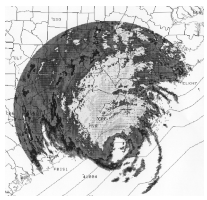
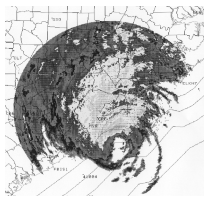


Carolina Skies



Hurricane Floyd September 15-16, 1999

National Weather Service, Wilmington, NC **Summer 2002**

Preparing for Hurricane Season

What's Inside?

Named Storms as of 9/10/2002

- ★ **Arthur**
- ★ **Bertha**
- ★ **Cristobal**
- ★ **Dolly**
- ★ **Edouard**
- ★ **Fay**
- ★ **Gustav**

To report severe weather, call 1-800-697-3901, and thanks!

Check out the Wilmington National Weather Service Website: www.erh.noaa.gov/er/ilm

Hurricane Season, It Only Takes One!

As of late August, Hurricane Season 2002 had been sleepy (Hurricane seasons runs from June 1 - November 30). Tropical Storms Arthur and Cristobal formed off the Southeast U.S. coast and moved out to sea, causing little rain and no damage over the area. Tropical Storm Bertha formed over the Gulf of Mexico and caused rain over the Gulf States and the Mississippi Valley. (By the way . . . these names may seem familiar, as Tropical Storm Arthur and Hurricane Bertha affected the Carolinas in 1996 - the names get recycled every six years. The name Fran was retired, though, as Fran '96 hit the Cape Fear NC area as a Category 3 hurricane and did more than $3B in damage and took 34 lives.)

Hurricane season forecasts issued this spring were for normal to above-normal activity, based on expected warm Atlantic Ocean temperatures and weak El Nino conditions, but updated August forecasts by the NWS Climate Prediction Center and Dr. Bill Gray's team at Colorado State U. were for below-normal to normal activity. The reason for the change in expectations is, mainly, because the El Nino is affecting conditions more strongly than had been anticipated.

El Nino is a term for the above-average warming of the tropical Pacific Ocean that occurs every two to seven years and lasts maybe 18 months. A warm ocean evaporates more water, and more evaporation means more condensation and more hurricane development. During an El Nino, hurricanes are more active in the Pacific, since hurricanes form to exhaust excess heat from the ocean . . . and the Pacific is warm!

These Pacific El Ninos are big players in Atlantic hurricane activity as well. They keep the air over the tropical Atlantic stirred up with stronger winds from the west up in the development altitude . . . 2 to 3 miles up. For all its power and fury, a hurricane is a big baby that requires incubator-like peaceful conditions to develop, and an El Nino in the Pacific almost always leads to suppressed hurricane development in the Atlantic. In contrast, during periods when the tropical Pacific is cool (La Nina - the opposite of El Nino), hurricanes develop more easily in the Atlantic Basin.

During the '80s and the first half of the '90s, El Ninos came more frequently and there was little Atlantic hurricane activity. During that period, only Diana '84 and Hugo '89 affected the area (both during La Nina years). In '95 and '96 the Pacific again turned cool (La Nina) and

strong hurricane activity erupted across the Atlantic Basin. Hurricanes Bertha '96 and Fran '96 made direct hits in the area. A strong El Nino developed in '97, suppressing hurricane activity and causing a rainy winter across the area. As cooler La Nina conditions returned to the Pacific, Bonnie '98, and Floyd '99 made landfall in the area and hurricane activity in the Atlantic Basin (including the Gulf of Mexico and Caribbean Sea) continued at record-breaking extremes into the 21st century.

The current El Nino is weak, with tropical Pacific Ocean temperature just a few degrees warmer than normal, but it is enough to suppress hurricane development. It is expected that El Nino conditions will continue into the winter - a condition that normally causes above-normal precipitation in the Southeast U.S...and it is expected that precipitation will be above normal this winter and spring, helping to relieve the drought.

Severe Weather 2002

The role of the National Weather Service is to inform the public of weather conditions, for the purpose of protecting lives and property, and to enhance the national economy. While we issue week-long forecasts for the general public, we also issue special weather forecasts for mariners, beach goers, pilots, and fire fighters.

However, short-fuse warnings for dangerous weather takes precedence over everything else. Using near-real time radar and satellite images and sophisticated forecast models, we work hard 24/7 to detect dangerous weather and let you know about it.

Severe Thunderstorms (with hail at least 3/4" diameter and/or wind at least 58 mph) began developing in March, and through mid-August we issued 102 Severe Thunderstorm Warnings for counties in the area on 21 days. Of those warnings, we received confirmation that 62 were well-founded with reports of large hail and/or wind damage. The average lead time . . . from the time a warning was issued to the time damage or hail occurred . . . was about 15 minutes. The biggest hail stones reported this year were 2.5 inches diameter on March 16 in Western Robeson County.

We received 14 reports of severe thunderstorm events for which a warning was not issued . . . mainly for downed trees or 3/4" hail . . . right at the warning threshold. Radar or satellite displays do not always portray what is occurring. Sometimes, we miss a warning here and there.

One tornado warning was issued, for a waterspout near the mouth of the Shallotte River in Brunswick County that came ashore as a weak tornado.

Twenty-six Special Marine Warnings were issued for the coastal waters out 40 miles for high wind or waterspouts.

Plans for the Demolition of Frying Pan Shoals on Hold

The National Weather Service (NWS) was informed that the destruction of the Frying Pan Shoals Light Tower is on hold until sometime next year. The weather equipment which resides on Frying Pan is an important part of an already sparse network of marine observations. Weather data obtained from Frying Pan includes wave heights, wind direction, wind speed, and pressure. All of these parameters are magnified by passing hurricanes, or intensifying Nor'easters.

Fortunately, there are plans to replace the weather station on Frying Pan with a 3-meter discus buoy. However, it is not certain when this will occur. The tower is very unstable and not safe for people to work on. If for some reason the weather equipment fails before Frying Pan is destroyed, then it is possible that there may be a lapse in data until the

replacement buoy can be deployed.

The NWS was told that the delay to demolish Frying Pan was for two reasons. First, it was determined too risky to remove a marine weather station as we head into the heart of hurricane season. Second, there will be fewer budget constraints next fiscal year.

Columbus County Join the StormReady Community

County Emergency Managers are working with the National Weather Service to prepare for dangerous weather. During August, Columbus County was recognized as StormReady. Robeson County was again acknowledged in June, two years after its initial recognition.

In our area, Columbus, Robeson, Dillon, Pender, Brunswick, Horry and New Hanover Counties have been formally recognized for meeting the StormReady requirements, and applications are being considered from Darlington, Georgetown, Marion, Florence and Bladen counties, as well as the city of Myrtle Beach.

Nationwide, about 425 counties and communities have been recognized as StormReady.

StormReady requirements include:

1. 24 hour communications capability and an Emergency Operations Center

2. Multiple means of receiving NWS warnings

3. Local weather monitoring capability, storm spotter training

4. Warning dissemination - weather radios in public buildings, schools, etc; TV overrides

5. Public preparedness campaigns, safety talks

6. Administrative - Hazardous Weather action plan and drills to test plan

The StormReady program is a guide for counties to prepare and stay prepared - recognition is for three years, and must then be renewed. For more information on the program, call Tom Matheson at 910-762-8043 or see this website: http://www.nws.noaa.gov/stormready/

Climate Corner

The Eastern Carolinas experienced above normal temperatures, and below normal rainfall amounts overall for the months of April, May, and June. Region wide, April was the warmest month with temperatures averaging 4.8 degrees above normal. May was the coolest with temperatures averaging 1.0 degrees below normal.

Precipitation across the Eastern Carolinas continued well below normal. Region wide, it was a relatively dry period with precipitation averages nearly one and a half inches below normal for each month. Drought conditions continued moderate to severe in South Carolina, and moderate in North Carolina during this period.

NEW NOAA WEATHER RADIO VOICES

The National Weather Service in Wilmington, NC began using new voices for NOAA Weather Radio listening areas in July. Listeners will now hear current weather conditions, forecasts, and severe weather warnings delivered by a new computer voice program with a more natural sounding male and female voice.

The National Weather Service spent months evaluating computer text to speech software and public input before selecting the male and female weather radio voices. All forecast offices around the country will customize their weather radio programs so words and local geographical names are understandable to listeners.

The time is better than ever to give a weather radio to loved ones as gifts. Fairly inexpensive, a weather radio is a gift that keeps on giving.