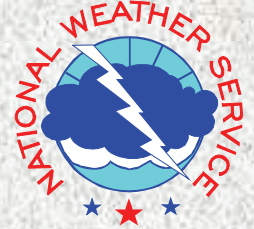


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CAROLINA SKY WATCHER

AUTUMN 2007 EDITION



WARM & DRY WINTER FOR EASTERN NC *By Hal Austin, Forecaster*

The winter outlook for drought-stricken Eastern North Carolina is not good, according to the December 2007-February 2008 outlook, released by the National Oceanic & Atmospheric Administration (NOAA) on October 9th.

NOAA forecasters are calling for above average temperatures, along with below normal rainfall. The announcement was made at the 2007-2008 Winter Fuels Outlook conference in Washington DC on October 9th.

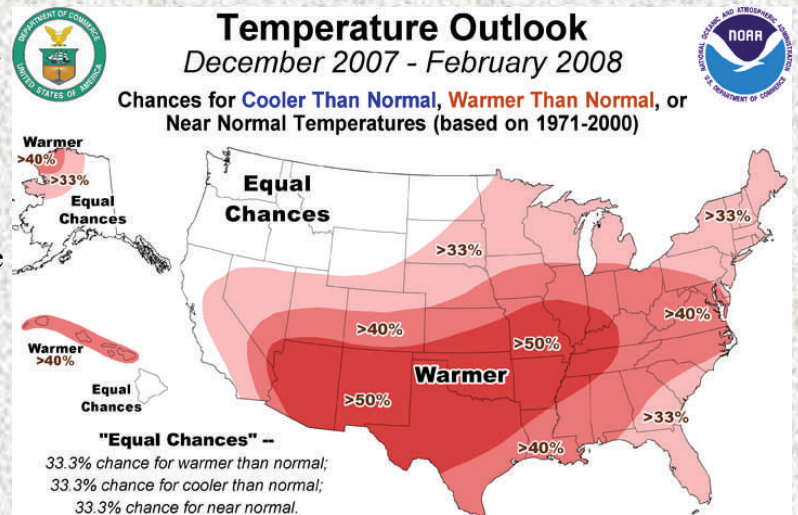
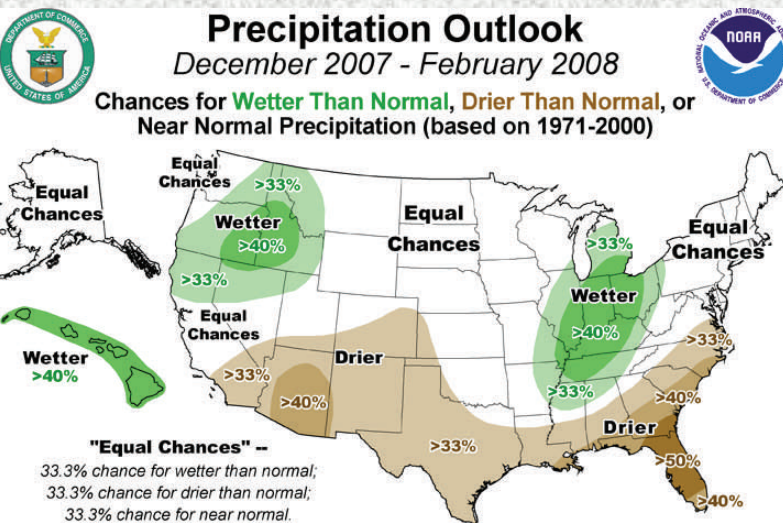
“La Niña is here, with a weak-to-moderate event likely to persist through the winter,” said Michael Halpert, head of forecast operations and acting deputy director of NOAA’s Climate Prediction Center.

“The big concern this winter may be the persistence of drought across large parts of the already parched South. And while December through February is likely to be another milder-than-average winter for much of the country, people should still expect some bouts of winter weather.”

La Niña is defined as cooler than normal sea-surface temperatures in the central and eastern tropical Pacific Ocean that

impact global weather patterns. La Niña conditions recur every few years and can persist for as long as two years.

Typically, a La Niña is preceded by a buildup of cooler-than-normal subsurface waters in the tropical Pacific. Eastward-moving atmospheric and oceanic waves help bring the cold water to the surface through a complex series of events still being studied.



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ied. In time, the easterly trade winds strengthen, cold upwelling off Peru and Ecuador intensifies, and sea-surface temperatures (SSTs) drop below normal. During the 1988- 89 La Niña,

WINTER OUTLOOK *continued from page 1*

SSTs fell to as much as 4 degrees C (7 degrees F) below normal. Both La Niña and El Niño tend to peak during the Northern Hemisphere winter.

In the United States, La Niña often features drier than normal conditions in the Southwest in late summer through the subsequent winter. Drier than normal conditions also typically occur in the Central Plains in the fall and in the Southeast in the winter. In contrast, the Pacific Northwest is more likely to be wetter than normal in the late fall and early winter with the presence of a well-established La Niña. On average La Niña winters are warmer than normal in the Southeast and colder than normal in the Northwest.

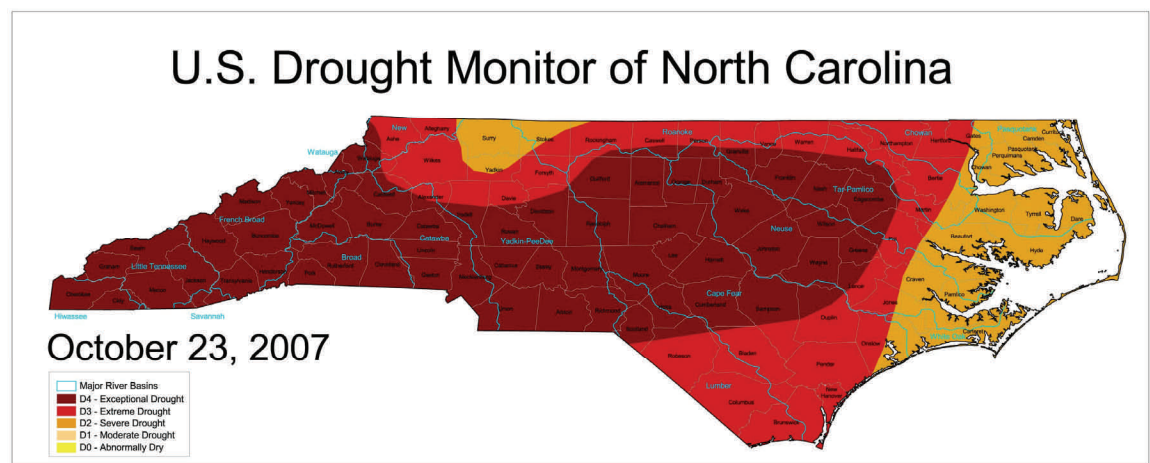
This winter is predicted to be warmer than the 30-year norm. For the country as a whole, NOAA's heating degree day forecast for December through February projects a 2.8 percent warmer winter than the 30-year normal, but a 1.3 percent cooler winter than last year.

The U.S. winter outlook is produced by a team of scientists at the Climate Prediction Center in association with NOAA-funded partners. Scientists base this forecast on long-term climate trends and a variety of forecast tools from statistical techniques to extremely complex dynamical ocean-atmosphere coupled models and composites. The outlook will be updated on Oct. 18 and again on Nov. 15 at 8:30 a.m. Eastern Time.

DROUGHT 2007 *by Sarah Jamison, Forecaster*

A dry spring, a hot summer, and a quiet tropical season have all combined to create a statewide drought that will likely last into 2008. After following a fairly active severe weather season in 2006, the spring months of 2007 were relatively serene with less than 25% of the warnings issued the previous year. Less severe weather means less heavy rain, and subsequently the beginning of this year's drought. The summer months of June through August saw less convective rainfall than normal, except perhaps near typical sea breeze locations along the coast. Temperatures also soared in late July and early August, which enhanced the amount of evaporation. Most of North Carolina's rainfall occurs during the later part of August through the month of September, primarily caused by tropical activity. As of late September, what tropical activity there was remained out to sea or impacted areas well to the south, the only exception being Tropical Storm Gabrielle. Gabrielle was unique in the fact that it originated as a

subtropical storm, best described as a mix between a winter low and a tropical low, which tends to produce less rainfall than normal tropical systems. The storm gathered tropical characteristics just as it was about to make landfall, and subsequently did not produce much in the way of widespread rainfall with most areas receiving less than a half an inch. However a few locations, mainly near the coast, did receive upwards of 8" of additional rainfall. So with the threat of a tropical system over, the potential for the region to make up for the 10 to 16 inch rainfall deficits are diminishing.



Continued on page 3

DROUGHT 2007 *continued from page 2*

The drought across eastern North Carolina is considerably less intense than the rest of the state, where 25 to 50% of the annual average has fallen. As of the end of September, almost half of the state population was under mandatory water restrictions and an additional 25% under voluntary water restrictions. Other impacts outside the realm of climate include local impacts from public water supply systems, agriculture, forestry, streamflows, ground water, reservoirs and lake levels, all of which have suffered this year.

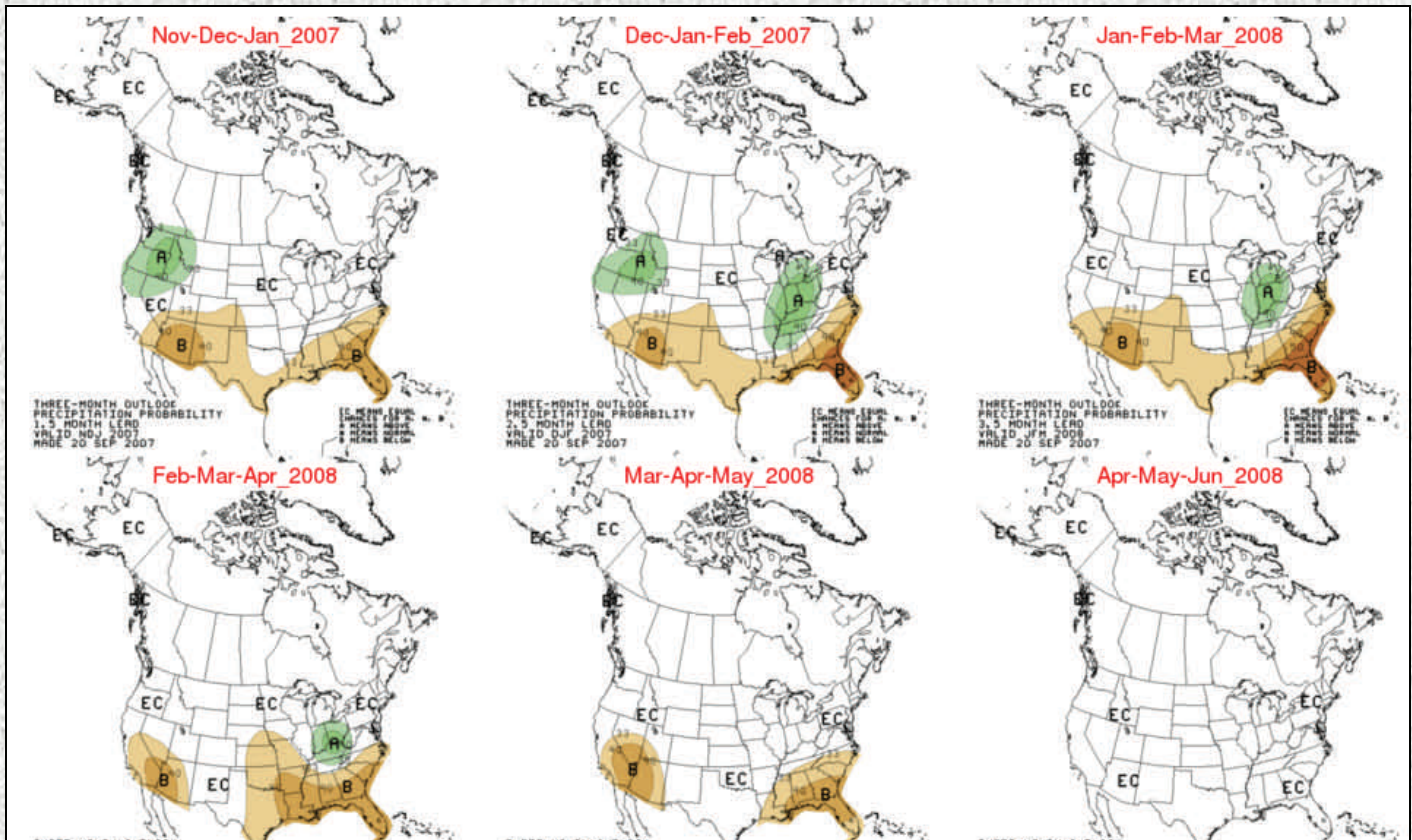
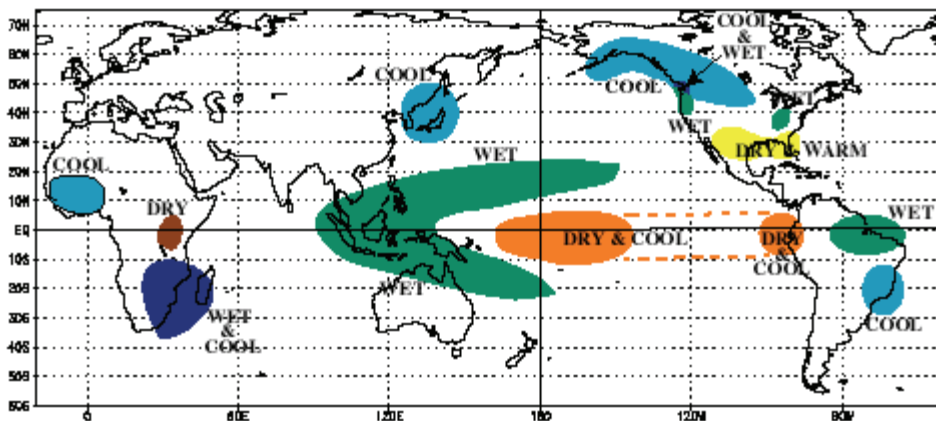


Figure 1: Climate Prediction Center 3 month seasonal precipitation outlooks issued in September 2007. Brown indicates areas of below normal precipitation, while green indicates areas with above normal chances for precipitation. Note across North Carolina there is an indication of below normal chances of precipitation through spring.

COLD EPISODE RELATIONSHIPS DECEMBER - FEBRUARY



To make matters worse, the Climate Prediction Center outlooks the rest of the year and into 2008 suggests below normal precipitation through the spring primarily based on the development of *La Niña conditions. La Niña signals are much stronger further south over Florida, but the trend during La Niña winters over North Carolina is for warmer temperatures and less precipitation than normal.

*La Niña refers to the periodic cooling of ocean surface temperatures in the central and east-central equatorial Pacific that occurs every 3 to 5 years or so. La Niña represents the cool phase of the ENSO cycle, and is sometimes referred to as a Pacific cold episode.

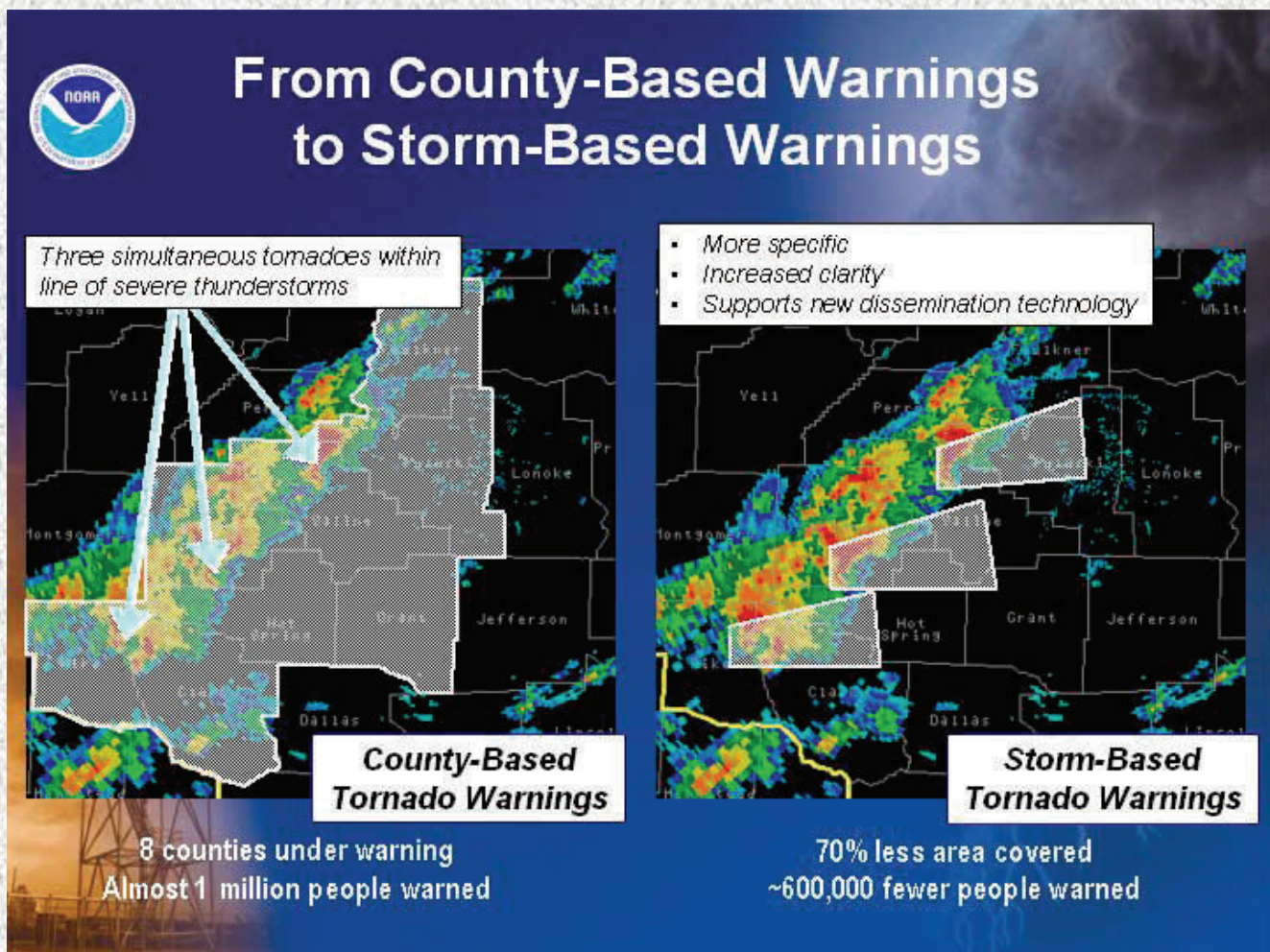
MORE PRECISE WARNINGS *By Bob Frederick, Forecaster*

On October 1st, the National Weather Service began issuing more geographically precise warnings for tornadoes, severe thunderstorms, floods and marine hazards. These new “storm-based” warnings allow forecasters to pinpoint the specific areas where threats are highest. This will help reduce the warned area by as much as 70%, compared to the previous method, which was to warn for an entire county. Please refer to the graphic below for a comparison.

“By focusing the threat, we can reduce the warned area by as much as 70 percent, which equates to more than \$100 million in savings to the public,” said Vice Admiral Conrad C. Lautenbacher Jr., under secretary of commerce for oceans and atmosphere and NOAA administrator. “The real bottom line is that this will potentially save more lives. Eliminating areas needlessly warned builds confidence that you do indeed need to take action when a warning is issued.”

Storm-based warnings (threat-based polygon warnings), are essential to effectively warn for severe weather. Storm-based warnings show the specific meteorological or hydrological threat area and are not restricted to geopolitical boundaries. By focusing on the true threat area, warning polygons will improve National Weather Service warning accuracy and quality. Storm-based warnings will promote improved graphical warning displays, and in partnership with the private sector, support a wider warning distribution through cell phone alerts, pagers, web-enabled Personal Data Assistants (PDA), etc.

The Emergency Alert System is geared toward counties and NOAA Weather Radio All Hazards will still alarm if there is a warning anywhere in the county. However, text and audio messages will provide more specific information about where in the county the storm is, and the direction the storm is moving. Storm-based warnings will reference landmarks such as highways, shopping centers, and parks, and will use directional delimiters to indicate county location.



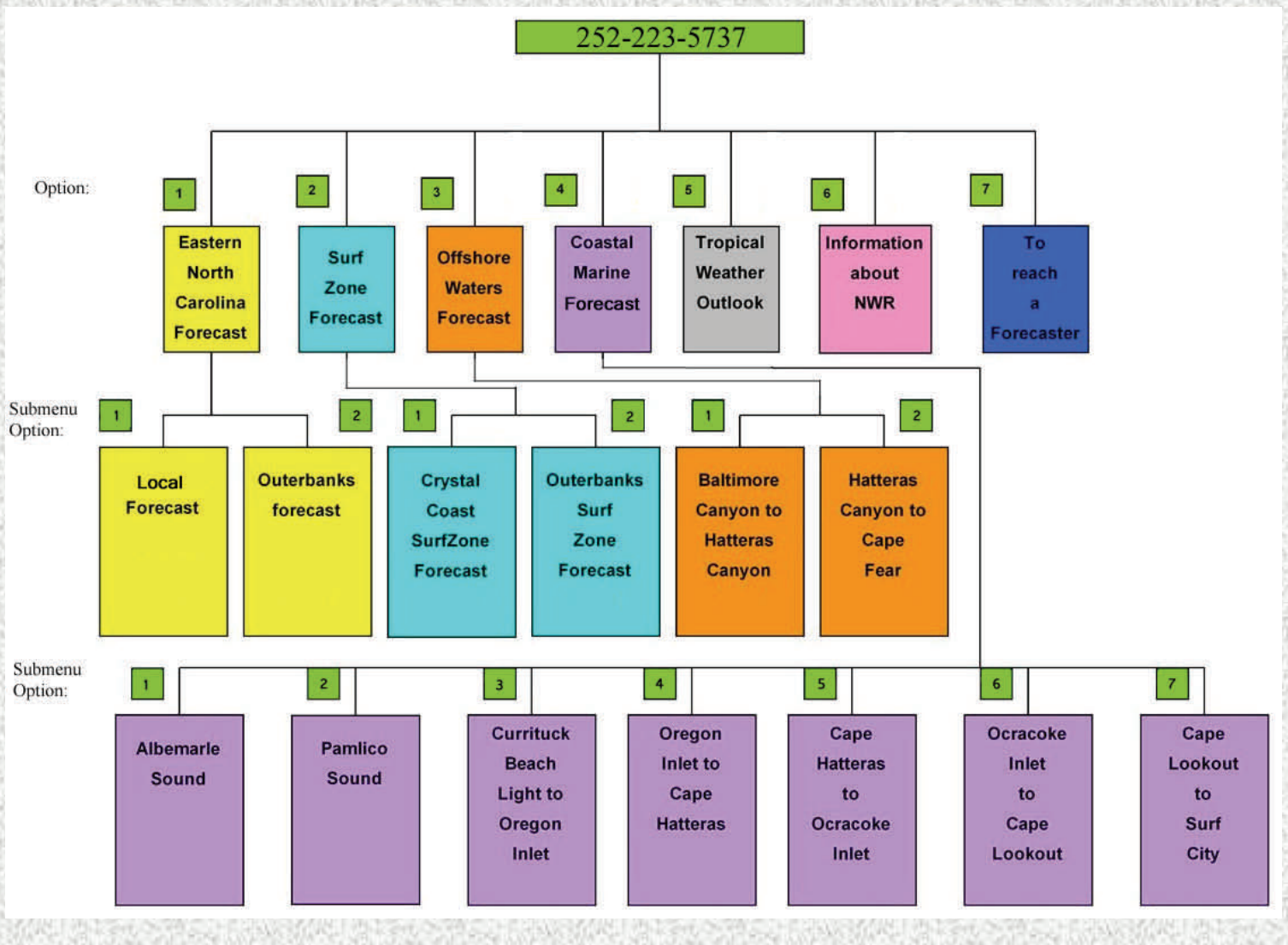
PHONE TREE CHANGES *By Scott Kennedy, Forecaster*

NWS Newport has recently made some changes to our forecast phone tree. The biggest change was the addition of the surf zone forecast to the line up. This forecast includes rip current risk, beach weather, UV index, surf zone wave heights, water temperatures and tide information for Eastern North Carolina beaches from mid April through late November. Only the water temperatures and tide information is included during the winter months. In order to add this forecast to the phone tree we had to shuffle a few of the other forecasts around. When calling, please listen to the introduction carefully to navigate through the system.

The phone number to reach the phone tree is **252-223-5737**. The main menu now has the following selections:

- #1 - Eastern North Carolina Forecast
- #2 - Surf Zone Forecast
- #3 - Offshore Waters Forecast
- #4 - Coastal Marine Forecast
- #5 - Tropical Weather Outlook (June through November)
- #6 - Information about NOAA Weather Radio
- #7 - To reach a forecaster

The graphic below may help you to navigate through the phone tree easier.





NATIONAL WEATHER SERVICE,
NEWPORT/MOREHEAD CITY
NC

533 Roberts Rd.
Newport, NC 28570

Phone: 252-223-5122
Fax: 252-223-3673

Website: www.erh.noaa.gov/mhx



VOLUNTEERS WANTED! *By Casey Quell, Meteorological Intern*

Volunteers are needed to participate in the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) in North Carolina.

Anyone can participate; young, old, and in-between. The only requirements are an enthusiasm for watching and reporting weather conditions, and a desire to learn more about how the weather can affect and impact our lives.

CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds, working together to measure and map precipitation (rain, hail and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive web site, the aim is to provide the highest quality data for natural resource, agricultural, education and research applications.

CoCoRaHS is used by a wide variety of organizations and individuals. The National Weather Service, other meteorologists, hydrologists, emergency managers, city utilities (water supply, water conservation, storm water), insurance adjusters, USDA, engineers, mosquito control, ranchers and farmers, outdoor & recreation interests, teachers, students, and neighbors in the community are just some examples of those who visit our web site and use our data.

To learn more about CoCoRaHS and what is needed to participate, visit the CoCoRaHS web site at www.cocorahs.org, or contact your Eastern Region Coordinators Sarah Jamison (Sarah.Jamison@noaa.gov) or Casey Quell (Casey.Quell@noaa.gov).

To report adverse weather conditions 24/7, please call us at:

1-800-889-6889