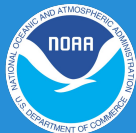


HURRICANE HAZARDS AND COMMUNICATION



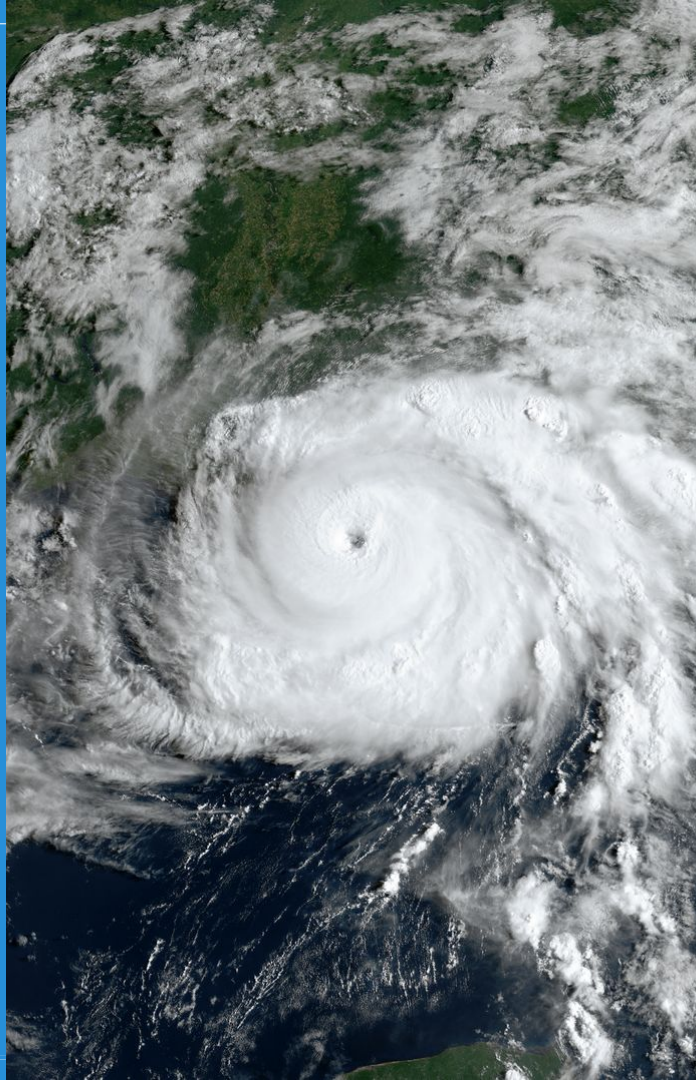
2023 HURRICANE SEASON

NATIONAL WEATHER SERVICE

New Orleans/
Baton Rouge

LAUREN NASH

Warning
Coordination
Meteorologist



OUR LOCAL OFFICE – NWS NEW ORLEANS/BATON ROUGE

- 24/7 Operations with 2-3 meteorologists per shift
- Forecast and Warnings for public, aviation, fire weather, marine, and hydrological communicates
- Service area includes 22 parishes in Louisiana and 8 counties in Mississippi with population of 2.9 million plus marine areas out 60 NM
- Upper Air station (balloon launches)
- Collocated Doppler Radar

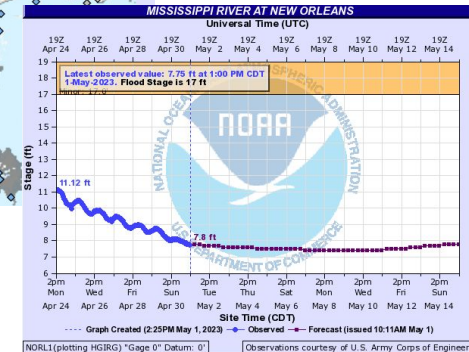
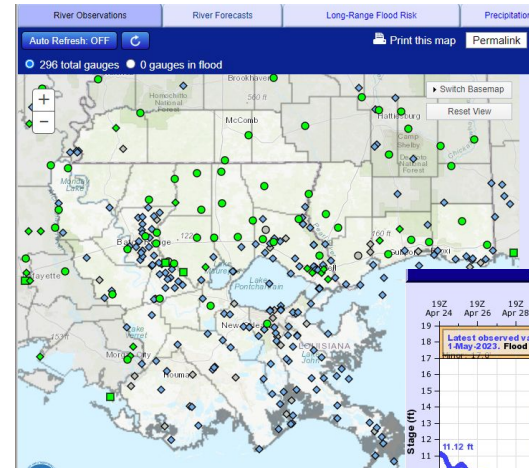
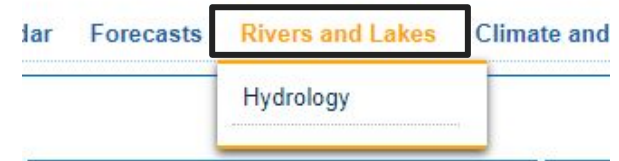


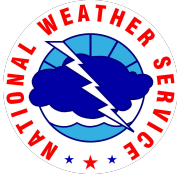
PORT RELATED PRODUCTS

We have multiple lake and offshore marine forecasts such as the Coastal Waters Forecast, Small Craft Advisory and Gale Watches/Warnings. These are not issued for the river.

Best way to find point information about the river is our point and click and the Graphical Hazardous Weather Outlook. (Next slide)

River Forecasts:





POINT AND CLICK/HOURLY WEATHER GRAPH

On our website, weather.gov/lix, “click” the map where you want a forecast for:

Click a location below for detailed forecast.



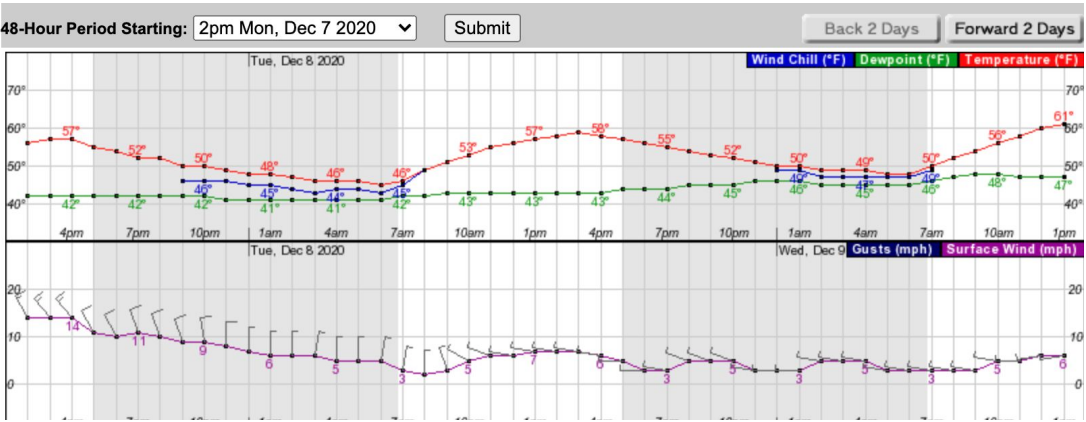
[Watches, Warnings & Advisories](#)

[Small Craft Advisory](#)

Zoom Out

These winds will be LOWER than the winds you see during hurricanes. We are forecasting more of a “worst case” using probabilities during hurricanes.

Last Map Update: Mon, Dec. 7, 2020 at 1:57:22 pm CST



**BACK TO
HURRICANES!**

2023 ATLANTIC HURRICANE NAMES

Arlene

Harold

Ophelia

Bret

Idalia

Philippe

Cindy

Jose

Rina

Don

Katia

Sean

Emily

Lee

Tammy

Franklin

Margot

Vince

Gert

Nigel

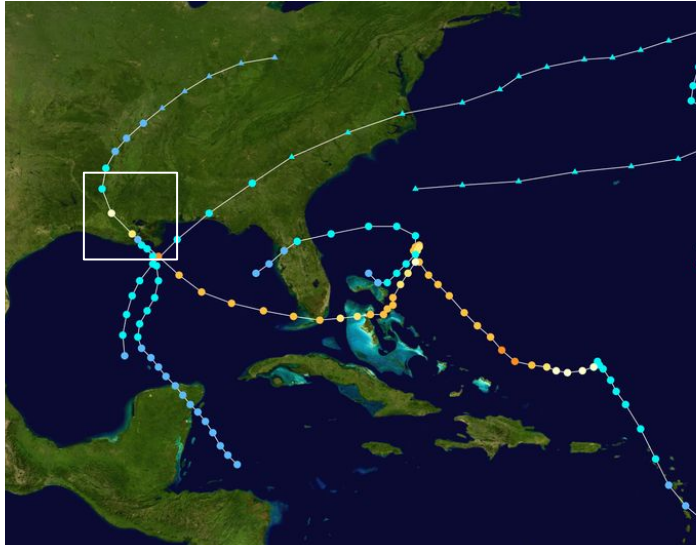
Whitney

If we run out of names on the main list, we will go to the supplemental list of names, rather than the Greek alphabet

SO... WHAT'S THE FORECAST THIS YEAR?

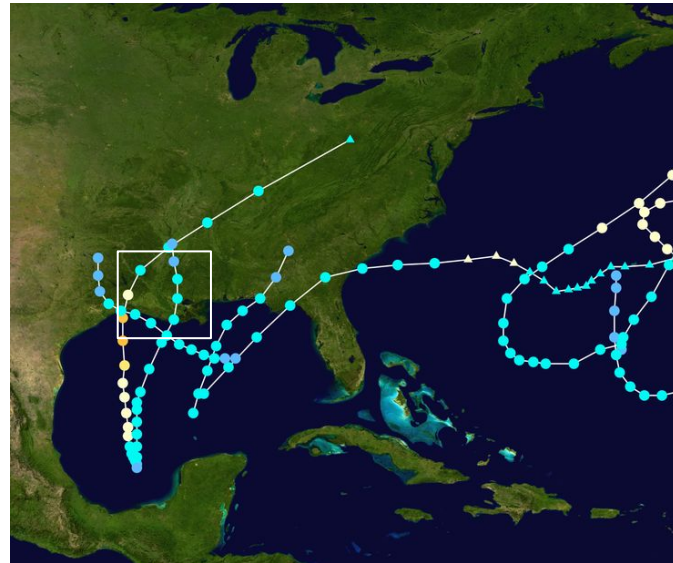
- Too early to tell!
- We are heading into El Nino: 80-90% chance it develops by Fall
 - “Typically” means a quieter hurricane season...
 - There is NO strong correlation between El Nino and slow GULF tropical seasons. **So the storms may not form in the Atlantic, but they can still form in the Gulf!**
 - Last year was La Nina, and we got nothing!

STRONG EL NINO YEARS



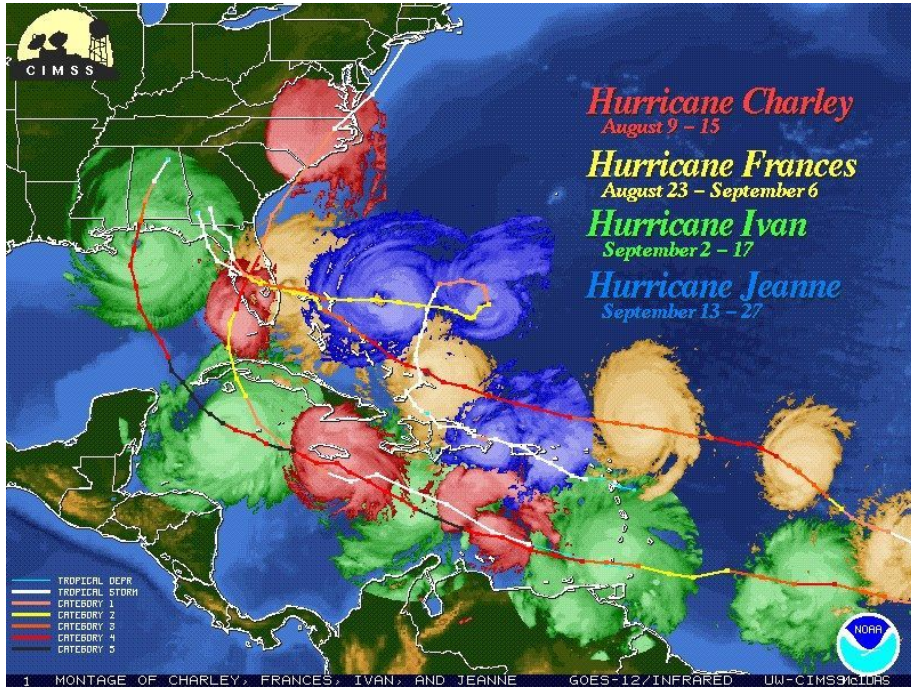
1965

It doesn't matter what the forecast is if that **one** storm hits us!

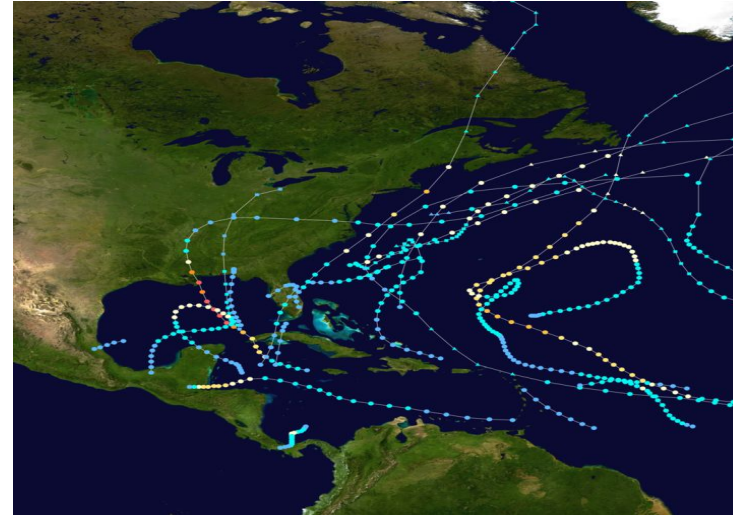


1957

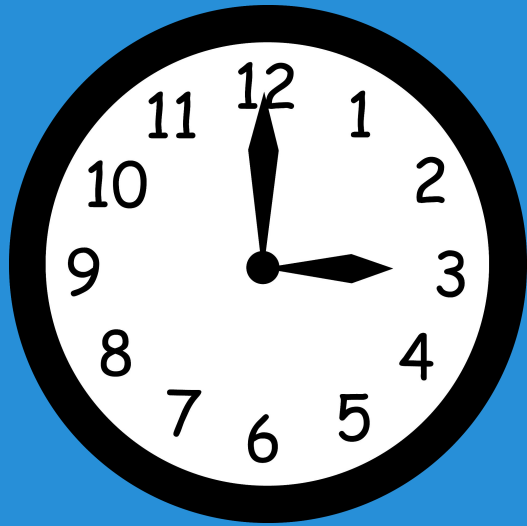
SIMILAR SEA SURFACE TEMP YEARS AS WHAT IS FORECAST



2004



1969- Camille



**General Timeline:
When do products
become available?**

NEW

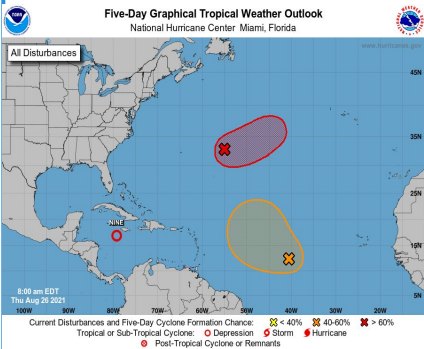
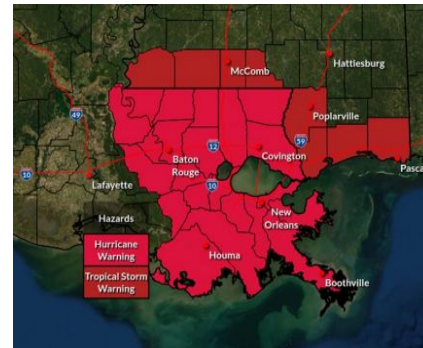
7 DAYS OUT

● TROPICAL WEATHER OUTLOOK



60 HOURS OUT*

● PSURGE (FOR SELECT, WELL-BEHAVED STORMS)



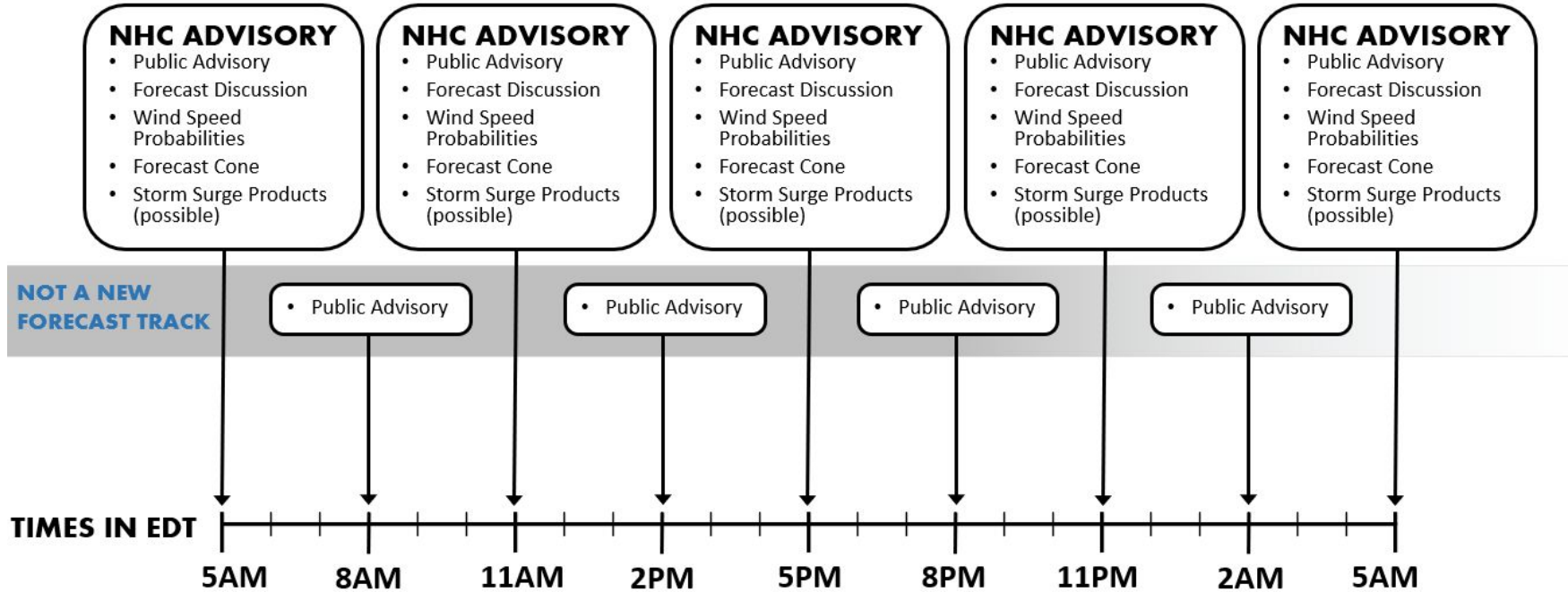
5 DAYS OUT

- NHC ADVISORY PACKAGES (CONE, WIND SPEED PROBABILITIES, TOA)
- SLOSH MOMS AND MEOWS*

48 HOURS OUT

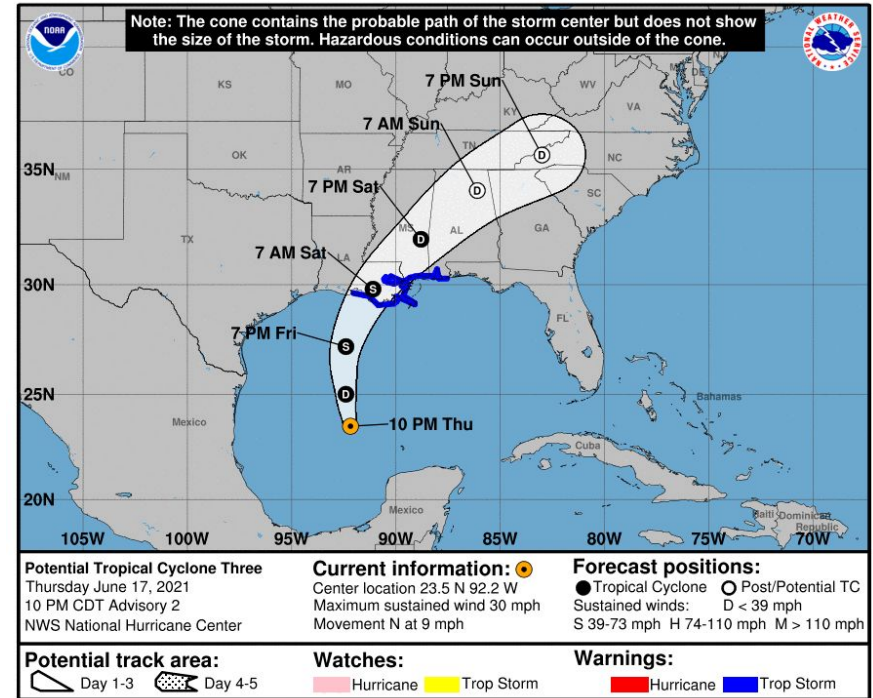
- WATCH/WARNING PRODUCTS
- HURRICANE THREATS AND IMPACTS GRAPHICS
- PSURGE/INUNDATION FORECASTS

NHC ADVISORY CYCLE WITH WATCHES/WARNINGS



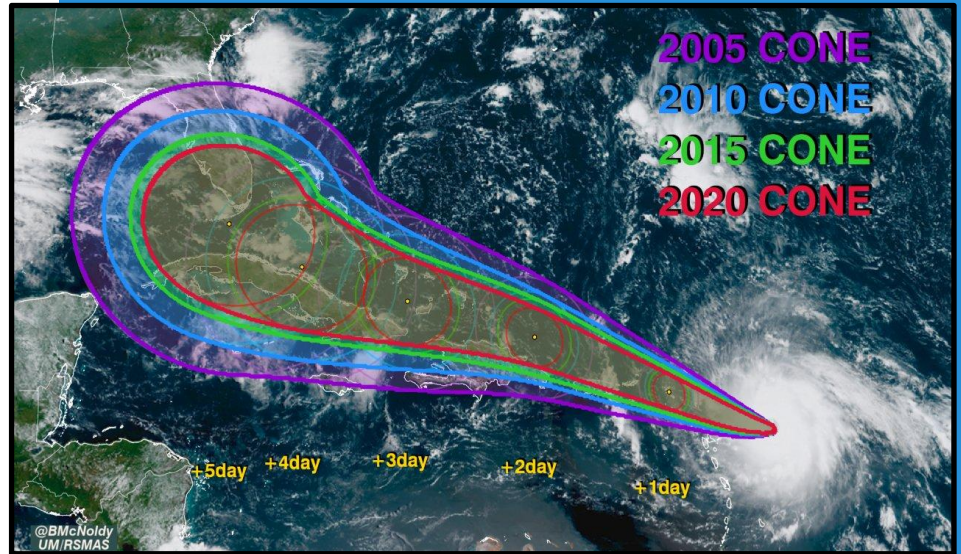
WHAT INFORMATION CAN YOU FIND IN THIS GRAPHIC?

- A. How strong the winds will be
- B. Which hurricane hazard will be the most impactful
- C. Where the center of the storm is most likely to move
- D. What areas will feel the greatest impacts from the storm
- E. What time the highest impacts will be felt

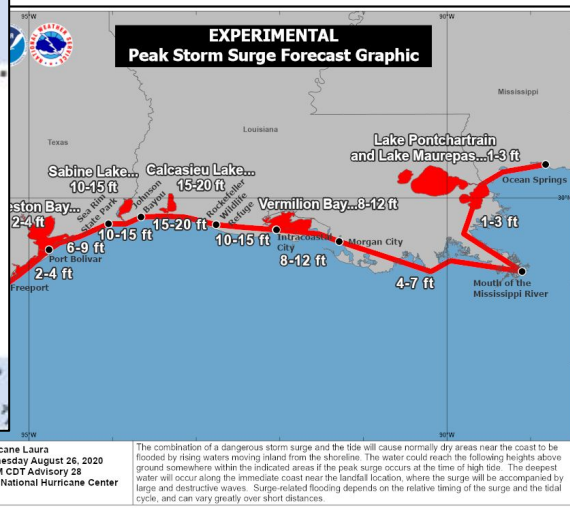
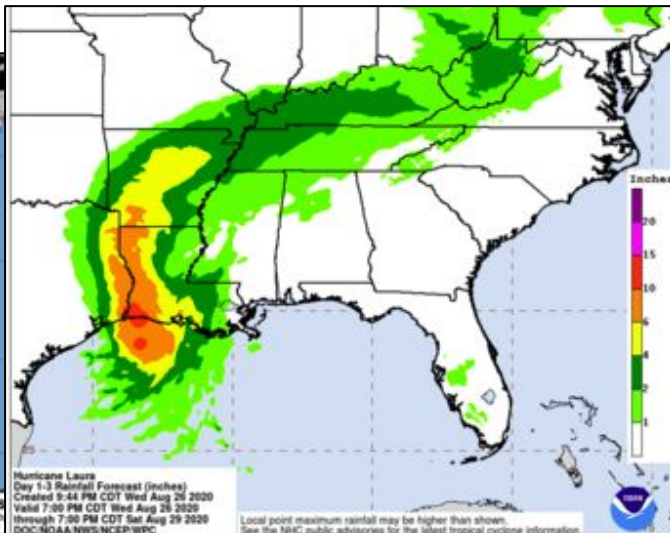


WHAT THE CONE ACTUALLY IS

- Represents the most likely path of the CENTER of the storm- NO forecast of impacts.
- Created by connecting imaginary circles that represent 2/3 the average track error over the past 5 years.
- Small changes in size every year
- **Does NOT change for every storm.**



REMINDER: THE CONE DOESN'T TELL YOU ABOUT IMPACTS!

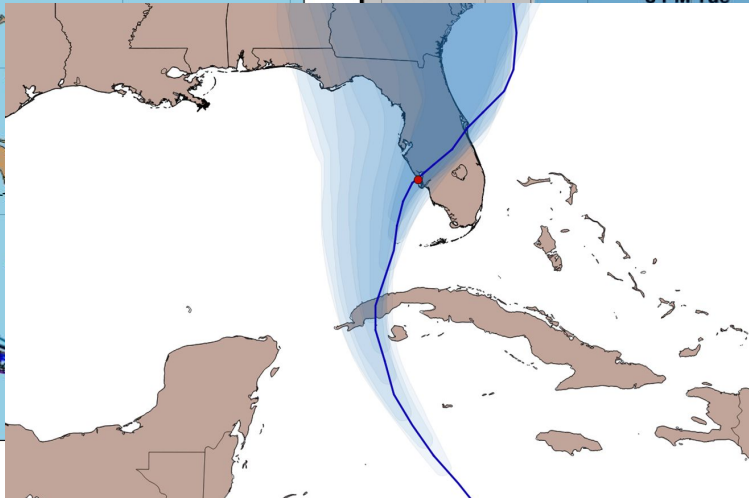
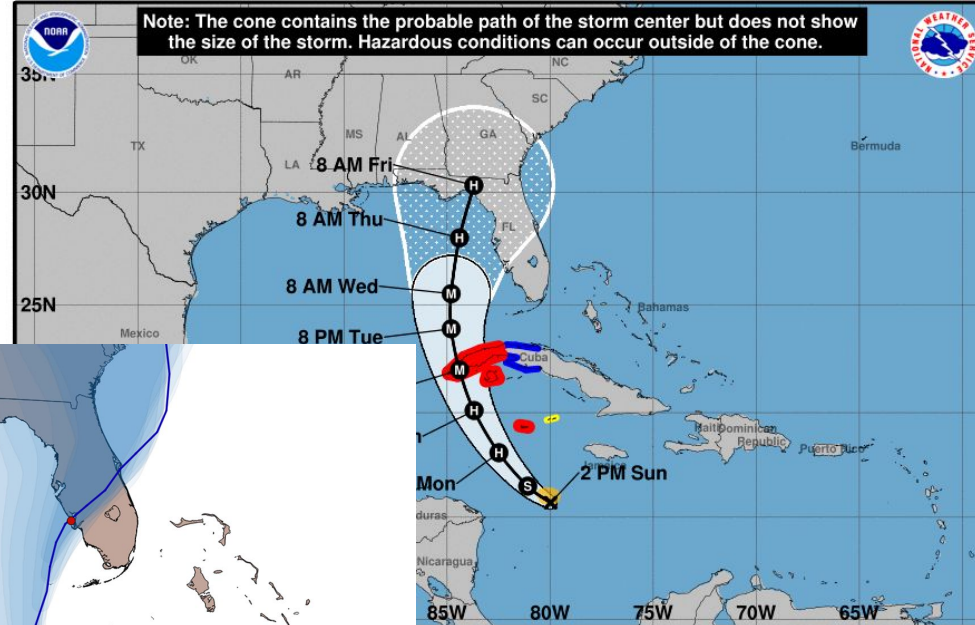
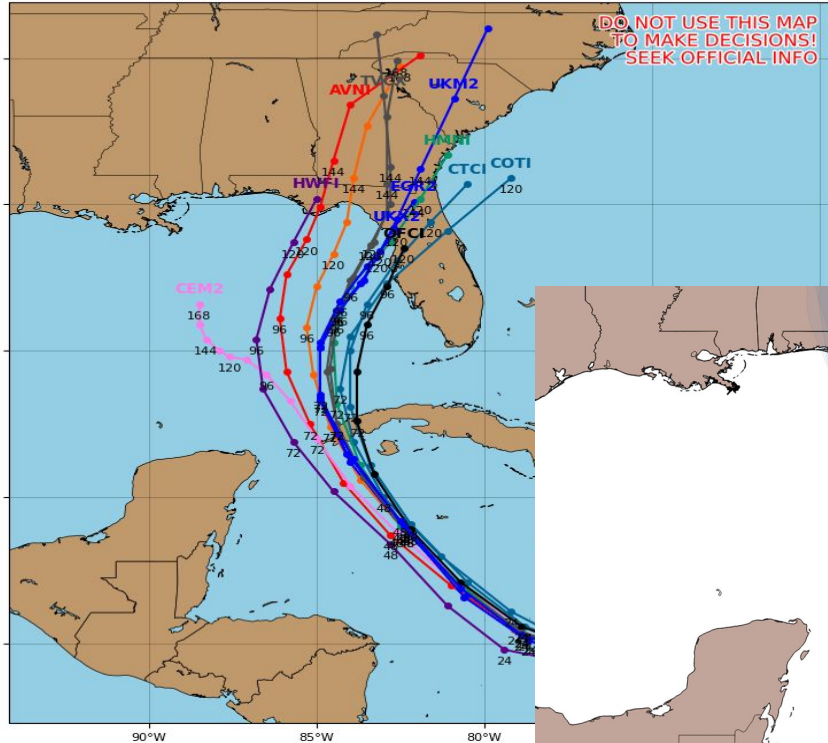


IAN EXAMPLE

Tropical Storm IAN Model Track Guidance

Initialized at 12z Sep 24 2022

Levi Cowan - tropicaltidbits.com



Current information: x
 Location 15.7 N 80.0 W
 Minimum sustained wind 50 mph
 Minimum WNW at 12 mph

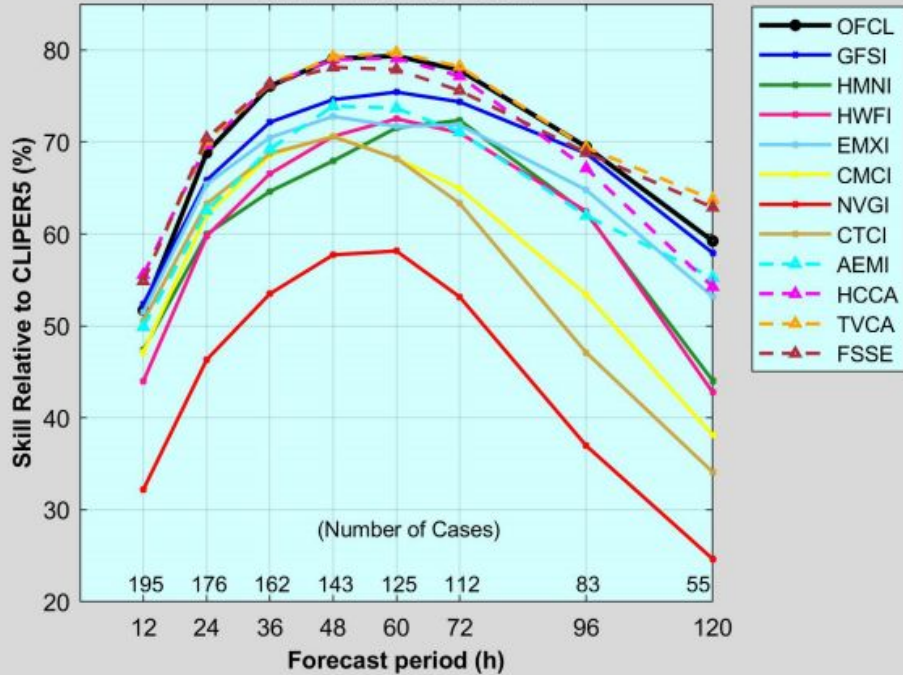
Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Warnings: Tropical Storm (blue), Hurricane (red)
Current wind extent: Hurricane (brown), Tropical Storm (yellow)

WHAT WEATHER MODEL SHOULD YOU USE FOR YOUR HURRICANE FORECASTING?

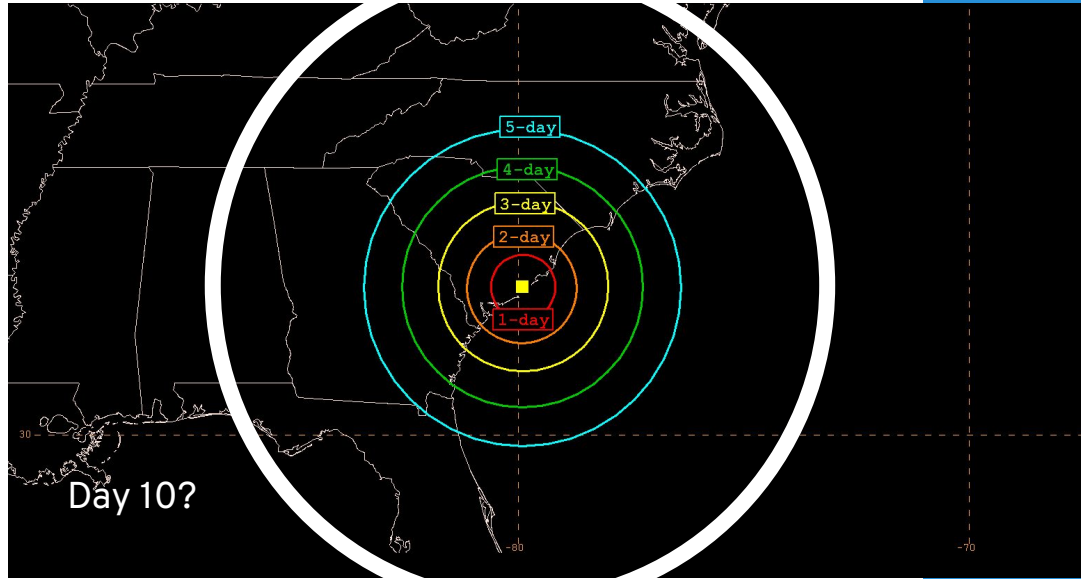
1. The GFS (American model)
2. The Euro (European model)
3. The ICON (German model)
4. The UKMET (UK model)
5. The HWRF (Hurricane model)
6. I like Spaghetti
7. You shouldn't.

**Track Forecast Skill (Early Models)
2021 - Atlantic Basin**



- In 2021, no individual model performed better than the official NHC track forecasts.
- A few consensus aids (dashed lines) did slightly outperform NHC at early lead times.

How good are the forecasts?



This is a good visual representation on how large that error is at Day 5. Imagine how large it is when you see a weather model showing it at day 10?



WIND HAZARDS AND COMMUNICATION

**WHAT ACTIONS WOULD YOU TAKE IF A CATEGORY
1 STORM WAS MAKING LANDFALL WITH 20
INCHES OF RAIN AND 18 FEET OF SURGE?**

WHAT HAZARD CAUSES THE MOST LOSS OF LIFE?

THE SAFFIR-SIMPSON WIND SCALE

Saffir-Simpson Hurricane Wind Scale



WIND: 74-95 mph

DAMAGE: Very dangerous winds will produce some damage



WIND: 96-110 mph

DAMAGE: Extremely dangerous winds will cause extensive damage



WIND: 111-129 mph

DAMAGE: Devastating damage will occur



WIND: 130-156 mph

DAMAGE: Catastrophic damage will occur

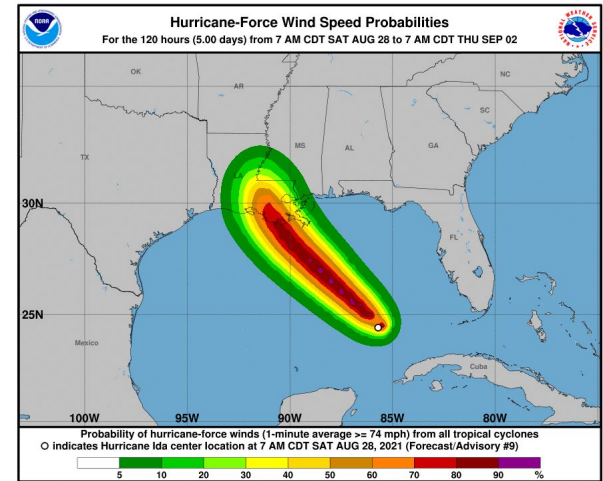
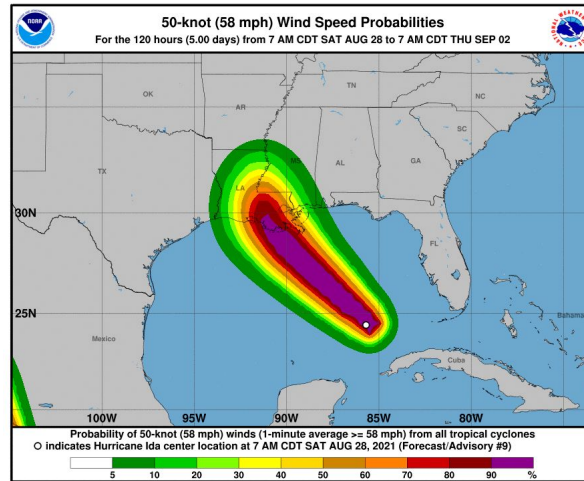
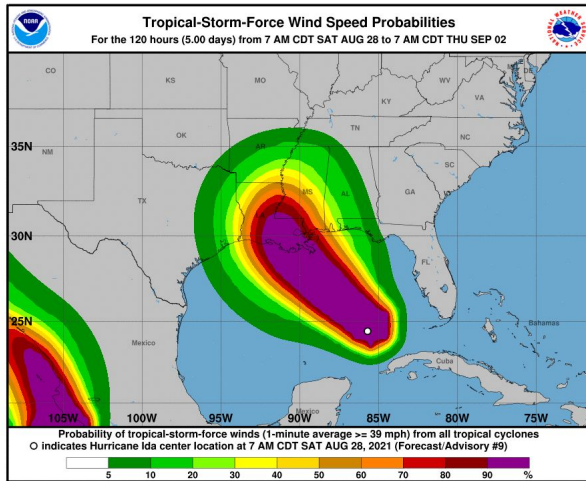


WIND: 157 mph or higher

DAMAGE: Catastrophic damage will occur



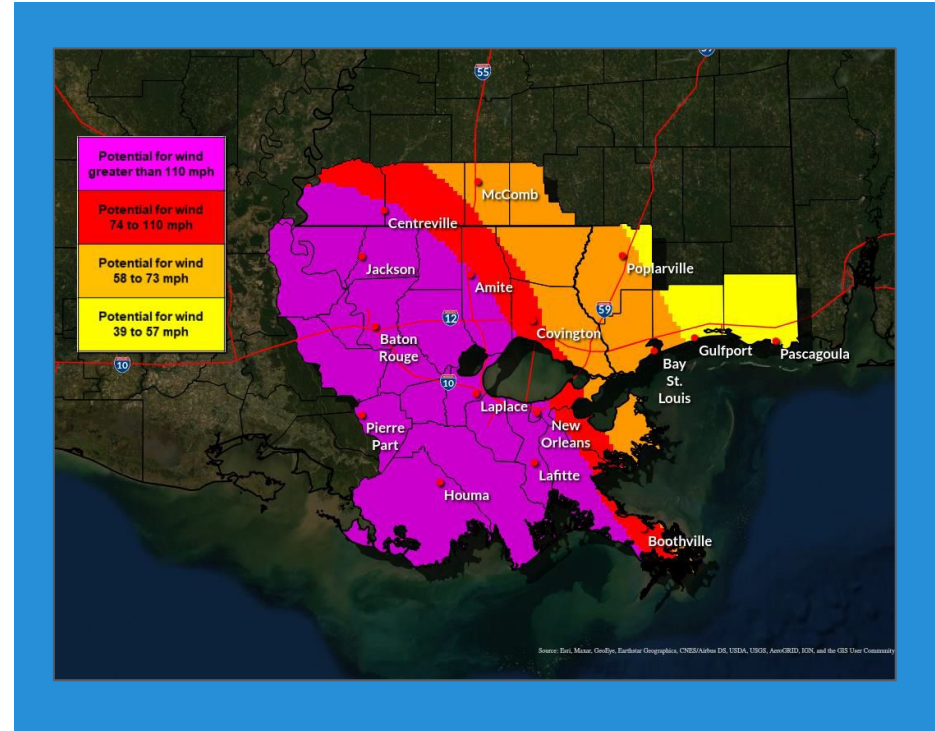
WIND SPEED PROBABILITIES



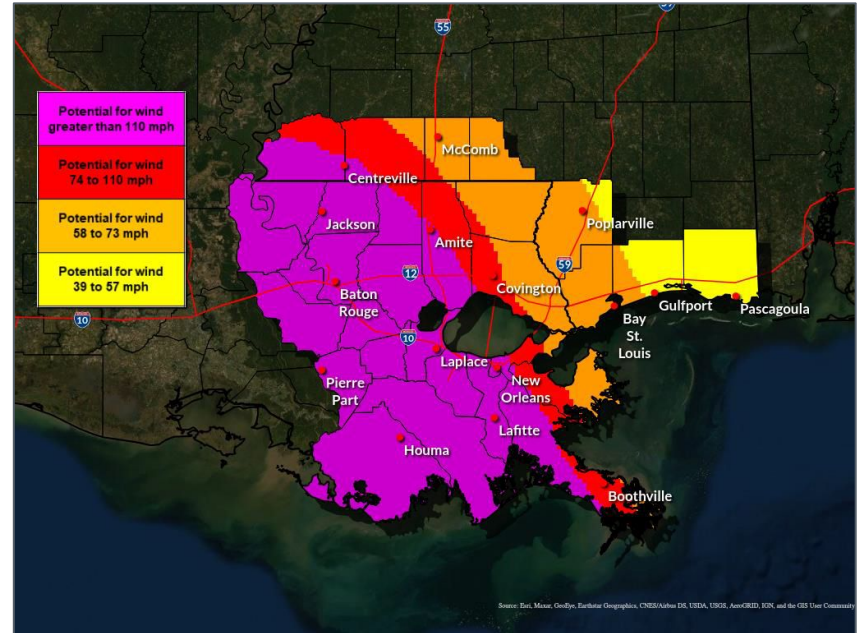
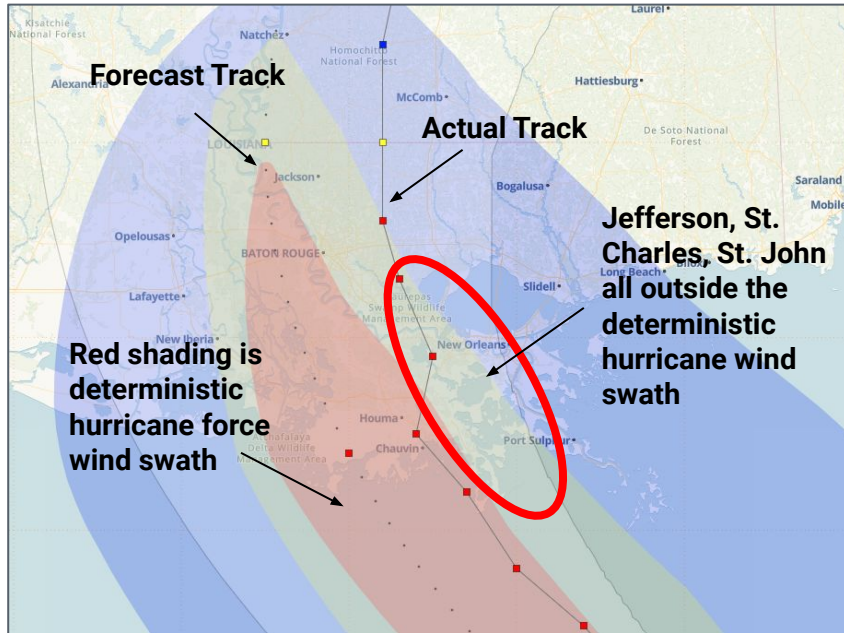
- Available for 34kt, 50kt, 64kt wind speeds out 5 days
- Remember, low probabilities can be significant!

HURRICANE THREATS AND IMPACTS GRAPHICS (HTI)

- Probabilistic forecast based on the current NHC advisory and accounting for reasonable forecast errors
- Wind, Tornado, Surge, Flooding
- Provides the **POTENTIAL** of what you should prepare for- likely will **be higher** than what is in the forecast
- Example from Hurricane Ida 10am 8/28.



WHY USE HTI'S?

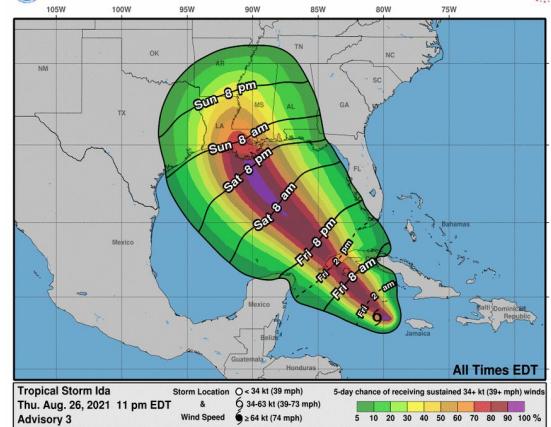


All graphics associated with the 10am CDT forecast 8/28 for Hurricane Ida

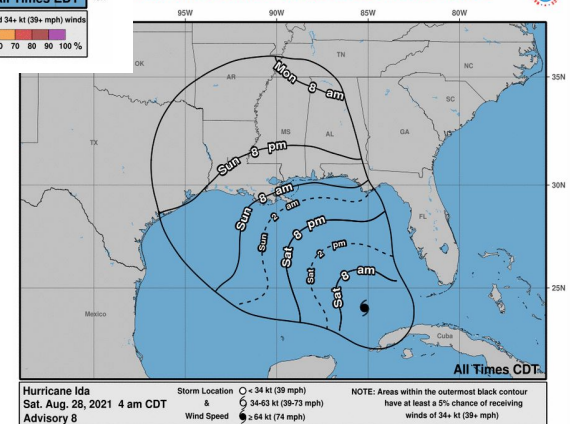
TIME OF ARRIVAL GRAPHICS

- Provides probabilistic time of arrival of 34 KT/39 MPH winds
- Earliest reasonable is based on 10% threshold- 90% chance that the storm will arrive AFTER the time on the graphic.
- Most likely is based on 50% threshold.

Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



ikely Arrival Time of Tropical-Storm-Force Winds

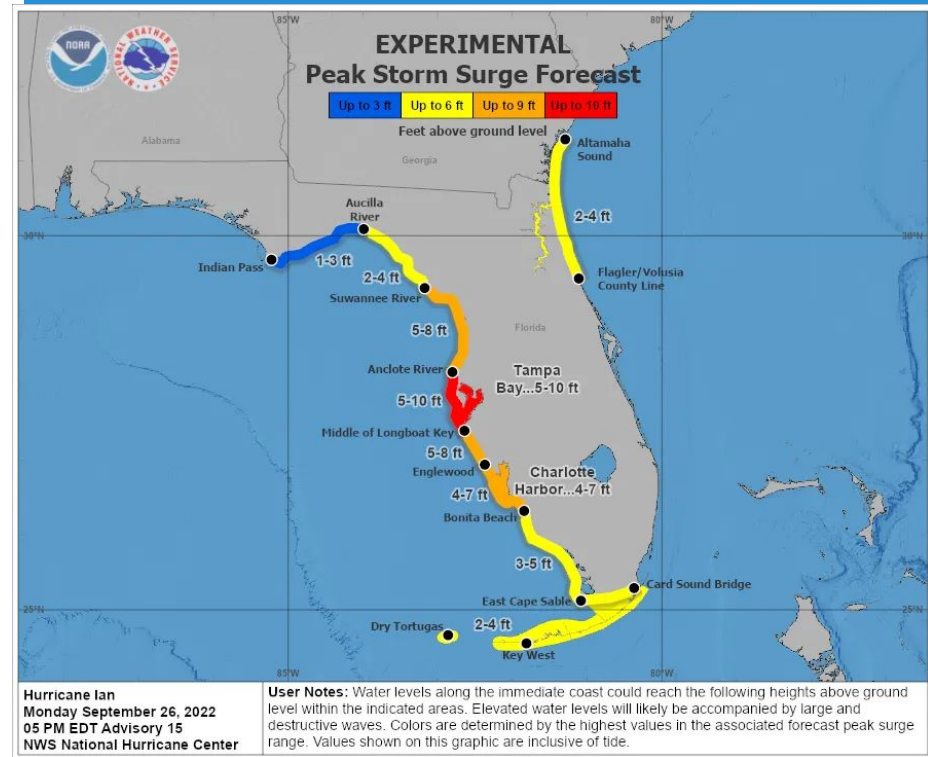




STORM SURGE

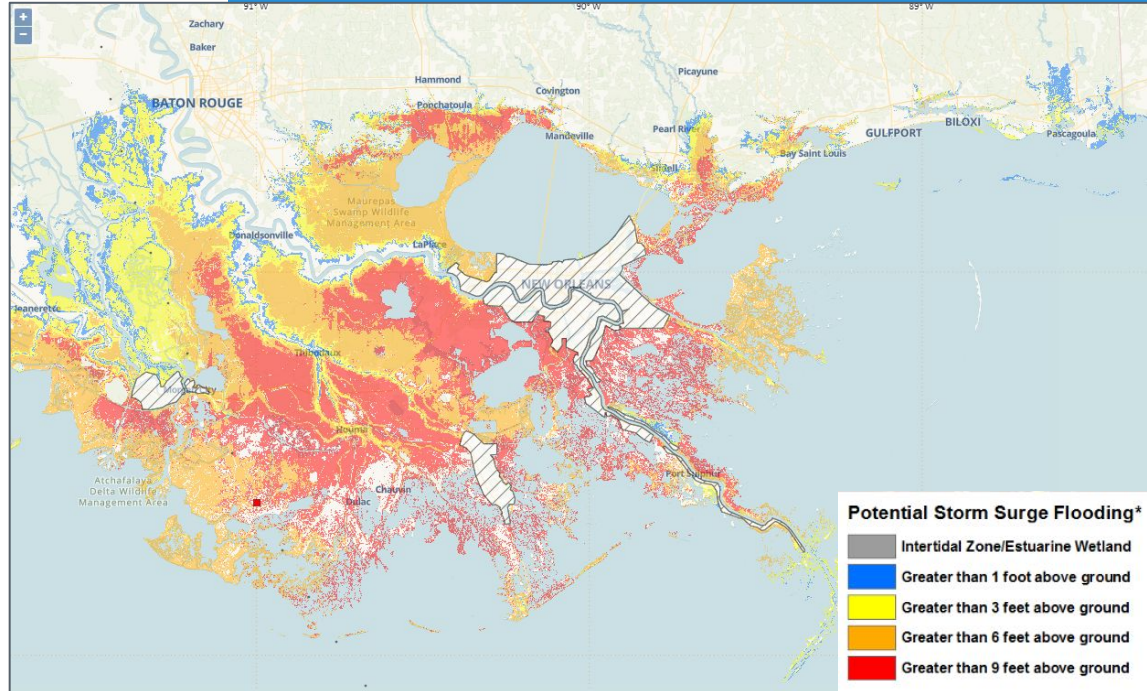
PEAK STORM SURGE FORECAST GRAPHIC

- Provides potential peak inundation values along the open coast
- Not everywhere will see these values
- Does NOT indicate potential depths away from the open coast
- Available around advisory time when watches/warnings are in effect.



STORM SURGE FLOODING MAP

- Based on probabilistic surge forecasts
- Provides a reasonable worst case inundation at each location based on the current NHC forecast track and intensity.
- Shows how high above ground the water is forecast to go, in 3 feet intervals.



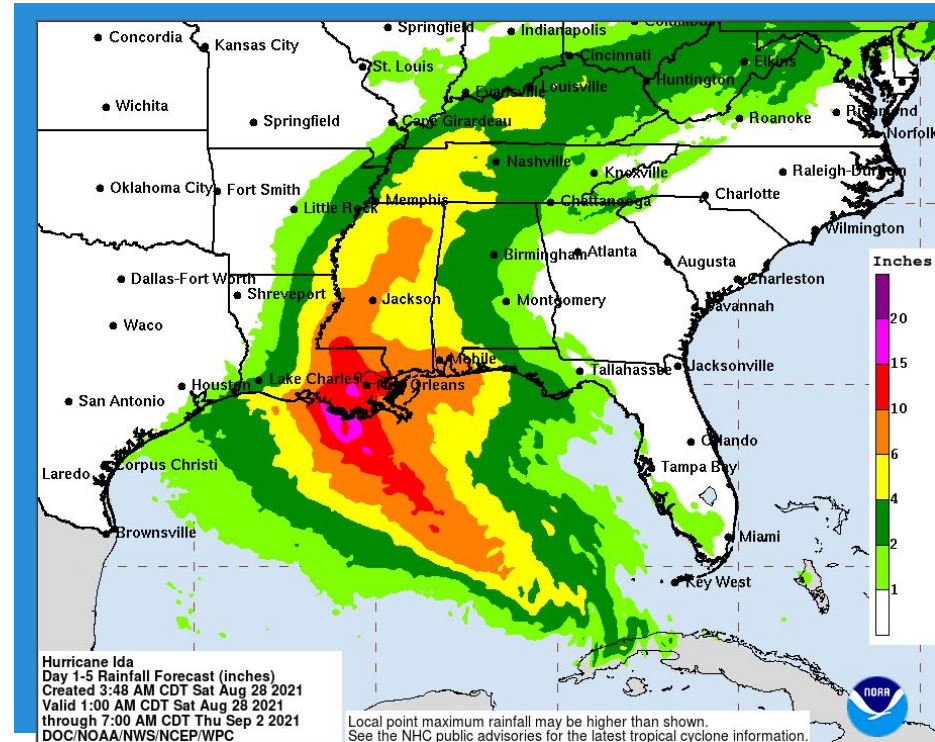


NOFD

FLOODING RAIN

DETERMINISTIC RAINFALL FORECAST (QPF)

- Rainfall forecast graphics for tropical systems are created with a broader color scale .
- They are hosted on both the WPC and NHC website and typically include 3 to 5 days of rainfall depending on the storm.





OTHER IMPORTANT TOPICS

WATCH/WARNINGS DURING TROPICAL

- Storm Surge Watch/Warning**
- Hurricane Watch/Warning**
- Tropical Storm Watch/Warning
- Flood Watch and Flash Flood Warnings**
- Tornado Watches and Tornado Warnings**
 - Extreme Wind Warnings**

***These warnings will be alerted via Wireless Emergency Alerts that automatically get pushed to cell phones.

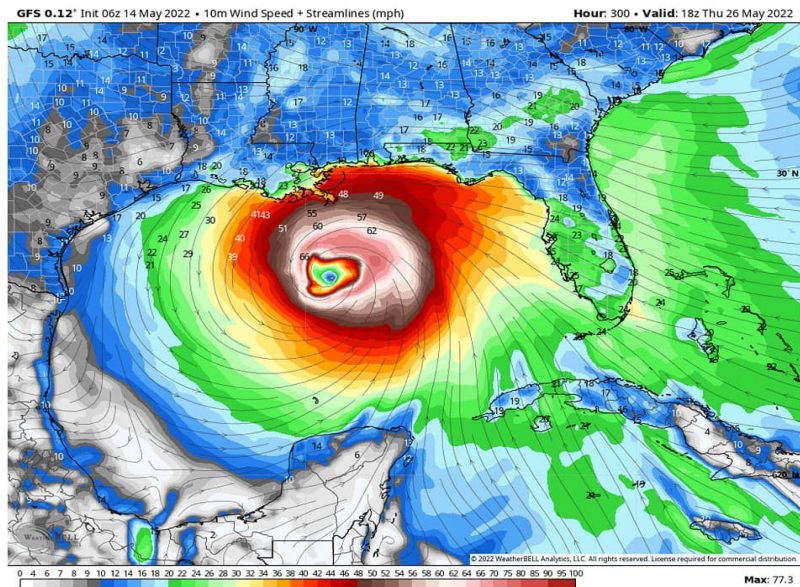
Watches are issued 48 hours out and warnings 24 hours.



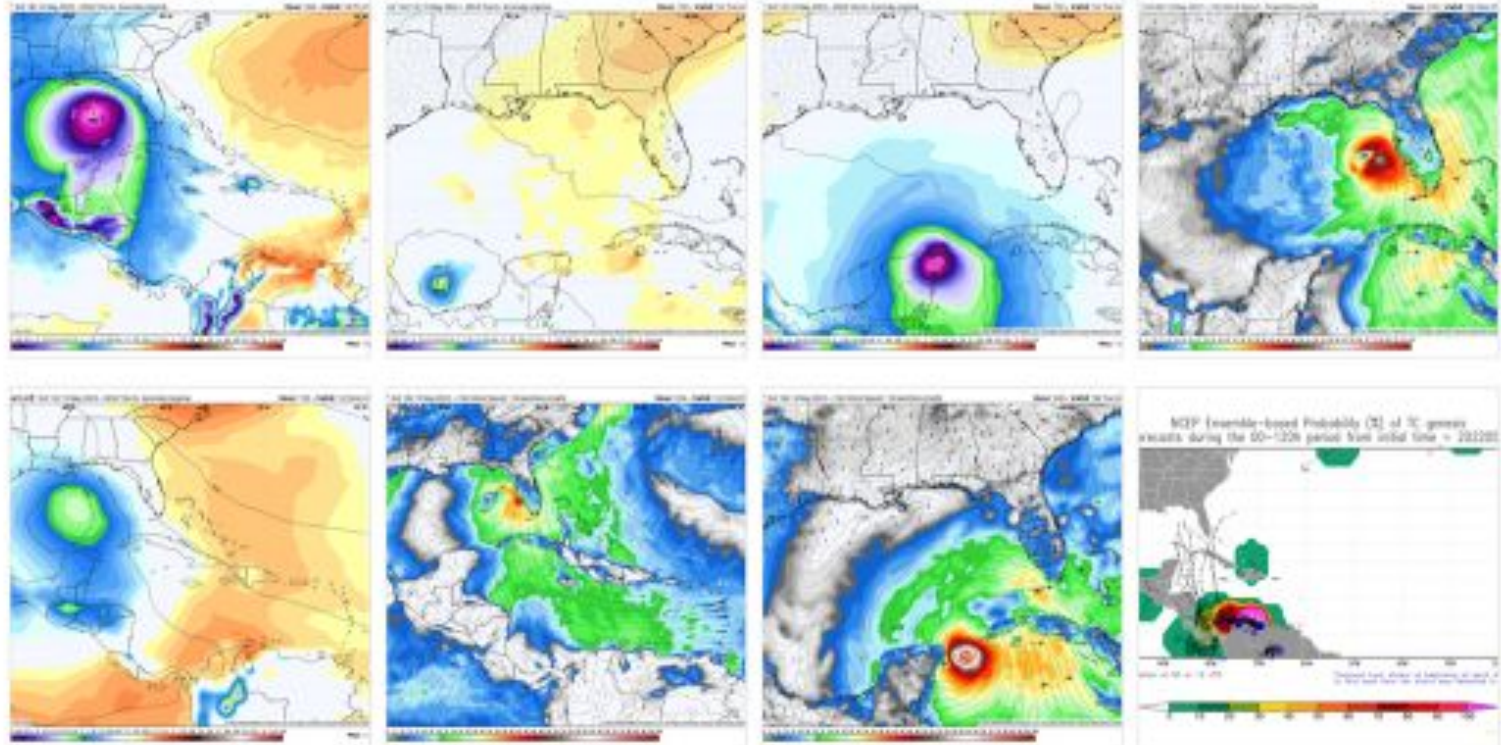
**SOCIAL
MEDIA**

“SOCIAL MEDIAROLOGISTS”

- Just because a forecast goes “viral” doesn’t mean it’s likely to happen.
- Individual models constantly create tropical systems.
- There is a 175 mile track error out 5 days. Imagine what that is at 10 days?!
- **We will NEVER hide a hurricane from you!**
- **NEVER follow someone who is showing just weather models.**



WHAT HURRICANE DO YOU THINK THESE IMAGES WERE FROM?



THERE WAS NO STORM!

RESOURCES

www.weather.gov/neworleans

www.weather.gov/srh/tropical?office=lix

www.nhc.noaa.gov

www.facebook.com/NWSNewOrleans

www.twitter.com/NWSNewOrleans

www.weather.gov/lix/embrief

(includes link to latest briefing slides and recording)

And last but not least... US! If you're struggling to put together the pieces, give us a call. We're here to help!

QUESTIONS?!?!

LAUREN NASH

LAUREN.NASH@NOAA.GOV