



National Weather Service Newport/Morehead City



Flood SKYWARN Online Training 2020



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Welcome To Our Third Year Of Online Classes



- You can download our presentation via our website if you have trouble. Visit: <u>https://www.weather.gov/mhx/MHXSkywarn</u>
- Both your audio and video will come through your PC/mobile device.
- We will send you a certificate of completion in the next week, to the email you registered with. If you don't get one, make sure you entered your email correctly.



Asking Questions



- At the end we will answer questions you have. If you raise your hand I will call on you and you can use your mic to ask a question. I will unmute your line.
 - If you don't have a mic or don't want to ask in front of everyone, just send me a chat









- National Weather Service Overview
- SKYWARN Facts
- Flood History
- Tropical systems, localized flooding and coastal flooding.
- Flash Floods
- Review of spotter procedures



Future Classes





 We hold 4 SKYWARN classes throughout the year. Basic Spring, Basic Winter, Flood and Tropical SKYWARN, Advanced SKYWARN.

 We will always post future class information on our website weather.gov/newport at the top of the page. Also, we will post it on Facebook.

 Our goal is that you report to us year round (snow, hail, high winds, etc).



Keep Current



 Bookmark weather.gov/mhx/ MHXSkvwarn

- You can find YouTube training for both winter and spring skywarn
- You can also refresh yourself on when and how to report along with the current schedule









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

We are

StormReady







Hurricane Florence

LKEFFEL

Staff here for 3 to 7 days

Our building is designed to withstand storms

We stay when the weather is bad







 SKYWARN is a National volunteer program run by the National Weather Service

 SKYWARN's goal is to provide NWS with "Ground Truth Reports" of significant weather







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How do Weather Spotters help the NWS?



- Real time reports assist the National Weather Service in our warning decisions.
- Helps forecasters gauge how severe • a storm is.
- Your information may be the reason a 0 warning is issued, and/or provides credibility to a warning.
- You could help provide the citizens of your community with potentially lifesaving information.
 - **SKYWARN** provides a backbone of emergency communications.
 - The trained eye of the storm spotter is still our greatest asset!





Fundamental Definitions

<u>Watch</u>

Conditions are favorable for the weather event in/near the watch area.

<u>Warning</u>

The weather event is imminent or occurring in the warned area. Issued by NWS Newport.

<u>Flash Flood</u>

Flooding that begins within 6 hours (often within 3 hour). Most often caused by heavy rain (dam breaks other possible reasons).



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





7- Day Forecast

weather.gov/newport



	Detailed Forecast			
	Today	Mostly cloudy, with a high near 54. Light northwest wind.		
Sky cover	Tonight	Mostly cloudy, with a low around 38. West wind 5 to 7 mph.		
	Wednesday	Sunny, with a high near 60. Northwest wind 7 to 9 mph.		
High/low temperatures	Wednesday Night	Mostly clear, with a low around 38. Light north wind.		
i ingri/10 w temperatures	Thursday	Sunny, with a high near 60. Light and variable wind becoming northwest around 5 mph.		
	Thursday Night	Partly cloudy, with a low around 44.		
— 🔊 Winds	Friday	Mostly sunny, with a high near 67.		
	Friday Night	Mostly cloudy, with a low around 48.		
	Saturday	A chance of showers. Mostly cloudy, with a high near 64. Chance of precipitation is 50%.		
Chance of precipitation	Saturday Night	A chance of showers. Mostly cloudy, with a low around 44. Chance of precipitation is 50%.		
*	Sunday	Partly sunny, with a high near 58.		
≉•	Sunday Night	Mostly clear, with a low around 39.		
	Monday	Sunny, with a high near 60.		

Detailed Ecropol

Extended Forecast for **New Bern NC**

Today	Tonight	Wednesday	Wednesday Night	Thursday	Thursday Night	Friday	Friday Night	Saturday
- E	- Star	*		*			- 3	50%
Mostly Cloudy	Mostly Cloudy	Sunny	Mostly Clear	Sunny	Partly Cloudy	Mostly Sunny	Mostly Cloudy	Chance Showers
High: 54 °F	Low: 38 °F	High: 60 °F	Low: 38 °F	High: 60 °F	Low: 44 °F	High: 67 °F	Low: 48 °F	High: 64 °F



Hourly Forecast

weather.gov/newport





Follow us on Twitter

Forecaster Discussion

Follow us on Facebook

Marine





Tropical

Skywarn

Submit Storm Reports

MHX RSS Feed



Weather Briefings

weather.gov/newport





Hurricane Florence Impacts

January 2018 Winter Storm





Social Media

Search NWS Morehead City





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 ...

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Hurricane Florence NWS Morehead City Wednesday 900 AM Briefing

SEATHey .	NWSMoreheadCity
	Published on Sep 12, 2018

2.895 views

SUBSCRIBE 199

A SHARE =+ SAVE ...

Hurricane Florence Lead Up

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Mobile Forecasts

mobile.weather.gov



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





Call the Spotter Hotline: REPORTS ONLY!1-800-889-6889

Note: This is specific to Eastern NC. Outside the area follow future info sent to you!

This is a special number only for spotters and rings directly to us!

- 1. Who you are: Trained Skywarn Spotter
- 2. What you saw (funnel cloud etc.)
- 3. Where you saw it (Newport).
- 4. When you saw it (6:45 P.M.) or 5 minutes ago, etc.

R_Spotters can belp save lives by_Making the renor s

Email US!!!

REPORTS ONLY!

REPORTS ONLY! Wxobs.mhx@noaa.gov

Note: This is specific to Eastern NC. Outside the area follow future info sent to you!

- Who you are: Trained Skywarn Spotter. 1.
- What you saw (large trees down. More than a few. 70 mph 2. winds estimated)
- Where you saw it (1 mile east of Beaufort) 3.
- 4. When you Saw it (2:35 PM)

Hurricanes



Hurricane...

The Greatest Storm on Earth!

Hurricane Names Around The World

Central & Eastern Pacific Oceans



Atlantic Ocean

"Hurricane"

Cyclone"

Indian Ocean Western Pacific

"Typhoon"

"Willy-Willy" Coast of Australia 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: 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



Hurricane Floyd 1999



Hurricane Floyd 1999





Grifton, N.C.





FLOODING

Multi-cells can "train" over an area producing flash flooding









Havelock 2009

10" in 4 hours. Rainfall Rates of 6" per hour. Stalled thunderstorms along a sea breeze



Nor Easter 2015

Heavy rainfall but also coastal flooding in our area





Hurricane Matthew 2016

Historic flooding







Near Vanceboro (Matthew)



Flowing Water Near Grifton (Matthew)



Near Hookerton (Matthew)



Hurricane Florence 2018

Historic flooding







Florence Preliminary Storm Total Rainfall Rep Created: 9/19/2018 3:44 PM

Totals From 8 AM Thursday – 8 AM Tuesday

Swansboro, NC	34.14"
Jacksonville, NC	30.65"
Albertson, NC	26.26"
Newport NWS, NC	25.62"
Emerald Isle, NC	23.49"
Trenton, NC	19.42"
MCAS New River, NC	19.35"
Kinston, NC	18.92 "
New Bern, NC	15.17"
Winterville, NC	13.24"



National Weather Service – Newport/Morehead City

weather.gov/mhx 📑 US National Weather Service Newport/Morehead City 🈏 @NWSMoreheadCity



National Weather Service Newport/Morehead City North Carolina

Preliminary Hurricane Florence Rainfall Totals

Data Source: Regional Observations(PNS)



Observed Precipitation



Near Hookerton (Matthew)





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





TRENT RIVER AT POLLOCKSVILLE



Florence Crest: 20.48 ft.

River Flooding

Exceeded Hurricane Floyd (flood of record) levels

Extensive flash flooding caused numerous road washouts





Flooding...

- Significant = something never or rarely seen
- Ideally, we want to know "before" it gets really bad.
- Example, roads are becoming covered with water, my stream is rising fast and approaching bankfull.
- We want to know, how deep is the water? Compare it to a car, up to the tires, up to the doors, the roof, etc.
 - Are roads washed out, impassable ?
- If you live along the coast, how far above normal is the water? Do you have a gauge (water level)?





Have A Rain Gauge? Rainfall Reports extremely useful

- Rainfall reports help us confirm how the radar is doing with estimation.
- Knowing how much rain has fallen, gives us a good idea of the potential for flooding.
- Rainfall amounts of 1" or greater in 24 hours or rainfall amounts of 1" in an hour or less are MOST important.

Think about CoCoRaHS.



How can I Join the NETWORK?



Five easy steps

Simply sign-up on the CoCoRaHS web page: www.cocorahs.org

Obtain a 4" plastic rain gauge

View the on-line "training slide show" or attend a training session

Set-up the gauge in a "good" location in your yard

Start observing precipitation and report on-line daily

Section I

Setting up your rain gauge and measuring precipitation



Placement of your gauge

"Location is the key to good data"



Places not to place your gauge





The #1, all time worst place to put your rain gauge is to leave it in the box!

Using your gauge to hold up your gutter downspout is not a wise choice either!

Although convenient, the deck is still too close to the house





Avoid placing it under trees or any structure



Sprinklers both big and small

Animals (dogs, birds . ..)



Avoid anything that would artificially increase or decrease your catch gauge



This can cause updrafting during strong winds, which may reduce your gauge catch.

residential





Ideal placements for your gauge



urban

Distance from Obstacles

In <u>open areas</u> strive to be <u>twice as far</u> from obstacles as they are high.

In <u>developed areas</u> strive to be <u>as far</u> from obstacles as they are high.

Distance between Trees

Ideally, place your gauge equidistant from the nearest trees



Height above the ground

In <u>open areas</u> place the gauge top approx. 2 feet off the ground



In <u>developed areas</u> place the gauge top approx. 5 feet off the ground



Level and Bevel

Make sure that your gauge is level





Bevel the top of the post to reduce rain splashing into the gauge Measuring Rainfall with your Gauge

"Accuracy and consistency are very important"



A Word about Decimals

Please be careful when recording your measurement. Getting the decimal point correct is <u>essential</u>!

There is a large water difference between 0.40 inches and 4.00 inches

The Meniscus

The surface of the water in the gauge looks curved. How do I know where to read?

As water fills up the measuring tube, a curved surface is formed called a meniscus. It is formed by the surface tension of a liquid in contact with the sides of the tube.





"This is "one half" inch and is recorded as 0.50"





"This is "one inch" and is recorded as 1.00"

Lots of rain !!

When more than an inch of rain falls the precipitation will overflow into the outer cylinder.

The whole gauge has a capacity to hold eleven inches.





To measure greater than one inch . . .



Pour out the first inch from the inner tube and write it down.



Pour the remaining water into the funnel and measure the inner tube.



Continue until all of the water has been measured. Make sure you keep track of your measurements along the way. 62 Finally add up all of your measurements

1.00 inch
0.97 inches
0.88 inches
+ 0.92 inches
Total = 3.77"



Jow do I make my report

http://www.facebook.com/NWSMoreheadCity

facebook

Be sure to identify yourself as a trained spotter! Post a picture to our wall!

- 1. Who you are: Trained Skywarn Spotter
- 2. What you saw (quarter size hail. Hail lasted 5 minutes)
- 3. Where you saw it (North Towanda)
- 4. When you saw it (12:45 PM.)





When Should You Contact Us? Review

- Tornado or Funnel cloud (confirm rotation)
- Hail (any size)
- Wind damage- trees down, structural
- Flooding (closed roads, streams close to bankfull)
 - Heavy rainfall (amounts of 2 inch or more in 24 hours or 2 inches in less than an hour).



What Else To Report? Year Round Spotter



 Snowfall – take a few measurements in an area away from tall objects and does not drift to get an average. Report snowfall to us in the nearest tenth of an inch.

7.1", 2.2", etc

Any accumulation of ice. What is it sticking to? Only the cars, only the sidewalks, etc. You can measure the thickness of the ice on branches (if you want). Just knowing the conditions though is the most important.

Thanks for Your Interest!

HURRICANE EVACUATION ROUTE



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www.weather.gov/newport