



# **TROPICAL UPDATE**

**5 PM EDT**

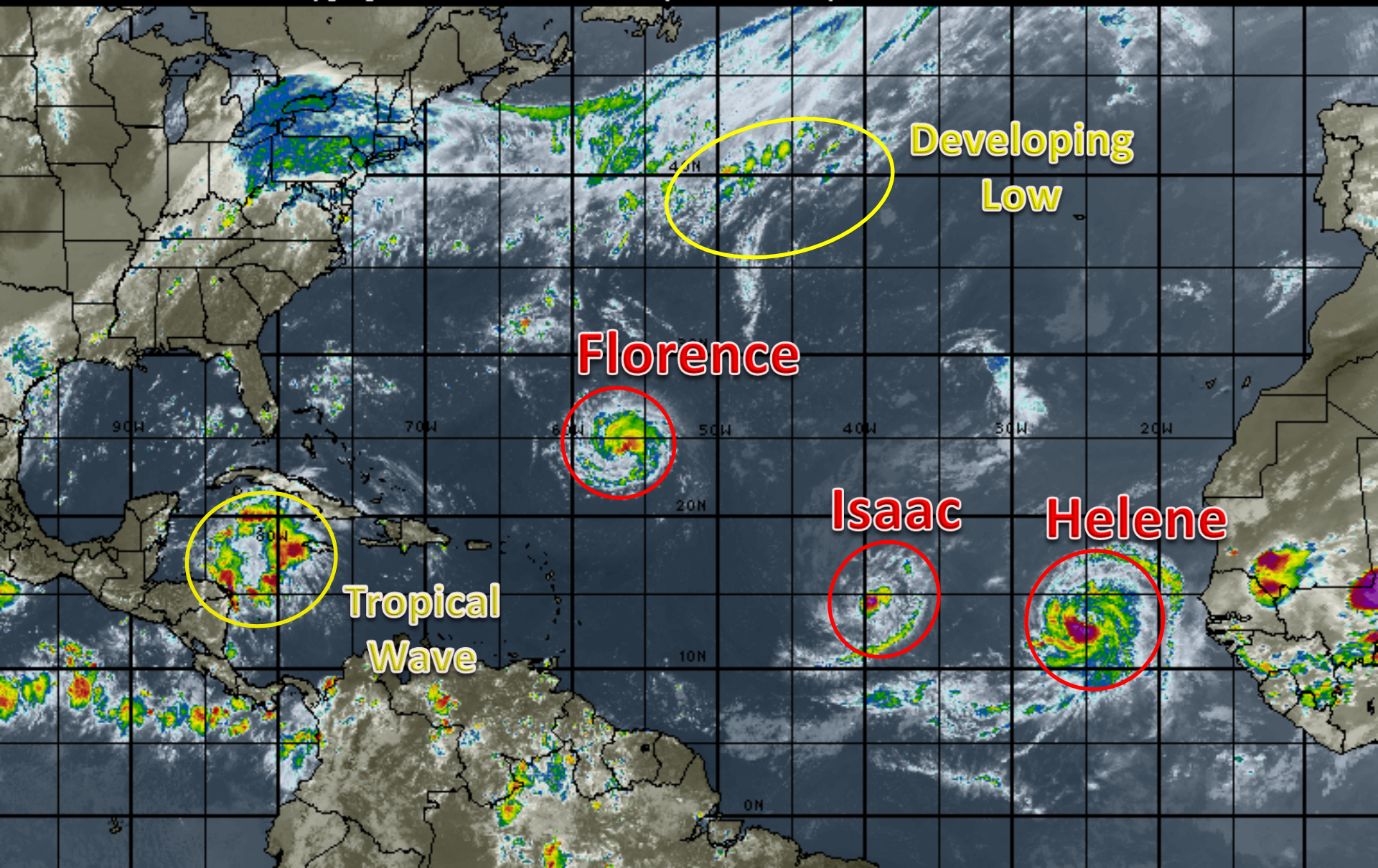
**Sunday, September 9, 2018**

**Hurricane Florence, Hurricane Helene, Tropical Storm Isaac, Gulf Tropical Wave (20%), North Atlantic Low (30%)**

**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

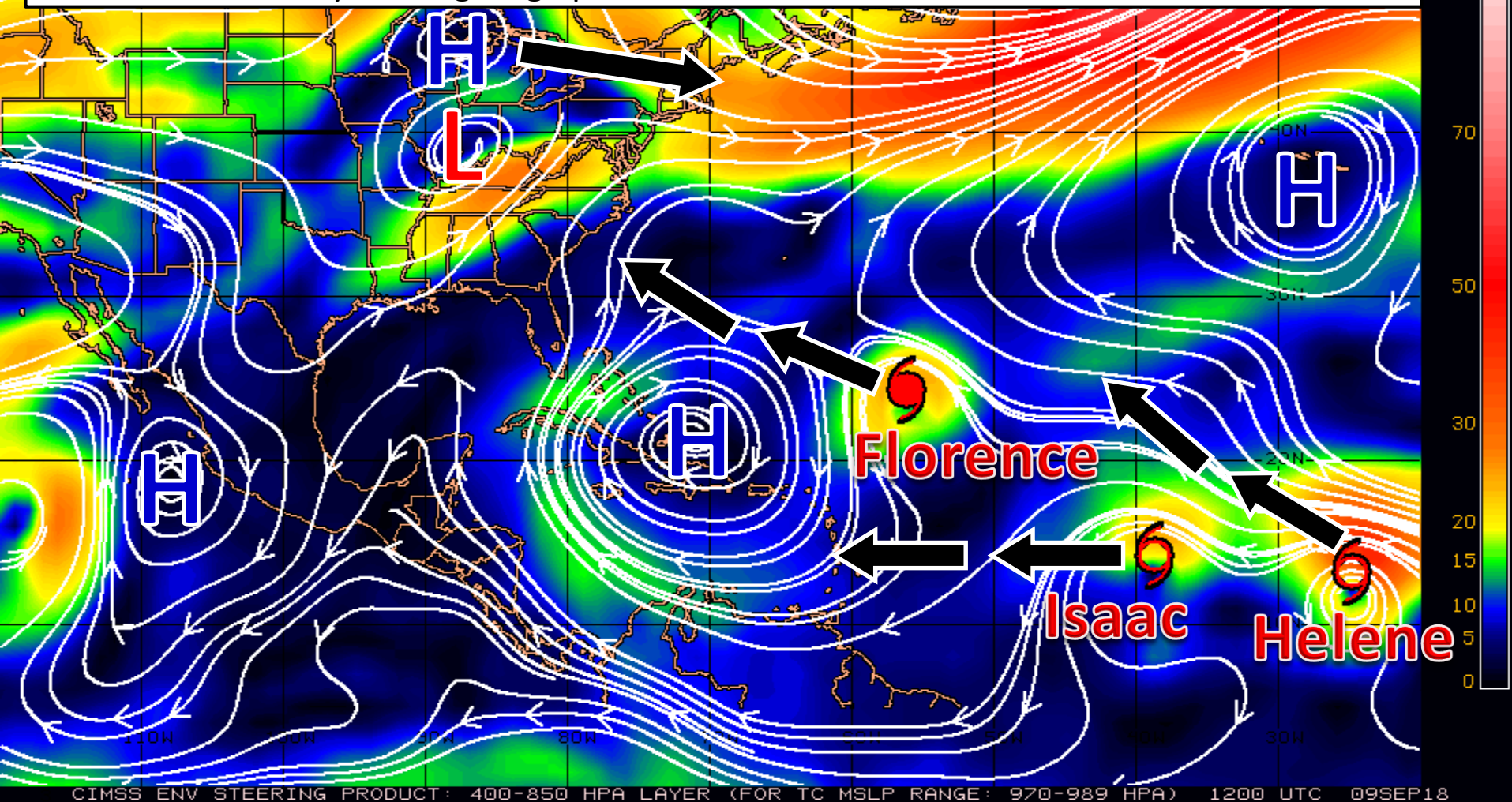
18:00 09-SEP-2018 GMT Copyright © 1998-2018 WSI Corporation <http://www.wsi.com>





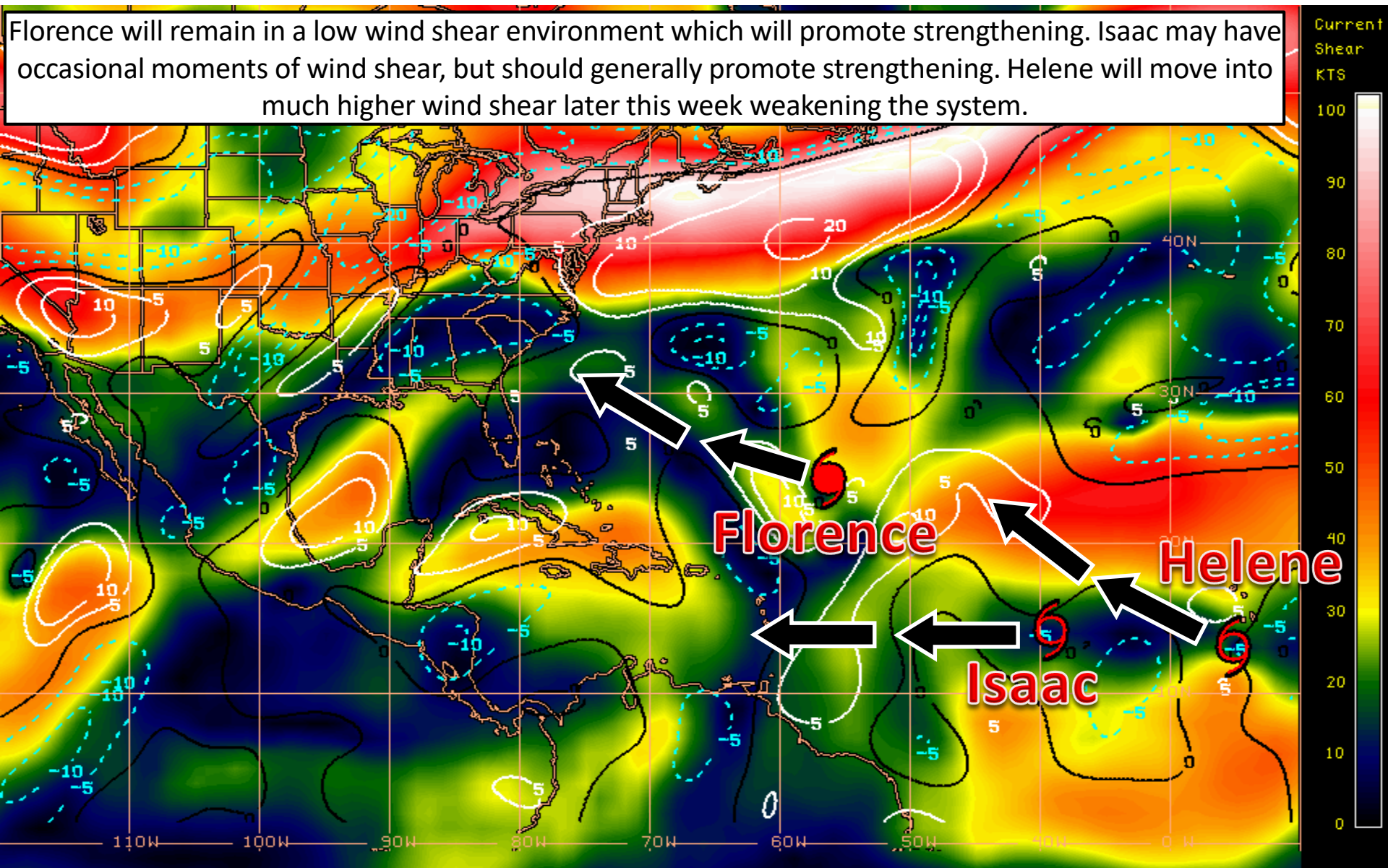
# Steering Currents

Areas of high pressure are steering all of the systems across the Atlantic. The high pressure system driving Florence slowly south is starting to weaken as a new high pressure system develops to the north. This will drive Florence west-northwest. Isaac will continue west as it gets trapped under the high pressure in the Caribbean. Helene will track northwest driven by the large high pressure in the northeastern Atlantic.



# Wind Shear (shaded) and Wind Shear Tendencies (contoured)

Florence will remain in a low wind shear environment which will promote strengthening. Isaac may have occasional moments of wind shear, but should generally promote strengthening. Helene will move into much higher wind shear later this week weakening the system.



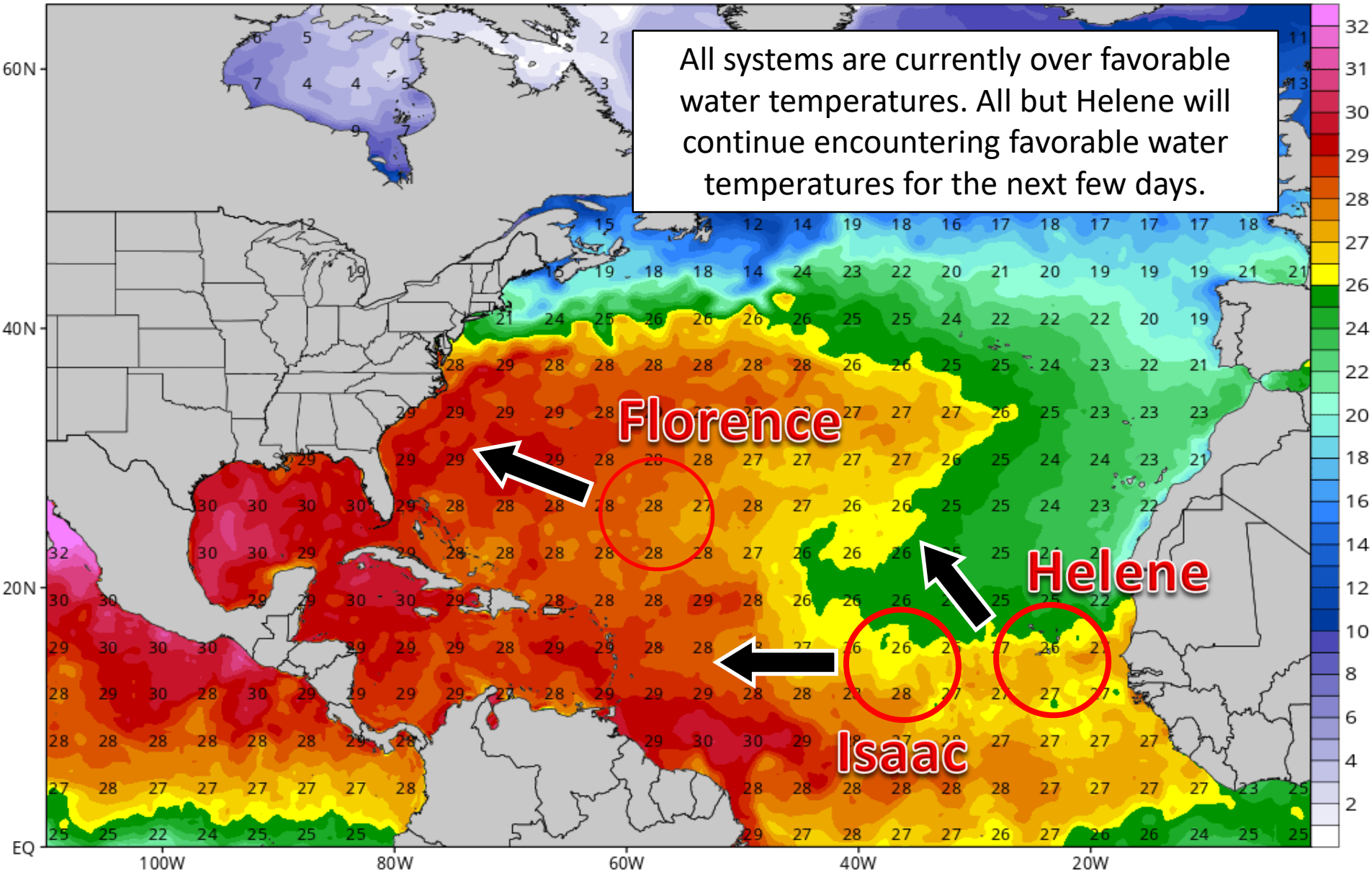
Shear Tendency (KTS) Over Past 24 Hours: Increasing — Decreasing ----

# Water Temperatures

CDAS Sea Surface Temperature (°C)

Analysis Time: 00z Sep 09 2018

TROPICALTIDBITS.COM

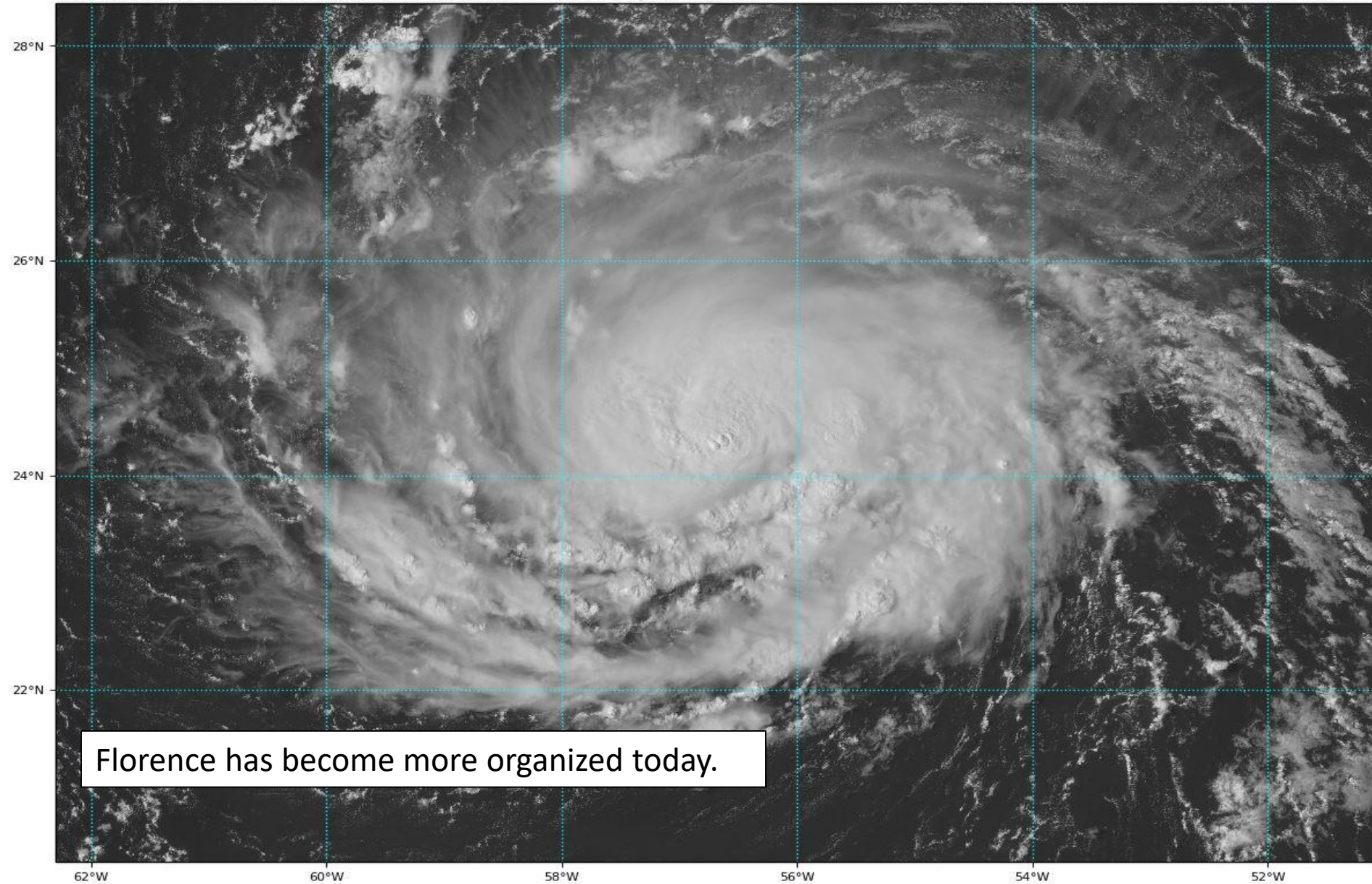




# Hurricane Florence Satellite Image

GOES-16 Channel 2 (visible) Reflectance at 19:05Z Sep 09, 2018

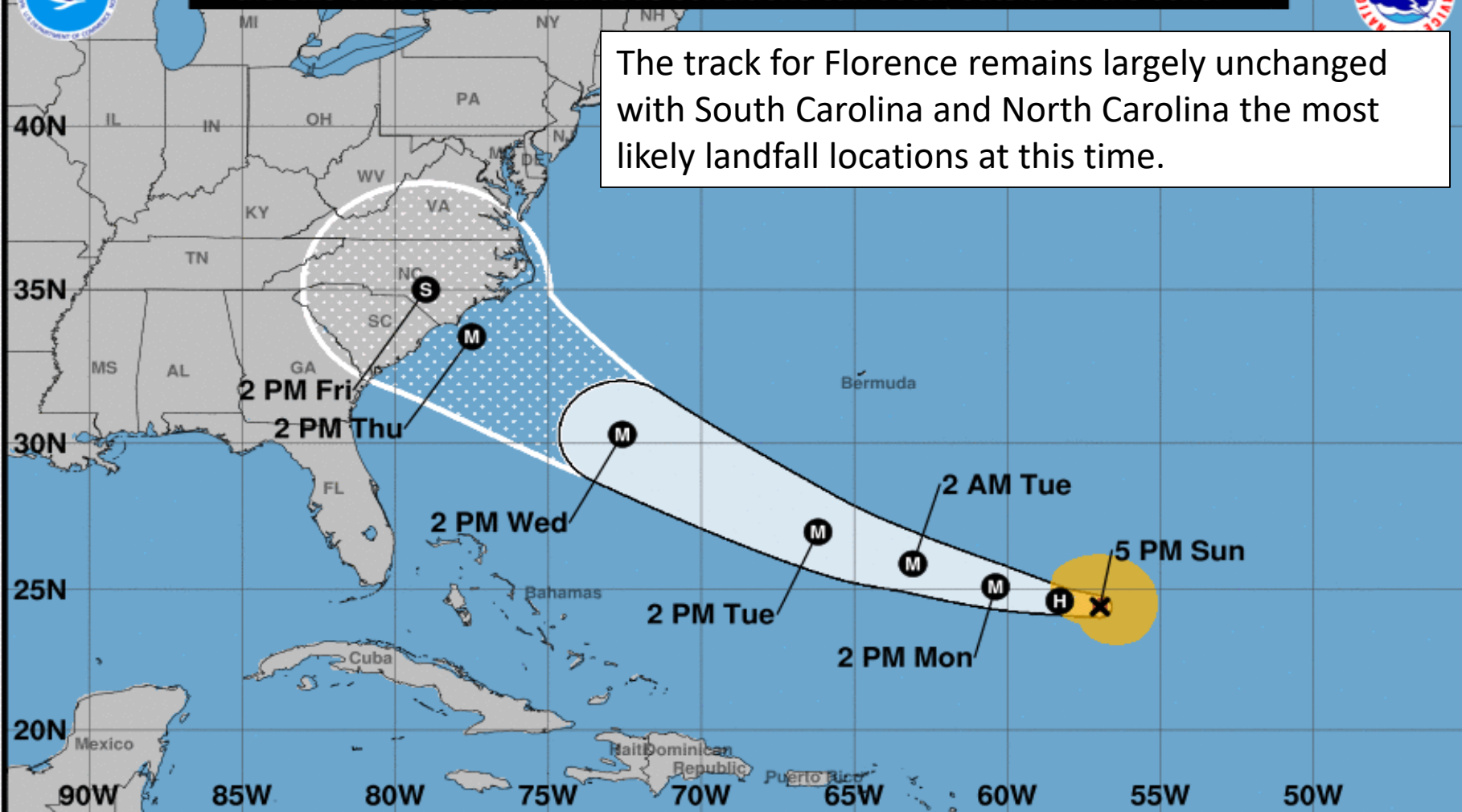
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Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

The track for Florence remains largely unchanged with South Carolina and North Carolina the most likely landfall locations at this time.



### Hurricane Florence

Sunday September 09, 2018  
5 PM AST Advisory 42  
NWS National Hurricane Center

### Current information: X

Center location 24.4 N 57.0 W  
Maximum sustained wind 85 mph  
Movement W at 7 mph

### Forecast positions:

● Tropical Cyclone ○ Post/Potential TC  
Sustained winds: D < 39 mph  
S 39-73 mph H 74-110 mph M > 110 mph

### Potential track area:

Day 1-3 Day 4-5

### Watches:

Hurricane Trop Stm

### Warnings:

Hurricane Trop Stm

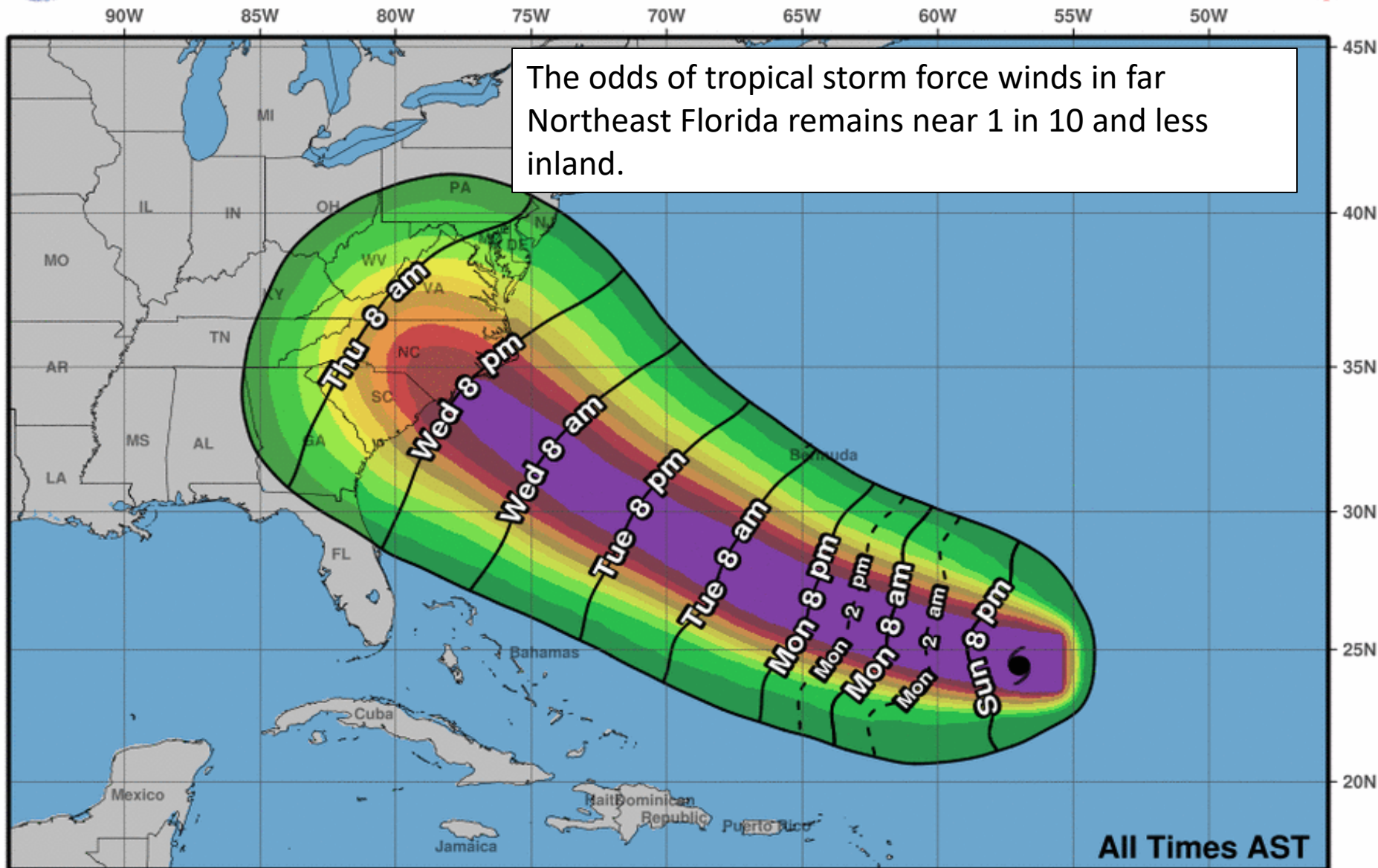
### Current wind extent:

Hurricane Trop Stm





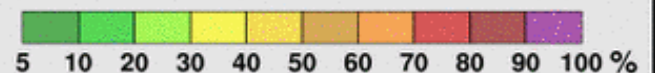
# Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



**Hurricane Florence**  
**Sun. Sep. 9, 2018 5 pm AST**  
**Advisory 42**

Storm Location & Wind Speed  
○ < 34 kt (39 mph)  
○ 34-63 kt (39-73 mph)  
● ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds



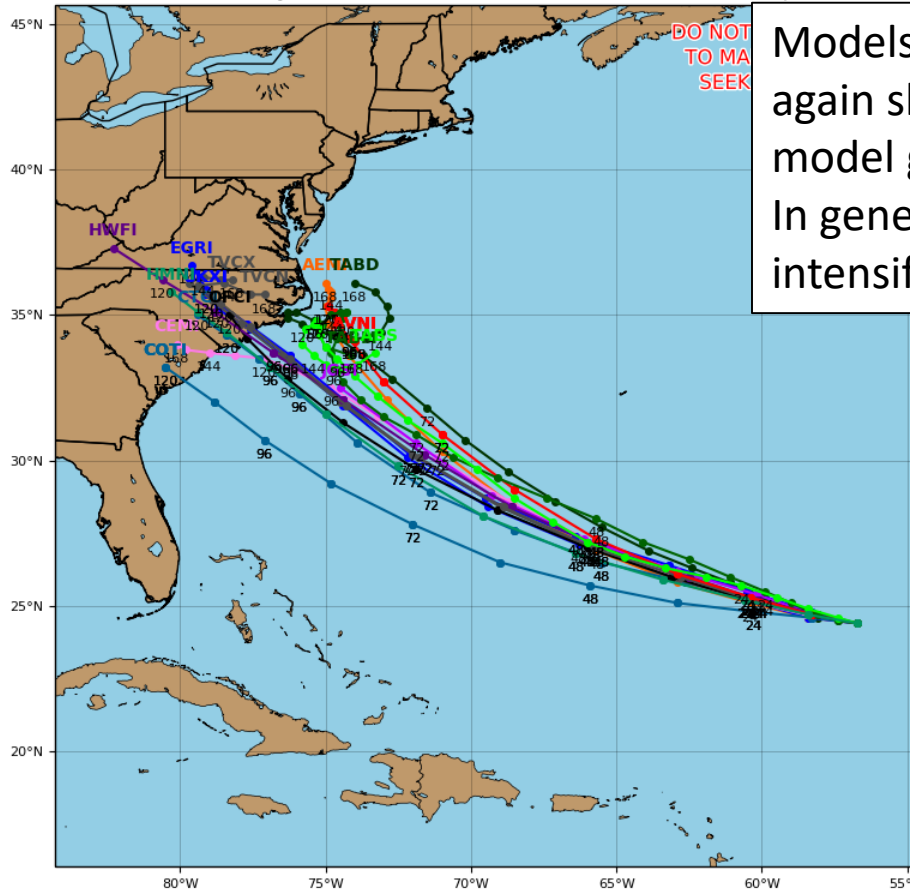


# Track Models (Florence)

## Hurricane FLORENCE Model Track Guidance

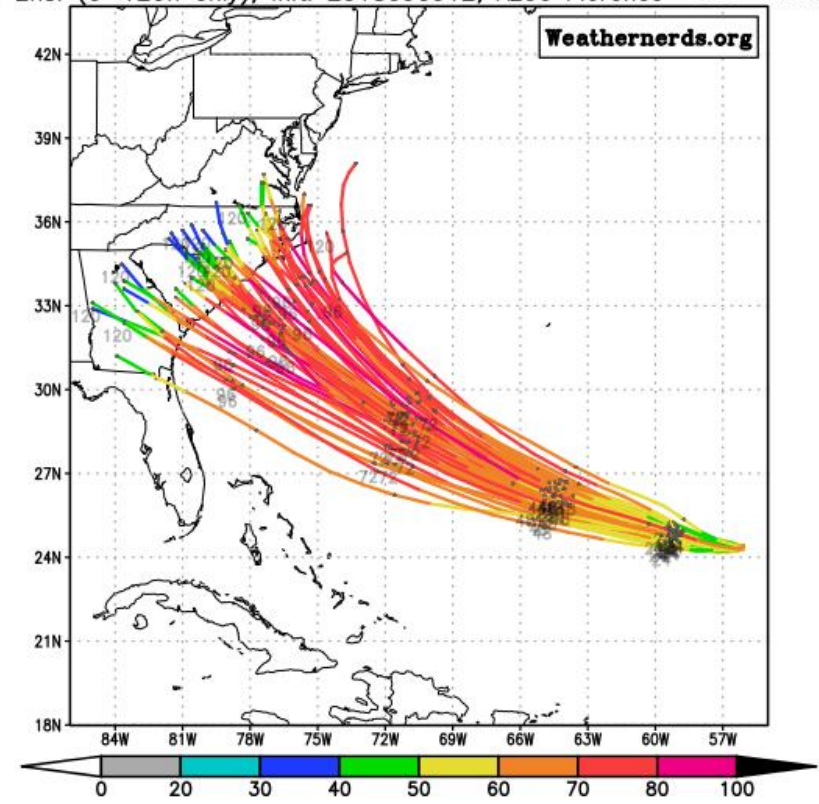
Initialized at 18z Sep 09 2018

Levi Cowan - tropicaltidbits.com



Models have come into better agreement today and again shift slightly to the north. Nearly all of the model guidance is now targeting a Carolina landfall. In general, the stronger Florence is and the faster it intensifies, the further north it will track.

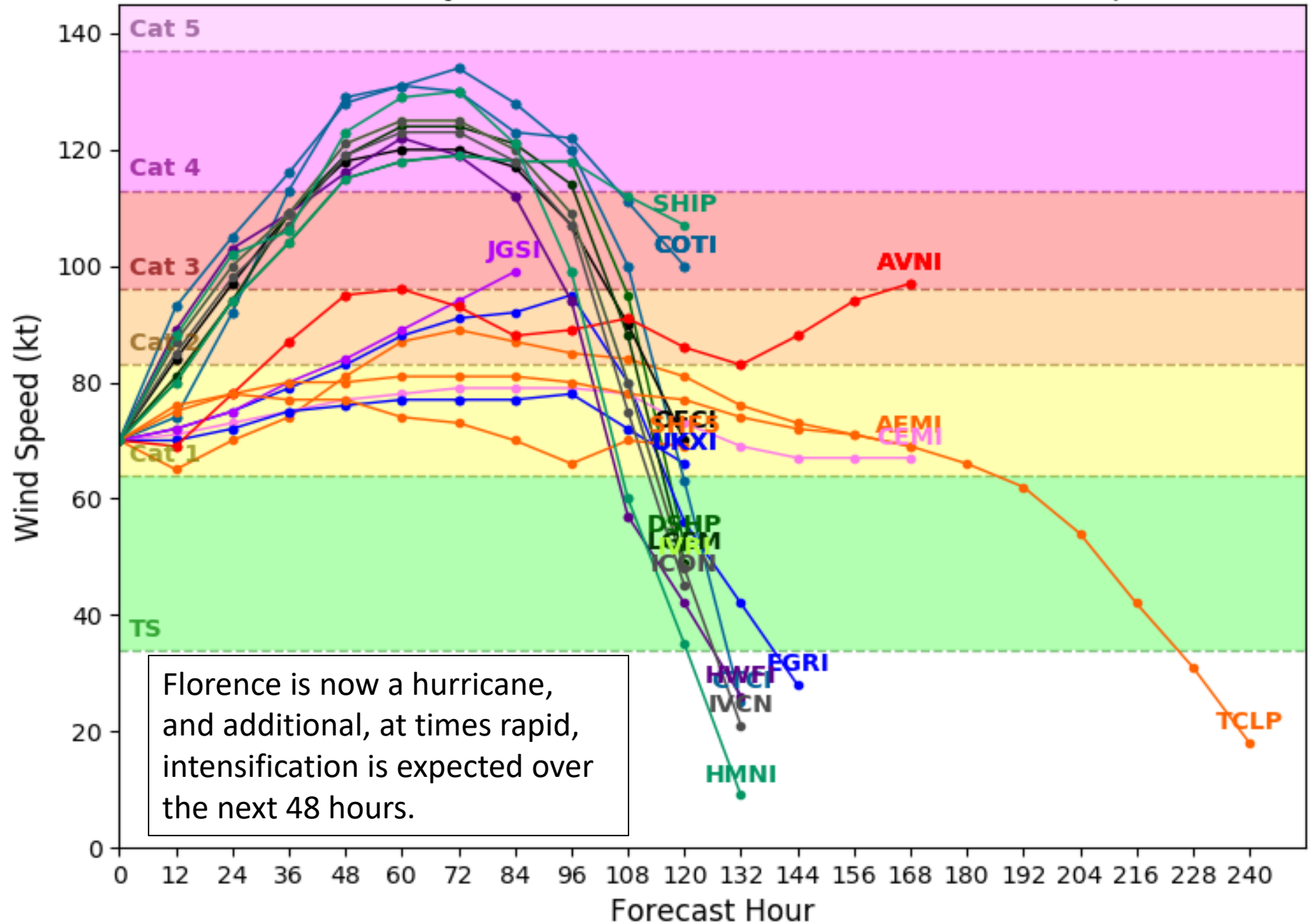
ECMWF Ens. (0–120h only), init: 2018090912, AL06 Florence color = max wind (kt)



# Hurricane FLORENCE Model Intensity Guidance

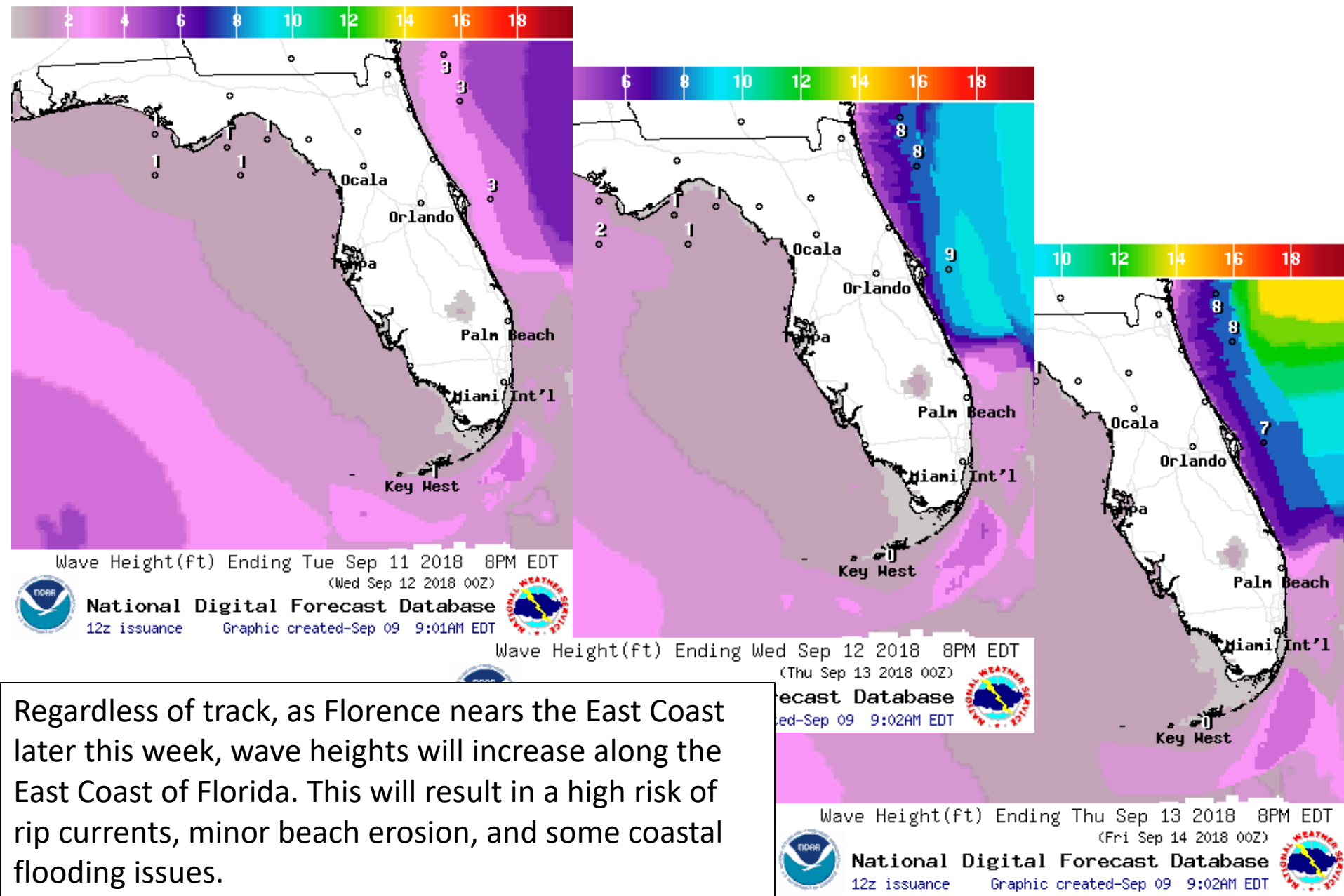
Initialized at 18z Sep 09 2018

Levi Cowan - tropicaltidbits.com





# Forecast Wave Heights (Florence)



Regardless of track, as Florence nears the East Coast later this week, wave heights will increase along the East Coast of Florida. This will result in a high risk of rip currents, minor beach erosion, and some coastal flooding issues.

# Rip Current Forecast





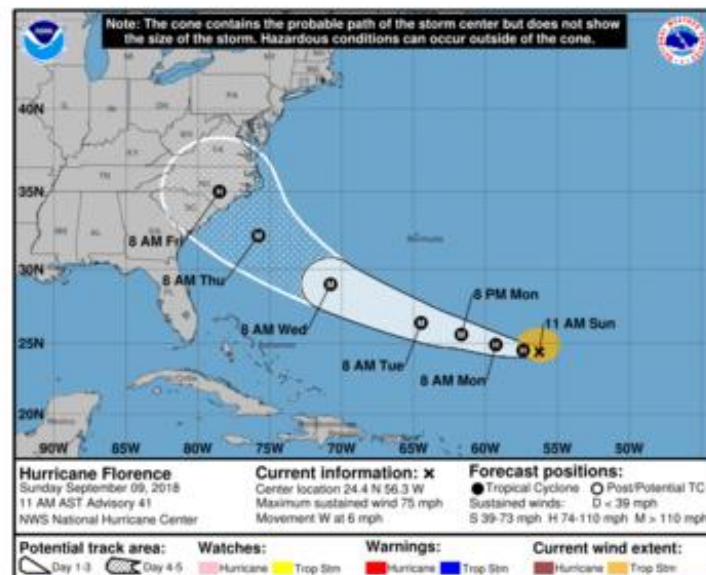


# Key Messages for Hurricane Florence

Advisory 41: 11:00 AM AST Sun Sep 09, 2018



1. There is an increasing risk of two life-threatening impacts from Florence: storm surge at the coast and freshwater flooding from a prolonged heavy rainfall event inland. While it is too soon to determine the exact timing, location, and magnitude of these impacts, interests at the coast and inland from South Carolina into the mid-Atlantic region should closely monitor the progress of Florence, ensure they have their hurricane plan in place, and follow any advice given by local officials.



For more information go to [hurricanes.gov](http://hurricanes.gov)

# Florence Key Points

## Northeast Florida and Southeast Georgia



Jacksonville, FL  
Weather Forecast Office

1. Expected to intensify to a Major Hurricane (Category 3 or higher) near the southeast U.S. coast late Thursday.
2. Interests from north Florida to North Carolina should monitor the progress of Florence. **Supply kits should be stocked & be ready to execute hurricane plans.**
3. High confidence of large swells, frequent rip currents, and high surf impacting local beaches through mid-week. Beach erosion potential will increase.
4. Too soon to determine the exact timing, location, & magnitude of potential impacts, including wind magnitude, surge and rainfall.
5. Be careful of speculation on storm impacts from unofficial sources, including those on social media. For the latest, official forecast information refer to your local [National Weather Service](#) office and the [National Hurricane Center](#).

Briefing Time: 9/9/2018 4:05 PM

US National Weather Service Jacksonville

Caution: Do Not Use Beyond Eight (8) Hours from Briefing Time.

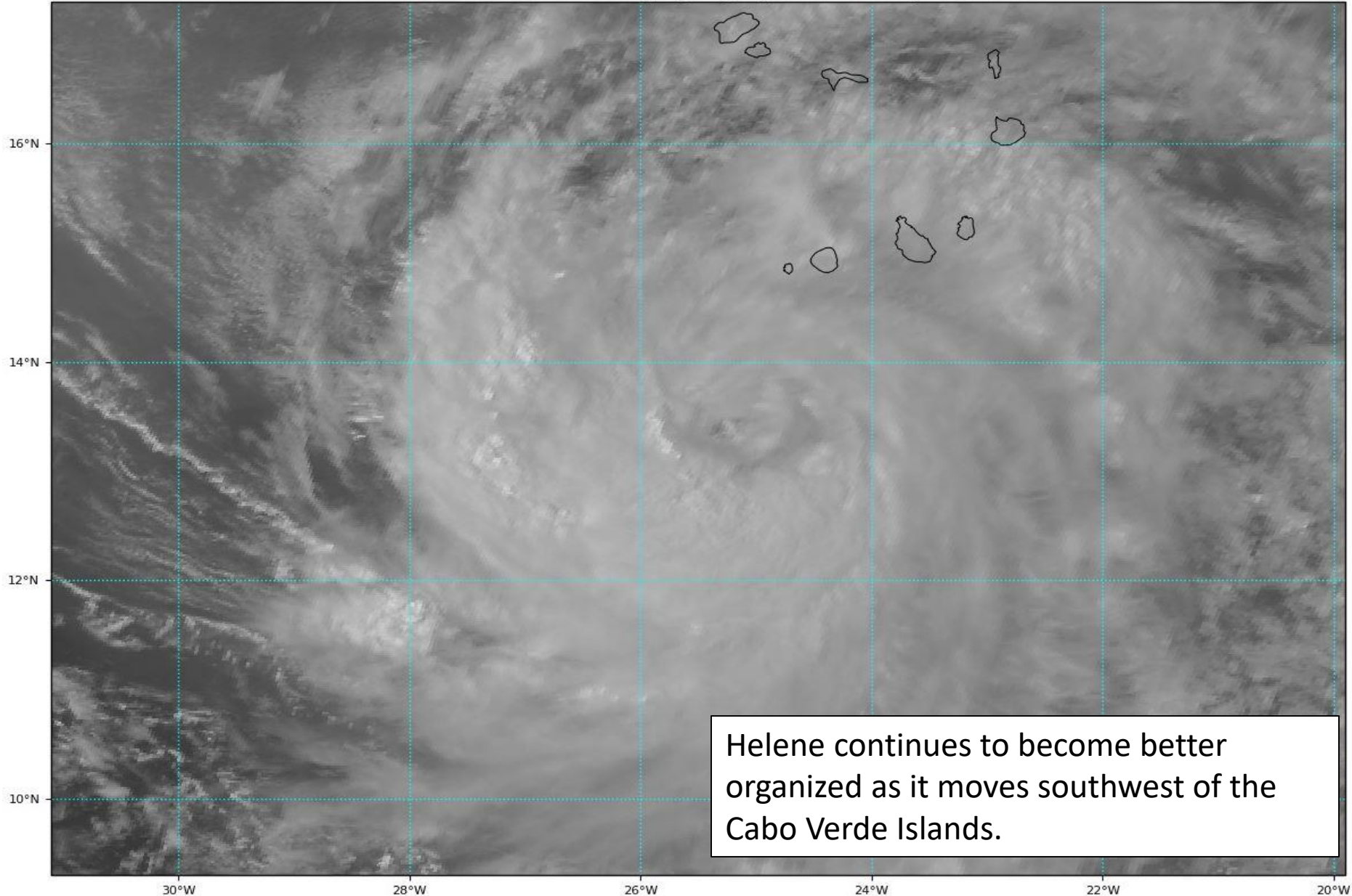
@NWSJacksonville [Weather.gov/JAX](#)



# Hurricane Helene Satellite Image

GOES-16 Channel 2 (visible) / Channel 7 (shortwave IR) [Day/Night] at 17:35Z Sep 09, 2018

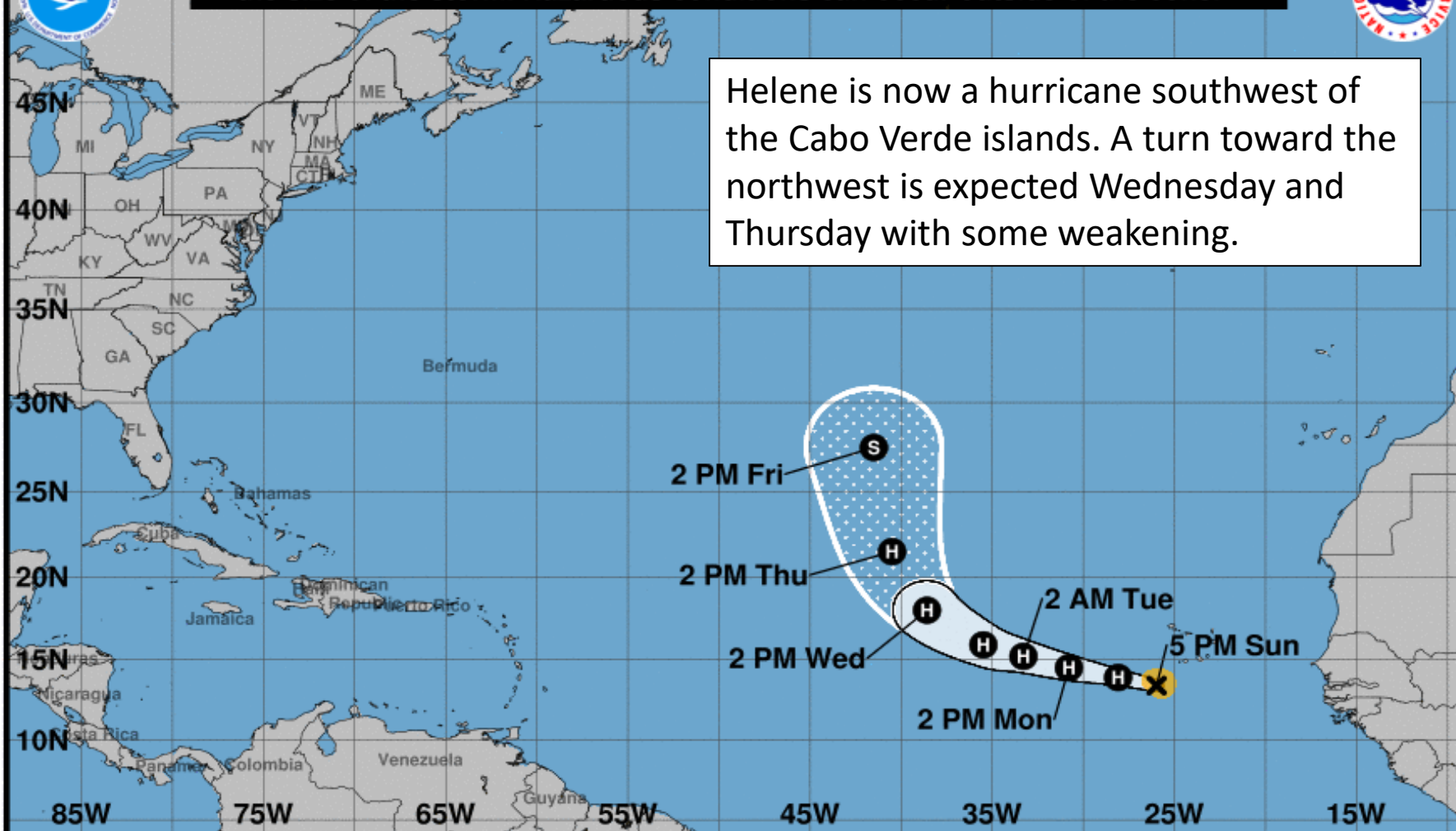
TROPICALTIDBITS.COM





**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.**

Helene is now a hurricane southwest of the Cabo Verde islands. A turn toward the northwest is expected Wednesday and Thursday with some weakening.



### Hurricane Helene

Sunday September 09, 2018

5 PM AST Advisory 10

NWS National Hurricane Center

### Current information: x

Center location 13.4 N 26.0 W

Maximum sustained wind 75 mph

Movement W at 13 mph

### Forecast positions:

● Tropical Cyclone ○ Post/Potential TC

Sustained winds: D < 39 mph

S 39-73 mph H 74-110 mph M > 110 mph

### Potential track area:

Day 1-3 Day 4-5

### Watches:

Hurricane Trop Stm

### Warnings:

Hurricane Trop Stm

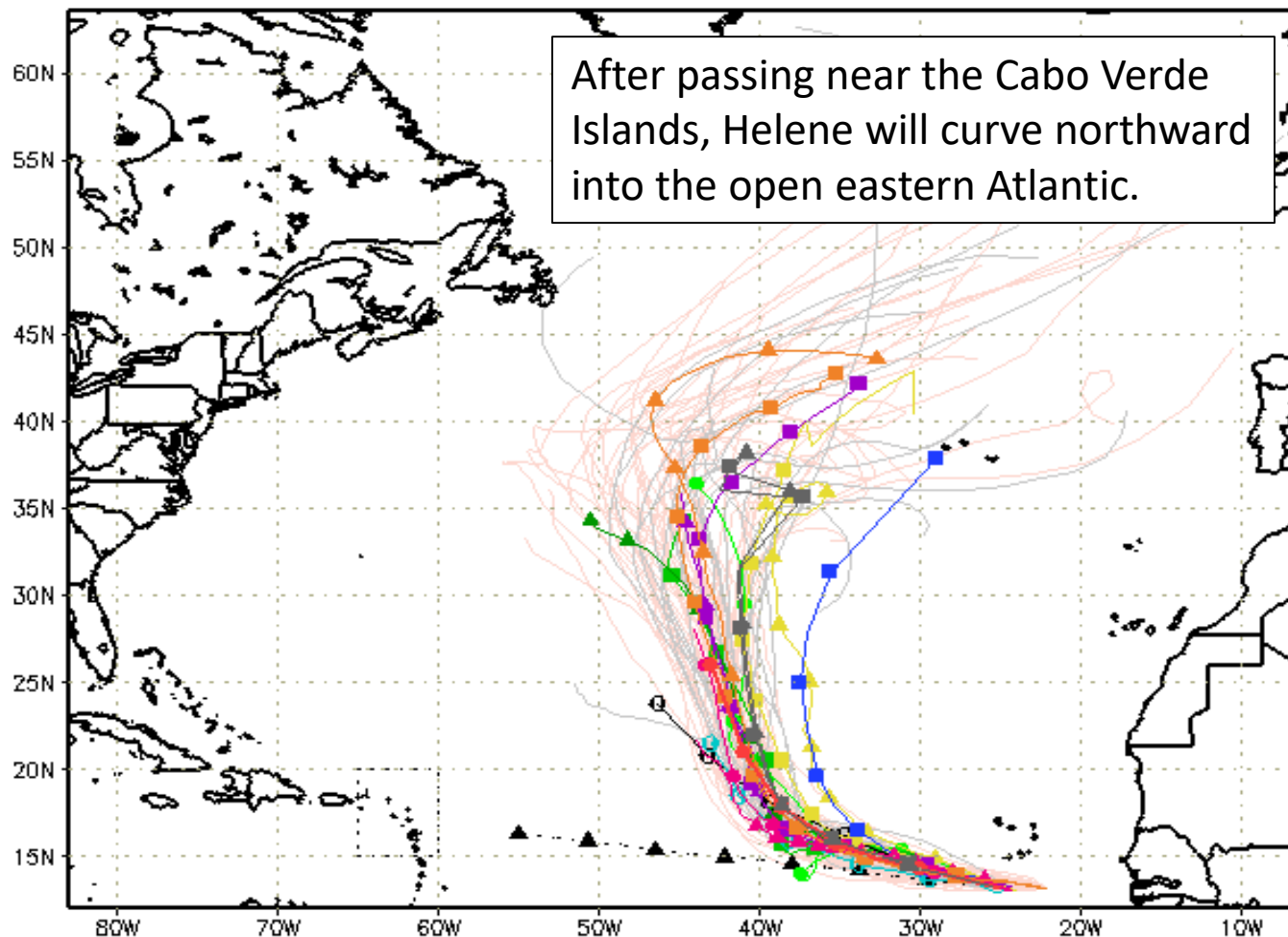
### Current wind extent:

Hurricane Trop Stm



# Track Models (Helene)

--▲-- XTRP 09/1800Z    ○ CLP5 09/1800Z    ▲ HMON 09/1200Z    ▲ AVNO 09/1200Z    ▲ ECMF 09/0000Z  
 ■ TVCN 09/1800Z    ▲ TABD 09/1800Z    ● HWRF 09/1200Z    ■ AEMN 09/1200Z    ■ EEMN 09/0000Z  
 ▲ TVCX 09/1800Z    ■ TABM 09/1800Z    ■ UKM 09/1200Z    — APxx 09/1200Z    — EExx 09/0000Z  
 ● NHC 09/1500Z    ● TABS 09/1800Z    ○ COTC 09/1200Z    ▲ CMC 09/1200Z    ■ GEMN 09/1200Z



storm\_08

sfwmd.gov

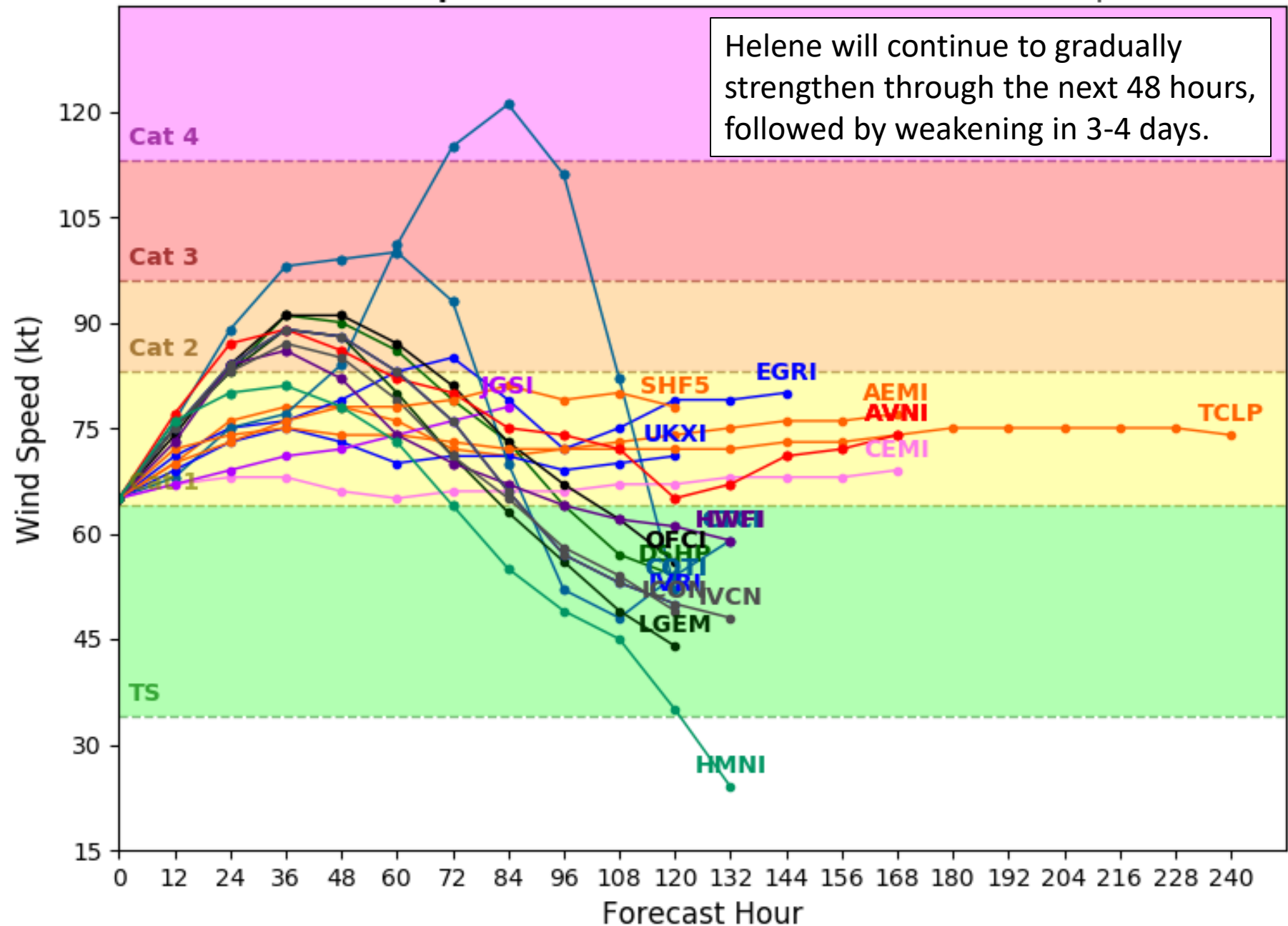
weather@sfwmd.gov  
09-Sep 15:21EDT

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>



Levi Cowan - [tropicaltidbits.com](http://tropicaltidbits.com)

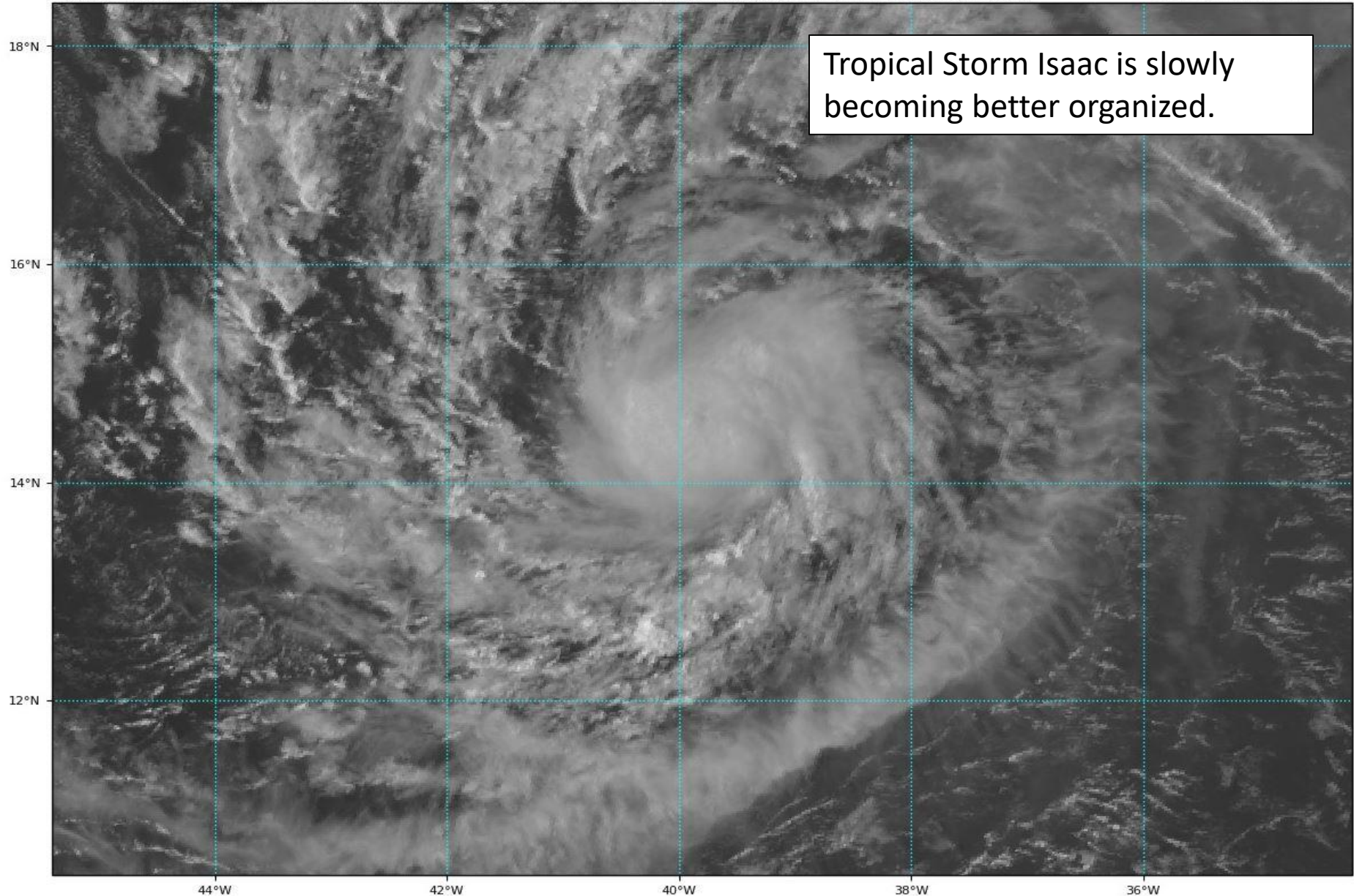
Helene will continue to gradually strengthen through the next 48 hours, followed by weakening in 3-4 days.



# Tropical Storm Isaac Satellite Image

GOES-16 Channel 2 (visible) / Channel 7 (shortwave IR) [Day/Night] at 18:35Z Sep 09, 2018

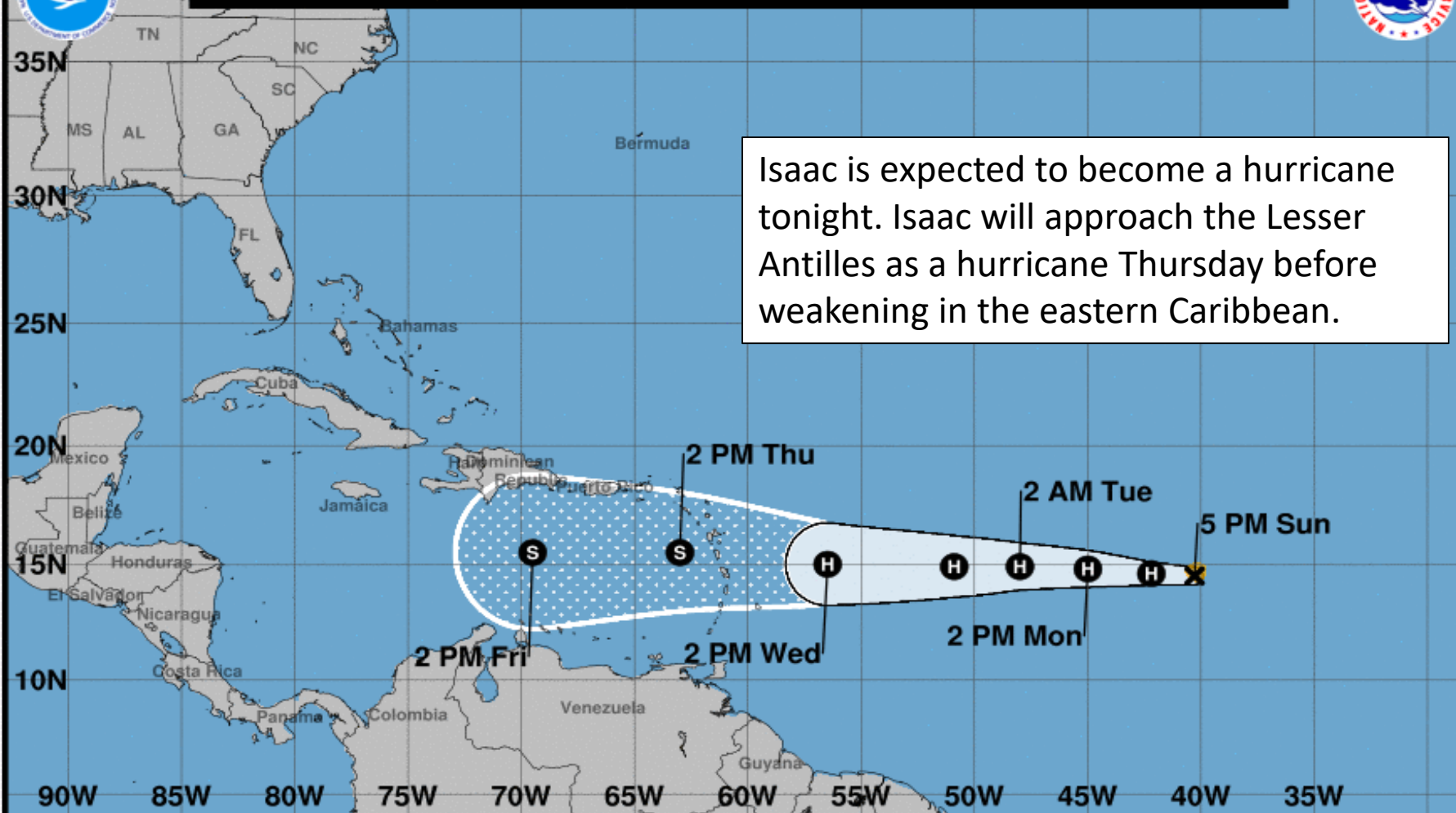
TROPICALTIDBITS.COM







**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.**



Isaac is expected to become a hurricane tonight. Isaac will approach the Lesser Antilles as a hurricane Thursday before weakening in the eastern Caribbean.

**Tropical Storm Isaac**  
Sunday September 09, 2018  
5 PM AST Advisory 9  
NWS National Hurricane Center

**Current information: x**  
Center location 14.5 N 40.3 W  
Maximum sustained wind 70 mph  
Movement W at 12 mph

**Forecast positions:**  
● Tropical Cyclone ○ Post/Potential TC  
Sustained winds: D < 39 mph  
S 39-73 mph H 74-110 mph M > 110 mph

**Potential track area:**

Day 1-3 Day 4-5

**Watches:**

Hurricane Trop Stm

**Warnings:**

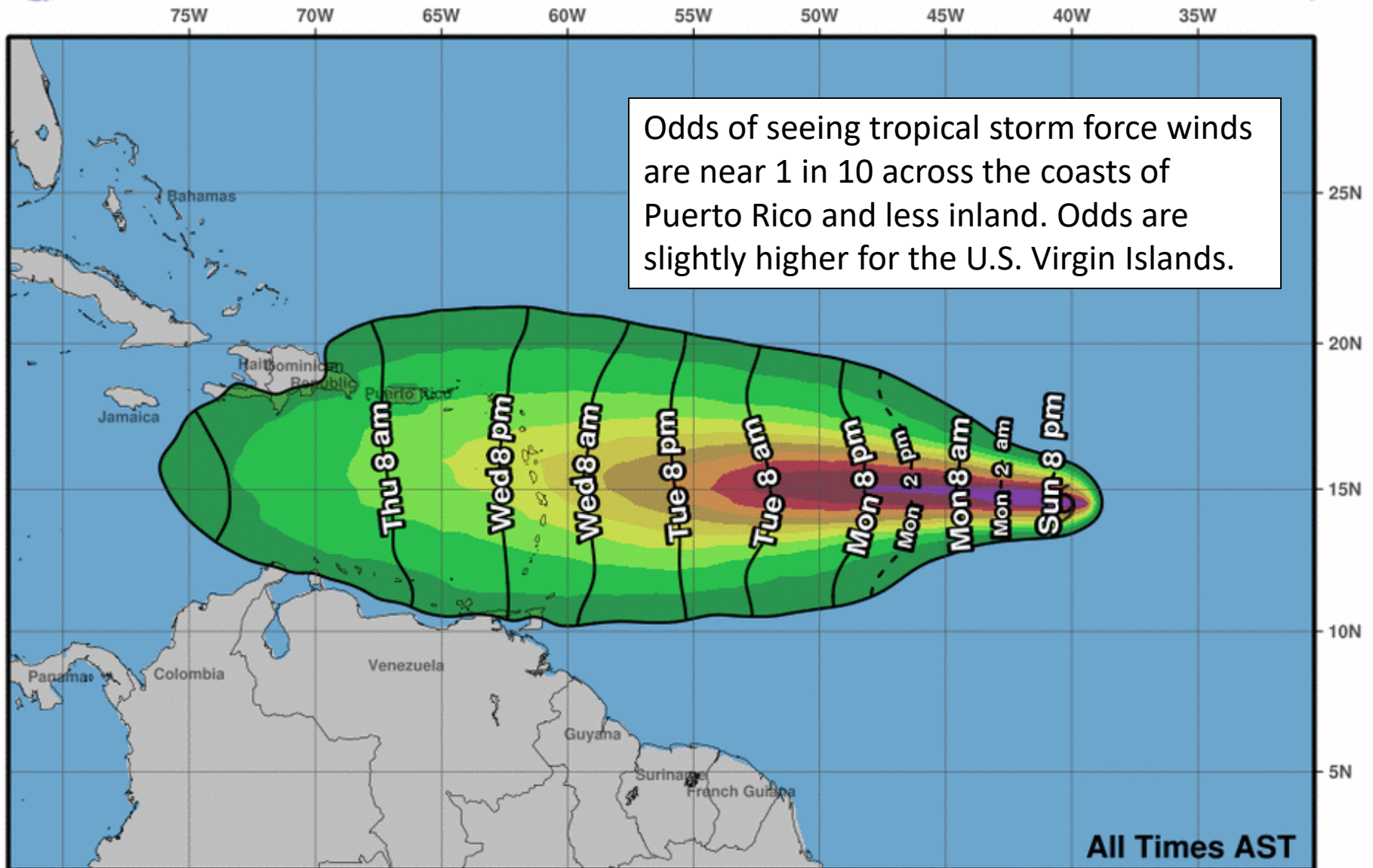
Hurricane Trop Stm

**Current wind extent:**

Hurricane Trop Stm



# Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



**Tropical Storm Isaac**  
**Sun. Sep. 9, 2018 5 pm AST**  
**Advisory 9**

Storm Location & Wind Speed

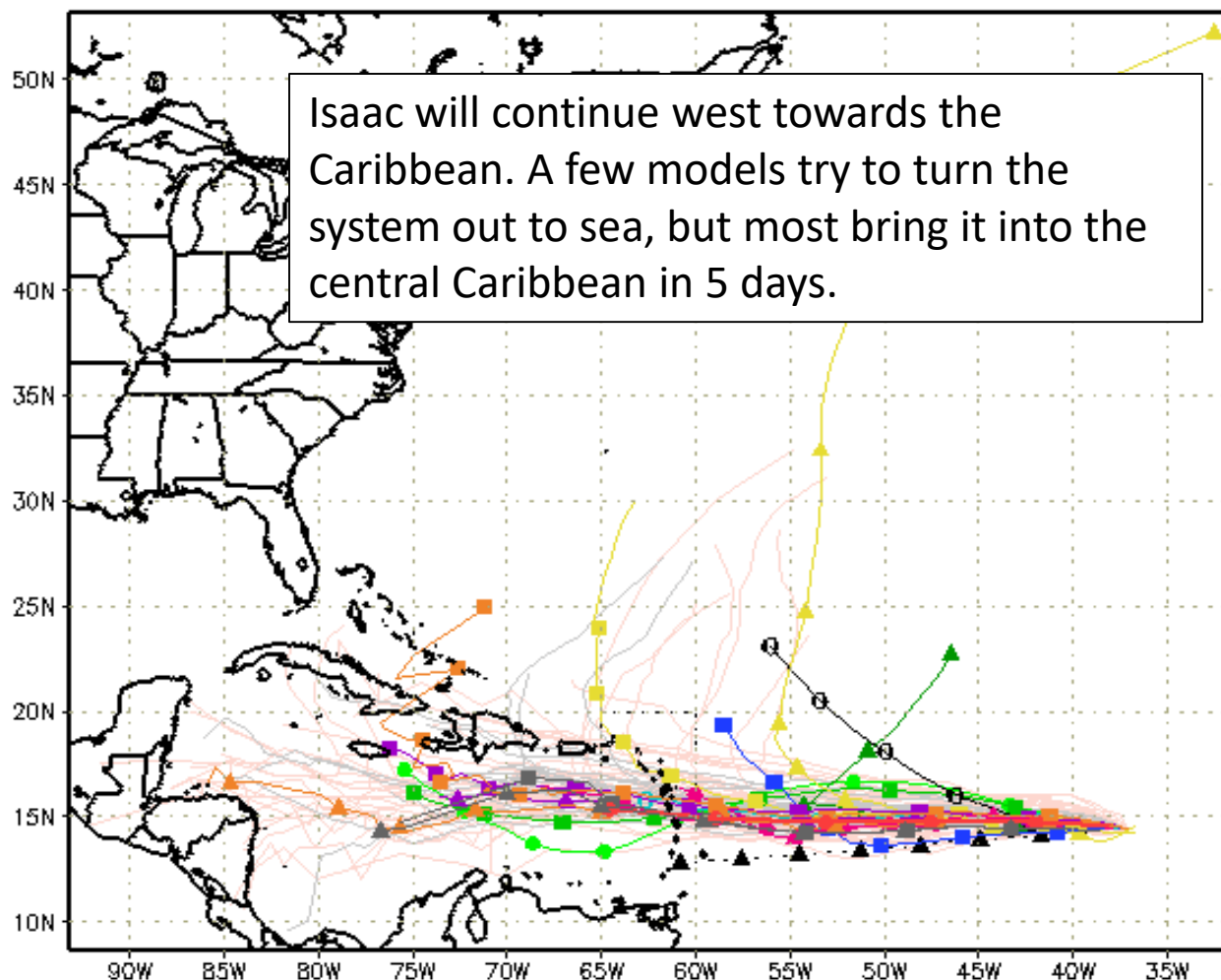
- < 34 kt (39 mph)
- 34-63 kt (39-73 mph)
- ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds

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

# Track Models (Isaac)

---▲--- XTRP 09/1200Z	---○--- CLP5 09/1200Z	---▲--- HMON 09/0600Z	---▲--- AVNO 09/0600Z	---▲--- ECMF 09/0000Z
---■--- TVCN 09/1200Z	---▲--- TABD 09/1200Z	---●--- HWRF 09/0600Z	---■--- AEMN 09/0600Z	---■--- EEMN 09/0000Z
---▲--- TVCX 09/1200Z	---■--- TABM 09/1200Z	---■--- UKM 09/0000Z	---○--- APxx 09/0600Z	---○--- EExx 09/0000Z
---●--- NHC 09/0900Z	---●--- TABS 09/1200Z	---○--- COTC 09/0600Z	---▲--- CMC 09/0000Z	---■--- GEMN 09/0000Z









# Five-Day Graphical Tropical Weather Outlook

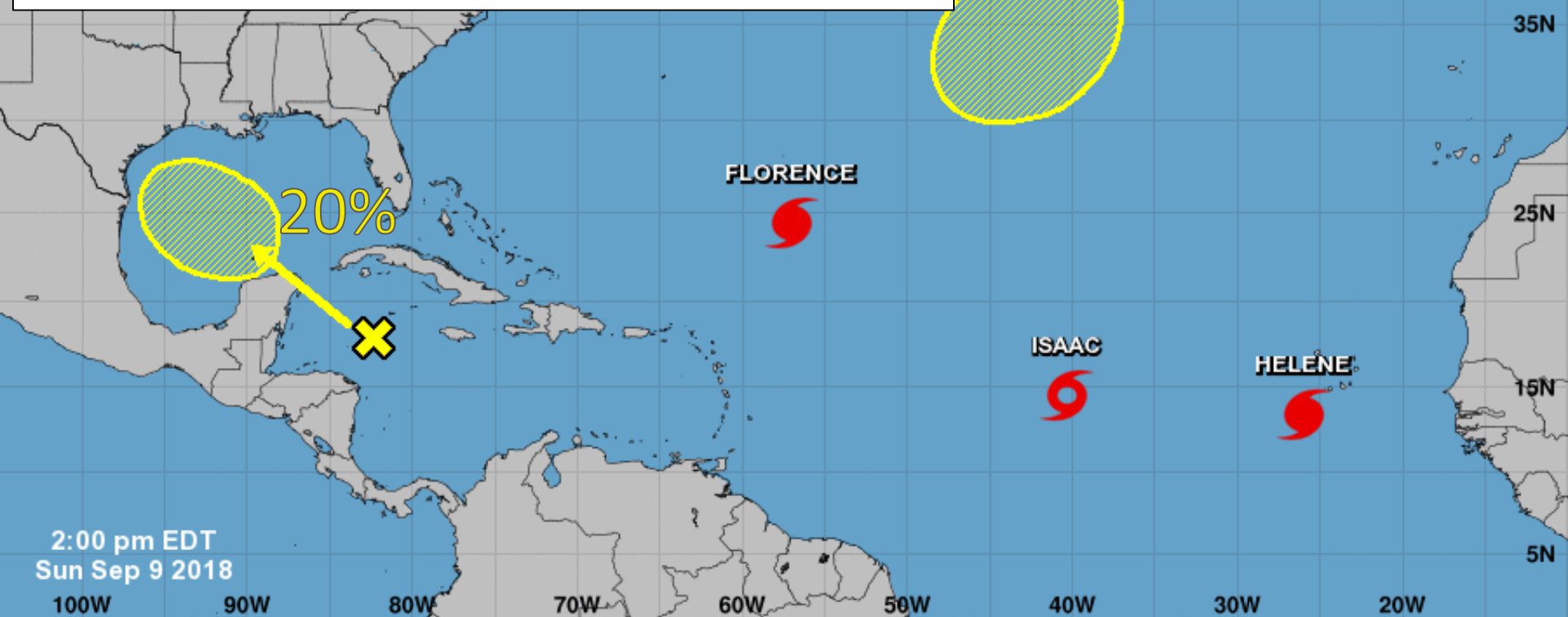
National Hurricane Center Miami, Florida



www.hurricanes.gov

A non-tropical area of low-pressure is forecast to develop in the northern Atlantic. It may acquire some tropical characteristics later in the week. Chances of development are near 0% in the next 48 hours and 30% (**low**) in days 3-5. This system poses no threat to the U.S.

A tropical wave will move into the western Gulf of Mexico mid-week where conditions may be conducive for some development. Chances of development are near 0% in the next 48 hours and 20% (**low**) in days 3-5.



2:00 pm EDT  
Sun Sep 9 2018

Current Disturbances and Five-Day Cyclone Formation Chance: **X** < 40% **OX** 40-60% **XX** > 60%  
Tropical or Sub-Tropical Cyclone: **O** Depression **S** Storm **H** Hurricane  
**⊗** Post-Tropical Cyclone or Remnants

# Summary

- Florence is becoming better organized over the central Atlantic Ocean this afternoon and continues to strengthen.
- At 5 PM EDT Sunday, Hurricane Florence was located in the central Atlantic Ocean about 720 miles southeast of Bermuda, or approximately 1,400 miles east of Miami, Florida.
- Maximum sustained winds are near 85 mph. Strengthening is forecast and Florence may become a major hurricane tomorrow.
- Florence is moving to the west at 7 mph. A slight turn to the west-northwest along with an increase in forward speed is forecast tonight or early tomorrow. An additional turn to the northwest by the middle of the week is expected.
- Landfall is becoming increasingly likely along the Carolina coast Thursday night as a major hurricane.
- Hurricane Hunters and NOAA research aircraft are investigating the system and the surrounding environment daily.
- As of 5 PM EDT Sunday, Helene was upgraded to a category 1 hurricane with maximum sustained winds of 75 mph. Additional strengthening is forecast for the next few days before wind shear increases.
- Tropical Storm Helene is located in the eastern Atlantic Ocean about 145 miles southwest of the Cabo Verde Islands.
- Helene is moving to the west at 13 mph. A turn toward the northwest and north is expected during the middle to end of this week into the open Atlantic.
- As of 5 PM EDT Sunday, Isaac is located about 1,390 miles east of the Windward Islands and moving west at 12 mph. This general motion is expected to continue through the next five days.
- Maximum sustained winds are now near 70 mph. Isaac has strengthened some today and additional strengthening is forecast. Isaac is likely to become a hurricane tonight or tomorrow on approach to the Lesser Antilles.
- The forecast track remains uncertain past 5 days as the system may be drawn northward by a trough or continue westward into the central and western Caribbean. Puerto Rico and the U.S. Virgin Islands should continue to monitor the progress of this system.
- A non-tropical area of low-pressure will develop in the northeast Atlantic in the coming days. By the middle to end of the week, it may acquire some tropical characteristics. This system has a 30% (low) chance of development during the next 5 days and is no threat to the U.S.
- A tropical wave will be moving into the western Gulf of Mexico by the middle of the week. Some gradual development is possible once it does as it moves west or northwest towards the western Gulf Coast. This system has a 20% (low) chance of development during the next 5 days.
- Regardless of development, this system is likely to bring increased rain chances to Texas later this week.



### **Florida Outlook:**

- Over the last 24 hours, chances of direct impacts to Northeast Florida from Florence have decreased – but are still not zero! Northeast Florida should continue to monitor the track of Florence closely during the next few days.
- The odds of seeing tropical storm force winds along the immediate coast of far Northeast Florida are near 1 in 10 (10%) and less inland.
- Otherwise, it is too early to speculate exact wind strength, rainfall, and any surge potential in Northeast Florida. Details will become more clear over the next 24 hours.
- Regardless of Florence's eventual track, large swells emanating from the storm will reach portions of the Florida East Coast resulting in life-threatening rip currents. Increasing impacts include large breaking waves, erosion, and minor coastal flooding.
- Breaking waves along the beach in Northeast and east-central Florida will peak on Wednesday and Thursday as high as 8-12'.
- A Coastal Flood Advisory is in effect through this evening for Nassau, Duval, St. Johns, Flagler, and Putnam Counties. Minor coastal flooding at high tide will be possible. This advisory may be extended through the next couple of days.
- Tropical Storm Helene poses no threat to Florida or the U.S.
- Tropical Storm Isaac will need to be monitored over the next 7-10 days as it moves into the Caribbean, but is not a direct threat at this time.
- The chance of tropical storm force winds along the southern coast of Puerto Rico is near 1 in 10 (10%) and less inland. Odds are slightly higher across the U.S. Virgin Islands near 1 in 5 (20%).
- The tropical wave moving into the western Gulf of Mexico does not pose a direct threat to Florida at this time, but should be monitored.

Another briefing packet will be issued tomorrow morning. For the latest information on the tropics, please visit the National Hurricane Center website at [www.hurricanes.gov](http://www.hurricanes.gov).



# TROPICAL UPDATE

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State Meteorological Support Unit

Florida Division of Emergency  
Management

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