



TROPICAL UPDATE



10:00 AM EST

Monday, November 9, 2020

Tropical Storm Eta, Invest 97L in Northeast Atlantic (70%),
and New Caribbean Wave (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.



Tropical Storm Eta

10 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:

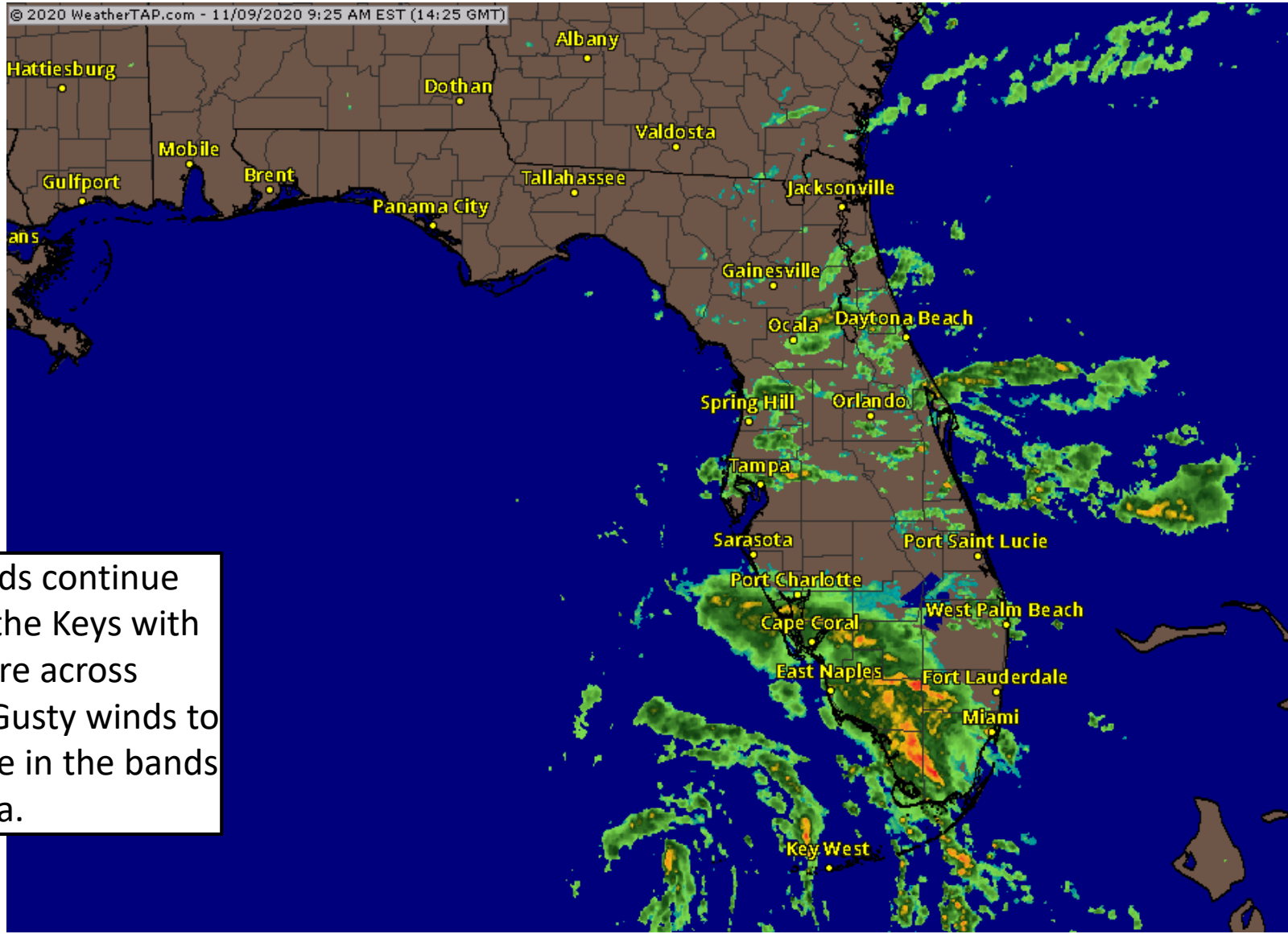
All Tropical Storm/Hurricane/Storm Surge Warnings CANCELED except for the Dry Tortugas
Flash Flooding Ongoing and Threat Continues Today in Southeast Florida
Some gusts to tropical-storm-force are possible in any heavy rain bands.

Details on the turn back to Florida later this week are NOT CLEAR! Expected changes.



Current Florida Radar

As of 9:25 AM ET



Some of the heavier rain bands continue across Southwest Florida and the Keys with bands of showers elsewhere across Northeast and Central Florida. Gusty winds to tropical-storm-force are possible in the bands across South Florida.

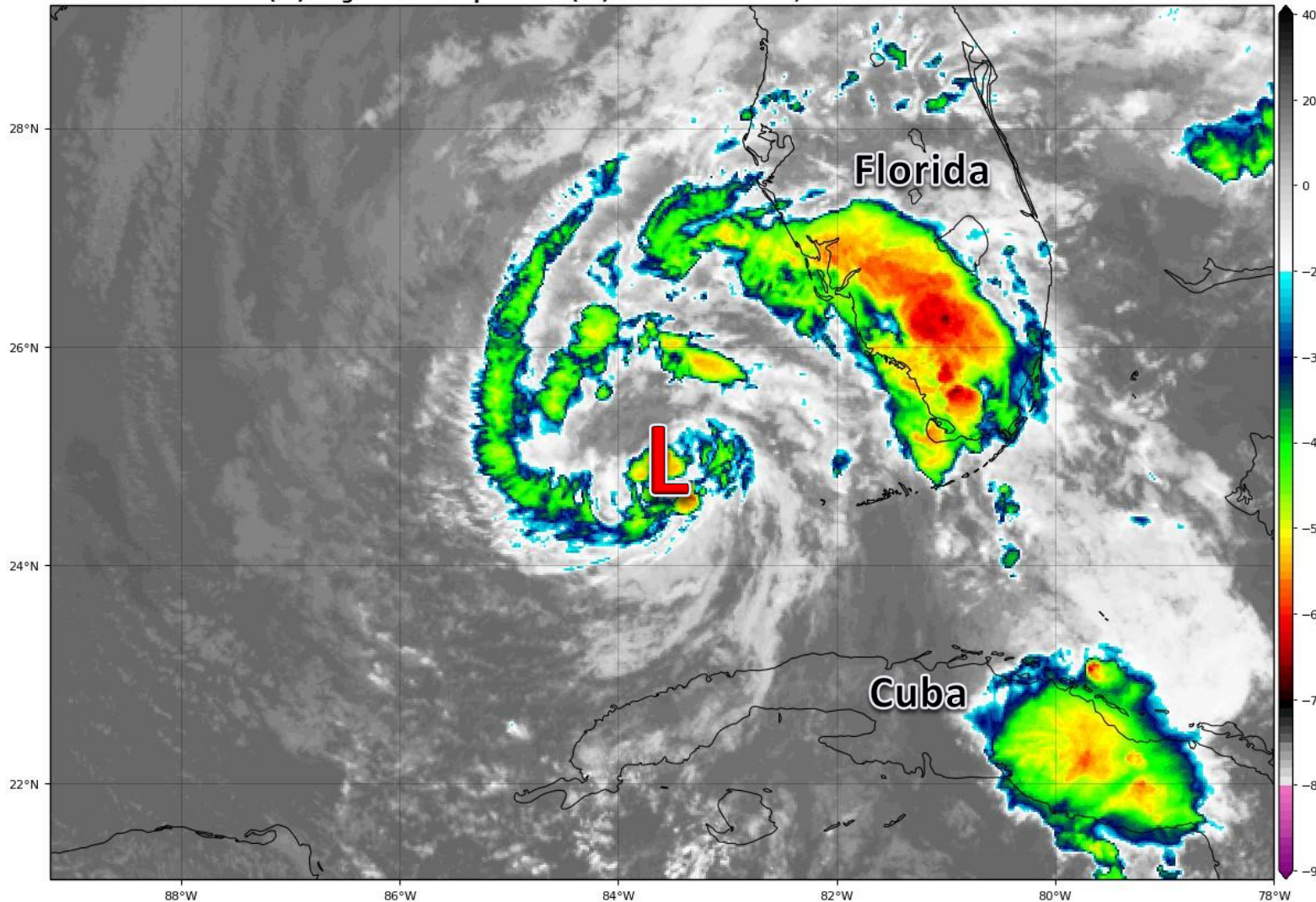


Satellite Imagery

Tropical Storm Eta – Florida Straits

GOES-16 Channel 13 (IR) Brightness Temperature (°C) at 14:22Z Nov 09, 2020

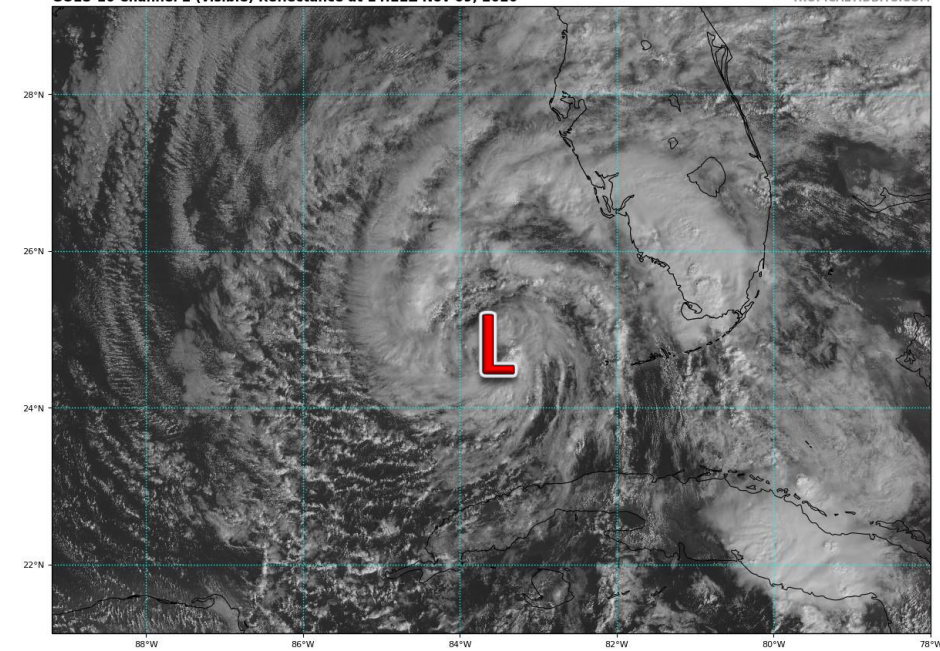
TROPICALTIDBITS.COM



Eta has ingested a lot of dry air, eroding much of the showers and storms. However, heavy rainfall continues across parts of South Florida. Hurricane Hunters are currently investigating the system.

GOES-16 Channel 2 (visible) Reflectance at 14:22Z Nov 09, 2020

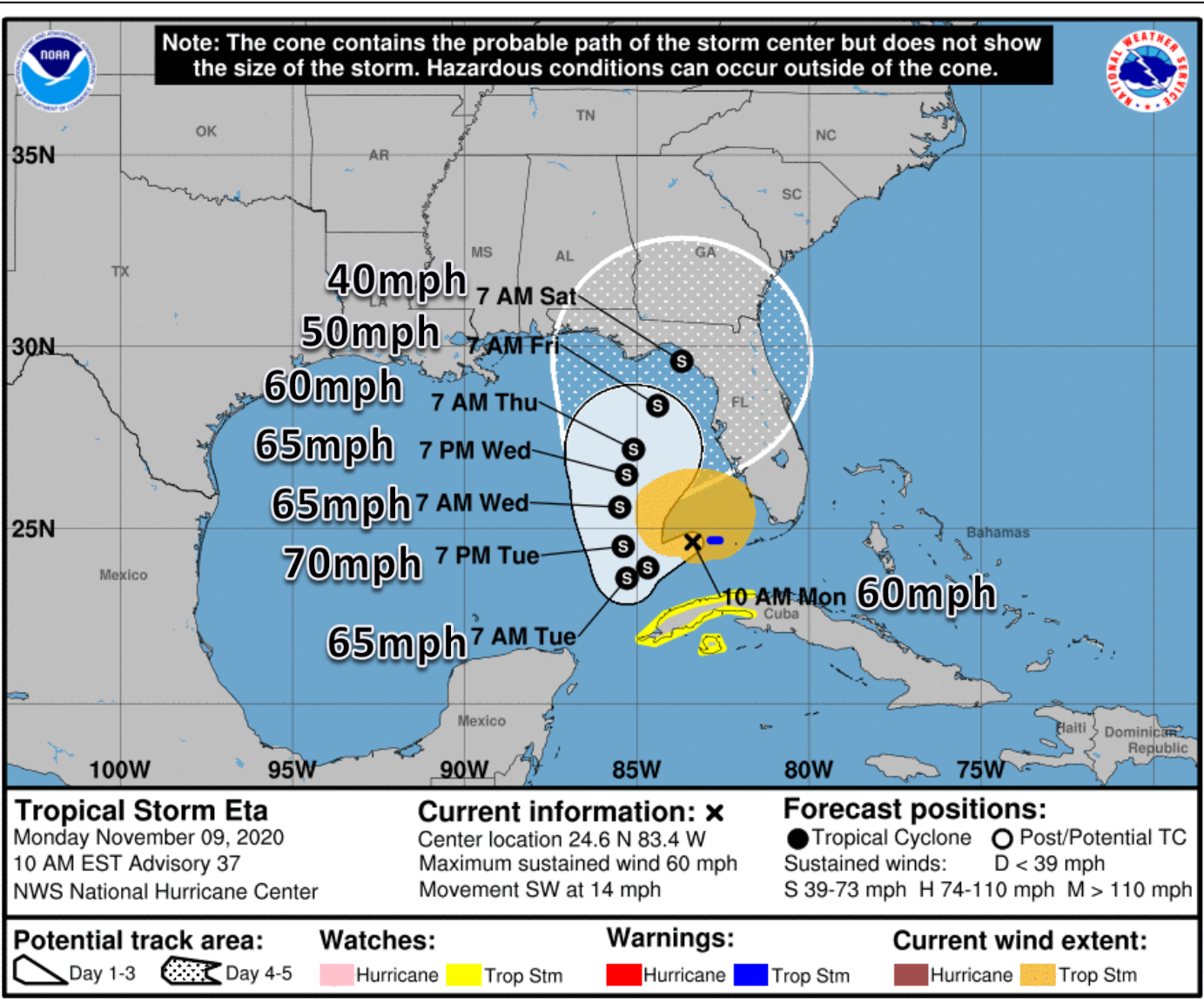
TROPICALTIDBITS.COM





Official Forecast Track

From the National Hurricane Center – Tropical Storm Eta



- The center of Tropical Storm Eta is about 30 miles west-southwest of the Dry Tortugas, moving southwest at 14 mph.
- Maximum sustained winds are near 60 mph, and Eta could still strengthen over the next 24-36 hours. However, Eta is no longer forecast to become a hurricane.
- Eta will turn northward on Tuesday, and the official forecast brings Eta north-northeastward toward the West Coast or North Florida by this weekend.
- Models are highly divergent on if Eta moves northward toward the Florida coast or if it moves westward over the Gulf of Mexico. This is a low confidence forecast. **Per NHC: “The official forecast track remains a compromise of these two extremes...”**



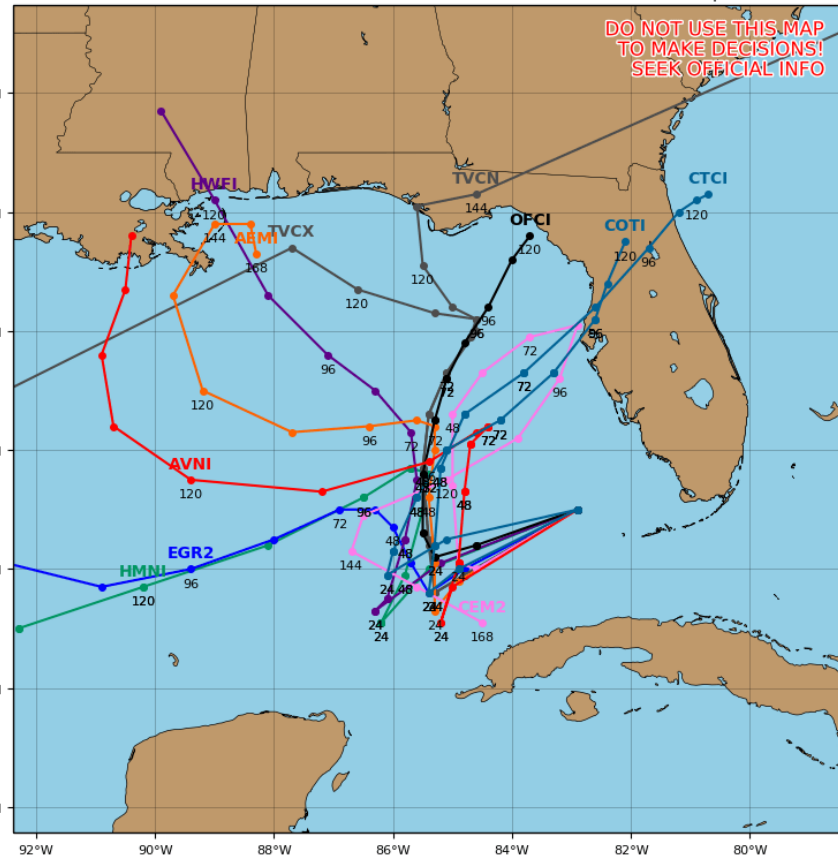
Model Forecast Tracks

Ensembles, Dynamical, and Statistical Models

Tropical Storm ETA Model Track Guidance

Initialized at 12z Nov 09 2020

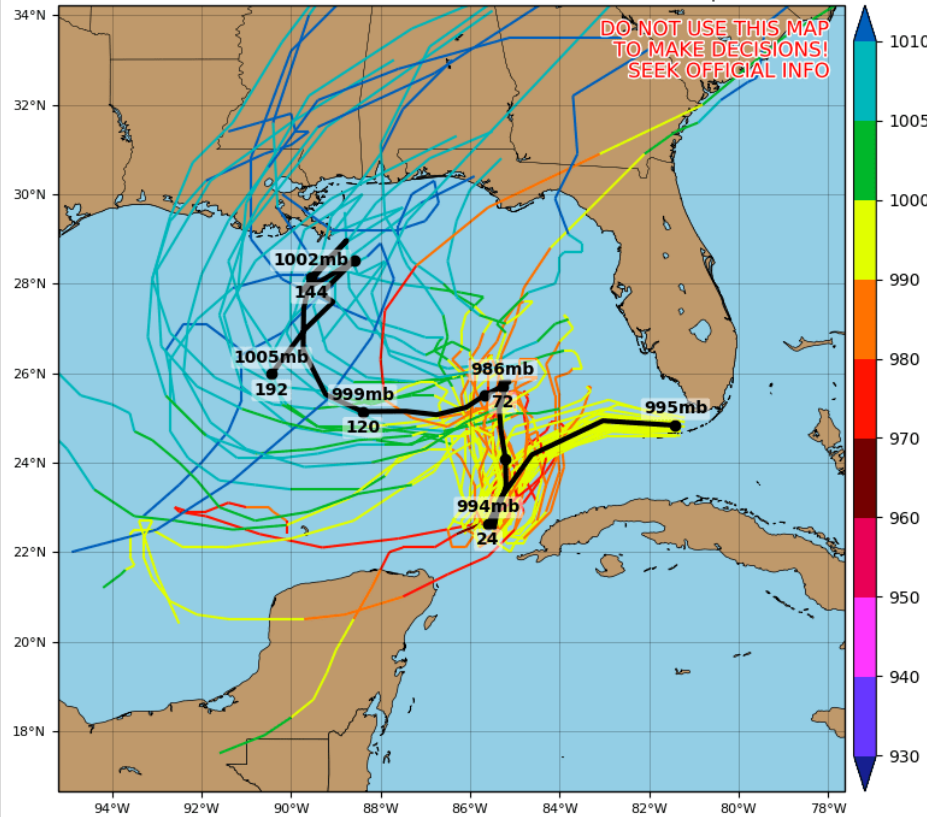
Levi Cowan - tropicaltidbits.com



Tropical Storm ETA GEFS Tracks & Min. MSLP (mb)

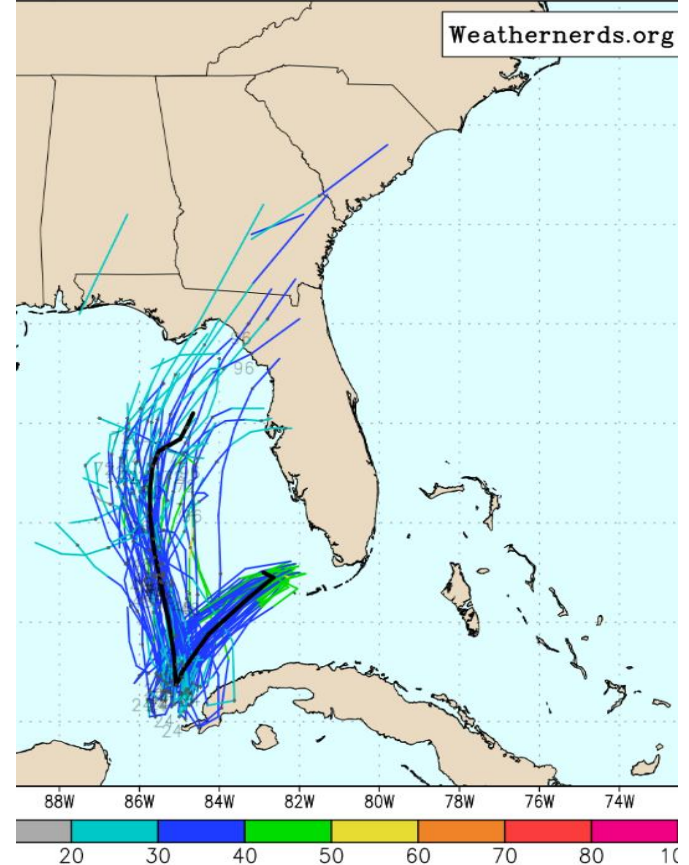
Initialized at 06z Nov 09 2020

Levi Cowan - tropicaltidbits.com



init: 2020110906, AL29 Eta

colo



Models become highly divergent after a couple days across the east-central Gulf of Mexico. There are two camps the models are in.

A north to north-northeast motion toward the Big Bend or Nature Coast by this weekend or a westward turn over the Gulf of Mexico. In either case, the models do show weakening as it approaches the northern Gulf of Mexico due to dry air, increasing wind shear, and cooler waters.



Key Messages

From the National Hurricane Center



Key Messages for Tropical Storm Eta Advisory 37: 10:00 AM EST Mon Nov 09, 2020



1. Heavy rainfall from Eta will continue across portions of Cuba, the Bahamas, and southern and central Florida. Life-threatening flash flooding will be possible across urban areas of southeast Florida today. Flash and urban flooding will also be possible for Cuba, the Bahamas and the remainder of southern Florida, along with potential minor river flooding in central Florida.

2. Eta could approach the Florida Gulf Coast later this week as a tropical storm, and possibly bring impacts from rain, wind, and storm surge. Interests in this area should monitor the progress of Eta and updates to the forecast this week.



For more information go to hurricanes.gov

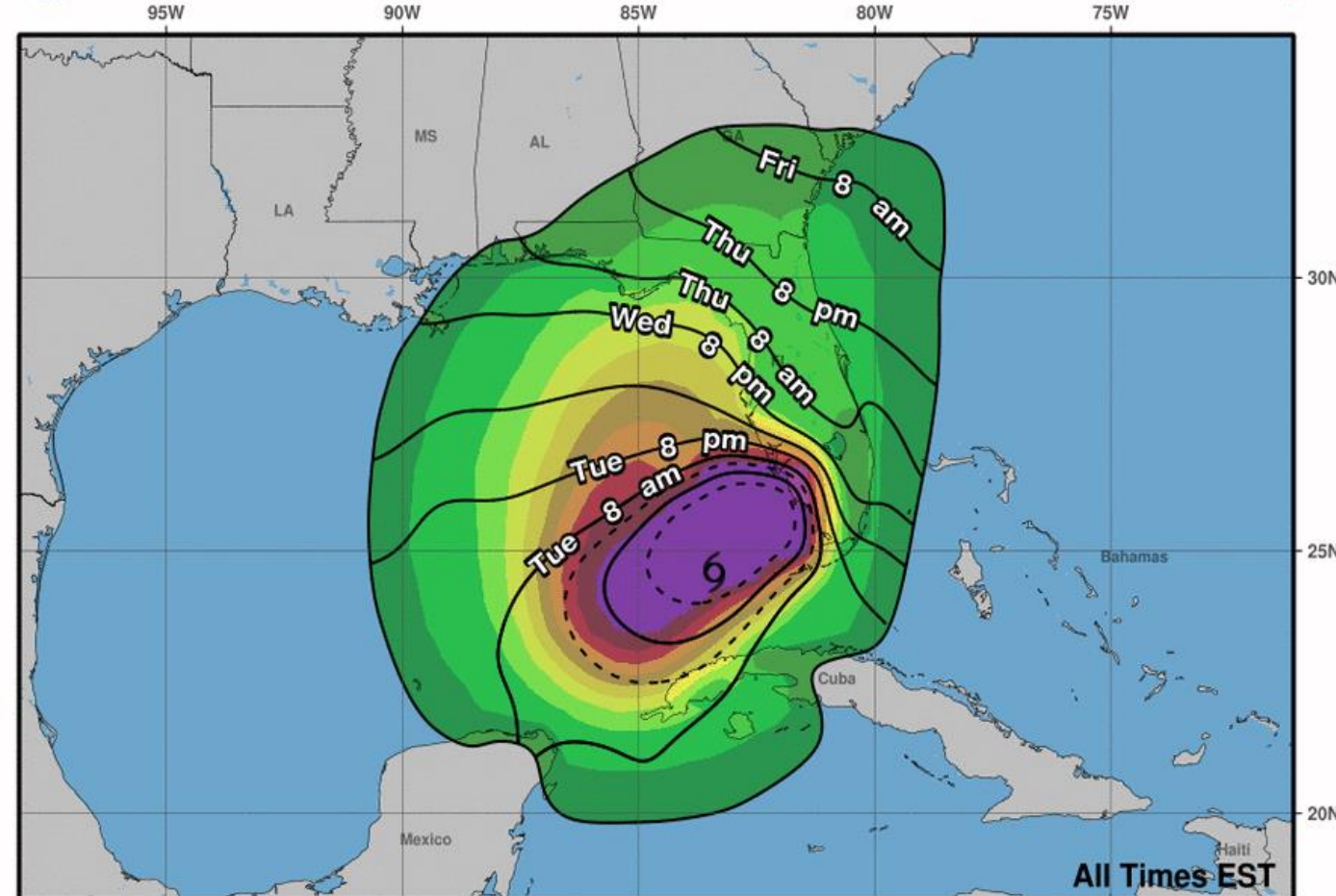


Time of Arrival & Wind Speed Probabilities

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

Key West

23%

-73%

Marathon

16%

-83%

Miami

5%

-84%

Ft. Lauderdale

11%

-62%

West Palm Beach

11%

-43%

Naples

99%

+14%

Ft. Myers

99%

+45%

Tampa

32%

-17%

Orlando

10%

-10%

Daytona Beach

9%

-6%

Apalachicola

29%

+6%

Panama City

22%

+5%

Tropical-storm force winds are ending across South Florida and the Keys. If tropical-storm-force winds occur along the Nature Coast or Big Bend later this week, they would most likely begin Wednesday night into Thursday.

Tropical Storm Eta
Mon. Nov. 9, 2020 10 am EST
Advisory 37

Storm Location & Wind Speed
○ < 34 kt (39 mph)
● 34-63 kt (39-73 mph)
● ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds
5 10 20 30 40 50 60 70 80 90 100 %

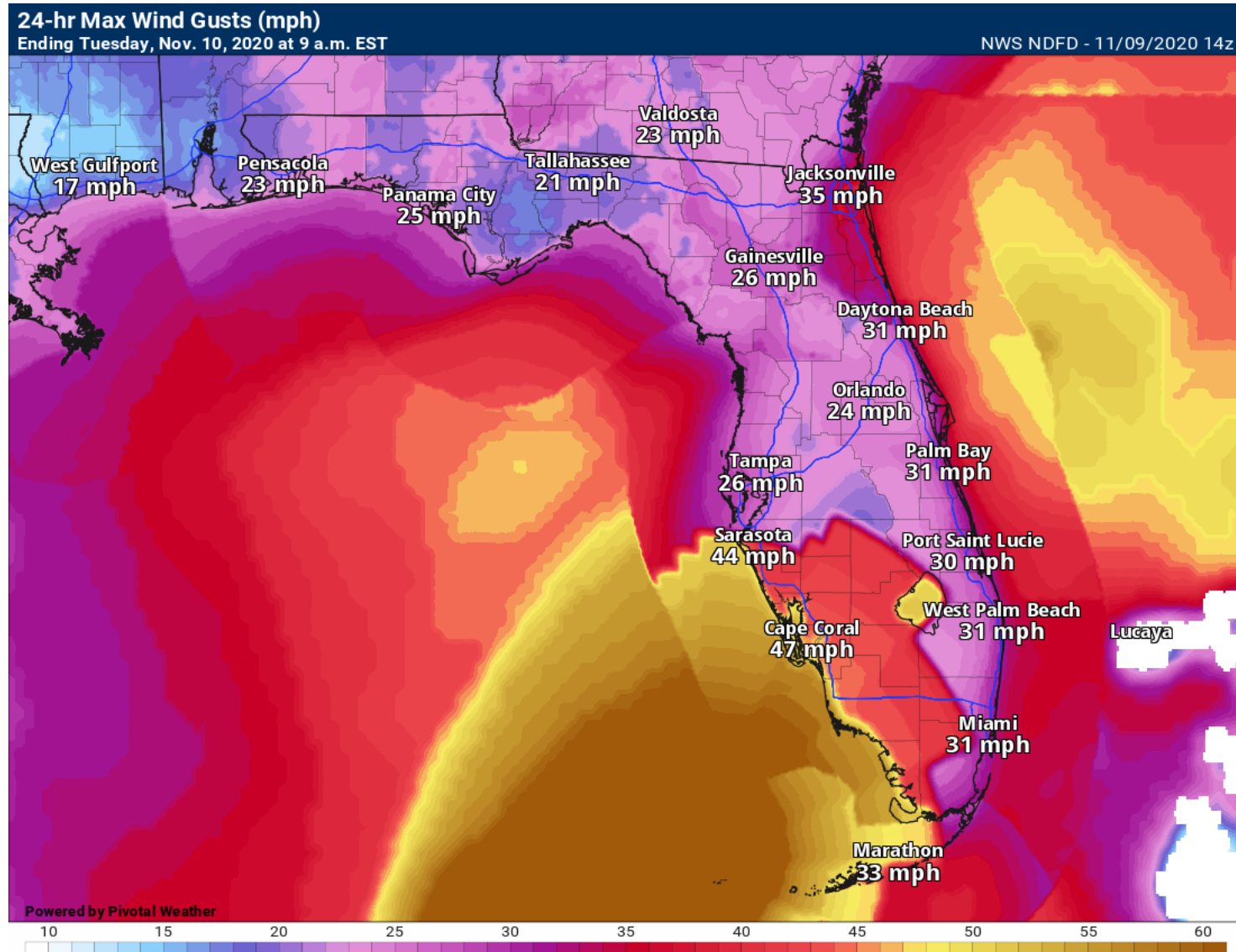


Maximum Wind Gusts

Next 24 Hours

Gusts of 35-50 mph remain possible across coastal Southwest Florida and the Keys with 25-40 mph along the East Coast. These gusts are mainly in any outer bands.

Tropical Storm Warnings have been canceled.





Flood Threat Overview

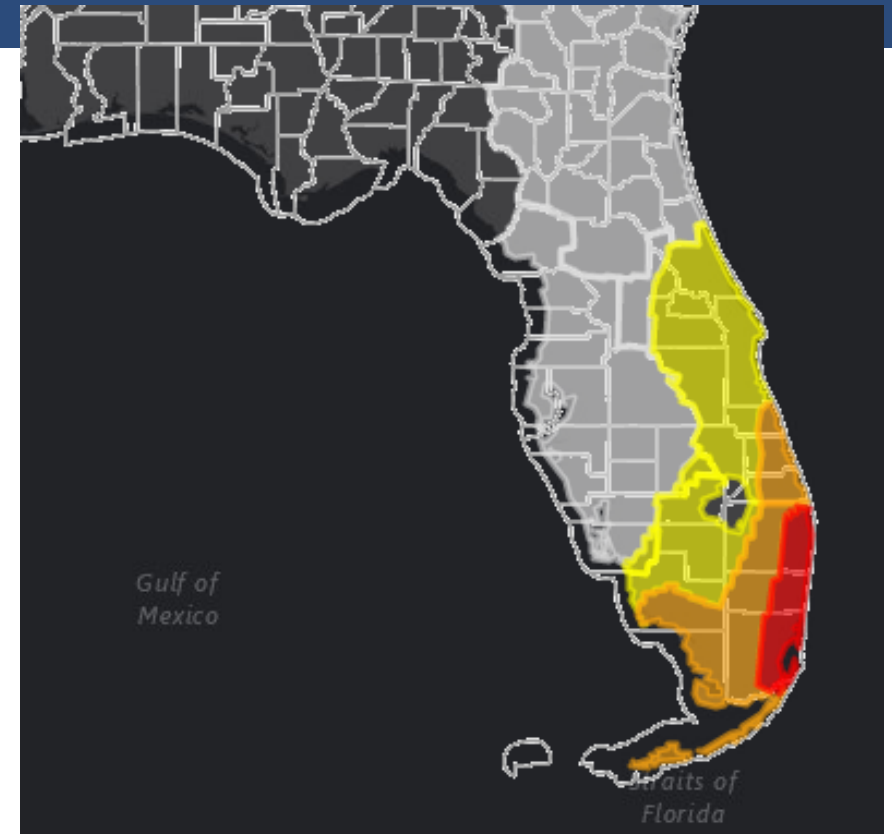
Tropical Storm Eta

A potentially significant flood threat is evolving across the Treasure Coast and Southeast Florida. Very heavy rain on top of saturated soil will result in a higher chance of flash flooding. Space Coast and the Lake Okeechobee area could see some isolated flash flooding.

Flood Watches are in effect for much of South Florida and the Treasure Coast.

[https://www.weather.gov/srh/tropical?
office=mfl](https://www.weather.gov/srh/tropical?office=mfl)

Click on “Threats and Impacts” Tab



[\[Download KML\]](#)

[\[Download Image\]](#)

Flooding Rain Threat
Potential for extreme flooding rain
Potential for major flooding rain
Potential for moderate flooding rain
Potential for localized flooding rain
Little to no potential for flooding rain



Flood Watches

Links: [NWS Miami](#) | [NWS Melbourne](#) | [NWS Tampa Bay](#)

Through this Evening:

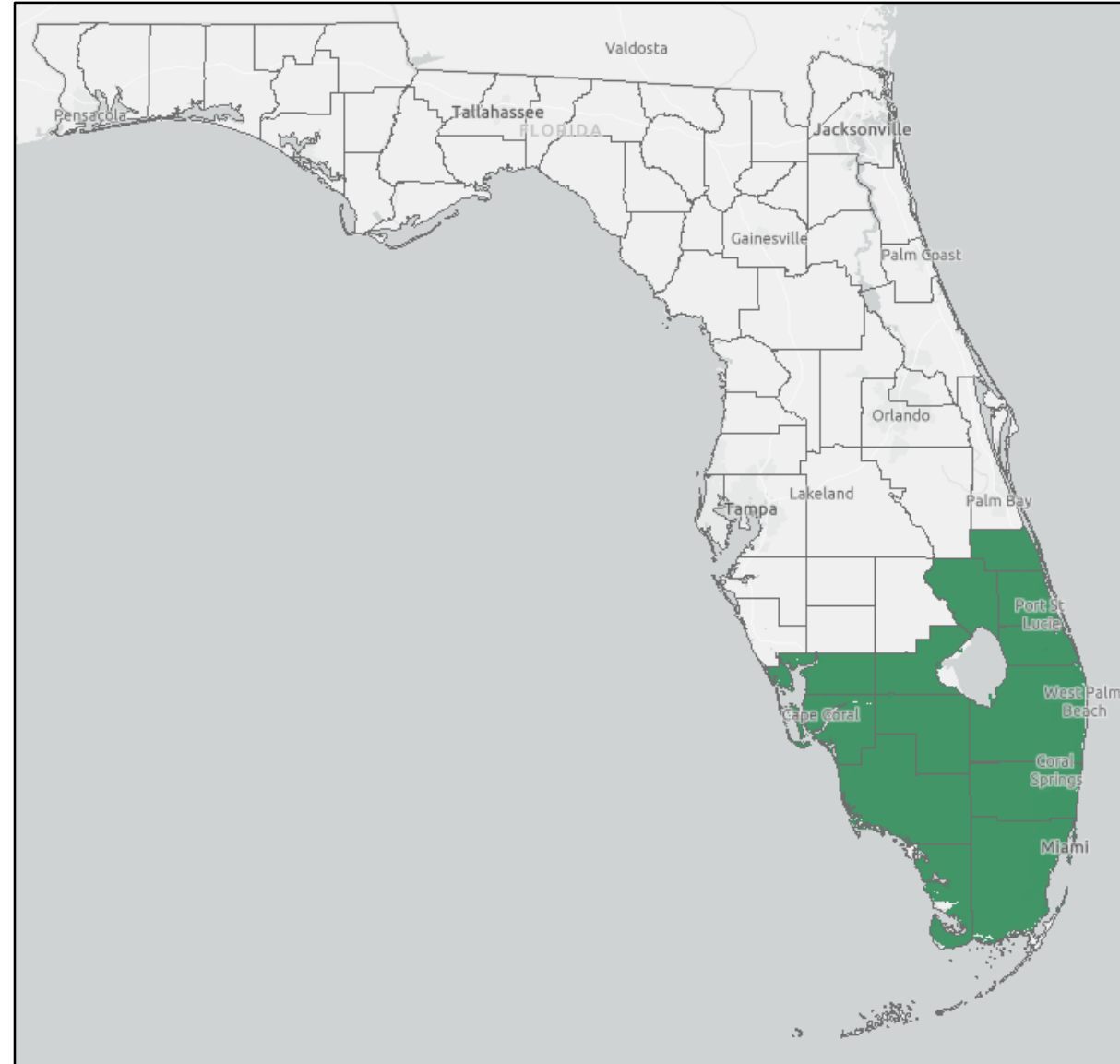
Indian River, St. Lucie, Martin, and
Okeechobee Counties

Through Tuesday Evening:

Glades, Hendry, Collier, mainland Monroe,
Palm Beach, Broward, and Miami-Dade
Counties

Through Wednesday Evening:

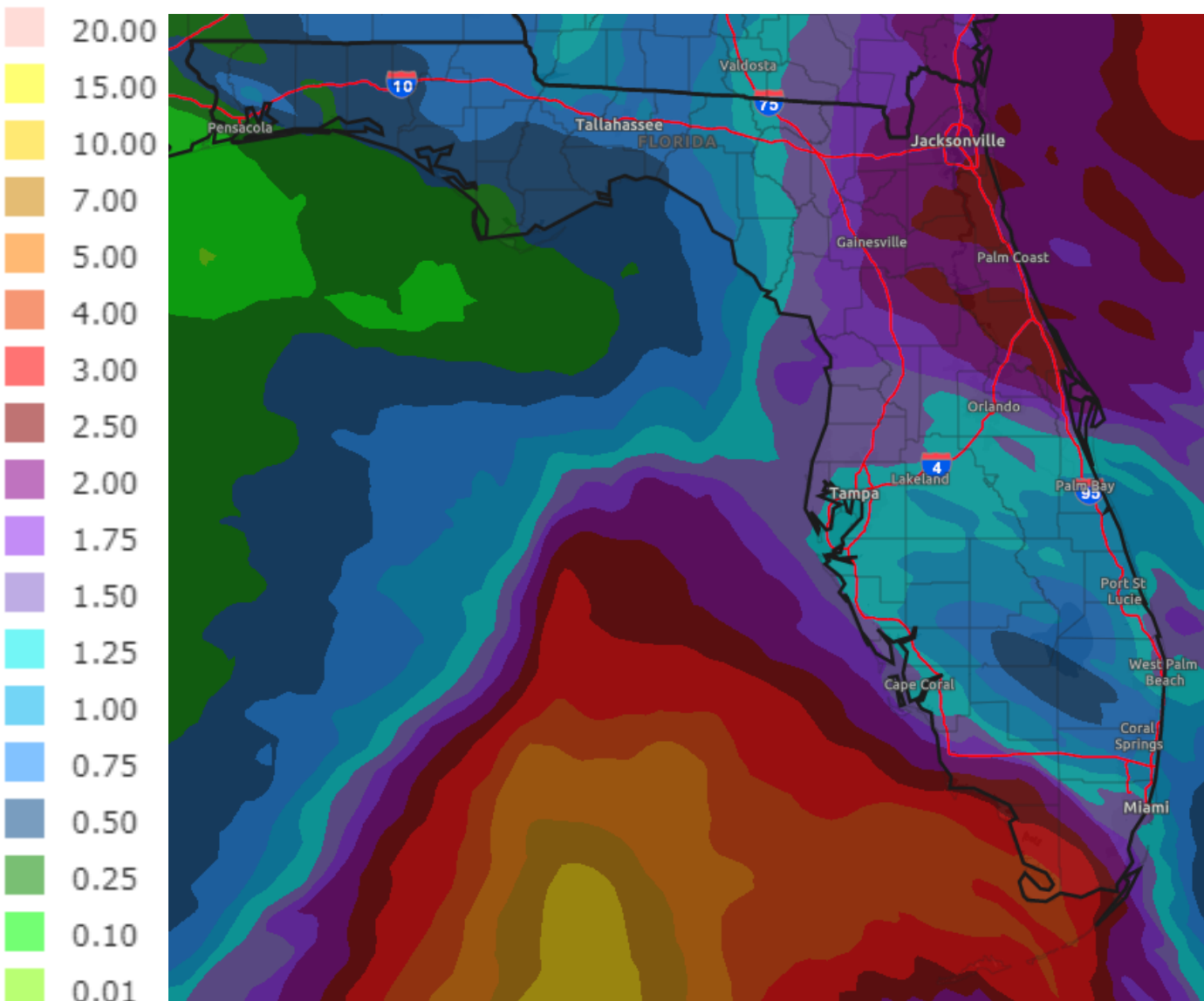
Charlotte and Lee Counties





Rainfall Totals Next 7 Days

Ending 7 AM ET Monday



An additional 4-8" of rain is expected across South Florida and the Keys, primarily tonight and Monday. Localized areas could see an additional 10-12"

Areas between I-4 and Lake Okeechobee could see 1.5-3" of rain with localized totals of 3-5".

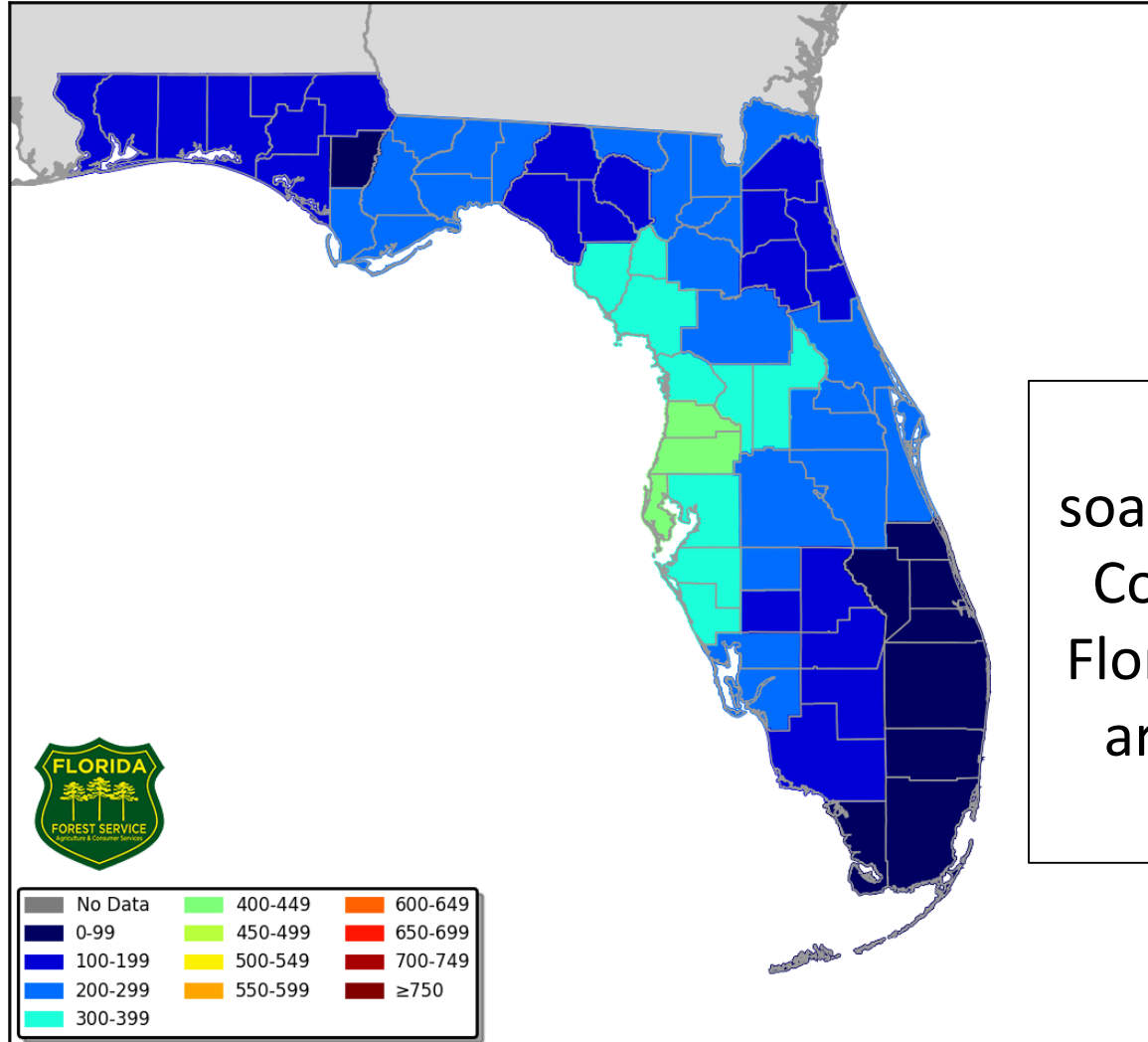
Rainfall totals over the northern half of the state become more uncertain and will be dependent on the future track of Eta.



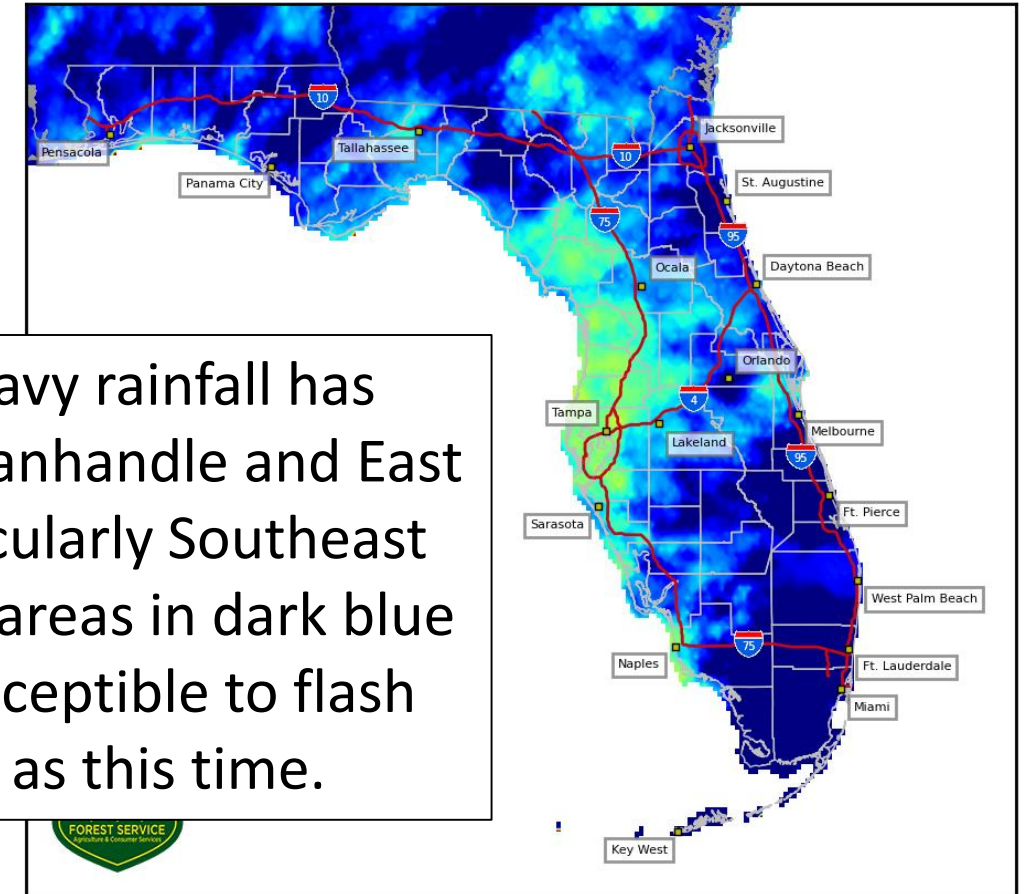
Drought Index – Soil Moisture

[KBDI – Full Report from the FFS](#)

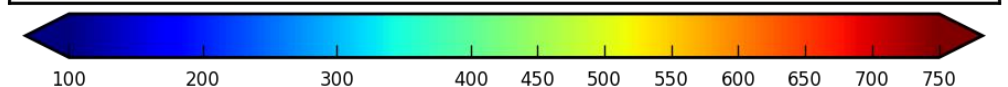
Keetch Byram Drought Index (KBDI)
County Averages for November 08, 2020



4 km Resolution KBDI
Statewide
November 08, 2020



Recent heavy rainfall has soaked The Panhandle and East Coast (particularly Southeast Florida). The areas in dark blue are very susceptible to flash flooding as this time.



Index



Flash Flood Guidance

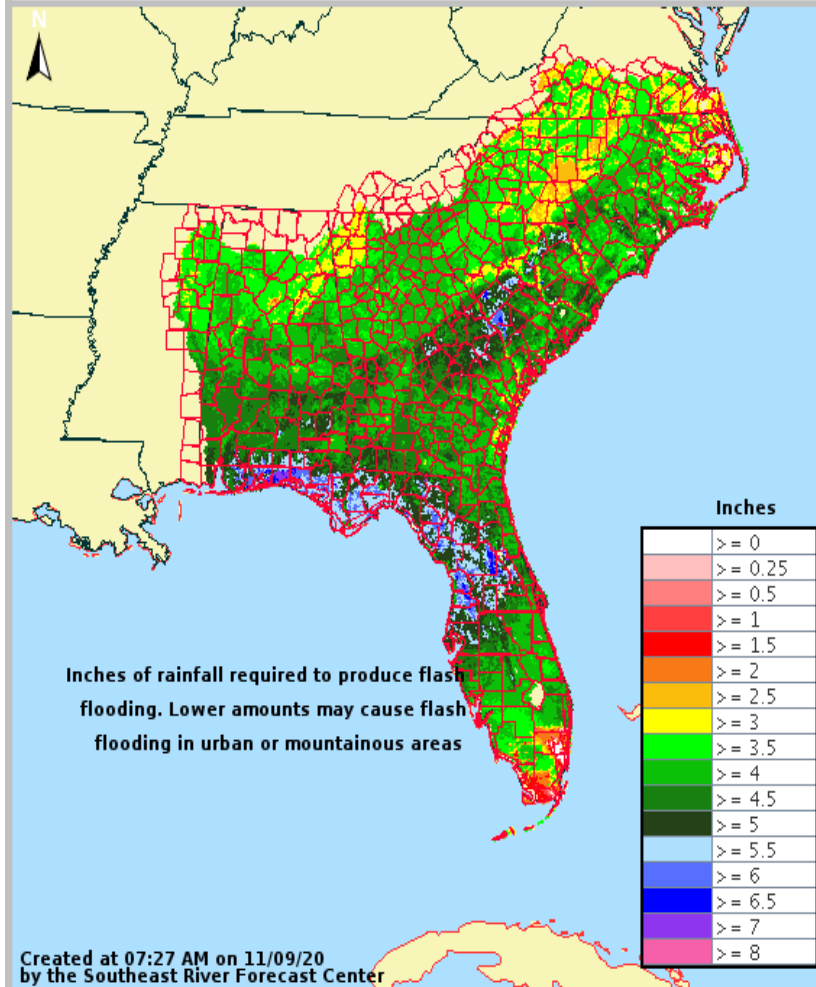
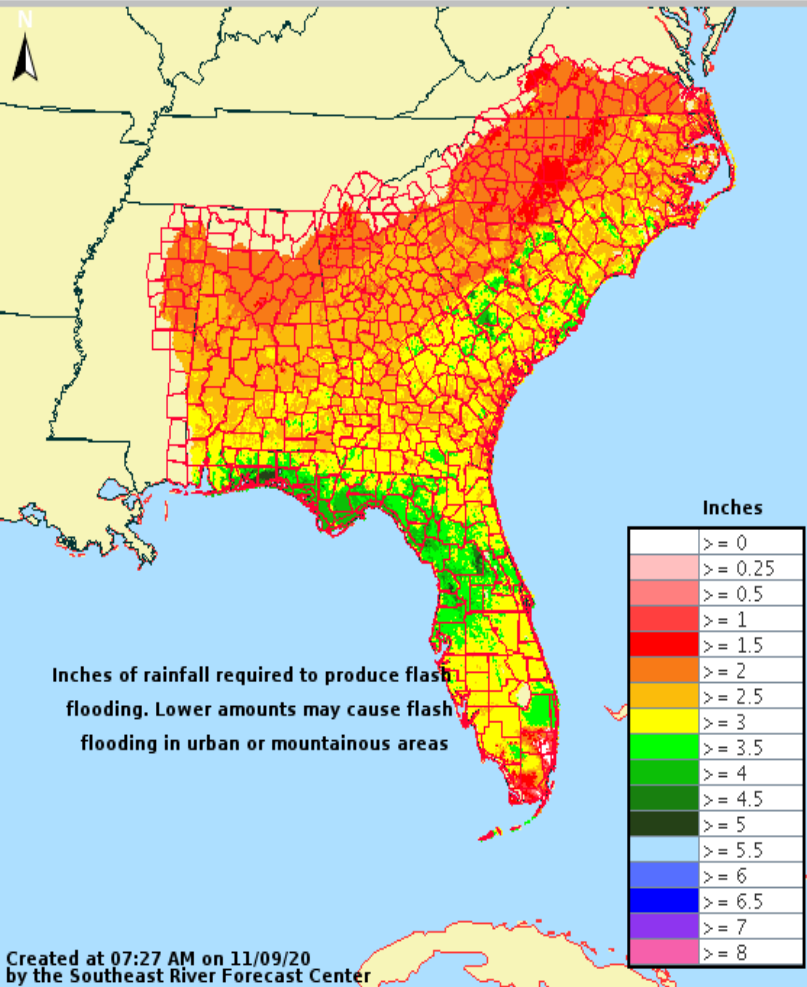
How Much Rain is Needed to Create Flash Flooding?



South Florida remains very wet from rainfall over the last several months. This area remains very prone to flooding.

It will only take about 1-2" of rain within 6 hours in parts of Broward, Miami-Dade, and Monroe Counties.

Elsewhere in South Florida, it will take about 3-4" of rain in 1 hour or 4-5" in 6 hours to cause flash flooding.

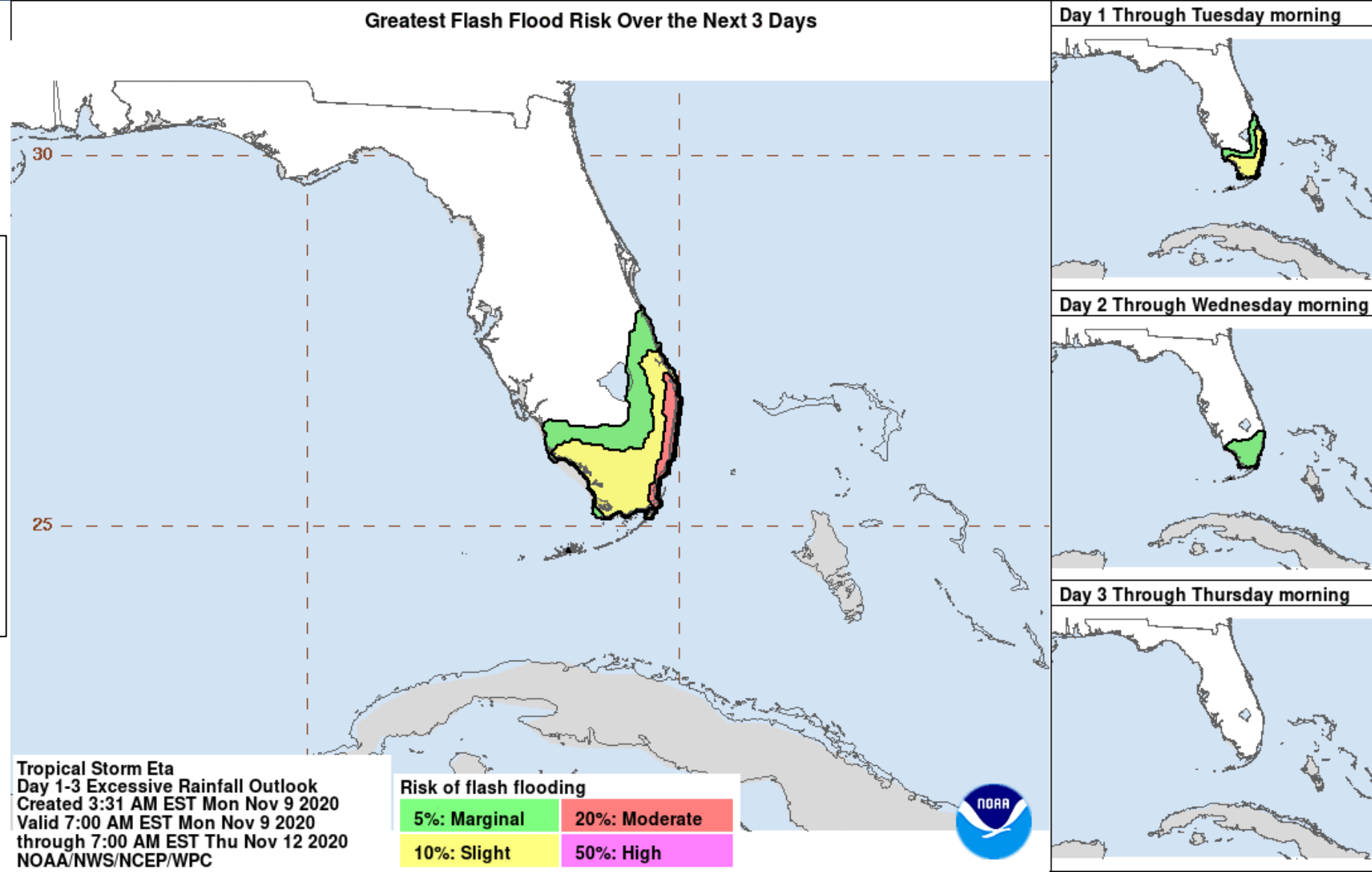




Flash Flood Outlook

3-Day Event Summary

Significant flash flooding is possible across Southeast Florida today, possibly northward toward the Treasure Coast. A risk of flash flooding continues across much of South Florida through the next few days.




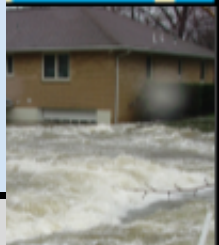




Flash Flood Risk Categories

Understanding the Weather Prediction Center Risk Scale

Understanding WPC Excessive Rainfall Risk Categories

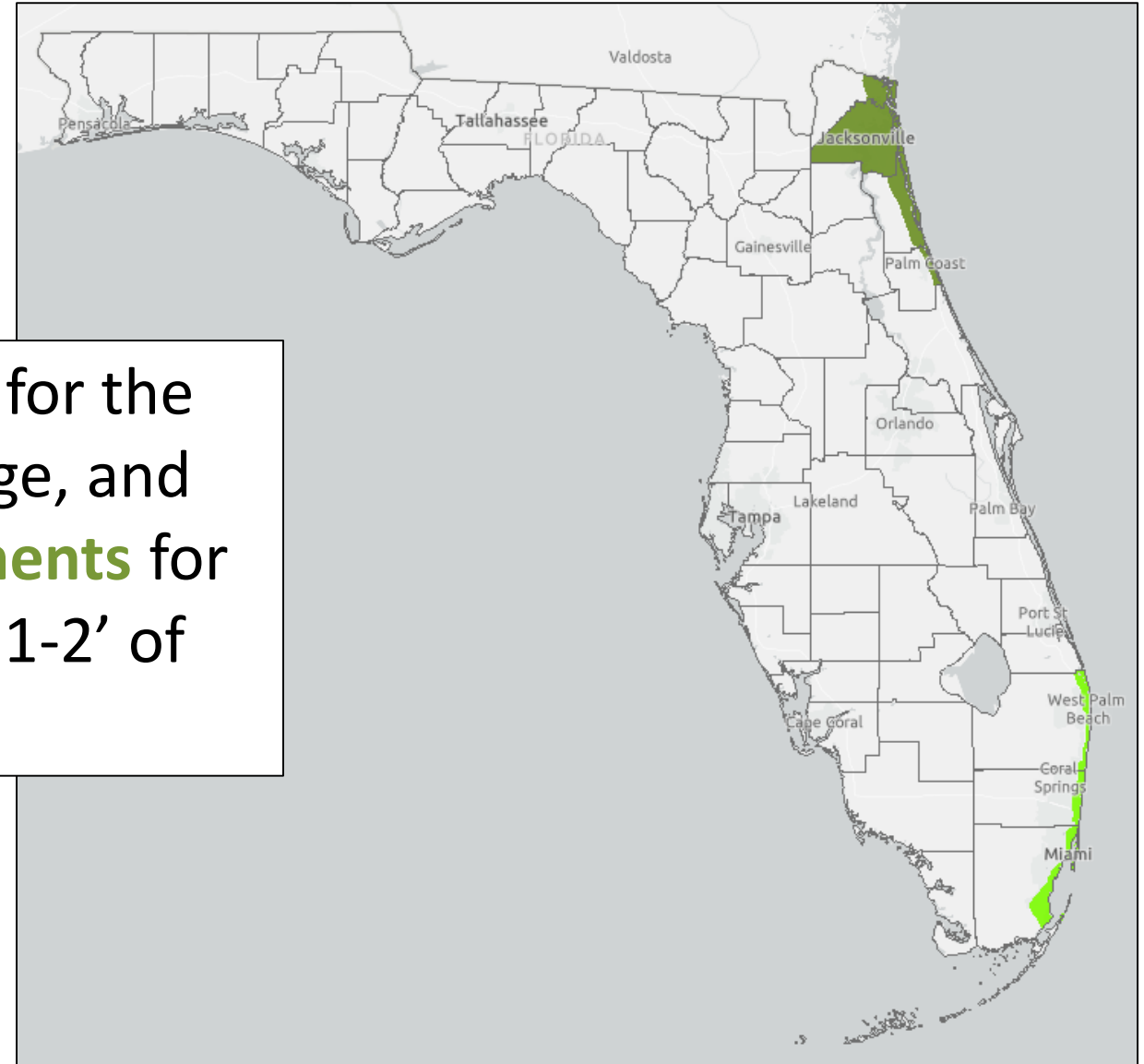
No Area/Label	MARGINAL (MRGL)	SLIGHT (SLGT)	MODERATE (MDT)	HIGH (HIGH)
Flash floods are generally not expected. www.wpc.ncep.noaa.gov @NWSWPC	Isolated flash floods possible Localized and primarily affecting places that can experience rapid runoff with heavy rainfall.	Scattered flash floods possible Mainly localized. Most vulnerable are urban areas, roads, small streams and washes. Isolated significant flash floods possible.	Numerous flash floods likely Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers.	Widespread flash floods expected 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			
	NO Flash Flooding			
 WEATHER PREDICTION CENTER		<p>Risk of rainfall exceeding flash flood guidance within 25 miles of a point to the right of a line</p> <p>HIGH: > 50% SLGT: 10%-20% MDT: 20%-50% MRGL: 5%-10%</p>		
				



Coastal Flood/Storm Surge Alerts

Tropical Storm Eta

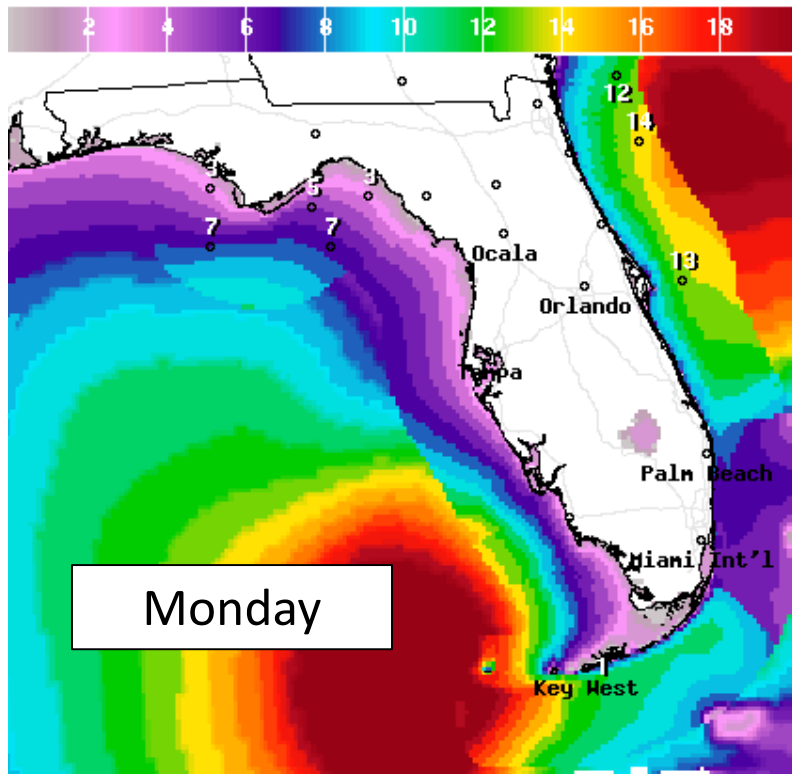
Coastal Flood Warnings are in effect for the entire Florida Keys for 1.5-2.5' of surge, and **Coastal Flood Advisories and Statements** for Southeast and Southwest Florida for 1-2' of surge.





Forecast Wave Heights

Through Early Week

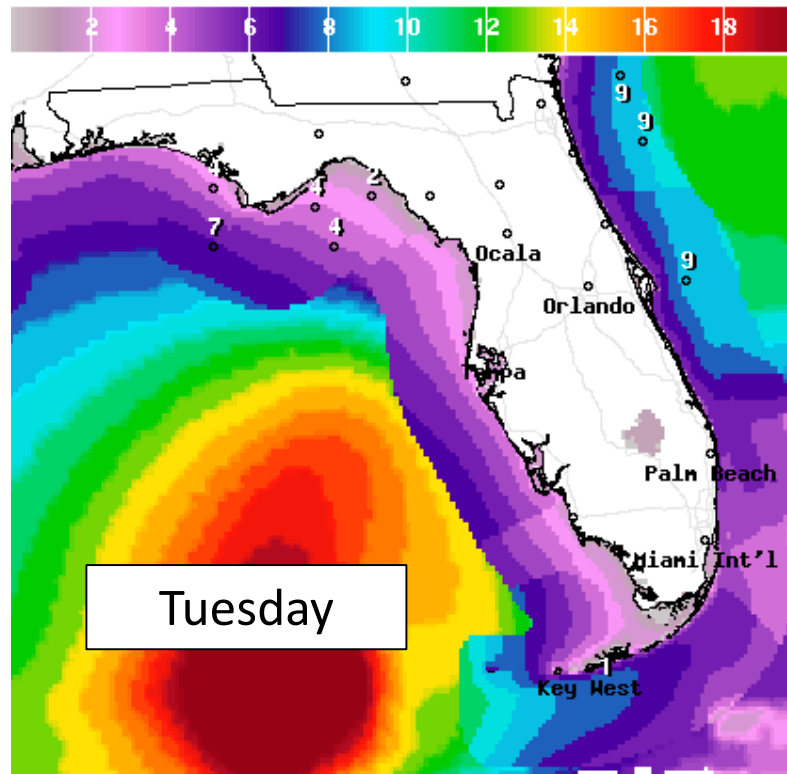


Wave Height(ft) Ending Mon Nov 09 2020 7PM EST
(Tue Nov 10 2020 00Z)



National Digital Forecast Database

19z issuance Graphic created-Nov 08 2:27PM EST

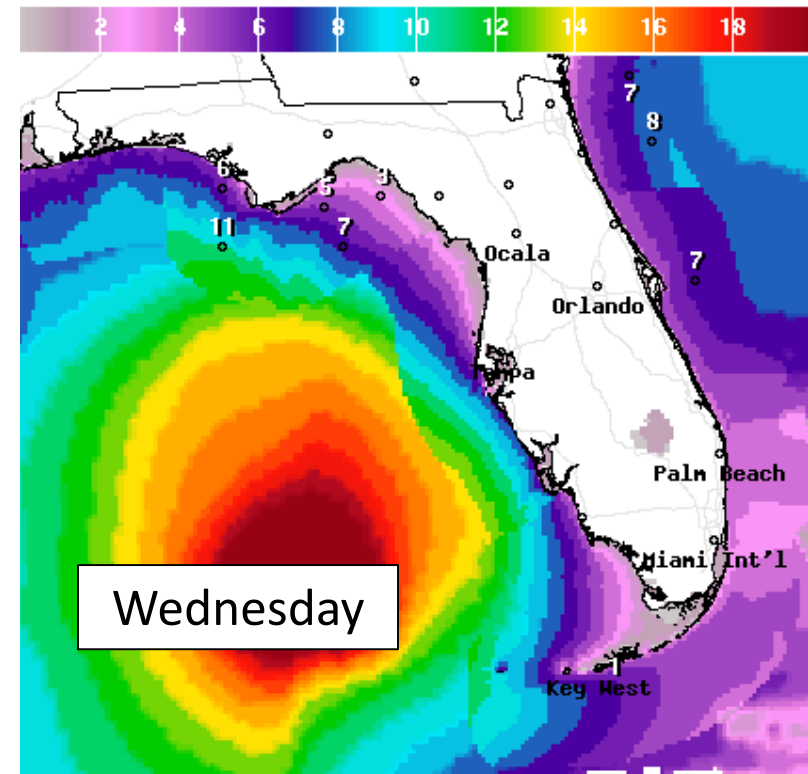


Wave Height(ft) Ending Tue Nov 10 2020 7PM EST
(Wed Nov 11 2020 00Z)



National Digital Forecast Database

19z issuance Graphic created-Nov 08 2:28PM EST



Wave Height(ft) Ending Wed Nov 11 2020 7PM EST
(Thu Nov 12 2020 00Z)



National Digital Forecast Database

19z issuance Graphic created-Nov 08 2:29PM EST



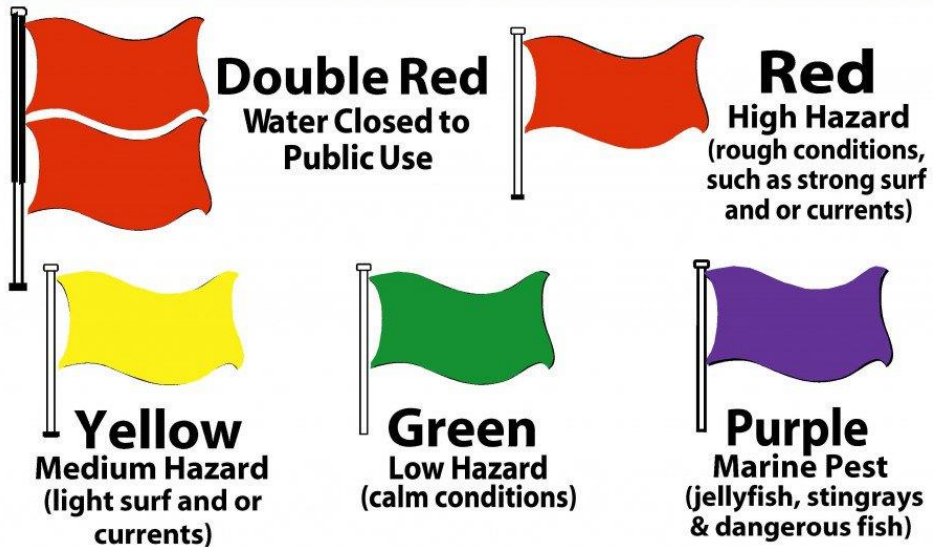
High surf of 7-13 feet will be possible along the East Coast Monday, subsiding to 4-8' by Tuesday and Wednesday. Waves will build across Gulf Coast beaches through this week as Eta moves into the Gulf. Significant beach erosion and dune overwash is possible at many beaches into next week.



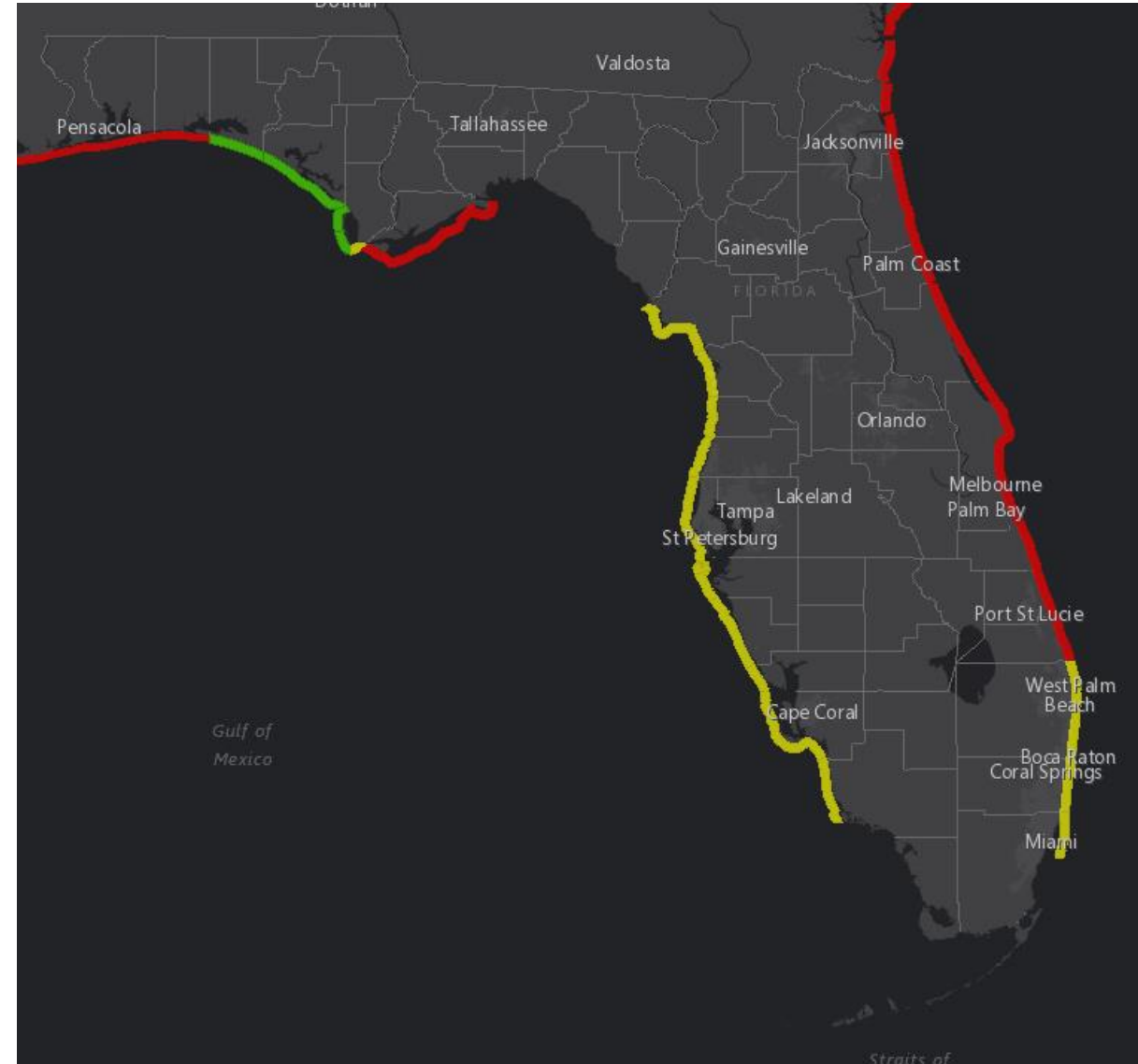
Rip Current Outlook

Today

BEACH FLAG WARNING SYSTEM



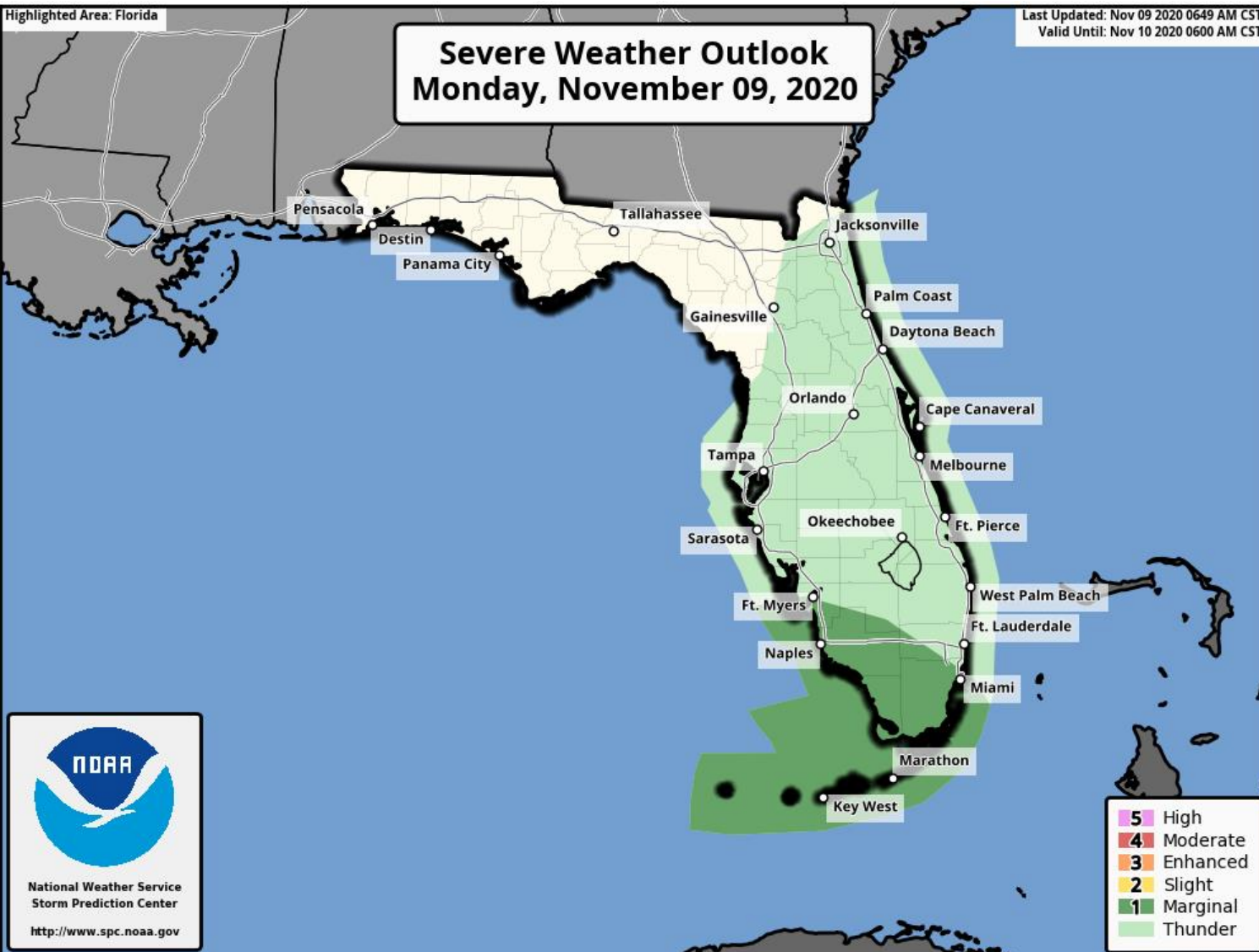
Dangerous rip currents continue due to strong easterly winds and rough surf.





Severe Weather Outlook Today

From the Storm Prediction Center




Isolated tornadoes will be possible across South Florida and the Keys in some of the outer bands on Monday. There is a **Marginal Risk** (level 1 of 5) of Severe Weather.



Severe Thunderstorm Risk Categories

Understanding the Storm Prediction Center Risk Scale

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
					

* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.



National Weather Service

www.spc.noaa.gov



**Thunderstorms
(no label)** No severe* thunderstorms expected
Lightning/flooding threat exists with all thunderstorms
Winds to 40 mph and small hail possible



**1 Marginal Risk
(MRGL)** *Isolated severe thunderstorms possible*
Limited in duration and/or coverage and/or intensity
Wind to 40-60 mph, hail up to 1", and low tornado risk



**2 Slight Risk
(SLGT)** *Scattered severe storms possible*
Short-lived and/or not widespread, isolated
intense storms
One or two tornadoes
Reports of strong winds and wind damage
Hail ~1", isolated 2"



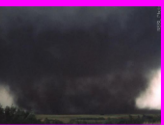
**3 Enhanced Risk
(ENH)** *Numerous severe storms possible*
More persistent and/or widespread, a few intense
A few tornadoes
Several wind damage reports
Damaging hail, 1"-2"



**4 Moderate Risk
(MDT)** *Widespread severe storms likely*
Long-lived, widespread and intense
Strong tornadoes
Widespread wind damage
Destructive hail, 2" or greater



**5 High Risk
(HIGH)** *Widespread severe storms expected*
Long-lived, very widespread and particularly intense
Tornado outbreak
Derecho





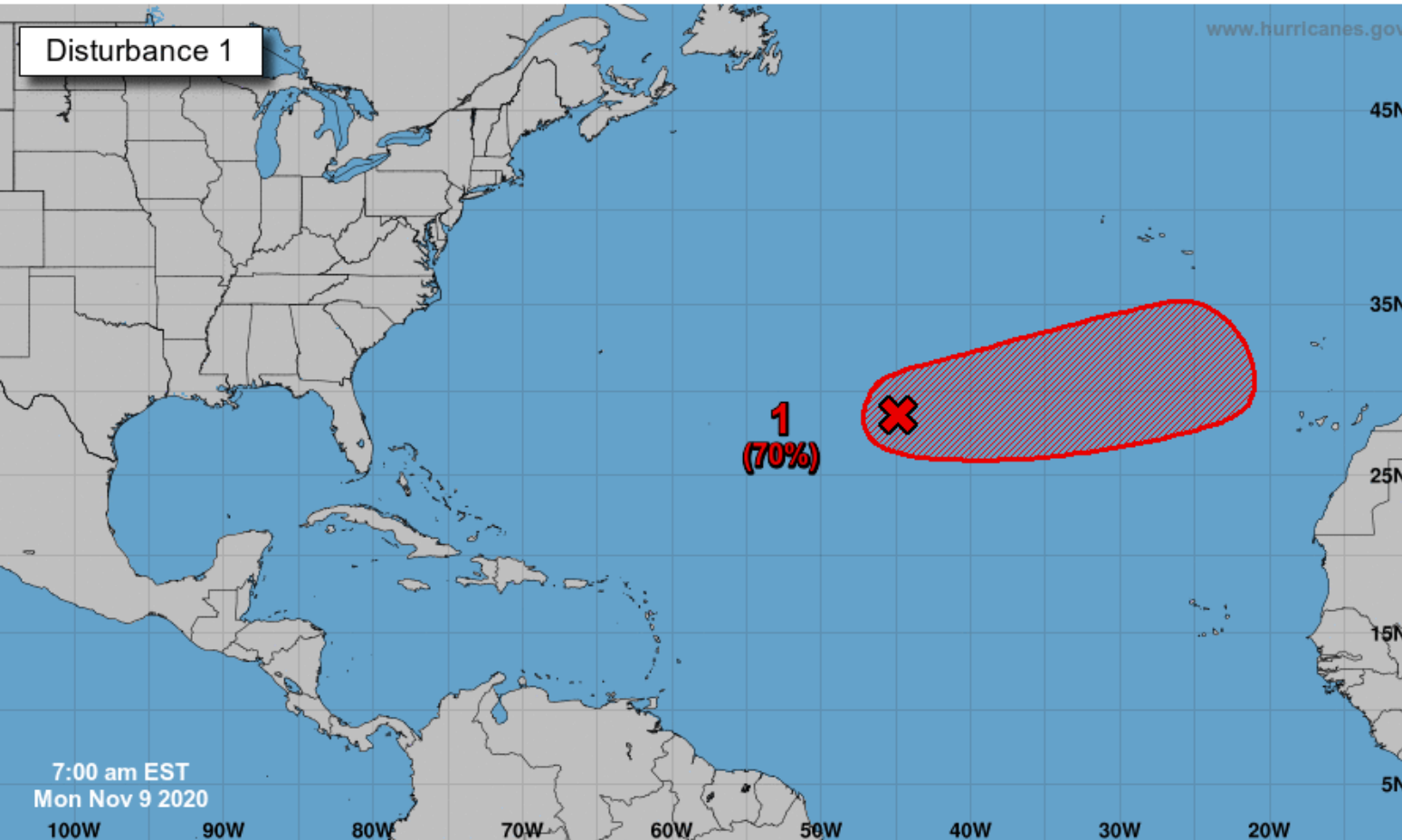
Tropical Weather Outlook

Possible Areas of Development During the Next 5 Days ([LINK](#))



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Showers and thunderstorms associated with a non-tropical low pressure system located several hundred miles southwest of the Azores continues to get better organized.

Further development is expected, and a tropical or subtropical storm will likely form during the next few days while the system moves eastward or east-northeastward over the northeastern Atlantic Ocean.

***Formation chance through 48 hrs...medium...50%.**

***Formation chance through 5 days...high...70%.**

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



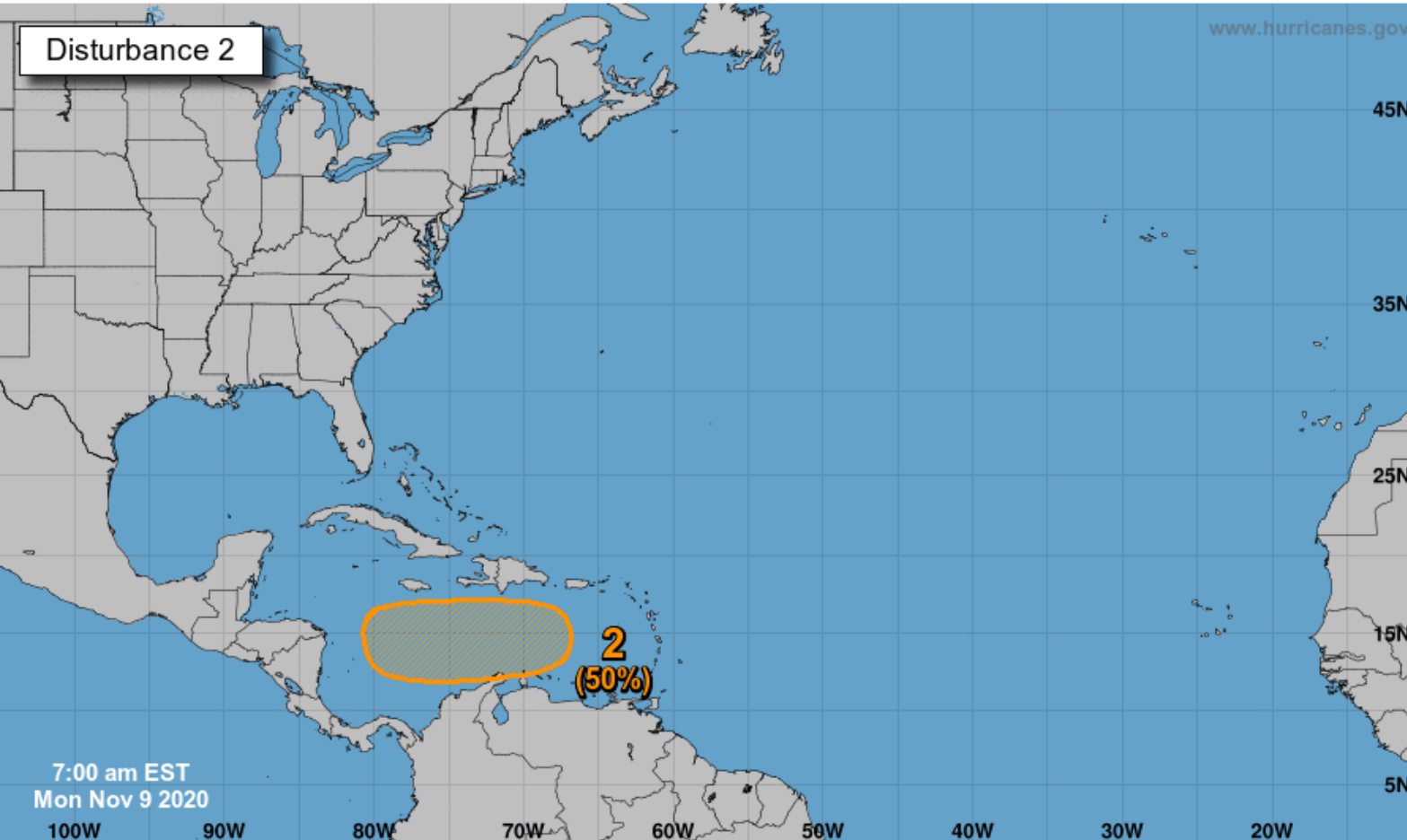
Tropical Weather Outlook

Possible Areas of Development During the Next 5 Days ([LINK](#))



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



A tropical wave is forecast to move over the central Caribbean Sea, where an area of low pressure could form in a couple of days.

Environmental conditions are forecast to be conducive for development, and a tropical depression could form later this week or over the weekend while the system moves slowly westward.

This system may need to be monitored later in the week or next weekend.

***Formation chance through 48 hrs...low...near 0%.**

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

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



Overall Summary

Tropical Storm Eta

- The center of Eta is located about 30 miles west-southwest of the Dry Tortugas, moving southwest at 14 mph.
- Maximum sustained winds are near 60 mph, and some strengthening is possible over the next 24-36 hours. However, Eta is no longer forecast to become a hurricane.
- Eta will turn northward over the eastern the Gulf of Mexico on Tuesday. The official forecast brings Eta north-northeastward toward the West Coast or North Florida by this weekend.
- However, this forecast is of very low confidence, and the official forecast is a compromise of two extremes—a northward motion toward the Big Bend and a westward drift of a weak system in the east-central Gulf of Mexico.

Invest 97L – Northeast Atlantic

- A non-tropical low pressure system several hundred miles of the Azores could acquire some tropical or subtropical characteristics later this week as it moves east or east-northeast.
- This system has a 50% (medium) chance of formation during the next 48 hours and a 70% (high) chance during the next 5 days.
- This system does not need to be monitored.

Caribbean Wave

- A tropical wave moving over the Caribbean could spawn an area of low pressure over the central Caribbean as it slowly moves westward through the end of the week.
- This system has a 0% (low) chance of formation during the next 48 hours and a 20% (medium) chance during the next 5 days.
- This system may need to be monitored later in the week or next weekend.



Florida Outlook

Florida Outlook:

- It is important to **NOT** focus on the exact track of Eta. Impacts will extend well beyond the cone away from the center.
 - **Hurricane Watches & Warnings:** Canceled
 - **Tropical Storm Warnings:** Canceled
 - Gusts to tropical-storm-force are still possible in the heavier rain bands through this afternoon in South Florida and the Keys.
 - Saturated soils make trees and power lines more susceptible to wind damage.
 - An additional 3-5" of rain is still possible in parts of South Florida, but any heavy downpours in Broward or Miami-Dade Counties will result in flash flooding.
 - Flood Watches are in effect for all of South Florida, the Treasure Coast, and Okeechobee County.
 - **Storm Surge Watches & Warnings:** Canceled
 - Coastal Flood Warning: Florida Keys | Coastal Flood Advisories: Southeast and Southwest Florida
 - 1-2.5' of storm surge remains possible in South Florida and the Keys.
 - Isolated tornadoes will also be possible in any of the outer bands through today across South Florida and the Keys.
 - Beach erosion and dangerous rip currents from very high surf are expected along the East Coast. This become possible across the Gulf beaches next week.
 - This system could impact other parts of the state farther north. However, details there become highly uncertain.
- The next tropics packet will be issued this afternoon with the 4 PM ET 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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