



MIAMI-SOUTH FLORIDA

National Weather Service

Forecast Office

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

South Florida 2022 Weather Summary

Top 5 Warmest Year on Record

Tropical Systems Punctuate a Wetter than Normal Year Across Most of South Florida

January 4th, 2023: Without a doubt, Floridians will remember 2022 as the year of hurricane impacts from Category 4 Ian in September and Category 1 Nicole in November. In addition, a tropical disturbance in early June produced significant flooding over parts of South Florida.

Outside of tropical systems, it was a relatively inactive year from the standpoint of severe weather events as high pressure controlled the local weather pattern for most of the summer and helped to cut down on rainfall and number of severe weather events during what is typically the most weather-active time of the year.

As has been the case the past several years, temperatures were above normal and were in the top 5 warmest on record at the main climate sites. It was warmer than 2021, but not as warm as the record-breaking 2020.

A description of these events is provided in the summary below, as well as an overview of temperatures and rainfall.

2022 Temperatures

Average temperatures for the year were 1-2 degrees above normal (Figure 1). Temperatures were consistent warmer than normal throughout 2022, with each season ranking among the top 10 warmest at each of the 4 main climate sites (the lone exception being Naples recording its 16th warmest summer on record).

The highest recorded temperature at any of the NWS sites (ASOS, RAWS, Cooperative) was **99F** set in the following locations and dates:

- Big Cypress Reservation (southern Hendry County) on August 19th
- Oasis Ranger Station (eastern Collier County) on September 6th
- Canal Point (western Palm Beach County) on August 20th

The hottest calendar days (average of the daily low and high temperature) at most locations were August 19th, August 20th, and September 6th.

The lowest recorded temperature at NWS sites was **28F** in Ortona on January 30th.

Freezing temperatures were recorded over interior sections of South Florida as far south as Tamiami Trail in the Everglades on the morning of January 30th, and again on January 31st over most of the same area.

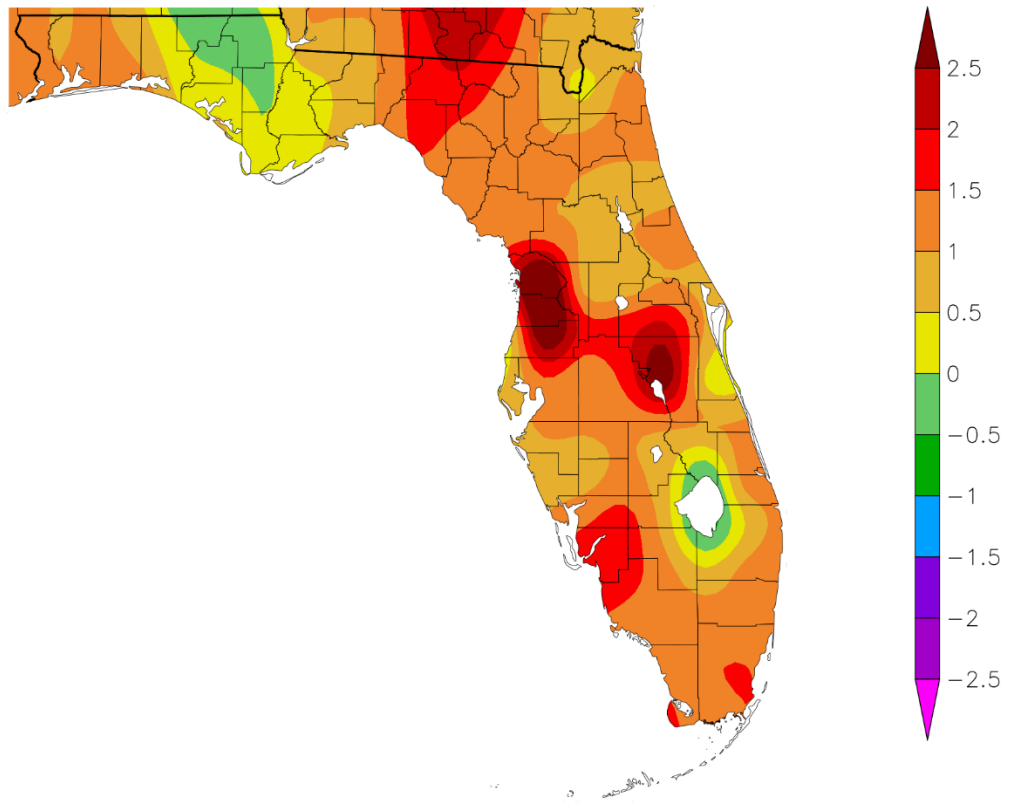
The coldest calendar day (average of the daily low and high temperature) occurred on Christmas Day.

2022 temperature summaries for the 4 main climate sites are below:

- ***Miami International Airport*** had an average 2022 temperature of 78.9 degrees Fahrenheit. This is 1.5F above the 30-year normal, and ranks as the **5th warmest year on record** (going back to 1895). The highest temperature was 96 degrees on August 17th, August 18th, and September 7th, and the lowest was 42 degrees on January 30th.
- ***Palm Beach International Airport*** had an average 2022 temperature of 77.7 degrees Fahrenheit. This is 1.9F above the 30-year normal, and ranks as the **3rd warmest year on record** (going back to 1888). The highest temperature was 96 degrees on August 18th, and the lowest was 37 degrees on January 30th.
- ***Fort Lauderdale/Hollywood International Airport*** had an average 2022 temperature of 78.3 degrees Fahrenheit. This is 1.1F above the 30-year normal, and ranks as the **4th warmest year on record** (going back to 1911). The highest temperature was 94 degrees on August 17th and September 6th, and the lowest was 40 degrees on January 30th.
- ***Naples Municipal Airport*** had an average 2022 temperature of 77.2 degrees Fahrenheit. This is 1.7F above the 30-year normal, and ranks as the **4th warmest year on**

record (going back to 1942). The highest temperature was 96 degrees on June 15th and August 20th, and the lowest was 37 degrees on January 30th.

Departure from Normal Temperature (F) 1/1/2022 – 12/31/2022



Generated 1/2/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 1 - 2022 temperature departure from normal

2022 Precipitation

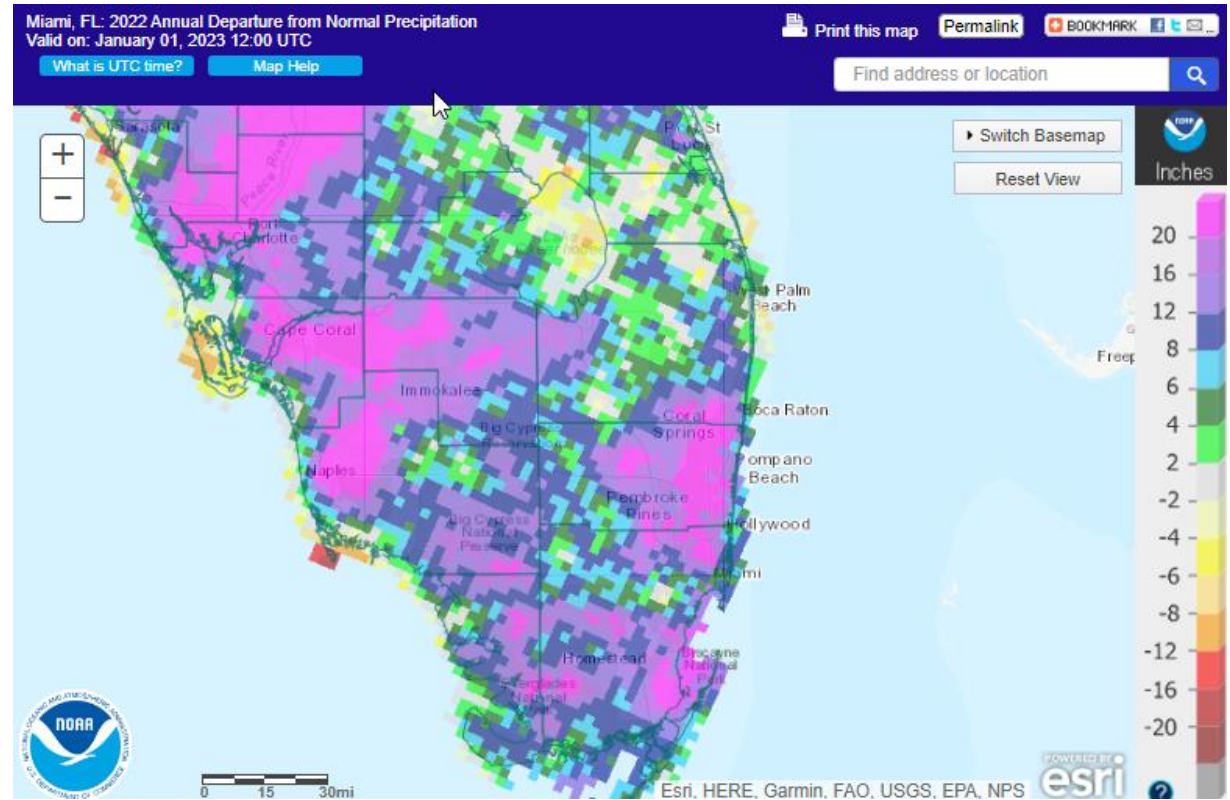
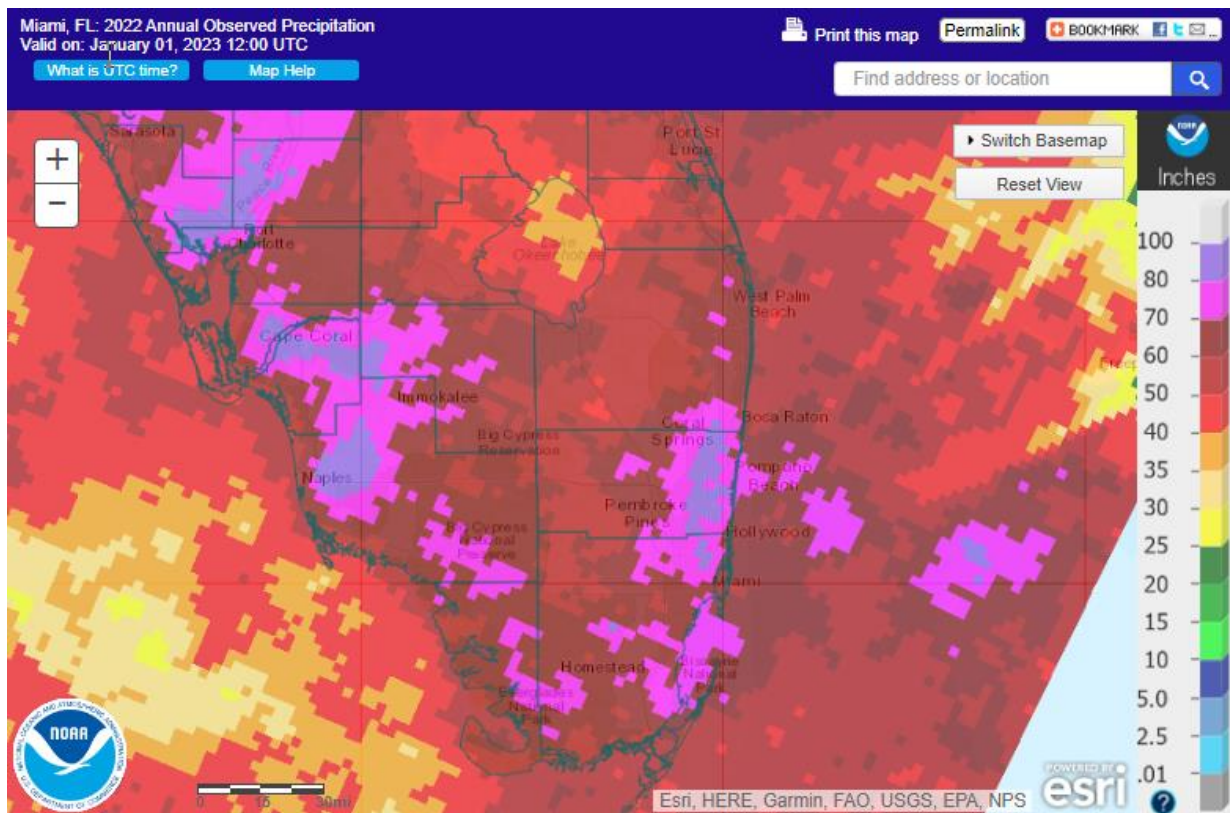
Rainfall in 2022 ended up near to above normal over most locations, with highest observed rainfall amounts of over 60 inches from northern metro Miami-Dade County through southern Palm Beach County. Several unofficial measurements of 70-80 inches were recorded in this area. Another area of high rainfall totals was over interior sections of Collier County in the Golden Gate Estates/East Naples areas where 70-80 inches of rain was observed. Pockets of slightly below normal precipitation were noted over Palm Beach County, Glades County and adjacent Lake Okeechobee areas, coastal sections of Broward and Collier counties, and over the Everglades. Even here, rainfall

totals were in the 50-inch range with the exception of northern Glades County which was in the 40-50-inch range.

Rainfall from the three tropical systems affecting South Florida significantly contributed to the high rainfall totals, but these were at least partially offset across SE Florida by an abnormally drier than normal period from mid-June through early September due in large part to easterly winds from a persistently strong subtropical high pressure over the western Atlantic which steered most daily showers and thunderstorms away from the east coast and closer to the Gulf coast and interior sections of Southwest Florida.

Here are some 2022 precipitation totals and departure from normal for NWS sites with mostly complete data throughout the year:

Location	2022 Rainfall (inches)	Departure from Normal
Cape Florida	56.81	+11.42
Ft. Lauderdale/Hollywood Int'l Apt	58.32	-2.63
Fort Lauderdale Executive Airport	66.86	+10.36
Hollywood North Perry Airport	66.43	+4.45
Homestead General Airport	60.38	+0.48
Marco Island	50.58	-2.72
Miami International Airport	71.55	+4.14
Miami/Tamiami Executive Airport	64.48	+8.40
Muse	64.89	+8.17
Naples Municipal Airport	51.58	+2.03
NWS Miami – University Park	67.20	-2.54
Palm Beach Gardens	65.71	-0.29
Palm Beach Int'l Airport	53.48	-8.27
Pompano Beach Airpark	51.96	-3.66
The Redland	64.35	-2.12



Figures 2 & 3: 2022 rainfall and departure from normal courtesy NWS/AHPS

Tropical Cyclones

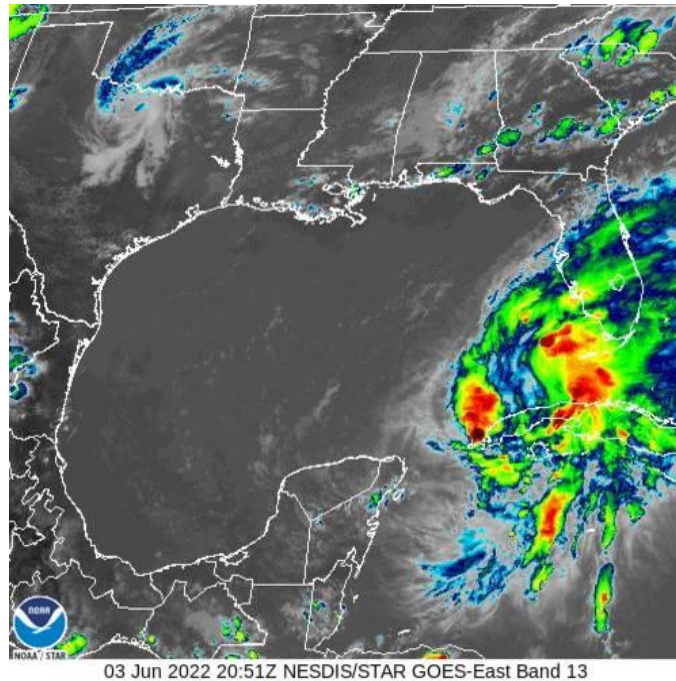


Figure 4: GOES IR satellite image of Potential Tropical Cyclone One as it approached Florida

- **Tropical Disturbance/Potential Tropical Cyclone One - June 3rd and 4th:** A tropical disturbance moved from the western Caribbean across South Florida on June 3rd and 4th. Bands of torrential rainfall accompanied the disturbance on its path across Florida. Areas over the east coast metro from Homestead north to southern Palm Beach County received between 8 and 14 inches of rain, with the higher values observed from Miami to Hollywood. Central and northern metro Palm Beach County received amounts in the 5-7" range. Collier County averaged between 5-8 inches, with peak values of 9-10". Areas around Lake Okeechobee, including Glades, Hendry, and western Palm Beach County, received mostly 3-6". Severe flooding occurred in many parts of metro Miami-Dade and Broward counties, as well as in isolated areas of Collier County in the South Naples/Lely area. Lingering moisture and a trough left behind by T.S. Alex from June 6-9 caused additional heavy rainfall in South Miami-Dade County, with the Cutler Bay area being hardest hit by severe flooding. A total of 18-20" of rain fell in the Cutler Bay area during a 4-day period.

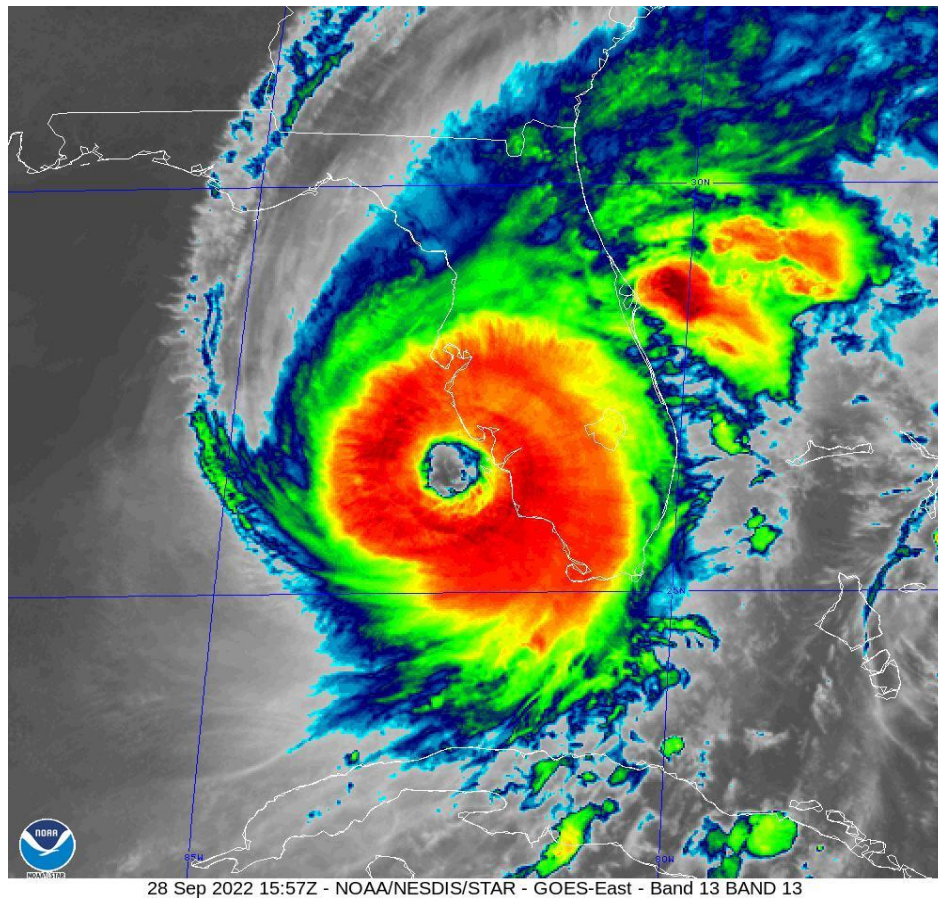


Figure 5: GOES IR satellite image of Major Hurricane Ian right before landfall along the SW Florida coast

- **Hurricane Ian - September 27th and 28th:** Ian made landfall in Lee County as a Category 4 hurricane on September 28th, producing a devastating storm surge to the Gulf coast of SW Florida from Naples to Fort Myers. In addition, Ian spawned a total of 13 tornadoes across South Florida from the afternoon of September 27th through the early morning of September 28th.

A full summary of Hurricane Ian's impacts on South Florida can be found here:

<https://arcg.is/a10Wi>

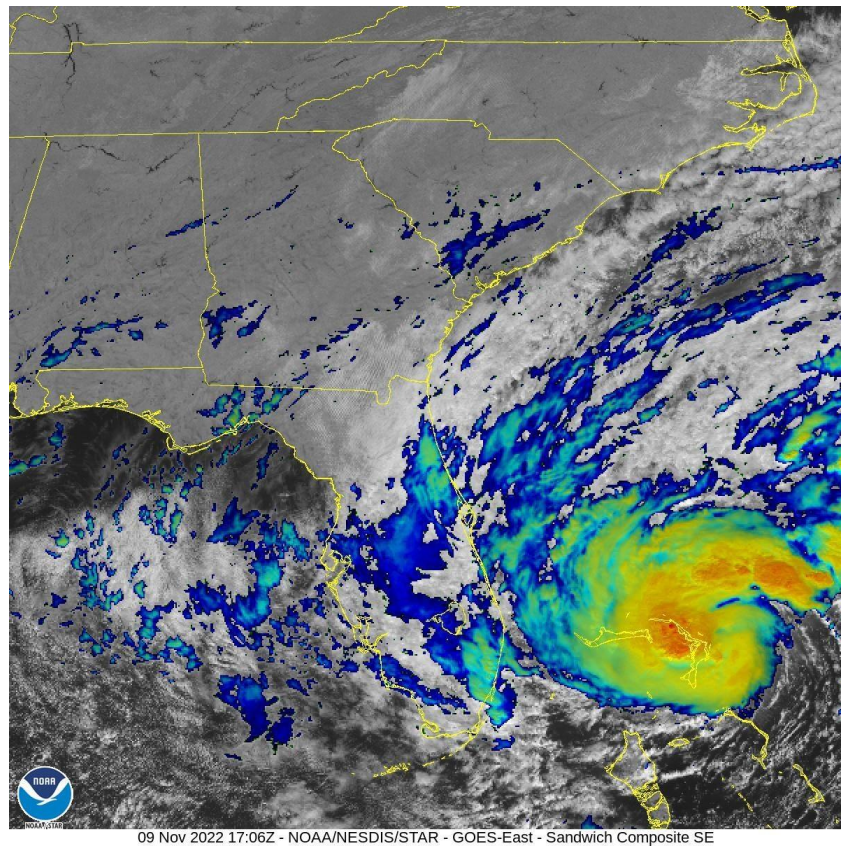


Figure 6: GOES satellite image of Hurricane Nicole over the NW Bahamas

- **Hurricane Nicole - November 9th and 10th:** Nicole developed as a subtropical storm east of the Bahamas, and gradually attained tropical characteristics as it moved west, crossing the far NW Bahamas on November 9th, then making landfall near Vero Beach as a Category 1 hurricane early on November 10th. The main impact from Nicole across South Florida was storm surge and high surf along the east coast. A storm surge of 2 to 2.5 feet was observed along the coast of Palm Beach and Broward counties, with near 2 feet along the Miami-Dade County coast. These storm tides combined with seasonal “king tides” led to flooding in the barrier islands and vulnerable locations near the Intracoastal Waterway. In addition, very high surf caused significant to major beach erosion and damage to several piers. Tropical storm force winds were measured at the east coast beaches and offshore.

Other Severe/Hazardous Weather

- **Flooding:** A total of 14 local flash flood events were recorded in 2022, 6 of which occurred in association with the early June tropical disturbance.
- **Lightning:** No lightning deaths/injuries were reported in 2022, although at least 4 structures were directly hit by lightning, causing damage. On August 14th, a lightning strike to a townhouse complex in North Lauderdale severely damaged 4 units and displaced at least 12 people.
- **Rip Currents:** 3 deaths and 9 injuries from rip currents were reported, all at the Atlantic coast beaches.
- **Thunderstorm Wind/Hail:** Outside of tropical systems, 34 damaging wind and/or large hail events occurred in South Florida in 2022. 25 of these occurred in April and May, with only 5 events after June 1st. The largest hailstone reported was 2 inches in diameter in LaBelle on April 4th, and the strongest measured thunderstorm wind gust was 78 mph in Palm Beach Gardens on April 6th in association with a tornado in the vicinity.
- **Tornadoes:** 16 tornadoes were confirmed across South Florida in 2022, the most since 2017 which had the same number of tornadoes. The leading outer bands of Hurricane Ian contributed to 13 tornadoes. The strongest was an EF-2 tornado with estimated maximum winds of 125 mph in the Kings Point neighborhood west of Delray Beach on September 27th, injuring 2 people and significantly damaging several structures. Three (3) others associated with Ian were rated EF-1 (Pembroke Pines, Wellington, and Loxahatchee), and another 3 were based on radar tornadic debris signatures (TDS) over the Everglades. Of the remaining three tornadoes of 2022, two were in Collier County on January 16th, and one in Palm Beach Gardens on April 6th, all rated EF-0.
- **Waterspouts:** a total of 25 waterspouts were reported in 2022 over the local South Florida waters. Two of these briefly touched down along the immediate coast but produced no damage.