



# **TROPICAL UPDATE**

**Midnight**

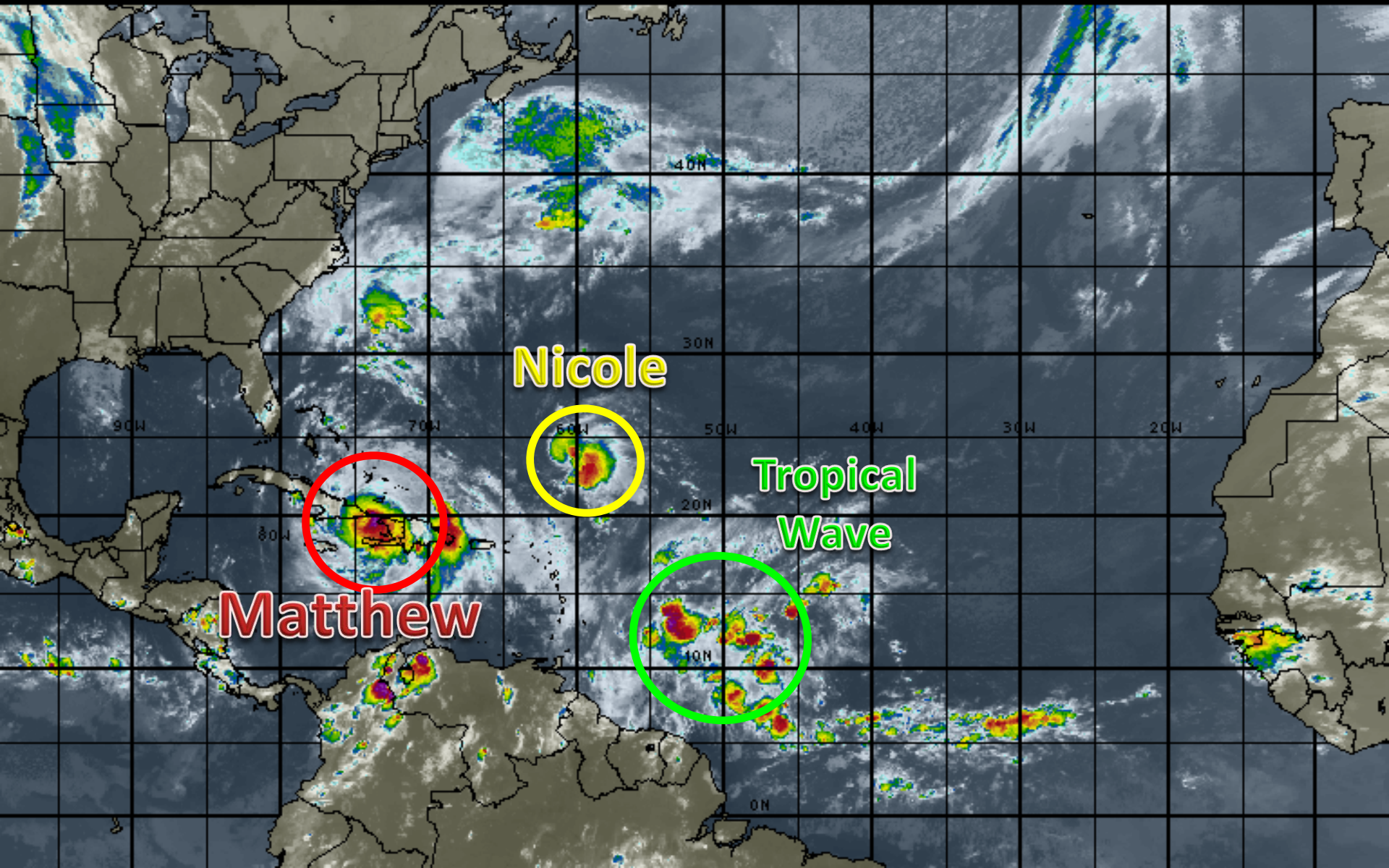
**Wednesday, October 5, 2016**

**Hurricane Matthew &  
Tropical Storm Nicole**

**This update is intended for government and emergency response officials, and is provided for informational and situational awareness purposes only. Forecast conditions are subject to change based on a variety of environmental factors. For additional information, or for any life safety concerns with an active weather event please contact your County Emergency Management or Public Safety Office, local National Weather Service forecast office or visit the National Hurricane Center website at [www.nhc.noaa.gov](http://www.nhc.noaa.gov).**

# Atlantic Basin Satellite Image

00:00 05-OCT-2016 GMT Copyright © 1998-2016 MSI Corporation <http://www.usi.com>







# Two-Day Graphical Tropical Weather Outlook

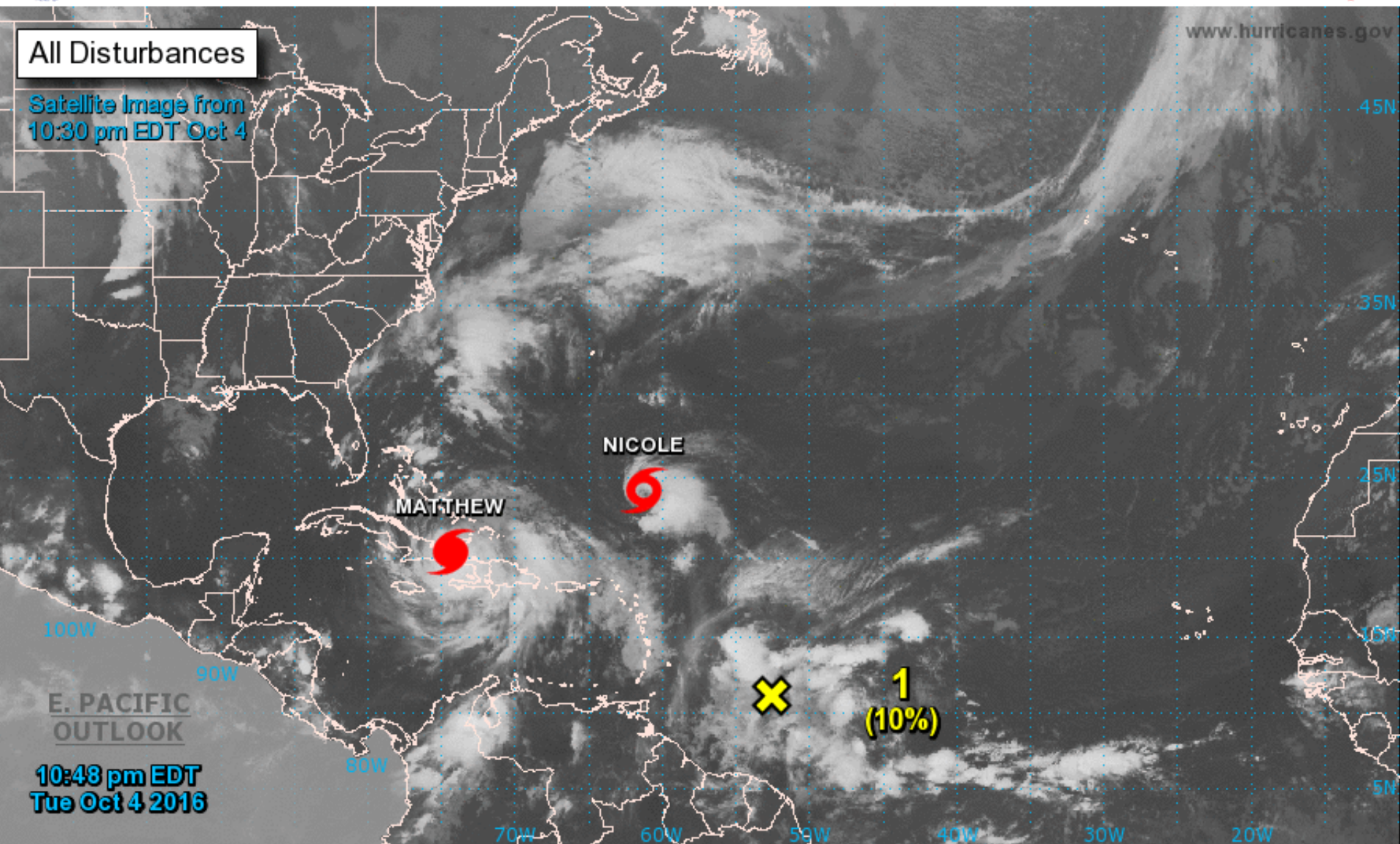
National Hurricane Center Miami, Florida



All Disturbances

Satellite Image from  
10:30 pm EDT Oct 4

www.hurricanes.gov



Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone Remnants



# Hurricane Matthew

11 PM EDT, Tue Oct 04 2016

Position 20.4°N 74.4°W

Maximum Winds 130 mph

Gusts 160 mph

Movement N at 8 mph

Minimum Pressure 950 mb (28.04 inches)

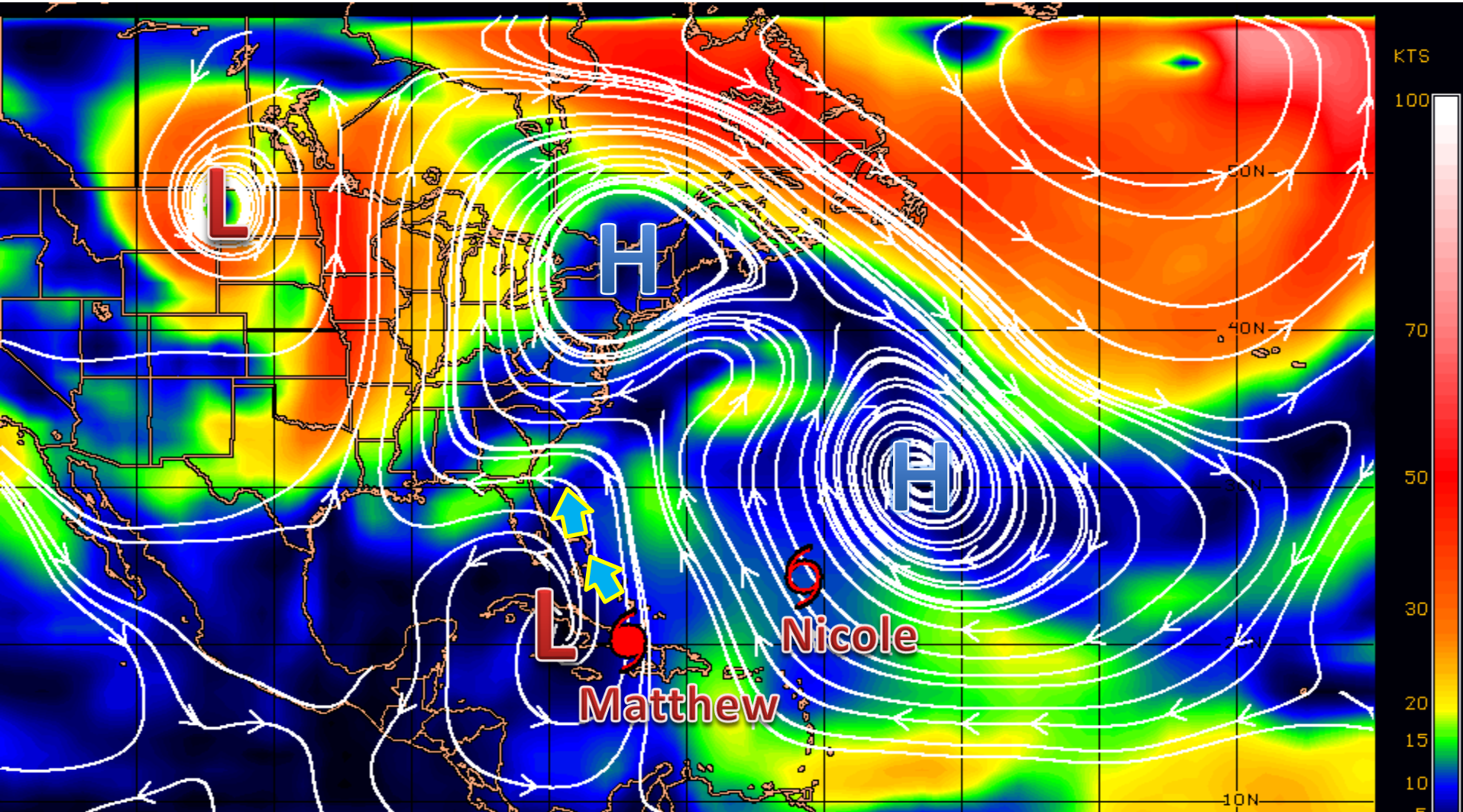
Blue Marble basemap imagery courtesy NASA

Satellite 3:07 AM UTC  
11:07 PM EDT





# Steering Currents

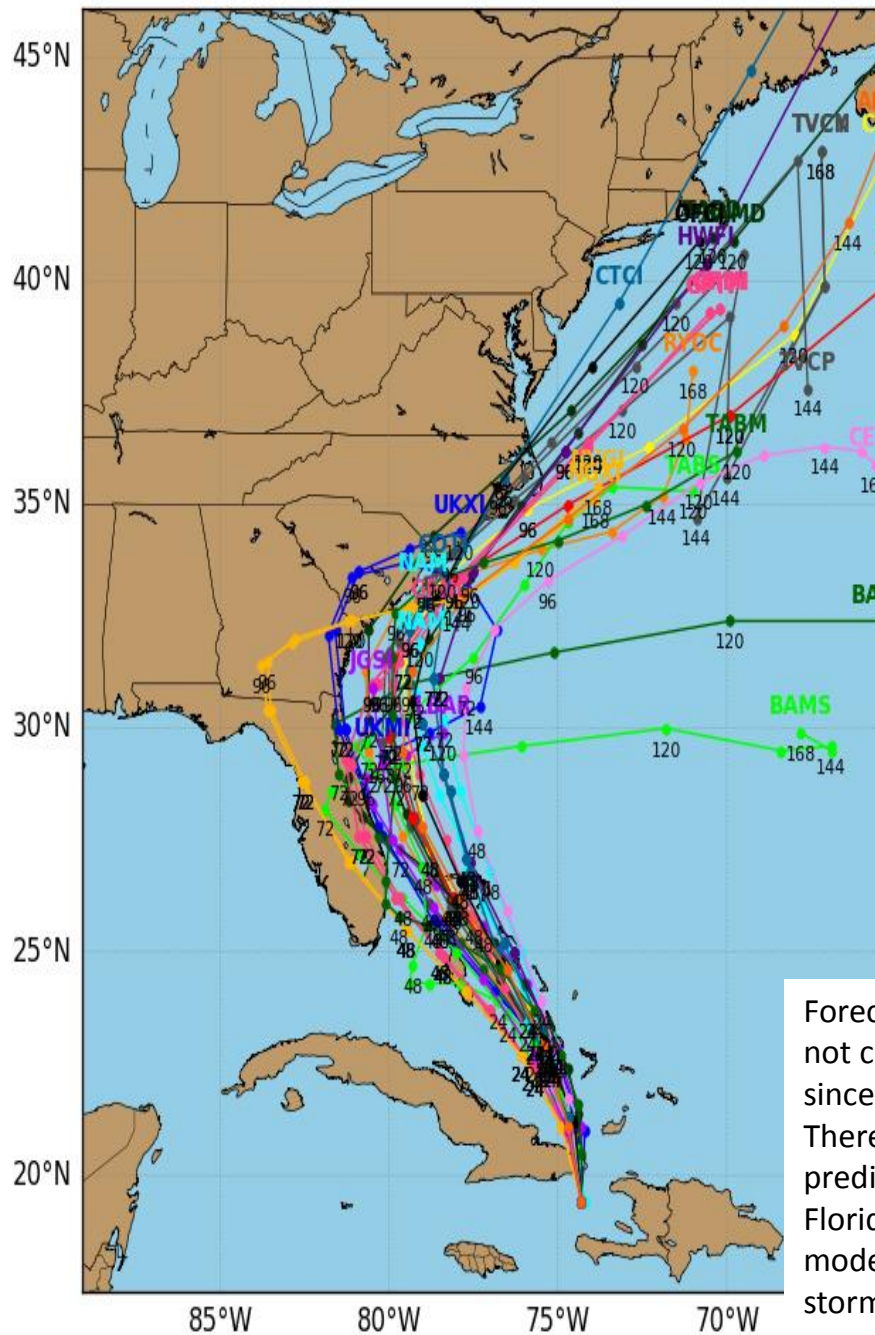


Matthew is being steered north between a high pressure system over the central Atlantic and low pressure over Cuba. Another high pressure ridge is over New England and forecast to build south, causing Matthew to take a NW movement before another low pressure system in the Plains moves to the Eastern U.S. and steers Matthew north to the northeast this weekend.

# Hurricane MATTHEW Model Track Guidance

Initialized at 18z Oct 04 2016

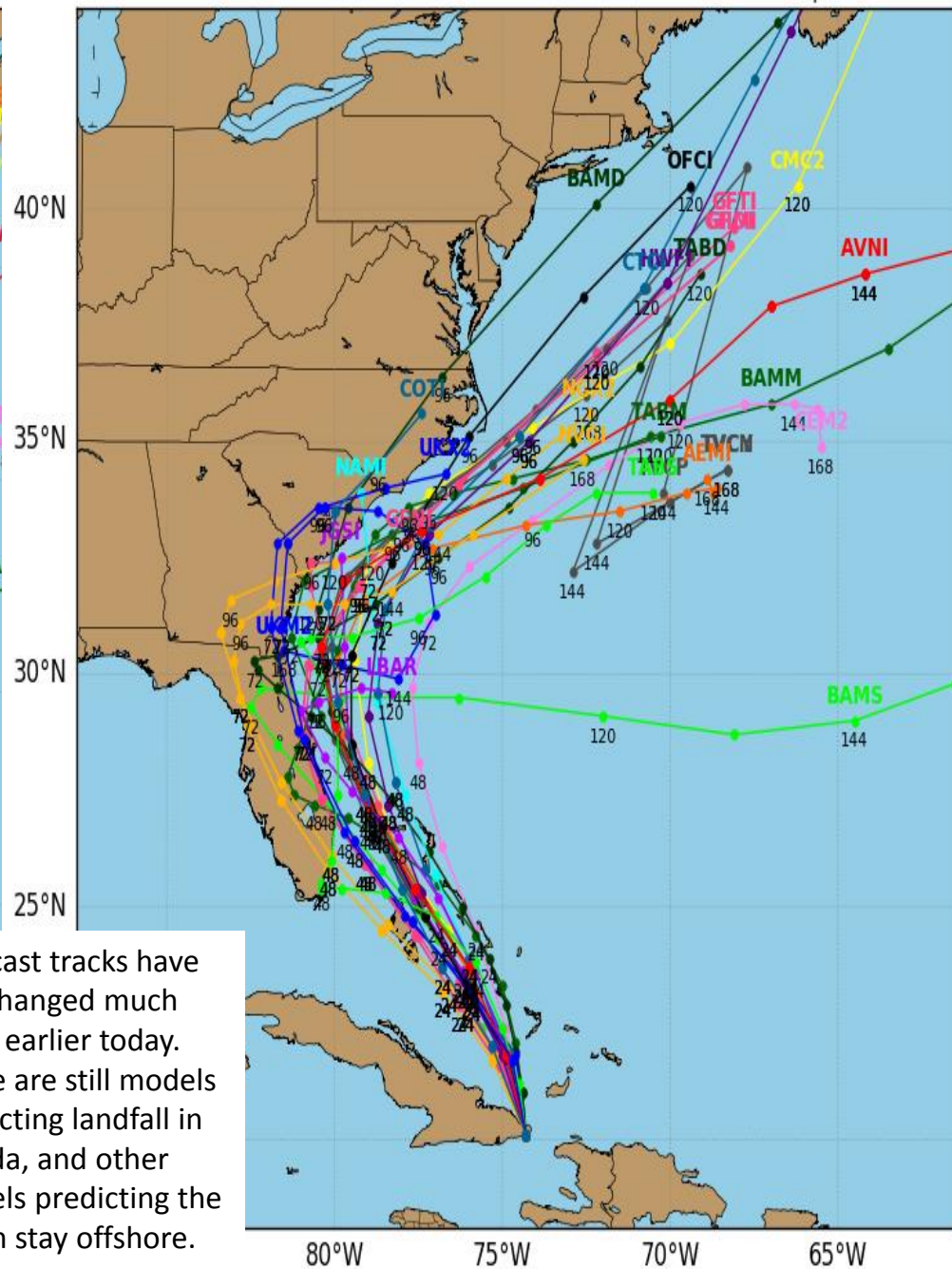
Levi Cowan - tr



# Hurricane MATTHEW Model Track Guidance

Initialized at 00z Oct 05 2016

Levi Cowan - tropicaltidbits.com

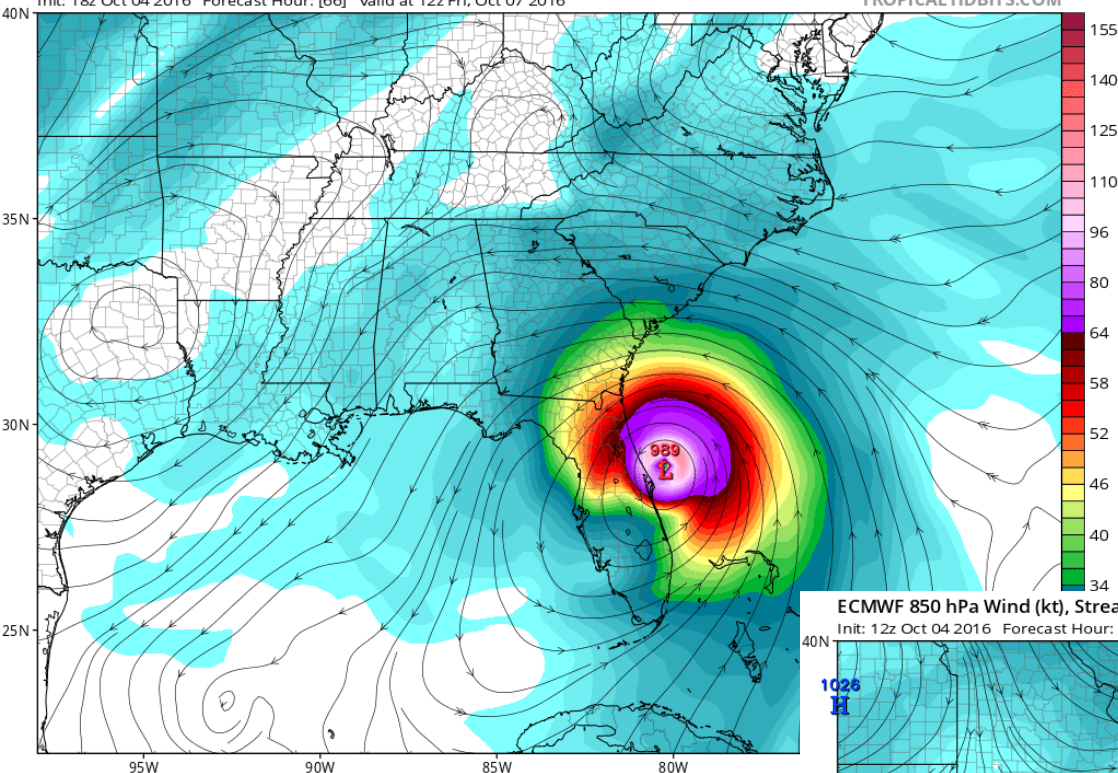


Forecast tracks have not changed much since earlier today. There are still models predicting landfall in Florida, and other models predicting the storm stay offshore.



GFS 850 hPa Wind (kt), Streamlines, MSLP Centers (hPa)  
Init: 18z Oct 04 2016 Forecast Hour: [66] valid at 12z Fri, Oct 07 2016

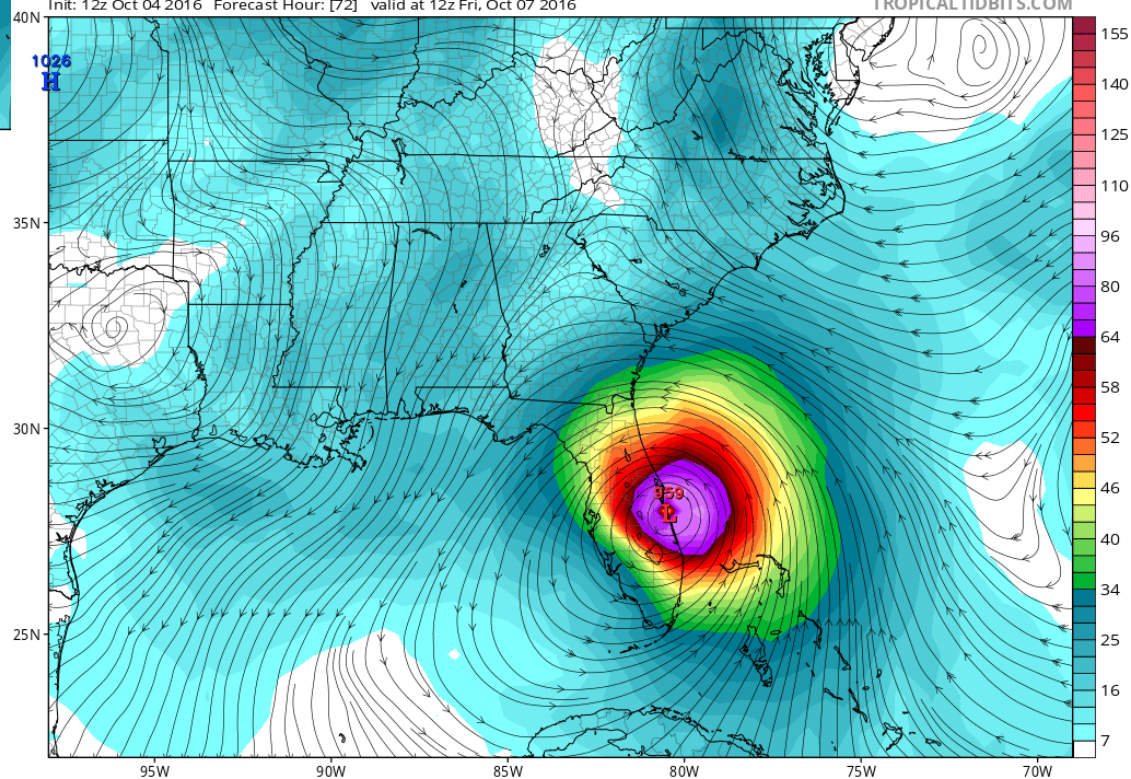
TROPICALTIDBITS.COM



# Euro vs. GFS – 8AM Friday

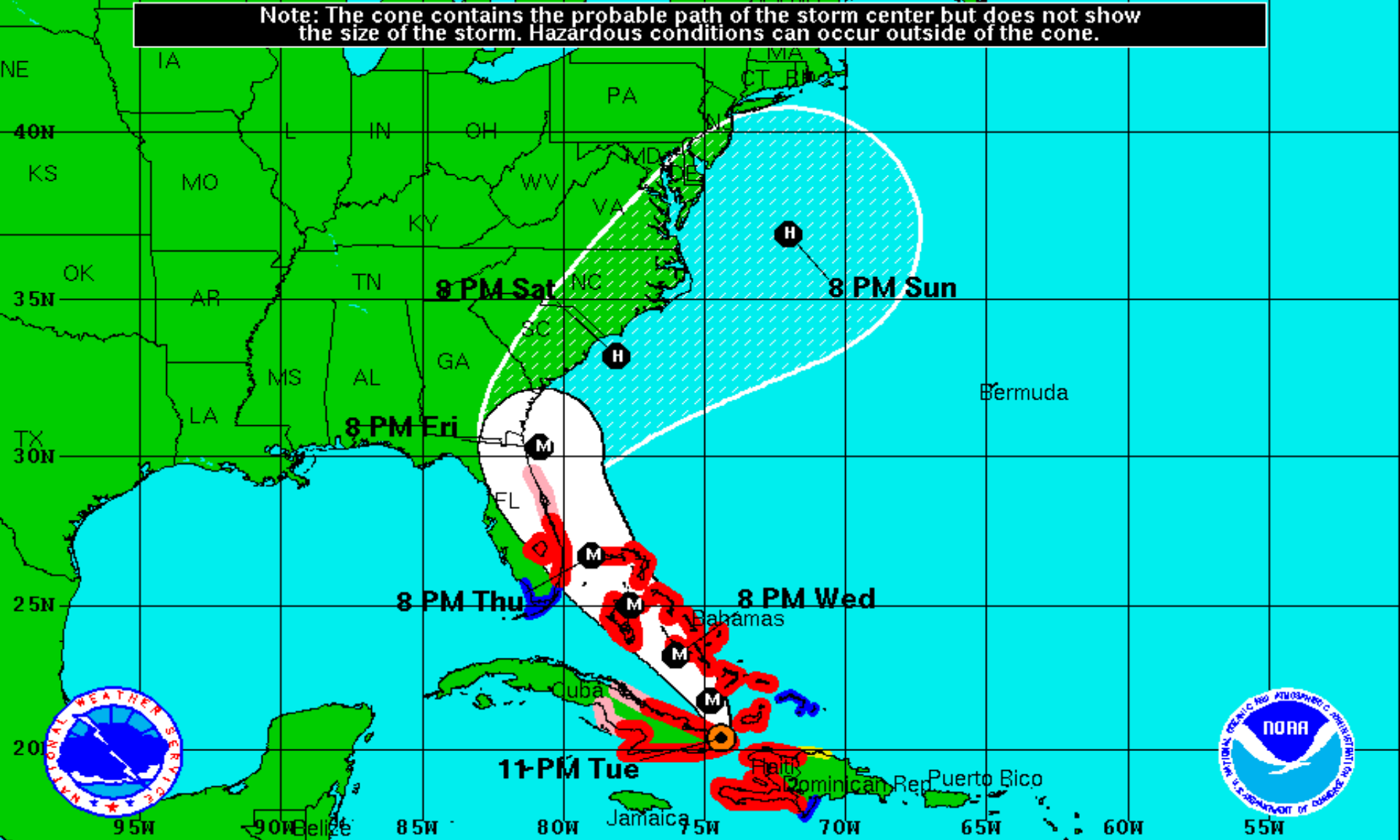
ECMWF 850 hPa Wind (kt), Streamlines, MSLP Centers (hPa)  
Init: 12z Oct 04 2016 Forecast Hour: [72] valid at 12z Fri, Oct 07 2016

TROPICALTIDBITS.COM



The latest European model run also shows a Florida landfall, while the GFS model has the hurricane core just off the Space Coast Friday at 8AM.

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.



**Hurricane Matthew**  
 Tuesday October 4, 2016  
 11 PM EDT Advisory 28  
 NWS National Hurricane Center

**Current Information:**   
 Center Location 20.4 N 74.4 W  
 Max Sustained Wind 130 mph  
 Movement N at 8 mph

**Forecast Positions:**  
 Tropical Cyclone Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 Day 1-3 Day 4-5

**Watches:**  
 Hurricane Trop.Storm

**Warnings:**  
 Hurricane Trop.Storm





# HURRICANE MATTHEW

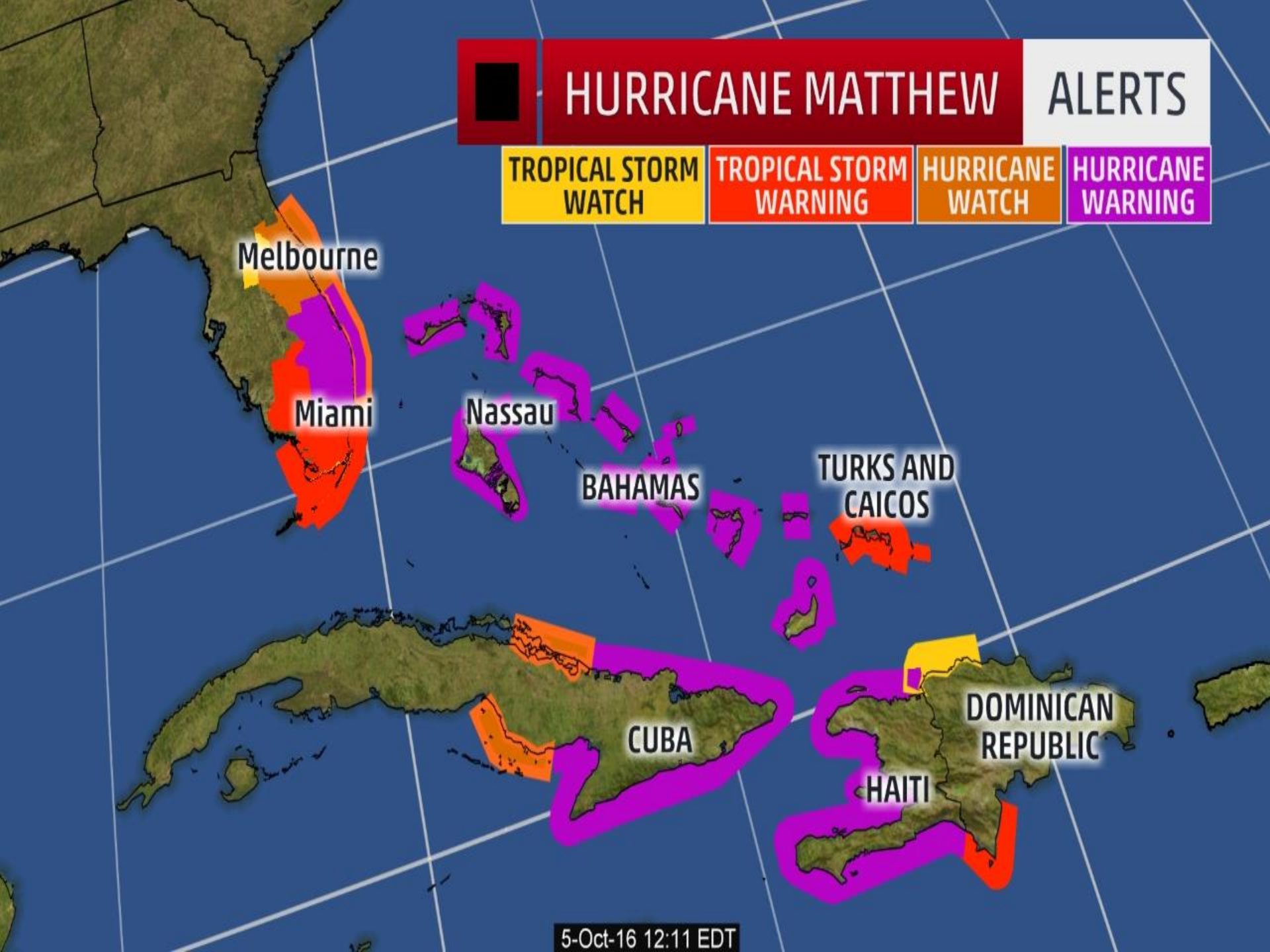
## ALERTS

TROPICAL STORM  
WATCH

TROPICAL STORM  
WARNING

HURRICANE  
WATCH

HURRICANE  
WARNING

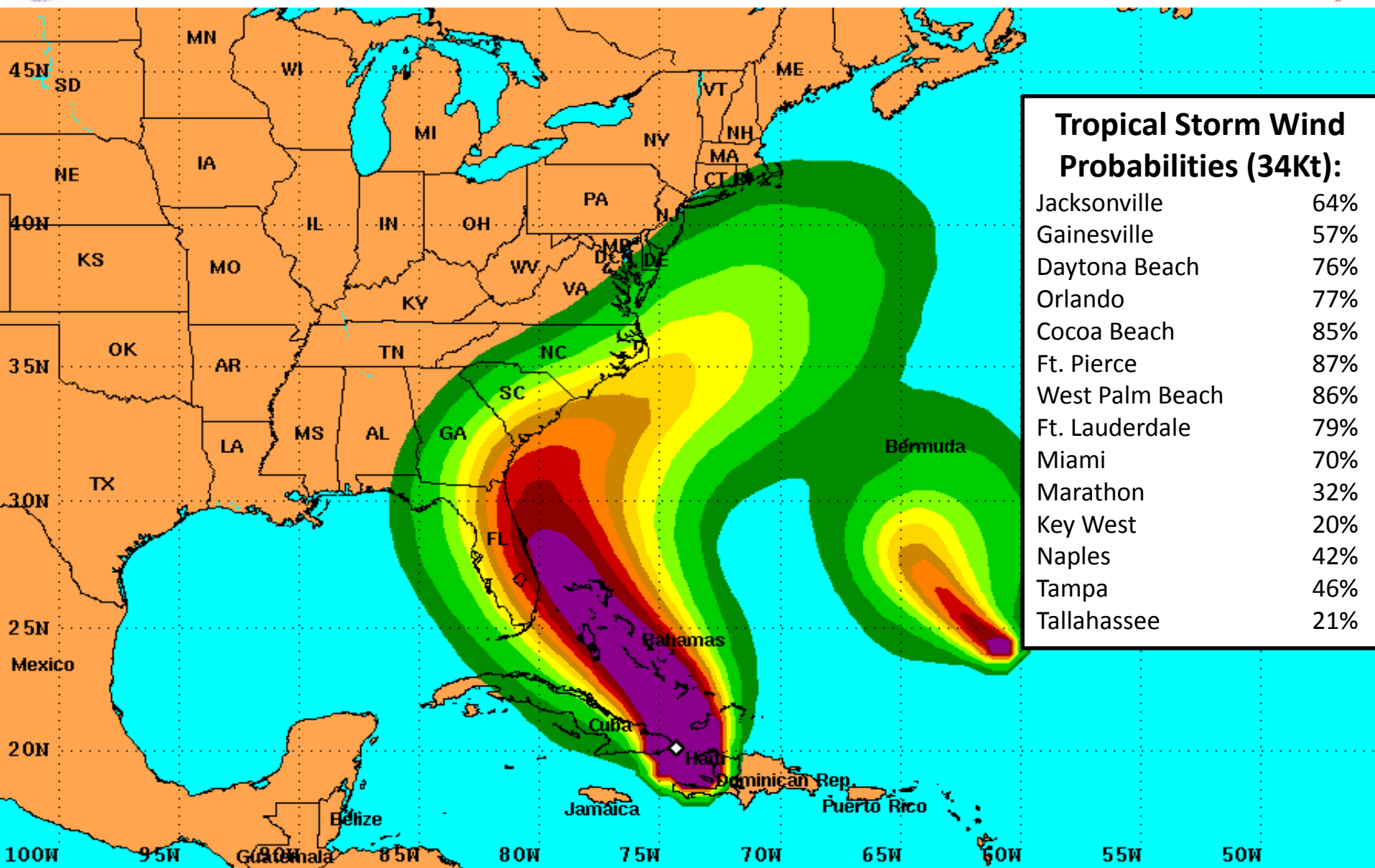


5-Oct-16 12:11 EDT



# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 8 PM EDT Tue Oct 4 to 8 PM EDT Sun Oct 9



Probability of tropical storm force surface winds (1-minute average  $\geq 39$  mph) from all tropical cyclones

◇ indicates HURRICANE MATTHEW center location at 8 PM EDT Tue Oct 4 2016 (Forecast/Advisory #28)

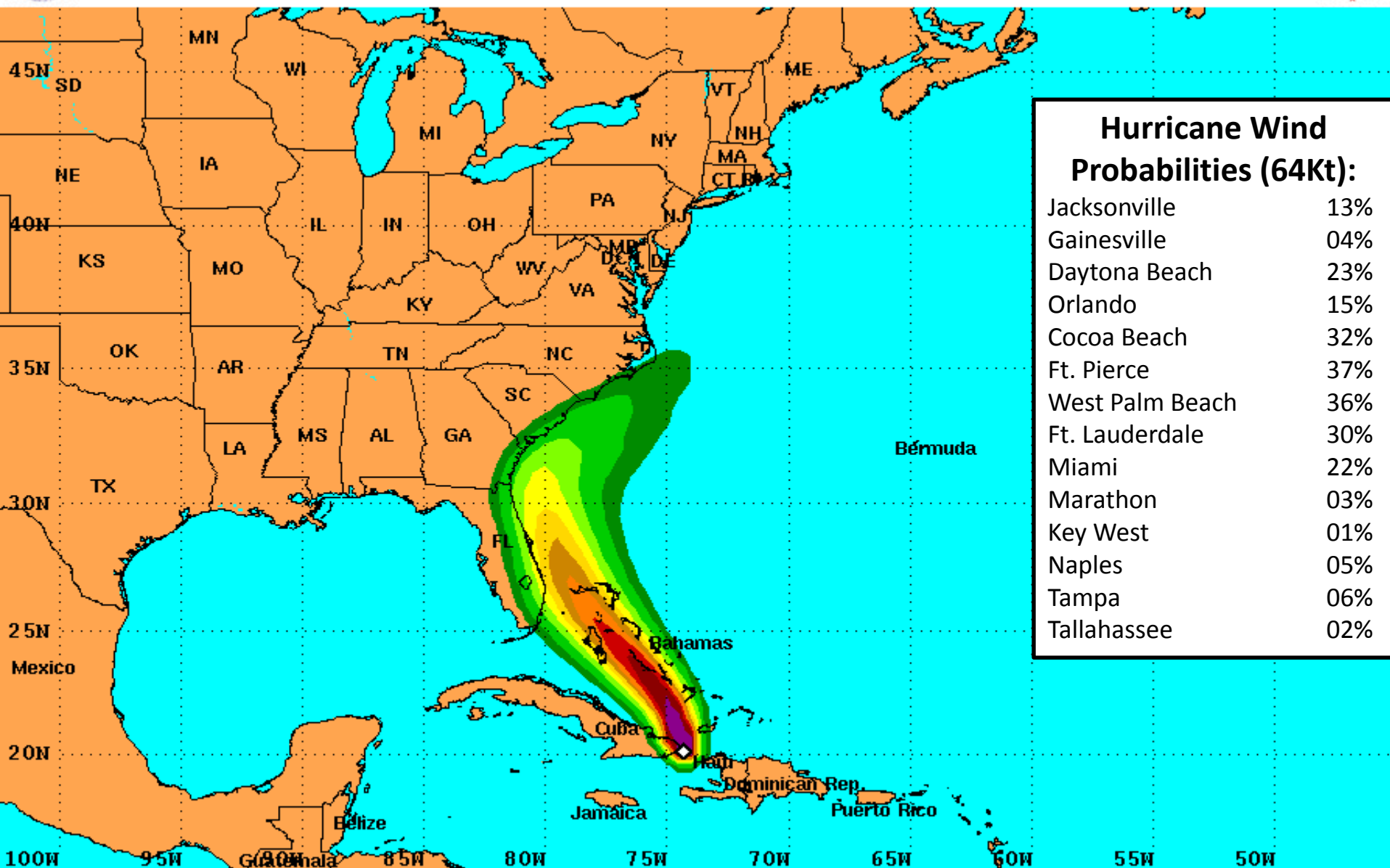






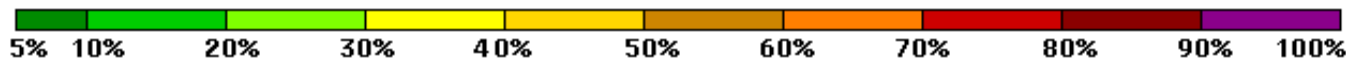
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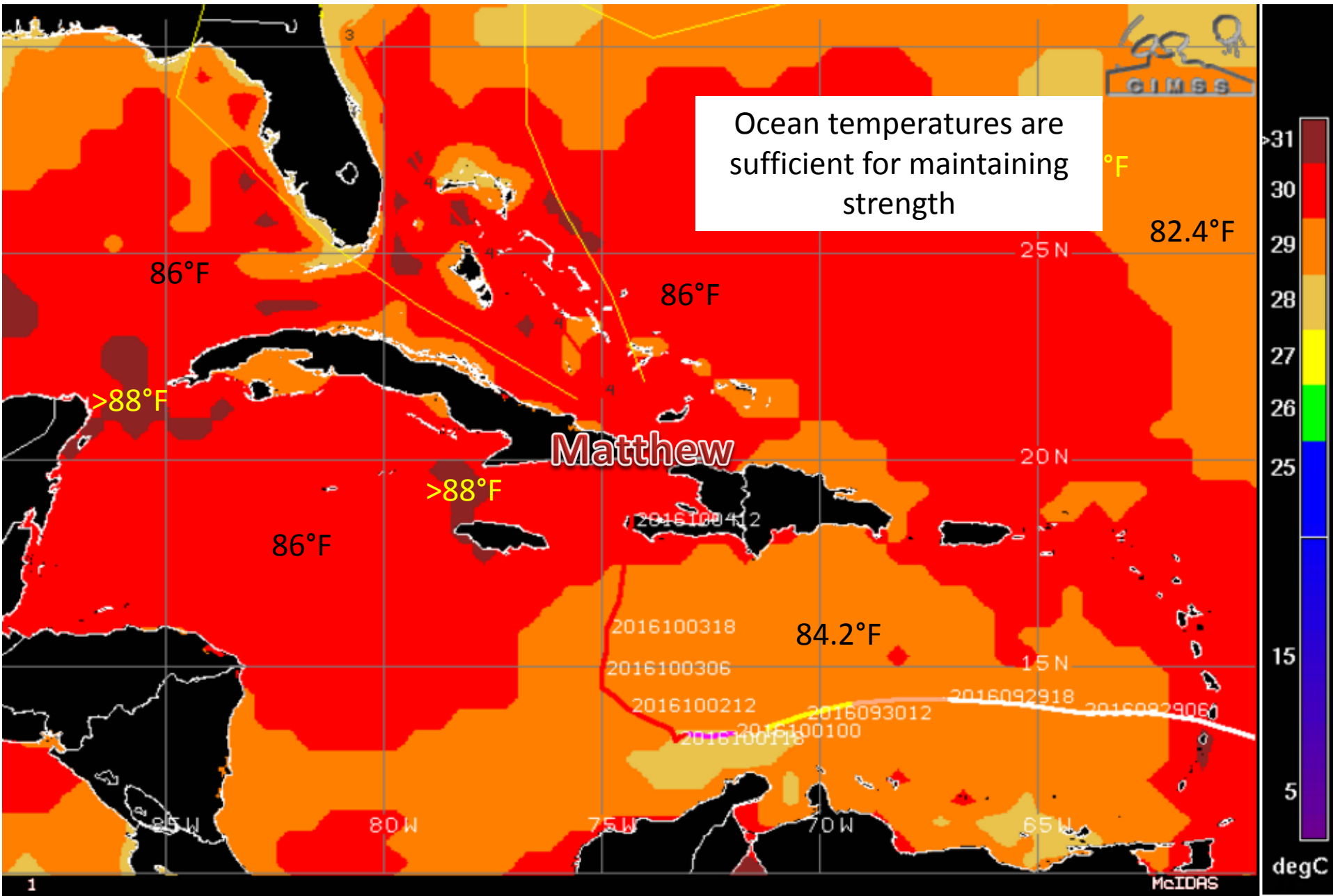


Probability of hurricane force surface winds (1-minute average  $\geq 74$  mph) from all tropical cyclones

◇ indicates HURRICANE MATTHEW center location at 8 PM EDT Tue Oct 4 2016 (Forecast/Advisory #28)

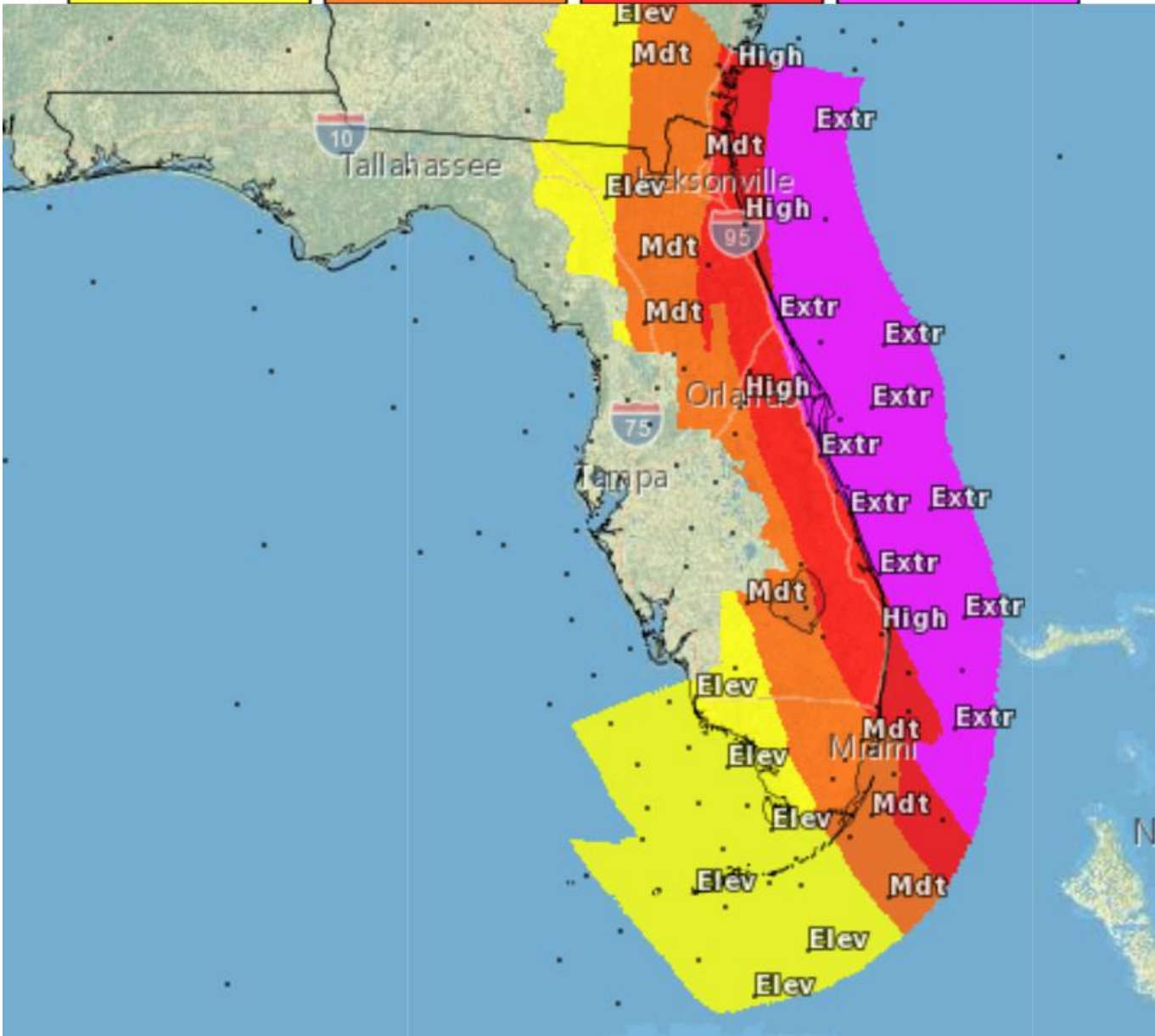


# Sea Surface Temperatures Near Matthew

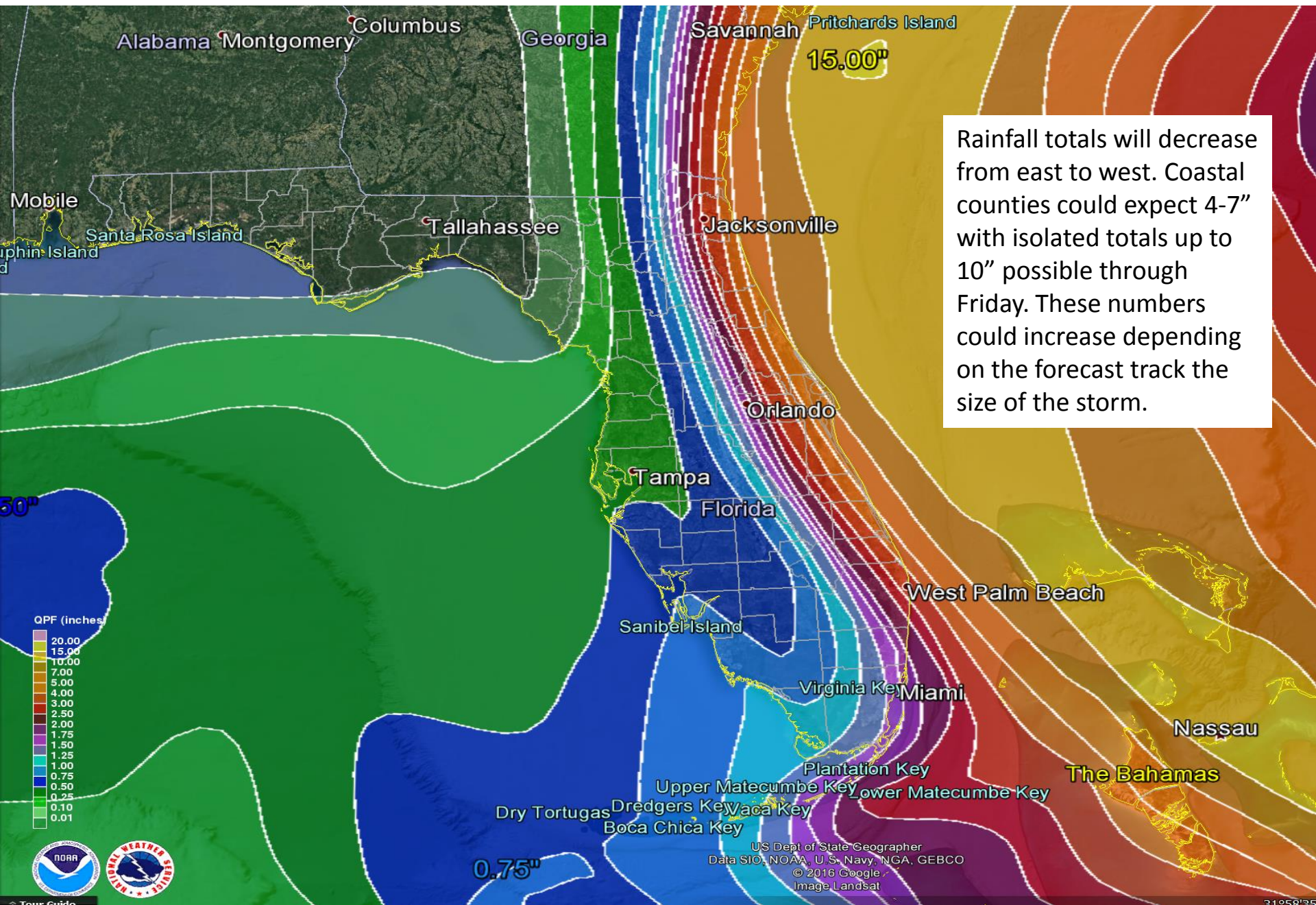




A map of Florida divided into counties, each labeled with a risk level: Elevated (yellow), Moderate (orange), High (red), or Extreme (pink). Major cities like Tallahassee, Jacksonville, Orlando, Tampa, and Miami are marked. Interstate highways 10, 95, and 75 are also shown.



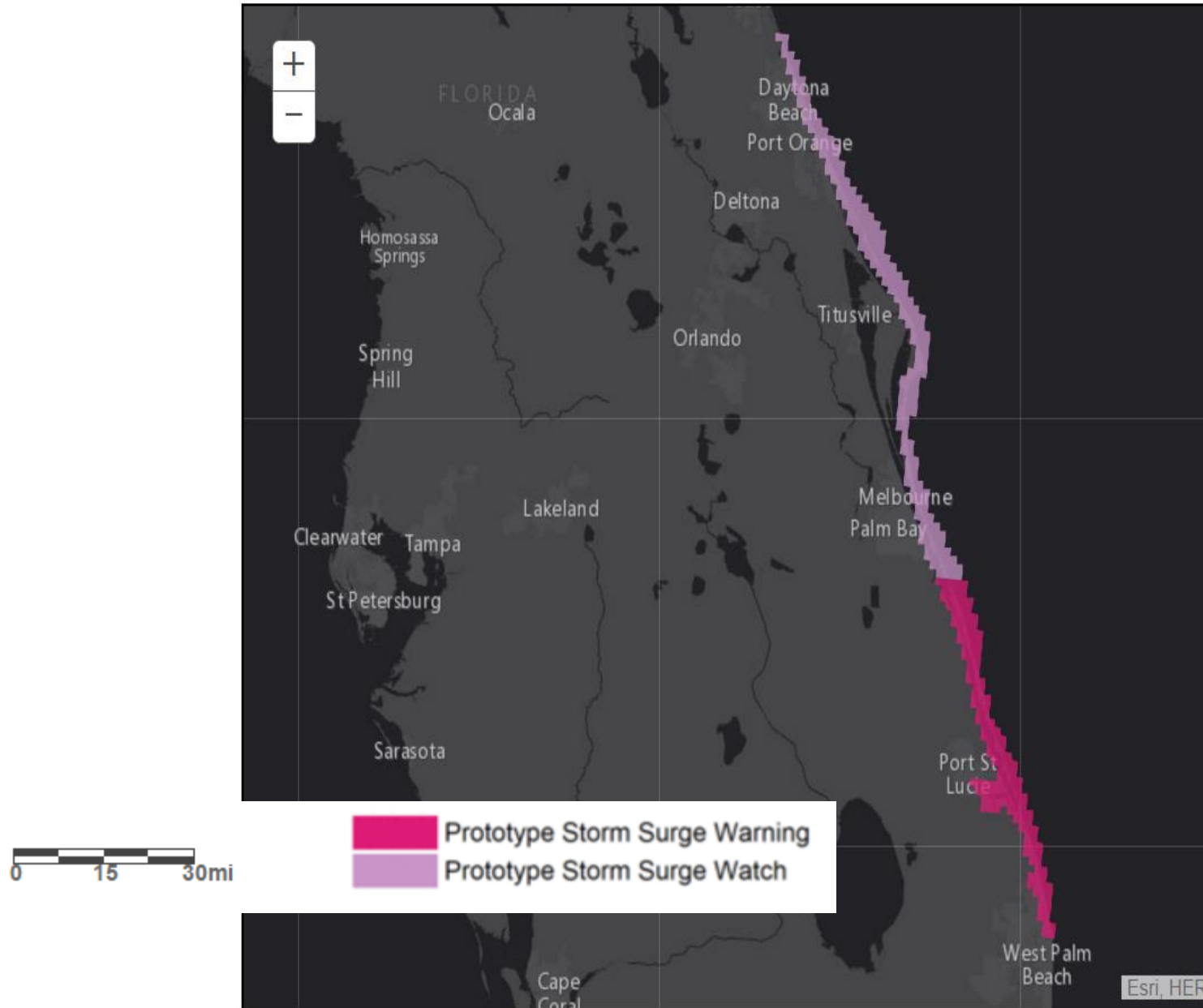
# Next Five Day Rainfall Totals

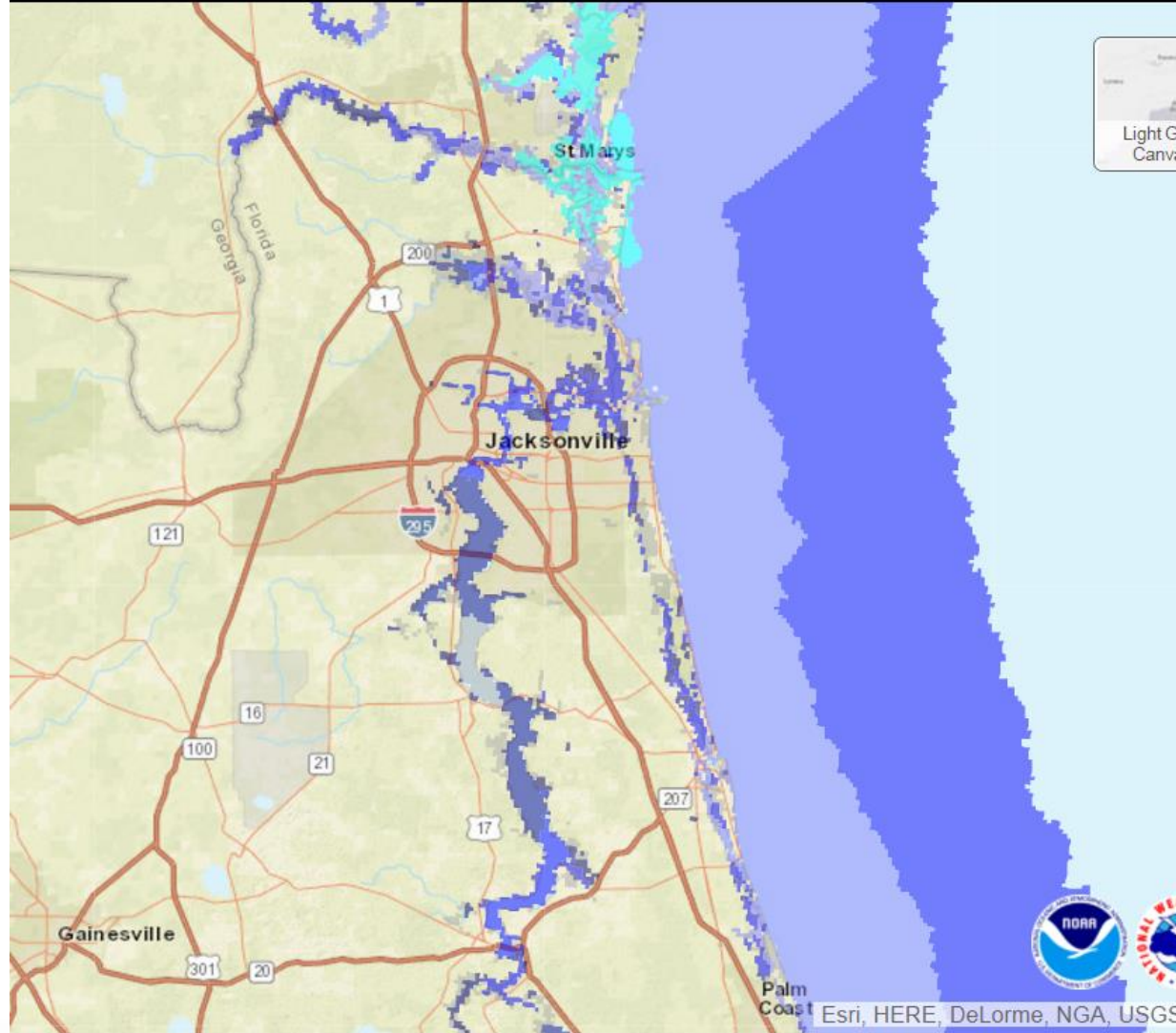


Rainfall totals will decrease from east to west. Coastal counties could expect 4-7" with isolated totals up to 10" possible through Friday. These numbers could increase depending on the forecast track the size of the storm.



# Prototype Storm Surge Watches/Warnings





## Legend

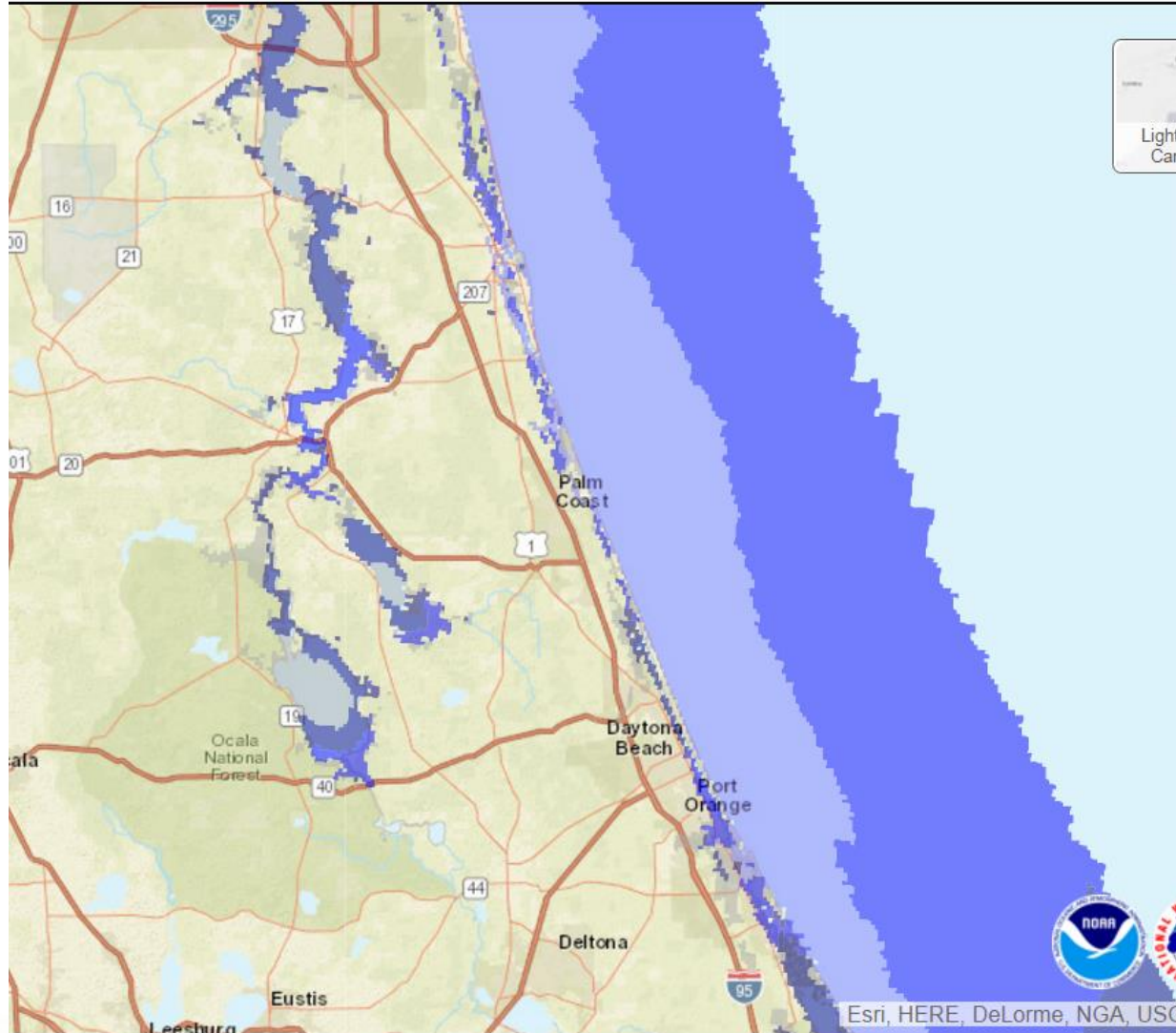
### Height above ground (feet)

0 to < 2	11 to < 13	23 to < 25
2 to < 3	13 to < 15	25 to < 27
3 to < 5	15 to < 17	27 to < 29
5 to < 7	17 to < 19	29 to < 36
7 to < 9	19 to < 21	
9 to < 11	21 to < 23	

Tropical Cyclone Storm Surge (with tide) Heights  
That Have a 1 in 10 Chance of Being Exceeded  
Hurricane Matthew (2016) Advisory 28

For the 77 hours from 11 PM EDT Tue Oct 04 to 04 AM EDT Sat Oct 08





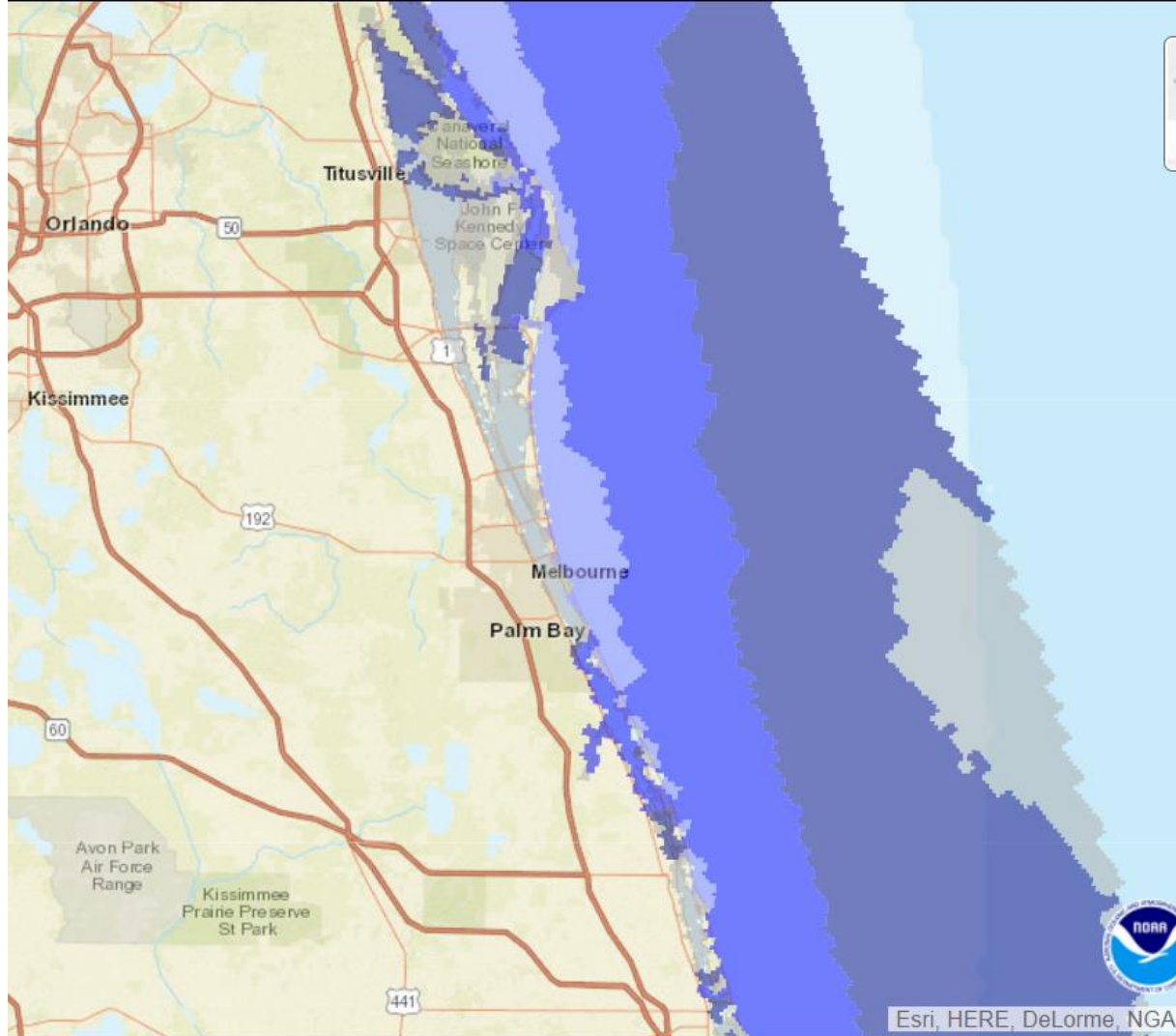
## Legend

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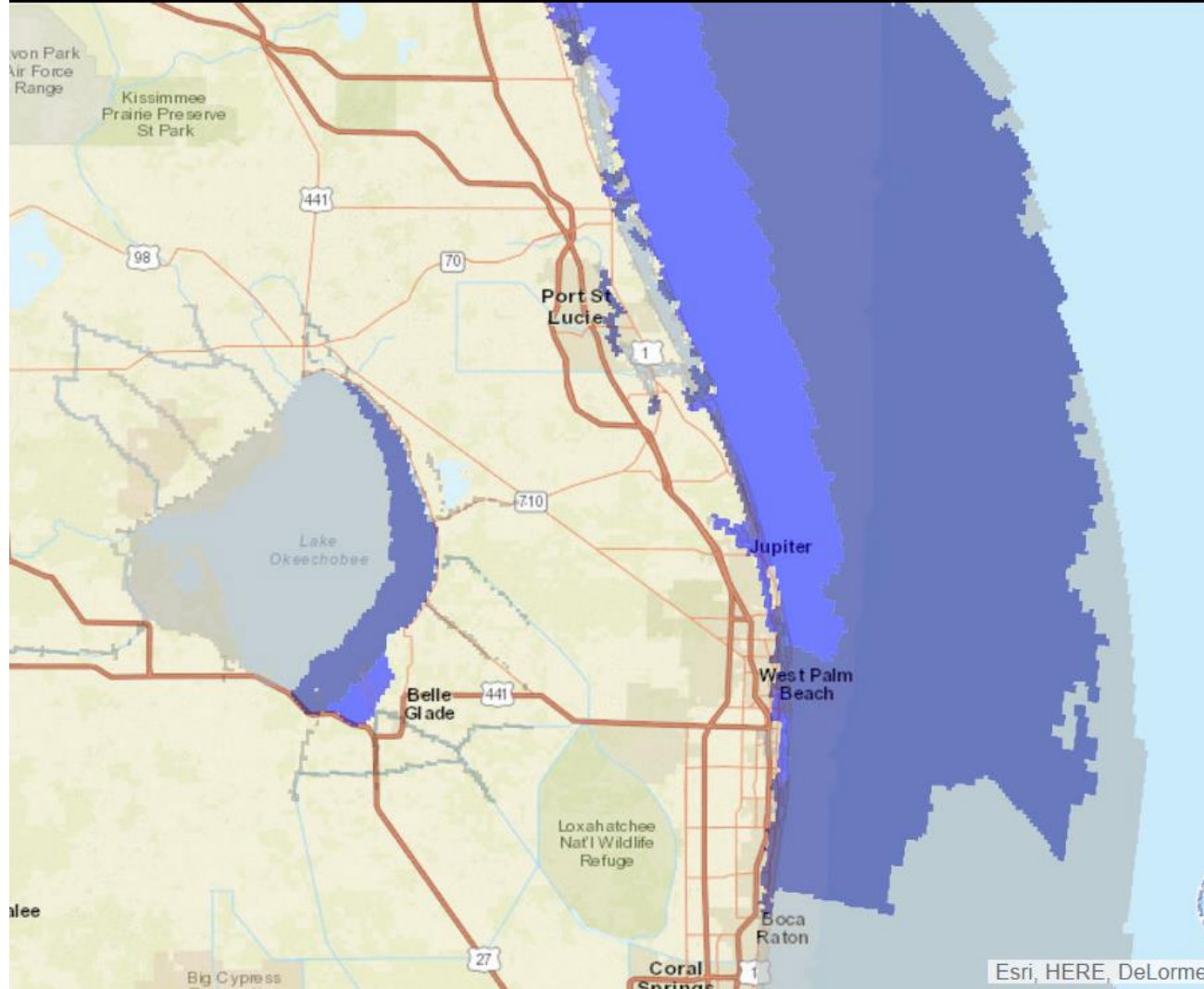


# Legend

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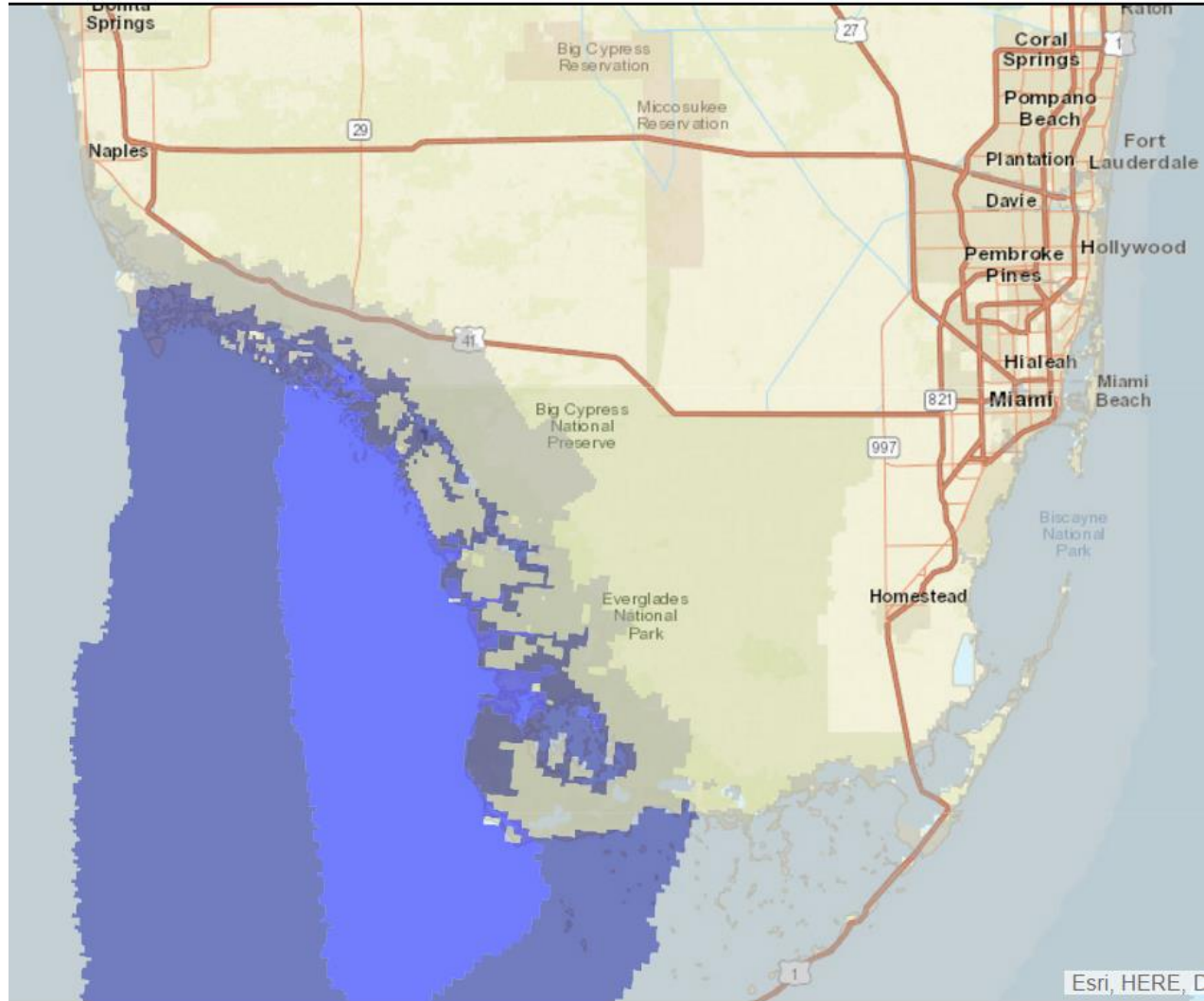
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Tropical Cyclone Storm Surge (with tide) Heights  
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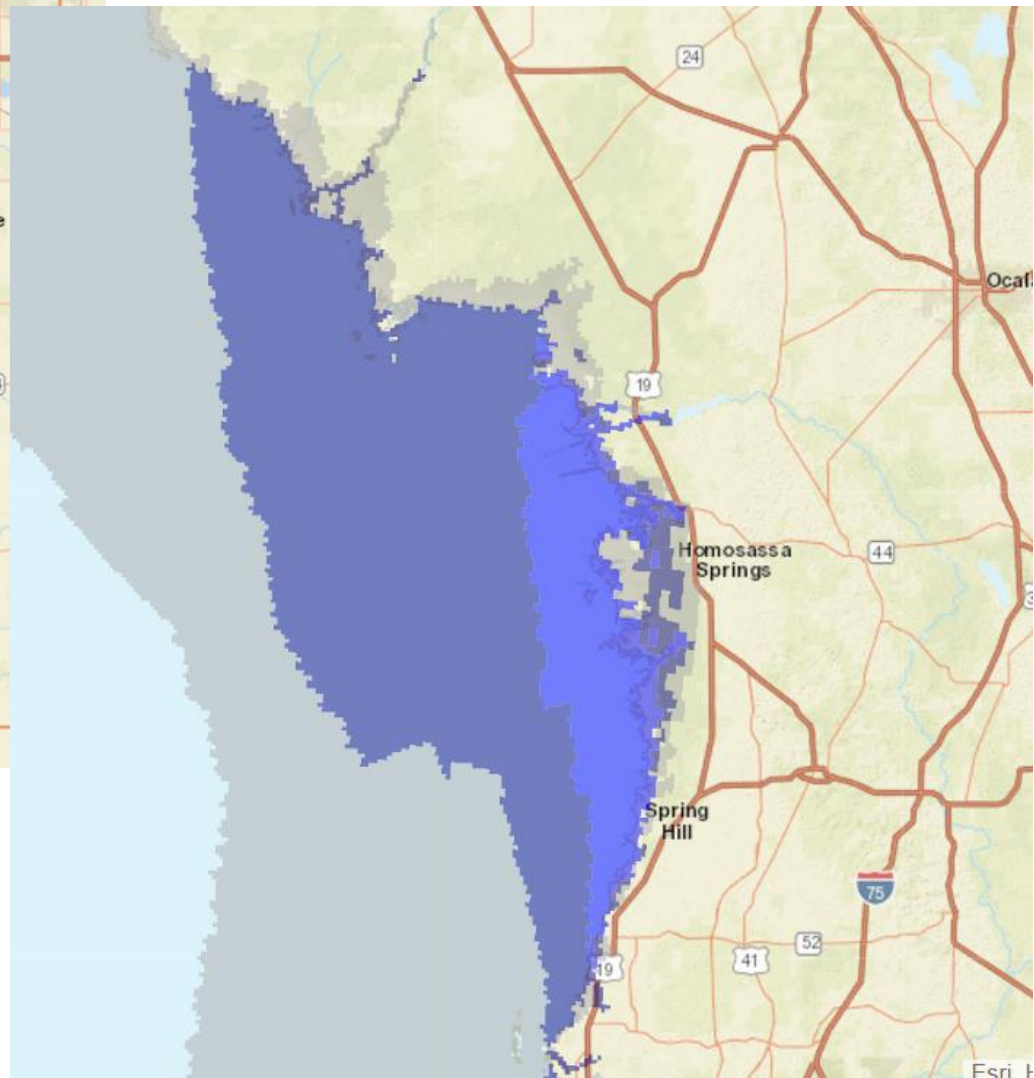
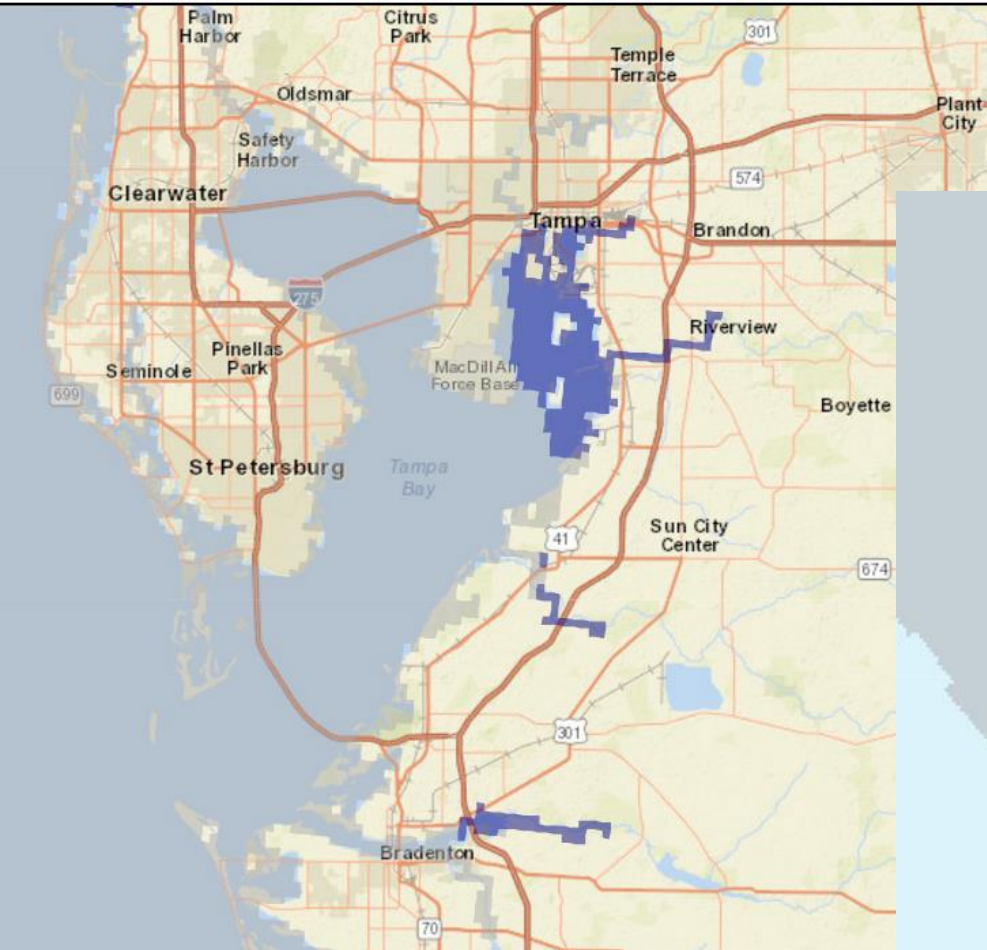
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Tropical Cyclone Storm Surge (with tide) Heights  
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For the 77 hours from 11 PM EDT Tue Oct 04 to 04 AM EDT Sat Oct 08





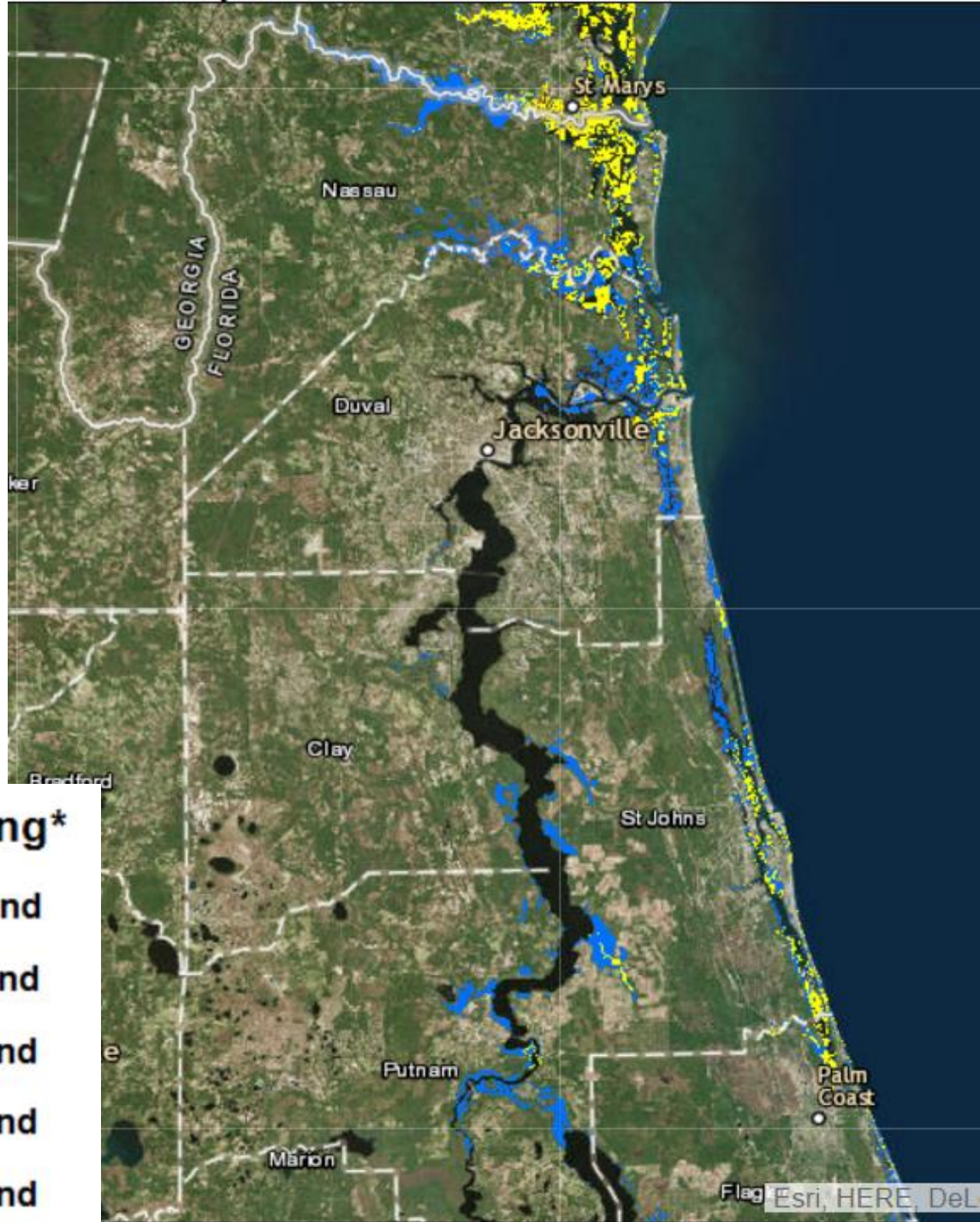
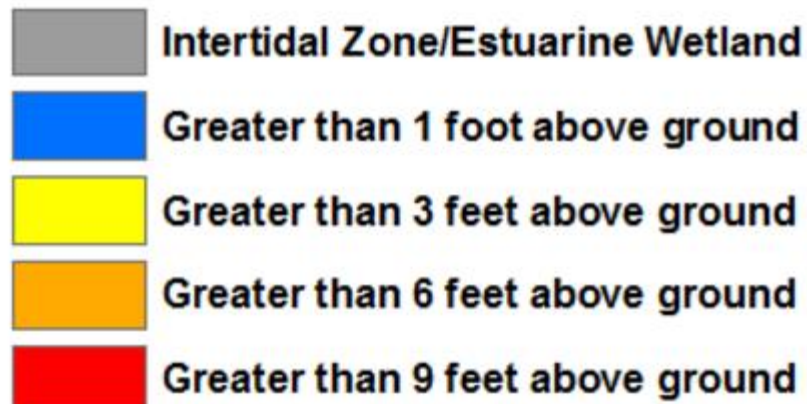
## Legend

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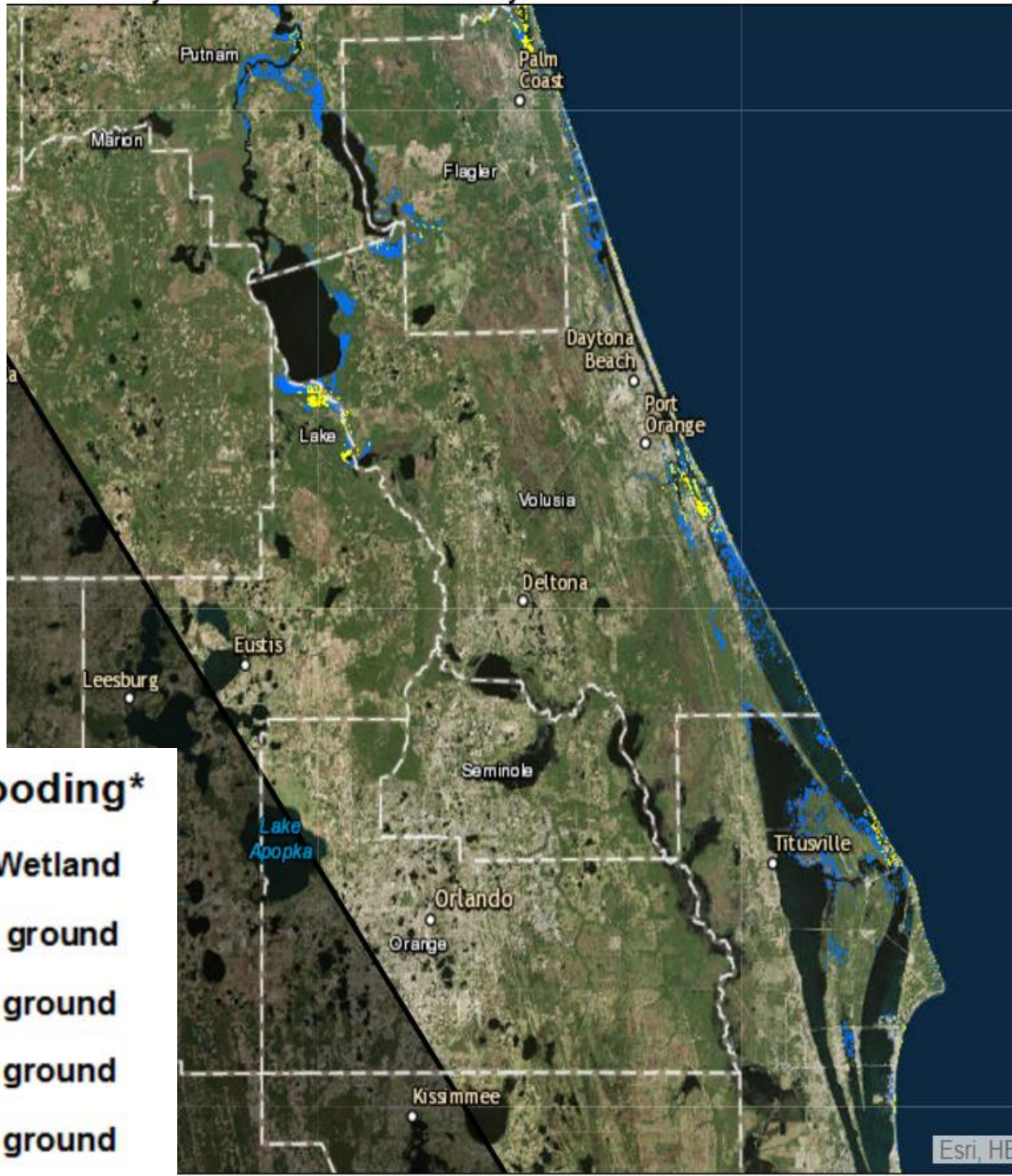
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Hurricane Matthew (2016) Advisory 28  
For the 77 hours from 11 PM EDT Tue Oct 04 to 04 AM EDT Sat Oct 08

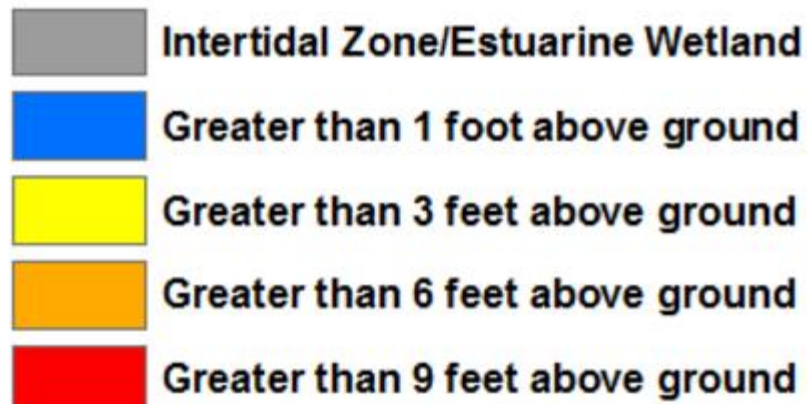
## Potential Storm Surge Flooding\*

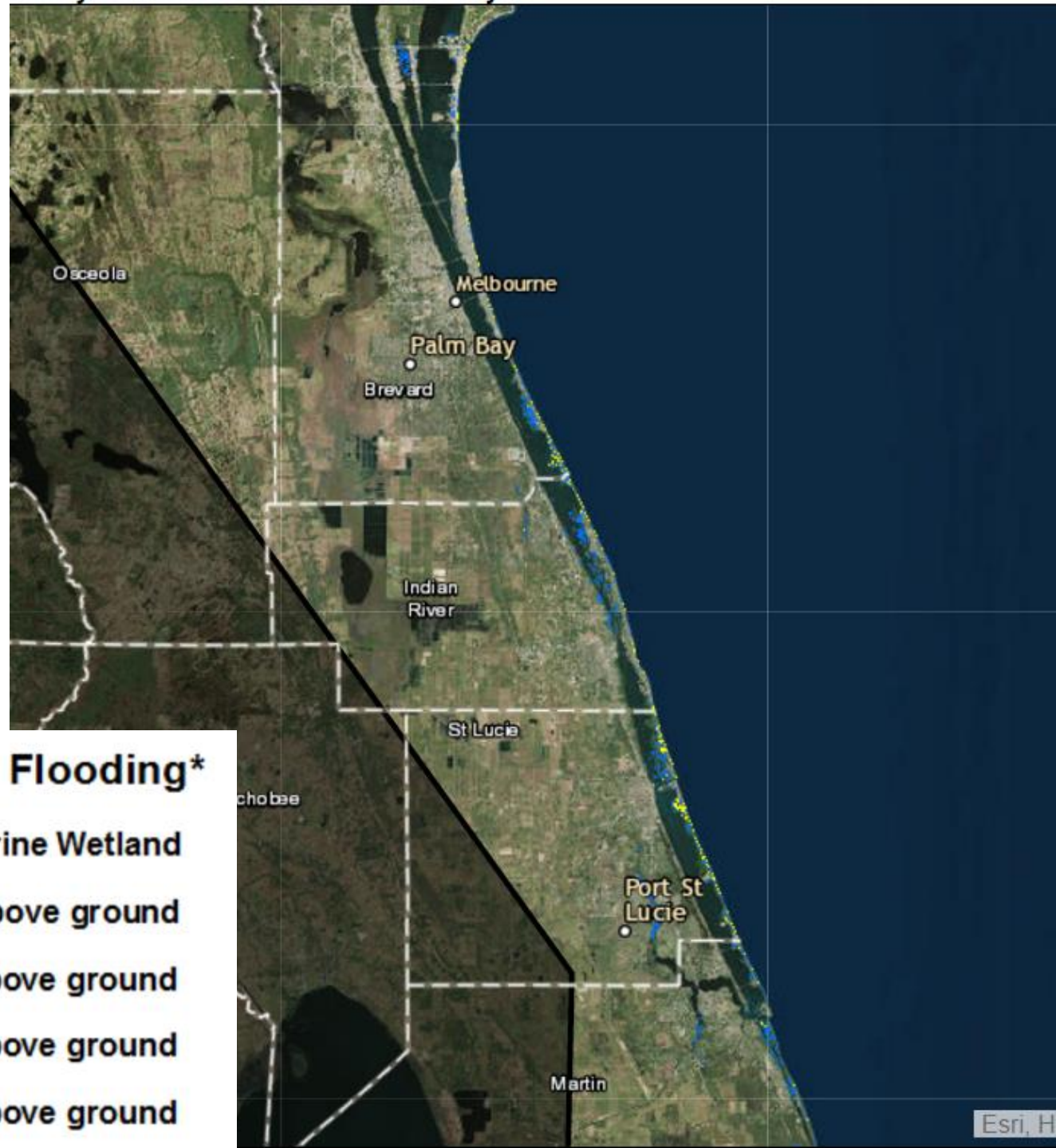




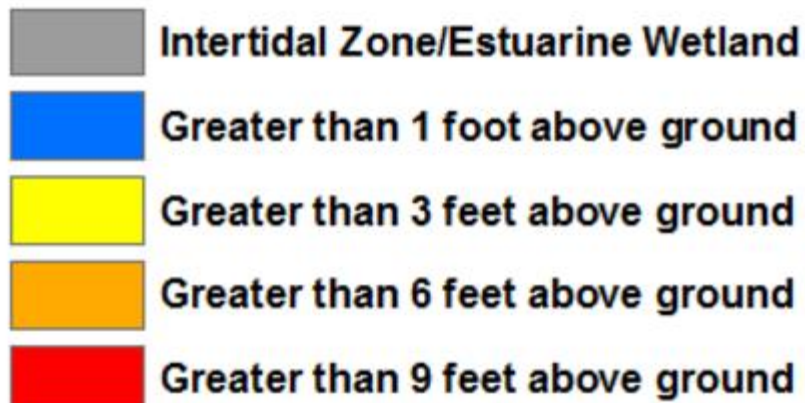


## Potential Storm Surge Flooding\*



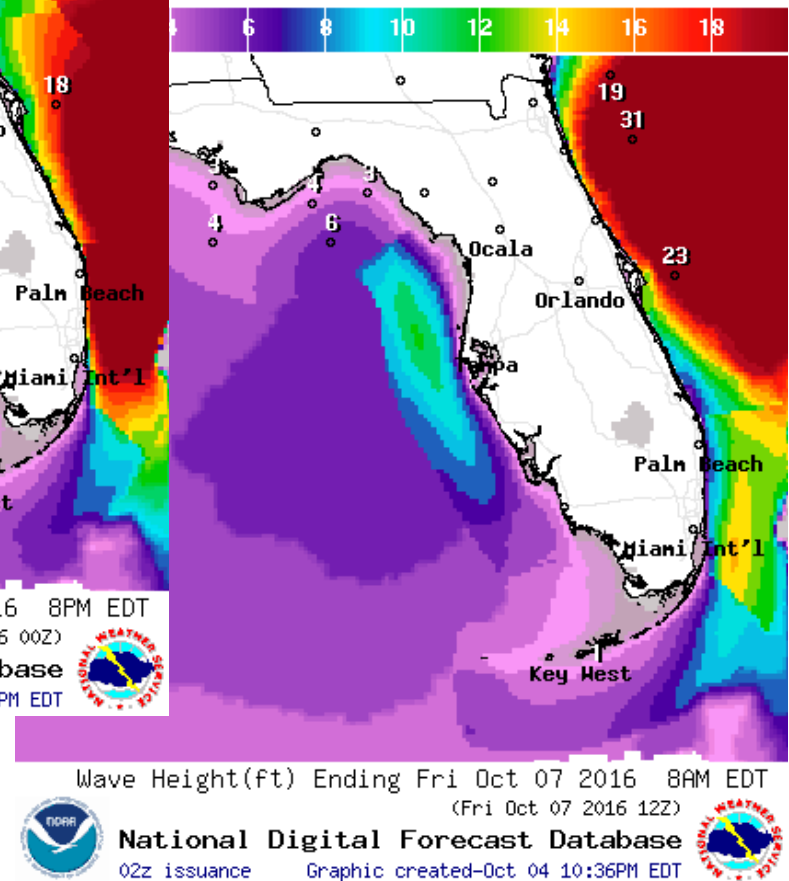
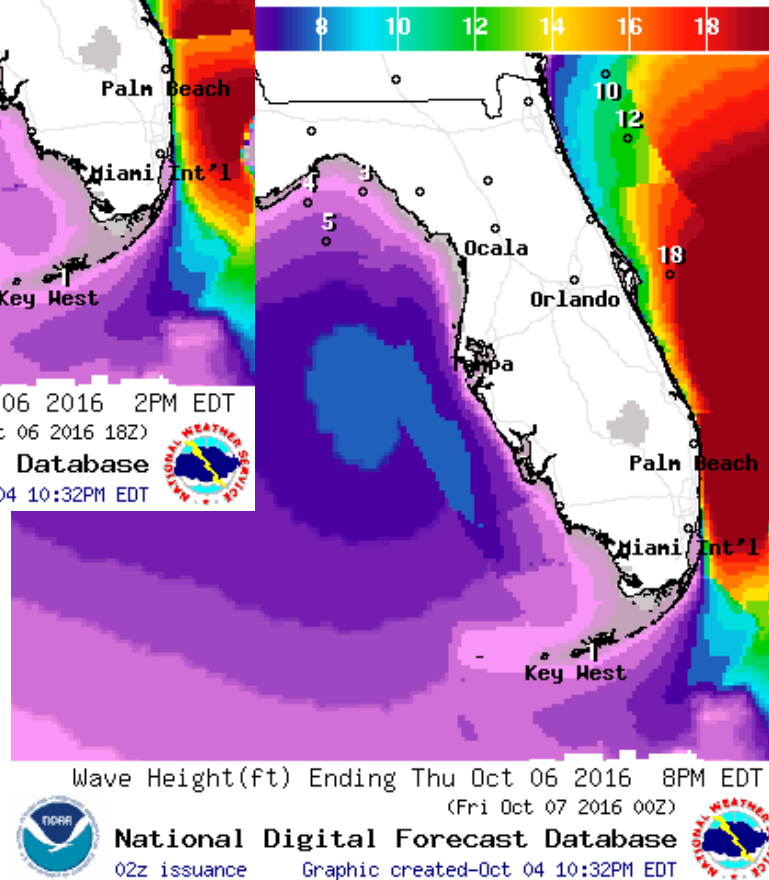
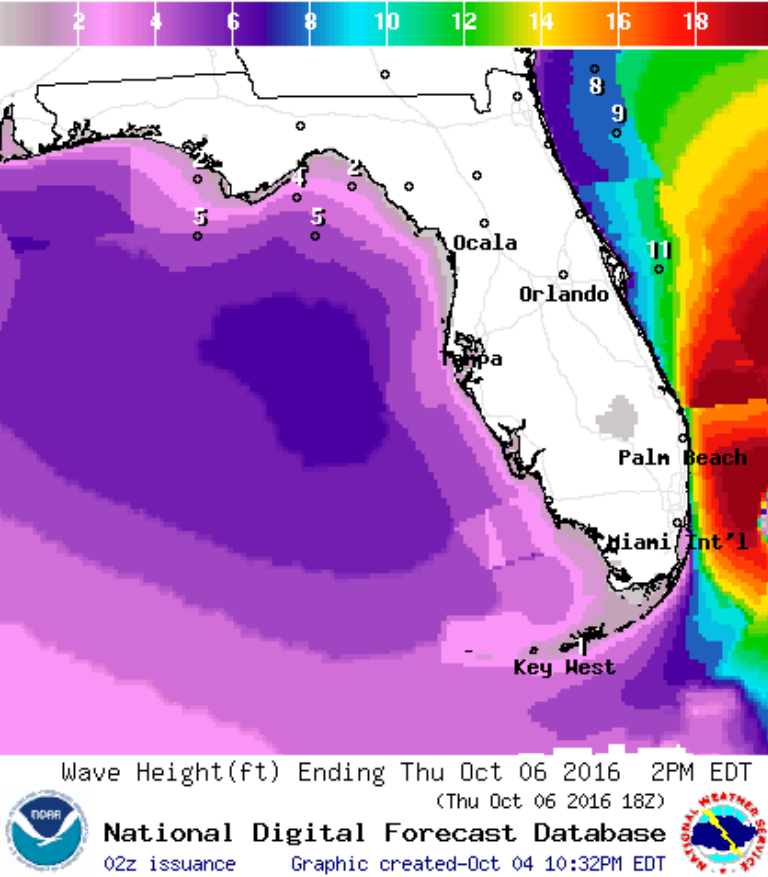


## Potential Storm Surge Flooding\*





# Forecast Wave Heights



# Tropical Storm Nicole

11 PM EDT Tue Oct 04 2016

Position 24.2N 61.3W

Maximum Winds 50 mph

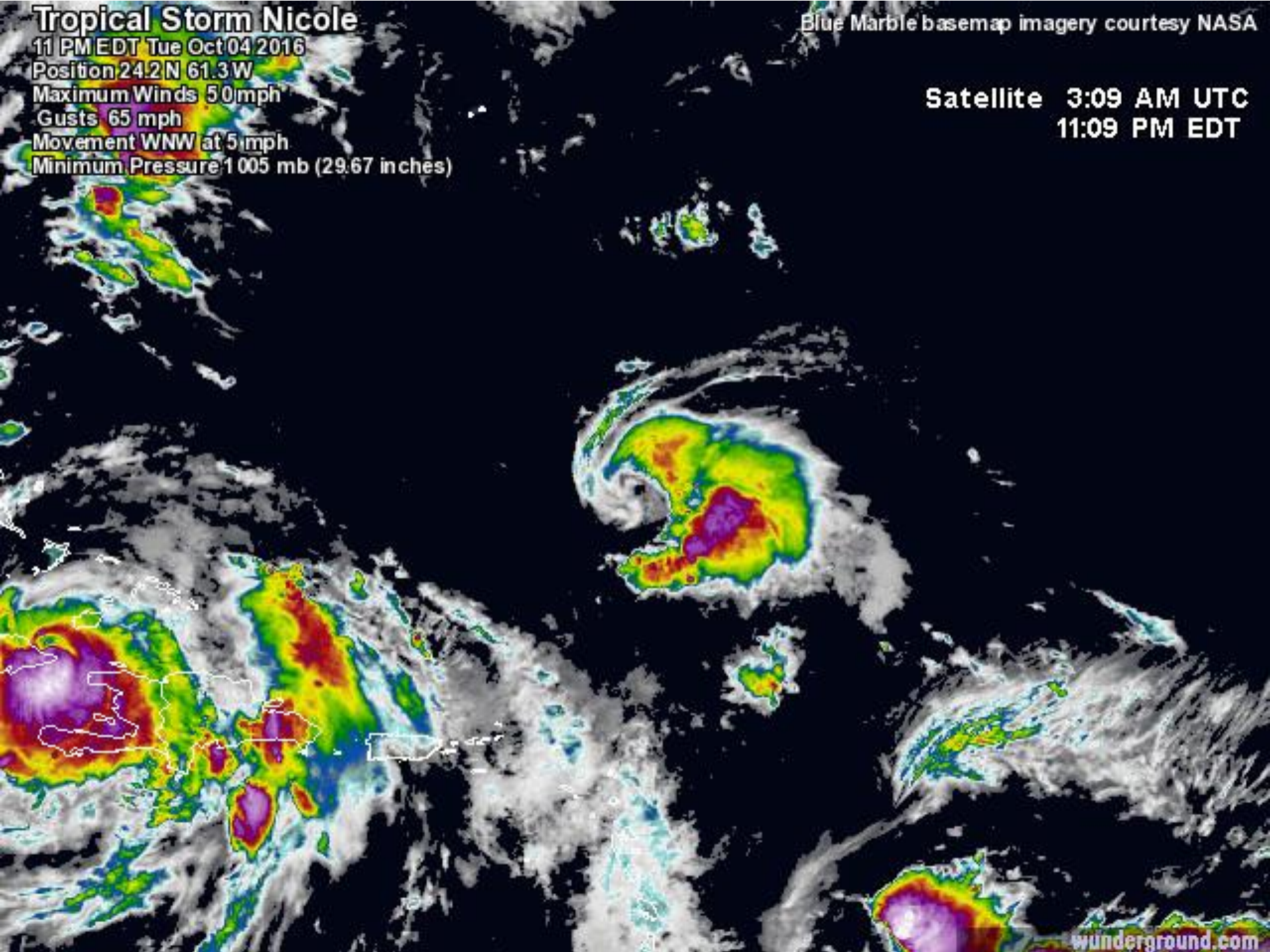
Gusts 65 mph

Movement WNW at 5 mph

Minimum Pressure 1005 mb (29.67 inches)

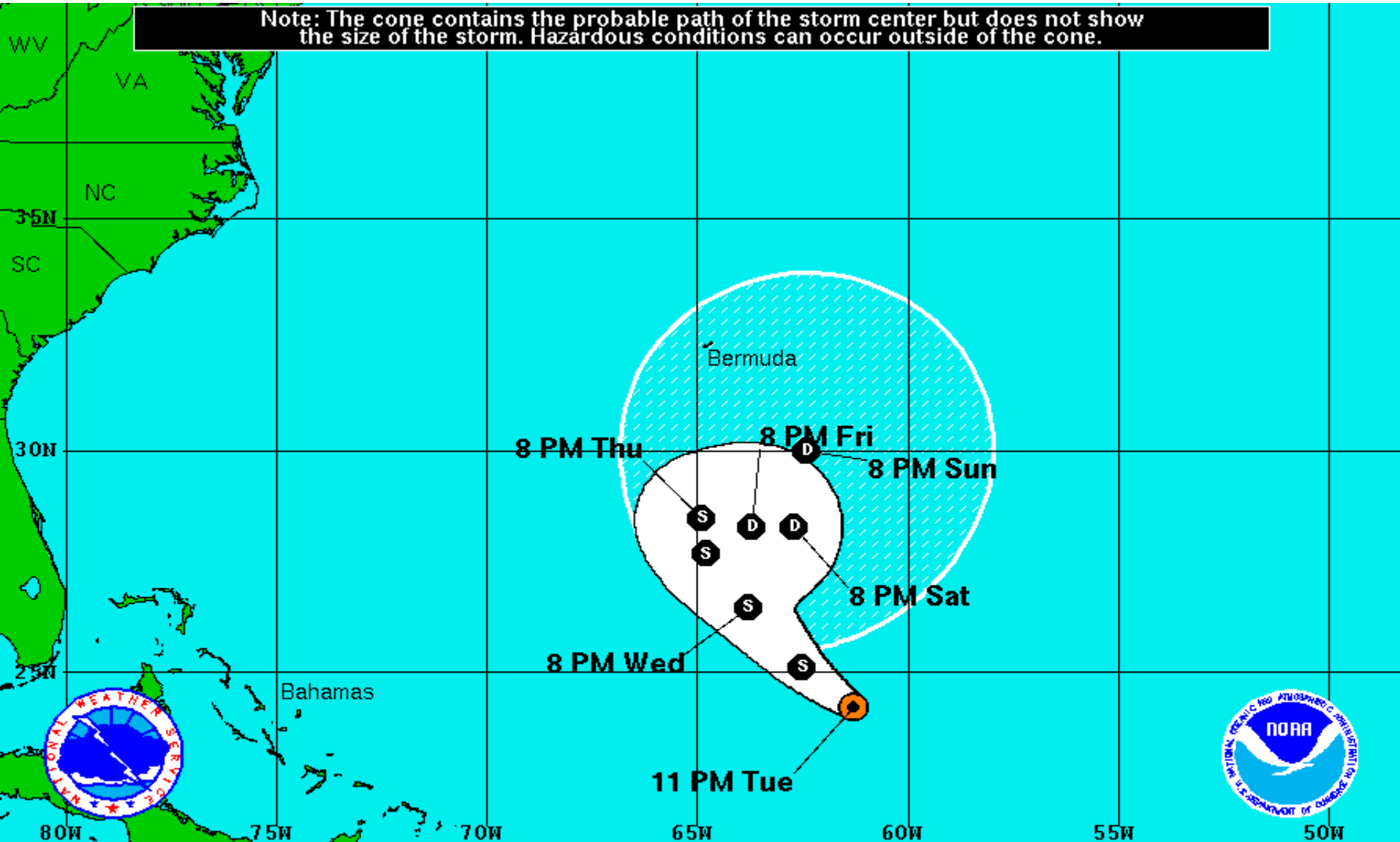
Blue Marble basemap imagery courtesy NASA

Satellite 3:09 AM UTC  
11:09 PM EDT








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.



**Tropical Storm Nicole**  
 Tuesday October 4, 2016  
 11 PM EDT Advisory 3  
 NWS National Hurricane Center

**Current Information:**   
 Center Location 24.2 N 61.3 W  
 Max Sustained Wind 50 mph  
 Movement WNW at 6 mph

**Forecast Positions:**  
 Tropical Cyclone  Post-Tropical  
 Sustained Winds: D < 39 mph  
 S 39-73 mph H 74-110 mph M > 110mph

**Potential Track Area:**  
 Day 1-3  Day 4-5

**Watches:**  
 Hurricane  Trop.Storm

**Warnings:**  
 Hurricane  Trop.Storm

**Initialized at 00z Oct 05 2016**

Models are not in good agreement, but most project Nicole to move northwest over the next day or so.





# Five-Day Graphical Tropical Weather Outlook

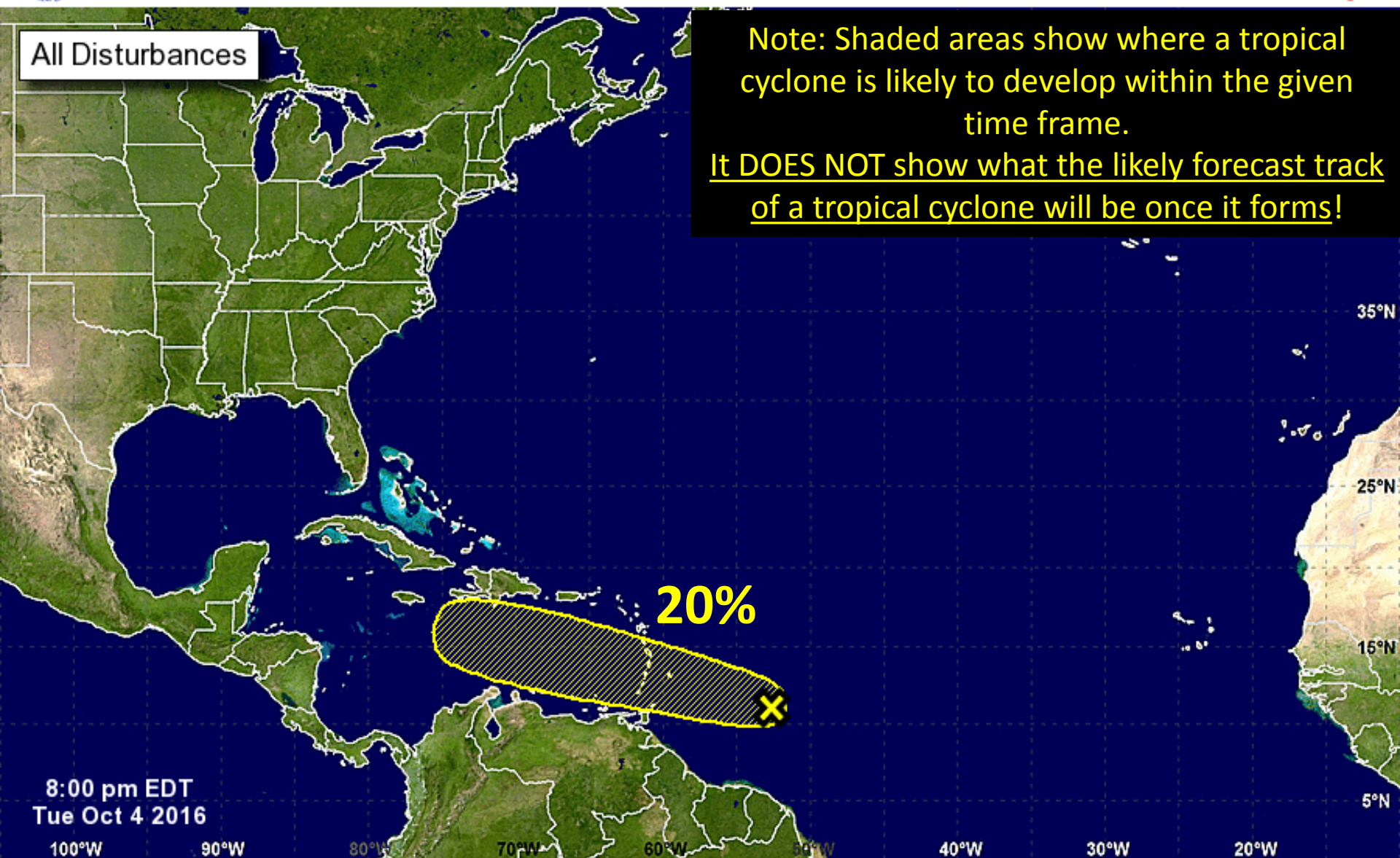
National Hurricane Center Miami, Florida



All Disturbances

Note: Shaded areas show where a tropical cyclone is likely to develop within the given time frame.

It DOES NOT show what the likely forecast track of a tropical cyclone will be once it forms!



8:00 pm EDT  
Tue Oct 4 2016

Tropical Cyclone Formation Potential for the Five-Day Period Ending at 8:00 pm EDT Sun Oct 9 2016

Chance of Cyclone Formation in Five Days: ■ Low < 40% ■ Medium 40-60% ■ High > 60%

X indicates current disturbance location; shading indicates potential formation area.

## **Tropical Summary:**

- At 11pm EDT, Hurricane Matthew was located 20 miles northwest of the eastern tip of Cuba, or approximately 525 miles southeast of Miami, Florida.
- Maximum sustained winds are currently 130 mph with higher gusts, making Matthew a Category 4 hurricane on the Saffir-Simpson scale.
- Matthew is moving toward the north near 8 mph, and this general motion is expected to continue tonight. A turn toward the north-northwest is expected on Wednesday, followed by a northwest turn Wednesday night. Matthew will be moving through the Bahamas through Thursday, and is expected to be very near the east coast of Florida by Thursday evening.
- It is important not to focus on the center line of the forecast cone. Only small deviation in the forecast track to the left could bring the core of a major hurricane onshore, while a small deviation to the right could keep all of the hurricane-force winds offshore. It will likely take another day or so for the potential impacts of Matthew in the United States to clarify.
- Matthew remains a large storm, with tropical storm force winds extending 175 miles from the center, and hurricane force winds extending 45 miles from the center.
- Tropical Storm Nicole is located 505 miles northeast of San Juan, Puerto Rico. Nicole is moving to the west-northwest at 6 mph. A turn toward the northwest is expected on Wednesday, followed by a turn toward the north by late Thursday. The system poses no threat to Florida.
- Elsewhere, large area of showers and thunderstorms located several hundred miles east of the Windward Islands is associated with a tropical wave. Development, if any, of this system is expected to be slow to occur while the wave moves westward at 10 to 15 mph. Regardless of tropical cyclone development, locally heavy rains and gusty winds are possible in the Windward and southern Leeward Islands during the next couple of days as the wave approaches and then passes.
- The system has a 10% (low) chance of development over the next 48 hours, and a 20% (low) chance of development through the next five days.



## **Florida Outlook:**

- Tropical Storm Nicole does not pose a threat to Florida.
- Hurricane Warning is in effect for Broward, Palm Beach, Martin, St. Lucie, Indian River, and Okeechobee Counties, along with Lake Okeechobee.
- Hurricane Watch is in effect for Brevard, Volusia, Osceola, Orange, and Seminole Counties.
- Tropical Storm Warning is in effect for Miami-Dade, Monroe, Collier, Hendry, and Glades Counties.
- Tropical Storm Watch is in effect for Lake County.
- Almost all of the eastern Florida peninsula are within the 3-day average error cone.
- Regardless of track, Matthew is a very large storm and it has the potential to generate gusty winds and rough seas long the East Coast of Florida, along with minor coastal flooding, beach erosion, and dangerous rip currents.
- Any additional impacts are dependent on future track and size of the storm, which still remain somewhat uncertain at this moment.
- Areas along the east coast of Florida (from Miami to Jacksonville and inland to Orlando) have a greater than 70% chance of seeing tropical storm force winds within the next three days.
- Tropical storm force winds could arrive Thursday morning across Southeast Florida and spread from south to north across East Central Florida through the day on Thursday and into Northeast Florida overnight Thursday into Friday morning.
- Hurricane force winds will be just off the coast of Florida, and any westward deviation of the current track will bring those destructive hurricane force winds onshore.
- The current forecast calls for 4-7" of rain near the I-95 corridor with isolated totals of 10" possible, but it is highly dependent on the track of the storm.
- Storm surge values of 1-3' is possible along the Southeast Florida coast, with storm surge heights of 3-6 feet possible from northern Palm Beach County through Nassau County. A few areas could experience higher values depending on the proximity of the core of the hurricane relative to the coast.
- Isolated tornadoes are possible Thursday and Friday.

Another briefing packet will be issued on Wednesday morning. For more information on this system, please visit the NHC website at [www.nhc.noaa.gov](http://www.nhc.noaa.gov)



# **TROPICAL UPDATE**

Created by:

Kevin Rodriguez, Deputy State Meteorologist

[Kevin.Rodriguez@em.myflorida.com](mailto:Kevin.Rodriguez@em.myflorida.com)

State Meteorological Support Unit

Florida Division of Emergency  
Management