, and the lowest was 40 degrees on January 15th.

- **Fort Lauderdale/Hollywood International Airport** had an average 2023 temperature of 78.6 degrees Fahrenheit. This is 1.4F above the 30-year normal, and ranks as the **2nd warmest year on record** (going back to 1911). The highest temperature was 97 degrees on July 23rd and the lowest was 43 degrees on January 15th.

- **Naples Municipal Airport** had an average 2023 temperature of 78.3 degrees Fahrenheit. This is 2.8F above the 30-year normal, and ranks as the **warmest year on record** (going back to 1942). The highest temperature was 98 degrees on August 8th and August 12th, and the lowest was 41 degrees on January 16th.

2023 Precipitation

One of the top weather events in 2023 was the lack of rainfall across SW Florida, especially in the Naples area. A very dry February and March led to severe to extreme drought conditions which lasted until early May when the wet season rainfall pattern set in. However, the region never totally recovered from the early season rainfall deficit as the rainy season did not deliver the usual rainfall to these areas due in large part to a weaker than normal subtropical high over the western Atlantic leading to a predominant southwest to west wind flow which pushed most of the daily summer thunderstorms away from the Gulf coast and towards the east coast. Quite unusually, drought conditions returned to coastal sections of SW Florida in August and persisted into December. For the calendar year 2023, below normal rainfall was noted over the western half of Collier County, far western Hendry County, Gulf coastal sections of

Mainland Monroe County, as well as a small pocket of far northwestern Palm Beach County near and along the Lake Okeechobee shoreline. Within this area of below normal rainfall, values of 30-40% below normal were noted over coastal sections of Collier County including the Naples and Marco Island areas.

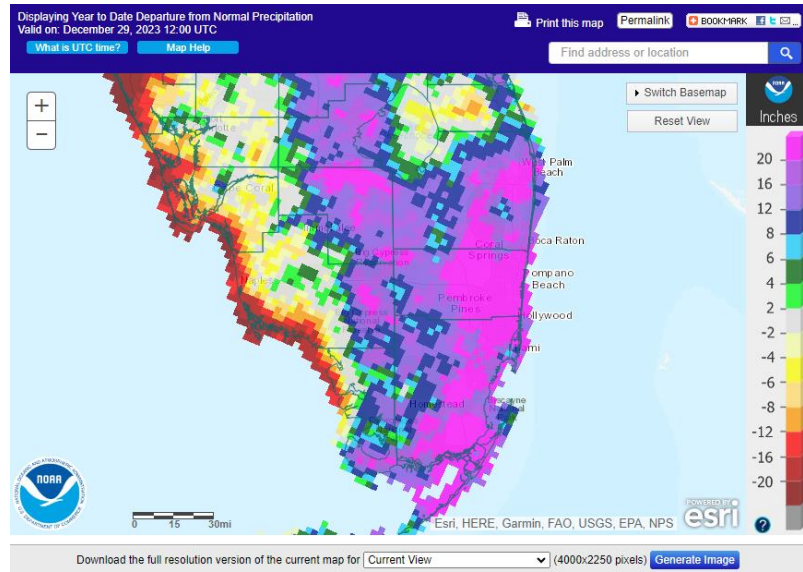
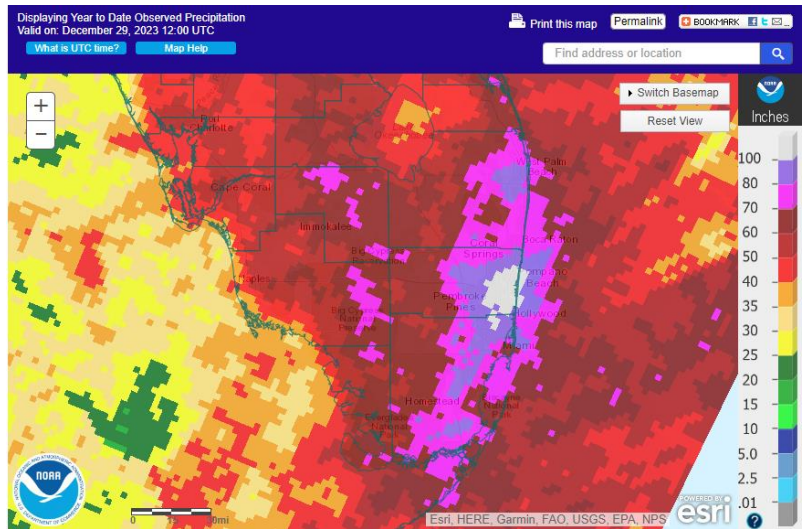
This wind flow steering showers and thunderstorms to the east, combined with several stalled frontal systems in spring and fall, led to the opposite pattern for SE Florida where rainfall ended up above to well above normal in 2023. This area of above normal precipitation also included most of Mainland Monroe County, far eastern Collier County, and most of Hendry and Glades counties. Within this area, much above normal rainfall with values of 50-80% above normal were observed over most of metro Broward County and northern metro Miami-Dade County.

This stark contrast between east and west is best exemplified by Fort Lauderdale/Hollywood International Airport’s record-breaking **maximum** yearly rainfall of 113.61 inches (breaking the previous record of 102.36” set in 1947), while only 100 miles to the west Naples Municipal Airport had a record-breaking **minimum** yearly rainfall of 30.48 inches (breaking the record of 30.60” set in 1944). **NOTE: these values are through December 29th and are subject to change in the unlikely event that additional rainfall occurs before the end of the year.**

Here are 2023 precipitation totals and departure from normal for several NWS sites through December 28th:

Location	2023 Rainfall (inches) as of December 28th	Departure from Normal	Ranking
Ft. Lauderdale Dixie Water Plant	100.33	+31.56	
Ft. Lauderdale/Hollywood Int'l Apt	113.61	+52.66	Wettest on Rec.
Fort Lauderdale Executive Airport	87.78	+31.28	2nd wettest
Hollywood North Perry Airport	87.68	+25.70	Wettest on Rec.
Hollywood Waste Water Plant	106.68	+41.64	Wettest on Rec.
Homestead General Airport	60.38	+10.46	4th wettest
Marco Island	35.24	-18.06	Driest on Rec.
Miami International Airport	83.43	+16.02	6th wettest
Miami/Tamiami Executive Airport	79.36	+23.28	Wettest on Rec.

Muse	56.40	-0.32	
Naples Municipal Airport	30.48	-19.07	Driest on Rec.
NWS Miami – University Park	67.20	+11.56	3 rd wettest
Opa-Locka Airport	80.28	+17.63	2 nd wettest
Palm Beach Int'l Airport	73.97	+12.22	18 th wettest
Pompano Beach Airpark	67.35	+11.73	
The Redland	82.18	+15.71	4 th wettest



Figures 1 & 2: 2023 rainfall and departure from normal courtesy NWS/AHPS

Tropical Cyclones

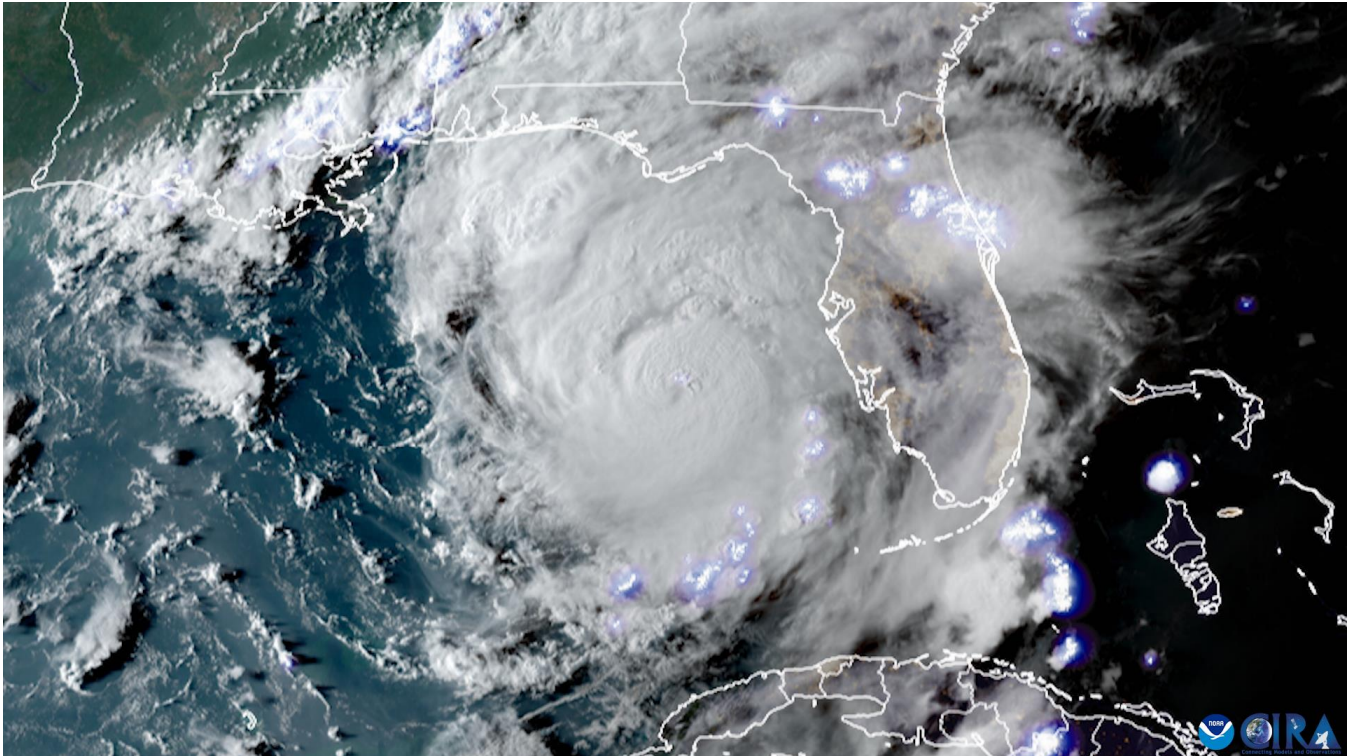


Figure 4: GOES satellite image of Hurricane Idalia as it passed west of SW Florida on August 29th

- **Hurricane Idalia – August 29th and 30th:** Hurricane Idalia, the 10th tropical cyclone of the 2023 Atlantic hurricane season, moved north over the southeastern Gulf of Mexico, passing about 160 miles west of Naples as a Category 2 hurricane on August 29th. Idalia briefly strengthened to Category 4 strength in the far NE Gulf of Mexico before making landfall as a Category 3 in the Florida Big Bend region on the morning of August 30th. The distance of the center of the storm from SW Florida meant that only tropical storm conditions were experienced in gusts across our region, along with rainfall amounts of only 1-3 inches. A storm tide of 3 feet was registered at Naples Pier, and tidal flooding occurred along the entire Collier County coastline during high tides on August 29th and 30th

Other South Florida Severe/Hazardous Weather

- **Flooding:** A total of 12 local flash flood events were recorded in 2023, 8 of which occurred with the April 12th and November 15th events. The [April 12th Fort Lauderdale flash flood](#) was by far the most significant flood event of the year, causing at least \$28

million in damage and displaced residents of entire neighborhoods for as much as a week

- **Lightning:** One lightning-related injury was reported in 2023, and at least 3 structures sustained fire/smoke damage from lightning strikes

- **Rip Currents:** For the first time since 2020 and for only the third time since 2000, no deaths or injuries from rip currents were reported during the entire year

- **Thunderstorm Wind/Hail:** 58 damaging wind and/or large hail events occurred in South Florida in 2023. April and June were the stormiest months with 18 and 19 events, respectively. The largest hailstone reported was 1.75 inches in diameter (golf ball size) in Palm Beach Gardens on April 26th and in Jupiter on April 29th. The strongest measured thunderstorm wind gust was 83 mph at Fort Lauderdale/Hollywood International Airport on June 3rd

- **Tornadoes:** 8 tornadoes were confirmed across South Florida in 2023. Six of these occurred in April which included a [violent EF-2 tornado in Palm Beach Gardens](#) on April 29th. Seven of the 8 tornado were rated EF-0, and two of these were landfalling waterspouts in Hollywood and Boca Raton in April which briefly reached shore before dissipating. EF-0 tornadoes in Dania Beach in April, The Redland in May, and Naples in August caused minor damage and one injury.

- **Waterspouts:** a total of 25 waterspouts were reported in 2023 over the local South Florida waters, including the two which briefly reached the beach in Hollywood and Boca Raton in April. All waterspout reports were from March to September

- **High Wind/Coastal Flooding:** Strong winds and heavy rainfall affected much of South Florida on November 15th and 16th in association with a low pressure area and stalled frontal system. A relatively rare [“wake low” phenomenon](#) caused wind gusts as high as 60-70 mph along the immediate SE Florida coast, and up to 40-55 mph in Southwest Florida. These winds produced quite a bit of tree damage and downed power lines. A storm tide of 2 feet produced coastal flooding along SE Florida beaches. Rainfall amounts of up to 8-12 inches caused flash flooding in sections of Broward and Miami-Dade counties.

Another period of strong winds affected South Florida from December 13th through 17th when a front stalled south of the Florida peninsula and a high pressure center over the eastern U.S. produced a strong pressure gradient over South Florida. Wind gusts over 40 mph occurred for at least 4 consecutive days over the area. On December 16th and early on December 17th, strong winds on the east side of a low pressure system over the eastern Gulf of Mexico produced a storm tide of 3.2 feet at Naples Pier, leading to coastal flooding in the Naples and Everglades City areas. Flooding was also noted as far south as Flamingo in Everglades National Park where campgrounds were flooded and damaged a number of vehicles