

Spring/Summer 2003

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Storm Courier

National Weather Service Charleston SC

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Hurricane season in the Atlantic, Caribbean Sea & Gulf of Mexico is from June 1st- November 30th.

2003 Hurricane Season Forecast-A First Look

Dr. William Gray, of Colorado State University, has released his first prediction of the year for the 2003 hurricane season in the Atlantic. The report was released April 4th. The following table shows his current prediction and seasonal averages:

<u>April 2003 Forecast</u>	<u>#</u>	<u>Seasonal Averages</u>
Named Storms:	12	9.6
Hurricanes	8	5.9
Intense (Cat. 3 or higher)	3	2.3

According to Dr. Gray's forecast, there is a 68% chance that an intense hurricane will strike the U.S., compared to a normal of 52%. There is a 48% chance that an intense hurricane will strike the U.S. East Coast, compared to a normal of 31%. His next Atlantic tropical season forecast will be released May 30th.

One of the important factors that go into making his forecast is the presence of an El Nino/ La Nina. Most forecast models show the current weak El Nino will be gone by the start of hurricane season, June 1st. This means wind shear in the lower latitudes of the Atlantic basin will be less than in 2002, resulting in a greater chance for tropical systems to strengthen into intense hurricanes. Hurricane season runs through November 30th. Residents along the coast should have

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New! Daily Climate Data on NWS Charleston Website

*Your #1 source for
weather in the SC
Lowcountry & southeast
GA is the NWS
Charleston website.
Public, marine, live
radar, climate data and
so much more...just a few
mouse clicks away!*

Need daily rainfall, high/low temperatures or degree days for Charleston and/or Savannah right up to the previous day? Well now it's available on the NWS Charleston website. Previously, monthly data was not posted until after the month ended. Now it's updated very early each and every morning! It's important to point out that it's only *preliminary* data. It's not official until certified by the National Climatic Data Center (NCDC) in Asheville NC. To access the data: go to our main page at <http://www.erh.noaa.gov>. In the left-hand column under Climate, click on Local. When you get to the next page, click on Pre

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Attention Boaters!

The latest offshore buoy data (winds, wave heights), updated hourly, is available on the web at: www.ndbc.noaa.gov/Maps/Southeast.shtml The latest forecasts for the Charleston Harbor, SC coastal waters and GA coastal/offshore waters are on the NWS Charleston website. Check us out before going out!



It's A Fact! Some interesting facts about our Doppler radar:

It's located in northern Jasper County SC.

It constantly scans multiple levels of the atmosphere 24/7. The data is always "live"!

It detects echoes out to 140 nautical miles.

The radar dish is 28 feet across.

It's output power is 725 kilowatts.

When the beam leaves the dish, the beam has the diameter of a pencil, then spreads out with distance.

It analyzes data by performing around 1300 processes per second!

2003 Hurricane Season-continued

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a plan of action for whenever a tropical system threatens the coast. To develop a plan, visit the Tropical Prediction Center website at: <http://www.nhc.noaa.gov>, then click on AHurricane Awareness@ in the middle of the page.

Hal Austin-Journeyman Forecaster

Climate Data-continued

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liminary F-6 Local Climatological Data.@ Click on "Climate for 2003" (from this page you can also look at daily data going back to July 2001). You can look at daily data for the month so far, or for any month so far this year.

Hal Austin-Journeyman Forecaster

Detecting Hail with the "VIL" Product

With the advent of radar products showing up on the internet over the past few years, the general public can now access many of the same products the meteorologists at your local National Weather Service Office use to make warning decisions. The basic products most viewed are reflectivity and velocity related. A few premium providers of NWS Doppler Radar products offer the VIL product.

The VIL graphic is a derived product that uses information from the entire 5-6 minute vertical scan from the WSR-88D radar. VIL is an acronym from **V**ertically **I**ntegrated **L**iquid. The VIL product shows the amount of liquid water measured in a vertical column over each point on the radar display. The data is measured in kilograms per square meter, a volumetric measure.

The Doppler Radar has powerful computers that use algorithms to derive the VIL product. The computers assume that all reflectivities are from liquid water and then uses equations to convert the reflectivities to liquid water content. Hailstones have unusually high reflectivities exceeding those from large water droplets. Since the algorithms assume all targets are liquid, the high reflectivities from hail are computed and show up in the VIL product as much larger values than seen in thunderstorms with no hail. While the VIL is helpful in determining storms with hail, the size of the hail is another story. Factors such as the height of the freezing level, the time of year, and the height of the storm top, must be considered when

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VIL Product-continued

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determining what VIL value is needed to achieve hailstones of 3/4 inch or larger in severe thunderstorms. Typically, VILs from 35 to 50 in the cool months may signify large hail, while in the summer months, VILs from 65 to 85 are more common. Since each day of the year is uniquely different, meteorologists at the Weather Forecast Office in Charleston perform careful checks to estimate the "VIL of the Day" to help warn for severe hailstorms.

Rich Thacker-Senior Forecaster



Summertime! Summer officially begins at 3:10 pm EDT, June 21st.

New Graphics of Area River Levels and Forecasts Now Online

In April 2002, the NWS inaugurated the Advanced Hydrologic Prediction Service (AHPS) to provide improved river and flood forecasting and water information. AHPS includes state-of-the-art forecasting tools covering flash floods on small streams to long-range forecasts for floods on larger rivers. These tools include Doppler radar, satellites and a network of automated surface observing stations. AHPS provides hydrologic information which better meets the changing needs of our diverse customers. Recently, heavy rain has pushed area rivers above flood stage, resulting in many phone calls to NWS Charleston asking for river information. The AHPS web page will provide all you need: graphical/tabular data of current/predicted levels, high/low water records, gauge locations and more. The address is: <http://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?chs>

Anyone with interests on or near area rivers should check it out today!

Hal Austin-Journeyman Forecaster

Forecasts and hourly temps on your phone-it's as easy as 1-2-3!

Just dial our number at 744-0303 and select from the following options:
 1-Local public forecast
 2-Marine forecast
 3-Current temperature at the airport and in downtown Charleston-updated hourly

Rip Currents-Swimmers Beware!

Rip currents, also known as runouts, and referred to as "drowning machines", are the most common beach hazards for swimmers. Erroneously called rip tides and undertows, they can last anywhere from a few minutes to a few days. Under certain weather conditions, they can become life-threatening. Rip currents are found near jetties, groins, piers, inlets and breaks in the sand bar, and can be difficult to see.

Each year rip currents are more deadly than lightning, hurricanes and tornadoes. Most surf related rescues are due to rip currents, and this may be due to the fact that rip currents diminish the power of incoming waves. Thus, the lack of surf can be more attractive to swimmers, with more people going into the water.

What Exactly Is A Rip Current and How Does It Form? A rip current is a narrow, surf-zone current that flows away from the beach. Water piles up against the shore, becoming trapped between the beach and sand bar. Strong winds and swells push water over the sand bar, allowing excess water to collect. Eventually, the water starts to return seaward, seeking a path of least resistance, "ripping" an opening in the sand bar.

Rip currents range from about 30 to 100 feet wide, with increasing width as they extend up to 1000 feet from

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Rip Currents-continued

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shore. The velocity of the water can be as high as 4 or 5 knots, which even an Olympic swimmer could have difficulty overcoming. The rip current is made up of the feeder(s), neck and head. The feeder portion is the fuel source, and the location where the waves become focused. The neck is the portion of the rip current where the water flows away from the beach. The current speeds are greatest in this area, making it the most dangerous part of the rip current. The final part of the rip current, where the neck ends, is the head. Here the rip current begins to spread outward, and its seaward motion diminishes.

How to Spot Them: Look for murky or dark water (as compared to the surrounding water), or for objects and foam moving steadily seaward. This is due to a channel which has been carved by the seaward flowing water. Wave heights are also lower and choppier in rip currents. Keep a lookout for posted flags or signs warning you of any danger. Do not assume that calm or fair weather means favorable surf. Some of the worse rip current events have occurred with sunny and pleasant weather due to a large swell from a storm hundreds of miles offshore.

How to Survive if Caught in a Rip Current: Rip currents are not undertows, so you will not be pulled under the water. If you do get caught, do not panic. Do not attempt to swim directly against the rip current, as this will only tire you out. Remain calm. Call or wave for assistance from the life guards. If you can, swim parallel to the beach until you are out of the rip current. If it is still too difficult to escape, calmly remain afloat until the rip current dissipates. Then once out of the rip currents, swim diagonally back to shore.

Remember, do not go in the water if you do not know how to swim. If you must be in the water, swim only at guarded beaches, and heed the advice of the life guards. Never swim alone, and parents are urged to stay close by their children if they go in the water.

Beginning May 15th, NWS Charleston will issue a new product called the Surf Zone Forecast. It will contain the general weather forecast for the area beaches, as well as rip current risk, based on a three-tiered set of qualifiers: low, moderate and high risk. The risk information will be based on reports from lifeguards in Charleston County SC and Chatham County GA. This product will only be available during the beach season which runs from May 15th through Labor Day weekend. If you have any questions or comments, please contact NWS Charleston at (843) 744-0303.

0303.

Pete Mohlin-Senior Forecaster

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