NATIONAL WEATHER SERVICE, NEWPORT/MOREHEAD CITY, NC

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CAROLINA SKY WATCHER

WINTER 2012-13 EDITION

SANDY BATTERS THE OUTER BANKS *by Chris Collins, Meteorologist*

Hurricane Sandy was the largest Atlantic hurricane on record, as well as the second-costliest Atlantic hurricane in history, only surpassed by Hurricane Katrina in 2005. The eighteenth named storm and tenth hurricane of the 2012 Atlantic hurricane season, Hurricane Sandy devastated portions of the Caribbean, Mid-Atlantic and Northeastern United States in late October. Sandy is estimated to have caused damage of at least $20 billion, behind only Hurricane Katrina.

Despite being far out to sea, Sandy had a number of impacts on eastern North Carolina. Ocracoke and Highway 12 on Hatteras Island were flooded with up to 2 feet of water, closing part of the highway, while 20 people on a fishing trip were stranded on Portsmouth Island. On October 29, the Coast Guard responded to a distress call from the H.M.S. Bounty, which was built for the 1962 movie Mutiny on the Bounty. It was taking on water about 90 miles southeast of Cape Hatteras. Sixteen people were on board. The Coast Guard said the 16 people abandoned ship and got into two lifeboats, wearing survival suits and life jackets. The ship sank after the crew got off. As of mid-morning on October 29, the Coast Guard rescued 14. Another crew member was found hours later but was unresponsive and died later on. On November 1, the Coast Guard suspended its search for the captain of the Bounty.

The large circulation around Hurricane Sandy, October 28, 2012.

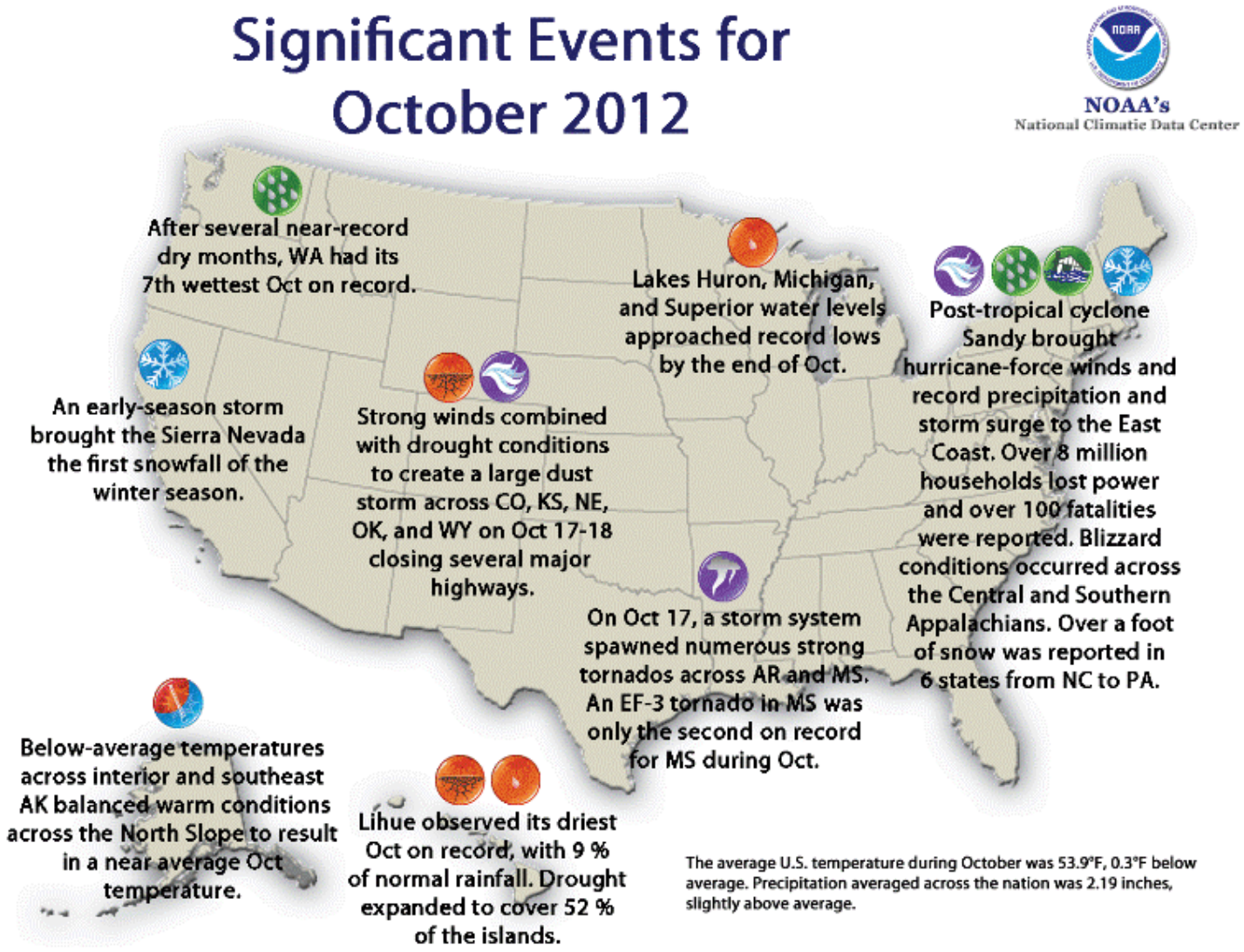
INSIDE THIS ISSUE

OCTOBER CLIMATE REVIEW

by Chris Collins, Meteorologist

The average temperature across the United States for October 2012 was 53.9 degrees, just 0.3 degrees below the long-term average, ending a 16-month streak of above-average temperatures for the lower 48 that began in June 2011. The streak dated back to May 2011. Below-average temperatures stretched from the Canadian border to the Gulf of Mexico during October, with 19 states having monthly temperatures below their 20th century averages. The Southwest and the Northeast were the only two areas of the country with above average temperatures. The October nationally-averaged precipitation total of 2.19 inches was slightly above the long-term average.

The October 30, 2012 U.S. Drought Monitor showed 60.2 percent of the contiguous U.S. was experiencing moderate-to-exceptional drought, less than the 64.6 percent at the beginning of October. Drought conditions improved across parts of the Midwest and Northeast, while drought conditions worsened across parts of the Northern Rockies.



TWITTER COMES TO WFO NEWPORT

by Lara Pagano, Meteorologist

Recently, the National Weather Service (NWS) joined the millions on Facebook. Now, the NWS will be providing updates on the social media outlet, Twitter. In an effort to better inform the public, the NWS Newport/Morehead City has a Twitter page (@NWSMoreheadCity) where followers can get more frequent updates. One advantage of following us via Twitter is the more numerous 'tweets' we post during weather events, as compared to our Facebook page, which is typically used for summary weather updates ('posts'). This means, you the follower, will be receiving information about hazards more readily. The typical daily 'tweet' will consist of current and forecast conditions. Weather briefings and outreach events will also be posted on both our Facebook and Twitter page. Again, we rely heavily on the public to post severe weather reports and pictures through our social media pages! So, we look forward to seeing you on our Facebook and Twitter pages.

For informative and more frequent updates of weather conditions across Eastern NC, please 'Follow' us @NWSMoreheadCity.

STUDENT INTERN PROGRAM *by Casey Dail, Meteorologist*

Are you a student interested in a career with the National Weather Service or in the field of meteorology? If so, our student volunteer program may be right for you. Our program is designed to provide students with an opportunity to learn about the science of weather forecasting, along with education about other NOAA agencies. This is done through several approaches including self-study, computer based learning, research, and hands on exercises.

The student volunteer program, though not a paying position, has many benefits for college or graduate students and recent graduates. Competition for positions within NOAA's National Weather Service (NWS) has increased in recent years, and it has proven beneficial for recent college graduates to have prior forecasting operational experience when they apply for positions within the NWS. Because of resource restraints, only a few students are selected to the student volunteer program through a competitive application process. Selected students may also be able to gain college credit for their time spent here at the NWS. Students will be required to complete a research project during their time at the office. The research can cover a range of topics from specific forecasting challenges to significant event reviews. Several of our previous volunteers have gone onto graduate schools and private sector positions in the meteorology field.

The volunteer program will be available for students:

- Majoring in meteorology or other related sciences
- Available to volunteer for at least 50 hours between late May and early August
- Be in good academic standing

The 2013 application will become available in mid-January on the NWS MHX website. If you have questions or are interested in meteorology and would like to learn more about the program please contact Casey.Dail@noaa.gov (252-223-5122).

2012 TORNADOES NEAR HISTORIC LOWS

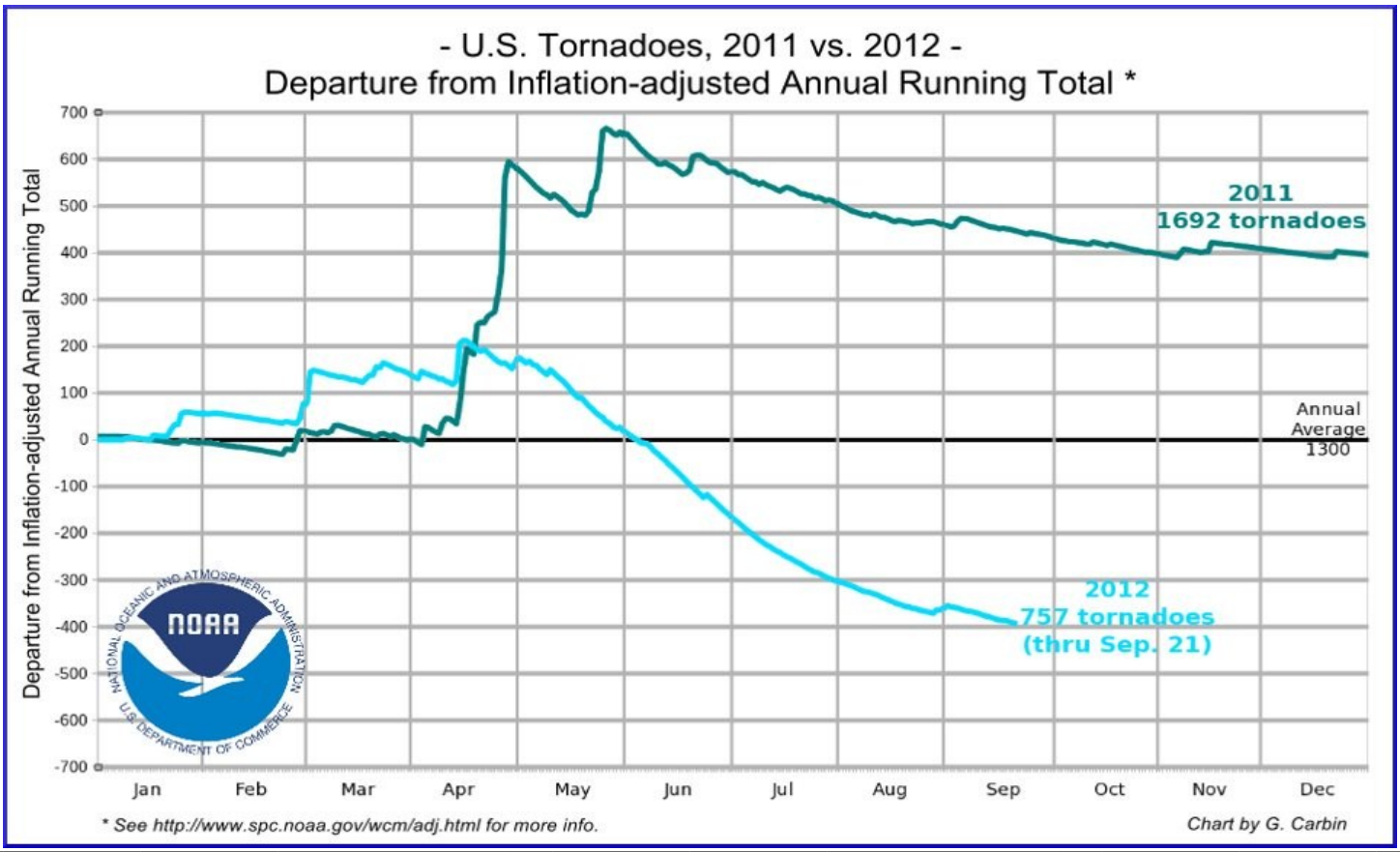
by Chris Collins, Meteorologist

After one of the busiest years in history for tornadoes in 2011, tornado numbers in 2012 have come crashing down to historic lows. In 2011, there were 1692 twisters - second most on record. This year, only 882 tornadoes have touched down. (Tornado records date back to 1950).

"We are approaching a theoretical minimum in the annual tornado count for the modern era," said Greg Carbin, warning coordination meteorologist at the National Weather Service Storm Prediction Center in Norman, Oklahoma. What's especially remarkable about the year's depressed numbers is that tornado activity got off to a red-hot start. Through mid-April, tornado counts were highest on record. But then, an extended tornado drought struck and the count ranking plummeted. The decrease in tornado activity coincided with the development of an extensive ridge of warm high pressure in the atmosphere across the western and central United States," Carbin said.

He continued: "This high pressure area produced both record warm temperatures and extreme drought over much of the middle part of the continent into the summer and autumn. The high pressure also acted as a block in the middle and upper atmosphere with more transient but dynamic weather systems, that can lead to tornado development, being shunted northward into Canada. Even when the high pressure weakened enough to allow for some of the more dynamic weather systems to move across the lower 48 states, shear in the atmosphere remained too limited to support more than isolated to occasional tornado events. These conditions didn't result in a complete lack of severe weather as evidenced by the June 29 and July 1 Derecho Events, it's just that conditions supporting more widespread tornadoes were clearly suppressed by the large scale pattern."

With only a few weeks remaining in 2012, it's unlikely there will be enough tornado activity for the year to rise significantly in the historic rankings as December is the 4th least active month of the year for tornadoes.

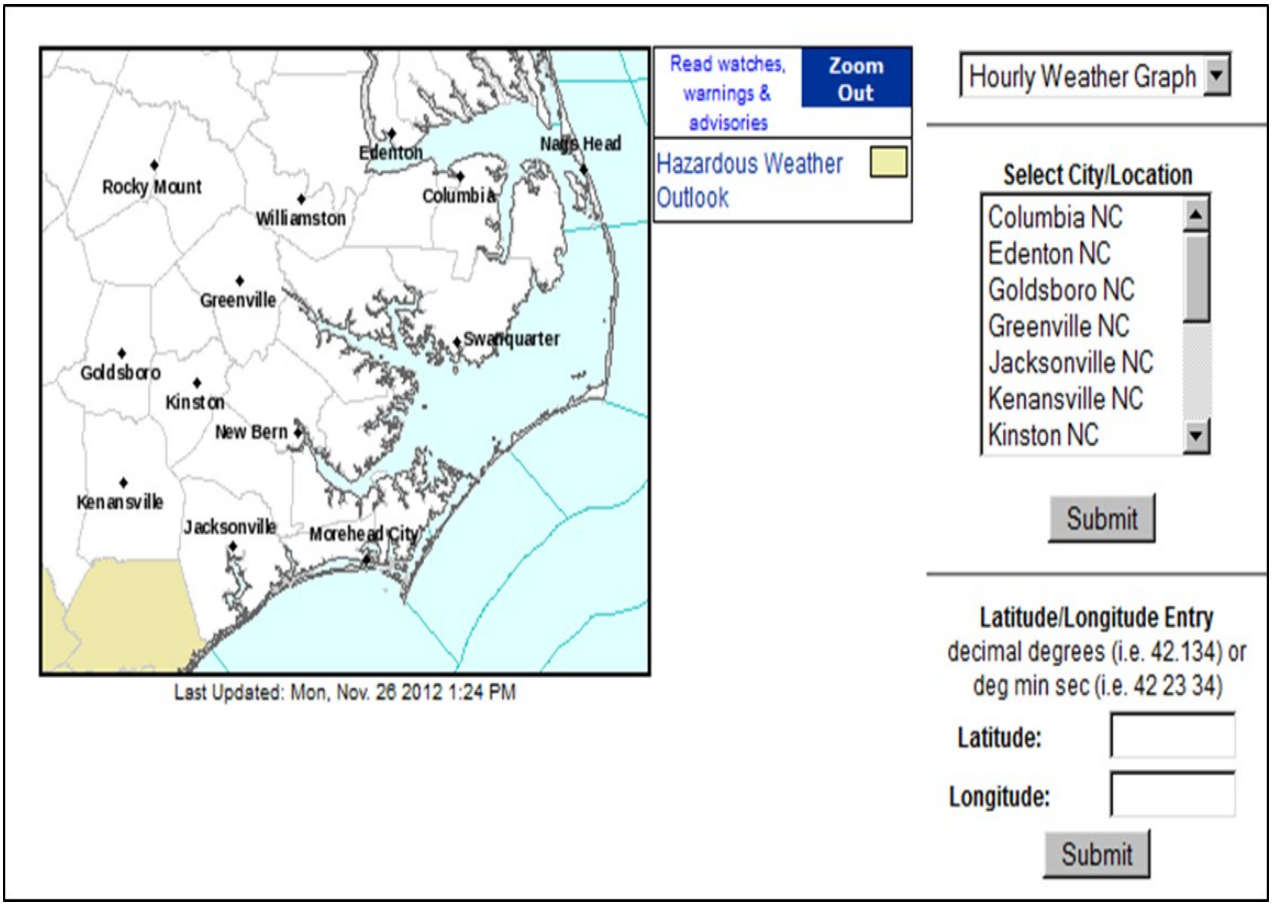


HOURLY WEATHER FORECASTS

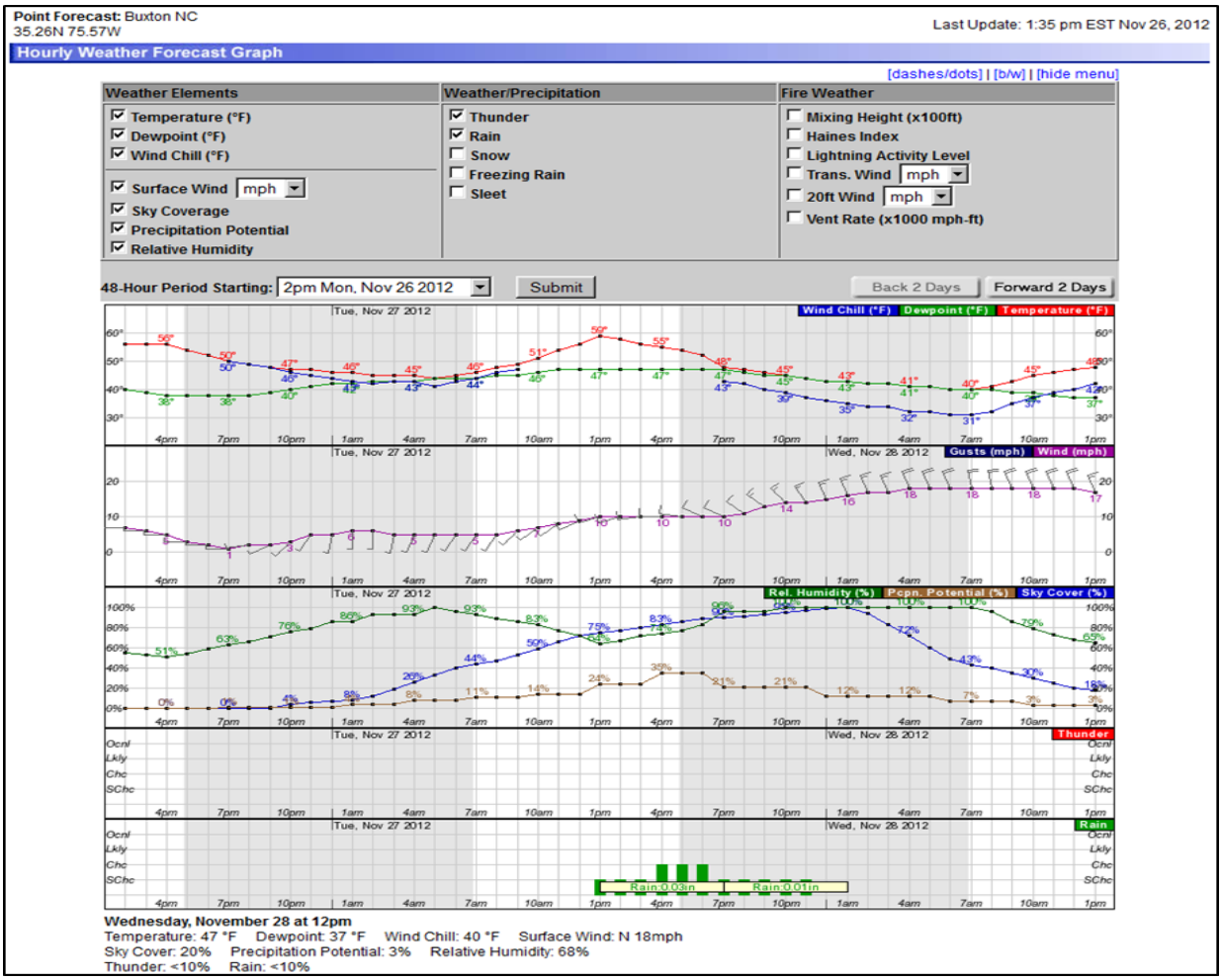
by David Glenn, Meteorologist

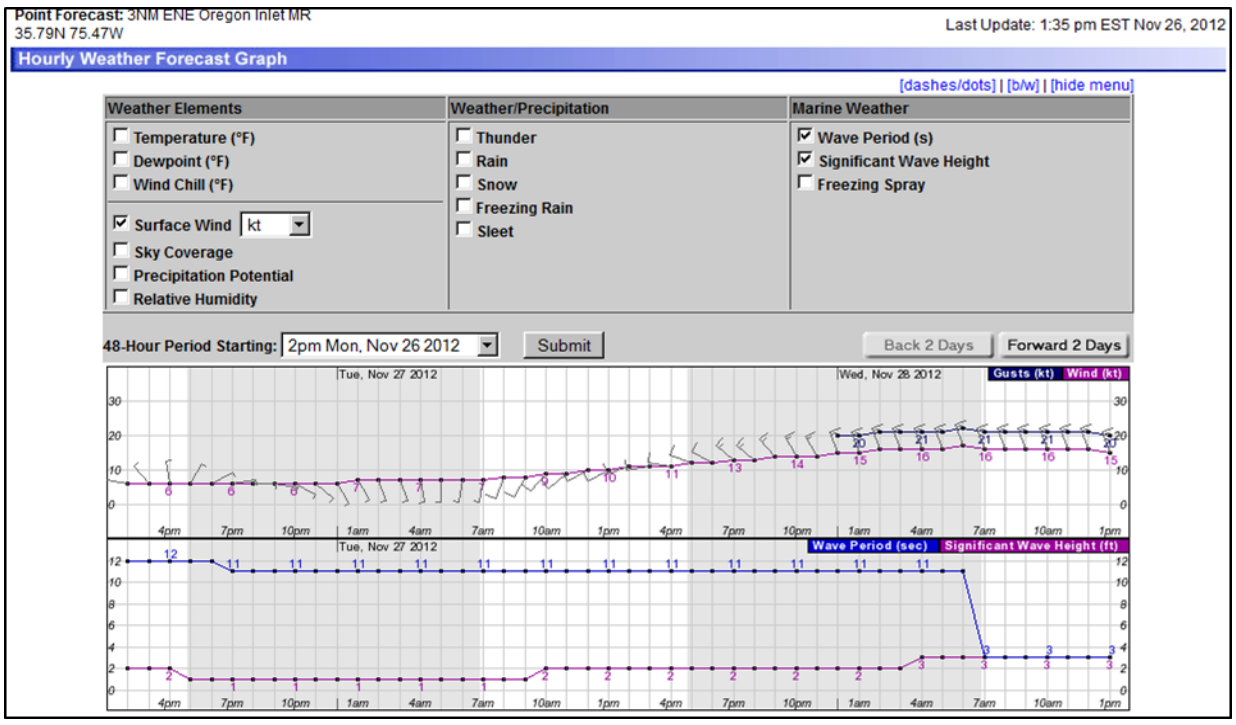
Did you know that our forecasts are available on an hourly basis? And, did you know that our hourly weather forecasts are also available for marine areas within 20 nautical miles? If not, follow this link http://forecast.weather.gov/gridpoint.php?site=mhx&TypeDefault=graphical to see the forecast for your area!

For land areas, the hourly weather graph has several weather elements available: Temperature, Dewpoint, Wind Chill, Surface Wind, Sky Coverage, Precipitation Potential, and Relative Humidity. Under the Weather/Precipitation section are several options for Thunder, Rain, Snow, Freezing Rain, and Sleet. The final section contains options for Fire Weather interests, specifically Mixing Height, Haines Index, Lightning Activity Level, Transport Wind, 20ft Wind, and Ventilation Rate. For marine areas, the hourly weather graph contains the same weather element and weather/precipitation sections as the land area graph. The Marine Weather section includes options for Wave Period, Significant Wave Height, and Freezing Spray. Examples of each forecast follow below.



HOURLY WEATHER FORECASTS (CONTINUED)





WEATHER BUREAU ON HATTERAS

by Chris Collins, Meteorologist

The U.S. Weather Bureau established several weather stations and observation posts throughout North Carolina and its coast as part of a national network of weather stations in the 1800's. The first coastal observation station in North Carolina was in Wilmington, established in 1871. A station at Cape Hatteras followed in 1874. Although some of them were temporary, smaller Weather Bureau observation stations on the North Carolina coast were set up over the years at various locations including Wash Woods (1878); Kitty Hawk (1875), which was moved to Manteo (1904); Portsmouth Village (1876); Cape Lookout (1876); and Beaufort Inlet (1878).

The first US Weather Bureau Station managed by the Army Signal Services on Hatteras Island was established at the Cape Hatteras Lighthouse Keepers' Quarters in 1874, moved to the Hatteras Life-Saving Station on December 1, 1880, and later transferred to a Hatteras Village private residence, known as Styron's Building, on October 1, 1883.

A few years later, the Weather Bureau built a structure for the station in Hatteras Village for the sum of $250. This building was a small one-story framed structure consisting of three rooms, two of the small rooms were each about 9 by 6 feet and one larger one about 14 feet square. There was also a small attic that was used for storage.

Cape Hatteras, where the Gulf Stream and Labrador Current meet, was an important location for weather forecasting. Residents that lived on the Outer Banks received their news by boat or through word of mouth. Residents of isolated Portsmouth and Ocracoke Islands got word of an approaching storm in sealed tubes dropped from airplanes. Cape Hatteras, a major shipping route, was also a common place for shipwrecks. The Weather Bureau felt that the need to have a main station on the North Carolina coast was important enough for them to build one in Hatteras Village.

On July 11, 1901, Secretary James Wilson, U.S. Department of Agriculture, requested proposals for the erection a two-story cellar frame and brick building for the Weather Bureau at Hatteras, NC. The Chief of the Weather Bureau awarded the contract to C.L Harding, Architect, Washington, DC. to design and supervise the first official building constructed for the U.S. Department of Agriculture, U.S. Weather Bureau in Hatteras. The cost was $5,194 to build the station and the purchase cost of the land was $110.35. On the back of the specification was a list of Weather Bureau Stations to be constructed - Hatteras, Taloosh, Canley, Criescent, Point Reyes, and Bismarck ND. Though construction was completed in 1901, the official Hatteras Weather Bureau Station was commissioned and occupied on January 1, 1902.

The design included a prefab structure that can be delivered by railroad and steamship to Hatteras Island. Located at the intersection known today as Kholer and Saxton Cut streets, the original building was a wood frame structure on masonry piling. The first floor had seven rooms including a living room, dining room, kitchen, store pantry, and three bedrooms for the weather observer and family. The second floor had a large observation room/office with a ship's ladder leading to a walk on the roof. Porches extended across the front and west side.

Other structures include two wooden storage outbuildings with gable roofs with cedar-shingles. On-site were a cistern, a metal signal tower for displaying weather flags, and a privy. The Weather Bureau operated there from 1902 until 1946.

WEATHER BUREAU ON HATTERAS (CONTINUED)

After its decommissioning in 1946 the building, the only station of its kind that remains in its original state, served as the residence for Weather Bureau personnel (who continued to monitor conditions at Hatteras, but from a different headquarters), a marine biology lab, and later housing for US Park Service staff. Although the building had been vacant for years, its architectural integrity remained intact. In 2005 it was completely renovated. Beautiful polished pine walls now gleam in the historic structure. Many of the original doors remain in place. In 2007 the US Weather Bureau Station opened as the Hatteras Island Welcome Center operated by the Outer Banks Visitors Bureau to compliment their other facilities

PHOTO COURTESY: NATIONAL PARK SERVICE

WEATHER BUREAU ON HATTERAS (CONTINUED)

Timeline of Hatteras Weather Bureau Station

Courtesy Doug Stover, Historian, National Park Service

- 1901 – Land purchased from John W. Rollinson at a cost of $101.00.
- The official building was commissioned and occupied January 1, 1902.
- 1911 - Observer asked to be relieved of duty at the Station.
- On September 15, 1933 Hurricane blew the storm warning tower down,
- 1946 - The station was decommissioned in April 1946 and was transferred to GSA and use by the U.S. Coast Guard.
- 1958 – Station transferred to the National Park Service/Cape Hatteras National Seashore.
- 1958-1964 Station used by a permit from Cape Hatteras NS to Zoology Dept, Duke University. Permit to Biological Lab, NC. State University. Marine Biology. NC State spent $17,000.00 during their eleven year stay on the building.
- 1979-1995 Used by park Staff as a Residence.
- August 30, 1999 Hurricane Dennis damaged the last of the storm warning tower.
- 1995-2001 Vacant
- 2001–2005 Restoration
- July 1, 2007 Site open to the public, a partnership between Outer Banks Visitor Bureau and the National Park Service.

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