



Tropical Update



11:30 AM EDT

Wednesday, September 21, 2022

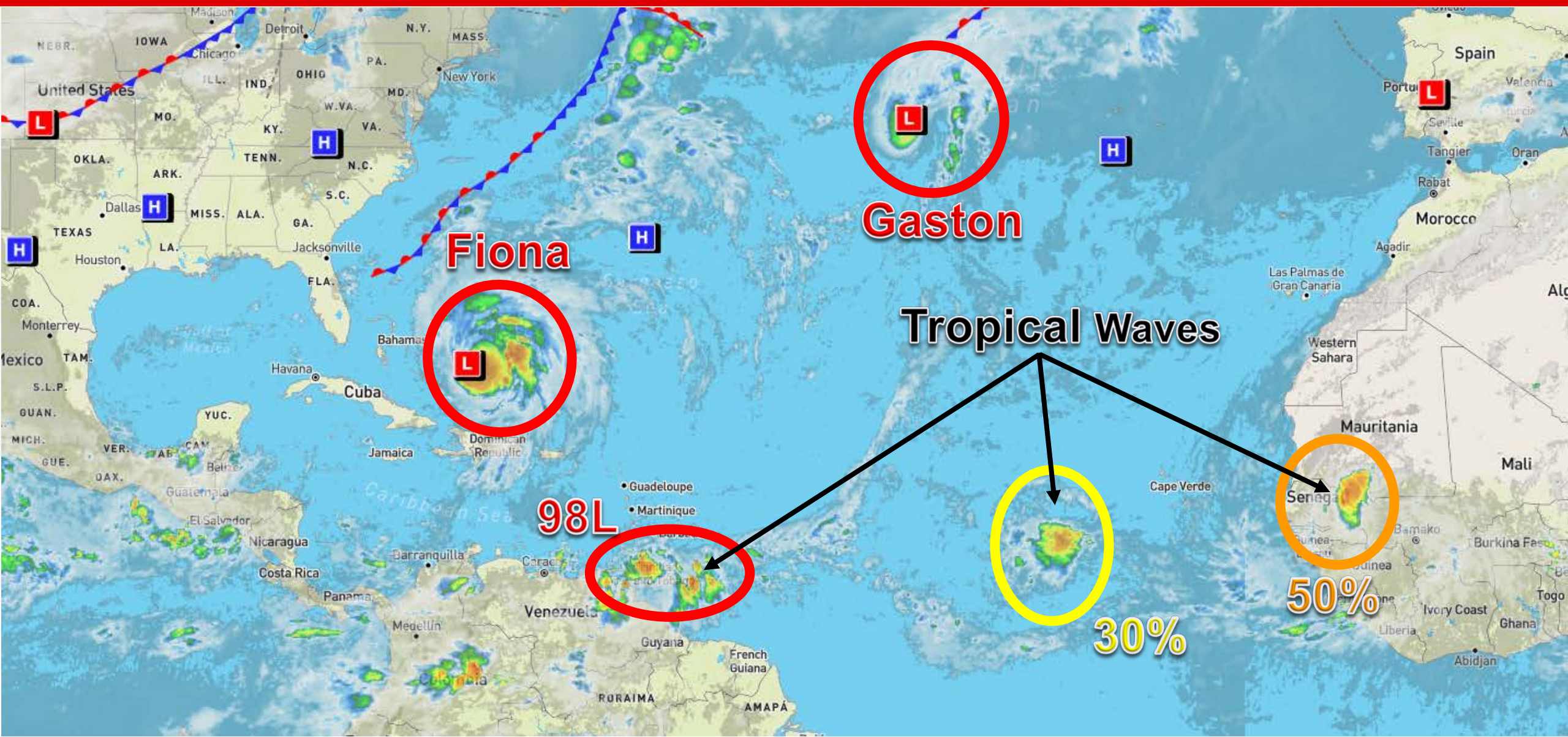
Major Hurricane Fiona, Tropical Storm Gaston, Invest 98L (90%), Western Africa Tropical Wave (50%), & East-Central Atlantic Tropical Wave(30%)

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

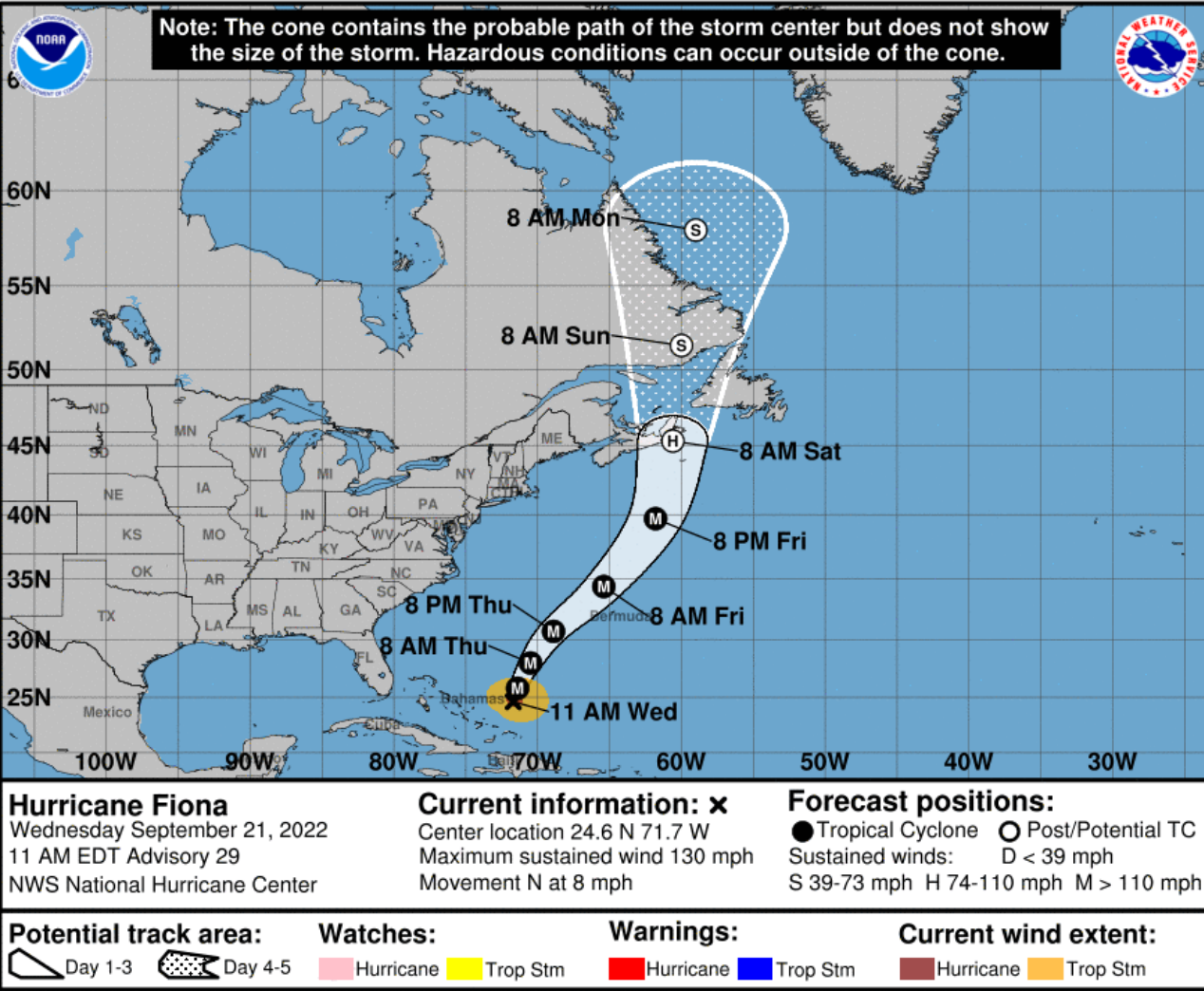
Chance of development: None Low Medium High





Forecast Cone

Major Hurricane Fiona ([LINK](#))



- **Location:** 675 miles southwest of Bermuda;
540 miles ESE Miami, FL
- **Maximum Sustained Winds:** 130 mph, Category 4
- **Current Movement:** N at 8 mph
- **FL Watches/Warnings:** None

A general northward motion is expected to continue through this evening. A turn toward the north-northeast with an increase in forward speed is expected by Thursday. On the forecast track, the center of Fiona will continue to move away from the Turks and Caicos today, approach Bermuda late on Thursday and approach Atlantic Canada late Friday. Some additional strengthening is forecast through tonight, with some fluctuations in intensity possible on Thursday. Fiona is forecast to be a hurricane-force cyclone through Saturday. *Fiona poses no direct threat to Florida over the next 5 days.*

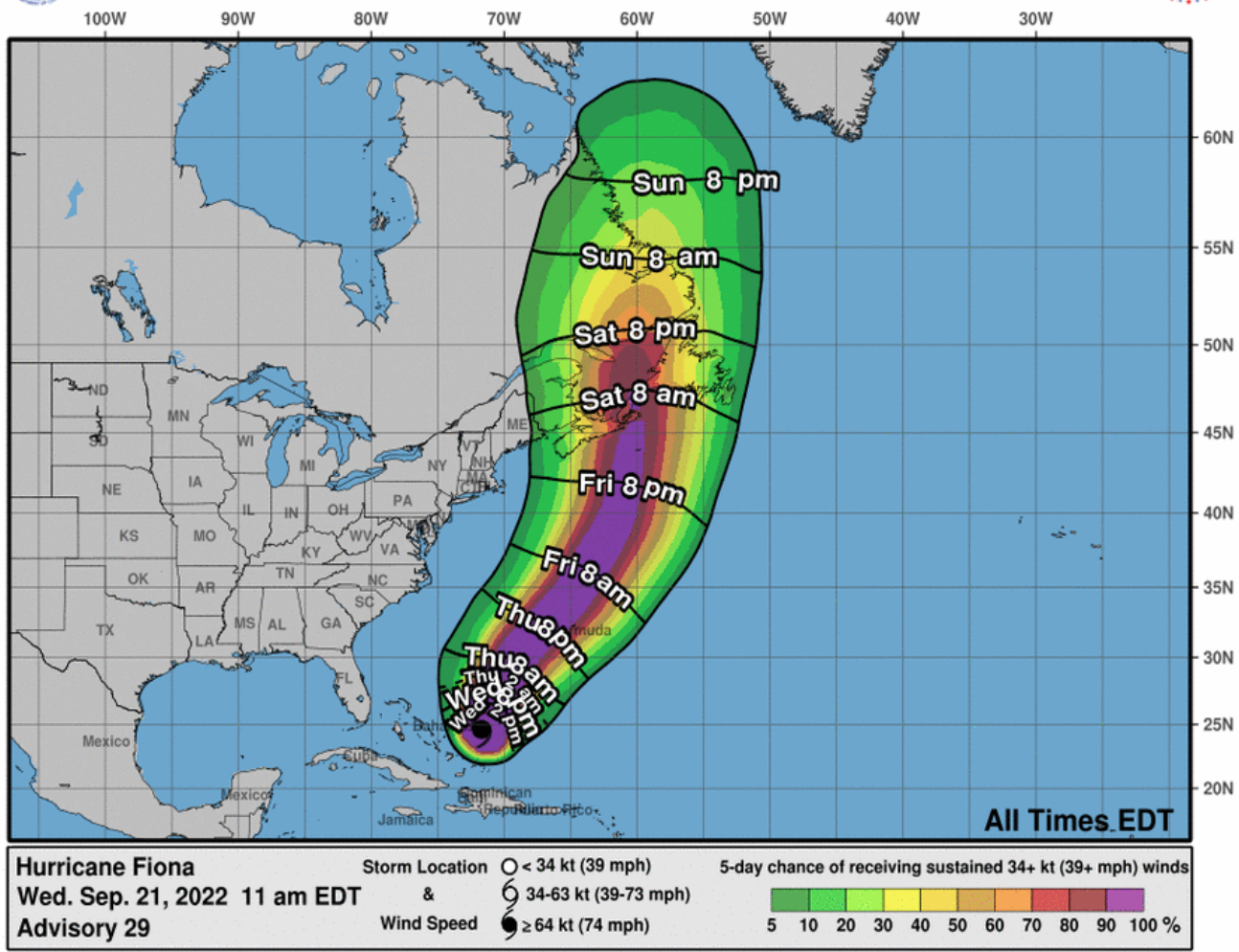


Wind Probabilities & Satellite Imagery

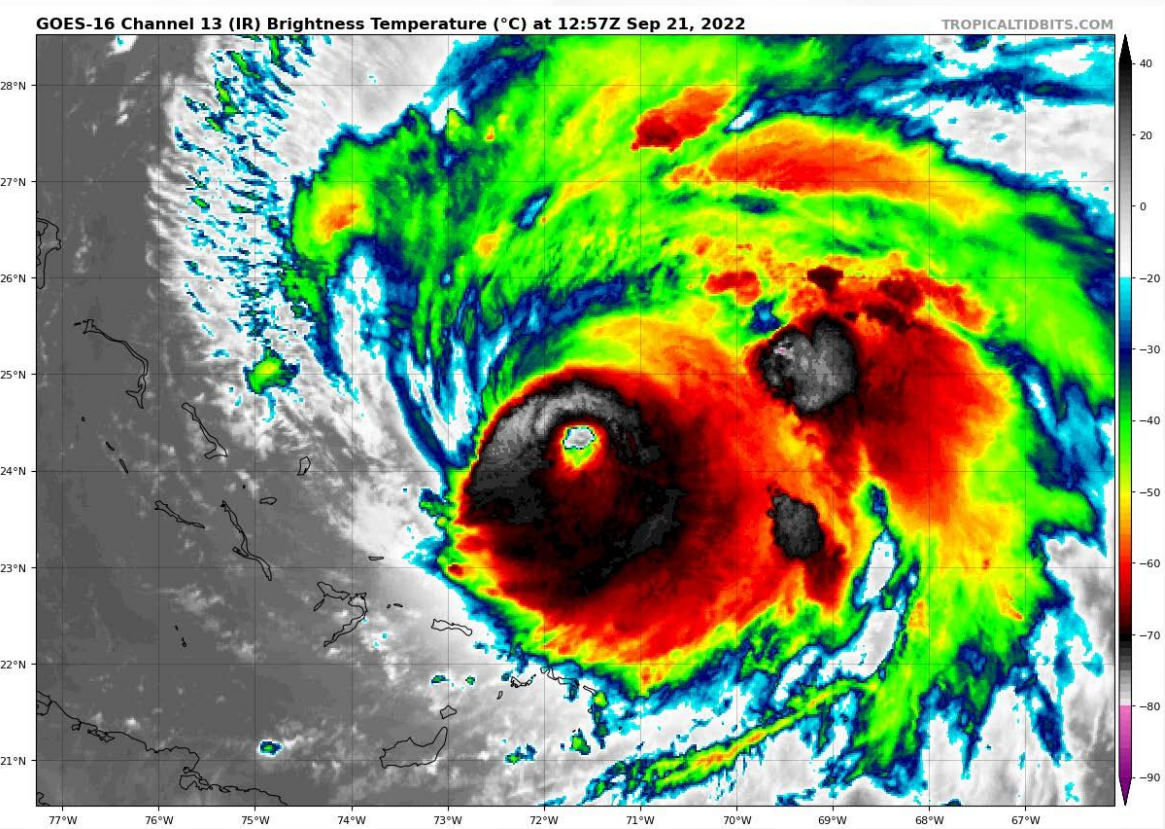
Major Hurricane Fiona ([LINK](#))



Most Likely Arrival Time of Tropical-Storm-Force Winds



Fiona has an impressive presentation on satellite images, with a well-defined eye. Tropical storm conditions are not expected for the continental U.S.





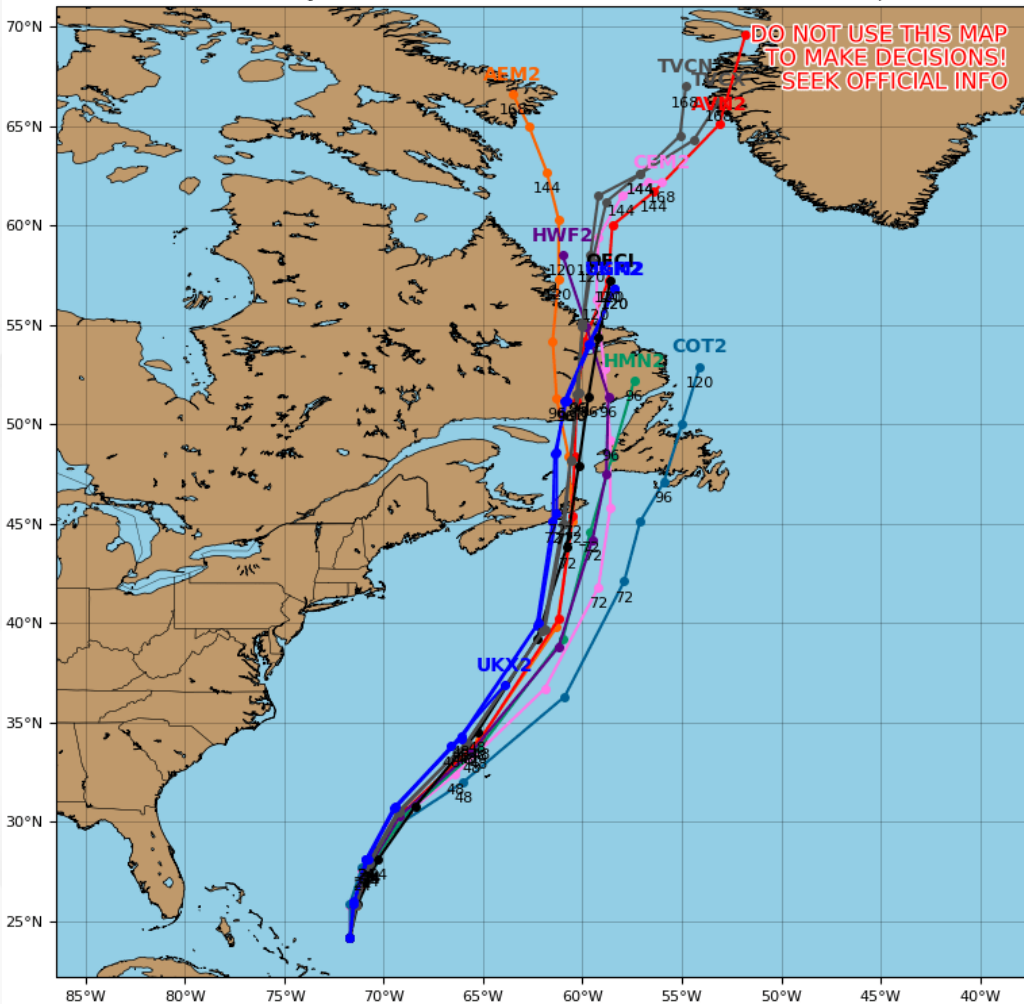
Model Forecasts – Next 5 Days

Major Hurricane Fiona

Hurricane FIONA Model Track Guidance

Initialized at 12z Sep 21 2022

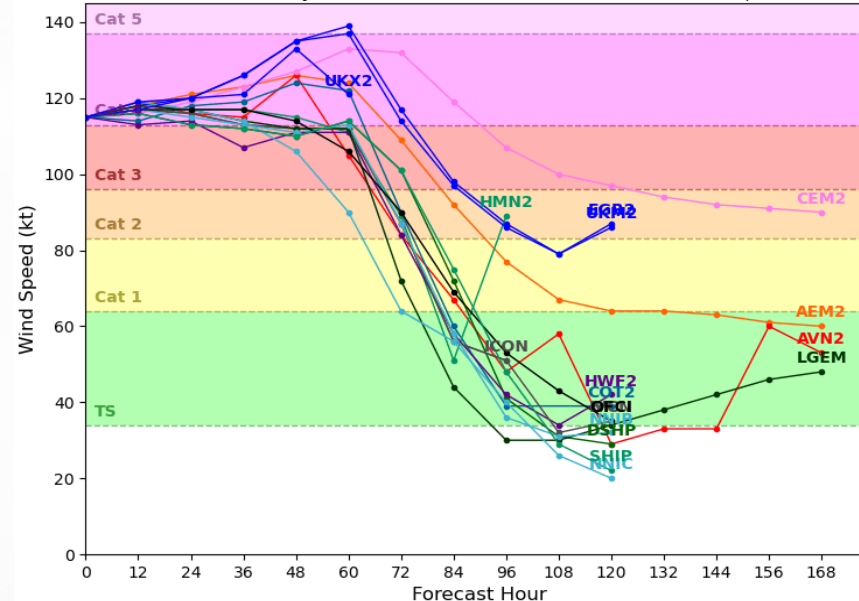
Levi Cowan - tropicaltidbits.com



Hurricane FIONA Model Intensity Guidance

Initialized at 12z Sep 21 2022

Levi Cowan - tropicaltidbits.com



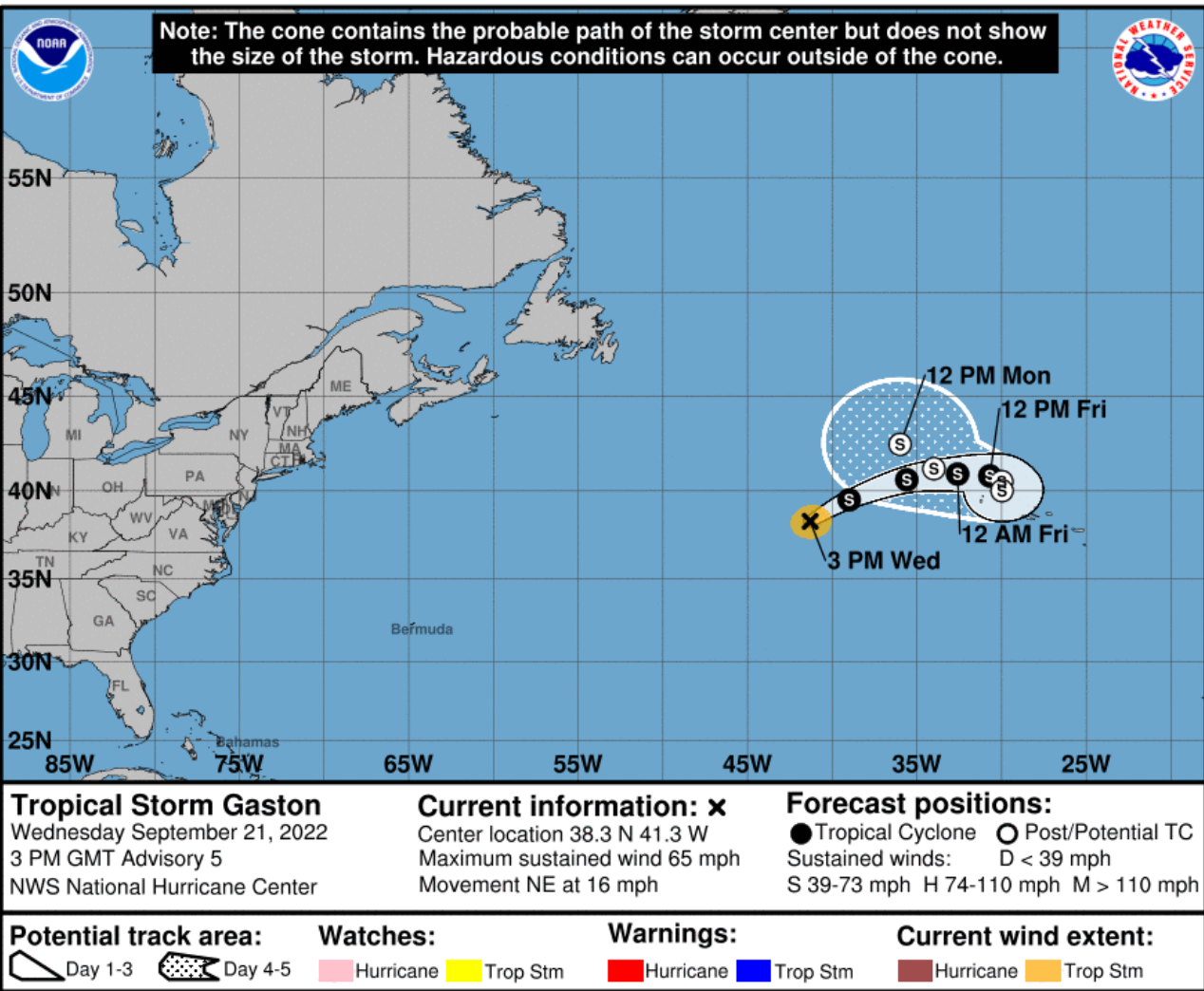
Computer models remain in good agreement that Fiona will continue to move northward to north-northeastward along the western side of an area of high pressure during the next day or so. A gradual acceleration is expected northeastward to north-northeastward over the next 3-5 days.

Fiona will continue to move over warm ocean waters and remain within a moist air mass; therefore, some additional strengthening could occur. Computer models are in good agreement that Fiona will remain at hurricane-force through the next 3-4 days, even after transitioning into an extratropical cyclone.

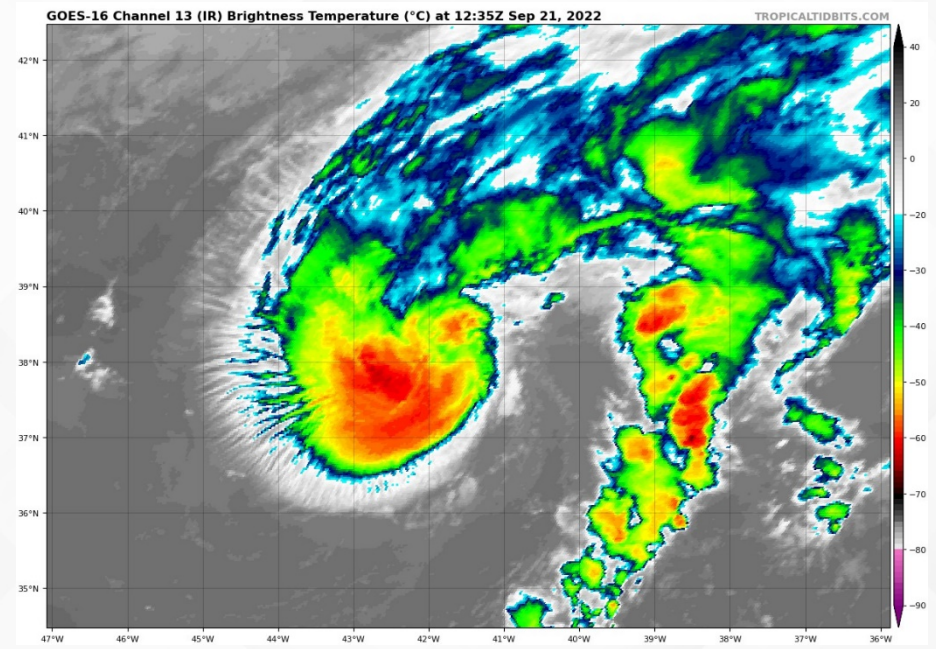


Forecast Cone and Satellite Imagery

Tropical Storm Gaston ([LINK](#))



- **Location:** 775 miles west of the Azores
 - **Maximum Sustained Winds:** 65 mph
 - **Current Movement:** NE at 16 mph
 - **FL Watches/Warnings:** None
- A turn toward the east is expected on Thursday, and Gaston is expected to stall near the western Azores late this week. Some additional strengthening is possible today, but gradual weakening should begin on Thursday.





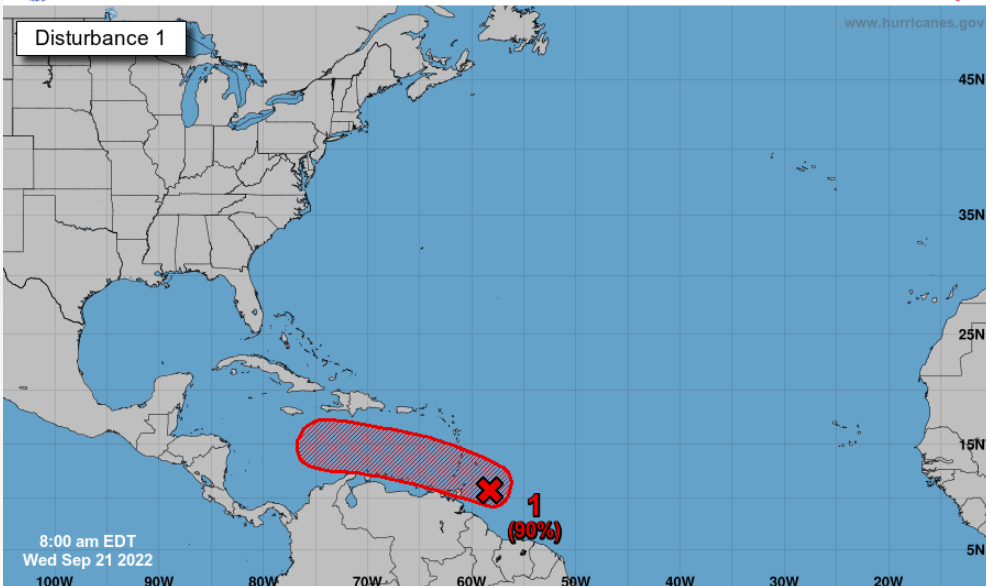
Tropical Weather Outlook

Disturbance 1 – Invest 98L ([LINK](#))

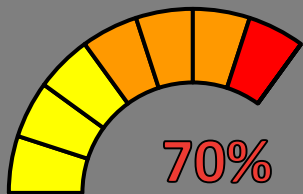


Five-Day Graphical Tropical Weather Outlook

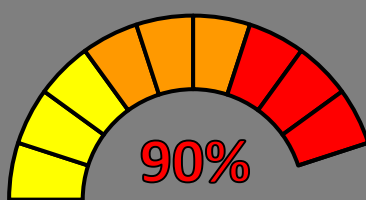
National Hurricane Center Miami, Florida



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

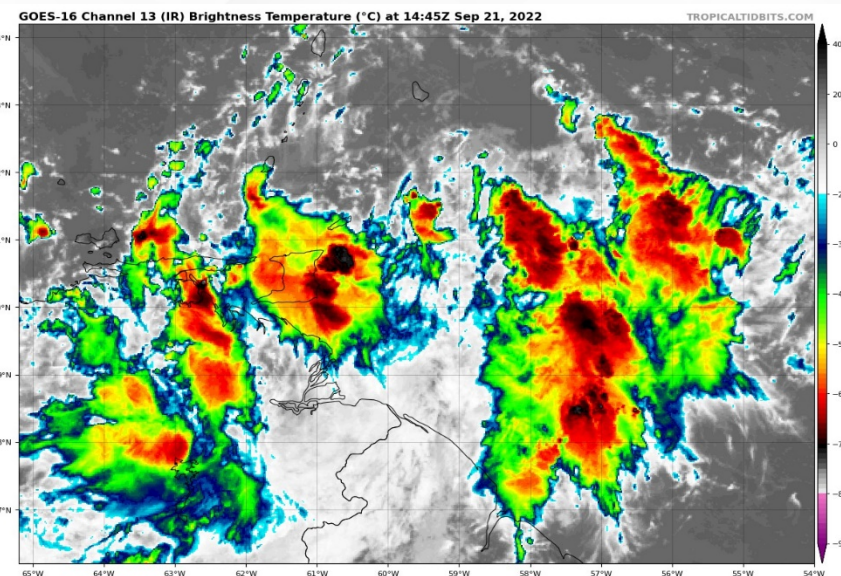


48 Hour Formation



5 Day Formation

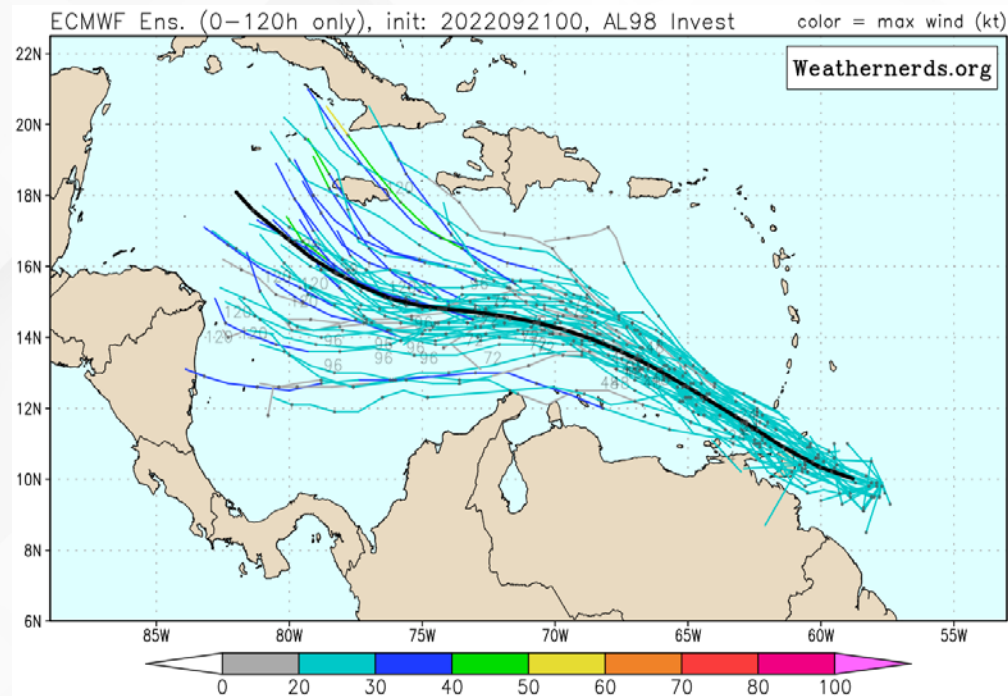
A tropical wave is producing shower and thunderstorm activity a couple hundred miles east of the southern Windward Islands. The system continues to show signs of organization, and it will likely become a tropical depression within the next couple of days. The disturbance is forecast to move west-northwestward across the southern Windward Islands today and then move toward the central Caribbean Sea later this week. *This system poses no threat to Florida within the next 5 days, but should be monitored.*



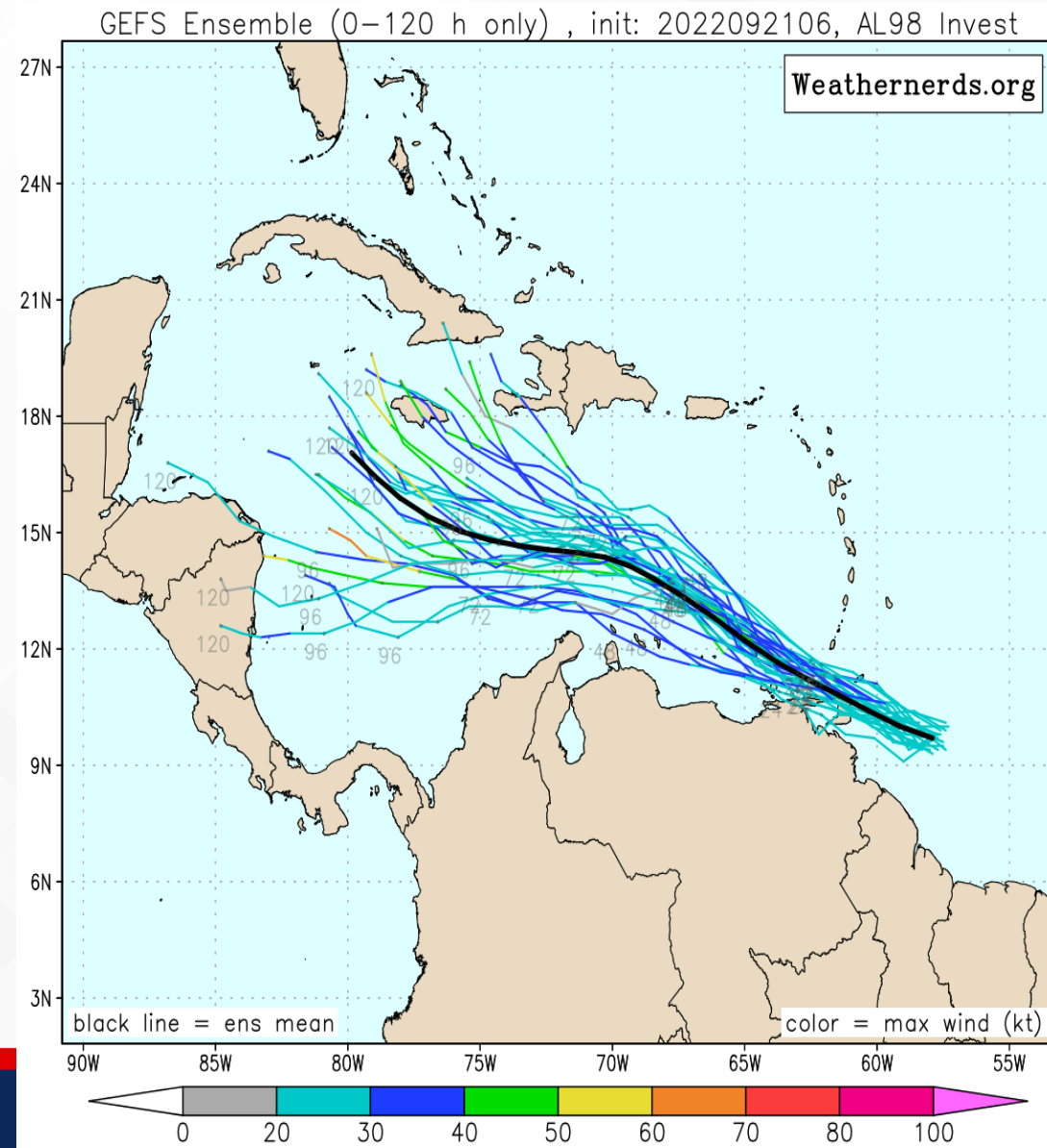


Model Forecasts – Next 5 Days

Invest 98L



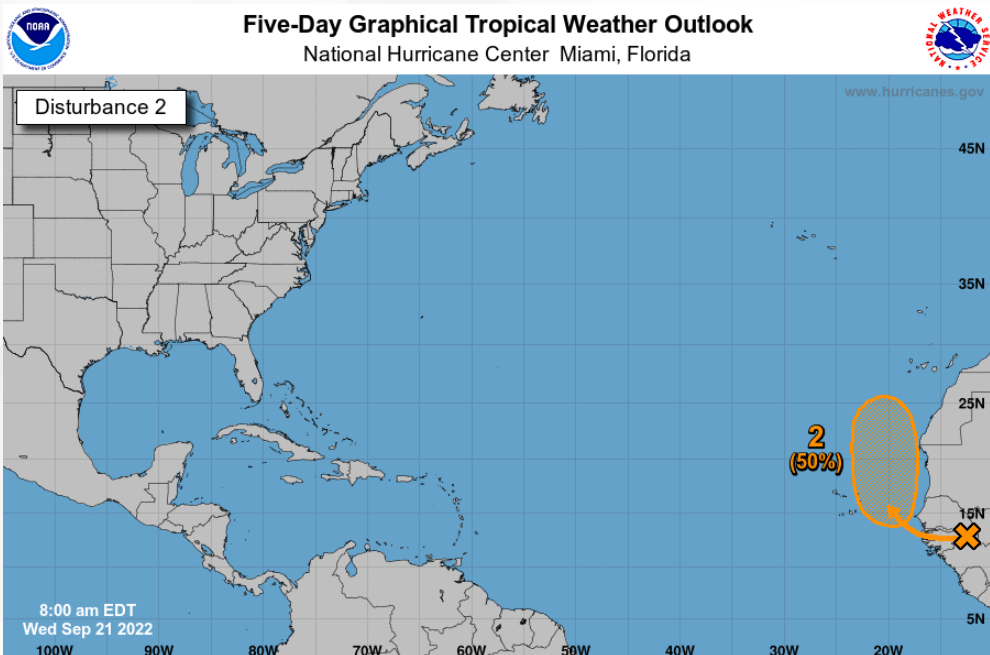
Computer models are in decent agreement that 98L will continue to organize over the Caribbean Sea as it moves generally west-northwestward over the next 5 days. However, there is greater disagreement on the track of 98L later in the forecast period, which is typical for newly formed systems that don't yet have a closed circulation. A general west-northwestward motion with a gradual increase in intensity through the Caribbean can be expected, but there is a larger range of possibilities after about 5 days (once it reaches the central to western Caribbean) and depends on the eventual steering currents in the western Atlantic, which can be prone to errors beyond 5-7 days. It is possible that this system could emerge into the Gulf of Mexico or Florida Straits next week. A hurricane hunter aircraft is scheduled to investigate the system this evening.





Tropical Weather Outlook

Disturbance 2 – Western Africa Tropical Wave ([LINK](#))

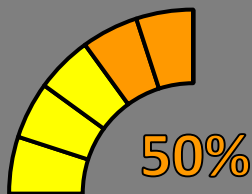


Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane
 Post-Tropical Cyclone or Remnants



20%

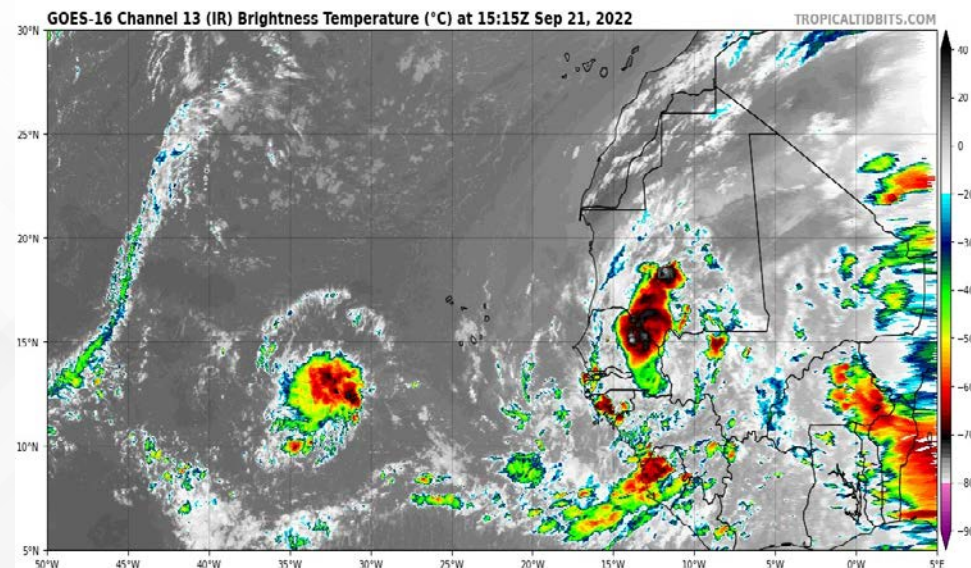
48 Hour Formation



50%

5 Day Formation

A tropical wave is forecast to move off the west coast of Africa on Thursday. Thereafter, environmental conditions are forecast to be conducive for some development, and a tropical depression could form this weekend while the system moves slowly northward, between west Africa and the Cabo Verde Islands. *This system poses no threat to Florida.*

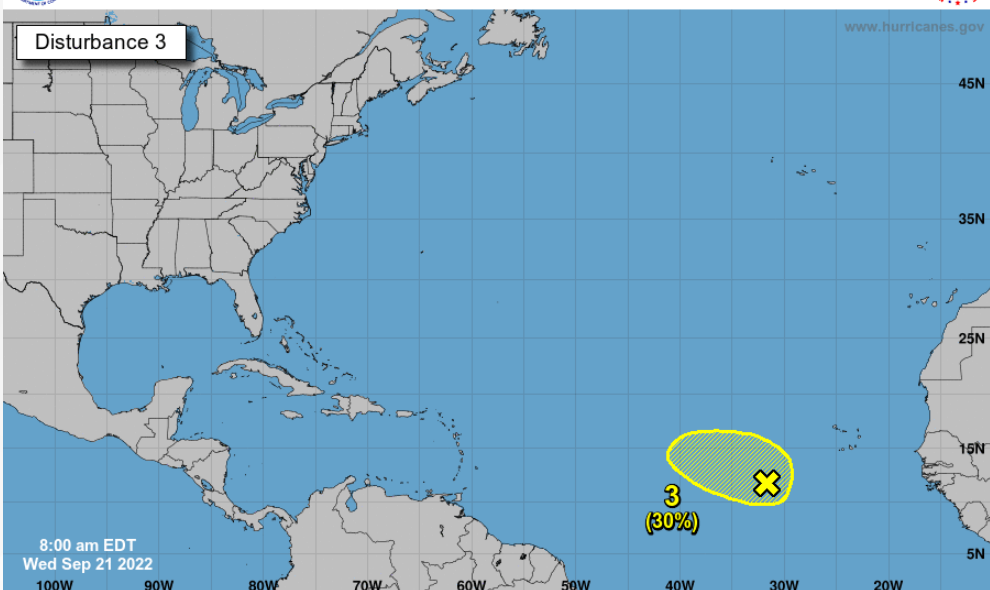




Tropical Weather Outlook

Disturbance 3 – East-Central Tropical Wave ([LINK](#))

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



20%

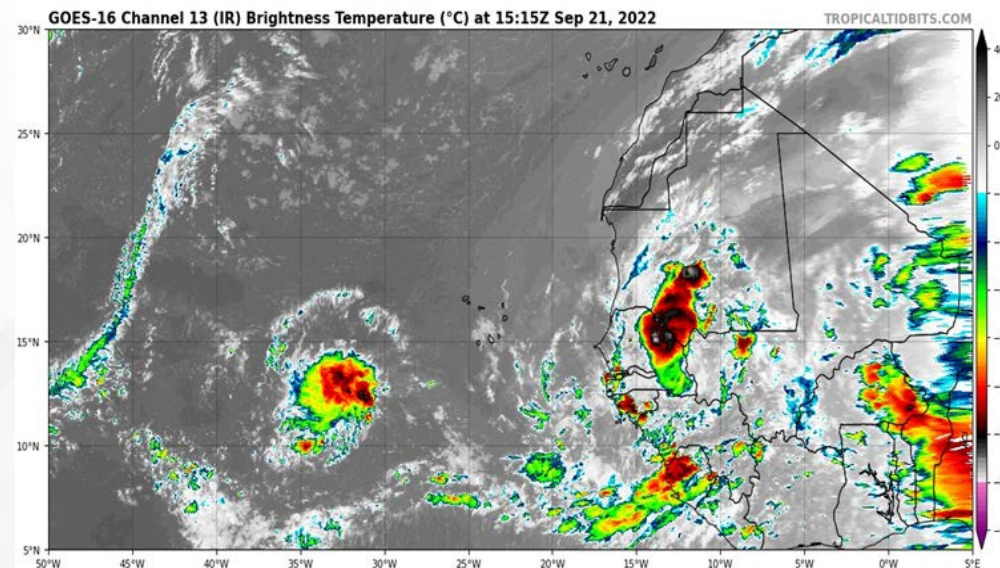
48 Hour Formation



30%

5 Day Formation

Shower and thunderstorm activity has increased in association with a tropical wave located several hundred miles west-southwest of the Cabo Verde Islands. Despite a dry environment, slow development of this system is possible over the next several days as it moves northwestward and then westward over the tropical Atlantic. *This system poses no threat to Florida.*





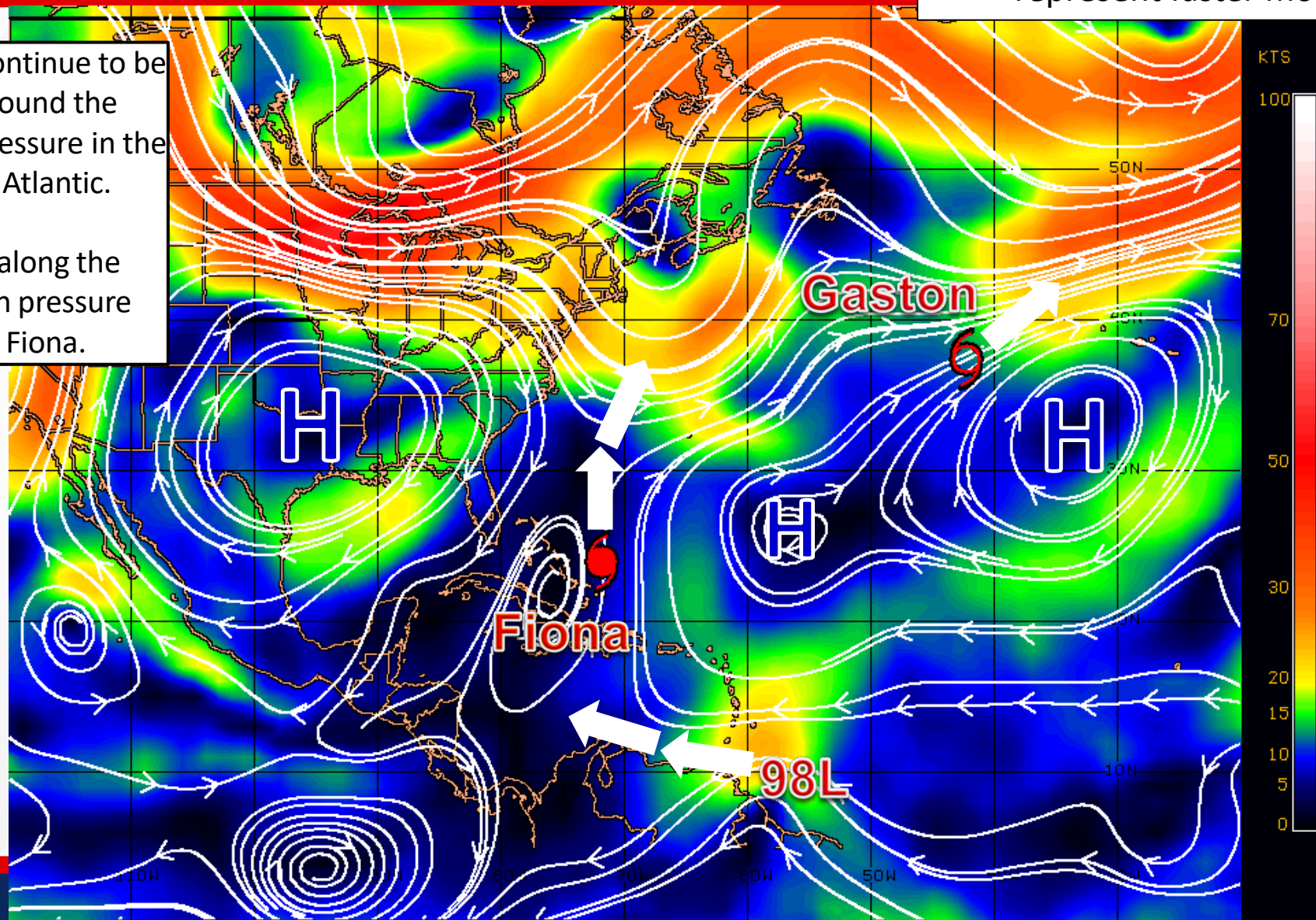
Steering Currents

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.

Fiona and Gaston will continue to be pulled northward around the western edge of high pressure in the eastern and central Atlantic.

Invest 98L will track along the southern edge of high pressure currently steering Fiona.



Fast Moving Storm

Fast Moving Storm

Typical Moving Storm

Slow Moving Storm

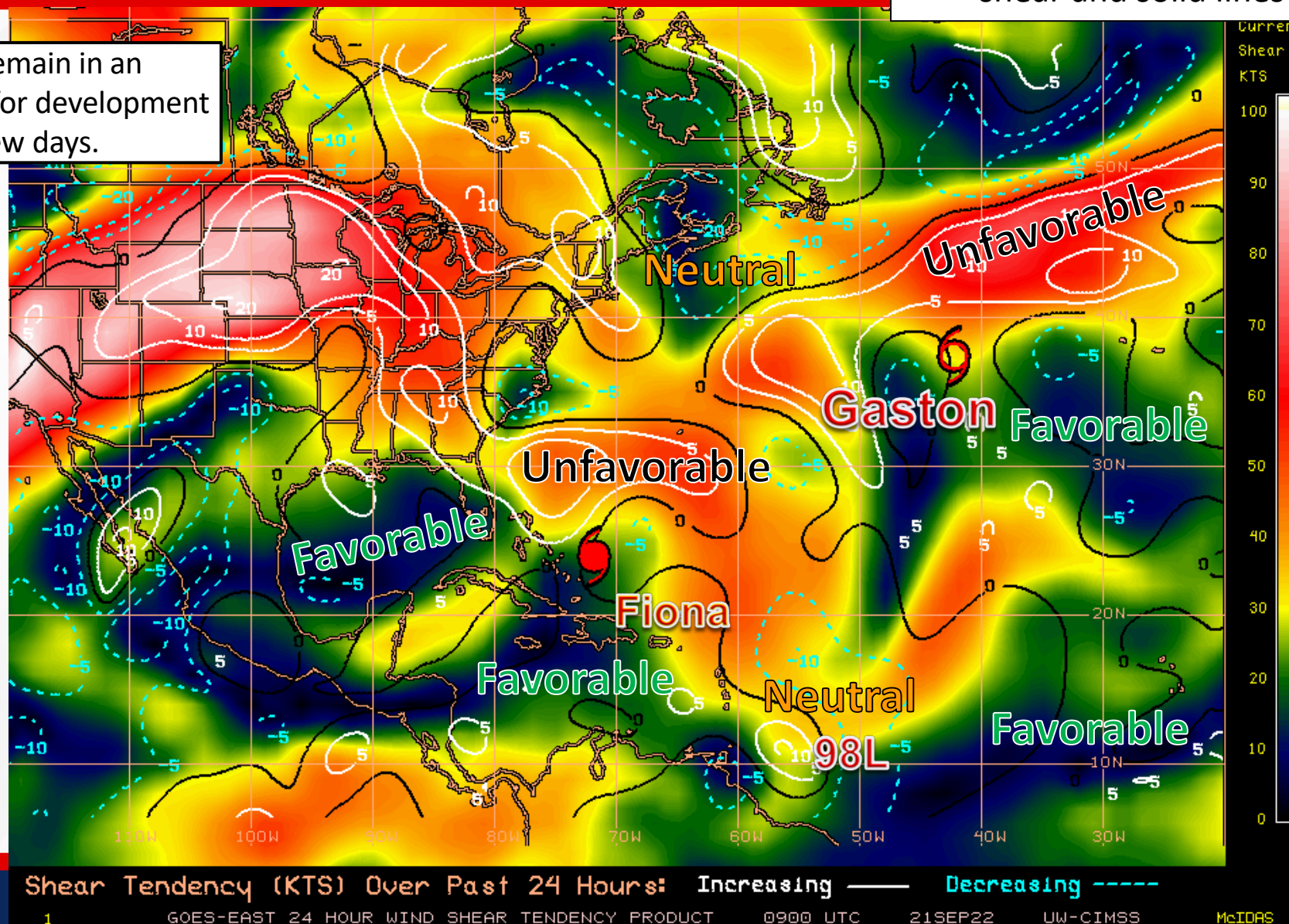


Wind Shear

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).

All 3 systems will remain in an environment favorable for development over the next few days.



HIGH Shear
(Unfavorable)

HIGH Shear
(Unfavorable)

MODERATE
Shear
(Neutral)

LOW Shear
(Favorable)



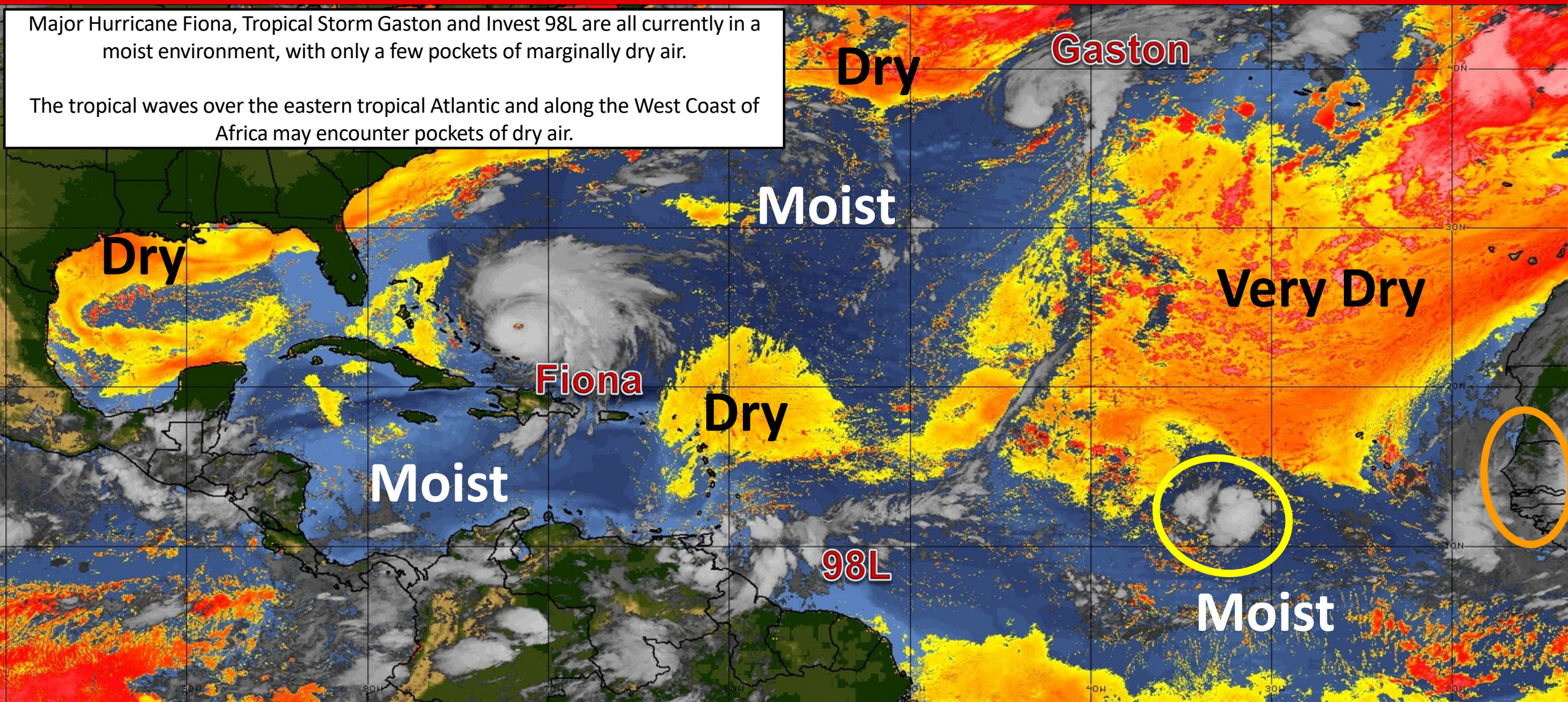
Dry Air & Saharan Dust

Is the environment favorable for the system?

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

Major Hurricane Fiona, Tropical Storm Gaston and Invest 98L are all currently in a moist environment, with only a few pockets of marginally dry air.

The tropical waves over the eastern tropical Atlantic and along the West Coast of Africa may encounter pockets of dry air.



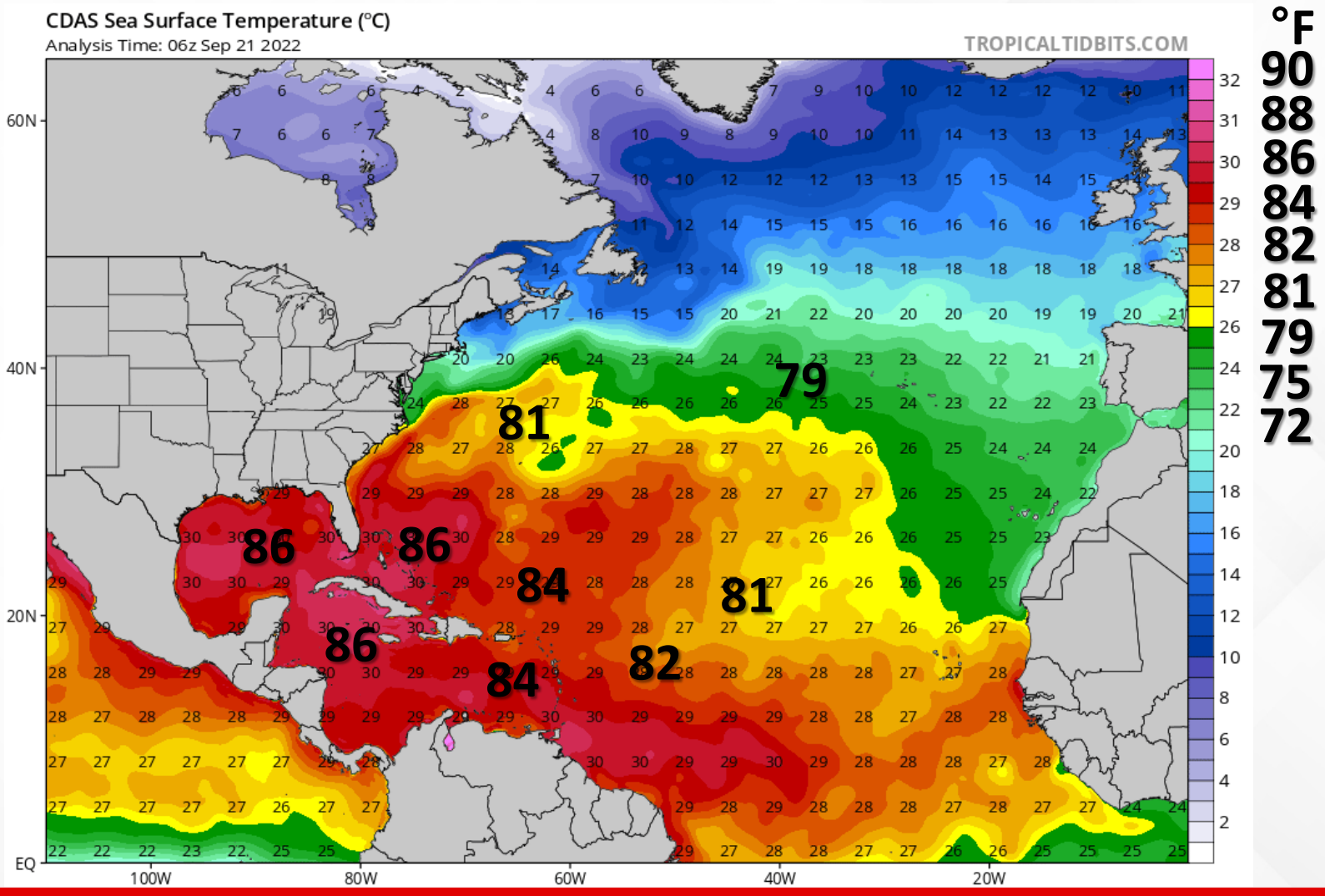
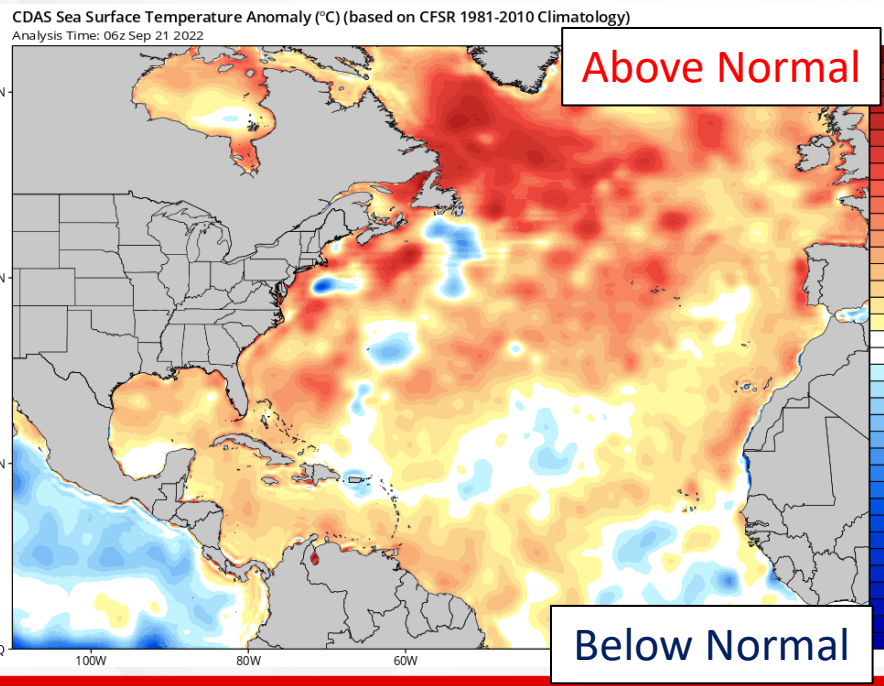
LESS <----- DRY AIR (LOW/MID-LEVEL) AND/OR DUSTY SAL AIRMASS -----> MORE



Sea Surface Temperatures & Anomalies

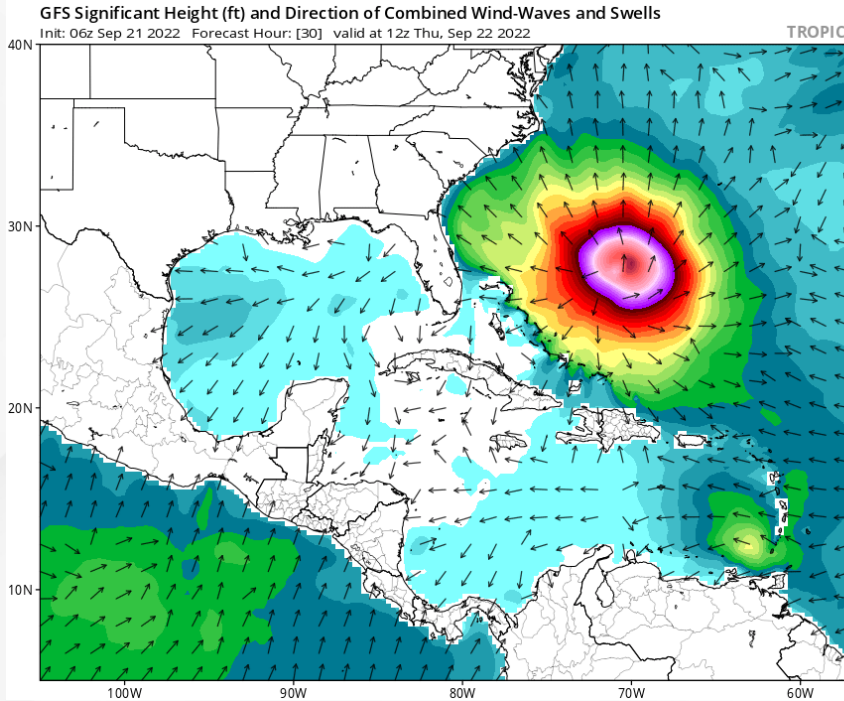
Is the ocean favorable for the system?

Water temperatures are warm enough to support tropical development across the tropical Atlantic. Water temperatures are running above normal over the Gulf of Mexico, Caribbean Sea and western Atlantic Ocean.

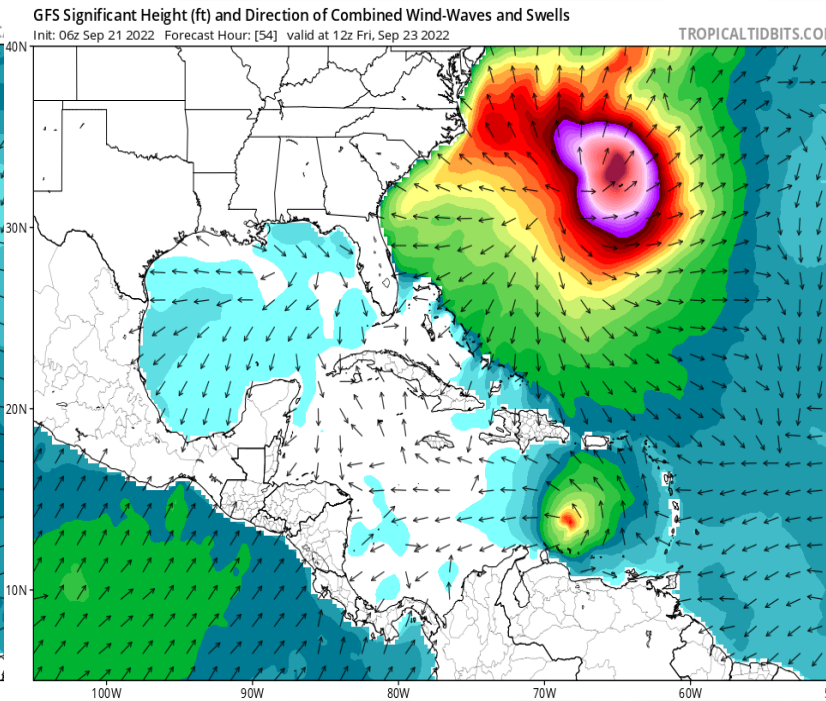




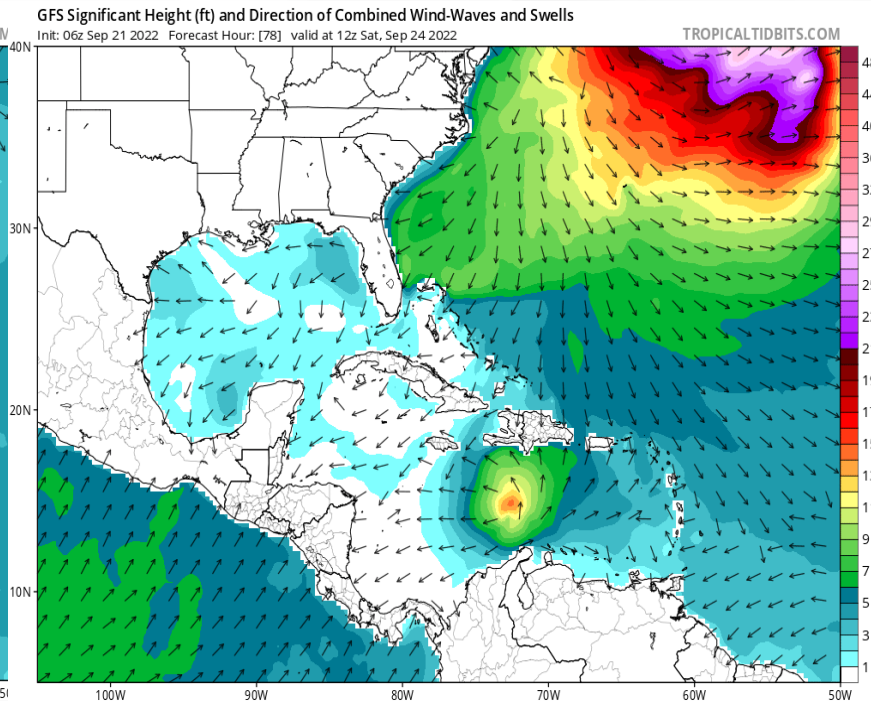
Forecast Wave Heights



Thursday (9/22)



Friday (9/23)



Saturday (9/24)

As Hurricane Fiona continues to move north-northeastward over the Atlantic, long-period ocean swells and **rip current risks** will increase along the Florida East Coast into the weekend. Breaking waves at the beach could be as high as 5-7' from Palm Beach northward.



Summary

Major Hurricane Fiona:

- At 11:00 AM Wednesday, Fiona is located about 675 miles southwest of Bermuda and moving northward at 8 mph.
- This general motion is expected to continue through this evening, and a turn toward the north-northeast with an increase in forward speed is expected by Thursday.
- Fiona will approach Bermuda late on Thursday and approach Atlantic Canada late Friday.
- Maximum sustained winds are near 130 mph, making Fiona a Category 4 hurricane. Some additional strengthening is forecast through tonight, with some fluctuations in intensity possible on Thursday.

Tropical Storm Gaston:

- At 11:00 AM Wednesday, Gaston is located about 775 miles west of the Azores and moving northeastward at 16 mph.
- A turn to the east is expected on Thursday, and Gaston is expected to stall near the western Azores late this week.
- Maximum sustained winds are near 65 mph, and some strengthening is possible today. Gradual weakening should begin on Thursday as Gaston enters the cooler waters of the North Atlantic.

Invest 98L:

- A tropical wave is producing shower and thunderstorm activity a couple hundred miles east of the southern Windward Islands.
- The system continues to show signs of organization, and it will likely become a tropical depression within the next couple of days.
- The disturbance is forecast to move west-northwestward across the southern Windward Islands today and then move toward the central Caribbean Sea later this week.

Western Africa Tropical Wave:

- A tropical wave is forecast to move off the west coast of Africa on Thursday.
- Thereafter, environmental conditions are forecast to be conducive for some development, and a tropical depression could form this weekend while the system moves slowly northward, between west Africa and the Cabo Verde Islands.

East-Central Atlantic Tropical Wave:

- Shower and thunderstorm activity has increased in association with a tropical wave located several hundred miles west-southwest of the Cabo Verde Islands.
- Despite a dry environment, slow development of this system is possible over the next several days as it moves northwestward and then westward over the tropical Atlantic.

Florida Outlook:

- Fiona and Gaston pose no direct threat to Florida and there are no wind or surge watches in effect for Florida.
- However, ocean swells from Hurricane Fiona will deteriorate beach and boating conditions along Florida's East Coast into the weekend.
- Invest 98L poses no threat to Florida over the next 5 days, but should continue to be monitored as the system progresses across the eastern and central Caribbean Sea.
- The next names on the list are Hermine and Ian.

The next briefing packet will be issued Thursday. For the latest information, please visit the [National Hurricane Center website](#).



Tropical Update



Created by:

Caitlyn Gillespie, Deputy State Meteorologist

Caitlyn.Gillespie@em.myflorida.com

State Meteorological Support Unit

Florida Division of Emergency Management

Users wishing to subscribe (approval pending) to this distribution list, register at:

https://public.govdelivery.com/accounts/FLDEM/subscriber/new?topic_id=SERT_Met_Tropics.

Other reports available for subscription are available at:

<https://public.govdelivery.com/accounts/FLDEM/subscriber/new?preferences=true>