

National Weather Service

Prevailing Winds

Welcome to the New Prevailing Winds

Special points of interest:

- New Skywarn Training Information... see page 3
- New severe hail criteria...see page 2
- CoCoRaHS...are you a part of the network? (Page 7)
- New Hurricane Watch/Warning criteria for 2010 (Page 4)
- The Importance of Snow Water Equivalent measurements (Page 5)

We hope that this inaugural newsletter will give you a taste of what we do, how you may be able to help us, and new initiatives that we have taken on. Your Southern New England Weather Forecast Office is blessed with a talented staff eager to apply new science and go the extra mile to meet customer needs.

As chief among our fiscal year (October through September) goals, we have set out to produce digital aviation forecasts, enhance coastal inundation forecasts and visualization, and prepare to be a test office for the next generation core computer/communications system. This office is revolutionizing how aviation forecasts are formulated and displayed. Like

other elements we forecast for, we are now producing gridded forecasts of ceiling heights and, in a much more sophisticated way, visibilities. This will allow us in the near future to provide forecast information for additional airports and provide hourly forecast maps of elements important to aviation needs. We have developed an enhanced process for coastal flood warnings and advisories that display expected impact as a function of both storm tide and waves. We now also produce tide forecasts out to 96 hours at selected points. We have started work to expand our visualization mapping to additional communities beyond Scituate, MA, our pilot. And very soon, we will be introducing an experimental web site

that will make it much easier to navigate to tide and coastal inundation information. The next generation computer/communications system will be largely transparent to most of you. However, it will enable us to apply new science into our forecast operations and produce key forecast information more efficiently.

In response to customer feedback, we are in the process of revamping portions of our web page as feasible under some national constraints. I cannot stress enough the importance of customer feedback to all that we do. We are a service organization, funded by taxpayers, and so are continually reviewing our ability to meet the

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Blizzard of 2009 Hits Southern New England

By Hayden Frank

A classic Noreaster brought the first official blizzard since February of 2006 to portions of southeast New England. A cold high pressure system was anchored across southeast Canada. At the same time, low pressure developed across the Gulf Coast and moved northeastward as it rapidly intensified. The low pressure system passed well southeast of Nantucket, which is an ideal track to keep our entire region on the cold side of the storm. How-

ever, this track combined with lots of dry air to the north resulted in little if any snow falling across portions of northwest Massachusetts as well as southern New Hampshire.

Snow began to overspread much of northeast Connecticut, Rhode Island and southeast Massachusetts during the evening of Saturday, December 19th. The snow quickly became heavy across portions of this region and continued through the morning hours of Sunday,

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New Bedford during the height of the blizzard.

Photo by: Mike Leger—BOX Skywarn Spotter

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From Page 1...MIC Musings

needs of customers and partners as well as prepare for your future expectations.

How does your local Weather Forecast Office fit into the larger National Weather Service? The National Weather Service contains nine specialized centers under the umbrella of the National Centers for Environmental Prediction (NCEP), 13 River Forecast Centers, 21 Center Weather Service Units, and 122 Weather Forecast Offices. We work closely with the National Centers (such as the National Hurricane Center, Storm Prediction Center, Ocean Prediction Center, etc.) when faced with specific phenomena such as a tropical cyclone, severe thunderstorms, major ocean storm, etc. We are fortunate that one of the thirteen River Forecast Centers, the Northeast River Forecast Center, is co-located with us. We look at the people from the National Centers and Northeast River Forecast Center as the specialists for specific weather phenomena and look at ourselves as general practitioners predicting all kinds of weather for the southern New

England area. And if you have lived in New England for any length of time, you know that we get a sampling of just about any kind of weather, sometimes in rapid succession!

This is one of the busiest of the 122 Weather Forecast Offices that you will find. We service major population centers in four states, have one of the heaviest aviation forecast loads in the country and the most complex marine forecast area in the eastern portion of the United States. We also produce daily river forecasts for 36 points, and manage more automated surface observation stations than any other office in the country. In addition, we provide fire weather forecasts, broadcast weather information over 7 All Hazards NOAA Weather Radio transmitters, manage large networks of volunteer cooperative observers and storm spotters, and collaborate with other National Oceanic and Atmospheric Administration (NOAA) offices in the region. You will learn more about our services and partners in this and future issues.

So, we are busy but not so busy to prevent us from genuinely caring about the service we provide. Consider our name: National Weather Service. We are part of a greater national-based organization. We are a science based organization committed to integrating cutting edge meteorology into our operations. Most importantly, we are about service. All of our people (meteorologists, hydrometeorological technicians, electronic technicians, information technology officer, and administrative support assistant) seek satisfaction in providing the best service possible with the ever evolving state of the science. It is the science that drew most of us into the National Weather Service. It is the service we provide that motivates us to remain with the National Weather Service as a fulfilling career. And it is the wonders of New England and the challenges of New England weather that keeps many of us home in this office.

Bob Thompson

Meteorologist-in-Charge

What is an MIC?

By now you're probably wondering, "What's with all the acronyms?" Well, we do have quite a few. The MIC is the Meteorologist-In-Charge of each NWS office. This is our top person in the office, kind of like a CEO for the Boston office.

There is no such thing as bad weather, only different kinds of good weather.

- John Ruskin

New Severe Hail Criteria in Effect

On January 5, 2010, the National Weather Service increased the size of hail considered to be severe.

Previously, the National Weather Service (NWS) issued Severe Thunderstorm Warnings whenever a thunderstorm was forecast to produce wind gusts to 58 miles per hour (50 knots) or greater and/or hail size 3/4 inch (penny-size) diameter or lar-

ger. During the past few years, offices that cover areas of Kansas have experimented using a warning criterion of one-inch diameter hail. During the spring and early summer of 2009, this experiment expanded to other areas in the Central and Western U.S. **Beginning January 5, 2010**, the minimum size for severe hail nationwide increases to **one inch (quarter-size)** diameter.

There will not be a change to the wind gust criterion of 58 mph.

This change is based on research indicating significant damage does not occur until hail size reaches 1 inch (quarter-size) in diameter, and as a response to requests by core partners in emergency management and the media.

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Two inch hail that fell in Plymouth, MA on August 16, 2008. Photo by: Roy Brown.

From the Training Desk

Changes in the NWS Skywarn Training Page

If you have bookmarked the page that lists upcoming training dates, you may have noticed that the link doesn't work anymore. The SKYWARN page and the Training Date pages have been moved. Here are the new links:

Main SKYWARN page:
<http://www.erh.noaa.gov/box/officePrograms/SkyWarn.shtml>

Training date page:
<http://www.erh.noaa.gov/box/officePrograms/skywarn/skywarnTraining.shtml>

Please check the Training Date page for the latest listing of confirmed dates and locations

New Online Re-Training

The Taunton National Weather Service office has created an online version of its SKYWARN training program. This has been done in order to give trained spotters a new option for retraining when scheduled classes are not available.

We wish to stress that **this online program is for people who are already trained**. People who have not been trained in person at a live session are not eligible to receive credit for this training.

A few technical glitches ave delayed the unveiling of this site, but we expect the Online Re-training to be "turned on" during the Spring.

Upon successful completion of this online class, you will be issued an updated spotter number. A new card will be issued either by mail or e-mail. The two links below lead to the online training and the quiz to follow, respectively.

<http://www.erh.noaa.gov/box/officePrograms/skywarn/webSkywarnRefresher/>

<http://business.tmlp.com/nwsbox/skywarnTrainQuiz.php>

New 5 Year Re-Training Requirement

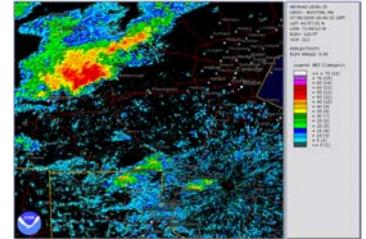
Starting with this year, the Taunton National Weather Service office will require existing trained spotters to undergo refresher training every five (5) years. For example, anyone trained in 2010 will need to be retrained by 2015. A spotter trained in 2008 would need to be retrained by 2013.

We have started this requirement in order to keep our database up-to-date. Previously, there had been no re-training requirement, with many spotters on the list who

were last trained in the 1990s. In recent years, too many calls made to spotters during weather events have found that the spotters were deceased or had moved away. During significant weather, we need to know what spotters are still available and where they are.

The retraining can be accomplished in one of two ways. A spotter can attend a live training class, such as those listed on the training

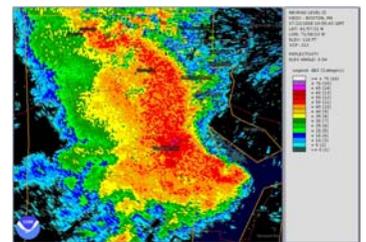
date page. This may not be as easy as in past years; in 2003 we held 23 classes around Southern New England, but in recent years that number is closer to a dozen. A trained spotter can instead use the new Online Re-Training course mentioned above.



Radar imagery from a July 8 2009 supercell that moved through Hopkinton, MA.

*Bad weather always
looks worse through a
window.*

-Tom Lehrer



Radar imagery from a July 23 2008 supercell that produced a waterspout over Narragansett Bay. The waterspout then moved ashore in Warren, RI as a tornado remaining on the ground for 4.2 miles, moving into Swansea, MA before lifting.



Damage to a tree in Swansea, MA from the July 23 2008 tornado. Photo from Official NWS Storm Survey

The WCM Corner

Changes to the Saffir-Simpson Scale

By Glenn Field

The National Hurricane Center (NHC) has made a change to the Saffir-Simpson Hurricane Scale, taking effect for the 2010 hurricane season. The wind speeds remain the same for each category, but it no longer ties specific storm surge values and flooding effects to each category.

According to Jamie Rhome at NHC, "The Saffir-Simpson scale had ranges of storm surge that would typically accompany an average category hurricane. But as we saw with previous storms, it is more than just the wind (that generates storm surge). Storm surge is a com-

plicated phenomenon that is a function of many things such as bathymetry (the topography of the ocean floor), the shape of the coastline, the forward speed and size of the hurricane. It's not just the maximum intensity that is controlling storm surge. The best example is Category 4 Hurricane Charley (in 2004) which struck the southwest coast of Florida and produced six to seven feet of storm surge whereas Category 3 Katrina (in 2005) struck Louisiana and Mississippi and produced approximately 27 feet of storm surge. The previous scale [gave] the impression that if you have a certain category storm that you are going to have a certain category storm surge, and this is not the case."



NOAA Satellite Imagery of Hurricane Isabel, September 18, 2003.

Tropical Watches and Warnings

According to the NHC, this year, Watches and Warnings for tropical storms and hurricanes along threatened coastal areas will be issued 12 hours earlier than in previous years. Tropical Storm Watches will be issued when tropical storm conditions are possible along the coast within 48 hours. In years past, Tropical Storm Watches have been issued when tropical storm conditions are possible along the coast within 36 hours. Tropical Storm Warnings will be issued when those conditions are expected within 36 hours (previously 24 hours). Similar increases in lead-time will apply to Hurricane Watches and Hurricane Warnings.

What is a WCM?

The one to the left stands for Warning Coordination Meteorologist. This is our person dedicated to making sure our customers know where to find us when they need us. You'll find Glenn out at Storm Ready meetings, giving talks, meeting with Emergency Managers, and talking with the media. He also keeps emergency managers and other government officials informed with the latest information on any big storms coming into the area and what the impacts of those storms will be.

2010 Hurricane Names

By Glenn Field

The 2010 Hurricane Season will begin June 1, just a few short months away. Here are the tropical storm/hurricane names for the Atlantic Basin 2010 season.

Alex
Bonnie
Colin
Danielle
Earl
Fiona
Gaston
Hermine
Igor
Julia
Karl
Lisa
Matthew
Nicole
Otto
Paula
Richard
Shary
Tomas
Virginie
Walter

The 2010 Hurricane Season will begin June 1, just a few short months away.

Evaluating Southern New England's Snowpack

By Bill Simpson

By mid March, the majority of Southern New England has little snow left on the ground. Any snow that falls in March or April usually melts within a few days. On the other hand, Southern New England's higher elevations (above 1000 feet), quite often retain a significant snow pack. These areas include the Berkshires,

southwest New Hampshire and southern Vermont.

With the accumulated snow pack and warming late winter and early spring temperatures comes the threat of rapidly melting snow and the resulting flooding of rivers. It is during these times that various private and government agencies evaluate the amount of water that is contained

within the snowpack, which will eventually make its way into the regions rivers. The primary agency that measures and evaluates the snowpack's ripeness in Southern New England is the Army Corps of Engineers. The term "ripe" means the snow is near the freezing point, and the liquid to snow ratio is near 33 percent or higher.

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Reliable snow information is an important factor in improving river and flood forecasts, as well as water supply forecasts.

From page 1...Blizzard of 2009

December 20th. Snowfall rates of 2 to 3 inches per hour occurred during that time along with strong winds. However, the snow took longer to move northward as very dry air was in place across much of southern New England. The snow did not arrive in the Boston-to-Worcester metropolitan areas until around, or shortly after, midnight. As mentioned in the previous paragraph, some places across extreme Northwest Massachusetts and southwest New Hampshire never even received any measurable snowfall from this system!

The low pressure system continued to rapidly intensify as it passed southeast of Nantucket during the morning of Saturday, December 20th. This, combined with high pressure over southeast Canada, caused northeast winds to increase markedly during the overnight hours across the southeast New England coast. The strongest winds were observed across the south coast of Massachusetts and Rhode Island, as well Cape Cod and the Islands, where

frequent gusts of 45 to 60 mph were observed. This, combined with heavy snow resulted in visibilities of less than a quarter of a mile at times. The official National Weather Service Blizzard Warning criteria are visibilities less than one-quarter mile along with frequent wind gusts of 35 mph, for at least three consecutive hours. This criteria was officially verified across the southeast New England coast and many places had whiteout conditions for several hours. The strong winds also resulted in some damage along with considerable blowing and drifting snow. During the heart of the blizzard, travel was nearly impossible.

The snow finally tapered off across most of southern New England by mid afternoon on December 20th, as the strong low pressure system pulled away from the region. Total snow accumulations ranged from between 12 and 22 inches across Rhode Island and Southeast Massachusetts. While the snowfall amounts were quite high, it was certainly not a historic storm for

our region. Nonetheless, this storm was a blizzard across parts of our region as the strong winds and heavy snow resulted in a dangerous winter storm across southeast New England. What was also noteworthy about this storm was the sudden and sharp northwest cutoff to the heavy snow and strong winds. This was unlike many of our other blizzards, where our entire forecast area was affected. The amount of dry air across the northern and western sections of our region resulted in snowfall amounts dropping off drastically to the northwest of a Hartford-to-Worcester-to-Bedford line. For example, in Massachusetts, snowfall amounts varied tremendously from the northern to southern portions of Worcester county. Mendon, MA reported 17.0 inches of snow, while Fitchburg only reported 1.5 inches! While this storm will be remembered as an all out blizzard across the southeast New England coast, folks just 60 miles to the northwest have probably long forgotten about the blizzard that never happened.



Drifting up to the first floor windows of a house in New Bedford.

Photo by: Mike Leger—BOX Skywarn Spotter

From Page 5...Snowpack

A simple example of a ripe snow pack is when there is 30 inches of snow with 10 inches of water within the snow pack. This amount of snow is usually only found in the highest elevations of Southern New England (above 2000 feet) during this time of year. The Army Corps of Engineers conducts snow surveys every two weeks from January through April. The results of these surveys for the 2009/2010 winter season

can be found [here](#).

The National Weather Service office in Taunton augments the Army Corps surveys as needed. Quite often in March and early April there will be a significant change in the snow pack in the two week period between surveys.

Our office is co-located with the Northeast River Forecast Center (NERFC). Both of our offices work in partnership

with the National Operational Hydrologic Remote Sensing Center (NOHRSC), a part of NOAA. They provide remotely sensed and modeled snow cover products and data sets to support the NWS Hydrologic Services Program for the United States. Reliable snow information is an important factor in improving river and flood forecasts, as well as water supply forecasts.



NWS Observing Program Leader Alan Dunham measures snow at the Taunton NWS Office.

Weather Cryptogram

A cryptogram is an encoded message. The code used is called a simple substitution cipher. This means that the message is encoded by replacing each letter in the message with a different letter of the alphabet. Every time a particular letter occurs in the message, it is replaced with the same code letter. Word spacing and punctuation are not changed. It works like this:

Mary had a little lamb, its fleece was white as snow.
XTNB LTZ T SCAASQ STXV, CAI DSQQWQ GTI GLCAQ TI IPRG.

Here are two weather related quotes. They both use the same coding (and different from the above example). Can you decode them? (Answers can be found within this newsletter.)

GZR EYZNKYO ZPEZCD PSSTD ESODY NKOSFUK Z EXVRSE. - NSW

PYKOYO

NKYOY XD VS DFHK NKXVU ZD GZR EYZNKYO, SVPC RXQQYOYVN

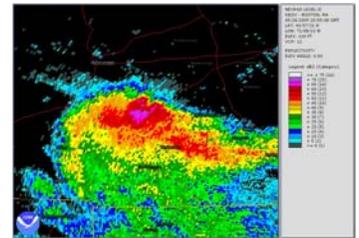
TXVRD SQ USSR EYZNKYO. - BSKV OFDTXV

From page 2...New Severe Hail Criteria

Particularly in areas of the Central U.S., the frequency of severe thunderstorm warnings issued for penny-size and nickel size hail might have desensitized the public to take protective action during a severe thunderstorm warning

In areas that experimented with changing to the one inch hail criterion, media partners stated their user feedback suggests warnings are now more meaningful. In addition, television networks receive fewer viewer complaints from breaking into programming

for non-damaging storms. The Emergency Management community in those areas agreed that warnings carry more weight, and spotters now concentrate on the more significant events.



Radar imagery of a May 24 2009 supercell that produced up to two inch diameter hail in Grafton, MA.



One and a quarter inch to one and a half inch hail that fell in Grafton, MA on May 24, 2009. Photo courtesy: Linda Hutchins.



National Weather Service Southern New England



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The National Weather Service provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.

What is CoCoRaHS?

If you're tired of complaining about the weather, here's your chance to do something about it – join a group of volunteers that provide daily readings on rain, snow and hail. The effort is part of a growing national network of home-based and amateur rain spotters known as the Community Collaborative Rain, Hail and Snow Network or CoCoRaHS.

CoCoRaHS began at Colorado State University in 1998, after a devastating flash flood submerged part of Fort Collins, Colorado. The details of the storm were not reported by the existing network of weather stations so the population was not given adequate warning. The non-profit network is sponsored in part by the National Oceanic and Atmospheric Administration's National Weather Service, as well as individual contributors and organizations.

CoCoRaHS is a unique, nonprofit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation including rain, hail and snow. Currently, tens of thousands of volunteers in all 50 states submit daily precipitation totals on the Web.

Weather buffs of all ages and backgrounds can join CoCoRaHS, playing an active role in meteorological reporting and research using inexpensive equipment in their backyard. Participants can include individuals or organizations, including schools.

Data gathered by volunteers provides important daily decision-making information on drought and water supply for agricultural and insurance industries, utility providers, resource managers, teachers, scientists, and homeowners.

Rhode Island was the first state in New England to join the network (April 2008). Massachusetts followed next (March, 2009), followed by Connecticut and New Hampshire (July, 2009). Volunteers are always needed, especially in western and central Massachusetts, Cape Cod and the Islands, and southwest New Hampshire.

Nicole Belk, Senior Service Hydrologist at the National Weather Service in Taunton is one such user of CoCoRaHS data. "Rainfall reports from Rhode Island observers helped forecasters issue a timely warning for urban flash flooding in Warwick and Cranston in the summer of 2008. In southern New England, we also use the data as part of monthly precipitation summaries used to assess drought conditions," Belk said.

For more information about CoCoRaHS, see <http://www.cocorahs.org>.