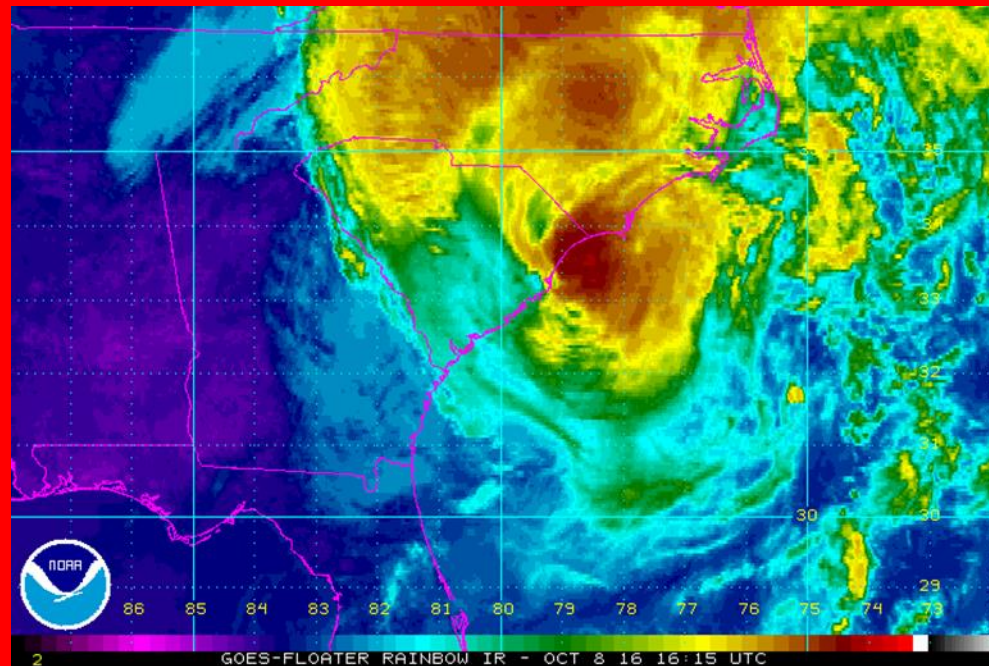


# Hurricane Matthew Threats and Impacts Briefing for all of Eastern NC

October 8<sup>th</sup>, 2016



National Weather Service  
Newport/Morehead City, NC

# Since Last Update

- The rainfall forecast has remained steady with 8 to 15 inches with isolated higher amounts.
- The risk for isolated tornadoes continues for Eastern NC today through this evening. Best chance of a tornado are areas along and south of Highway 70. A Tornado Watch has been issued for this portion of the area. Tornado warnings have been issued and the threat is ongoing.
- The forecast wind speeds across the area have remained steady with hurricane force wind gusts across the coastal waters south of Cape Lookout and tropical storm force winds rest of the area.
- The experimental storm surge watch continues to cover a large portion of the coastal areas of Eastern NC and the increased threat of moderate erosion and more areas of ocean over-wash ocean side locations continues, especially from southern Hatteras Island down through to Surf City.
- A Hurricane Warning continues for the coastal waters up to Cape Lookout.
- The following rivers are still expected to reach major flood stage-
  - NE Cape Fear River at Chinquapin,
  - Contentnea Creek at Hookerton,
  - Neuse River at Kinston
  - Tar River at Greenville

# Hurricane Matthew Key Points

- The rainfall forecast is still calling for 8 to 15 inches with locally higher amounts. This is a dangerous and life threatening flooding event!
- Storm surge will also add to water levels along the coast with an experimental storm surge watch in effect.
- This event has the potential to create once in a lifetime flooding levels for some areas! Many rivers could flood to major flood levels. This could be the worst flooding seen in Eastern NC since Hurricane Floyd!
- There is the potential for significant flash flood inundation of three feet or more across low lying roadways and properties! Flowing water is especially hazardous and should never be entered into either by foot or vehicle. The heaviest rain is expected late this afternoon through tonight. **Flash flooding is especially dangerous at night where road washouts are difficult to see!**
- The potential for downed trees is high and widespread power outages are likely. Vulnerable homes and buildings near tall trees should be aware of the potential for downed trees and falling limbs.
- Travel this weekend is highly discouraged!

# Tornado Watch



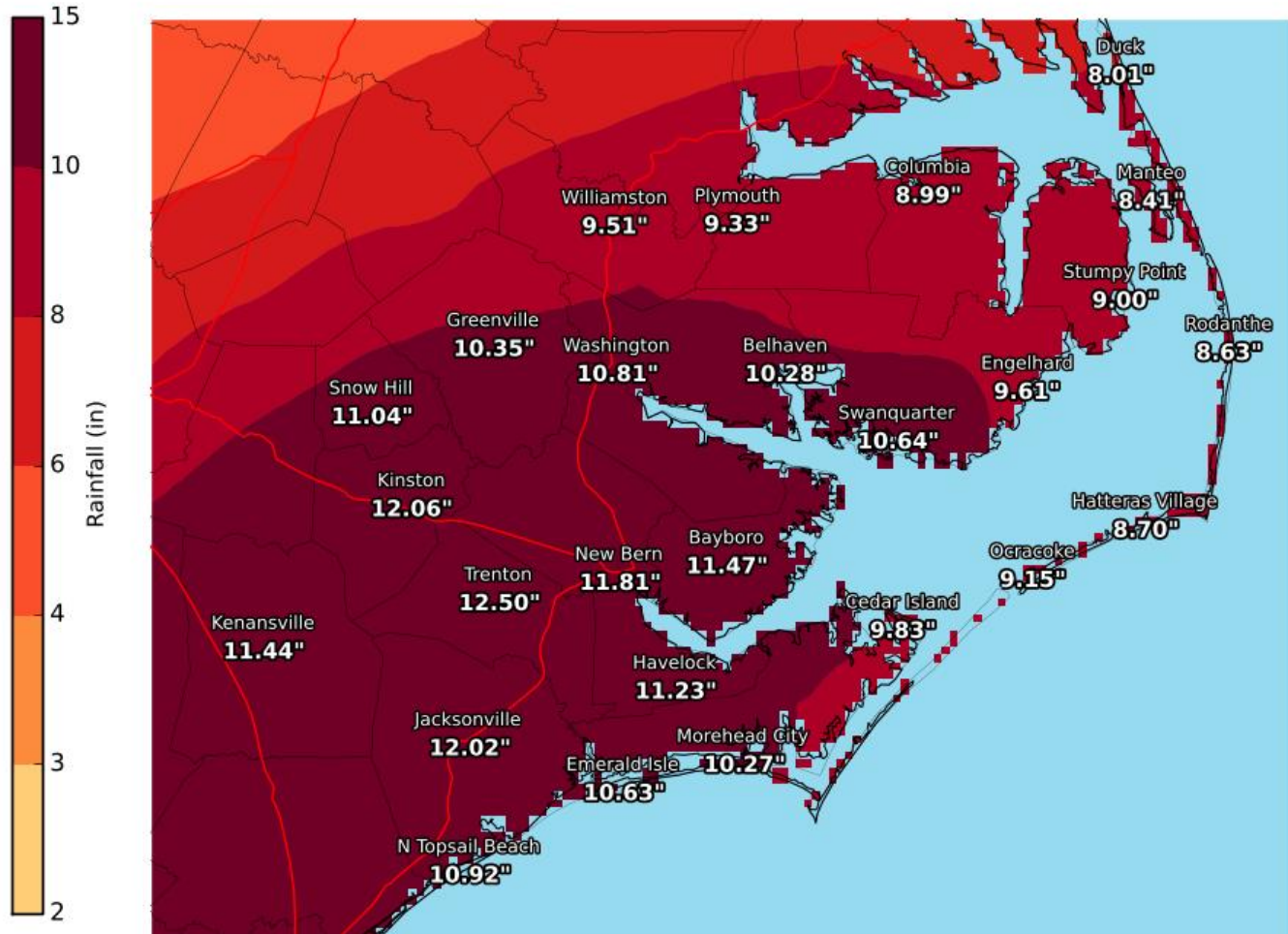
- Valid through 4 pm. Could be extended.
- Main threat south of Highway 70 and along the coast south of Ocracoke.

**Tornado Watch # 496 - Valid from 720 AM until 400 PM EDT**

# Dangerous Flash Flooding Likely!

## Hurricane Matthew Additional Rainfall Forecast

Valid: 10/08/2016 02:00 AM - 10/09/2016 08:00 PM EDT

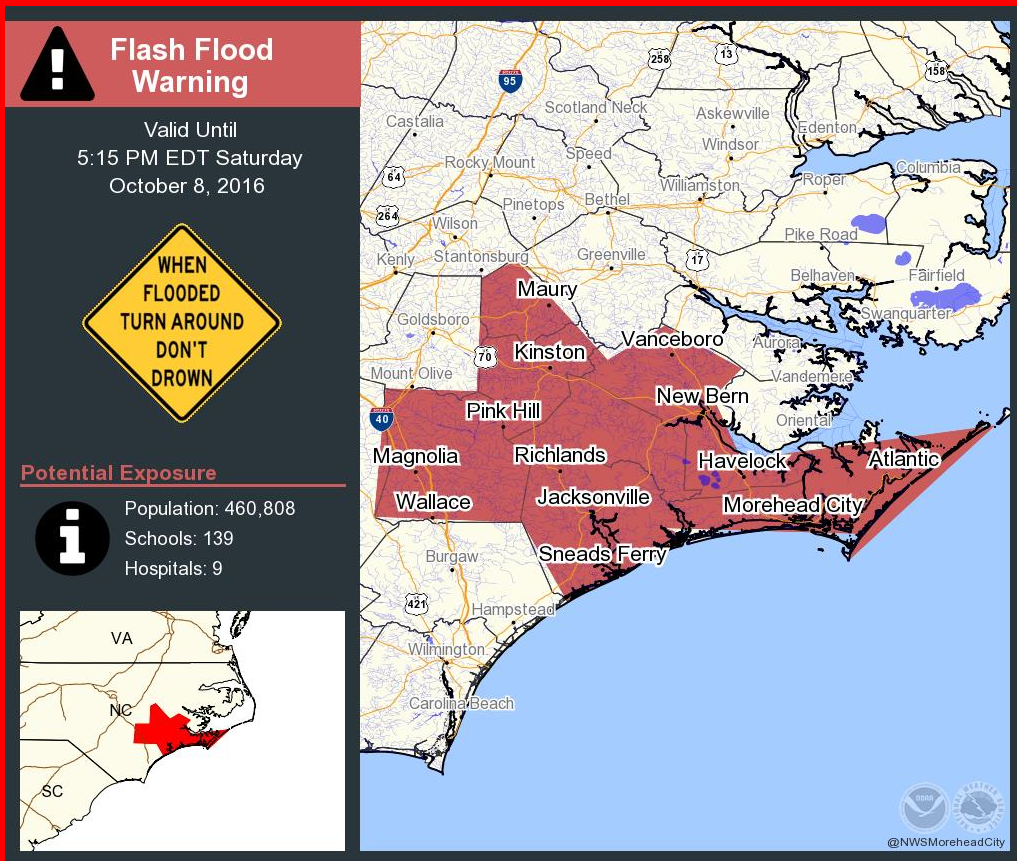


**National Weather Service**  
Newport/Morehead City North Carolina  
10/08/2016 11:42 AM EDT

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# Dangerous Flash Flooding Likely!



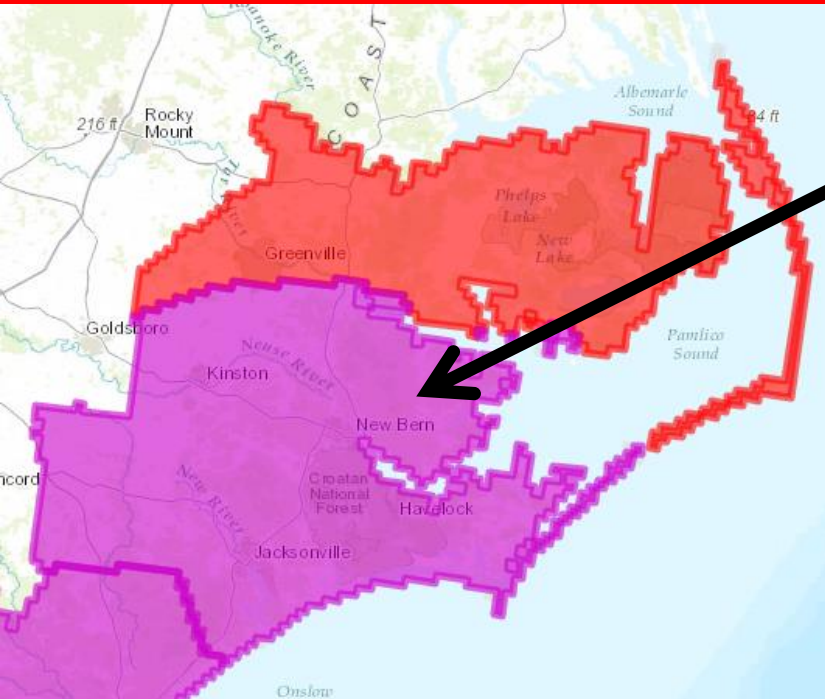
- This is a dangerous and life threatening flooding event!
- **8 to 15 inches of rain with locally higher amounts possible** across Eastern NC.
- Given already high water levels, **rainfall will have a difficult time draining in coastal areas, making the potential for rainfall flooding higher, possibly combining with storm surge to create higher inundation along coastal areas.**
- Peak heavy rainfall will be late this afternoon through tonight. **Flash flooding is especially dangerous at night where it is difficult to see high water and road washouts!**

**Flash Flood Warnings are  
in Effect**

**A Flash Flood Watch Is In  
Effect**

**Avoid unnecessary travel!  
If you must travel, remember to  
“Turn Around, Don’t Drown!”**

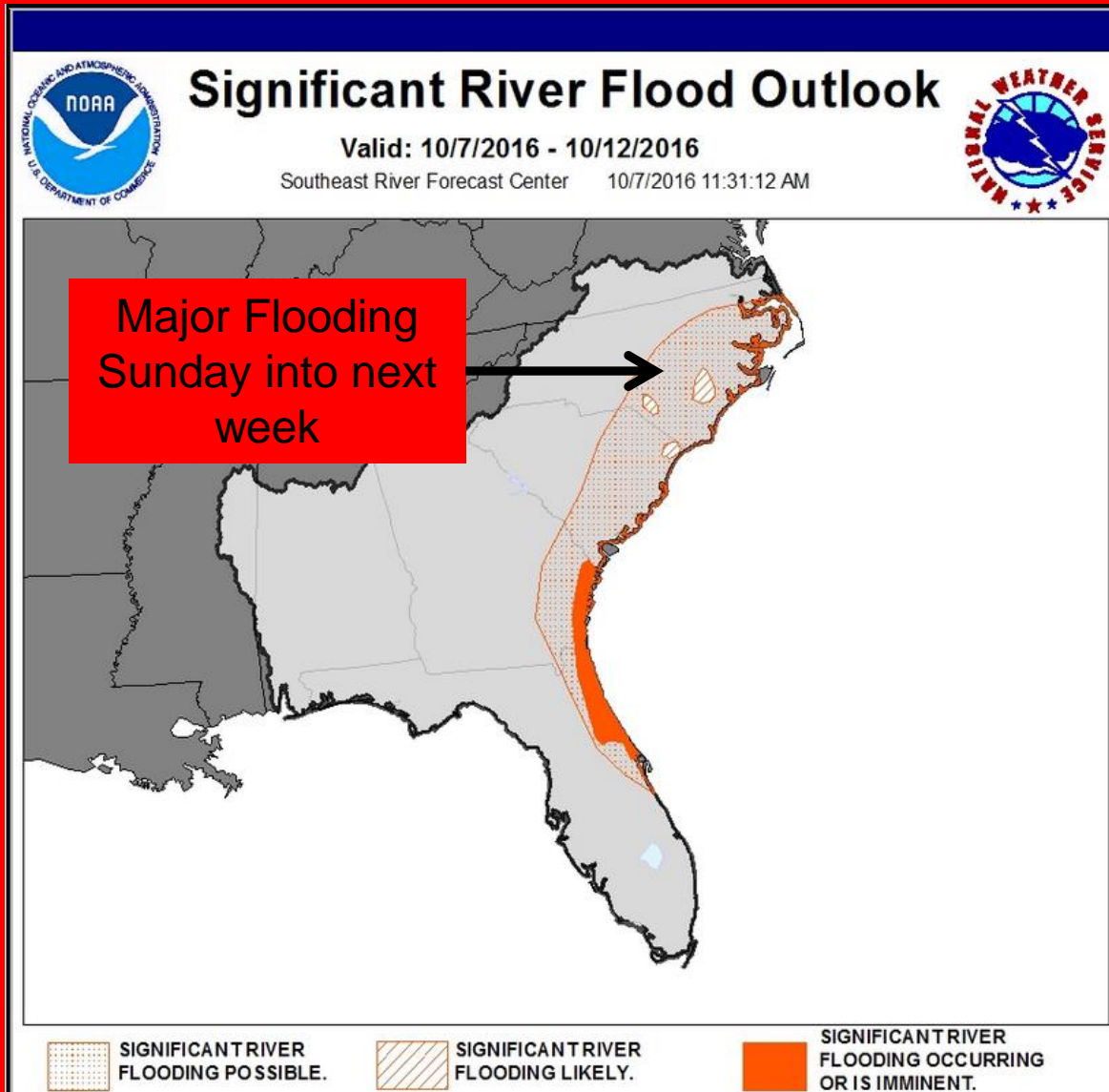
# Extreme Flooding Possible!



Flooding Rain Threat	Potential Impacts From Flooding Rains
<b>EXTREME</b> Potential for extreme rainfall flooding	<b>DEVASTATING TO CATASTROPHIC</b> To be safe, aggressively prepare for the potential of devastating to catastrophic flooding impacts where peak rainfall totals vastly exceed amounts conducive for flash flooding and/or rapid inundation.
<b>HIGH</b> Potential for major rainfall flooding	<b>EXTENSIVE</b> To be safe, aggressively prepare for the potential of extensive flooding impacts where peak rainfall totals well exceed amounts conducive for flash flooding and/or rapid inundation.
<b>MODERATE</b> Potential for moderate flooding	<b>SIGNIFICANT</b> To be safe, earnestly prepare for the potential of significant flooding impacts where peak rainfall totals notably exceed amounts conducive for flash flooding and/or rapid inundation.
<b>ELEVATED</b> Potential for some rainfall flooding	<b>LIMITED</b> To be safe, prepare for the potential of limited flooding impacts where peak rainfall totals are near amounts conducive for flash flooding and/or rapid inundation.
<b>LITTLE TO NONE</b> Little to no rainfall flooding anticipated	<b>LITTLE TO NONE</b> No immediate preparations needed to guard against excessive tropical rainfall.

With the potential for these high to extreme impacts, ***residents along rivers and creeks should prepare their property for significant flooding and consider moving to higher ground for the peak of the storm*** expected Saturday into Early Sunday morning.

# Major River Flooding Possible!



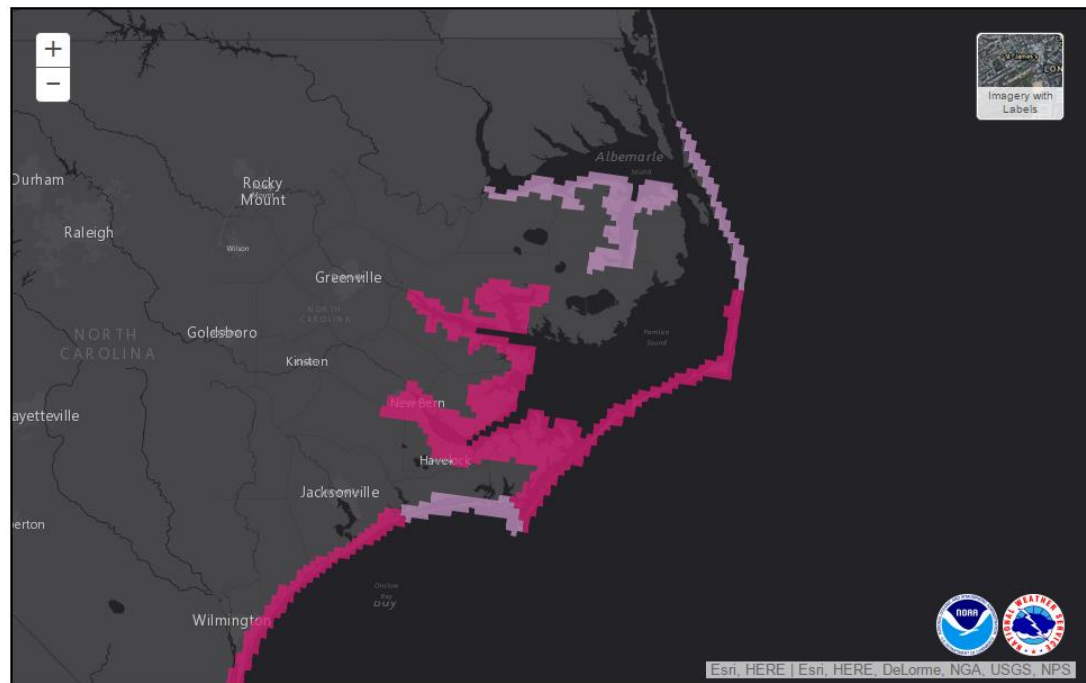
- Current forecasts call for:
  - Major Flooding at Chinquapin (22.6')
  - Moderate Flooding at Kinston (21.8')
  - Major Flooding at Greenville (20.2')
  - Major Flooding at Hookerton (18.8')
- Most vulnerable locations at junctions where rivers drain into the sounds.
- Forecast highly dependent rainfall totals
- Rivers expected to remain in flood for many days



# Storm Surge Warnings and Watches

## Prototype Storm Surge Watch/Warning Graphic\*

Hurricane MATTHEW  
Advisory 042 Issued: 11:00 AM EDT Sat Oct 8



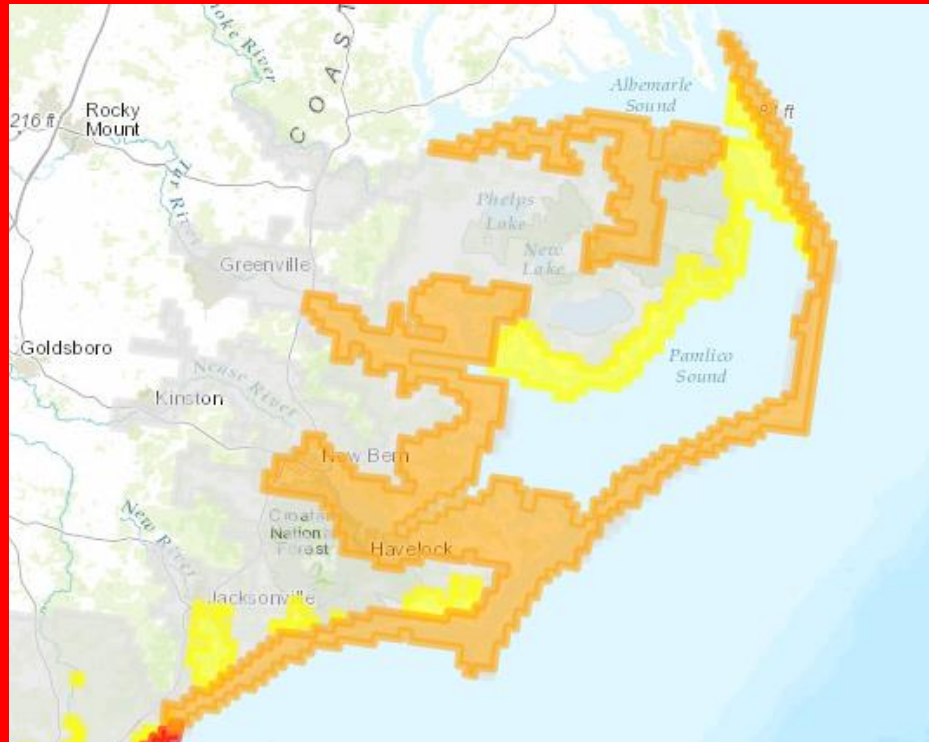
**Please Note:** Storm surge above ground values represent the potential at the average elevation across any particular grid cell. There can be locally deeper inundation levels at low spots.

- This prototype storm surge watch highlights the areas at greatest risk of storm surge. In the areas under the prototype watch, 2 to 4 feet of storm surge above ground is possible (3 to 6 feet above normal).

***Localized higher surge is possible.***

- Elsewhere, 1 to 3 feet above ground is possible all along our coast (2 to 4 feet above normal)

# Storm Surge Potential Threat & Impacts



Storm Surge Threat	Potential Impacts From Storm Surge
<b>EXTREME</b> Potential for inundation of 9 feet or greater above ground	<b>DEVASTATING TO CATASTROPHIC</b> To be safe, aggressively prepare for the potential of devastating to catastrophic storm surge flooding impacts.
<b>HIGH</b> Potential for inundation 6-9 feet above ground	<b>EXTENSIVE</b> To be safe, aggressively prepare for the potential of extensive storm surge flooding impacts.
<b>MODERATE</b> Potential for inundation 3-6 feet above ground	<b>SIGNIFICANT</b> To be safe, earnestly prepare for the potential of significant storm surge flooding impacts.
<b>ELEVATED</b> Potential for inundation 1-3 feet above ground	<b>LIMITED</b> To be safe, prepare for the potential of limited storm surge flooding impacts.
<b>LITTLE TO NONE</b> Little to no inundation	<b>LITTLE TO NONE</b> No immediate preparations needed. Little to no potential storm surge flooding impacts.

Timing of surge will begin in earnest this evening across the southern Crystal Coast and rivers and by Sunday on the Outer Banks and Southern Pamlico Sound, Albemarle Sound, and Sound Side of the Outer Banks.

# Hurricane Matthew Details

## High Surf/Beach Erosion

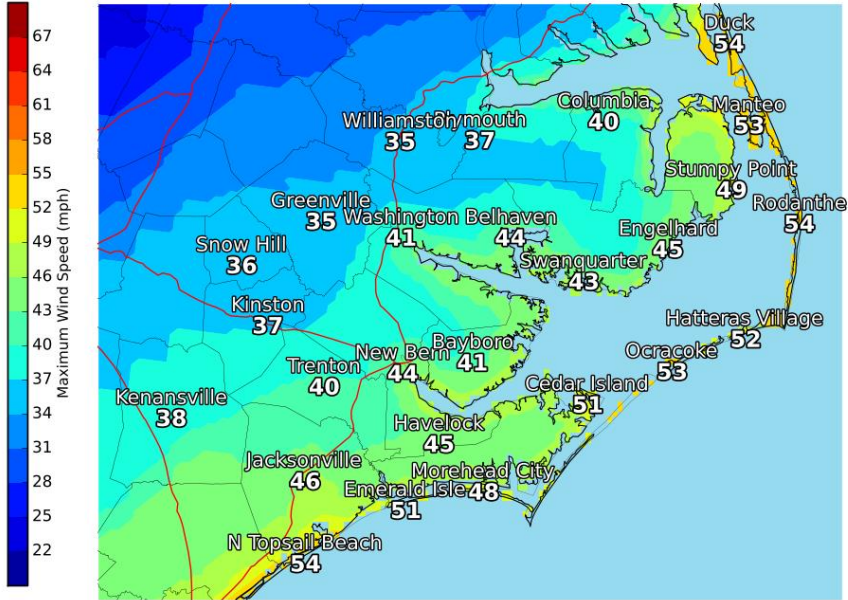
- Ocean front: High surf and breaking waves will likely result in ***moderate erosion and scattered areas of ocean over wash.***
- Most vulnerable areas:
  - The Crystal Coast could have some of the worst erosion. ***North Topsail Beach and further north along Onslow County Beaches will be especially vulnerable to erosion and some ocean front surge flooding. This would peak tonight.***
  - ***The combination of isolated dune breaches, over wash, and sound side flooding could cause mostly areas of inundation on portions of Highway 12 on the Outer Banks and Ocracoke. This could occur tonight through Sunday Night.***
  - ***High surf across the Outer Banks from Cape Hatteras North will continue Sunday into early next week. Vulnerable spots like Kitty Hawk could experience issues from erosion at multiple high tide cycles and suffer some over wash.***

# Hurricane Matthew Details

## Wind Impacts

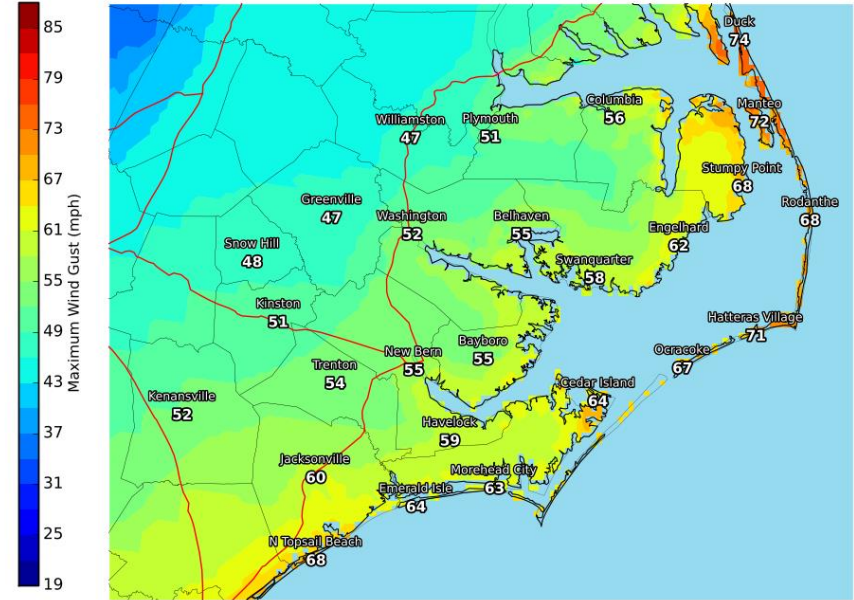
### Hurricane Matthew Max Wind Forecast

Valid: 10/08/2016 02:00 PM - 10/10/2016 08:00 AM EDT



### Hurricane Matthew Max Wind Gust Forecast

Valid: 10/08/2016 02:00 PM - 10/10/2016 08:00 AM EDT



National Weather Service  
Newport/Morehead City North Carolina  
10/08/2016 12:32 PM EDT

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National Weather Service  
Newport/Morehead City North Carolina  
10/08/2016 12:34 PM EDT

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- With the current track, **timing of the strongest winds would likely be beginning this afternoon, and continuing into Sunday Night on the Outer Banks.**
- **The very saturated ground will increase the potential for downed trees. We expect dangerous impacts with trees falling on buildings and cars with widespread power outages!**



# Hurricane Matthew Details

## Additional Impacts

- **Tornadoes**

- With Matthew tracking closer to the NC coast, a marginal threat for tornadoes is continues across Eastern NC. The best chance of seeing a tornado is along and south of highway 70.
- Be prepared to take action quickly should a tornado warning be issued. Mobile homes and camper trailers offer no protection from a tornado. Move to a more substantial structure if possible.

- **Marine (Coastal Waters) Threats**

- A tropical storm warning is in effect for all coastal waters, with a hurricane warning for the coastal waters south of Cape Lookout! The forecast for seas through the event is 12 to 22 feet.
- Conditions on the waters will deteriorate rapidly as Matthew approaches. ***Boaters are urged to stay in port, and be prepared to secure their vessels to deal with the potential water level rises associated with storm surge.***

- **Rip Currents**

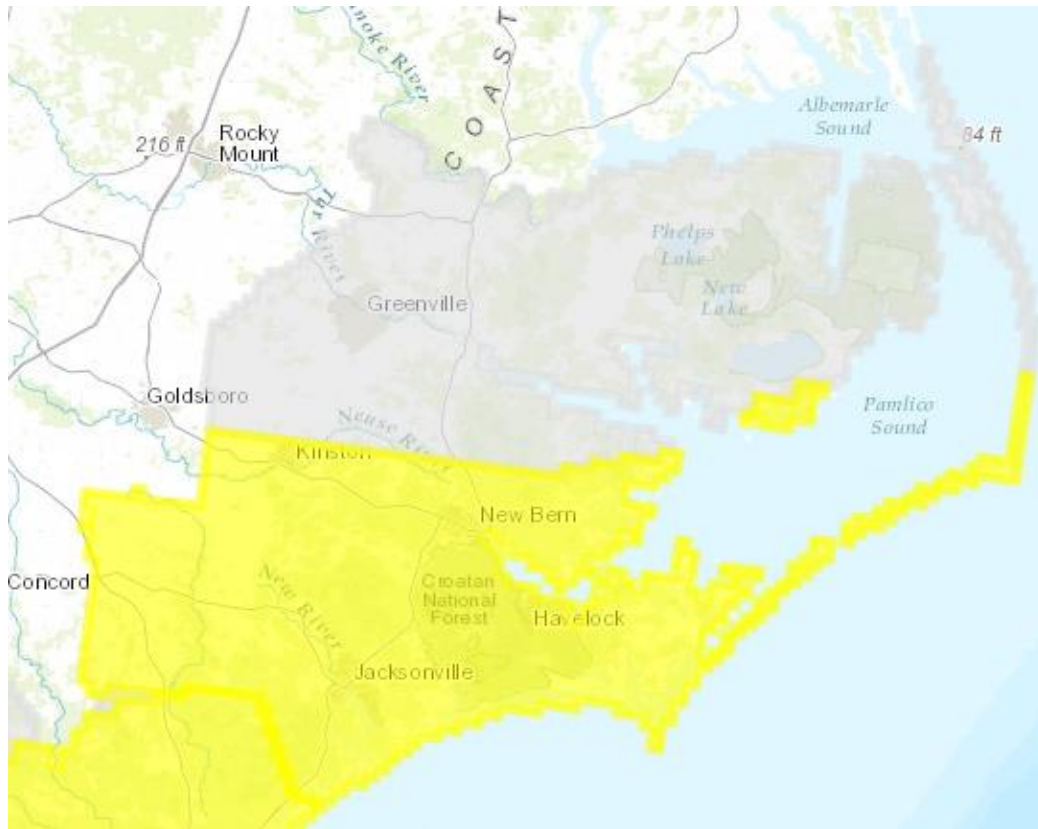
- ***There is a high threat of rip currents across the entire area, and very rough surf.***
- ***It is recommended to avoid swimming as surf conditions deteriorate.***

# Tornado Potential Threat & Impacts

If in a mobile home or camper trailer when a tornado warning is issued, seek shelter in a more substantial structure.

The potential for a few tornadoes has increased along the coast. Be prepared to react quickly to any tornado warnings that are issued.

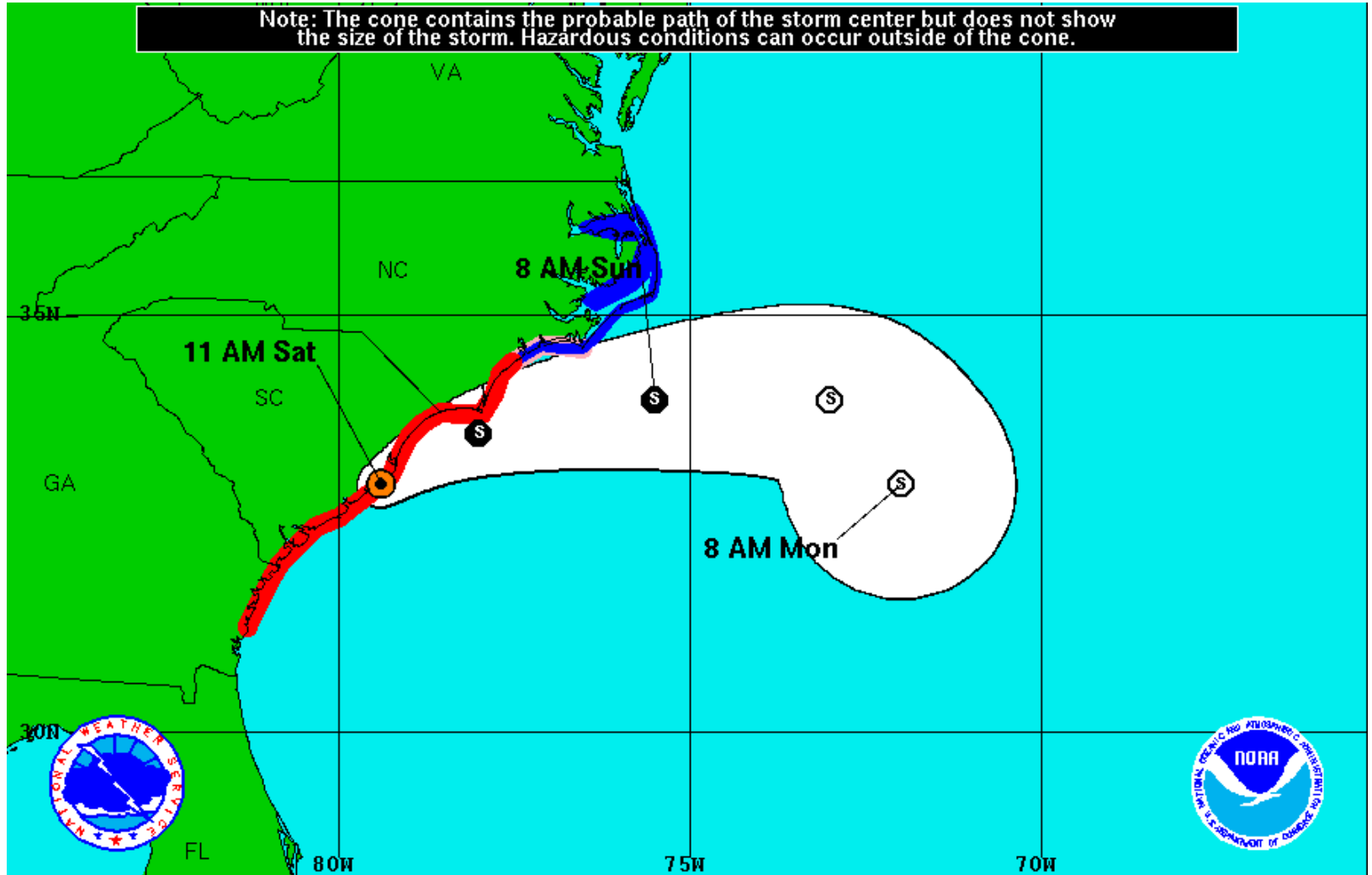
Tornado warnings have been issued. Monitor NOAA weather radio or other outlets for updates.



Tornado Threat	Potential Impacts From Tornadoes
<b>EXTREME</b> Potential for an outbreak of tornadoes	<b>DEVASTATING TO CATASTROPHIC</b> To be safe, aggressively prepare for the potential of devastating to catastrophic tornado impacts.
<b>HIGH</b> Potential for many tornadoes	<b>EXTENSIVE</b> To be safe, aggressively prepare for the potential of extensive tornado impacts.
<b>MODERATE</b> Potential for several tornadoes	<b>SIGNIFICANT</b> To be safe, earnestly prepare for the potential of significant tornado impacts.
<b>ELEVATED</b> Potential for a few tornadoes	<b>LIMITED</b> To be safe, prepare for the potential of limited tornado impacts.
<b>LITTLE TO NONE</b> Tornadoes not anticipated	<b>LITTLE TO NONE</b> No immediate preparations needed to guard against tropical tornadoes.

# Hurricane Matthew Forecast Track

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

Saturday October 8, 2016

11 AM EDT Advisory 42

NWS National Hurricane Center

**Current Information:** ●  
 Center Location 33.0 N 79.4 W  
 Max Sustained Wind 75 mph  
 Movement NE at 12 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:

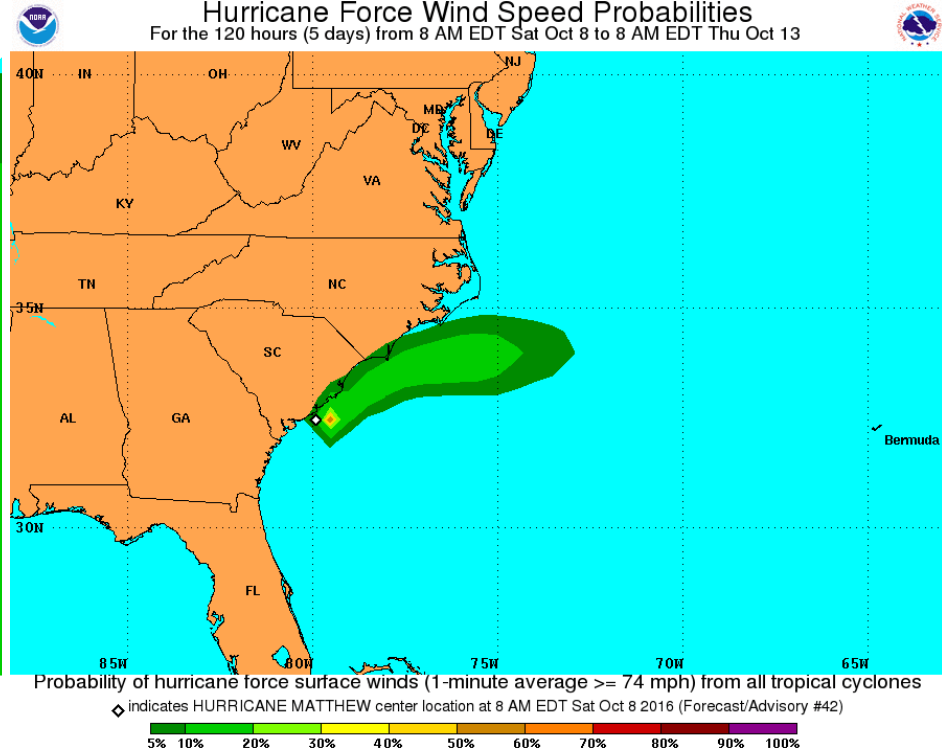
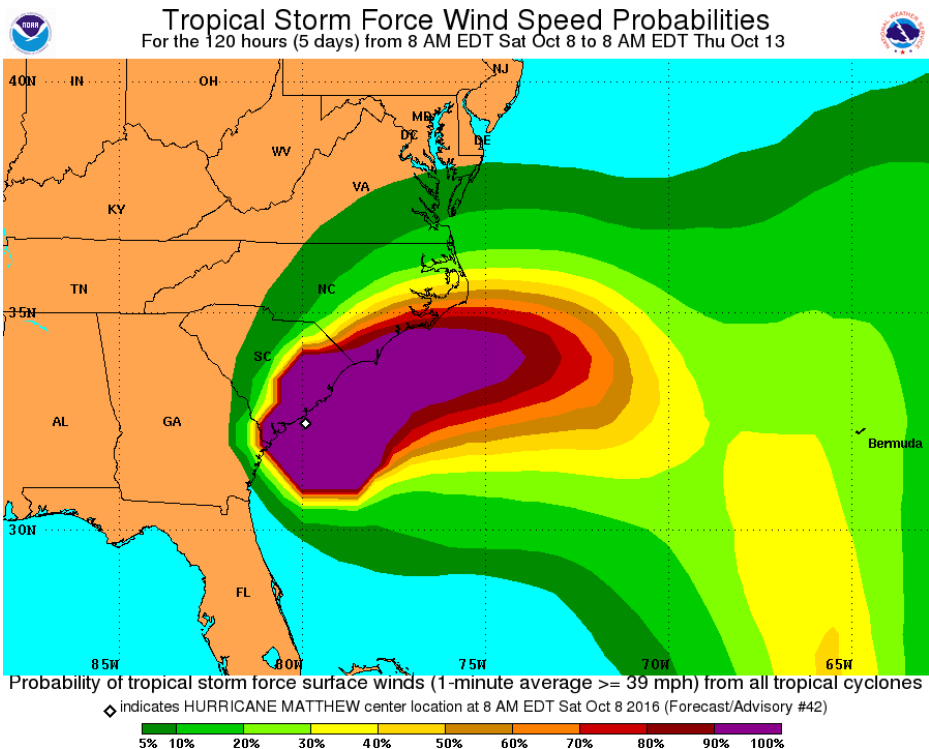
▭ Hurricane ▭ Trop.Storm

## Warnings:

▭ Hurricane ▭ Trop.Storm



# Hurricane Matthew Wind Speed Probabilities



Probability of tropical storm force winds.

Probability of hurricane force winds.

These probabilities have continued to increase across the area.



# Be Aware, Be Prepared, Stay Safe!

- **This is an extremely dangerous and life threatening situation! This could be the worst flooding event the area has faced since Hurricane Floyd. There is a heightened threat from wind and surge as well.**
- **It is important to *have multiple ways to receive warnings, especially at night*. NOAA Weather Radio is an excellent resource to be alerted to warnings, as well as newer cell phones that are Wireless Emergency Alert capable that will alert for Tornadoes and Flash Floods.**
- **Move property to the highest ground possible, especially if you live in low lying areas, especially if close to the sound, rivers, or small creeks.**
- **Consider relocating to higher ground if you are in a particularly vulnerable low lying location.**
- **Avoid travel if at all possible this weekend.**
- **There will be numerous areas with trees down and power outages.**
- **All preparedness Actions should be complete!**

For updates call the forecaster on Duty  
(252) 223-5122 x5

References:

[NWS Newport/Morehead City Webpage](#)

[WPC Rainfall Forecasts \(QPF\)](#)

[National Hurricane Center](#)

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