



TROPICAL UPDATE



5:00 PM EDT

Saturday, August 14, 2021

Remnants of Fred &
Tropical Storm Grace

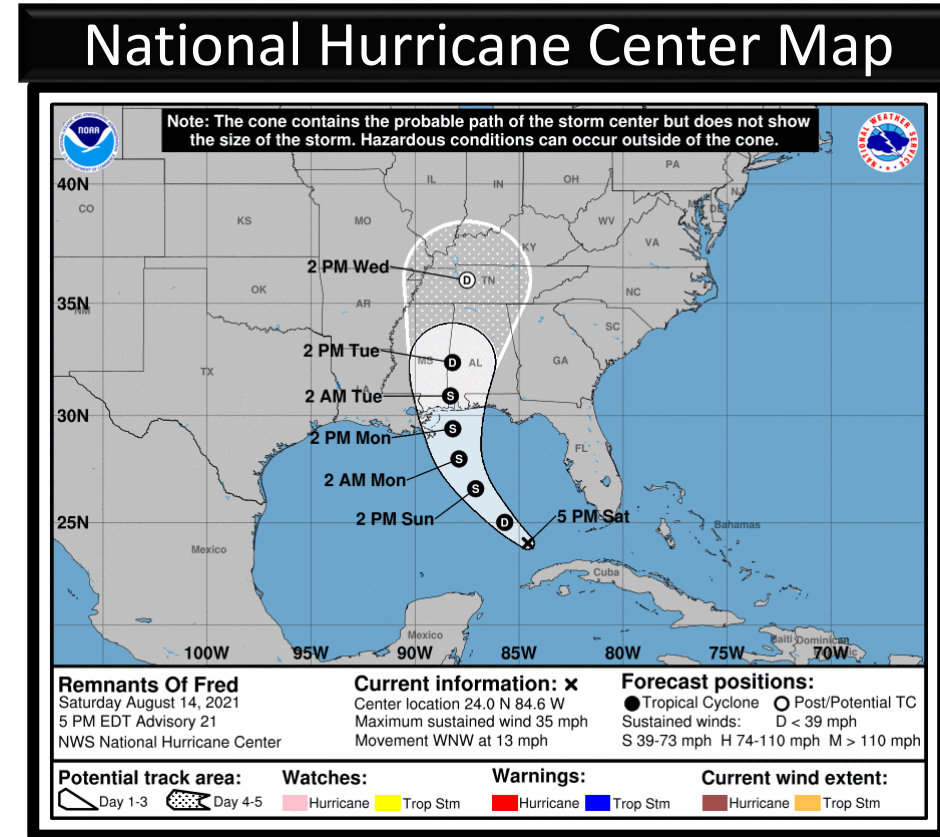
This update is intended for government and emergency response officials, and is provided for informational and situational awareness purposes only. Forecast conditions are subject to change based on a variety of environmental factors. For additional information, or for any life safety concerns with an 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.



Remnants of Fred

5 PM ET Saturday: Florida Threats & Changes Since Last Packet

	MINIMAL	Low	MODERATE	HIGH	EXTREME
WINDS					
STORM SURGE					
FLASH FLOODING					
TORNADOES					
	Low	MODERATE	HIGH		
RIP CURRENTS					



Overview/Recent Changes:

The track has shifted west again since this morning.

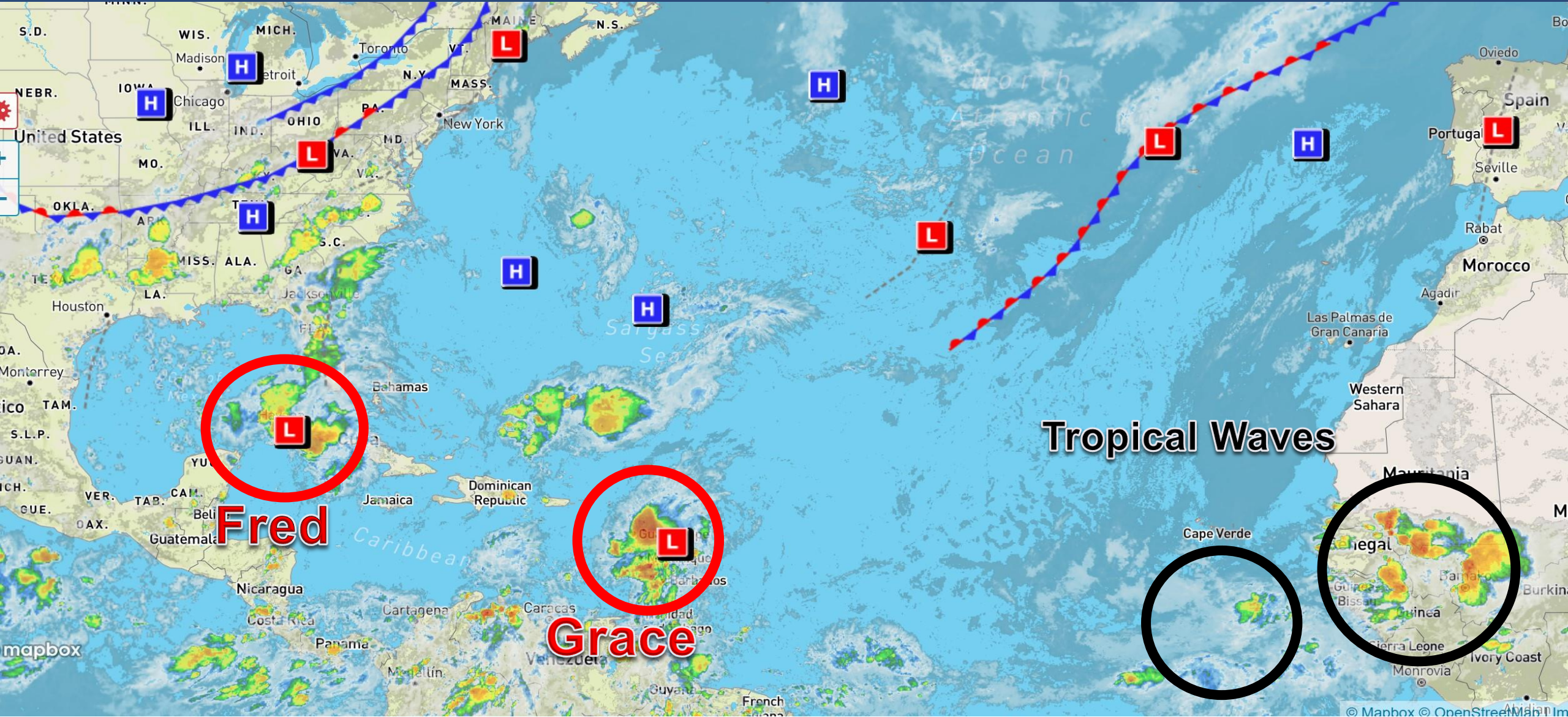
Fred remains weak and disorganized, and no longer has a closed circulation. However, NHC has continued advisories on Fred and still expects redevelopment into a tropical storm on Sunday and Monday in the Gulf of Mexico.

Tropical Storm Warnings cancelled for the Florida Keys. None in effect for Florida at this time.



Atlantic Basin Satellite Image

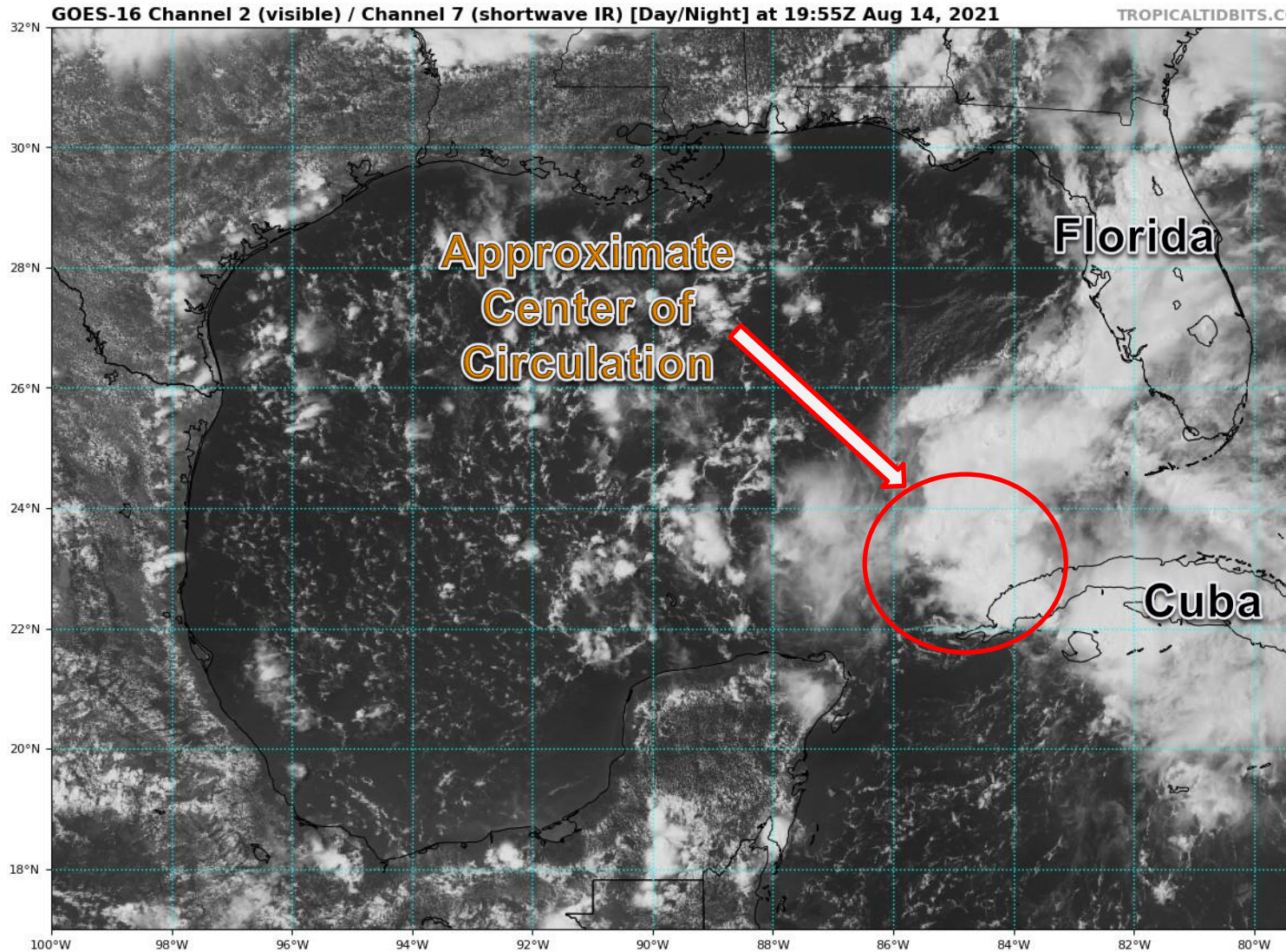
Chance of development: — None — Low — Medium — High



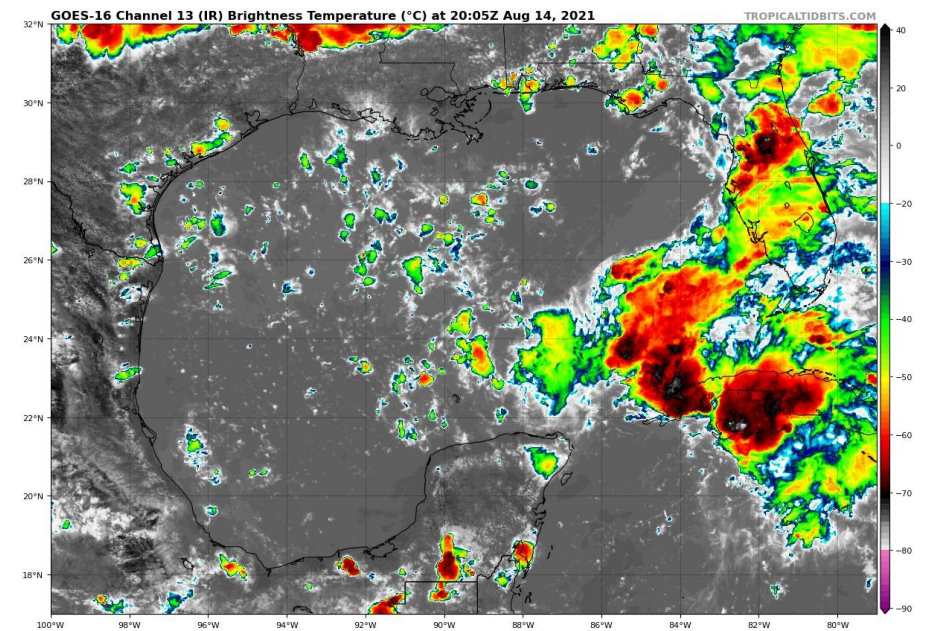


Satellite Imagery

Remnants of Fred



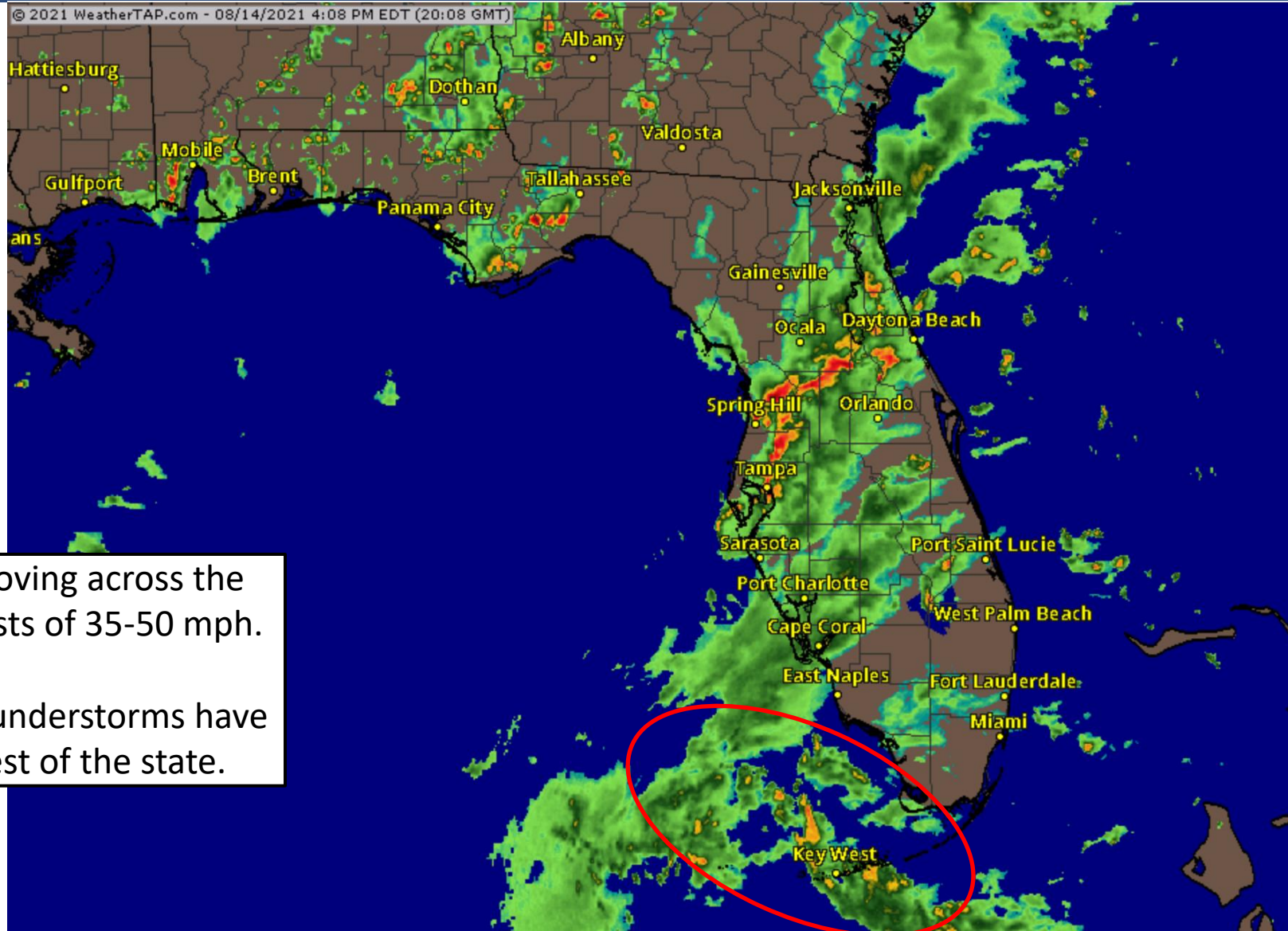
It is difficult to determine the exact center of Fred this afternoon, as a new center is expected to develop over the next 24 hours in the southeastern Gulf of Mexico.





Current Florida Radar

As of 4:30 PM ET



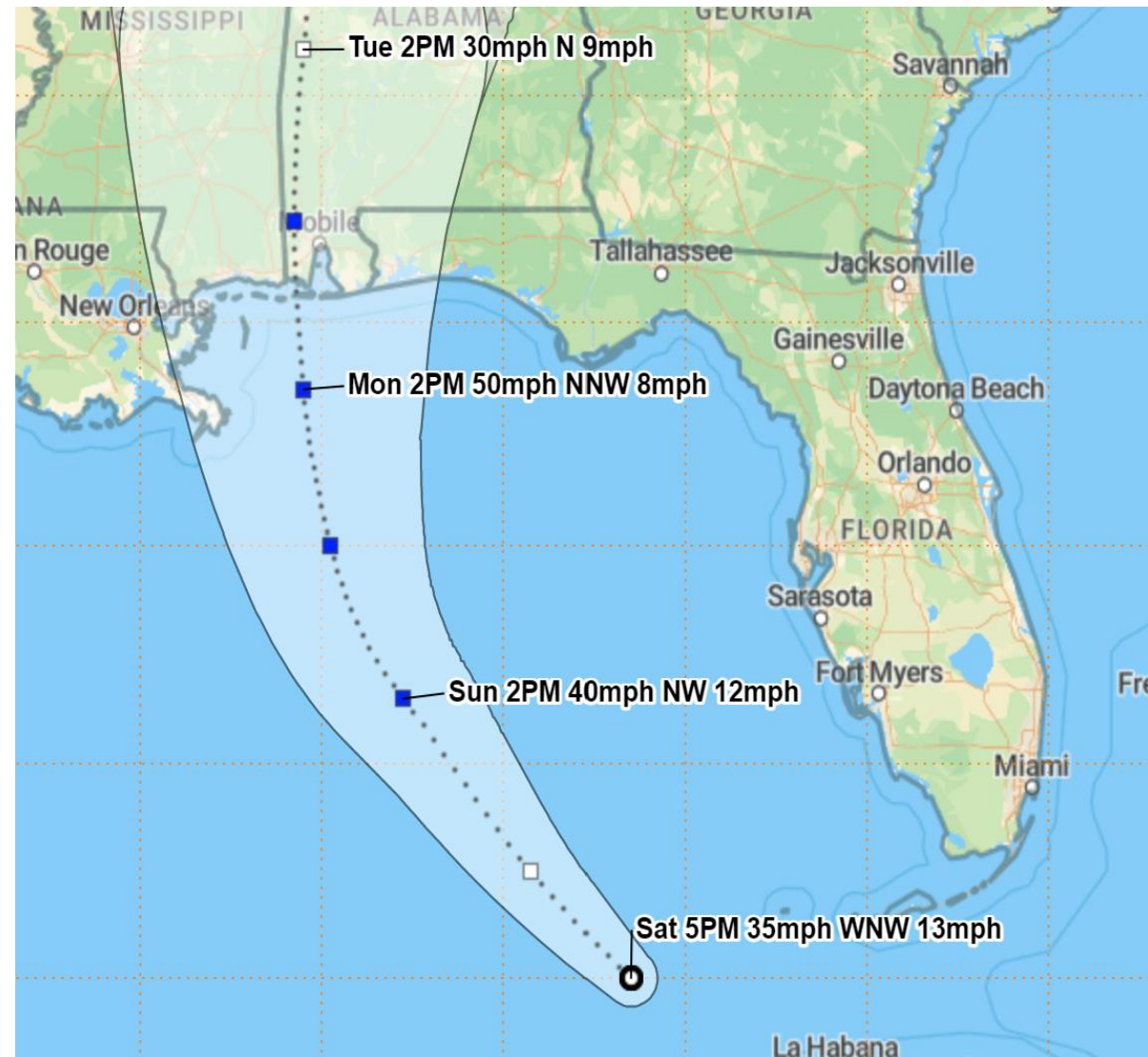
Occasional squalls are moving across the Florida Keys producing gusts of 35-50 mph.

Scattered summertime thunderstorms have developed across the rest of the state.



Official Forecast Track

From the National Hurricane Center



- The “center” of Fred is located off the northwest coast of Cuba, or about 500 miles south-southeast of Pensacola, Florida.
- Maximum sustained winds remain around 35 mph. Little change in strength is expected tonight. Slow strengthening is forecast, and Fred could become a tropical storm again on Sunday.
- Fred is moving west-northwest at 13 mph, and a more northwest to northward turn is expected by tomorrow.
- The track has shifted west again today. Fred is forecast to make landfall along the northern Gulf Coast from Mississippi to Alabama and the western Panhandle.
- Fred may be lopsided, with most of the impacts on the eastern side of the storm, extending well into the Florida Panhandle.

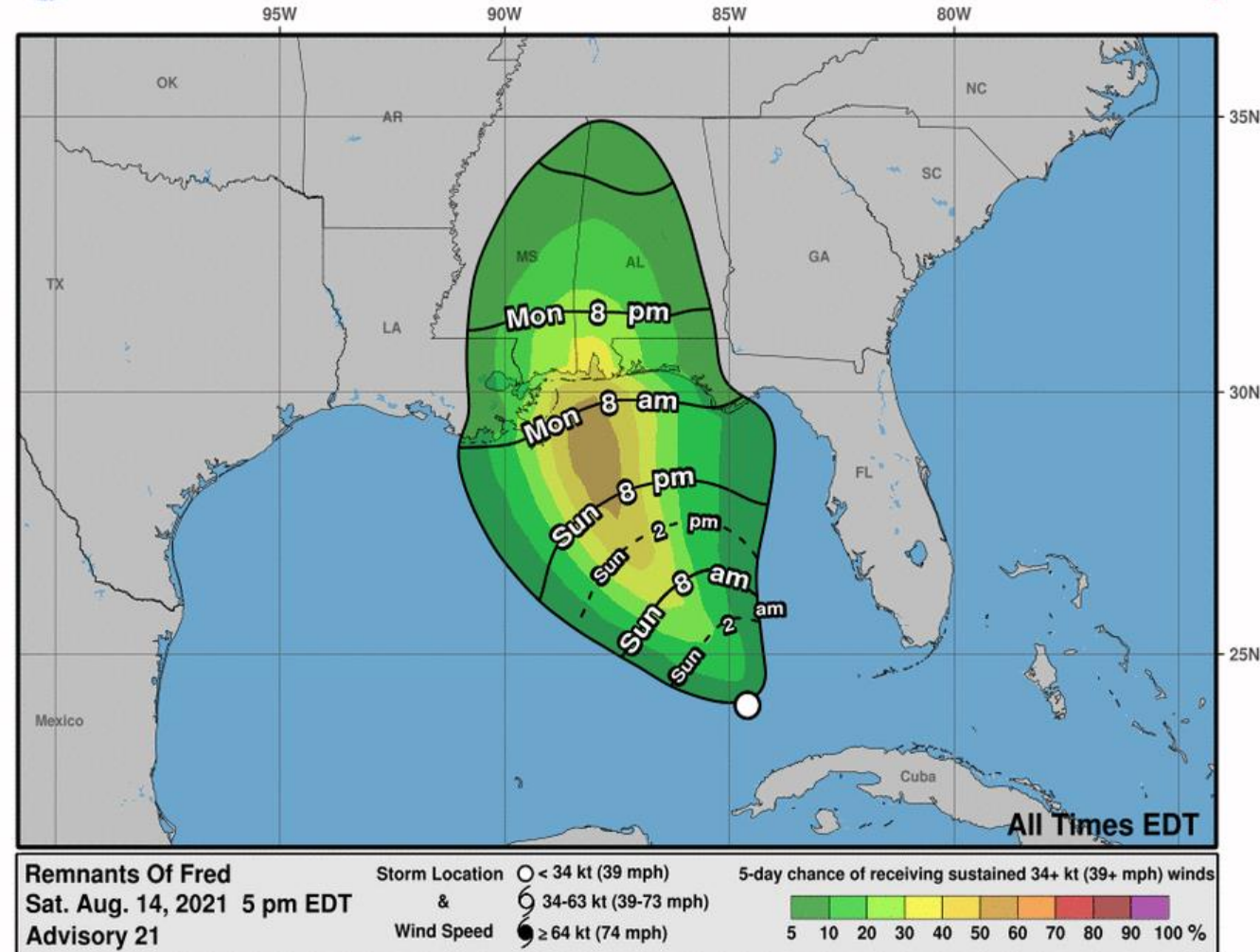


Time of Arrival & Wind Speed Probabilities

Most Likely Time of Arrival of Tropical Storm Force Winds (>39 mph)



Most Likely Arrival Time of Tropical-Storm-Force Winds



City	Chance for TS Winds	Changes Since Last Packet
Tallahassee	3%	-6%
Apalachicola	10%	-16%
Panama City	13%	-21%
Destin	15%	-13%
Pensacola	22%	-7%

The chances of tropical storm force winds across the Big Bend have dropped below 10% and decreased across the Panhandle as well. There is now a near 1 in 4 chance of tropical storm force winds for Pensacola.

Winds arrive on Monday morning in the Panhandle if they were to occur.



Active Tropical Watches/Warnings

- No tropical storm watches or warnings in effect!
- Watches may be issued tonight for parts of the Panhandle.

WATCH

Tropical storm and/or hurricane conditions are POSSIBLE in the "watch area"

Issued up to 48 hours in advance of the onset of tropical storm force winds

WARNING

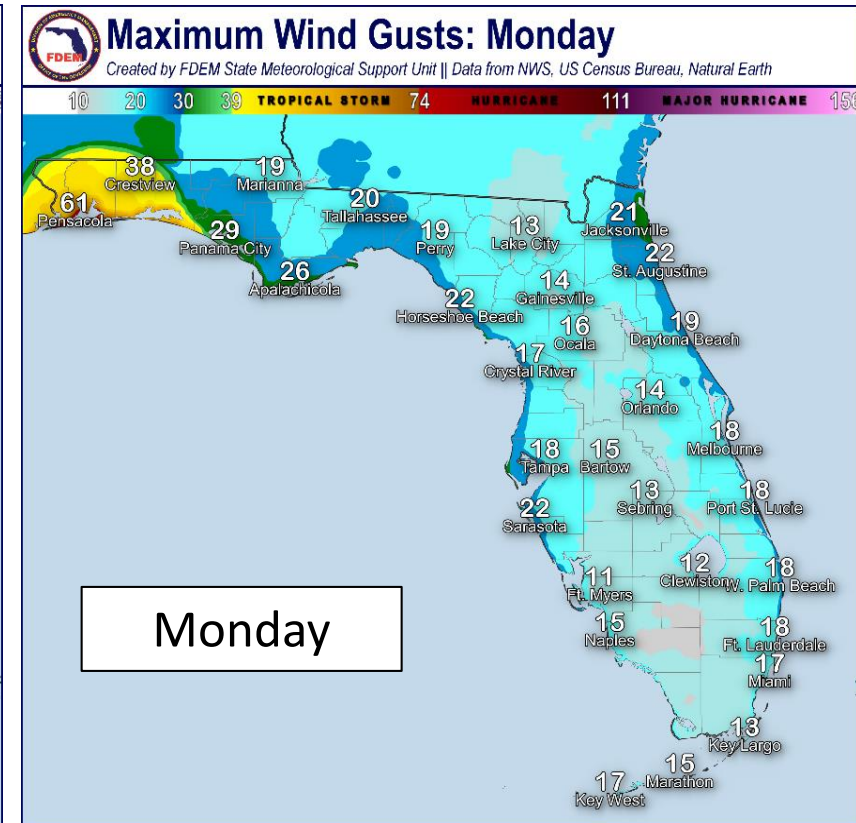
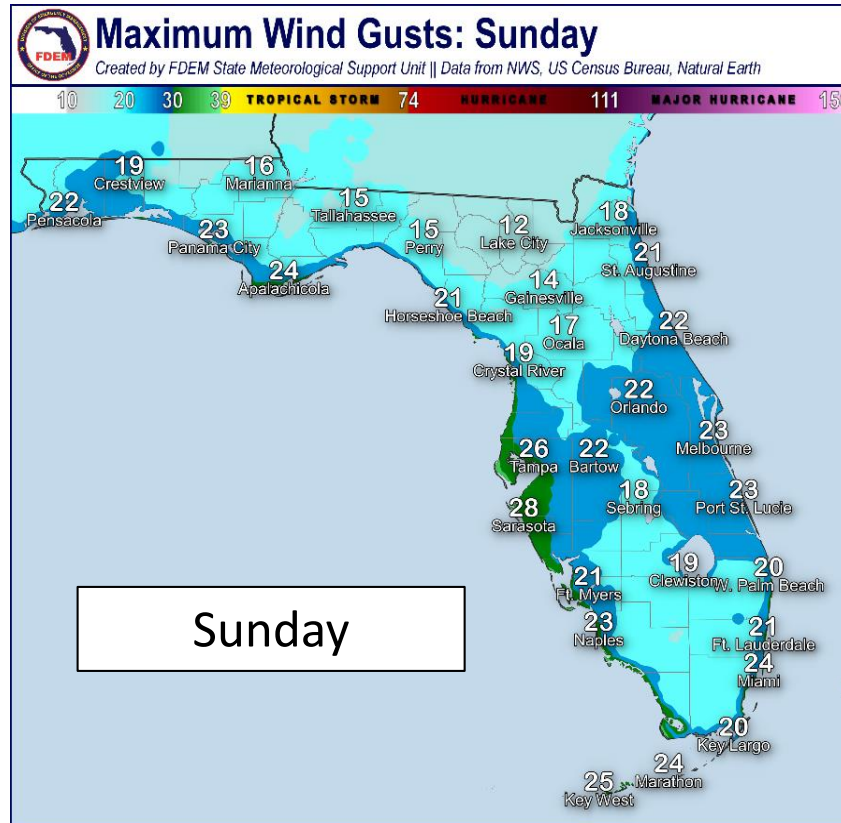
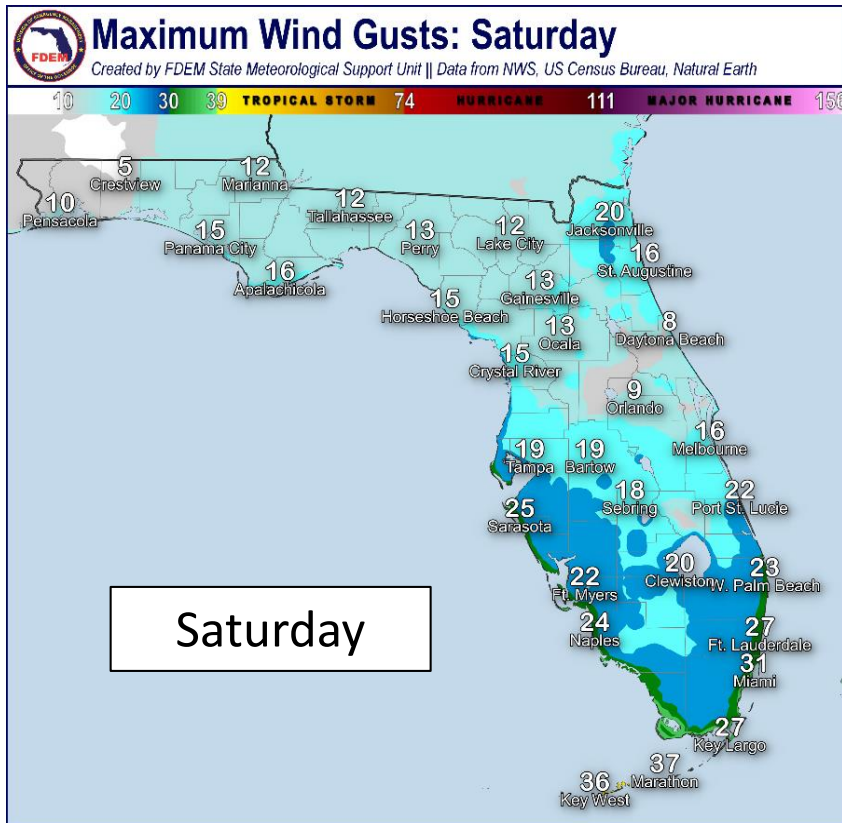
Tropical storm and/or hurricane conditions are EXPECTED in the "warning area"

Issued up to 36 hours in advance of the onset of tropical storm force winds



Forecast Wind Gusts from NWS

Exact wind gusts will vary in time, magnitude, and location

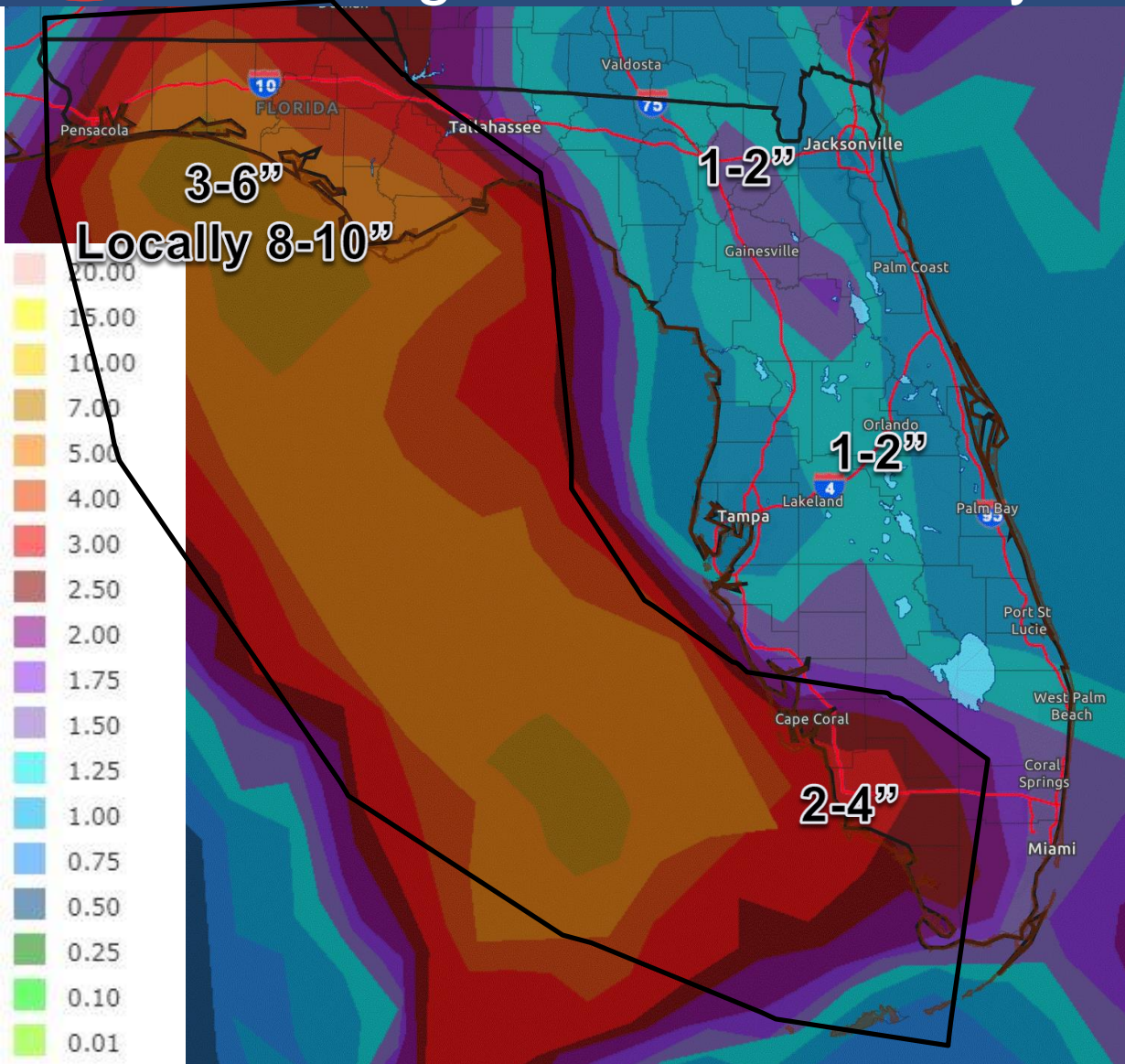


Breezy winds will continue across the Keys tonight, with some gusty winds expected along the West Coast on Sunday. Winds will begin increasing on Monday in the Panhandle, with gusts into tropical storm strength possible. Sustained winds will be lower.



Rainfall Totals Next 5 Days

Ending 8 PM ET Thursday



The main threat to Florida from Fred will be heavy rainfall. The shift in the track west has shifted most of the heavy rainfall over the Gulf of Mexico, with lesser totals now over the Peninsula and eastern Big Bend.

The heavy rain threat will move into the Panhandle and western Big Bend on Sunday and Monday.

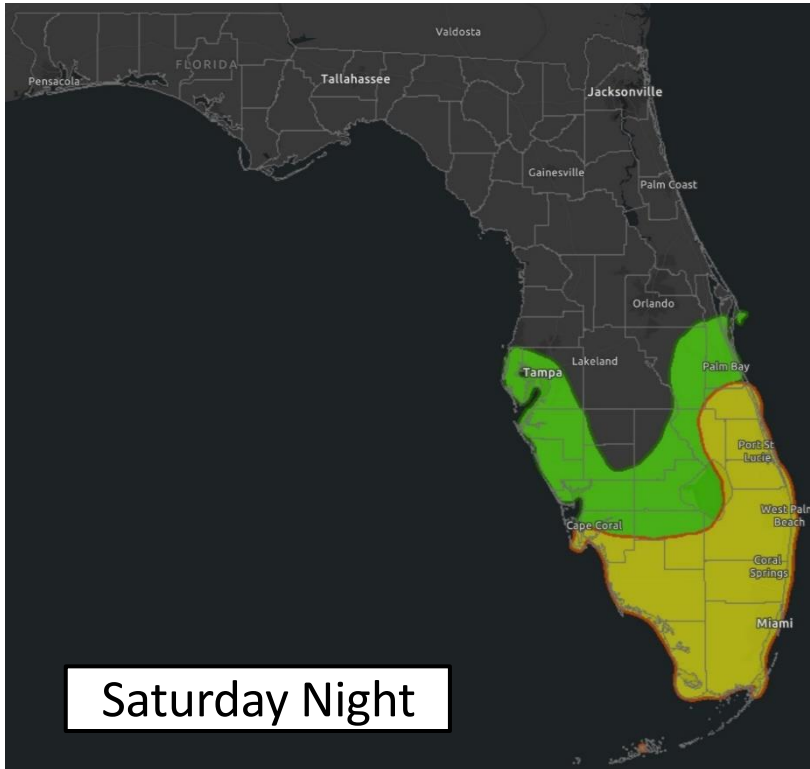
Isolated totals in the Panhandle could be as high as 10\".

These amounts may lead to flash flooding, riverine flooding, and any gusty winds may allow for shallow-rooted or weak trees to fall.

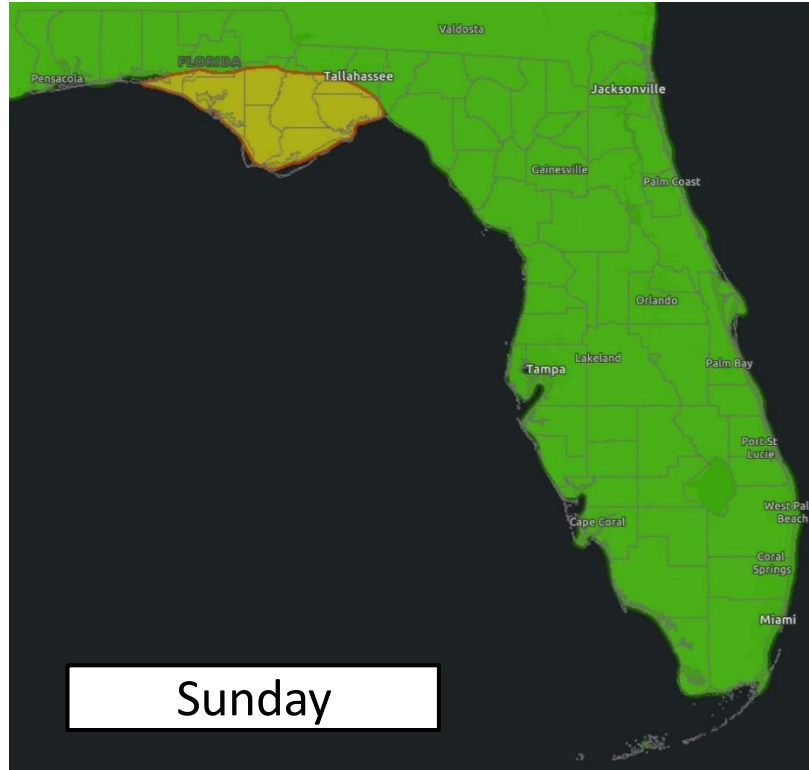


Flash Flood Outlooks

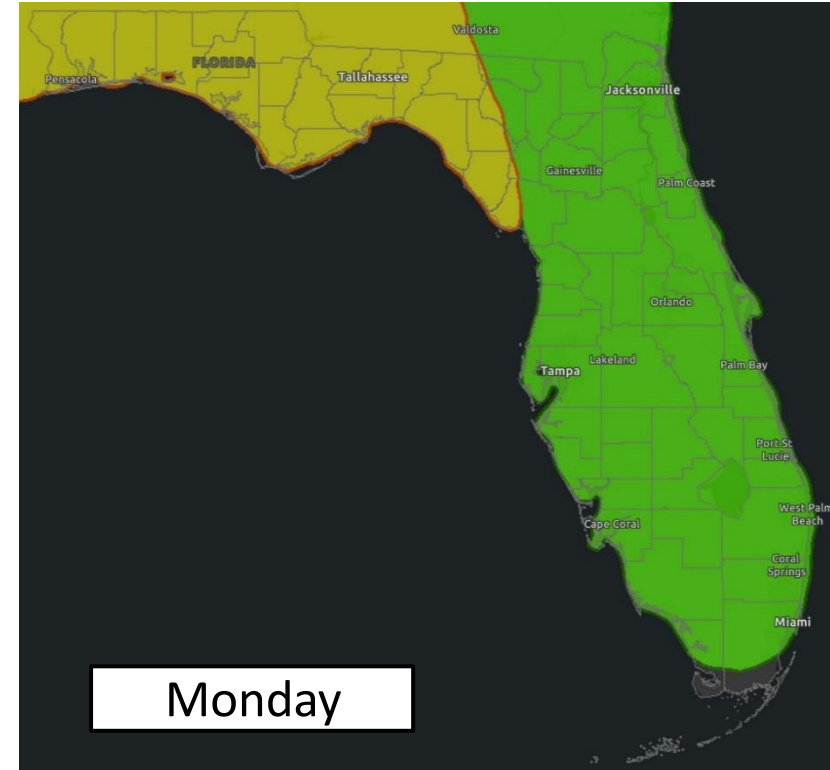
From the Weather Prediction Center



Saturday Night



Sunday



Monday

Risk of rainfall exceeding flash flood guidance within 25 miles of a point to the right of a line

HIGH: > 50%

SLGT: 10%-20%

MDT: 20%-50%

MRGL: 5%-10%

Rain bands will continue in South Florida today. Isolated flash flooding will be possible, especially in urban and low-lying areas. Flash flood risk will be the greatest on Sunday and Monday in Northwest Florida.

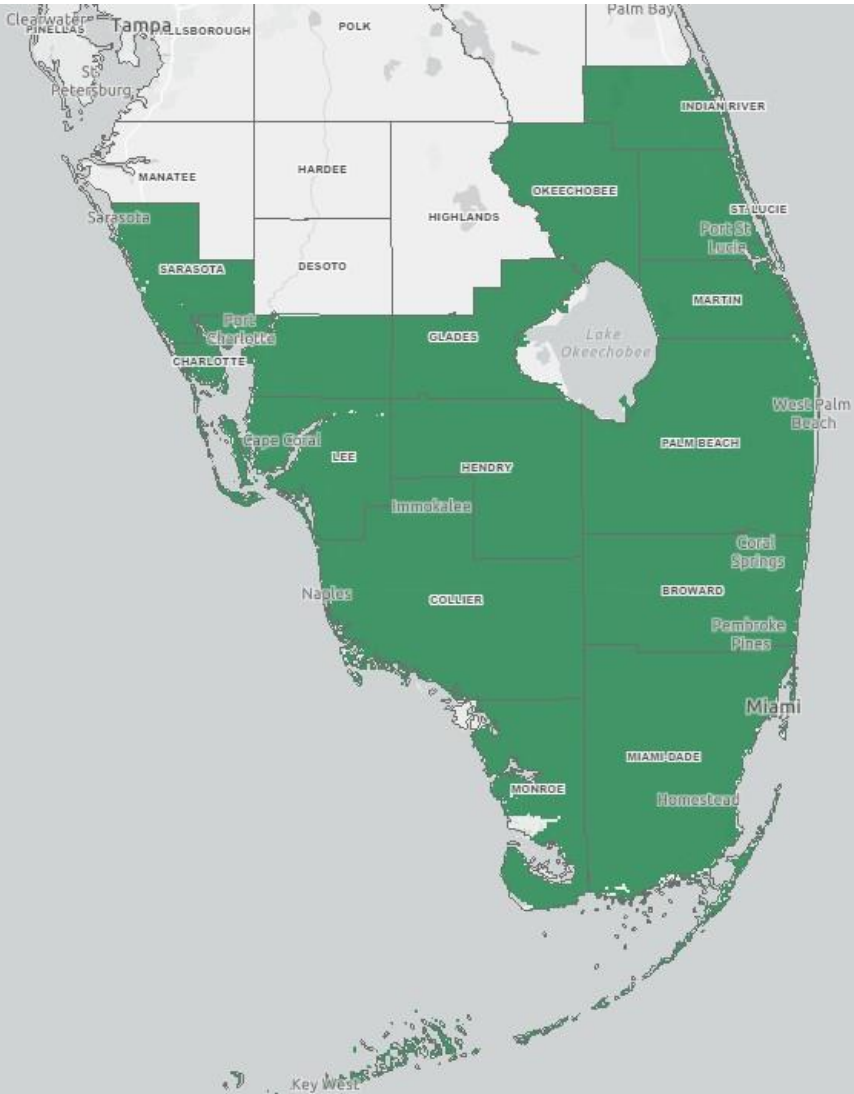


Active Flood Watches - NWS

- Areal Flood Watch until Sunday night

Counties:

Indian River, St. Lucie, Okeechobee, Martin, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Hendry, Glades, Charlotte, Lee, Sarasota

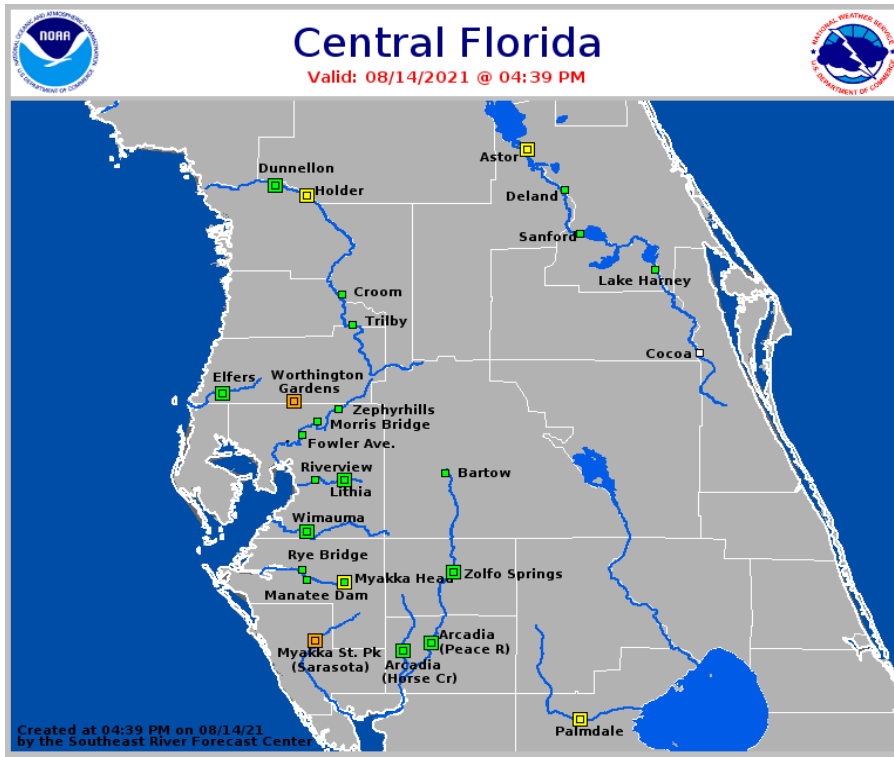




Current & Forecast River Flooding

Southeast River Forecast Center

Extensive river flooding will continue across Northeast Florida this week. Heavy rain could fall on rivers already in moderate flood stage which could result in additional, significant flooding. Minor flooding is expected in Southwest Florida with the forecasted rain amounts. **Minor flooding is also possible in the Panhandle.** River forecasts will be issued there tonight/tomorrow.



More details on river levels available at the [Southeast River Forecast Center website](https://www.southeastriverforecastcenter.com/).



Storm Surge Threat Overview

Fred

Storm surge impacts are expected to be low, with values less than 3' at this time, and expected to be 1-2'.

Building swells and beach erosion in the Panhandle will still be possible tomorrow and Monday.

<https://www.weather.gov/srh/tropical?office=mfl>

Click on "Threats and Impacts" Tab



[Download KML]

[Download Image]

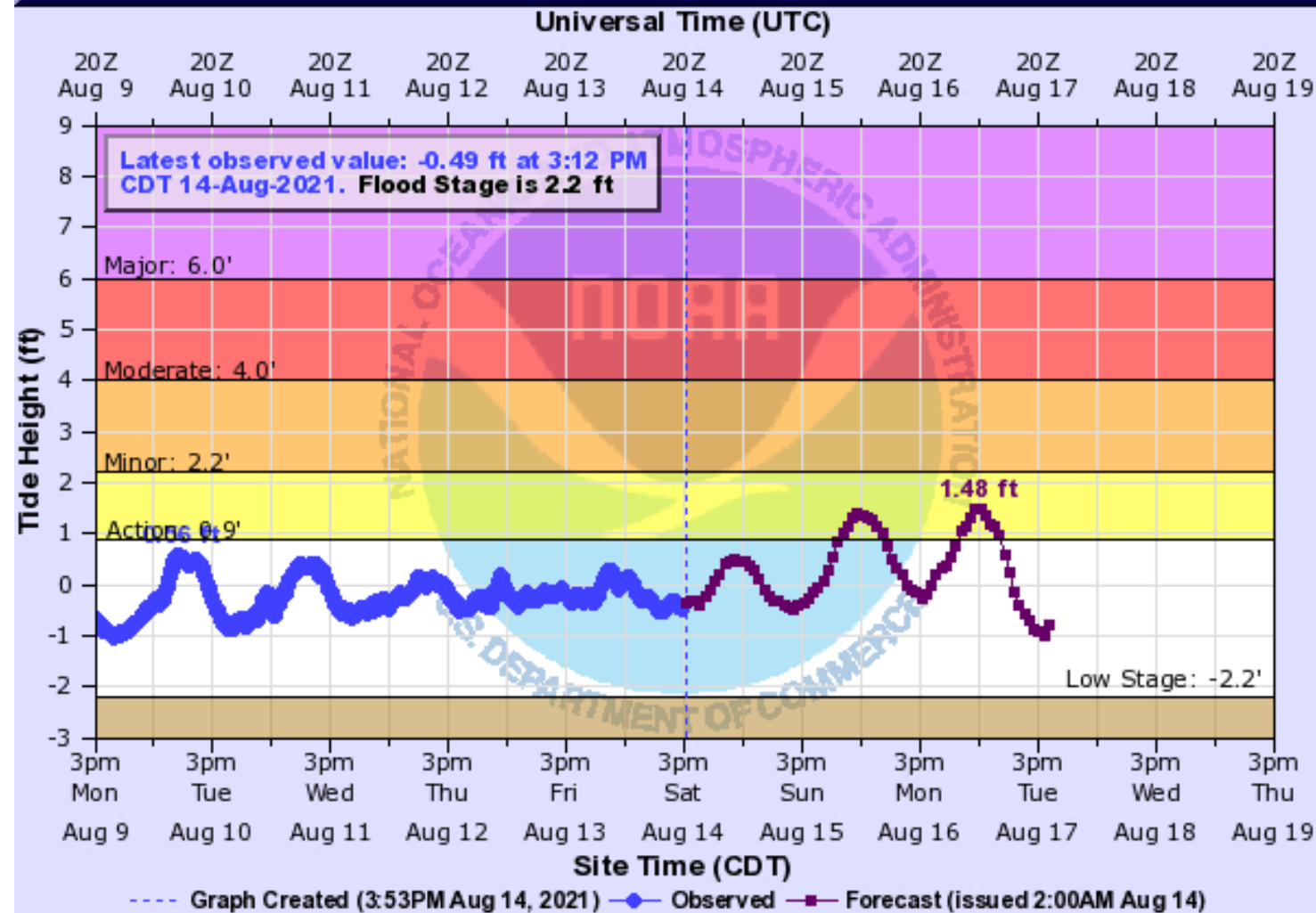
Storm Surge Threat
Potential for storm surge flooding greater than 9 ft above ground
Potential for storm surge flooding greater than 6 ft above ground
Potential for storm surge flooding greater than 3 ft above ground
Potential for storm surge flooding greater than 1 ft above ground
Little to no storm surge flooding



Gulf of Mexico at Panama City Beach

[Hydrograph Link](#)

GULF OF MEXICO TIDE GAUGE AT PANAMA CITY BEACH (IN MHHW)



3 Water begins to flood low lying areas in Camp Helen State Park and on south facing portions of Powell Lake in Bay County. Areas near beach access continue to flood. Erosion from wave action begins along the Bay County Beaches.

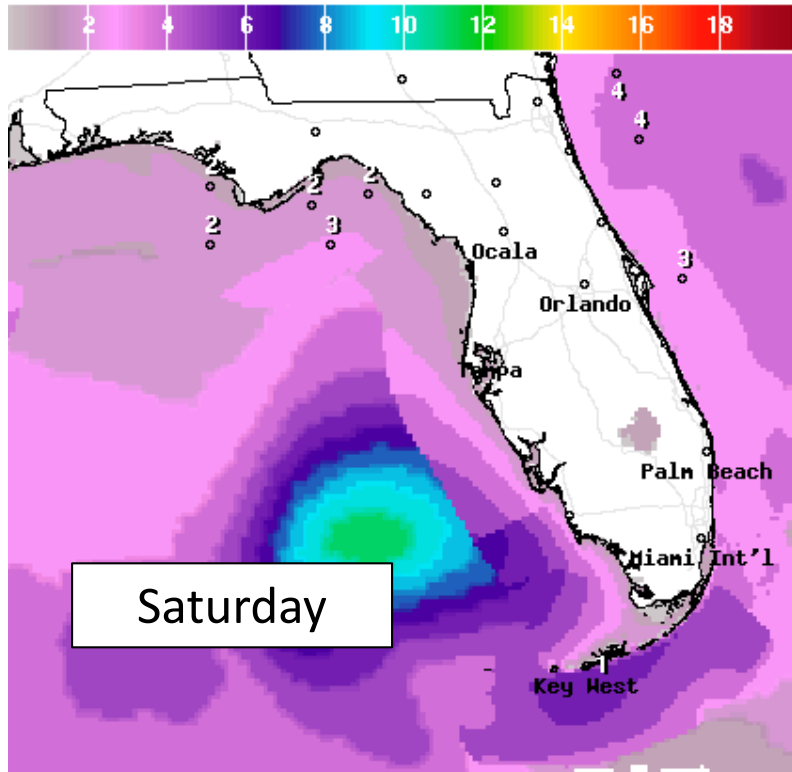
2.2 Where breaks in the dune line to beach access exist, water begins to flood access areas from Inlet Beach to St Andrews State Park in Panama City Beach.

1.7 Water reaches the dune line in several places along the Bay County Beaches.



Forecast Wave Heights

Early This Week



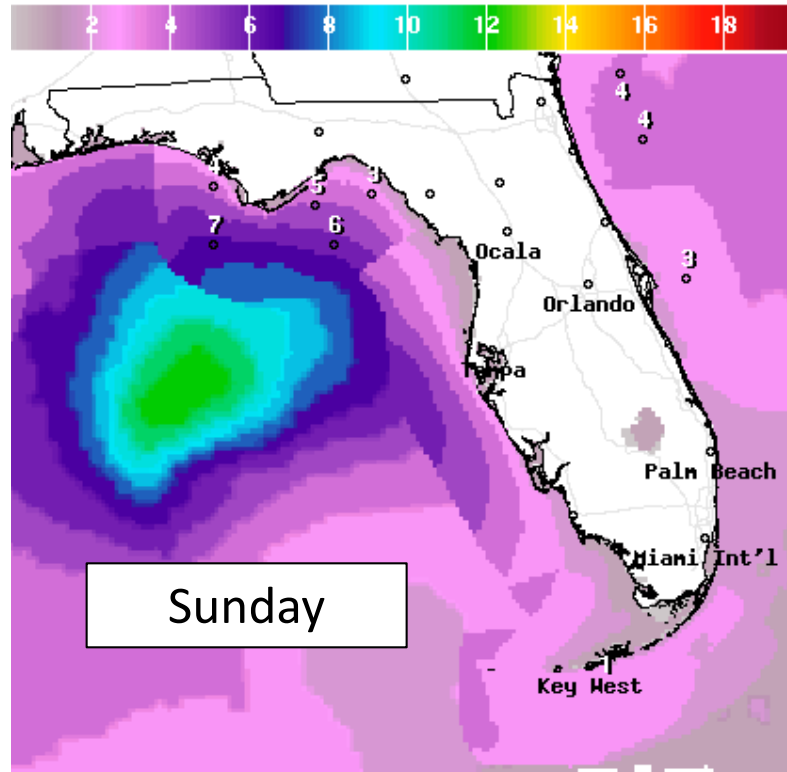
Saturday

Wave Height(ft) Ending Sun Aug 15 2021 2AM EDT
(Sun Aug 15 2021 06Z)



National Digital Forecast Database

20z issuance Graphic created-Aug 14 4:21PM EDT



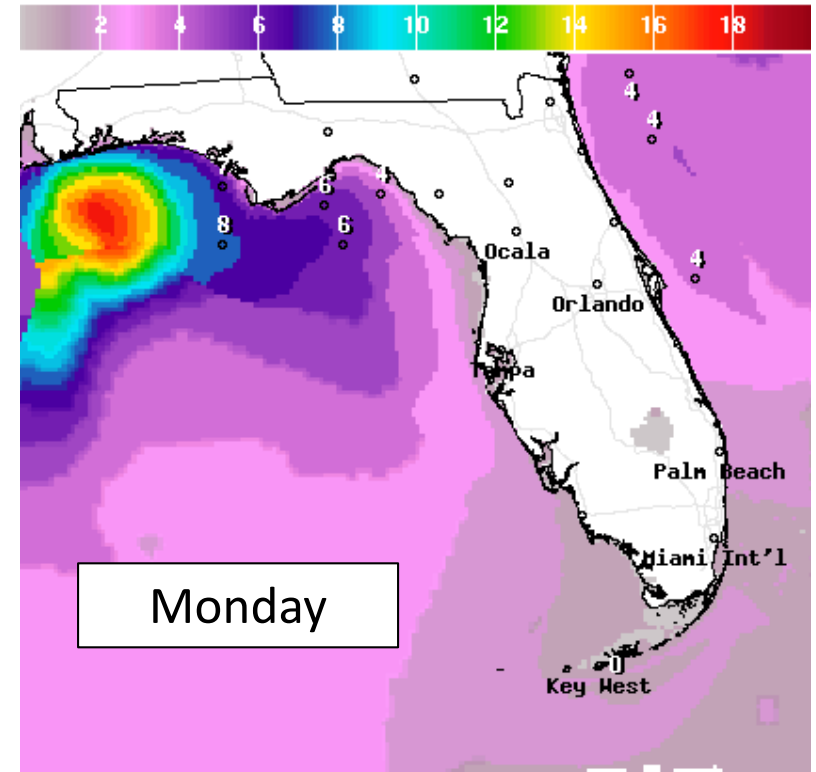
Sunday

Wave Height(ft) Ending Sun Aug 15 2021 8PM EDT
(Mon Aug 16 2021 00Z)



National Digital Forecast Database

20z issuance Graphic created-Aug 14 4:21PM EDT



Monday

Wave Height(ft) Ending Mon Aug 16 2021 2PM EDT
(Mon Aug 16 2021 18Z)



National Digital Forecast Database

20z issuance Graphic created-Aug 14 4:22PM EDT

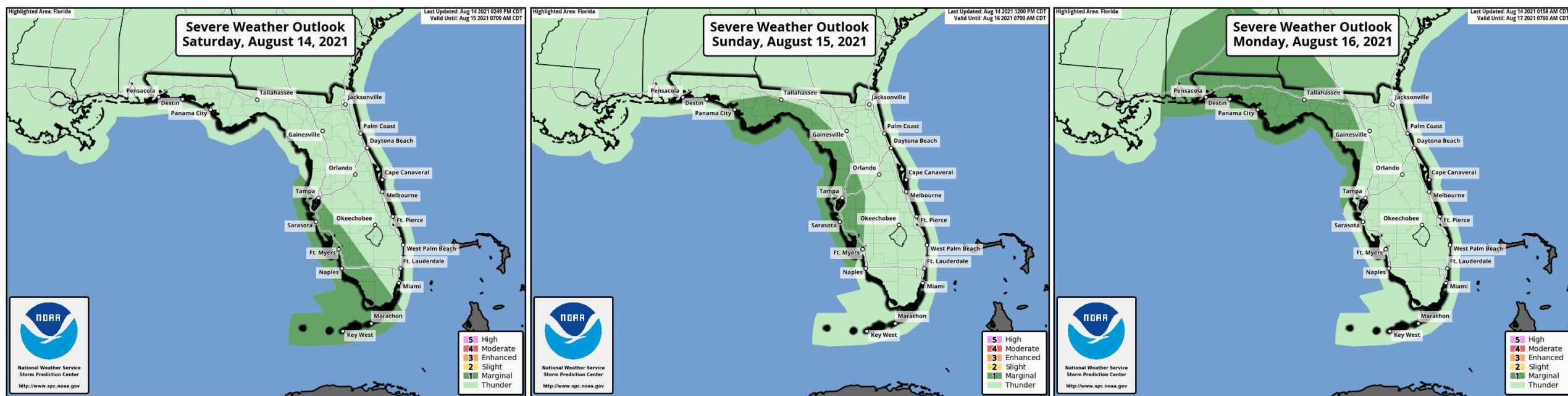


High surf of 6-10 feet is possible at Panhandle beaches with 2-4' feet along the rest of the Gulf Coast. A [High Surf Advisory](#) is in effect for Escambia, Santa Rosa, and Okaloosa County. This will result in dangerous rip currents and minor beach erosion (with a few spots of more significant erosion possible in the western Panhandle).



Severe Weather Outlooks

From the Storm Prediction Center



Isolated tornadoes will be possible in the outer bands of Fred in South Florida today. The threat will expand northward along the Gulf Coast Sunday, and into the Panhandle on Monday.

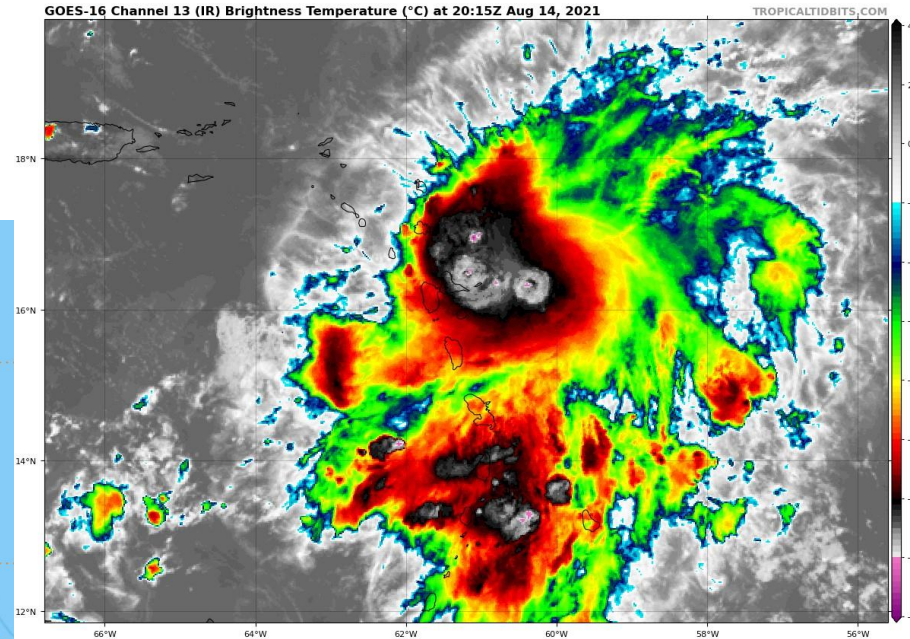
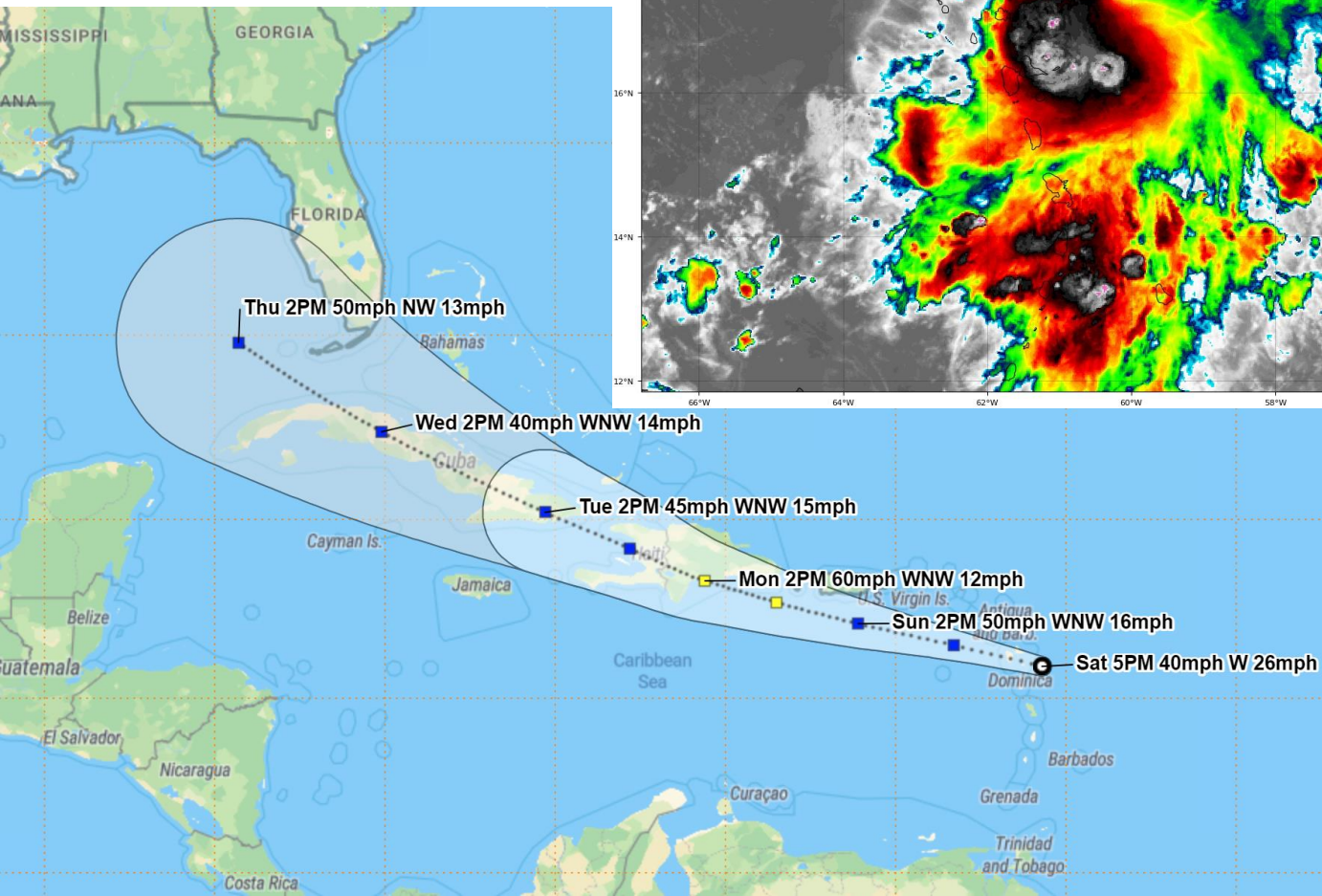
Understanding Severe Thunderstorm Risk Categories

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense



Official Forecast Track

From the National Hurricane Center



- Despite intensity thunderstorms continuing near the center all day, Grace has not actually strengthened and lacks a well-defined circulation.
- The center of Grace is located about 55 miles east of the Leeward Islands, or about 1,400 miles southeast of Miami, Florida.
- Maximum sustained winds are around 40 mph. Some strengthening is forecast as it approaches Puerto Rico and Hispaniola.
- Tropical Storm Grace is moving toward the west at a speedy 26 mph. Grace may slow down, which will be needed to allow strengthening.
- On the forecast track, the center is forecast to move over the Leeward Islands tonight, over the Virgin Islands and Puerto Rico on Sunday, and then over the Dominican Republic on Monday.
- Grace could approach the Florida Keys on Wednesday, but the track has shifted south.
- **Land Interaction makes the forecast uncertain!!**

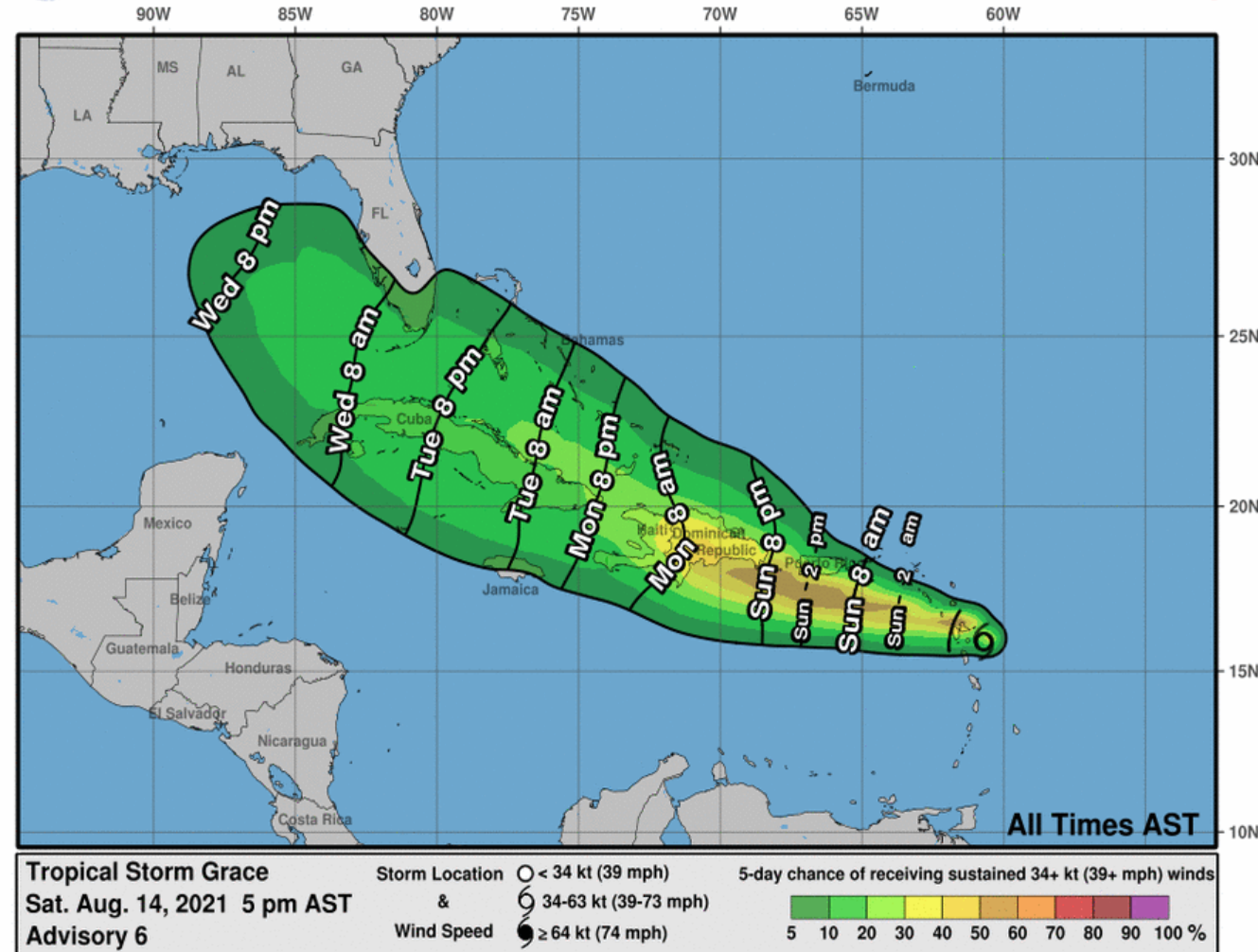


Time of Arrival & Wind Speed Probabilities

EARLIEST REASONABLE Time of Arrival of Tropical Storm Force Winds (>39 mph)



Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



City

Chance for
TS Winds

Changes Since
Last Packet

West Palm Beach

5%

Ft. Lauderdale

7%

Miami

4%

Marathon

15%

Key West

17%

Naples

9%

Ft. Myers

4%

There is a 1 in 10 chance of tropical storm force winds across the Florida Keys mid-week.

If they were to occur, they could arrive as early as Tuesday night, but most likely during the day on Wednesday.



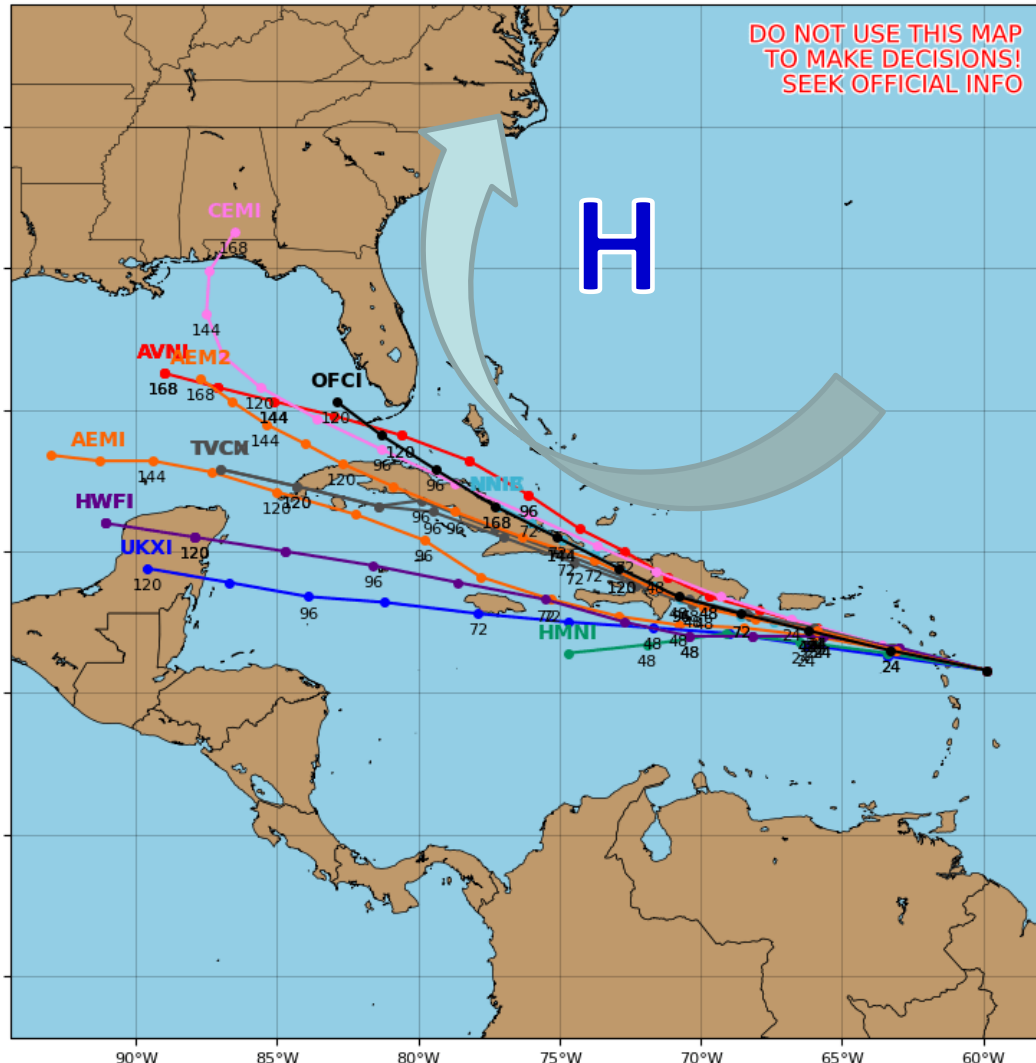
Model Forecasts

Ensembles, Dynamical, and Statistical Models – Grace

Tropical Storm GRACE Model Track Guidance

Initialized at 18z Aug 14 2021

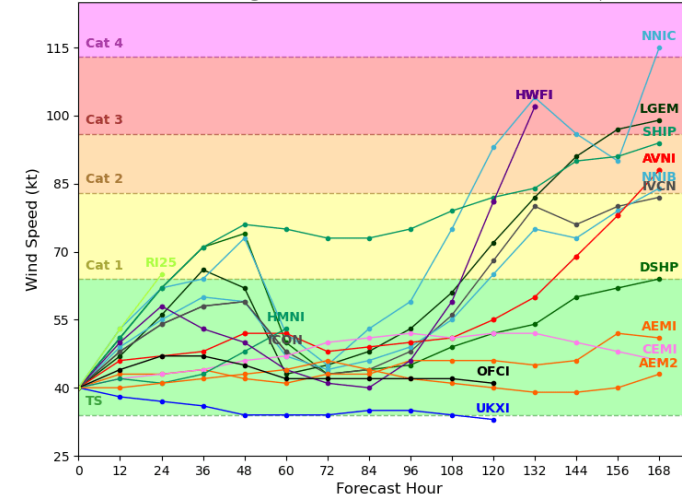
Levi Cowan - tropicaltidbits.com



Tropical Storm GRACE Model Intensity Guidance

Initialized at 18z Aug 14 2021

Levi Cowan - tropicaltidbits.com



High pressure will move Grace west-northwest like Fred. With Grace forecast to move near the mountainous Greater Antilles, it once again makes the intensity forecast uncertain.

In general, land interaction and some wind shear will keep the system weak, but if it avoids land interaction a stronger storm is possible. If Grace survives to the Gulf of Mexico, the environment may be more favorable for intensification. But there is a wide spread in possibilities of track AND intensity!

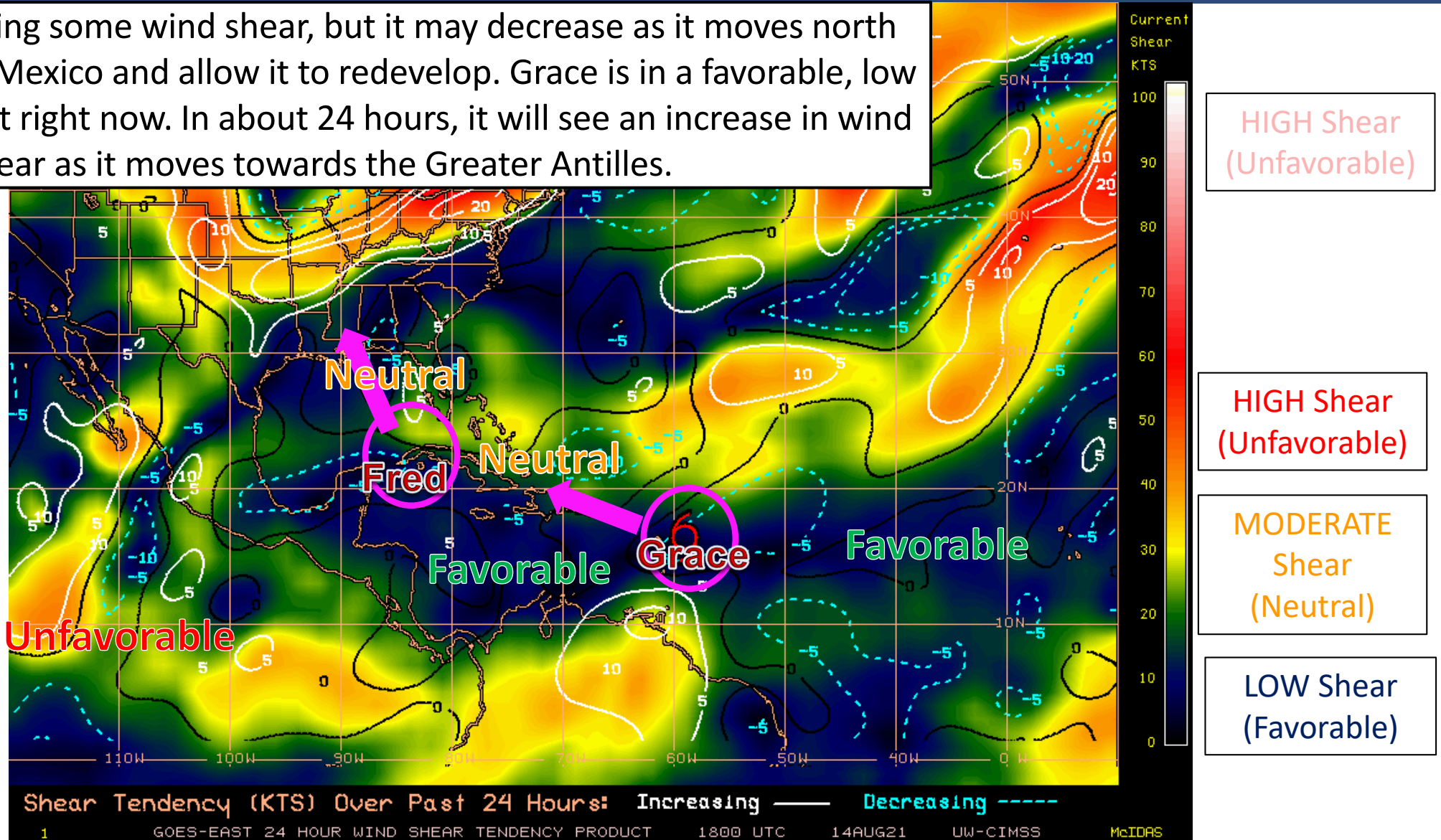


Wind Shear

Is the environment favorable for the system?

Color denotes the amount of wind shear and the lines denote how it have changed over the last 24 hours (dotted lines show decreasing shear and solid lines show increasing).

Fred is experiencing some wind shear, but it may decrease as it moves north across the Gulf of Mexico and allow it to redevelop. Grace is in a favorable, low shear environment right now. In about 24 hours, it will see an increase in wind shear as it moves towards the Greater Antilles.



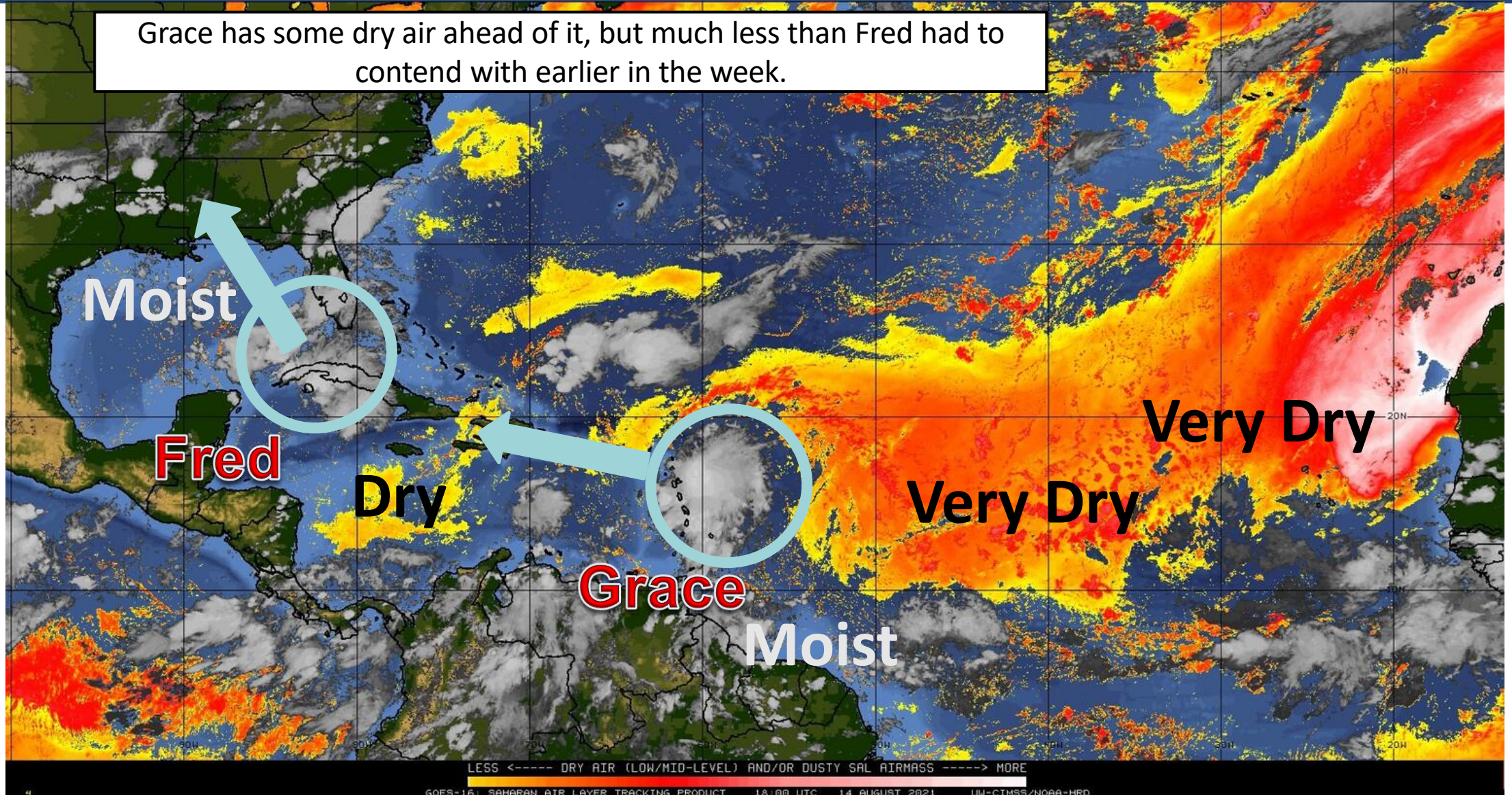


Dry Air & Saharan Dust

Is the environment favorable for the system?

Color denotes concentration of Saharan Dust or dry, stable air.

Grace has some dry air ahead of it, but much less than Fred had to contend with earlier in the week.





Sea Surface Temperatures & Anomalies

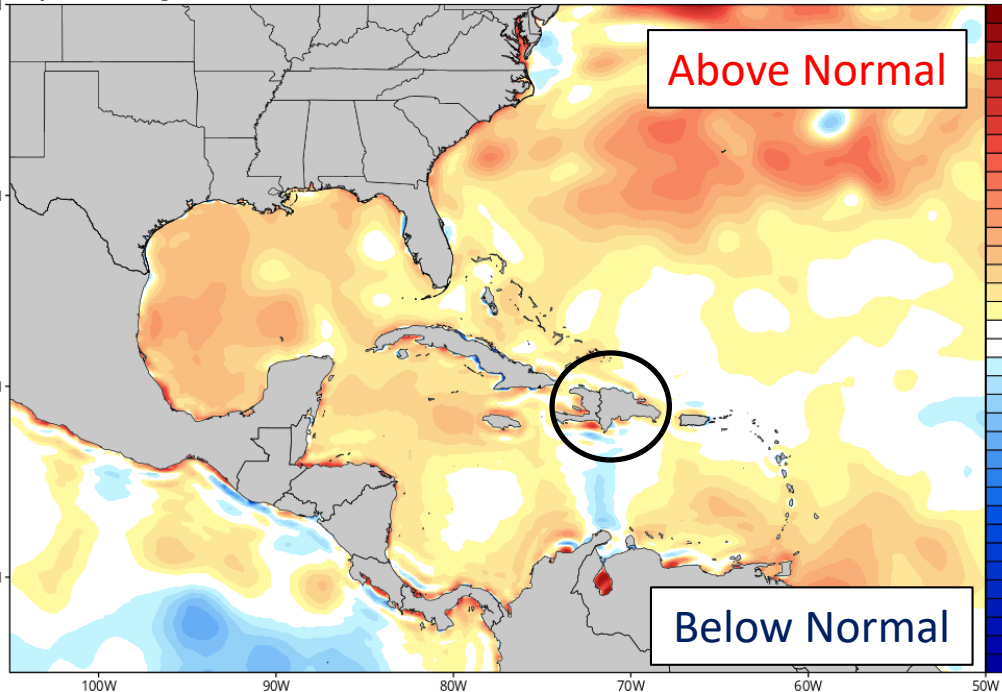
Is the ocean favorable for the system?

Water temperatures across much of the Caribbean, southwest Atlantic, and Gulf of Mexico are above normal and will support a hurricane. Water temperatures will become more favorable for development as Grace moves west/northwest.

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

Analysis Time: 12z Aug 14 2021

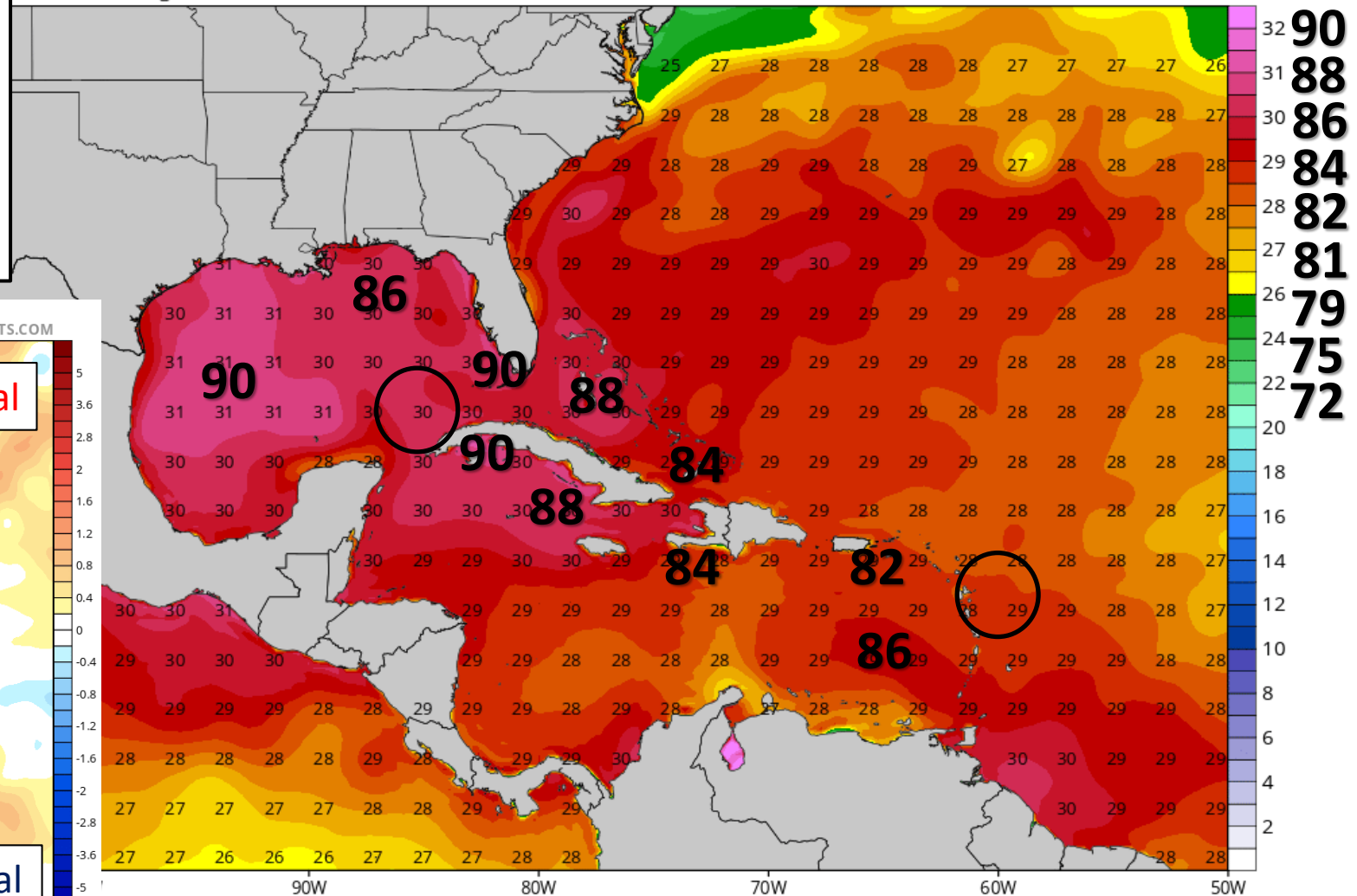
TROPICALTIDBITS.COM



Sea Surface Temperature (°C)

Analysis Time: 12z Aug 14 2021

TROPICALTIDBITS.COM





Key Messages

From the National Hurricane Center

Key Messages for Remnants Of Fred

Advisory 21: 5:00 PM EDT Sat Aug 14, 2021



1. Today through Monday, heavy rainfall could lead to areal, urban, and small stream flooding impacts, and cause new and renewed river flooding across southern Florida, the Big Bend, and Panhandle. From Monday onward, heavy rain and flood impacts could extend into other portions of the Southeast and into the southern and central Appalachians and Piedmont as Fred interacts with a front in the area.

2. Fred is forecast to regenerate as a tropical cyclone over the Gulf of Mexico tonight or on Sunday, and bring a risk of tropical storm conditions to portions of the northern Gulf coast, especially from coastal Mississippi to the Florida Panhandle beginning on Monday. Watches may be required for a portion of this area tonight, and warnings may be required on Sunday.



For more information go to hurricanes.gov

Key Messages for Tropical Storm Grace

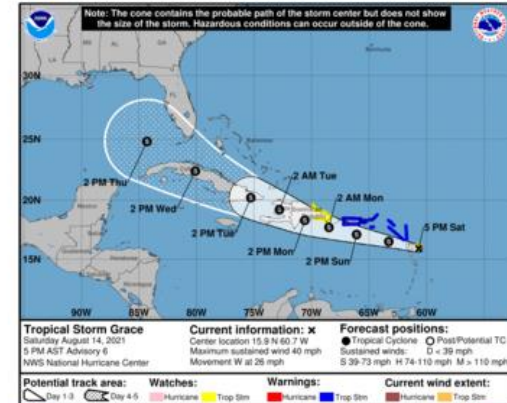
Advisory 6: 5:00 PM AST Sat Aug 14, 2021



1. Tropical storm conditions are expected in portions of the Leeward Islands tonight, and the Virgin Islands and Puerto Rico on Sunday. Tropical storm conditions are possible over eastern parts of the Dominican Republic Sunday night and Monday.

2. Heavy rainfall could lead to flash and urban flooding over the Leeward and Virgin Islands. Across Puerto Rico, the Dominican Republic, and Haiti, heavy rainfall may lead to flash, urban and small stream flooding, along with the potential for mudslides.

3. There is a risk of wind and rainfall impacts across the rest of the Dominican Republic, Haiti, the Turks and Caicos Islands, the Bahamas, Cuba, and Florida next week, but forecast uncertainty remains higher than usual. Interests in those areas should monitor the progress of Grace and updates to the forecast.



For more information go to hurricanes.gov



Overall Summary

Remnants of Fred:

- The “center” of Fred is located off the northwest coast of Cuba, or about 500 miles south-southeast of Pensacola, Florida.
- Maximum sustained winds remain around 35 mph. Little change in strength is expected tonight. Slow strengthening is forecast, and Fred could become a tropical storm again on Sunday.
- Fred is moving west-northwest at 13 mph, and a more northwest to northward turn is expected by tomorrow.
- The track has shifted west again today. Fred is forecast to make landfall along the northern Gulf Coast from Mississippi to Alabama and the western Panhandle.
- Fred may be lopsided, with most of the impacts on the eastern side of the storm, extending well into the Florida Panhandle.

Tropical Storm Grace:

- Despite intensity thunderstorms continuing near the center all day, Grace has not actually strengthened and lacks a well-defined circulation.
- The center of Grace is located about 55 miles east of the Leeward Islands, or about 1,400 miles southeast of Miami, Florida.
- Maximum sustained winds are around 40 mph. Some strengthening is forecast as it approaches Puerto Rico and Hispaniola.
- Tropical Storm Grace is moving toward the west at a speedy 26 mph. Grace may slow down, which will be needed to allow strengthening.
- On the forecast track, the center is forecast to move over the Leeward Islands tonight, over the Virgin Islands and Puerto Rico on Sunday, and then over the Dominican Republic on Monday. Grace could approach the Florida Keys on Wednesday, but the track has shifted south.

Florida Outlook:

- Tropical Storm Warnings have been cancelled for the Florida Keys. There are no tropical storm watches or warnings in effect for Florida.
- The main threat to Florida from Fred is heavy rainfall. A widespread 3-6” of rain with localized totals of 8-10” is anticipated across the Panhandle. Rainfall amounts have decreased for the West Coast/eastern Big Bend with the track shifting west again.
- **Flood Watches** are in effect for South Florida and the Treasure Coast until Sunday night. Additional watches for portions of North Florida are likely to be issued.
- Widespread minor to moderate river flooding will continue this week in Northeast Florida, and may develop in the Panhandle based on current forecasts.
- Isolated tornadoes are also possible in South Florida and the Keys tonight, with a tornado threat for Northeast and Central Florida on Sunday, and the Panhandle & Big Bend on Monday.
- The storm surge threat is minor, with surge values of 1-2’ only. High surf (4-10’) in the Panhandle may cause beach erosion and rip currents.
- It is too early to determine what, if any, impacts Florida may experience from Grace, but it should be monitored.

Another briefing packet will be issued Sunday morning with the 8 AM advisory. For the latest information on the tropics, please visit the National Hurricane Center website at www.hurricanes.gov.



TROPICAL UPDATE



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State Meteorological Support Unit

Florida Division of Emergency Management

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