



# Tropical Update



11:30 AM EDT

Thursday, November 16, 2023

**Invest 98L (W-Central Caribbean Sea 60%) &  
Non-Tropical Low (SE Coast of U.S.; 10%)**

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).



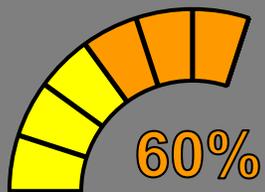
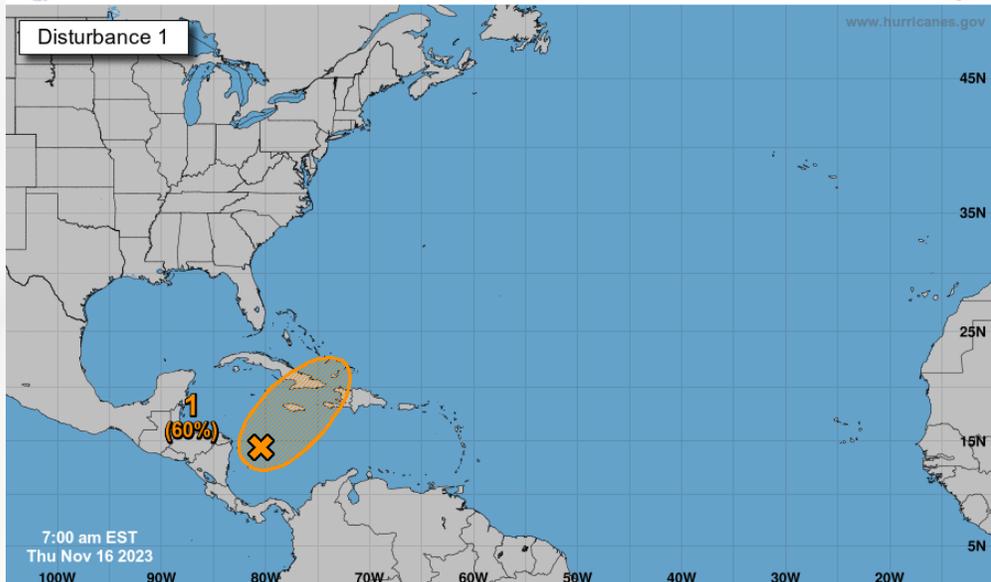
# Tropical Weather Outlook

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

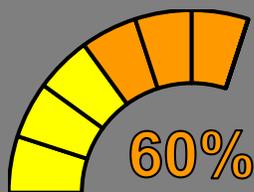


### Seven-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



48 Hour Formation



7 Day Formation

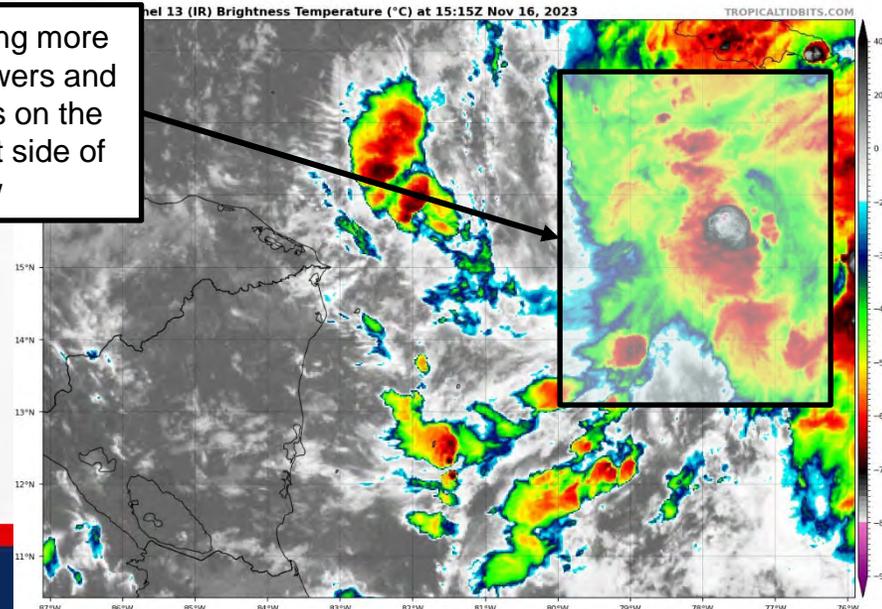
Showers and thunderstorms associated with a broad area of low pressure (Invest 98L) located over the west-central Caribbean Sea have become a little better organized since yesterday. Environmental conditions appear conducive for some additional development, and a tropical depression could form over the next day or two while the low moves northeastward toward Jamaica, Haiti, and eastern Cuba. An Air Force Reserve reconnaissance aircraft is scheduled to investigate the system this afternoon.

*This system poses no direct threat to Florida at this time but will continue to be monitored throughout the week.*

\* Formation chance through 48 hours...**medium...60%**.

\* Formation chance through 7 days...**medium...60%**.

System showing more organized showers and thunderstorms on the east-northeast side of the low





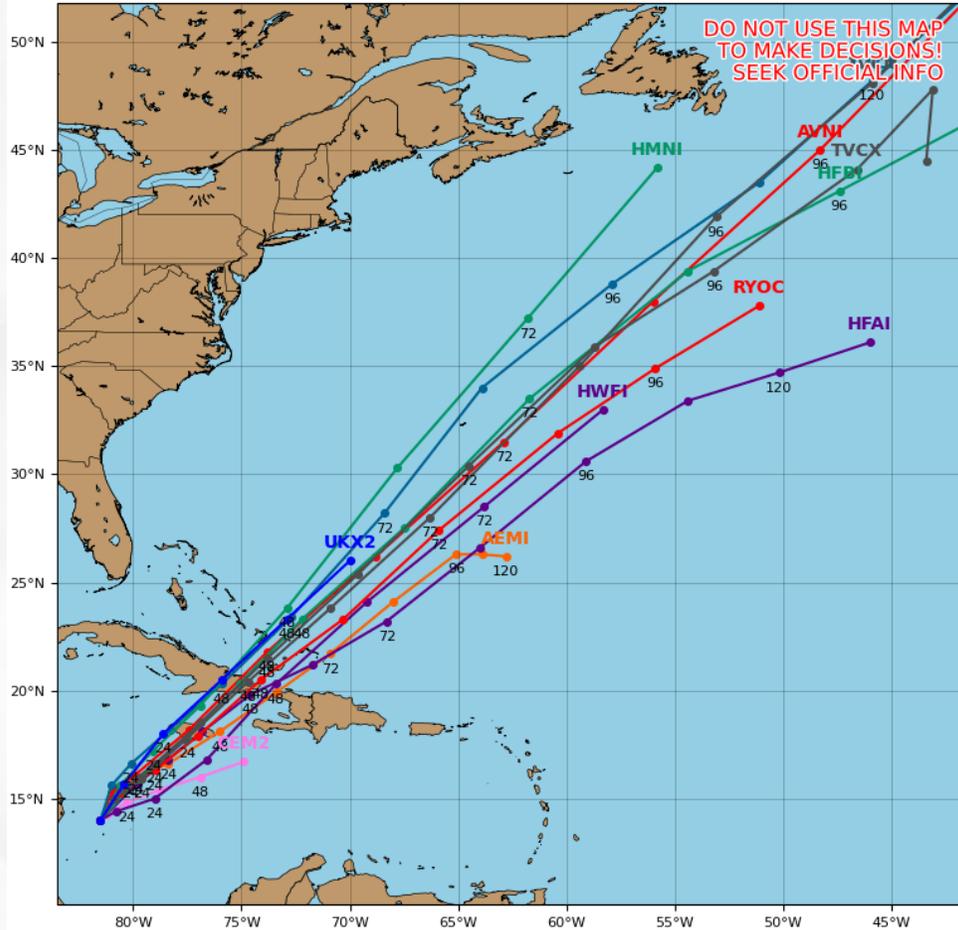
# Model Forecasts – Next 5-7 Days

## Invest 98L

### Invest 98L Model Track Guidance

Initialized at 12z Nov 16 2023

Levi Cowan - tropicaltidbits.com

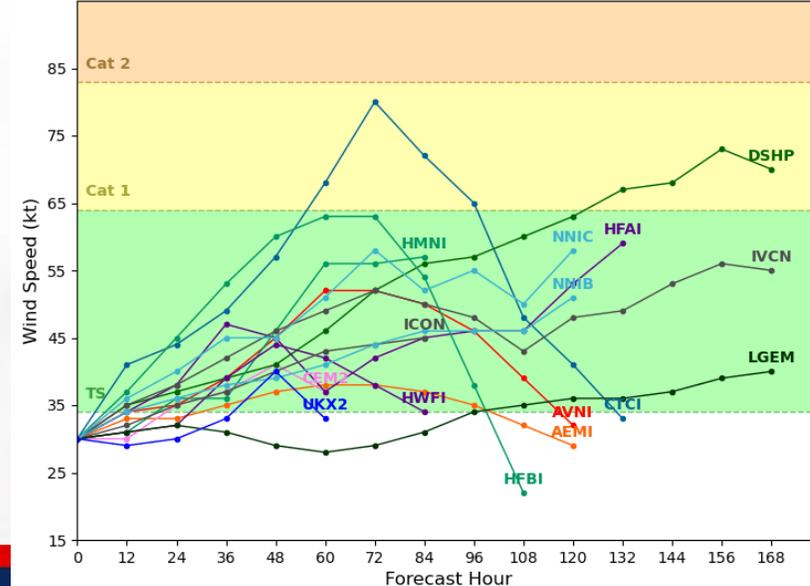


Models are beginning to show much better agreement regarding the area of low pressure over the West-Central Caribbean Sea as it continues to show better organization. Computer model guidance is decent agreement that Invest 98L will move northeastward towards the Islands and into the Western Atlantic over the next 3-5 days. The system will likely increase in forward speed in the next 48-72 hours as it is swept up by a strong frontal pattern present over the eastern United States. Larger forecast model discrepancies continue to reside within the system's eventual strength. Models indicate that the system will likely remain weaker, possibly developing into a tropical depression over the next day or so. The forecast details will continue to come into better agreement as shower and thunderstorm activity becomes more defined during the next few days.

### Invest 98L Model Intensity Guidance

Initialized at 12z Nov 16 2023

Levi Cowan - tropicaltidbits.com



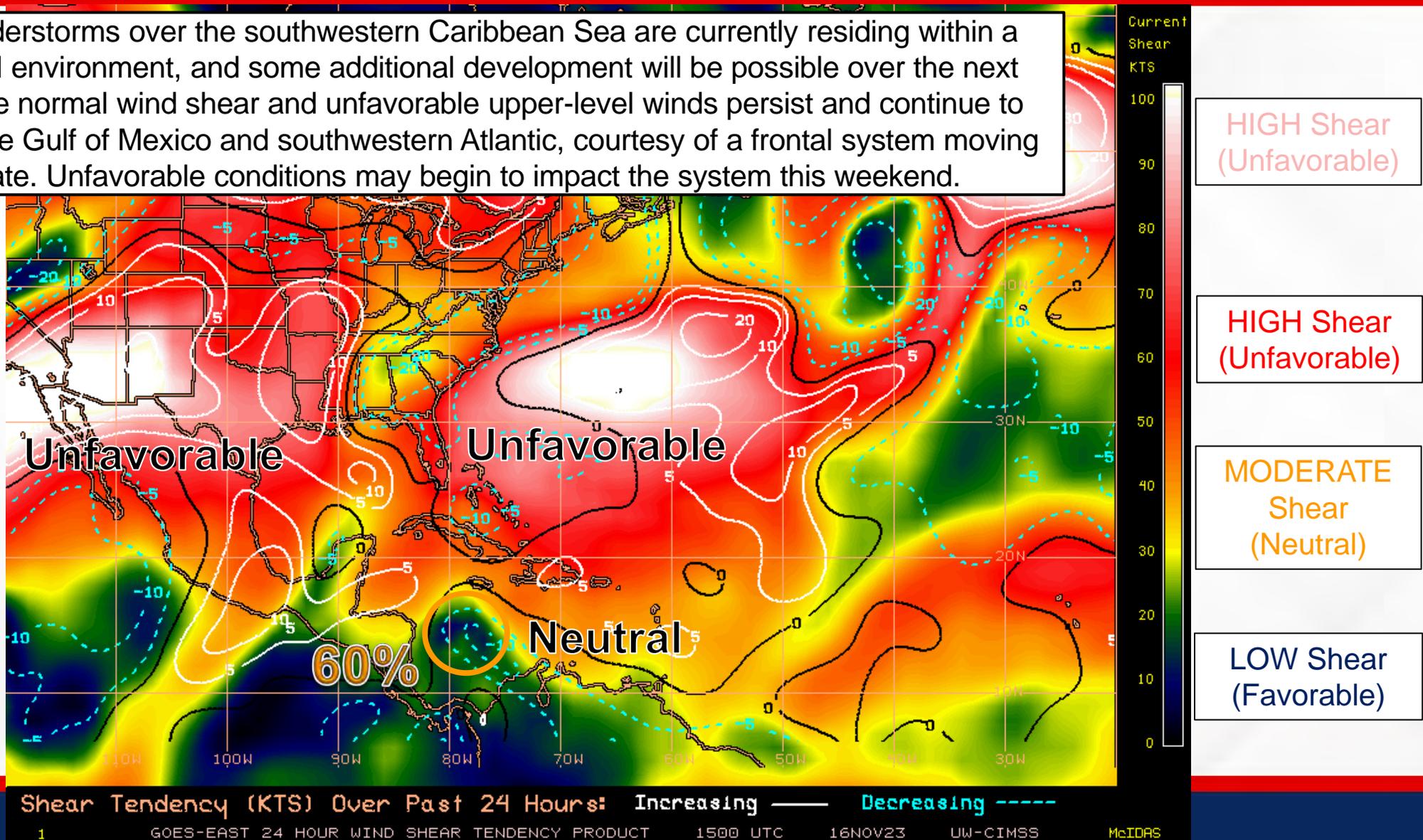


# Wind Shear

## 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).

Showers and thunderstorms over the southwestern Caribbean Sea are currently residing within a favorable to neutral environment, and some additional development will be possible over the next several days. Above normal wind shear and unfavorable upper-level winds persist and continue to strengthen across the Gulf of Mexico and southwestern Atlantic, courtesy of a frontal system moving through the state. Unfavorable conditions may begin to impact the system this weekend.



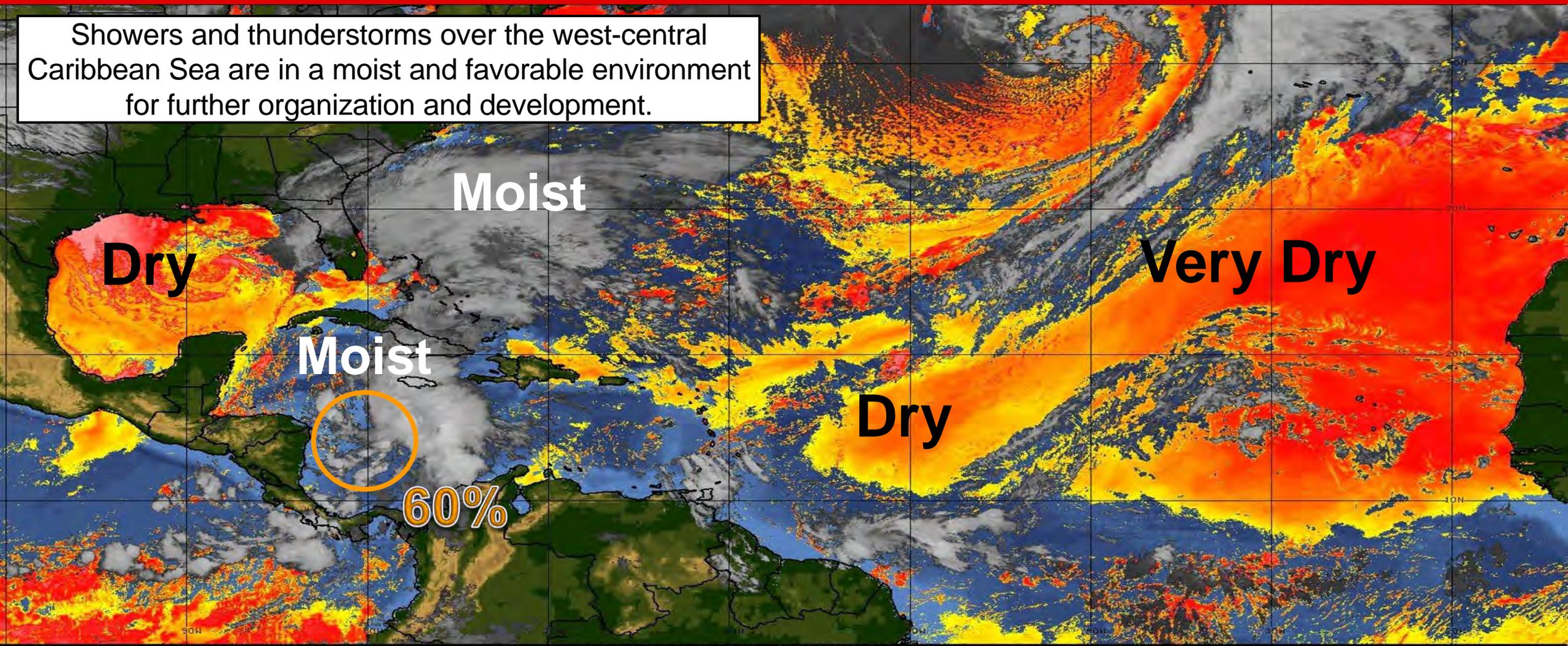


# Dry Air & Saharan Dust

Is the environment favorable for the system?

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

Showers and thunderstorms over the west-central Caribbean Sea are in a moist and favorable environment for further organization and development.



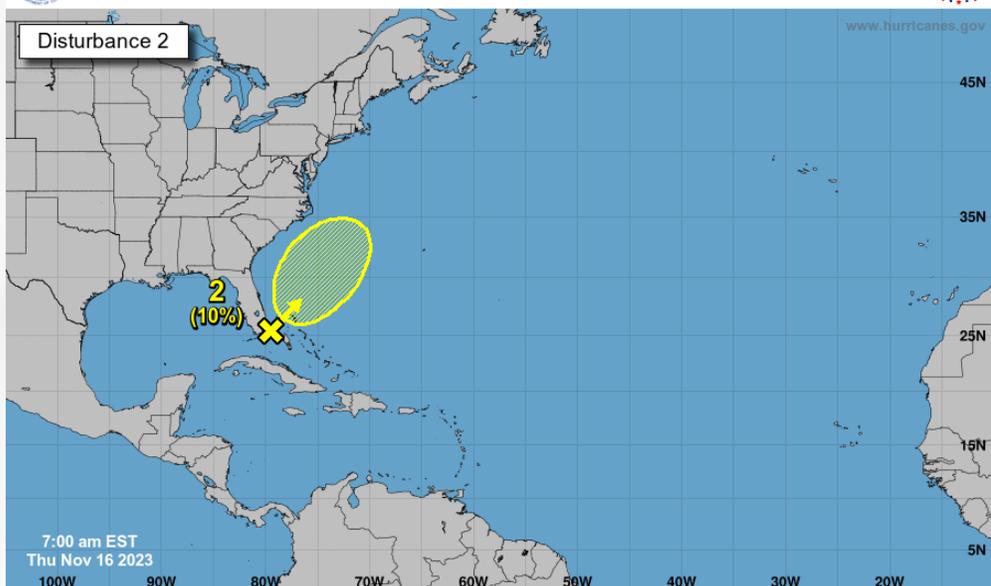
LESS <----- DRY AIR (LOW/MID-LEVEL) AND/OR DUSTY SAL AIRMASS -----> MORE



# Tropical Weather Outlook

Disturbance 2 – Offshore Southeast Coast of U.S. ([LINK](#))

Seven-Day Graphical Tropical Weather Outlook  
National Hurricane Center Miami, Florida



A non-tropical area of low pressure between southern Florida and the northwestern Bahamas is associated with a frontal boundary. Development of this system into a tropical cyclone appears unlikely. However, gusty winds and heavy rains are still possible across portions of the east coast of Florida and the Bahamas during the next day or so while the low moves quickly northeastward over the southwestern Atlantic.

*This system poses no direct threat to Florida, but will continue to bring heavy rainfall, gusty winds and elevated surf statewide.*

\* Formation chance through 48 hours...**low...10%**.

\* Formation chance through 7 days...**low...10%**.

**10%**

**48 Hour Formation**

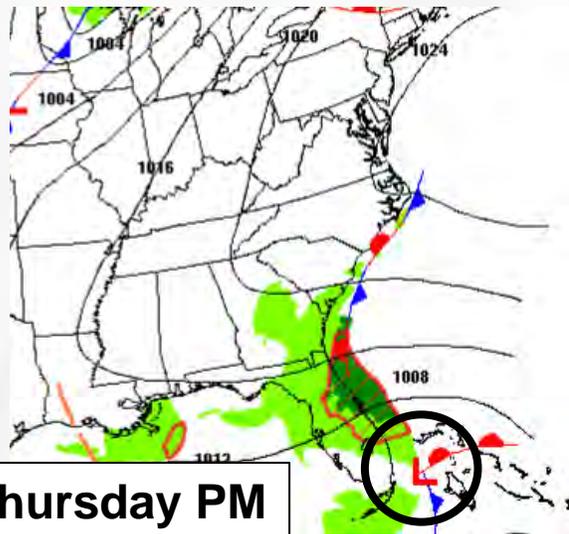
**10%**

**7 Day Formation**

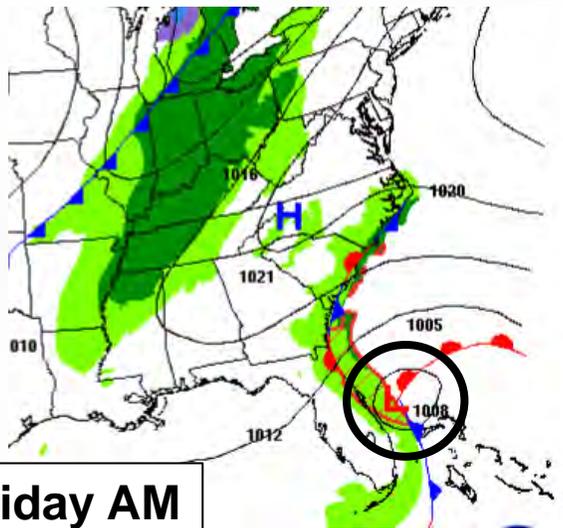


# Surface Weather Maps

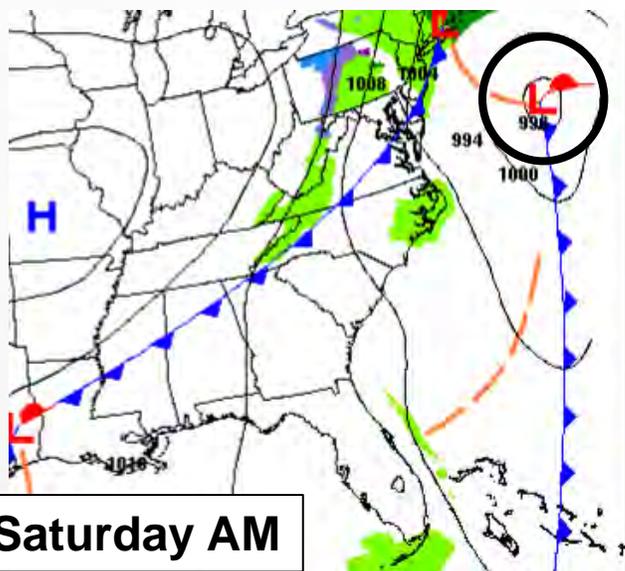
From the Weather Prediction Center



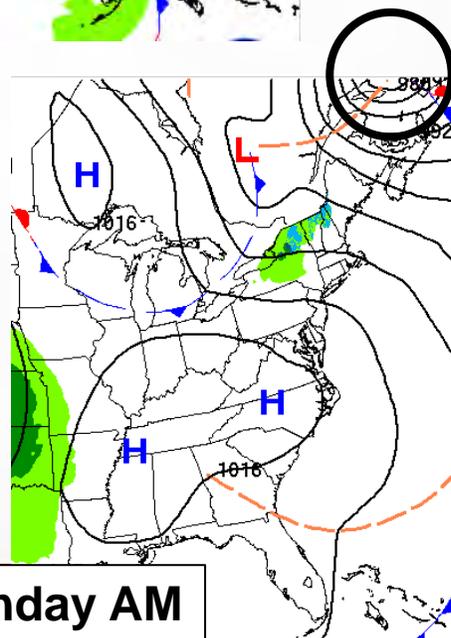
Thursday PM



Friday AM



Saturday AM



Sunday AM

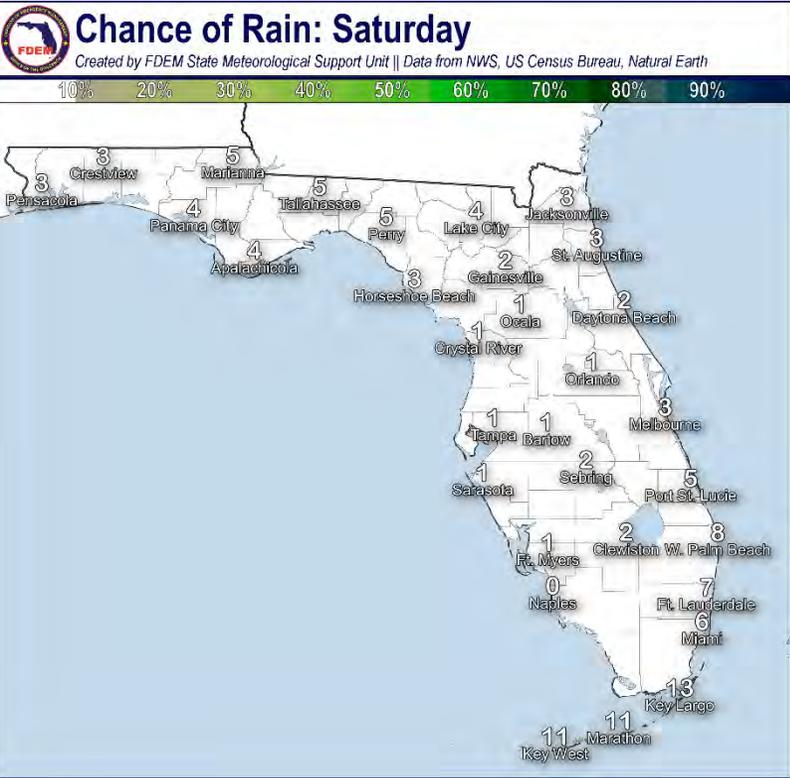
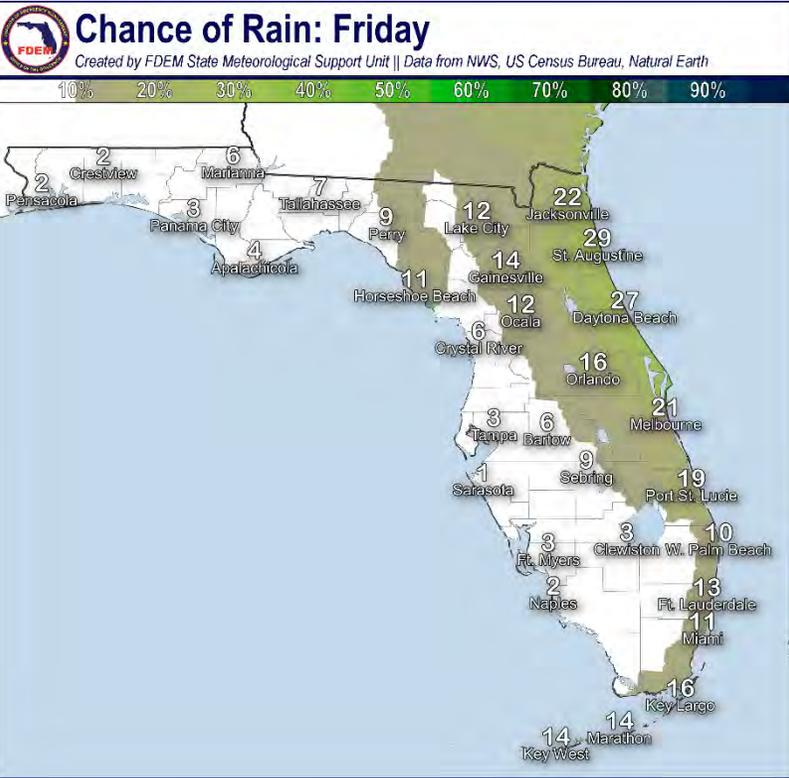
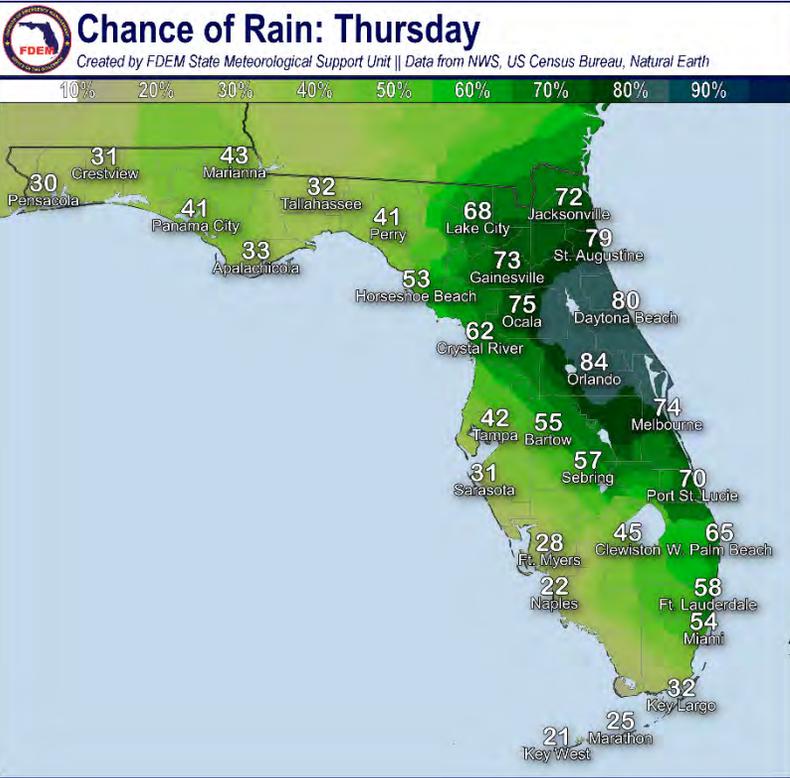
The first Gulf Low (non-tropical) of the season will begin to churn its way along the east coast of Florida today as it strengthens. This system will continue to yield elevated rain chances and breezy conditions across the Eastern Peninsula, bringing dangerous beach and boating conditions to many Florida coastlines through the end of the week.

Friday and into Saturday, the non-tropical area of low pressure will begin to move northeastward along the U.S. East Coast, away from Florida, as the system continues to strengthen. Brisk to strong onshore winds will continue along the Atlantic Coast through the rest of the week.



# Rain Chances

## From the National Weather Service

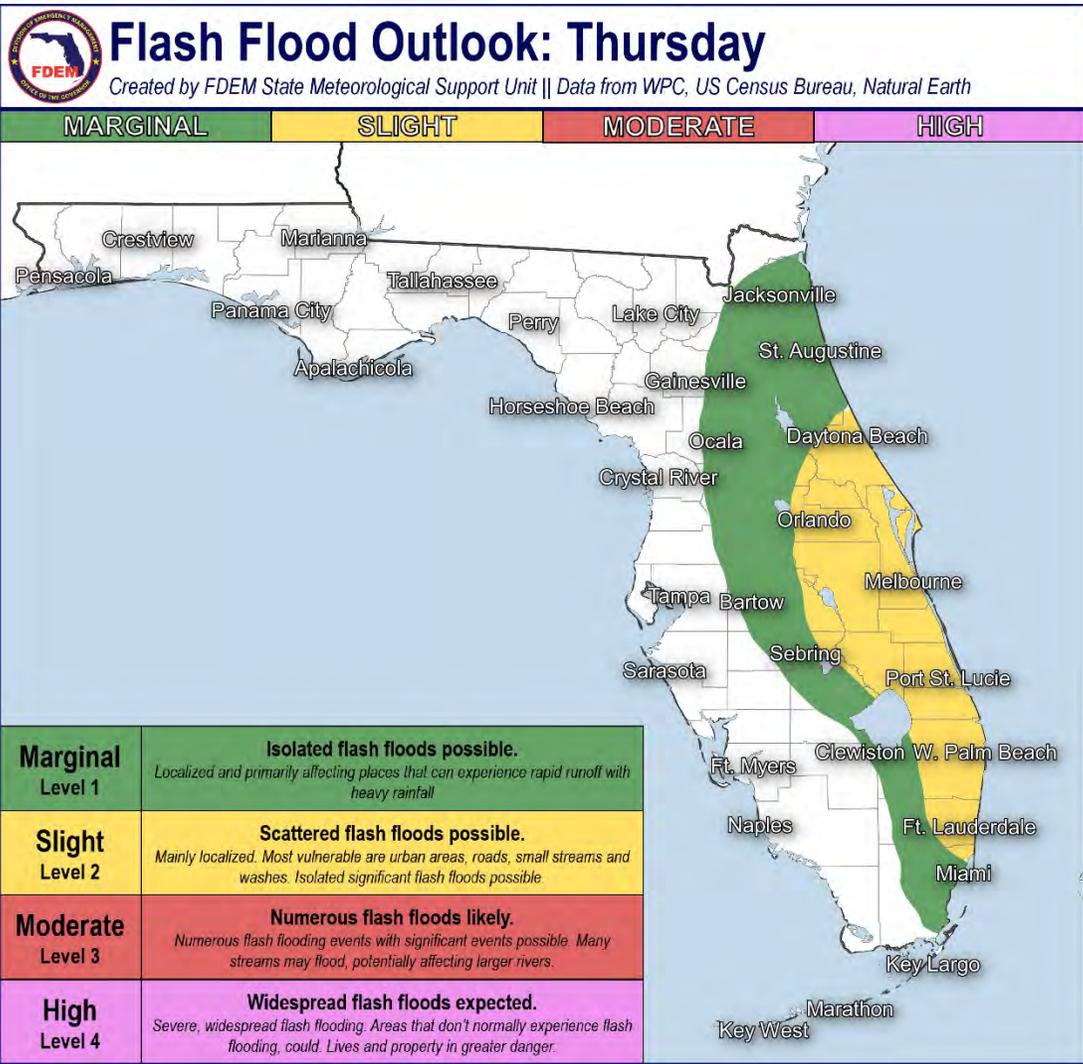


As the low-pressure progresses eastward and northward, the Florida Panhandle and Southwest Florida will quickly begin to see a drying trend later this morning or early this afternoon (20-45% chance of rain). As the low-pressure area lingers over the adjacent Atlantic waters, rain chances will remain elevated along the rest of the Peninsula (45-85%) today. The low-pressure system will begin to move off to the northeast Friday and Saturday, allowing for drier conditions to return statewide (10-25% chance of rain).



# Flash Flood Outlook

From the Weather Prediction Center

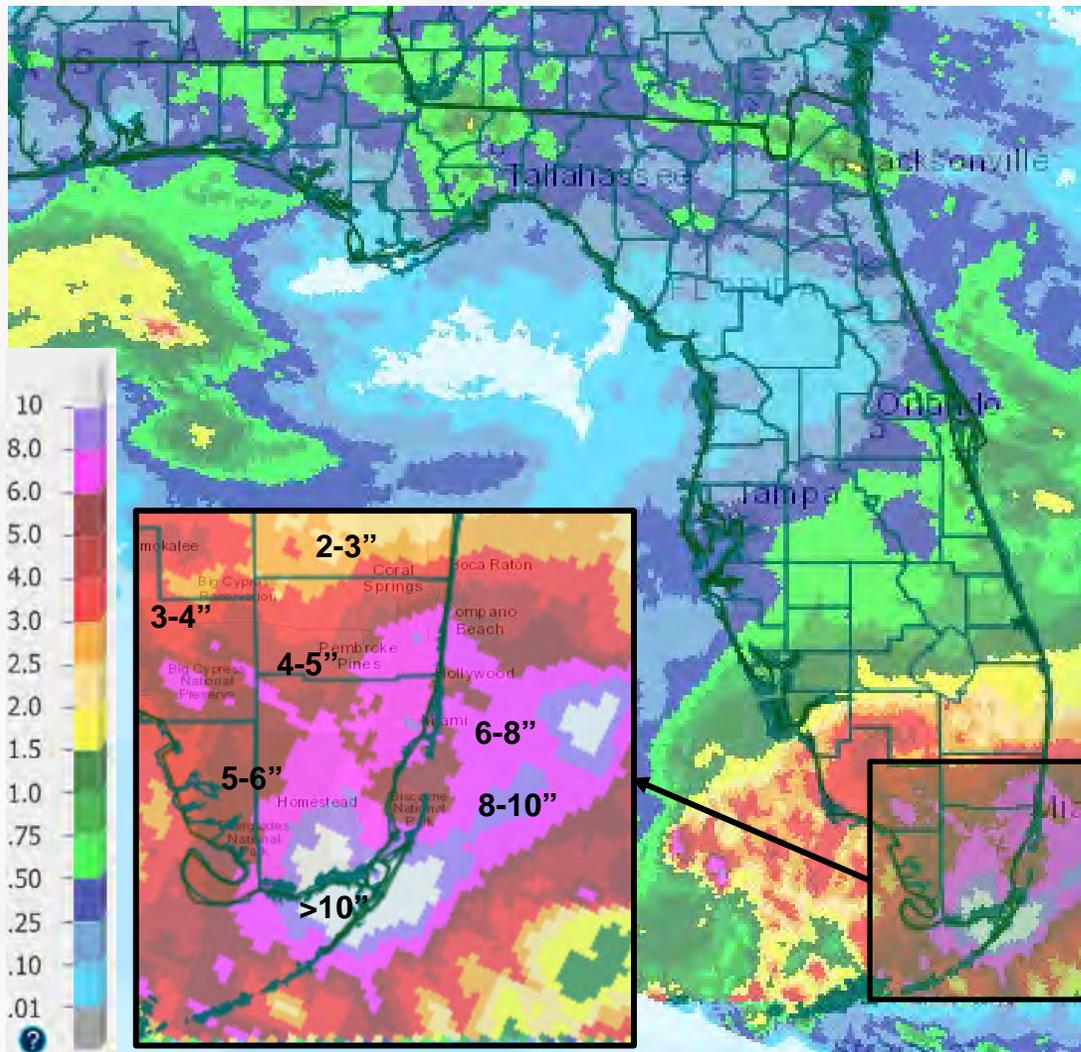


The Weather Prediction Center (WPC) is outlooking a **Slight Risk (2 or 4) for Flash Flooding** across East-Central Florida and the Gold Coast, with a **Marginal Risk (level 1 of 4)** extending across the interior and Eastern Peninsula. Grounds across the area remain saturated due to extensive rainfall observed over the last 24-48 hours, which will increase the **risk for flash flooding** with additional rainfall expected today. Training showers and possible thunderstorms moving over the same areas throughout the day will be capable of producing several rounds of rainfall over the same areas across the Eastern Peninsula.



# Observed Rainfall Totals

From the National Weather Service



Tuesday, scattered to numerous showers yielded rainfall totals of 1-2" along portions of the East Coast. Yesterday, additional widespread rainfall totals of 3-6" were observed across South Florida and the Keys. Locally higher rainfall totals of 6-10" with isolated totals upwards of 10" were noted along Southeast Florida and upper Florida Keys. Already saturated grounds from the excessive rainfall received over the last 24-48 hours may lead to a faster onset of **flash flooding** and **excessive runoff** as scattered to numerous showers yield additional heavy rainfall along the Eastern Peninsula throughout the day.



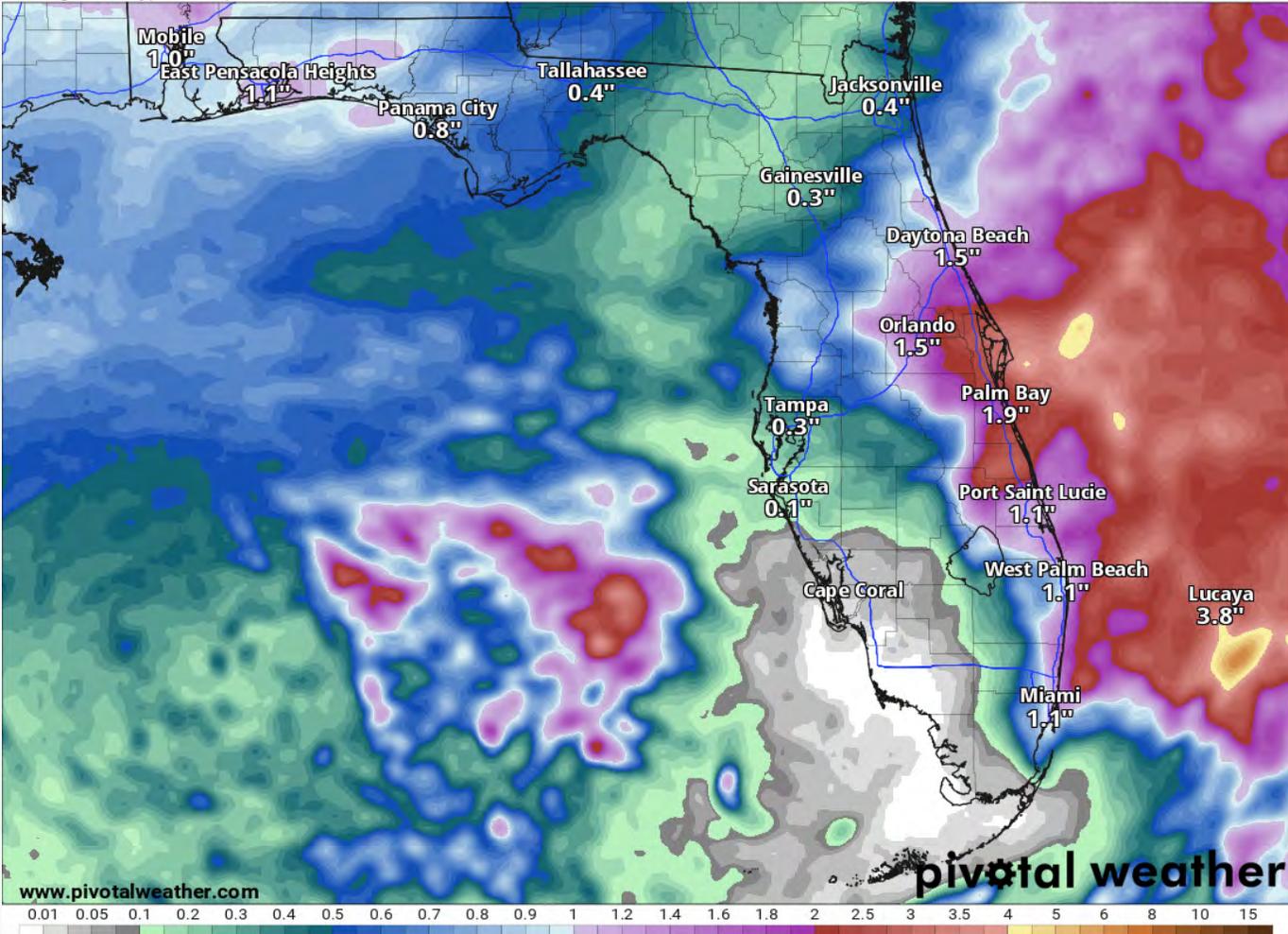
# 5-Day Forecast Rainfall

From the National Weather Service & Weather Prediction Center

120-Hour Precipitation (in)

Ending Tuesday, Nov. 21, 2023 at 7 a.m. EST

Init: Thu 2023-11-16 12z WPC

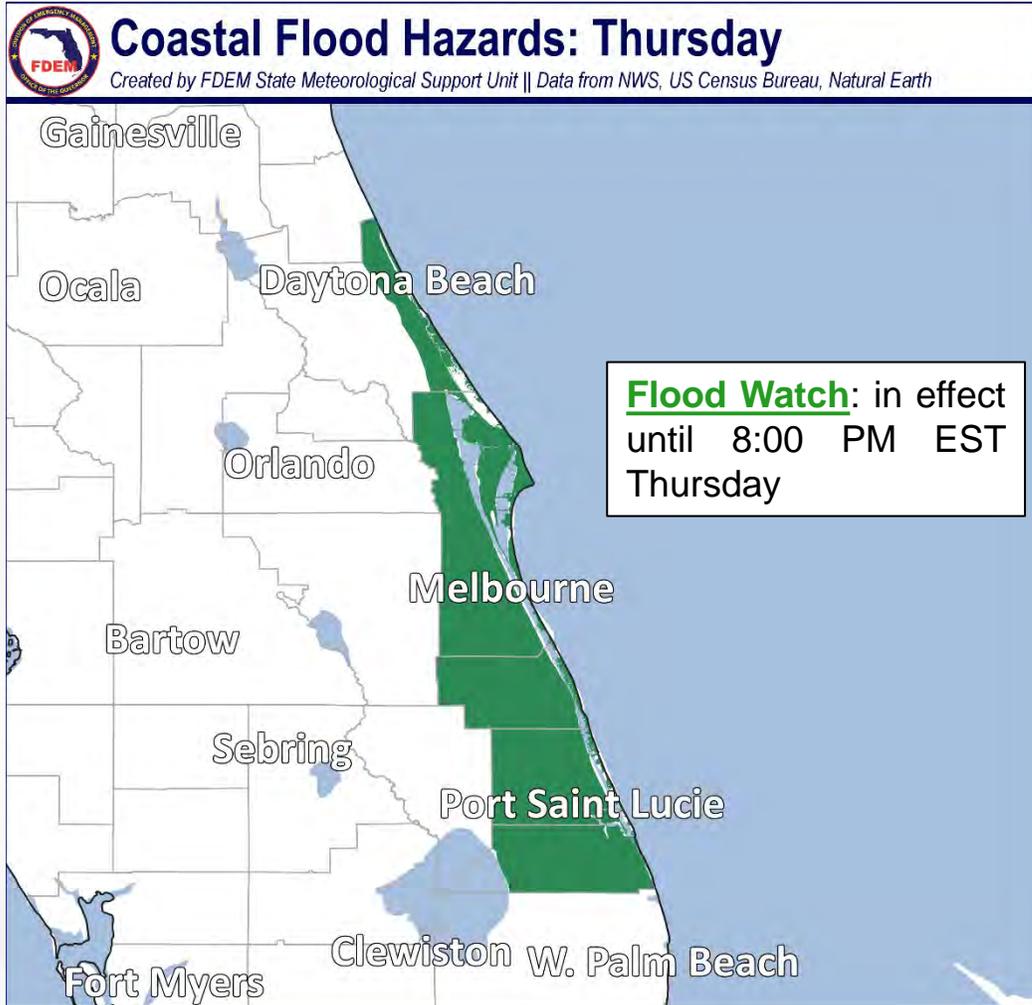


A widespread 1-3" of rainfall can be expected across Florida over the next 5 days, with higher rainfall totals of 3-6" possible along the Eastern Peninsula. While the heaviest rainfall amounts look to remain over the adjacent Atlantic waters, multiple rounds of heavy rainfall can be expected over the East Coast today. Localized rainfall totals of 6-8" will be possible. **Flood Watches** are in effect for portions of the Treasure Coast through this evening.



# Flood Watches in Effect

From the National Weather Service



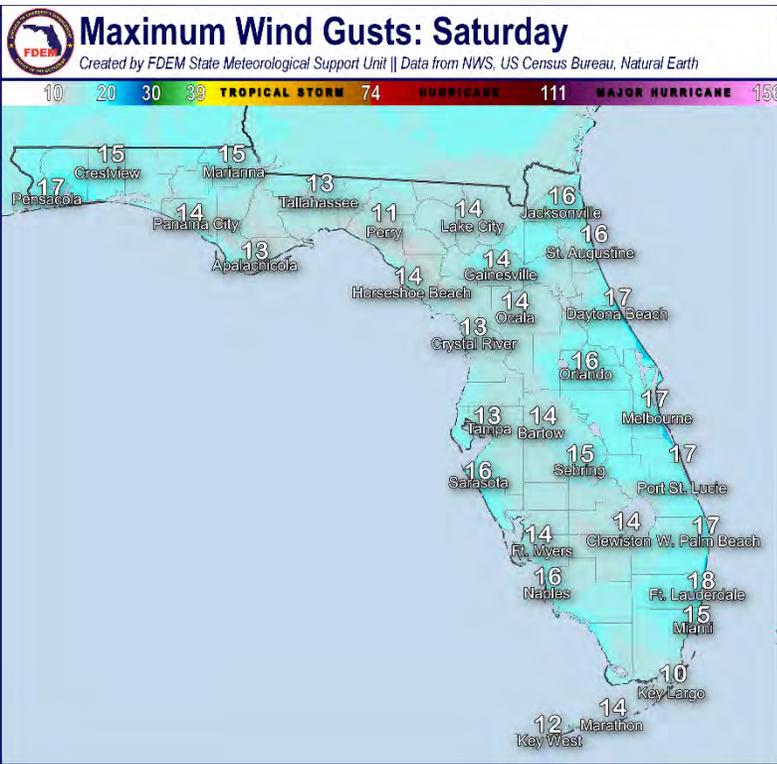
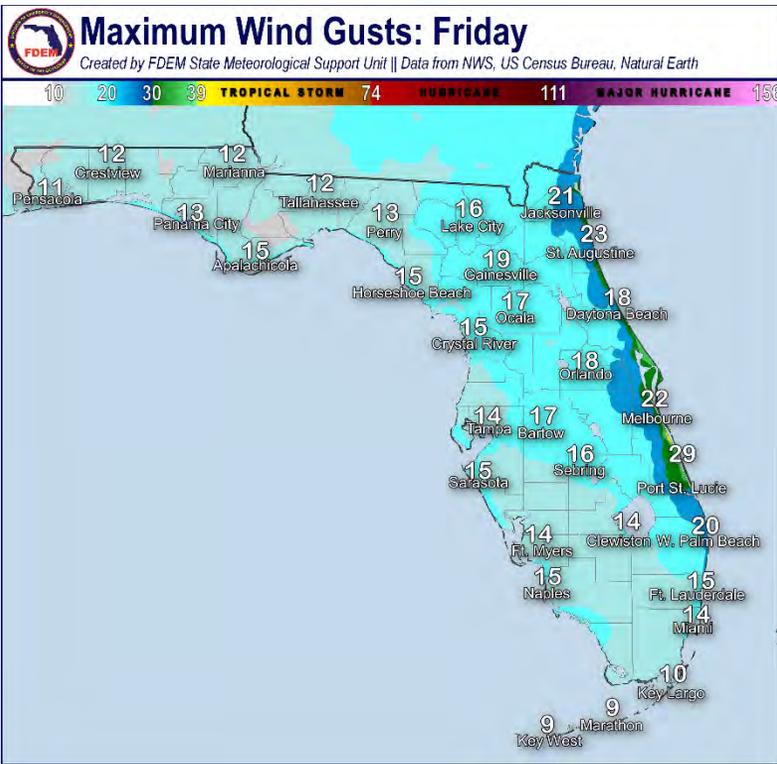
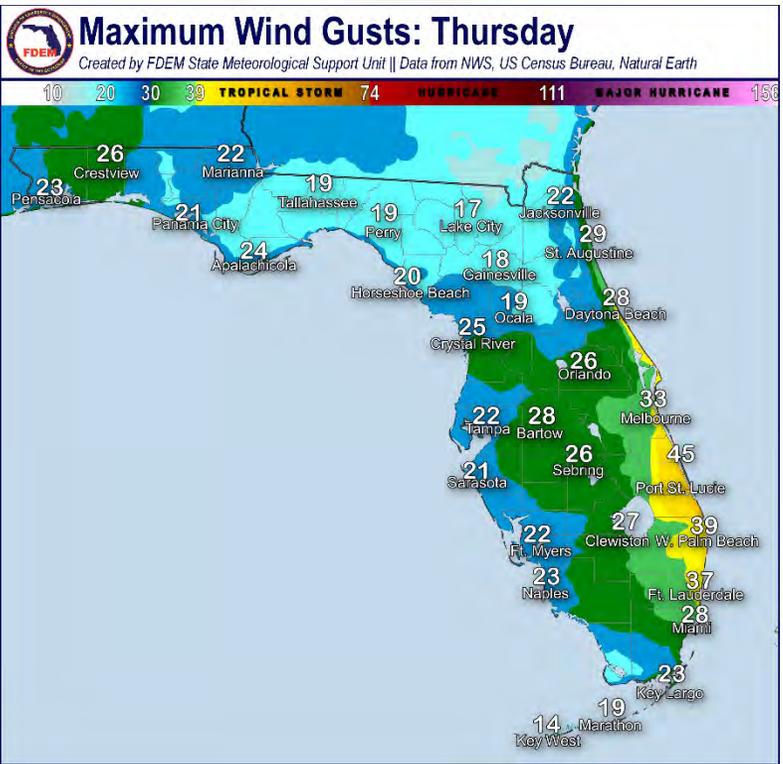
**Flood watches** remain in effect along East-Central Florida through this evening. Grounds are already saturated due to extensive rainfall observed over the last 24-48 hours. Additional heavy rainfall will be possible at times today, yielding **rainfall totals** of 2-4" with **locally higher** amounts of **4-6"** possible.

High rainfall rates and several rounds of rainfall may result in **flooding** in urban and poor drainage areas. **Excessive runoff** may result in **flooding** of rivers, creeks, streams, and other low-lying and flood-prone areas.



# Breezy Conditions Arrive This Afternoon

## From the National Weather Service



Gusty winds will continue to strengthen along the interior and Eastern Peninsula today, where **wind gusts of 30-45 mph** can be expected. The rest of the state can anticipate **wind gusts of 20-30 mph**. A **High Wind Warning** has been issued along East-Central Florida as east **winds of 25-40 mph** with **gusts up to 60 mph** are anticipated. **Wind Advisories** remain in effect across Southeast Florida and along the Space and Treasure Coasts as these areas will see easterly **winds of 20-30 mph with gusts up to 50 mph** at times. Winds will begin to weaken as the area of low-pressure moves off to the northeast Friday, with lingering wind gusts of 20-30 mph across the Eastern Coastline.

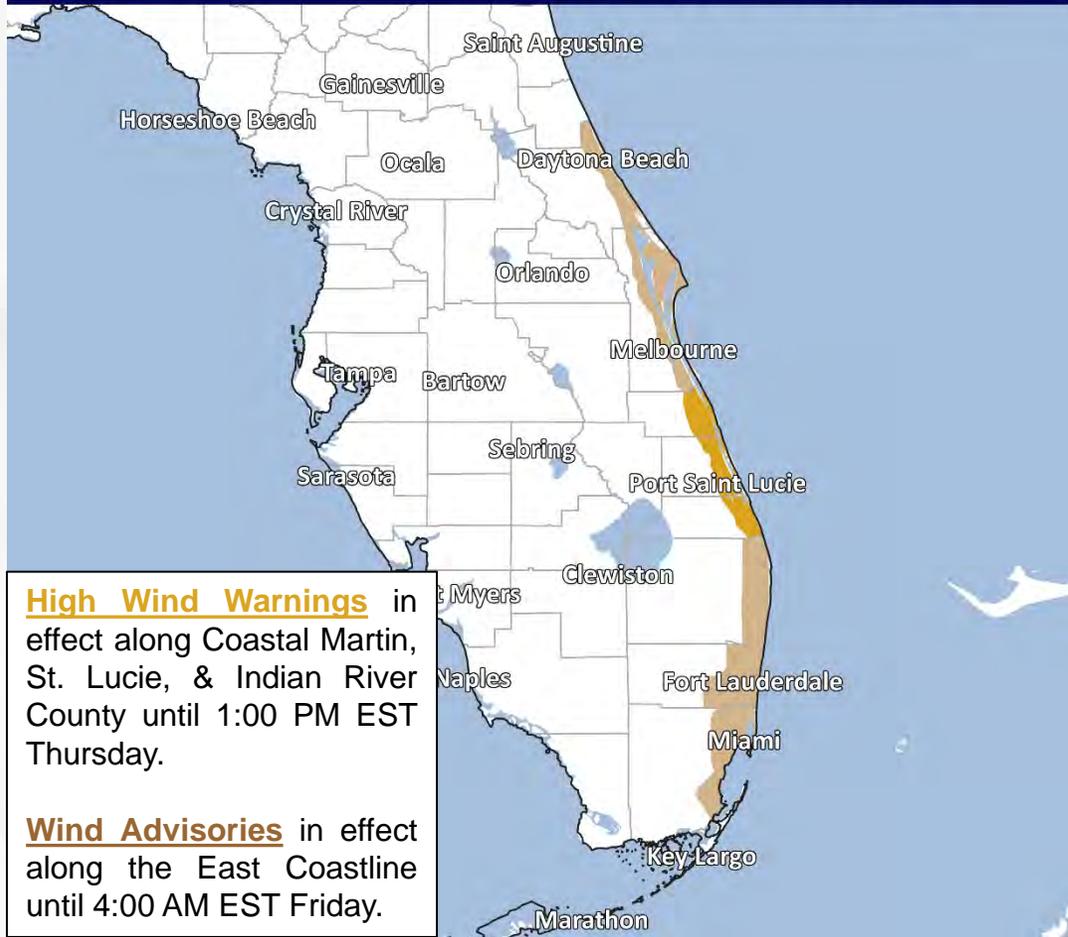


# Wind Advisory in Effect

## From the National Weather Service

### Wind Hazards: Thursday

Created by FDEM State Meteorological Support Unit || Data from NWS, US Census Bureau, Natural Earth



**High Wind Warnings** in effect along Coastal Martin, St. Lucie, & Indian River County until 1:00 PM EST Thursday.

**Wind Advisories** in effect along the East Coastline until 4:00 AM EST Friday.

**High Wind Warnings** are in effect along Coastal Martin, St. Lucie, & Indian River County through this afternoon as strong easterly to northeasterly winds develop. Sustained winds of 25-40 mph can be expected, with gusts up to 60 mph near the coast and across barrier islands.

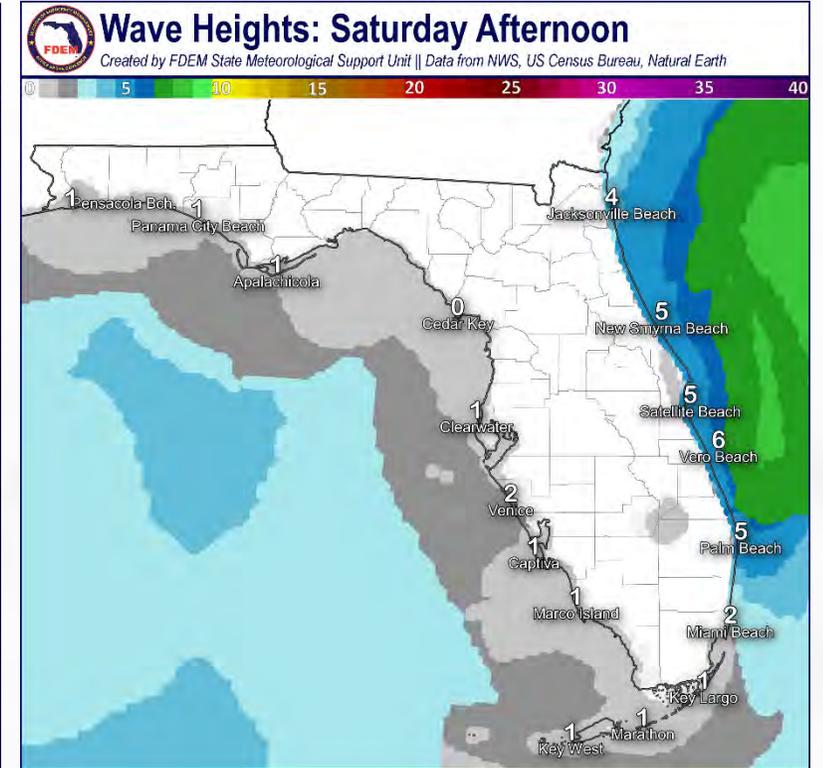
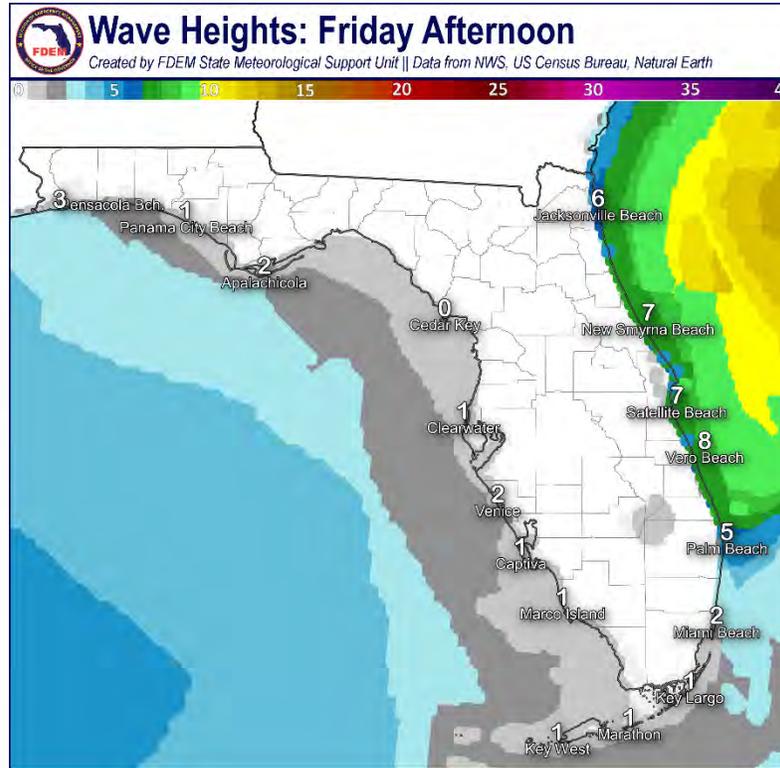
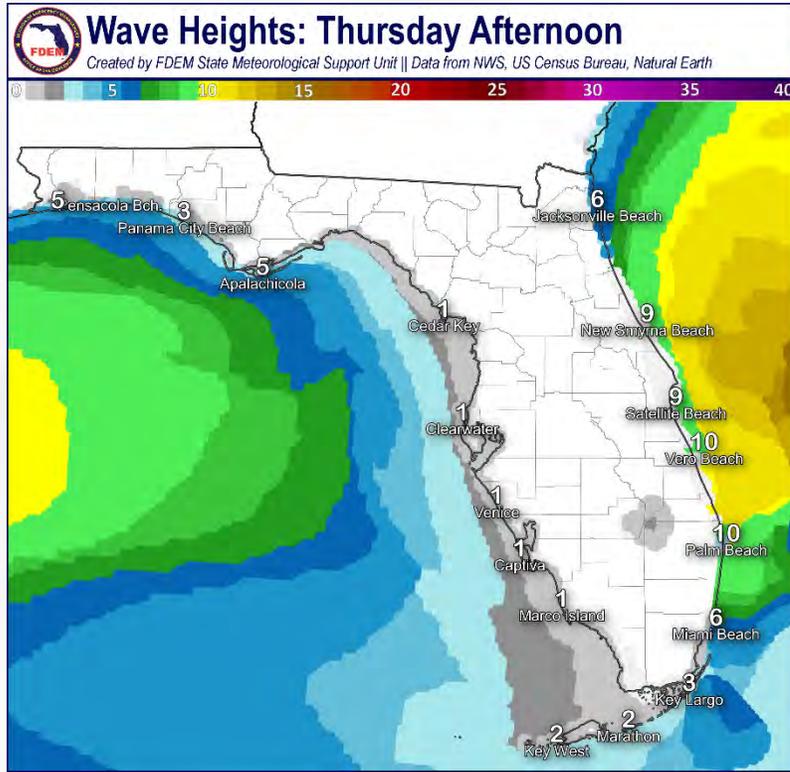
**Wind Advisories** are in effect along the East-Central and Southeast Coastlines through early Friday morning as moderate to strong easterly winds persist. Sustained winds of 20-30 mph can be expected, with gusts up to 45 mph throughout the day and into Friday.

*Gusty winds could blow around unsecured objects; tree limbs could be blown down and a few power outages may result from locally gusty conditions.*



# Forecast Wave Heights

From the National Weather Service

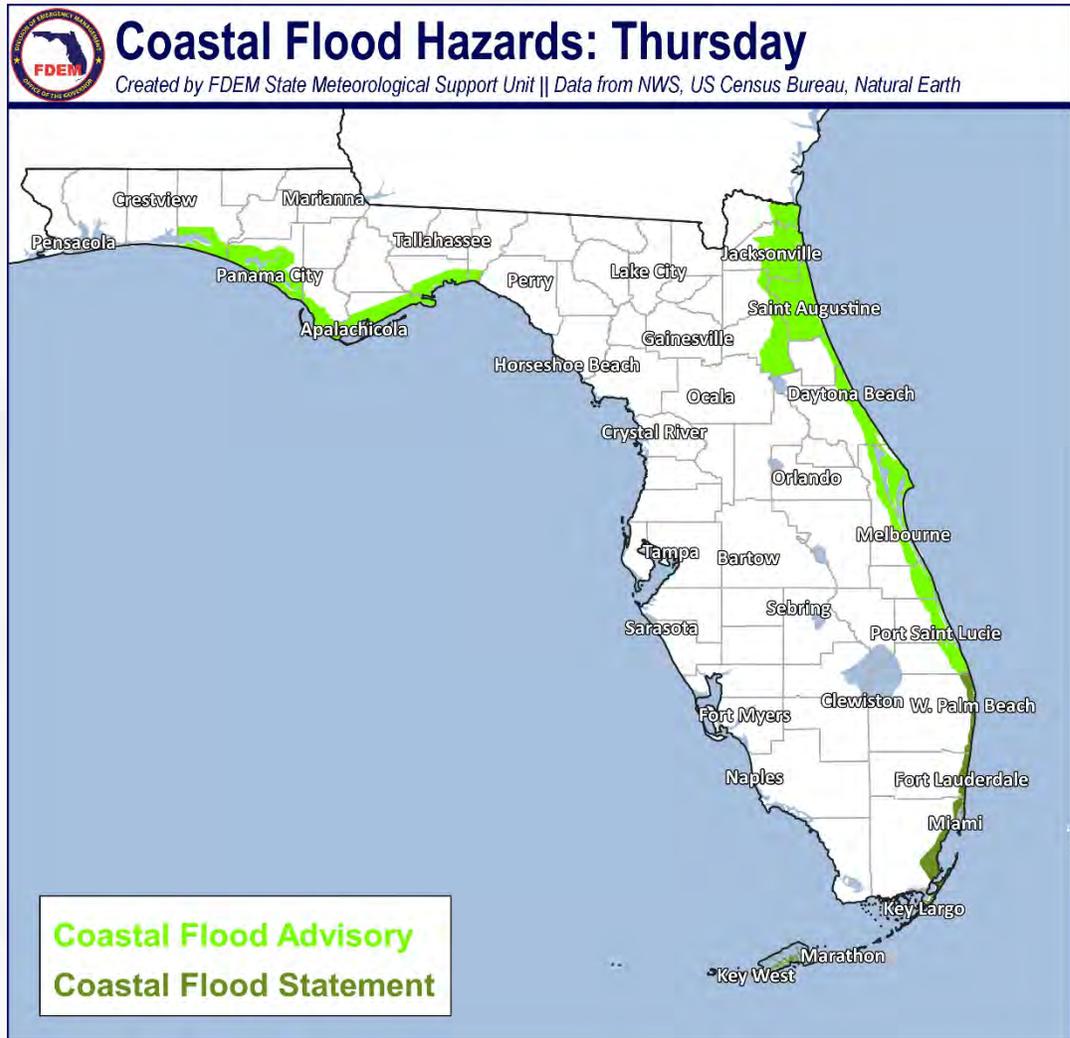


Breezy conditions statewide will create elevated wave heights along East Coast beaches as Panhandle beaches see wave heights begin to subside. **High Surf Advisories** are in effect along the Western Panhandle Coastline and the East Coast as **breaking waves of 5-9'** will be possible. **Locally higher breakers of 10'** will be possible in the surf along the Central-East Coast. As onshore flow persists Friday along the Florida East Coast, nearshore **wave heights of 6-9'** can continue to be expected. Wave heights will begin to subside as winds calm Saturday.



# Coastal Flooding

From the National Weather Service



Strong onshore winds and elevated astronomical tides will lead to instances of **minor to moderate coastal flooding and beach erosion** at or near times of high tide. **Coastal Flood Advisories** will remain in effect along the Space and Treasure Coast through early Friday morning, as well as along the portions of the St. Johns River basin. **Minor coastal flooding** will be possible along the Southeast Florida Coast and Keys during the next several high tide cycles, courtesy of the new moon phase and strong onshore winds (**Coastal Flood Statement**).

**Coastal Flood Advisories** are also in effect along the Florida Panhandle Coastline as strong easterly to southeasterly flow builds over the Gulf waters, yielding elevated wave heights and leading to instances of **minor coastal flooding**.



# Summary

## **West-Central Caribbean Sea (Invest 98L):**

- Showers and thunderstorms associated with a broad area of low pressure (Invest 98L) located over the west-central Caribbean Sea have become a little better organized since yesterday.
- Environmental conditions appear conducive for some additional development, and a tropical depression could form over the next day or two while the low moves northeastward toward Jamaica, Haiti, and eastern Cuba.
- An Air Force Reserve reconnaissance aircraft is scheduled to investigate the system this afternoon.
- The National Hurricane Center is outlooking a 60% (medium) chance of development over the next 48 hours and over the next 7 days.
- *This system poses no direct threat to Florida at this time, but the development of this system across the Caribbean Sea will be monitored through the week.*

## **Offshore Southeast Coast of U.S.:**

- A non-tropical area of low pressure between southern Florida and the northwestern Bahamas is associated with a frontal boundary.
- Development of this system into a tropical cyclone appears unlikely.
- Gusty winds and heavy rains are still possible across portions of the east coast of Florida and the Bahamas during the next day or so while the low moves quickly northeastward over the southwestern Atlantic.
- The National Hurricane Center is outlooking a 10% (low) chance of development over the next 48 hours and over the next 7 days.
- *This system poses no direct threat to Florida, but will continue to bring heavy rainfall, gusty winds and elevated surf statewide.*

## **Florida Outlook:**

- The first Gulf Low (*non-tropical*) will gradually churn northward offshore along the east coast of Florida today maintaining elevated rain chances, strong wind gusts, dangerous beach and boating conditions, and instances of coastal flooding along the Eastern Peninsula.
- Slight Risk (level 2 of 4) for Flash Flooding for across East-Central Florida and the Gold Coast, with a Marginal Risk (level 1 of 4) extending across the interior and Eastern Peninsula.
- Flood Watches remain in effect along East-Central Florida through this evening as additional rainfall totals of 2-4" and local totals of 4-6" are possible over already saturated grounds today. Saturated grounds may lead to faster onset of flash flooding and excessive runoff.
- High Wind Warnings and Wind Advisories are in effect along the Central-East and Southeast Coasts as wind gusts of 45-60 mph can be expected through this afternoon and evening.
- Persistent moderate to strong winds will lead to elevated wave heights over the Gulf and Atlantic waters; breakers in the surf zone of 5-9' can be expected over the next day or so along Florida Panhandle and Atlantic Coast beaches (High Surf Advisories issued).
- Above normal tides (new moon phase) and strong onshore flow will increase the concern for coastal flooding and beach erosion during the next several high tide cycles; Coastal Flood Advisories and Statements issued from the Space Coast through Southeast Florida and the Keys and along the Florida Panhandle coastlines.
- The next name on the list is Vince.

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



# Tropical Update



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**State Meteorological Support Unit**

**Florida Division of Emergency Management**

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