

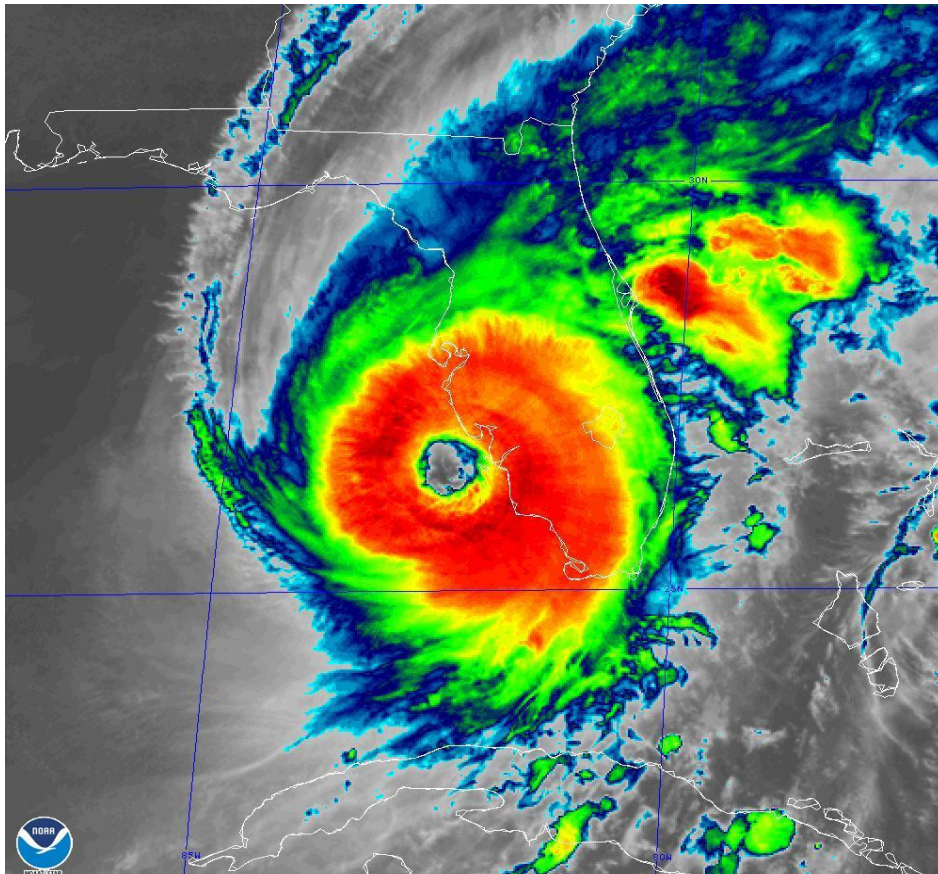


# MIAMI-SOUTH FLORIDA

National Weather Service

Forecast Office

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



28 Sep 2022 15:57Z - NOAA/NESDIS/STAR - GOES-East - Band 13 BAND 13

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

## 2024 Florida Severe Weather Awareness Week

**Thursday, February 8<sup>th</sup> is Hurricane and Flooding Awareness Day**

After a 2022 which saw devastating Major Hurricane Ian impact SW Florida, South Florida got a relative break from direct tropical storm or hurricane impacts in 2023, with Hurricane Idalia in late August being the only storm to pose a threat before passing west of the region over the eastern Gulf of Mexico.

A total of 19 named storms, including 7 hurricanes and 3 major hurricanes, moved across the Atlantic basin (Figure 1) in 2023. The total number of storms was above the 30-year normal, with the hurricane and major hurricane numbers being very close to normal.

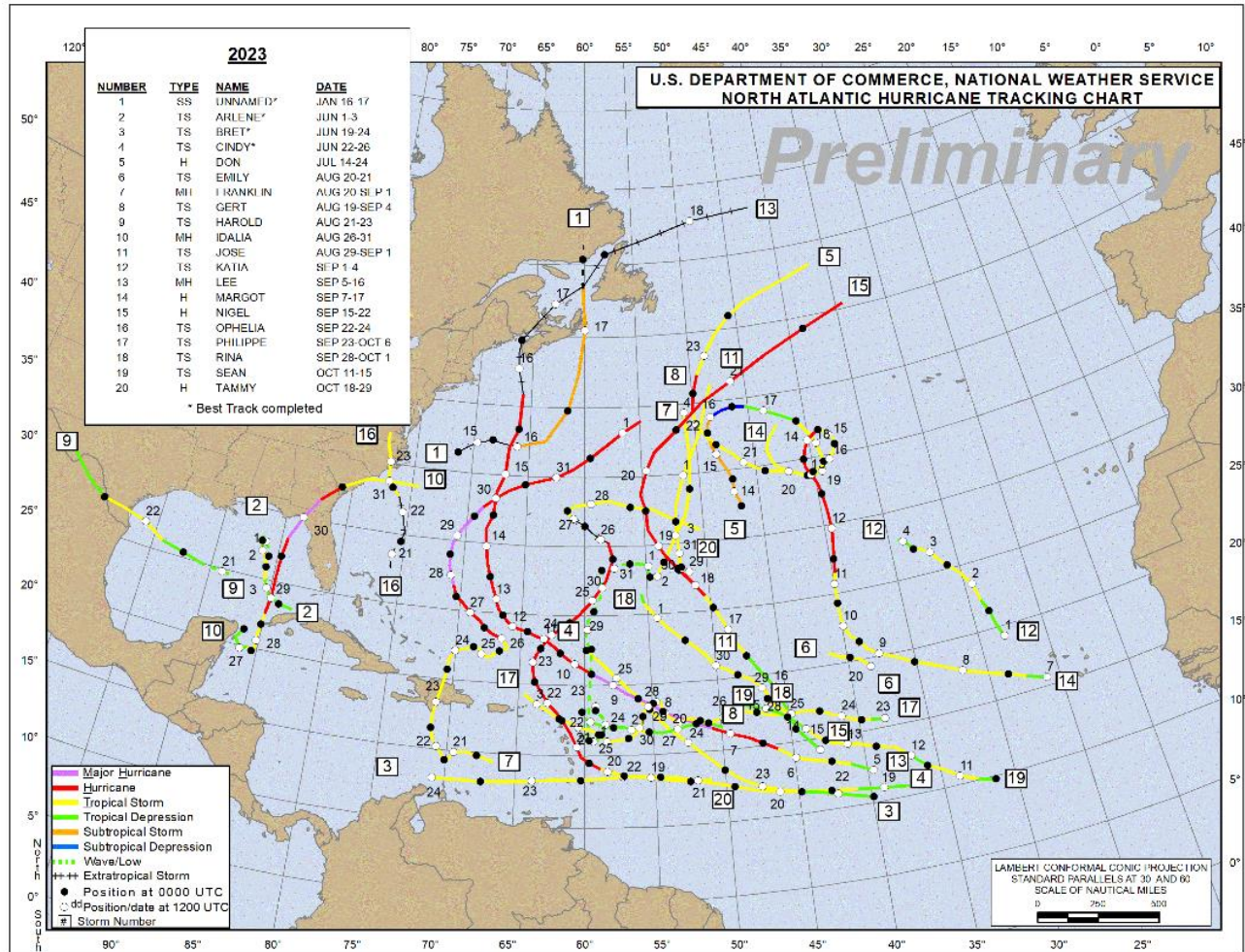


Figure 1: Preliminary Tracks of 2023 Atlantic Tropical Cyclones

As the above map shows, most of the tropical storms in hurricanes in 2023 tracked over the central and eastern Atlantic, as opposed to 2022 when several systems tracked across the western Caribbean and Florida.

## IT'S NOT JUST ABOUT THE WIND

As 2022 and recent years have made clear, tropical cyclones are multi-hazard weather systems. While the wind speed is what determines the classification of a tropical cyclone, other hazards such as storm surge, flooding and tornadoes can cause significant impacts including loss of life, regardless of the storm's category. The majority of the deaths from Hurricane Ian were from a catastrophic 10 to 15-foot storm surge which

devastated coastal locations from Naples to the Fort Myers area. Major rainfall flooding from Ian in Central Florida also resulted in several deaths. Ian also spawned 13 tornadoes in South Florida, several causing significant damage.

The graphic features a dark blue background with a stylized cityscape and a boat. At the top, the text 'SEVERE WEATHER AWARENESS WEEK 2024' is in dark blue, and 'HURRICANES & FLOODING' is in large yellow letters. Below this are three dark blue rounded rectangles with white and yellow text and icons. The first rectangle shows a hurricane icon and text about tornadoes, flooding, and storm surge. The second shows a weather presenter icon and text about receiving alerts. The third shows a flooded house icon and text about flood insurance. At the bottom left is the FDEM logo, and at the bottom center is the URL 'FLORIDADISASTER.ORG/PLANPREPARE'.

# SEVERE WEATHER AWARENESS WEEK 2024

## HURRICANES & FLOODING

**Hurricanes can cause tornadoes, flooding & storm surge**

**Have multiple ways to receive weather alerts such as TV or a weather radio**

**Consider purchasing flood insurance - just 1 inch of flood water can cause more than \$25,000 in damages**

**FLORIDADISASTER.ORG/PLANPREPARE**

**Remember:** It doesn't take a major hurricane to produce significant impacts. Tropical storms directly impacting South Florida have been known to produce severe flooding, damaging winds and tornadoes. Take every tropical cyclone seriously, whether it's a tropical storm or a major hurricane. Also, pay close attention to the Tropical Weather Outlook issued 4 times a day during hurricane season to stay abreast of weather systems which have the potential of forming into tropical storms.

**Important:** Historically, it is the water that has caused most of the deaths in hurricanes. Hurricane Ian is a prime example of this. About 90 percent of all hurricane-related deaths nationwide occur from drowning from either the storm surge or freshwater flooding.

Residents of coastal and surge-prone areas are urged to heed advice from local officials **and evacuate whenever storm surge flooding is expected**. Become familiar with your county's storm surge evacuation zones and know whether you live in one or not. **Visit your county's emergency management web site for more information on evacuation zones.**



*Damage to restaurant in Vanderbilt Beach caused by storm surge from Hurricane Ian (NWS Storm Survey picture)*



*Marooned boat on top of bridge in North Naples after Hurricane Ian (NWS Storm Survey picture)*

2022 served as a reminder that we live in one of the most vulnerable and hurricane-prone places in the country. On average, the center of a hurricane will pass within 50 miles of any point in South Florida every 6 to 8 years. This means that while hurricane strikes are typically not a yearly occurrence, statistics indicate that South Florida will at least be significantly threatened a few times a decade, and impacted directly by a hurricane at least once a decade. Indirect hurricane impacts, as well as tropical storms passing over South Florida, occur with a much higher frequency; at least every 2 or 3 years on average.

Therefore, we can't afford to become complacent. Be prepared **every year** for the possibility of a tropical storm or hurricane impacting our region.

## SEVERE WEATHER AWARENESS WEEK 2024 HURRICANES & FLOODING



- Develop individualized disaster preparedness plans for families, businesses & individuals with special needs
- Know evacuation routes & stock a disaster supply kit for at least 7 days
- Review insurance policies and ensure coverage is up-to-date



[FLORIDADISASTER.ORG/PLANPREPARE](https://FLORIDADISASTER.ORG/PLANPREPARE)

**HURRICANE SAFETY TIPS:** Regardless of the short- or long-term hurricane outlook, South Floridians need to be prepared every year. It only takes one big storm to affect our area long-lasting impacts to be felt. Now is the time to begin preparing for the 2024 hurricane season. Develop a plan and have it in place before a storm threatens. Know if you live in a hurricane evacuation zone. Gather supplies such as bottled water, canned foods and batteries. Remember to buy enough provisions to last a minimum of three to five days in the event of a tropical system affecting our area. Buy and install hurricane shutters. Make sure your property insurance is up to date. A minimum of preparation can save lives and property.

People are also urged to be extremely cautious during the storm's aftermath. Typically, more people die after the passage of a storm than during the storm itself, from a combination of factors including: carbon monoxide poisoning, injuries while removing debris and storm shutters, heat-related illnesses exacerbated by lack of proper air conditioning, and vehicle accidents. Extreme care must be used when using generators, and make sure to run them in an outdoor location, not inside the house.

For a comprehensive list of hurricane preparedness information, visit [ready.gov](https://www.ready.gov) and [Ready South Florida](#).

## Flooding

South Florida's occasional torrential rains and flat terrain, combined with an often-moisture-laden atmosphere, can lead to conditions conducive to major flooding rains. Flooding rainfall in South Florida can come from a variety of weather systems, from tropical disturbances, tropical storms, and hurricanes, to stalled frontal systems and even fairly typical summer thunderstorms.

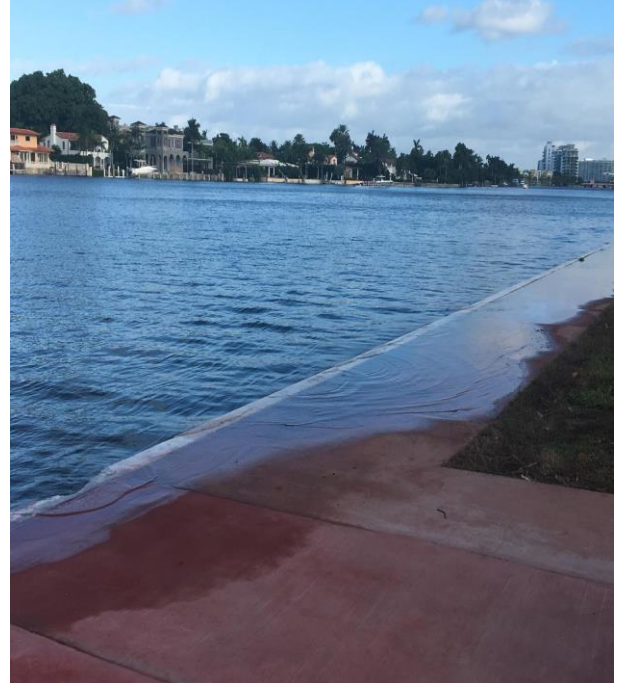
A tropical system doesn't have to be right over us to get major flooding, nor does it have to be a major storm. Outer bands from distant tropical cyclones can produce localized flooding. While tropical weather systems produce most of the significant and widespread rain events, flooding also occurs from non-tropical weather systems. Stalled frontal systems in the fall, winter, and spring sometimes cause very heavy rainfall leading to flooding, as well as on a typical summer day when local thunderstorms frequently produce enough rainfall to flood streets and cause hazardous driving conditions. Major flooding events occur on average about three times a year across the South Florida region, although highly flood-prone areas such as Downtown Miami, Miami Beach, and other parts of metro SE Florida may experience more events on a yearly basis.

Despite the lack of organized tropical systems, 2023 set rainfall records across South Florida, especially in the Fort Lauderdale area where over 100 inches of rain was measured. On April 12<sup>th</sup>, a stalled frontal system combined with an upper-level disturbance led to a [historic and extreme flooding event in Fort Lauderdale](#). Over 26" of rain fell at Fort Lauderdale/Hollywood International Airport, with about 20" falling in just 6 hours. These excessive rainfall rates caused crippling flooding in the city of Fort Lauderdale, closing the airport for 40 hours and causing flooding as much as 3 feet deep inside of homes in several city neighborhoods. Total damage exceeded \$20 million.



*Pictures via social media of severe flooding in Fort Lauderdale on April 12<sup>th</sup>, 2023*

Another type of flooding, tidal flooding due to astronomical high tide (a.k.a. King Tides), typically affects vulnerable areas along the Intracoastal Waterway during high tide cycles in September, October, and November, leading to flooding of streets, parks, and marinas.



*Typical South Florida King Tide Flooding (courtesy of Liam Lynam)*

**PREPARE FOR FLOODING:** The flat South Florida terrain lends itself to ponding of water in poorly drained or low-lying areas during heavy rain events, rather than the flash flooding that occurs in other parts of the country. While this type of flooding is normally not as deadly or destructive, it can still lead to significant impacts as water can enter homes and other structures, as well as make driving extremely hazardous due to flooded roadways which can sometimes obscure canals. If water is covering a roadway, do not assume that you can drive through it. **Turn around, don't drown.**



**“Turn Around, Don’t Drown”**

“Heavy” vehicles such as SUV’s and pickups are not immune to danger while driving through flood waters.

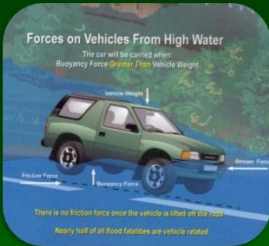

Most vehicles can be swept away by 18-24” of moving water.




**Tips for Driving**

Avoid driving around barricades. The road is closed for a reason. You put first responders at risk when they have to rescue you.

Even if the road is not closed, avoid driving into flooded areas. Water may be deeper than it appears, and the road bed may not be intact.

Most flash floods occur at night, when it is harder to see the flooding.

 National Weather Service – Miami, FL

All South Floridians need to be aware of their particular neighborhood’s vulnerability to flooding. Fortunately, people can also plan well in advance for floods. The best advice is to have flood insurance, a separate policy from your homeowner’s insurance. Know if you live in an area which floods frequently from heavy rains.

Good flood safety information can be found at the [NWS Flood Safety web site](https://www.weather.gov/flood).

Monitor NOAA Weather Radio before, during and after a tropical cyclone or flood event to stay abreast of the latest information. You can also visit the National Weather Service Miami Forecast Office web site at [weather.gov/southflorida](https://www.weather.gov/southflorida) where a description of potential storm impacts and latest hurricane and flood watches and warnings will be available, as well as the National Hurricane Center’s five-day tropical cyclone track and intensity forecast.