



# **TROPICAL UPDATE**

**5 AM EDT**

**Tuesday, October 4, 2016**

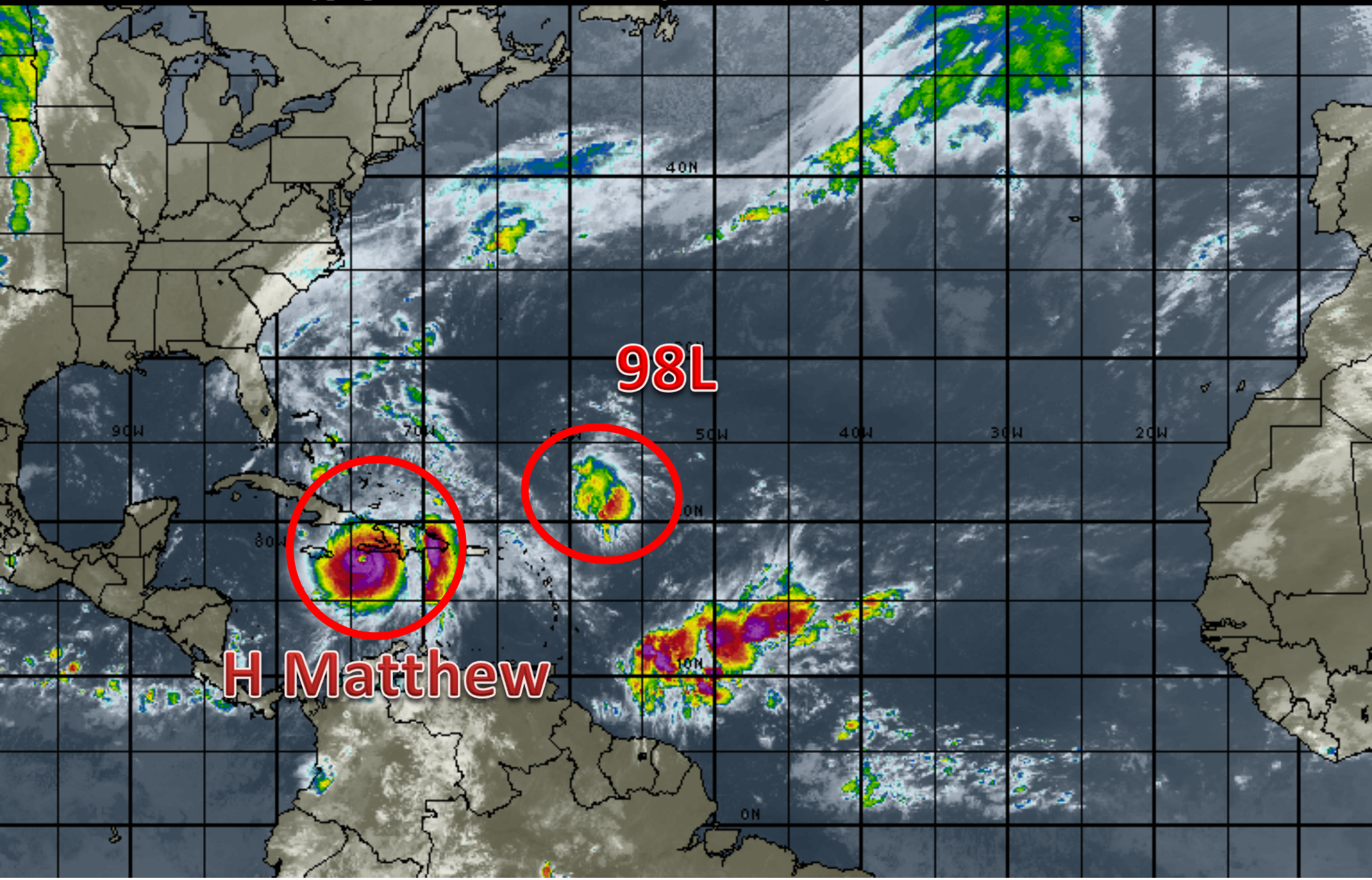
**Major Hurricane Matthew and Invest 98L  
(70%)**

**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

09:00 04-OCT-2016 GMT Copyright © 1998-2016 MSI Corporation <http://www.usi.com>





# Hurricane Matthew

5 AM EDT Tue Oct 04 2016

Position 17.8 N 74.4 W

Maximum Winds 145 mph

Gusts 170 mph

Movement N at 9 mph

Minimum Pressure 934 mb.(27.57 inches)

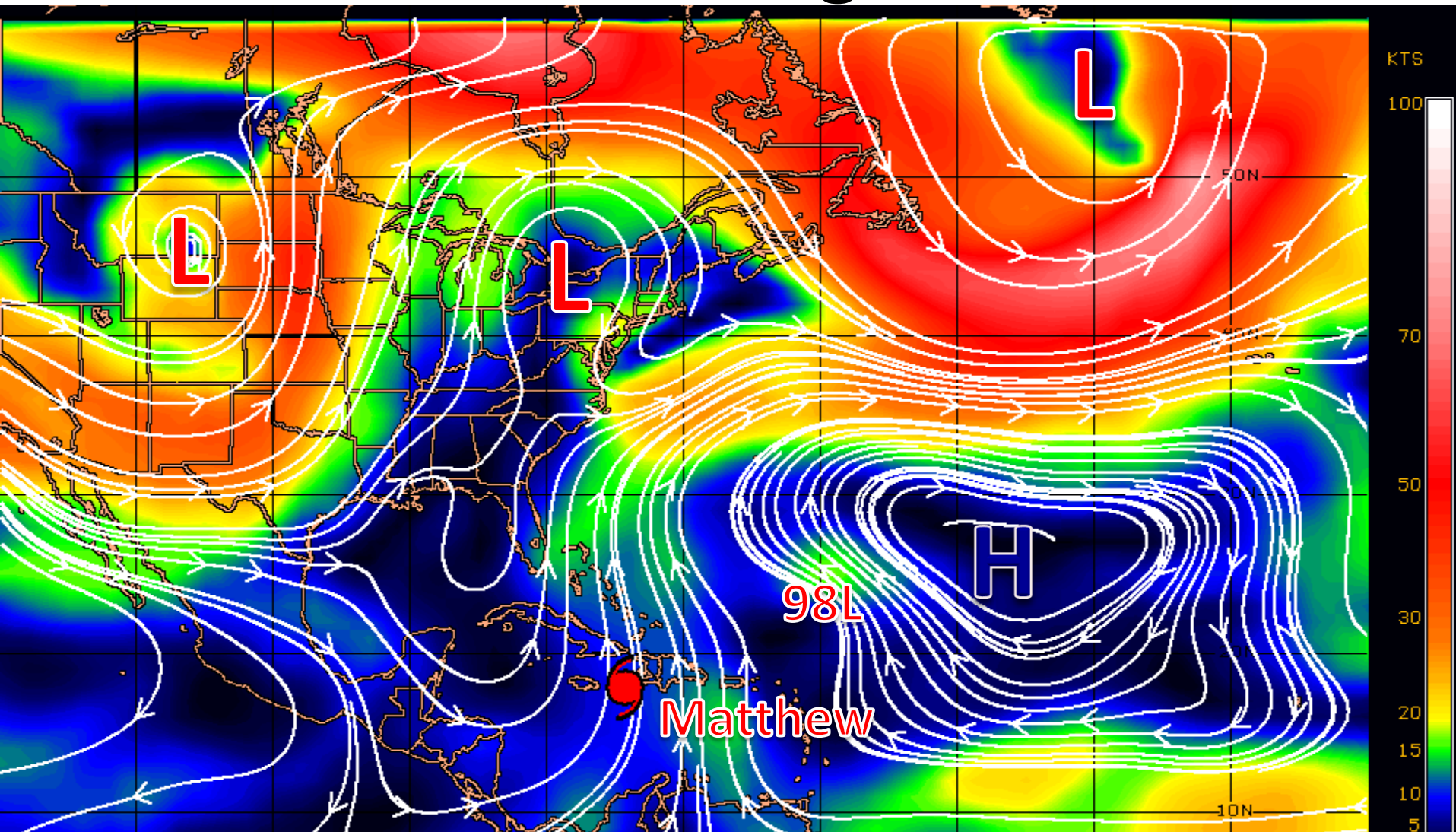
Blue Marble basemap imagery courtesy NASA

Satellite 10:46 AM UTC  
6:46 AM EDT





# Current Steering Currents



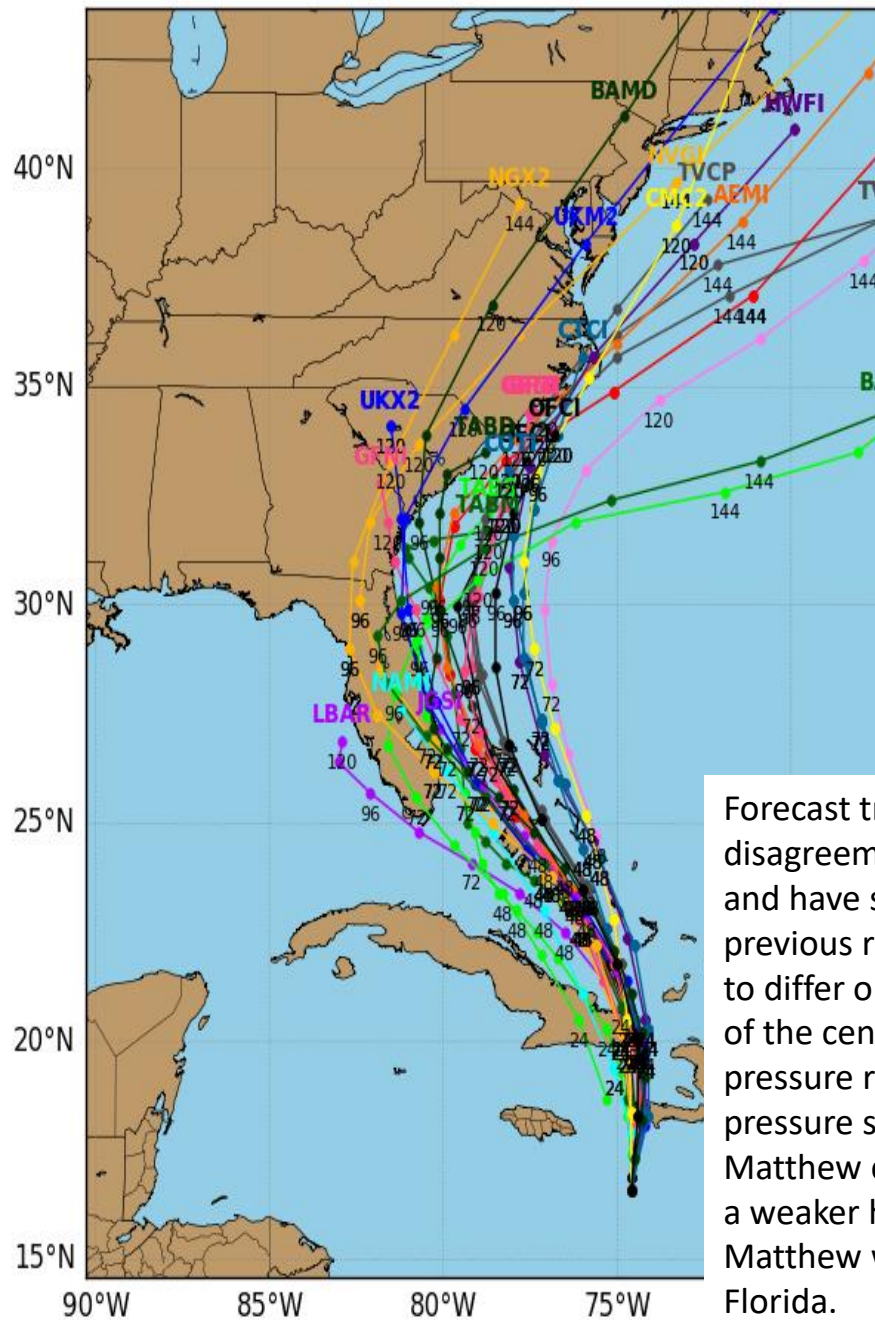
Matthew is being steered slowly north between a strong high pressure system over the central Atlantic and low pressure extending from New England to the Gulf of Mexico. The high pressure ridge is forecast to build west this week, causing a NW movement before another low pressure system in the Plains moves to the Eastern U.S. and steers Matthew north to northeast this weekend.



# Hurricane MATTHEW Model Track Guidance

Initialized at 00z Oct 04 2016

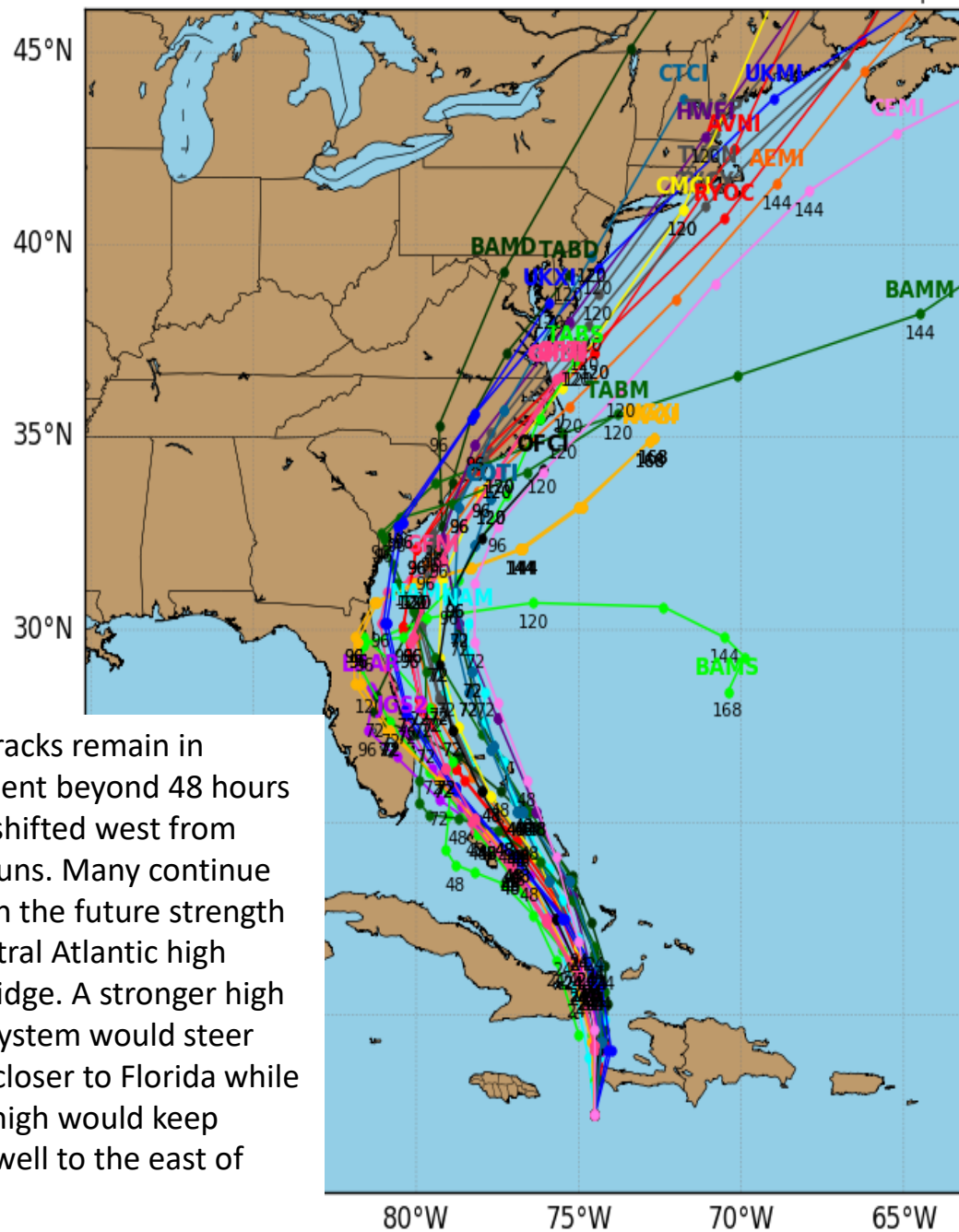
Levi Cowan



# Hurricane MATTHEW Model Track Guidance

Initialized at 06z Oct 04 2016

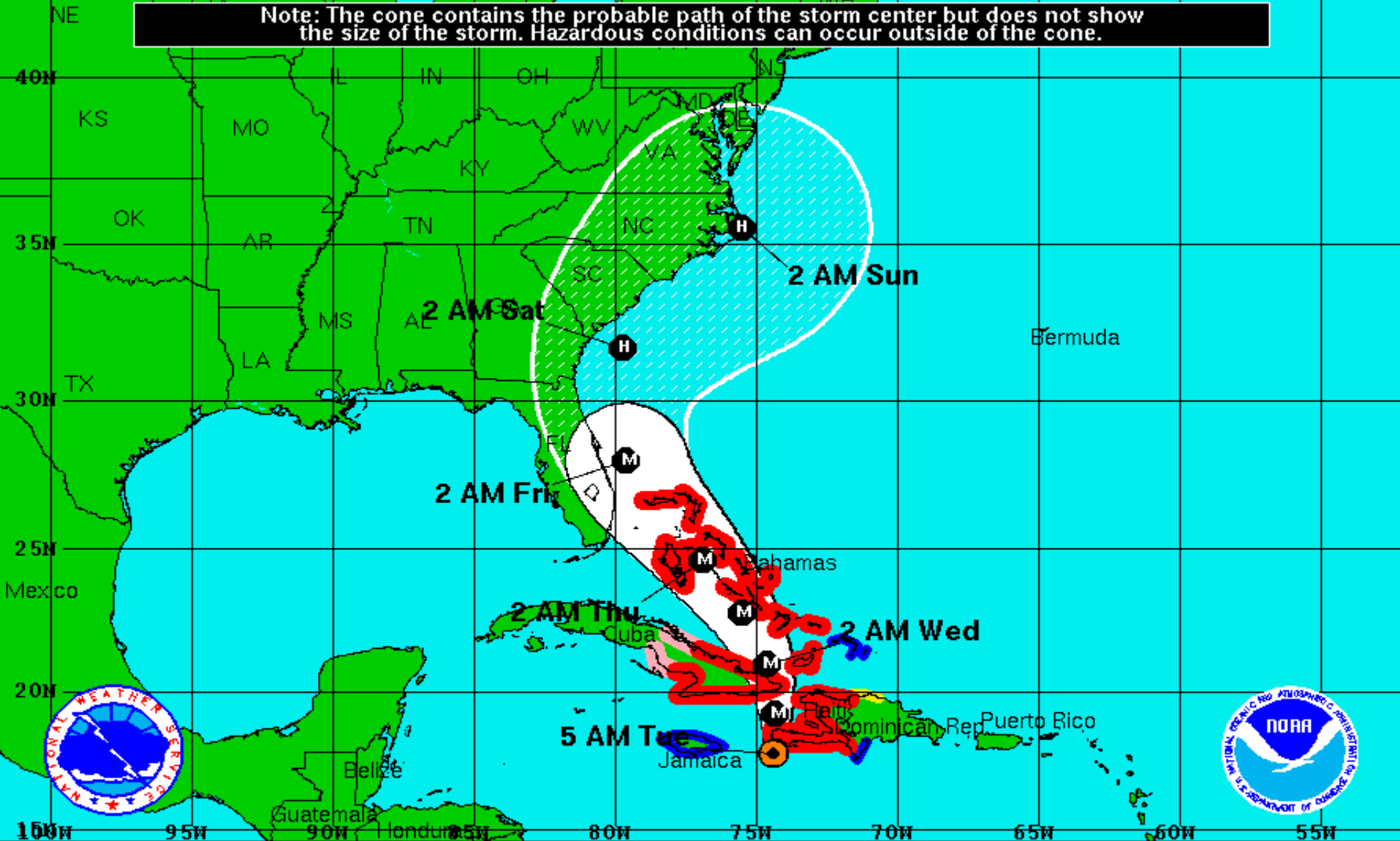
Levi Cowan - tropical




Forecast tracks remain in disagreement beyond 48 hours and have shifted west from previous runs. Many continue to differ on the future strength of the central Atlantic high pressure ridge. A stronger high pressure system would steer Matthew closer to Florida while a weaker high would keep Matthew well to the east of Florida.






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  
 5 AM EDT Advisory 25  
 NWS National Hurricane Center

**Current Information:**   
 Center Location 17.8 N 74.4 W  
 Max Sustained Wind 145 mph  
 Movement N at 9 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

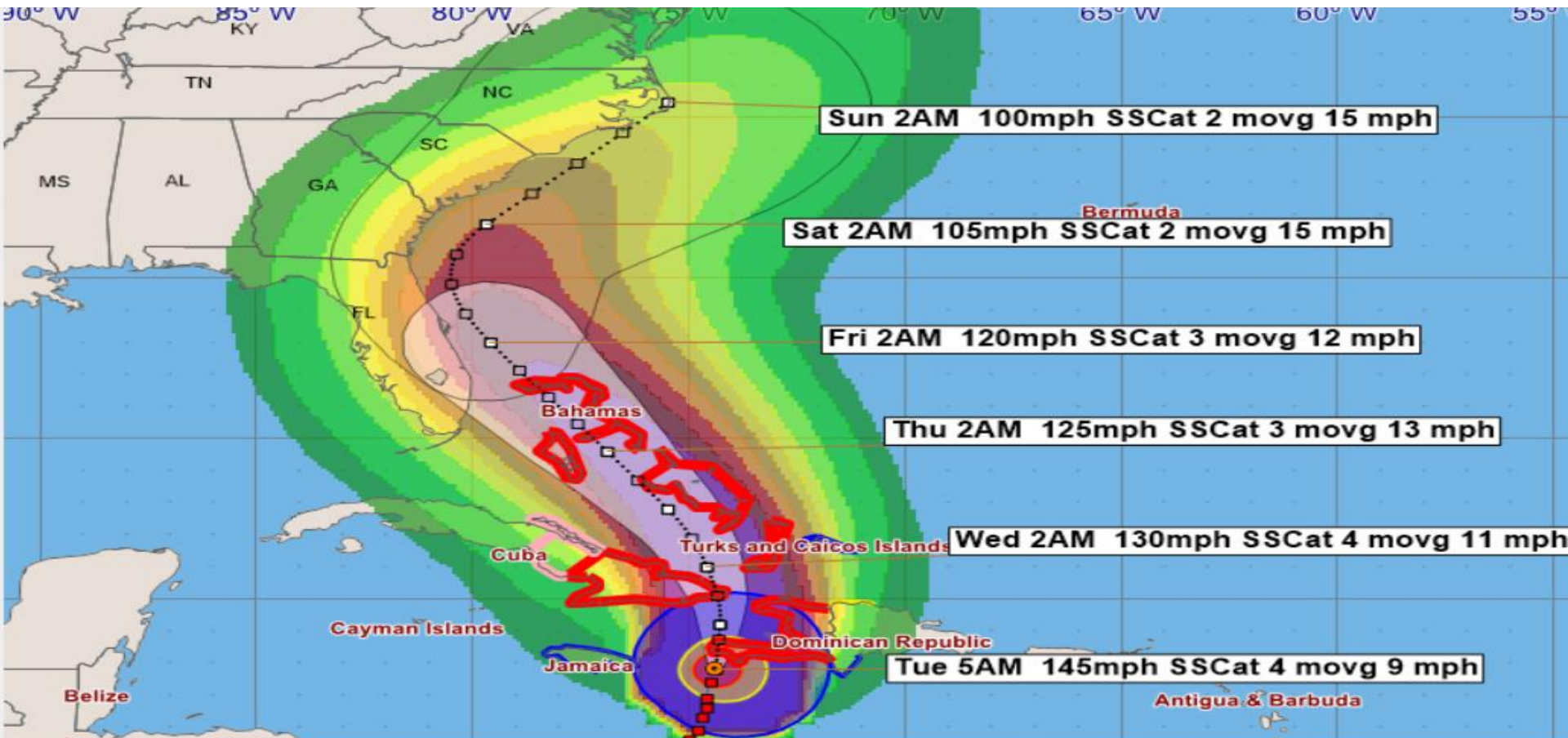
**Watches:**  
 Hurricane  Trop.Storm

**Warnings:**  
 Hurricane  Trop.Storm



## Forecast Error Cone + TS Wind Probabilities

Note: The forecast cone of error only shows where the center of the storm could be within the next 5 days. It does not account for the size of the storm or any potential impacts. Impacts can and often do occur outside of the cone



### Hurricane Matthew - Tuesday, October 4, 2016 5 AM EDT Advisory #25

Center Location: 17.8 N 74.4 W Maximum Sustained Winds: 145 mph (Cat 4) Movement: 9 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  $\geq 34$ kt/39mph strong tropical storm  $\geq 50$ kt/58mph hurricane  $\geq 64$ kt/74mph

Probability of tropical storm force surface winds (1-minute average  $\geq 34$ kt/39mph) from all tropical cyclones for the 120 hours (5 days) from 2AM EDT Tue 10/4/2016 to 2AM EDT Sun 10/9/2016

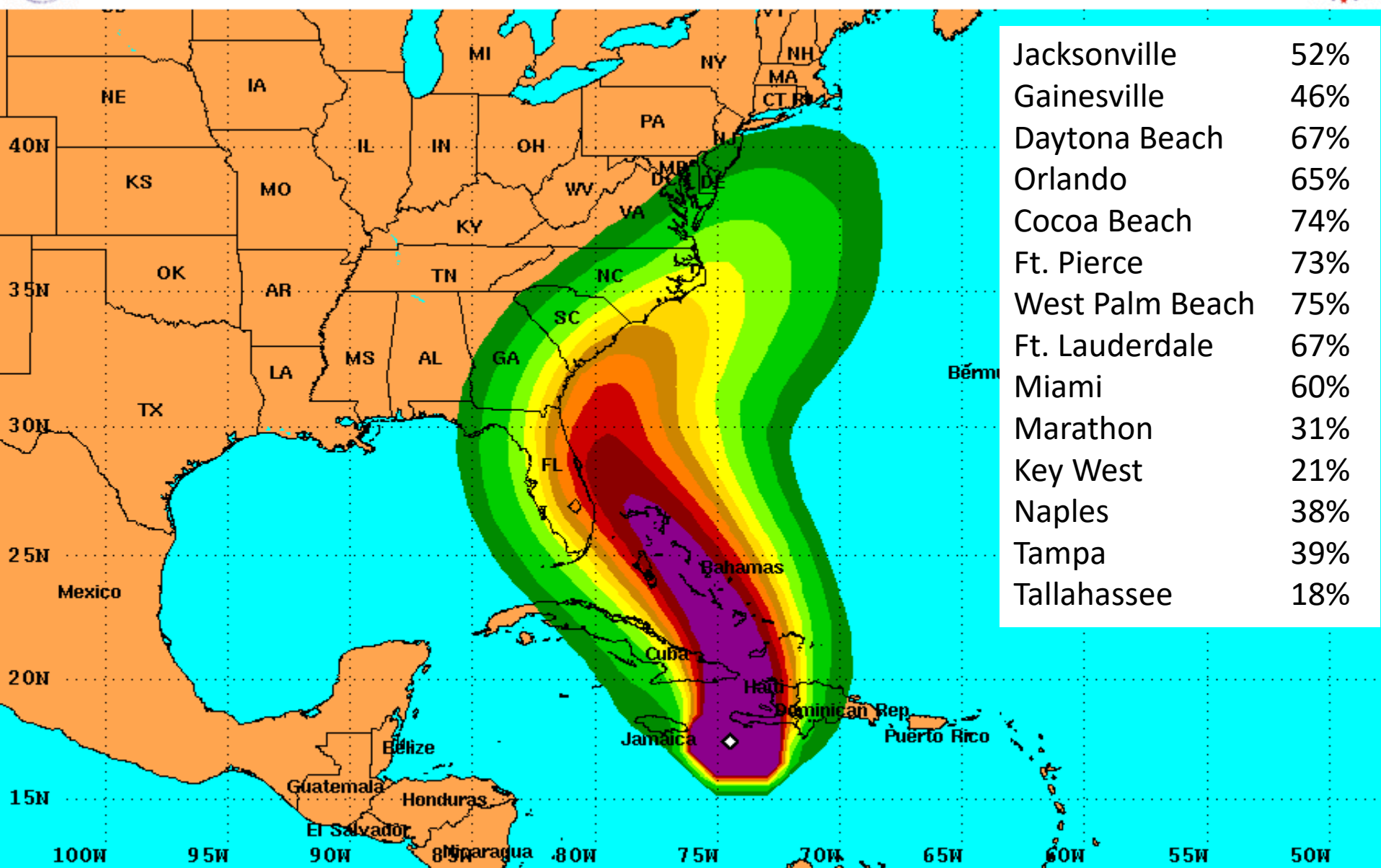
5% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%





# Tropical Storm Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Tue Oct 4 to 2 AM 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 2 AM EDT Tue Oct 4 2016 (Forecast/Advisory #25)

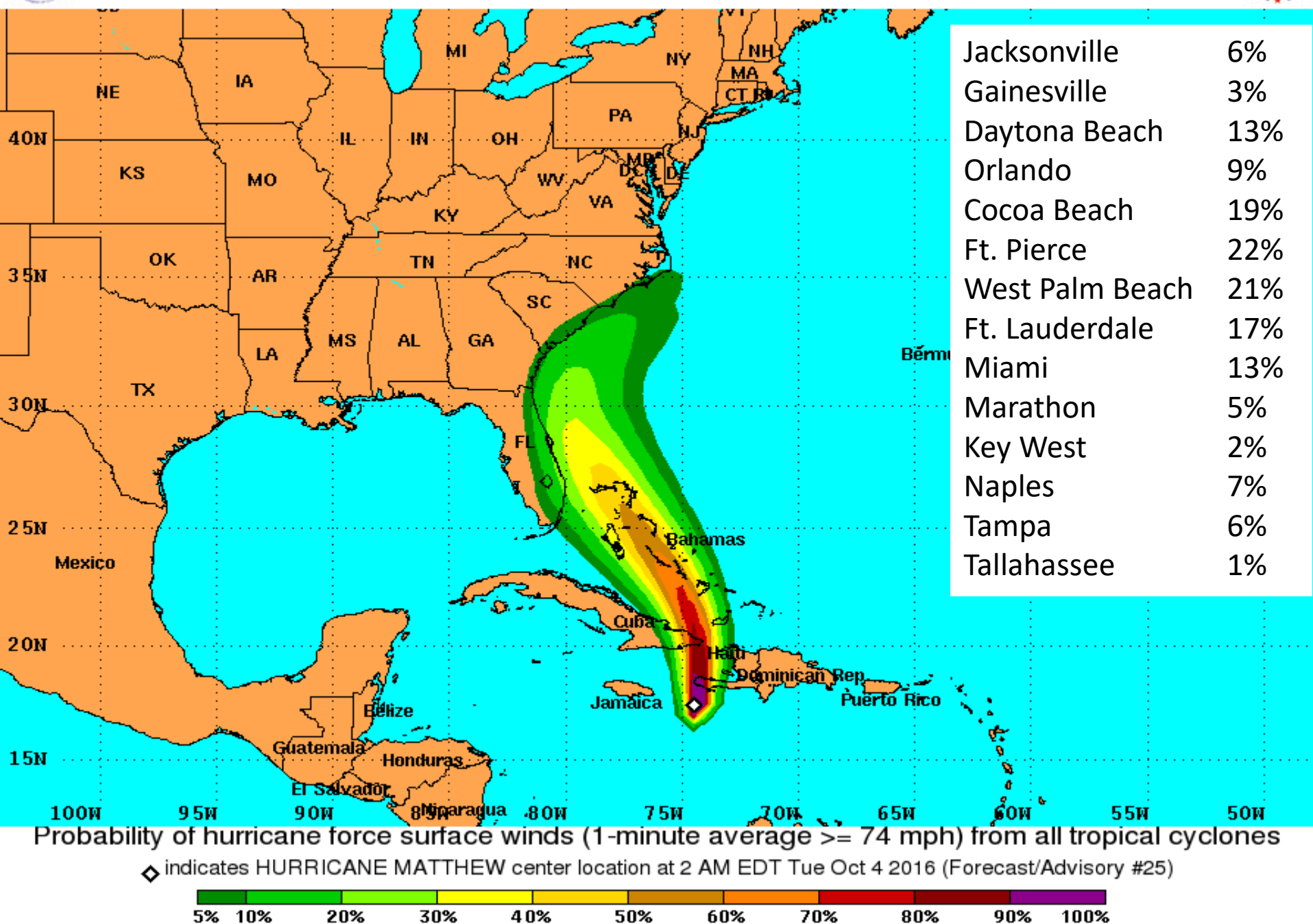






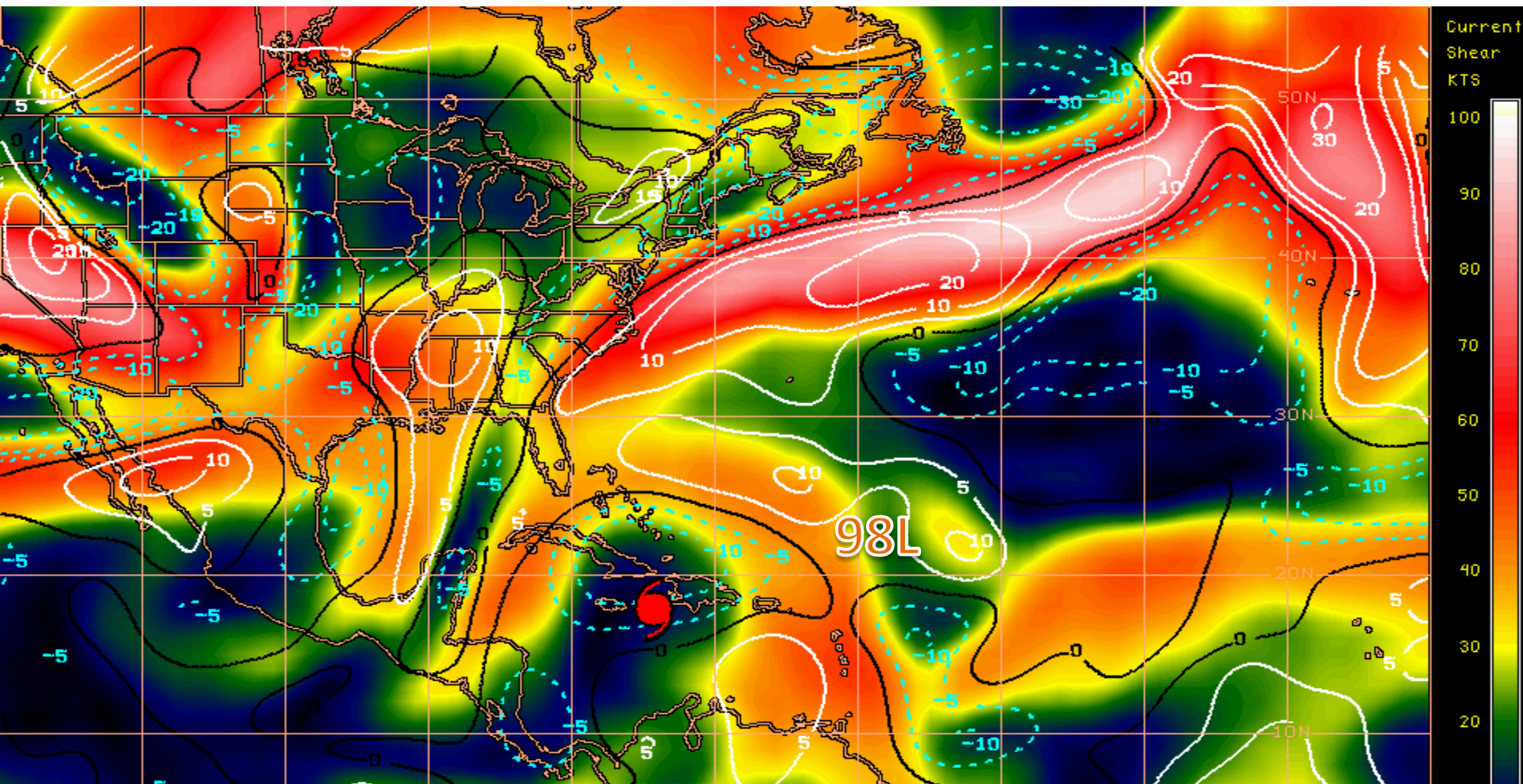
# Hurricane Force Wind Speed Probabilities

For the 120 hours (5 days) from 2 AM EDT Tue Oct 4 to 2 AM EDT Sun Oct 9





# Current Wind Shear (shaded) and Shear Tendency (lines)



Shear to the north of Matthew has decreased since yesterday and will not have much of an impact on weakening the storm until a stronger band of shear moves into the region later this weekend. Shear to the west of 98L could inhibit significant development.

Shear Tendency (KTS) Over Past 24 Hours: Increasing ——— Decreasing - - - - -

GOES-EAST 24 HOUR WIND SHEAR TENDENCY PRODUCT

0900 UTC

04OCT16

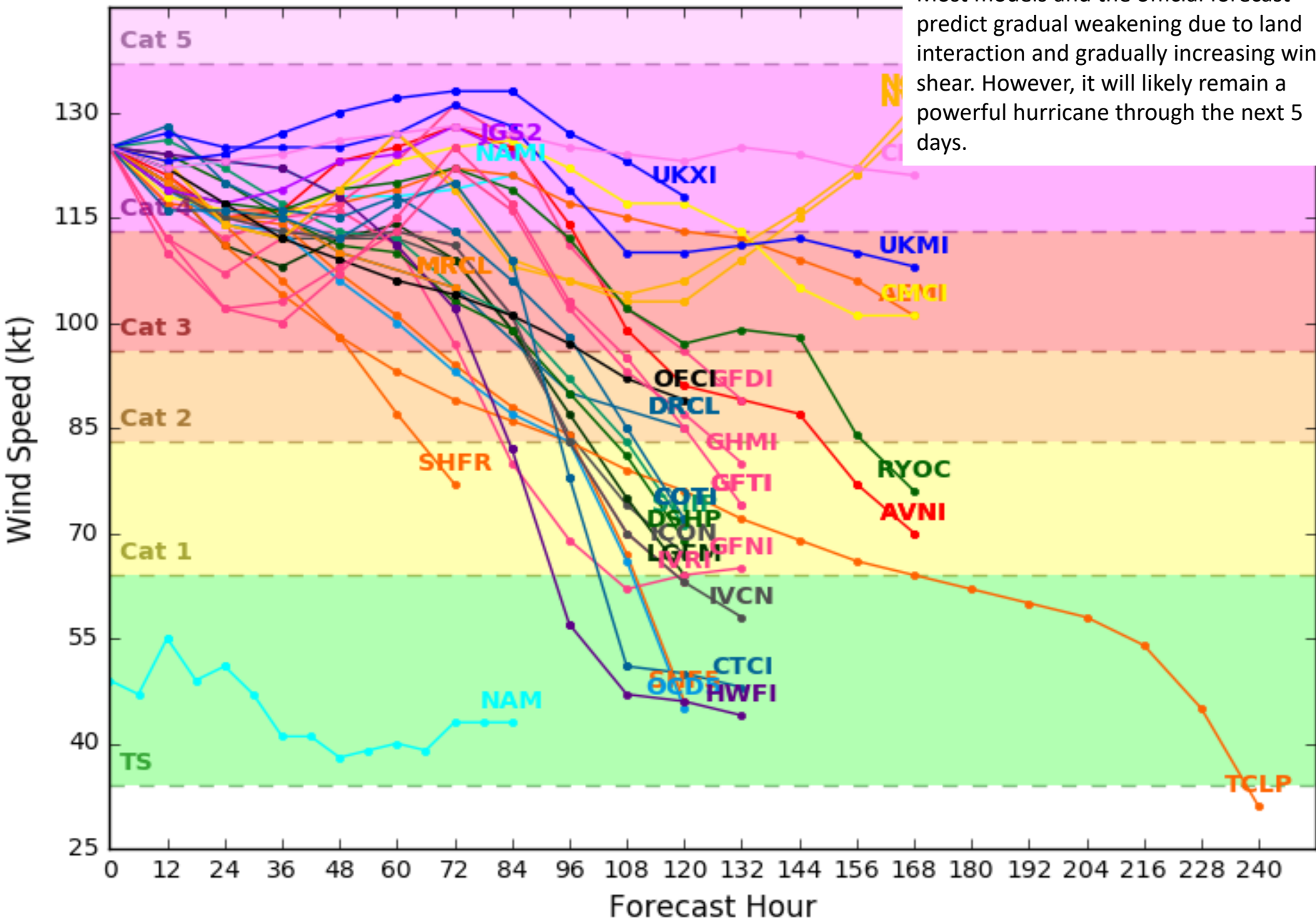
UW-CIMSS

McIDAS



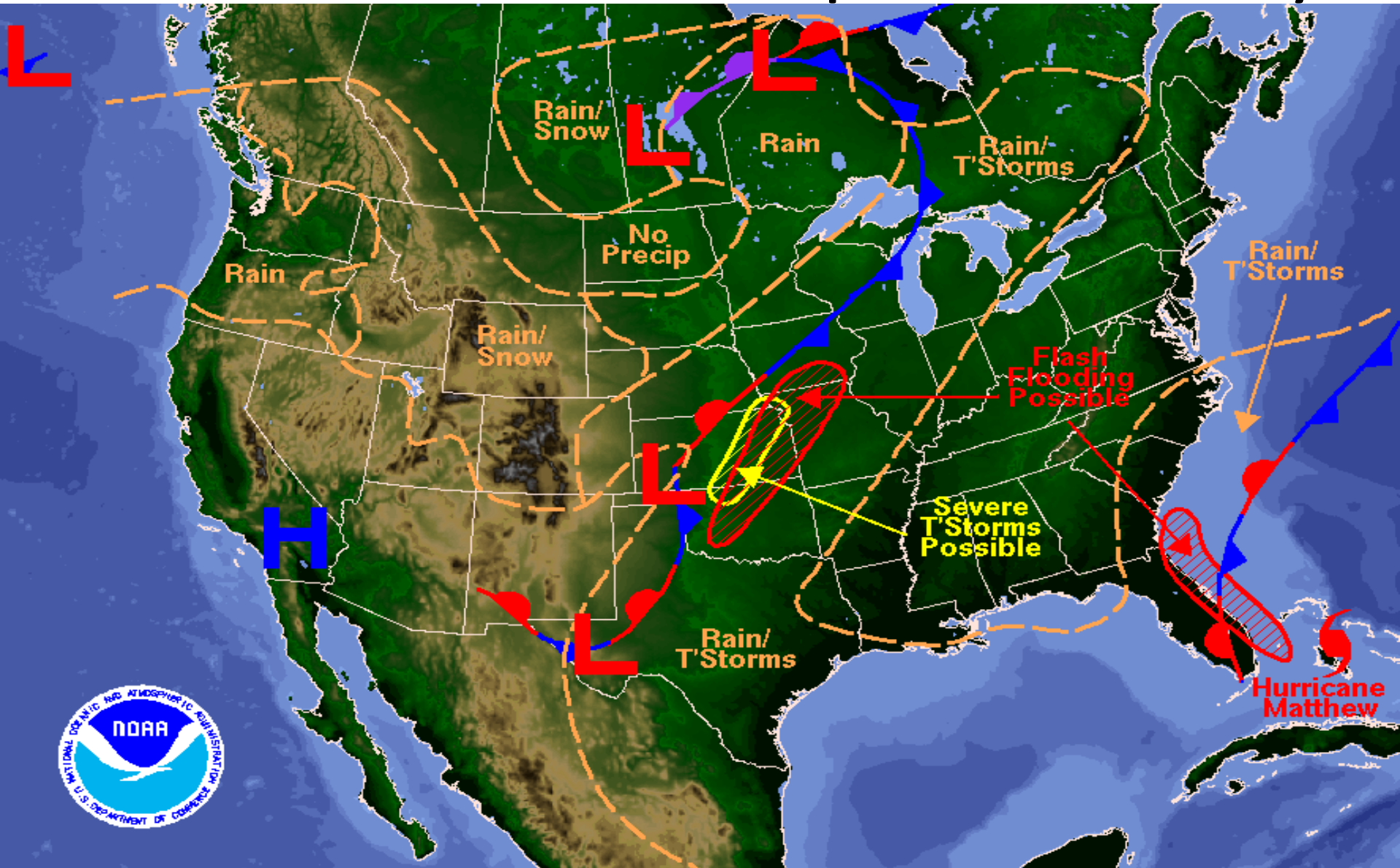
**Initialized at 06z Oct 04 2016**

shear. However, it will likely remain a powerful hurricane through the next 5 days.





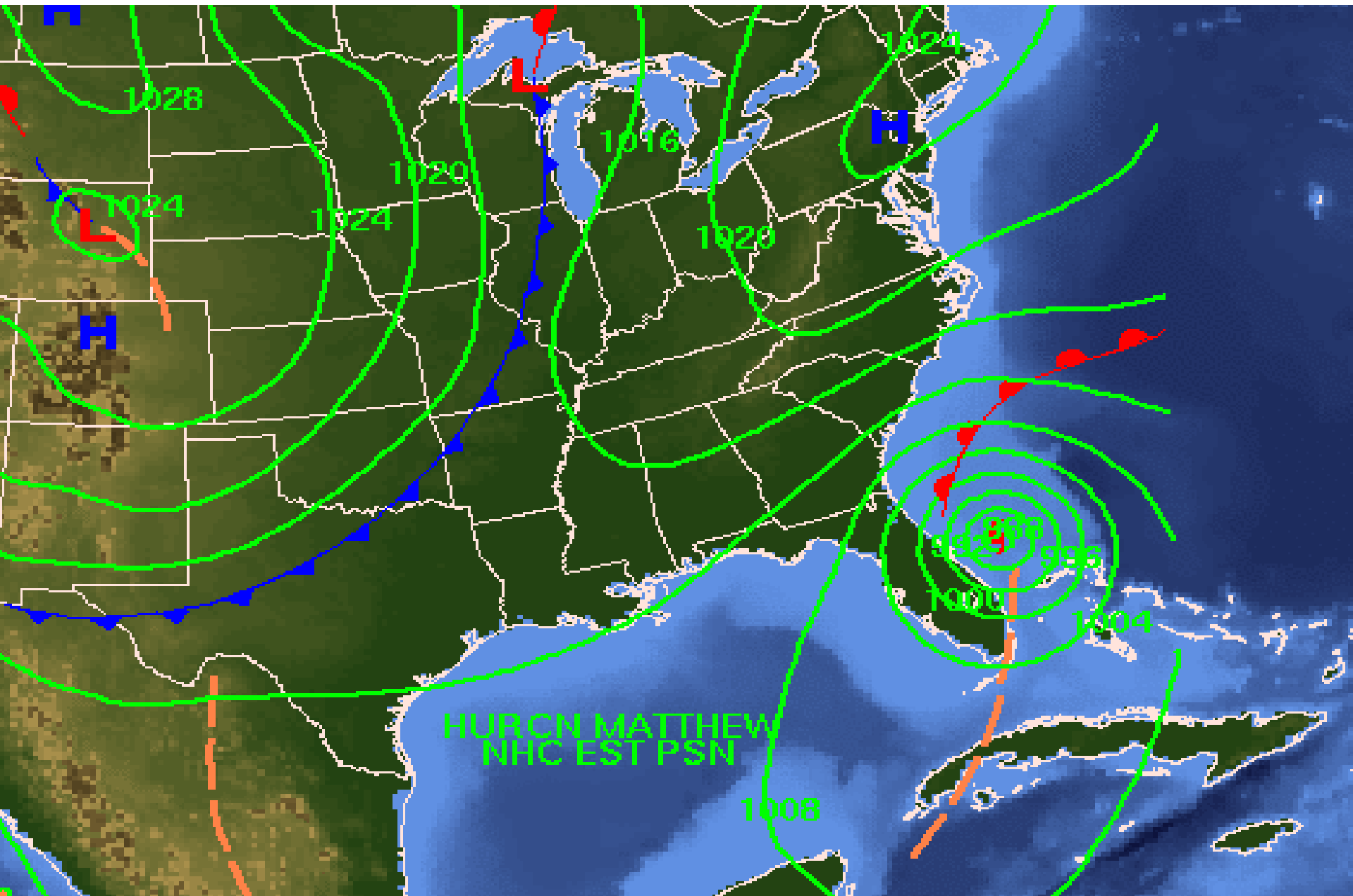
# Forecast Weather Map for Thursday



Weather Forecast for Thu, Oct 06, 2016, issued 4:47 AM EDT Tue, Oct 04, 2016  
DOC/NOAA/NWS/NCEP/Weather Prediction Center  
Prepared by McCreynolds based on WPC, SPC and NHC forecasts

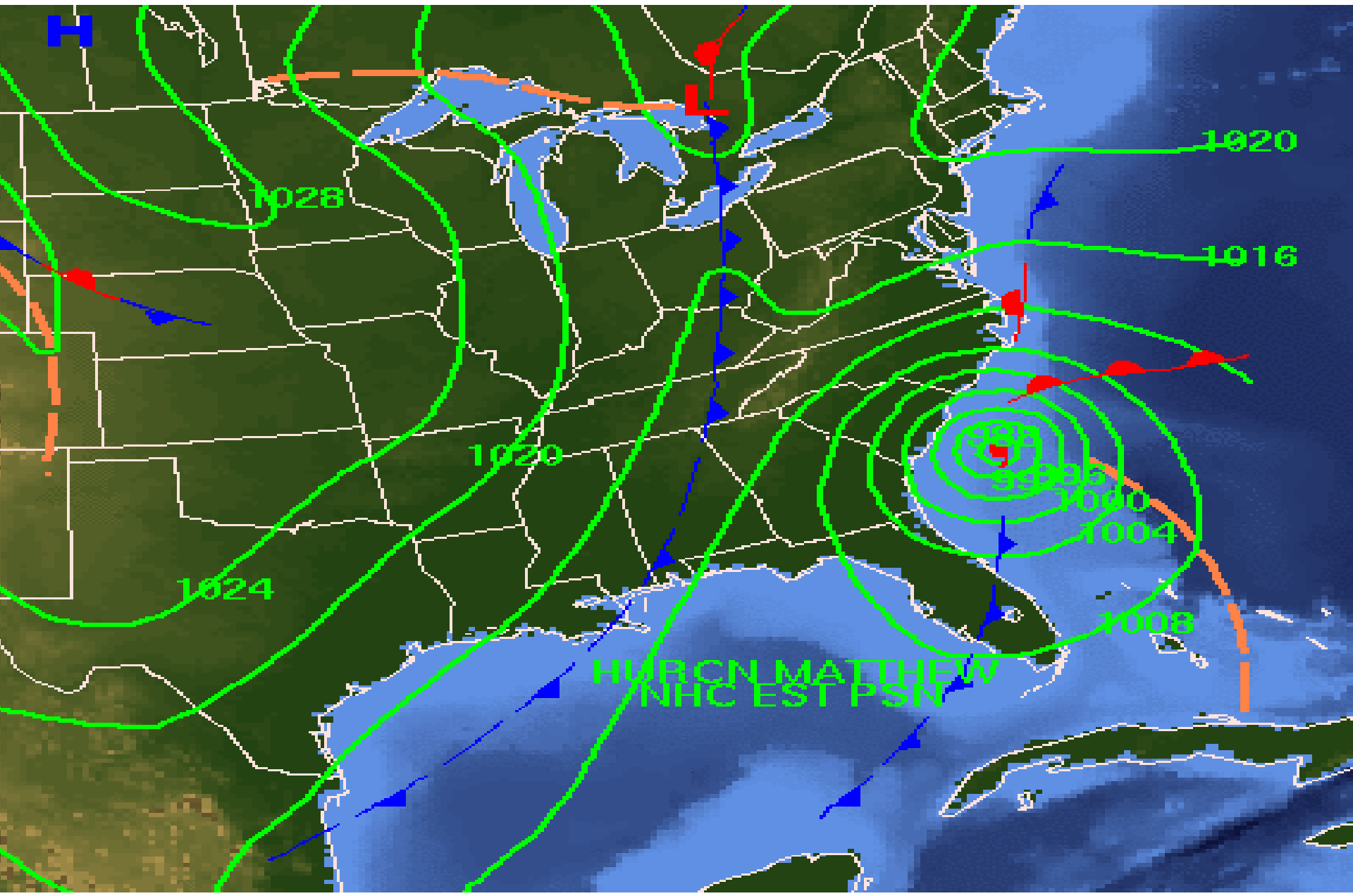


# Forecast Weather Map for Friday



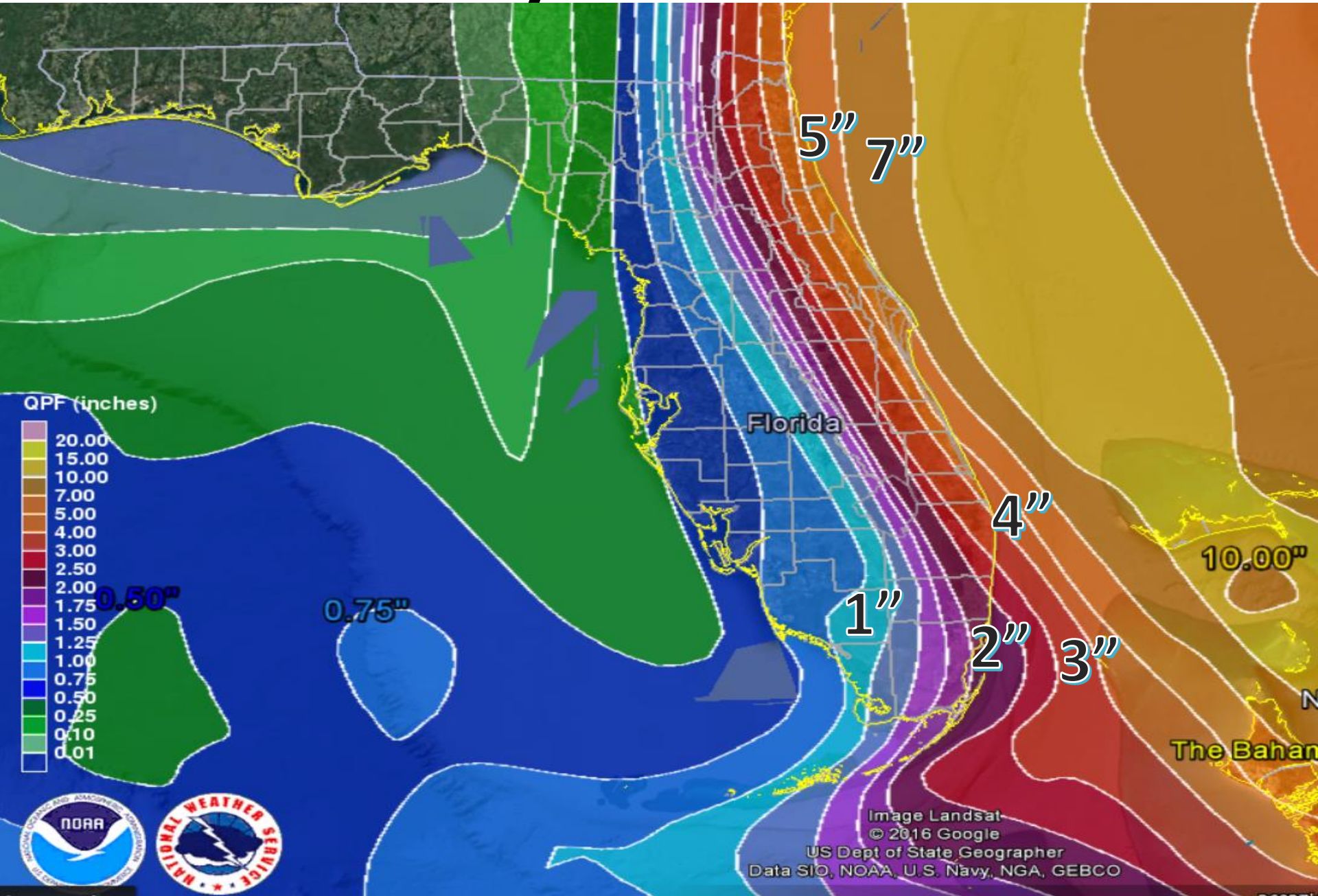


# Forecast Weather Map for Saturday



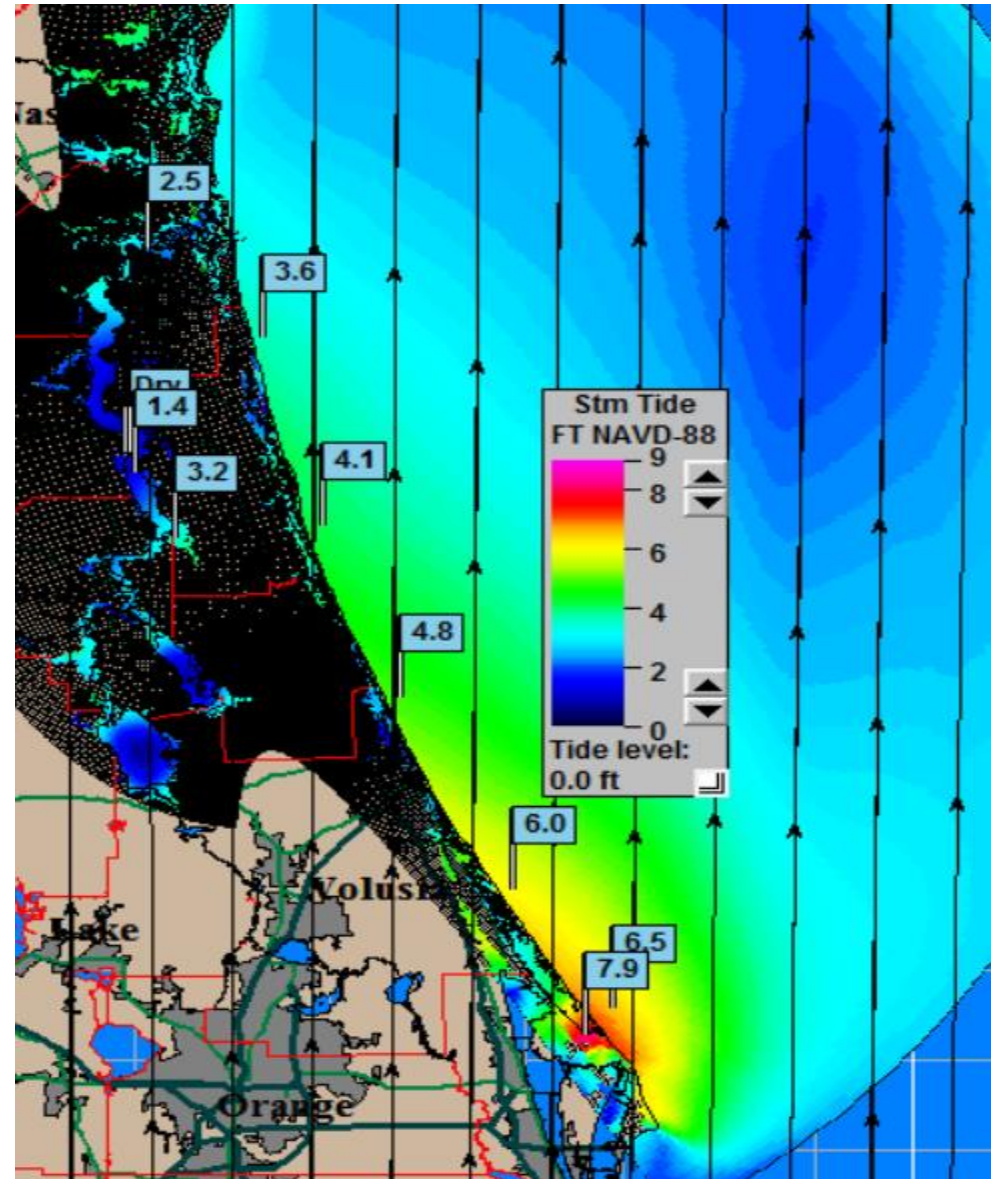
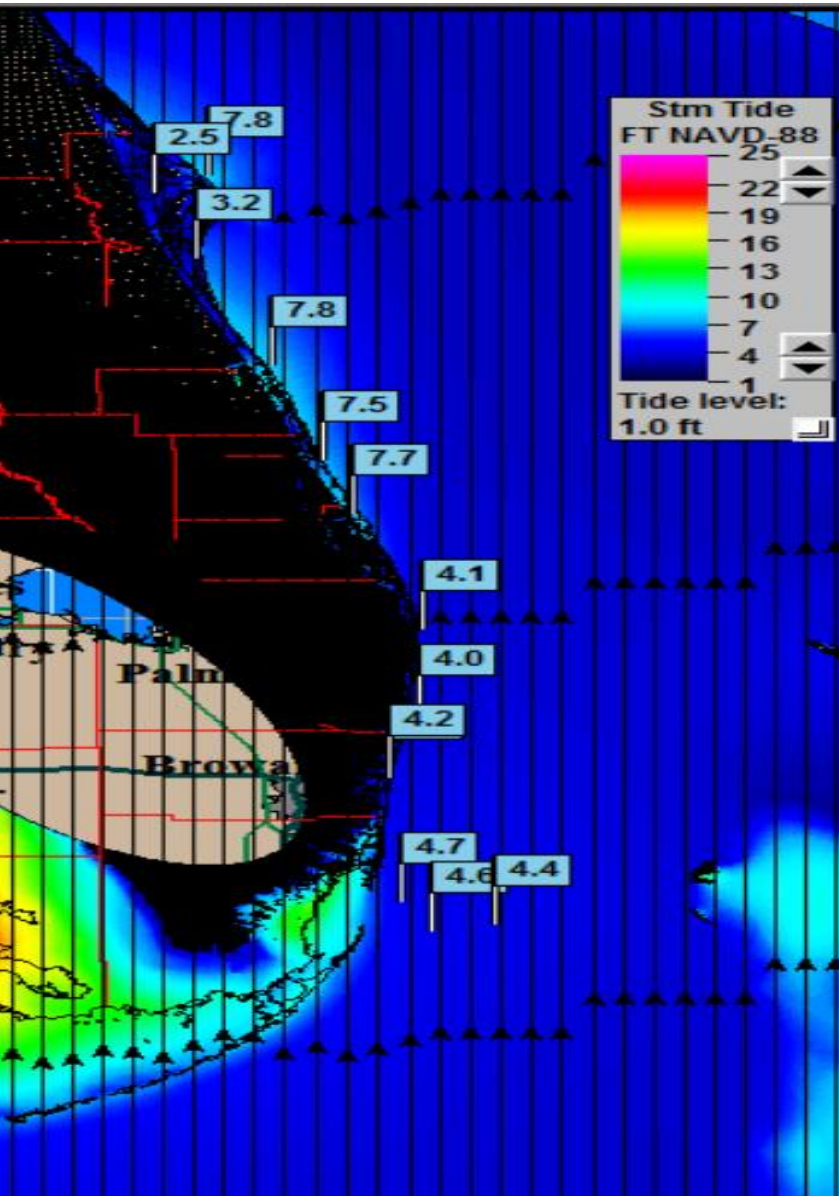


# Next 7 Day Forecast Rainfall



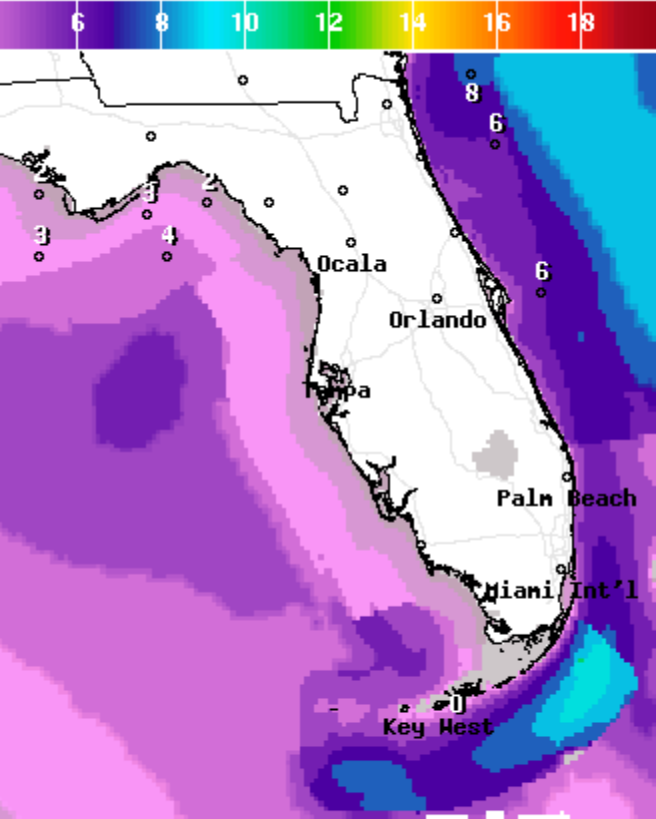


Maximum Envelope of water (MEOW) based on any Cat 4 moving north at 10mph along any line

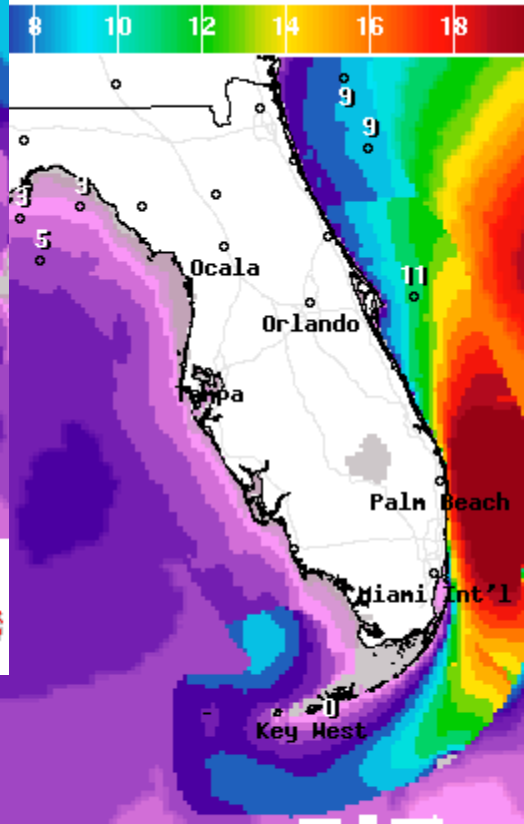




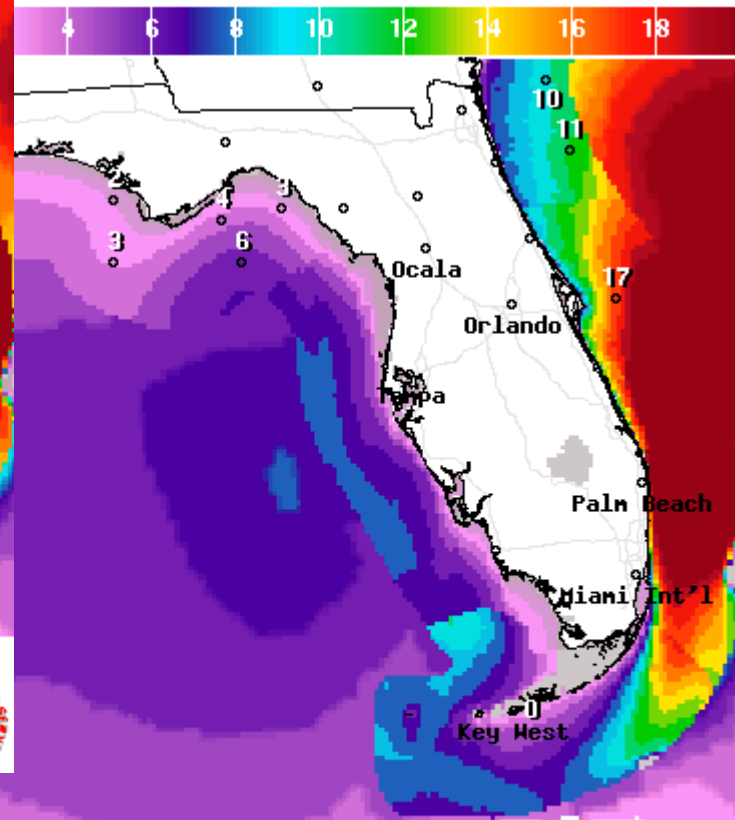
# Forecast Wave Heights



Wave Height(ft) Ending Wed Oct 05 2016 8PM EDT  
(Thu Oct 06 2016 00Z)  
National Digital Forecast Database  
10z issuance Graphic created-Oct 04 6:37AM EDT



Wave Height(ft) Ending Thu Oct 06 2016 2PM EDT  
(Thu Oct 06 2016 18Z)  
National Digital Forecast Database  
10z issuance Graphic created-Oct 04 6:38AM EDT



Wave Height(ft) Ending Thu Oct 06 2016 8PM EDT  
(Fri Oct 07 2016 00Z)  
National Digital Forecast Database  
10z issuance Graphic created-Oct 04 6:38AM EDT





# Two-Day Graphical Tropical Weather Outlook

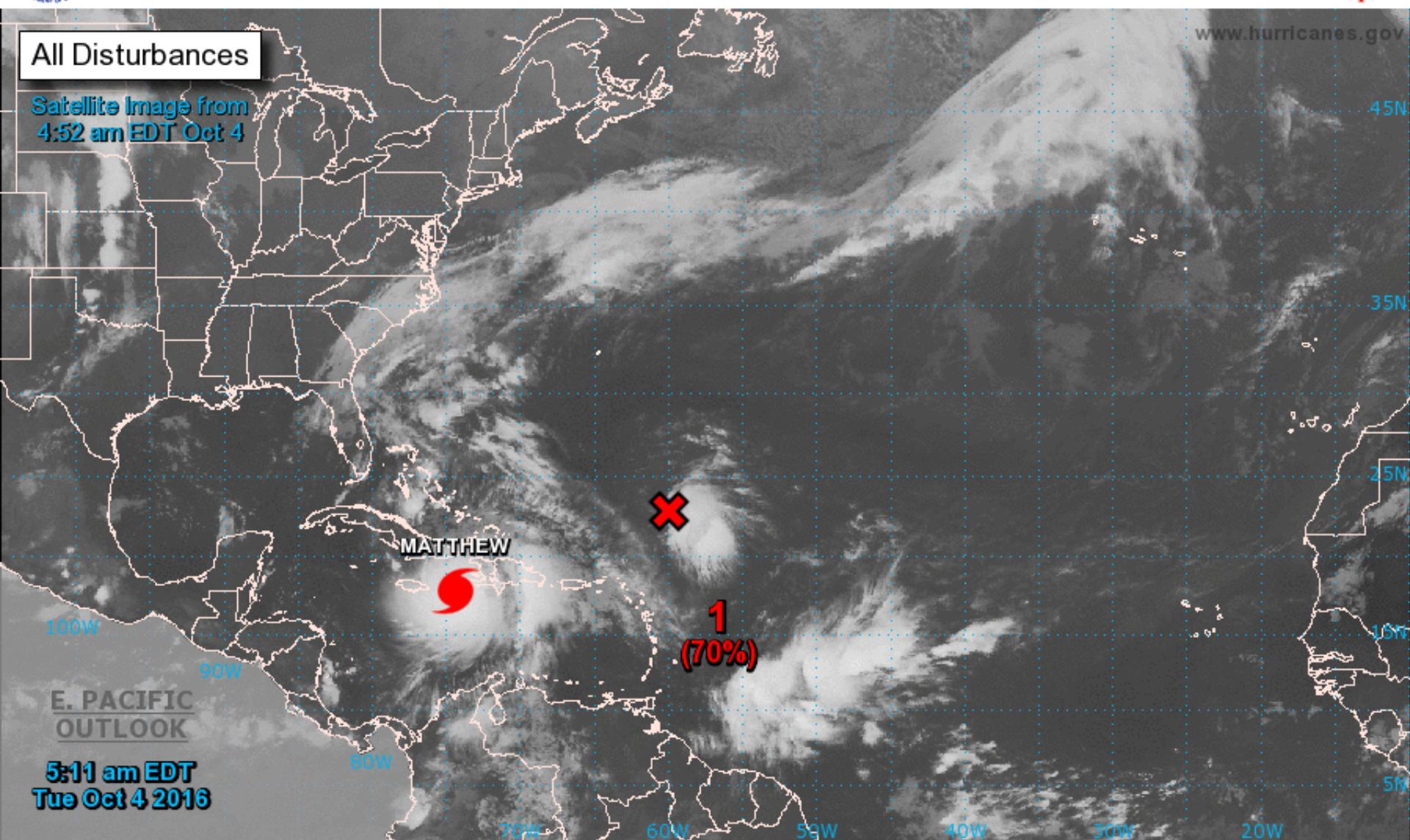
National Hurricane Center Miami, Florida



All Disturbances

Satellite Image from  
4:52 am EDT Oct 4

www.hurricanes.gov



5:11 am EDT  
Tue Oct 4 2016

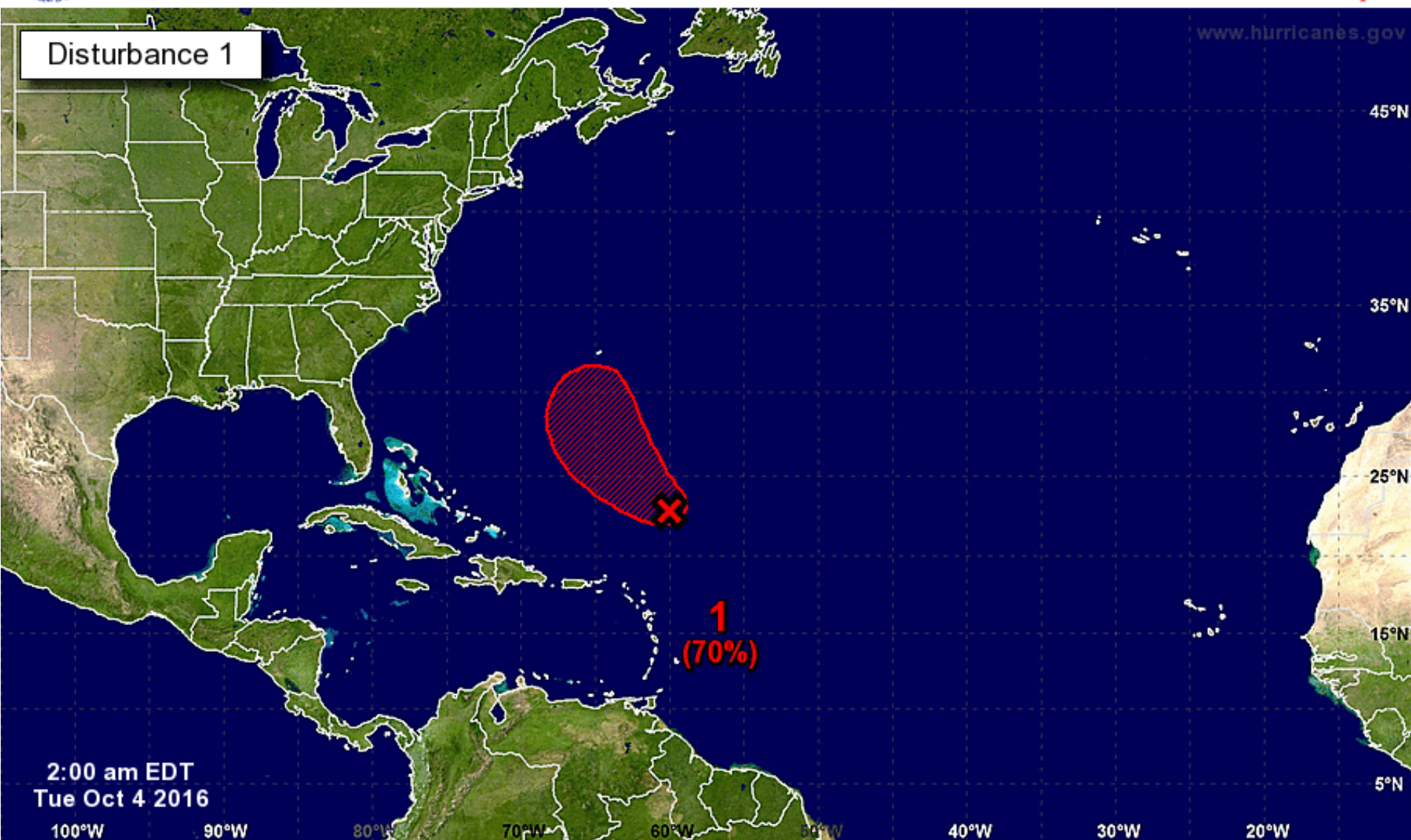
Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%  
Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane  
 Post-Tropical Cyclone Remnants





# Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Tropical Cyclone Formation Potential for the Five-Day Period Ending at 2:00 am 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.



**Invest 98L**

2 AM Tue Oct 4 2016

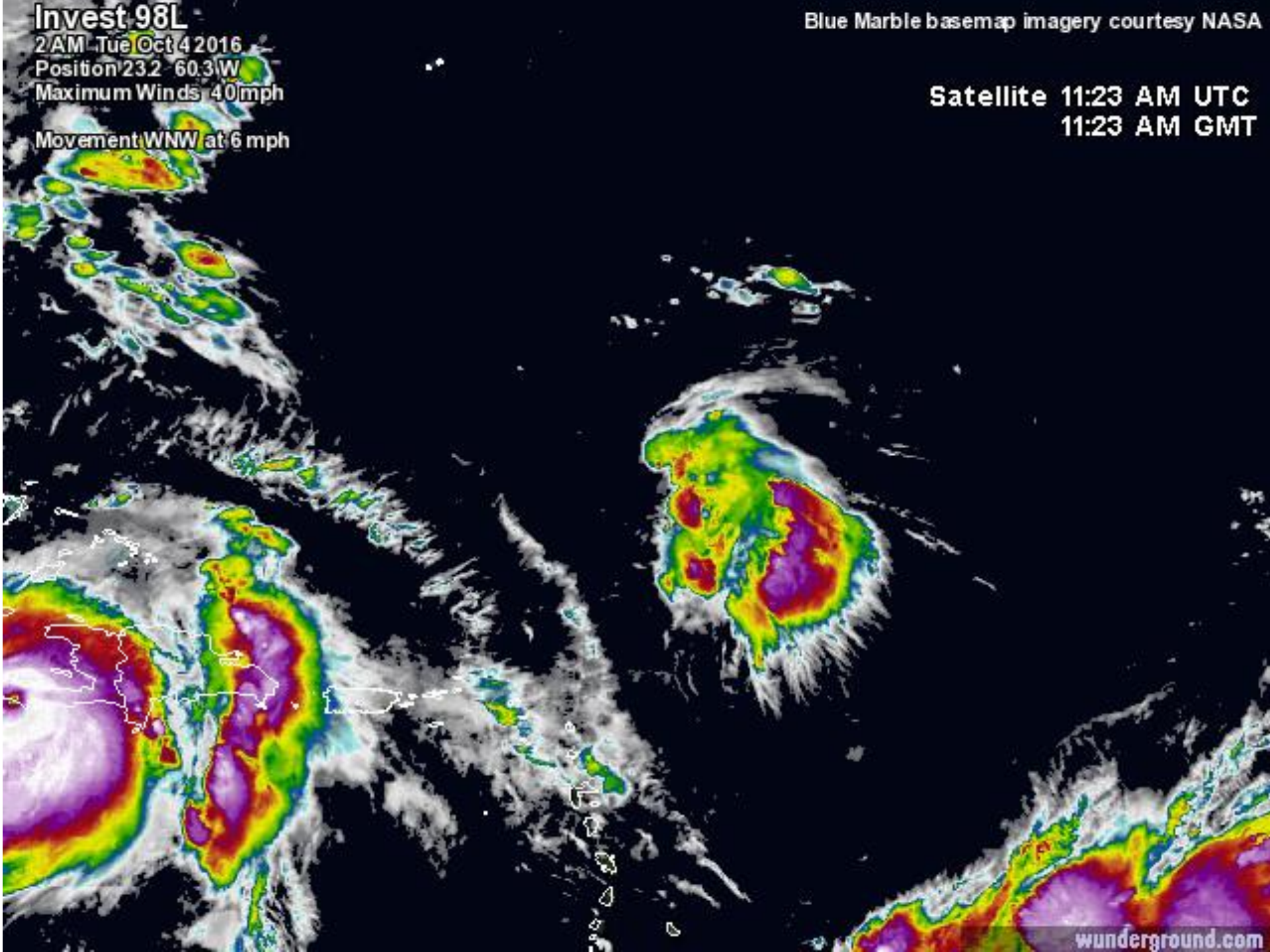
Position 23.2 60.3 W

Maximum Winds 40 mph

Movement WNW at 6 mph

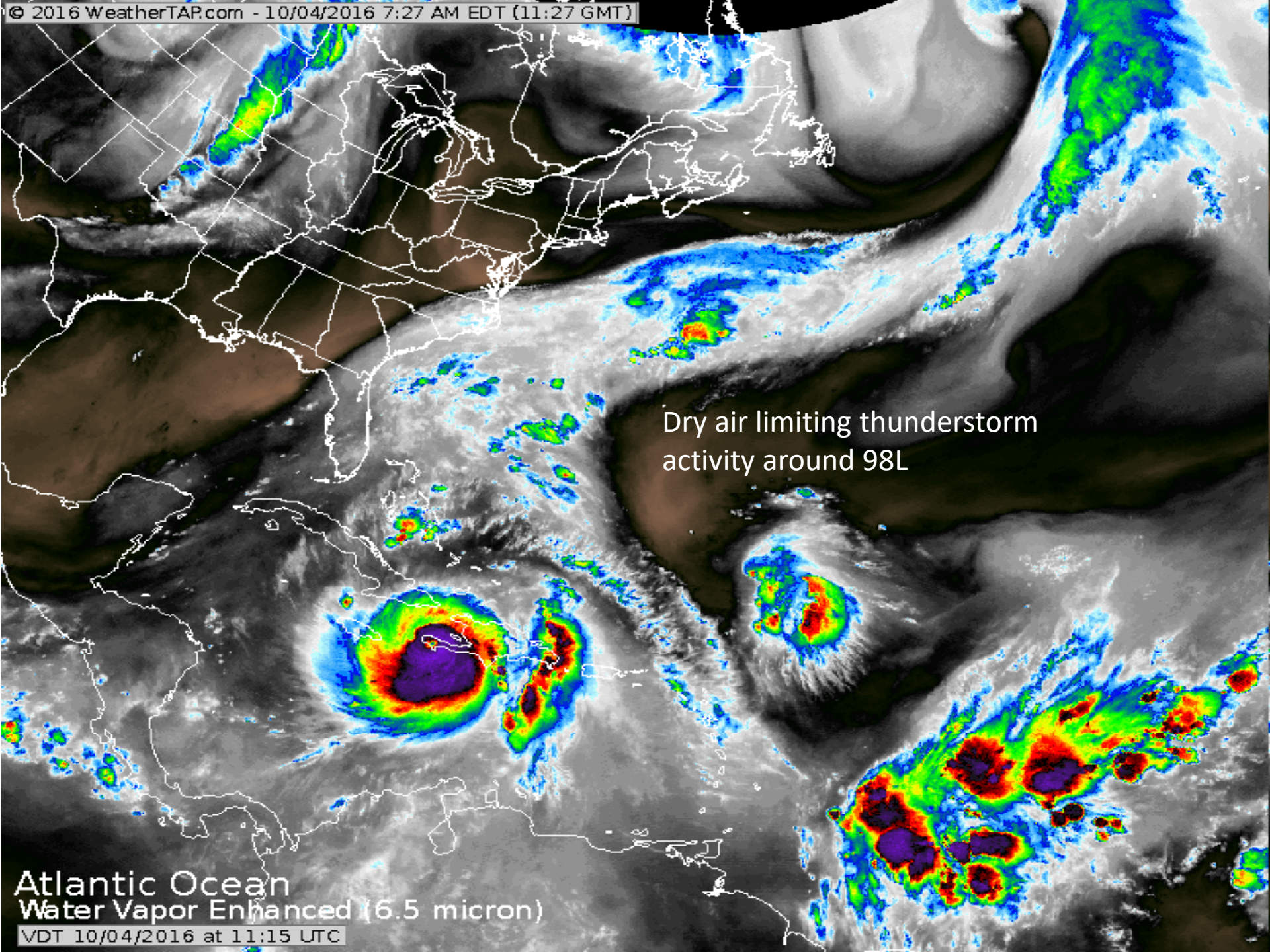
Blue Marble basemap imagery courtesy NASA

Satellite 11:23 AM UTC  
11:23 AM GMT



wunderground.com



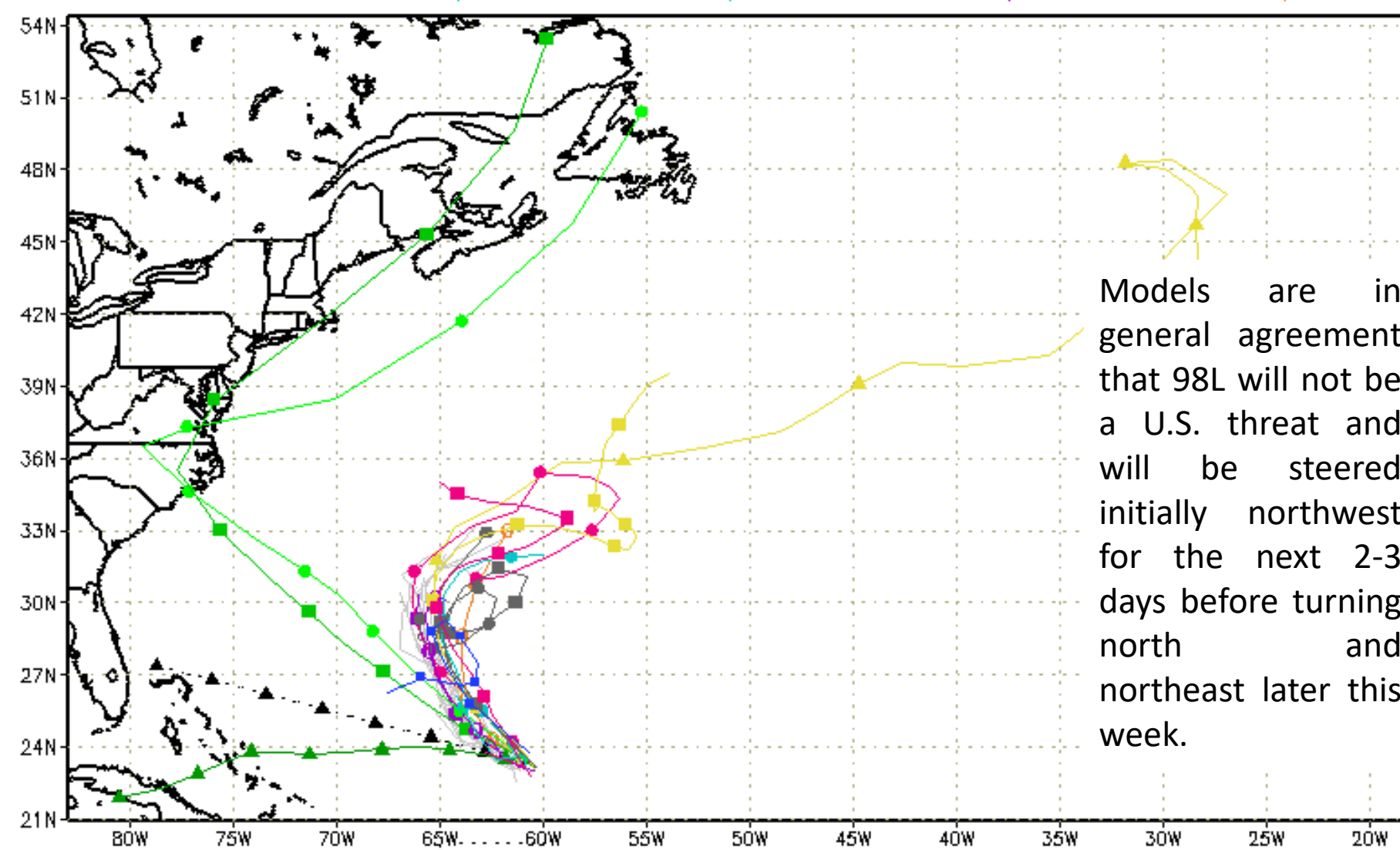


Dry air limiting thunderstorm  
activity around 98L

Atlantic Ocean  
Water Vapor Enhanced (6.5 micron)  
VDT 10/04/2016 at 11:15 UTC



--▲-- XTRP 04/0600Z    ▲ BAMD 04/0600Z    ▲ GFDL 04/0600Z    ▲ AVNO 04/0000Z    ▲ CMC 04/0000Z  
 --■-- TVCN 04/0600Z    ■ BMM 04/0600Z    ■ GFDN 04/0000Z    ■ AEMN 04/0000Z    ■ CEMN 04/0000Z  
 --●-- TVCX 04/0600Z    ● BAMS 04/0600Z    ● HWRF 04/0000Z    --○-- APxx 04/0000Z    ■ UKM 04/0000Z  
 --●-- NHC Not Avail    ● NVGM 04/0000Z    ● COTC 04/0000Z    ● NAM 04/0000Z    ● CLP5 04/0600Z



Models are in general agreement that 98L will not be a U.S. threat and will be steered initially northwest for the next 2-3 days before turning north and northeast later this week.

storm\_98  
 sfwmd.gov  
 weather@sfwmd.gov  
 04-Oct 07:21EDT

NHC Advisories and County Emergency Management Statements supersede this product.  
 This graphic should complement, not replace, NHC discussions.  
 If anything on this graphic causes confusion, ignore the entire product.  
 For full info, see <http://my.sfwmd.gov/sfwmd/common/images/weather/plots.html>





## Summary:

- At 5am EDT Tuesday, Hurricane Matthew was located 165 miles south of the eastern tip of Cuba, or approximately 665 miles southeast of Miami, Florida.
- Maximum sustained winds have increased to near 145 mph, a Category 4 on the Saffir-Simpson Hurricane Wind Scale. Some fluctuations in intensity are possible during the next couple of days due to land interaction, but Matthew is expected to remain a powerful hurricane through Thursday and could gain strength as it moves through the Bahamas.
- Matthew is moving toward the north near 9 mph, and this general motion is expected to continue today. A turn toward the north-northwest is expected by Wednesday, followed by a northwest turn Wednesday night. On the forecast track, the center of Matthew will move near eastern Cuba later today, and move near or over portions of the southeastern and central Bahamas tonight and Wednesday, and approach the northwestern Bahamas Wednesday night.
- However, there is low confidence in the track forecast beyond the next 48 hours and models have shifted west since yesterday.
- Many continue to differ on the future strength of the central Atlantic high pressure ridge. A stronger high pressure system would steer Matthew closer to Florida while a weaker high would keep Matthew well to the east of Florida. Invest 98L will have some influence on this scenario.
- Matthew remains a large storm, with tropical storm force winds extending out to 185 miles from the circulation in the northwest quadrant (140 miles on the northwest side) and hurricane force winds extending 40 miles from the center.
- Elsewhere, Invest 98L is a small low pressure system located about 400 miles northeast of the northern Leeward Islands and continues to produce a small area of showers and thunderstorms. Some development of this system is possible over the next few days before upper-level conditions become unfavorable.
- The system now has a 70% (high) chance of development over the next 48 hours and could become a depression today.
- The next name on the 2016 Atlantic storm name list is Nicole.



## Florida Outlook:

- Invest 98L does not pose a threat to Florida.
- Parts of the eastern Florida Peninsula are within the 3-day average error cone, with much of Northeast and Central Florida in the 5 day error cone.
- Chances for tropical storm force winds are gradually increasing for Florida. Areas along the east coast of Florida have approximately a 3 in 4 chance of seeing tropical storm force winds sometime within the next five days.
- No hurricane watches or warnings are currently in effect for Florida, but will likely be issued today.
- Regardless of track, Matthew is a very large storm and it has the potential to generate gusty winds and rough seas along the East Coast of Florida, along with minor coastal flooding, beach erosion, and dangerous rip currents.
- Any additional impacts are dependent on the future track and size of the storm, which remains uncertain at this time.
- The current forecast is for 3-6" of rain near the I-95 corridor with isolated totals of 10" possible.

Another briefing packet will be issued Tuesday evening. 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:

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State Meteorological Support Unit  
Florida Division of Emergency  
Management

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