



TROPICAL UPDATE



5:00 PM EDT

Wednesday, August 11, 2021

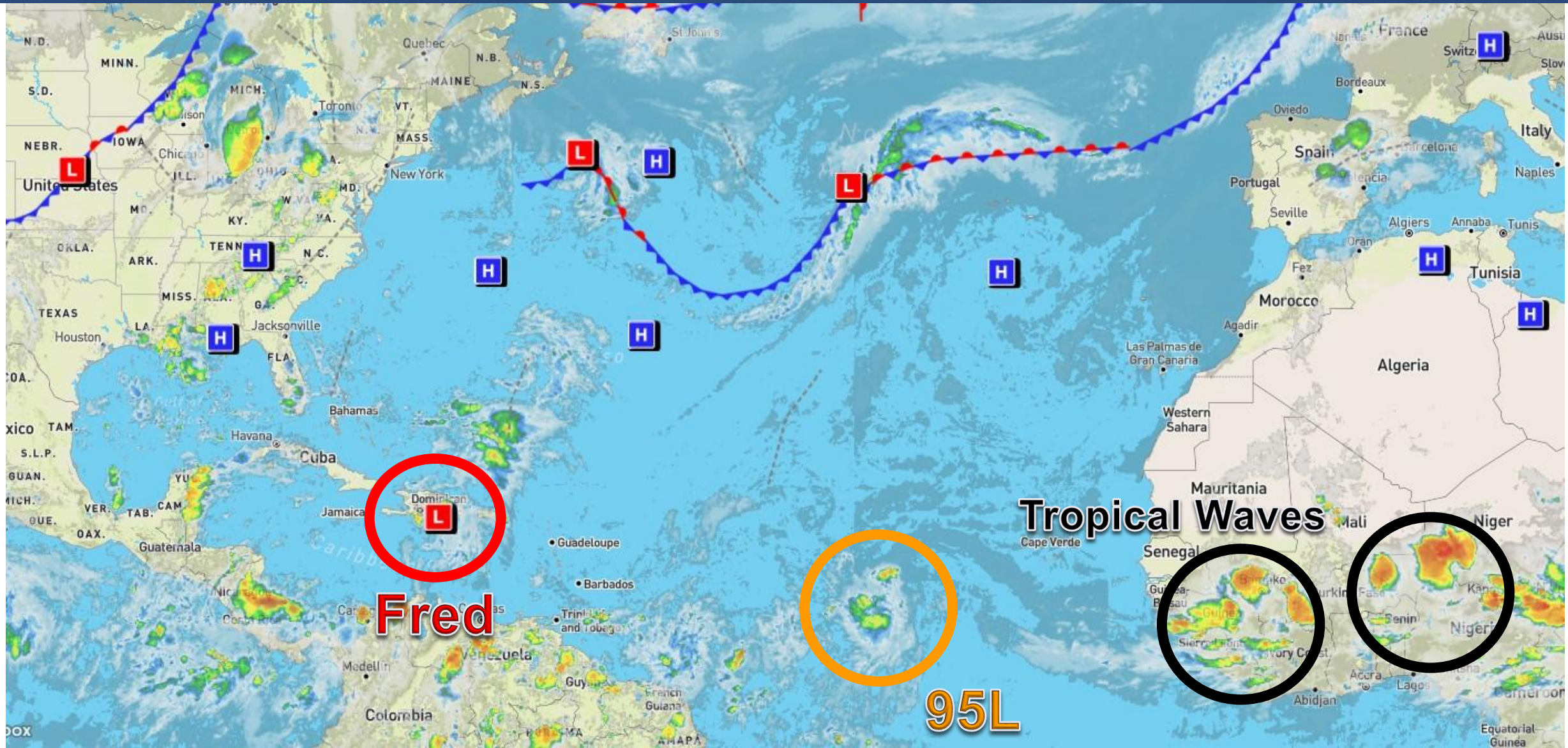
Tropical Storm Fred
& Invest 95L (50%)

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.



Atlantic Basin Satellite Image

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



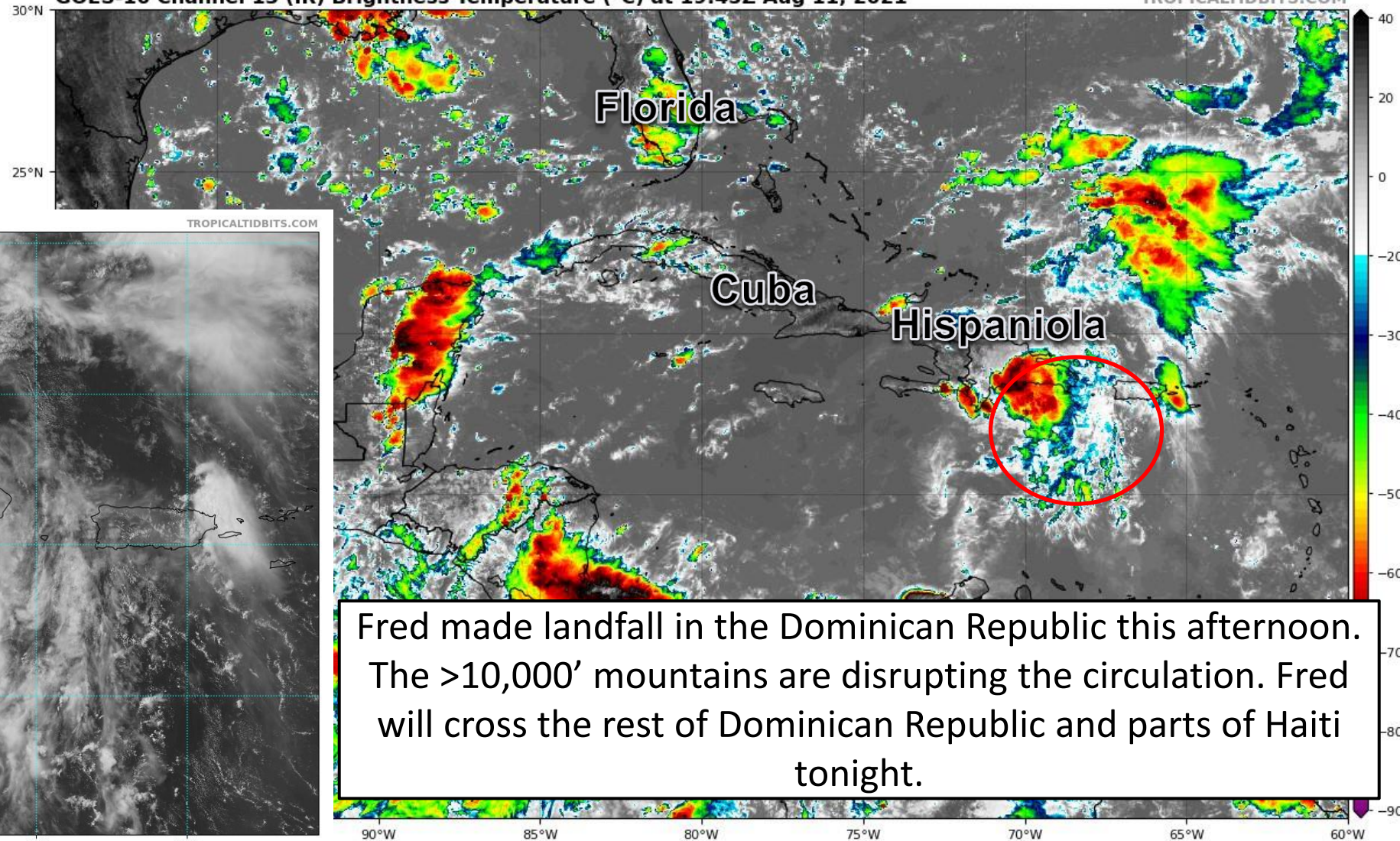


Satellite Imagery

Central Atlantic – Tropical Storm Fred

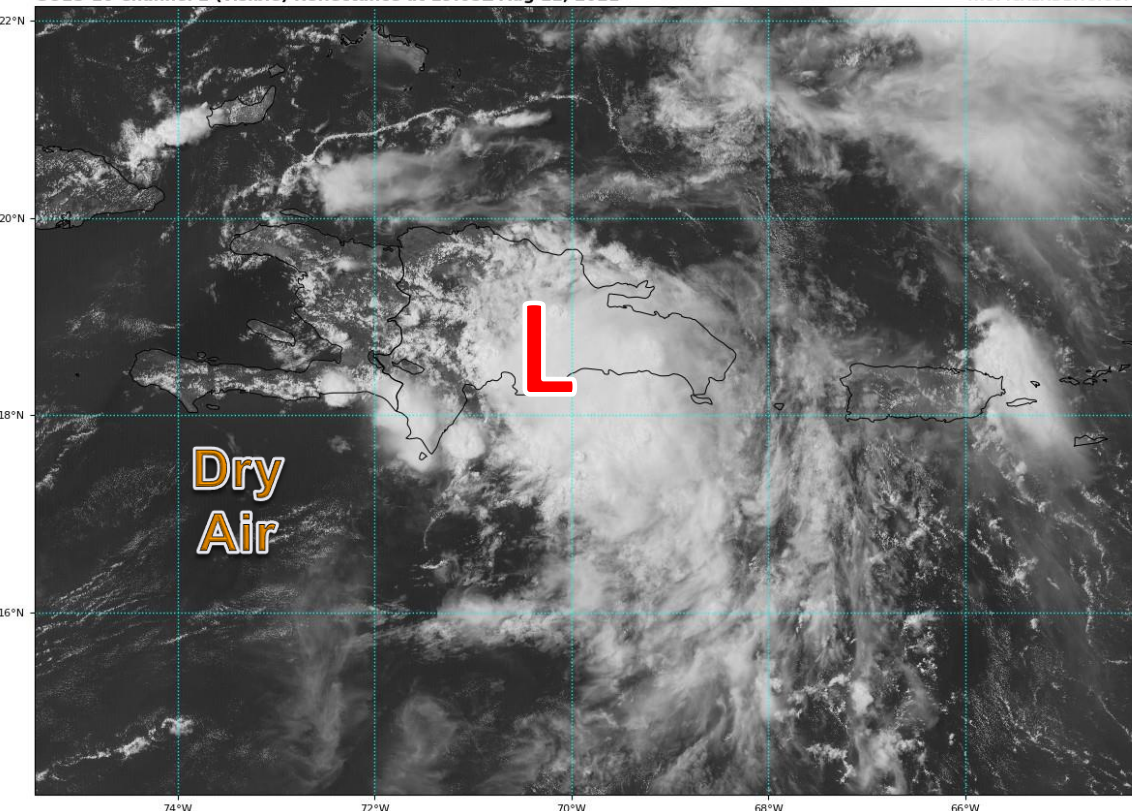
GOES-16 Channel 13 (IR) Brightness Temperature (°C) at 19:45Z Aug 11, 2021

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GOES-16 Channel 2 (visible) Reflectance at 19:05Z Aug 11, 2021

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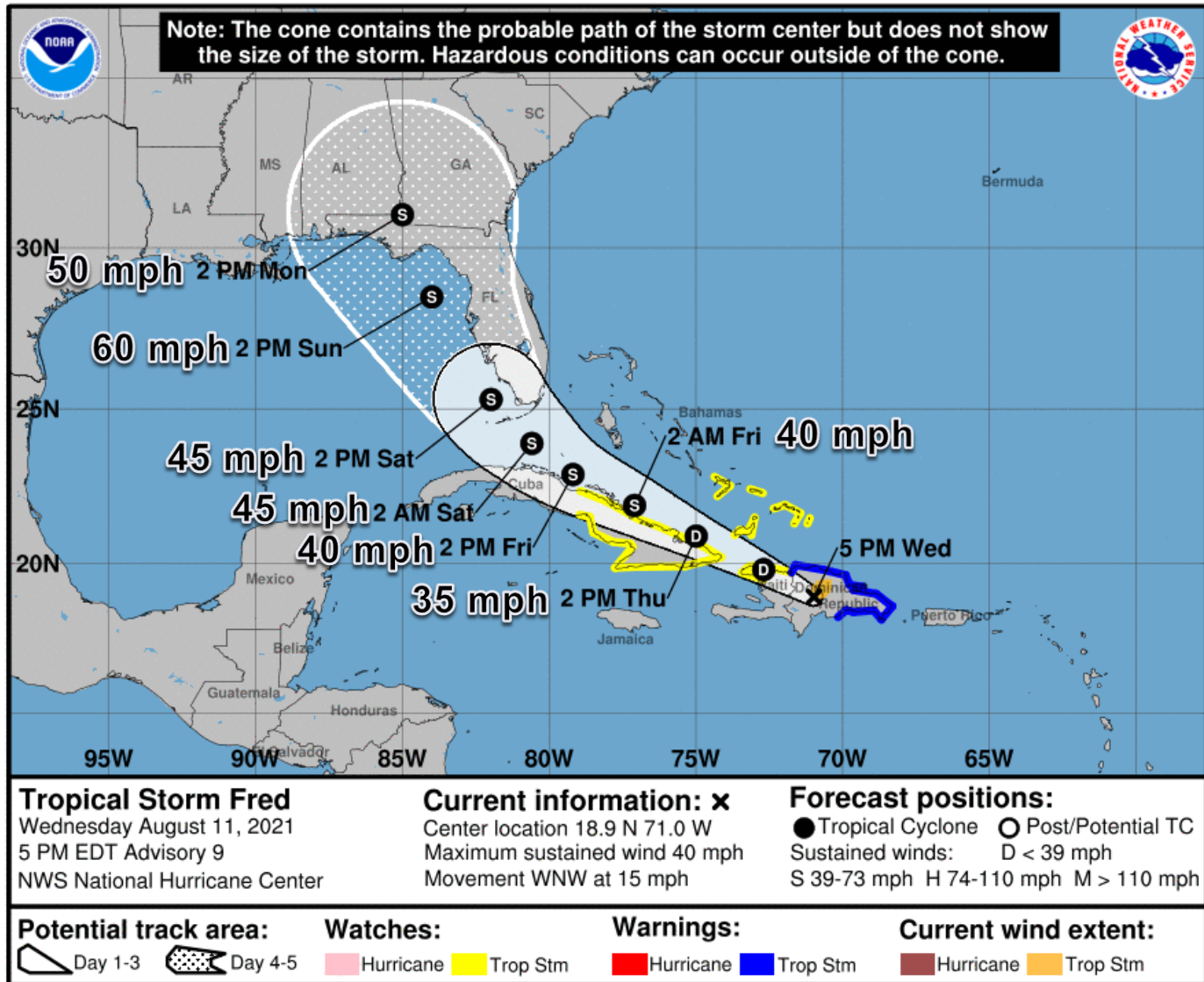


Fred made landfall in the Dominican Republic this afternoon. The >10,000' mountains are disrupting the circulation. Fred will cross the rest of Dominican Republic and parts of Haiti tonight.



Official Forecast Track

From the National Hurricane Center

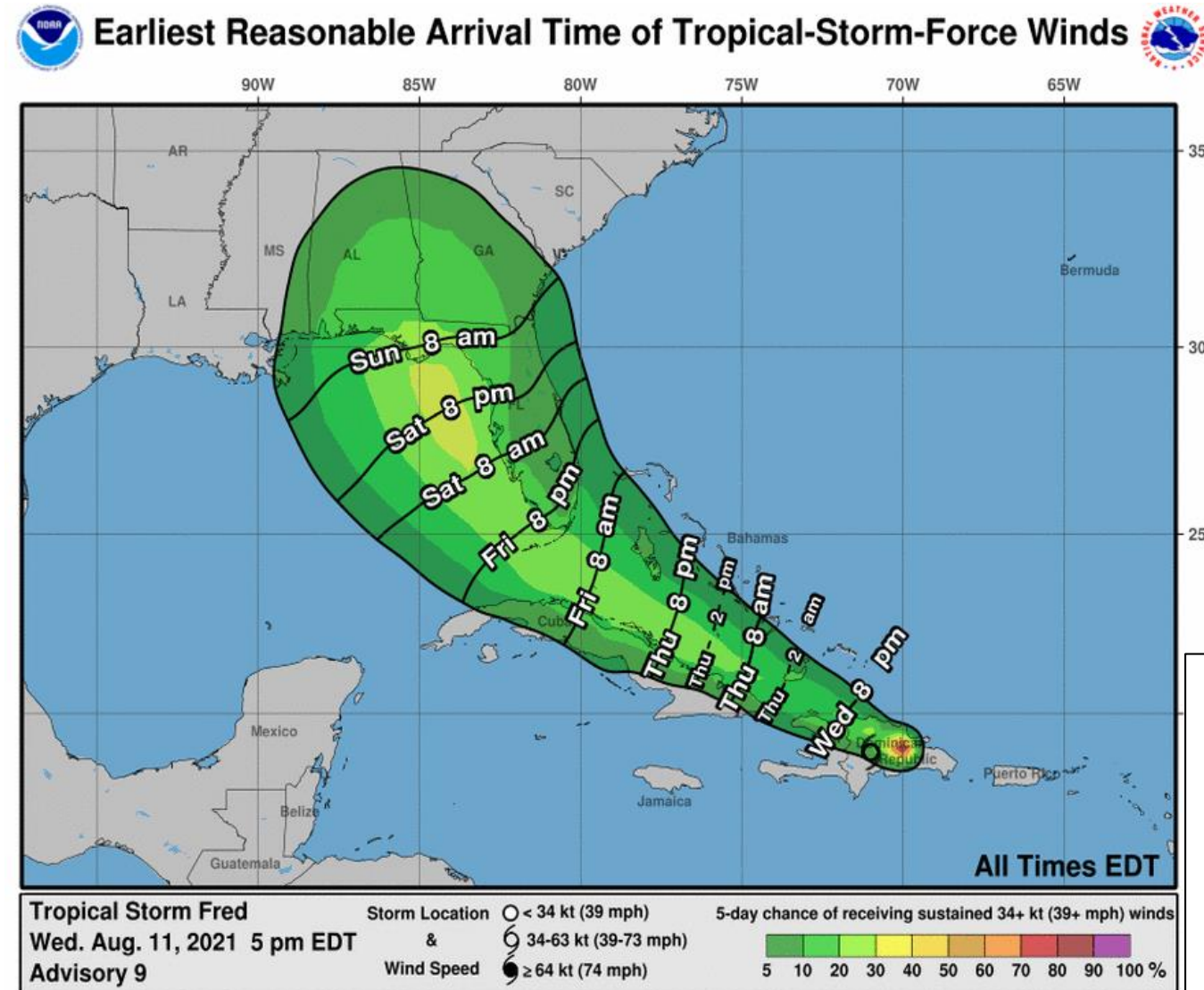


- The center of Fred is located over the Dominican Republic, or about 750 miles southeast of Miami, Florida.
- Fred made landfall in the Dominican Republic around 2 PM ET today.
- Fred currently has maximum sustained winds around 40 mph. It will weaken tonight as it moves over the mountains of Hispaniola.
- Fred is moving west-northwest at 15 mph and this general motion will continue over the next few days. This weekend, a northward turn is expected over the eastern Gulf of Mexico.
- On Thursday & Friday, Fred will move over Cuba or just offshore and will gradually reorganize as it approaches South Florida. The less/more interaction the storm has with Cuba and the Florida Peninsula, the stronger/weaker the winds will be.
- **No major changes to the track or intensity today.**



Time of Arrival & Wind Speed Probabilities

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



City	Chance for TS Winds	Changes Since Last Packet
West Palm Beach	11%	+/-0%
Miami	9%	+/-0%
Key West	22%	+2%
Naples	23%	+3%
Ft. Myers	11%	+1%
Tampa	22%	+5%
Cedar Key	21%	+5%
Tallahassee	19%	+4%
Apalachicola	25%	+7%
Panama City	22%	+6%
Pensacola	11%	+5%
Jacksonville & Orlando	8%	+2%

There is a near 25% or 1 in 4 chance of tropical storm force winds for the Florida Keys and Gulf Coast with about a 10% or 1 in 10 chance in Southeast Florida and across inland areas. The earliest reasonable arrival time of tropical storm force winds in South Florida is Friday afternoon. They are most likely to begin Friday night. Winds arrive on Saturday night/Sunday elsewhere.



Key Messages

From the National Hurricane Center



Key Messages for Tropical Storm Fred

Advisory 9: 5:00 PM EDT Wed Aug 11, 2021

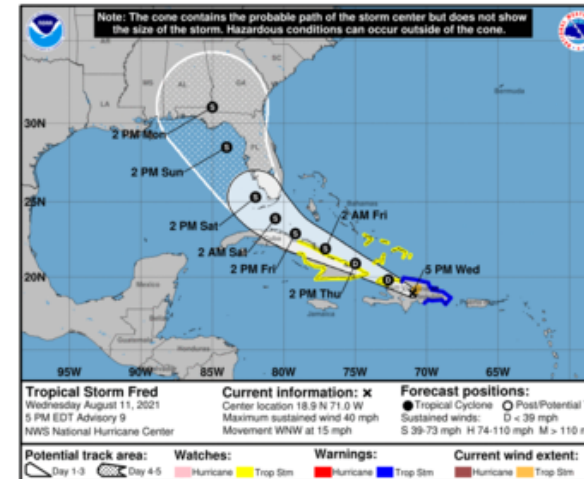


1. Tropical storm conditions are ongoing across portions of the Dominican Republic. Tropical storm conditions are possible in northern Haiti and the southeastern Bahamas this evening, and in portions of Cuba by tonight.

2. Through early Thursday morning, heavy rainfall could lead to flash, urban, and small stream flooding, along with possible rapid river rises and potential mudslides in the Dominican Republic.

3. There is a risk of wind and rainfall impacts elsewhere in portions of Hispaniola, the Bahamas, and Cuba during the next few days, although the forecast is more uncertain than usual since Fred is forecast to interact with Hispaniola through tonight.

4. There is an increasing risk of wind and rainfall impacts in Florida beginning Friday night or early Saturday in the Keys and spreading northward through portions of the Peninsula and the Panhandle Saturday through Monday. Beginning Friday, heavy rainfall could lead to areal, urban, and small stream flooding, and possible rapid river rises across southern Florida. Interests throughout Florida should monitor Fred's progress and check updates to the forecast.



For more information go to hurricanes.gov



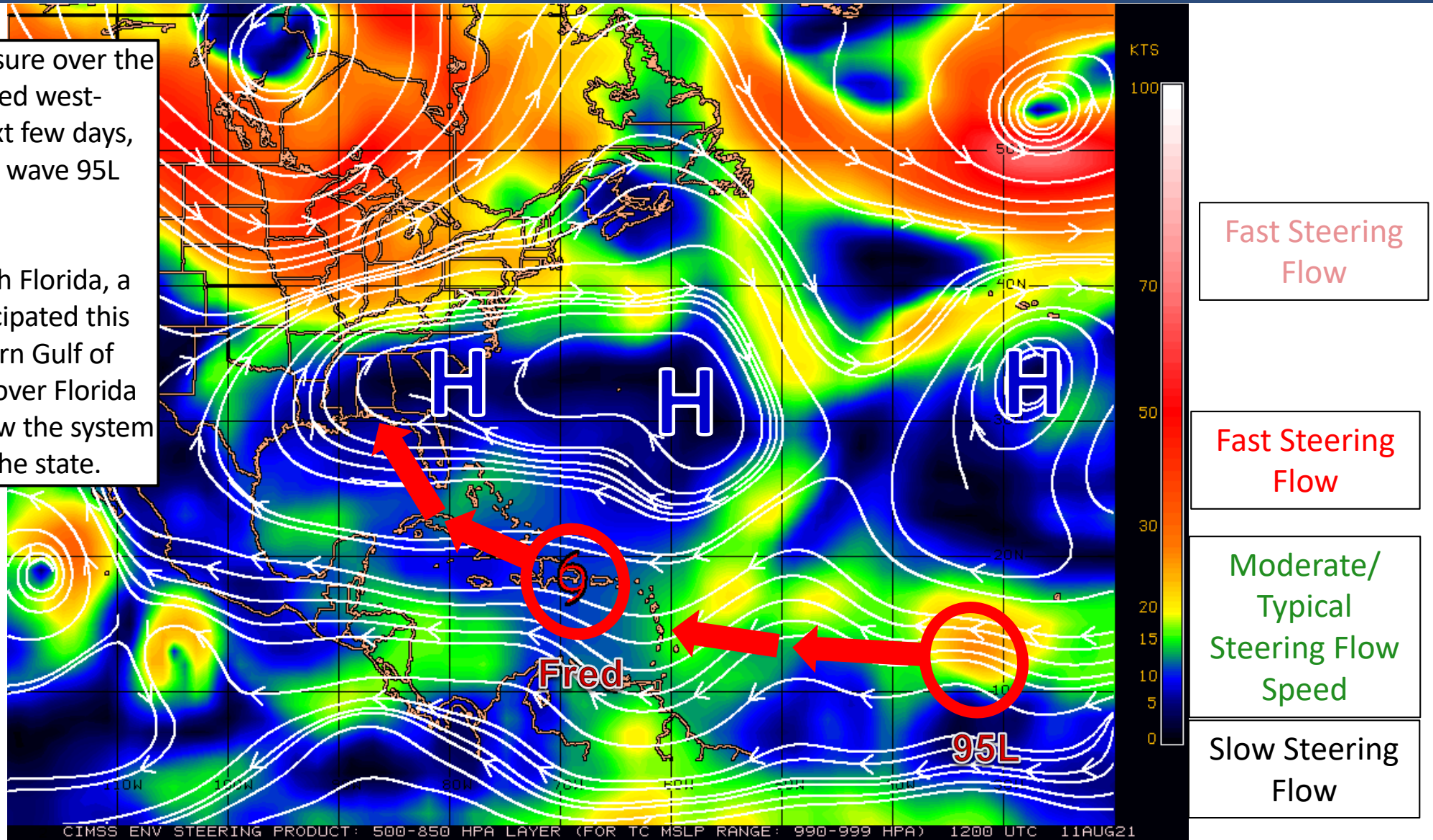
Steering Currents

What is Moving the System?

Color denotes the movement speed through the atmosphere and thin white lines denote direction. Tightly clustered white lines represent faster movement as well.

A large area of high pressure over the Atlantic will move Fred west-northwest over the next few days, and the other tropical wave 95L westward.

Once Fred is near South Florida, a northward turn is anticipated this weekend in the eastern Gulf of Mexico. High pressure over Florida will break down and allow the system to move near/over the state.



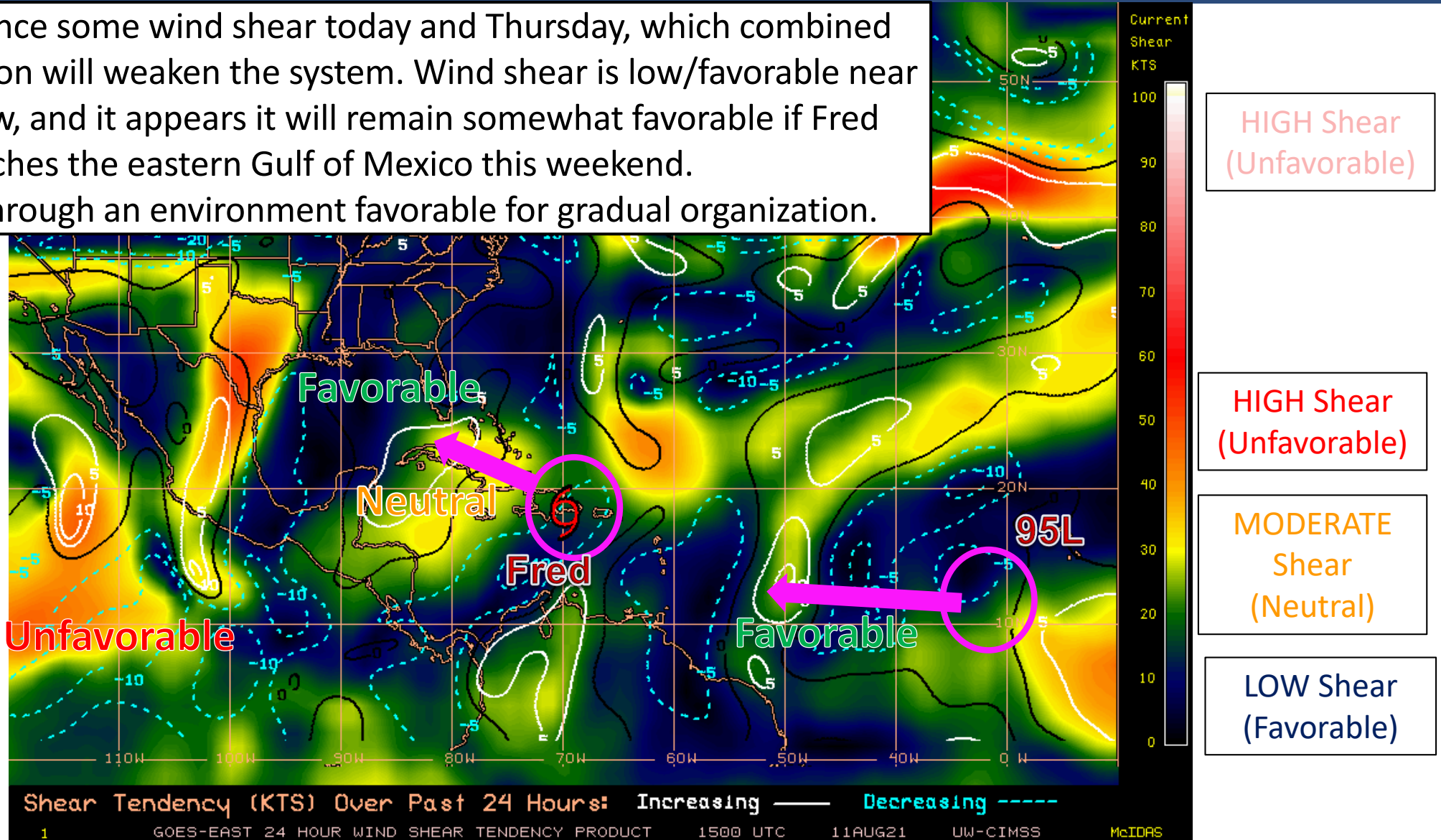


Wind Shear

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 will experience some wind shear today and Thursday, which combined with land interaction will weaken the system. Wind shear is low/favorable near Florida right now, and it appears it will remain somewhat favorable if Fred reaches the eastern Gulf of Mexico this weekend. 95L will move through an environment favorable for gradual organization.



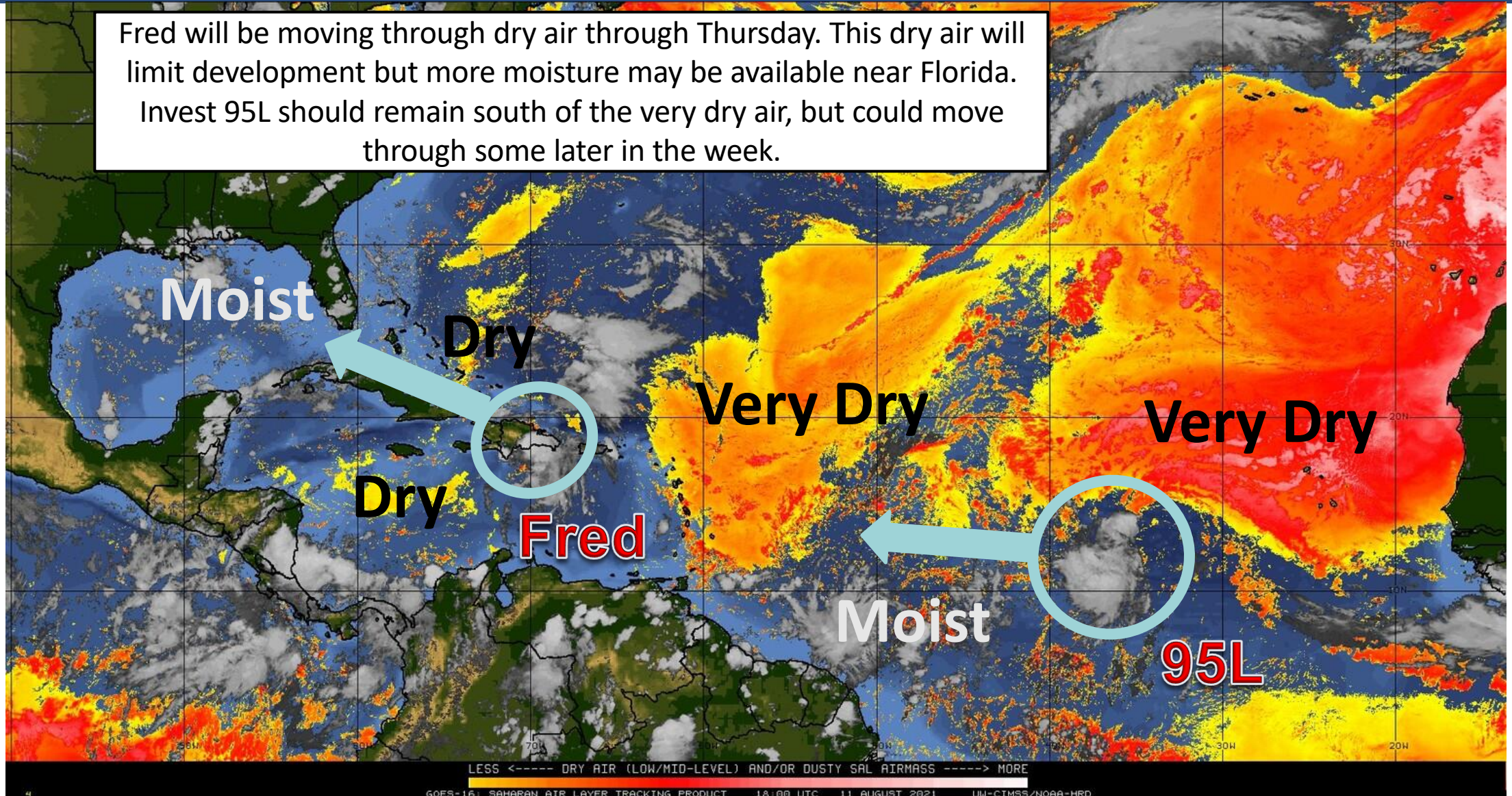


Dry Air & Saharan Dust

Is the environment favorable for the system?

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

Fred will be moving through dry air through Thursday. This dry air will limit development but more moisture may be available near Florida. Invest 95L should remain south of the very dry air, but could move through some later in the week.





Sea Surface Temperatures & Anomalies

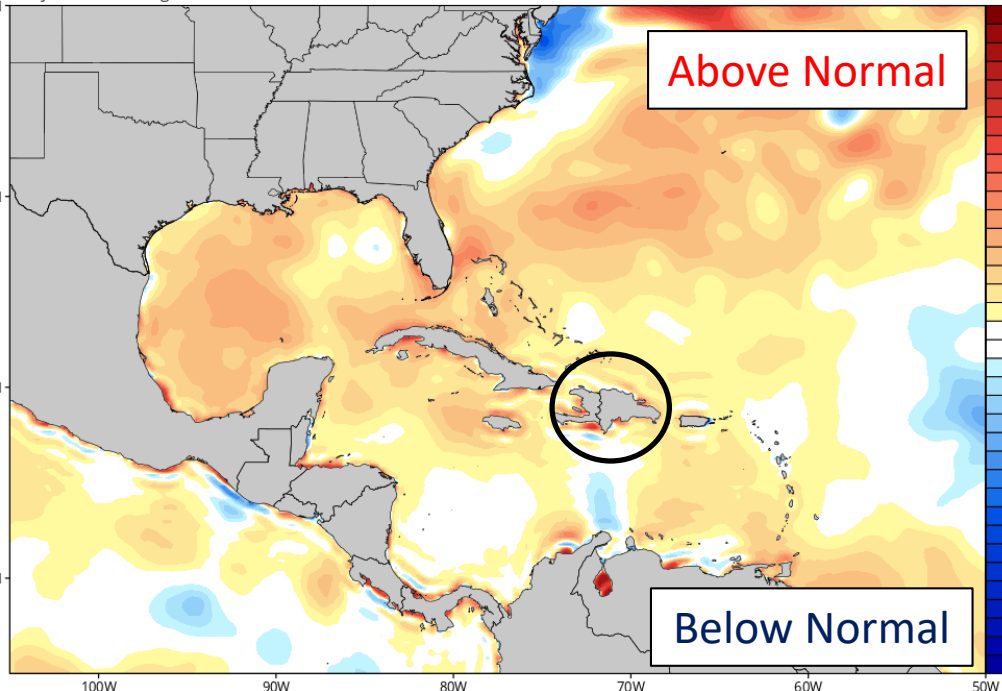
Is the ocean favorable for the system?

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 Fred & Invest 95L move west/northwest.

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

Analysis Time: 06z Aug 11 2021

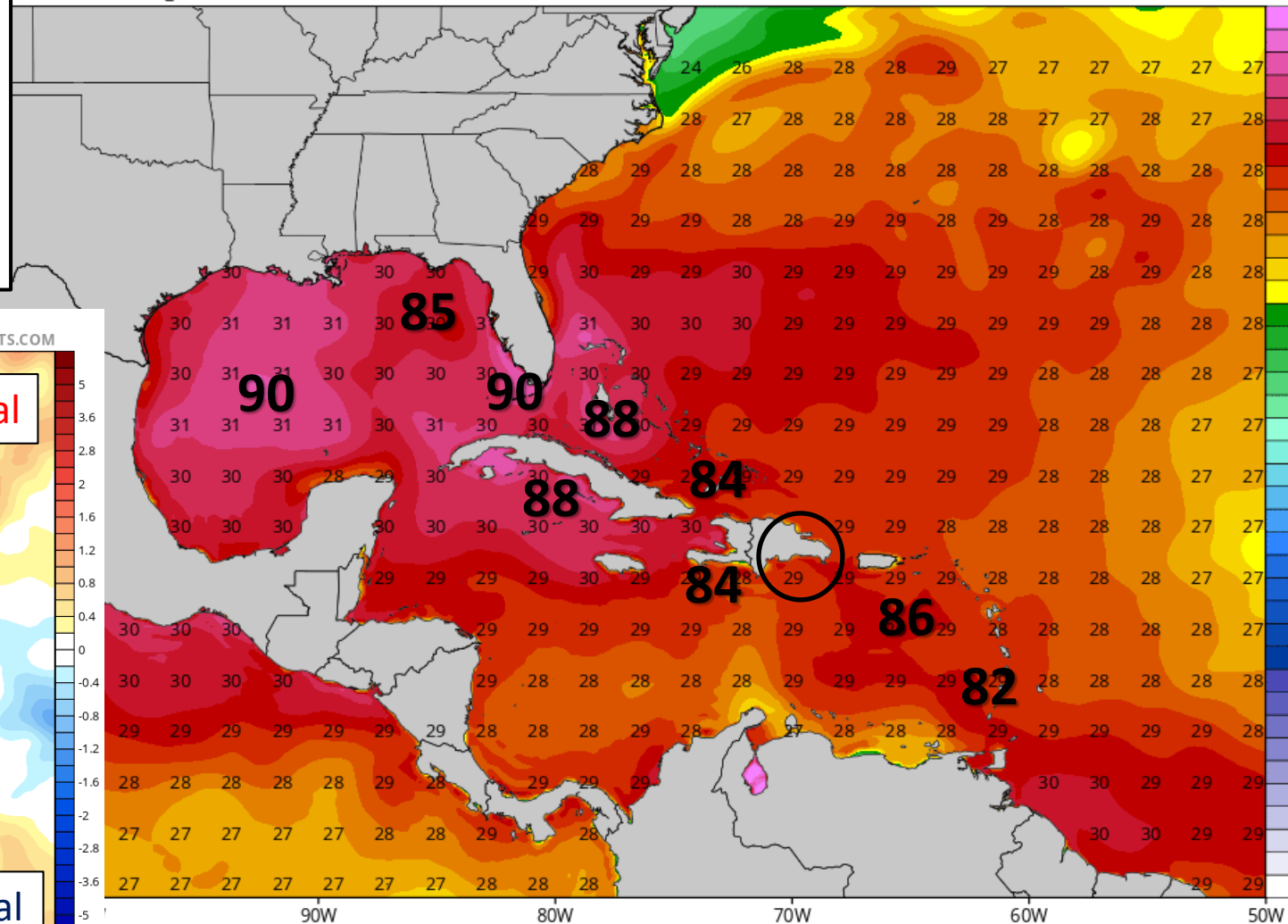
TROPICALTIDBITS.COM



Sea Surface Temperature (°C)

Analysis Time: 06z Aug 11 2021

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°F
90
88
86
84
82
81
79
75
72



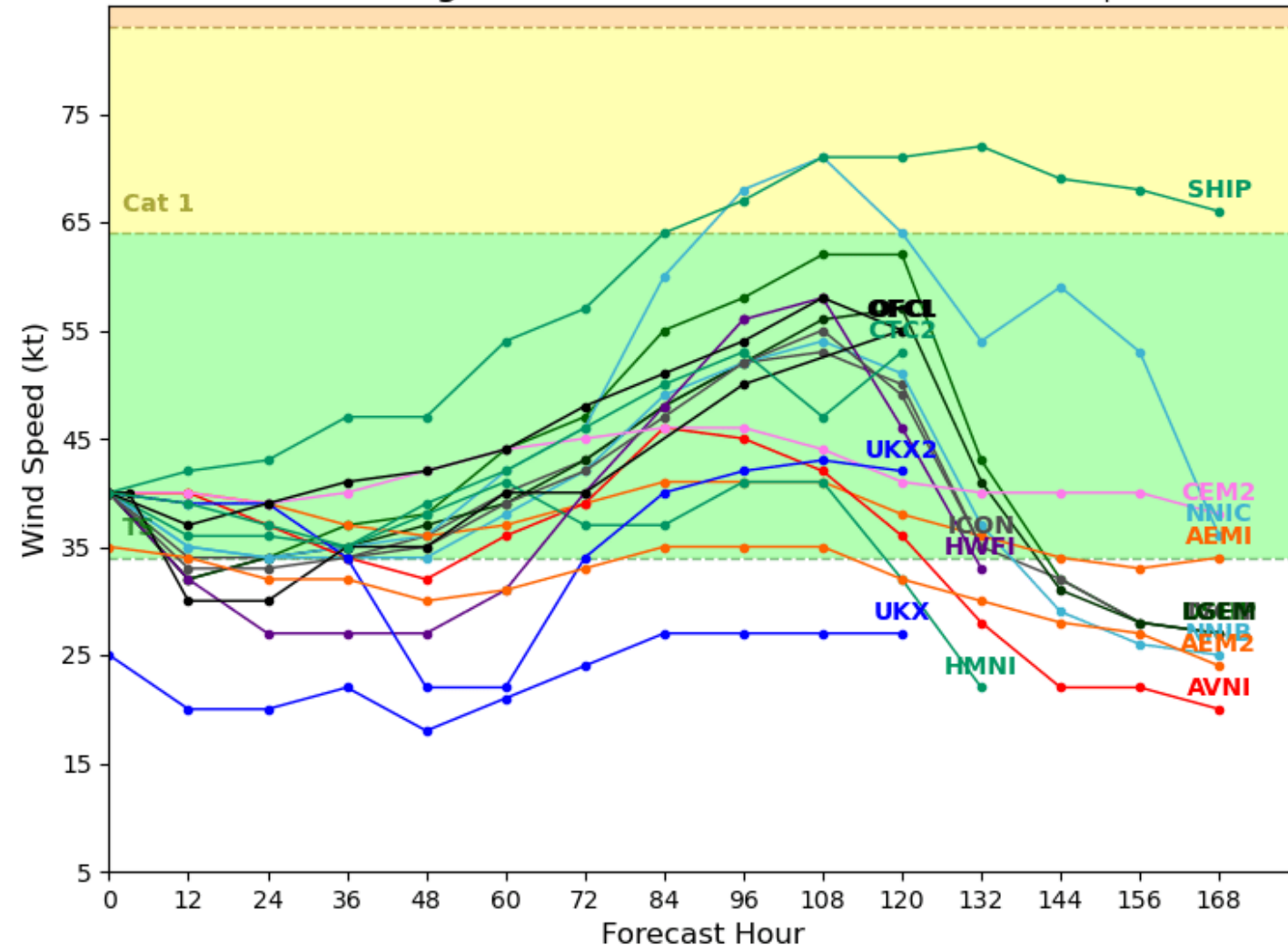
Model Forecast Intensity

Dynamical and Statistical Models – Tropical Storm Fred

Tropical Storm FRED Model Intensity Guidance

Initialized at 12z Aug 11 2021

Levi Cowan - tropicaltidbits.com



Land interaction, some dry air, and wind shear will keep Fred weak today and tomorrow.

By Friday (~48 hours), some gradual strengthening is possible as the system moves into a more favorable environment near South Florida. If Fred moves far enough off the West Coast of Florida in the Gulf of Mexico, it could near hurricane intensity before landfall on the northern Gulf Coast on Sunday.



Long-Range Flood Outlook

Next 7 Days – Ending Wednesday, August 18



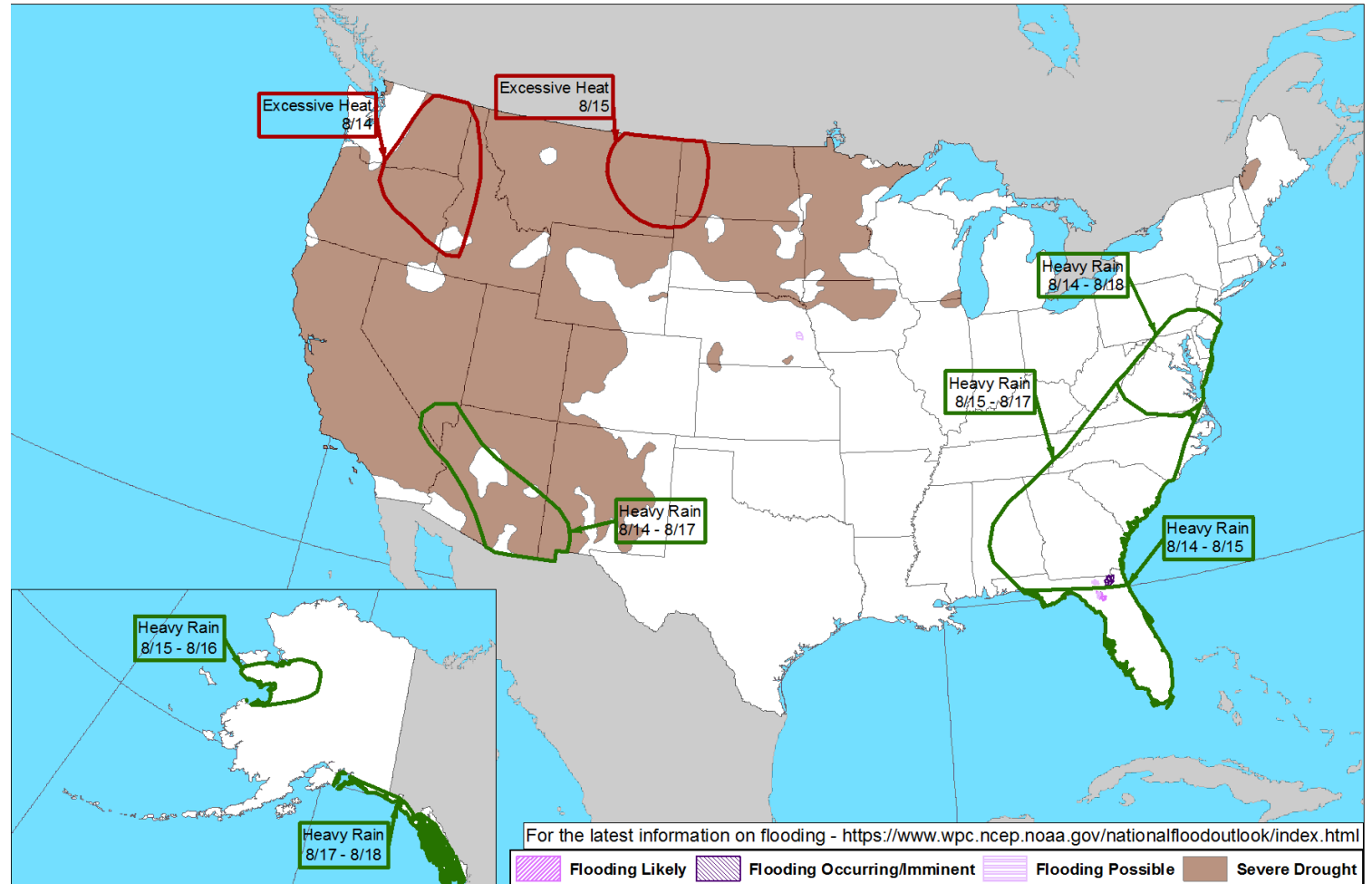
Day 3-7 U.S. Hazards Outlook
Valid: 08/14/2021-08/18/2021



Heavy rainfall will be possible across the entire state this weekend, and continue across North Florida into early next week.

Rivers across Northeast Florida are saturated and this region will be the most susceptible to additional flooding this weekend.

It is too early to determine exact rainfall totals.



Weather Prediction Center

Made: 08/11/2021 3PM EDT

Follow us:

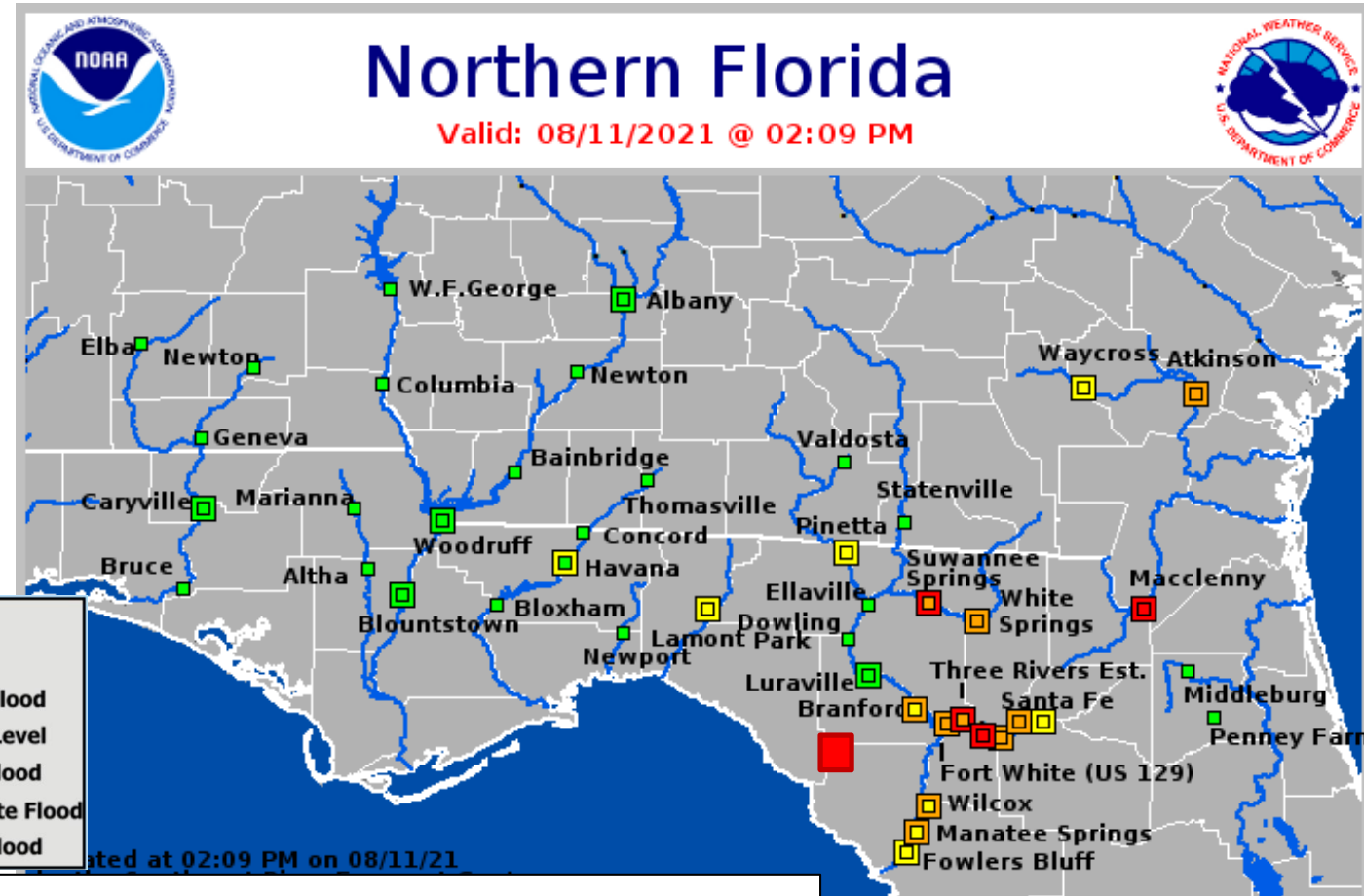
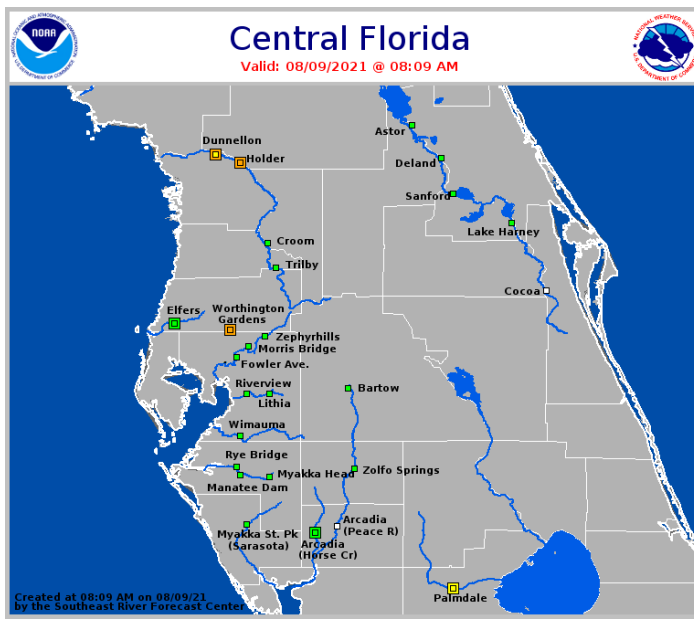
www.wpc.ncep.noaa.gov



Current & Forecast River Flooding

North Florida – 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.

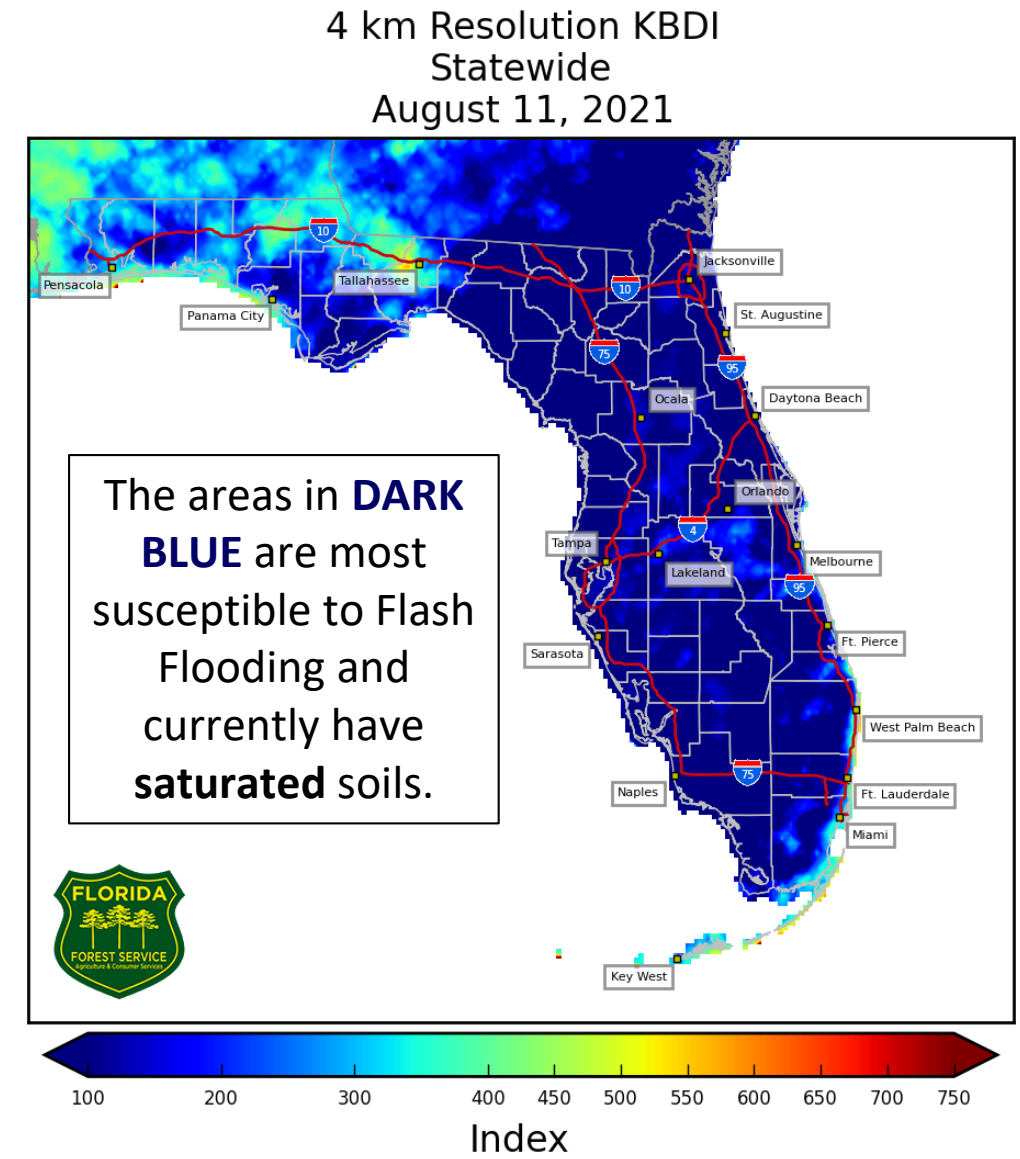
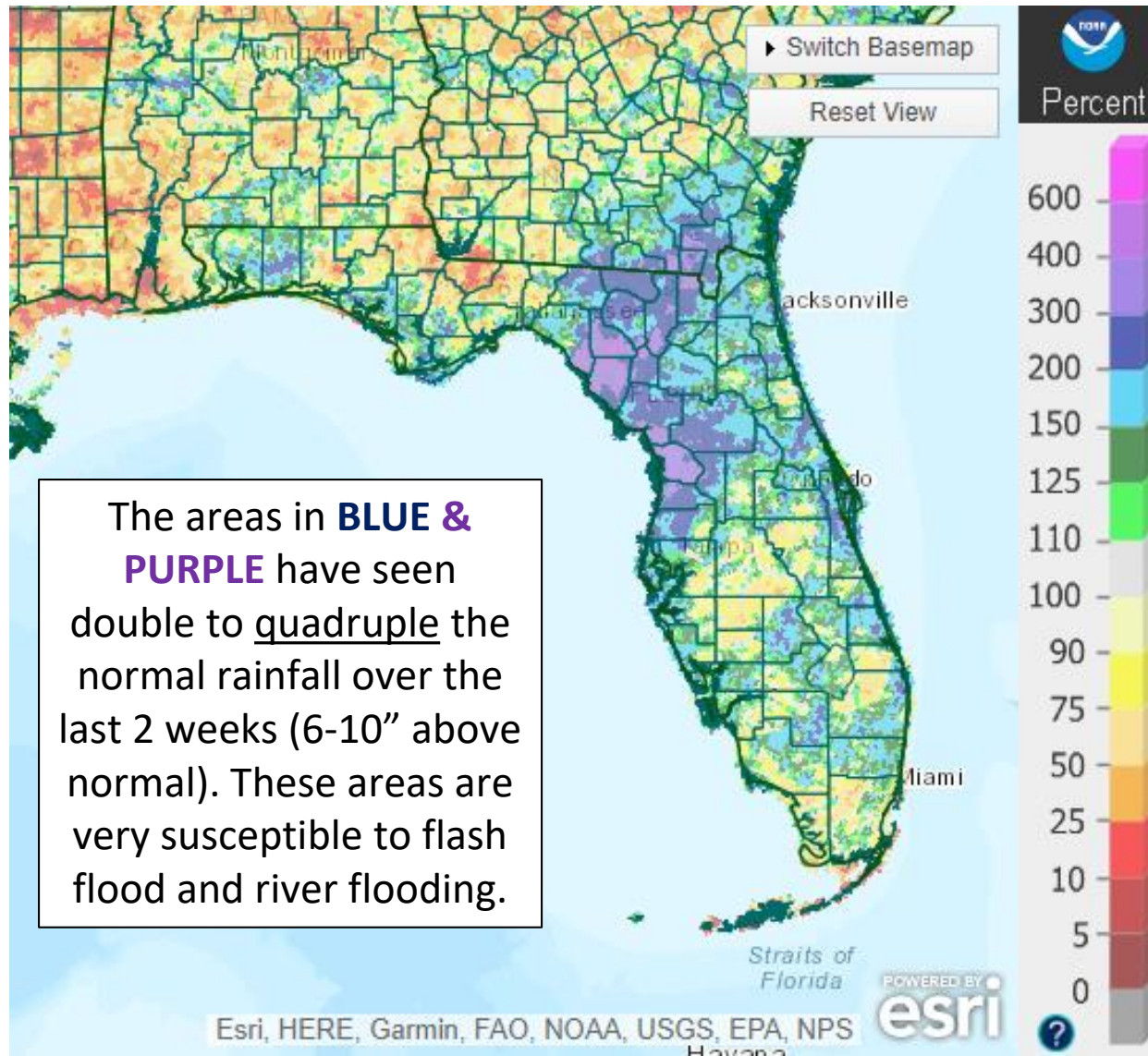


More details on river levels available at the [Southeast River Forecast Center website.](#)



Rainfall Anomaly – Soil Moisture

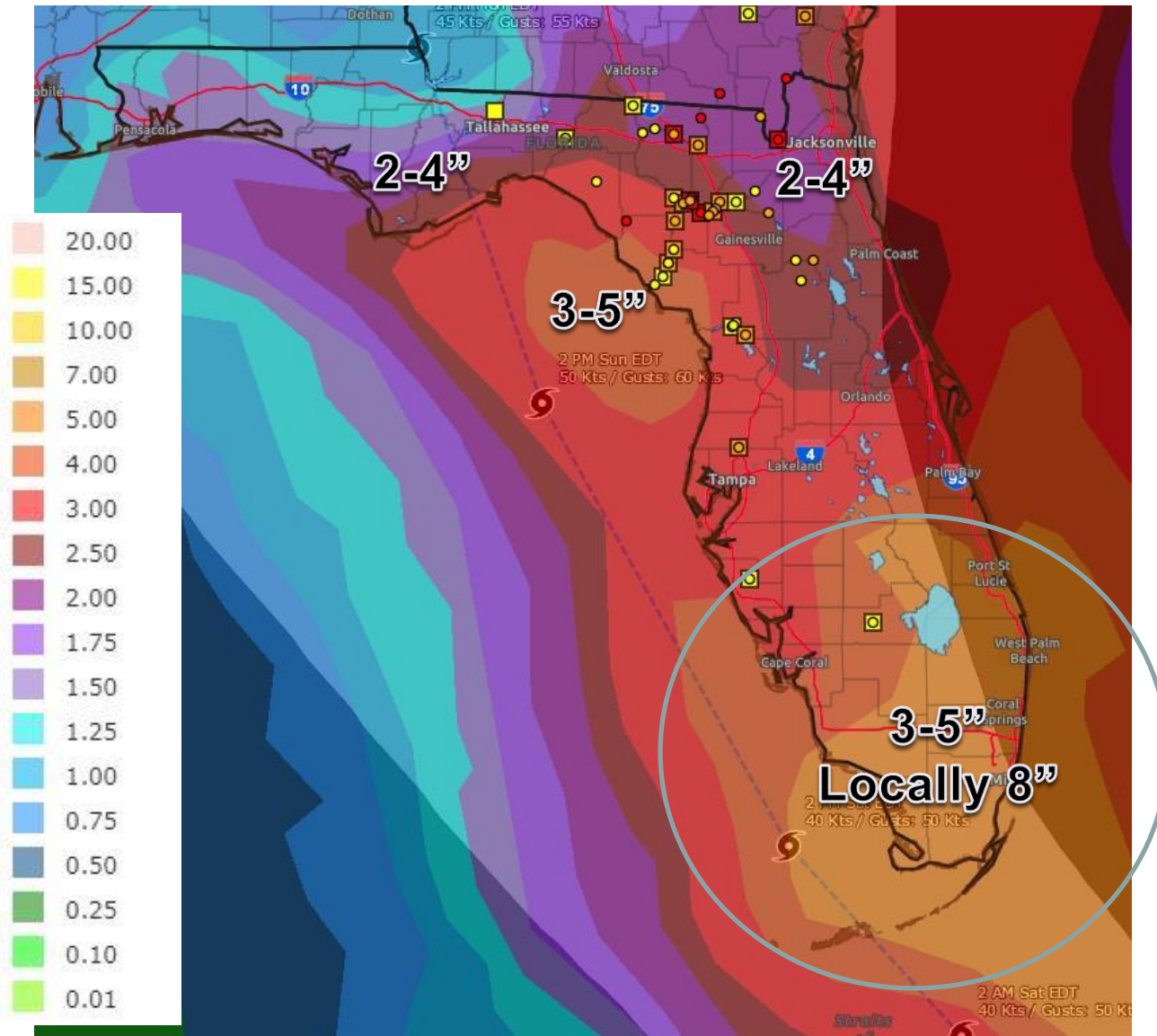
KB Drought Index – [Full Report from the Florida Forest Service](#)





Rainfall Totals Next 7 Days

Ending 8 PM ET Tuesday



Heavy rainfall will be possible across the Peninsula starting on Friday and continuing into the weekend.

The heavy rain threat will then move into North Florida early next week.

A widespread 3-5" of rain is expected near and south of Lake Okeechobee (including the Keys) with localized totals of 8".

***Exact rainfall totals across North Florida WILL CHANGE as the forecast track and intensity is fine tuned. These are first guess totals based on the current NHC forecast. ***









Flash Flood Outlook for Friday

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



Rain bands will begin to arrive in Southeast Florida Friday afternoon and continue into Friday night. An isolated flash flooding will be possible.

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
@NWSWPC	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.
Flash flooding near me?	Flash Flooding	Flash Flooding	Flash Flooding	Flash Flooding
NO Flash Flooding	Flash Flooding	Flash Flooding	Flash Flooding	Flash Flooding
  WEATHER PREDICTION CENTER				

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%



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



www.hurricanes.gov

Disturbance 1

1
(50%)



2:00 pm EDT
Wed Aug 11 2021

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

A tropical wave located over the eastern tropical Atlantic several hundred miles west-southwest of the Cabo Verde Islands continues to produce disorganized showers and thunderstorms. Environmental conditions are expected to become gradually more conducive for development of this system, and a tropical depression could form by early next week while moving generally westward across the tropical Atlantic near 20 mph.

This system could reach portions of the Leeward Islands by late Saturday, following in a similar path as Fred. Development chances have increased.

***Formation chance through 48 hours...low...30%**

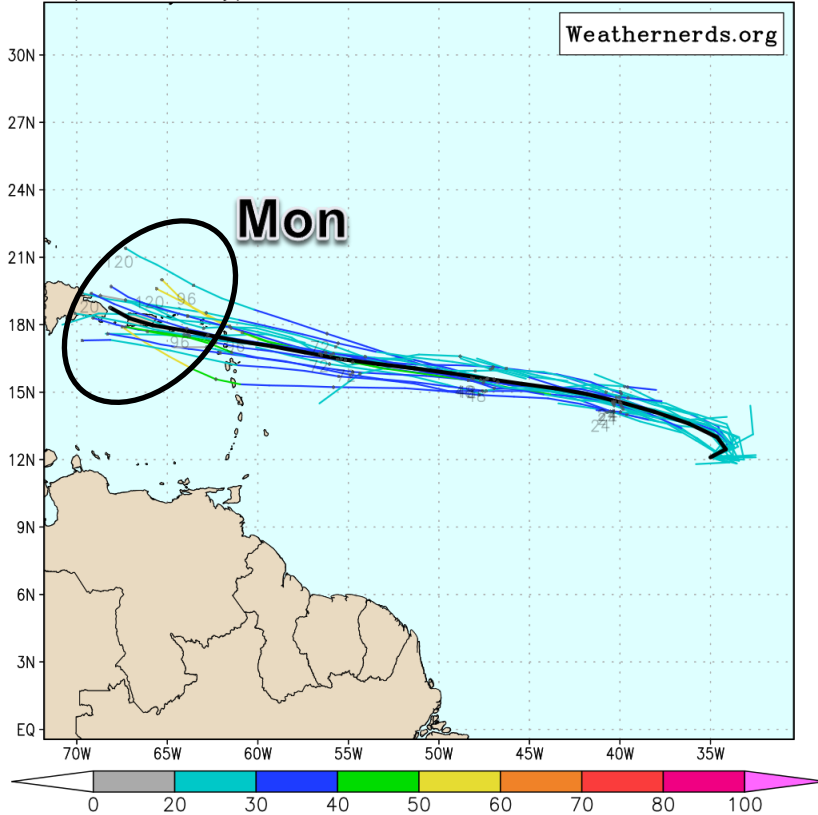
***Formation chance through 5 days...medium...50%**



Model Forecasts

Ensembles, Dynamical, and Statistical Models – Invest 95L

ECMWF Ens. (0–120h only), init: 2021081112, AL95 Invest color = max wind (kt)



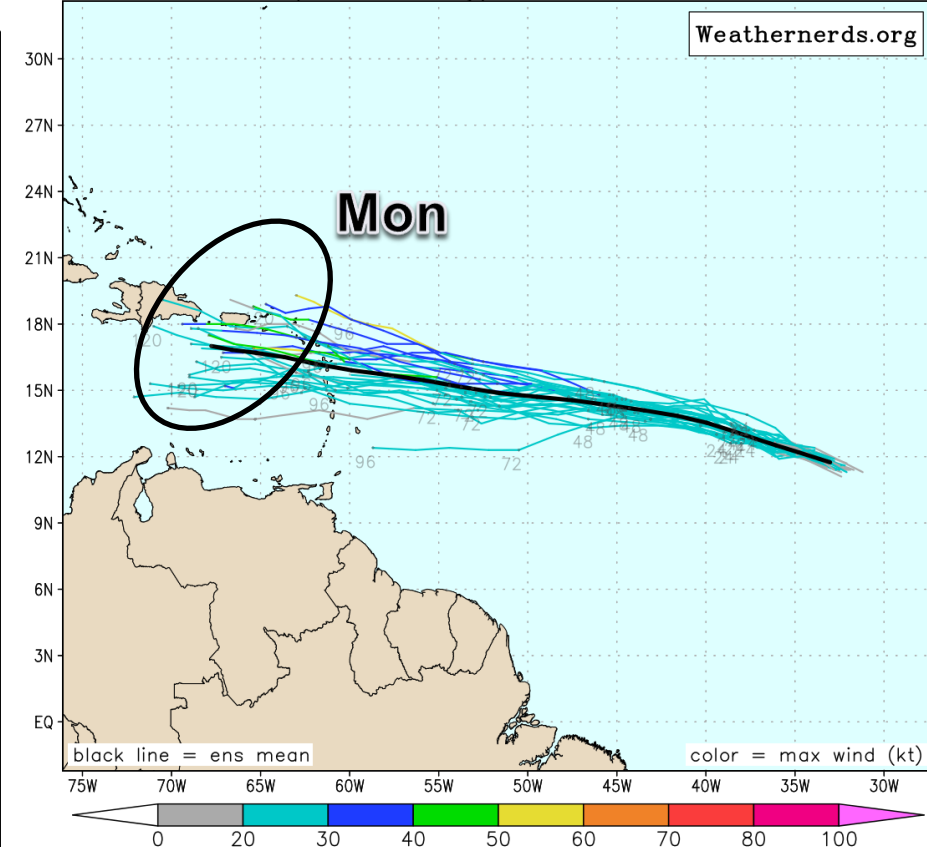
Invest 95L, a tropical wave out in the central Tropical Atlantic, will continue west-northwest over the next 5-7 days.

Gradual organization/development is expected and a tropical depression will probably form by the end of the weekend.

The system will be near Puerto Rico in about 5 days, which would be Monday morning.

A west or northwest motion will continue after that.

GEFS Ensemble (0–120 h only) , init: 2021081112, AL95 Invest





Overall Summary

Tropical Storm Fred (Formerly Potential Tropical Cyclone Six)

- The center is Fred is located over the Dominican Republic, or about 750 miles southeast of Miami, Florida.
- Fred made landfall in the Dominican Republic around 2 PM ET today.
- Fred currently has maximum sustained winds around 40 mph. It will weaken tonight as it moves over the mountains of Hispaniola.
- Fred is moving west-northwest at 15 mph and this general motion will continue over the next few days. This weekend, a northward turn is expected over the eastern Gulf of Mexico.
- On Thursday & Friday, Fred will move over Cuba or just offshore and will gradually reorganize as it approaches South Florida. The less/more interaction the storm has with Cuba and the Florida Peninsula, the stronger/weaker the winds will be.
- **No major changes to the track or intensity today.**

Invest 95L

- A tropical wave located over the eastern tropical Atlantic 1,500 miles east of the Lesser Antilles continues to produce disorganized showers and thunderstorms.
- Environmental conditions are expected to become gradually more conducive for development of this system, and a tropical depression could form by early next week while moving generally westward across the tropical Atlantic near 20 mph.
- NHC has the odds of development at 30% (low chance) over the next 48 hours and 50% (medium chance) over the next 5 days.

Florida Outlook:

- Tropical Storm Fred will bring increased rain chances and gusty winds to South Florida on Friday and Saturday and other regions of the state this weekend and into early next week.
- The entire state is in the 5-day forecast cone for where the center of the storm is most likely to travel.
- A widespread 3-5" of rain with localized totals of 8" are anticipate across the Florida Keys and South Florida (generally south of Lake Okeechobee).
- Isolated tornadoes are also possible in South Florida and the Keys on Friday and Saturday. Storm surge is anticipated to be minimal at this time.
- **It is too early to determine exact impacts to other regions of the state!!**
- Some wind, surge, and tornado impacts are possible along the Gulf Coast, particularly in the Panhandle/Big Bend if the system remains over the Gulf of Mexico far enough off the West Coast of Florida.
- Widespread minor to moderate river flooding will continue this week in Northeast Florida. Heavy rainfall may continue or worsen flooding.

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



TROPICAL UPDATE



Created by:

Michael Spagnolo, Deputy State Meteorologist

Michael.Spagnolo@em.myflorida.com

State Meteorological Support Unit

Florida Division of Emergency Management

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