

# Hurricane Season 2020

Mark Wool

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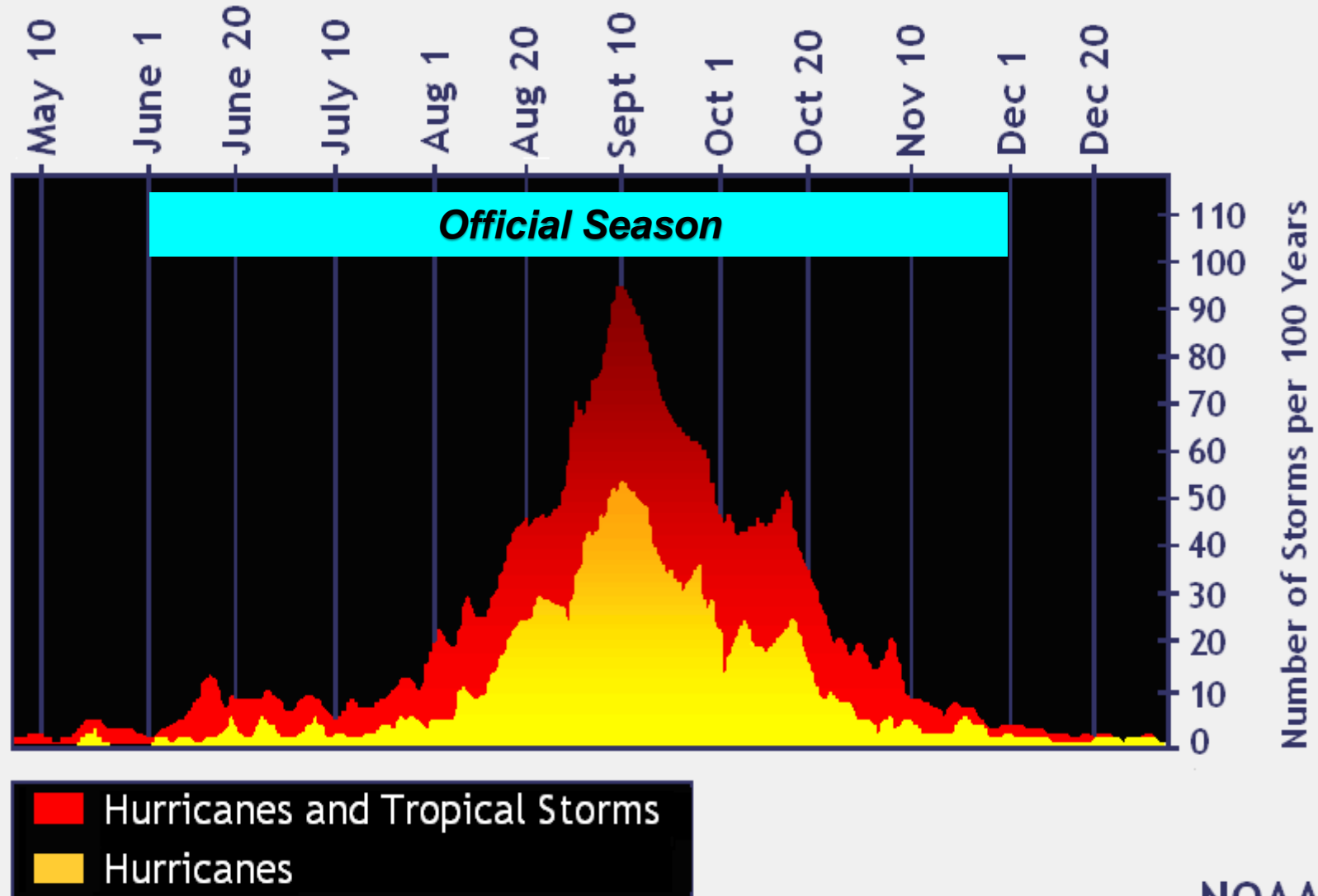
# Outline

- Hurricane Season Basics
- Tropical Webpage
- Useful NHC Graphics
- Seasonal Outlook
- Preparedness Resources



# The Basics

# The Official Season



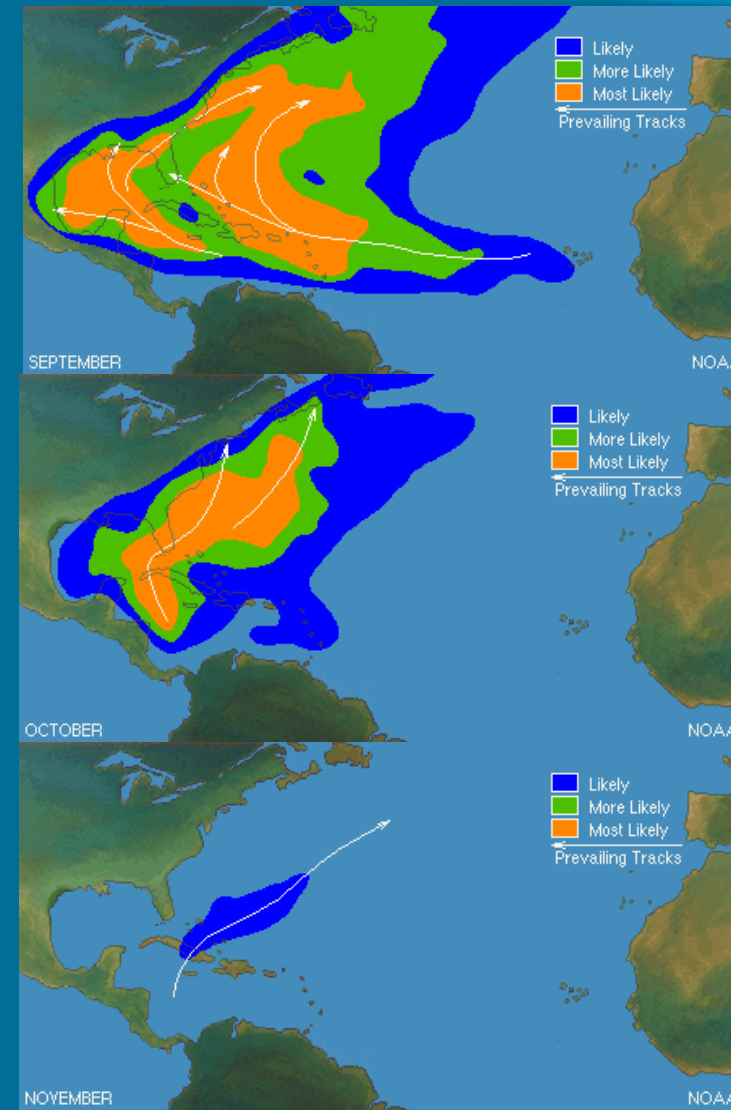
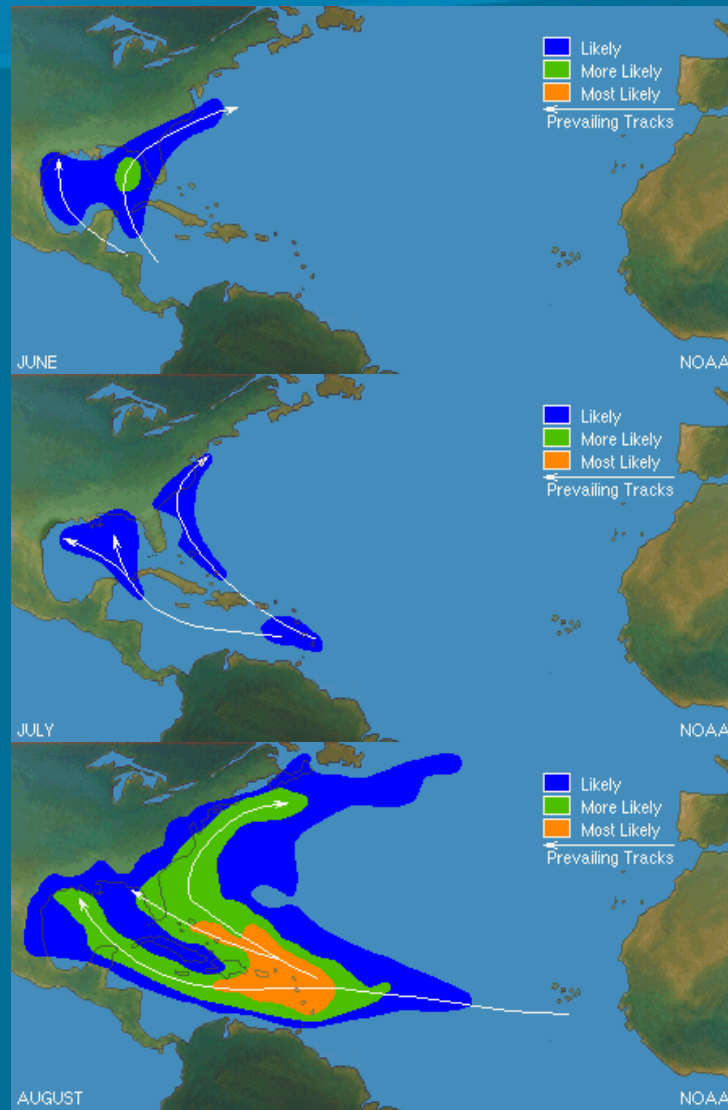
NOAA



# Peak of the Season

- August to October
- Since 1950, 78% of Atlantic named storms have formed in these months.
- 84% of hurricanes
- 92% of major hurricanes (Cat 3-5)

# Favored Development Areas



# Tropical Cyclone Thresholds & the Saffir-Simpson Wind Scale

Cyclone Type	Maximum Sustained Winds
Tropical Depression	38 mph or less
Tropical Storm	39 to 73 mph
Hurricane	74 mph or greater
Major Hurricane	111 mph or greater

Category	Wind Speed Range (peak 1-minute wind)
1	74-95
2	96-110
3	111-129
4	130-156
5	157-??

# Watches and Warnings

## Watches (T-48)

*T = arrival of tropical storm force winds*

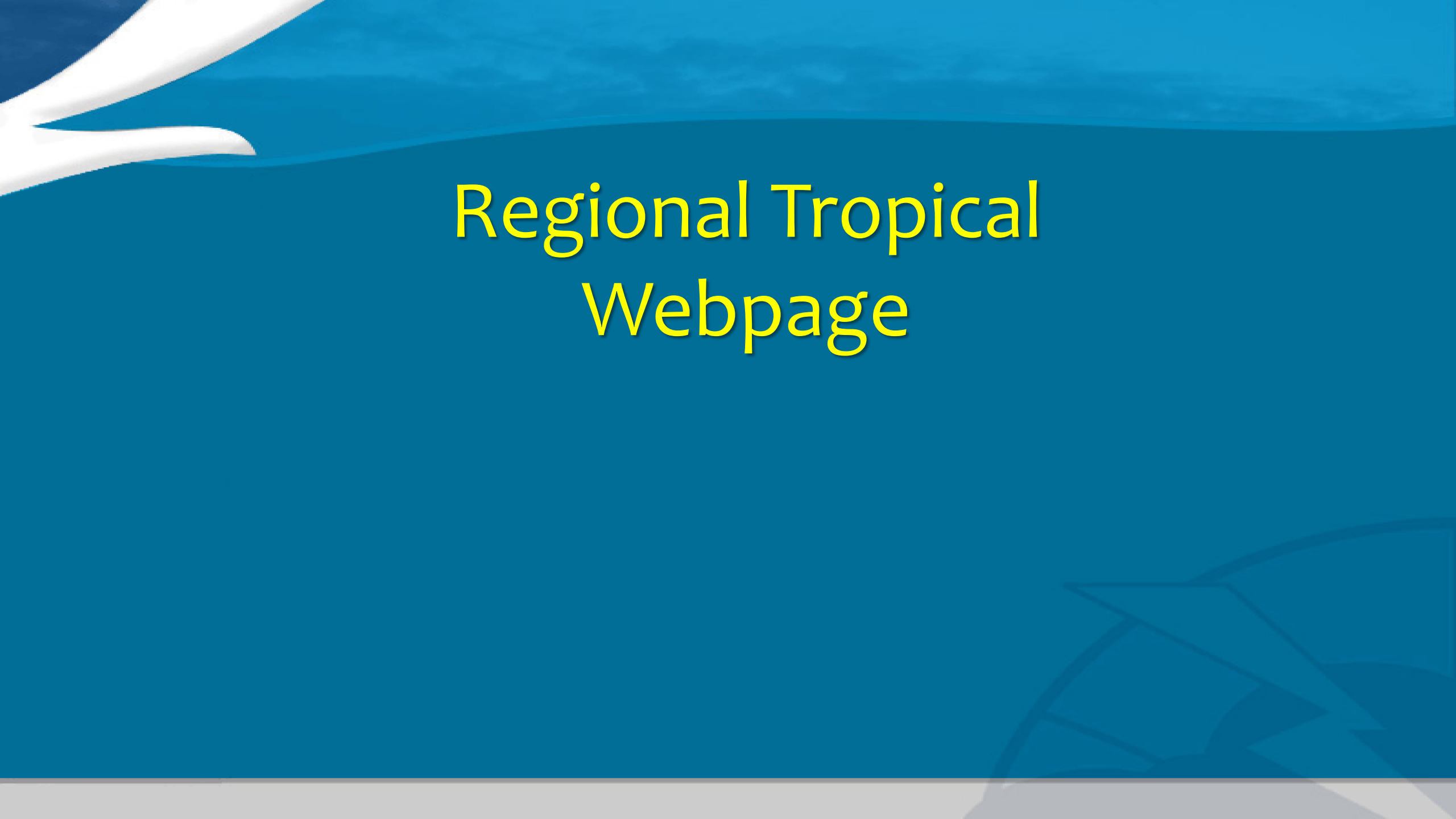
- **Tropical Storm Watch** – tropical storm conditions are possible within **48 hours**.

- **Hurricane Watch** – hurricane conditions are possible; issued **48 hours in advance of the anticipated onset of tropical-storm-force winds**.

## Warnings (T-36)

- **Tropical Storm Warning** – tropical storm conditions are expected within **36 hours**.

- **Hurricane Warning** – hurricane conditions are expected; issued **36 hours in advance of the anticipated onset of tropical-storm-force winds**.





# Regional Tropical Webpage



# Regional\* Tropical Page

weather.gov/tallahassee



## NATIONAL WEATHER SERVICE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

[HOME](#) [FORECAST](#) [PAST WEATHER](#) [SAFETY](#) [INFORMATION](#) [EDUCATION](#) [NEWS](#) [SEARCH](#) [ABOUT](#)

Local forecast by "City, St" or ZIP code


[Location Help](#)

### News Headlines

- [Get the latest on the tropics here. Be prepared!](#)
- [Forecasters predict a near- or above-normal 2018 Atlantic hurricane season](#)

### MY FORECAST

Tallahassee FL




Overcast

# 84°F

29°C [Get Detailed info](#)

This Afternoon



60%  
T-storms Likely

## NWS Forecast Office Tallahassee, FL

[Weather.gov](#) > Tallahassee, FL

Tallahassee, FL  
Weather Forecast Office

[Current Hazards](#) [Current Conditions](#) [Radar](#) [Forecasts](#) [Rivers and Lakes](#) [Climate and Past Weather](#) [Local Programs](#)

Today

Hourly View  
Forecaster's Discussion  
Activity Planner  
Fire  
Marine  
**Tropical**  
Aviation  
Local Models

Tomorrow

### Today

High Temperature and Chance of Precipitation


100%  
80%

85° Albany  
84° Tifton

Dothan  
Blakely

### Weather Forecast Office Tallahassee, FL

Issued May 30, 2018 4:03 AM EDT



# Regional\* Tropical Page

[weather.gov/srh/tropical?office=tae](https://weather.gov/srh/tropical?office=tae)

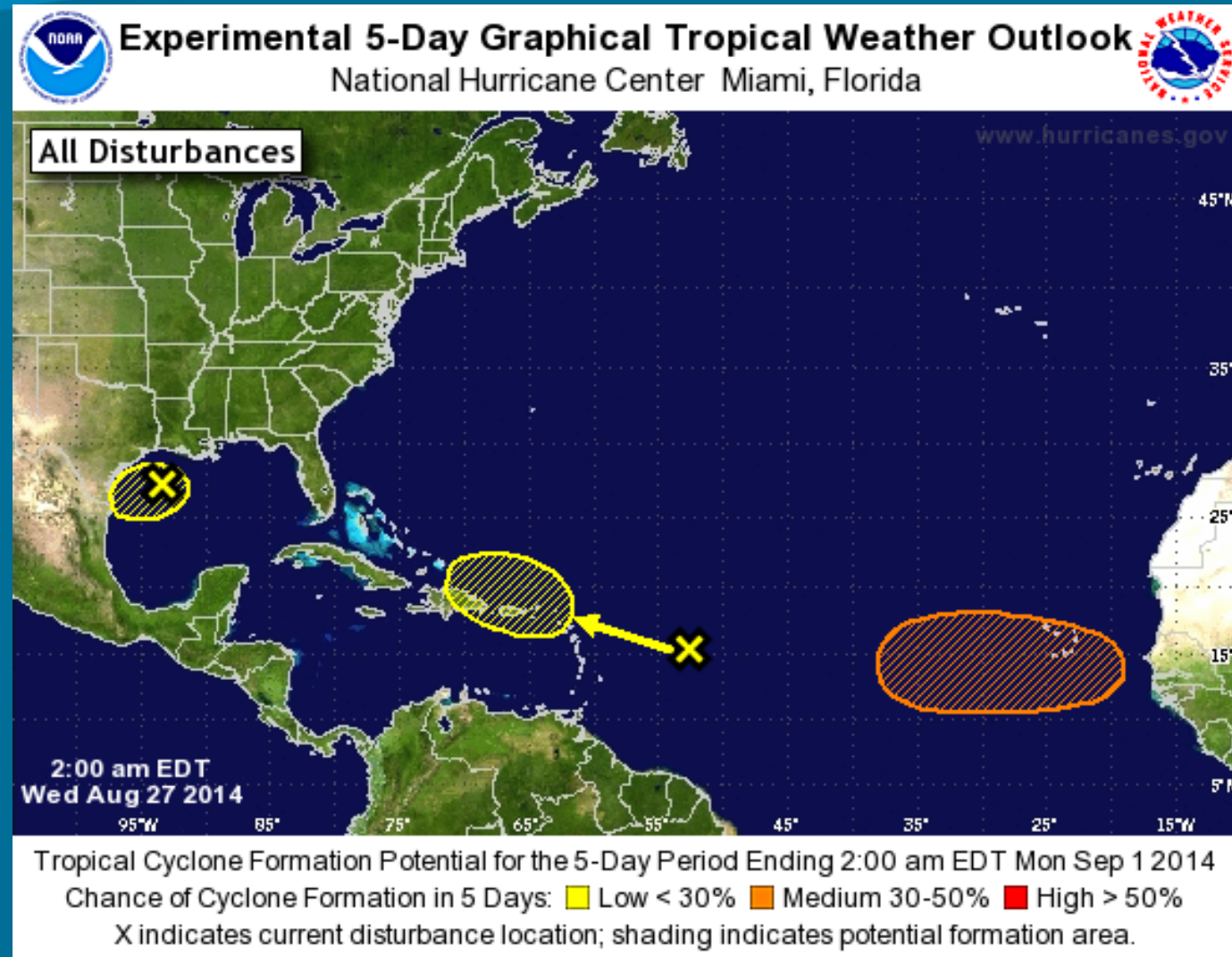
- Click here to go to NHC's Graphical Tropical Weather Outlooks
- Text TWO appears here
- All sorts of additional information available via the tabs. Check them out!

The screenshot displays the NWS Southern Region Tropical Webpage. At the top, the NWS logo and 'NATIONAL WEATHER SERVICE' are visible, along with the text 'NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'. Below this, the page is titled 'NWS Southern Region Tropical Webpage' and 'Southern Region Headquarters'. A navigation bar includes links for 'Local Forecast Offices A-L', 'Local Forecast Offices M-Z', 'River Forecast Centers', 'Center Weather Service Units', and 'Regional HQ'. A secondary navigation bar features tabs for 'Outlook', 'Active Storms', 'Threats and Impacts', 'Local Products', 'Satellite', 'Radar', 'Social Media', 'Preparedness', and 'Links'. The 'Outlook' tab is selected, showing a 'Local Briefing from the National Weather Service office in Tallahassee'. This briefing includes two graphical outlooks: a 'Two-Day Graphical Tropical Weather Outlook' and a 'Five-Day Graphical Tropical Weather Outlook', both from the National Hurricane Center in Miami, Florida. Below the outlooks, there is a 'Special Tropical Weather Outlook' section with text regarding advisories on newly formed Subtropical Storm Alberto and the resumption of routine issuance of the Tropical Weather Outlook on June 1. The page also includes a 'Product Description' link and a 'Click each image above to view the full-size image.' instruction.

\*All offices will have this same web page layout.



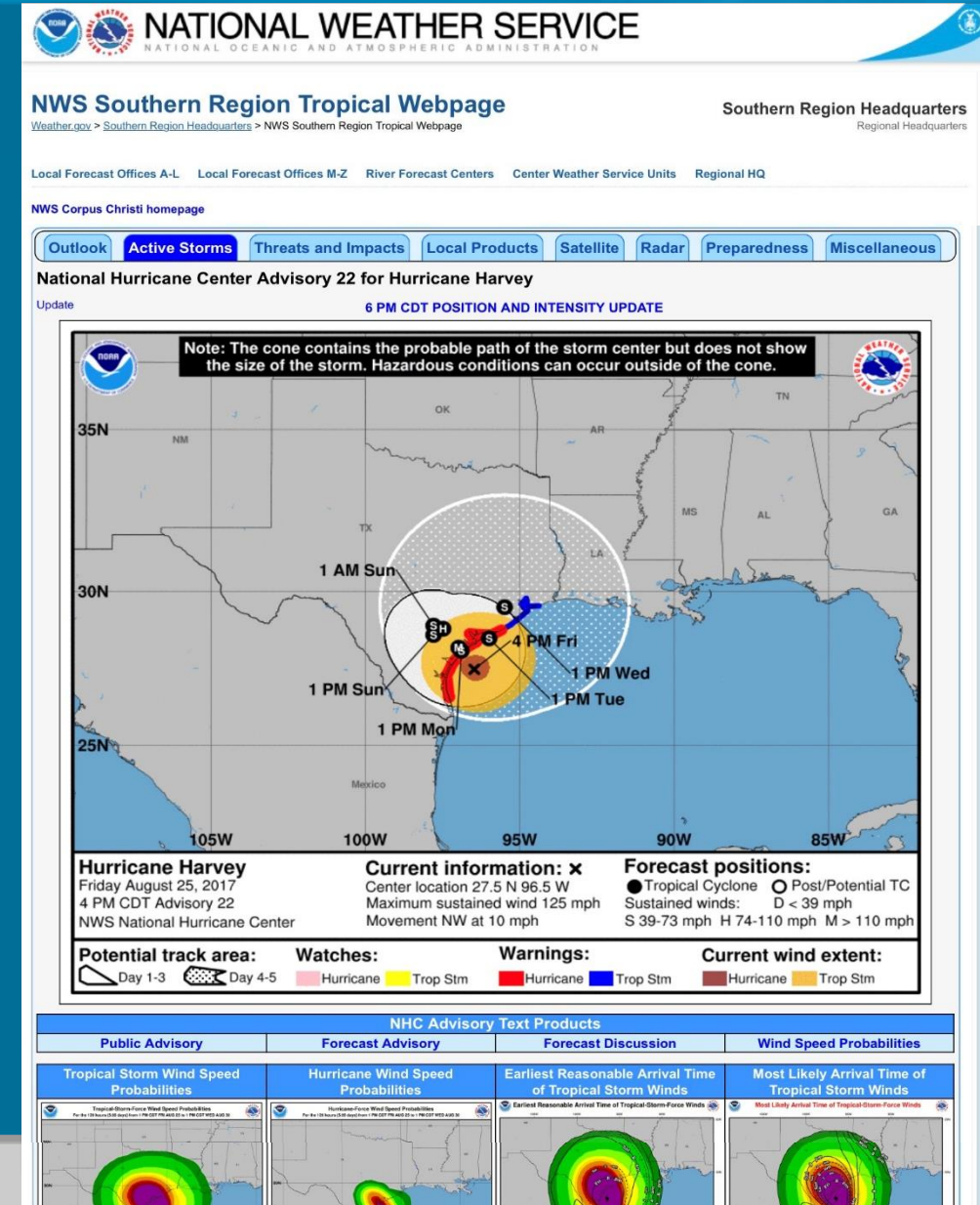
# Active GTWO Example



# Regional Tropical Webpage

[weather.gov/srh/tropical?office=tae](http://weather.gov/srh/tropical?office=tae)

- **One-Stop Shop** for all tropical related local forecast information, tailored to each forecast area along U.S. coastline.
- **Active Storms** tab becomes active when NHC initiates Tropical Cyclone advisories.
- Scrolling down the page provides access to NHC products related to each active storm and WPC rainfall products.

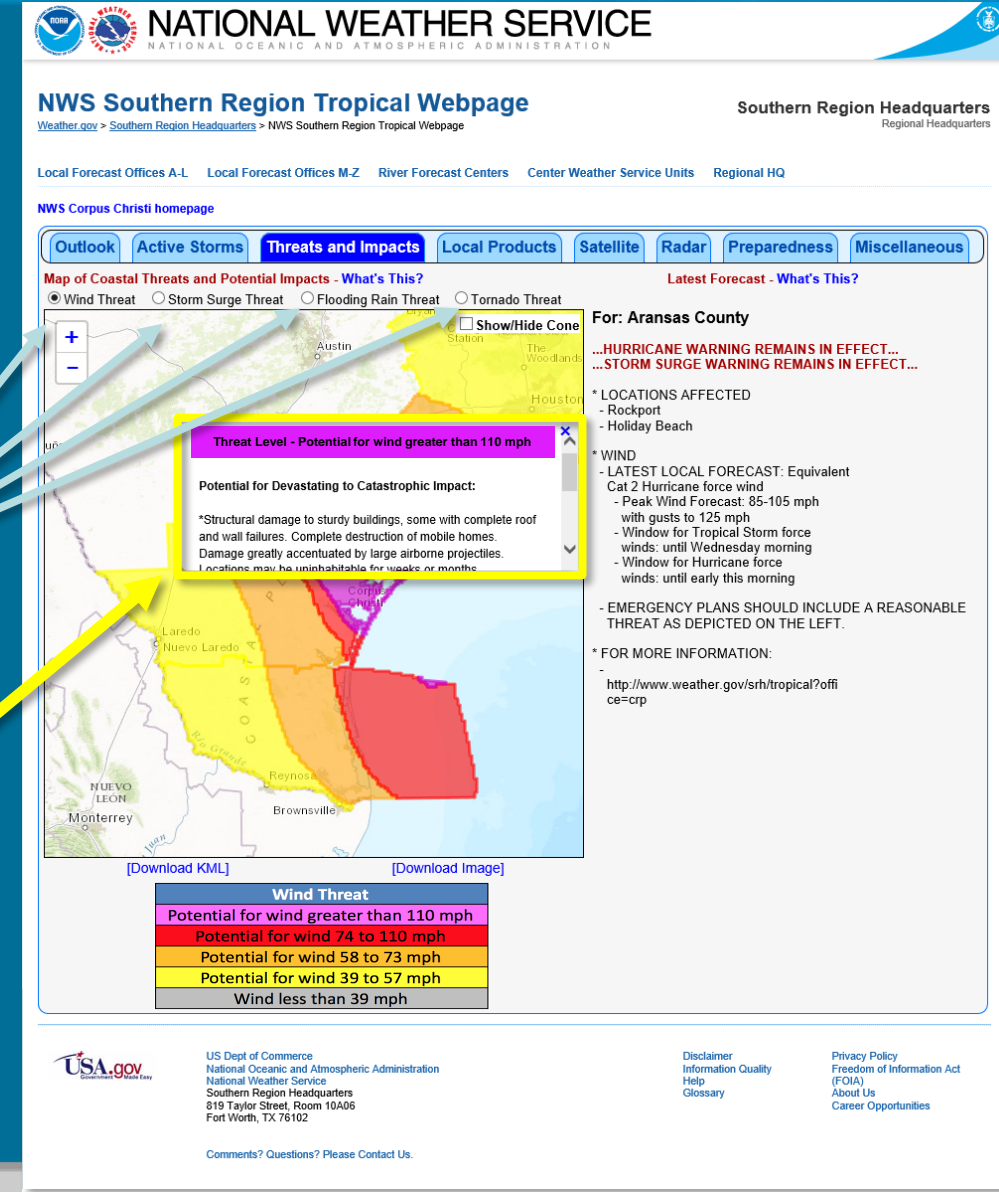




# Regional Tropical Webpage

[weather.gov/srh/tropical?office=tae](http://weather.gov/srh/tropical?office=tae)

- Threats and Impacts tab becomes active when WFO Issues Watches/Warnings for local area.
- Communicates threats & potential impacts for each tropical hazard in the local area including: Wind, Storm Surge, Flooding Rain, and Tornadoes.
- Helps communicate degree of preparation needed with safety margin factored in.



**NATIONAL WEATHER SERVICE**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**NWS Southern Region Tropical Webpage**  
[Weather.gov](#) > [Southern Region Headquarters](#) > NWS Southern Region Tropical Webpage

Southern Region Headquarters  
Regional Headquarters

Local Forecast Offices A-L   Local Forecast Offices M-Z   River Forecast Centers   Center Weather Service Units   Regional HQ

NWS Corpus Christi homepage

Outlook   Active Storms   **Threats and Impacts**   Local Products   Satellite   Radar   Preparedness   Miscellaneous

Map of Coastal Threats and Potential Impacts - What's This?   Latest Forecast - What's This?

☒ Wind Threat   ☐ Storm Surge Threat   ☐ Flooding Rain Threat   ☐ Tornado Threat   ☐ Show/Hide Cone

**For: Aransas County**

...HURRICANE WARNING REMAINS IN EFFECT...  
...STORM SURGE WARNING REMAINS IN EFFECT...

\* LOCATIONS AFFECTED  
- Rockport  
- Holiday Beach

\* WIND  
- LATEST LOCAL FORECAST: Equivalent Cat 2 Hurricane force wind  
- Peak Wind Forecast: 85-105 mph with gusts to 125 mph  
- Window for Tropical Storm force winds: until Wednesday morning  
- Window for Hurricane force winds: until early this morning

- EMERGENCY PLANS SHOULD INCLUDE A REASONABLE THREAT AS DEPICTED ON THE LEFT.

\* FOR MORE INFORMATION:  
- <http://www.weather.gov/srh/tropical?office=crp>

[Download KML]   [Download Image]

**Wind Threat**

Potential for wind greater than 110 mph
Potential for wind 74 to 110 mph
Potential for wind 58 to 73 mph
Potential for wind 39 to 57 mph
Wind less than 39 mph

USA.gov   US Dept of Commerce  
National Oceanic and Atmospheric Administration  
National Weather Service  
Southern Region Headquarters  
819 Taylor Street, Room 10A06  
Fort Worth, TX 76102

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Comments? Questions? Please Contact Us.

# Regional Tropical Webpage

[weather.gov/srh/tropical?office=tae](https://weather.gov/srh/tropical?office=tae)

- Local Products tab also becomes active when WFO Issues Watches/Warnings for local area.
- Entire text of Hurricane Local Statement can be viewed here.

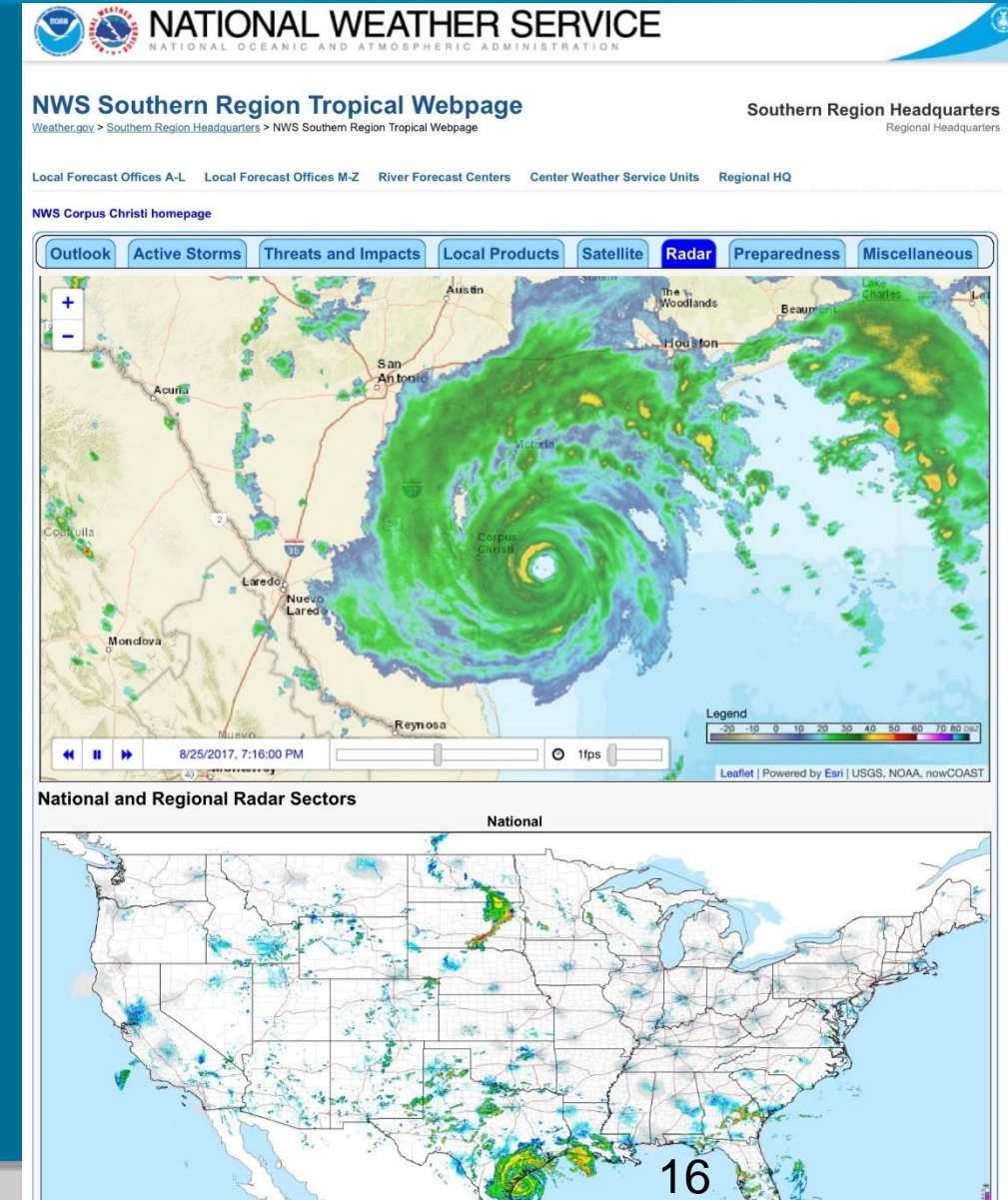
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# Regional Tropical Webpage

[weather.gov/srh/tropical?office=tae](https://weather.gov/srh/tropical?office=tae)

- Satellite and Radar data is always available.
- Preparedness tab is always available and provides quick access to local evacuation maps, preparedness guides and videos.
- Social Media tab has been added.

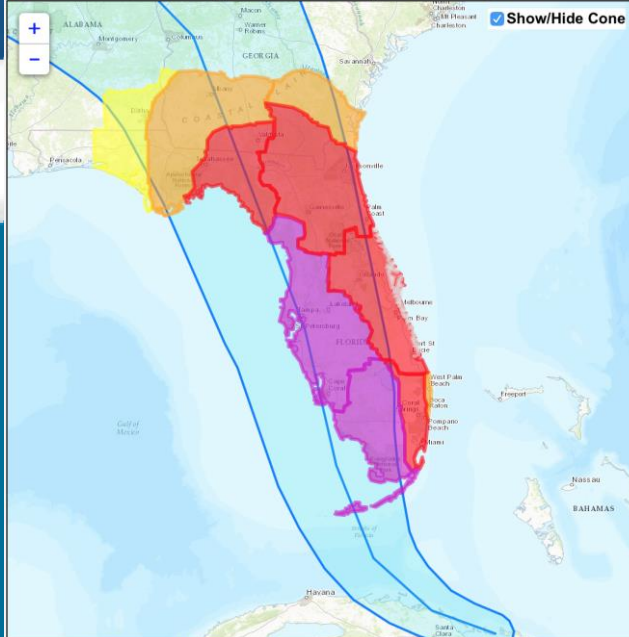




# Hurricane Threats & Impacts (HTI)

Map of Coastal Threats and Potential Impacts - What's This?

☒ Wind Threat ☐ Storm Surge Threat ☐ Flooding Rain Threat ☐ Tornado Threat



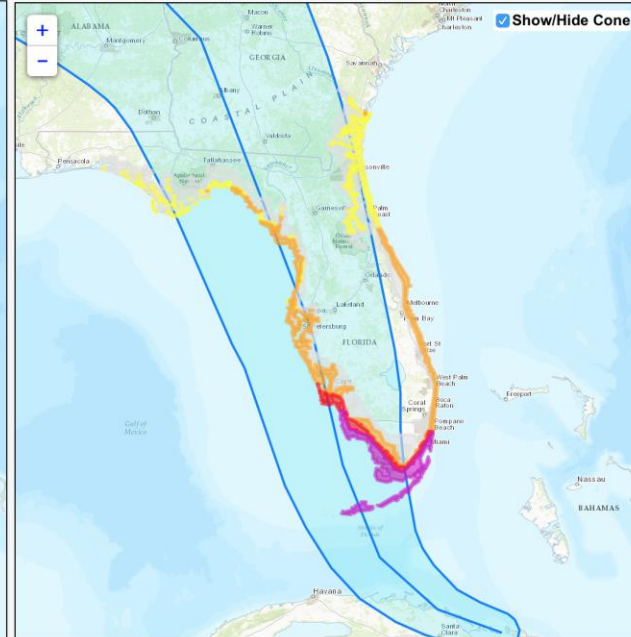
[Download KML]

[Download Image]

Wind Threat
Potential for wind greater than 110 mph
Potential for wind 74 to 110 mph
Potential for wind 58 to 73 mph
Potential for wind 39 to 57 mph
Wind less than 39 mph

Map of Coastal Threats and Potential Impacts - What's This?

☐ Wind Threat ☒ Storm Surge Threat ☐ Flooding Rain Threat ☐ Tornado Threat



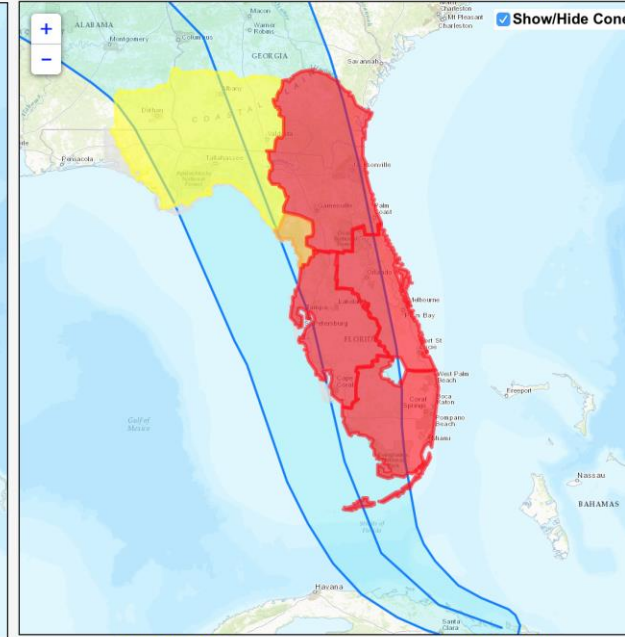
[Download KML]

[Download Image]

Storm Surge Threat
Potential for storm surge flooding greater than 9 ft above ground
Potential for storm surge flooding greater than 6 ft above ground
Potential for storm surge flooding greater than 3 ft above ground
Potential for storm surge flooding greater than 1 ft above ground
Little to no storm surge flooding

Map of Coastal Threats and Potential Impacts - What's This?

☐ Wind Threat ☐ Storm Surge Threat ☒ Flooding Rain Threat ☐ Tornado Threat



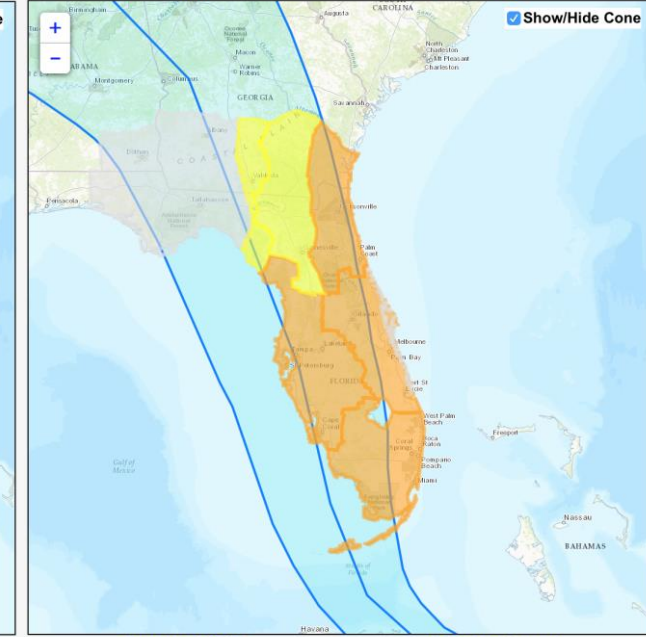
[Download KML]

[Download Image]

Flooding Rain Threat
Potential for extreme flooding rain
Potential for major flooding rain
Potential for moderate flooding rain
Potential for localized flooding rain
Little to no potential for flooding rain

Map of Coastal Threats and Potential Impacts - What's This?

☐ Wind Threat ☐ Storm Surge Threat ☐ Flooding Rain Threat ☒ Tornado Threat



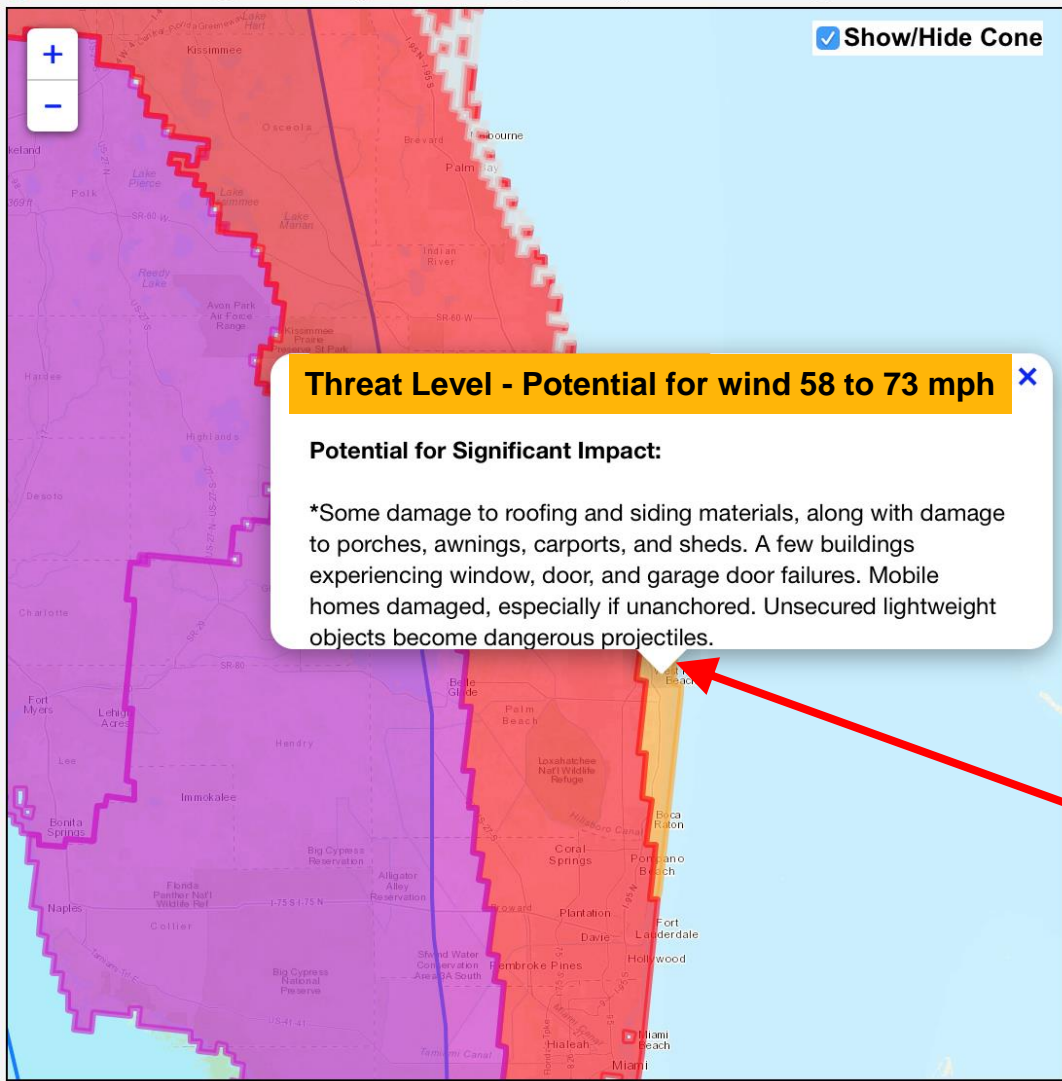
[Download KML]

[Download Image]

Tornado Threat
Potential for an outbreak of tornadoes
Potential for many tornadoes
Potential for several tornadoes
Potential for a few tornadoes
Tornadoes not expected

## Hurricane Threats and Impacts (HTI) Products

- Clicking on the map provides latest information from the TCV text product for your area relative to the four main tropical cyclone hazards: **Wind, Storm Surge, Flooding Rains, and Tornadoes**
- You will be able to find information on the **expected meteorological forecast** including *what* and *when* type information, **threat level** (which incorporates a safety margin based on historic size, track, and intensity errors), and corresponding **potential impact information** relative to each of those hazards.



**Threat Level - Potential for wind 58 to 73 mph**

**Potential for Significant Impact:**

\*Some damage to roofing and siding materials, along with damage to porches, awnings, carports, and sheds. A few buildings experiencing window, door, and garage door failures. Mobile homes damaged, especially if unanchored. Unsecured lightweight objects become dangerous projectiles.

**For: Coastal Palm Beach County**

**...HURRICANE WARNING REMAINS IN EFFECT...  
...STORM SURGE WARNING REMAINS IN EFFECT...**

**\* LOCATIONS AFFECTED**

- West Palm Beach
- Boca Raton
- Juno Beach
- Jupiter

**\* WIND**

- LATEST LOCAL FORECAST: Equivalent Tropical Storm force wind
- Peak Wind Forecast: 45-55 mph with gusts to 75 mph
- Window for Tropical Storm force winds: early Sunday morning until Monday afternoon

**- EMERGENCY PLANS SHOULD INCLUDE A REASONABLE THREAT AS DEPICTED ON THE LEFT.**

**\* FOR MORE INFORMATION:**

- <http://www.weather.gov/mfl>
- [www.co-palm-beach.fl.us](http://www.co-palm-beach.fl.us)
- For storm information call 2-1-1

**WHAT** should I be concerned about?

**WHERE** will it happen?

**HOW MUCH** is likely to occur?

**WHEN** should I expect it?

**WHAT** should I prepare for?

**Impact Statements** customized for the local area (i.e., topography, land use, infrastructure, etc.)

[Download KML]

[Download Image]

Wind Threat
Potential for wind greater than 110 mph
Potential for wind 74 to 110 mph
Potential for wind 58 to 73 mph
Potential for wind 39 to 57 mph
Wind less than 39 mph

**Hazard-Based Threat Scale** incorporates a “safety margin” relative to the uncertainty in the forecast



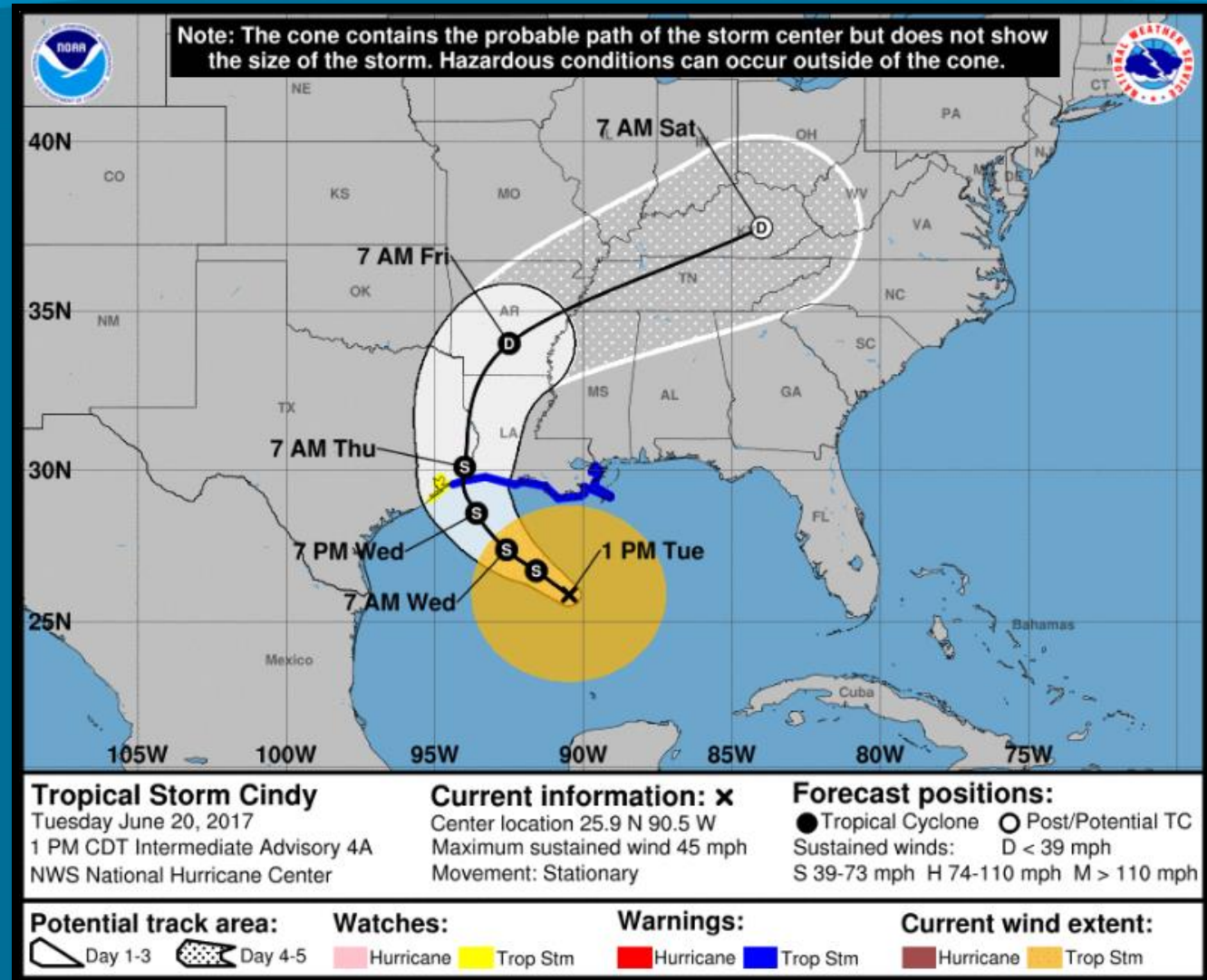
# NHC Advisory

## Issued by NHC at

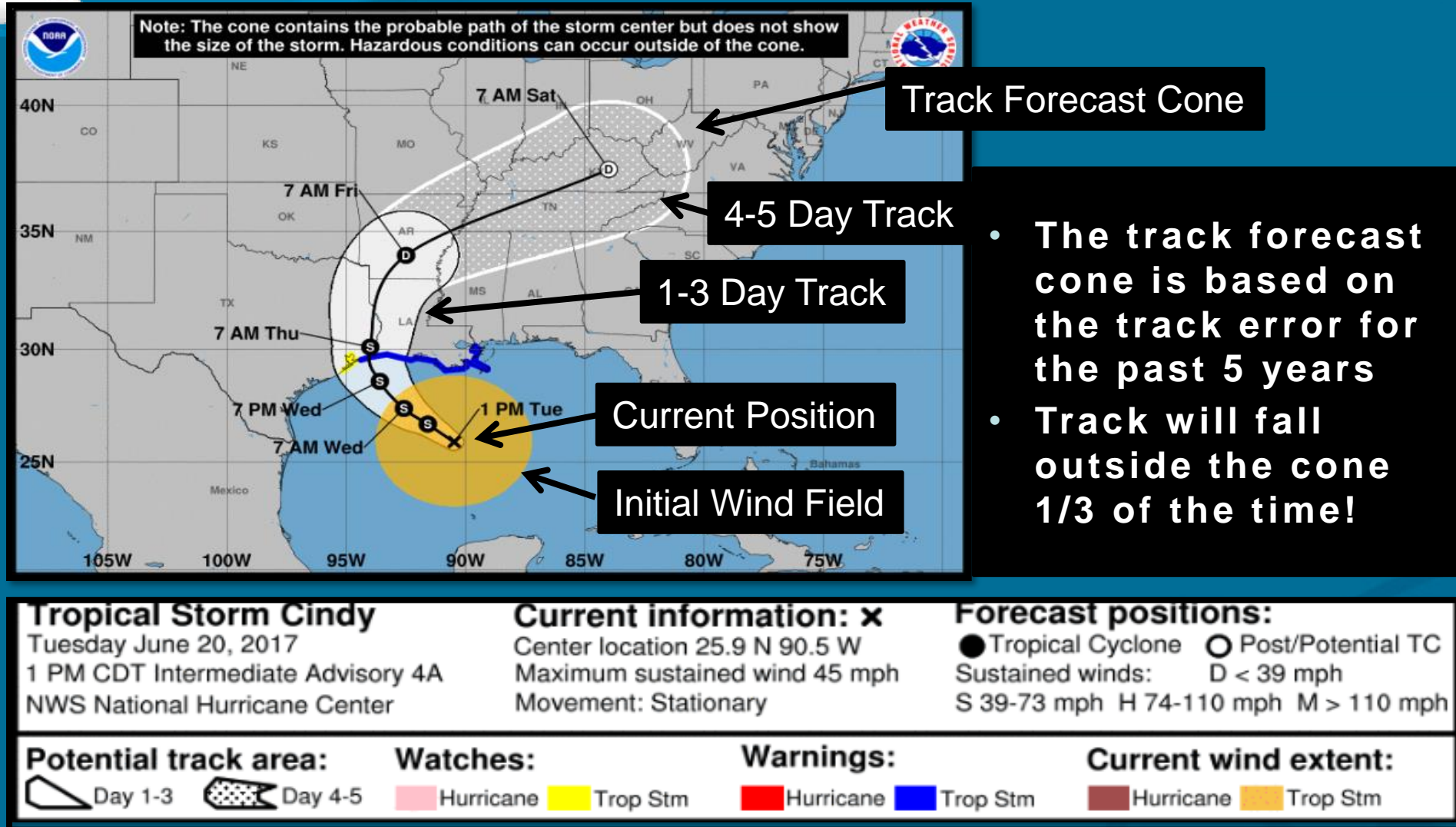
- 5 AM (EDT)
- 11 AM
- 5 PM
- 11 PM

Intermediate updates are issued between advisories when close to the coast

Available at  
[www.hurricanes.gov](http://www.hurricanes.gov)



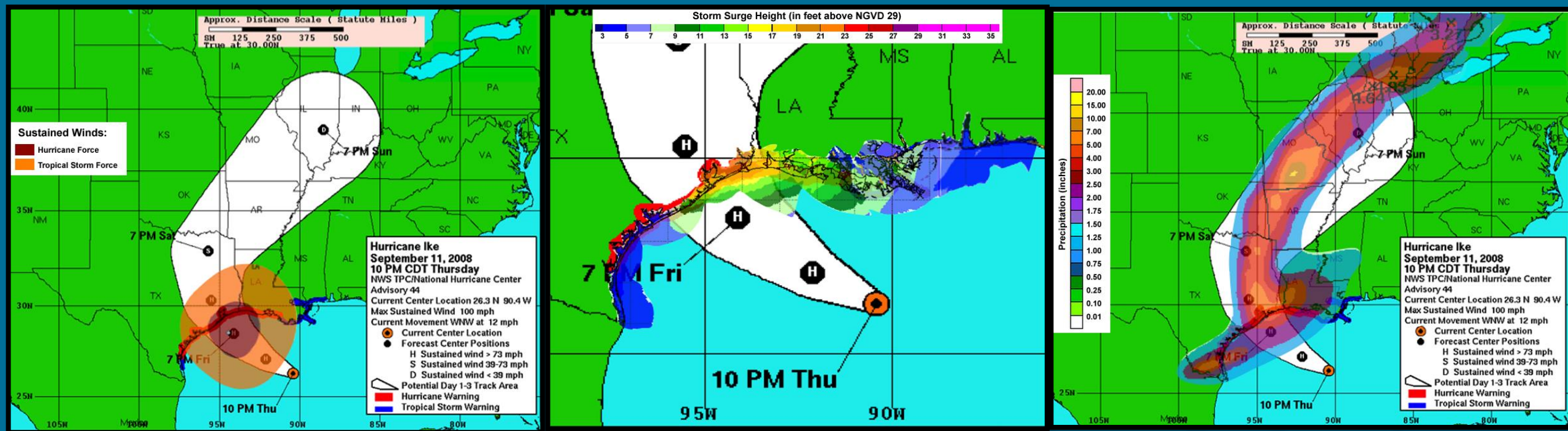
# NHC Advisory





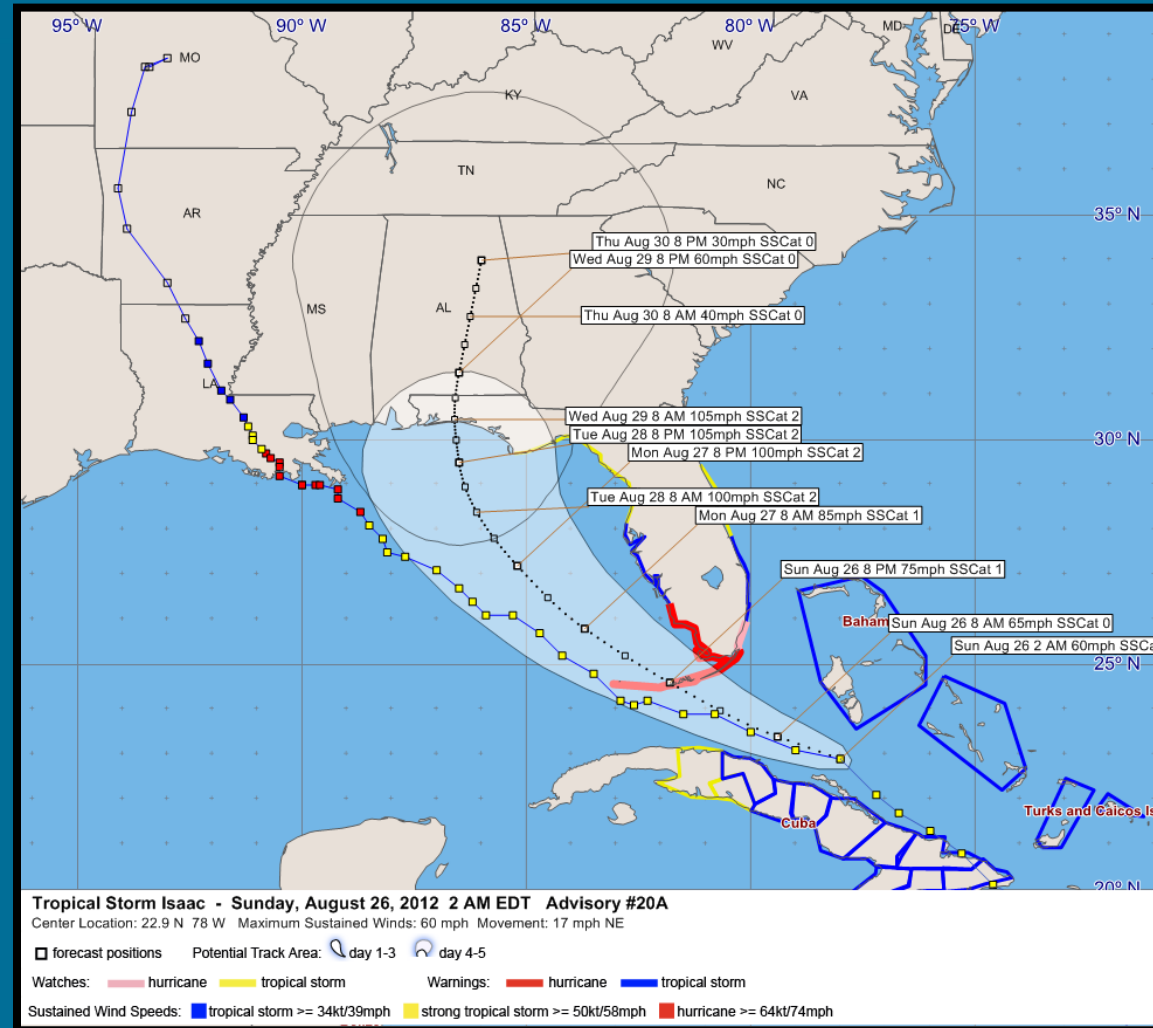
# Advisory reminders

- Cone only relates to the center of the tropical cyclone – it does NOT include impacts



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- Cone only relates to the center of the tropical cyclone – it does NOT include impacts



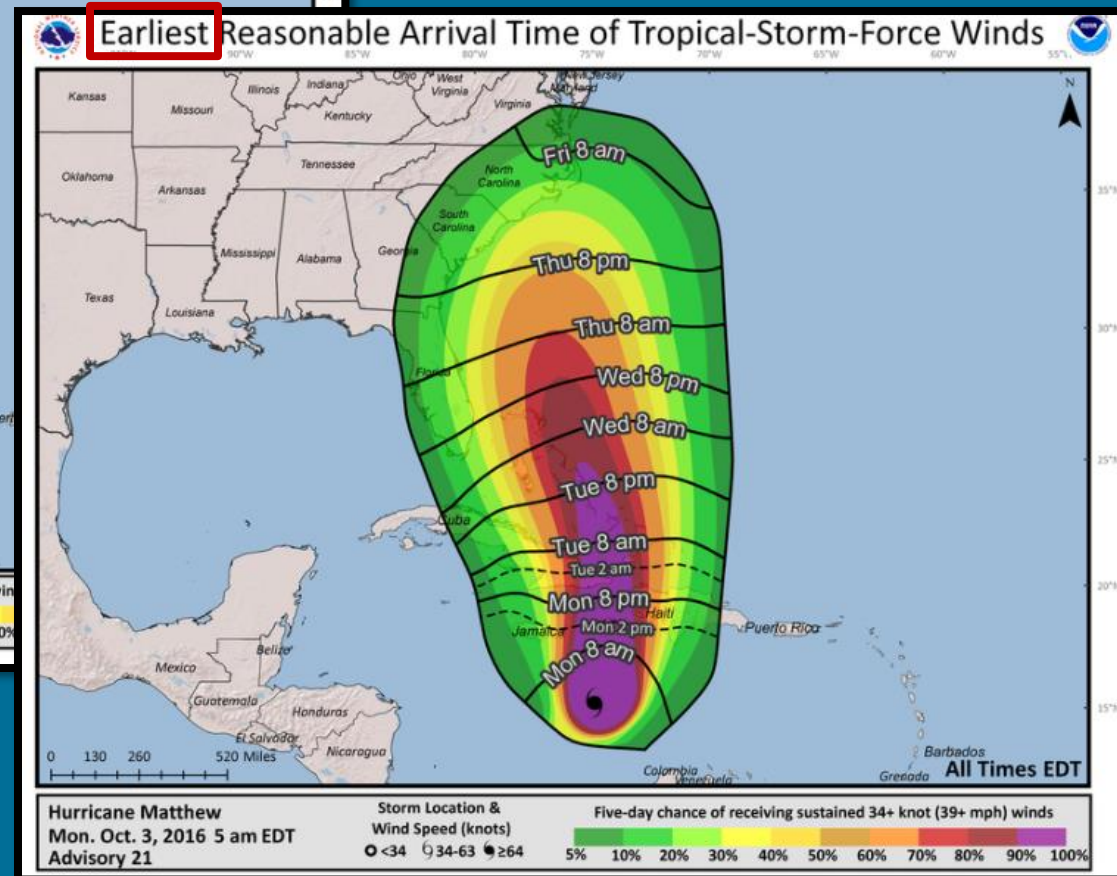
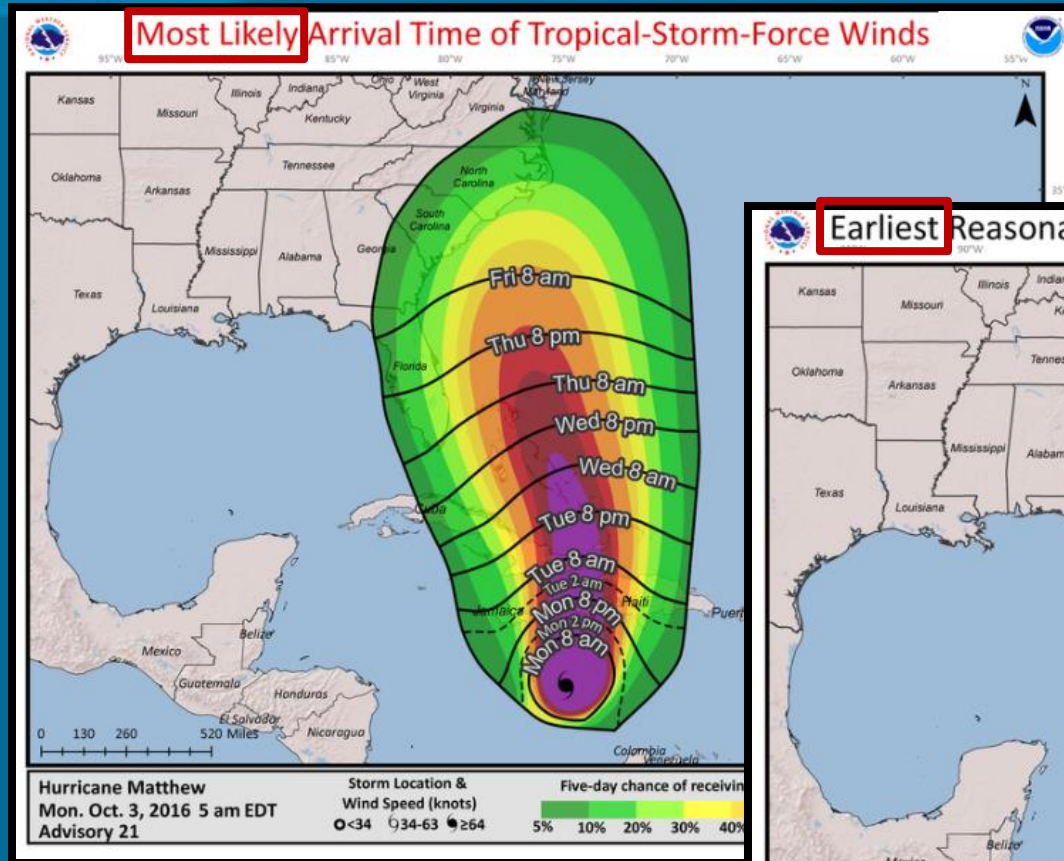
# Advisory reminders

- Cone only relates to the center of the tropical cyclone – it does NOT include impacts

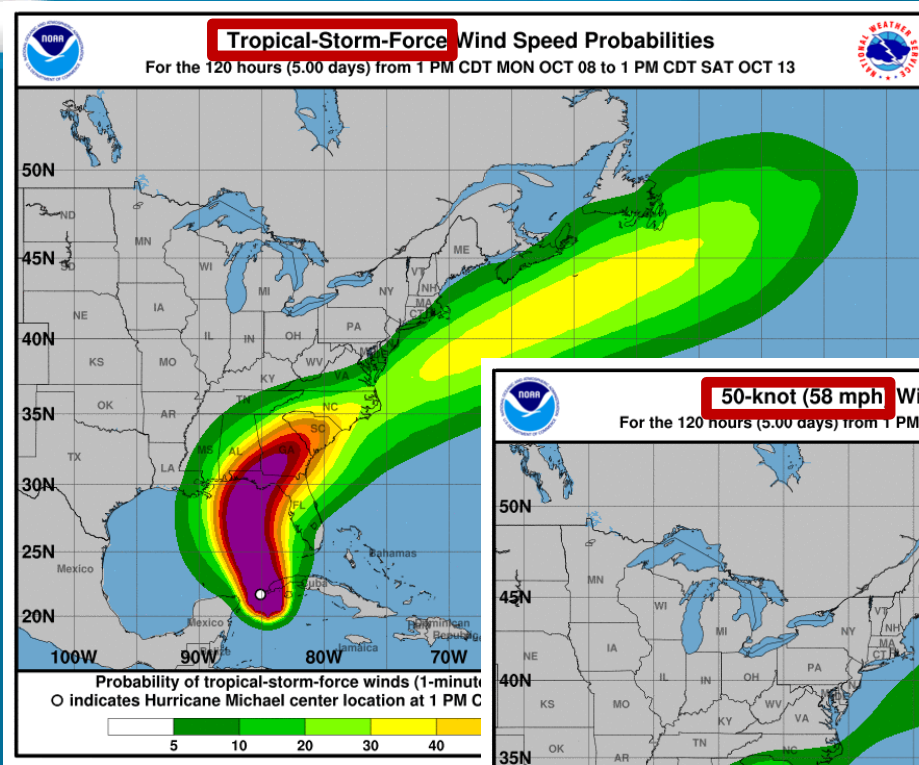




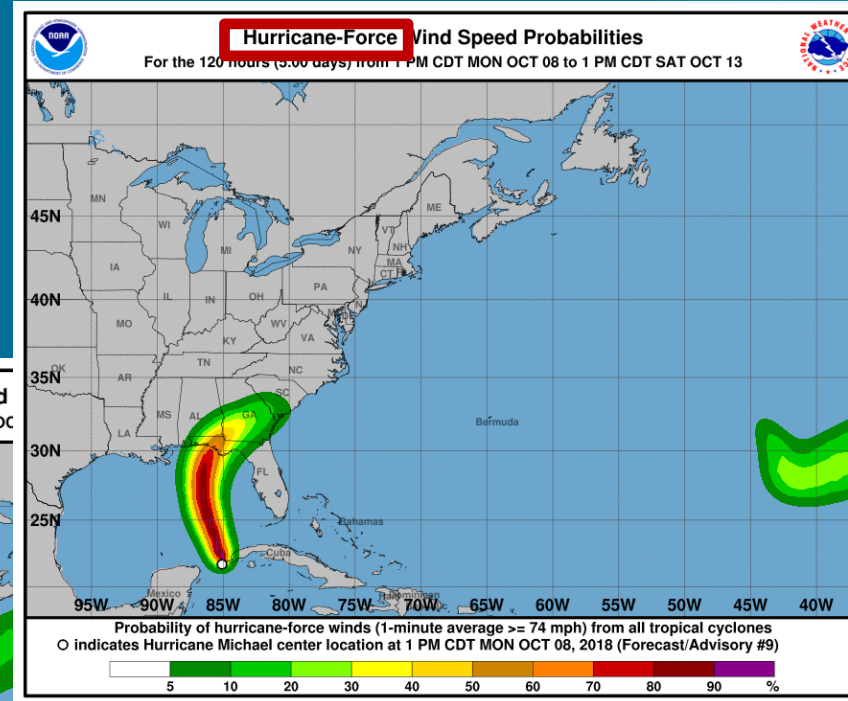
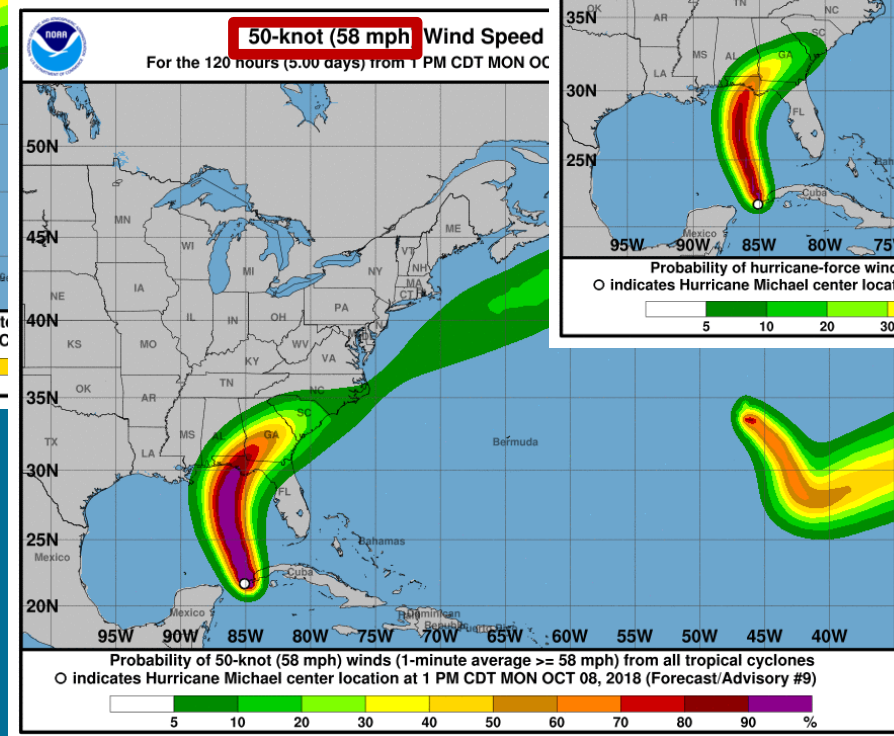
# Time of Arrival Graphics



# Wind Speed Probabilities



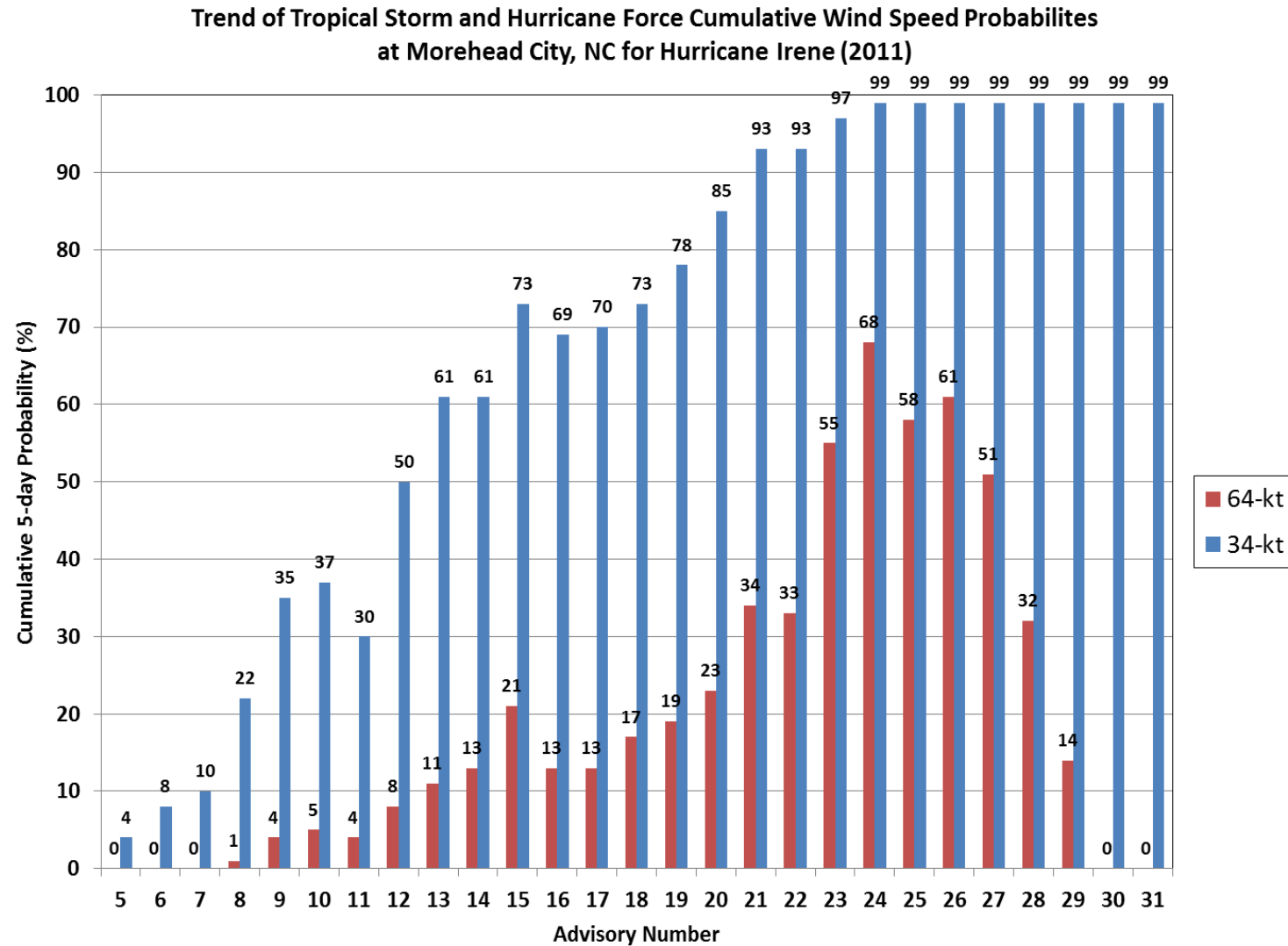
Graphics depict **location-specific** cumulative probabilities of tropical-storm-force, 58 mph, and hurricane-force winds



Takes into account uncertainty



# Caution With Wind Speed Probability Trends



# NEW: 60-h Forecast Information

## Tropical Cyclone Forecast/Advisory

ZCZC MIATCMAT5 ALL  
TTAA00 KNHC DDHHMM

HURRICANE DORIAN FORECAST/ADVISORY NUMBER 21  
NWS NATIONAL HURRICANE CENTER MIAMI FL AL052019  
1500 UTC THU AUG 29 2019

FORECAST VALID 31/1200Z 26.3N 73.4W  
MAX WIND 110 KT...GUSTS 135 KT.  
64 KT... 20NE 10SE 10SW 10NW.  
50 KT... 30NE 30SE 20SW 30NW.  
34 KT... 80NE 60SE 40SW 60NW.

48-h forecast  
information

FORECAST VALID 01/0000Z 26.7N 75.2W  
MAX WIND 110 KT...GUSTS 135 KT.  
50 KT... 40NE 30SE 20SW 30NW.  
34 KT... 80NE 70SE 40SW 70NW.

60-h forecast  
information

FORECAST VALID 01/1200Z 27.0N 76.9W  
MAX WIND 115 KT...GUSTS 140 KT.  
50 KT... 40NE 40SE 30SW 30NW.  
34 KT... 90NE 80SE 50SW 80NW.

72-h forecast  
information

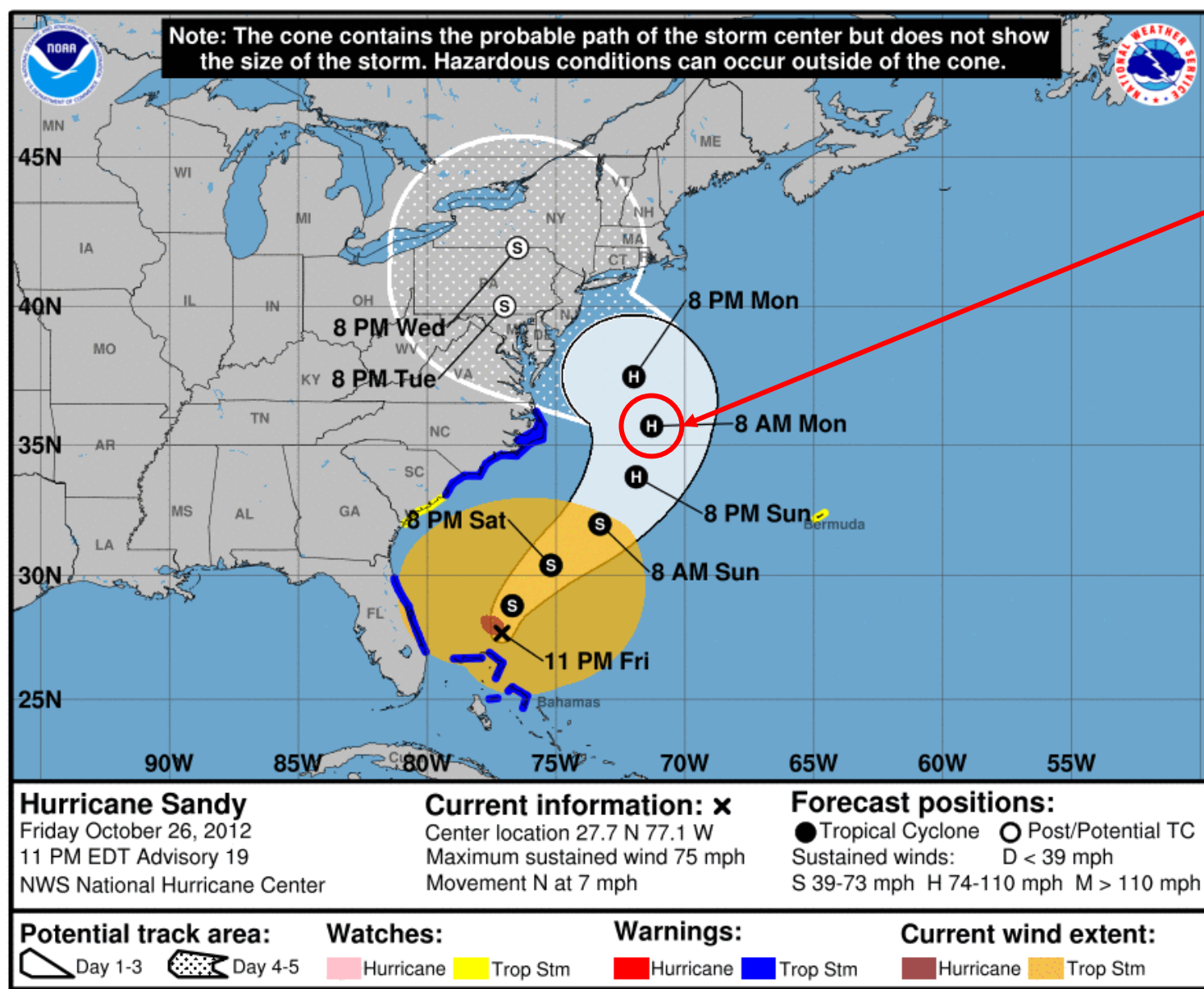
NHC will begin providing 60-h  
forecast information in 2020:  
position, intensity, and 34-kt & 50-kt  
wind radii

## Tropical Cyclone Discussion Table

### FORECAST POSITIONS AND MAX WINDS

INIT	29/1500Z	21.4N	67.2W	75 KT	85 MPH
12H	30/0000Z	22.9N	68.1W	85 KT	100 MPH
24H	30/1200Z	24.5N	69.6W	100 KT	115 MPH
36H	31/0000Z	25.6N	71.4W	105 KT	120 MPH
48H	31/1200Z	26.3N	73.4W	110 KT	125 MPH
60H	01/0000Z	26.7N	75.2W	110 KT	125 MPH
72H	01/1200Z	27.0N	76.9W	115 KT	130 MPH
96H	02/1200Z	27.5N	79.8W	115 KT	130 MPH
120H	03/1200Z	28.1N	81.5W	65 KT	75 MPH...INLAND

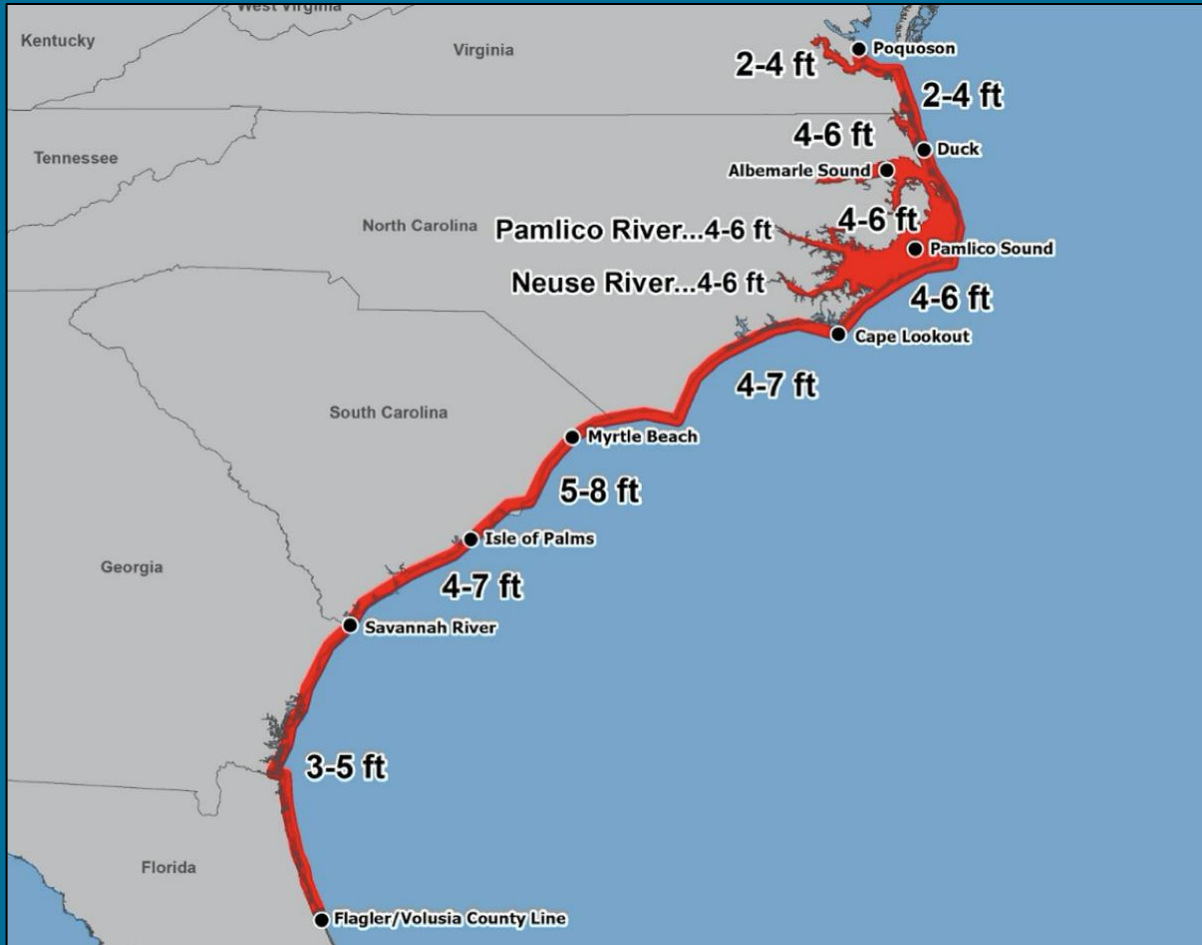
# 60-h Forecast Information



60-h forecast  
information on  
cone graphic

- Provides extra detail in the pre-watch phase
- Will help with wind speed probabilities

# NEW: Graphical Depiction of Storm Surge Inundation Values



- Graphical depiction of the peak storm surge inundation values along the U.S. Gulf and Atlantic coasts, Puerto Rico, and the U.S. Virgin Islands that are provided in the NHC Public Advisory.
- Values represent the peak height the water could reach above normally dry ground somewhere within the specified area.



Where were the nation's most powerful hurricanes *five* days before landfall?

Labor Day, Camille, & Michael did not exist!

Andrew



Where were the nation's most powerful hurricanes three days before landfall?

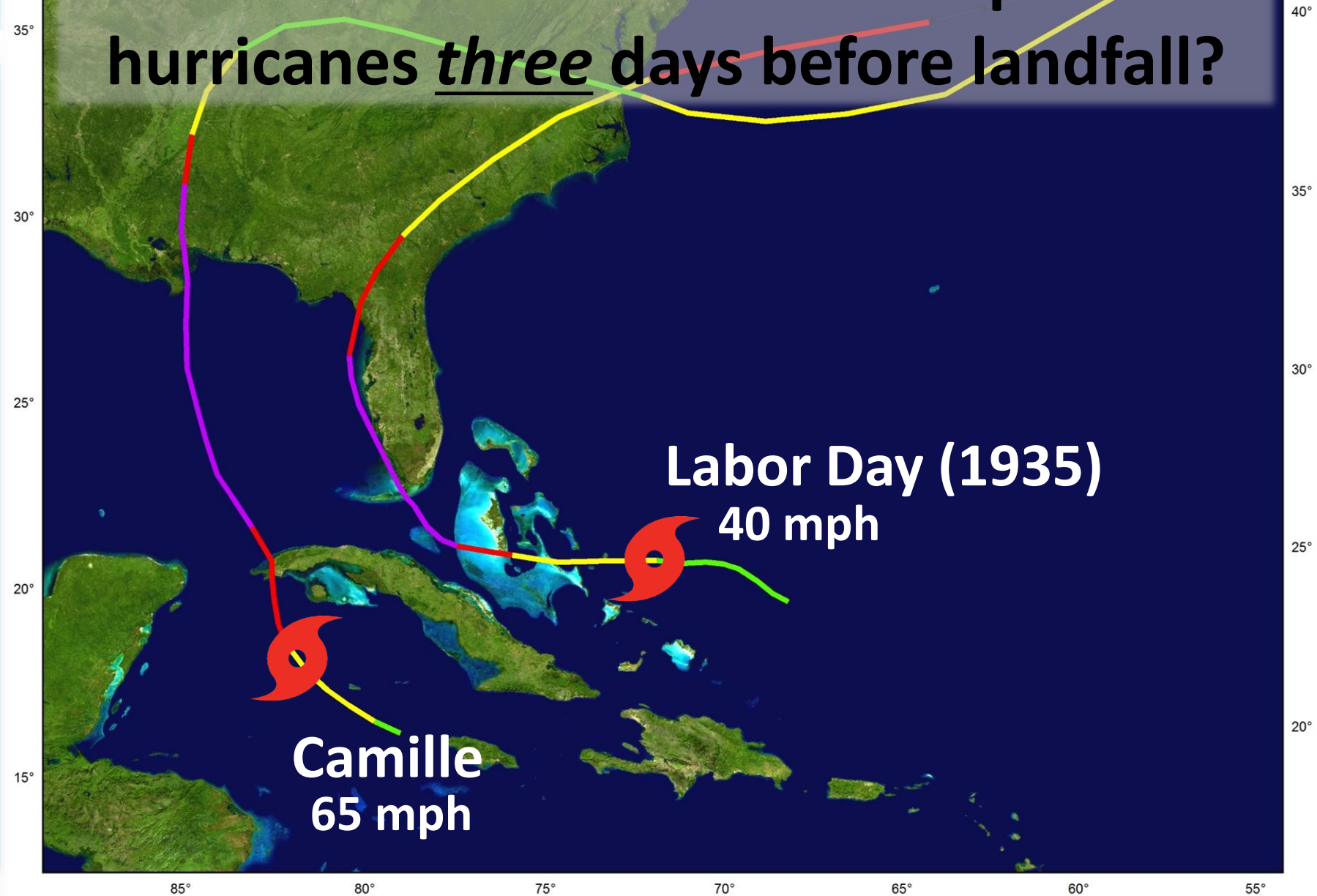


Where were the nation's most powerful hurricanes three days before landfall?





Where were the nation's most powerful hurricanes three days before landfall?



Where were the nation's most powerful hurricanes three days before landfall?






Where were the nation's most powerful hurricanes three days before landfall?

**All tropical storms!  
All rapidly strengthened!!**





# The 2020 Hurricane Season Outlook

# 2020 Atlantic Names List

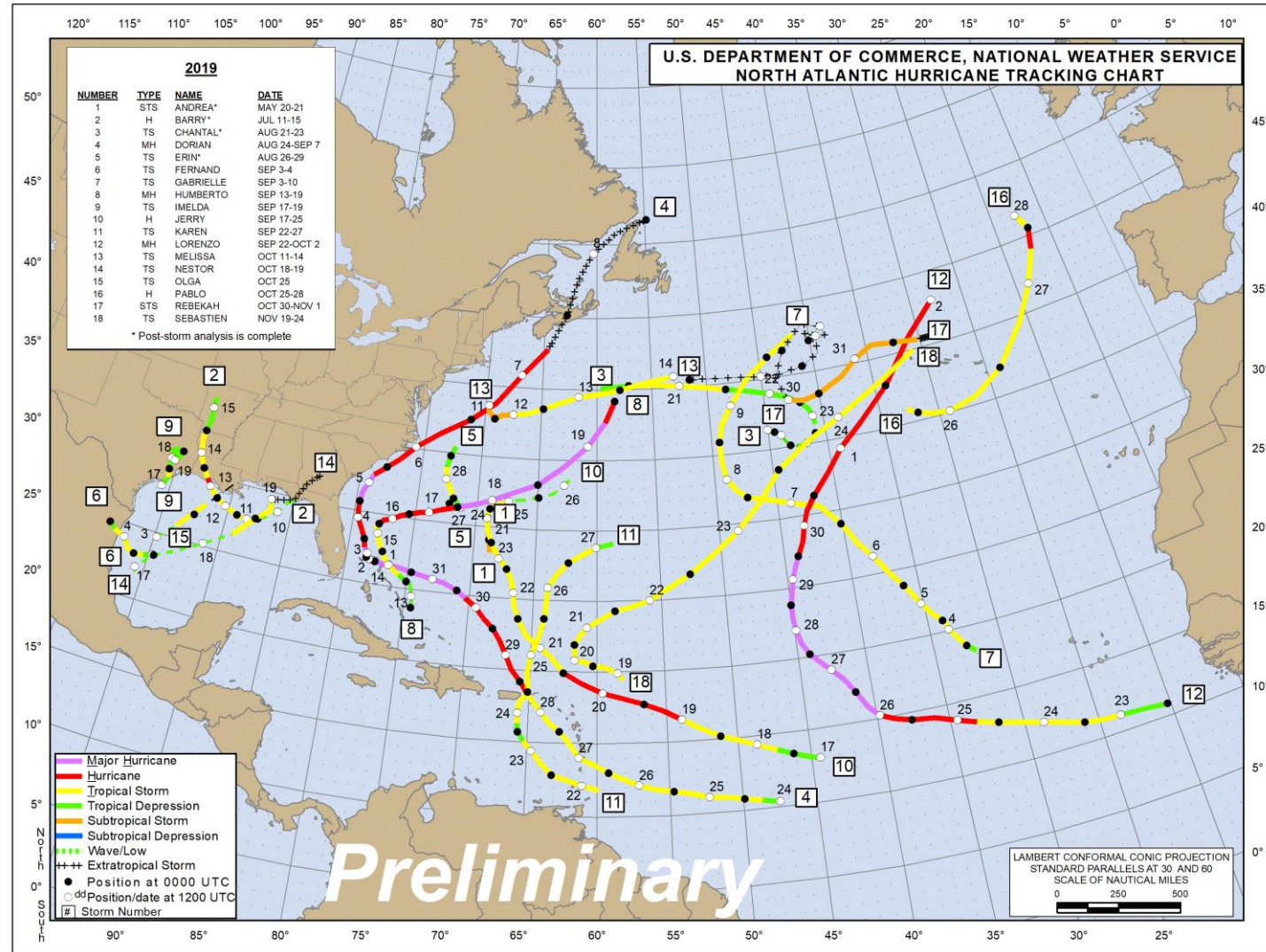
~~Arthur~~  
Bertha  
Cristobal  
Dolly  
Edouard  
Fay  
Gonzalo

Hanna  
Isaias  
Josephine  
Kyle  
Laura  
Marco  
Nana

Omar  
Paulette  
Rene  
Sally  
Teddy  
Vicky  
Wilfred



# First, A Look Back to 2019

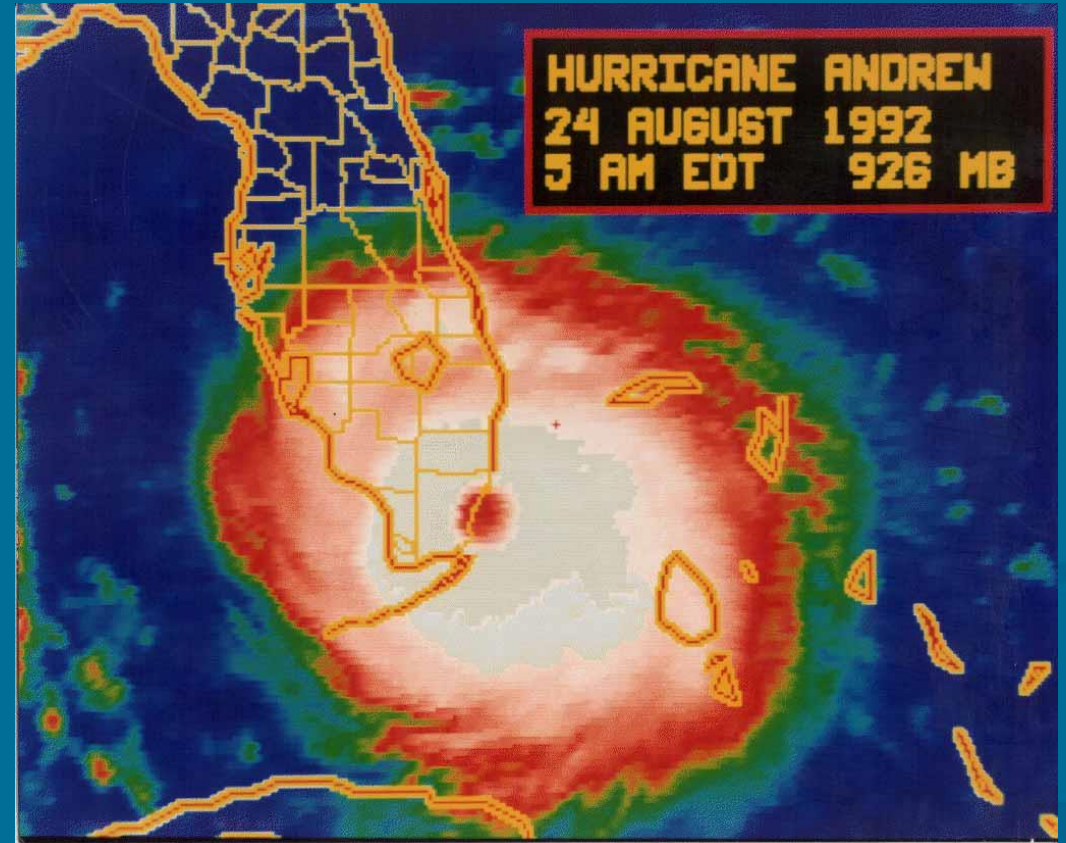


# 2020 Seasonal Outlooks

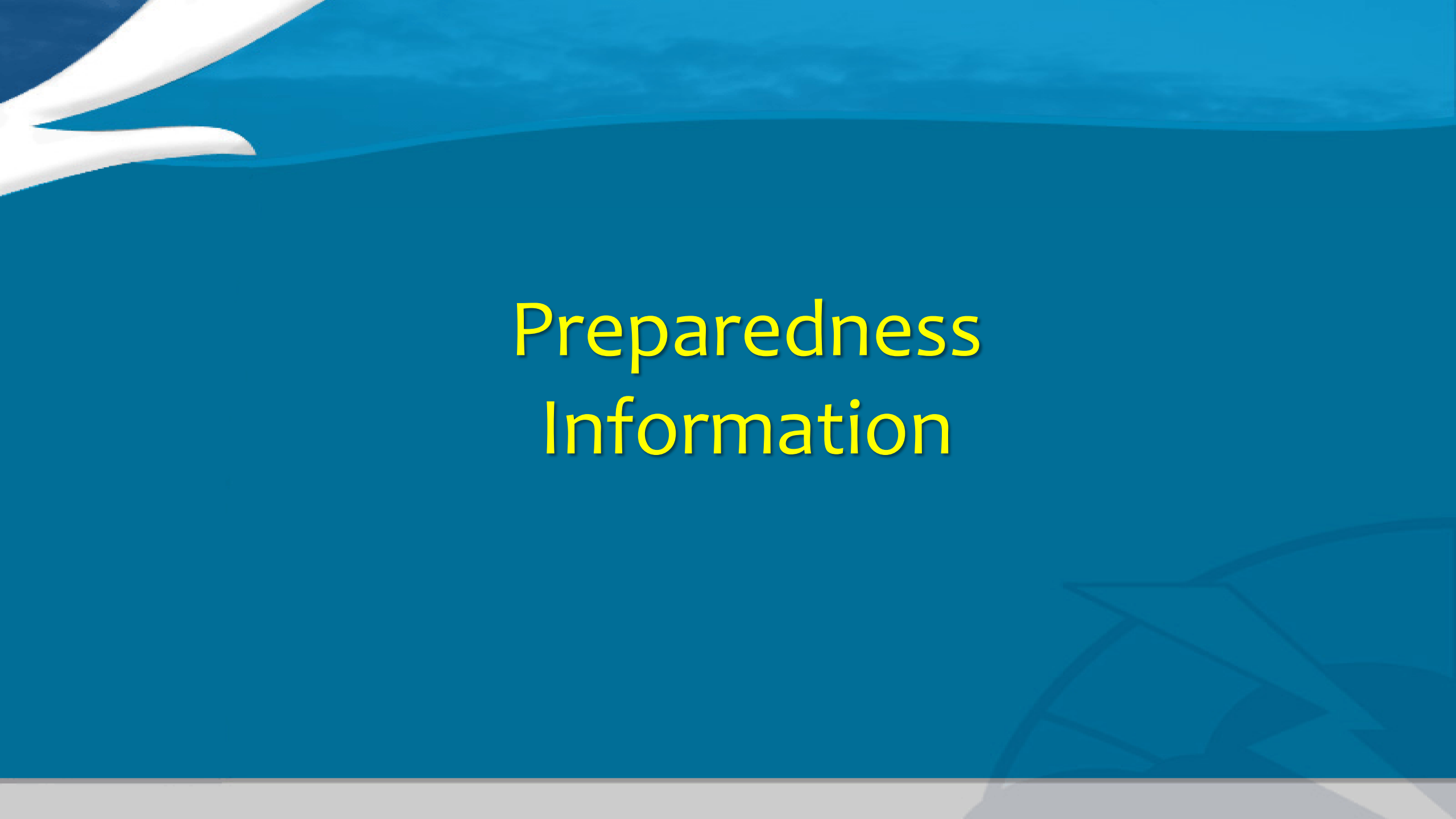
	Climatology	2019 Season	Colorado State	UK TS Risk Consortium	NC State	Accu Weather	NOAA (70%)
Named Storms	12	18	16	TBA	18-22	14-18	13-19
Hurricanes	6	6	8	TBA	11	7-9	6-10
Major Hurricanes	3	3	4	TBA	3-5	2-4	3-6

# It only takes one!

- Andrew occurred in an El Nino year (1992)
- Only 6 names storms
- Came ashore in late August
- Last Cat 5 hurricane to make landfall in U.S. before Michael







# Preparedness Information

# Hurricane Preparedness Week

May 3<sup>rd</sup>-9<sup>th</sup>

<https://www.weather.gov/wrn/hurricane-preparedness> OR [hurricanes.gov](https://www.weather.gov/hurricanes.gov)

National Hurricane Preparedness

Weather.gov > Weather-Ready Nation > National Hurricane Preparedness

Weather Hazards Safety Campaigns Ambassador Education Collaboration News & Events International About

## Hurricane Preparedness Week 2020

**SOCIAL MEDIA**

**EN ESPAÑOL**

Current Forecast Information

Hurricane Safety

Videos

Hurricane Hazards

Delivering the Right Message

#HurricaneStrong

Hurricane Preparedness Themes

- Determine Your Risk
- Develop an Evacuation Plan
- Assemble Disaster Supplies
- Get an Insurance Checkup
- Strengthen Your Home
- Help Your Neighbor
- Complete a Written Plan

#ItOnlyTakesOne  
#HurricaneStrong

### Hurricane Preparedness Themes

**DETERMINE YOUR RISK**

Determine Your Risk

**DEVELOP AN EVACUATION PLAN**

Develop an Evacuation Plan

**ASSEMBLE DISASTER SUPPLIES**

Assemble Disaster Supplies

**GET AN INSURANCE CHECKUP**

Get an Insurance Checkup

**STRENGTHEN YOUR HOME**

Strengthen Your Home

**HELP YOUR NEIGHBOR**

Help Your Neighbor

**COMPLETE A WRITTEN PLAN**

Complete a Written Plan

# So What Was that Hurricane Season Forecast Again?

It really doesn't matter  
since it only takes 1!





# Questions/Comments?

