



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

## **Rainy Season 2021 Outlook**

### **Higher Likelihood of Wetter and Warmer Than Normal**

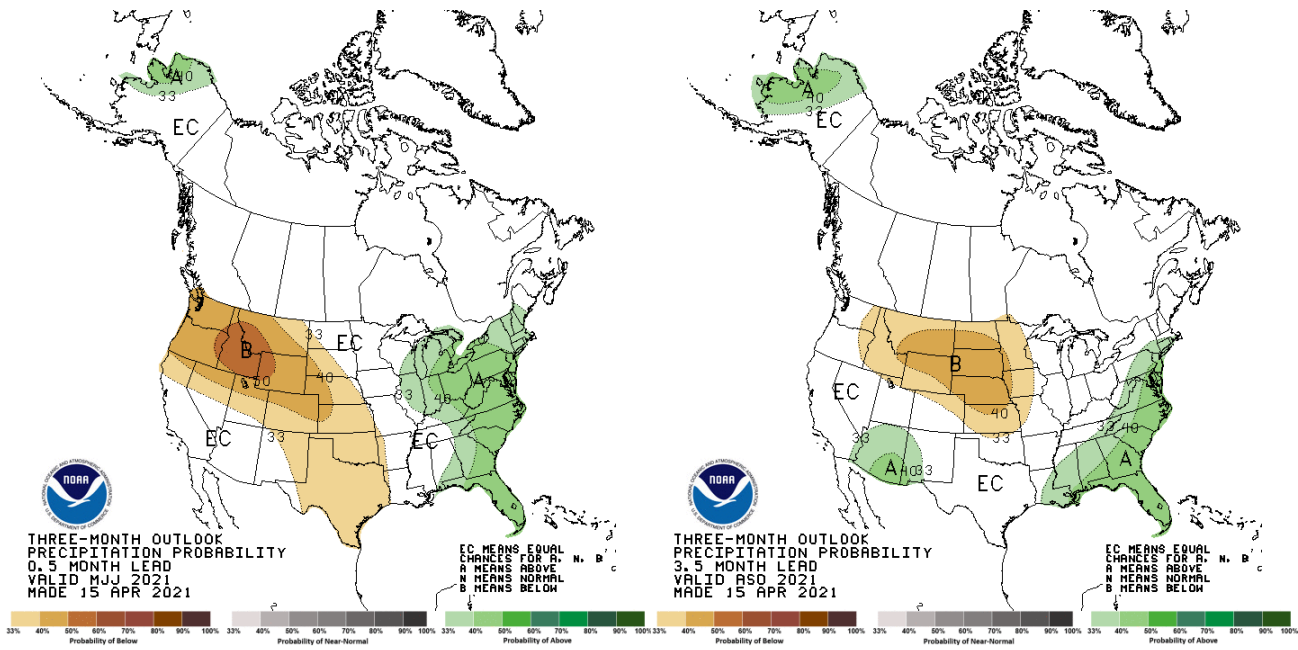
#### **Recording of the Rainy Season Outlook Press Conference**

**May 11, 2021:** The National Weather Service outlook for the 2021 South Florida rainy season is for a higher likelihood of wetter and warmer than normal conditions. This is consistent with the NOAA Climate Prediction Center's outlook (Figures 1-4), and based on a combination of several factors: analogs (past summers with similar atmospheric conditions to what is expected this summer), long-range models, and trends (observed conditions over the past 10 to 20 years).

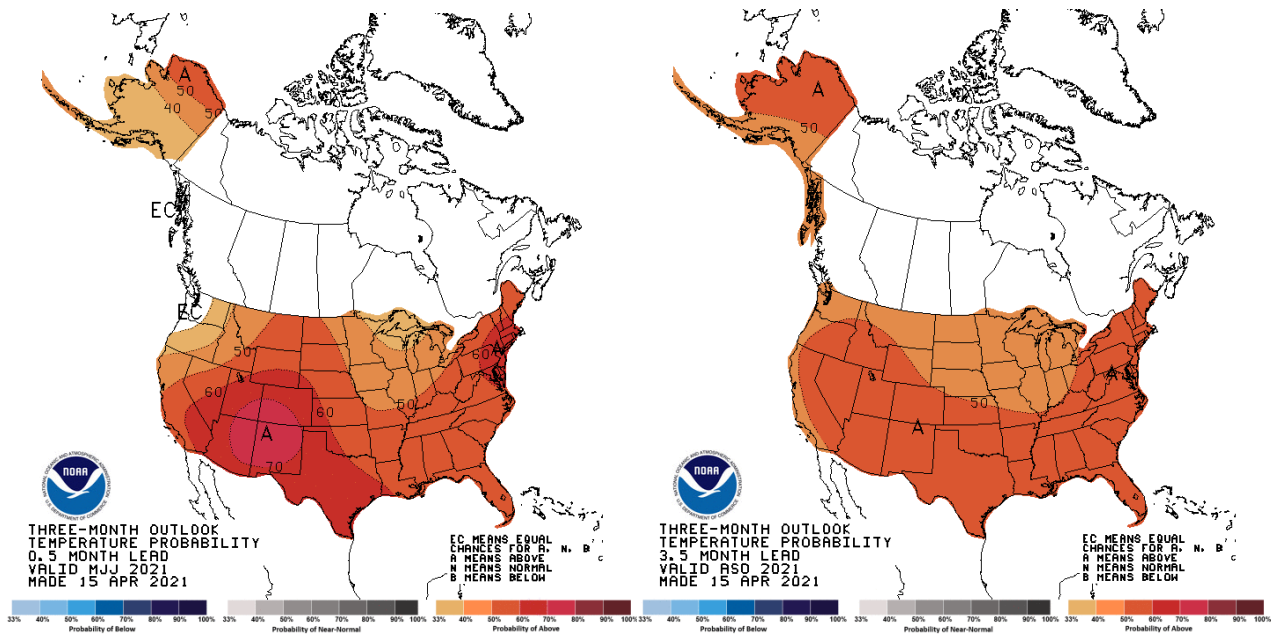
**The temperature outlook** has a medium-high level of confidence due in large part to summer temperature trends over the past 10 to 20 years. Average temperatures are not expected to be much above normal, with the likely range being about 0.5 - 1 degree F per month above the 30-year normal, and should largely be the result of warmer than normal night and morning temperatures.

**The precipitation outlook** has a low to medium level of confidence due to weak and/or mixed signals from the different factors. The current La Niña conditions which contributed to drier than normal conditions for much of the dry season is forecast to transition to ENSO-neutral conditions. A consensus of long-range models points to an increased chance of above normal rainfall, while trends point slightly towards more rainfall than normal.

**The flood risk for South Florida is average.** Despite the increased likelihood of above normal rainfall this rainy season, the flood risk for South Florida is average (8-10 significant events per rainy season) as water levels to begin the rainy season are at near to slightly below normal levels.



Figures 1 & 2: NOAA's Climate Prediction Center precipitation outlook for May-July (left) and August – October (right)



Figures 3 & 4: NOAA's Climate Prediction Center temperature outlook for May-July (left) and August – October (right)

## Definition and Significance of the South Florida Rainy Season

The South Florida rainy season begins on May 15<sup>th</sup> and ends on October 15<sup>th</sup>, and is defined as the time of year when approximately 70% of the yearly rainfall occurs. Year-round groundwater conditions are largely determined by the amount of precipitation received during the rainy season. For example, a drier and/or late-arriving rainy season can lead to significant water shortages, while an early and/or particularly wet rainy season can result in concerns about too much groundwater. Often there is a transition period near the beginning and end of the rainy season which can last two weeks or more.

The rainy season is characterized by consistently high moisture levels (almost daily surface dewpoints in the 70s), and coupled with high temperatures support near-daily development of showers and thunderstorms over the Florida peninsula and adjacent waters. The exact location of the daily rainfall depends on interactions between the larger scale wind flow in the lower levels of the atmosphere, and smaller-scale wind flows such as sea breezes and lake breezes.

The Atlantic subtropical ridge (a semi-permanent high pressure area over the Atlantic Ocean that lies anywhere between about 25 and 35 degrees North Latitude in the summer) is the primary influence on the large-scale wind flow across Florida. [The National Weather Service Tampa Bay Area office has created a website](#) describing eight wind patterns or “flow regimes” that tend to favor thunderstorm development in certain parts of the peninsula.

## Rainy Season Normals and Phases

Average wet season rainfall ranges anywhere from 30 to 45 inches, highest within about 5-8 miles inland from both the Atlantic and Gulf coasts, and lowest near and along the immediate coastline of both coasts as well as around and just west of Lake Okeechobee. South Florida’s daily wet season rainfall tends to be highly variable in nature, with nearby areas often observing large differences in rainfall amounts. Normally it takes at least one or two organized, large-scale weather systems (such as tropical waves, disturbances or tropical storms/hurricanes) to provide high rainfall amounts over a large area.

Here are some rainy season normals (1991-2020) for select South Florida locations:

- **Main climate locations:**

- Miami: 44.84"
- Fort Lauderdale: 37.49"
- West Palm Beach: 36.30"
- Naples: 36.08"

- **Other locations:**

- Hialeah: 48.19"
- Juno Beach: 39.83"
- West Kendall: 38.08"
- Marco Island: 37.44"
- Miami Beach: 35.55"
- Pompano Beach: 33.40"
- Moore Haven: 33.13"

The South Florida rainy season usually has three fairly distinct phases:

- **Mid-May through early July** ("stormiest" part of the season). Severe weather impacts, including strong and damaging winds, tornadoes, excessive lightning, hail, and flooding are most likely to occur during this period.
- **Early July through mid-August** (hottest with intermittent dry periods).
- **Late August through mid-October** (higher rainfall variability due to potential tropical systems and early-fall cold fronts).

## Weather Hazards and Potential Impacts

Weather hazards associated with the rainy season include lightning, damaging thunderstorm winds, flooding, hail, and even tornadoes. May to August is the period when most of South Florida’s severe weather (flooding, large hail, tornadoes and strong winds) takes place (Figure 5). Also, rip currents are common due to the persistent onshore winds.

These hazards **do not include** impacts from any tropical systems that can affect South Florida, particularly during the peak months of August, September and October.

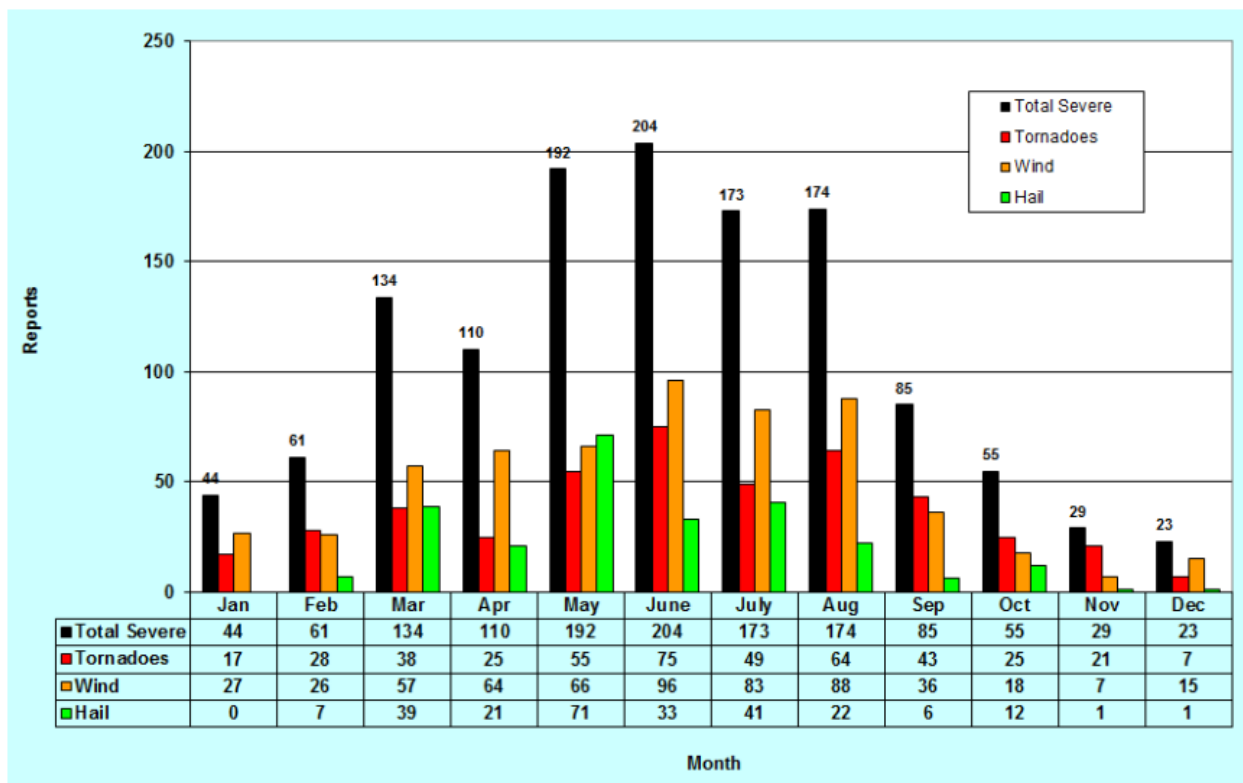


Figure 5: Monthly Distribution of Severe Weather for southern Florida (1950-2012 Tornadoes & 1955-2012 Wind/Hail)

Please visit <http://weather.gov/southflorida> for daily forecasts and severe weather warnings and outlooks.