



TROPICAL UPDATE



8:00 AM EDT

Monday, August 16, 2021

Tropical Storm Fred, Tropical Depression Grace,
& Tropical Depression Eight

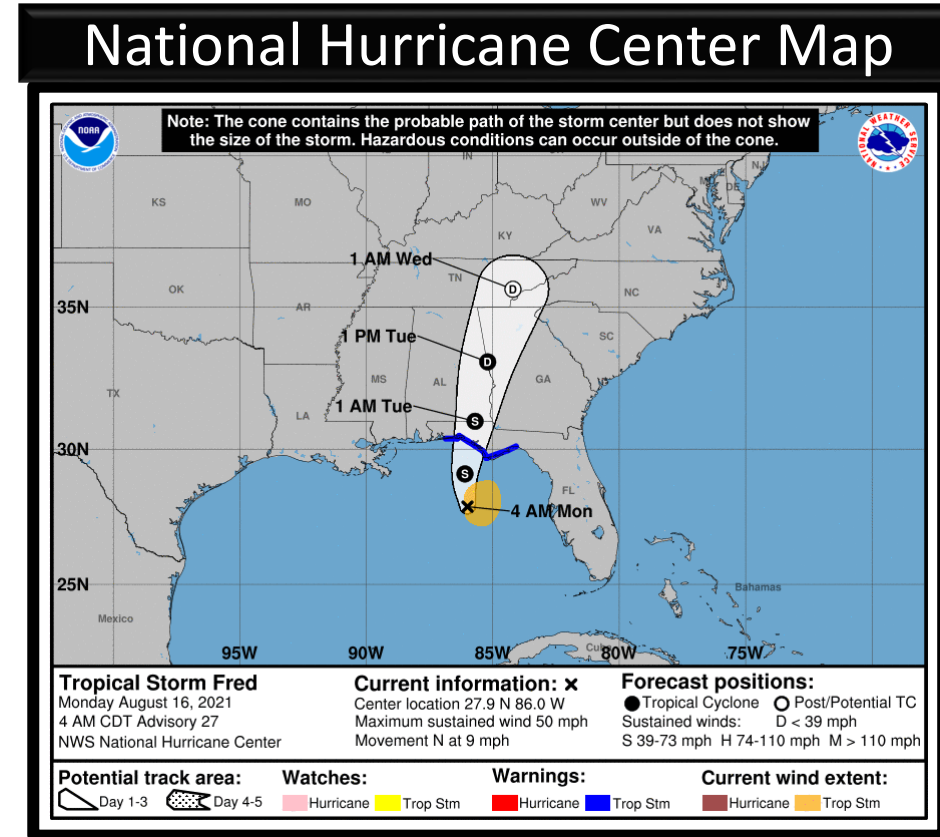
This update is intended for government and emergency response officials, and is provided for informational and situational awareness purposes only. Forecast conditions are subject to change based on a variety of environmental factors. For additional information, or for any life safety concerns with an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



Tropical Storm Fred

5 AM ET Monday: 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:

IMPACTS EXTEND WELL EAST OF THE CONE

Fred is strengthening as it approaches the coast and will likely be a strong tropical storm at landfall.

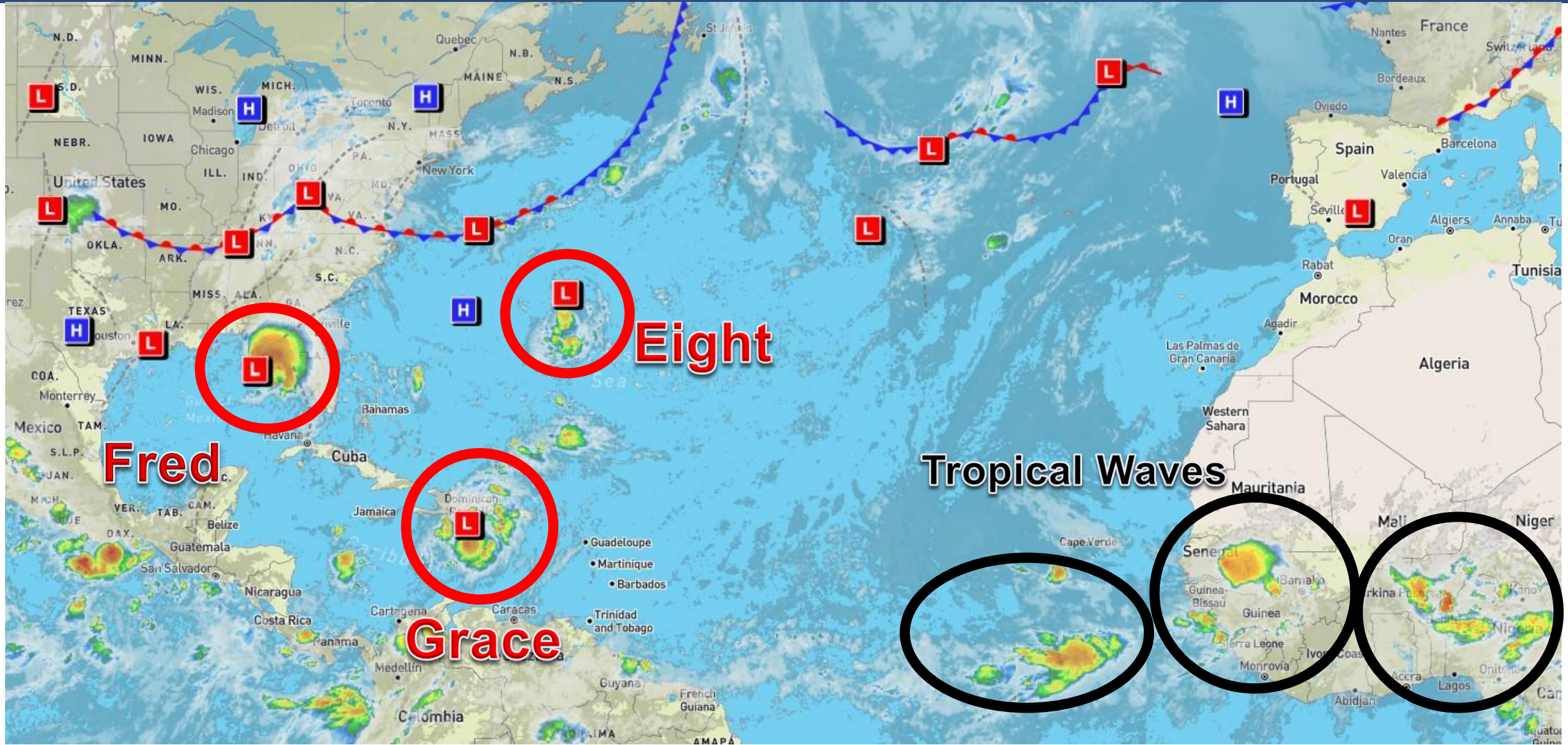
Storm surge has begun in Apalachee Bay, and will peak this evening from 3-5'.

Slight shift east in the track again overnight.



Atlantic Basin Satellite Image

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





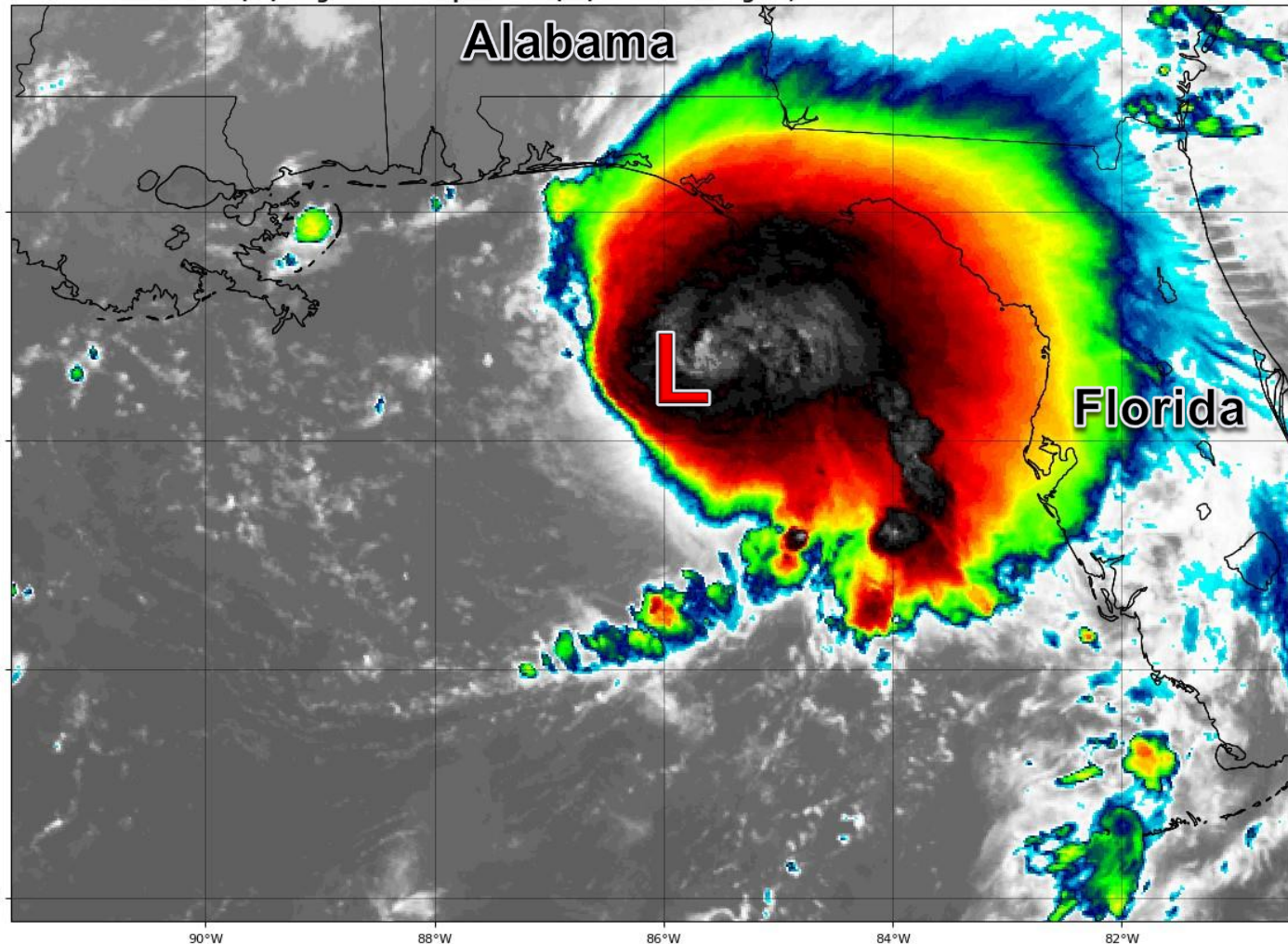
Satellite Imagery

Tropical Storm Fred

Fred has had intense thunderstorm development this morning. Due to wind shear, most of the thunderstorms/rain/wind are north and east of the center. It is expected to remain this way through landfall.

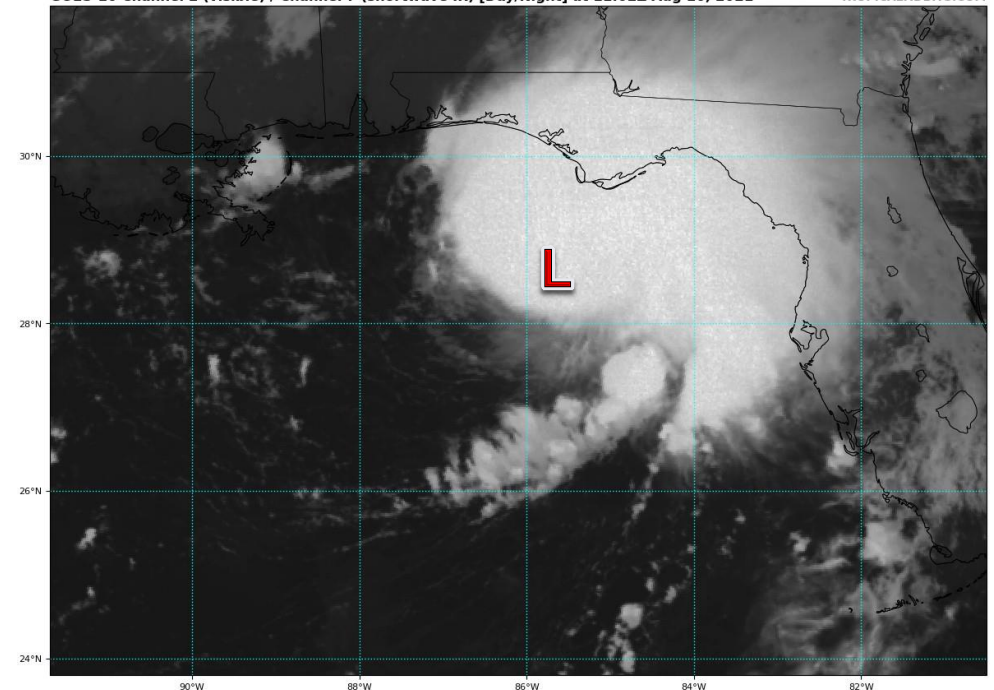
GOES-16 Channel 13 (IR) Brightness Temperature (°C) at 10:07Z Aug 16, 2021

TROPICALTIDBITS.COM



GOES-16 Channel 2 (visible) / Channel 7 (shortwave IR) [Day/Night] at 11:02Z Aug 16, 2021

TROPICALTIDBITS.COM



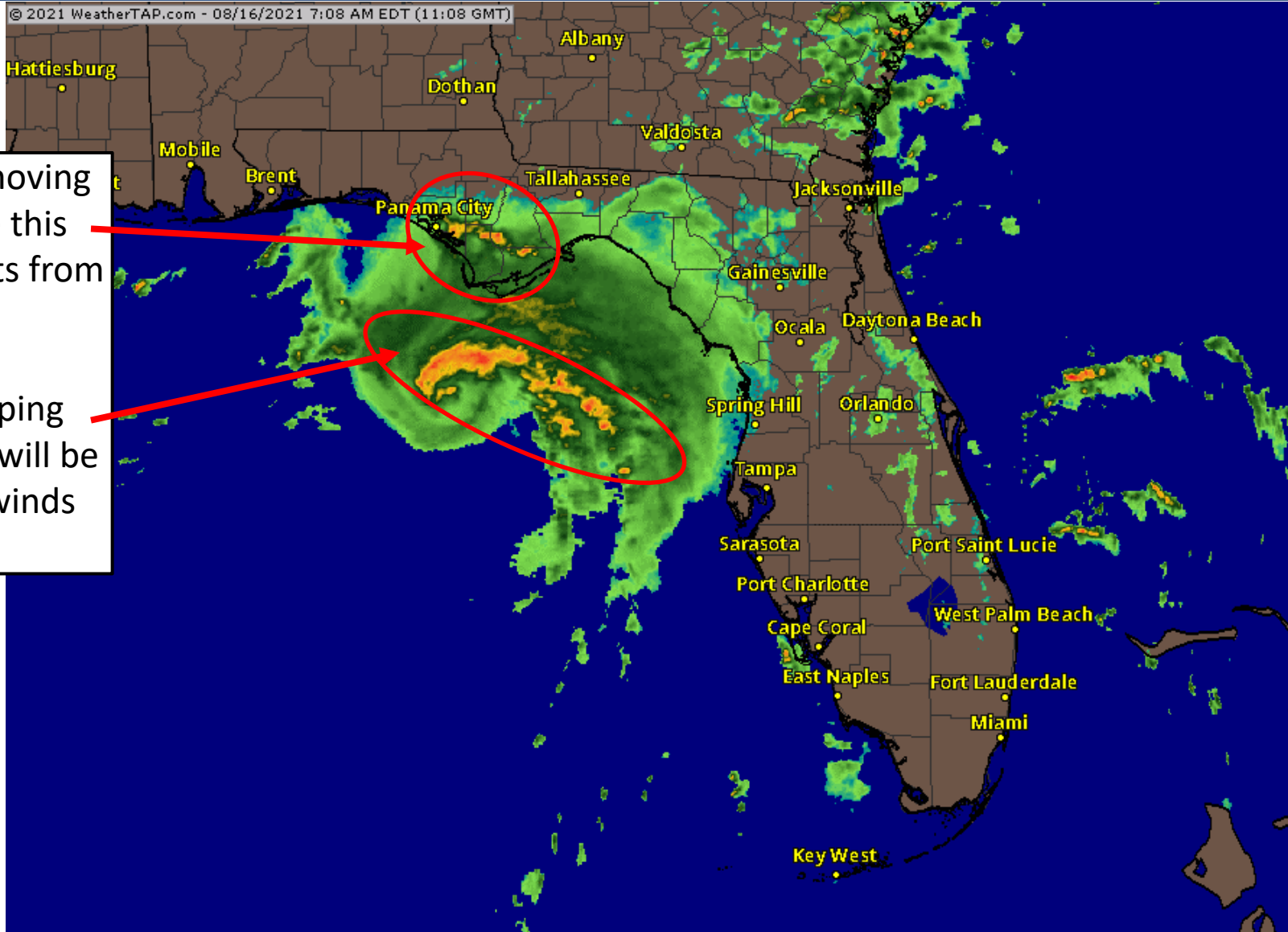


Current Florida Radar

As of 7:00 AM ET

Outer rain bands are moving across the Panhandle this morning producing gusts from 40-55 mph.

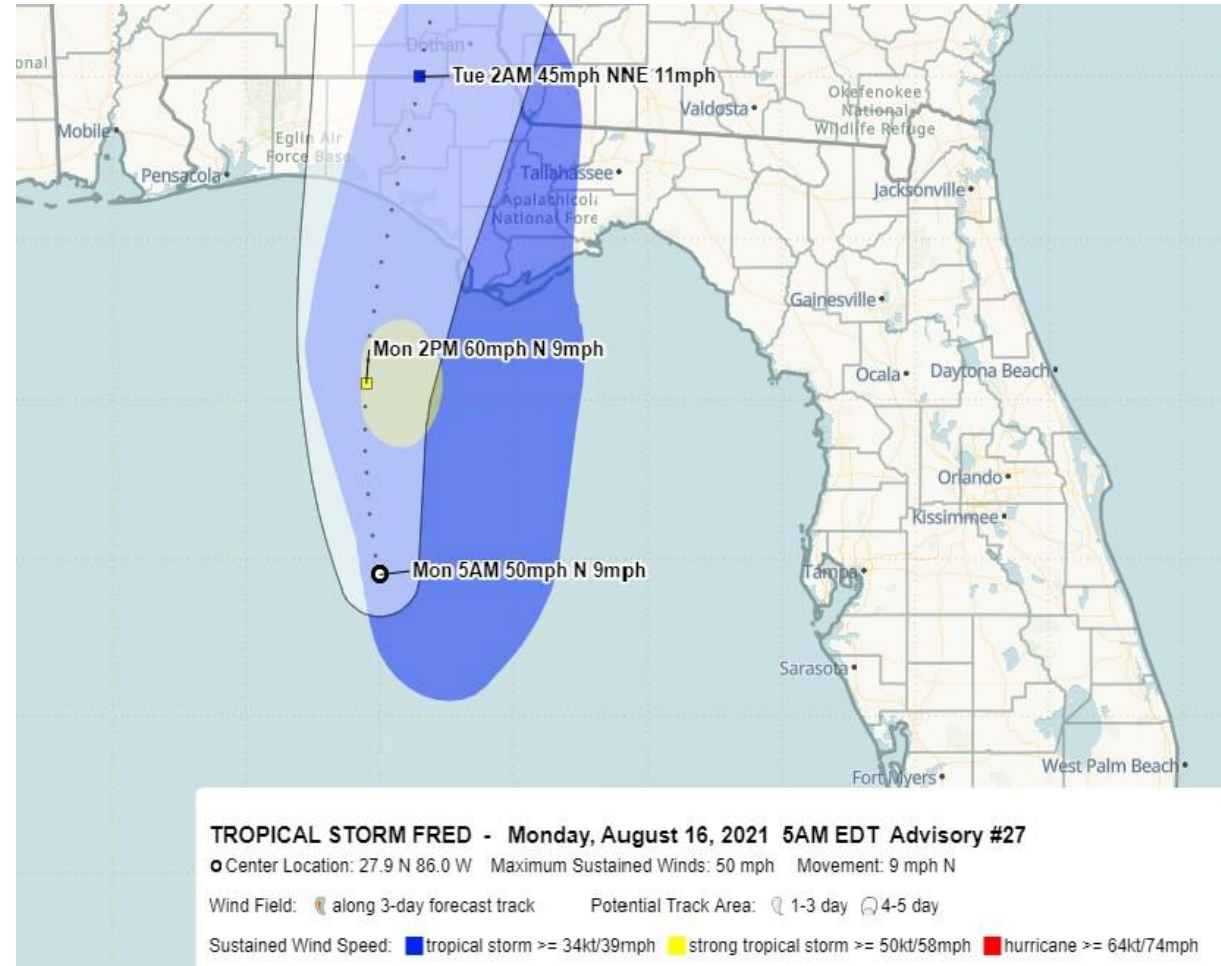
An eye wall is developing around the center and will be where the strongest winds occurs.





Official Forecast Track for Fred

From the National Hurricane Center



- The center of Fred is located about 140 miles south of Apalachicola, Florida.
- Maximum sustained winds are around 50 mph with higher gusts, and Fred is moving to the north at 9 mph.
- Fred will gradually gain strength today and will make landfall late this afternoon in the Florida Panhandle with maximum sustained winds around 60 mph.
- **Hurricane hunters are enroute to assess intensity.**
- The track has shifted east slightly overnight.
- Fred is lopsided, with most of the impacts (wind, rain, tornadoes, and surge) on the eastern side of the storm. **These impacts will extend well outside of the cone.**
- Tropical storm force winds extend out about 90 miles to the east of the center.



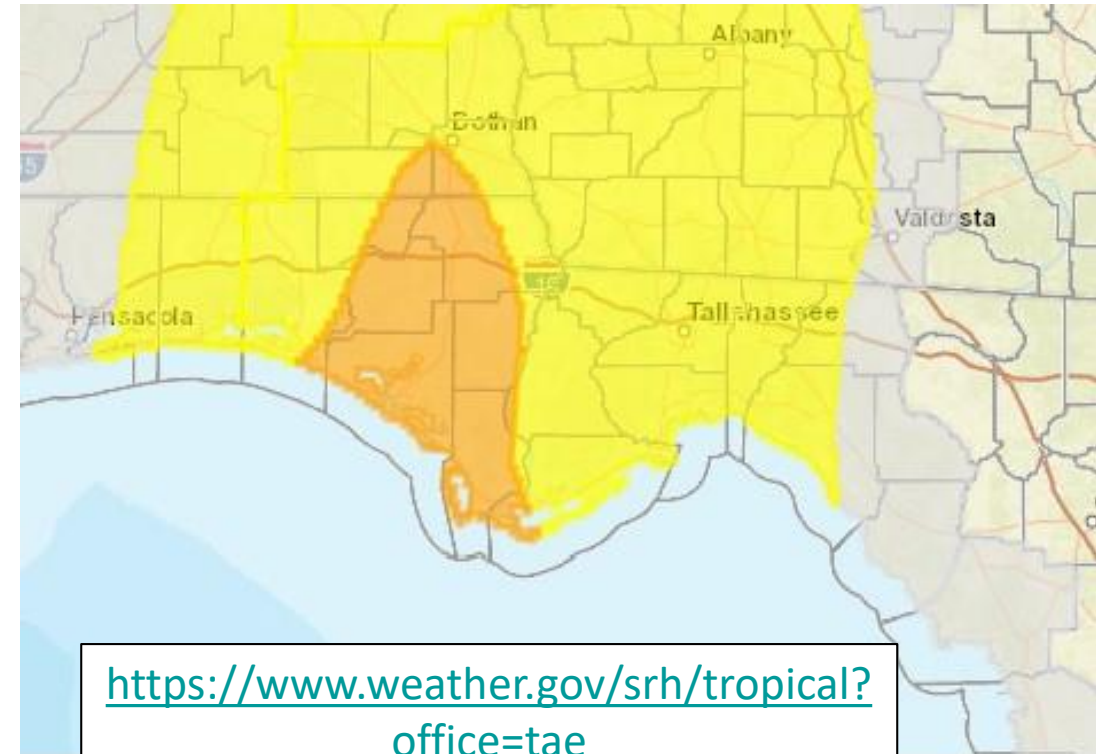
Damaging Wind Threat Overview

Tropical Storm Fred

The greatest wind threat is along the immediate coast of the Panhandle, but some winds will extend inland at and east of where the center makes landfall.

Sustained winds from 40-60 mph are possible in the orange area, with gusts as high as 70 mph.

Wind gusts from 40-50 mph are possible into the Big Bend in the yellow shaded area.



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

Click on "Threats and Impacts" Tab

| Wind Threat |
|-----------------------------------------|
| Potential for wind greater than 110 mph |
| Potential for wind 74 to 110 mph |
| Potential for wind 58 to 73 mph |
| Potential for wind 39 to 57 mph |
| Wind less than 39 mph |

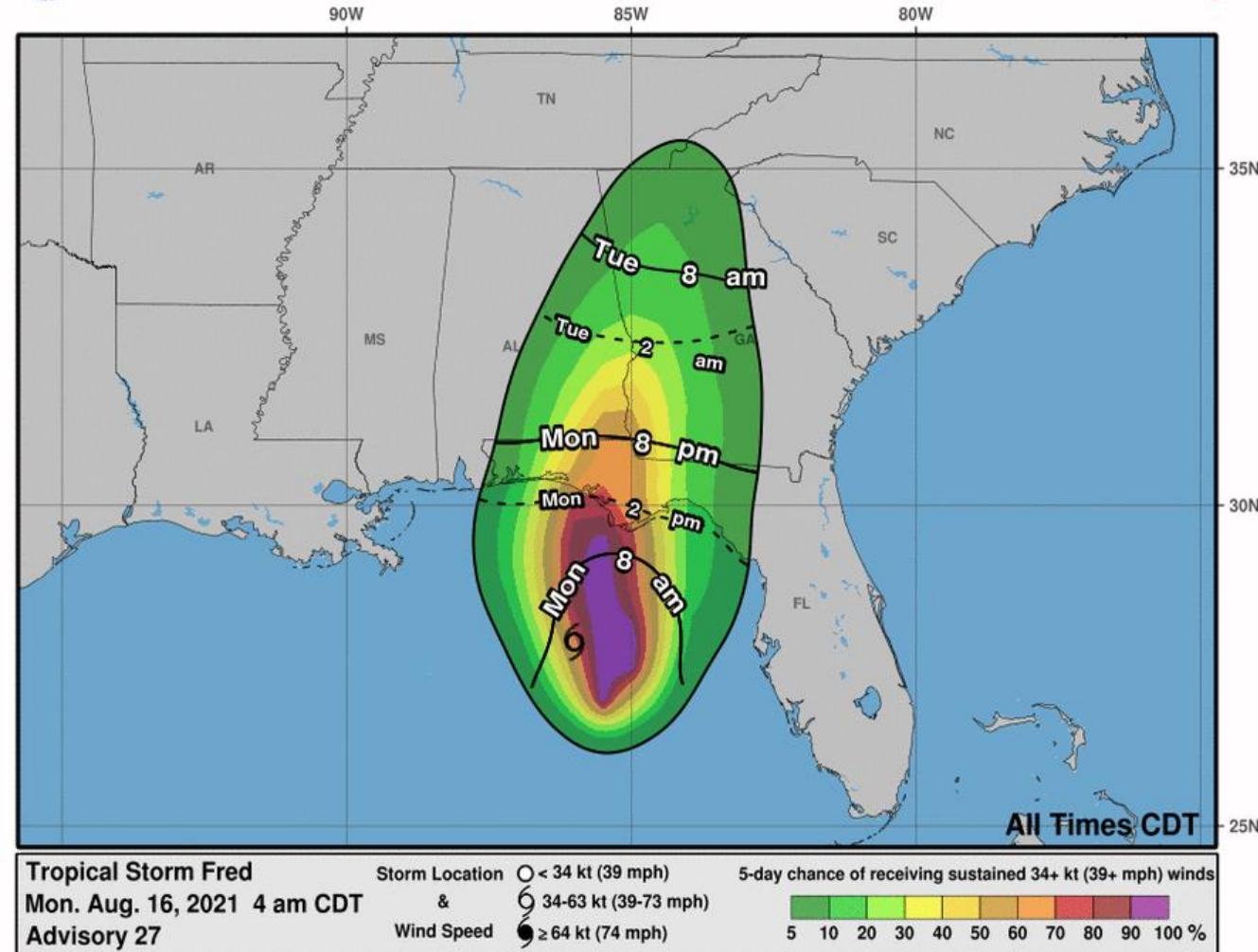


Time of Arrival & Wind Speed Probabilities

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 |
|--------------|---------------------|---------------------------|
| Cedar Key | 6% | -14% |
| Tallahassee | 29% | -1% |
| Apalachicola | 74% | +8% |
| Panama City | 86% | +12% |
| Destin | 32% | -15% |
| Pensacola | 7% | -15% |

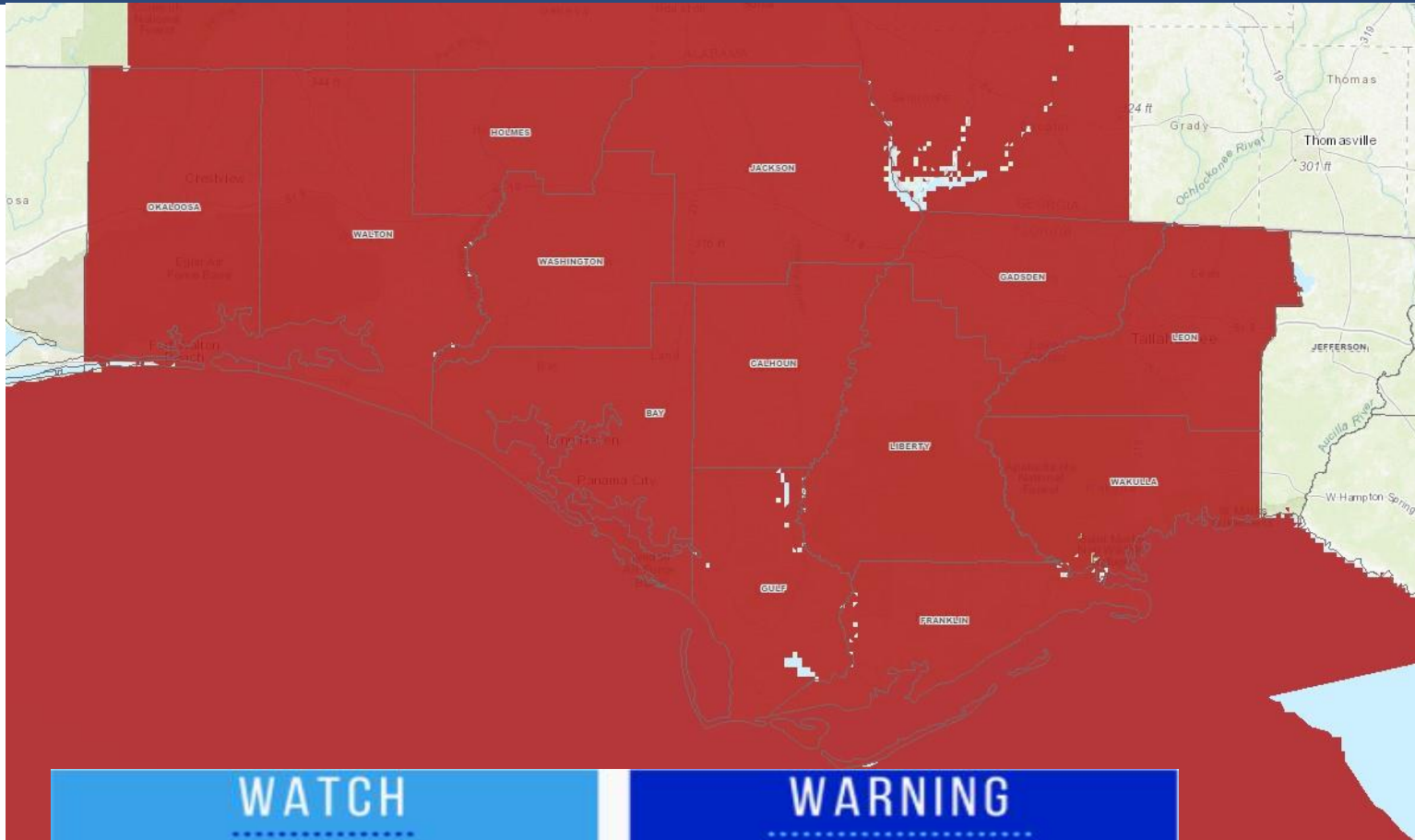
The chance of tropical storm force winds is very high in the eastern Panhandle! Odds are now almost 9 in 10!

All preparations should be rushed to completion as tropical storm force winds are moving inland this morning.

The odds of strong tropical storm force winds (>58 mph) in these locations are generally 10-25% with the odds of hurricane force winds only 1-3%.



Active Tropical Watches/Warnings



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"

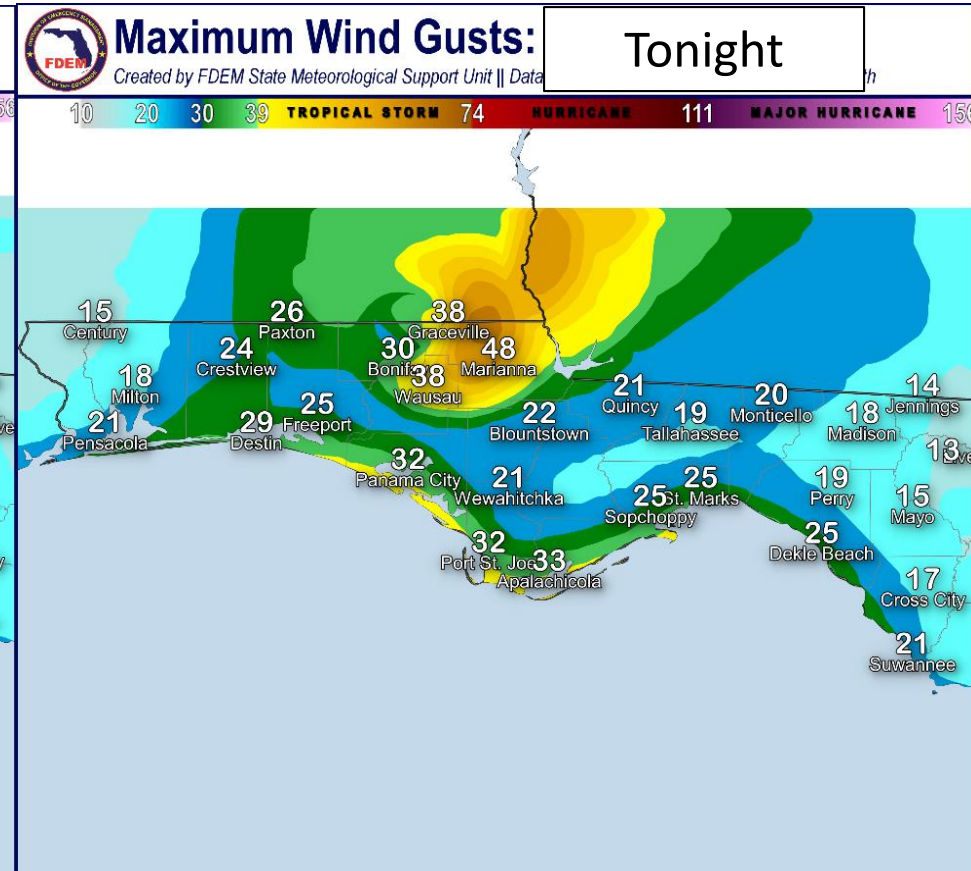
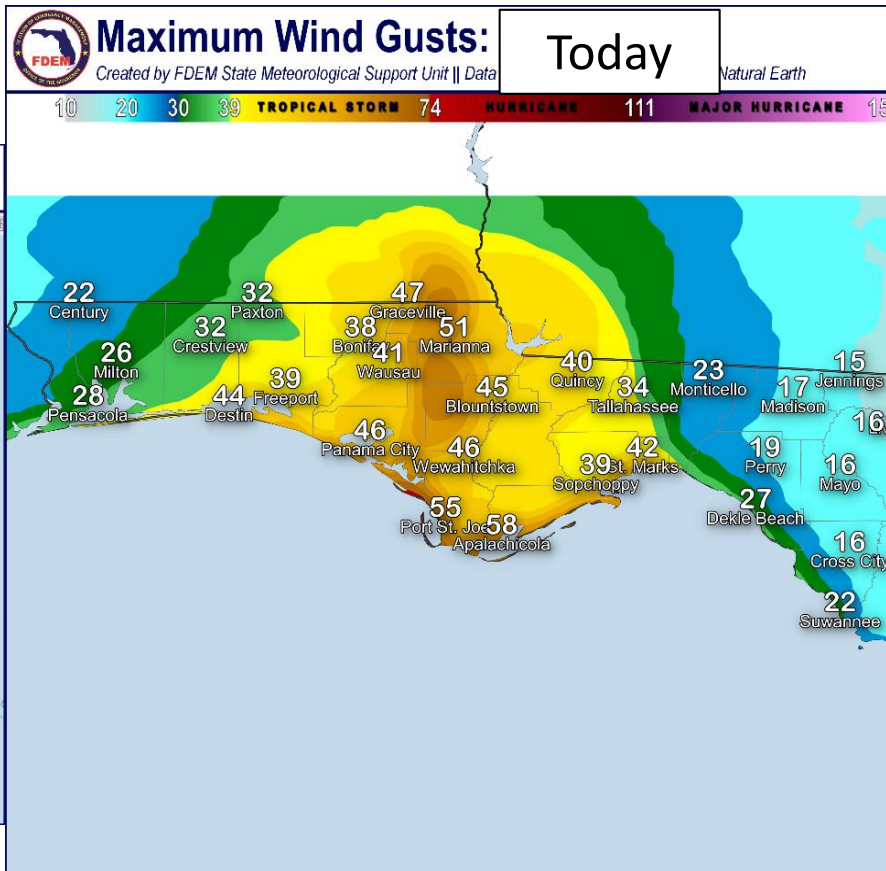
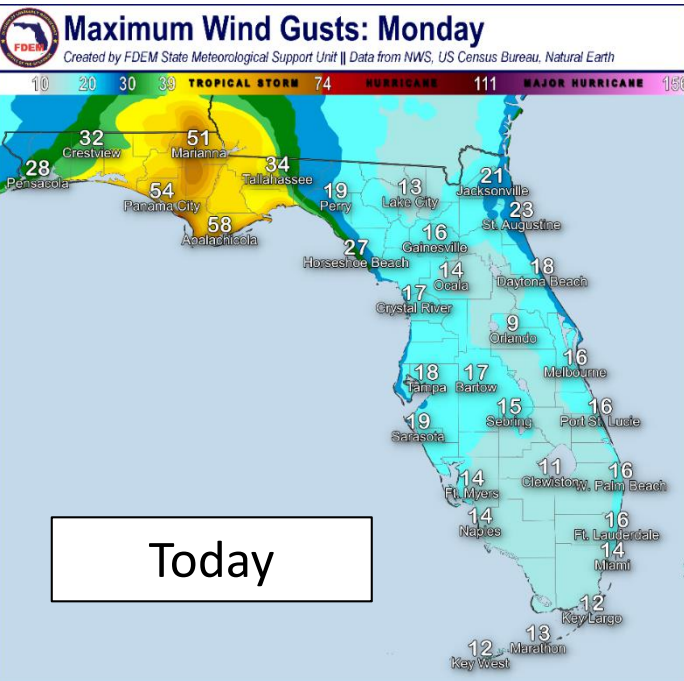
Issued up to 36 hours in advance of the onset of tropical storm force winds

- **Tropical Storm Warnings** are in effect for the Florida Panhandle and western Big Bend.
- Bay, Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Leon, Liberty, Okaloosa, Wakulla, Walton, and Washington
- **Tropical Storm Watches** have been cancelled.



Forecast Wind Gusts

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



Winds will begin increasing this morning in the Panhandle, with gusts into tropical storm strength across Northwest Florida throughout the day. Some wind gusts near 70 mph are possible in the Apalachicola area and inland toward the tri-state area.

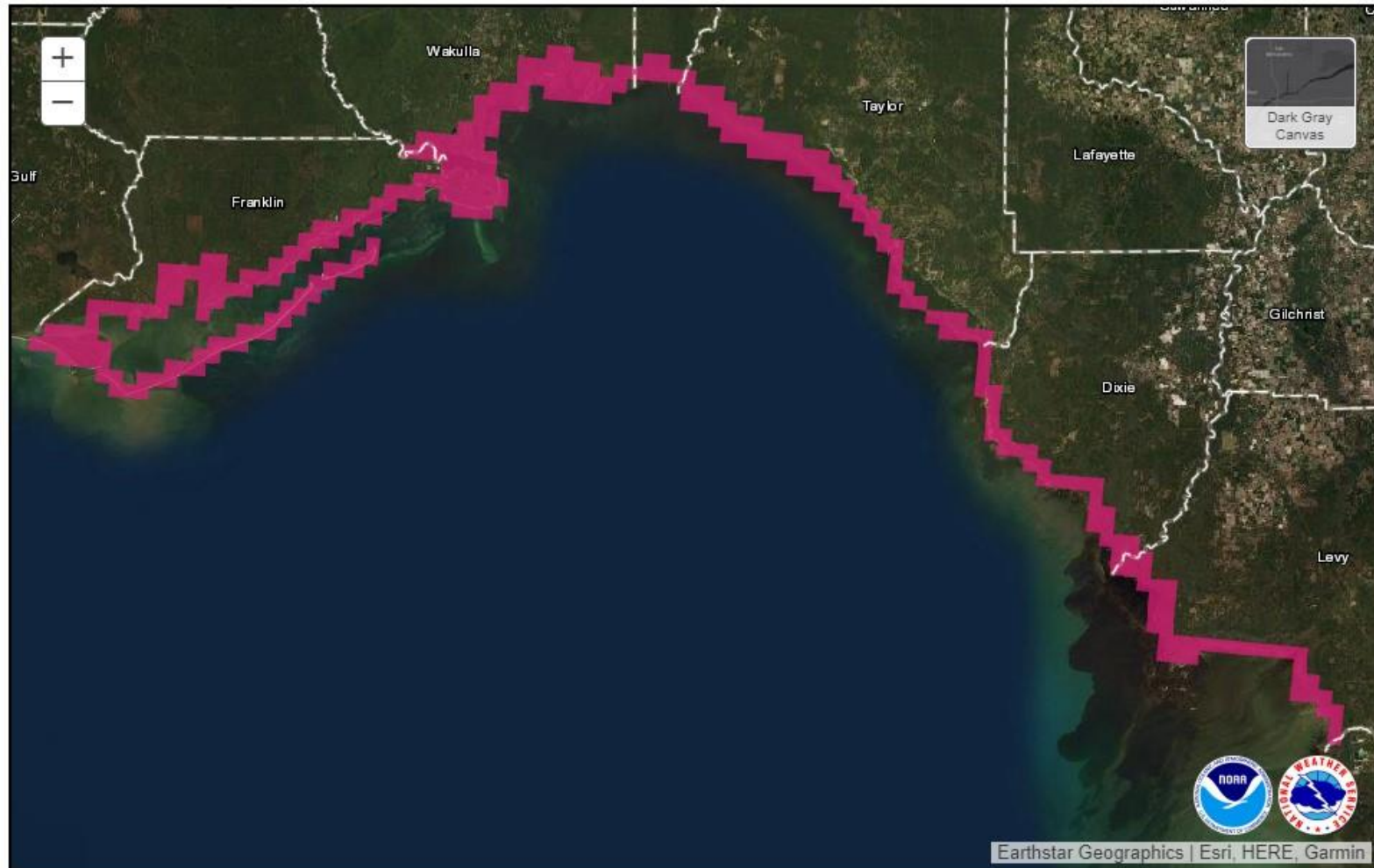
Wind gusts will decrease overnight, but remain breezy along the coast.



Surge Watches and Warnings

In Effect Until Further Notice

Tropical Storm Fred
Advisory 025 Issued: 4:00 PM CDT Sun Aug 15



0 10 20mi
Storm Surge Warning
Storm Surge Watch

https://www.nhc.noaa.gov/refresh/graphics_at1+shtml/153159.shtml?inundation#contents

P-Surge Interactive Map

Storm Surge Warnings are in effect for the Big Bend, from Franklin County to Levy County (Indian Pass to Yankeetown).

Storm Surge Warning

There is a **danger of life-threatening inundation** from rising water moving inland from the shoreline generally **within 36 hours**.

Promptly follow evacuation and other instructions from local officials.

Storm Surge Watch

There is a **possibility of life-threatening inundation** from rising water moving inland from the shoreline generally **within 48 hours**.

Promptly follow evacuation and other instructions from local officials.





Storm Surge Threat Overview

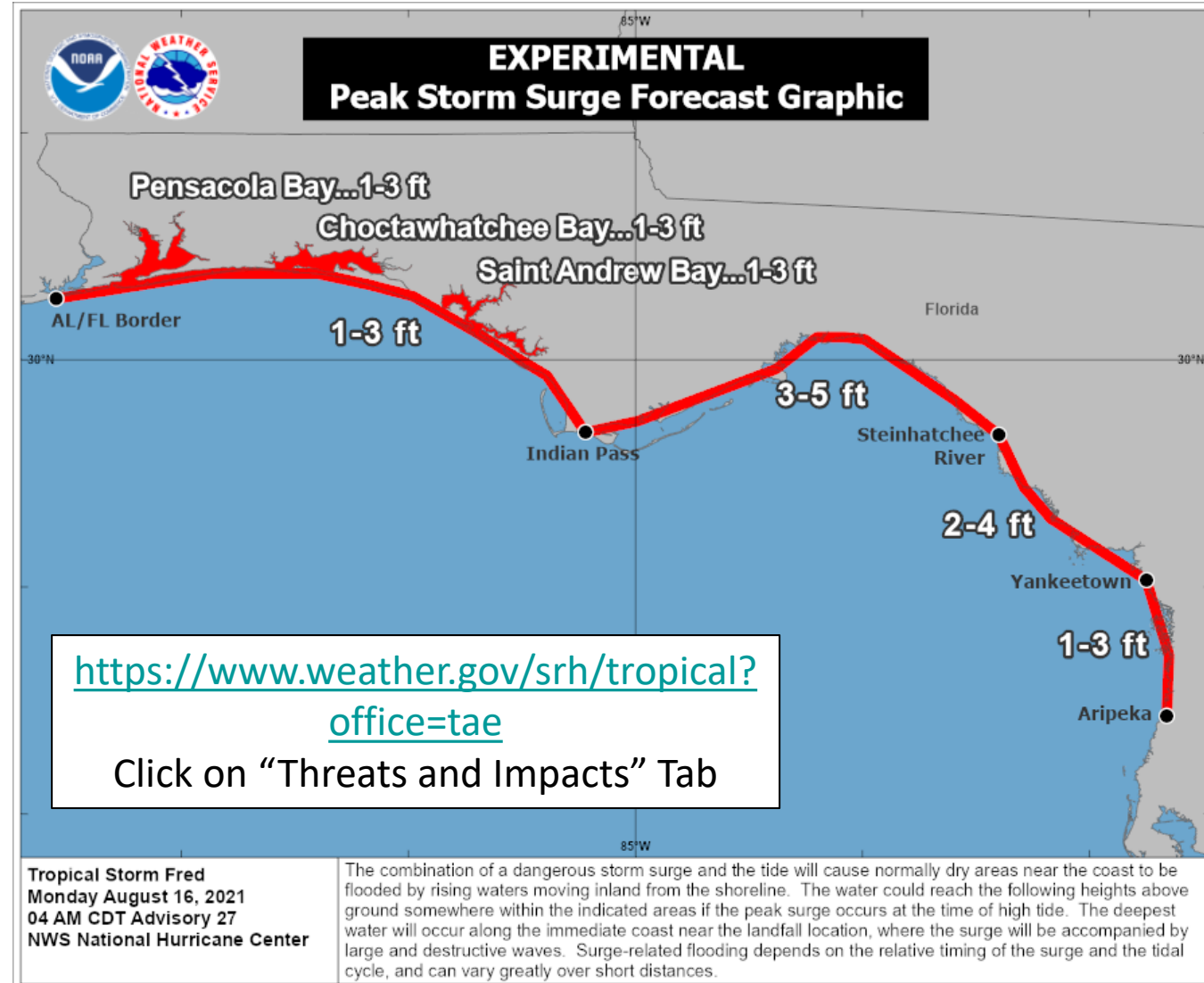
Tropical Storm Fred

Storm surge impacts are expected to be low in the Panhandle, with values less than 3' at this time.

Higher surge is now forecast in Apalachee Bay of 3-5' due to the eastward shift in track and a large wind field.

Surge values also increased further east, from the Steinhatchee River to Yankeetown where values of 2-4' are now expected.

1-3' is possible further south along the Nature Coast

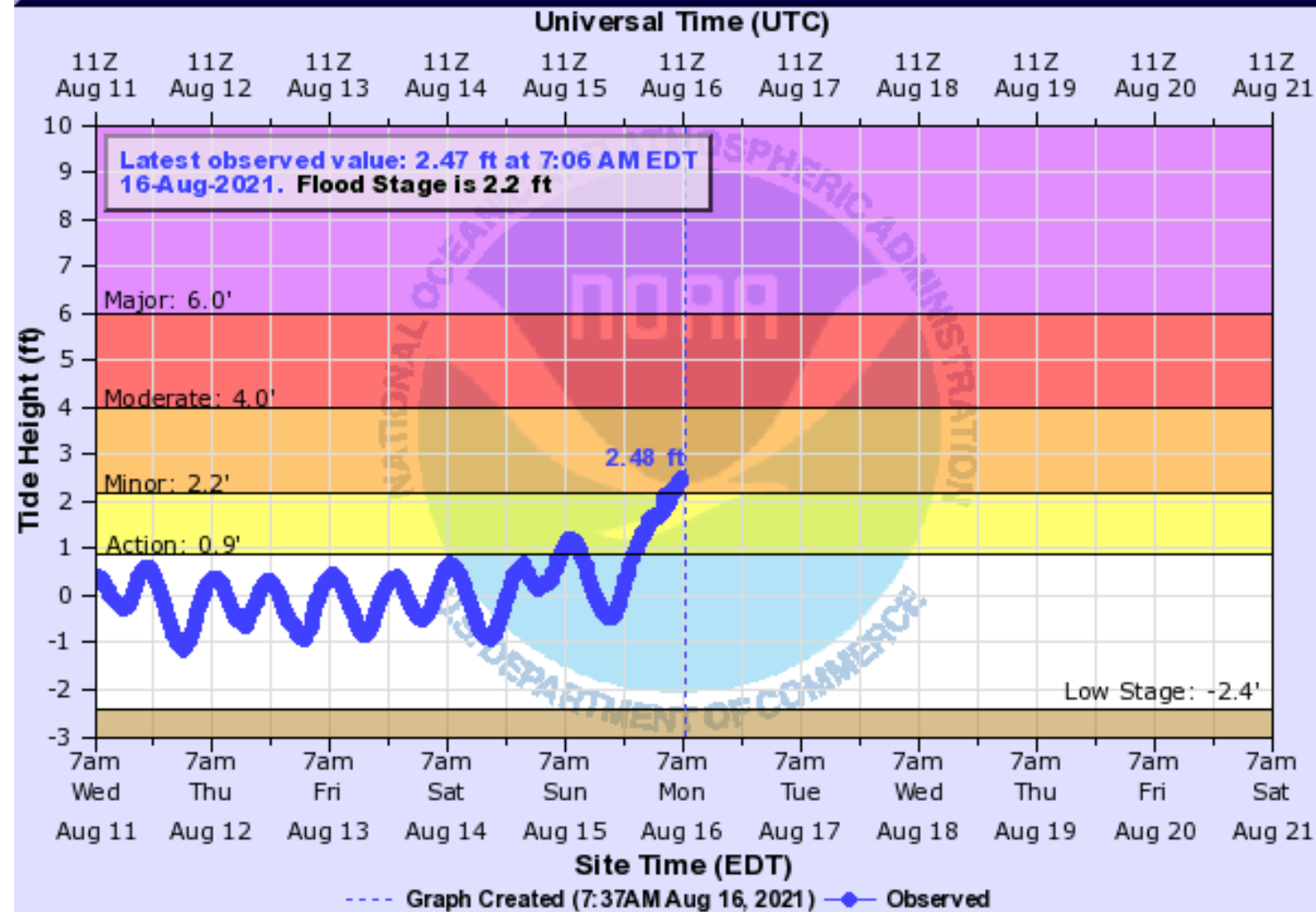




Gulf of Mexico at Apalachicola

[Hydrograph Link](#)

GULF OF MEXICO TIDE GAUGE AT APALACHICOLA (IN MHHW)

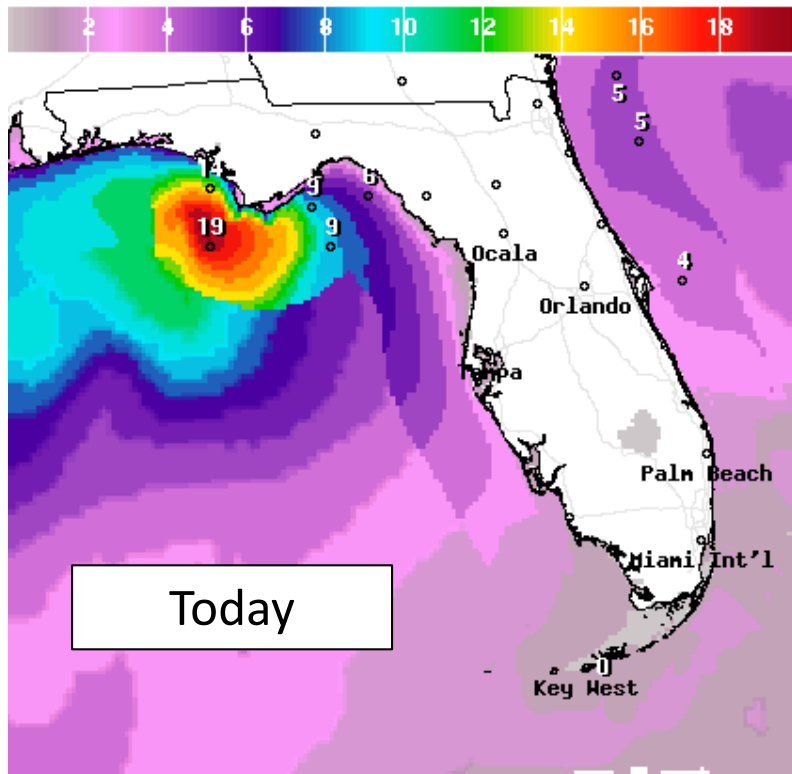


- 5 In Apalachicola, US-98 is subject to flooding near the airport. Flooding continues to extend inland affecting areas primarily along Bay Avenue, east of Market Street and north of Apalachicola along the river at Waddell Road and Bay City Road. In Eastpoint, Patton Drive floods at this level. Areas along East Bay Drive and Rose Drive begin to flood. Around Indian Lagoon, structures not elevated flood, with water levels up to 2 feet deep. Indian Pass Road is impassible.
- 4 The St George Island Causeway near Eastpoint begins to flood and is subject to closure above this level. In Apalachicola, areas between Market Street and the waterfront flood with a water depth up to 2 feet. Bay Avenue begins to flood, with structures not elevated impacted. North of Apalachicola, areas along Waddell Road and Bay City Road near the river begin to flood. In Gulf County, flooding begins to affect the backyards of some residences on the south side of Indian Lagoon
- 3 In Apalachicola, water floods backyards of residences on Bay Avenue. Market Street floods near the Orman House State Park. In Gulf County, Indian Pass Road begins to flood at this level.
- 2.7 In Apalachicola, Water Street floods as well as the Battery Park under the John Gorrie Bridge. In Eastpoint, low lying areas near the causeway begin to flood at this level.
- 2.2 In Gulf County, water will overwash SR-30E at the Stump Hole. Backyards of residences on the north side of Indian Pass Lagoon will begin to flood. Water approaches Indian Pass Road on the west side of the Lagoon.
- 1.9 The boat ramp at the city docks in Apalachicola will flood.



Forecast Wave Heights

Early This Week

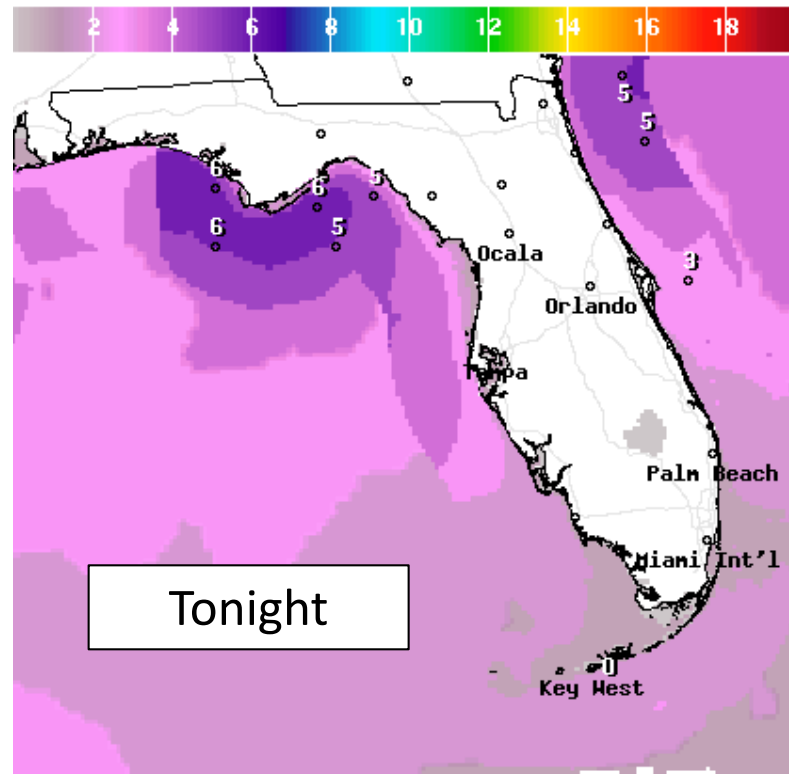


Wave Height(ft) Ending Mon Aug 16 2021 2PM EDT
(Mon Aug 16 2021 18Z)



National Digital Forecast Database

10z issuance Graphic created-Aug 16 6:31AM EDT

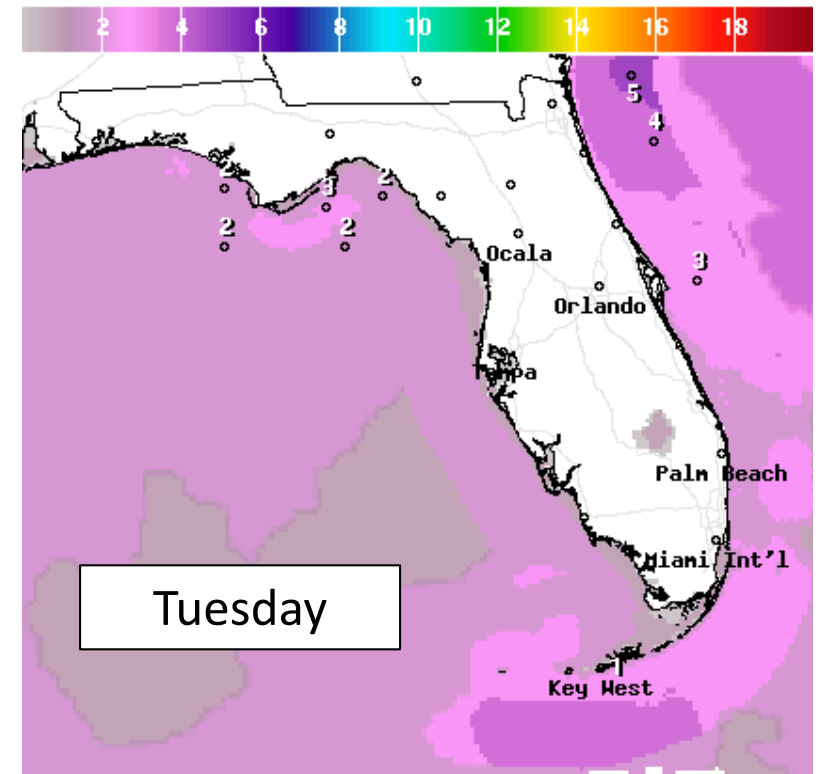


Wave Height(ft) Ending Tue Aug 17 2021 8AM EDT
(Tue Aug 17 2021 12Z)



National Digital Forecast Database

10z issuance Graphic created-Aug 16 6:32AM EDT



Wave Height(ft) Ending Wed Aug 18 2021 2AM EDT
(Wed Aug 18 2021 06Z)



National Digital Forecast Database

10z issuance Graphic created-Aug 16 6:33AM EDT

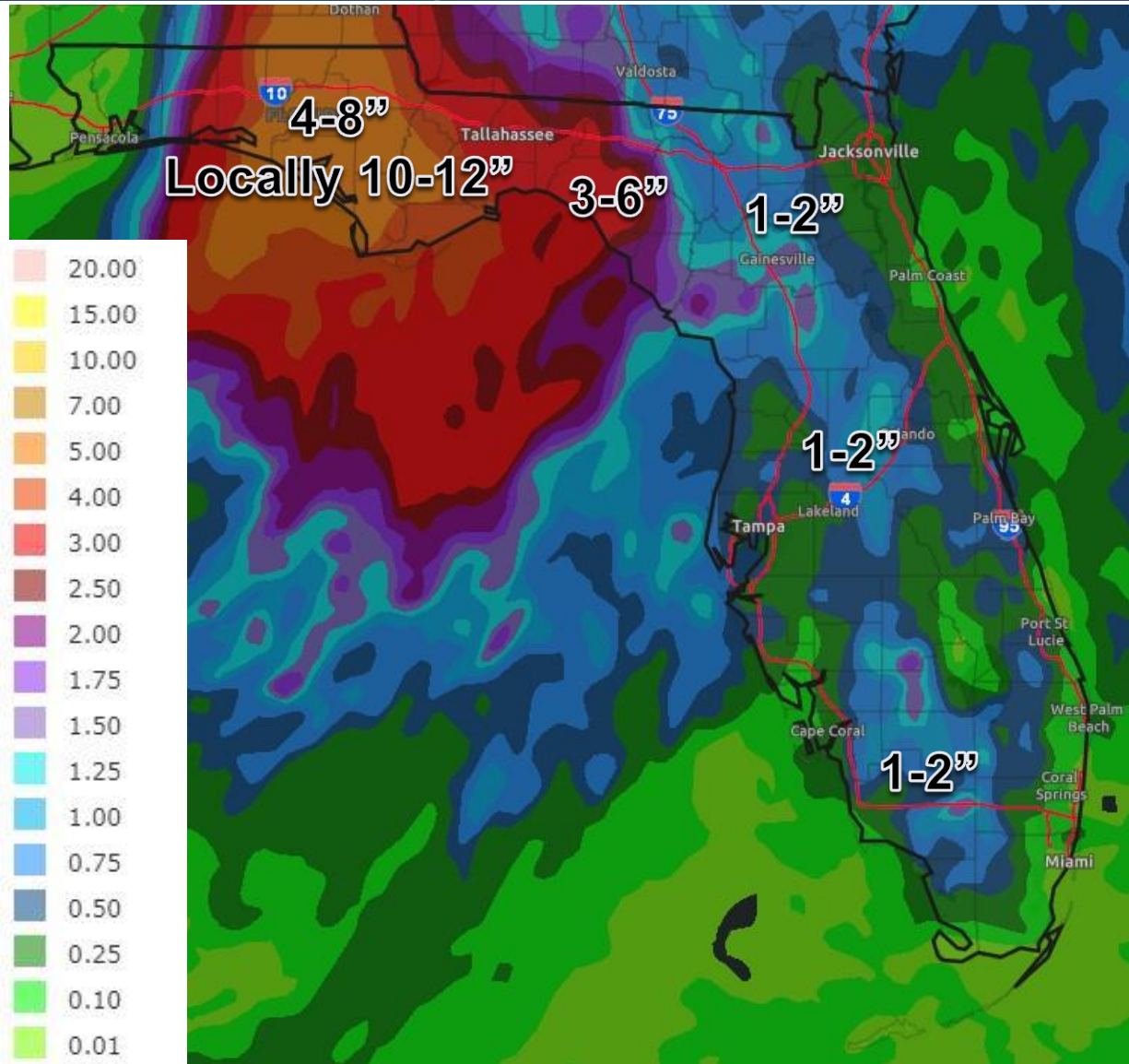


High surf of 8-12 feet is expected at Panhandle beaches with 2-4' feet along the rest of the Gulf Coast. A [High Surf Warning](#) is in effect from Escambia County to [Franklin County](#). This will result in dangerous rip currents and minor to significant beach erosion.



Rainfall Totals Next 48 Hours

Ending 8 AM ET Wednesday



The main threat to Florida from Fred will be heavy rainfall.

The heavy rain threat will move into the Panhandle and western Big Bend throughout the day. Rainfall will gradually end tonight, but some trailing rain bands may continue in the Big Bend.

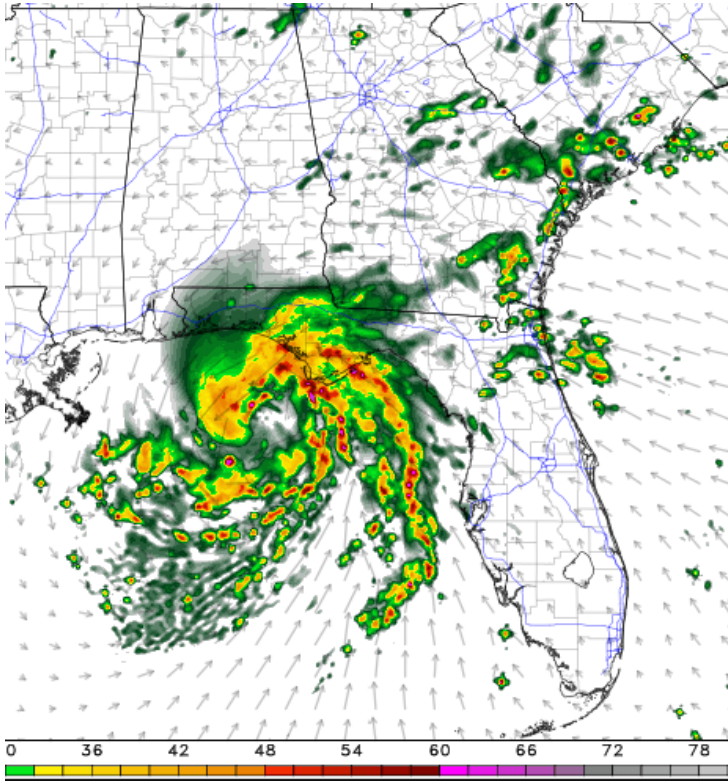
Isolated totals in the Panhandle could be as high as 12", with widespread totals of 4-8" and a widespread 3-6" in the Big Bend.

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

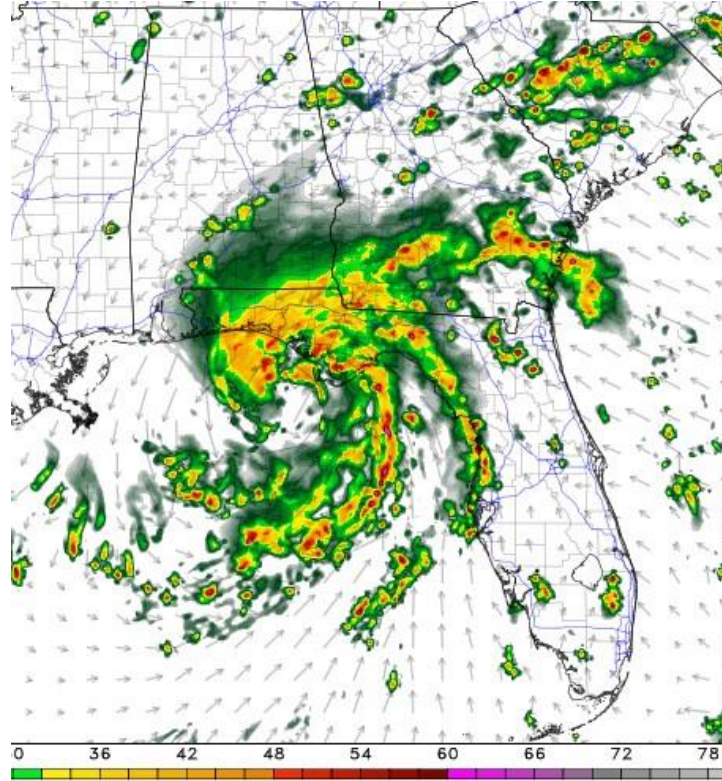


Model Forecast Radar

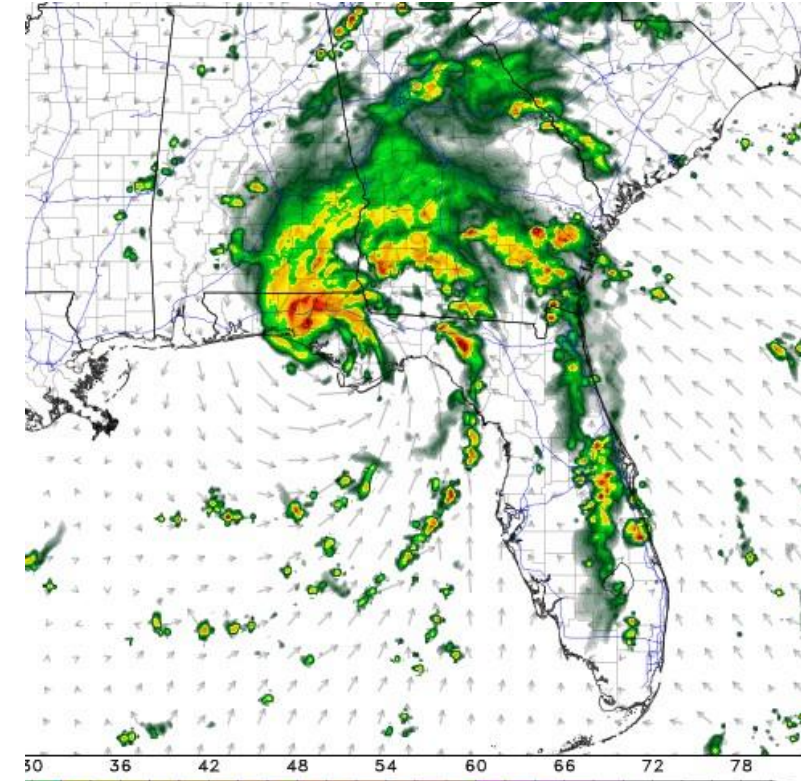
*****Only Model Guidance – Time & Position Will Vary*****



Monday Morning



Monday Afternoon

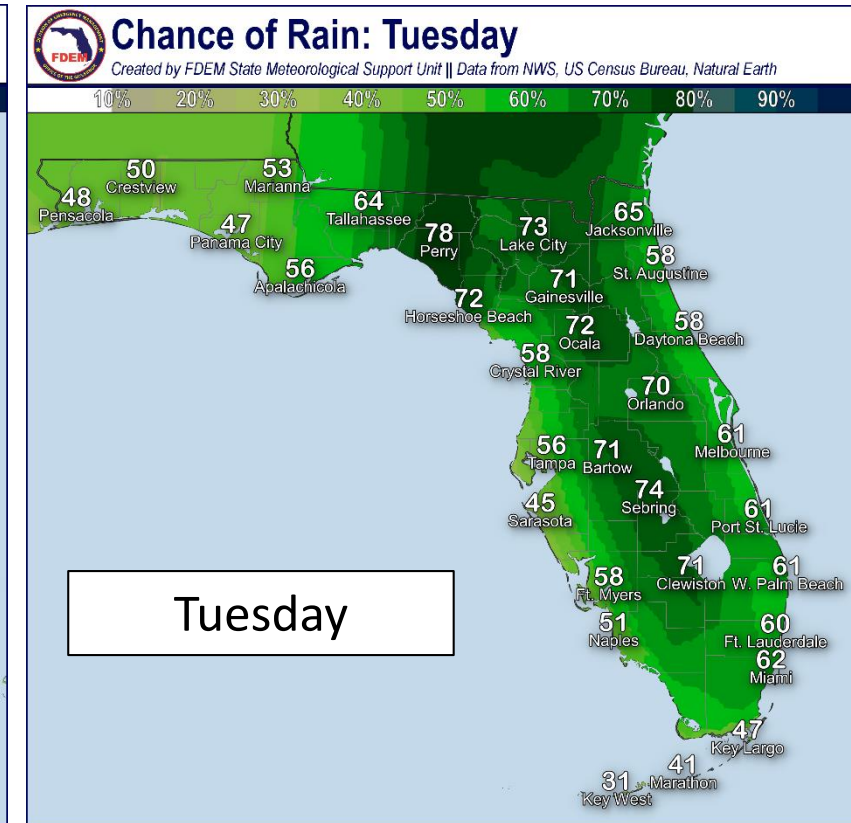
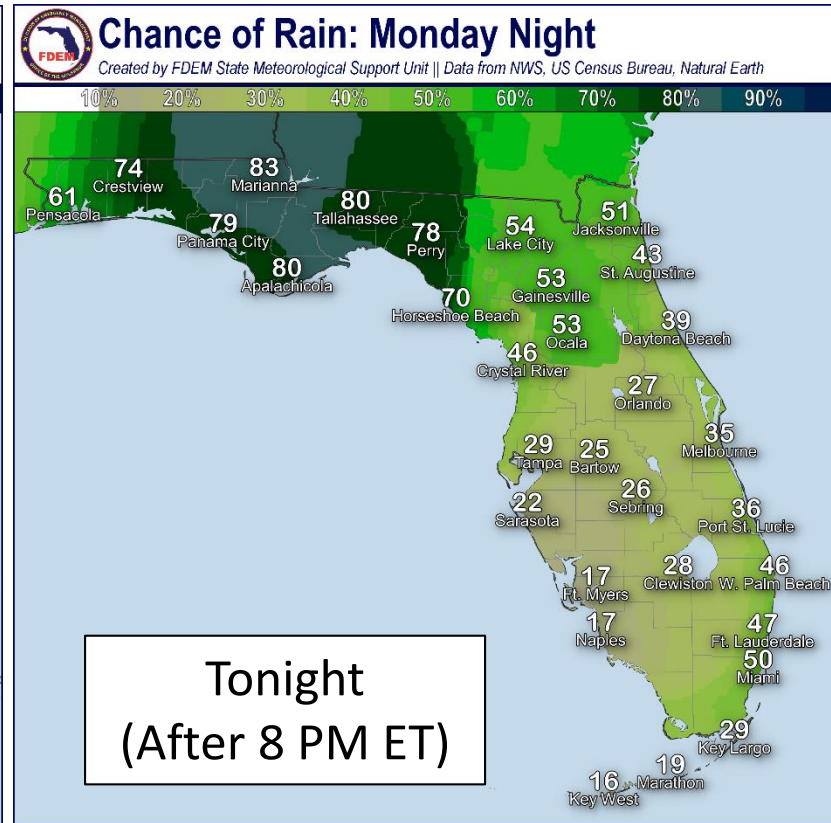
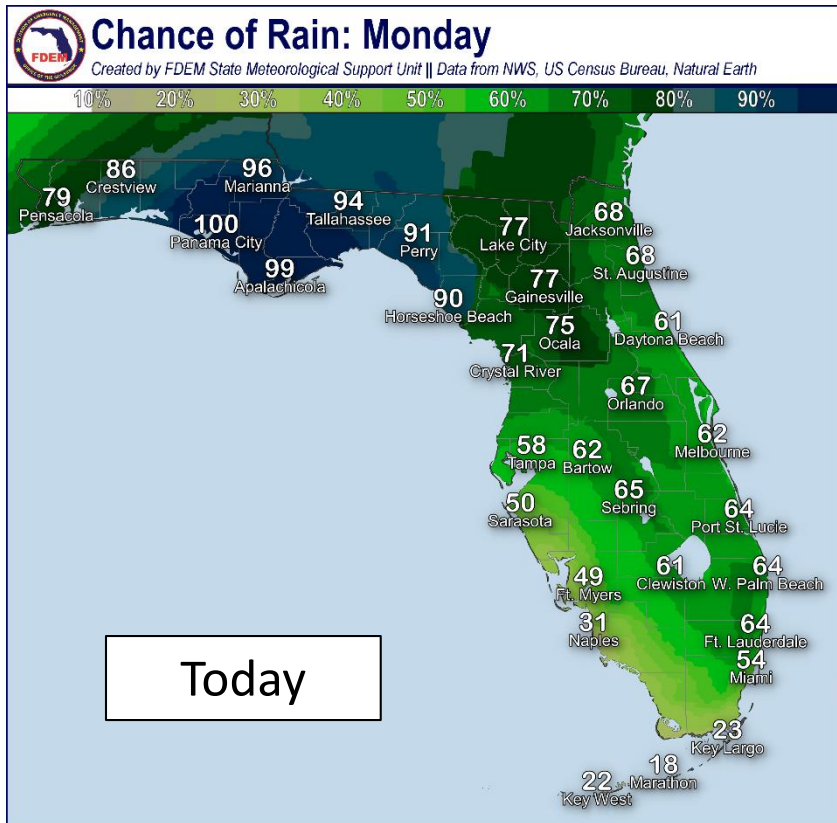


Monday Evening

Rain bands will continue to move inland early Monday morning. Conditions will deteriorate Monday afternoon as Fred nears the coast. Tornadoic rain bands may impact as far east as the Nature Coast/NE FL. Fred moves inland Monday night with improving conditions Tuesday morning.



Rain Chances from NWS



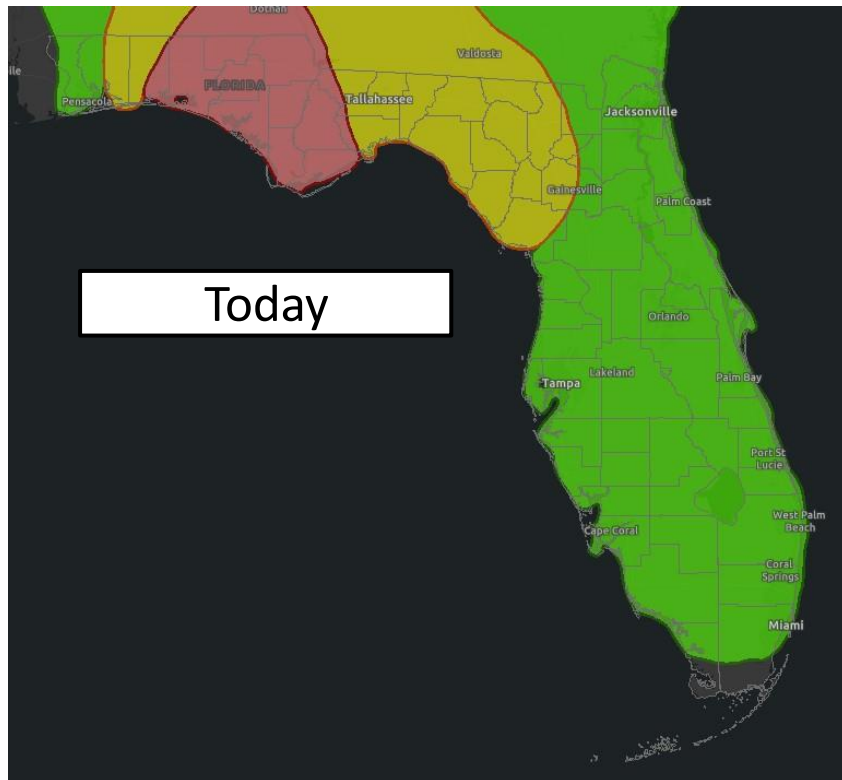
Conditions will begin to improve into the early morning hours on Tuesday.

Scattered summertime thunderstorms are expected across the Peninsula on Monday, some with gusty winds (especially along the West Coast and Northeast Florida). Some trailing rain bands continue in Northeast Florida into Tuesday.



Flash Flood Outlooks

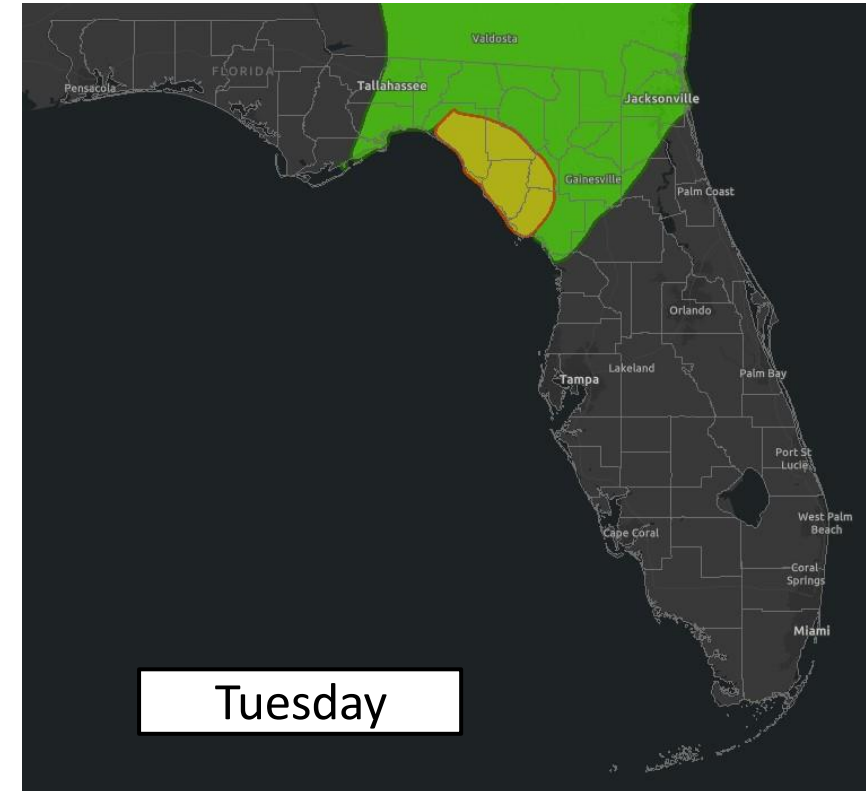
From the Weather Prediction Center



| MARGINAL (MRGL) | SLIGHT (SLGT) | MODERATE (MDT) |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Isolated flash floods possible | Scattered flash floods possible | Numerous flash floods likely |
| Localized and primarily affecting places that can experience rapid runoff with heavy rainfall. | Mainly localized. Most vulnerable are urban areas, roads, small streams and washes. Isolated significant flash floods possible. | Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers. |

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

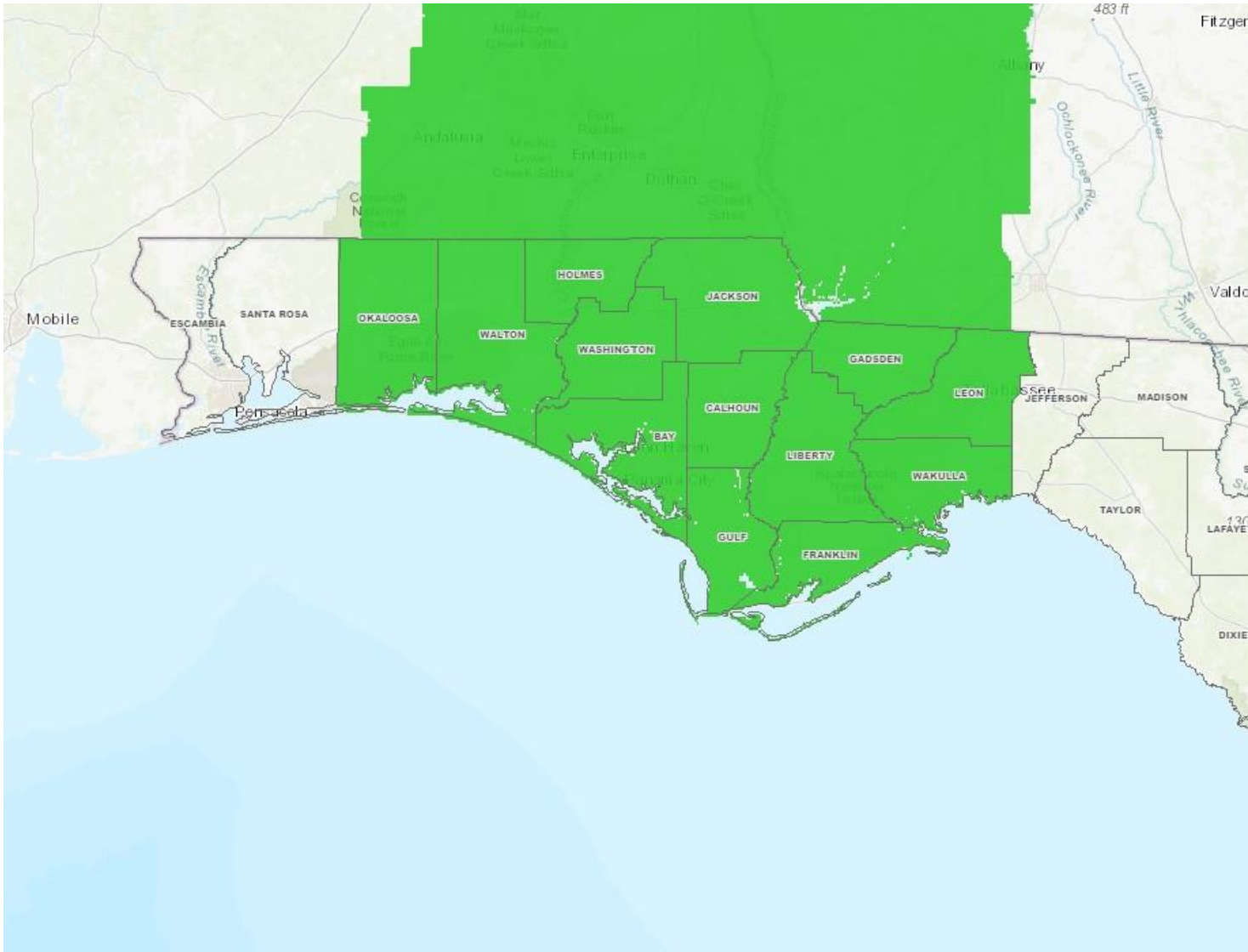
| | |
|--------------|---------------|
| HIGH: > 50% | SLGT: 10%-20% |
| MDT: 20%-50% | MRGL: 5%-10% |



Heavy rainfall will move into the Panhandle and Big Bend this morning and continue into the evening. This heavy rainfall may cause urban and flash flooding, along with river flooding. Some trailing rain bands will keep an isolated flash flood threat through Tuesday, especially in the sensitive areas of Taylor and Dixie County.



Active Flood Watches - NWS



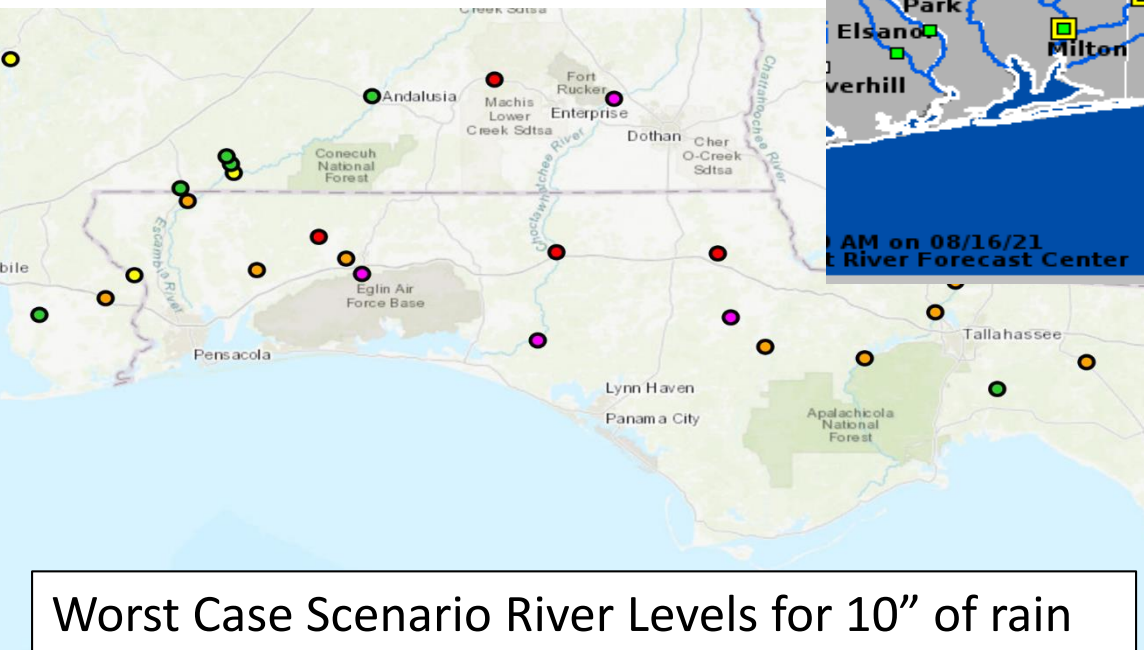
- **Flash Flood Watch** until Tuesday afternoon for the Panhandle.



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 minor to moderate flood stage which could prolong or worsen flooding. Minor flooding is ongoing along the West Coast as well. **Minor to moderate flooding is also possible in the Panhandle, but rivers here are starting out lower than those in the rest of the state.**



Worst Case Scenario River Levels for 10" of rain

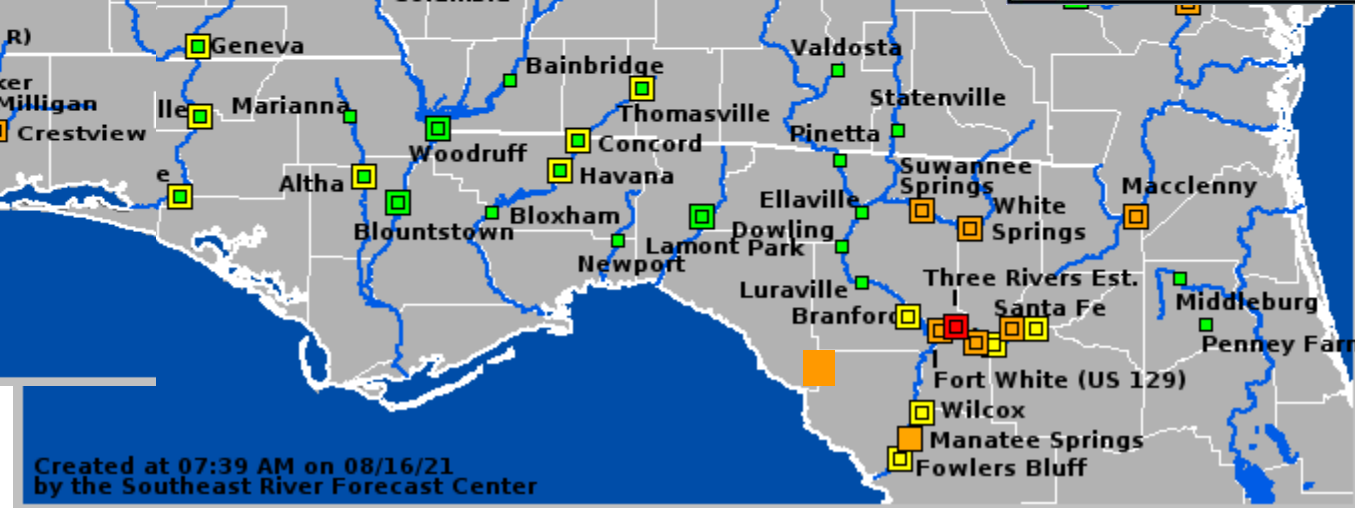
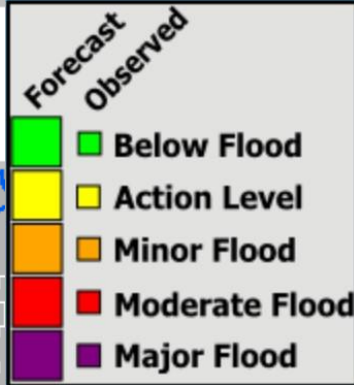


Northern Florida

Valid: 08/16/2021 @ 07:39 AM

AM on 08/16/21
River Forecast Center

Created at 07:39 AM on 08/16/21
by the Southeast River Forecast Center

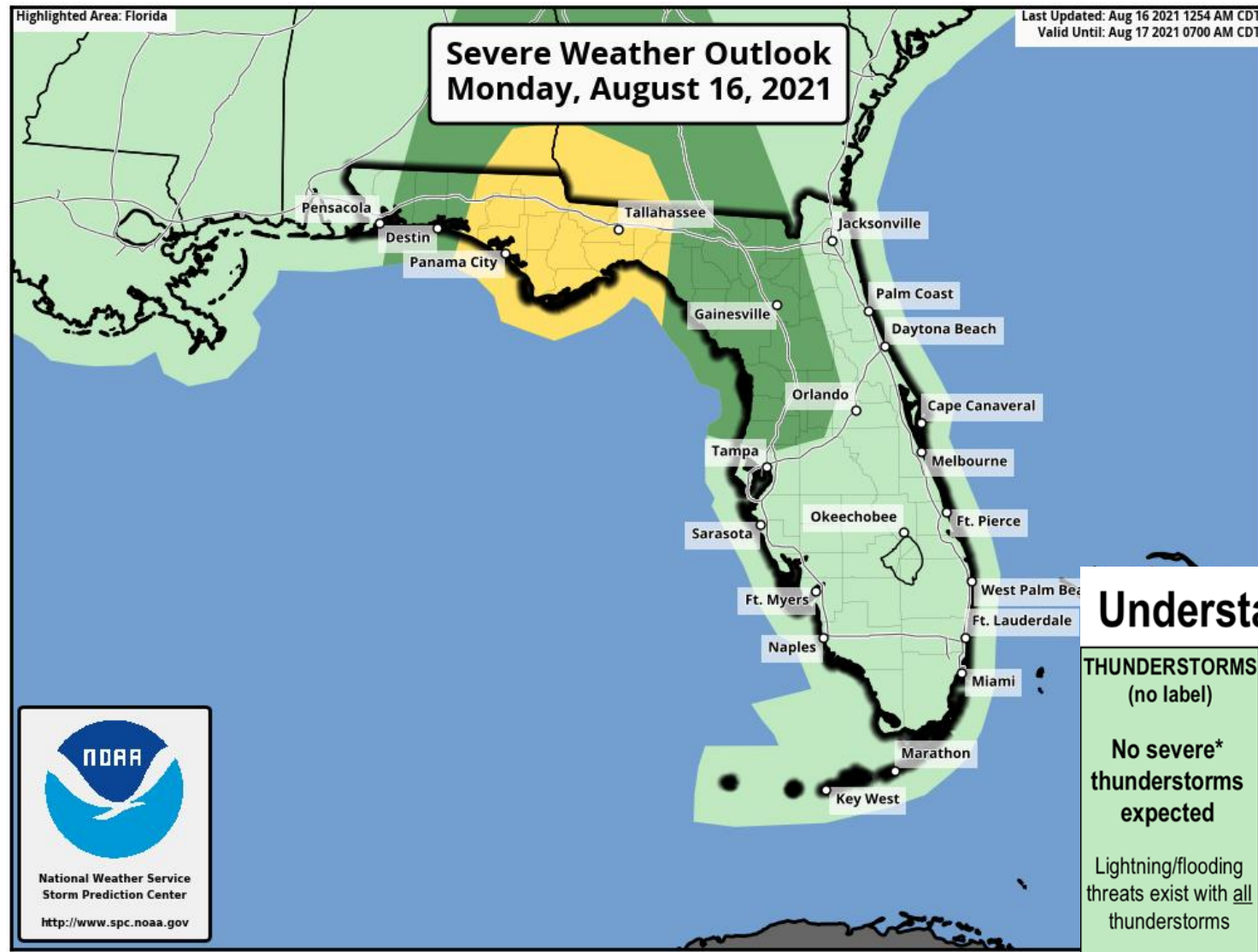


More details on river levels available at the [Southeast River Forecast Center website](https://www.southeastriverforecastcenter.com/).



Severe Weather Outlooks

From the Storm Prediction Center



Tornado Watch likely to be issued later this afternoon and continue into tonight

Isolated tornadoes will be possible in the outer bands of Fred in the Panhandle, Big Bend, and into the Nature Coast and Northeast Florida.

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 |



Key Messages

From the National Hurricane Center



Key Messages for Tropical Storm Fred Advisory 27: 4:00 AM CDT Mon Aug 16, 2021



1. Through Tuesday, heavy rainfall may lead to flash, urban, small stream, and isolated river flooding impacts across the Southeast. By the middle of the week as Fred lifts northward and inland, heavy rainfall and flooding will impact the southern and central Appalachians, the Piedmont of the Southeast, and the Mid-Atlantic.

2. Dangerous storm surge inundation is possible along portions of the coast of the Florida Panhandle and the Florida Big Bend region, and a Storm Surge Warning is in effect for this area. Interests in these areas should follow any advice given by local officials.

3. Tropical storm conditions are expected in the tropical storm warning area beginning later this morning.

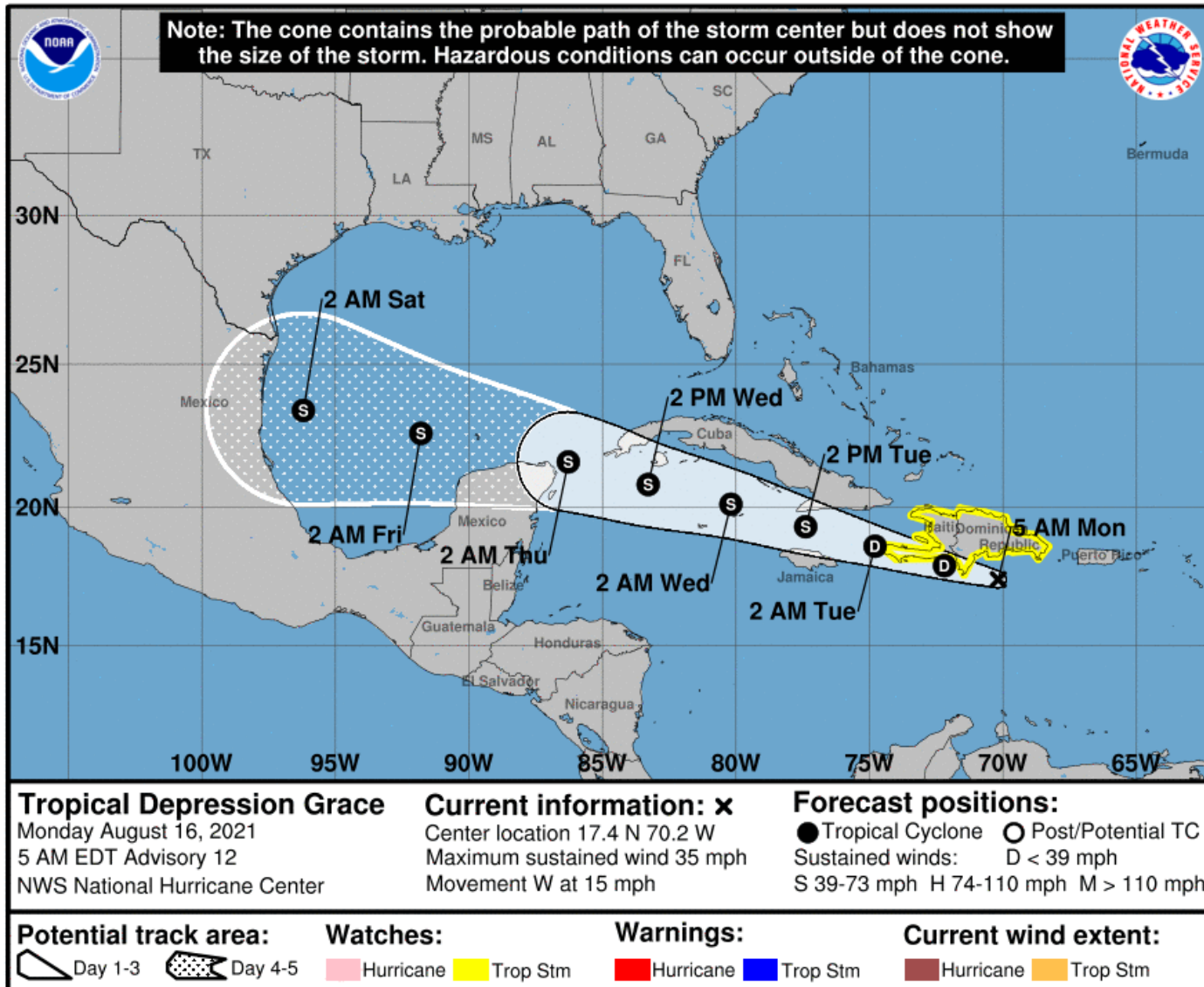


For more information go to hurricanes.gov



Official Forecast Track

From the National Hurricane Center - Grace



- Grace remains disorganized and has weakened to a tropical depression.
- The center of Grace is located about 150 miles southeast of Port Au Prince, Haiti, or about 850 miles southeast of Key West, Florida
- Maximum sustained winds are around 35 mph and Grace is moving to the west at 15 mph.
- On the forecast track, the center is forecast to move near Hispaniola today, and then Cuba on Tuesday and Wednesday.
- The track has shifted south, and the system is now likely to stay well south of the Florida Keys.

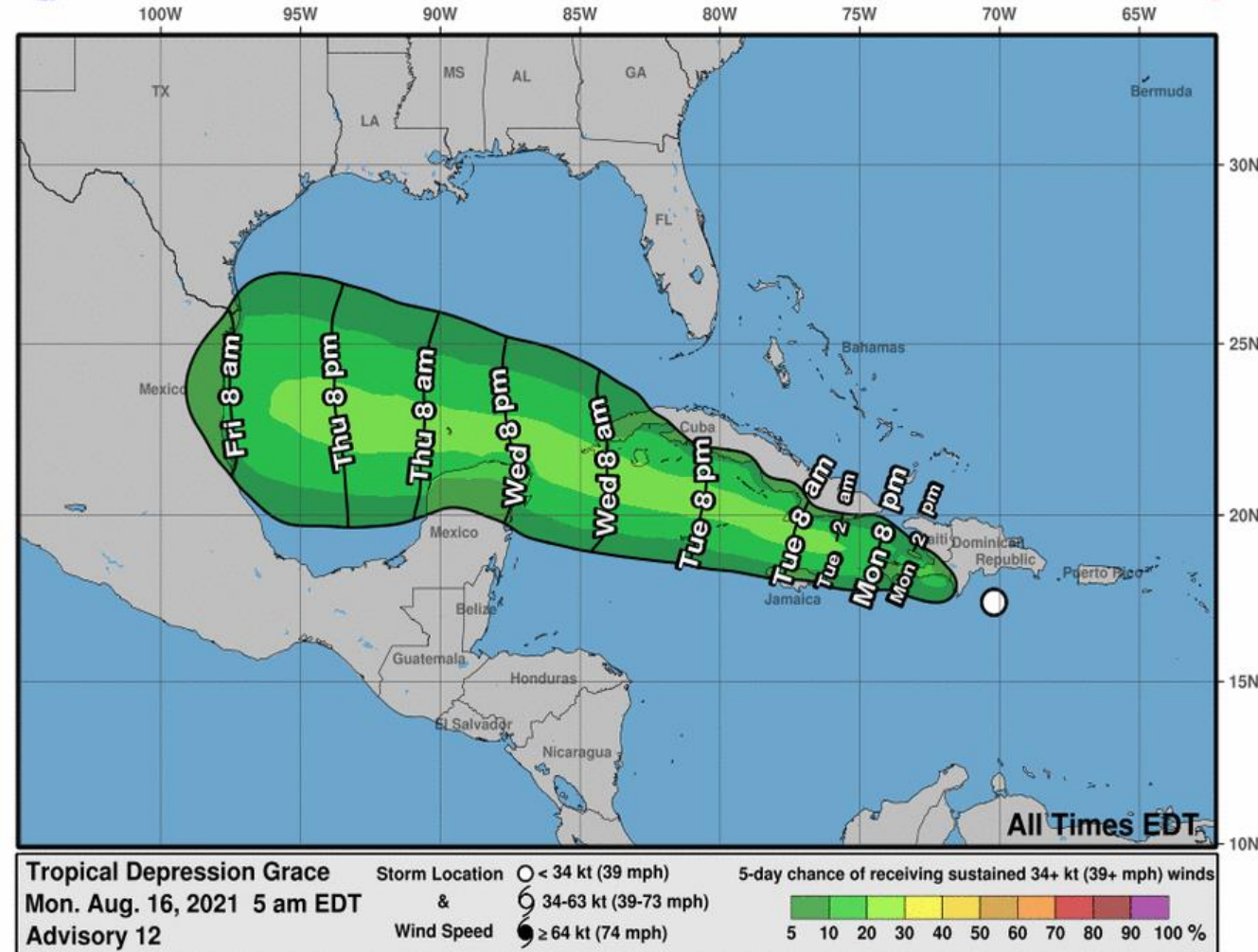


Time of Arrival & Wind Speed Probabilities

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**

Key West

3%

-1%

The odds of tropical storm force winds are now less than 5% in the Florida Keys.

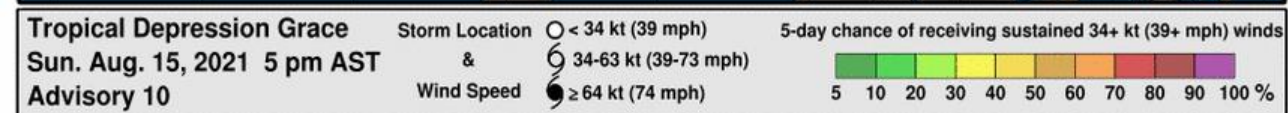
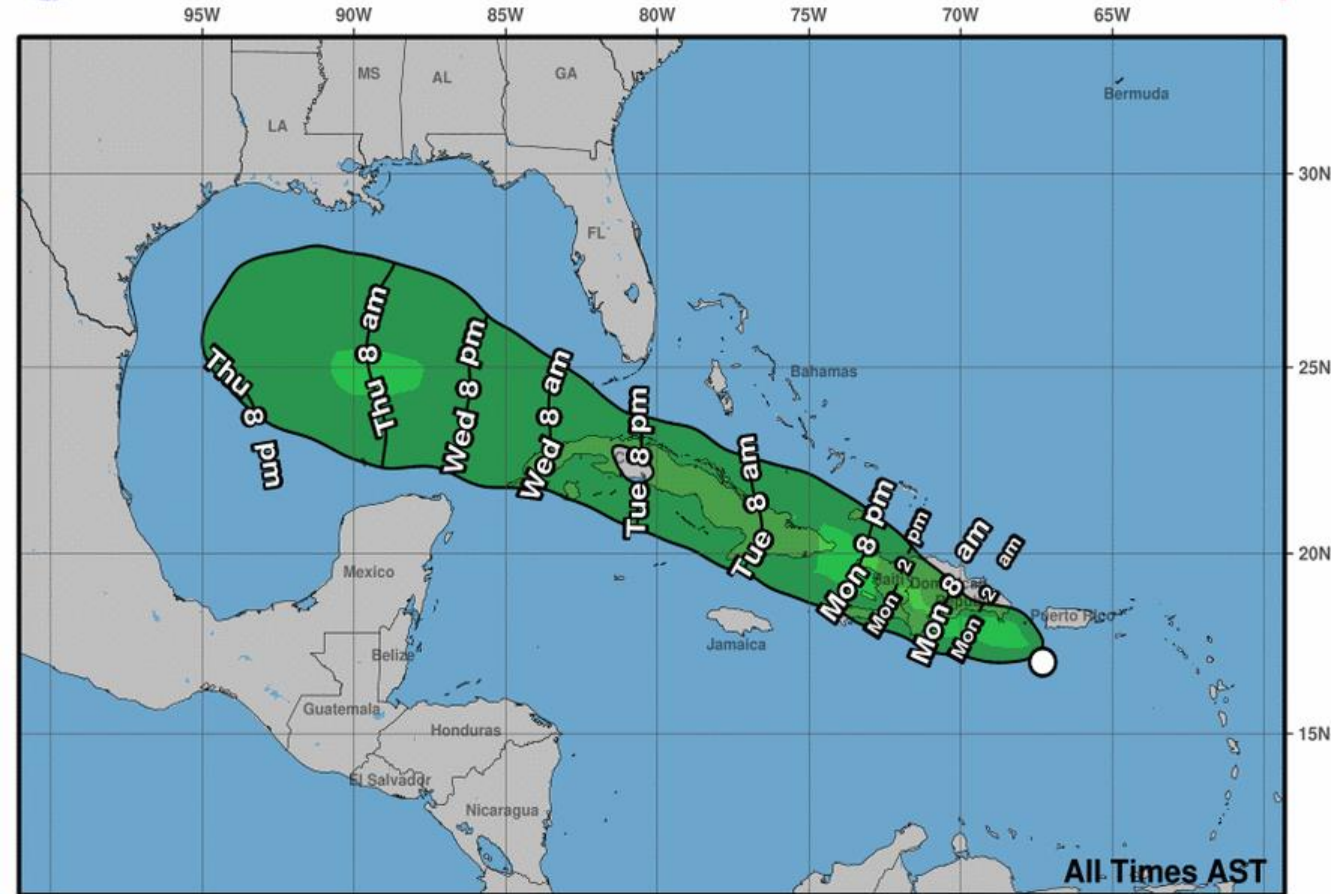


Time of Arrival & Wind Speed Probabilities

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

Key West

4%

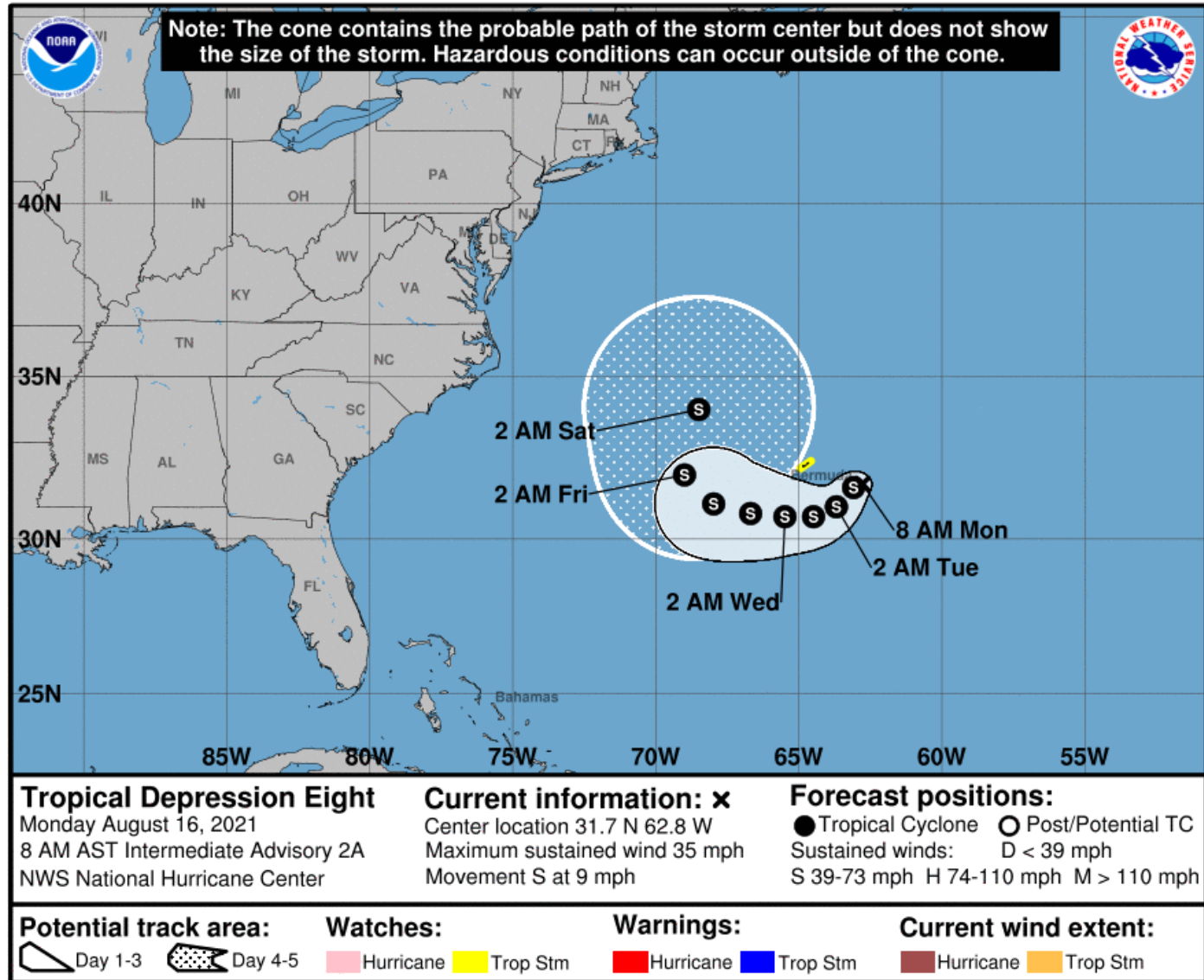
-8%

The odds of tropical storm force winds are now less than 5% in the Florida Keys.



Official Forecast Track

From the National Hurricane Center – TD 8



- A new, small tropical depression formed overnight near Bermuda.
- The center of Tropical Depression Eight is located about 120 miles east of Bermuda, or about 1,100 miles east of Jacksonville, Florida
- Maximum sustained winds are around 35 mph and Eight is moving to the south at 9 mph.
- On the forecast track, the center is forecast to loop around Bermuda and then move back to the north later in the week.
- The environment is only a little favorable for development, so only gradual strengthening is forecast.
- The next name on the list is Henri (ahn-REE)



Overall Summary

Tropical Storm Fred:

- The center of Fred is located about 140 miles south of Apalachicola, Florida.
- Maximum sustained winds are around 50 mph with higher gusts, and Fred is moving to the north at 9 mph.
- Fred will gradually gain strength today and will make landfall late this afternoon in the Florida Panhandle with maximum sustained winds around 60 mph.
- The track has shifted east slightly overnight.
- Fred is lopsided, with most of the impacts (wind, rain, tornadoes, and surge) on the eastern side of the storm. **These impacts will extend well outside of the cone.**
- Tropical storm force winds extend out about 90 miles to the east of the center.

Florida Outlook:

- **Tropical Storm Warnings** have been issued for the Panhandle: Bay, Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Leon, Liberty, Okaloosa, Wakulla, Walton, and Washington County.
- Tropical Storm Watches have been cancelled for Escambia and Santa Rosa County.
- Sustained winds of 40-60 mph are possible in the warning areas, with gusts from 60-70 mph Monday evening and Monday night as a worst case scenario.
- **Storm Surge Warnings** are now in effect for coastal portions of Dixie, Franklin, Jefferson, Levy, Taylor, and Wakulla. Storm surge of 3-5' is expected from Indian Pass to the Steinhatchee River, with 2-4' further east to Yankeetown. 1-3' is expected across the rest of the Florida Panhandle and Nature Coast.
- *Apalachicola is currently experiencing gusts from 30-55 mph and storm surge of about 2.5'.*
- The main threat to Florida from Fred is heavy rainfall. A widespread 4-8" of rain with localized totals of 12" is anticipated across the Panhandle and western Big Bend. **Flash Flood Watches** are in effect for this region until Tuesday evening.
- Widespread minor to moderate river flooding will continue this week in Northeast Florida, and may develop in the Panhandle based on current forecasts. In areas that see more than 10" of rain, moderate to major flooding can't be ruled out!
- Isolated tornadoes are also possible in the Panhandle, Big Bend, and Northeast Florida today. A Tornado Watch is likely to be issued this morning.
- High surf (8-12') in the Panhandle will cause beach erosion. Dangerous rip currents are expected at all Florida beaches today.
- Other than some squally weather in the Keys on Wednesday, Grace is not expected to impact Florida. The track has trended south- away from South Florida.
- Tropical Depression Eight near Bermuda poses no threat to Florida over the next 5 days, but swells from the system could impact Northeast Florida beaches.



Overall Summary

Tropical Depression Grace:

- Grace remains disorganized and has weakened to a tropical depression.
- The center of Grace is located about 150 miles southeast of Port Au Prince, Haiti, or about 850 miles southeast of Key West, Florida
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- On the forecast track, the center is forecast to move near Hispaniola today, and then Cuba on Tuesday and Wednesday.
- The track has shifted south, and the system is now likely to stay well south of the Florida Keys.

Tropical Depression Eight (formerly Invest 96L):

- A new, small tropical depression formed overnight near Bermuda.
- The center of Tropical Depression Eight is located about 120 miles east of Bermuda, or about 1,100 miles east of Jacksonville, Florida
- Maximum sustained winds are around 35 mph and Eight is moving to the south at 9 mph.
- On the forecast track, the center is forecast to loop around Bermuda and then move back to the north later in the week.
- The environment is only a little favorable for development, so only gradual strengthening is forecast.
- The next name on the list is Henri (ahn-REE)

Another briefing packet will be issued mid-day with the 11 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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