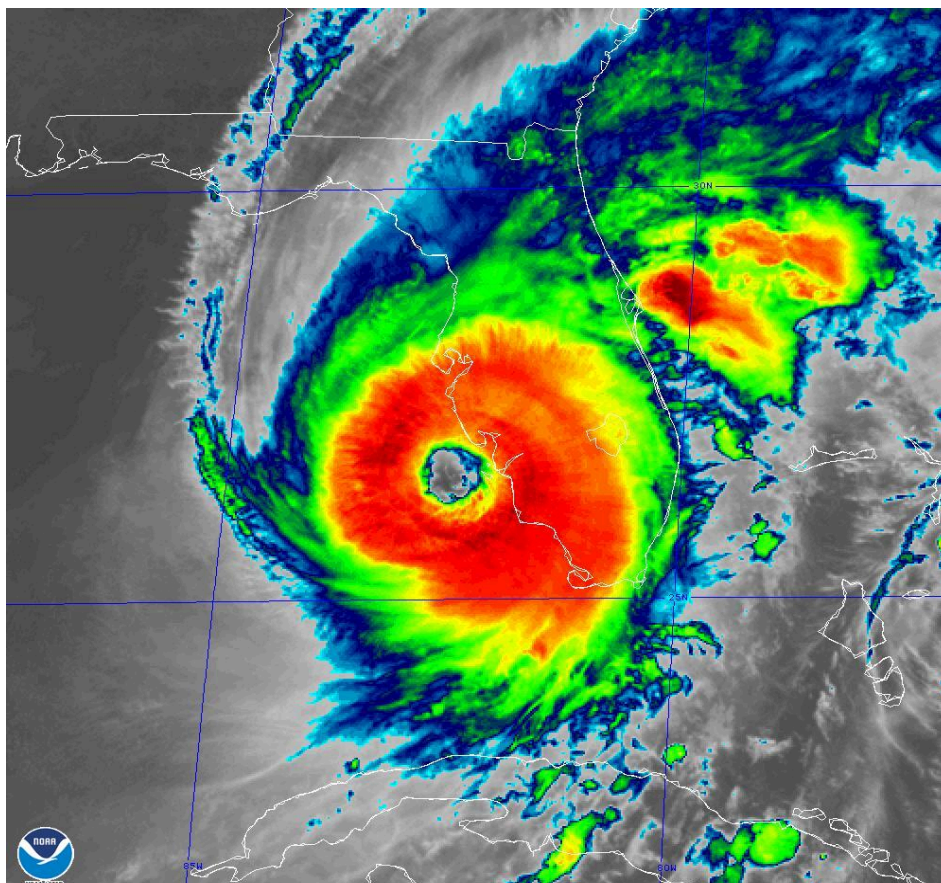


MIAMI-SOUTH FLORIDA
National Weather Service
Forecast Office
<http://www.weather.gov/miami>



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

2025 Florida Severe Weather Awareness Week

Thursday, February 6th is Hurricane and Flooding Awareness Day

2024 was an impactful year for Florida as several storms made landfall in the state. Hurricane Debby and Major Hurricanes Helene and Milton created significant impacts along the Gulf coast of Florida including storm surge and rainfall flooding.

A total of 18 named storms, including 11 hurricanes and 5 major hurricanes, moved across the Atlantic basin (Figure 1) in 2024. The total number of storms was above the 30-year normal, with the hurricane and major hurricane numbers being above normal.

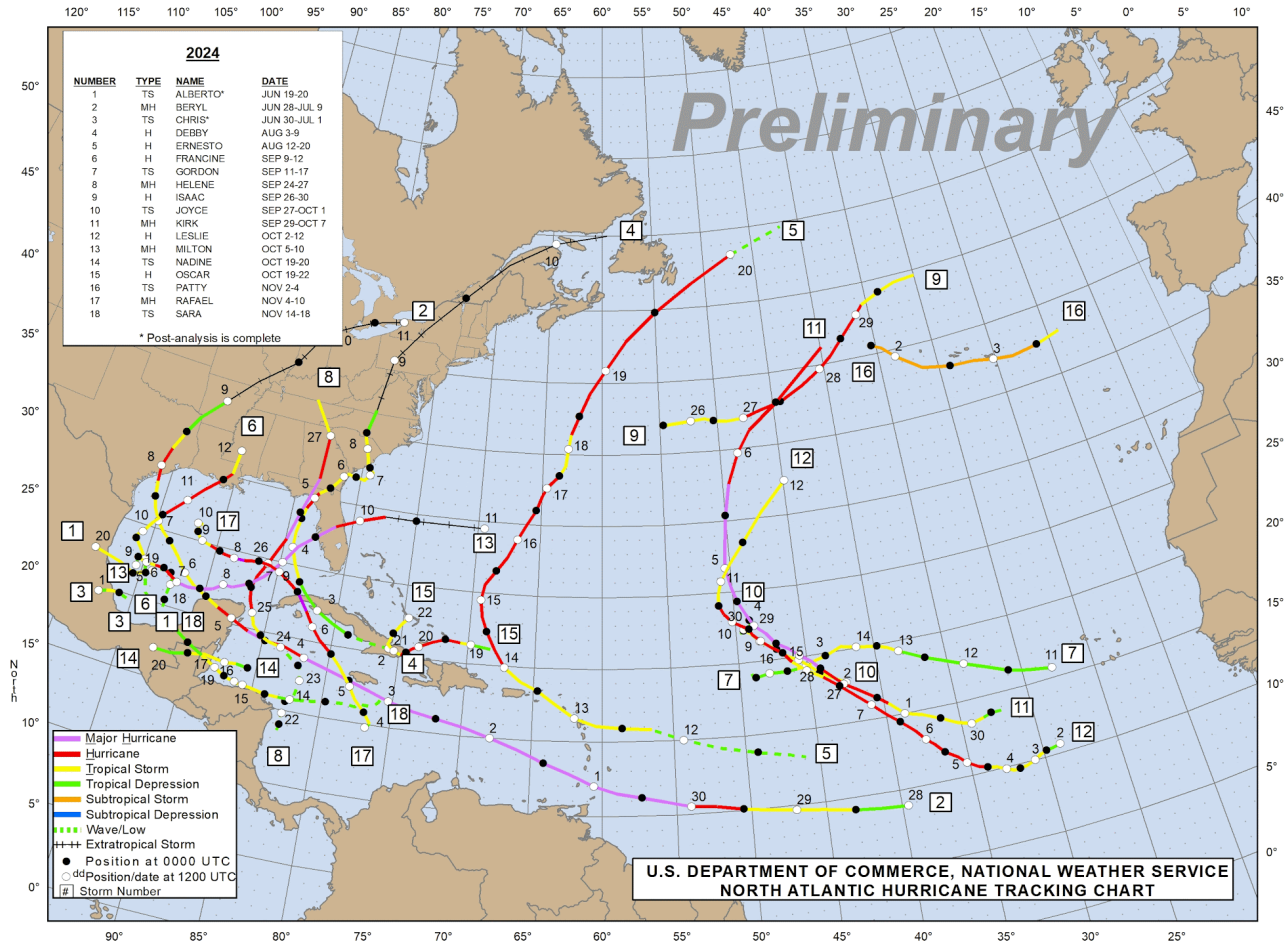


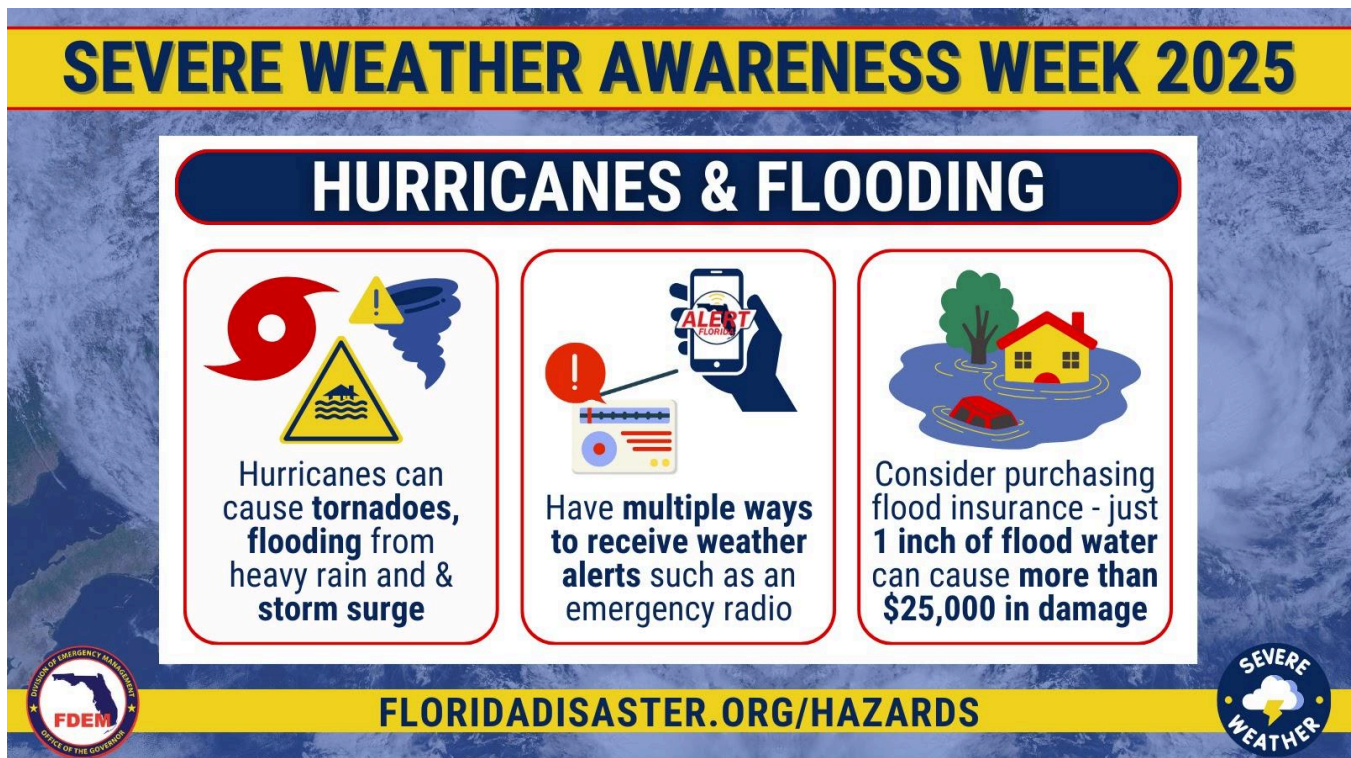
Figure 1: Preliminary Tracks of 2024 Atlantic Tropical Cyclones

As the above map shows, most of the tropical storms and hurricanes in 2024 tracked over the western Caribbean and Gulf of Mexico.

IT'S NOT JUST ABOUT THE WIND


As 2024 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 in 2022 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. Hurricane Milton produced 15 confirmed tornadoes in South Florida and over 40 statewide on the late morning, afternoon, and early evening of October 9th, 2024.






SEVERE WEATHER AWARENESS WEEK 2025

HURRICANES & FLOODING

 Hurricanes can cause **tornadoes, flooding** from heavy rain and & **storm surge**

 Have **multiple ways to receive weather alerts** such as an emergency radio

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

 **FLORIDADISASTER.ORG/HAZARDS** 

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)

2024 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.

The infographic features a yellow header with the text "SEVERE WEATHER AWARENESS WEEK 2025". Below this is a dark blue banner with "HURRICANES & FLOODING" in white. The main content is divided into three yellow boxes, each with a numbered tip and an icon. The first tip is "1 Make disaster preparedness plans for families, businesses & individuals with special needs" with an icon of a notebook and a warning sign. The second tip is "2 Know evacuation routes and stock a disaster supply kit for at least 7 days" with an icon of a first aid kit, water bottles, and a radio. The third tip is "3 Review insurance policies to ensure coverage is up-to-date" with an icon of a house and a shield. At the bottom, there is a yellow bar with the URL "FLORIDADISASTER.ORG/HAZARDS". On the left is the FDEM logo (Florida Division of Emergency Management, Office of the Governor) and on the right is a "SEVERE WEATHER" logo with a lightning bolt and cloud.

SEVERE WEATHER AWARENESS WEEK 2025

HURRICANES & FLOODING

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

FLORIDADISASTER.ORG/HAZARDS

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.

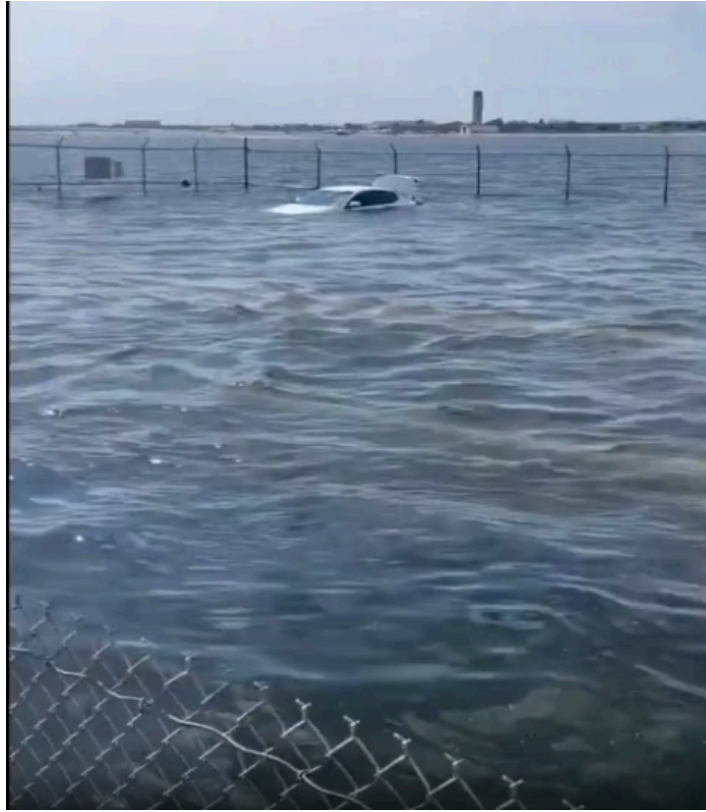
For a comprehensive list of hurricane preparedness information, visit [ready.gov](https://www.ready.gov) and [Ready South Florida](#).

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 12th, 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 of severe flooding in Fort Lauderdale on April 12th, 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.



Forces on Vehicles From High Water
The car will be carried when Buoyancy Force Greater Than Vehicle Weight



There is no friction force once the vehicle is lifted off the road.
Nearly half of all flood fatalities are vehicle related.

Weather.gov/mfl NWSMiami @NWSMiami 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.