



TROPICAL UPDATE



5:00 PM EDT

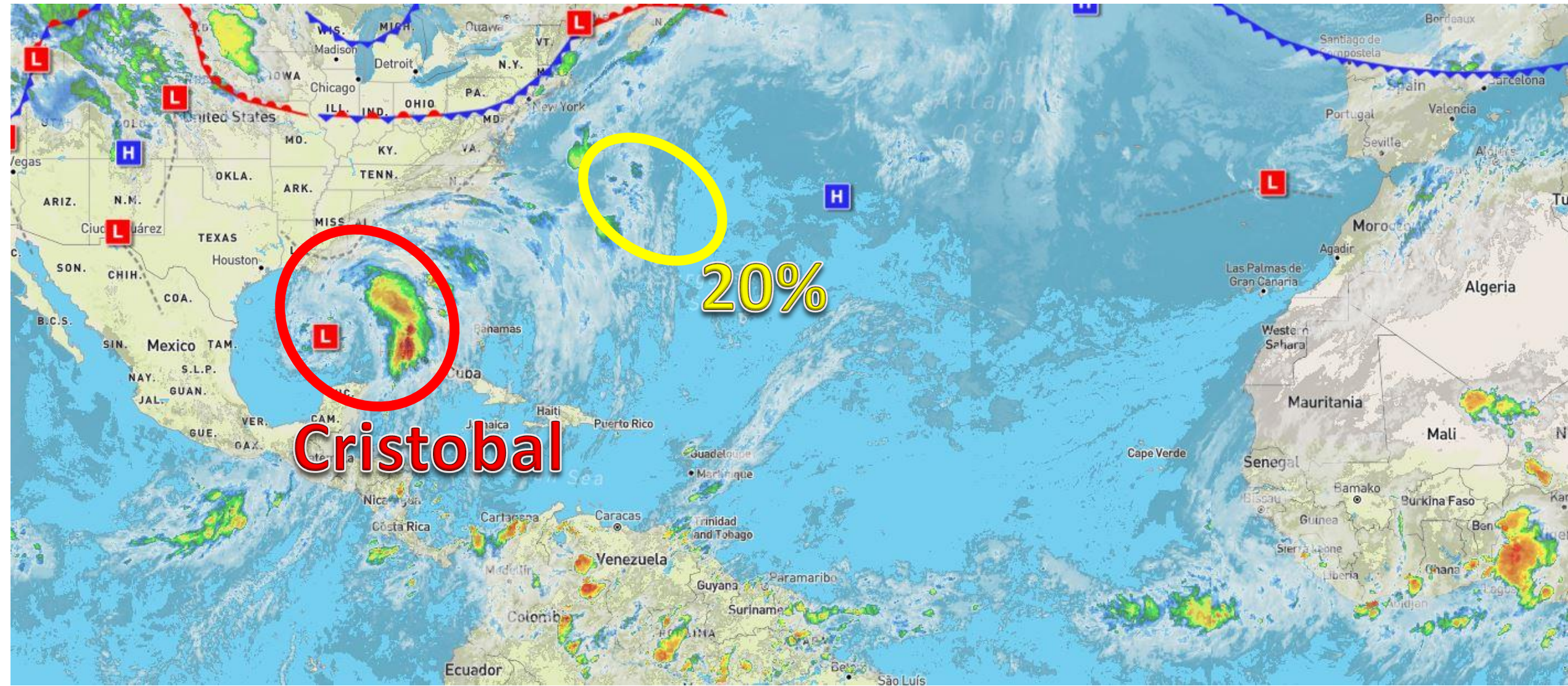
Saturday, June 6, 2020

Tropical Storm Cristobal
& Bermuda Low (20%)

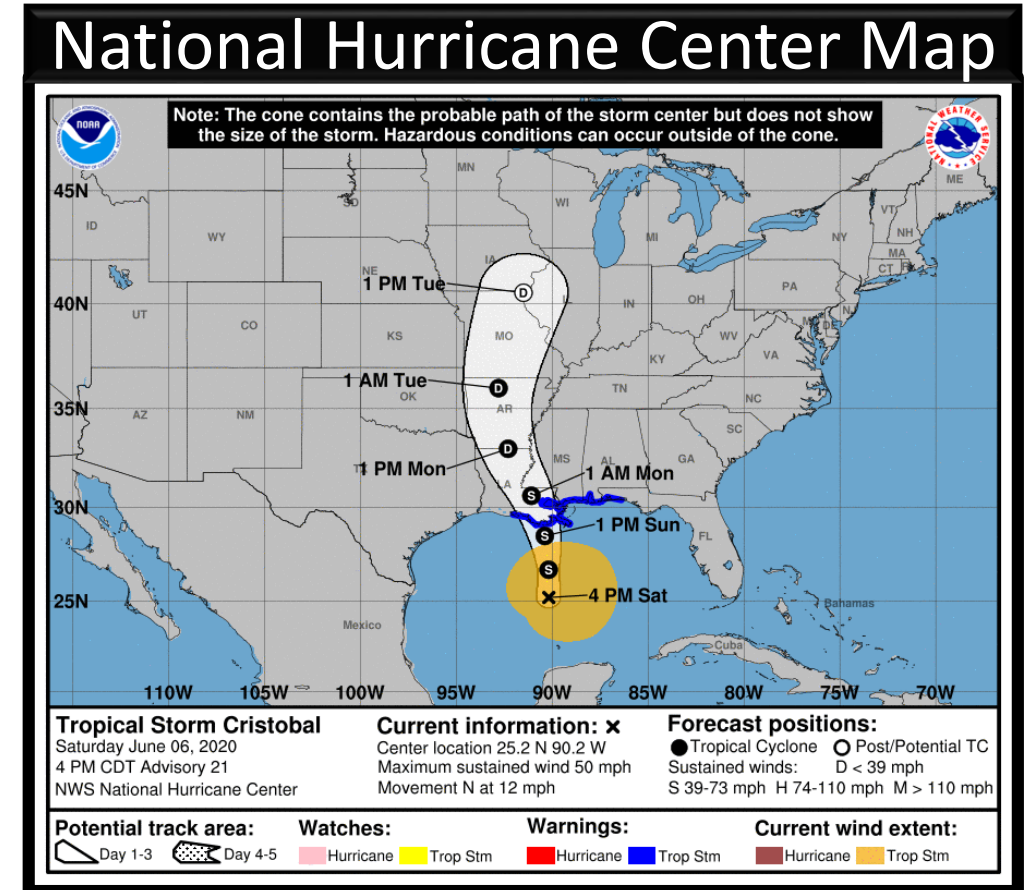
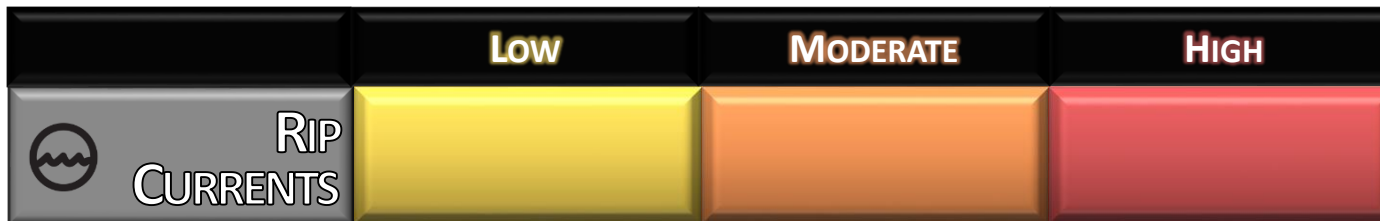
This update is intended for government and emergency response officials, and is provided for informational and situational awareness purposes only. Forecast conditions are subject to change based on a variety of environmental factors. For additional information, or for any life safety concerns with an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

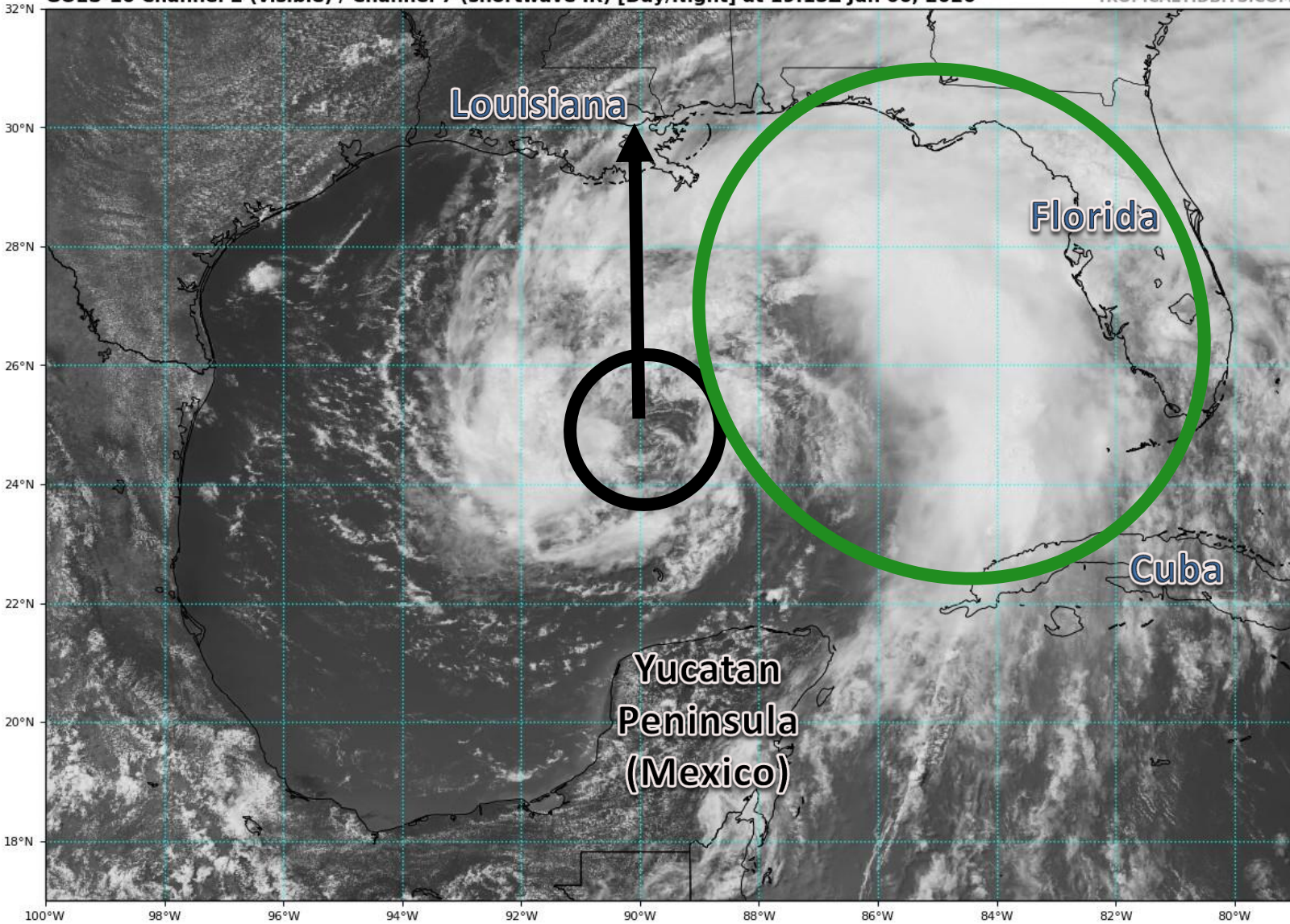


Tropical Storm Cristobal Saturday, June 6



Tropical Weather Overview:

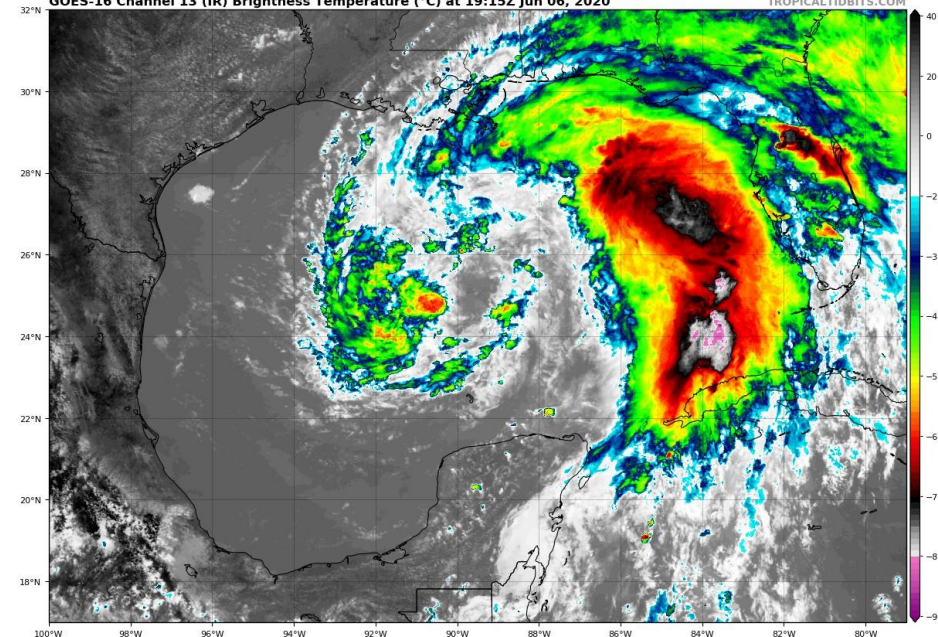
The tornado risk has increased since this morning, with a slight risk being issued for the West Coast of the Peninsula. Otherwise, the forecast remains on track. The main threat from Cristobal continues to be heavy rainfall. Flash Flood Watches have been issued for the entire Panhandle, Big Bend, and into interior Northeast Florida.

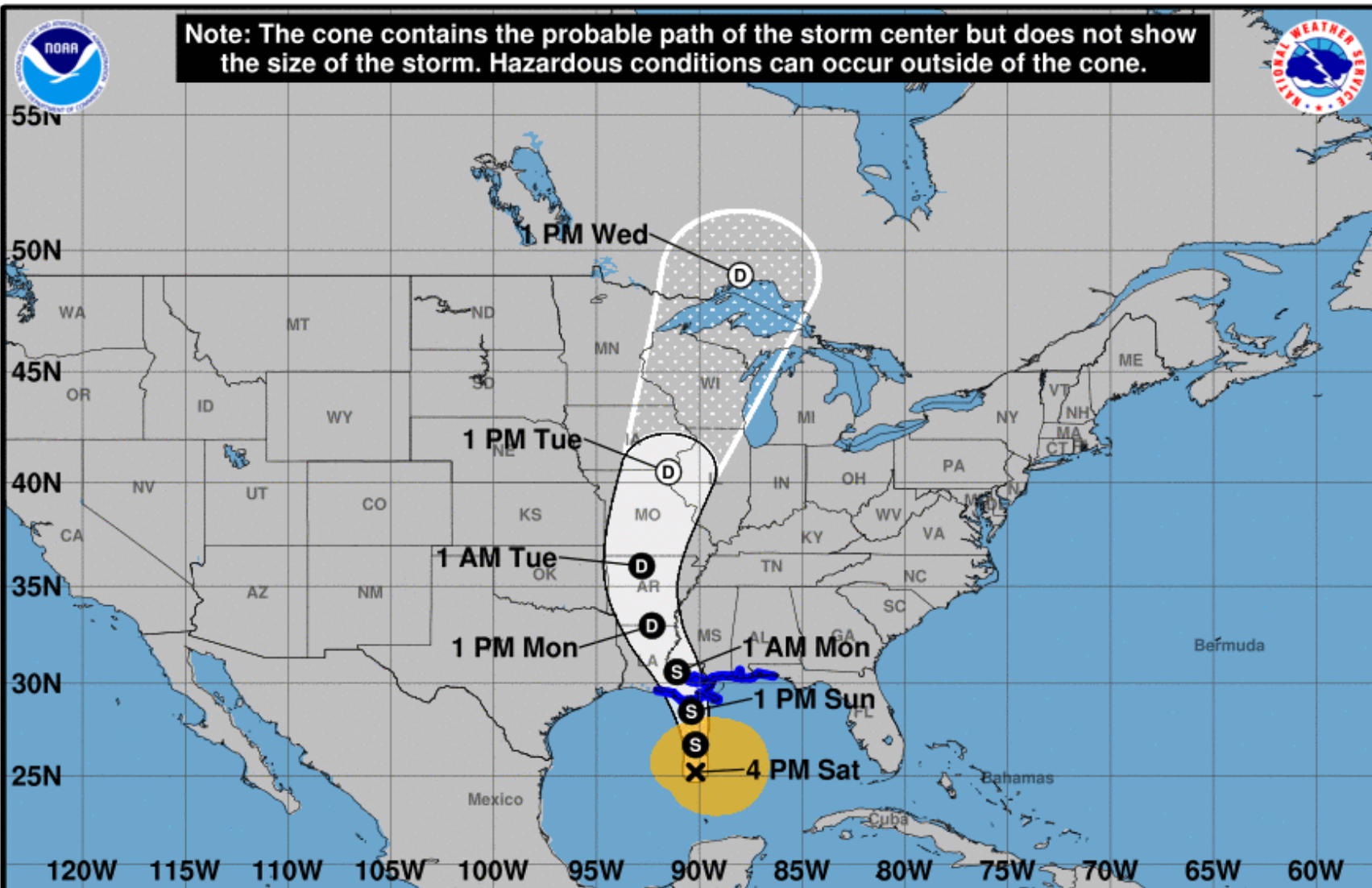


Visible Satellite Imagery: Tropical Storm Cristobal

Cristobal is a large system with much of the thunderstorms (green circle) displaced well to the east of the center (black circle).

Cristobal is moving to the north over the Gulf of Mexico as it continues to gradually regain strength.





Tropical Storm Cristobal
 Saturday June 06, 2020
 4 PM CDT Advisory 21
 NWS National Hurricane Center

Current information: X
 Center location 25.2 N 90.2 W
 Maximum sustained wind 50 mph
 Movement N at 12 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

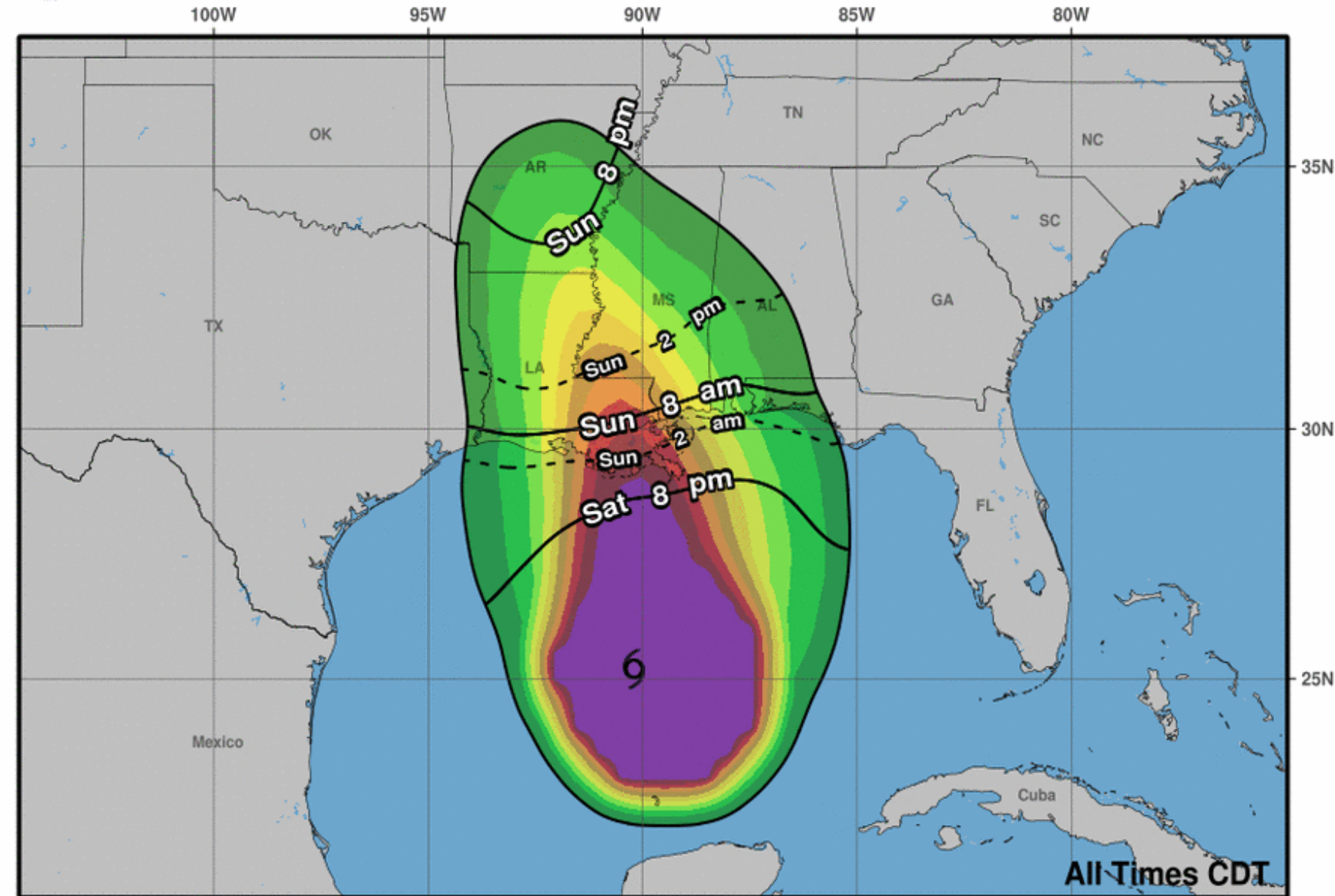
Potential track area:	Watches:	Warnings:	Current wind extent:
Day 1-3 (Solid line) Day 4-5 (Dotted line)	Hurricane (Pink) Trop Stm (Yellow)	Hurricane (Red) Trop Stm (Blue)	Hurricane (Brown) Trop Stm (Orange)

Projected Path: Tropical Storm Cristobal

- The center of Cristobal is located about 280 miles south of the mouth of the Mississippi River, of 375 miles southwest of Pensacola, Florida.
- Maximum sustained winds are at 50 mph.
- Cristobal is moving north at 12 mph, and this general motion will continue through landfall.
- Some strengthening is possible until landfall
- Cristobal will likely make landfall along the Louisiana coast Sunday evening
- **Tropical Storm Warnings** are in effect for the western Panhandle.
- **Flood Watches** are in effect for much of the state.
- Coastal Flood Advisories are in effect for the Gulf Coast.



Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



Chances for Sustained Tropical Storm Force Winds (39+ mph)

Pensacola NAS: 19%

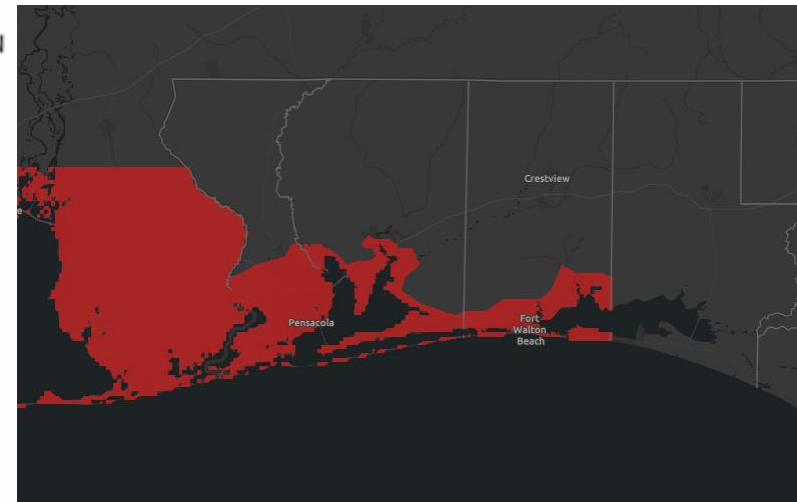
Milton: 10%

Destin: 8%

Panama City: 7%

Apalachicola: 3%

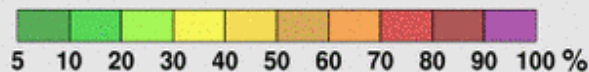
Tropical Storm Warning



Tropical Storm Cristobal
Sat. Jun. 6, 2020 4 pm CDT
Advisory 21

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





Wind Gusts

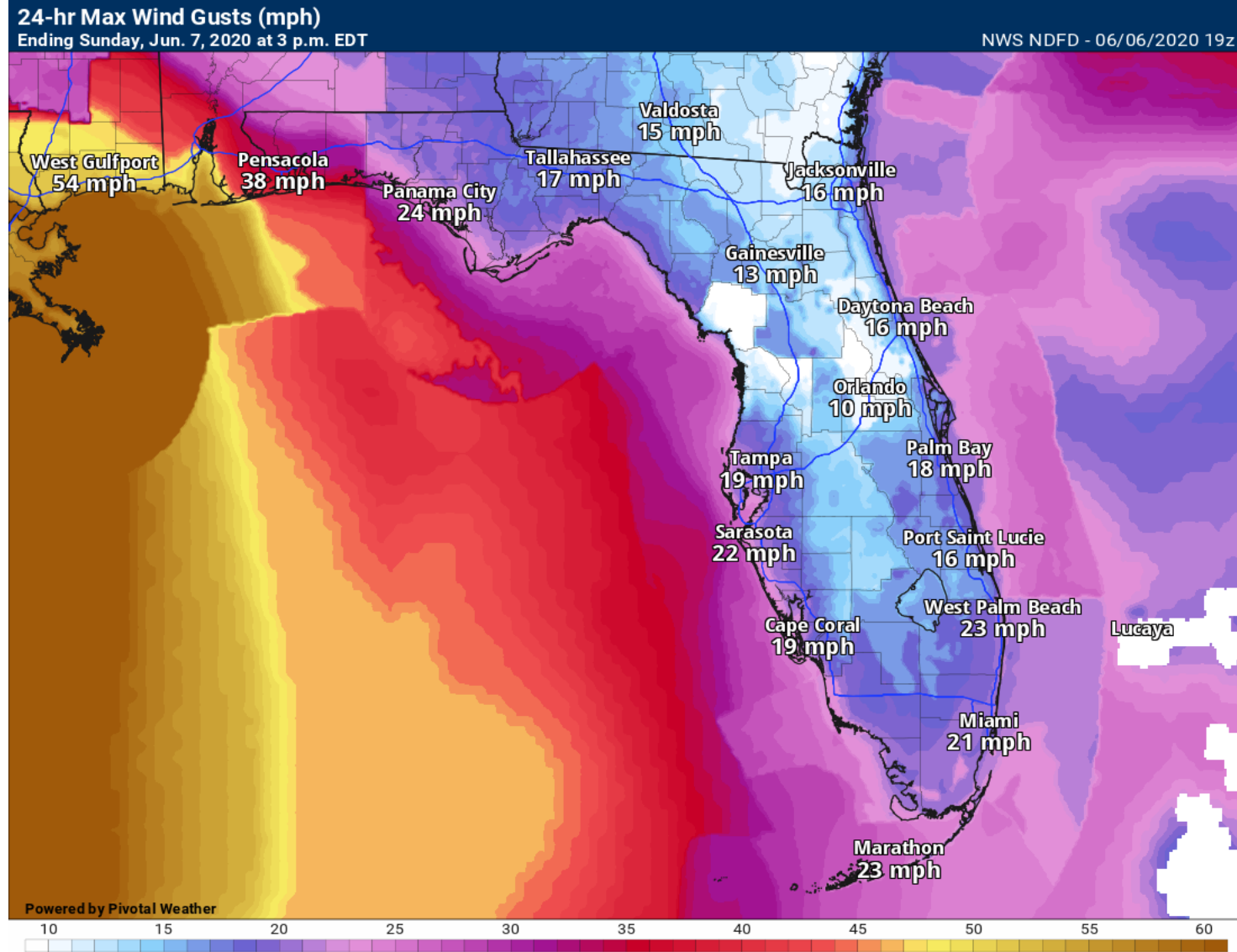
Next 24 Hours

Wind gusts to 25 mph are possible across much of the state today, from the south and east.

Higher gusts are likely in any heavy thunderstorms.

Higher gusts to 40 mph are possible tonight and Sunday in the western Panhandle.

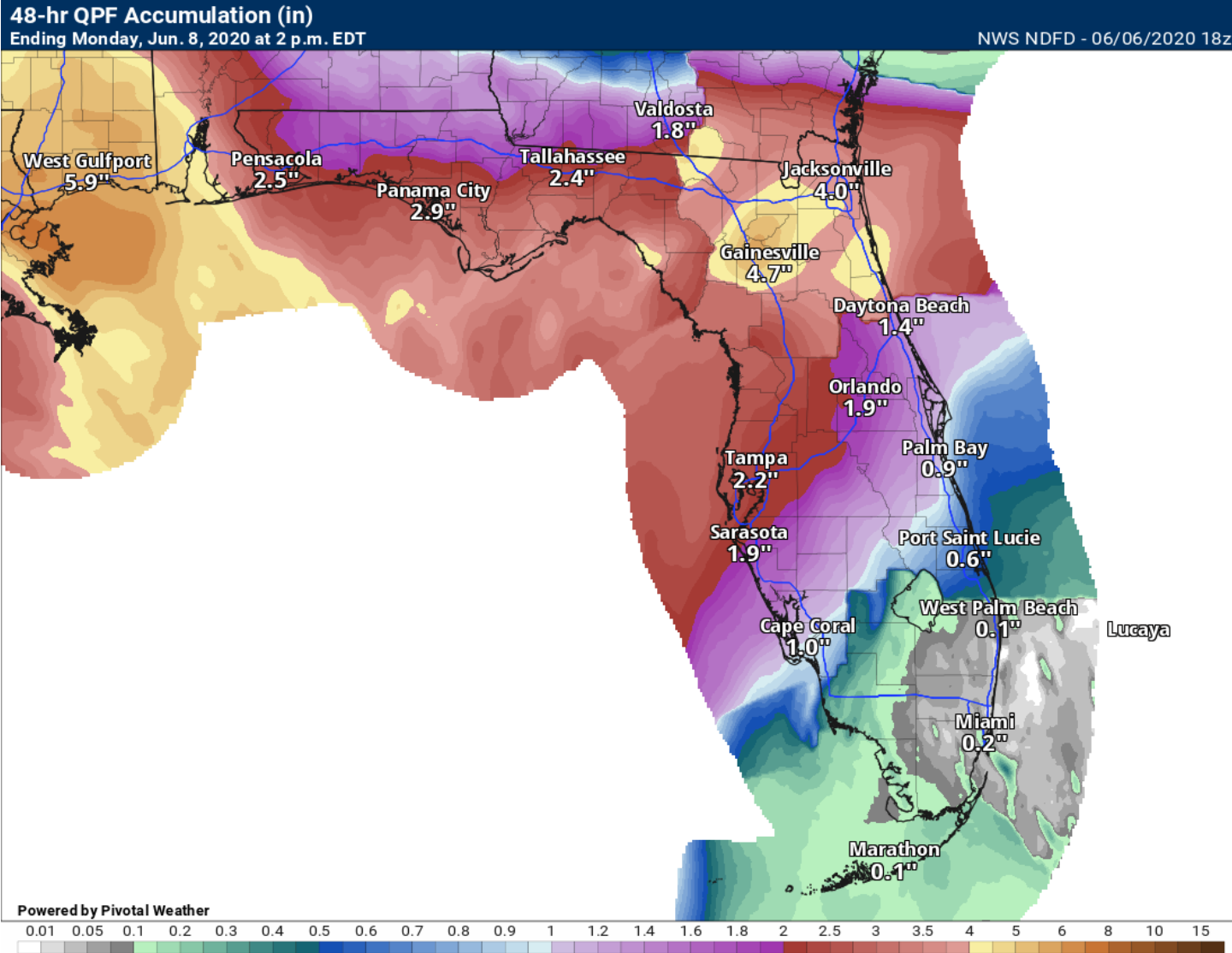
Tropical Storm Warnings are in effect for coastal Escambia, Santa Rosa, and Okaloosa County.





Rainfall Totals Next 48 Hours

Ending 2 PM ET Monday



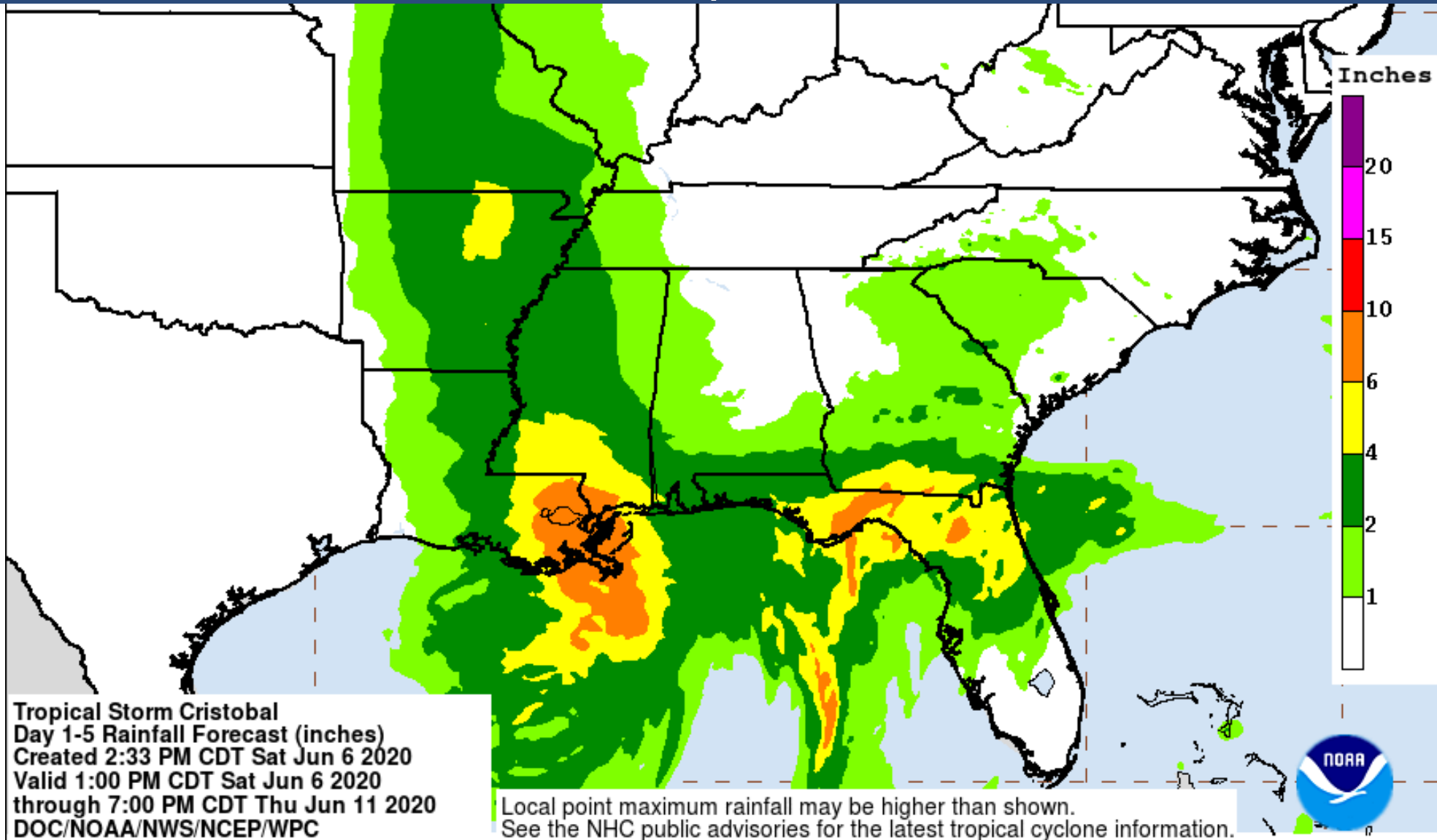
Through Monday afternoon, widespread rainfall totals of 2-5" are expected across North and Central Florida. Locally higher totals of 6-12" are possible, especially where heavier bands set up in the Big Bend, interior Northeast Florida, and the Nature Coast.

Training rain bands are likely to set up tonight along the Big Bend and/or Nature Coast, increasing the Flash Flood Threat between Tampa and Panama City.



Day 1-5 Rainfall Totals

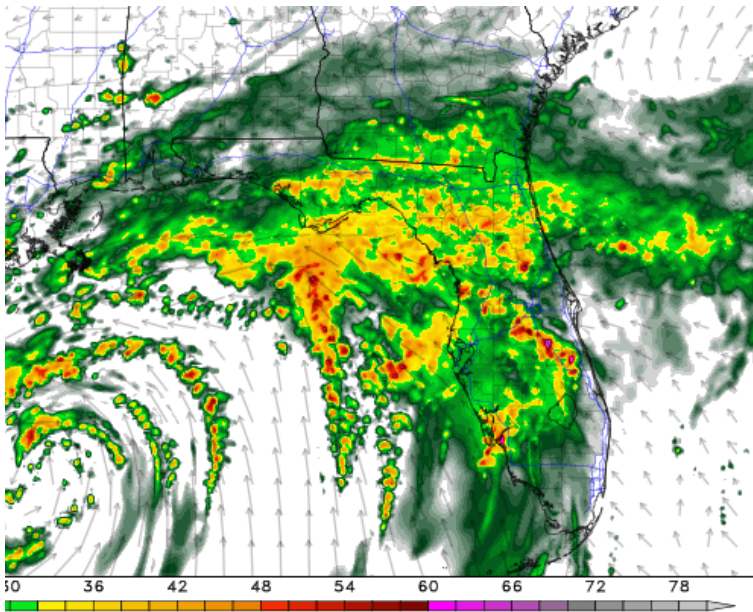
For the Entire Tropical Storm Cristobal Event



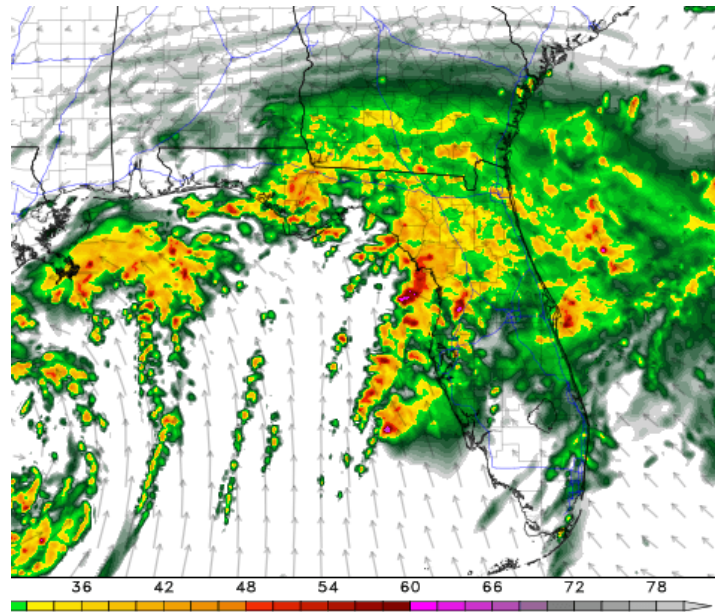


Model Forecast Radar

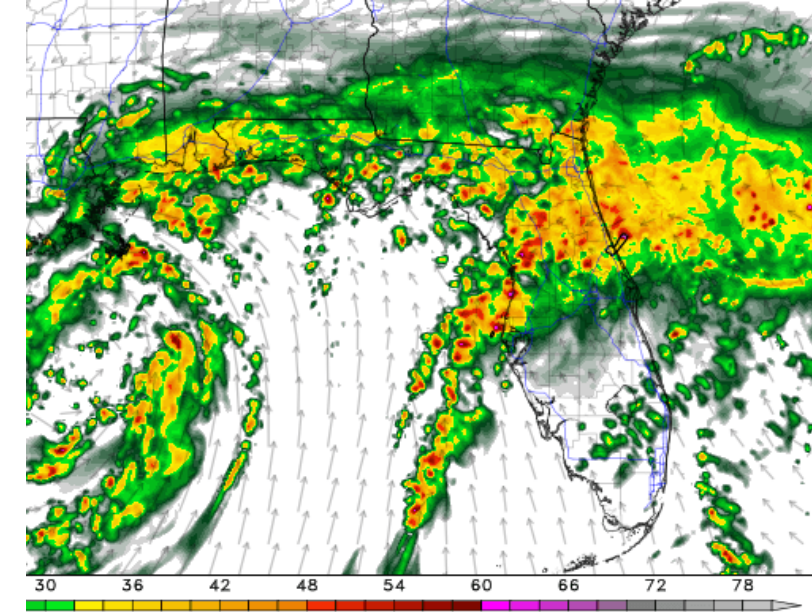
*****Only Model Guidance – Time & Position Will Vary*****



8 PM ET Saturday



3 AM ET Sunday



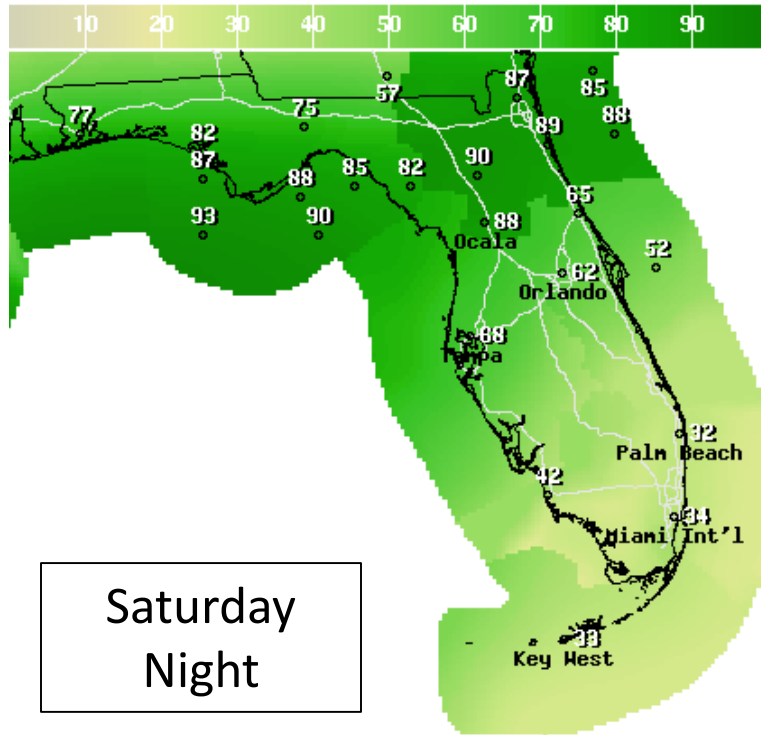
8 AM Sunday

Widespread rainfall will continue across North and Central Florida tonight with a more focused rain band setting up in the Big Bend and Nature Coast through tomorrow morning. Isolated tornadoes and flash flooding will be possible.

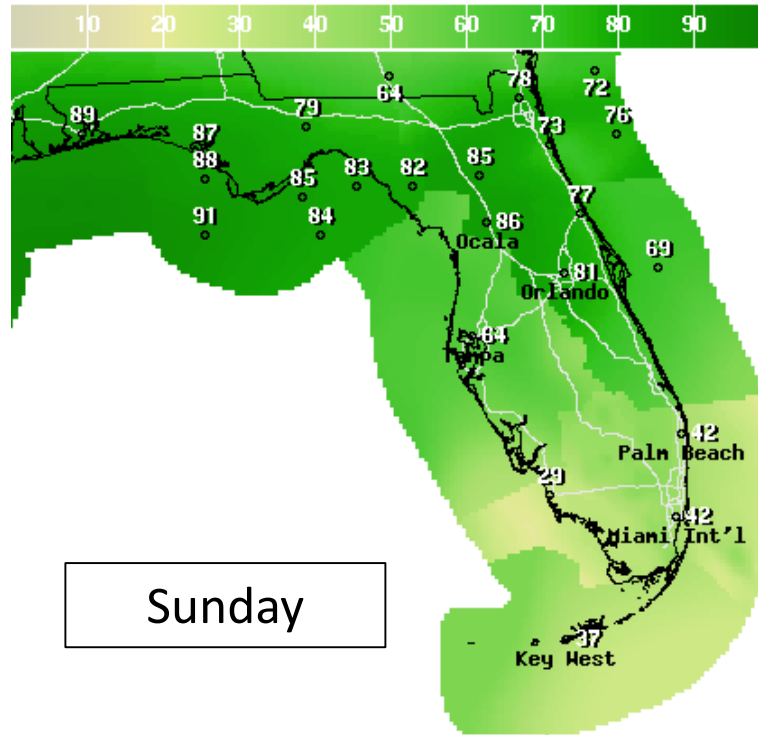


Saturday - Monday

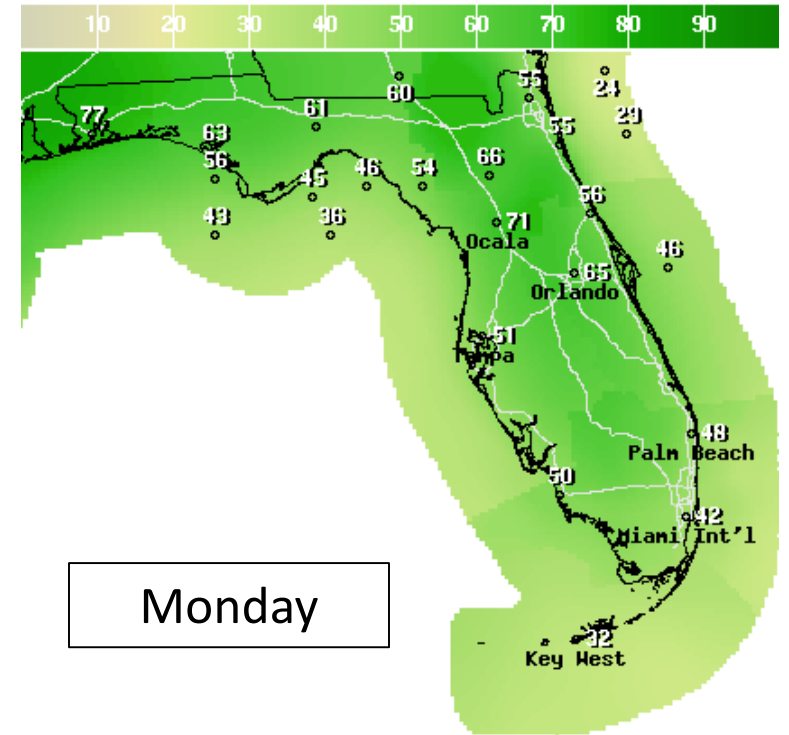
Timing the Event – Cristobal Rainfall



12Hr Prob.Precip(%) Ending Sun Jun 07 2020 8AM EDT
(Sun Jun 07 2020 12Z)
National Digital Forecast Database
18z issuance Graphic created-Jun 06 2:48PM EDT



12Hr Prob.Precip(%) Ending Sun Jun 07 2020 8PM EDT
(Mon Jun 08 2020 00Z)
National Digital Forecast Database
14z issuance Graphic created-Jun 06 10:24AM EDT



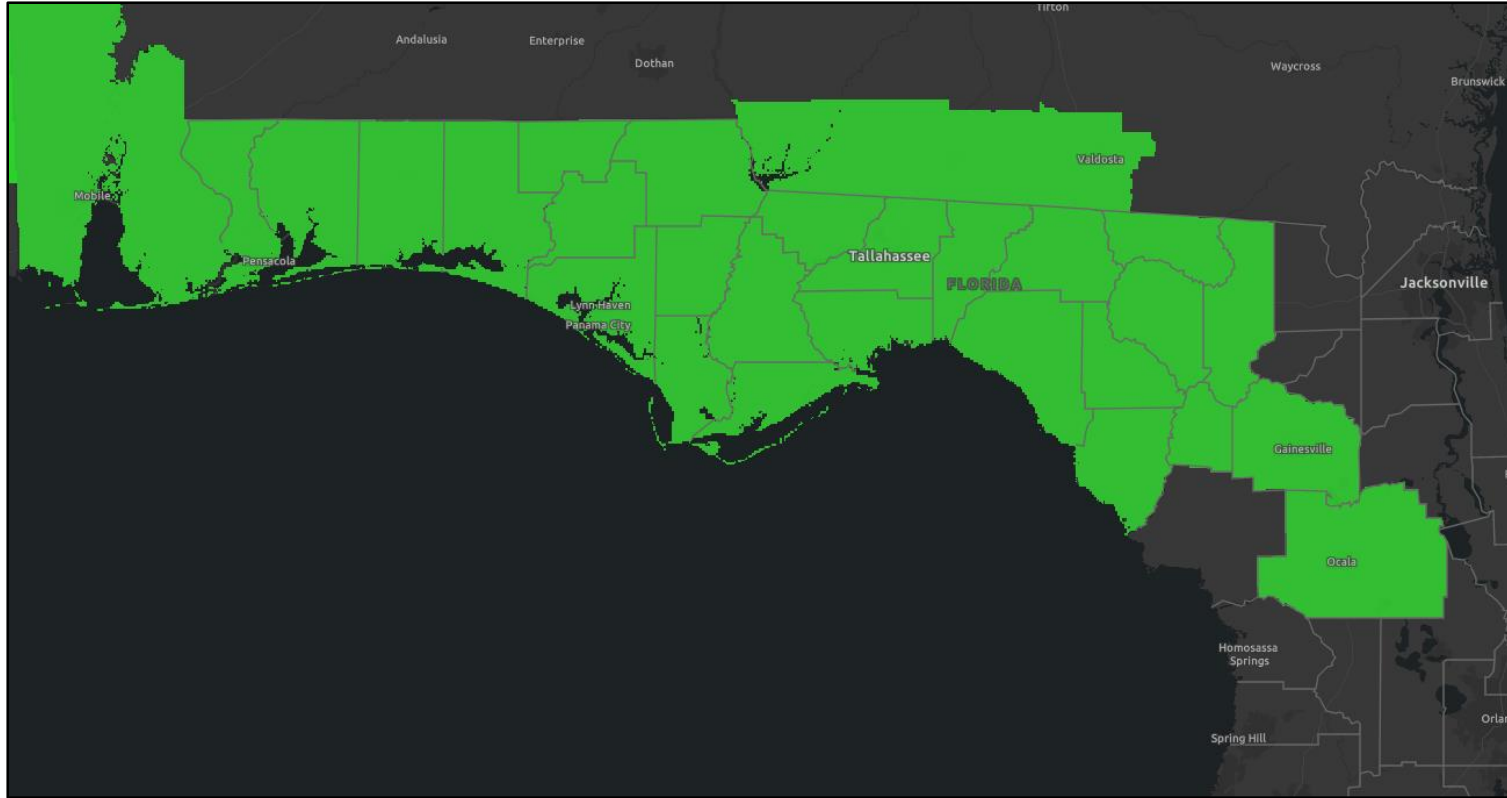
12Hr Prob.Precip(%) Ending Mon Jun 08 2020 8PM EDT
(Tue Jun 09 2020 00Z)
National Digital Forecast Database
14z issuance Graphic created-Jun 06 10:24AM EDT

Widespread areas of rain are spreading over the state today. Heavier bands of rain will impact the Gulf Coast today and tonight, with scattered thunderstorms developing in Southeast Florida each afternoon. Additional rain bands will set up across North Florida on Sunday and Monday.



Flash Flood Watches

Links: [NWS Mobile](#) | [NWS Tallahassee](#) | [NWS Jacksonville](#)



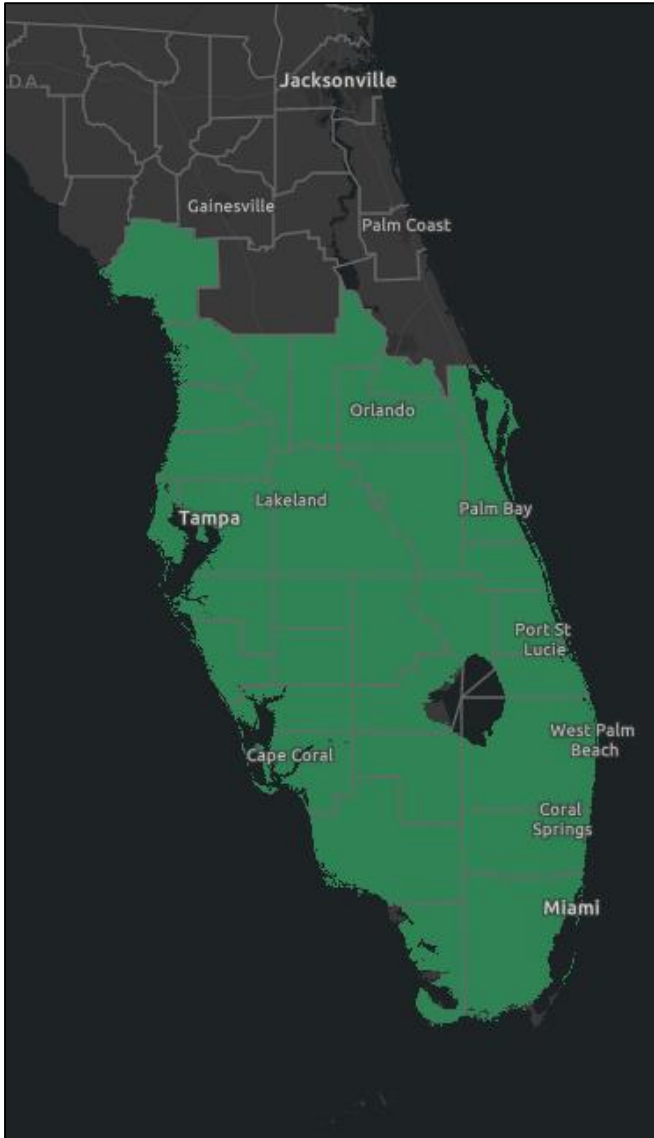
The Flash Flood Watch expires at 8 PM ET / 7 PM CT SUNDAY for the eastern Panhandle, Big Bend, and interior Northeast Florida (NWS Tallahassee & Jacksonville Area).

It expires at 7 PM CT MONDAY for the western Panhandle including Escambia, Santa Rosa, and Okaloosa County (NWS Mobile Area).



Areal Flood Watches

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



Torrential downpours and wet to saturated soils will lead to some flooding, especially of urban, low-lying, or poor drainage areas. Average rainfall of 2-4" is expected across the Peninsula with localized amounts of 6-8" possible.

Some parts of the Peninsula have seen 10+" of rain locally. Additional rainfall could result in more flooding.

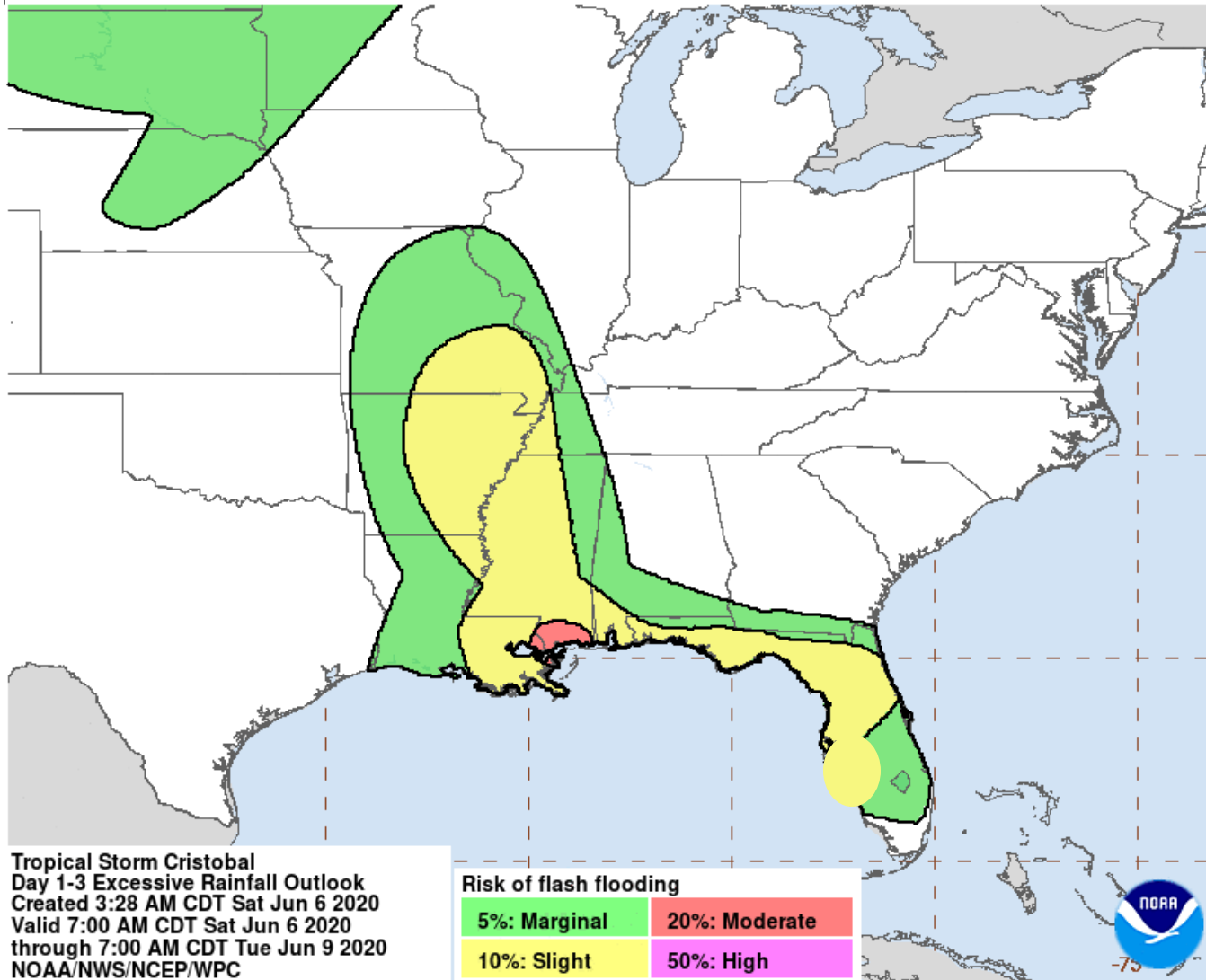
The Flood Watch expires at 8 PM ET TODAY for South Florida (NWS Miami Area) but continues until 8 PM ET SUNDAY for Central Florida (NWS Tampa/Melbourne Area)



Weekend Flash Flood Threat

Flash Flood Outlook

Greatest Flash Flood Risk Over the Next 3 Days

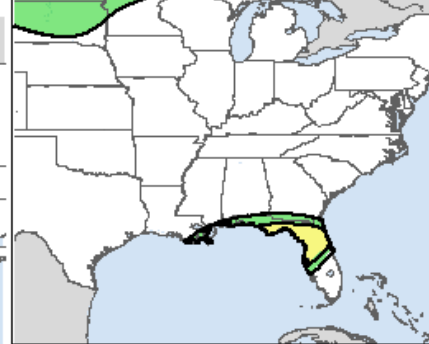


Tropical Storm Cristobal
Day 1-3 Excessive Rainfall Outlook
Created 3:28 AM CDT Sat Jun 6 2020
Valid 7:00 AM CDT Sat Jun 6 2020
through 7:00 AM CDT Tue Jun 9 2020
NOAA/NWS/NCEP/WPC

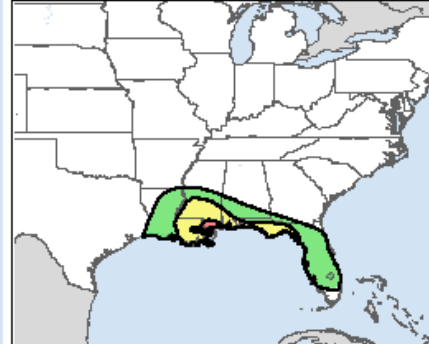
Risk of flash flooding

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

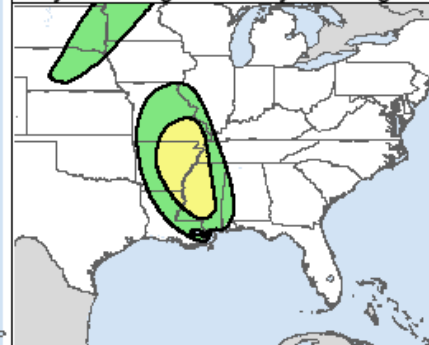
Day 1 Through Sunday morning



Day 2 Through Monday morning



Day 3 Through Tuesday morning



Most of the state will be under a Marginal to Slight Risk for flash flooding today and Sunday. Isolated to scattered flash floods are possible.







However, should heavier rainfall materialize, the risk for flash flooding may increase- particularly in North Florida once it becomes more clear where exactly heavier rain bands set up.



Weekend Flash Flood Threat

Flash Flood Outlook Key

Understanding WPC Excessive Rainfall Risk Categories

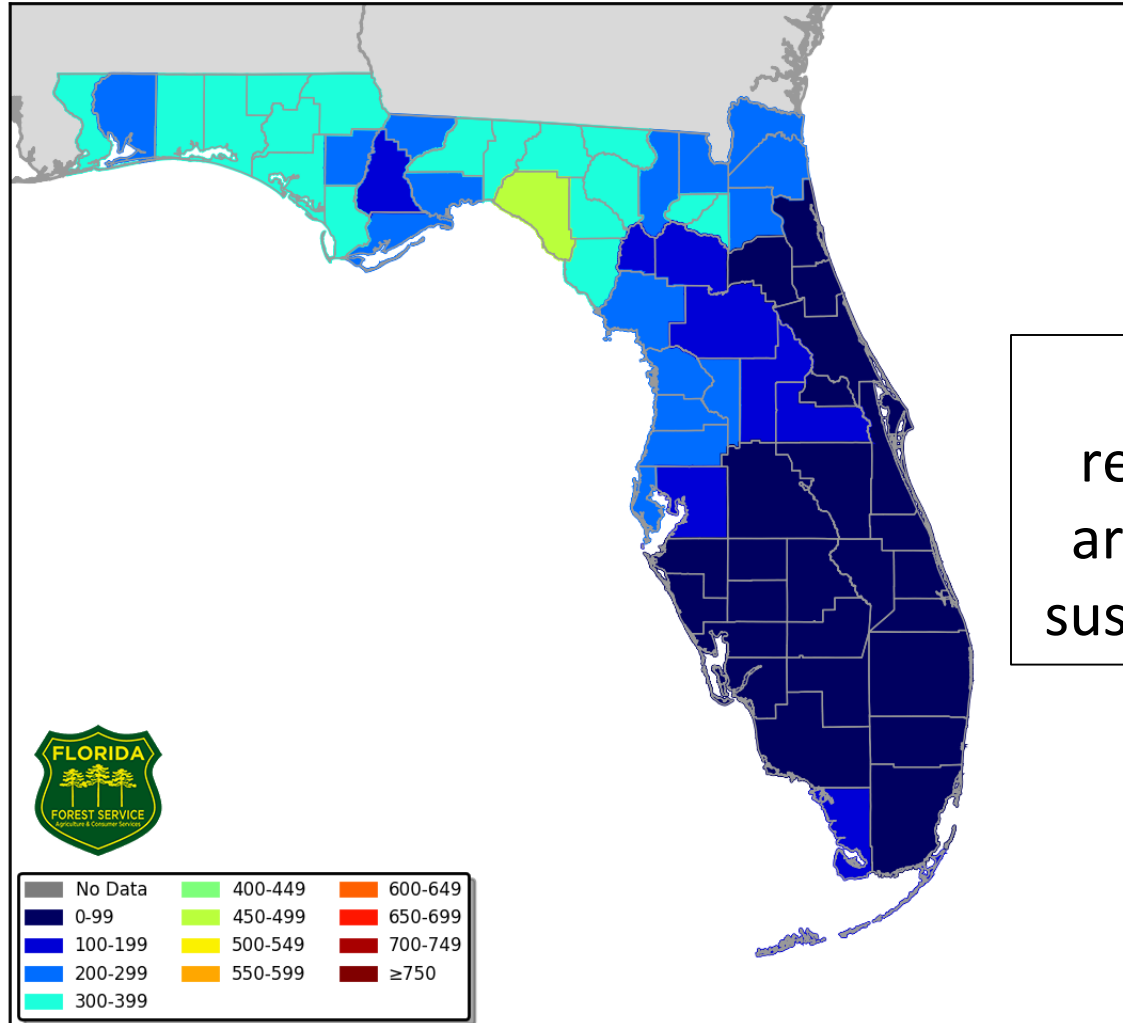
No Area/Label	MARGINAL (MRGL)	SLIGHT (SLGT)	MODERATE (MDT)	HIGH (HIGH)
Flash floods are generally not expected.	Isolated flash floods possible	Scattered flash floods possible	Numerous flash floods likely	Widespread flash floods expected
Localized and primarily affecting places that can experience rapid 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.	
www.wpc.ncep.noaa.gov @NWSWPC				
Flash flooding near me?	Flash Flooding			
	NO Flash Flooding			
  WEATHER PREDICTION CENTER				



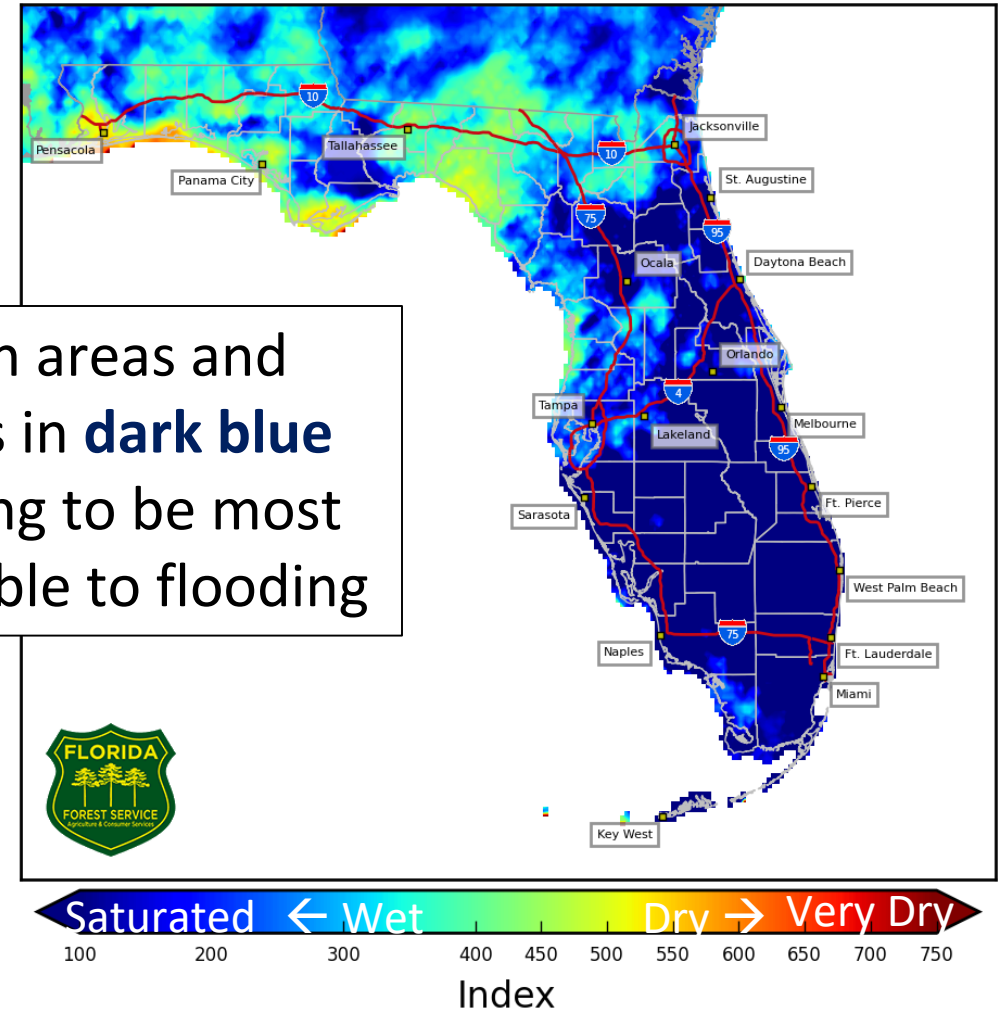
Drought Index – Soil Moisture

KBDI – Full Report from the Florida Forest Service

Keetch Byram Drought Index (KBDI)
County Averages for June 06, 2020



4 km Resolution KBDI
Statewide
June 06, 2020





Possible River Flooding



POSSIBLE river crest levels next week based on model guidance

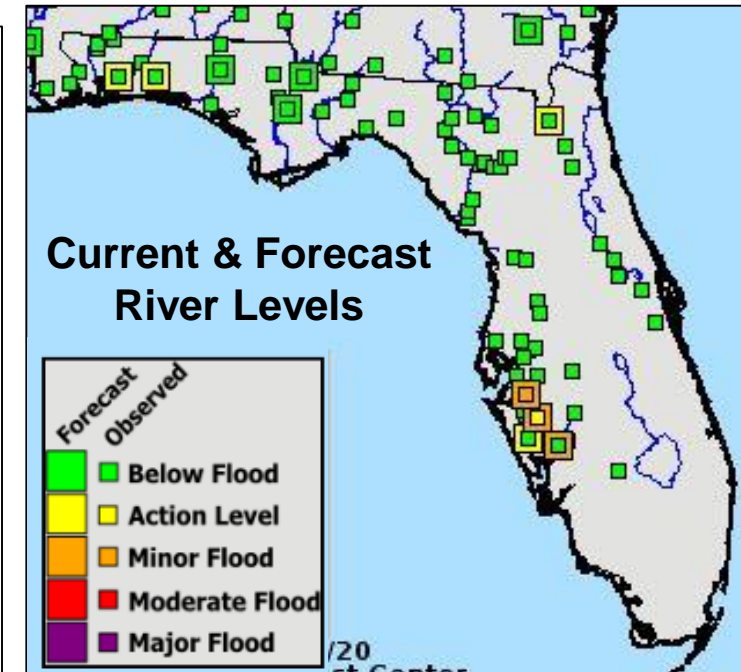
Chance of Exceedance		
30%	Level	70%
	Action	
	Minor Flood	
	Moderate Flood	
	Major Flood	
= less than 30% chance of reaching Action level		

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

Some minor flooding is possible along some rivers, but it will depend on where exactly the heaviest rain falls.

The [Manatee River at Myakka Head](#), [Little Manatee River near Wimauma](#), and [Horse Creek near Arcadia](#) are forecast to reach minor flood stage early next week.

Current low river levels across North Florida will help to minimize river impacts.



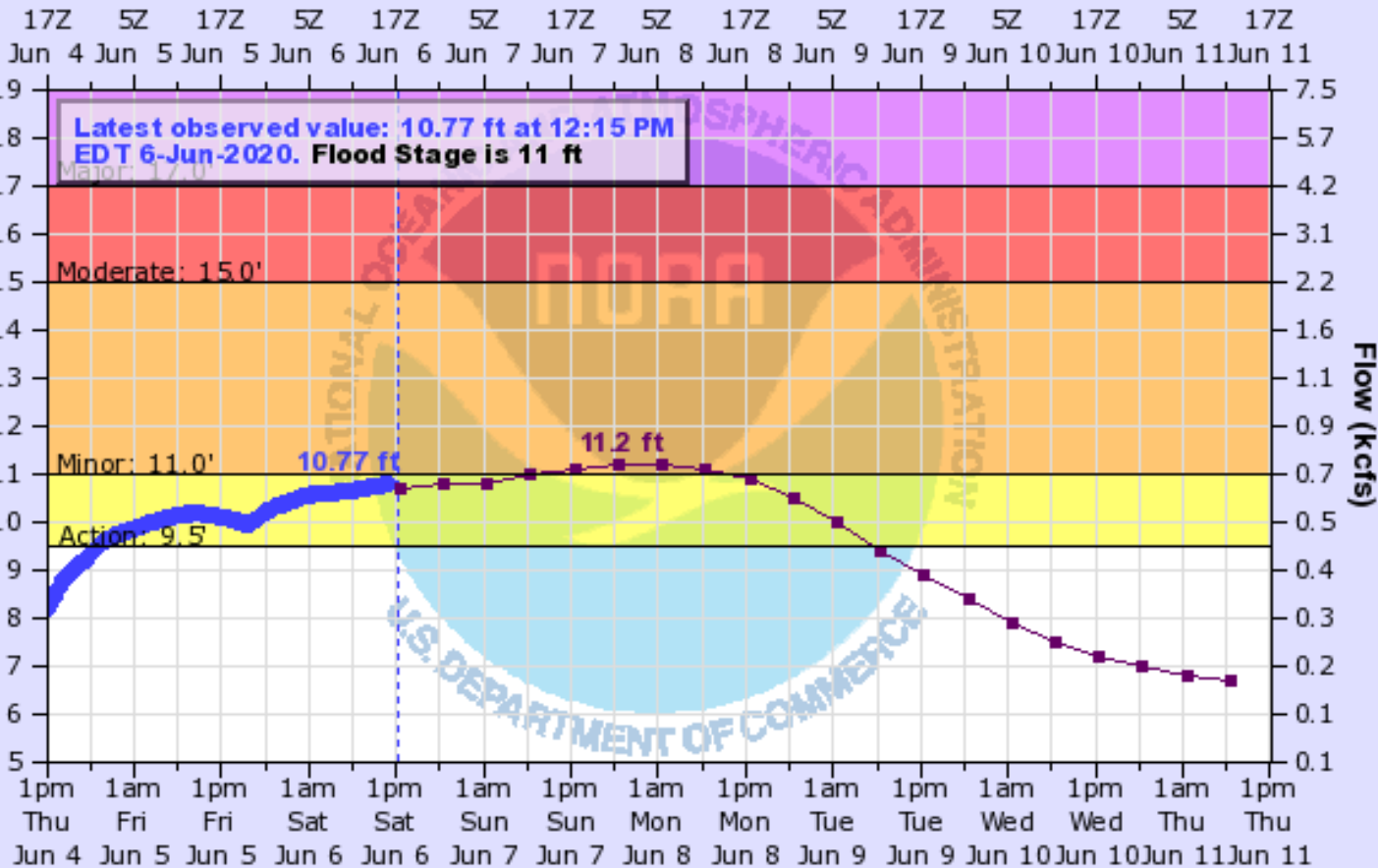


Manatee River at Myakka Head

[Hydrograph Link](#)

MANATEE RIVER (FL) NEAR MYAKKA HEAD AT SR 64

Universal Time (UTC)



Site Time (EDT)

--- Graph Created (1:37PM Jun 6, 2020) —●— Observed —■— Forecast (issued 10:18AM Jun 6)

22 Water reaches the roadbed level of the State Road 64 bridge.

15 Low sections of State Road 64 start to flood.

11 Private road and bridge 1 mile downstream flood. Agricultural, rural Kibler area begins to flood.

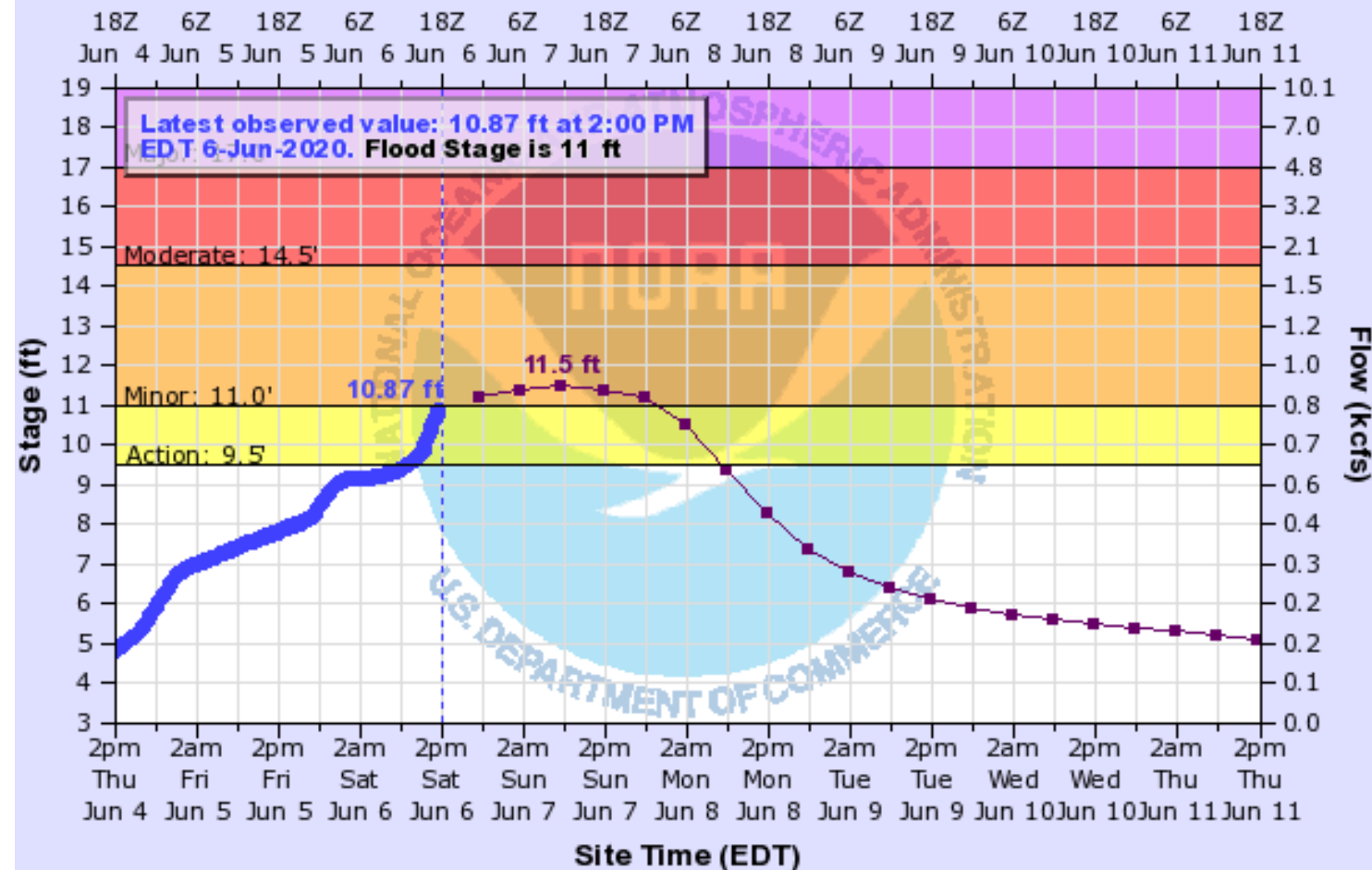


Little Manatee River at Wimauma

[Hydrograph Link](#)

LITTLE MANATEE RIVER (FL) NEAR WIMAUMA AT US 301

Universal Time (UTC)



14.5 Flooding of several houses begins near 32nd and 33rd streets in Ruskin.

13 The canoe rental area floods.

11 The river overflows its banks.



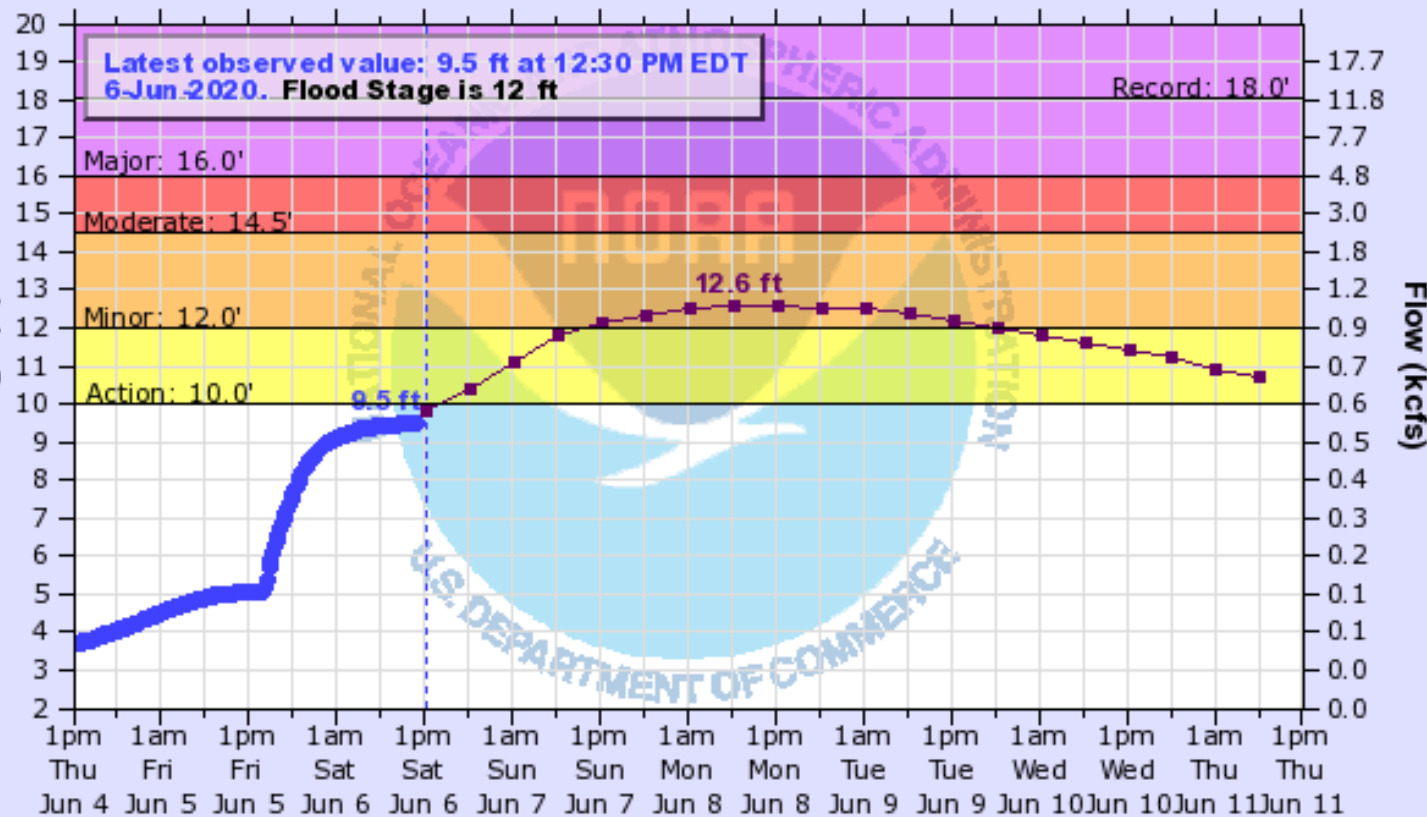
Horse Creek at Arcadia

[Hydrograph Link](#)

HORSE CREEK (FL) NEAR ARCADIA AT SR 72

Universal Time (UTC)

17Z 5Z 17Z 5Z 17Z 5Z 17Z 5Z 17Z 5Z 17Z 5Z 17Z 5Z 17Z
Jun 4 Jun 5 Jun 5 Jun 6 Jun 6 Jun 7 Jun 7 Jun 8 Jun 8 Jun 9 Jun 9 Jun 10 Jun 10 Jun 11 Jun 11



--- Graph Created (1:52PM Jun 6, 2020) —●— Observed —■— Forecast (issued 10:18AM Jun 6)

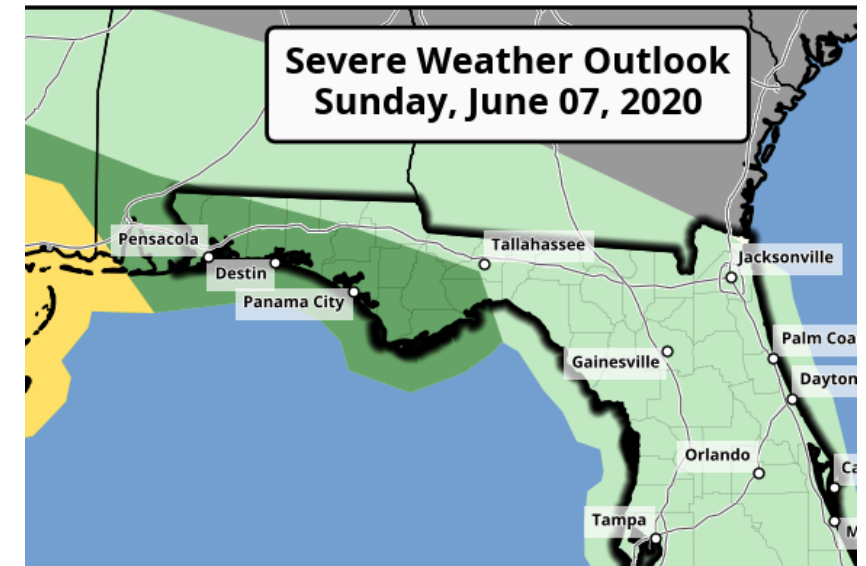
ARHF1(plotting HGIRG) "Gage 0" Datum: 10.96'

Observations courtesy of US Geological Survey

- 15 Royal Park Estates are affected near State Road 72.
- 14 Buildings in Hidden Acres flood.
- 12 The access road to Hidden Acres is impassable.
- 11 Secondary roads in hidden acres and royal palm begin to flood.
- 10.5 Two homes become isolated.



Tornado Risk



As the outer bands from Cristobal move along the Gulf Coast today and additional thunderstorms develop across the Peninsula, isolated tornadoes are possible. There is a **Marginal to Slight Risk** (level 1 of 5) of Severe Weather. On Sunday, the isolated tornado risk will be confined to the Panhandle.



Tornado Risk

Severe Weather Outlook Key

Severe Thunderstorm Risk Categories

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"



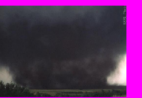
3 Enhanced Risk (ENH) Numerous severe storms possible
More persistent and/or widespread, a few intense
A few tornadoes
Several wind damage reports
Damaging hail, 1"-2"



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



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



*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.weather.gov - www.spc.noaa.gov



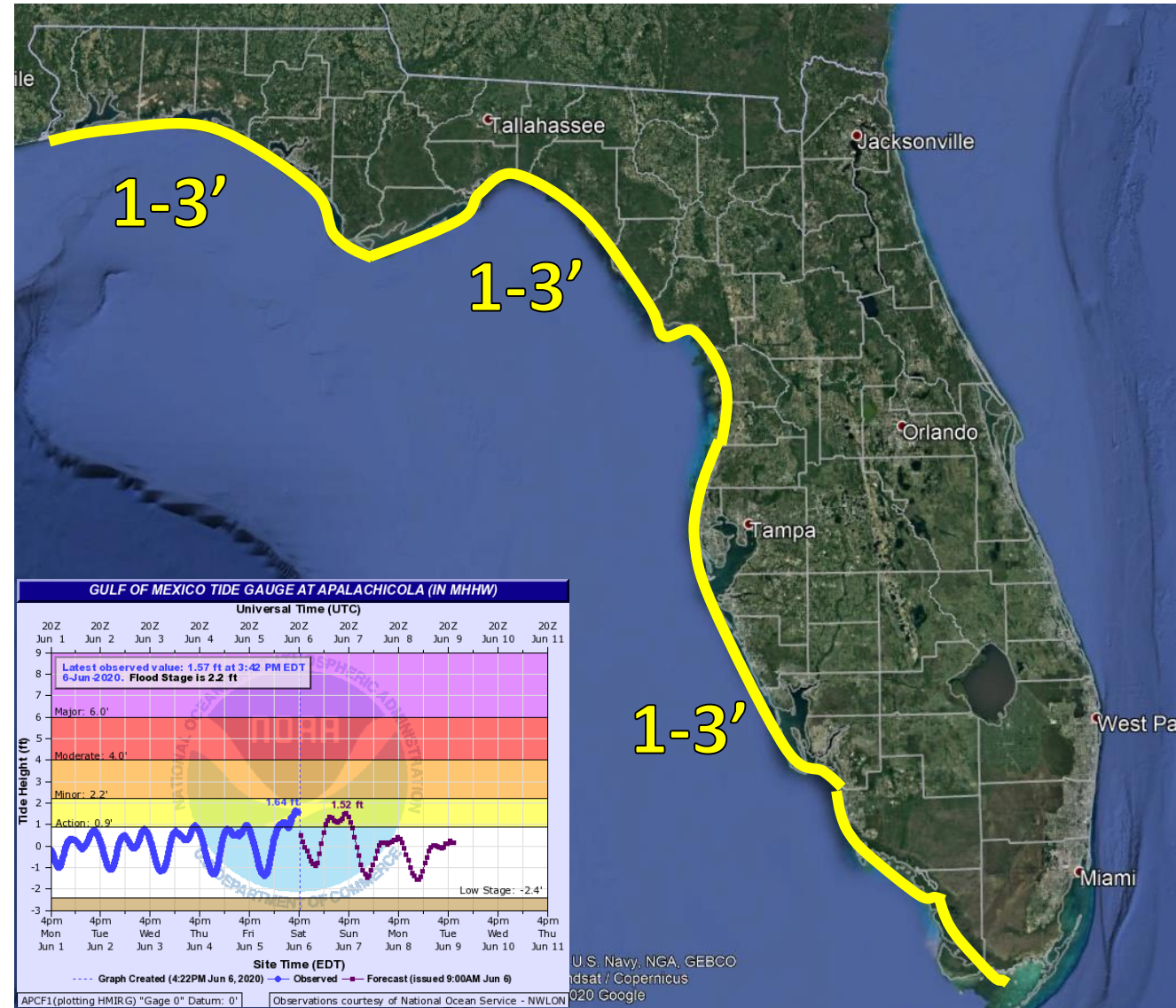
Storm Surge Flooding

This Weekend

Onshore winds ahead of Cristobal will result in some minor coastal flooding along the Gulf Coast. Tides are already running 1-1.5' above normal in the Panhandle and will run 1-3' above normal along the entire Gulf Coast through Sunday night.

Storm Surge Watches have been cancelled and replaced with Coastal Flood Advisories.

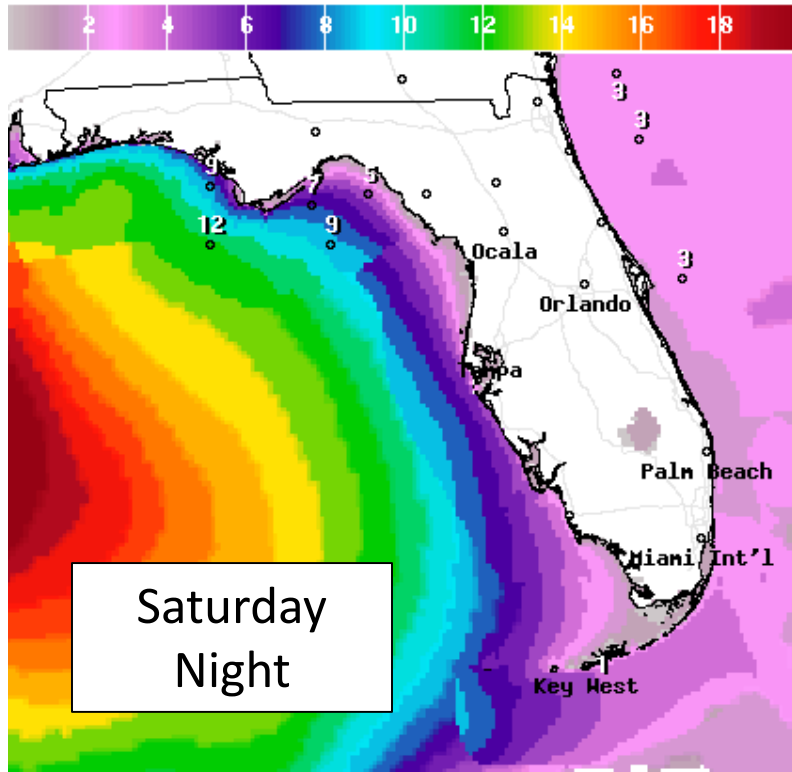
Includes Pensacola Bay and Tampa Bay





Forecast Wave Heights

This Weekend

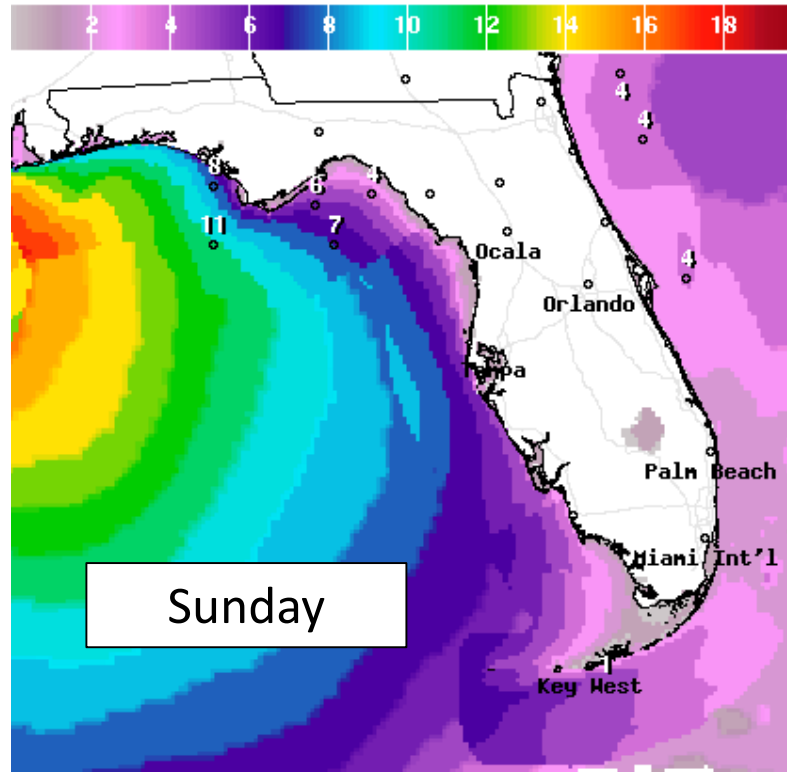


Wave Height(ft) Ending Sun Jun 07 2020 2AM EDT
(Sun Jun 07 2020 06Z)



National Digital Forecast Database

20z issuance Graphic created-Jun 06 4:21PM EDT

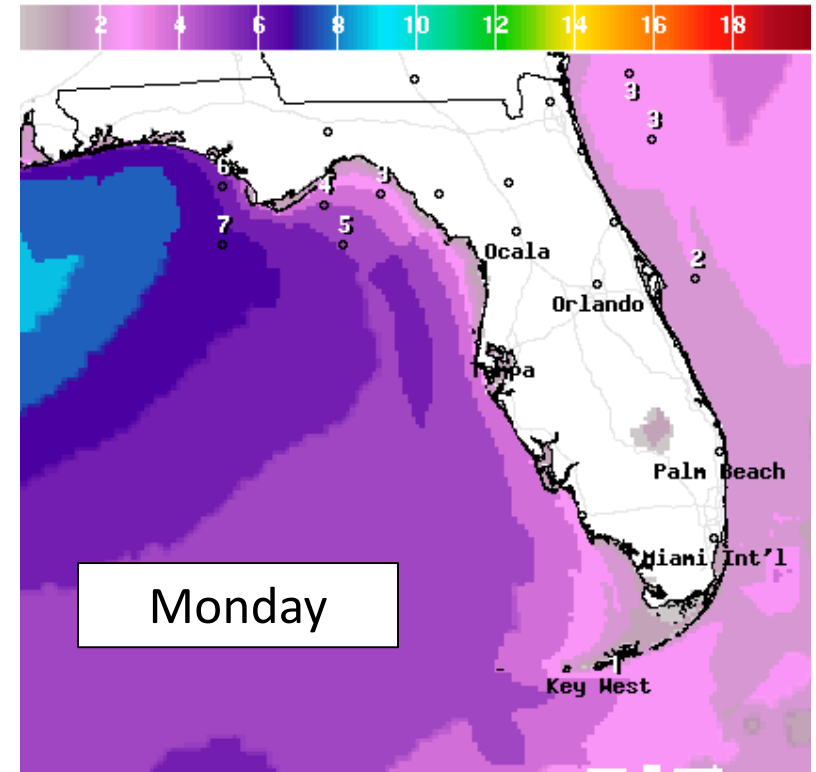


Wave Height(ft) Ending Sun Jun 07 2020 8PM EDT
(Mon Jun 08 2020 00Z)



National Digital Forecast Database

13z issuance Graphic created-Jun 06 9:29AM EDT



Wave Height(ft) Ending Mon Jun 08 2020 2PM EDT
(Mon Jun 08 2020 18Z)



National Digital Forecast Database

13z issuance Graphic created-Jun 06 9:29AM EDT



High surf of 8-11 feet is expected at Panhandle Beaches with 4-8 feet along the rest of the Gulf Coast. This will result in dangerous rip currents along all Gulf beaches. Minor beach erosion is also likely with a few spots of more significant erosion possible in the western Panhandle.



Tropical Weather Outlook

Development Areas Next 5 Days

Bermuda Low: An area of low pressure is expected to develop along a cold front a few hundred miles east or northeast of Bermuda by the middle of next week. Some development of this system is possible while it meanders near Bermuda for the next several days. This system is not expected to pose a direct threat to the United States.

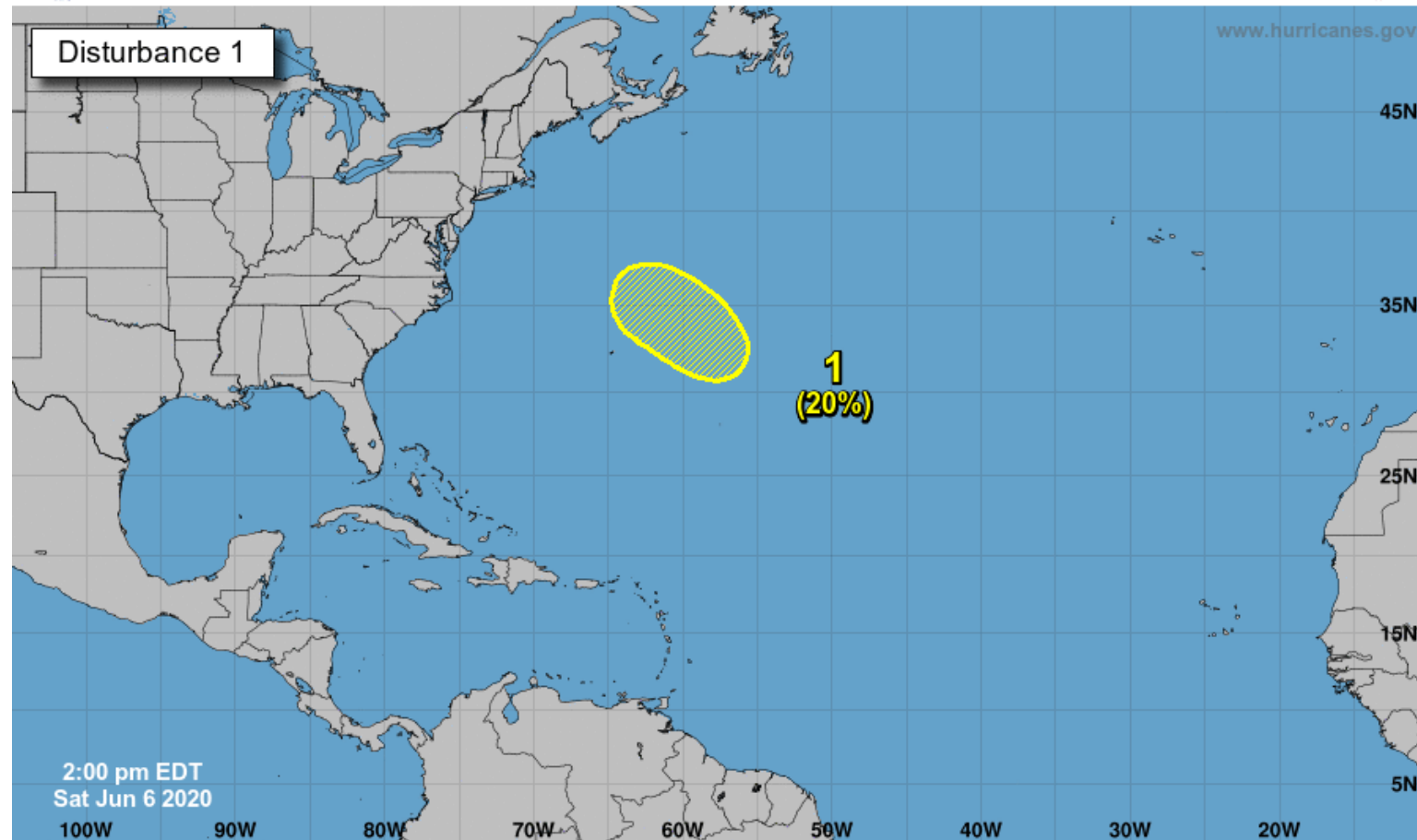
*Formation chance through 48 hours...low...near 0 percent.

*Formation chance through 5 days...low...20 percent.



Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



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

Summary

Tropical Storm Cristobal

- As of 5 PM ET, the center of Cristobal was located about 280 miles south of the mouth of the Mississippi River, or about 375 miles southwest of Pensacola, Florida, moving north at 12 mph.
- Maximum sustained winds are near 50 mph. Some gradual strengthening is possible through landfall.
- Cristobal is expected to make landfall in Louisiana Sunday afternoon, but the system will be asymmetrical with much of the heavy rainfall well to the east of the center and where landfall occurs.

Bermuda Low

- An area of low pressure is expected to develop along a cold front a few hundred miles east or northeast of Bermuda by the middle of next week.
- Some development of this system is possible while it meanders near Bermuda for the next several days.
- This system is not expected to pose a direct threat to the United States at this time.
- The odds of development over the next 48 hours is near 0%, but 20% (low chance) over the next 5 days.

Florida Outlook:

- A **Tropical Storm Warning** is in effect from the AL/FL border (Escambia County) to the Okaloosa/Walton County Line. While sustained tropical storm force winds are not expected elsewhere, gust up to 50 mph are possible in heavier showers/thunderstorms.
 - **Tropical Storm Warning:** Escambia, Santa Rosa, and Okaloosa Counties
- Tides will be running 1-3' above normal along the Gulf Coast. Coastal Flood Advisories/Statements are in effect through Sunday evening for the entire Gulf Coast.
- An **Areal Flood Watch** is in effect for much of the Peninsula.
 - **Flood Watch:** Levy, Citrus, Hernando, Pasco, Sumter, Seminole, Orange, Brevard, Osceola, Polk, Hillsborough, Pinellas, Manatee, Sarasota, Hardee, DeSoto, Highlands, Okeechobee, Indian River, St. Lucie, Martin, Palm Beach, Glades, Hendry, Charlotte, Lee, Collier, Broward, Miami-Dade, and Mainland Monroe.
- A **Flash Flood Watch** is in effect for much of the Panhandle, Big Bend, and interior Northeast Florida.
 - **Flash Flood Watch:** Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Washington, Holmes, Calhoun, Jackson, Franklin, Calhoun, Gadsden, Leon, Wakulla, Jefferson, Taylor, Dixie, Lafayette, Madison, Hamilton, Suwannee, Columbia, Gilchrist, Alachua, and Marion.
- A widespread 2-5" of rain is forecast to fall across North and Central Florida. This will come from multiple rounds of rainfall over the next 48 hours. Rain bands and training thunderstorms will result locally higher amounts, perhaps up to 12". This is most likely to occur in the Big Bend and Nature Coast, from Panama City to Tampa.
- **This will result in a flash flood threat that will develop tonight and continue through the day on Sunday.**
- Minor river flooding is forecast along parts of Horse Creek, the Manatee River, and the Little Manatee River over the next few days. Additional rivers are likely to see rises as well.
- Isolated tornadoes will be possible in some of the outer bands, and the Storm Prediction Center has outlined West Central Florida in a Slight Risk for severe weather (level 2 of 5) tonight, and a Marginal Risk (level 1 of 5) in the Panhandle on Sunday.
- Dangerous rip currents and beach erosion are expected at Gulf Coast beaches. Breaking waves of 8-11' are forecast in the western Panhandle and 4-8' across the rest of the Gulf Coast.

The next briefing packet will be sent out Sunday morning with the 11 AM ET advisory. For the latest information on the tropics, please visit the National Hurricane Center website at

www.hurricanes.gov.



TROPICAL UPDATE



Created by:

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State Meteorological Support Unit

Florida Division of Emergency Management

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