



# TROPICAL UPDATE



5:00 PM EDT

Thursday, August 12, 2021

Tropical Depression Fred

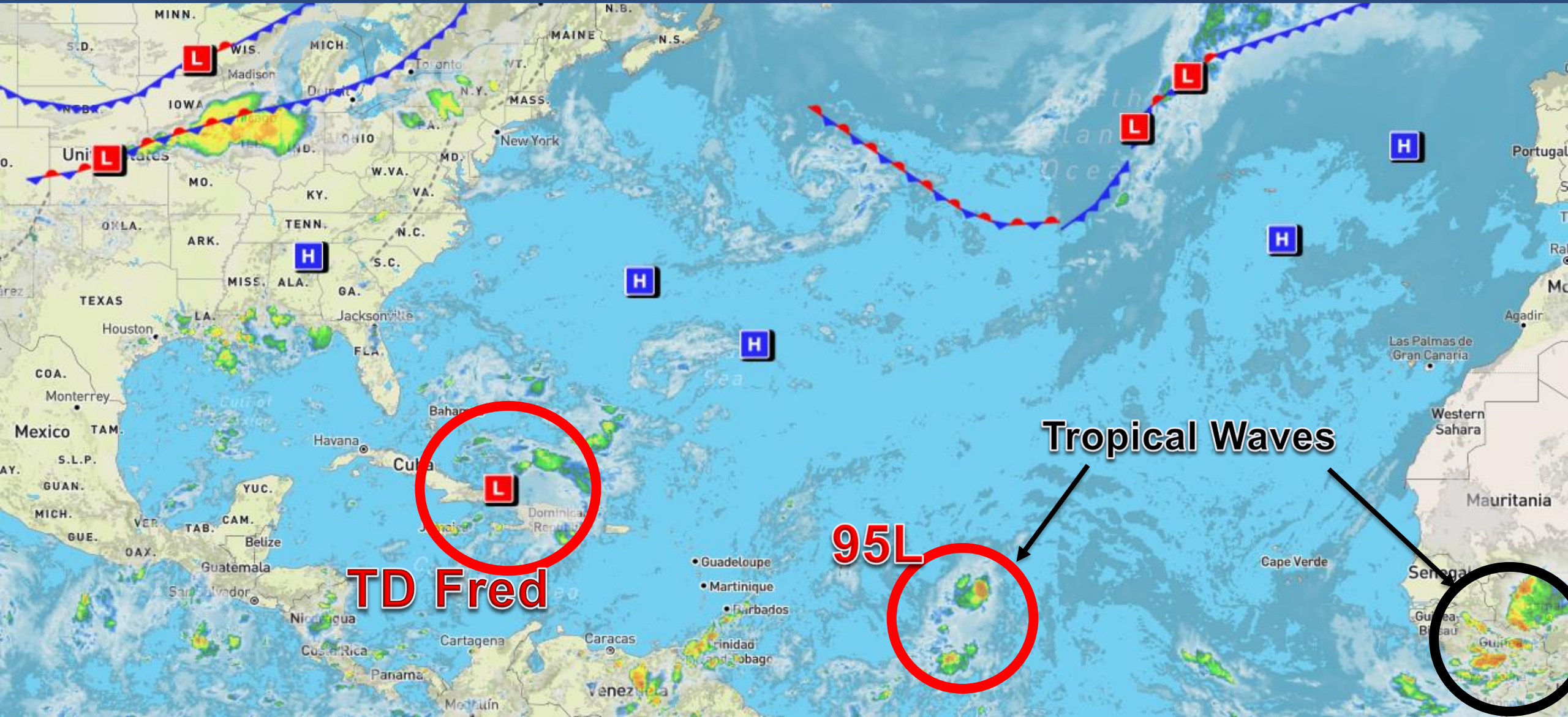
& Invest 95L (70%)

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).



# Atlantic Basin Satellite Image

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

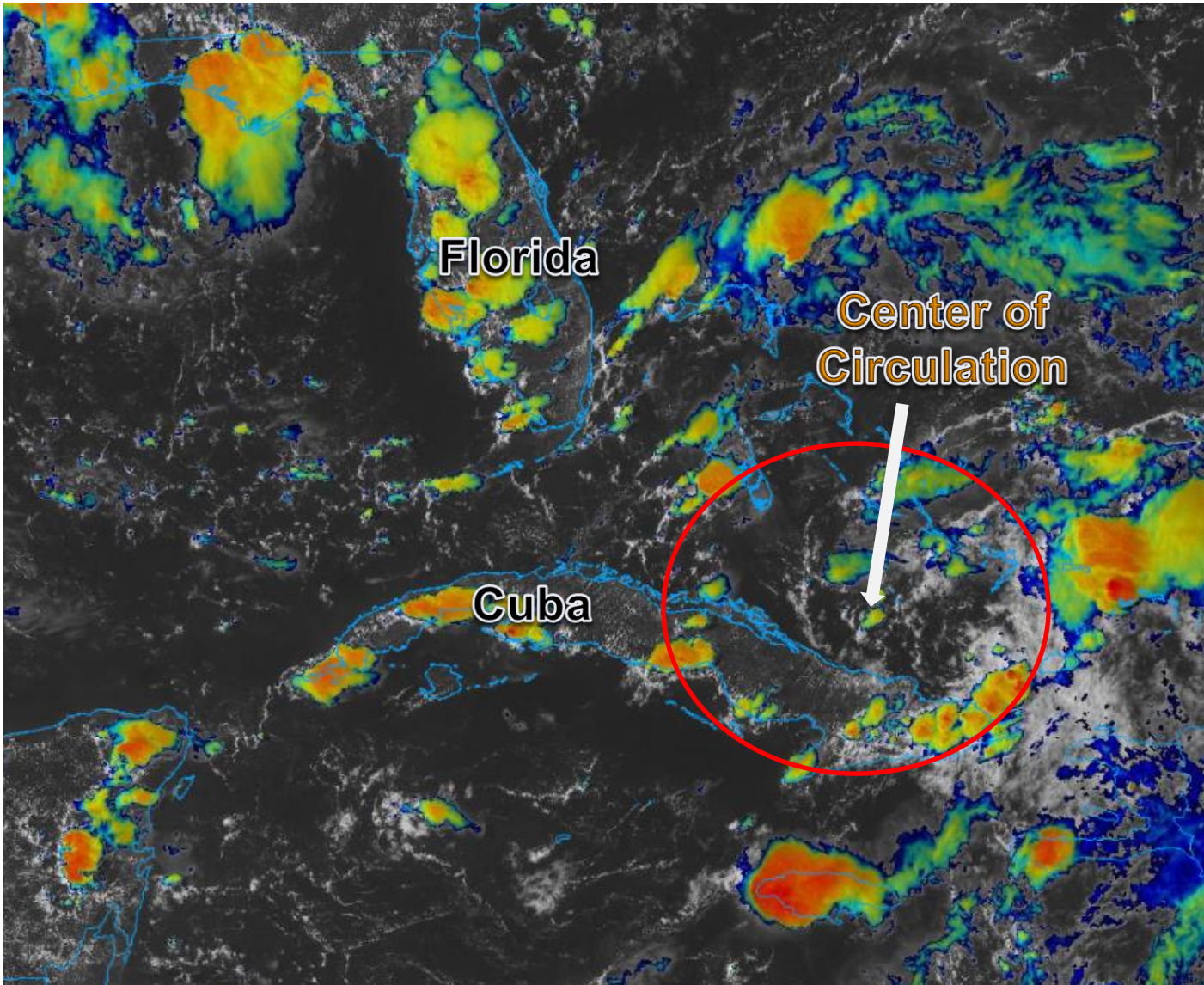






# Satellite Imagery

## Tropical Depression Fred

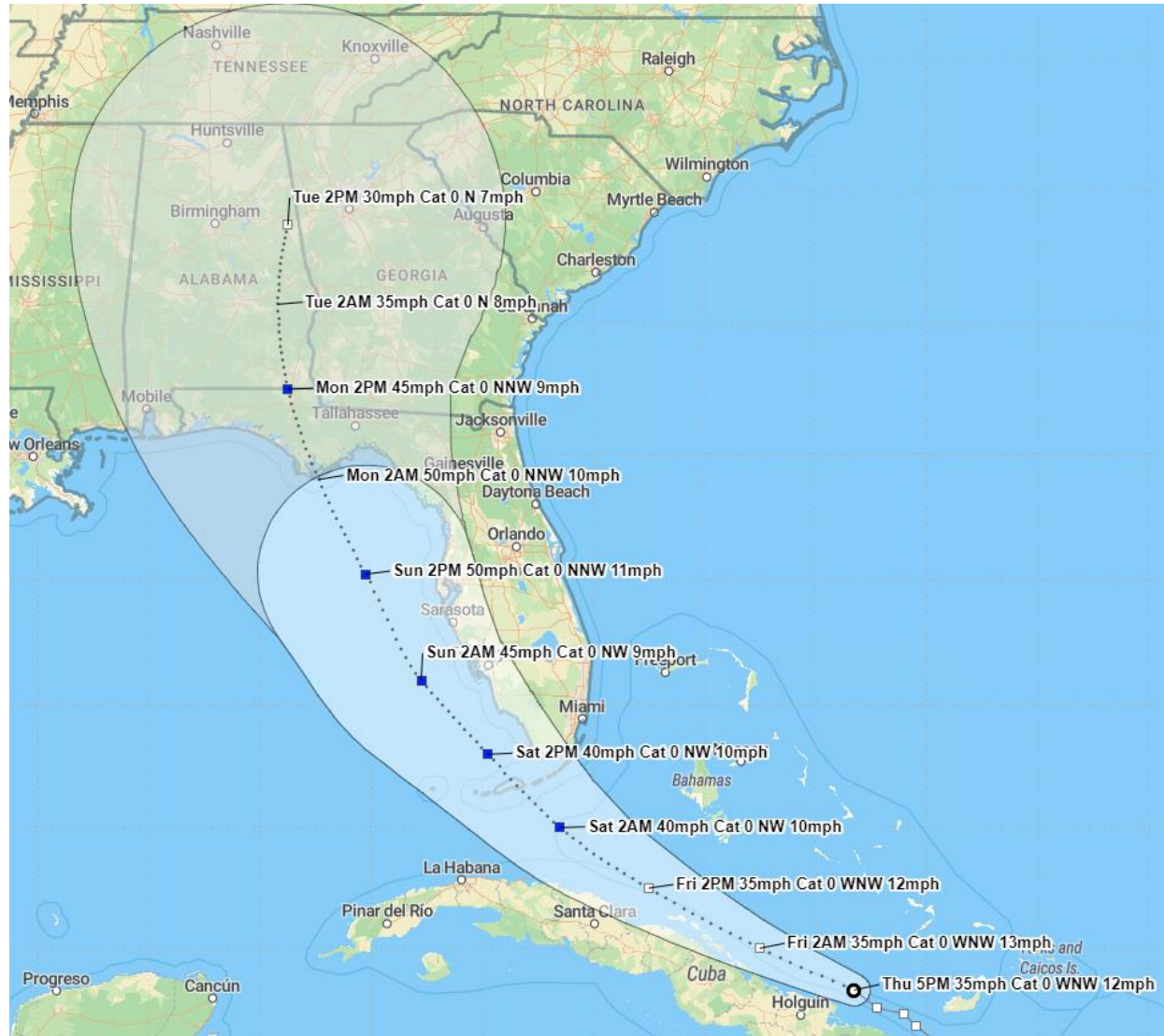


The center of Fred is located just north of the coast of eastern Cuba. Strong thunderstorm activity remains displaced from the center, but as Fred moves toward the Florida Straits & Keys, more organized storm activity should begin to concentrate again near the center and allow it to slowly strengthen.



# Official Forecast Track

## From the National Hurricane Center



- The center of Fred is located near the northern coast of eastern Cuba, or about 470 miles southeast of Key West, Florida.
- Maximum sustained winds are around 35 mph. Little change in strength is expected through tonight. Slow strengthening is expected Friday through Saturday, and Fred is forecast to regain tropical storm strength as it nears the Florida Keys and south Florida.
- Fred is moving west-northwest at 12 mph, and this motion with a decrease in forward speed is expected through Friday, followed by a turn to the northwest.
- The forecast track has been shifted slightly to the west.
- On the forecast track, Fred is expected to move along or just north of eastern and central Cuba tonight and Friday, and be near the Florida Keys and southern Florida on Saturday.
- A second landfall is expected along the Florida Panhandle or Big Bend coast early Monday morning.



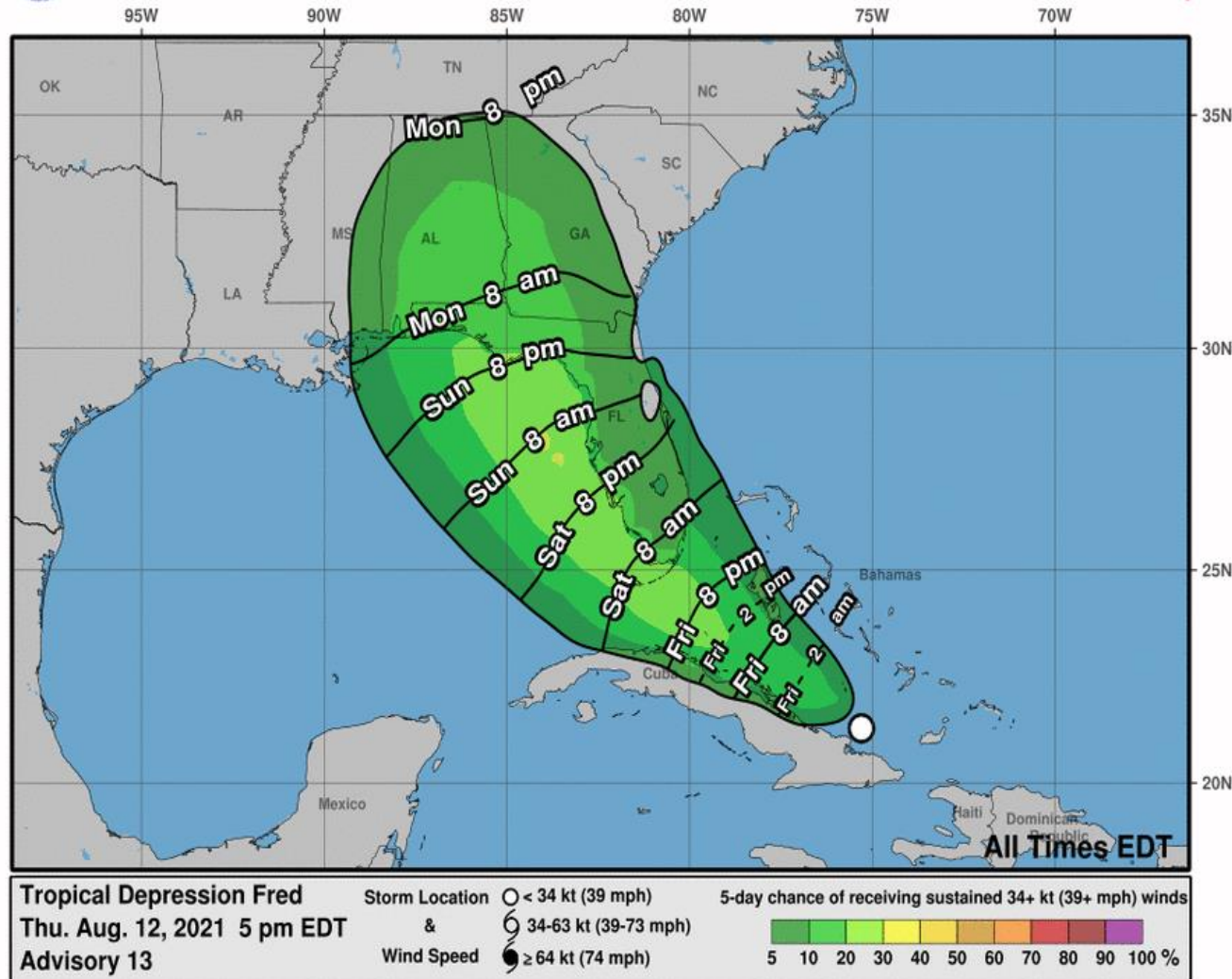


# Time of Arrival & Wind Speed Probabilities

## 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
West Palm Beach	8%	-4%
Miami	7%	-4%
Key West	24%	+1%
Naples	26%	+1%
Ft. Myers	10%	-3%
Tampa	19%	-4%
Cedar Key	20%	-3%
Tallahassee	16%	-1%
Apalachicola	26%	+1%
Panama City	23%	+1%
Pensacola	12%	+3%
Orlando	5%	-4%

There is a near 25% or 1 in 4 chance of tropical storm force winds for the Florida Keys, coastal areas along the Southwest Coast of Florida, the eastern Florida Panhandle and Florida Big Bend. The earliest reasonable arrival time of tropical storm force winds in South Florida is Friday evening, but are most likely to begin late Friday night through Saturday. Winds arrive on Sunday night into Monday in the Panhandle.



# 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

- A Tropical Storm Watch has been issued for South Florida from Ocean Reef to Bonita Beach, including all of the Florida Keys.
- Counties: Monroe, coastal Collier, extreme south Miami-Dade





# Key Messages

From the National Hurricane Center



## Key Messages for Tropical Depression Fred

Advisory 13: 5:00 PM EDT Thu Aug 12, 2021



1. From Friday into Monday, heavy rainfall could lead to areal, urban, small stream, and exacerbated river flooding across southern and central Florida, and into the Big Bend of Florida. By early next week, heavy rain and flood impacts could extend into other portions of the Southeast and into the southern and central Appalachians and Piedmont.

2. Tropical storm conditions are possible beginning Friday night and Saturday in the Florida Keys and portions of southern Florida, where a Tropical Storm Watch is in effect. The risk of tropical storm conditions will spread northward along portions of the Florida west coast and to the Florida Panhandle Saturday night through Monday.



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

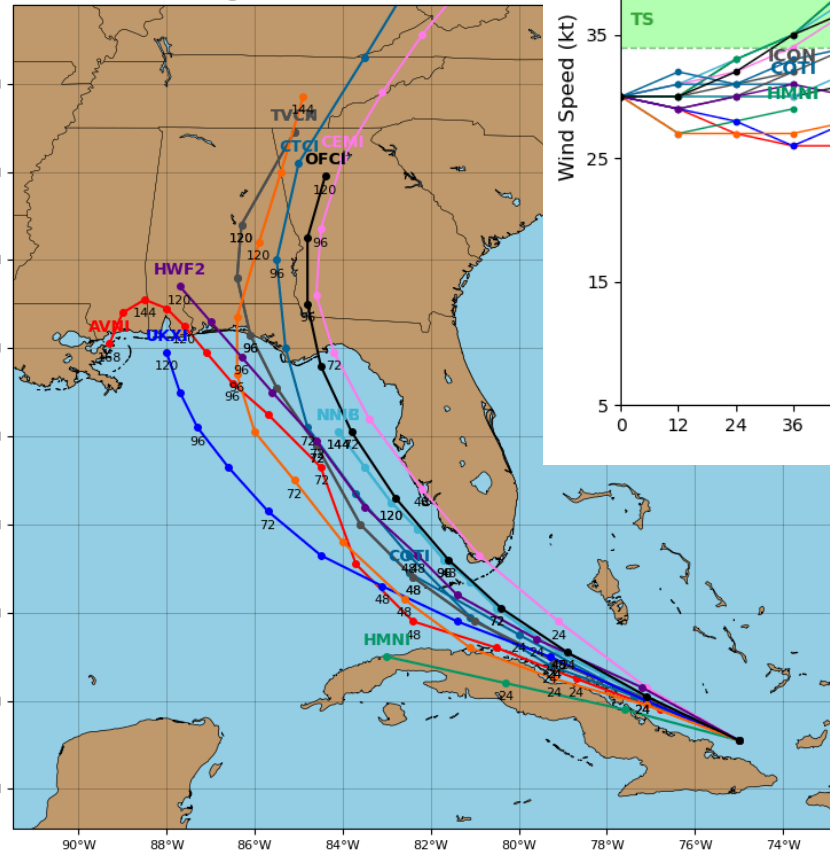


# Model Forecast Tracks & Intensity

Dynamical and Statistical Models – T.D. Fred

**Tropical Depression 06L Model Track**

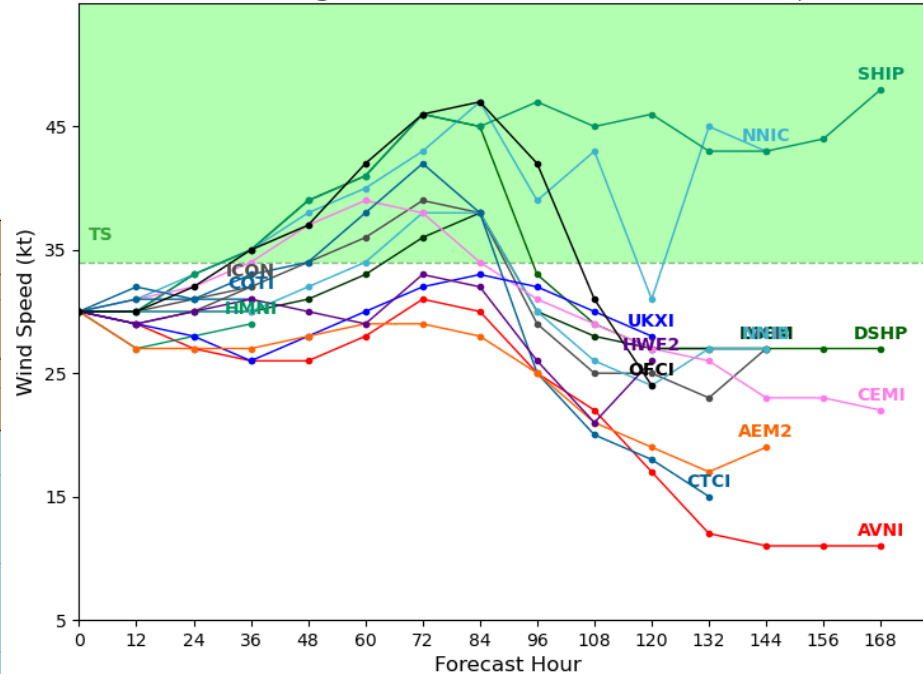
Initialized at 18z Aug 12 2021



**Tropical Depression 06L Model Intensity Guidance**

Initialized at 18z Aug 12 2021

Levi Cowan - tropicaltidbits.com



There still remains some uncertainty in regards to the forecast track and intensity for Fred as forecast models indicate a more westward movement with a weaker system.

Minor adjustments to the forecast track may continue to occur and all within the cone of error should continue to closely monitor the forecast.

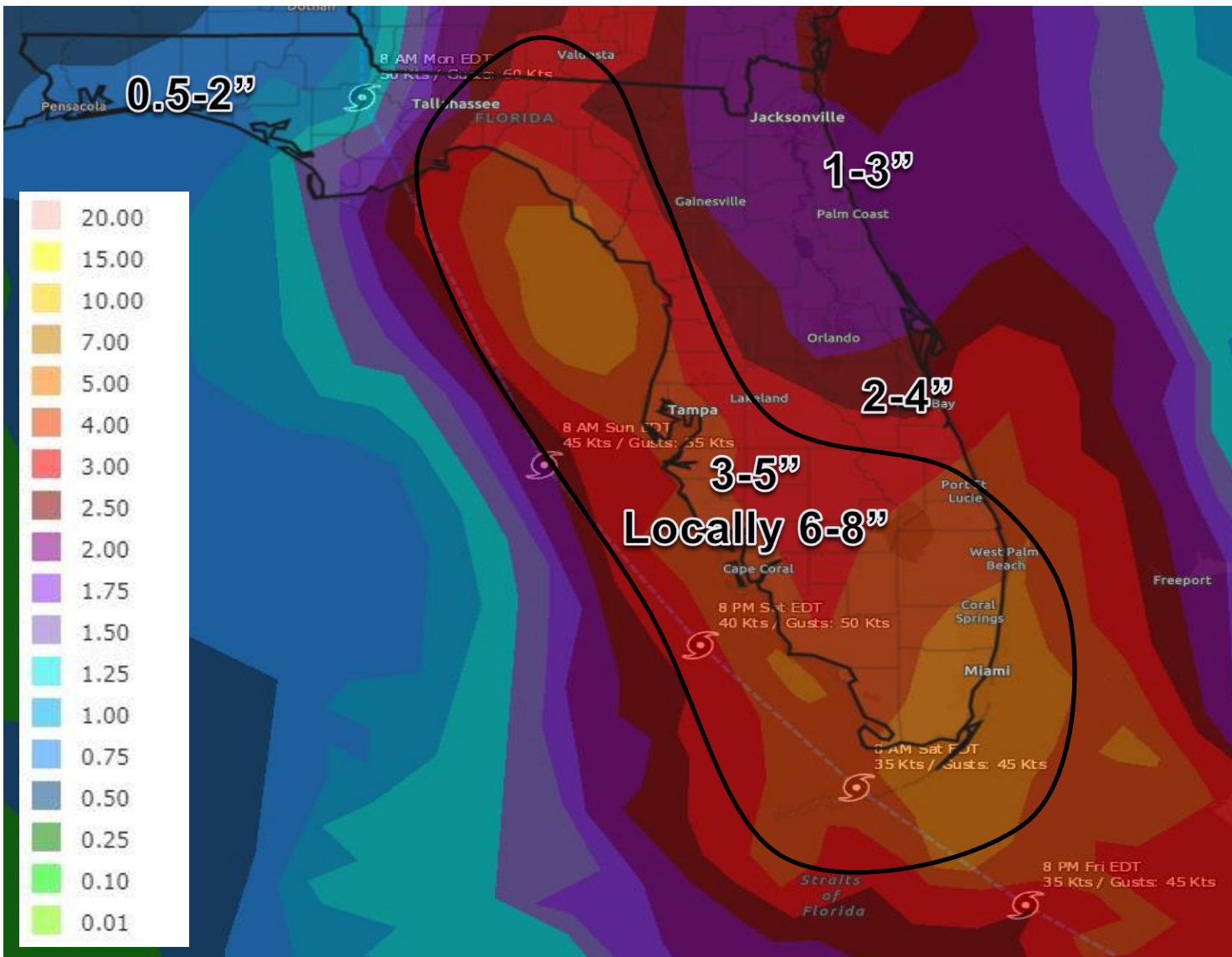
Many computer models are indicating that Fred is likely to strengthen, but remain a tropical storm through landfall due to land interaction, some dry air, and wind shear.





# Rainfall Totals Next 5 Days

Ending 8 AM ET Tuesday



The main threat to Florida from Fred will be heavy rainfall, first affecting much of South Florida starting on Friday and continuing into the weekend. The heavy rain threat will then move into North Florida Sunday and Monday.

A widespread 3-5" of rain is expected near and south of Lake Okeechobee (including the Keys), as well as along the Florida West Coast into the Big Bend. Isolated areas may receive higher totals up to 6-8".

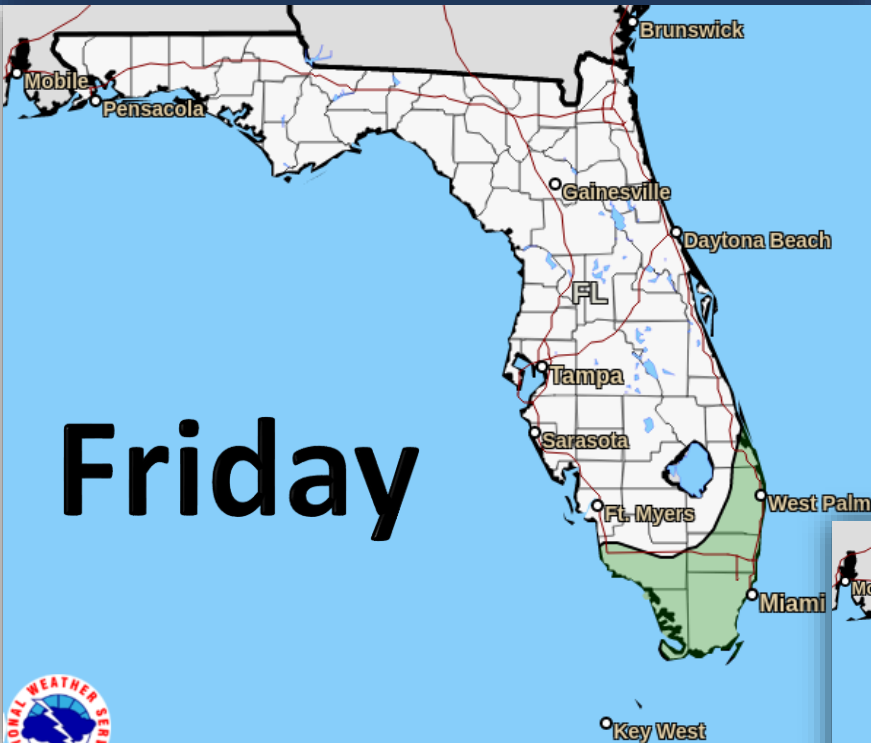
Given saturated soil conditions, these amounts may lead to flash flooding, riverine flooding and any gusty winds may allow for shallow-rooted or weak trees to fall.



# Flash Flood Outlook for Friday-Saturday

From the Weather Prediction Center ([LINK](#))

## Friday



Probability of excessive rainfall leading to rapid onset flooding.\*

- High Risk: >50%
- Moderate Risk: 20-50%
- Slight Risk: 10-20%
- Marginal Risk: 5-10%

\* Within 25 miles of a point.  
May not represent localized flooding threat over burn scars.

## Understanding WPC Excessive Rainfall Risk Categories

No Area/Label

Flash floods are generally not expected.

[www.wpc.ncep.noaa.gov](http://www.wpc.ncep.noaa.gov)  
@NWSWPC

Flash flooding near me?

Flash Flooding  
NO Flash Flooding

**MARGINAL (MRGL)**

Isolated flash floods possible

Localized and primarily affecting places that can experience rapid runoff with heavy rainfall.

**SLIGHT (SLGT)**

Scattered flash floods possible

Mainly localized. Most vulnerable are urban areas, roads, small streams and washes. Isolated significant flash floods possible.

**MODERATE (MDT)**

Numerous flash floods likely

Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers.

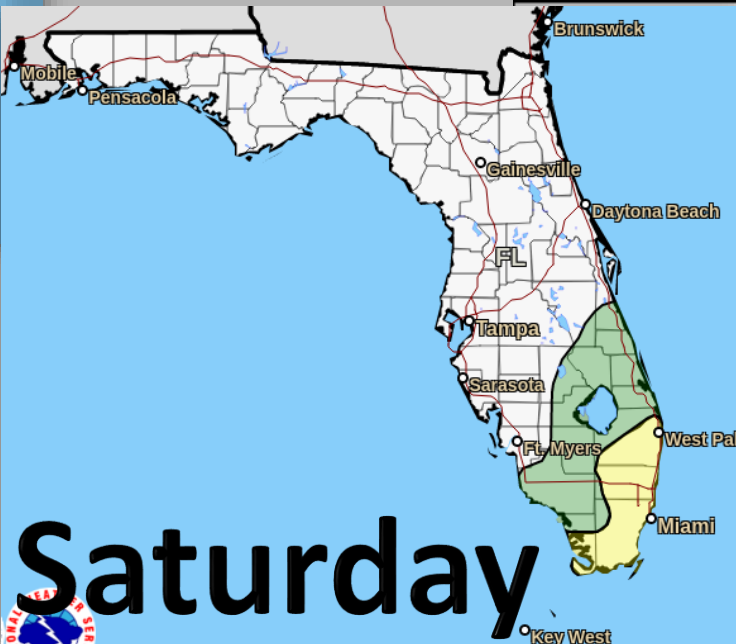
**HIGH (HIGH)**

Widespread flash floods expected

Severe, widespread flash flooding. Areas that don't normally experience flash flooding, could. Lives and property in greater danger.



## Saturday



Rain bands will begin to arrive in Southeast Florida later on Friday afternoon and continue into Saturday. Isolated flash flooding will be possible, especially in urban and low-lying areas.

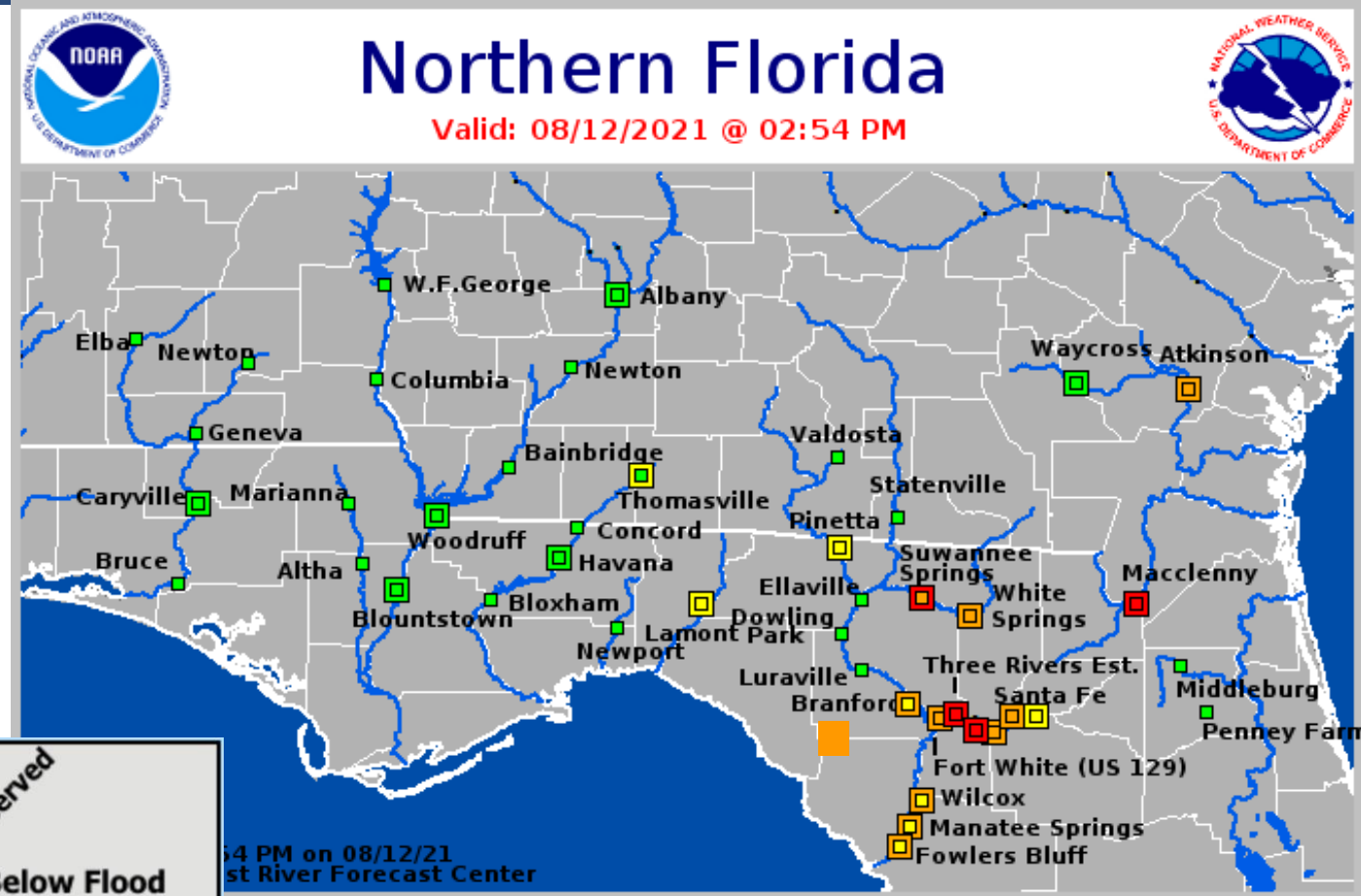
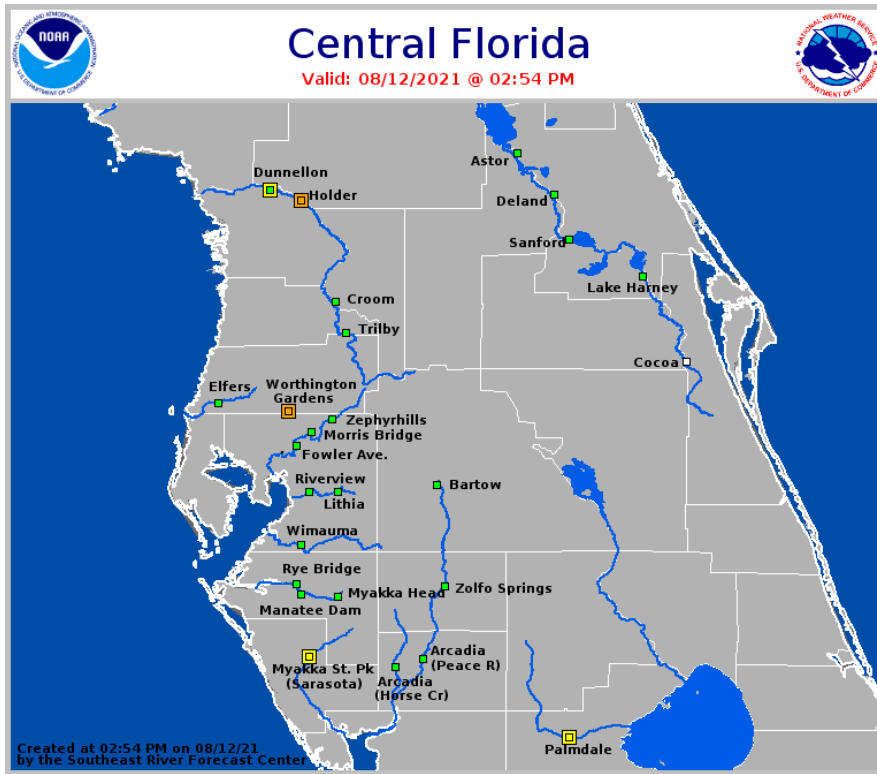




# Current & Forecast River Flooding

## Southeast River Forecast Center

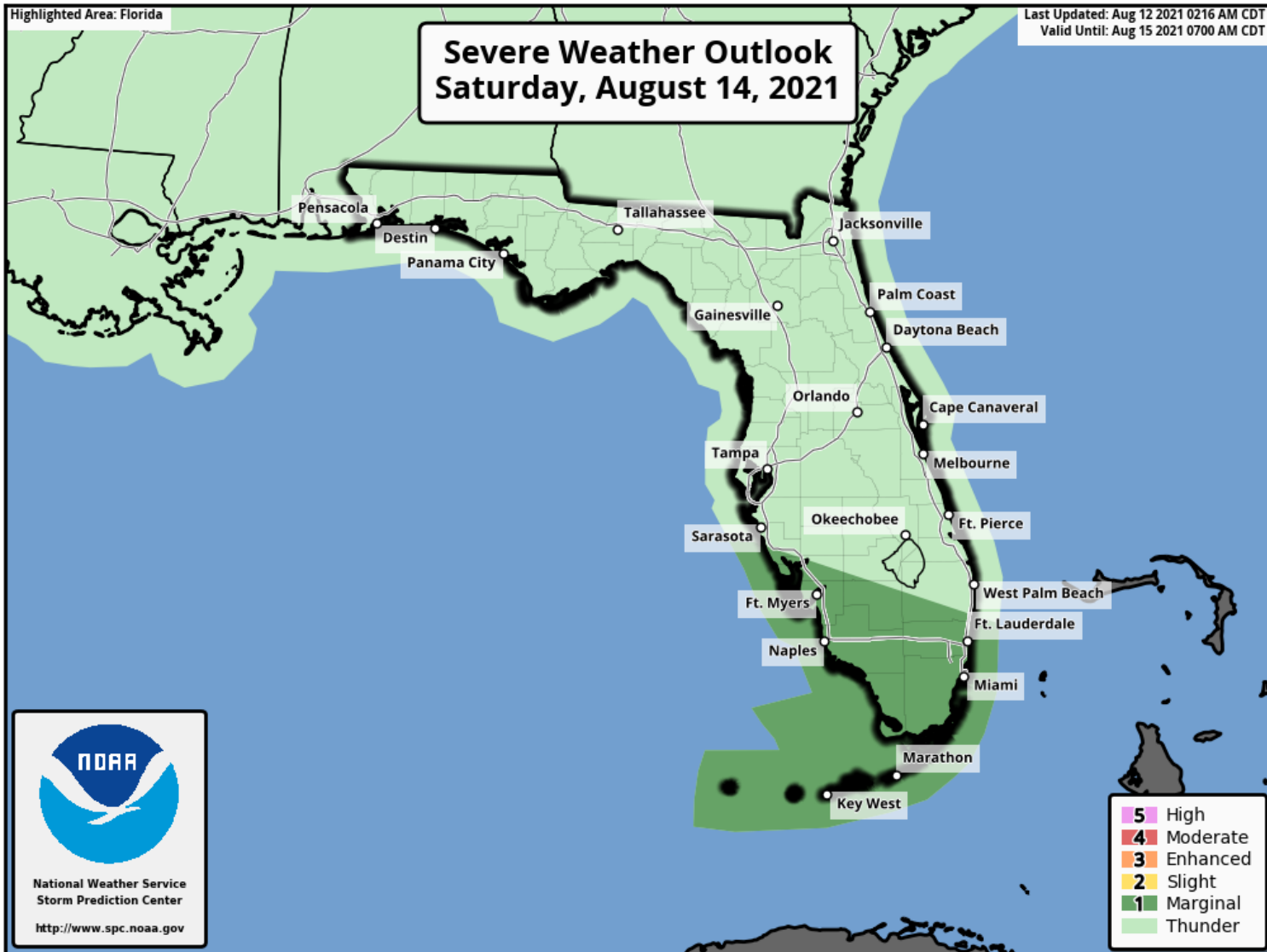
Extensive river flooding will continue across Northeast Florida this week. Heavy rain could fall on rivers already in moderate flood stage which could result in additional, significant flooding.



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



# Tornado Risk - Saturday



Isolated tornadoes will be possible in the outer band of Fred as it passes South Florida on Saturday.

The threat will expand northward along the Gulf Coast into Sunday and Monday.





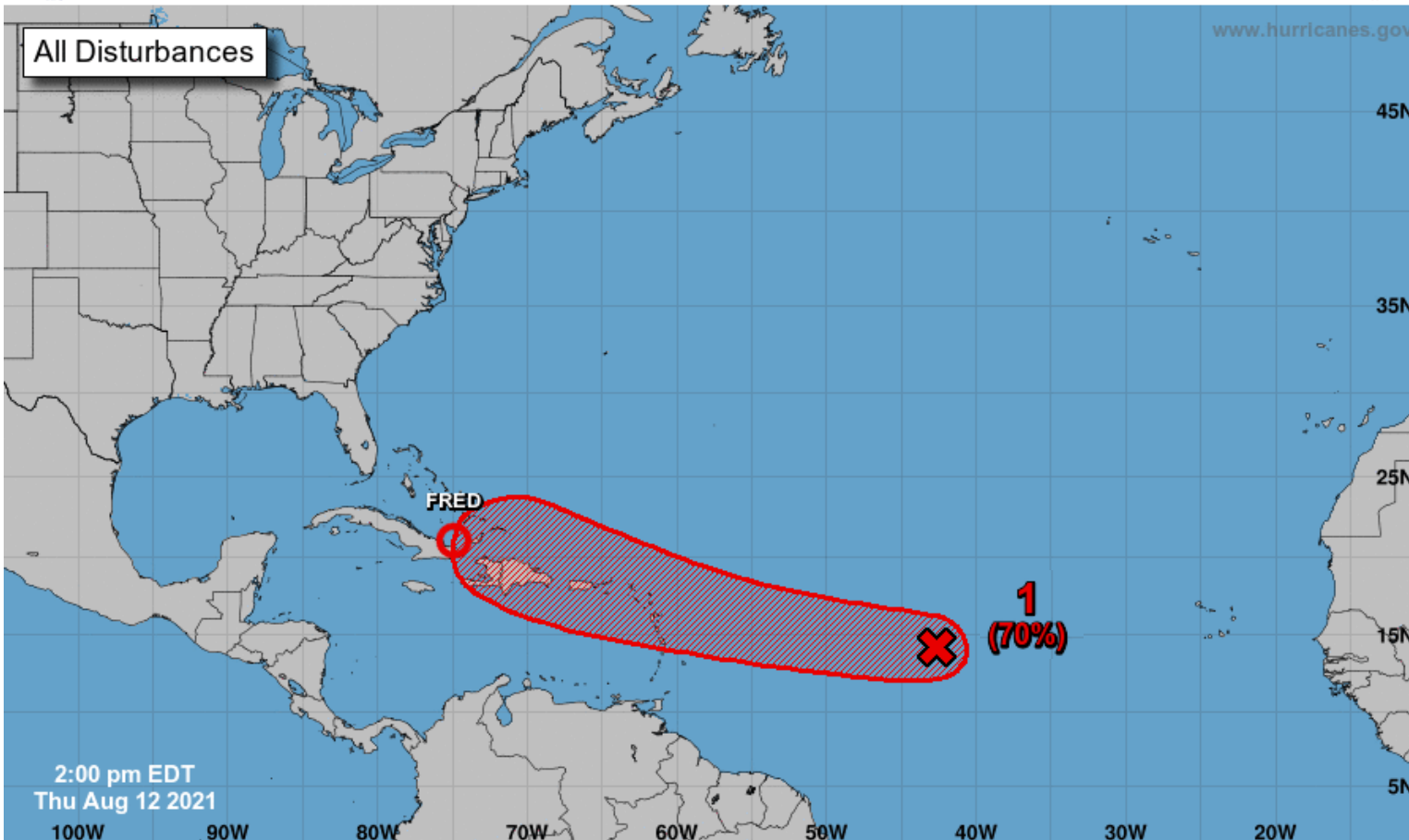
# Tropical Weather Outlook

Possible Areas of Development During the Next 5 Days ([LINK](#)) – Invest 95L



## Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Five-Day Cyclone Formation Chance:   
 Tropical or Sub-Tropical Cyclone: ○ Depression ○ Storm ○ Hurricane   
 ⊗ Post-Tropical Cyclone or Remnants   
 ✕ < 40% ✕ 40-60% ✕ > 60%

Satellite-derived wind data from this morning indicated that a small area of low pressure has developed along a tropical wave about 1200 miles east of the Lesser Antilles. However, the low does not quite have a closed circulation, and the associated shower and thunderstorm activity remains disorganized. Environmental conditions are expected to become more conducive for additional development, and a tropical depression is likely to form by the weekend while moving generally westward at about 20 mph across the tropical Atlantic. This system is expected to reach portions of the Leeward Islands late Saturday or early Sunday, and interests there should monitor its progress.

**\*Formation chance through 48 hours...medium...60%**

**\*Formation chance through 5 days...medium...70%**

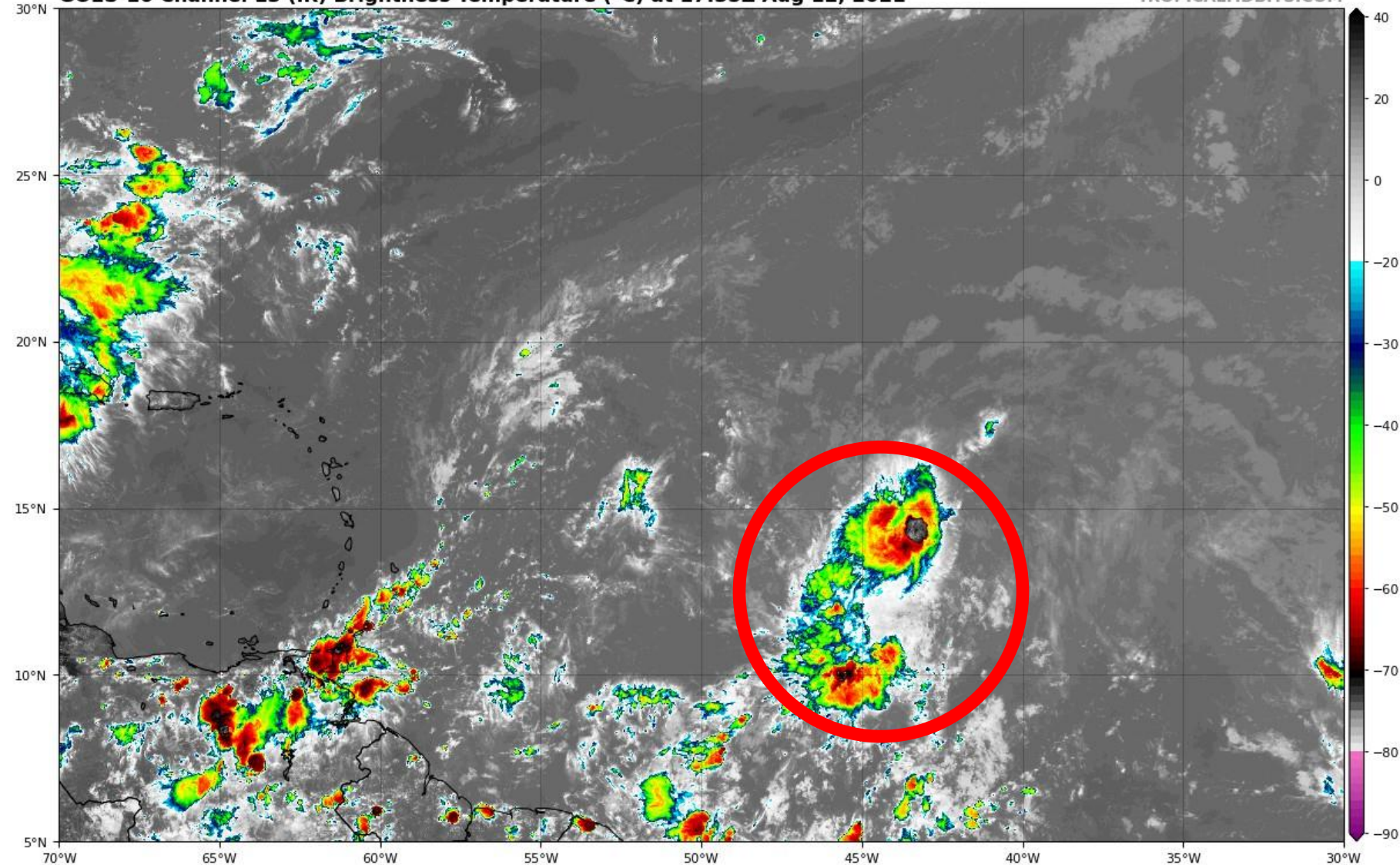


# Satellite Imagery

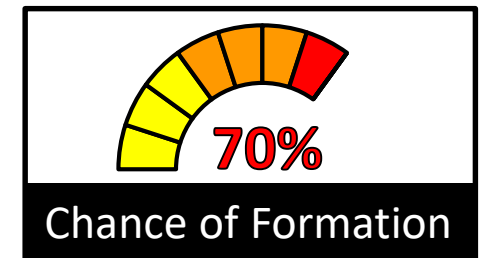
## Central Atlantic Wave – 95L

GOES-16 Channel 13 (IR) Brightness Temperature (°C) at 17:35Z Aug 12, 2021

TROPICALTIDBITS.COM



Development chances have increased for 95L as it appears that it is becoming better organized with a center of low pressure. Wind shear on the system is pushing thunderstorm activity to the west of the center of low pressure, but the wind shear should decrease over the next few days.







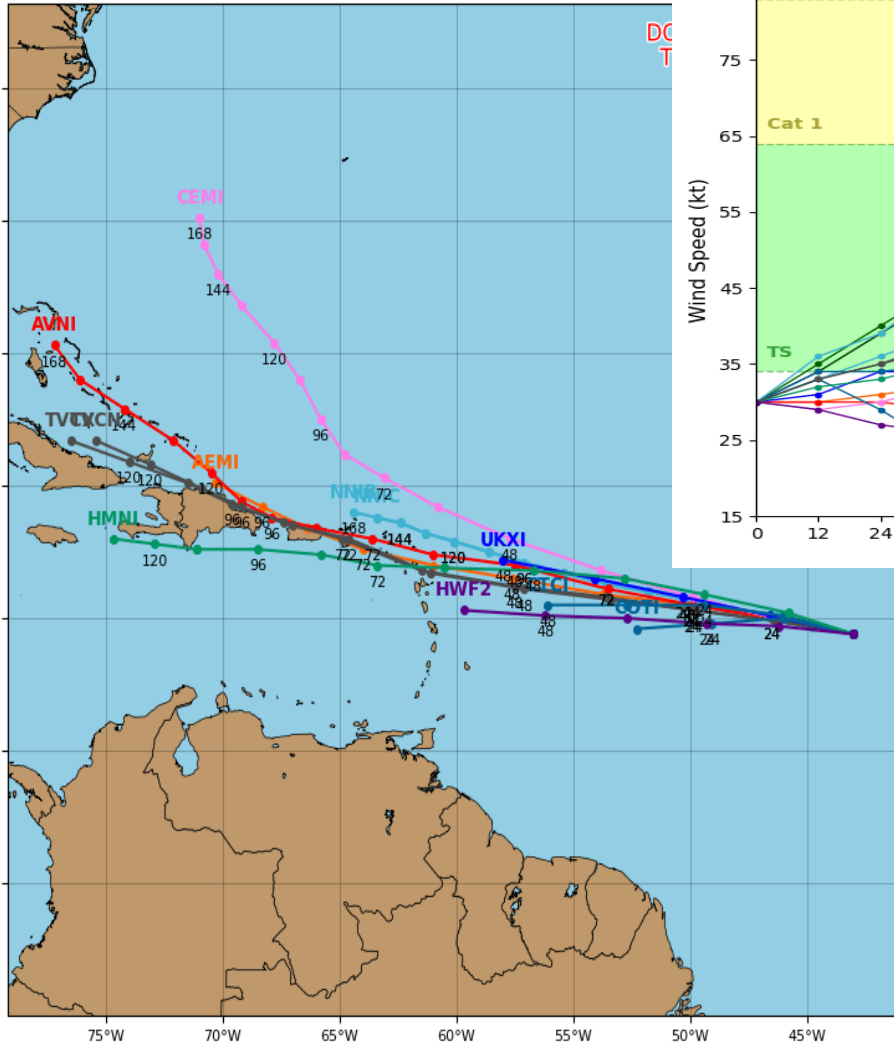
# Model Forecasts

## Ensembles, Dynamical, and Statistical Models – Invest 95L

### Invest 95L Model Track Guidance

Initialized at 18z Aug 12 2021

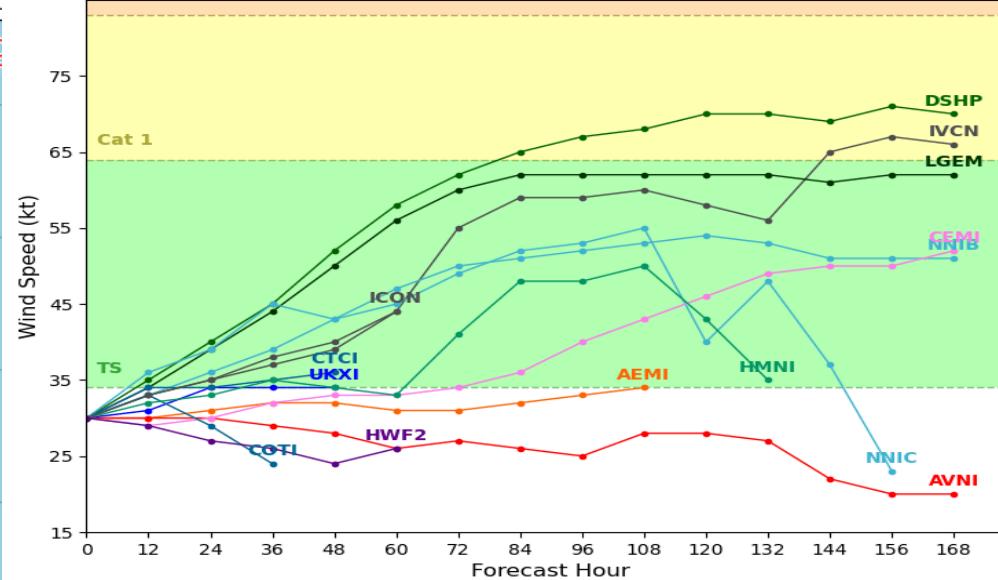
Levi C



### Invest 95L Model Intensity Guidance

Initialized at 18z Aug 12 2021

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Computer models are split on track and intensity for 95L, which is common in newly developing systems. Many keep the system weak or dissipate the system near the Lesser Antilles or Hispaniola while others show a possibility for a tropical depression or storm moving towards the Bahamas and East Coast of Florida.

Fluctuations in forecast models are likely until the system acquires a defined center of low pressure and models come into agreement on steering flow in the western Atlantic for later net week.



# Overall Summary

## Tropical Depression Fred:

- The center of Fred is located off the northeastern coast of Cuba, about 470 miles east-southeast of Key West, Florida.
- Fred currently has maximum sustained winds around 35 mph, but slow strengthening is expected over the next 48-72 hours.
- Fred is moving west-northwest at 14 mph and this general motion will continue through tomorrow, followed by a northwest turn on Saturday.
- On the forecast track, Fred is expected to move along or just north of eastern and central Cuba tonight and Friday, and be near the Florida Keys and southern Florida on Saturday.
- A second landfall is expected along the Florida Panhandle or Big Bend coast early Monday morning.

## Invest 95L

- A disorganized area of low pressure in the central Atlantic, designated as Invest 95L, has a 70% chance of becoming a tropical depression by the weekend while moving generally westward across the tropical Atlantic near 20 mph.

## Florida Outlook:

- Regardless of the exact track and intensity, Tropical Depression Fred will bring heavy rainfall to South Florida on Friday and Saturday as well as much of the Florida Gulf Coast this weekend and into early next week.
- Much of the Florida Gulf Coast remains within the 5-day forecast cone for where the center of the storm is most likely to travel.
- **TROPICAL STORM WATCHES have been issued for the Florida Keys and Southwest Florida from Ocean Reef south to the Dry Tortugas and up the west coast to Bonita Beach. Additional watches are possible for the Florida West Coast and Florida Panhandle tomorrow.**
- The main threat to Florida from Fred is heavy rainfall. A widespread 3-5" of rain with localized totals of 6-8" are anticipated across South Florida (generally south of Lake Okeechobee) as well as portions of the Florida West Coast and Florida Panhandle.
- Widespread minor to moderate river flooding will continue this week in Northeast Florida. Heavy rainfall may continue or worsen flooding.
- Isolated tornadoes are also possible in South Florida and the Keys on Saturday.
- It is too early to determine storm surge impacts, but is anticipated to be minimal at this time for South Florida. A minor coastal flood threat may exist for portions of Apalachee Bay.
- It is too early to determine what, if any, impacts Florida may experience from 95L.

Another briefing packet will be issued tomorrow morning. For the latest information on the tropics, please visit the National Hurricane Center website at

[www.hurricanes.gov](http://www.hurricanes.gov).





# TROPICAL UPDATE



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State Meteorological Support Unit

Florida Division of Emergency Management

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