



# TROPICAL UPDATE



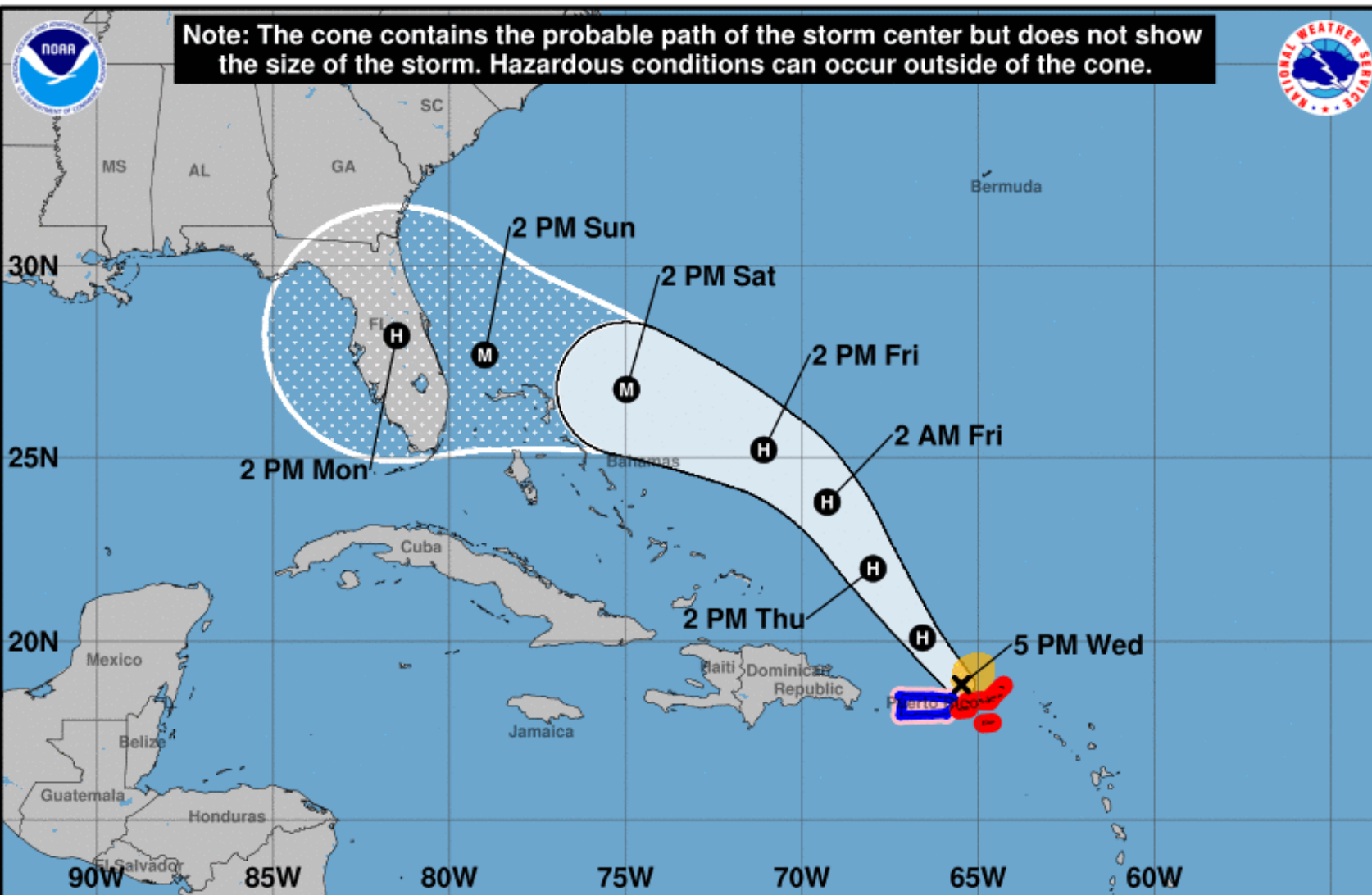
5 PM EDT

Wednesday, August 28, 2019

Hurricane Dorian

& Tropical Depression Erin

This update is intended for government and emergency response officials, and is provided for informational and situational awareness purposes only. Forecast conditions are subject to change based on a variety of environmental factors. For additional information, or for any life safety concerns with an active weather event please contact your County Emergency Management or Public Safety Office, local National Weather Service forecast office, or visit the National Hurricane Center website at [www.hurricanes.gov](http://www.hurricanes.gov).



**Hurricane Dorian**  
 Wednesday August 28, 2019  
 5 PM AST Advisory 18  
 NWS National Hurricane Center

**Current information: x**  
 Center location 18.8 N 65.5 W  
 Maximum sustained wind 80 mph  
 Movement NW at 14 mph

**Forecast positions:**  
 ● Tropical Cyclone ○ Post/Potential TC  
 Sustained winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110 mph

**Potential track area:**

Day 1-3 Day 4-5

**Watches:**

Hurricane Trop Stm

**Warnings:**

Hurricane Trop Stm

**Current wind extent:**

Hurricane Trop Stm

## Changes & Key Points

**NHC is now forecasting a landfalling Category 3 Hurricane somewhere along the Florida East Coast Sunday Night/Monday Morning.**

Dorian strengthened to a Hurricane (Category 1 ) today over the Virgin Islands.

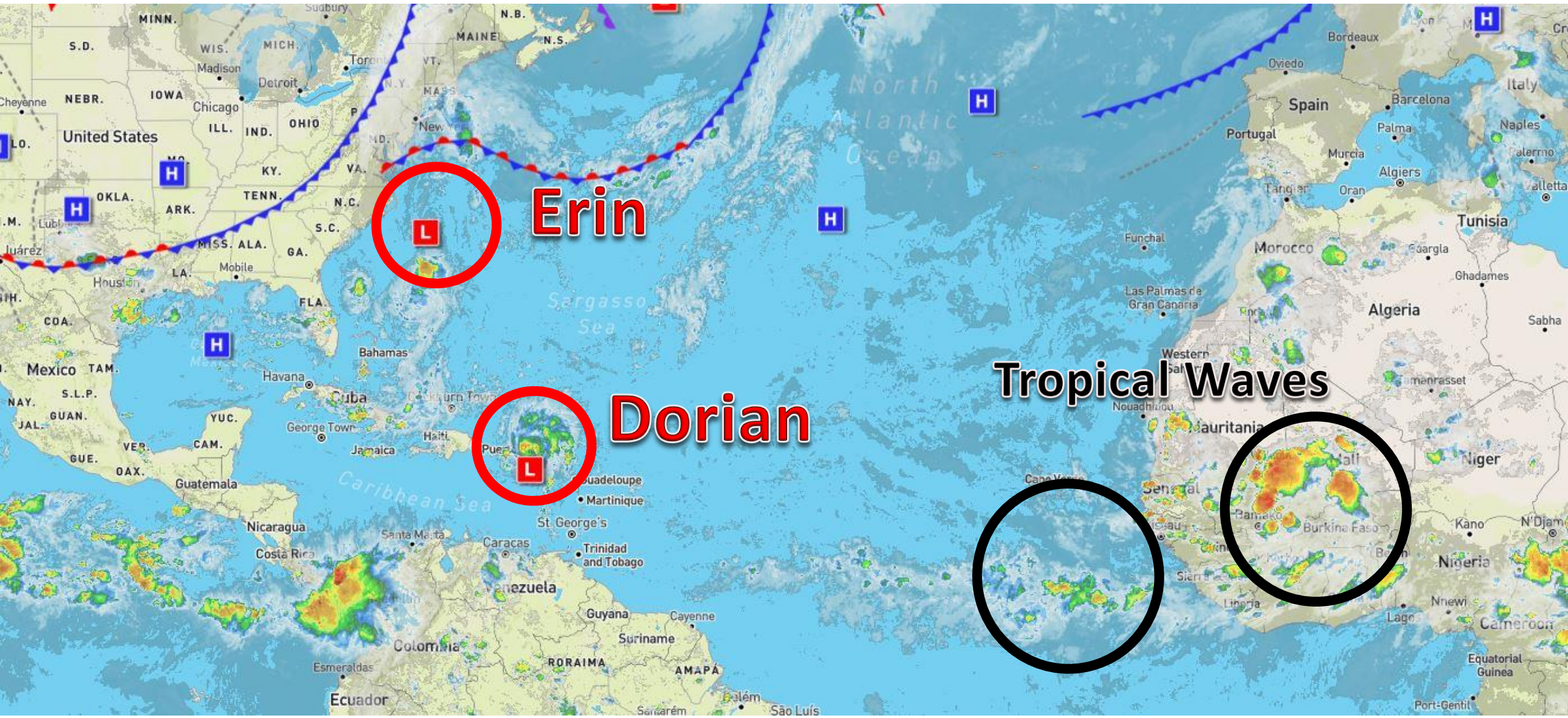
The track shifted south slightly.

***The track as the system approaches Florida is still uncertain, and the system could re-emerge in the Gulf of Mexico, or move inland over Northeast Florida.***



# Atlantic Basin Satellite Image

Chance of development: — None    — Low    — Medium    — High

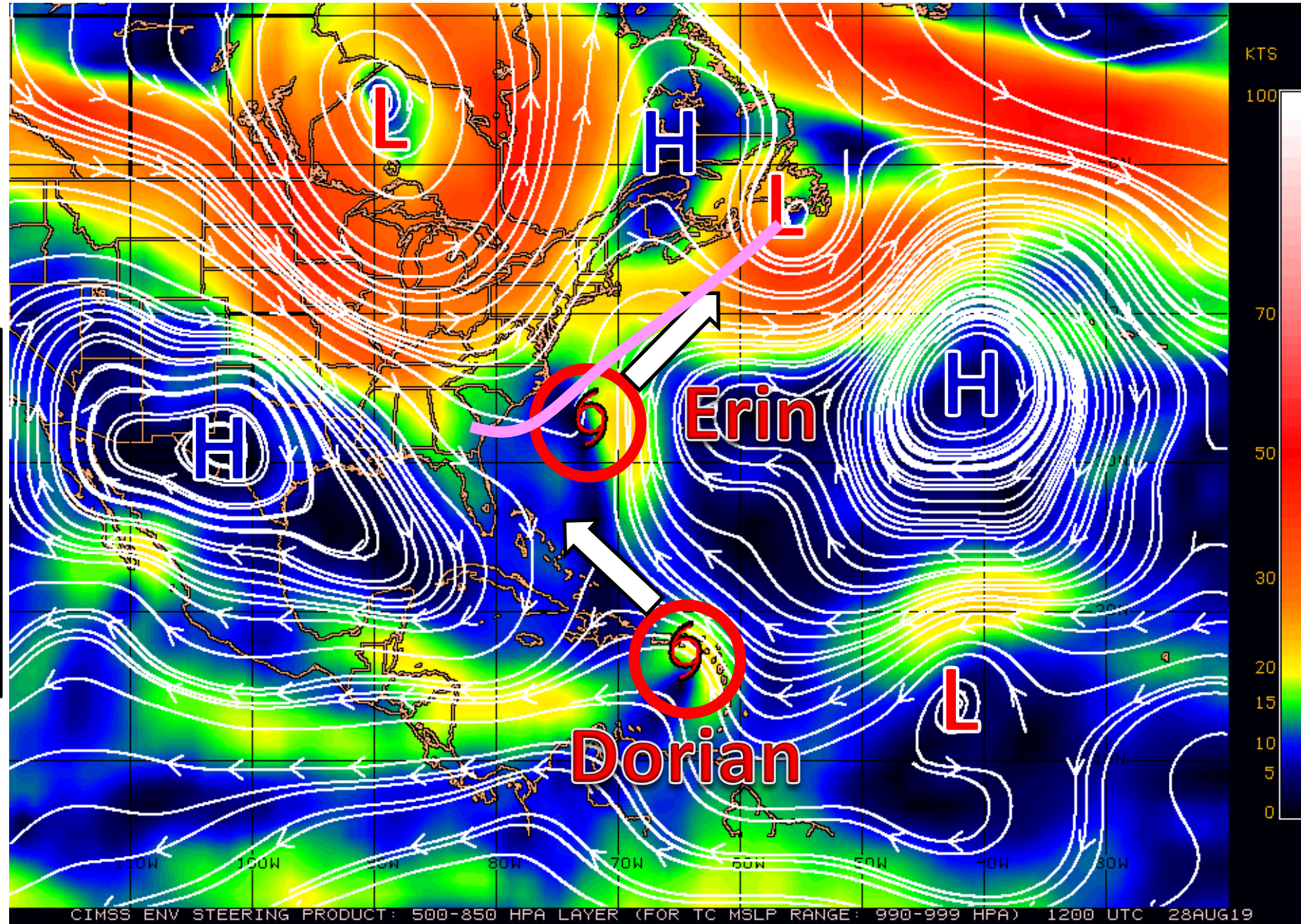




# Steering Currents

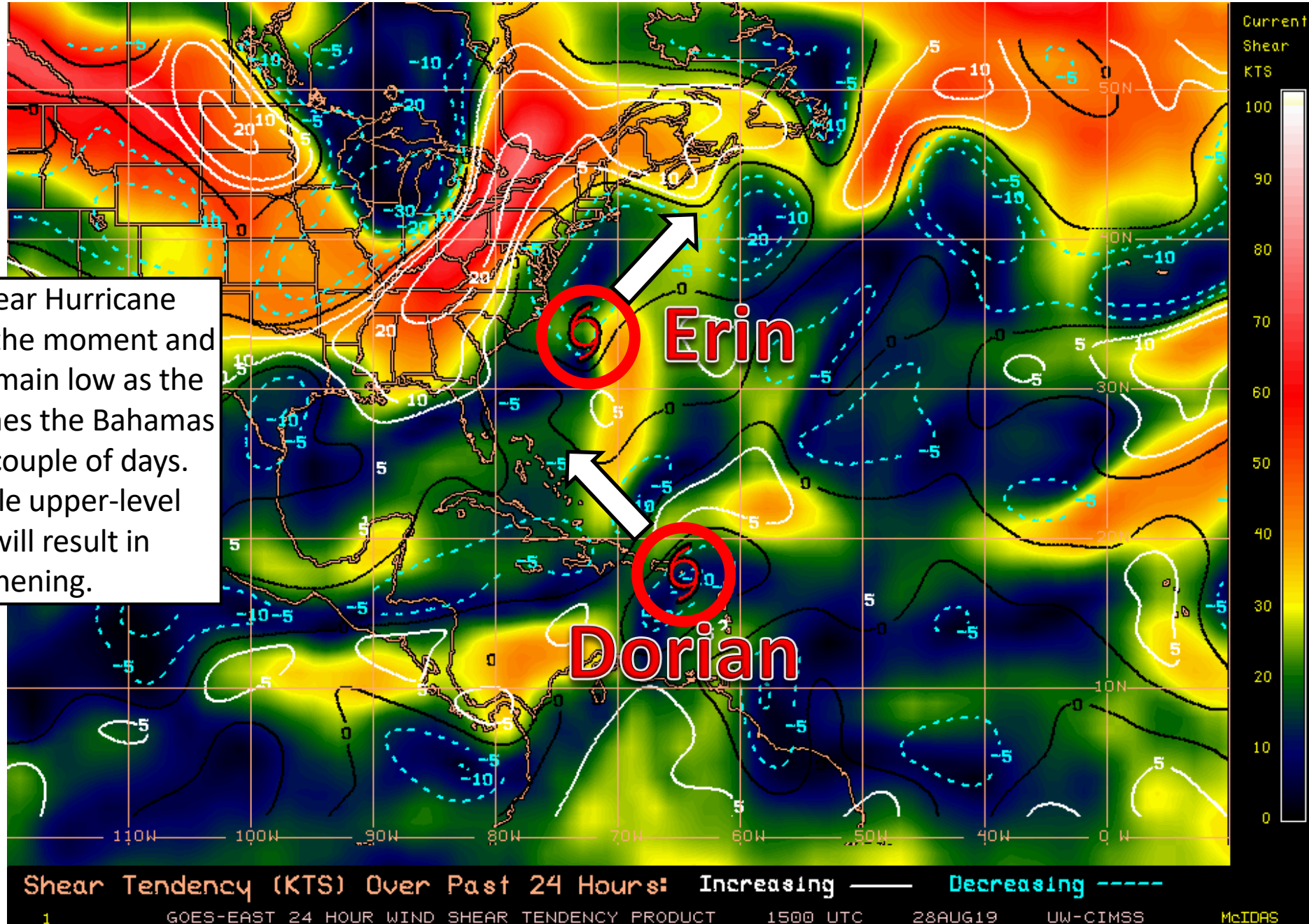
Tropical Depression Erin, well offshore of the North Carolina Coast, will move northeastward ahead of a cold front (pink line).

Hurricane Dorian continues northwestward around the southern edge of a large Atlantic high pressure system.



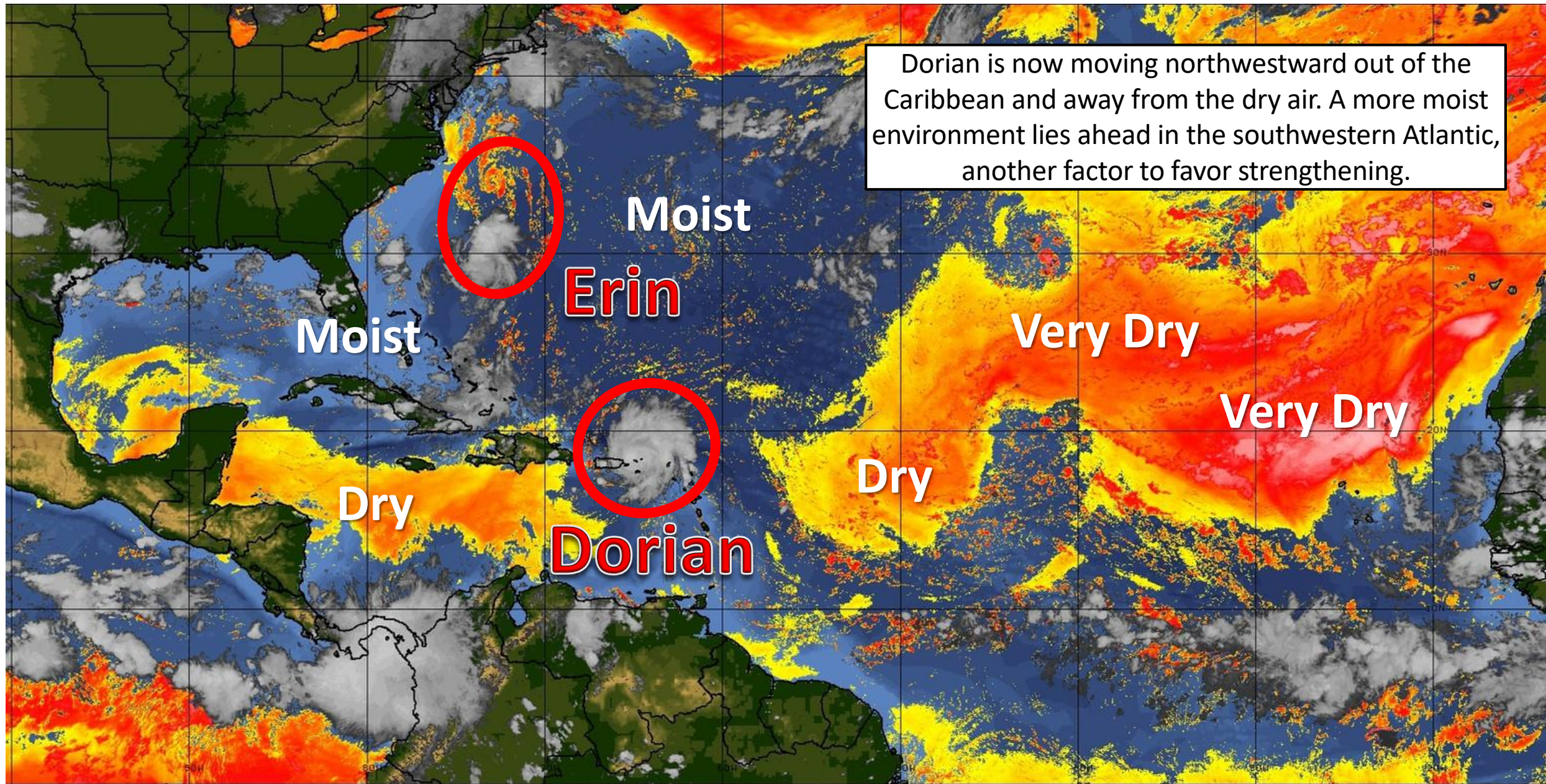


# Wind Shear (shaded) and Wind Shear Tendencies (contoured)





# Dry Air & Saharan Dust



Dorian is now moving northwestward out of the Caribbean and away from the dry air. A more moist environment lies ahead in the southwestern Atlantic, another factor to favor strengthening.

LESS <----- DRY AIR (LOW/MID-LEVEL) AND/OR DUSTY SAL AIRMASS -----> MORE

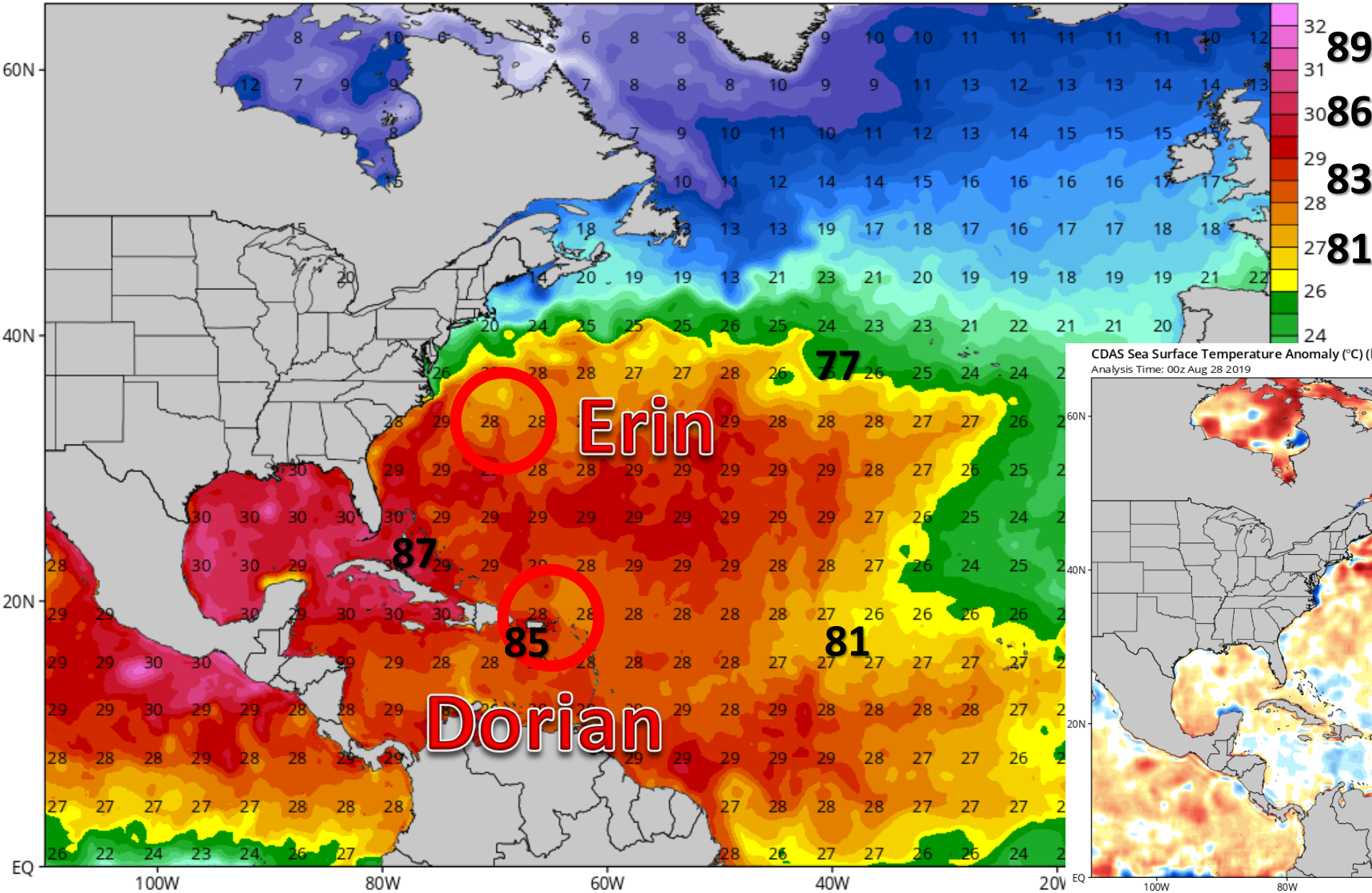


# North Atlantic Sea Surface Temperatures and Anomalies

CDAS Sea Surface Temperature (°C)

Analysis Time: 00z Aug 28 2019

TROPICALTIDBITS.COM

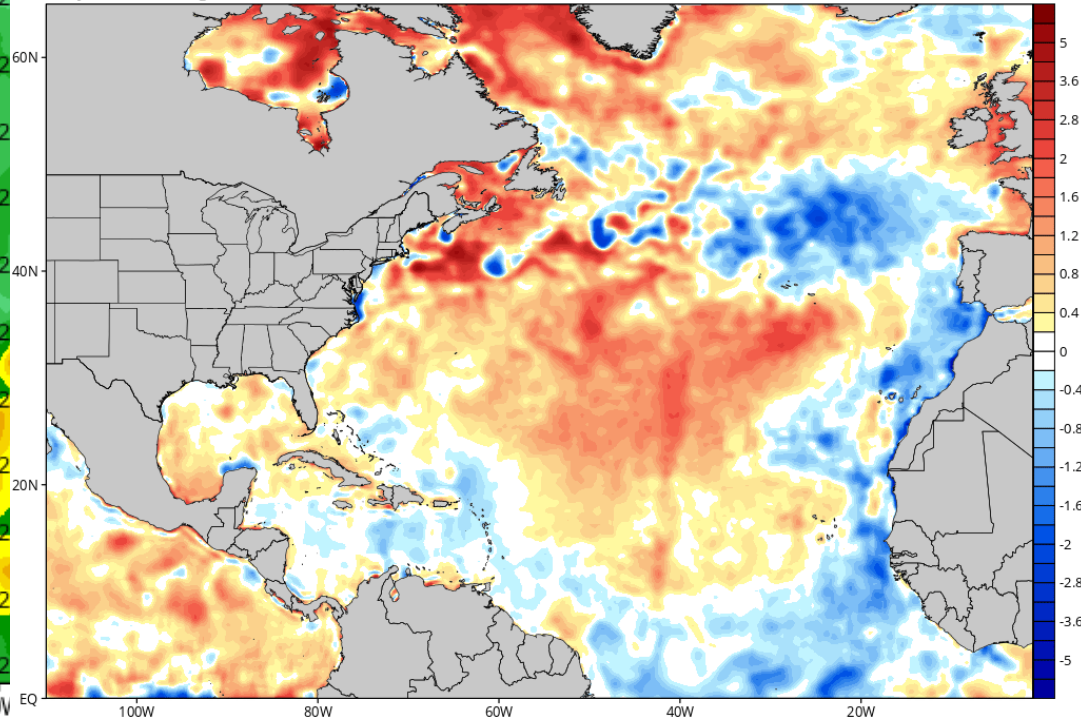


Water temperatures ahead of Dorian are plenty warm enough to support intensification. Water temperatures will be warming as Dorian travels northwest. Temperatures are near normal for this time of year in the Caribbean & Bahamas.

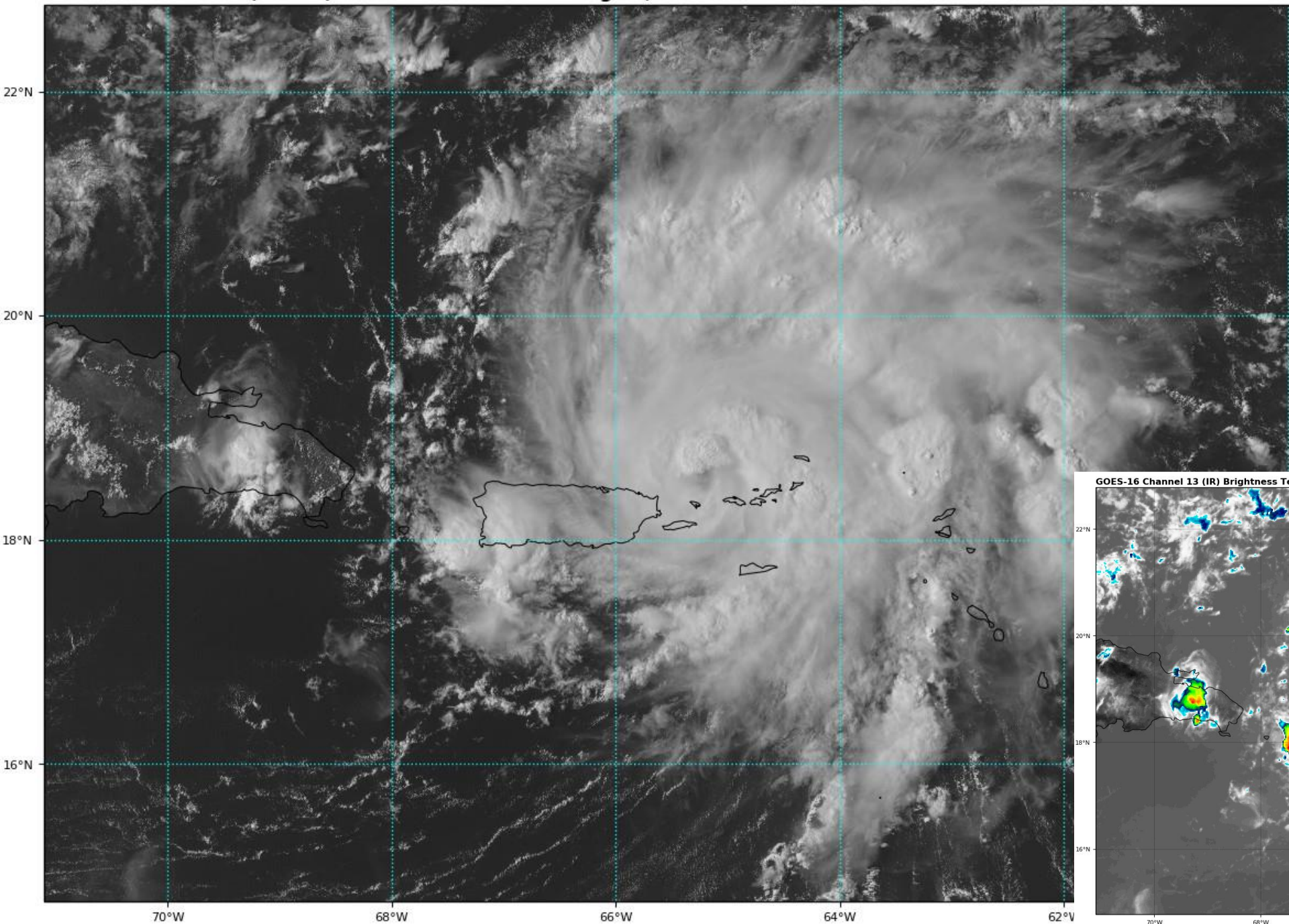
CDAS Sea Surface Temperature Anomaly (°C) (based on CFSR 1981-2010 Climatology)

Analysis Time: 00z Aug 28 2019

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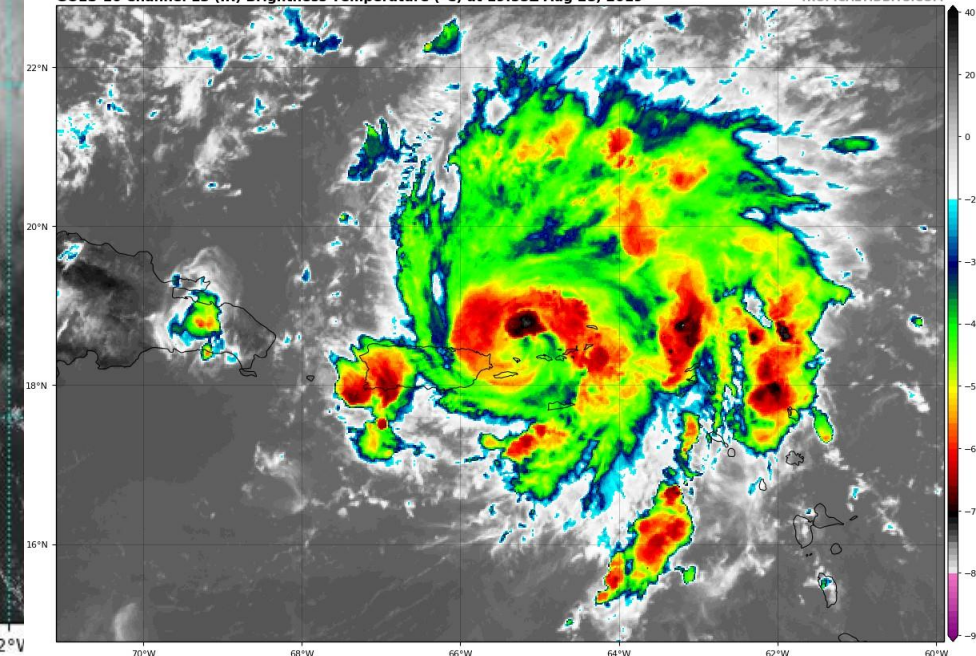


# Hurricane Dorian Satellite Image

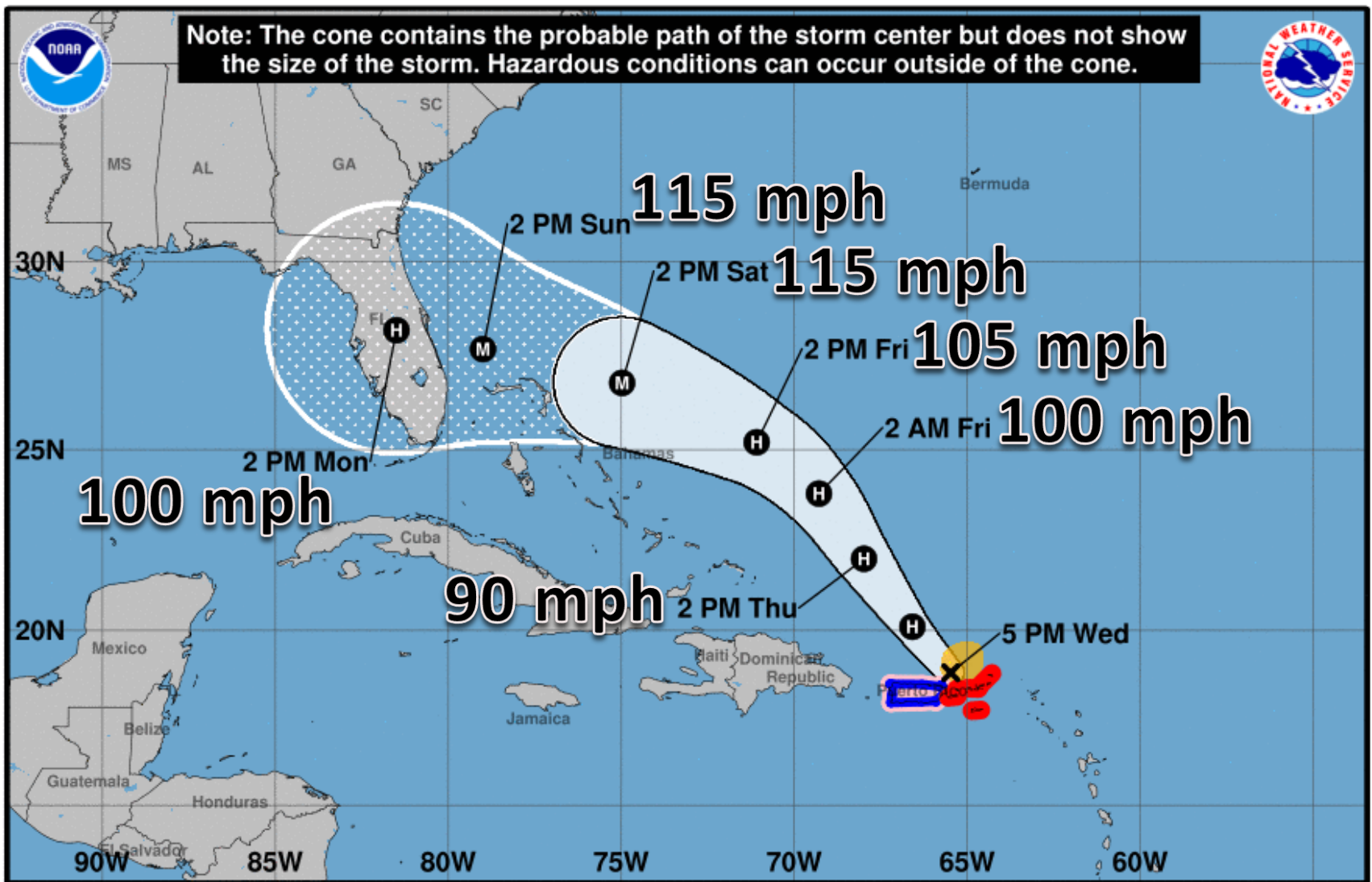
Dorian has continued to organize today and an eye is now becoming visible. Dorian is symmetric with numerous outer bands.

GOES-16 Channel 13 (IR) Brightness Temperature (°C) at 19:55Z Aug 28, 2019

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# Hurricane Dorian Forecast Track

Hurricane Dorian, located 45 miles northwest of St. Thomas, continues to move northwest at 14 mph. Maximum sustained winds have increased to 80 mph.

With less land interaction and favorable environmental conditions, continual strengthening is forecast over the next few days.

Dorian is forecast to be at **MAJOR HURRICANE** strength as it approaches Florida on Sunday Night/Monday Morning.

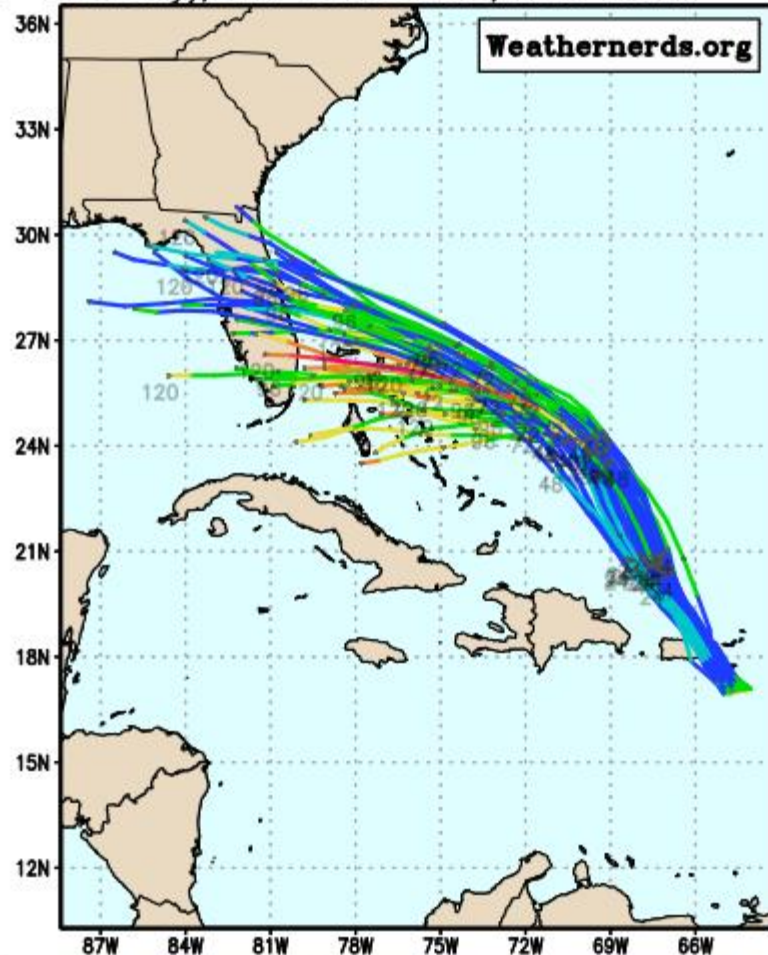
<b>Hurricane Dorian</b> Wednesday August 28, 2019 5 PM AST Advisory 18 NWS National Hurricane Center	<b>Current information: x</b> Center location 18.8 N 65.5 W Maximum sustained wind 80 mph Movement NW at 14 mph	<b>Forecast positions:</b> ● Tropical Cyclone    ○ Post/Potential TC Sustained winds:    D < 39 mph S 39-73 mph    H 74-110 mph    M > 110 mph	
<b>Potential track area:</b> Day 1-3    Day 4-5	<b>Watches:</b> Hurricane    Trop Stm	<b>Warnings:</b> Hurricane    Trop Stm	<b>Current wind extent:</b> Hurricane    Trop Stm



# Current Forecast Ensemble Model Guidance

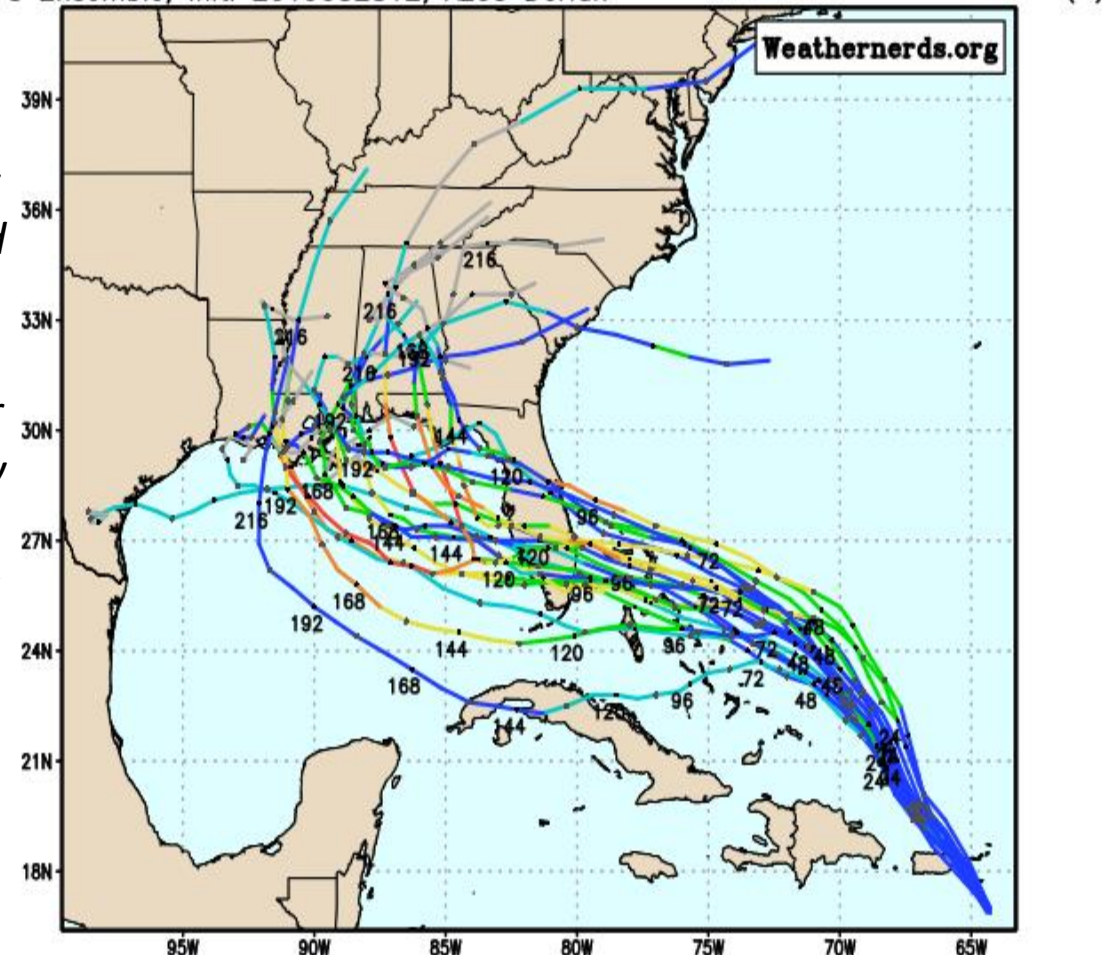
There is a wide spread in solutions for the track of Dorian later this week. With Dorian missing the highest mountains in the Caribbean, a major hurricane is now forecast in the Bahamas.

ECMWF Ens. (0–120h only), init: 2019082812, AL05 Dorian color = max wind (kt)



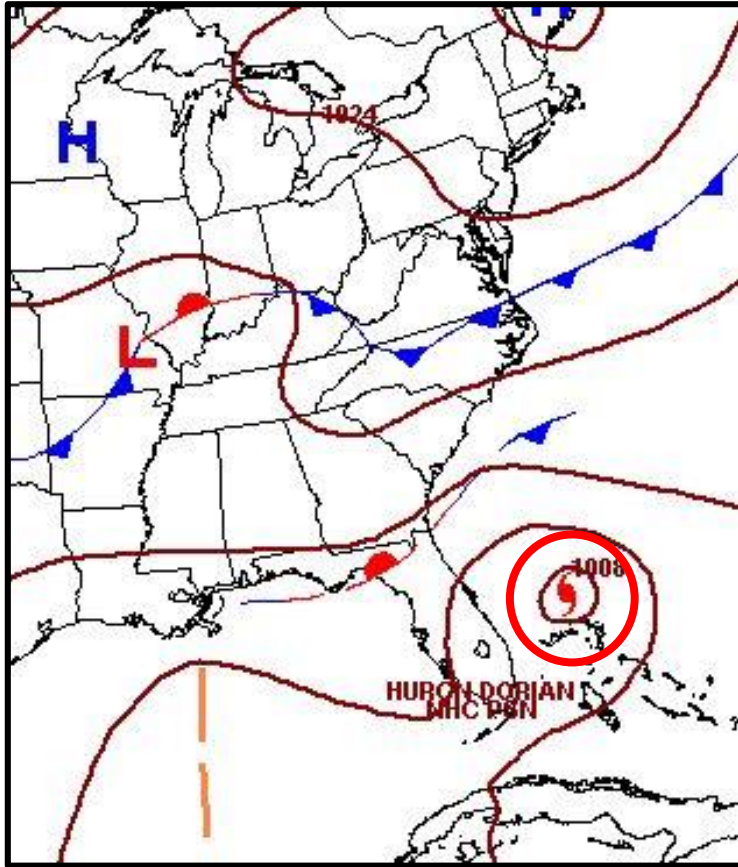
*If Dorian impacts North-Central or Northeast Florida, it will move inland and dissipate. If the system makes landfall in Central or South Florida, it may re-emerge over the Gulf of Mexico early next week.*

GFS Ensemble, init: 2019082812, AL05 Dorian color = max wind (kt)

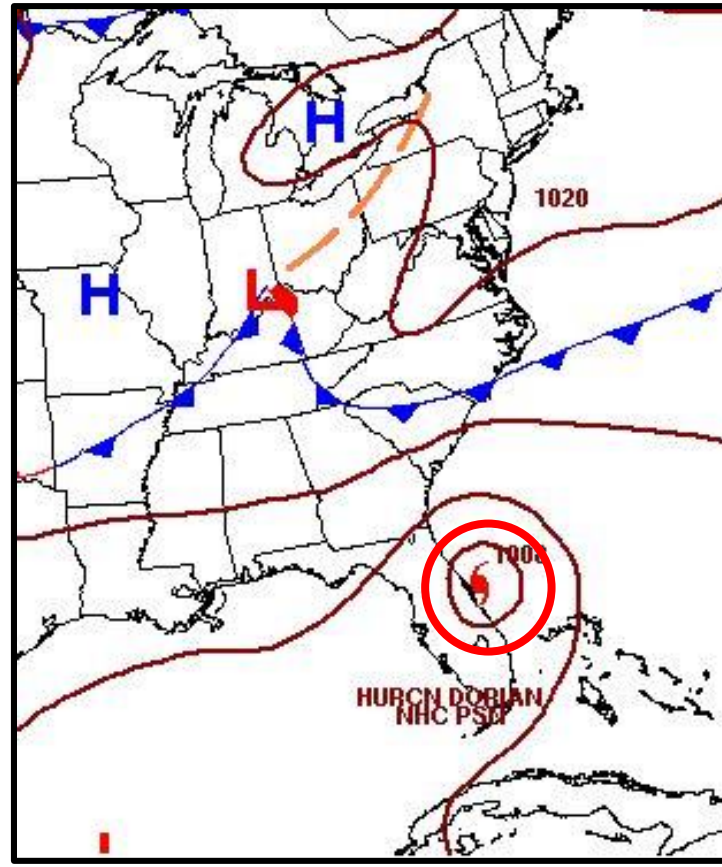




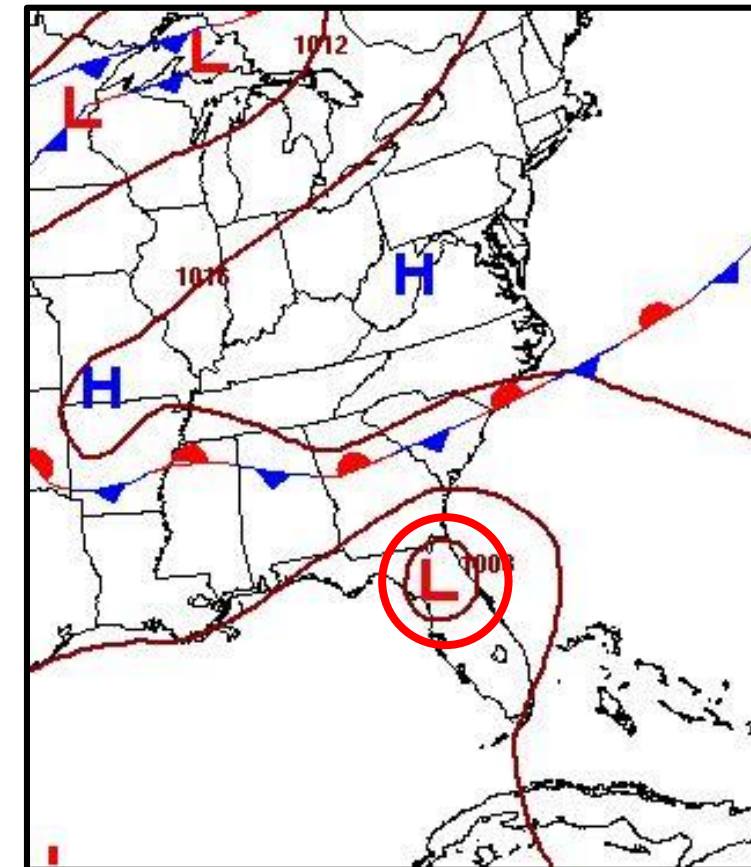
## Forecast Weather Maps with Fronts



**Sunday AM**



**Monday AM**



**Tuesday AM**

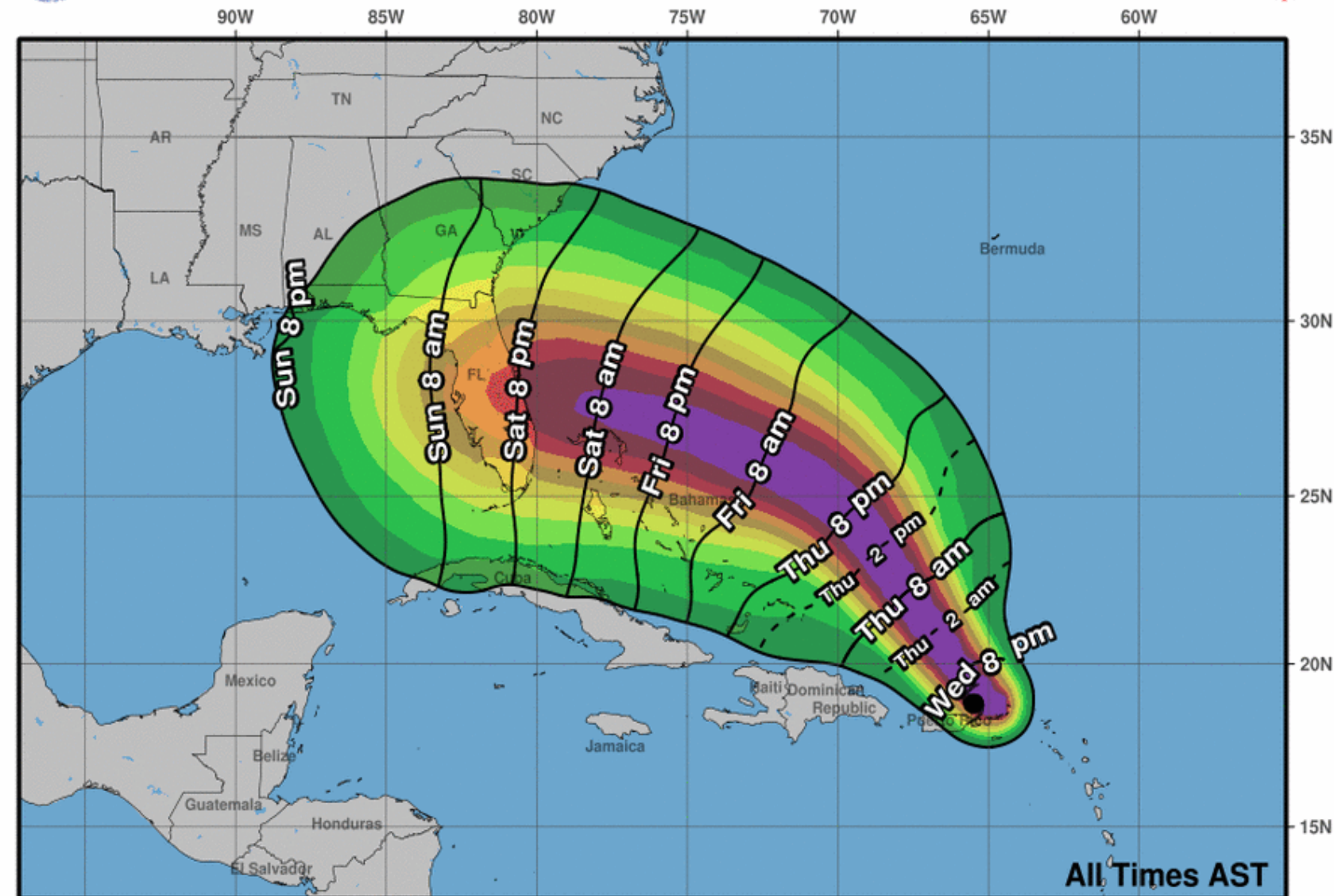
Hurricane Dorian will track north of or through the Bahamas as a hurricane on Friday and Saturday, approaching the Florida Peninsula Sunday night and Monday. Dorian may then move into the eastern Gulf of Mexico by Labor Day, or dissipate inland over Northeast Florida and Georgia.

**Regardless of the exact track of Dorian, increased rain chances and heavy rainfall are expected statewide for Labor Day weekend.**





# Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



There are no watches or warnings for Florida, but could be issued as early as Thursday.

Chance of TROPICAL STORM FORCE WINDS (>39 mph) have increased today for all of Florida:

Jacksonville: 41%

Orlando: 71%

Cocoa Beach: 84%

West Palm Beach: 76%

Ft. Lauderdale: 65%

Miami: 48%

Naples: 48%

Marathon: 33%

Tallahassee: 24%

Panama City: 22%

All Times AST

Hurricane Dorian  
Wed. Aug. 28, 2019 5 pm AST  
Advisory 18

Storm Location &  
Wind Speed

- < 34 kt (39 mph)
- 34-63 kt (39-73 mph)
- ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds

5	10	20	30	40	50	60	70	80	90	100 %
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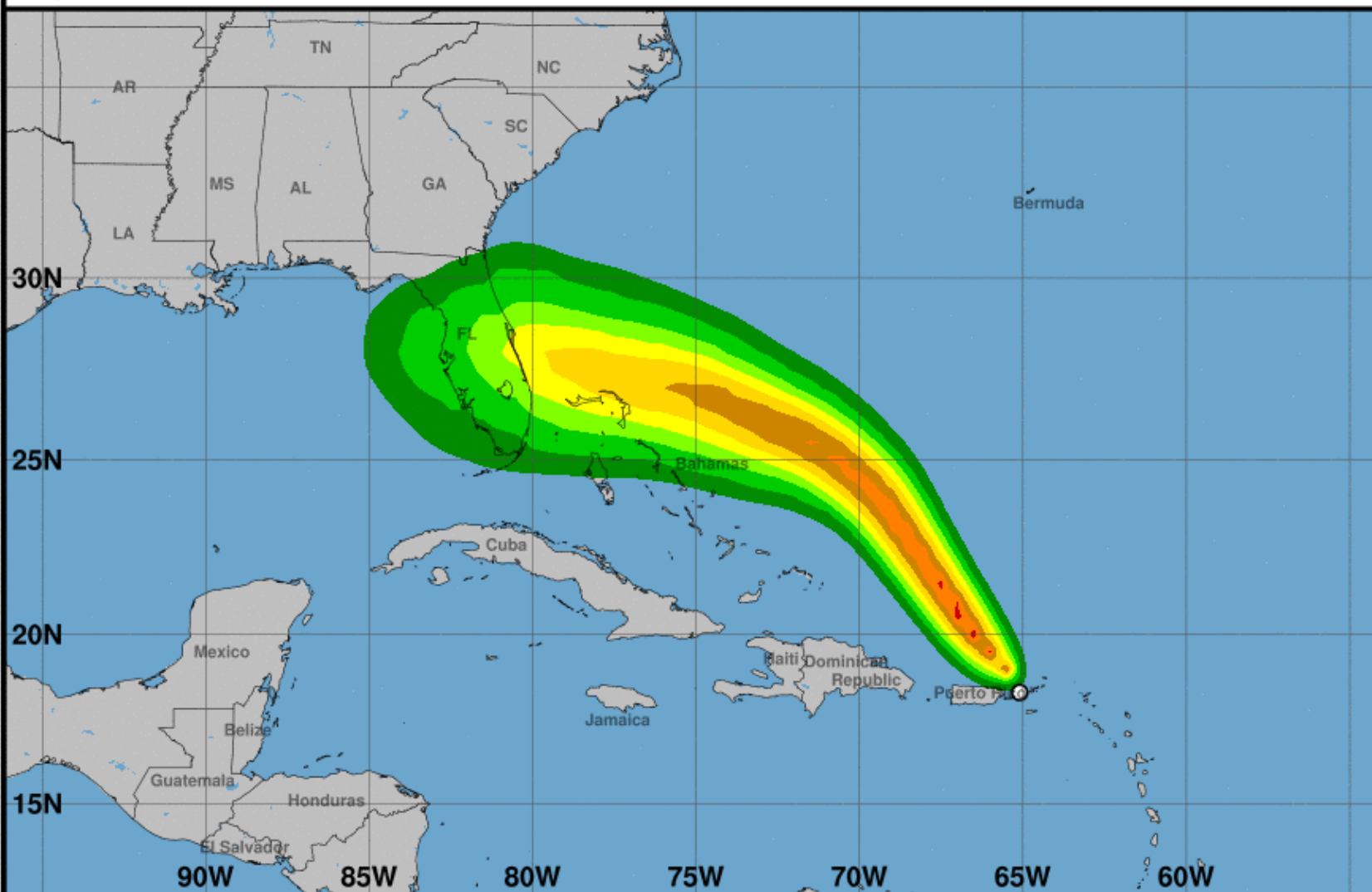
Chances in Miami and Jacksonville are similar!





## Hurricane-Force Wind Speed Probabilities (Preliminary)

For the 120 hours (5.0 days) from 2 PM AST WED AUG 28 to 2 PM AST MON SEP 02



Probability of hurricane-force winds (1-minute average  $\geq 74$  mph) from Hurricane Dorian

○ indicates Hurricane Dorian center location at 2 PM AST WED AUG 28, 2019 (Forecast/Advisory #18)



There are no watches or warnings for Florida, but could be issued as early as Thursday.

Chance of HURRICANE FORCE WINDS ( $>74$  mph) have increased today for all of Florida:

Jacksonville: 5%

Orlando: 27%

Cocoa Beach: 35%

West Palm Beach: 26%

Ft. Lauderdale: 17%

Miami: 10%

Naples: 8%

Marathon: 4%

Tallahassee: 2%

Panama City: 2%





# Key Messages for Hurricane Dorian

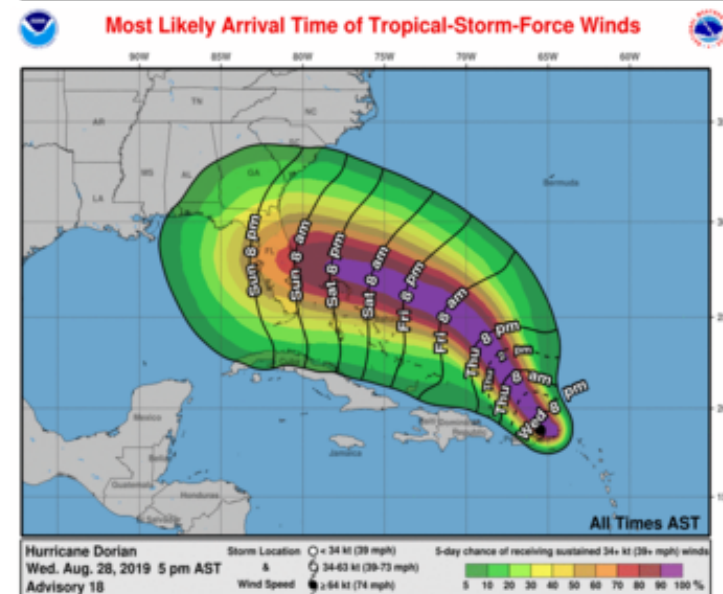
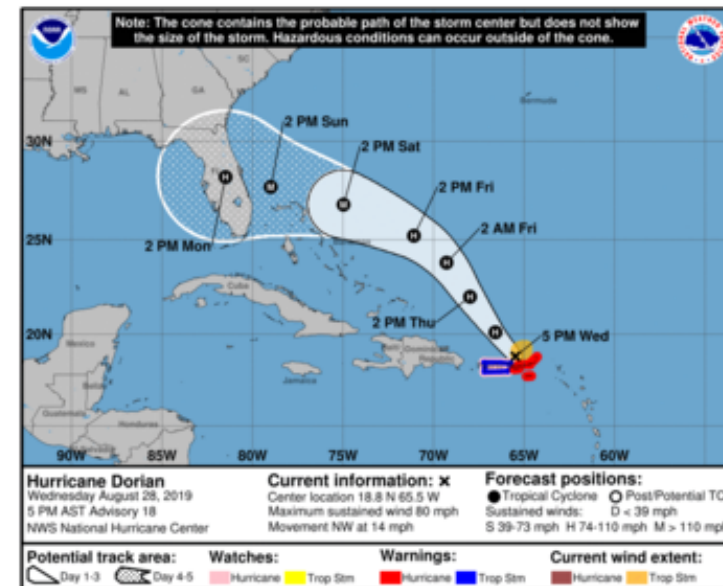
Advisory 18: 5:00 PM AST Wed Aug 28, 2019



1. Dangerous winds will continue in the Virgin Islands, Culebra, Vieques, and portions of Puerto Rico during the next few hours. Heavy rainfall over portions of Puerto Rico and the Virgin Islands could produce flash flooding through Thursday morning.

2. The risk of dangerous storm surge and hurricane-force winds later this week and this weekend continues to increase in the central and northwestern Bahamas and along the Florida east coast, although it is too soon to determine where these hazards will occur. Residents in these areas should ensure they have their hurricane plan in place and not focus on the exact forecast track of Dorian's center.

3. Heavy rains are expected to occur over portions of the Bahamas, Florida, and elsewhere in the southeastern United States later this week and into early next week.



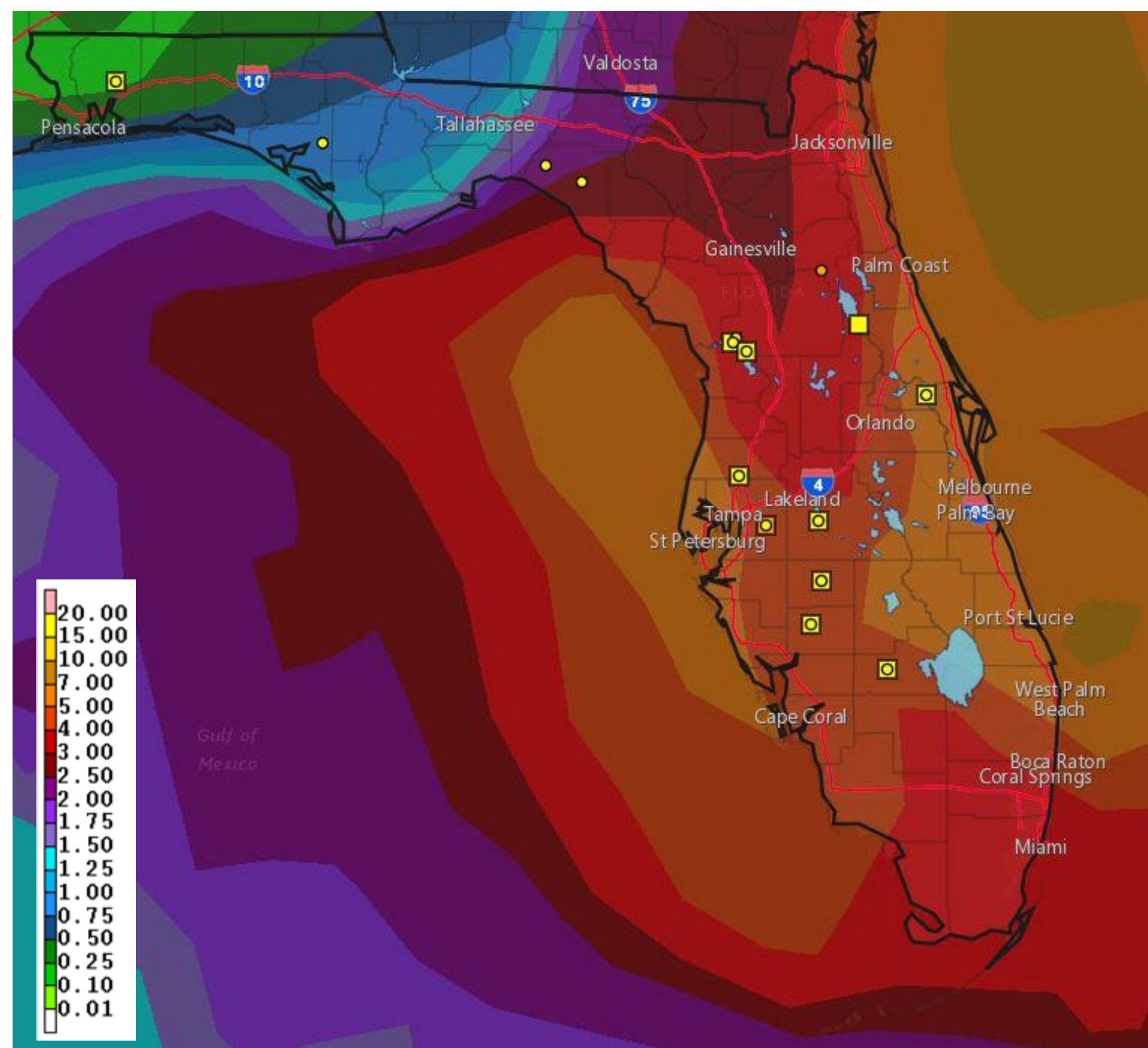
For more information go to [hurricanes.gov](https://hurricanes.gov)



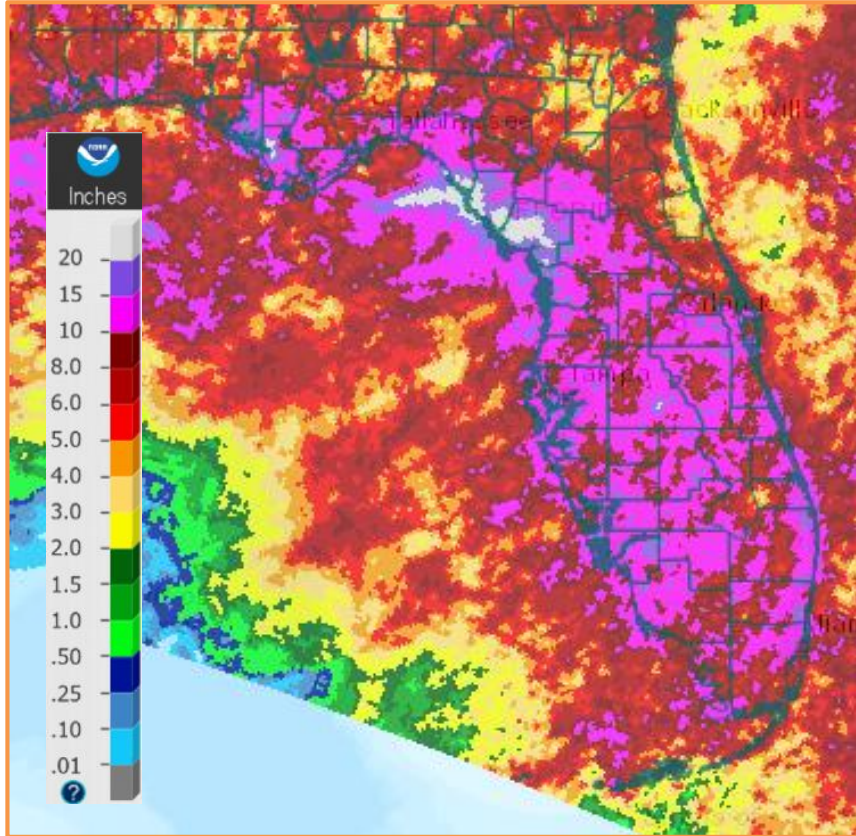
# Rainfall Totals Next 7 Days

*Given the recent stretch of wet weather, these rainfall amounts will create additional river flooding and areal flooding in urban and low-lying areas.*

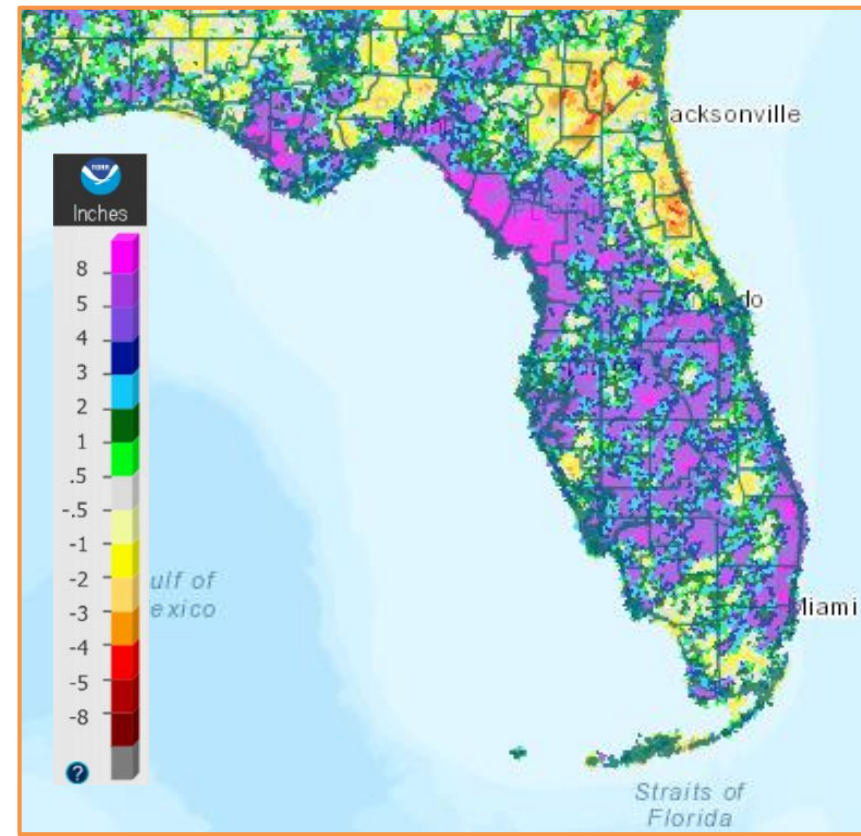
*These rainfall forecasts are track-dependent and will likely change with subsequent forecasts. **Wherever Dorian tracks, the heaviest rainfall totals will follow the track.** However, a widespread 5-8" of rain is expected across much of the state. Locally higher totals are possible, but it is too early to give specifics on rainfall totals.*



# Estimated 30 Day Rainfall



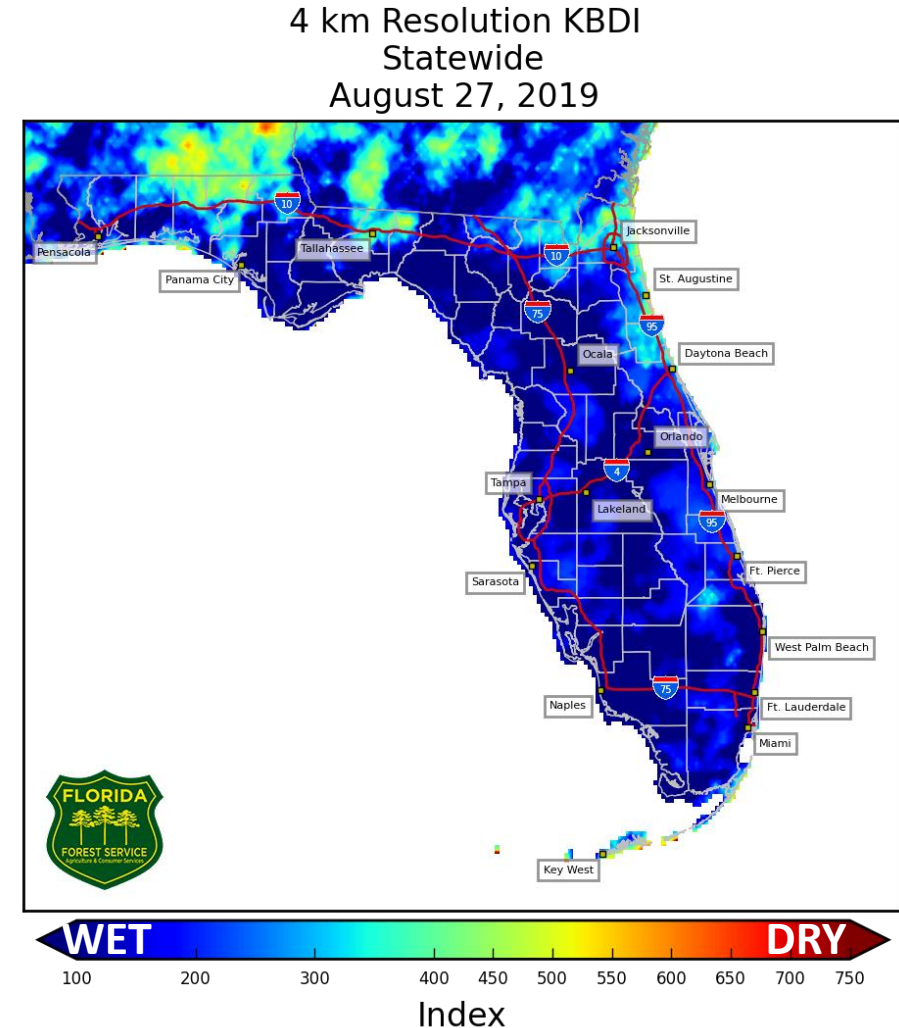
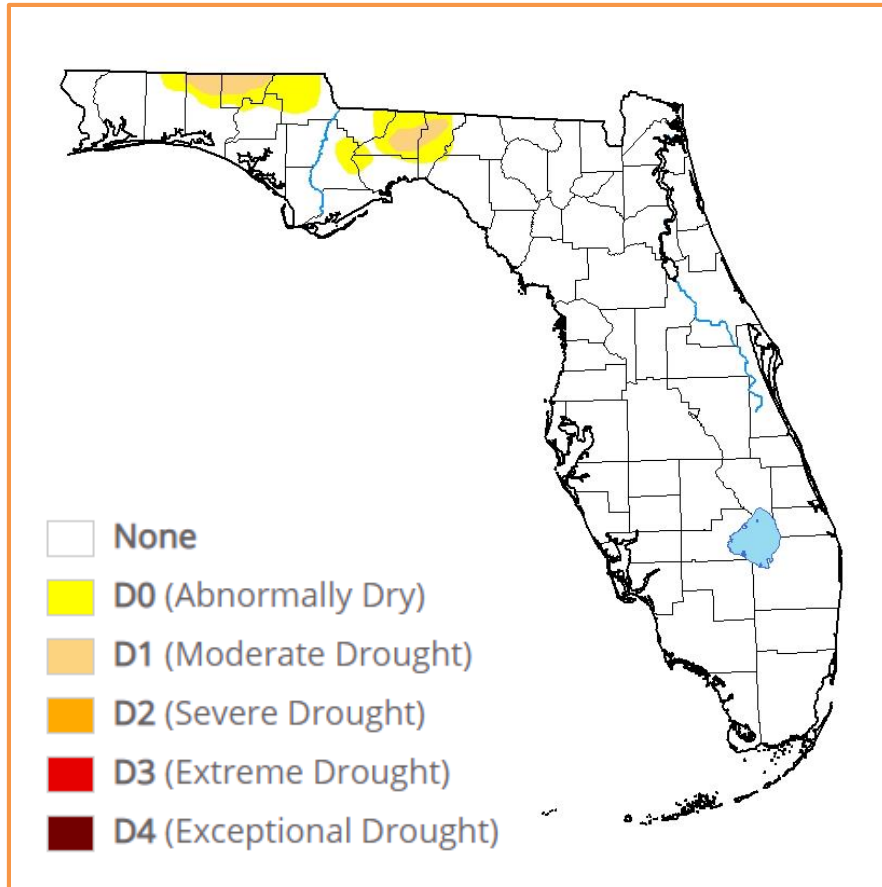
# 30 Day Rainfall Departures



Rainfall over the last 30 days has been very abundant across the Peninsula with most areas seeing 10-15 inches of rain. Localized areas in the Peninsula have seen 15-20"+, which is about 4-8"+ above average. This is also about 150-300% of normal rainfall. Rainfall in the Panhandle is about 1-3" below average for the last 30 days.



# Current Drought Monitor and Keetch-Byram Drought Index



Soils are very saturated across nearly all of the Peninsula, and the additional rainfall is not needed and may lead to additional flooding concerns. However, parts of the inland Panhandle and Big Bend are still in moderate drought, and the rainfall would be welcome in those areas.

# Current River Conditions

## River Gauges in Flood Stage

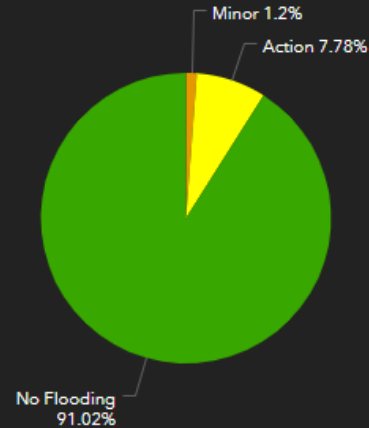
2

▲ 0 (last update)

Includes gauges in Minor, Moderate, & Major Flood Stage

Last update: a few seconds ago

## River Gauge Conditions by Status

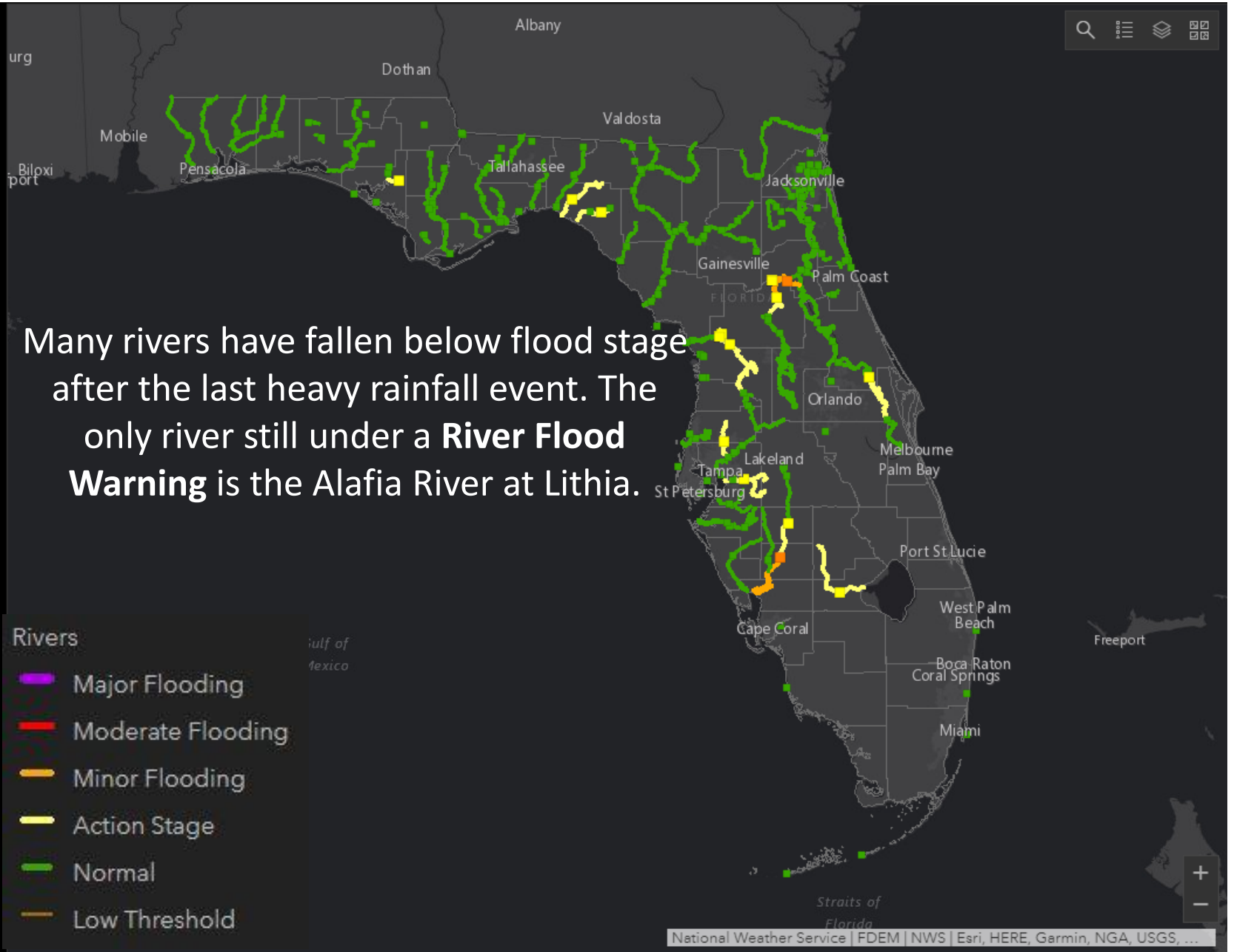


Last update: a few seconds ago

Many rivers have fallen below flood stage after the last heavy rainfall event. The only river still under a **River Flood Warning** is the Alafia River at Lithia.

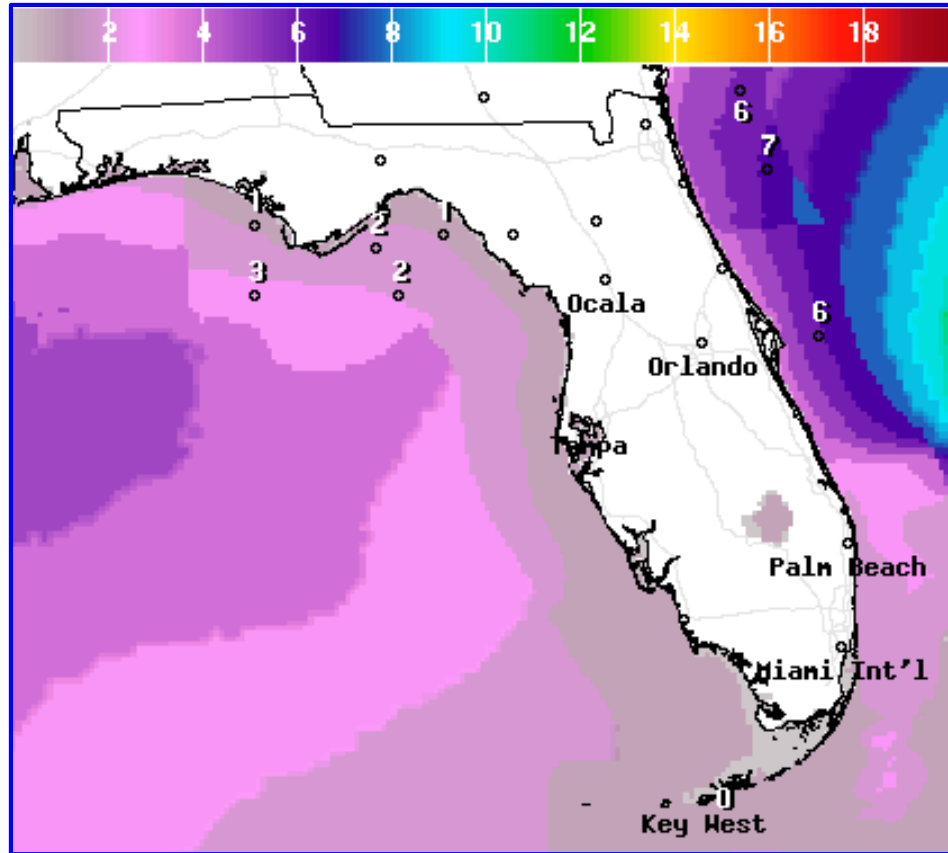
## Rivers

- Major Flooding
- Moderate Flooding
- Minor Flooding
- Action Stage
- Normal
- Low Threshold

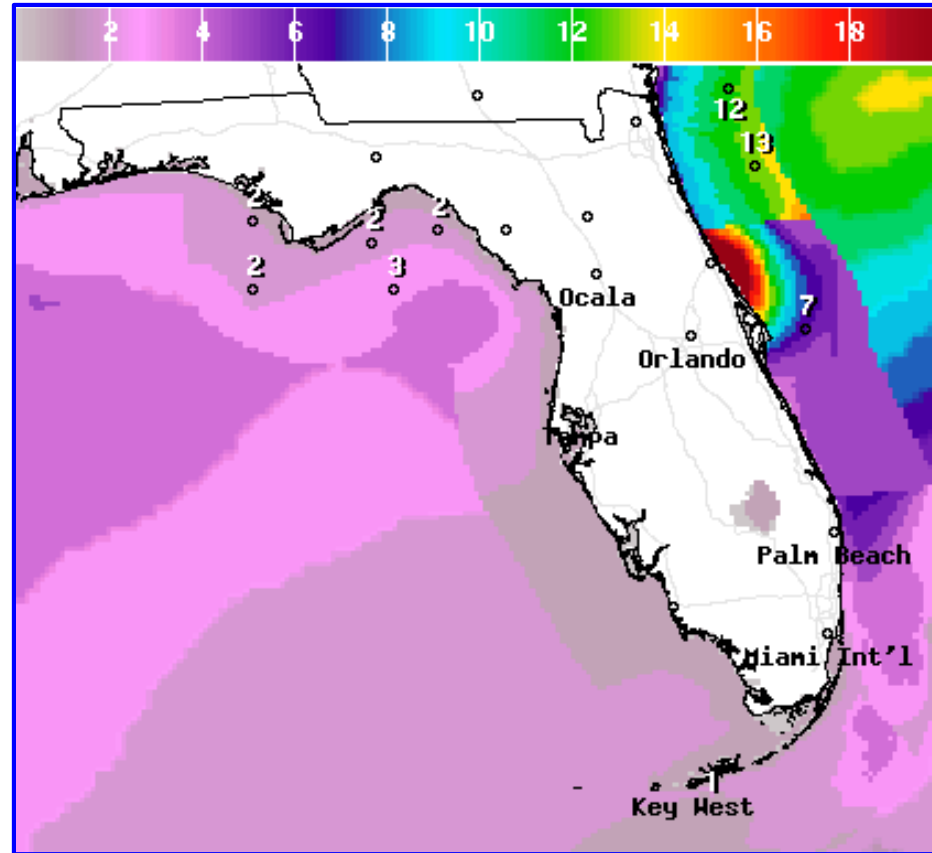




# Forecast Wave Heights This Weekend

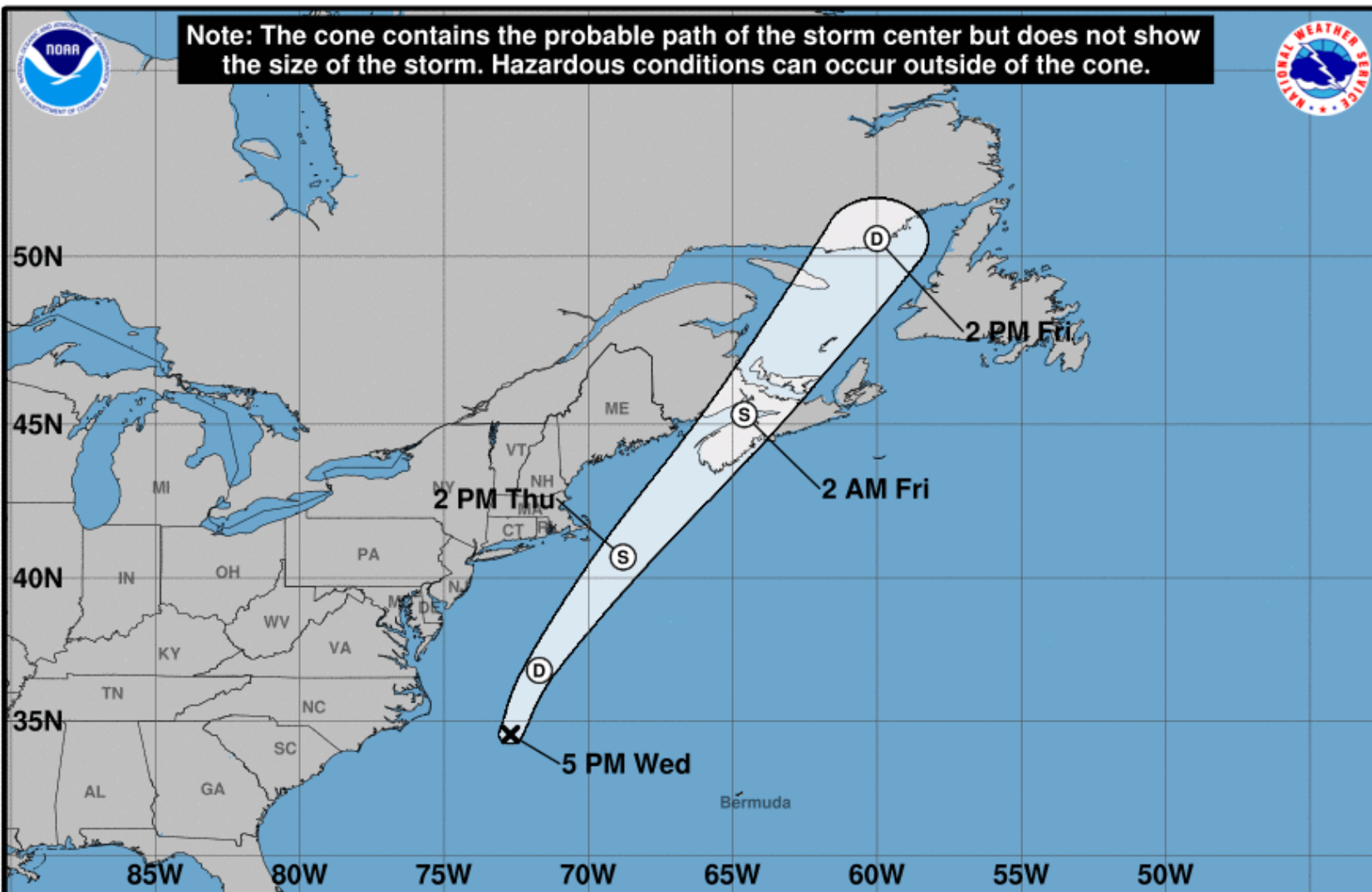


**Saturday**



**Sunday**

**Dangerous rip currents are expected at all East Coast beaches this weekend into early next week.** Additionally, with the new moon, tides will already be running above normal along the East Coast this week, which could result in minor flooding alone. Additional water rises could cause more flooding.



# Tropical Depression Erin Forecast Track

Tropical Depression Erin is forecast to begin accelerating northeast into southeastern Canada.

**This system poses no threat to Florida.**

## Tropical Depression Erin

Wednesday August 28, 2019  
5 PM EDT Advisory 9  
NWS National Hurricane Center

## Current information: X

Center location 34.5 N 72.7 W  
Maximum sustained wind 35 mph  
Movement N at 13 mph

## Forecast positions:

● Tropical Cyclone ○ Post/Potential TC  
Sustained winds: D < 39 mph  
S 39-73 mph H 74-110 mph M > 110 mph

## Potential track area:

Day 1-3 Day 4-5

## Watches:

Hurricane Trop Stm

## Warnings:

Hurricane Trop Stm

## Current wind extent:

Hurricane Trop Stm



# Summary

## Hurricane Dorian

- As of the 5 PM ET advisory, Hurricane Dorian was located 45 miles northwest of St. Thomas and moving to the northwest at 14 mph. Maximum sustained winds have increased to 80 mph, which is a Category 1 Hurricane.
- Dorian has tracked further northeast than forecast, missing Hispaniola and Puerto Rico entirely and moving through the Virgin Islands. Dorian will continue moving northwestward over the next couple days before turning more west-northwestward or westward over the weekend.
- ***Conditions are favorable for continued organization and strengthening over the next few days.***
- Dorian is forecast to be a MAJOR HURRICANE as it approaches Florida on Sunday and Monday.
- The exact track is unknown after Day 4. The chances for a northeastward turn off the East Coast are decreasing. However, the odds for Dorian making it into the Gulf are increasing.
- Hurricane Hunters will continue to investigate the system regularly over the next few days.

## Tropical Depression Erin

- As of 5 PM ET, the center of Tropical Depression Erin is located about 165 miles east-southeast of Cape Hatteras, NC and moving to the north at 13 mph. Erin will become a post-tropical cyclone tonight.
- There are no areas being monitored for new tropical development over the next 5 days.

## Florida Outlook:

- Hurricane Dorian does not pose a threat to Florida until Saturday night, at the earliest.
- The entire Florida Peninsula, Northeast Florida, and the Big Bend are included in the 5-day forecast cone.
- There are no watches or warnings in effect, but tropical storm or hurricane watches could be issued as early as Thursday.
- Dorian is forecast to be a Major Hurricane (Category 3) as it approaches Florida on Sunday (Northeast Florida, Central Florida, and/or South Florida).
- After Sunday, Dorian could re-emerge over the eastern Gulf of Mexico should it track over Central or South Florida, or could move northward inland towards Georgia.
- The Rip Current Risk will be dangerously high for the holiday weekend at all Florida beaches.
  
- **Damaging winds, flash flooding, river flooding, storm surge, and isolated tornadoes are all possible later this weekend in the Florida Peninsula. However, it is still too early to give specifics on these threats.**
- **Confidence has increased in the intensity forecast this weekend, but the track is uncertain past this weekend.**
- **All locations in Florida should continue to monitor Dorian for possible impacts over the Labor Day Weekend.**

The next tropics packet will be issued Thursday morning. For the latest information on the tropics, please visit the National Hurricane Center website at [www.hurricanes.gov](http://www.hurricanes.gov). For the latest flood updates, see the latest products from your local National Weather Service, the [Southeast River Forecast Center](#), and the [Weather Prediction Center](#).





# TROPICAL UPDATE



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State Meteorological Support Unit

Florida Division of Emergency Management

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