

Effective Messaging:

Changing the Outcome of the Event





Communicating Hurricane Threats & Impacts

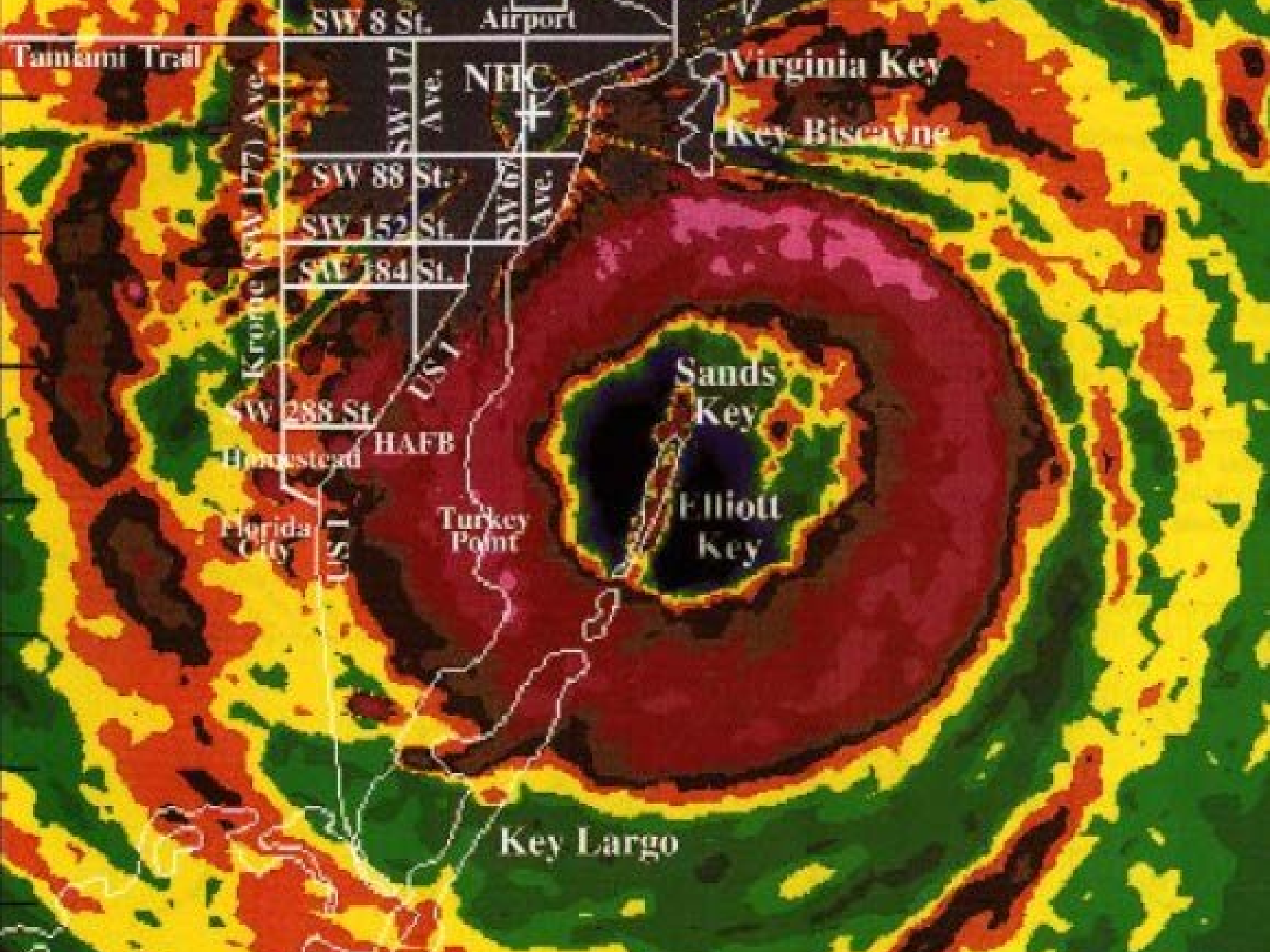
David Sharp

Science & Operations Officer
NOAA/National Weather Service
Melbourne, FL

August 24, 1992



**When the
Physical Science
intersects the
Social Science**



SW 8 St. Airport
Tainiami Trail 117 NHC

Virginia Key





Ultimately, it's about people!



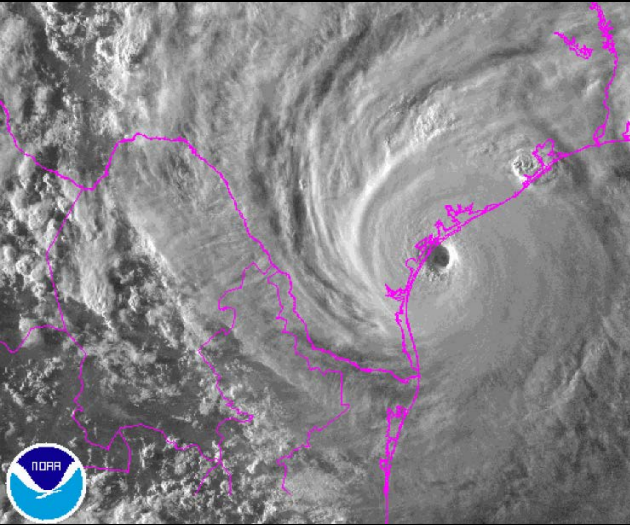
QUESTION: If you could go back in time to about 12-18 hours before Hurricane Andrew's landfall and take with you the knowledge of the wind impacts about to be realized, what **main message** would you have for the people of Homestead, FL?

- “The probability of hurricane force winds is increasing for Homestead.”
- “A hurricane warning remains in effect for South Florida, which includes the town of Homestead.”
- “Act now to protect your life! This is an extremely dangerous and potentially catastrophic wind situation for Homestead.”

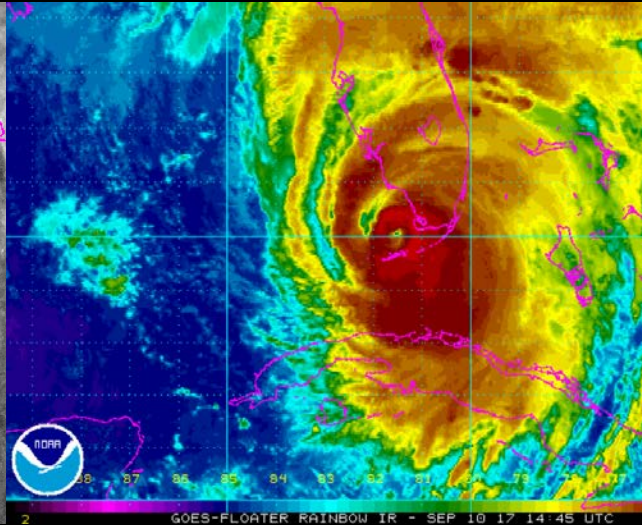


Now consider recent seasons ...

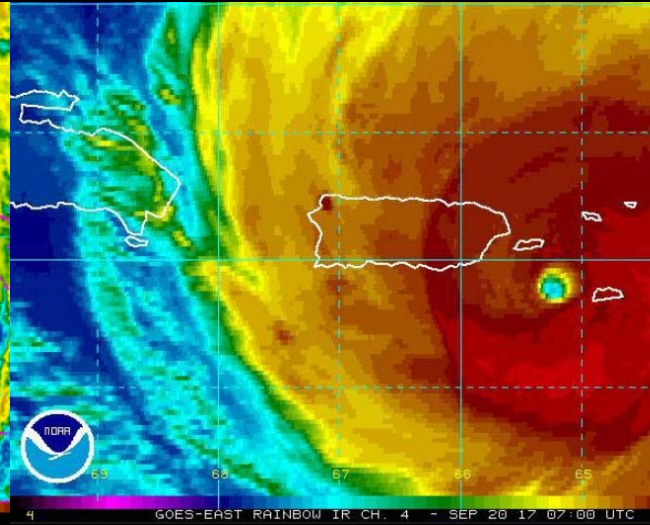
2017



Hurricane Harvey



Hurricane Irma



Hurricane Maria





**Hurricane
Harvey (2017)**



**Hurricane
Irma (2017)**



**Hurricane
Matthew (2016)**



**Hurricane
Maria (2017)**

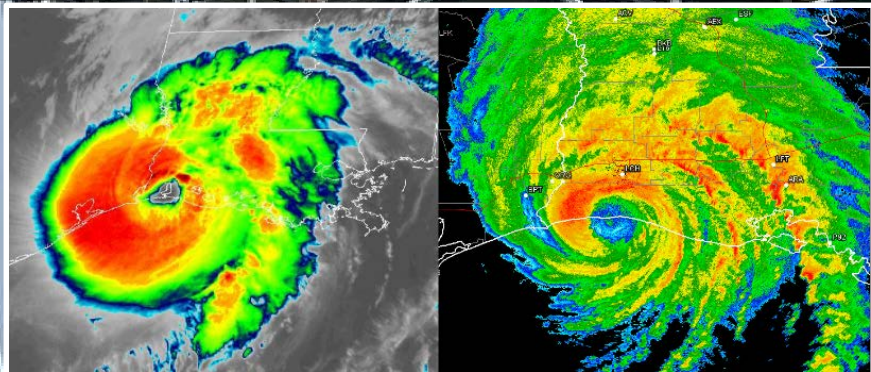
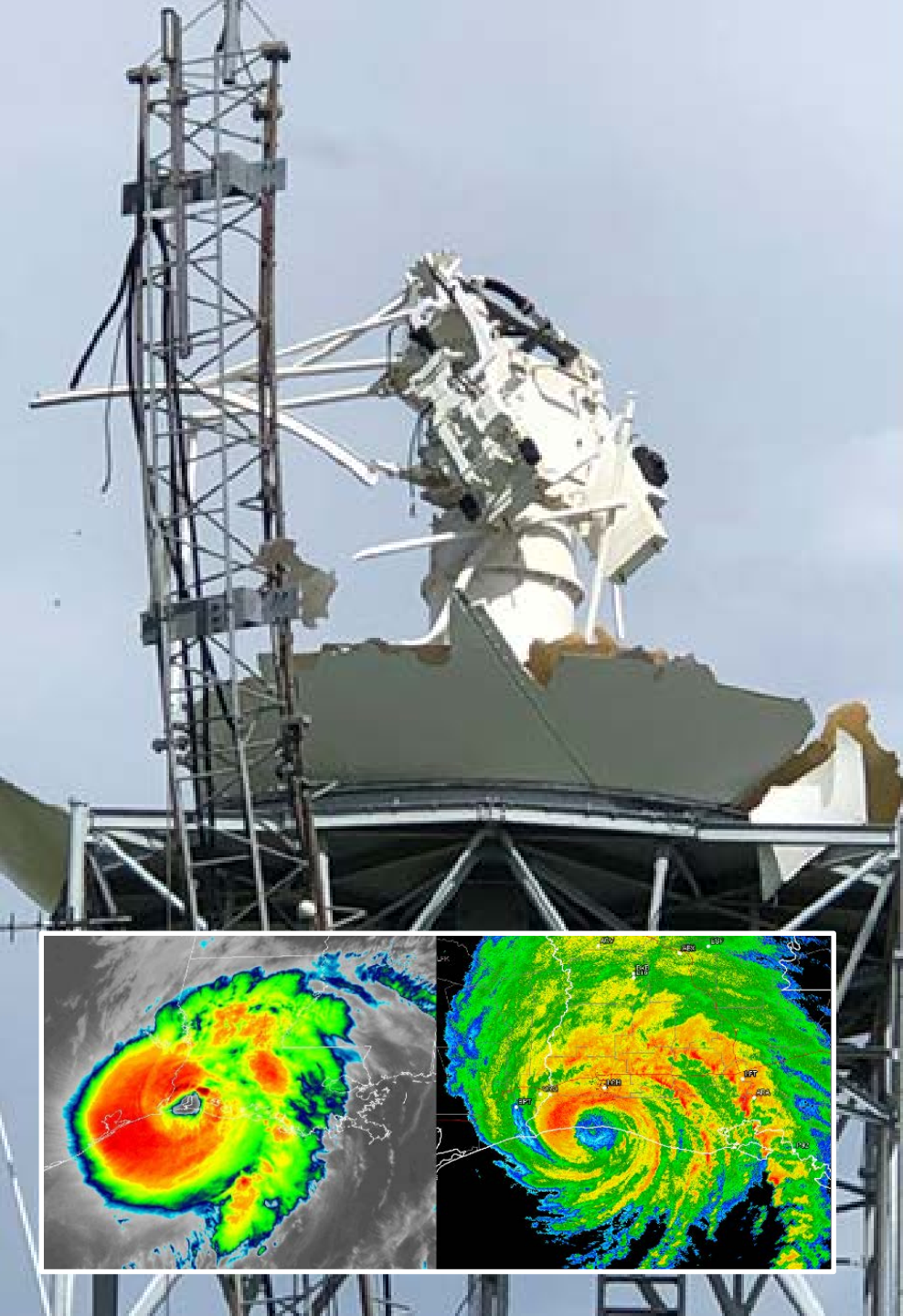


Hurricane Michael (2018): Panama City, FL
USAToday



Hurricane Michael (2018): Mexico Beach, FL
USAToday

Hurricane Laura (2020)





It's All About Impacts

"The Impact Footprint"



- **Hurricane Hazards:**

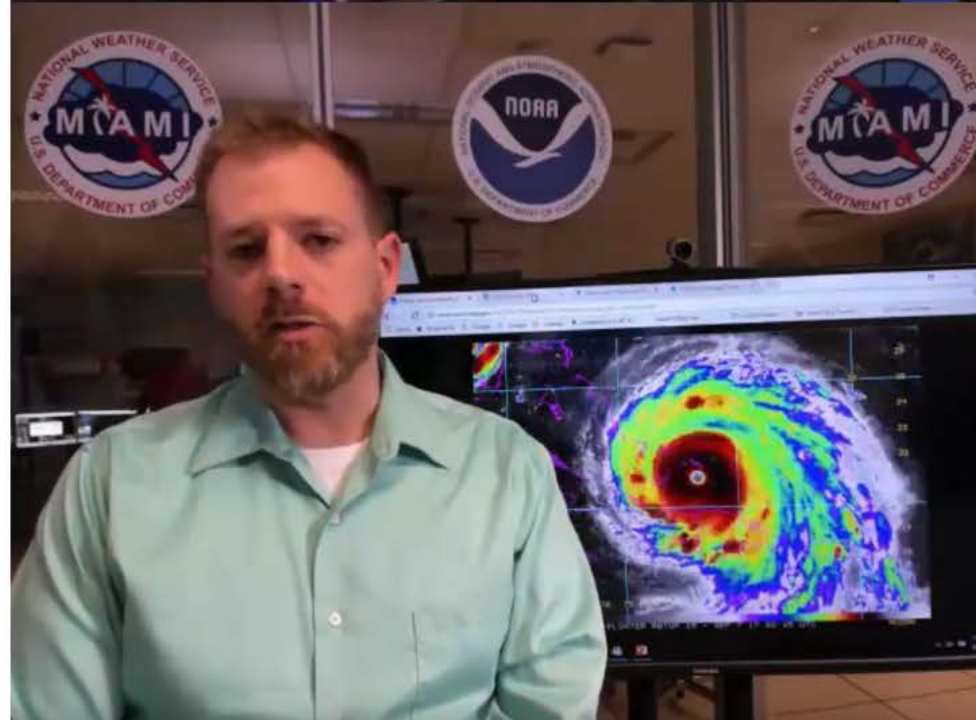
- High Wind
- Storm Surge & Tide
- Flooding Rain
- Pounding Surf/Dangerous Seas
- Tornadoes & Waterspouts



Messaging Types

- **Community Decision-making**
 - Emergency Managers
 - Community plans
 - Potential impacts relative to established weather/water thresholds and triggers
- **Personal Decision-making**
 - Public; Individuals/Families; Small Businesses
 - Personal plans
 - Potential impacts relative to local watches/warnings; any orders issued from local officials

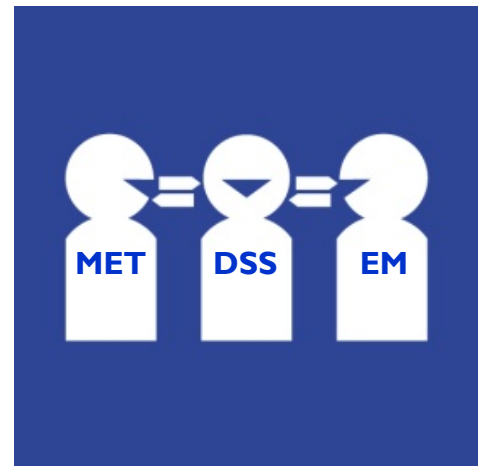
➤ *Limited sophistication with some safety instruction included*





Making Things Simple

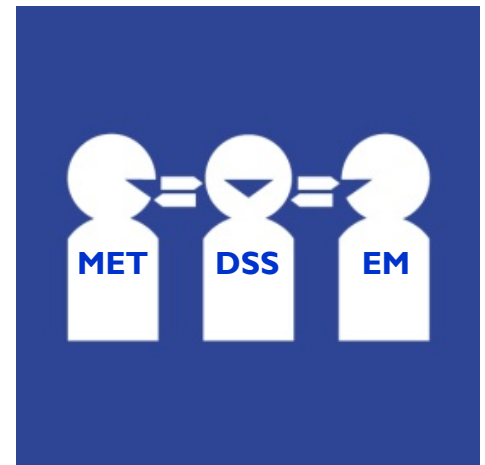
- **FACT:** The majority of our customers are not meteorologists, hydrologists, or oceanographers.
 - *"Some are weather-wise; most are other-wise."*
- To effectively communicate, we must learn to speak the language of the customer.
 - *Especially during emergencies when lives are imperiled.*





Making Things Simple

- Our science-based hurricane messaging must be:
 - **Distilled** ... *focused and succinct; nice and concise*
 - **Translated** ... *put in customer-speak*
 - **Interpreted** ... *maintain content meaning*



Communication of Weather-related Hurricane Emergency Information

3 Routes



From *Social and Behavior Influences on Weather-Driven Decisions* (Galluppi et al. 2013)

Public Safety Messaging

An aerial photograph of a long, multi-lane bridge spanning a body of water. The bridge has multiple support pillars and stretches into the distance under a hazy sky.

1. **Coordinate Public Safety Messages**
 - in conjunction with emergency management partners
2. **Communicate Public Safety Messages**
 - in conjunction with media partners

An integrated approach

Messaging in ways:

*“To help get the right people...
to do the right things...
at the right time.”*



Hurricane Irene (2011)

August 26, 2011
8:00 AM Advisory
Cat 2 (marginal Cat 3)
Large cyclone
Moving north at 14 mph.



Potential Impacts



Realized Impacts

Impacts = Customer Language

Relatable Information = Actionable Information

August 26, 2011

8:00 AM Advisory

Cat 2 (marginal Cat 3)

Large cyclone

Moving north at 14 mph.



Potential Impacts



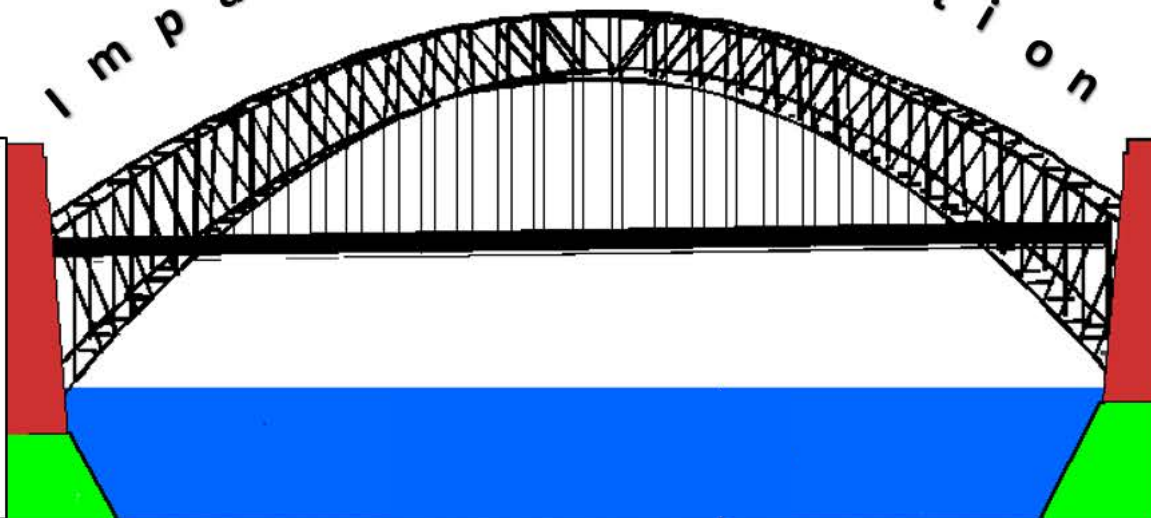
Realized Impacts

Impacts = Customer Language

Impact Recognition

**Threat
Assessment**

**Message
Communication**



Forecast Mode: Wind

Threat Assessment

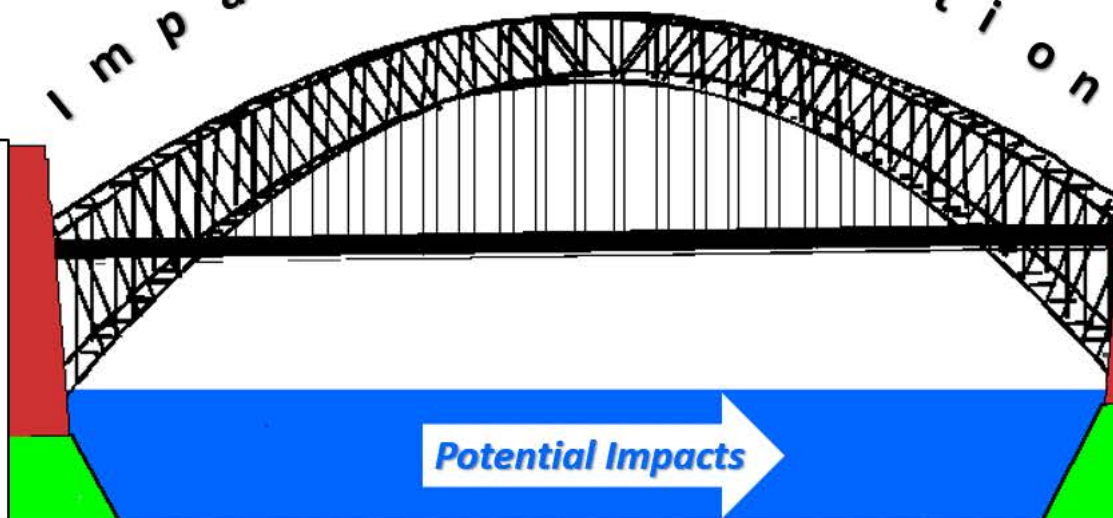
Likelihood of tropical winds

I m p a c t R e c o g n i t i o n

Message Communication

Protective action according to risk

Potential Impacts

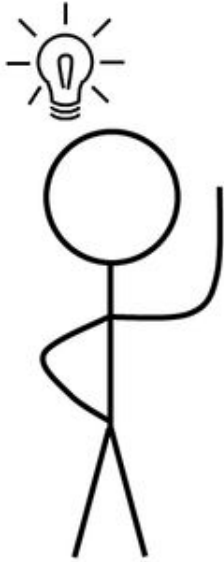


Impact Recognition: Bridges the latest threat assessment to a well-calibrated message by considering the imperilment to life and/or potential property damage ... according to locally established thresholds and community impact descriptions.



Public Messaging

THINKING AND FEELING

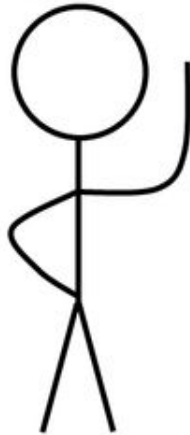


Thinkers
focus first on the
use of things



Public Messaging

THINKING AND FEELING



Thinkers

focus first on the
use of things



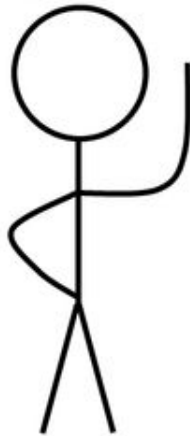
Feelers

focus first on the
meaning of things



Public Messaging

THINKING AND FEELING



Thinkers

**focus first on the
use of things**



Feelers

**focus first on the
meaning of things**

*“Act now to protect your life!
This is an extremely dangerous
and potentially catastrophic
wind situation for Homestead.”*



Societal Vulnerability to Hurricanes

Exposure:

Populations at Risk

Properties at Risk

Community Preparedness

Incidence:

Frequency / Return Period

Intensity



Pielke & Pielke 1997

Societal Vulnerability to Hurricanes

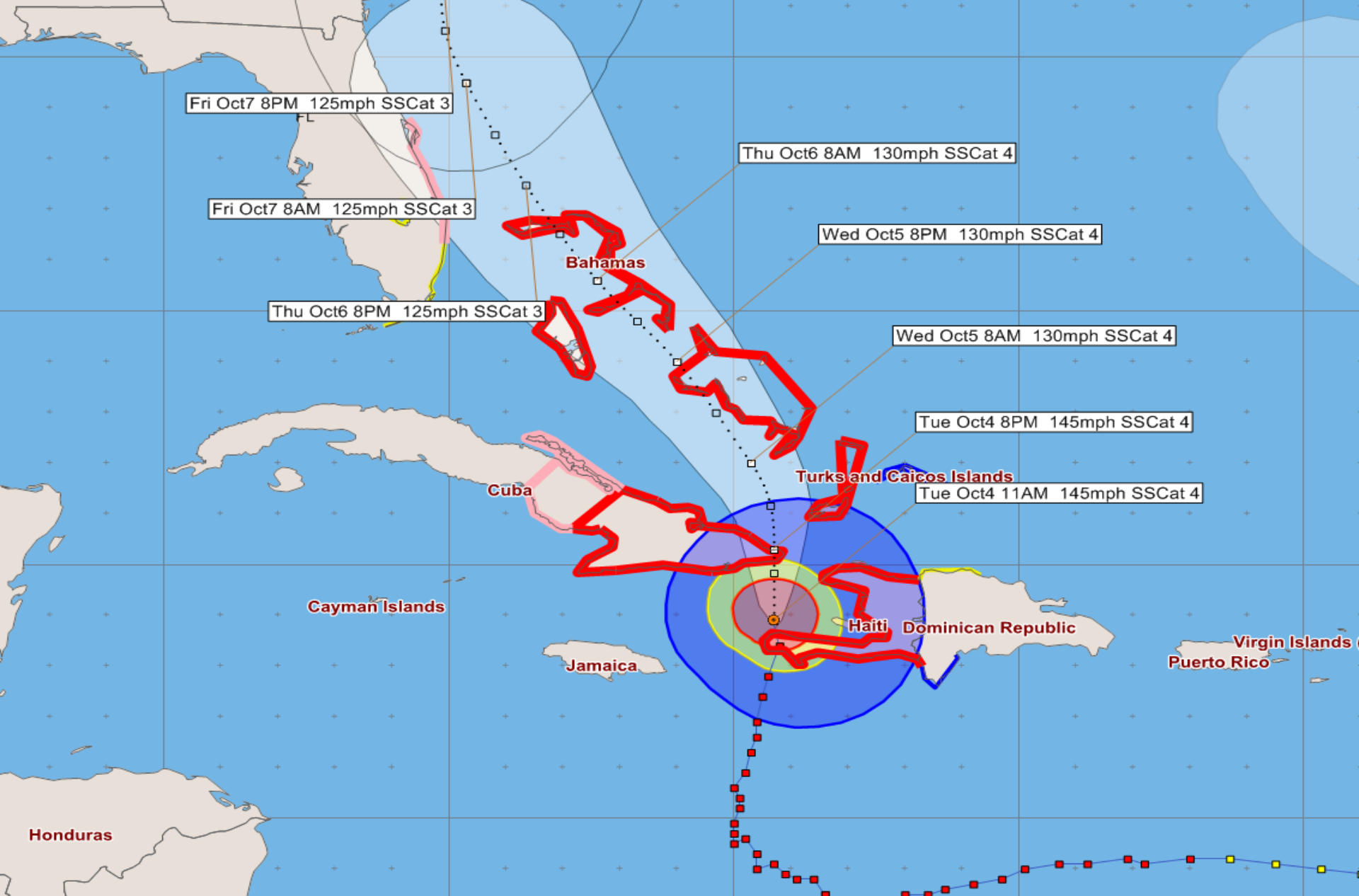
Readiness

Responsiveness

Resiliency



NOAA/NWS



Hurricane Matthew - Tuesday, October 4, 2016 11 AM EDT Advisory #26

Center Location: 18.9 N 74.3 W Maximum Sustained Winds: 145 mph (Cat 4) Movement: 10 mph N

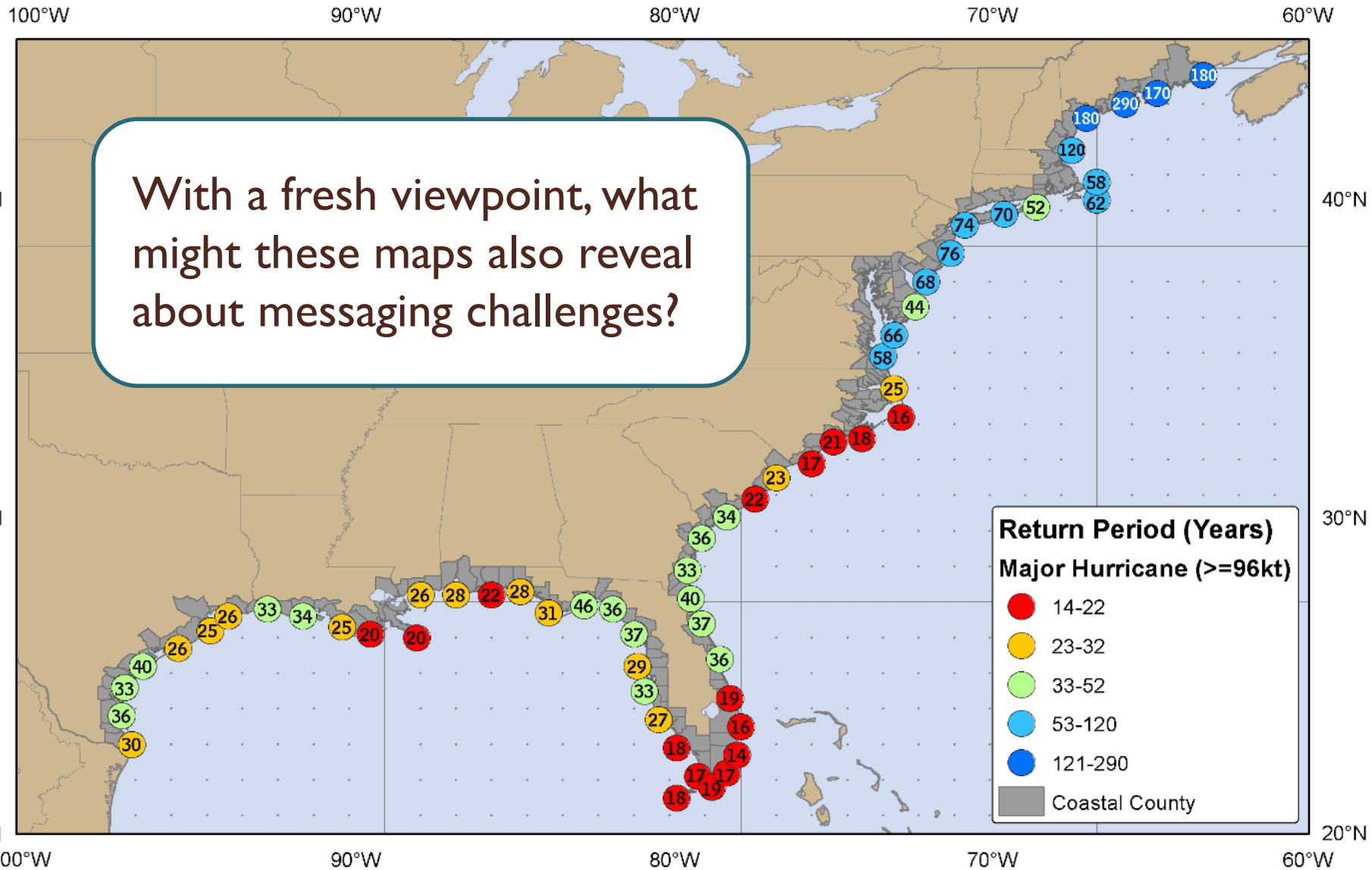
Forecast positions: □ day 1-3 □ day 4-5 Potential Track Area: day 1-3 day 4-5 Surface Wind Field: ● at current location

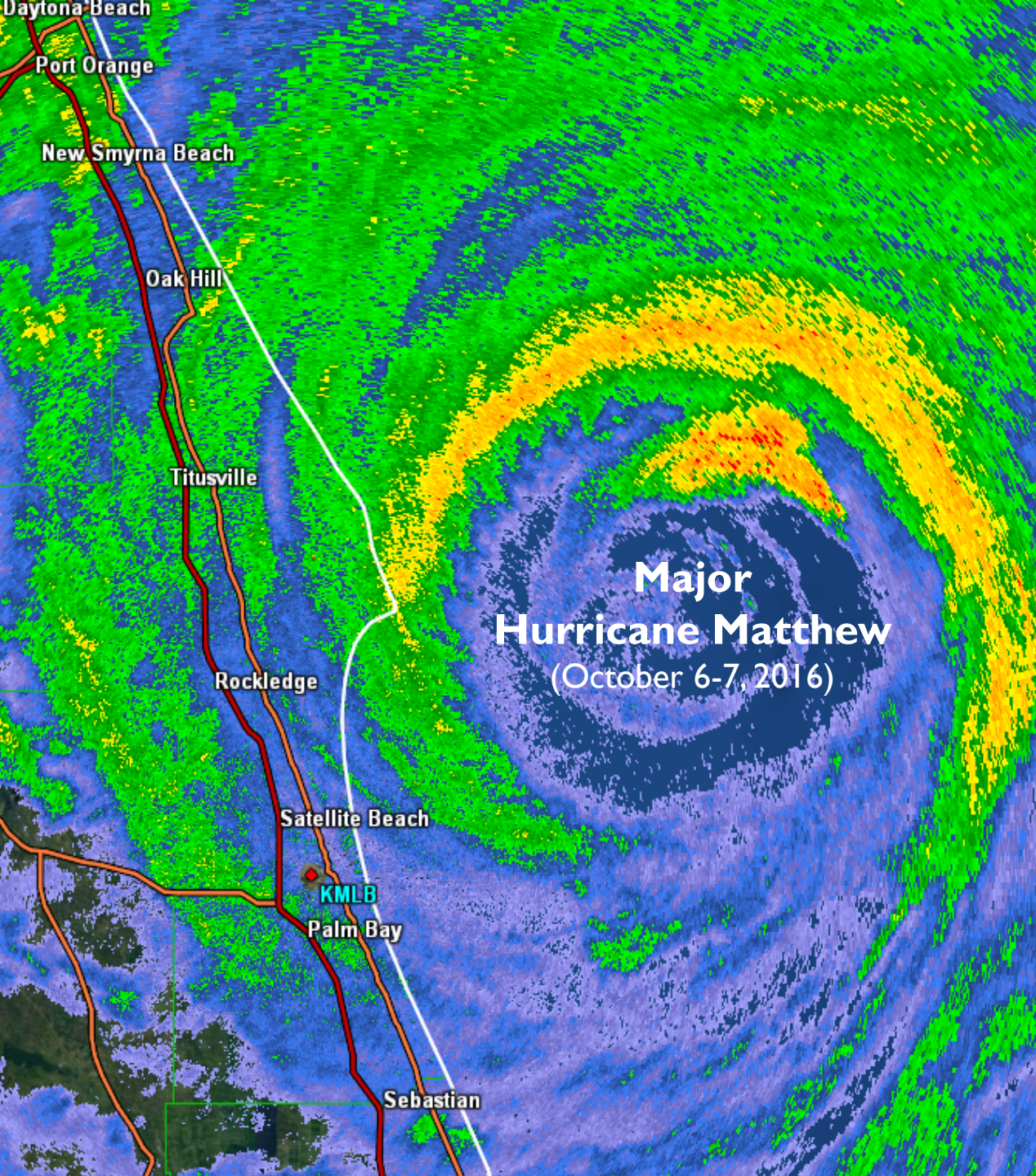
Watches: hurricane tropical storm Warnings: hurricane tropical storm

Sustained Wind Speeds: tropical storm $\geq 34\text{kt}/39\text{mph}$ strong tropical storm $\geq 50\text{kt}/58\text{mph}$ hurricane $\geq 64\text{kt}/74\text{mph}$

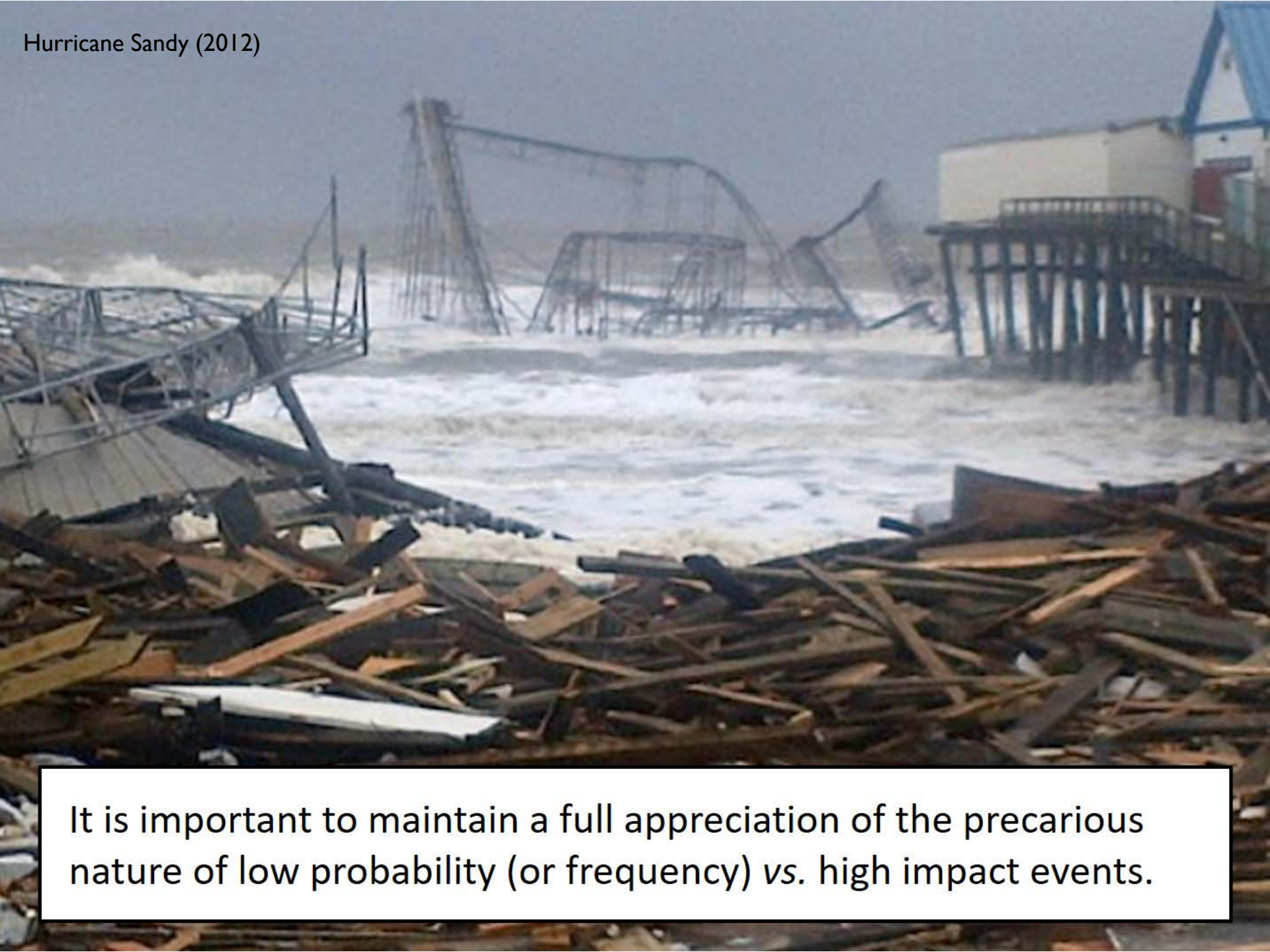
Return Frequencies

With a fresh viewpoint, what might these maps also reveal about messaging challenges?





Hurricane Sandy (2012)



It is important to maintain a full appreciation of the precarious nature of low probability (or frequency) vs. high impact events.



In the absence of effective messaging, the risk can be grossly misperceived ... *until it's too late!*

Steps To Effective Warning Response



**Resources, Ability,
& Time**

Appropriate Protective Action

Considerations for Public Safety Messaging to evoke Desired Societal Response



The Nature of Information



- **A Danger of the Information Age** - we can now yield an overwhelming volume of weather/water data and information.
 - But, are we simply adding to the *information fire hose*?





The Nature of Information

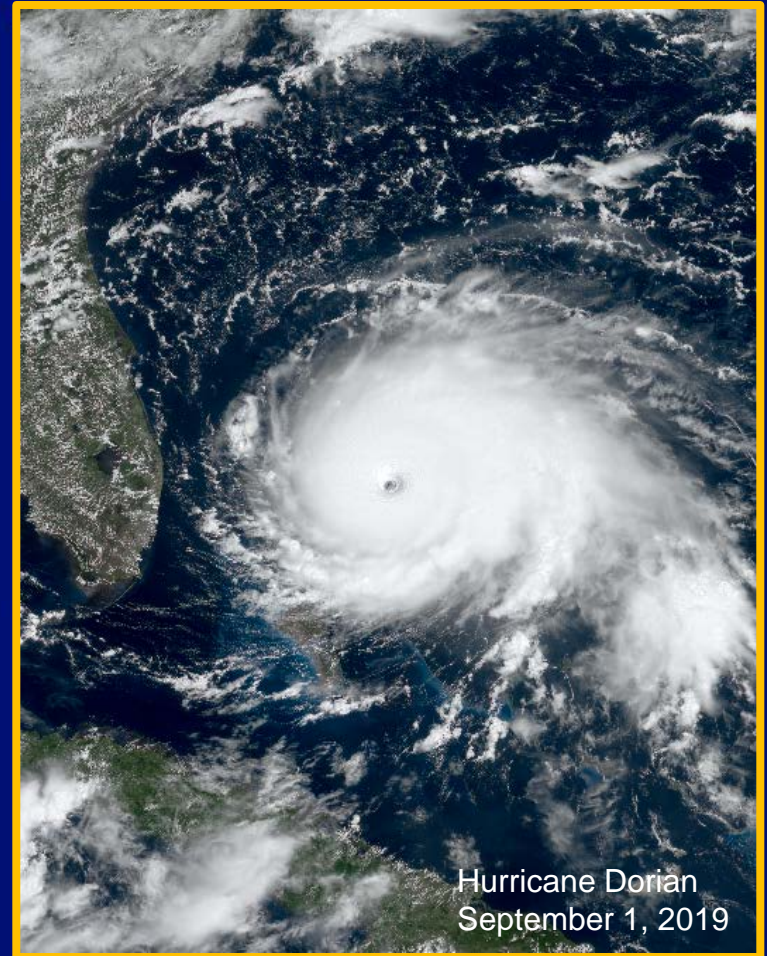


- Providing increasingly more information of ambiguous utility is not helpful.
- ***This neither helps community decision-makers nor serves the public!***
 - “Drowning in Information”
 - “Information Overload & Paralysis”
 - “Over-Anxiety & Hurricane Fatigue ”



Mental Noise Model

- ❑ **Stress affects information processing**



Hurricane Dorian
September 1, 2019



The Nature of Information



- **Information Management Age** - we must move beyond the information age and onward to the *information management* & *decision support* age.
 - Providing **targeted**, **actionable**, and **timely** information
 - While remaining a **trusted** source



Being a Trusted Source Makes the Difference

Brevard County EOC

- Plan for Threats
- Prepare for Impacts
- Act on Thresholds

Supporting Both Community Actions & Family Actions



Why Should I Listen To You?

For community decision-making ...



Craig Fugate, FEMA Director (retired)

- I need to listen to someone who is credible.
 - **Credibility = Expertise + Trust**
- I want to listen to someone who understands.
 - **Understanding = Empathy + Trust**

“Things really start clicking when these are found in a common source.”



What is the one thing everyone wants but we cannot provide?

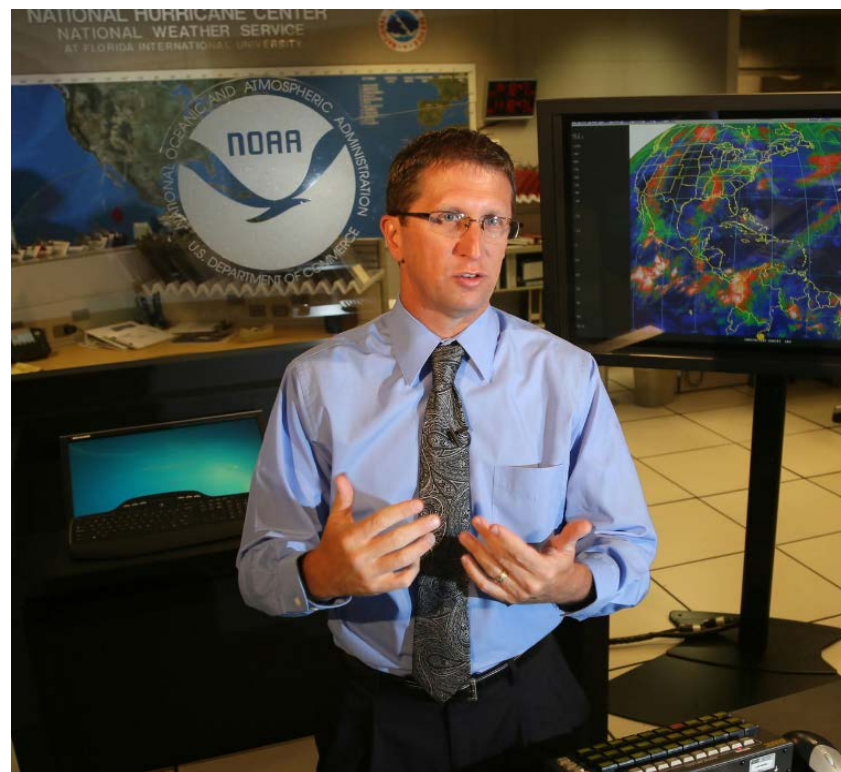
... a perfect forecast !!!



DSS



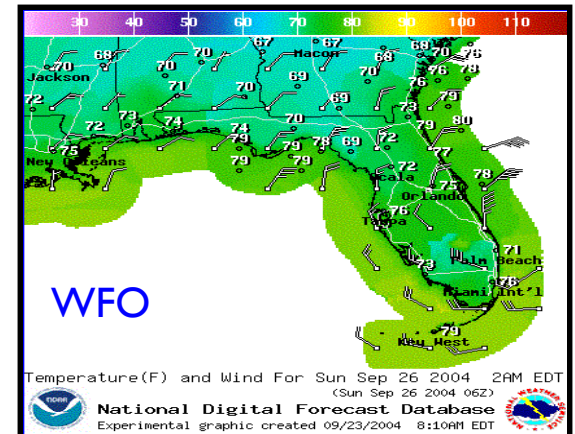
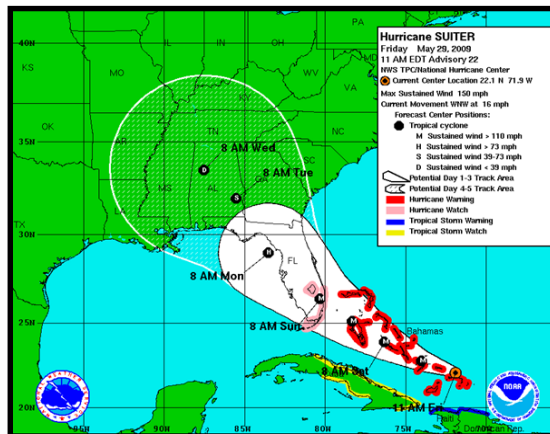
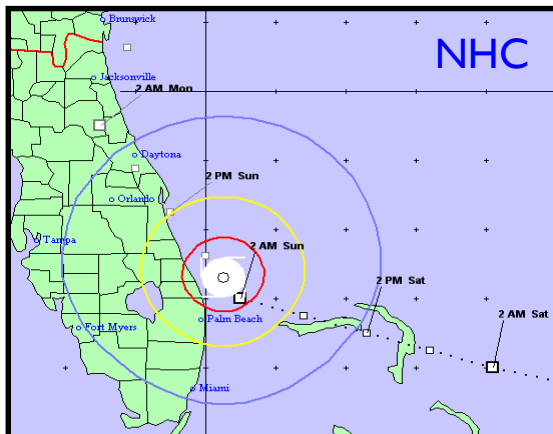
What, then, should be our intent?



“Our mutual intent is to change the outcome of the event!”

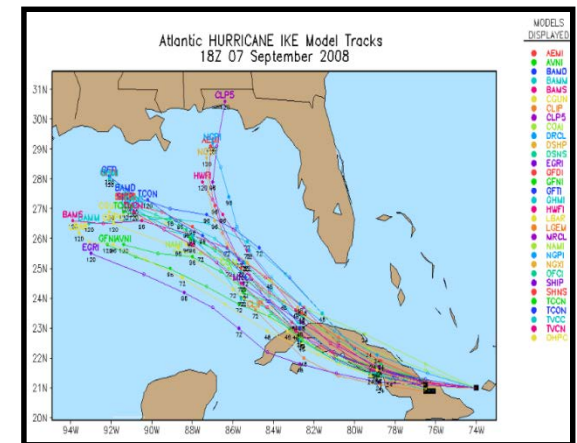
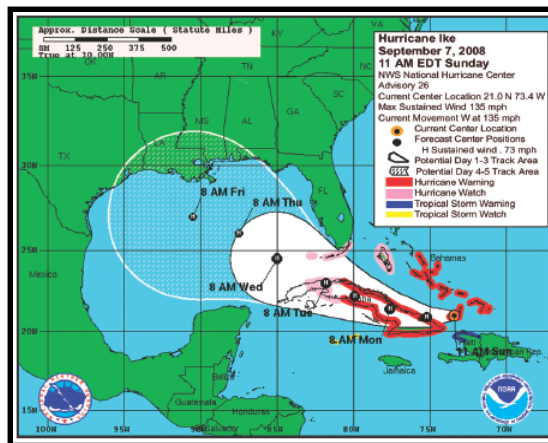
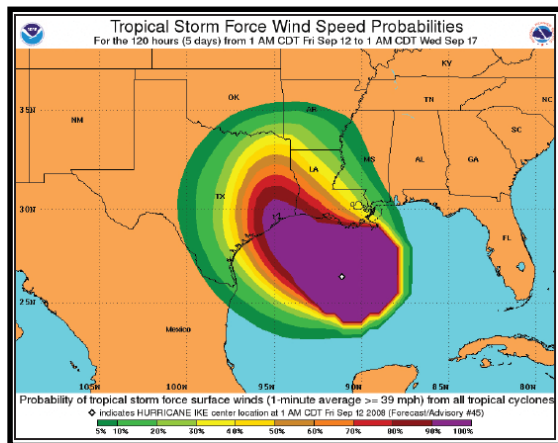
We ...

- Are comfortable with conveying our latest forecast
- But still struggle with conveying forecast uncertainty
 - Rules of Thumb (subjective; empirical)
 - Error Cone (track errors only)



We ...

- Are comfortable with conveying our latest forecast
- But still struggle with conveying forecast uncertainty
 - Rules of Thumb (subjective; empirical)
 - Error Cone (track errors only); Spaghetti Plots (for confidence)
 - Wind Speed Probabilities (for critical thresholds)



Scenario Types for Supporting Decisions



Simplify

Latest Forecast

Most Likely Scenario

Most Likely Alternate Scenario

Reasonable Worst Case Scenario

Reasonable Best Case Scenario



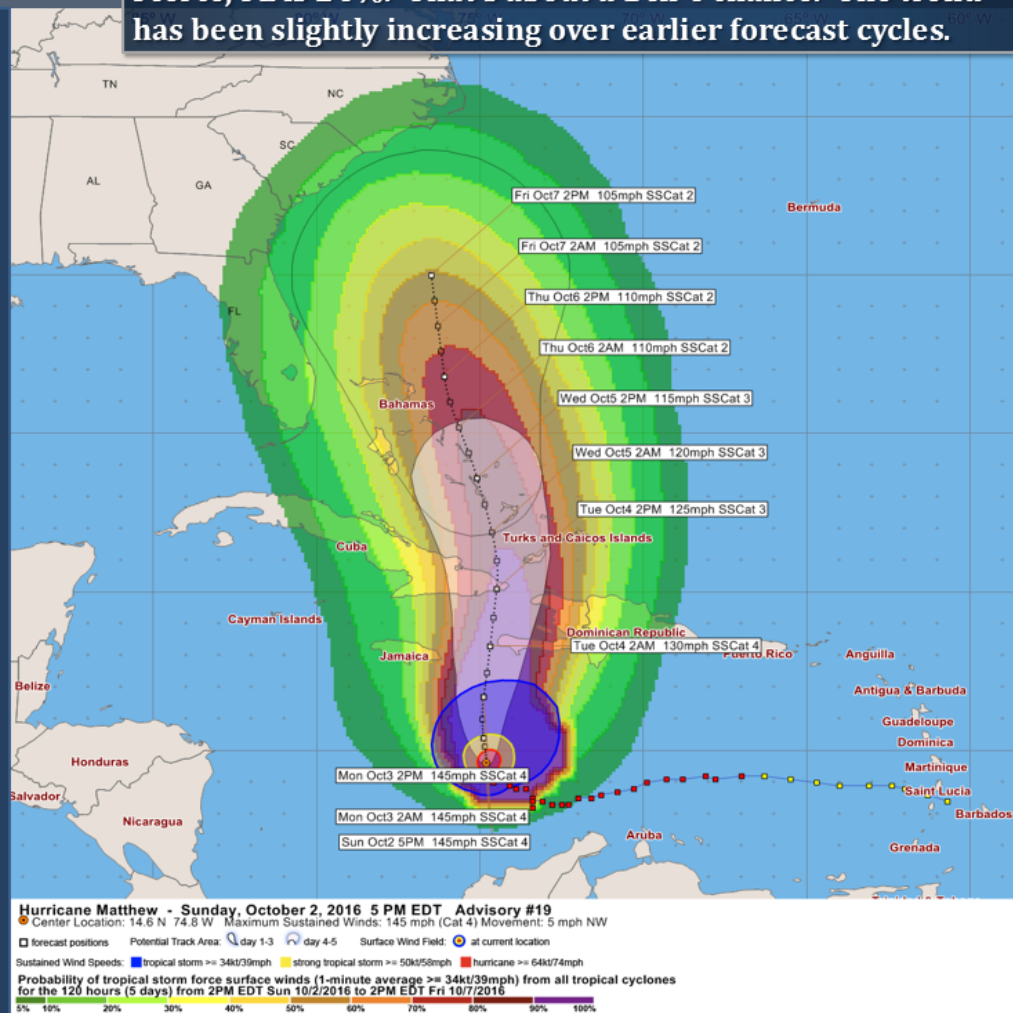
Situation Overview

East Central Florida & Adjacent Coastal Waters

The **probability for tropical storm force winds** at Fort Pierce, FL is 24%. That's about a 1 in 4 chance. The trend has been slightly increasing over earlier forecast cycles.

According to the latest forecast...

- A most likely scenario still keeps Matthew to the east of the Florida Peninsula.
 - Offering significant marine and coastal/beach concerns to ECFL



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October 2, 2016



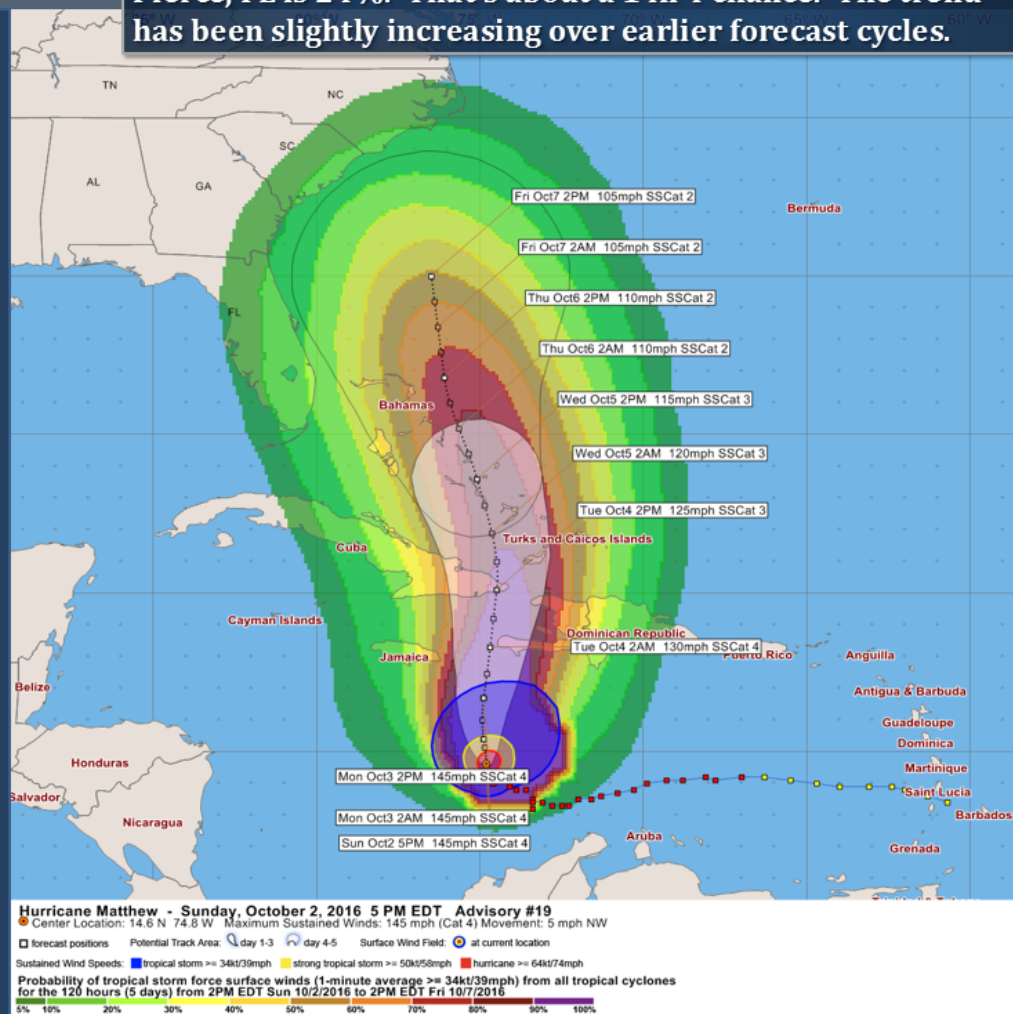
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- An alternate scenario could bring Matthew closer to ECFL.
 - Increasing the concern for potential wind impacts for land locations



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Situation Overview

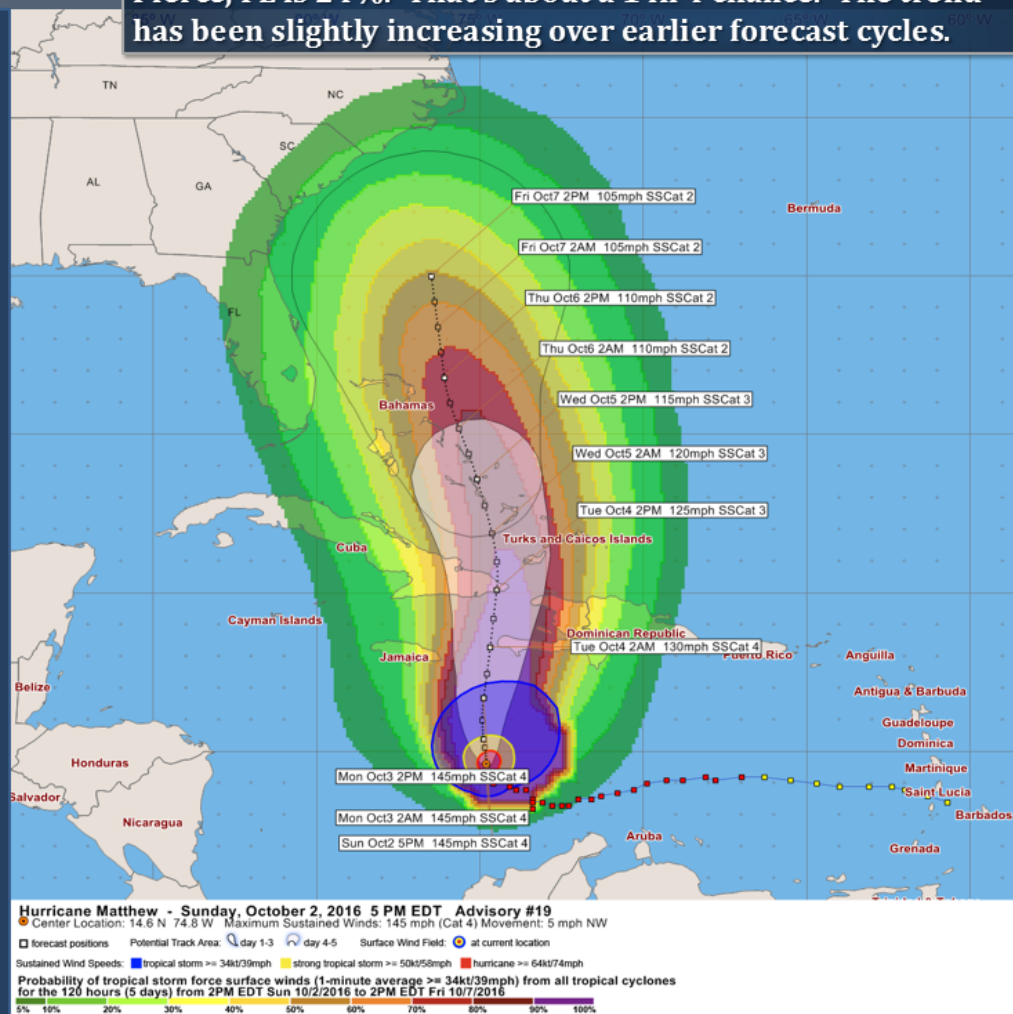
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 - Offering significant marine and coastal/beach concerns to ECFL
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 - Increasing the concern for potential wind impacts for land locations

Key Point: It is possible for a major hurricane to be in our vicinity (ECFL) by mid-late week.



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[@NWSMelbourne](https://twitter.com/NWSMelbourne)

October 2, 2016



Situation Overview

East Central Florida & Adjacent Coastal Waters

The probability for tropical storm force winds at Fort Pierce, FL is 24%. That's about a 1 in 4 chance. The trend is for more forecast cycles.

According to

Key Point & Public Safety Message:

It is possible for a major hurricane to be in our vicinity by mid-late week.

**Stay informed of the latest forecast.
Review your hurricane emergency plan and check your seasonal supplies.**



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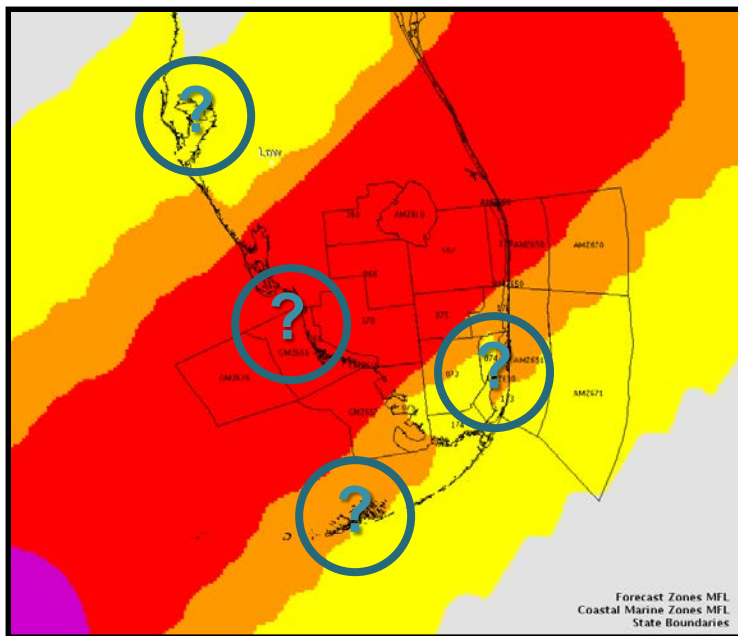
October 2, 2016



***To be safe, to what extent
should preparations be made?***

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

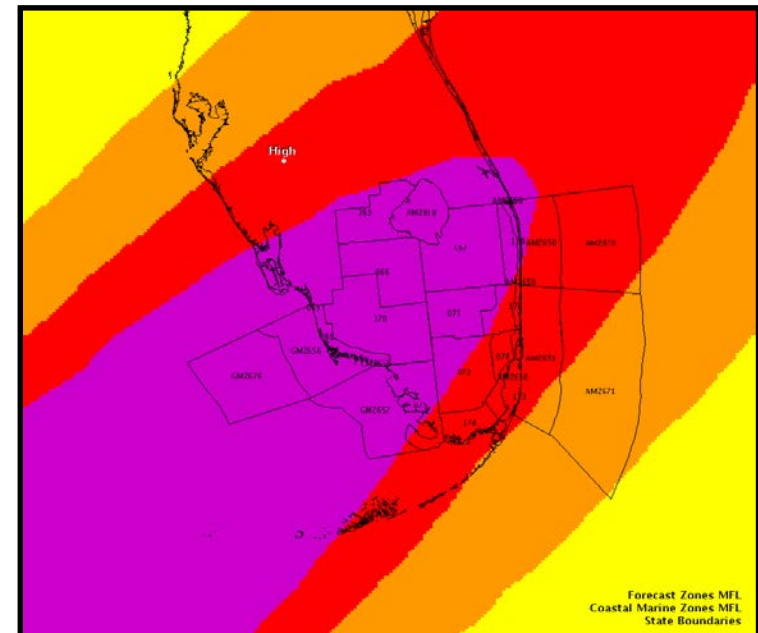
Forecast: **“Peak Wind Swath”**



Most Likely Scenario

No Safety Margin

Forecast: **“Peak Wind Threat Swath”**



Reasonable Worst Case Scenario

Wide Safety Margin



Threat Assessments x 4

Wind

Storm Surge

Wind Threat

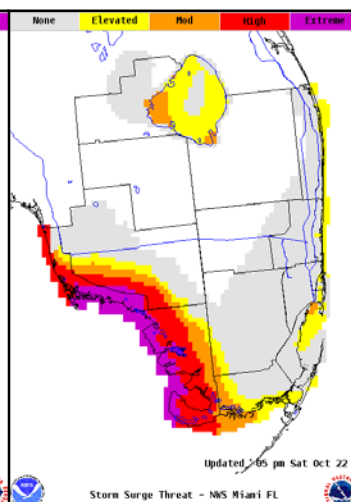
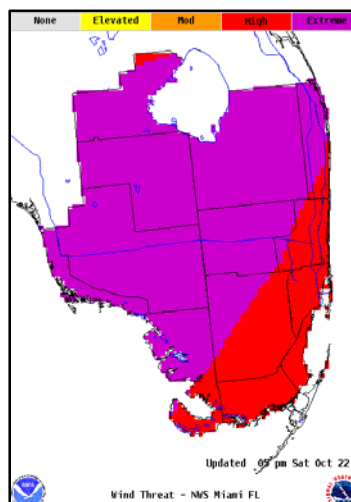
Potential for wind greater than 110 mph

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



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

Tornado Threat

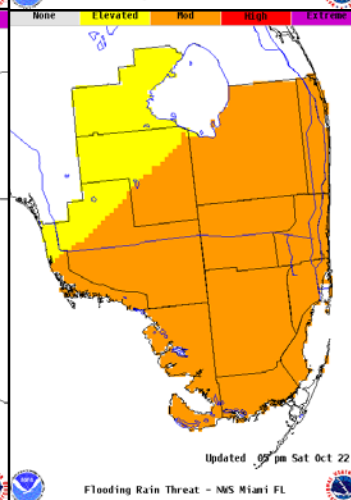
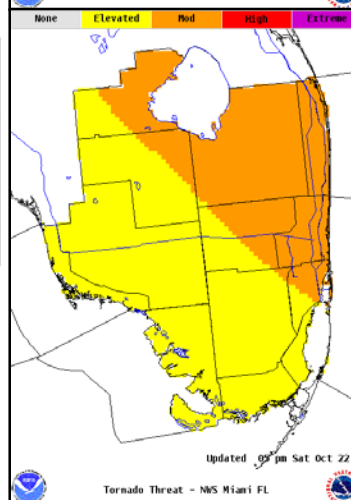
Potential for an outbreak of tornadoes

Potential for many tornadoes

Potential for several tornadoes

Potential for a few tornadoes

Tornadoes not expected



Flooding Rain Threat

Potential for extreme flooding rain

Potential for major flooding rain

Potential for moderate flooding rain

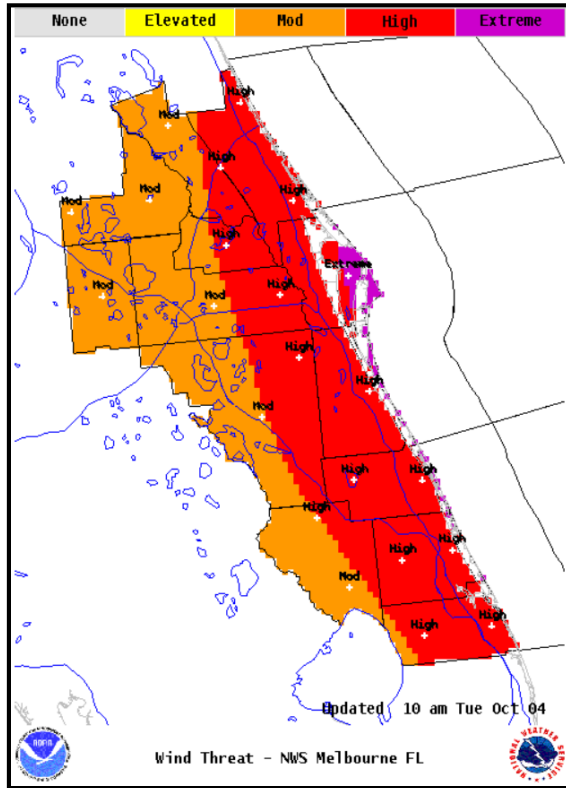
Potential for localized flooding rain

Little to no potential for flooding rain

Tornadoes

Flooding Rain

To be Safe, Prepare for This



Wind Threat

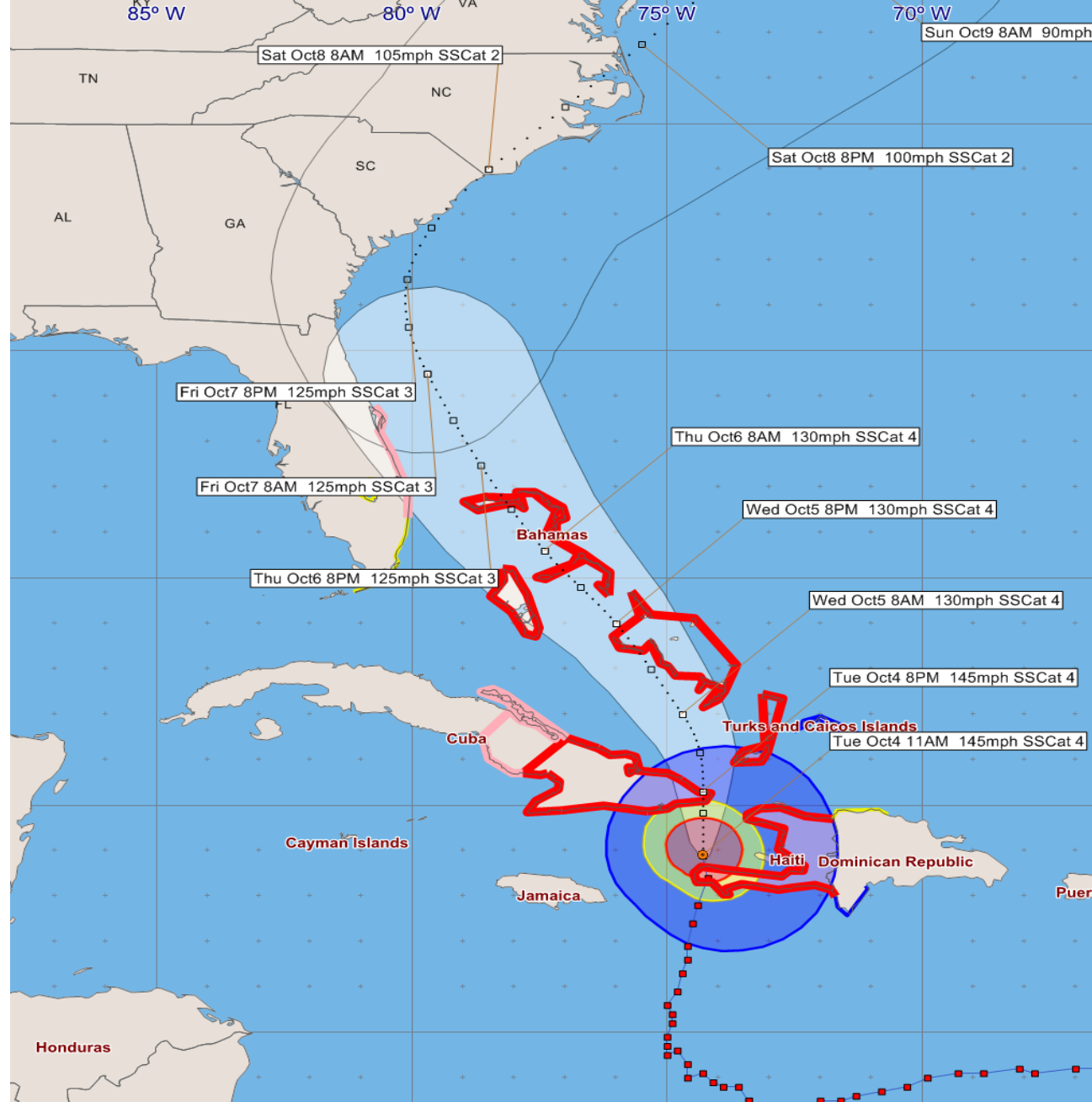
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Wind less than 39 mph



Hurricane Matthew - Tuesday, October 4, 2016 11 AM EDT Advisory #26

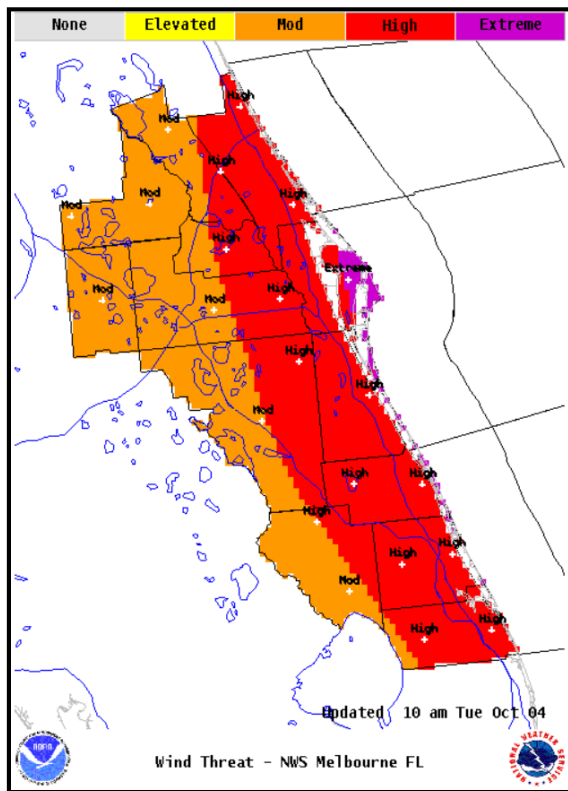
Center Location: 18.9 N 74.3 W Maximum Sustained Winds: 145 mph (Cat 4) Movement: 10 mph N

forecast positions Potential Track Area: day 1-3 day 4-5 Surface Wind Field: at current location

Watches: hurricane tropical storm Warnings: hurricane tropical storm

Sustained Wind Speeds: tropical storm ≥ 34 kt/39mph strong tropical storm ≥ 50 kt/58mph hurricane ≥ 64 kt/74mph

To be Safe, Prepare for This



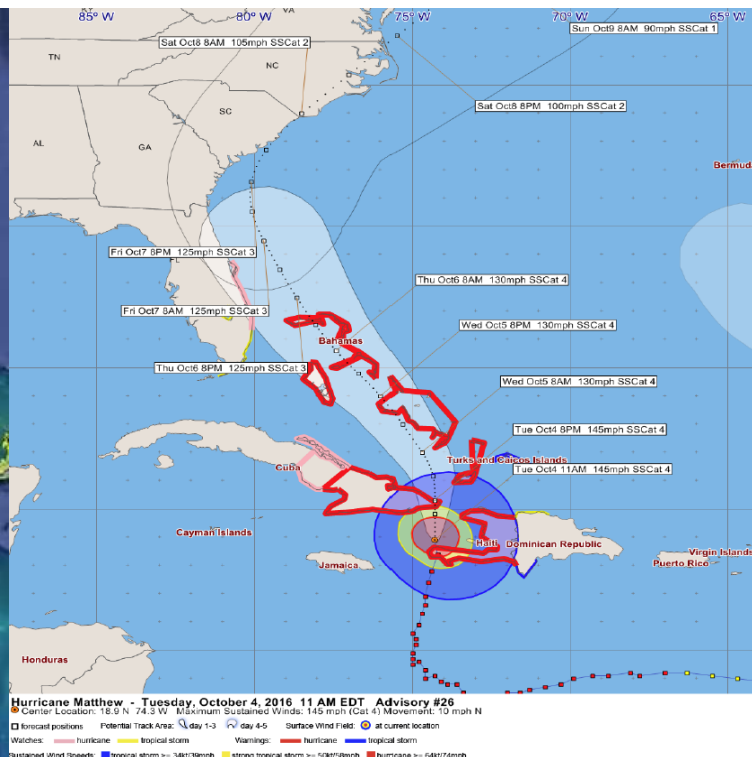
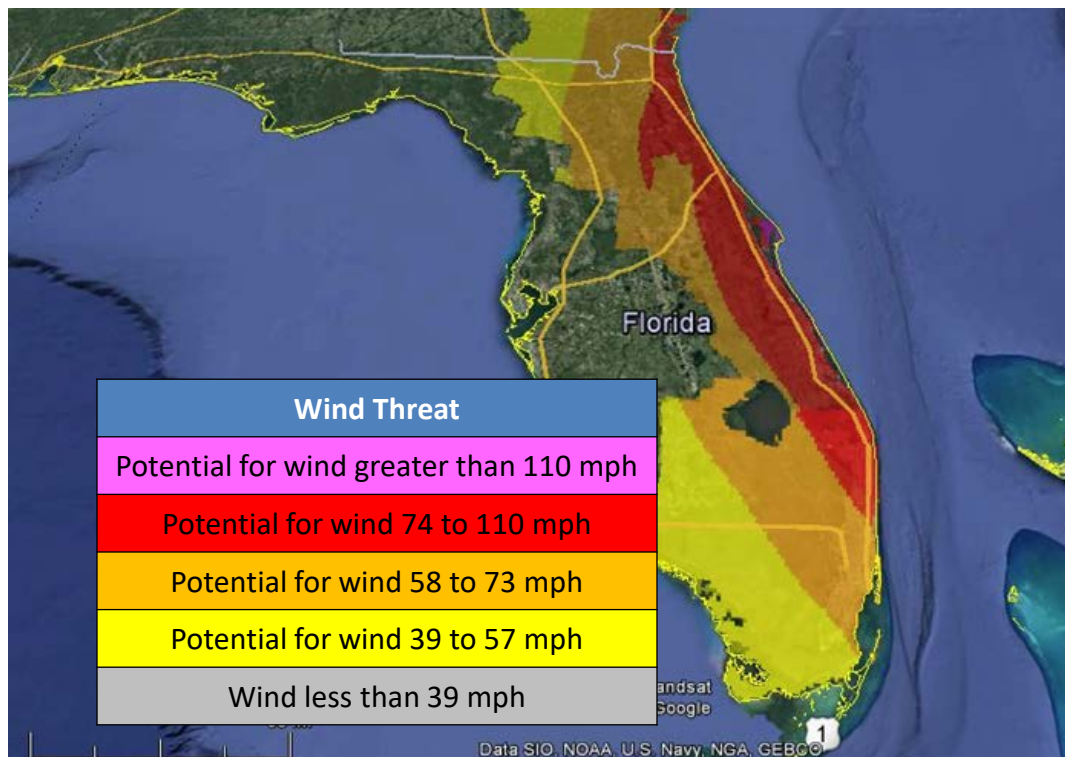
Wind Threat
Potential for wind greater than 110 mph
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Wind less than 39 mph

Key Point & Public Safety Message:

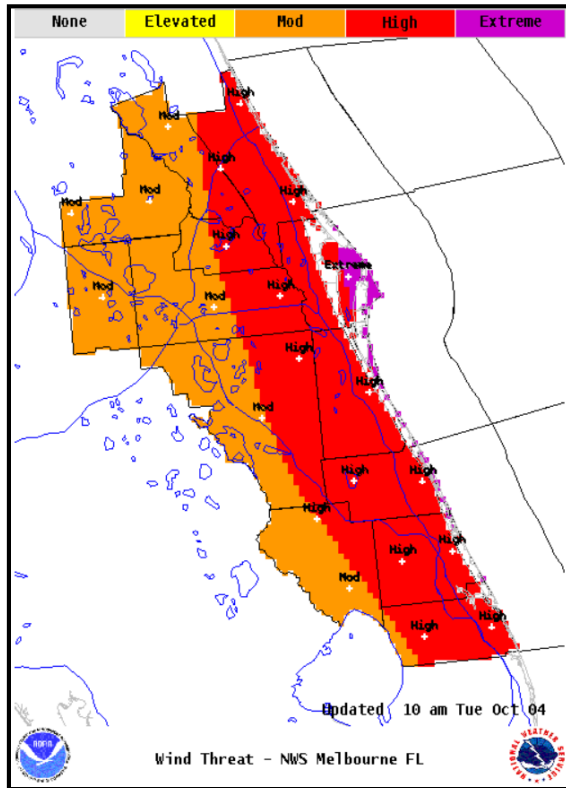
The threat to our area from Hurricane Matthew has increased. A hurricane watch is now in effect.

People located in coastal counties should prepare for the threat of hurricane force winds while those on barrier islands should make ready for possible extreme winds. Listen for evacuation orders, and heed them if issued.

Wind Threat Mosaic (HTI)

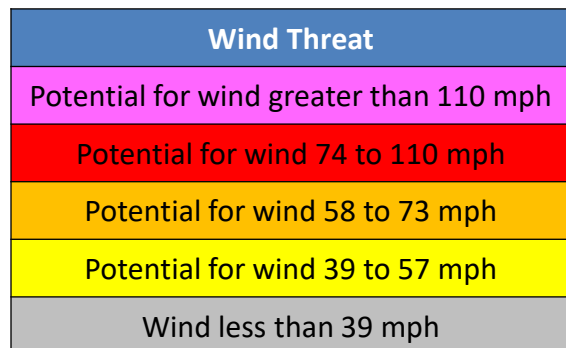
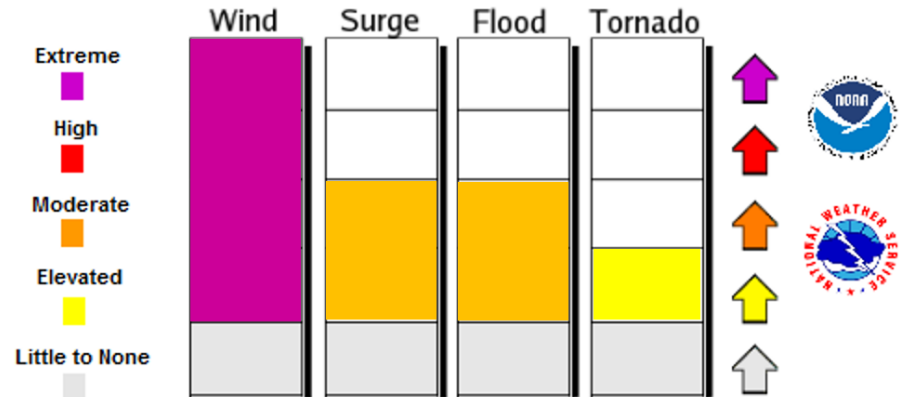


To be Safe, Prepare for This



Hurricane Hazards Threat Meter

Specific to East Central Florida



Composite Hazards Bar Chart

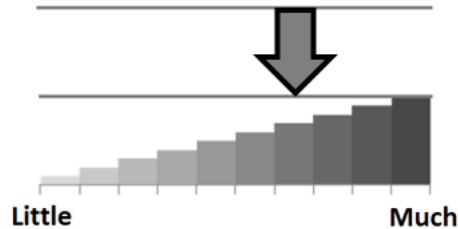
Hazards Assessment



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Hurricane Irma

Forecast Confidence

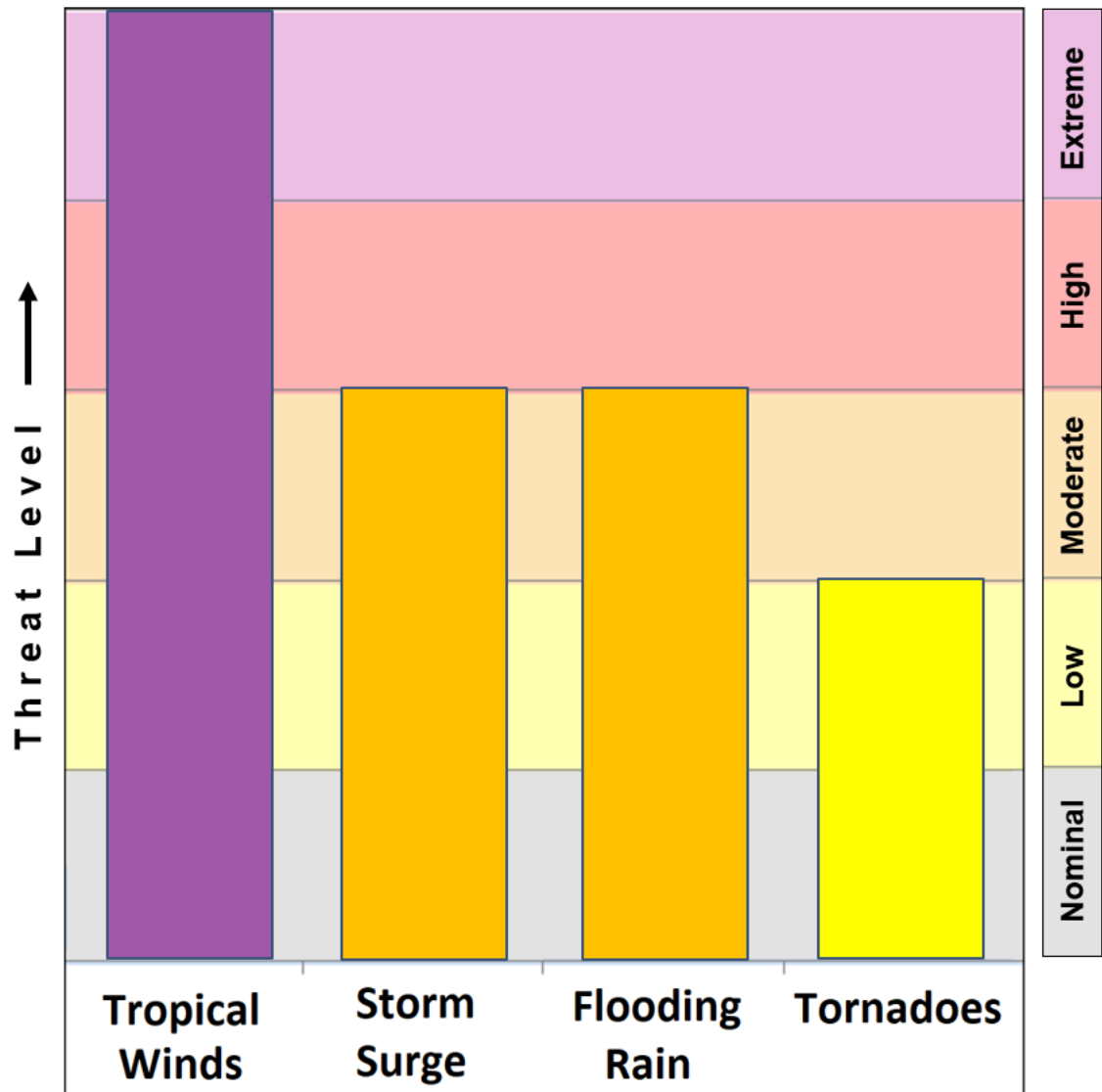


Main Hazards:

- Extreme wind threat

Other Hazards:

- Moderate threat of storm surge
- Moderate threat of flooding rain





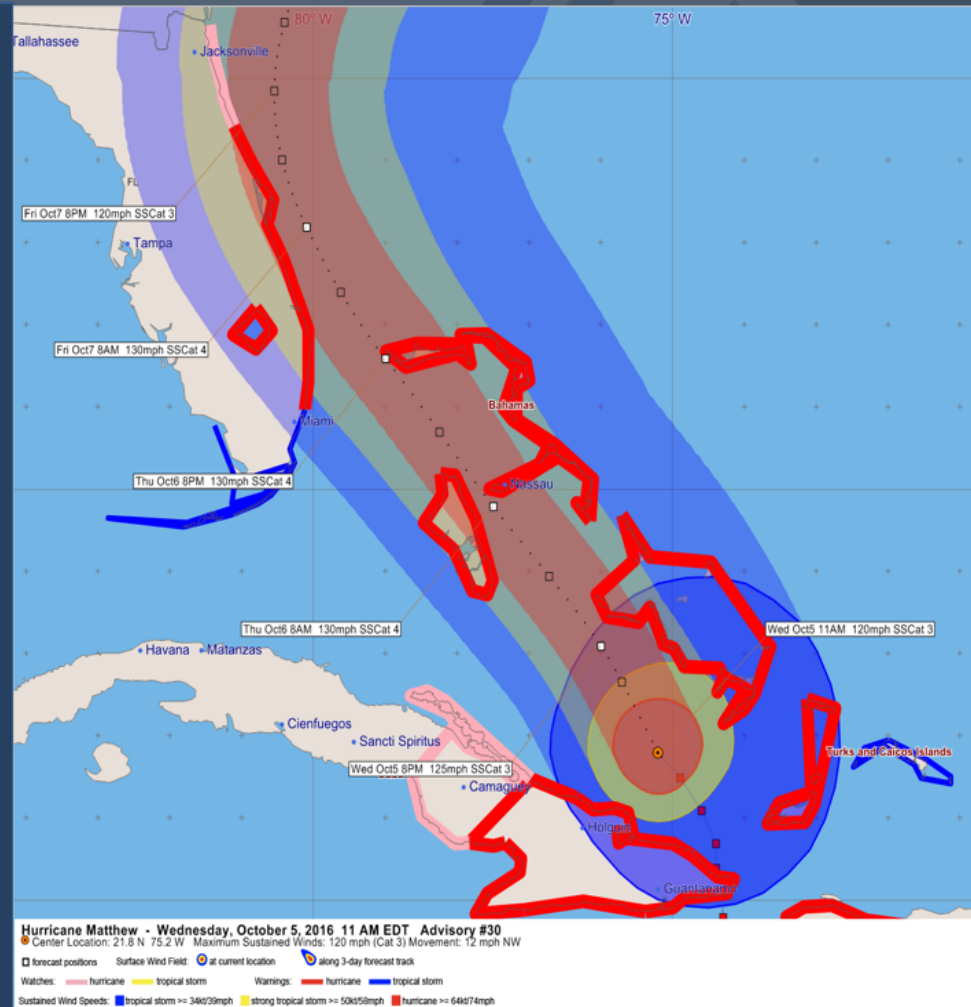
Situation Overview

East Central Florida & Adjacent Coastal Waters

- This is a very serious situation! Major Hurricane Matthew is headed for ECFL!
- Hurricane Warnings are now in effect for all ECFL counties, except for Lake County where a Tropical Storm Warning is now in effect.

Key Point: A rare and historic hurricane event in the making.

The situation is very serious!
Wind and surge impacts to coastal counties could be devastating.



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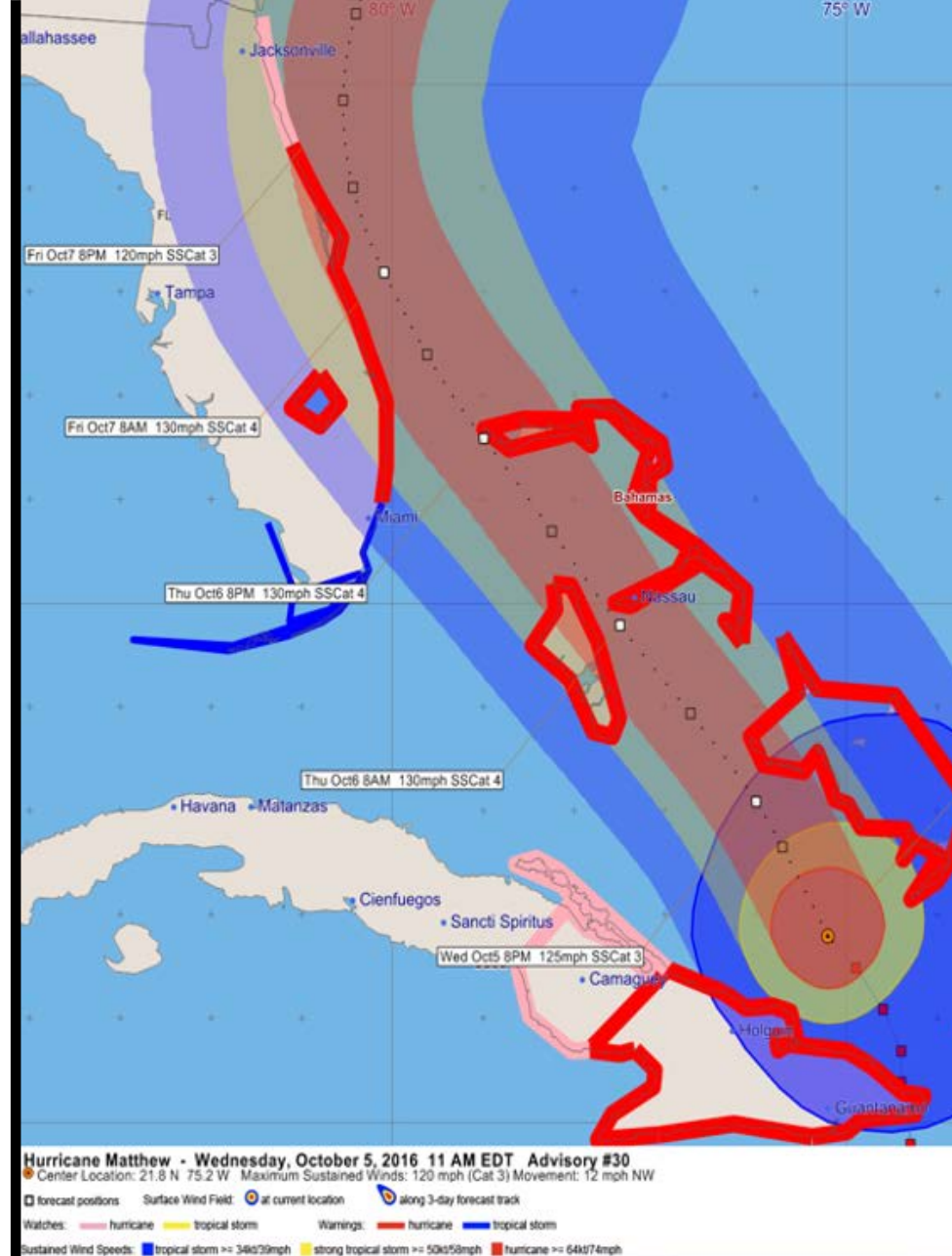
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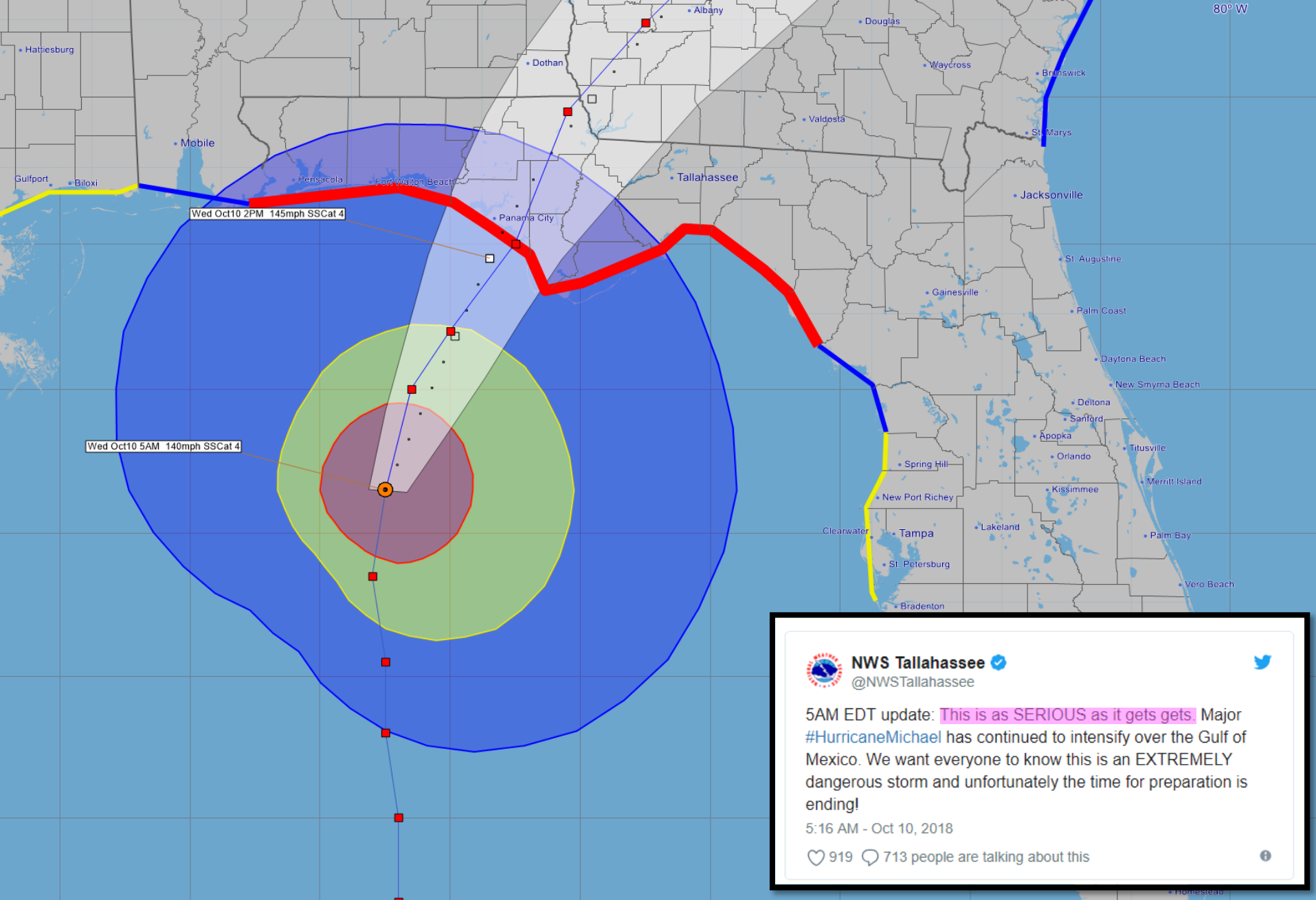
[@NWSMelbourne](https://twitter.com/NWSMelbourne)

October 5, 2016

“[Brace yourselves for a] heart-breaking loss of life. Hurricane Matthew is likely to make history ... and we don’t want you to be part of that history.”



...HURRICANE EMERGENCY: This is an Extremely Dangerous Situation...



NWS Tallahassee

@NWSTallahassee

5AM EDT update: **This is as SERIOUS as it gets gets** Major #HurricaneMichael has continued to intensify over the Gulf of Mexico. We want everyone to know this is an EXTREMELY dangerous storm and unfortunately the time for preparation is ending!

5:16 AM - Oct 10, 2018

♡ 919 💬 713 people are talking about this

Hurricane Michael - Wednesday, October 10, 2018 5 AM EDT Advisory #15

Center Location: 28.3 N 86.5 W Maximum Sustained Winds: 140 mph (Cat 4) Movement: 13 mph N

Forecast positions Potential Track Area: day 1-3 day 4-5 Surface Wind Field: at current location

Watches: hurricane tropical storm Warnings: hurricane tropical storm

Sustained Wind Speeds: tropical storm ≥ 34 kt/39mph strong tropical storm ≥ 50 kt/58mph hurricane ≥ 64 kt/74mph

Hurricane Michael (2018)

Hurricane Irma (2017)



A simple, but highly effective, hurricane message!

Cause: Extreme Wind/Surge

Effect: *"Nowhere will be safe"*



Using “**BIG**” Words

Great motivators, but use sparingly.

MEGA - DESCRIPTORS

OK

UNSURVIVABLE

EXTREME

RARE

HISTORIC

RECORD-BREAKING

UNPRECEDENTED

DISASTROUS

CATASTROPHIC

EPIC

OVERWHELMING

CATAclysmic

NO

~~MEATGRINDER HELLACIOUS APOCALYPTIC~~

The Power of

3

Some Things You Should Know

Hurricane Irma



Melbourne
WEATHER FORECAST OFFICE

- **Hurricane Irma remains powerful and very dangerous !!!**
 - Irma likely to bring extreme winds to South and Central Florida late this weekend
 - Sustained winds could be greater than 110 mph along with higher gusts
- **Hurricane Watches have been issued for parts of ECFL.**
 - Hurricane watches are in effect for the Treasure Coast and near Lake Okeechobee
 - Additional watches and initial warnings likely issued tomorrow
 - To be safe - evacuations/preparations should be completed before Saturday afternoon
- **Lives and livelihoods are greatly imperiled !!!**
 - The threat to life and property is extreme; wind damage may be devastating
 - Potential impacts from storm surge and flooding rain are also of particular concern
 - Tornadoes will become an increasing concern with any westward shift in track

Public Safety Message: "Listen to local officials. Evacuate if ordered to do so. If you are vulnerable to high winds, make plans to relocate to safer shelter. Now is the time to ready yourself and your loved ones for a possible extreme hurricane event."

9/7/2017 11:30 PM

For East Central Florida & Adjacent Coastal Waters

www.weather.gov/melbourne

9/7/2017 11:30 PM

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Hurricane Dorian (2019)

Martin-
522 PM EDT Sun Sep 1 2019

Martin County Stuart, FL

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

A Hurricane Warning means hurricane-force winds are expected somewhere within this area within the next 36 hours

A Storm Surge Warning means there is a danger of life-threatening inundation, from rising water moving inland from the coastline, somewhere within this area within the next 36 hours

* LOCATIONS AFFECTED

- Stuart
- Hobe Sound

* WIND

- LATEST LOCAL FORECAST: Equivalent Tropical Storm force wind
 - Peak Wind Forecast: 40-50 mph with gusts to 75 mph
 - Window for Tropical Storm force winds: early Monday morning until early Wednesday morning

- POTENTIAL THREAT TO LIFE AND PROPERTY: Potential for wind 74 to 110 mph

- The wind threat has remained nearly steady from the previous assessment.
- PLAN: Plan for life-threatening wind of equivalent CAT 1 or 2 hurricane force due to possible forecast changes in track, size, or intensity.
- PREPARE: Remaining efforts to protect life and property should be urgently completed. Prepare for considerable wind damage.
- ACT: Move to safe shelter before the wind becomes hazardous.

- POTENTIAL IMPACTS: Extensive

- Considerable roof damage to sturdy buildings, with some having window, door, and garage door failures leading to structural damage. Mobile homes severely damaged, with some destroyed. Damage accentuated by airborne projectiles. Locations may be uninhabitable for weeks.
- Many large trees snapped or uprooted along with fences and roadway signs blown over.
- Some roads impassable from large debris, and more within urban or heavily wooded places. Several bridges, causeways, and access routes impassable.
- Large areas with power and communications outages.

Florida's Space & Treasure Coasts

• WIND

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- **ACT: Move to safe shelter before the wind becomes hazardous.**



Hurricane Charley (2004)

Threat Statements:

Actionable information that is proportional to the threat and according to phase of the event.

- **Media Sound Bites**
 - Interviews; Products/Services
- **Social Media Posts**
 - FaceBook; Twitter; Instagram
- **Facilitate Media Messaging**
 - NWSChat; TV Crawls
- **Facilitate EM Messaging**
 - Smart Devices/Signs
 - IDSS Briefings



Hurricane Dorian (2019)

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522 PM EDT Sun Sep 1 2019

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Martin County Stuart, FL

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Florida's Space & Treasure Coasts

• WIND

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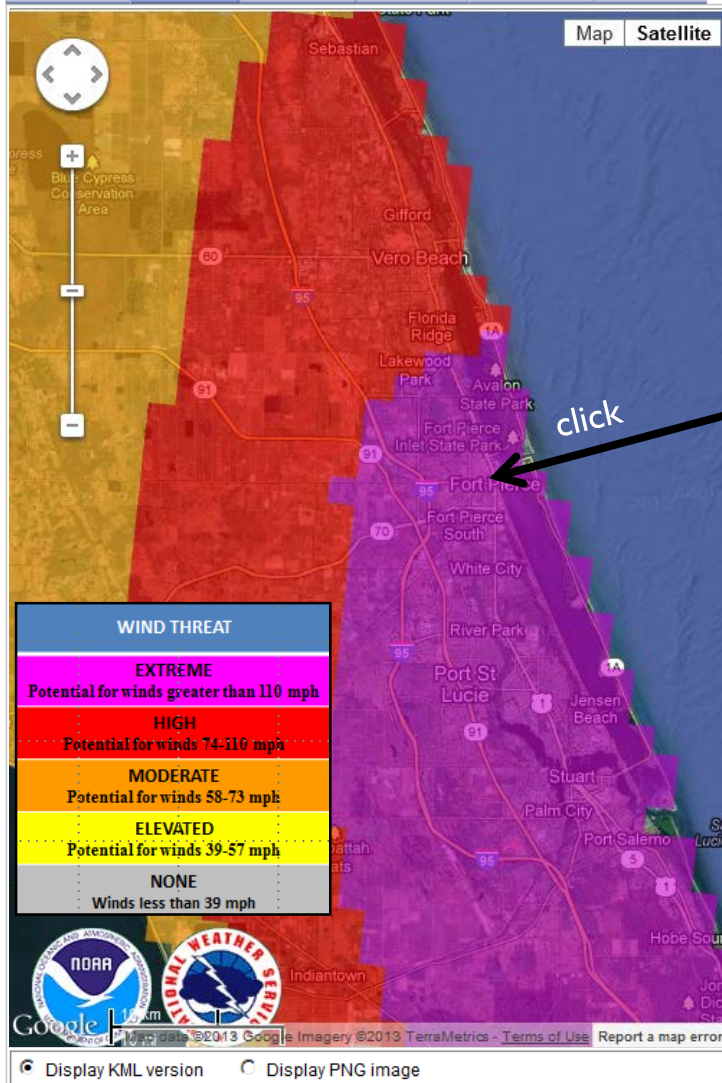
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East Central Florida - Hurricane Threats & Impacts

[Home](#)[NWS Home](#)[News](#)[Organization](#)Search for: [NWS](#)[All NOAA](#)

Hurricane Omega Exercise

[Combined](#)[Wind](#)[Coastal Flood](#)[Inland Flood](#)[Tornadoes](#)[Marine](#)[Map](#)[Satellite](#)

ZOOM

Prepare for These Potential Impacts:

Wind Threat	Potential Wind Impacts (generalized)
EXTREME THREAT for wind greater than 110 mph	DEVASTATING TO CATASTROPHIC IMPACTS
Imperiled Lives	<ul style="list-style-type: none">To be safe, aggressively prepare for the potential of devastating to catastrophic wind impacts from major hurricane force wind of equivalent Category 3 intensity or greater.
Buildings	<ul style="list-style-type: none">Life threatening wind possible. Failure to adequately shelter from extreme wind may result in serious injury, loss of life, or immense human suffering.
Trees/Signs	<ul style="list-style-type: none">Structural damage to sturdy buildings with some experiencing complete roof and wall failures. Complete destruction of mobile homes. Damage greatly accentuated by large airborne projectiles. Hardest hit locations may be uninhabitable for weeks or months.
Roads/Bridges	<ul style="list-style-type: none">Numerous large trees snapped or uprooted along with fences and roadway signs blown over.
Power/Comms	<ul style="list-style-type: none">Many roads impassable from large debris. Many bridges, causeways, and access routes connecting barrier islands impassable.Widespread power and communication outages with many areas suffering extended outages.

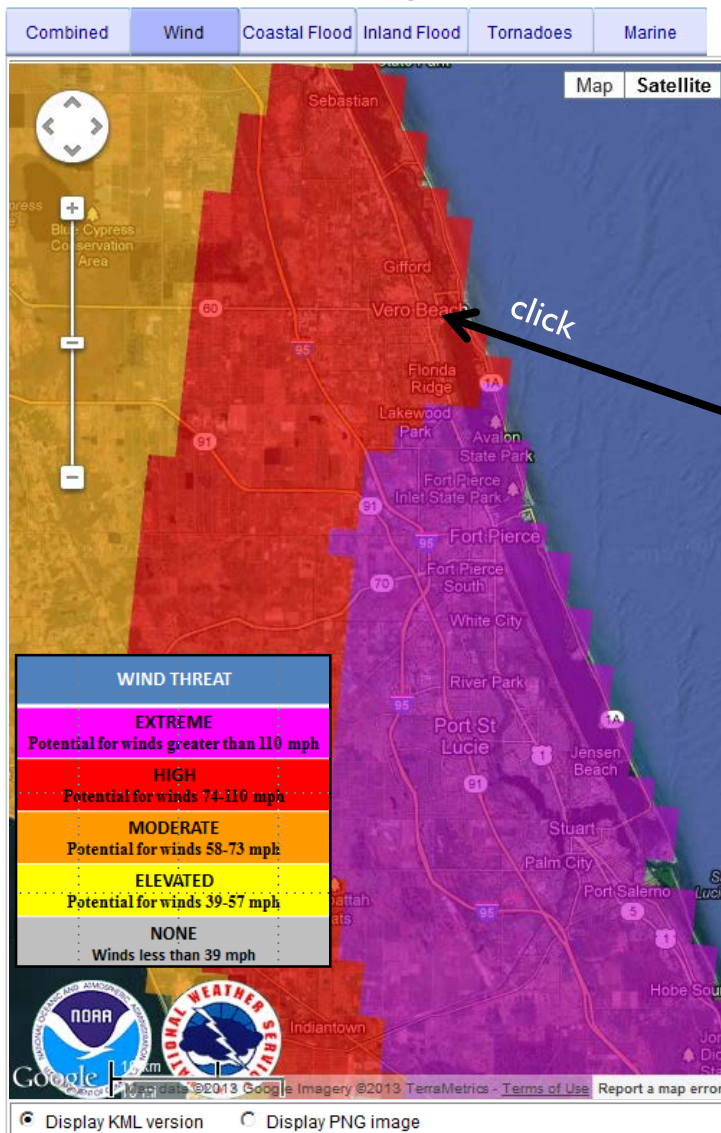
Also good for local hurricane briefings ... with added detail.



East Central Florida - Hurricane Threats & Impacts

[Home](#)[NWS Home](#)[News](#)[Organization](#)Search for: [NWS](#) [All NOAA](#)

Hurricane Omega Exercise



Prepare for These Potential Impacts:

Wind Threat	Potential Wind Impacts (generalized)
HIGH THREAT for wind 74-110 mph	EXTENSIVE IMPACTS <ul style="list-style-type: none">To be safe, aggressively prepare for the potential of extensive wind impacts from hurricane force wind of equivalent Category 1 or 2 intensity.Life threatening wind possible. Failure to adequately shelter may result in serious injury or loss of life.Considerable damage to roofing and siding materials of sturdy buildings, with some having window, door, and garage door failures leading to structural damage. Mobile homes severely damaged, with some destroyed. Damage accentuated by airborne projectiles. Hardest hit locations may be uninhabitable for weeks.Many large trees snapped or uprooted along with fences and roadway signs blown over.Some roads impassable from large debris, and more within urban or heavily wooded places. Several bridges, causeways, and access routes connecting barrier islands impassable.Power and communications outages across large areas, with several places suffering extended outages.

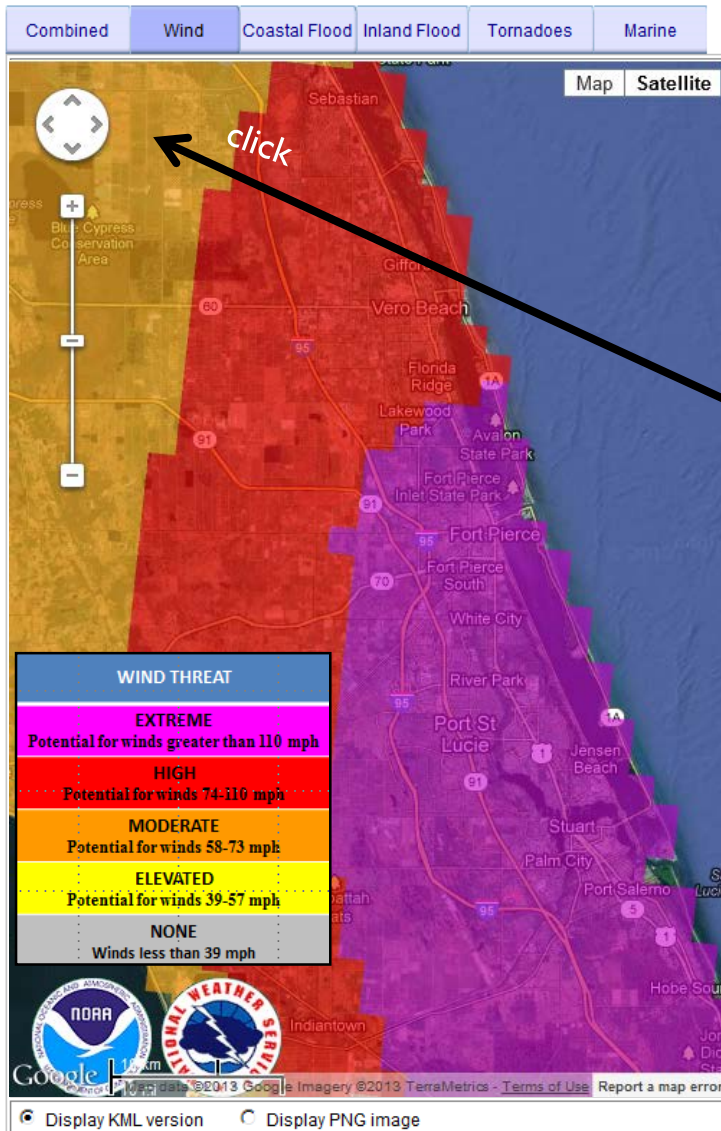
Also good for local hurricane briefings ... with added detail.



East Central Florida - Hurricane Threats & Impacts

[Home](#)[NWS Home](#)[News](#)[Organization](#)Search for: [NWS](#)[All NOAA](#)[Go](#)

Hurricane Omega Exercise



Prepare for These Potential Impacts:

Wind Threat	Potential Wind Impacts (generalized)
MODERATE THREAT for wind 58-73 mph	SIGNIFICANT IMPACTS <ul style="list-style-type: none">To be safe, earnestly prepare for the potential of significant wind impacts from strong tropical storm force wind.Dangerous wind possible. Failure to adequately shelter may result in serious injury, and in some cases loss of life.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.Several large trees snapped or uprooted, but with greater numbers in places where trees are shallow rooted. Several fences and roadway signs blown over.A few roads impassable from large debris, and more within heavily wooded places. A few bridges, causeways, and access routes connecting barrier islands impassable.Scattered power and communications outages, but more prevalent in areas with above ground lines.

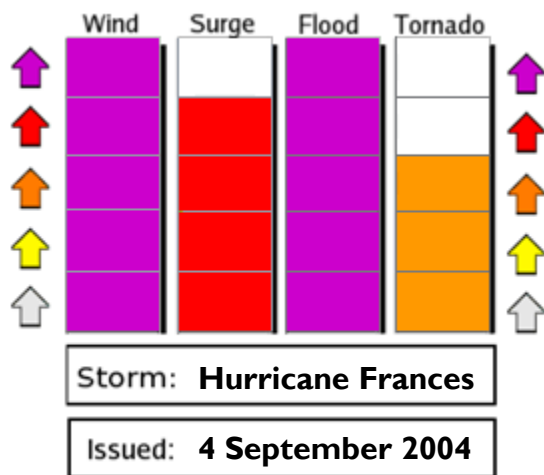
Also good for local hurricane briefings ... with added detail.



All Hazards Assessments

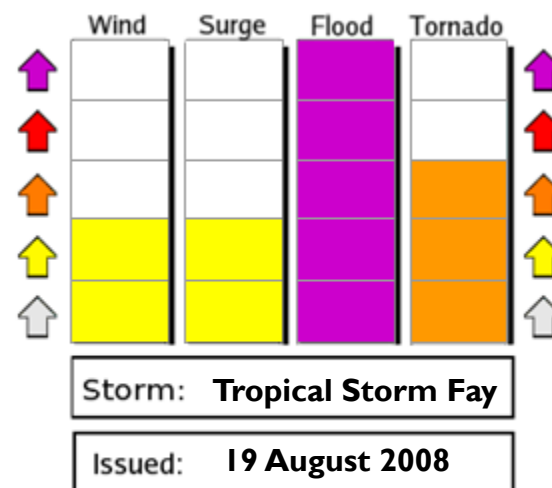
Hurricane Frances - All Hazards

Saint Lucie County, FL

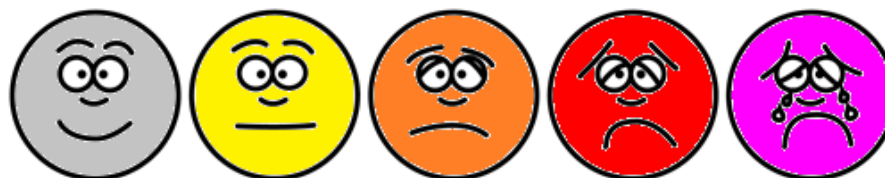


Tropical Storm Fay - All Hazards

Lat/Lon 28.12N 80.62W



*“Emoticons”
to help overcome
language barriers?*



Community Distress Index

Using Social Media to Communicate Public Safety Messages

Kimberly Prosser, Former Director
Brevard County Emergency Management

- EM & WFO sharing and commenting on each others' Facebook posts and re-tweeting on Twitter increases the ...
 - **Timeliness** of information received
 - **Visibility** of posts and agencies themselves
 - **Credibility** as one agency bolsters credibility of the other
 - **Accuracy** as EMs no longer need to rewrite WFO alerts/emails
 - **Interaction** public is likely to interact with both entities
 - **Reach** each agency's audience is largely unique
 - **Opportunity** to inform one more citizen.

0 = 3 Strikes
0 = Strikes

Extreme Wind Warning

Fri 10:30Z 07-Oct-16

NWSChat

Use of NWSChat to keep the media “on message” during the event.

The screenshot shows the NWSChat Live web application running in Internet Explorer. The browser's address bar displays <https://nwschat.weather.gov/live/>. The application interface is divided into several sections:

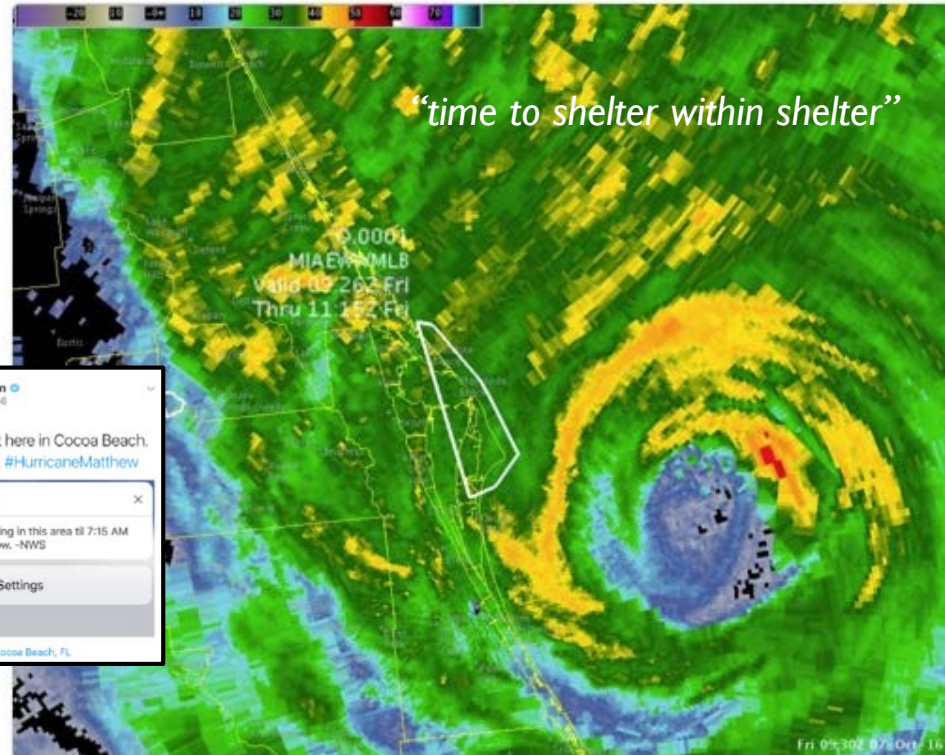
- Map Panel:** Displays a Google Map of Florida. The map is titled "Map Valid: 3:20 PM". It includes navigation controls (compass, zoom in/out, and a globe icon) and an "Opacity" slider. The map shows major cities like Sarasota, Port St. Lucie, West Palm Beach, Cape Coral, Bonita Springs, Naples, Fort Lauderdale, Miami, and Homestead. The Everglades National Park is also visible.
- Buddies:** A list of chat participants on the left side. It includes groups like "SR SOO Group", "WDTB Group", "Southern Region HQ", "Southern Region - Regional Op", and "NWSChat Admin Team". Individual users listed include "Daryl Herzmann", "nwsbot", "nwsfwd-soo", "nwslix-soo", "nwsffc-soo", "nwsmeg-soo-Tom S.", "wdtb-elliott", "nws-wdtb-don", and "nwswdtb-chris-spanagle".
- Layers Control:** A panel on the right side showing various map layers. It includes "Base Layer" (Blank, Google Street), "Satellite" (GOES Water, GOES West V, GOES East Vi, GOES Visible, GOES IR), and "Precip/RADAR" (NMQ Q2 3 Da, NMQ Q2 2 Da, NMQ Q2 1 Da).
- Chatroom Bookmarks:** A section at the bottom left with a "+" button.
- Chatrooms:** A section at the bottom right with a "+" button.
- Chatroom Tabs:** A row of tabs at the bottom of the map panel, including "Help", "All Chats", "sr-roc", "mlbchat", "mlbemchat", "tbwchat", and "tbwemchat".

nws-david.sharp: If an EWW is issued, it means that it is time to shelter within shelter. The message - move now to the safest place within your shelter and protect your head and body from extreme winds.



NWS Melbourne @NWSMelbourne · Oct 7

543 am | Extreme Wind Warning for
Brevard [FL] till Oct 7, 7:15 AM EDT
[forecast.weather.gov/product.php?si ...](https://forecast.weather.gov/product.php?si...)



59 32

Fact Sheet:

Extreme Wind Warnings



Near Mexico Beach, FL after Hurricane Michael (2018)

Extreme hurricane winds ... are associated with the eyewall of major hurricanes of Category 3, 4, or 5 intensity. When they threaten, lives are greatly imperiled even for those who have already sheltered from the storm. For any given city or town along the coast, the occurrence of such deadly winds is rare. However, when they do occur skies become filled with flying debris as large objects become airborne. Damage can be devastating to catastrophic as buildings once thought to be safe are blown apart by winds exceeding 110 mph. During Hurricane Andrew (1992), the winds reached 165 mph in South Florida and caused many to scramble in search of a safer place within whatever was left of their home or shelter as extreme winds blew all around them.

Whenever extreme hurricane winds threaten, the local National Weather Service office now issues an **Extreme Wind Warning (EWW)** at the imminent onset (about 1 hour before arrival) of winds greater than 110 mph. The intent is to leverage the final opportunity to save lives by encouraging people to move to the safest place within their home or shelter. Since it's hard to know exactly when or where the narrow path of extreme winds will ultimately occur with a major hurricane, the EWW offers last chance information to save lives.

When extreme wind warnings are issued ...

- Move to the safest place within your home or shelter such as a small interior room or hallway.
- If possible, take your flashlight and cell phone with you. Keep your shoes on (closed-toe).
- Protect your head and body making good use of pillows, cushions, helmets, etc.
- Take the same protective action as if a violent tornado was approaching.

Shelter within Shelter ... the recommendation to urgently move to the safest place within your hurricane shelter.



National Weather Service
Melbourne, FL

www.weather.gov/mlb/



Local Fact Sheets

Pre-made hand-outs;
ready to give to reporters





Hurricane Winds

When wind speeds reach tropical storm strength, they become dangerous. That's why evacuation plans and shelter decisions are based on these speeds. If winds reach hurricane strength, the threat to life and property significantly increases. The wind threat is extreme with hurricanes of Category 3 force or greater.



High Wind Safety Tips:



- Know your vulnerability relative to hurricane winds.
- Those living in mobile homes, high rise buildings, along the immediate coast, and at higher elevations are most susceptible.
- If you are vulnerable to high winds, relocate to safer shelter.
- Securing doors and deploying shutters can help reduce the risk of property damage.
- Securing yard objects can help reduce the chance for dangerous projectiles.



National Weather Service
Melbourne, FL

Sage Advice

Breathe!

Stay Calm

Stay Focused

Be the Voice
of Reason

Stay Connected

Follow Through





Thank You