# HURRICANE HAZARDS AND COMMUNICATION



2023 HURRICANE SEASON

#### NATIONAL WEATHER SERVICE New Orleans/ Baton Rouge





Meteorologist





#### **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: 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!

But sea surface temperatures are also at a record high!

# **STRONG EL NINO YEARS**



It doesn't matter what the forecast is if that \*one\* storm hits us! 1965



U.S. U.S. TEXAS LA. FLA. MEXICO CUBA Caribbean Sea





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!**

# WHAT WILL WE SAY EVERY TIME YOU CALL US **AND ASK "WHAT ABOUT THAT STORM THE MODELS ARE SHOWING THAT SOCIAL MEDIA IS TALKING OUT ABOUT THAT'S MORE THAN 7** DAYS OUT?"

(YOU CAN COPY AND PASTE THIS FROM OUR FIRST EMAIL OF The season and reuse it every time!) It is far too soon to discuss any potential impacts due to the high level of uncertainty in where/when it might develop and where it might move, IF it develops at all. We do not issue forecasts more than 7 days out. Please follow official sources of weather information. Please know that our office WILL send out email updates if/when there is a reasonable threat of tropical activity in the Gulf.



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







#### 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

## **REVIEW: THE NHC ADVISORY CYCLE**

- When no watches/warnings in effect anywhere:
  - Full advisory packages issued at 4a, 10a, 4p, 10p CDT

- When watches/warnings are in effect somewhere:
  - Full advisory packages issued at 4a, 10a, 4p, 10p CDT
  - Intermediate advisories issued at 1a, 7a, 1p, 7p CDT

- When a storm with a well defined eye is within radar range:
  - Full advisory packages issued at 4a, 10a, 4p, 10p CDT
  - Intermediate advisories issued at 1a, 7a, 1p, 7p CDT

# **WHAT INFORMATION CAN YOU FIND IN THIS GRAPHIC?**

- How strong the winds will be
- Which hurricane hazard will be the most impactful
- Where the center of the storm is most likely to move
- What areas will feel the greatest impacts from the storm
- 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



# 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.





- 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.





# **THE SAFFIR-SIMPSON WIND SCALE**



# 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.









#### **SLOSH MOMS AND MEOWS**

- MOMs (maximum of maximums) vary category only and are primarily used during the off season for planning purposes
- MEOWs (maximum envelope of water) vary direction, forward speed, and category and can be used in the 3-5 day time frame when there is still significant uncertainty about the exact track/intensity of a storm
- Available through HVX using the storm surge explorer



### **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.





# FLOODING

RAIN

#### NOFD

#### **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.



## **Marine Integrated Warning Team** Workshop 2023

To be held at the NOAA Gulf of Mexico Disaster Response Center in Mobile, AL

#### Wednesday, July 26th!

Are you interested in collaborating and sharing your knowledge and/or experiences with the NWS and other marine industry colleagues?

US National Weather Service Mobile Alabama







ere is an Enhanced risk of severe weather for the ddle/upper Texas coast and parts of the central ast, Tornadoes (some strong) and damaging



READY RESPONSIVE



MBASSADO

Registration info coming soon!

Hosted by the National Weather Service Offices based in New Orleans, LA, Mobile, AL, and

Tallahassee, FL





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!

#### LAUREN NASH LAUREN.NASH@NOAA.GOV

#### **QUESTIONS?!?!**