Our Mission

The National Weather Service (NWS)

About

Serving you in every community in the U.S. Check out who we are and what we do!

NWS Mission

Provide weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy.

NWS Vision

A Weather-Ready Nation: Society is prepared for and responds to weather, water, and climate-dependent events.

Weather-Ready Nation Story

Accurate weather forecasts do not always result in a good outcome. The National Weather Service (NWS) learned this difficult... Read more

Begin Your NWS journey
Our Local Office

Eastern part of North Carolina

Includes: Land areas, inland rivers, sounds, and adjacent ocean

Other parts of the state covered by other local offices (Raleigh, Wilmington, etc)
Open 24/7/365

Hurricane Florence

Staff here for 3 to 7 days

Our building is designed to withstand storms

We stay when the weather is bad
Our Website
weather.gov/newport

Weather information from past events, current weather, and forecast

Explore the website and bookmark or save what you like

Go in depth as much as you need
Sky cover
High/low temperatures
Winds
Chance of precipitation
Created prior to bigger events of severe weather
Weather Briefings
weather.gov/newport

January 2018
Winter Storm

Summary of Greatest Impacts

- **Wind:** Moderate Confidence – track dependent
  - None
  - Elevated
  - Moderate
  - High
  - Extreme

- **Surge/Inundation:** Moderate to High Confidence
  - None
  - Elevated
  - Moderate
  - High
  - Extreme

- **Rainfall Flooding:** High Confidence
  - None
  - Elevated
  - Moderate
  - High
  - Extreme

- **Tornado:** Low Confidence – track dependent
  - None
  - Elevated
  - Moderate
  - High
  - Extreme

- **Marine:** Confident – regardless of track
  - None
  - Elevated
  - Moderate
  - High
  - Extreme

Most Likely Snow Amount Through Thursday morning

- **Storm Confidence:**
  - Confidence is high for widespread significant impacts.
  - Highest impacts will be Wednesday night into Thursday morning.
  - Snowfall rates 1” – 2” per hour.
  - Find the most up to date snowfall map, click [here](http://weather.gov/newport)

Hurricane Florence Impacts
Category of the storm is only related to wind, it does not tell you about all of the impacts with a #hurricane like #florence. Our impacts have not changed with storm surge and catastrophic flooding. Do not let your guard down. weather.gov/media/mhx/Late ...
Quickly access hourly forecasts, radar, and more from your local office, ANYWHERE in the country.

Can work like a weather “APP” by adding it to home screen.

Also works on PCs.
Hurricane...
The Greatest Storm on Earth!
Hurricane Names Around The World

Central & Eastern Pacific Oceans

Atlantic Ocean

Indian Ocean

Western Pacific

Coast of Australia

“Hurricane”

“Typhoon”

“Cyclone”

“Willy-Willy”
Light winds aloft steer the storm

Moist air rises & condenses

Warm moist air converges near storms center

Hurricanes are fueled by warm ocean waters (more than 80°F)
Anatomy of a Hurricane

- Eye
- Eye Wall
- Spiral Rain Bands
Anatomy of a Hurricane

Eye: Light winds, mostly sunny, very low surface pressure

Eye Wall: Strongest winds, heaviest rain

Spiral Rain Bands: Rotate around the storm, moderate to heavy rain, strong winds, possible weak tornadoes
Climatology (North Atlantic Basin)

![Graph showing the frequency of hurricanes and tropical storms in the North Atlantic Basin. The graph indicates that hurricanes are most common in August and September. Notable hurricanes include Beryl, Andrea, Arthur, Irene, Hermine, Matthew, Dorian, Florence, and Sandy.]
You Should Prepare Each and EVERY Year

MAY 5 - Assemble Disaster Supplies
Get your supplies before hurricane season begins. Have enough food and water for each person for at least three days. Be sure to fill your prescriptions and have medicine on hand. Radios, batteries and phonechargers on are also must haves. Gas up your vehicle and extra cash on hand.

- Food & Water
- Medicine
- Batteries, Radio, Chargers
- Gas Up
- Cash on Hand
Hurricane Preparedness

www.weather.gov/wrn/hurricane-preparedness or ready.gov

You Should Prepare Each and EVERY Year

MAY 9 - Complete a Written Plan
Writing down your plan will help you avoid mistakes when faced with an emergency and ensure everyone in your home is prepared for the next storm.

- Have photo documentation of valuables
- Keep your important documents together for quick access
- Share your plan
Tropical Cyclone Products
GRAPHICAL TROPICAL OUTLOOK
Provides formation potential for individual disturbances during the next 5 days.

Issued 4 Times A Day
8 and 2 AM/PM EDT
7 and 1 AM/PM EST
Tropical Cyclone Track Forecast Cone Watches/Warnings Initial Wind Field

Cone represents probable path of the CENTER of the storm

The cone does NOT show impacts

Impacts can occur hundreds of miles from the center of the storm

The center of the storm passes within the cone roughly 2/3 of the time
**National Hurricane Center**

www.nhc.noaa.gov or hurricanes.gov

---

**Hurricane Florence**

- **Wednesday September 12, 2018**
- 5 PM EDT Advisory 54
- NWS National Hurricane Center

**Current information:**

- Center location 30.9 N 72.5 W
- Maximum sustained wind 120 mph
- Movement NW at 16 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 Storm

**Warnings:**

- Hurricane
- Trop Storm
Tropical Cyclone Impacts

- Wind
- Storm Surge/Wave Run-up
- Rainfall/Freshwater Flooding
- Tornadoes
- Rip Currents
Saffir/Simpson Hurricane Scale

Used to categorize hurricane strength and to give an estimate of potential property damage

- **Category 1**: Wind: 74-95 mph, Damage: Very dangerous winds will produce some damage
- **Category 2**: Wind: 96-110 mph, Damage: Extremely dangerous winds will cause extensive damage
- **Category 3**: Wind: 111-129 mph, Damage: Devastating damage will occur
- **Category 4**: Wind: 130-156 mph, Damage: Catastrophic damage will occur
- **Category 5**: Wind: 157 mph or higher, Damage: Catastrophic damage will occur
Storm Surge
Almost 50% of the deaths are due to storm surge.

Over 80% of deaths are due to water.

Wind causes less than 10% of deaths.

Florence killed 15 people directly.

11 were water related.

Storm Surge Watch

5 am 11th

Sturm Surge Warning

Storm Surfge Watch

5 pm 11th

NATIONAL WEATHER SERVICE

Potential Storm Surge Flooding Map

- 6 to 12 feet above ground level from Cape Fear to Cape Lookout, including the Neuse and Pamlico River
- Cape Lookout to Ocracoke Inlet of 5 to 8 feet

NATIONAL WEATHER SERVICE

Potential Storm Surge Flooding Map

- 9 to 13 feet above ground from Cape Fear to Cape Lookout, including the Neuse and Pamlico River
- Cape Lookout to Ocracoke Inlet of 6 to 9 feet
- Ocracoke Inlet to NC/VA border 4 to 6 feet
Storm Surge

8 to 11 feet storm surge inundation in New Bern

Over 1,800 water rescues in New Bern alone

2 to 4 feet of surge Swansboro, Bogue Sound, Emerald Isle
Rainfall Flooding
### Totals From 8 AM Thursday – 8 AM Tuesday

<table>
<thead>
<tr>
<th>Location</th>
<th>Rainfall (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swansboro, NC</td>
<td>34.14</td>
</tr>
<tr>
<td>Jacksonville, NC</td>
<td>30.65</td>
</tr>
<tr>
<td>Albertson, NC</td>
<td>26.26</td>
</tr>
<tr>
<td>Newport NWS, NC</td>
<td>25.62</td>
</tr>
<tr>
<td>Emerald Isle, NC</td>
<td>23.49</td>
</tr>
<tr>
<td>Trenton, NC</td>
<td>19.42</td>
</tr>
<tr>
<td>MCAS New River, NC</td>
<td>19.35</td>
</tr>
<tr>
<td>Kinston, NC</td>
<td>18.92</td>
</tr>
<tr>
<td>New Bern, NC</td>
<td>15.17</td>
</tr>
<tr>
<td>Winterville, NC</td>
<td>13.24</td>
</tr>
</tbody>
</table>
River Flooding

N.E Cape Fear River Near Chinquapin gauge and New River near Gum Branch (northwest of Jacksonville)

Exceeded Hurricane Floyd (flood of record) levels

Extensive flash flooding caused numerous road washouts
River Flooding

Exceeded Hurricane Floyd (flood of record) levels

Extensive flash flooding caused numerous road washouts

TRENT RIVER AT POLLOCKSVILLE

Florence Crest: 20.48 ft.
Wind
# Peak Wind Gusts (MPH)

<table>
<thead>
<tr>
<th>Location</th>
<th>MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Lookout</td>
<td>106</td>
</tr>
<tr>
<td>Wilmington</td>
<td>105</td>
</tr>
<tr>
<td>Fort Macon</td>
<td>105</td>
</tr>
<tr>
<td>Scotts Hill</td>
<td>92</td>
</tr>
<tr>
<td>Cherry Point</td>
<td>88</td>
</tr>
<tr>
<td>New River Air Station</td>
<td>88</td>
</tr>
<tr>
<td>Castle Hayne</td>
<td>74</td>
</tr>
<tr>
<td>Beaufort</td>
<td>71</td>
</tr>
<tr>
<td>Lumberton</td>
<td>69</td>
</tr>
<tr>
<td>Myrtle Beach</td>
<td>61</td>
</tr>
</tbody>
</table>
*Duration of wind was impactful (3 - 4 days*
Tornadoes
Tornadoes

Over 25 confirmed tornadoes for coastal Carolina

Enhanced areas of damage

Tornadoes can occur well away from the center/well ahead of landfall
Rip Currents
Hurricane Lorenzo – Sept. 23 to Oct. 4, 2019

- Major Hurricane for several days.
- Northern most Cat 5 on record in Atlantic.
- Recurved well out at sea.
- But generated a significant swell event for the western Atlantic.
- 4 deaths in the Carolinas, 7 total on the East Coast
Rip currents are powerful currents of water moving away from shore. They can sweep even the strongest swimmer away from shore. If at all possible, swim near a lifeguard.

IF CAUGHT IN A RIP CURRENT
- Relax, rip currents don’t pull you under.
- Don’t swim against the current.
- Swim out of the current, then to shore.
- If you can’t escape, float or tread water.
- If you need help, yell or wave for assistance.

WHAT TO REMEMBER
If you’re caught in a rip current...
Float, Wave, and Yell
OR
Swim Parallel
● Understand that the Category and track of storm does not inform on impacts. Follow NWS Briefing packages and graphics.

● Understand your Storm Surge Risk using the new Storm Surge Watch/Warning products and Potential Storm Surge Flooding Map.

● Heavy rains and flooding can preceded strong winds, do not delay evacuations!

● Never drive through flooded roadways! Make plans to be off the road and remain off the road during any tropical system!

● Deep water can linger and rivers can rise for days following a storm.

● Have multiple means of obtaining warnings. Be prepared to take quick action for tornado warnings!
Thanks for Your Interest!

erik.heden@noaa.gov  www.weather.gov/newport