



TROPICAL READINESS WEEK 2024

PRESENTED BY NATIONAL WEATHER SERVICE FLORIDA
OFFICES





TRAINING GOALS

1. SHOWCASE TOOLS TO HELP YOU ASSESS YOUR VULNERABILITY.
2. IDENTIFY & INTERPRET CREDIBLE FORECAST RESOURCES.
3. OFFER GUIDANCE THAT ANSWERS...

“What should I be doing *now*?”

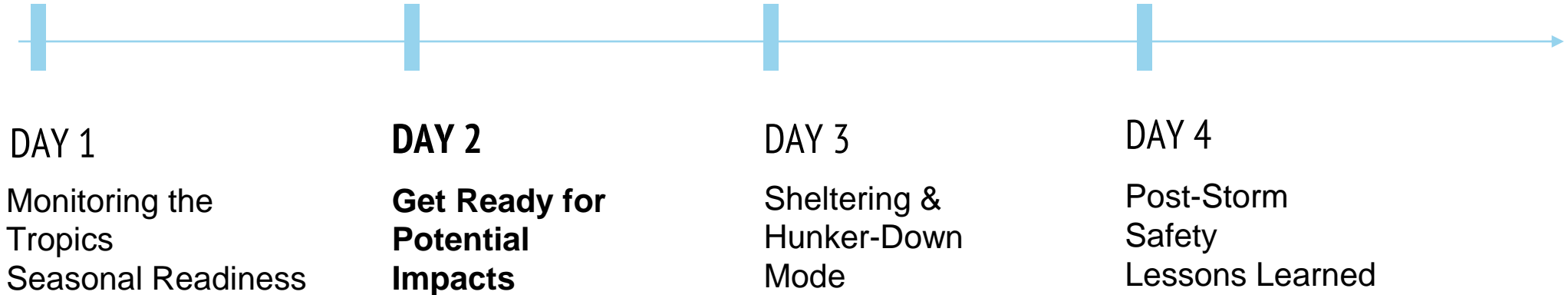
TOPICS





TRAINING TIMELINE

TODAY



<https://www.weather.gov/jax/FloridaTropicalTrainingWeek2024>





Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

35N

30N

Get Ready

When & to what extent do you prepare?

Prepare

Monitor
Days 6-7

Get Ready
Days 3-5

Hunker Down
< 48 hrs to Impact

Recover
After Storm

Understand & Apply Forecast Tools

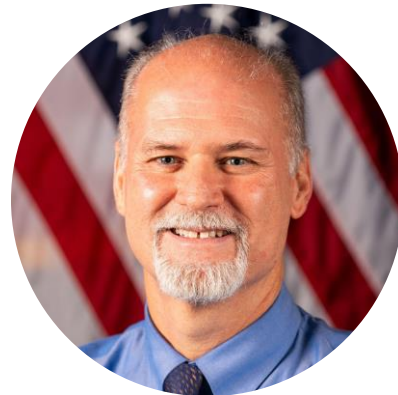
Personal Threat & Impact Assessment

Evacuation & Impact Readiness

11 am EDT TEAM



Jessica Chace
*Warning Coordination
Meteorologist*
NWS Mobile



Rob Molleda
*Meteorologist-in-
Charge*
NWS Miami



Matt Anderson
*Science and
Operations Officer*
NWS Tampa Bay



Paige Klingler
Meteorologist
NWS Jacksonville

1 pm EDT TEAM



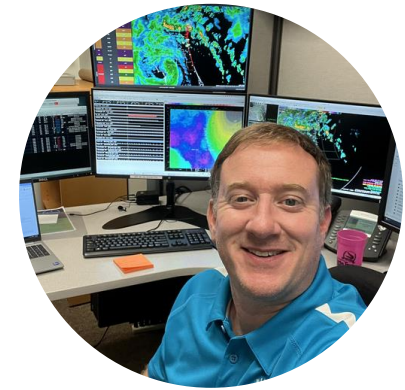
Kelly Godsey
*Senior Service
Hydrologist*
NWS Tallahassee



Cameron Young
Meteorologist
NWS Tallahassee



Paige Klingler
Meteorologist
NWS Jacksonville



Ben Nelson
Senior Meteorologist
NWS Jacksonville

7 pm EDT TEAM



Matt Anderson
*Science and
Operations Officer*
NWS Tampa Bay



Kelly Godsey
*Senior Service
Hydrologist*
NWS Tallahassee



Jessica Chace
*Warning Coordination
Meteorologist*
NWS Mobile

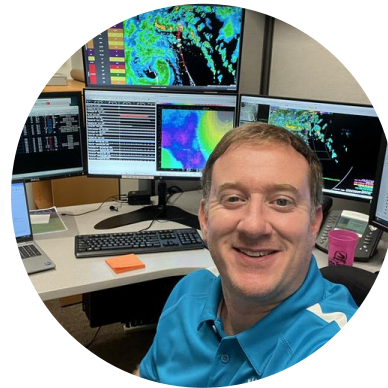


Paige Klingler
Meteorologist
NWS Jacksonville

9 pm EDT TEAM



Jen Hubbard
Senior Meteorologist
NWS Tampa Bay



Ben Nelson
Senior Meteorologist
NWS Jacksonville



Tony Hurt
Meteorologist
NWS Tampa Bay



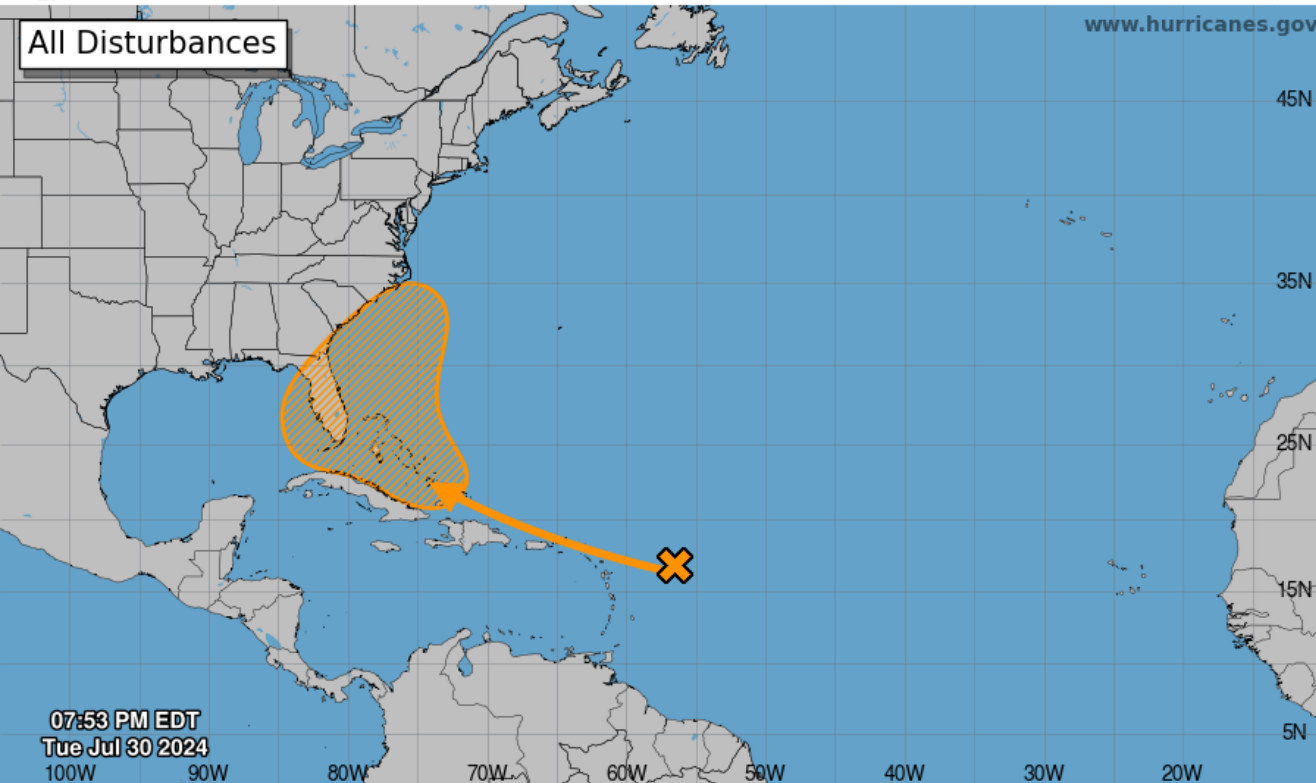
Morgan Barry
Senior Meteorologist
NWS Mobile/Pensacola

TROPICAL WEATHER OUTLOOK



Seven-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



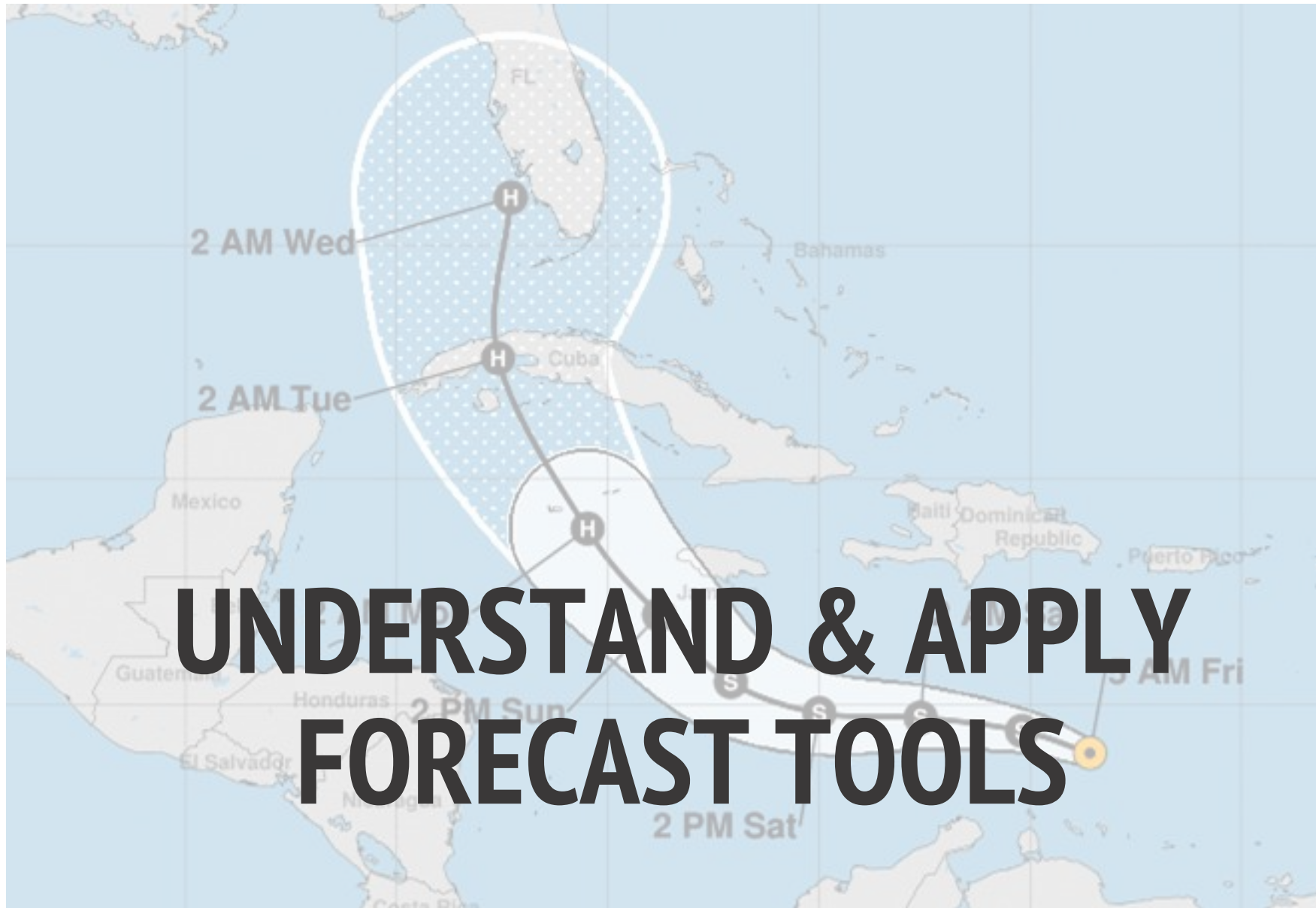
Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane
 Post-Tropical Cyclone or Remnants

There is a 60% chance of tropical cyclone formation somewhere in the orange shaded area in the next 7 days

What to do now:

- Stock Supply Kits
- Review Hurricane Plans
- Know your Evacuation Zone
- Monitor here: www.hurricanes.gov





UNDERSTAND & APPLY FORECAST TOOLS



Understand Forecast Information



Rely on forecasts from the National Hurricane Center & your local NWS office



Know your alerts & the difference between a Watch and Warning



Focus on potential impacts, regardless of storm size or category



Know that deadly hazards occur well outside of the Forecast Cone



NATIONAL WEATHER SERVICE

Tropical Cyclone Products & Messaging Strategy



> 5 Days

3-5 Days

< 48 hrs

Impacts

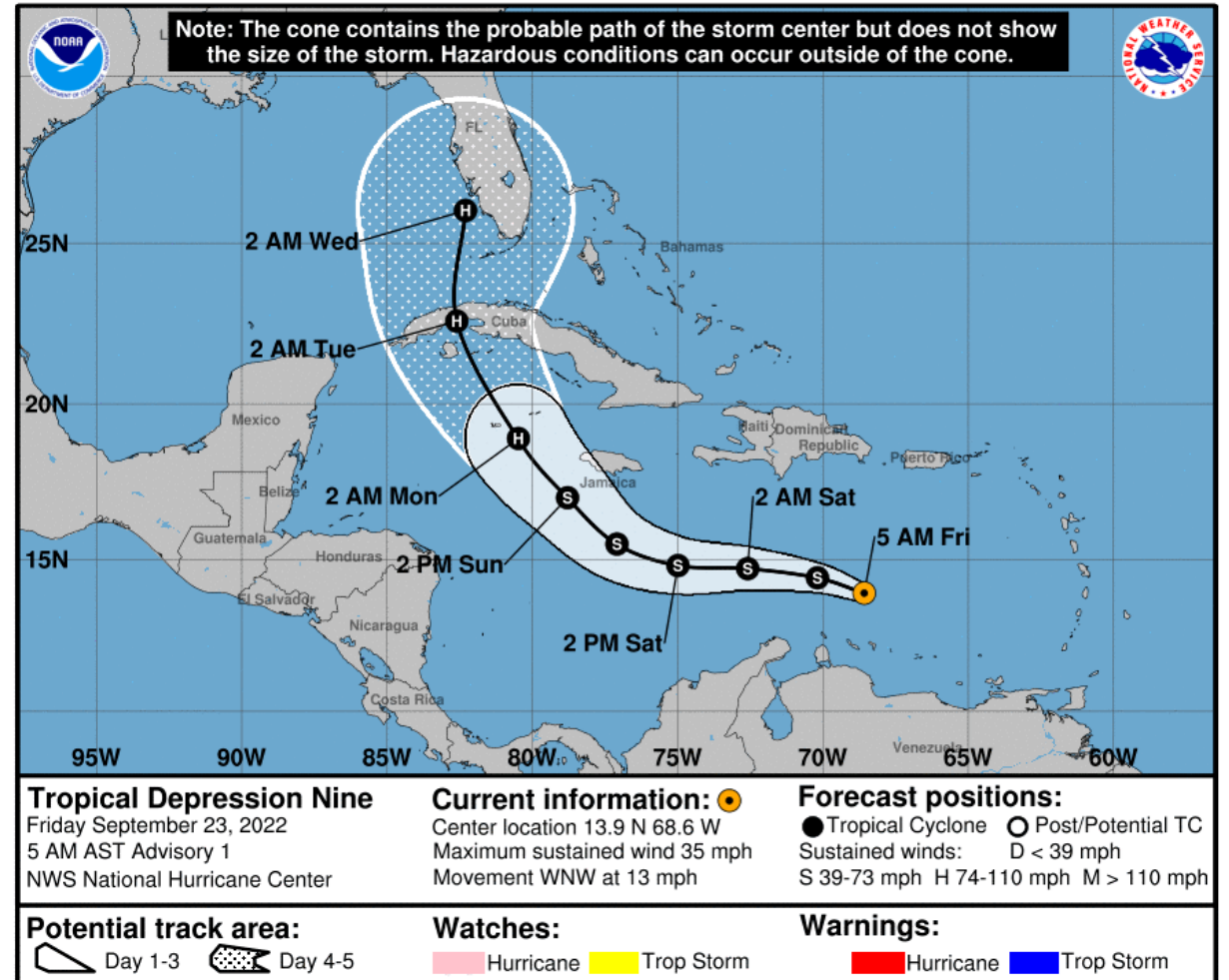
UNDERSTAND & APPLY FORECAST TOOLS POTENTIAL CENTER TRACK

GET READY

White shaded area (aka cone) displays the most likely track of storm CENTER

DOES NOT show impact areas

Available National Hurricane Center
www.hurricanes.gov



GETTING READY

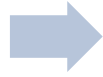
POLL QUESTION

About how often does the center of a tropical cyclone track outside of the forecast cone?

- A. Never
- B. Half (50%) of the time
- C. One-third (33%) of the time
- D. 10% of the time



> 5 Days



3-5 Days



< 48 hrs



Impacts

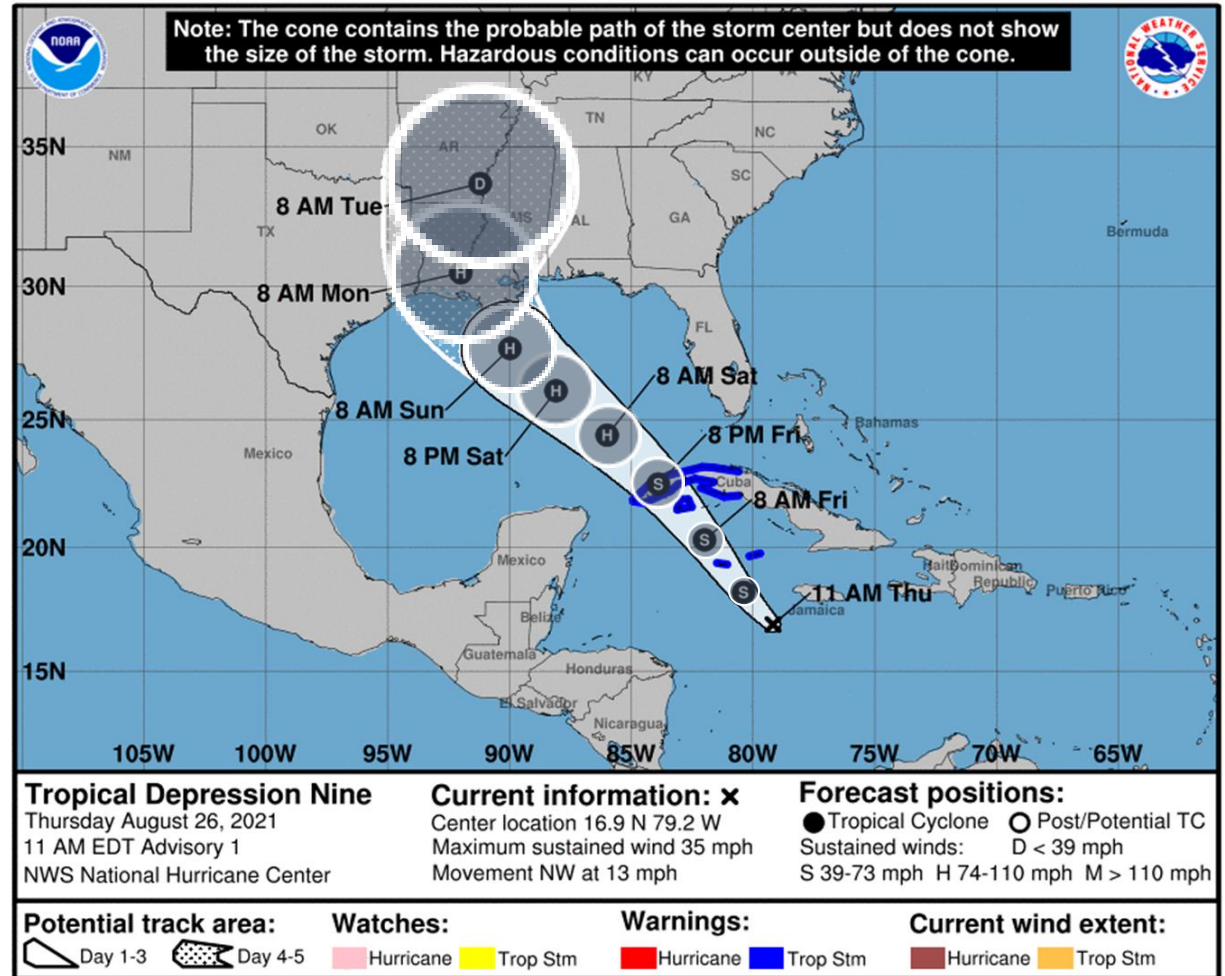
UNDERSTAND & APPLY FORECAST TOOLS POTENTIAL CENTER TRACK

GET READY

Circles “drawn” around each forecast point (12, 24, 36 hours, etc.) based on the 67th percentile of the 5 year NHC track forecast error at that forecast lead time

A cone is drawn based on those circles

Cone size does not change during season



> 5 Days

3-5 Days

< 48 hrs

Impacts



UNDERSTAND & APPLY FORECAST TOOLS

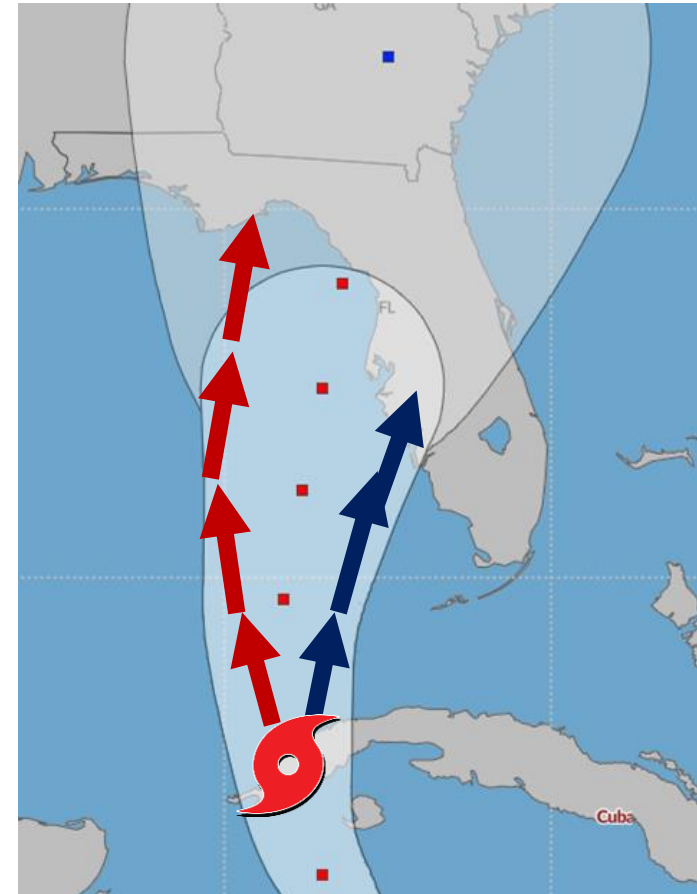
TRACK ADJUSTMENTS

Storm track adjustments by just a few degrees ultimately influences landfall location & degree of impacts for specific locations

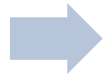
Constantly monitor the forecast!

Example:

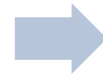
	Track adjustment from north 360° to north-northwest 350°	Potential landfall somewhere FL panhandle – in a few days
	Track adjustment from north 360° to north-northeast 10°	Potential landfall somewhere SW FL peninsula - with a few days



> 5 Days



3-5 Days



< 48 hrs



Impacts

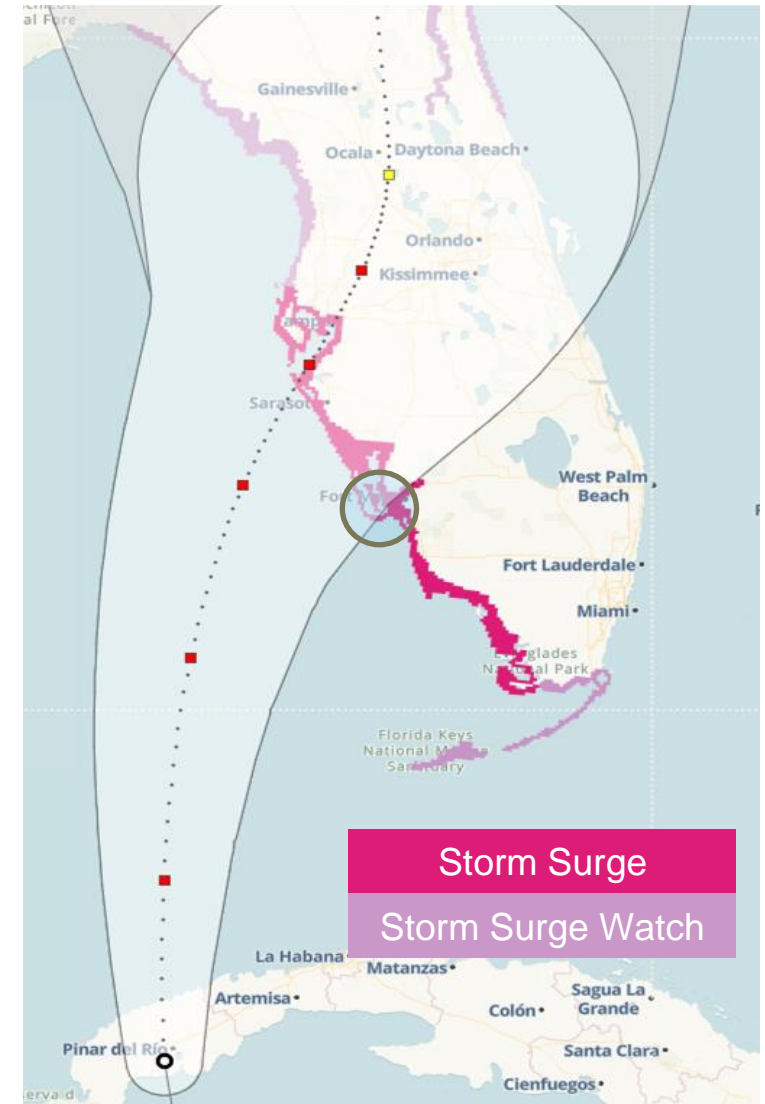
UNDERSTAND & APPLY FORECAST TOOLS

RISKS OUTSIDE OF CONE

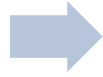
Deadly tropical cyclone hazards occur outside of forecast cone

DO NOT assume you are safe if your location is not within the forecast cone

The entire west coast of FL is under threat of deadly storm surge



> 5 Days



3-5 Days



< 48 hrs



Impacts

UNDERSTAND & APPLY FORECAST TOOLS

KEY MESSAGES

GET READY

General overview & head's up

Too early for details on wind, surge, rain amounts/values

Focus on PREPARATION & MONITORING

Available National Hurricane Center www.hurricanes.gov

Key Messages for Tropical Depression Nine
Advisory 1: 5:00 AM AST Fri Sep 23, 2022

1. Tropical Depression Nine is expected to produce heavy rainfall and instances of flash flooding and possible mudslides in areas of higher terrain in Aruba, Bonaire, and Curacao. Heavy rains are also likely to spread into Jamaica and the Cayman Islands in the coming days.
2. The depression is expected to approach Jamaica and the Cayman islands as an intensifying tropical storm. Watches and warnings for these locations may be required in subsequent forecast cycles.
3. This system is forecast to approach western Cuba and enter the southeastern Gulf of Mexico by the end of the forecast period. Interests in Cuba and those along the Eastern Gulf Coast of the United States should closely monitor this system, though at this juncture forecast uncertainty remains fairly high.

For more information go to hurricanes.gov

THREAT & IMPACT ASSESSMENT

WHAT SHOULD I BE PREPARING FOR?



THREAT & IMPACT ASSESSMENT

APPROPRIATE FORECAST INTERPRETATION & RESPONSE

GET READY

Fuel Preparedness Hesitation

Motivate under-preparation

Motivate exhaustive over-preparation

Create forecast desensitization

Fuel Appropriate Preparedness Motivation

Motivate reasonable preparation

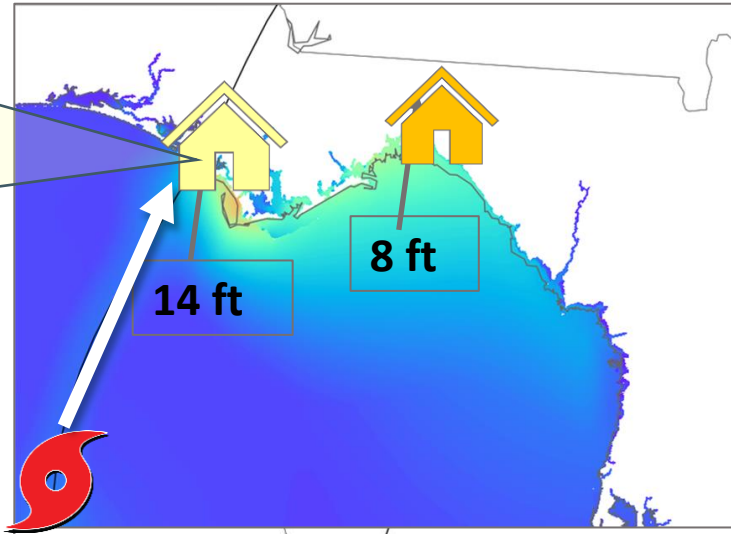
Encourage forecast monitoring & appropriate interpretation

THREAT & IMPACT ASSESSMENT

APPROPRIATE FORECAST INTERPRETATION & RESPONSE

GET READY

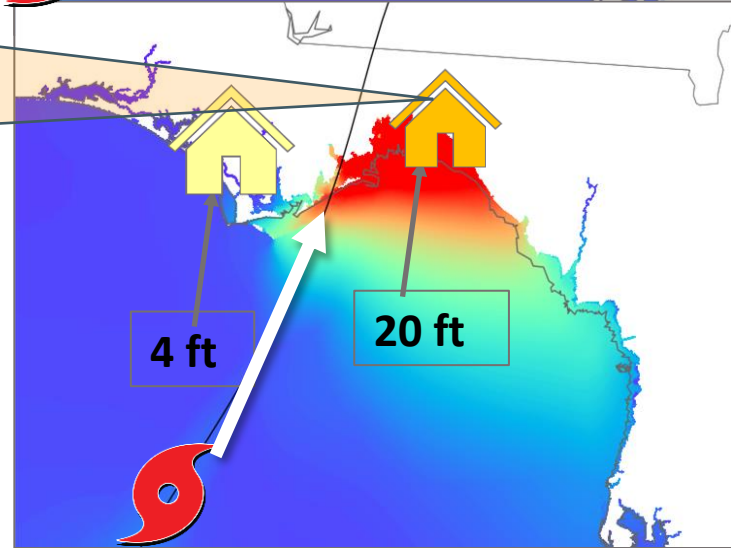
Just this morning they said 10-14 ft of surge, now it's 3-5 ft.
Can't they make up their mind?



Coastline shape & tropical cyclone track strongly influence storm surge values at specific locations

Do not base preparedness on specific "numbers" days in advance (ex: storm surge of X ft, rain of X inches, winds of X mph)

They don't know what this storm's going to do.
We were fine last time...



**Prepare for
THREAT & IMPACT
POTENTIAL**

Homes ~50 miles apart

WIND RISK

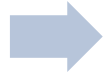
Based on 1,000 realistic alternative scenarios created using:

- ✓ Official NHC track & intensity forecast
- ✓ Historical NHC track & intensity forecast errors
- ✓ Climatology and persistence wind radii model

Uses model spread to account for track uncertainty



> 5 Days



3-5 Days



< 48 hrs



Impacts

THREAT & IMPACT ASSESSMENT

WIND RISK

GET READY

What is it?

The chance of tropical cyclone force winds at a specific location over the next 5 days

How do you use it?

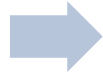
Watch the trends – increasing probabilities mean your location is at greater wind damage risk.

How can it help you?

Helps monitor & evaluate your tropical cyclone wind risk & motivate preparedness.



> 5 Days



3-5 Days



< 48 hrs



Impacts

THREAT & IMPACT ASSESSMENT

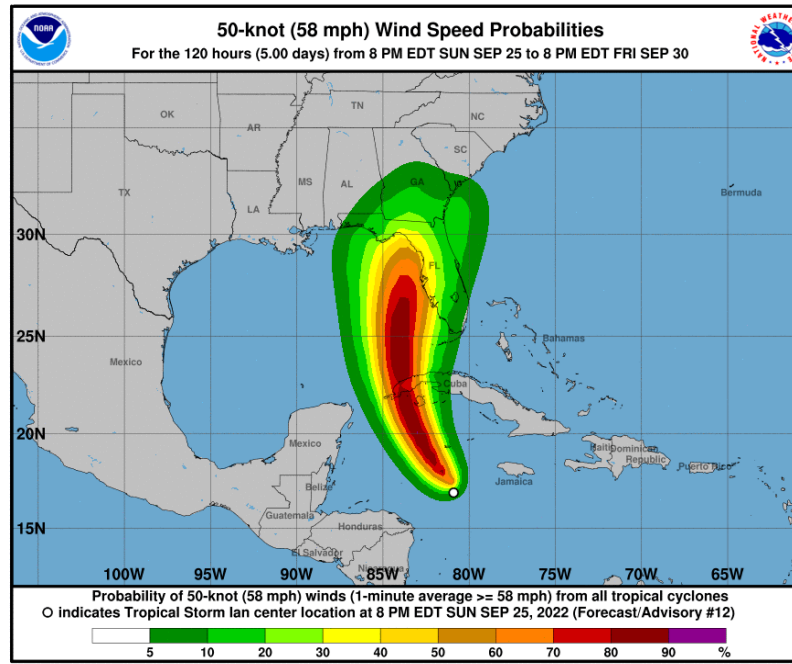
WIND RISK

GET READY

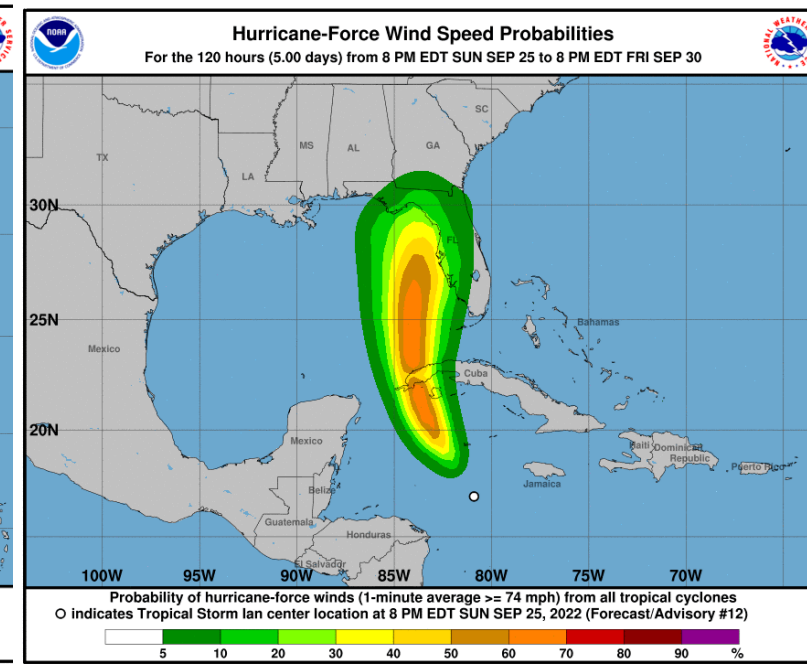
Available through the National Hurricane Center
www.hurricanes.gov



**Tropical Storm Wind Potential
(Sustained ≥ 39 mph)**



**Strong Tropical Storm Wind Potential
(Sustained ≥ 58 mph)**



**Hurricane Wind Potential
(Sustained ≥ 74 mph)**

THREAT & IMPACT ASSESSMENT

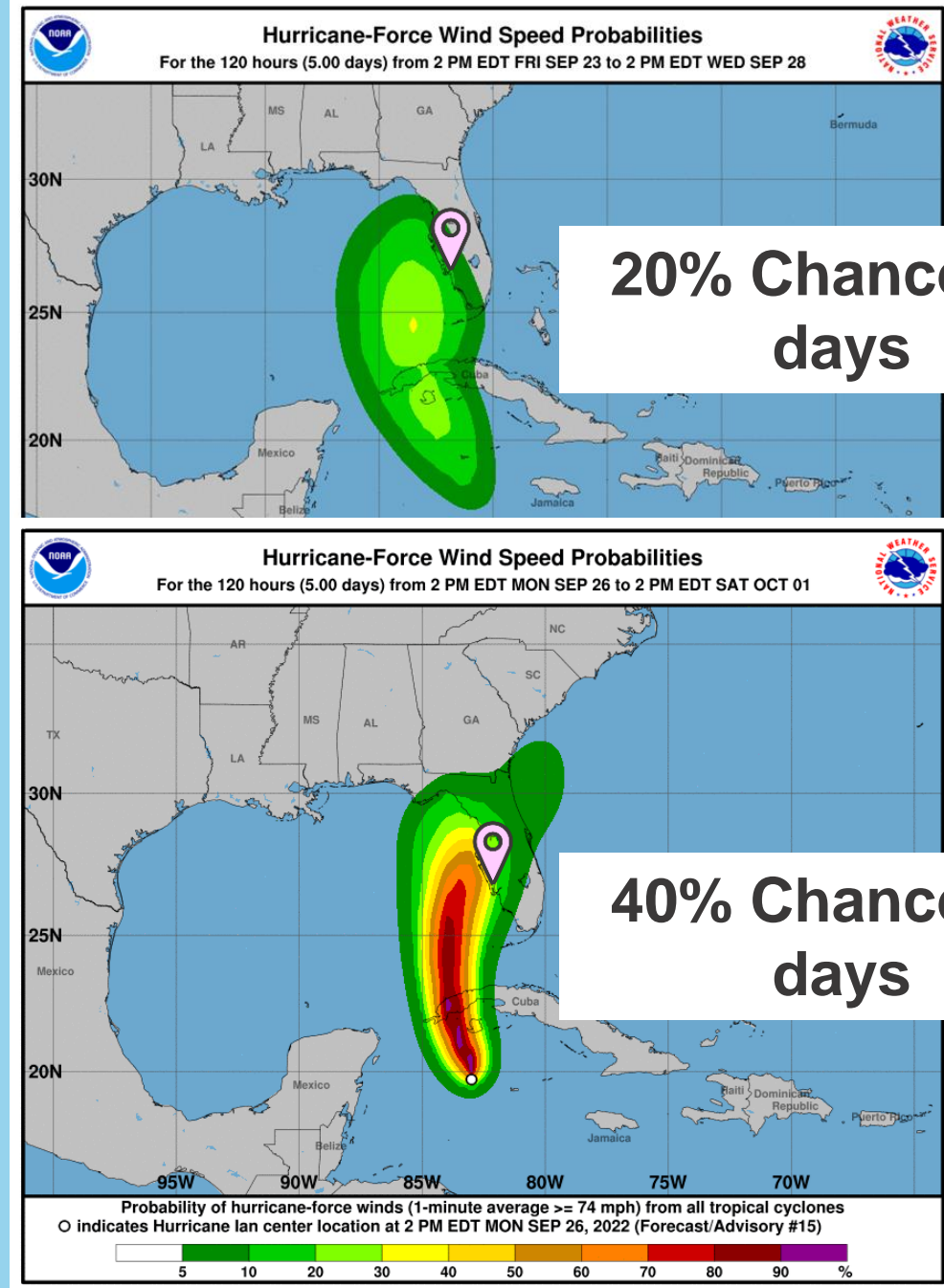
INTERPRET WIND RISK

Event	Probability of Event	Potential Impact
Rain	20%	Wet
Traffic Delay	20%	Late to Event

Low probabilities for a HIGH Impact Event are MEANINGFUL



**Risk vs
Reward**



THREAT & IMPACT ASSESSMENT

WIND RISK TIMING

Available through the National Hurricane Center

www.hurricanes.gov



- Only 1 in 10 chance of tropical storm force winds arriving earlier than noted time
- Best for users with low risk tolerance

“Tropical storm force winds could arrive as early as Tuesday...”



- Equal chances of tropical storm force winds arriving before or after the time listed
- Preparations should be completed by this time

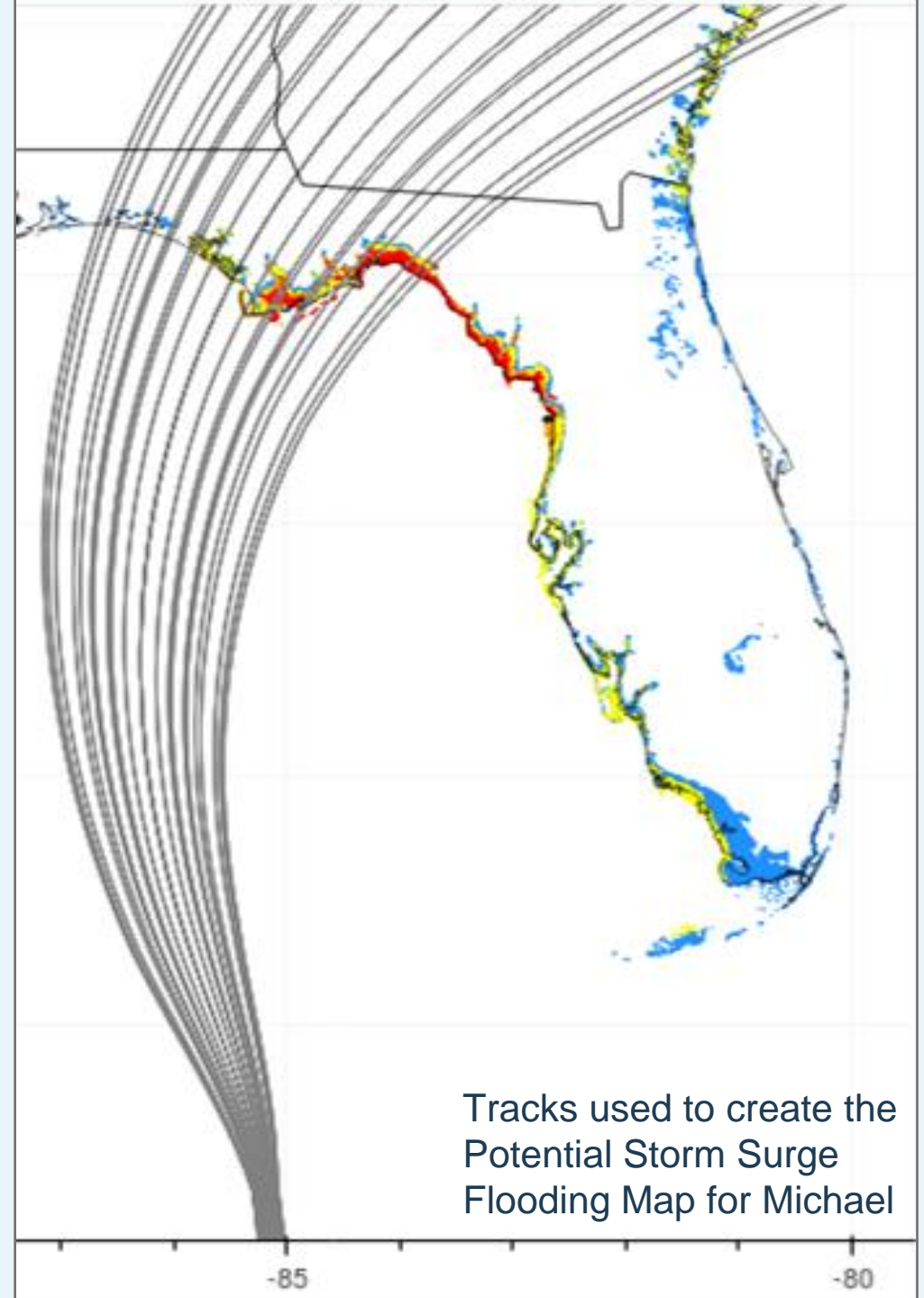
“Tropical storm force winds will likely arrive Tuesday night...”

STORM SURGE RISK

National Hurricane Center models 100s of storm scenarios for a specific tropical cyclone.

Modeling adjusts the size, intensity & forward speed of a specific cyclone – accounts for storm track wobbles

Uses model spread to account for track uncertainty



Tracks used to create the Potential Storm Surge Flooding Map for Michael

THREAT & IMPACT ASSESSMENT

INTERPRET STORM SURGE RISK

Available National Hurricane
Center

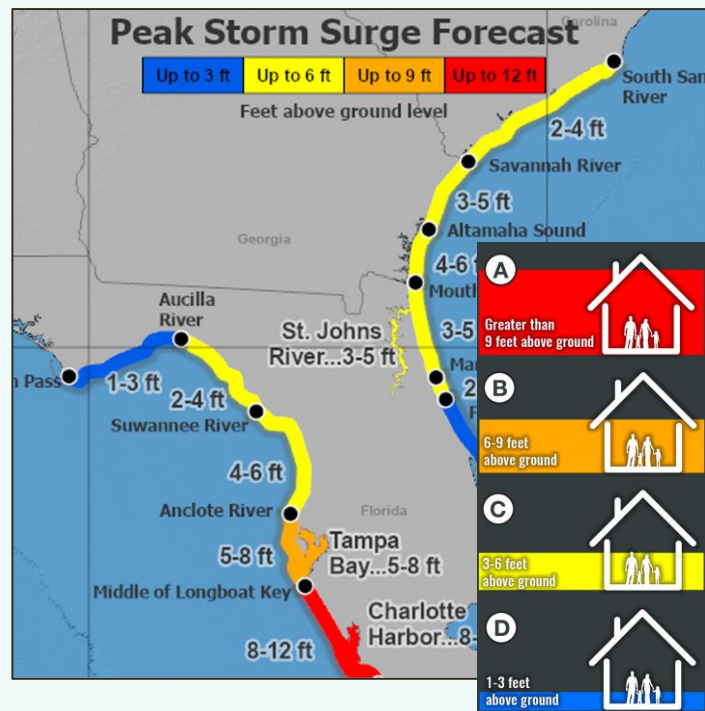
www.hurricanes.gov

NHC Peak Surge

Expected - Forecast

Peak values water could reach above normally dry ground

Only valid along the immediate coast - does not depict inland extent



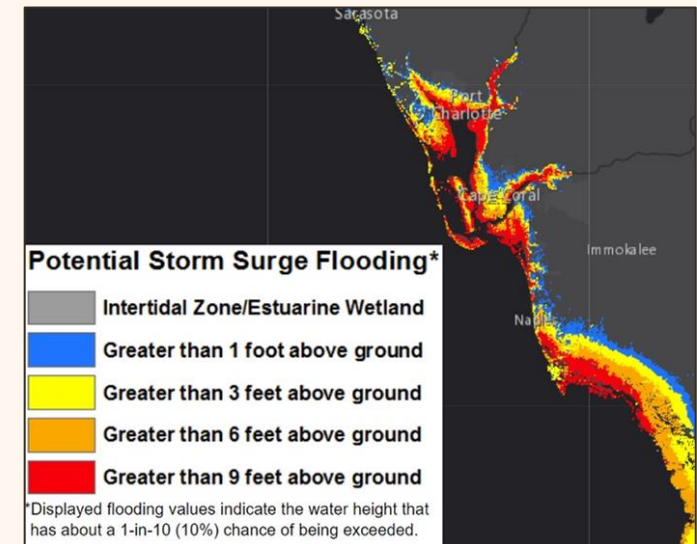
NHC Potential Storm Surge

Potential - Reasonable Worst-Case Scenario

How high the water *could* rise above normally dry ground

Only a 1 in 10 chance storm surge will be greater than shown

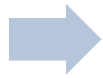
Doesn't represent a flooding footprint





<https://www.youtube.com/watch?v=OcW5nCczDhM>

> 5 Days



3-5 Days



< 48 hrs



Impacts

THREAT & IMPACT ASSESSMENT FLOODING RAIN RISK

Available National Hurricane
Center

www.hurricanes.gov

GET READY

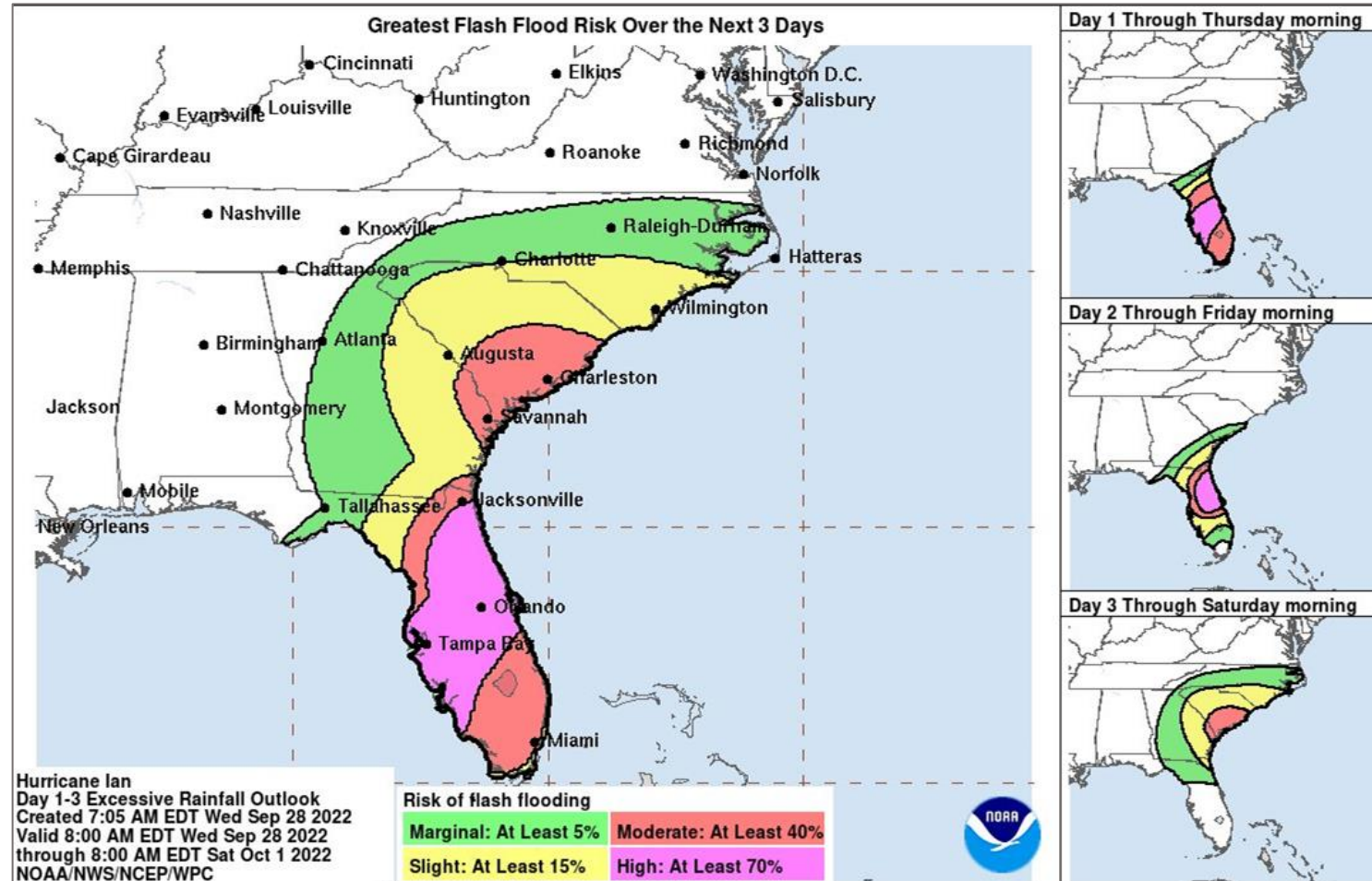
What is it?

Excessive Rainfall Outlooks (EROs) identify where & when the threat of flash flooding is greatest.

How do you use it?

Watch the trends & timing – increasing probabilities mean your location is at greater flood risk.

Threat regardless of category of storm Slower storm, high flooding rainfall threat



> 5 Days



3-5 Days



< 48 hrs



Impacts

THREAT & IMPACT ASSESSMENT TORNADO RISK

Available Storm Prediction
Center

www.spc.noaa.gov

GET READY

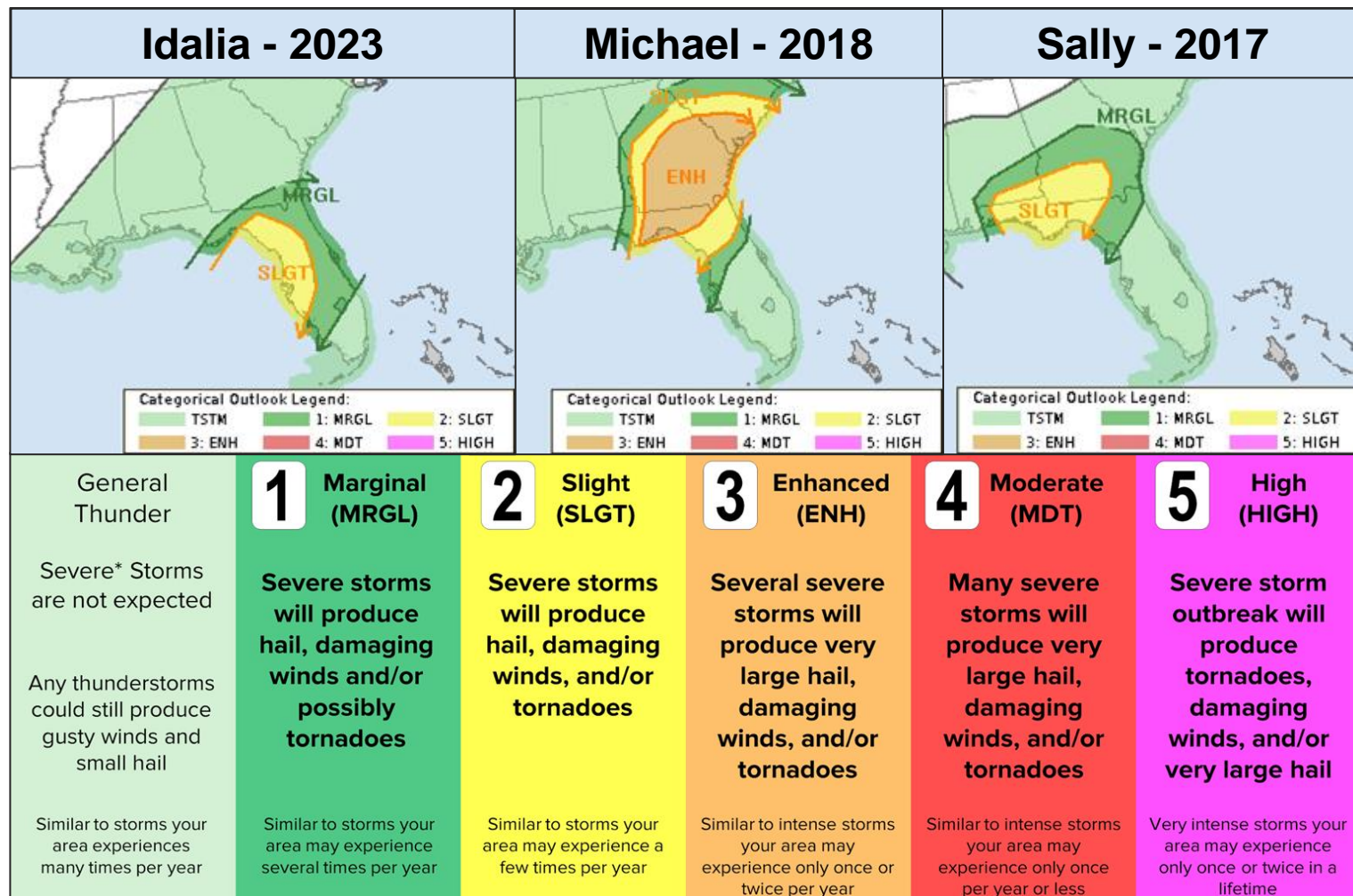
What is it?

Convective Outlooks identify where & when the threat of severe storms capable of producing tornadoes are located.

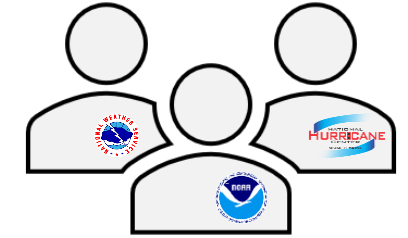
How do you use it?

Watch the trends & timing – increasing probabilities mean your location is at greater tornado risk.

Threat regardless of category of storm □ Can extend 100s of miles away from storm center, days in advance of landfall.



THREAT & IMPACT ASSESSMENT FORECAST INTERFACE



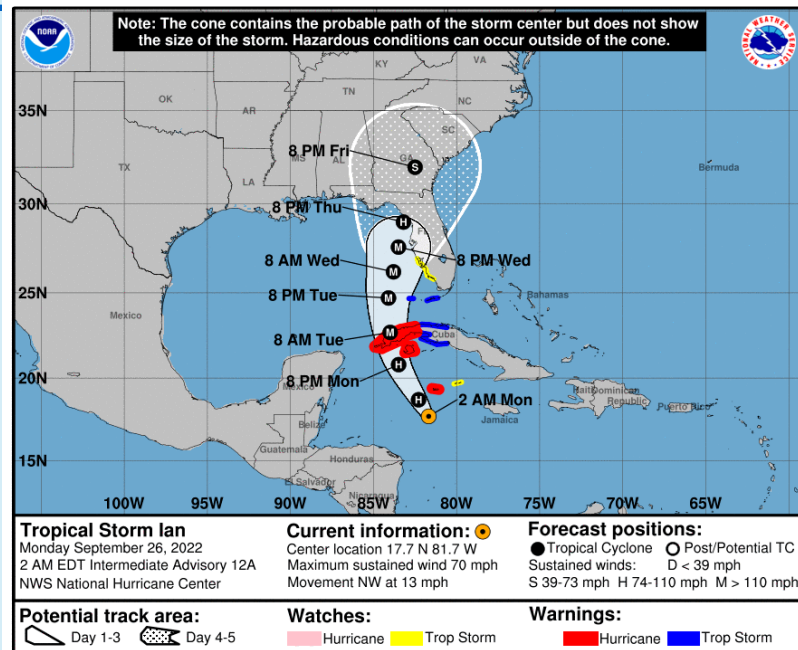
GET READY

National Hurricane Center

Storm Scale Forecasts – Size, Intensity & Track

Regional Forecast

www.hurricanes.gov

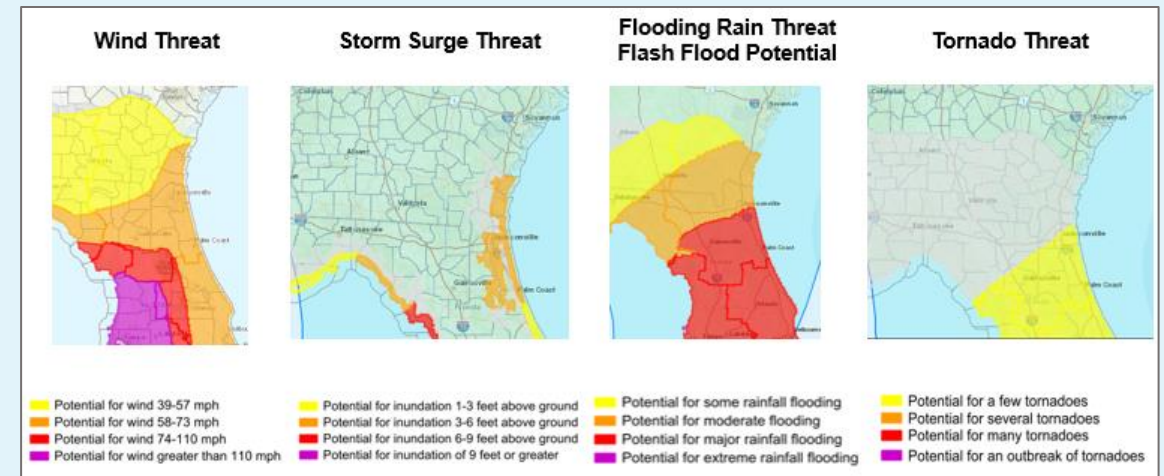


Local National Weather Service Offices

Downscale NHC Forecasts to Local Area

Local Forecast: What to prepare for, where, when

www.weather.gov



GETTING READY

POLL QUESTION

What forecast information do the Hurricane Threats & Impacts graphics depict?

- A. What is EXPECTED at specific locations
- B. What locations should PREPARE for



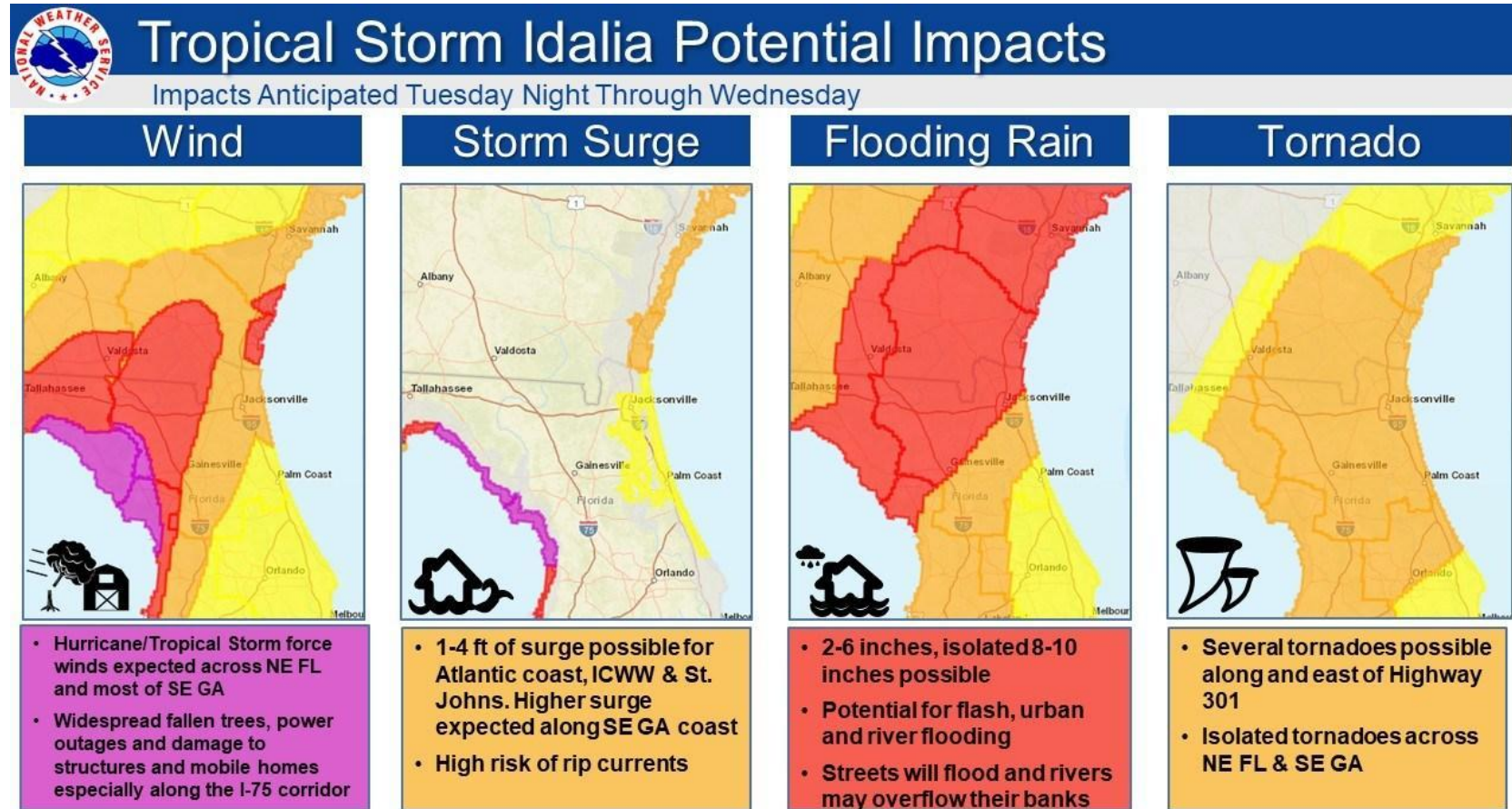
THREAT & IMPACT ASSESSMENT

LOCAL NATIONAL WEATHER SERVICE

Downscale NHC Impacts for local area

Help answer what, where, when & how bad

What should you be preparing for?



THREAT & IMPACT ASSESSMENT FORECAST INTERFACE

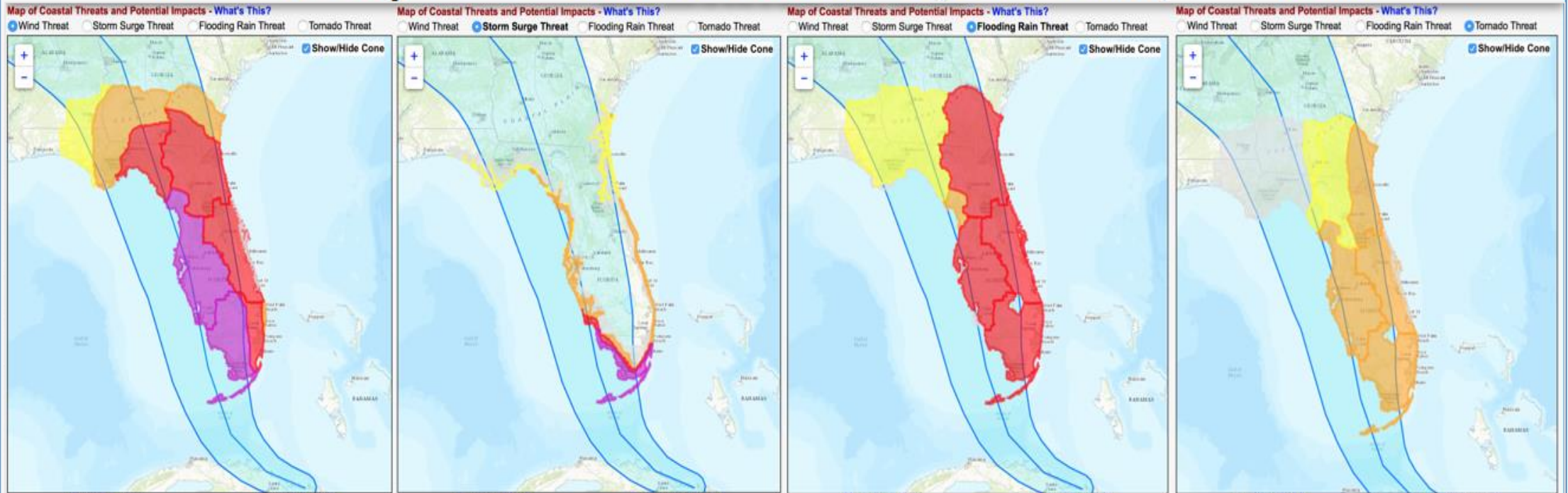


GET READY



[Outlook](#)
[Threats and Impacts](#)
[Satellite](#)
[Radar](#)
[Social Media](#)
[Preparedness](#)
[Links](#)

There are currently no active storms in the North Atlantic, Caribbean Sea, or Gulf of Mexico.



[\[Download KML\]](#) [\[Download Image\]](#)

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

[\[Download KML\]](#) [\[Download Image\]](#)

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

[\[Download KML\]](#) [\[Download Image\]](#)

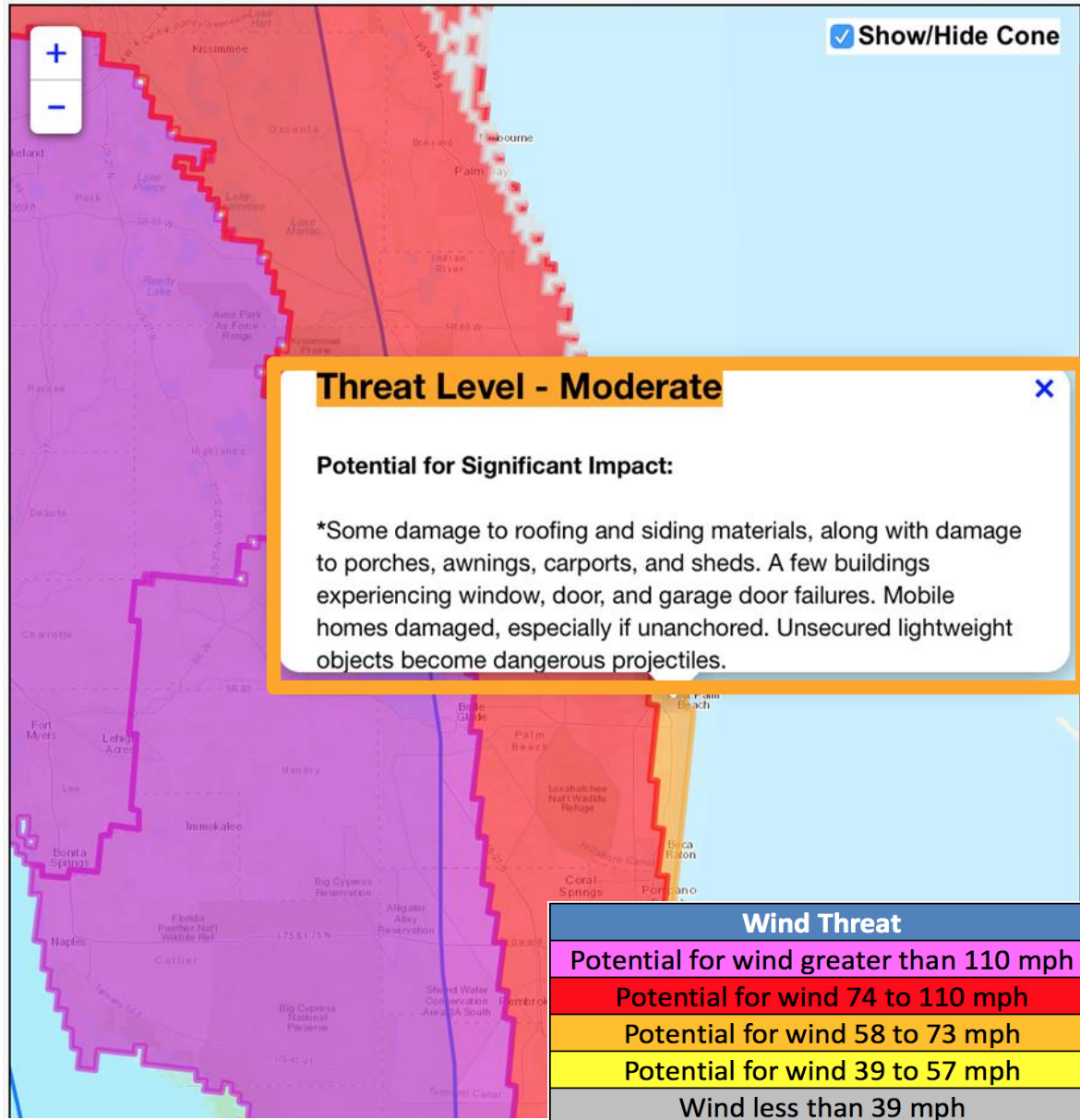
Flooding Rain Threat
Potential for extreme flooding rain
Potential for major flooding rain
Potential for moderate flooding rain
Potential for localized flooding rain
Little to no potential for flooding rain

[\[Download KML\]](#) [\[Download Image\]](#)

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

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

- Wind Threat
 Storm Surge Threat
 Flooding Rain Threat
 Tornado Threat



Latest Forecast - What's This?

For: Coastal Palm Beach County

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

What is the hazard?

*** LOCATIONS AFFECTED**

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

Where will it happen?

*** 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

How much is expected?

When is it expected?

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

**What should I prepare for?
Localized Impact Statement**

*** FOR MORE INFORMATION:**

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

Hazard-Based Threat Scale
w/safety-margin relative to uncertainty in forecast

EVACUATION & IMPACT READINESS

WHAT SHOULD I BE DOING NOW?





Get Moving When a Storm Threatens



Protect your home: cover windows, secure doors & loose items



Determine sheltering options and consider your pets



Ready your go-bag, meds & supplies, charge phone, fill up/charge vehicle



Help your neighbors, especially the elderly & other vulnerable people



Follow evacuation orders if given



SECURE YOUR BOAT BEFORE THE STORM



Don't wait for a storm warning to secure your boat.



Storm surge & wind can carry your boat onshore or out to sea!



Stay informed by listening to the weather forecast and plan ahead.



Add additional lines to your boat as soon as a Hurricane Watch or Tropical Storm Watch is issued.



Hurricane Preparedness

Strengthen Your Home



Cover windows



Trim trees



Secure loose outdoor items



Secure all doors



Move vehicle to a safe location

EVACUATION & IMPACT READINESS

EVACUATION READINESS

Evacuation is Needed When...

- ✓ Your Evacuation Zone is requested to evacuate
- ✓ Your location and/or routes to access your location are expected to be inundated with Storm Surge
- ✓ A household member is Special Needs
Example: A household member relies on power for life-safety.



Photo Getty Images

EVACUATION & IMPACT READINESS

EVACUATION READINESS



✓ Have supplies packed in vehicle



✓ Have route to shelter



✓ Be ready to leave when told to do so



✓ Monitor Official Sources for Evacuation Orders –
Local News, State & County Emergency Management



✓ The longer you wait, traffic & lodging issues will arise



Understand Forecast Information



Rely on forecasts from the National Hurricane Center & your local NWS office



Know your alerts & the difference between a Watch and Warning



Focus on potential impacts, regardless of storm size or category



Know that deadly hazards occur well outside of the Forecast Cone





TOMORROW

DAY 1

Monitoring the Tropics
Seasonal Readiness

DAY 2

Get Ready for Potential Impacts

DAY 3

Sheltering & Hunker-Down Mode

DAY 4

Post-Storm Safety
Lessons Learned

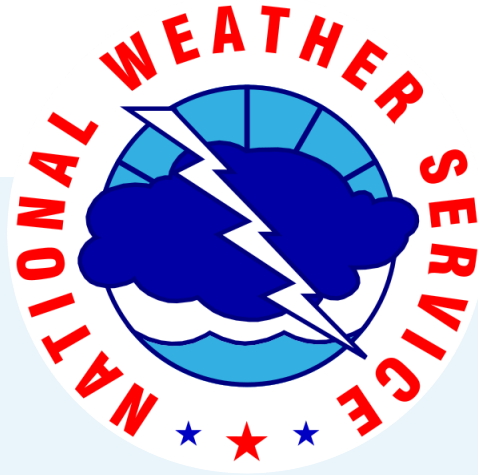
TRAINING TIMELINE

Go to this form to submit



SEND QUESTIONS





Program Website



Submit questions



**BE PREPARED.
STAY AWARE.**

<https://www.weather.gov/jax/FloridaTropicalTrainingWeek2024>

WWW.WEATHER.GOV



WWW.HURRICANES.GOV