



# TROPICAL UPDATE



9:00 AM EDT

Friday, August 13, 2021

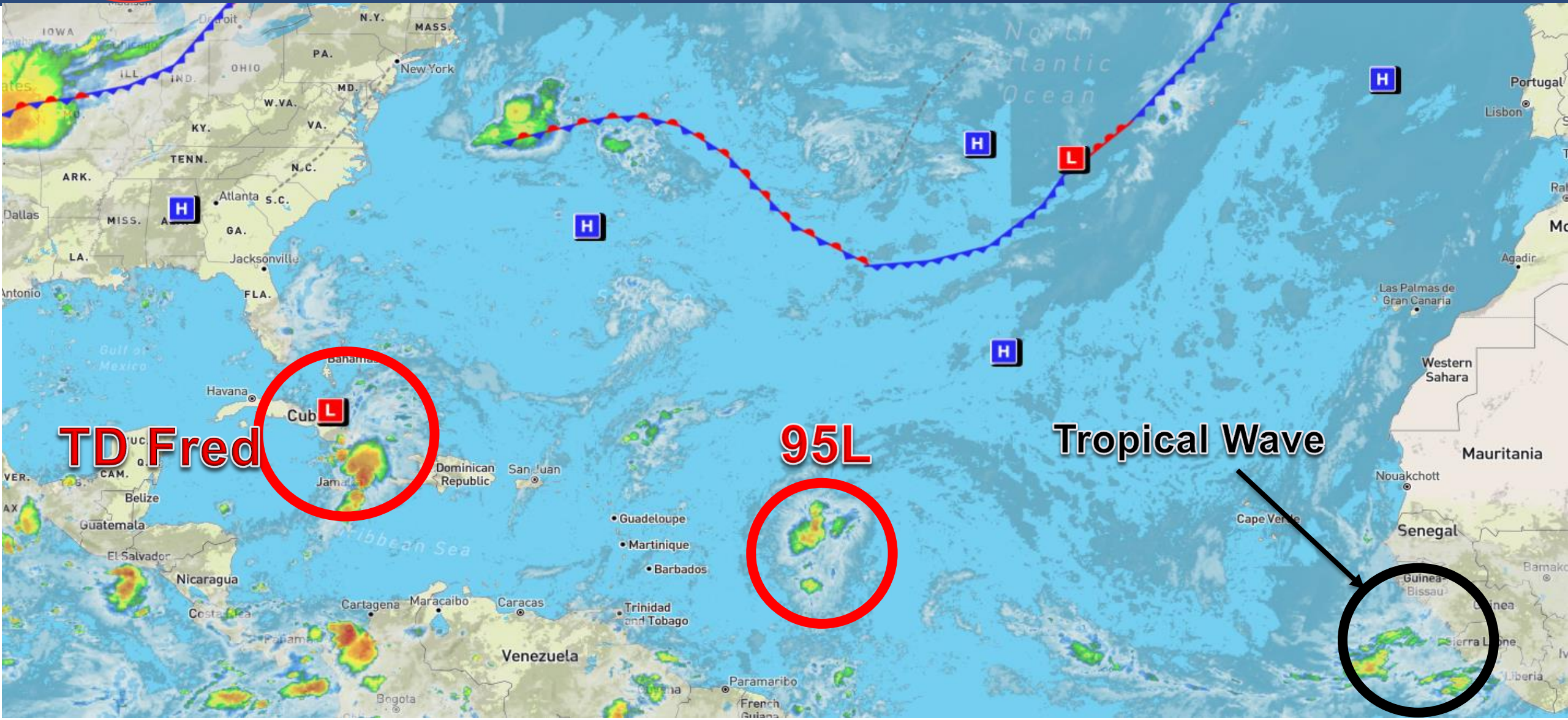
Tropical Depression Fred  
& Invest 95L (80%)

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

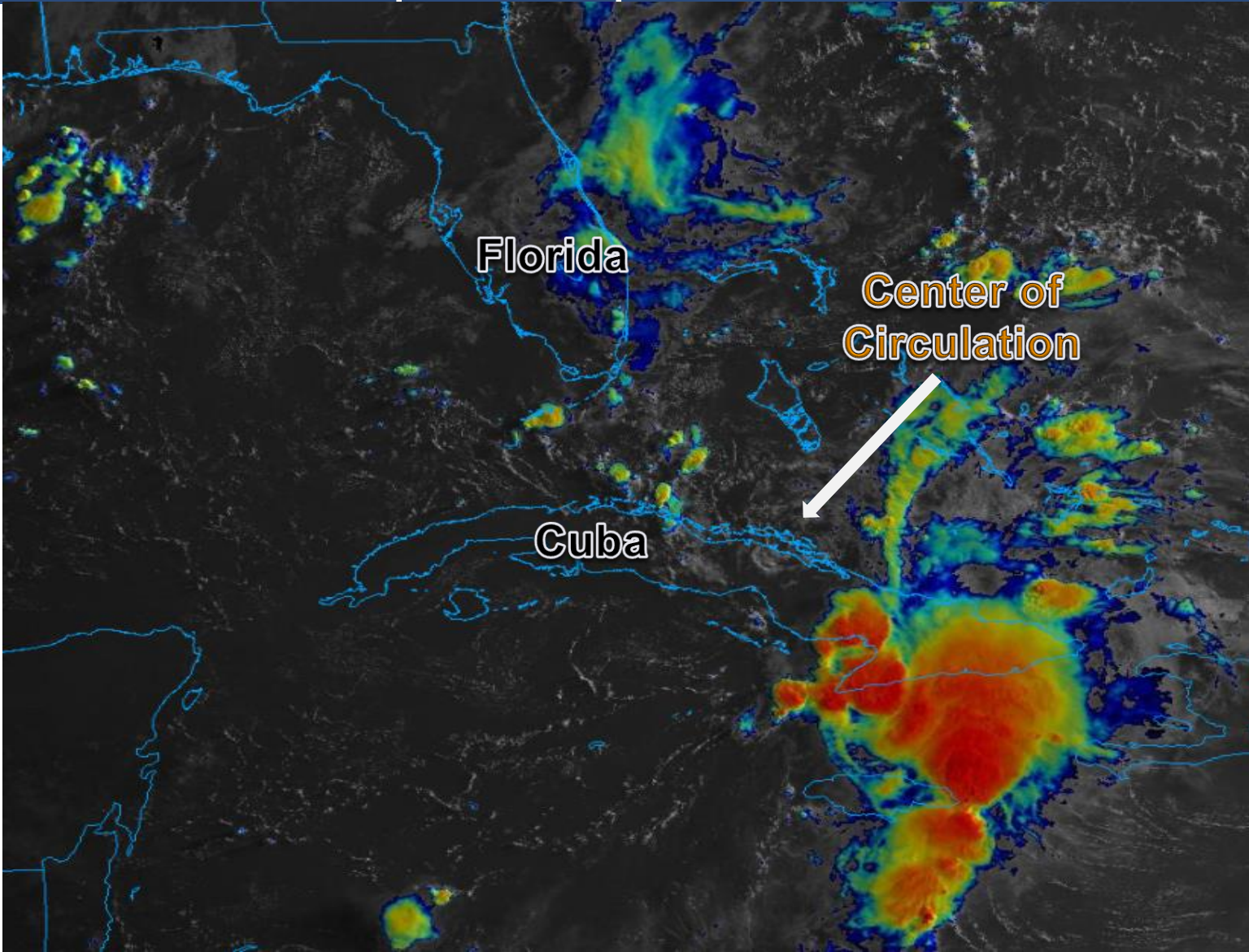






# Satellite Imagery

## Tropical Depression Fred

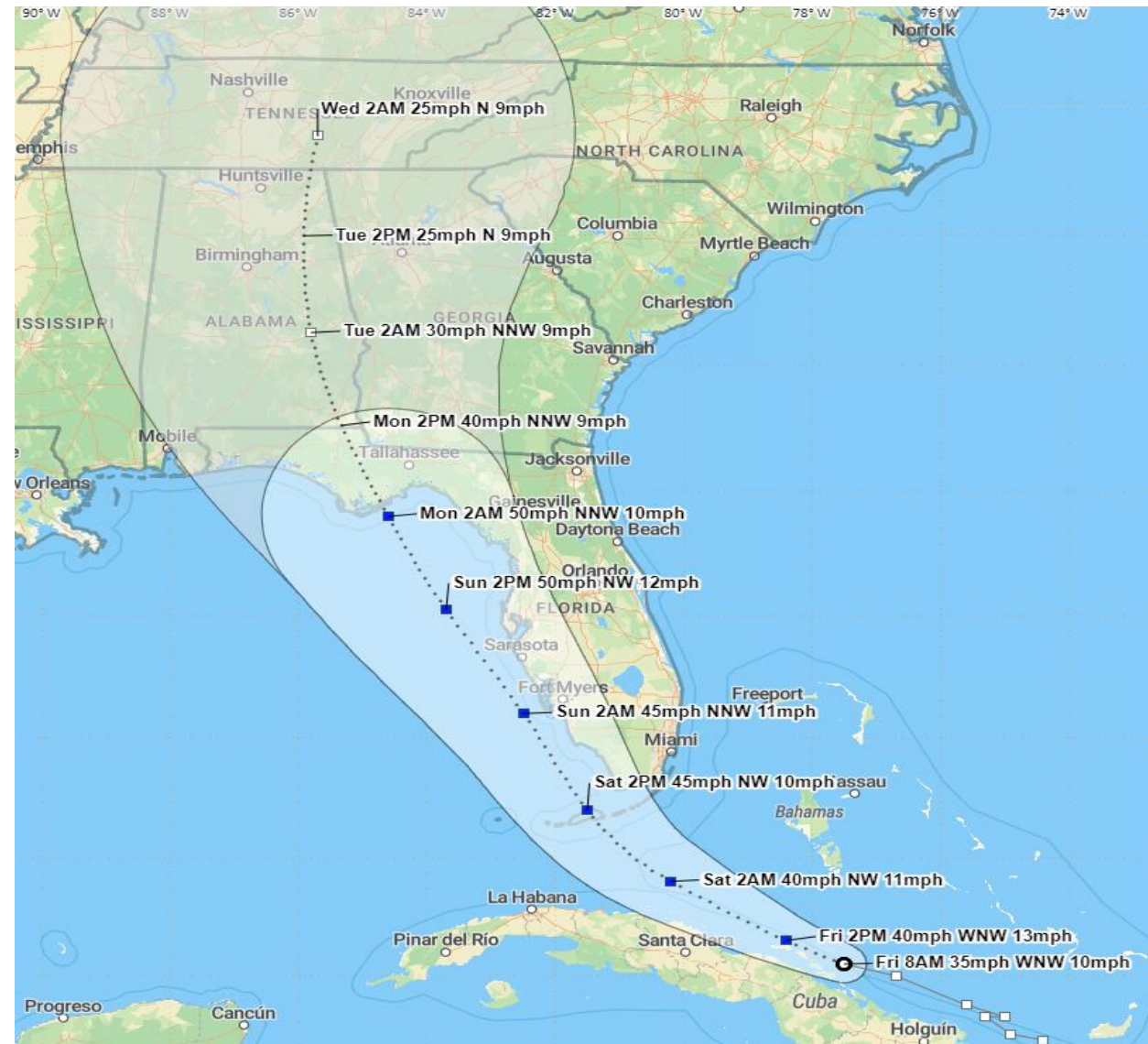


The center of Fred is located just off the northern coast of central Cuba. The system remains disorganized with strong thunderstorm activity remaining displaced from the center. As Fred moves toward the Florida Keys, more organized storm activity should begin to concentrate again near the center and allow it to slowly strengthen.



# Official Forecast Track

From the National Hurricane Center



- The center of Fred is located near the northern coast of central Cuba, or about 315 miles southeast of Key West, Florida.
- Maximum sustained winds remain around 35 mph. Slow strengthening is expected through Sunday, and Fred is forecast to regain tropical storm strength today.
- Fred is moving west-northwest at 10 mph, and this general motion is expected to continue today. A turn toward the northwest is expected tonight or Saturday.
- On the forecast track, Fred is expected to move along or just north of central Cuba through tonight, be near the Florida Keys on Saturday, and near the west coast of Florida on Sunday.
- A second landfall is expected along the Florida Panhandle or Big Bend coast early Monday morning.

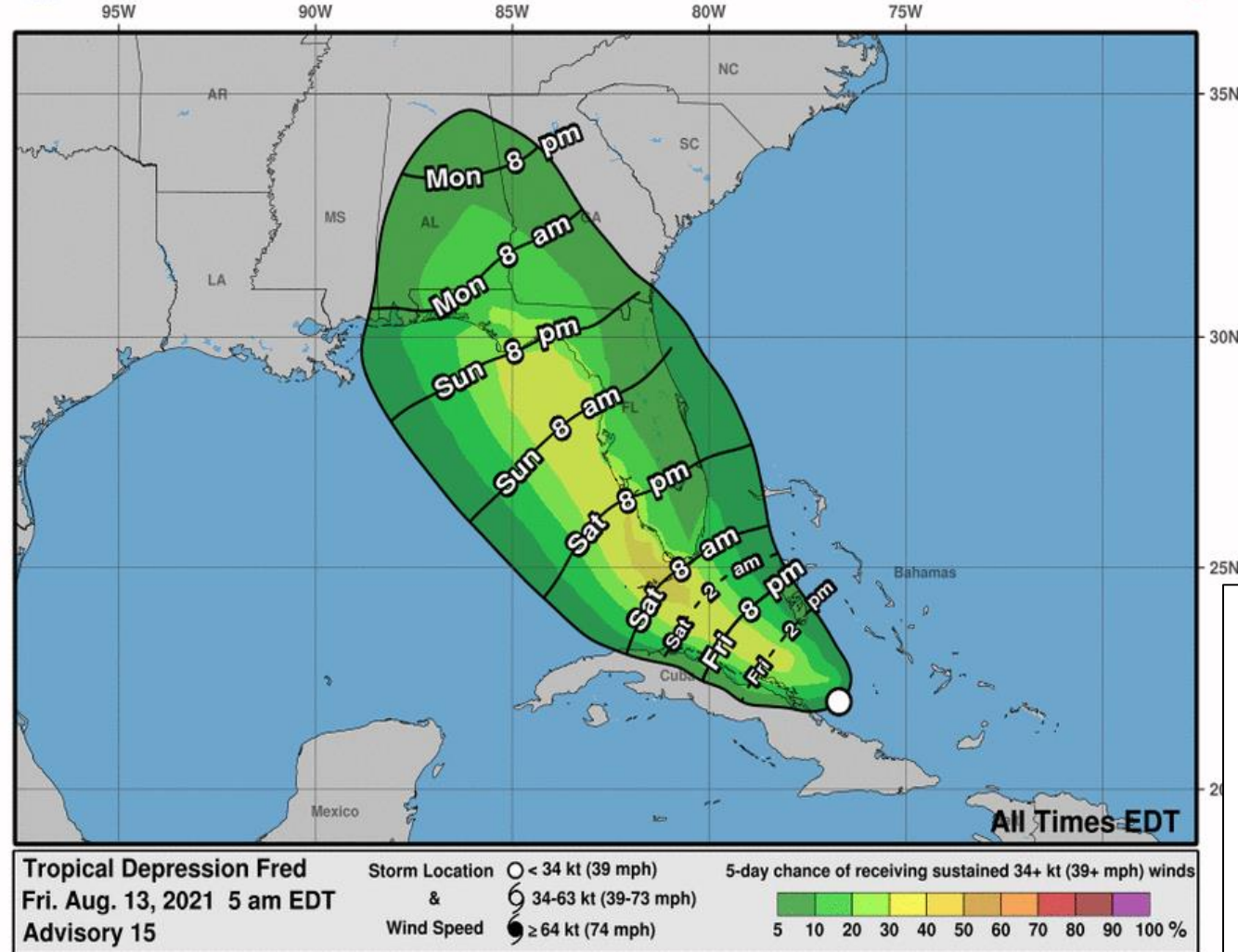




# Time of Arrival & Wind Speed Probabilities

## 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

11%

+3%

Miami

8%

+1%

Key West

34%

+10%

Naples

38%

+12%

Ft. Myers

18%

+8%

Tampa

29%

+10%

Cedar Key

27%

+7%

Tallahassee

17%

+1%

Apalachicola

26%

+0%

Panama City

22%

-1%

Pensacola

8%

-4%

Orlando

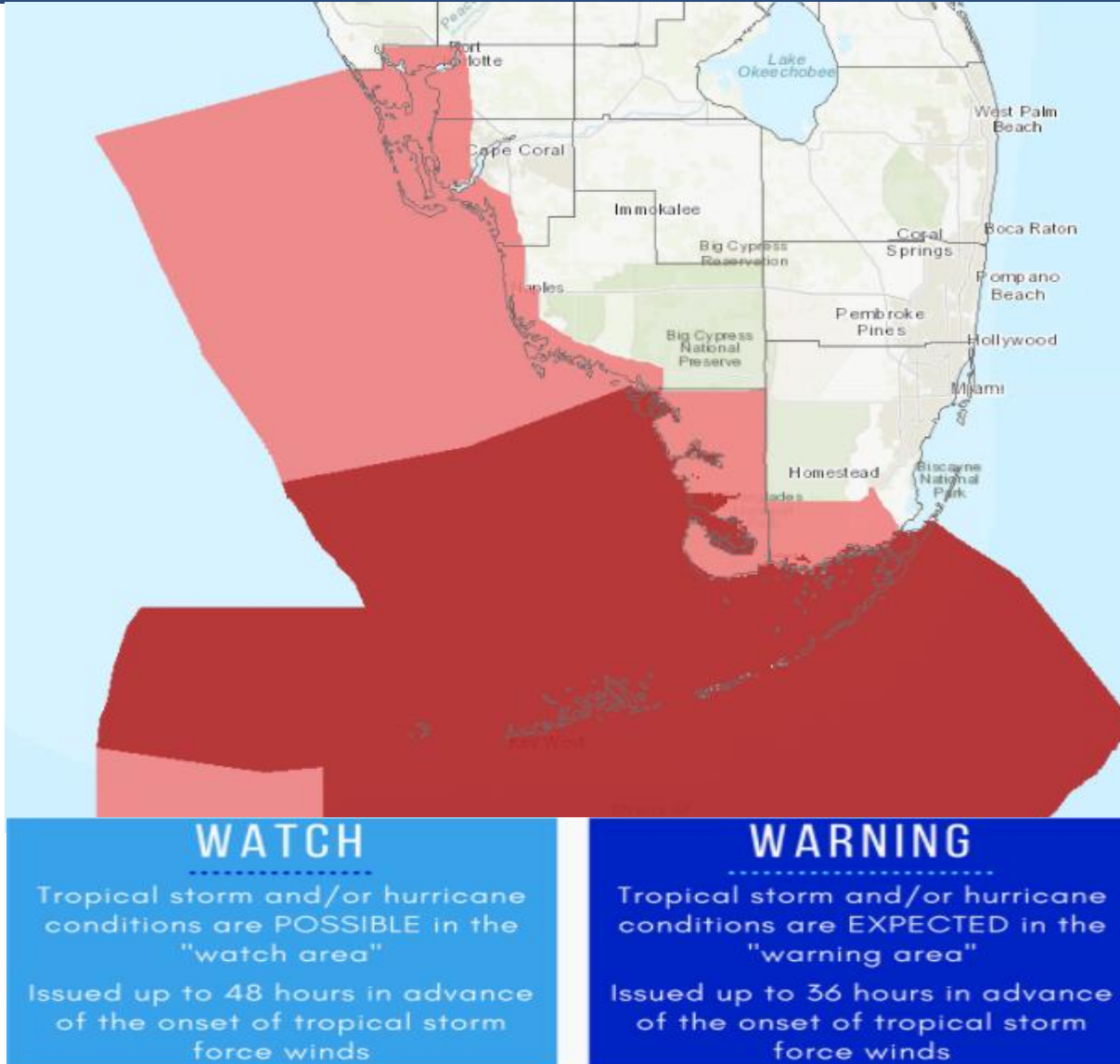
7%

+2%

There is a 1 in 3 chance of tropical storm force winds for the Florida Keys and coastal portions of Southwest Florida up to Tampa, with a 1 in 4 chance of tropical storm conditions along the Florida Big Bend coast. The earliest reasonable arrival time of tropical storm force winds in South Florida is late tonight, but are most likely to begin Saturday morning in the Keys and affect other portions of South Florida during the day Saturday. Winds arrive on Sunday night in the Panhandle.



# Active Tropical Watches/Warnings



- A Tropical Storm Warning is in effect for the entire Florida Keys
  - Counties: Monroe
- A Tropical Storm Watch has been issued for Southwest Florida.
  - Counties: Coastal Collier, extreme south Miami-Dade, mainland Monroe, Lee, Charlotte





# Key Messages

From the National Hurricane Center



## Key Messages for Tropical Depression Fred

Advisory 15: 5:00 AM EDT Fri Aug 13, 2021



1. From today into Monday, heavy rainfall could lead to areal, urban, small stream, and exacerbated river flooding, across southern and central Florida into the Big Bend. From Sunday onward, 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 expected in the Florida Keys on Saturday, where a Tropical Storm Warning has been issued.
3. Tropical storm conditions are possible late Saturday and early Sunday across portions of the west coast of Florida in the Tropical Storm Watch area. The risk of tropical storm conditions will spread northward along the Florida west coast and to the Florida Panhandle Sunday and Monday.



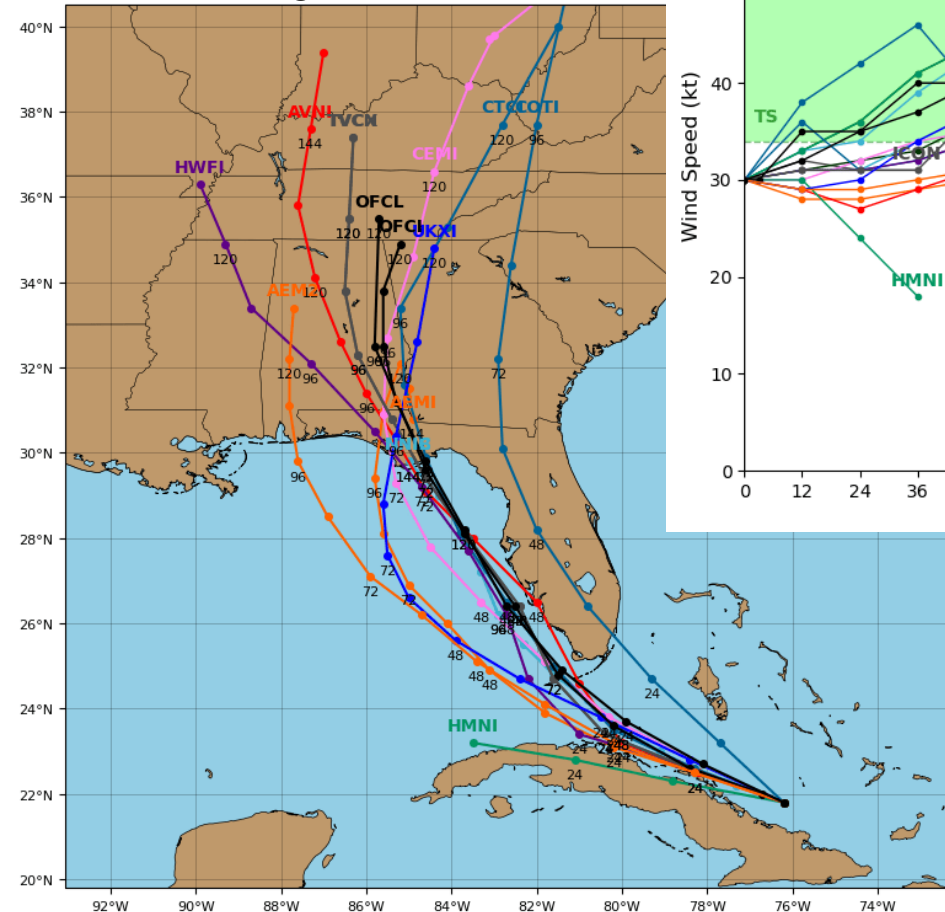
For more information go to [hurricanes.gov](https://hurricanes.gov)



# Model Forecast Tracks & Intensity

Dynamical and Statistical Models – T.D. Fred

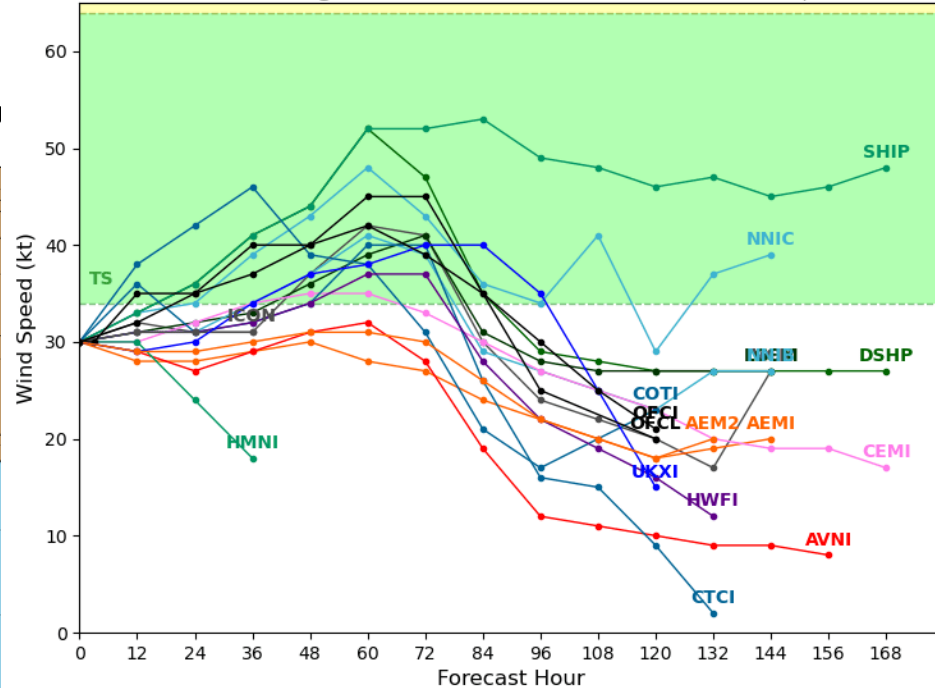
**Tropical Depression 06L Model Track Guidance**  
Initialized at 06z Aug 13 2021



**Tropical Depression 06L Model Intensity Guidance**

Initialized at 06z Aug 13 2021

Levi Cowan - tropicaltidbits.com



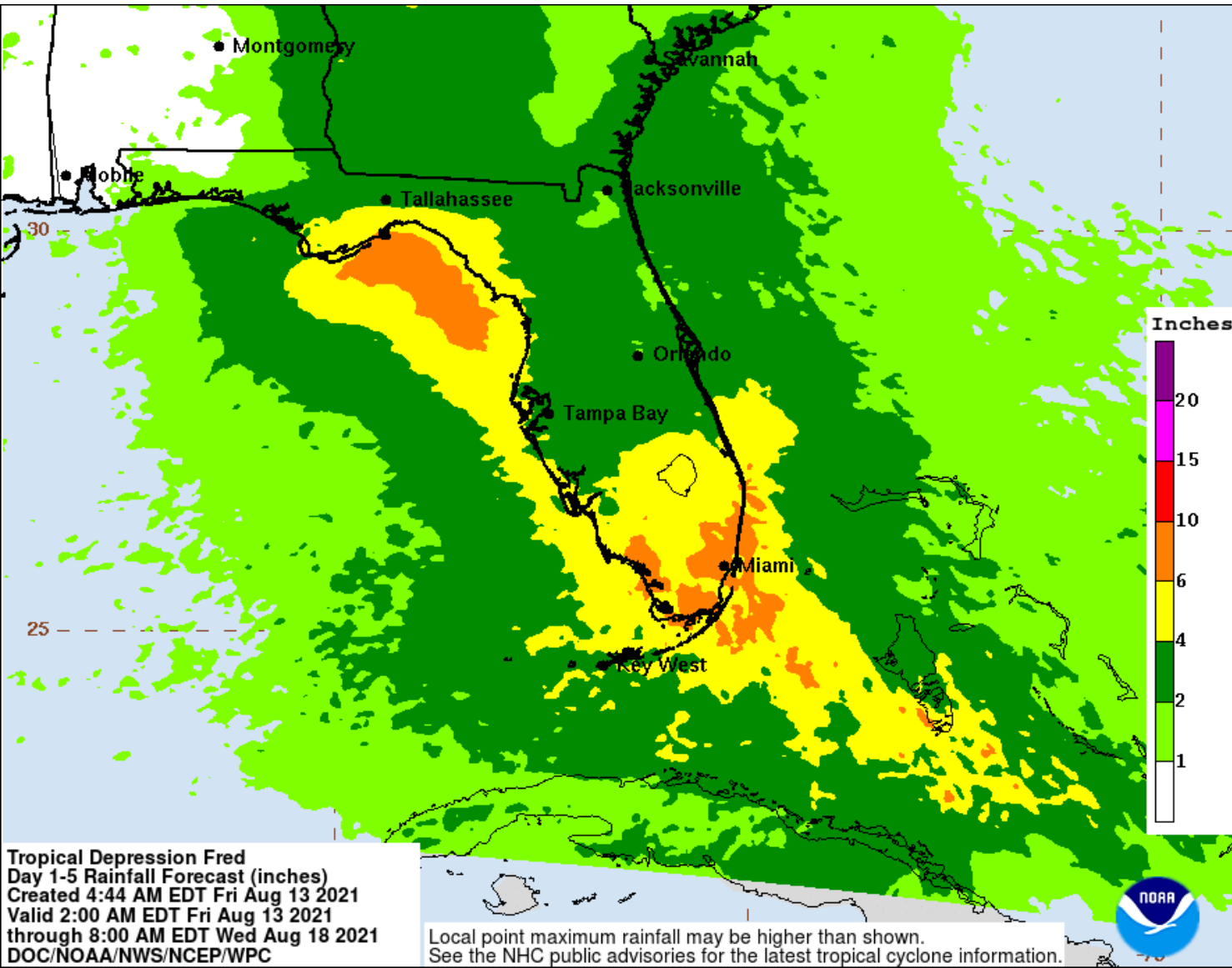
Computer models are still in some disagreement in regards to the forecast track, but many are converging on a track near or over the Florida Keys, paralleling the Southwest Florida Coast and making landfall in the western Big Bend or eastern Panhandle. While some computer models suggest Fred will remain a tropical depression, intensification appears likely due to generally favorable conditions in the eastern Gulf of Mexico.





# Rainfall Totals Next 5 Days

Ending 8 AM ET Wednesday



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

A widespread 3-5" of rain is expected across South Florida and the Florida 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.

Tropical Depression Fred  
Day 1-5 Rainfall Forecast (inches)  
Created 4:44 AM EDT Fri Aug 13 2021  
Valid 2:00 AM EDT Fri Aug 13 2021  
through 8:00 AM EDT Wed Aug 18 2021  
DOC/NOAA/NWS/NCEP/WPC

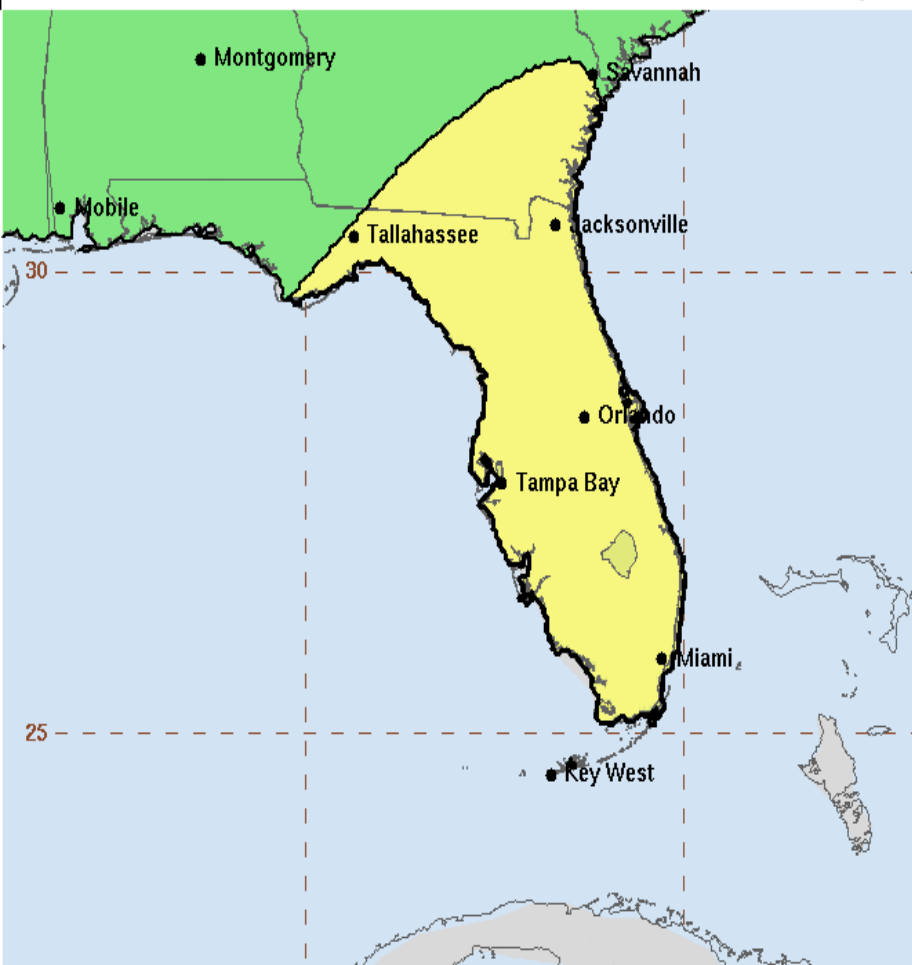
Local point maximum rainfall may be higher than shown.  
See the NHC public advisories for the latest tropical cyclone information.



# Flash Flood Outlook for Friday-Saturday

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

Greatest Flash Flood Risk Over the Next 3 Days



Tropical Depression Fred  
Day 1-3 Excessive Rainfall Outlook  
Created 4:22 AM EDT Fri Aug 13 2021  
Valid 8:00 AM EDT Fri Aug 13 2021  
through 8:00 AM EDT Mon Aug 16 2021  
NOAA/NWS/NCEP/WPC

Risk of flash flooding

5%: Marginal	20%: Moderate
10%: Slight	50%: High

Day 1 Through Saturday morning









Day 2 Through Sunday morning



Day 3 Through Monday morning



## Understanding WPC Excessive Rainfall Risk Categories

No Area/Label	MARGINAL (MRGL)	SLIGHT (SLGT)	MODERATE (MDT)	HIGH (HIGH)
Flash floods are generally not expected.	Isolated flash floods possible	Scattered flash floods possible	Numerous flash floods likely	Widespread flash floods expected
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.	Severe, widespread flash flooding. Areas that don't normally experience flash flooding, could. Lives and property in greater danger.	
<a href="http://www.wpc.ncep.noaa.gov">@NWSWPC</a>				
Flash flooding near me?	Flash Flooding			
	NO Flash Flooding			
  WEATHER PREDICTION CENTER				

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. Flash flood risk will be the greatest on Sunday.

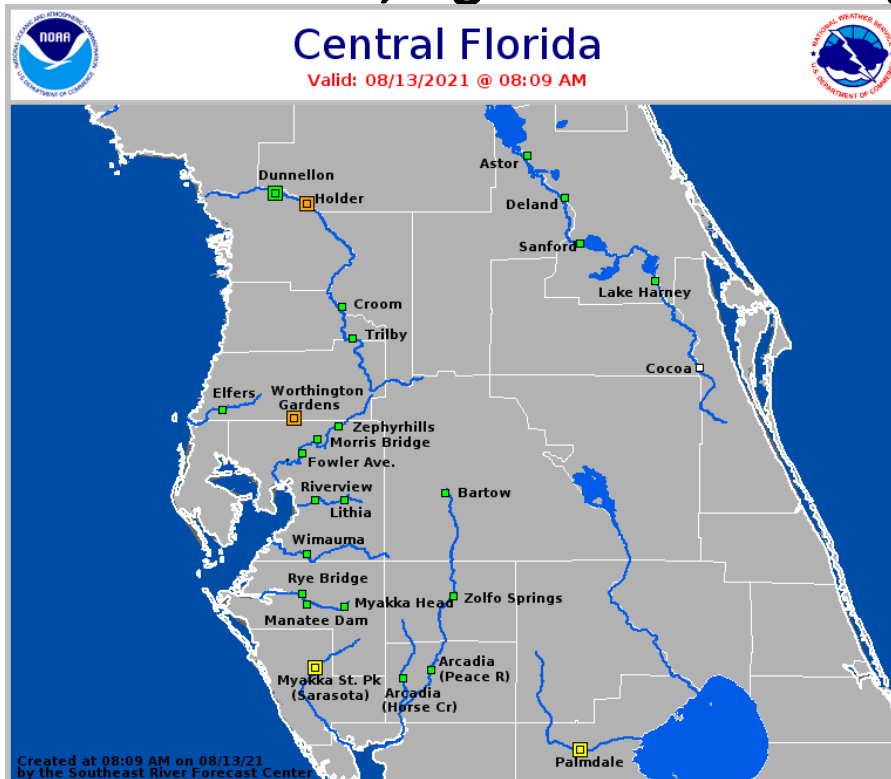




# Current & Forecast River Flooding

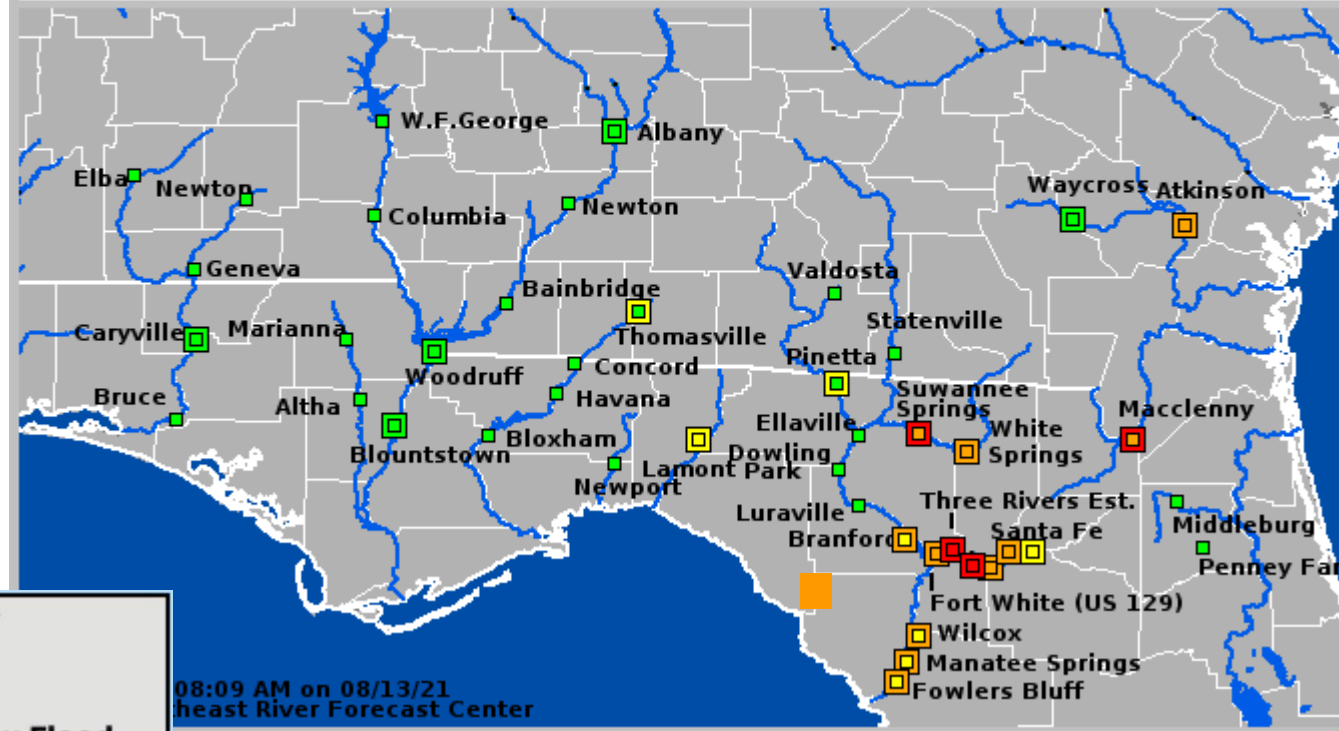
## Southeast River Forecast Center

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.



## Northern Florida

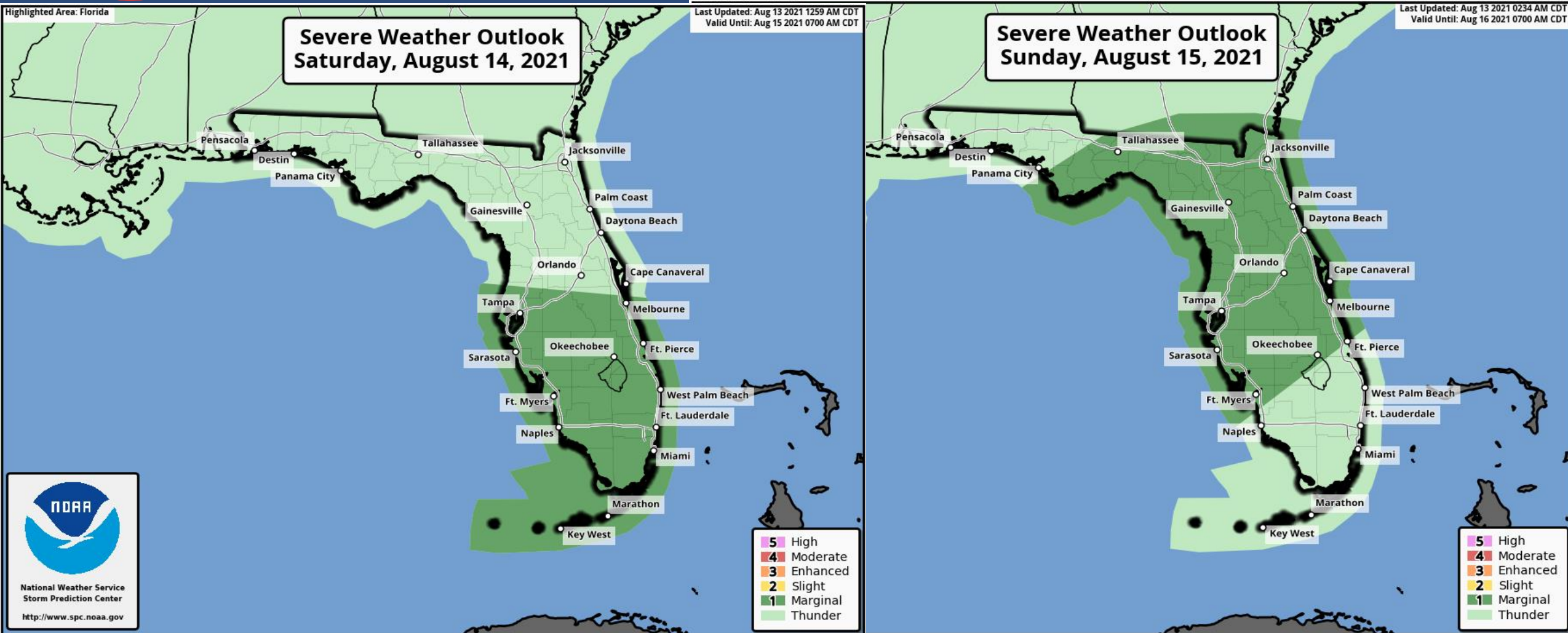
Valid: 08/13/2021 @ 08:09 AM



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 bands of Fred as it passes South Florida on Saturday. The threat will expand northward into North and Central Florida Sunday.





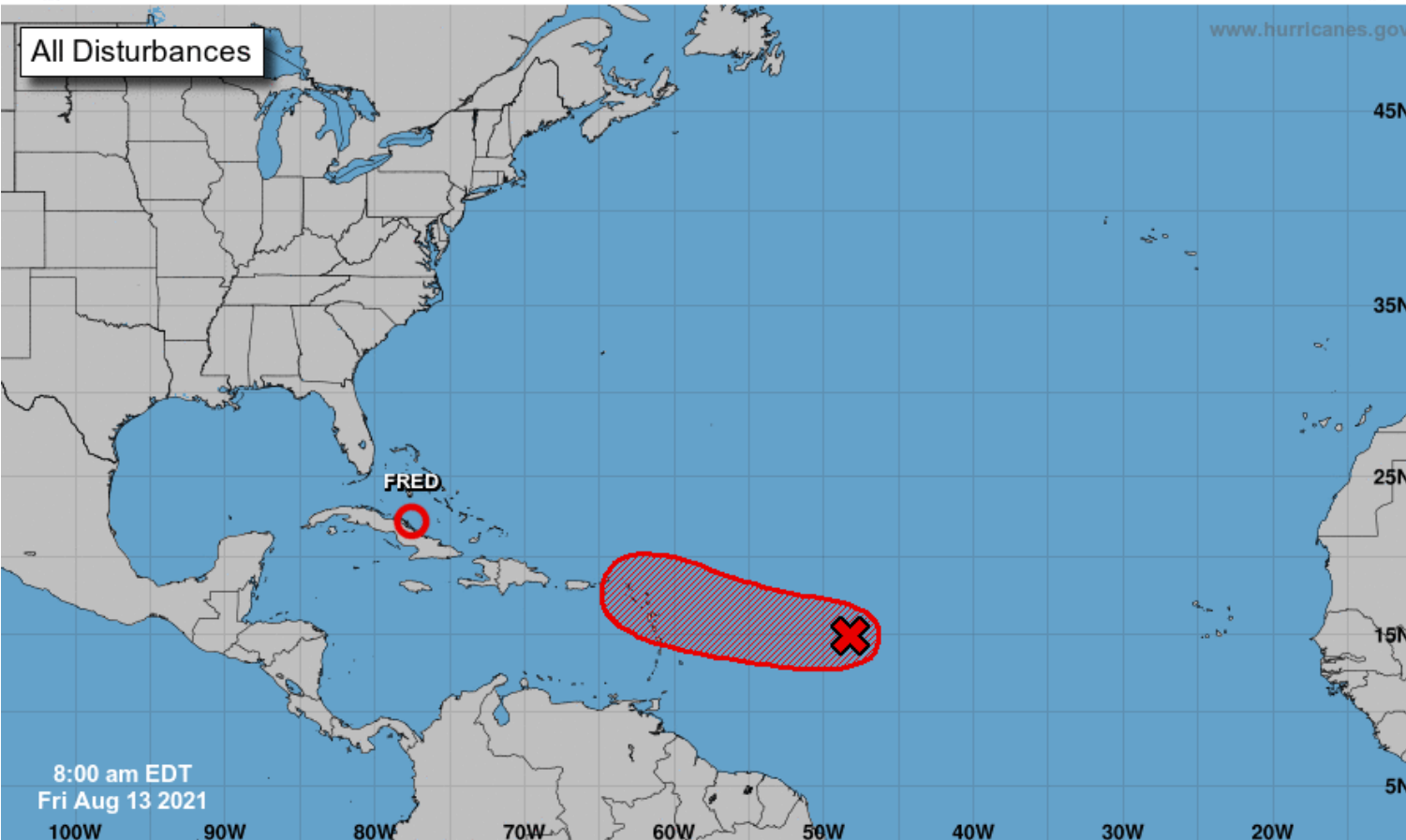
# Tropical Weather Outlook

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



## Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Showers and thunderstorms have become a little better organized since yesterday near an area of low pressure located about 850 miles east of the Lesser Antilles. Environmental conditions are becoming more conducive for additional development, and a tropical depression is likely to form over the next day or two while moving toward the west or west-northwest at about 20 mph. This system is expected to reach portions of the Leeward Islands Saturday night and then the Virgin Islands and Puerto Rico Sunday and Sunday night. Interests in these areas should continue to monitor the progress of this disturbance.

**\*Formation chance through 48 hours...high...80%**

**\*Formation chance through 5 days...high...80%**

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

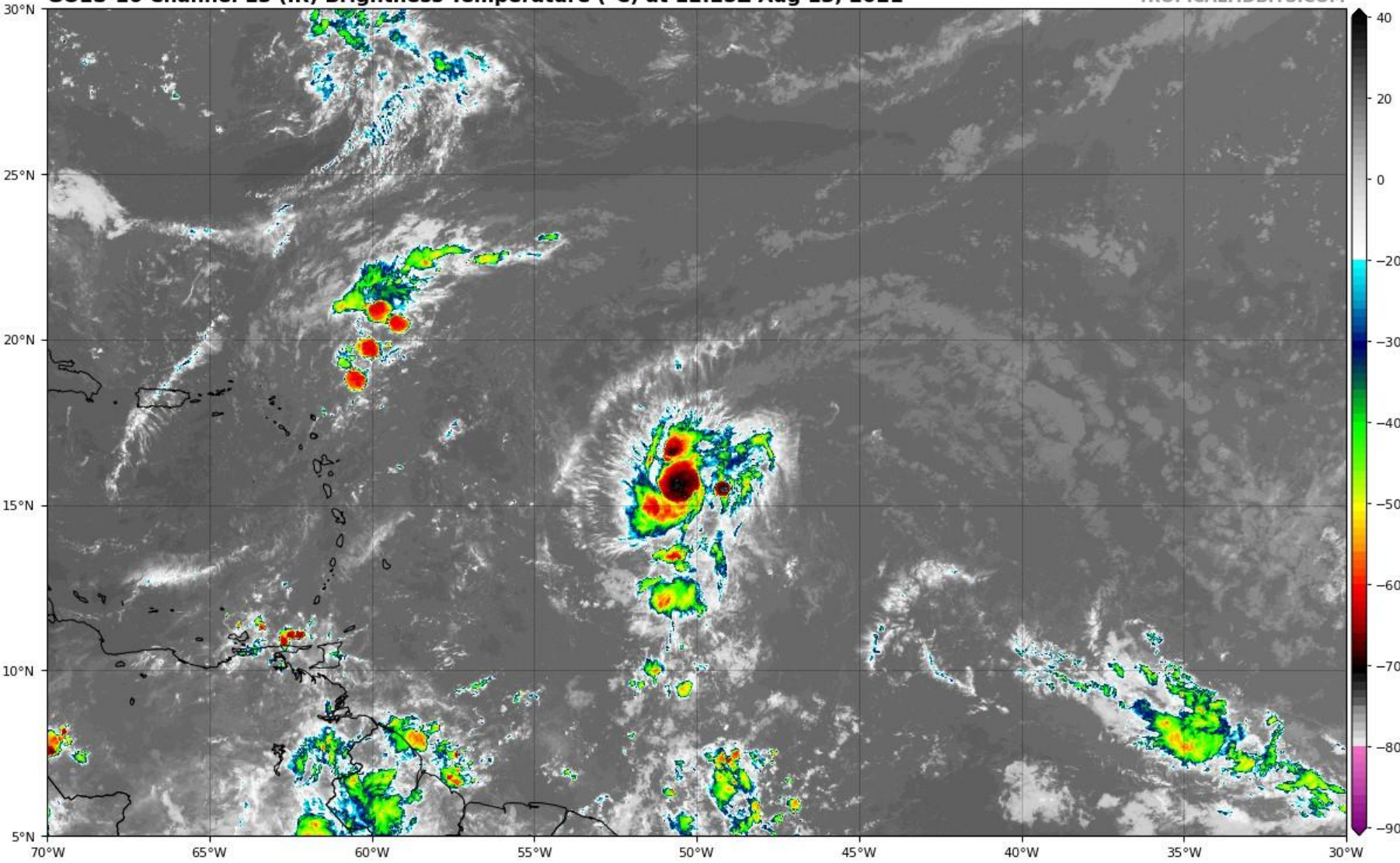


# Satellite Imagery

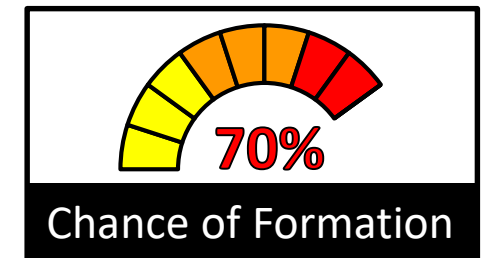
## Central Atlantic Wave – 95L

GOES-16 Channel 13 (IR) Brightness Temperature (°C) at 12:25Z Aug 13, 2021

TROPICALTIDBITS.COM



Development chances have increased for 95L. The next name on the 2021 Atlantic storm name list is Grace.





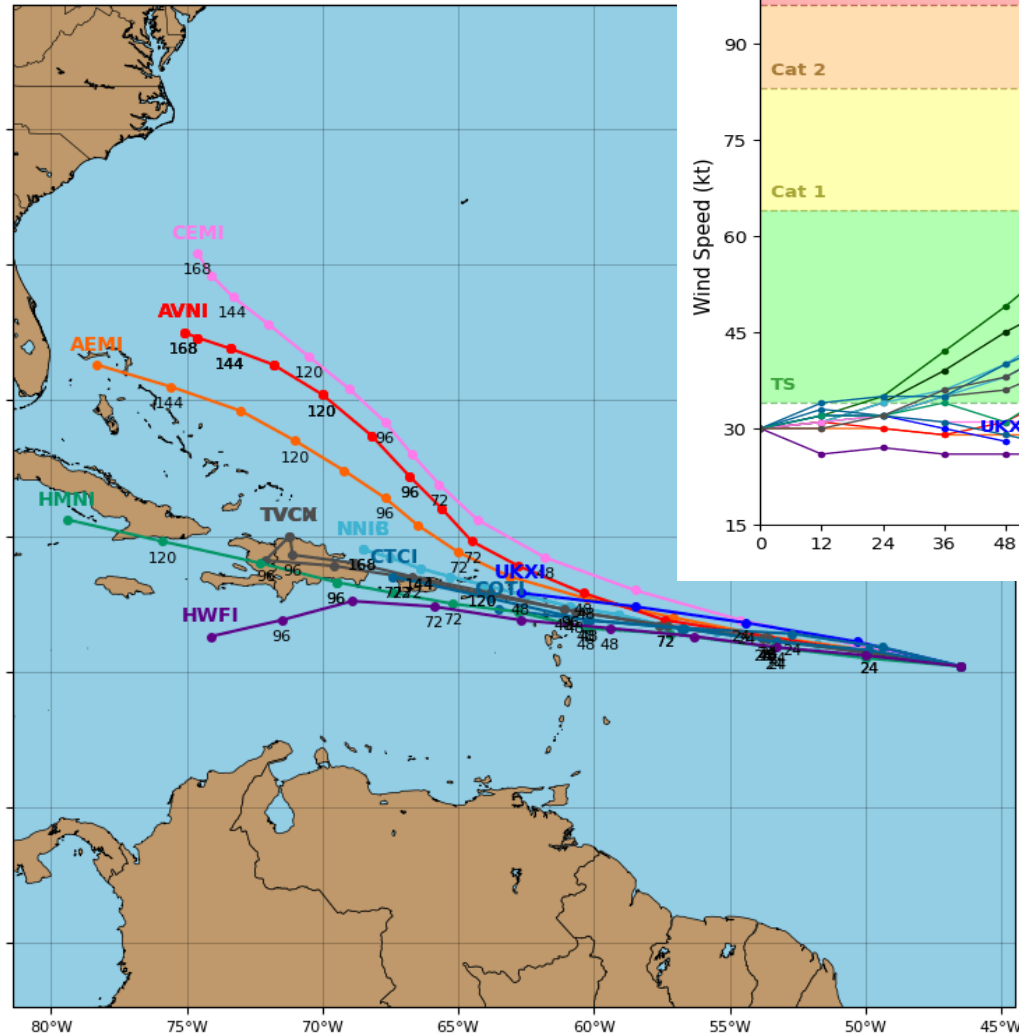


# Model Forecasts

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

### Invest 95L Model Track Guidance

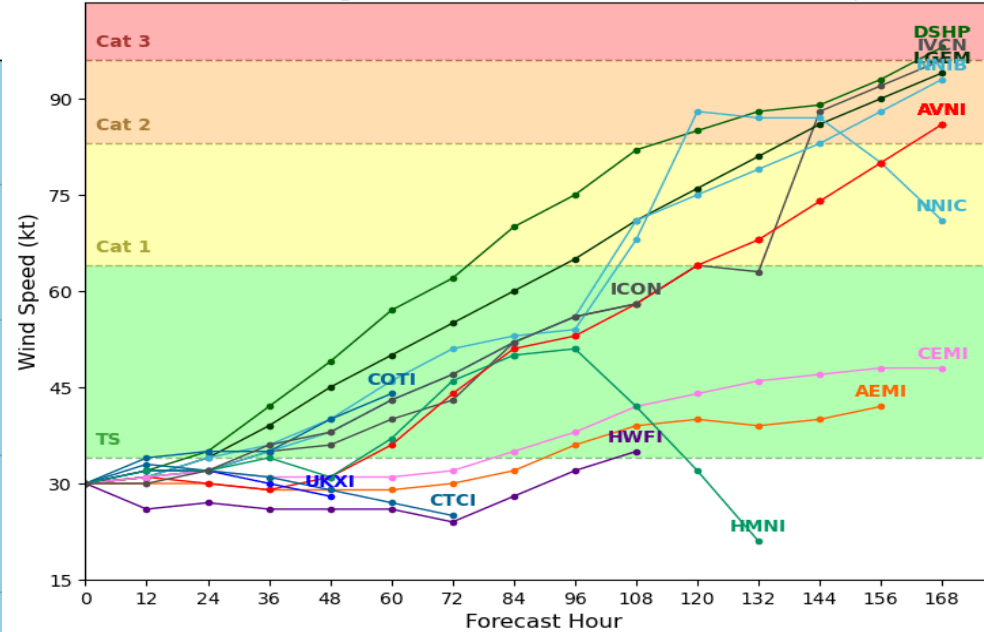
Initialized at 06z Aug 13 2021



### Invest 95L Model Intensity Guidance

Initialized at 06z Aug 13 2021

Levi Cowan - tropicaltidbits.com



Computer models remain split on track and intensity for 95L, which is common in newly developing systems. While some keep the system weak or dissipate the system near Hispaniola, others show a possibility for a stronger system moving more northwest and then westward 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 next week.



# Overall Summary

## **Tropical Depression Fred:**

- The center of Fred is located off the northern coast of Cuba, about 315 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 10mph and this general motion will continue through today, followed by a northwest turn on Saturday.
- On the forecast track, Fred is expected to be near the Florida Keys and southwestern Florida on Saturday, then parallel the west coast of Florida on Sunday.
- 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 an 80% chance of becoming a tropical depression by the weekend while moving generally westward across the tropical Atlantic near 20 mph. The next name is Grace.

## **Florida Outlook:**

- Tropical Storm Watches and Warnings have been issued for the Florida Keys and coastal portions of Southwest Florida south of Englewood. Additional watches and warnings are possible for the Florida West Coast and Florida Panhandle today or tomorrow.
- 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.
- The main threat to Florida from Fred is heavy rainfall. 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.
- A widespread 3-5" of rain with localized totals of 6-8" are anticipated across South Florida 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, with a tornado threat for North and Central Florida on Sunday.
- 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 this afternoon. 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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