Sterling Reporter

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A real "Washingtonian" - born at Georgetown Hospital and raised in Northern Virginia

Melody Paschetag

After graduating from JEB Stuart High School in Falls Church, VA I went to Longwood College in Farmville, VA for two years. I'm not like most Meteorologists; I didn't know what I wanted to study until I was in college. I transferred to the University of North Carolina at Asheville, NC, which has an Atmospheric Science program. While there, I was Laboratory Assistant for the Department. I began my career with the government at the National Climatic Data Center as a Meteorological Aid while finishing my degree in Meteorology.

Following graduation, I was a Meteorologist for the Navy, working at the Naval Oceanographic Office in Bay St Louis, MS. The most exciting thing about working for the Navy was my onetime experience on the USS Lexington aircraft carrier and being codded off like a slingshot. During May 1990, just less than a year after being with the Navy, I moved back home to the Washington DC area and the National Weather Service in Sterling, VA as a Meteorological Intern. In March 1994, I became the office Service Hydrologist and remained until January 25, 2004. After working for the government for 16 years and the National Weather Service for nearly 14 years, I left the workforce to spend more time with my family; they grow so fast!

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INSIDE THIS ISSUE

Congratulations Barbara!

Steve Rogowski

After over ten years of dedication to the Sterling Office, Barbara Watson received a promotion as the new Meteorologist-In-Charge of the Binghamton, New York Office. During her time in Sterling as Warning Coordination Meteorologist, Barbara tracked tornado outbreaks, floods, hurricanes and numerous winterstorms, briefing area Emergency Managers the vital information needed to make life saving decisions.

Barbara also participated on numerous committees unique to the Greater Washington DC Metropolitan Area. These added partnerships with an extended family of emergency management officials, served to allow our office to influence local emergency response policy.

In addition, Barbara oversaw the Skywarn program at the Sterling office. During her years here, she trained thousands of emergency officials and members of the public how to observe severe weather. These reports are invaluable to forecasters during a severe weather episode.

We of course have mixed feelings about Barb's departure. We're very happy for Barb having an opportunity to move back to an area close to where she grew up. At the same time, Barb's dedication and her ability to create policy will be missed not only by our staff, but by the emergency managers across the region.

"Melody" continued from page 1…

There is so much to say about my experiences at the National Weather Service — friends and coworkers, skywarn (spotters, presentations, picnics), hydrologic precipitation and cooperative observers, talking to "the Public", interviews, tours, balloon releases, NOAA Weather Radio, rotating shifts (don't miss it), working with other government agencies, radar, AFOS to AWIPS, building expansion and don't forget the variety of weather such as severe thunderstorms, tornadoes, hurricanes, blizzards, drought and of course major floods.

As the Meteorological Intern on duty during much of the 1993 blizzard, I was snowed in with the rest of the staff on duty, along with the skywarn radio volunteers. Though everything outside was at a standstill, we continued to get the information out to the media and "public." Even when there is weather, everything must go on. Besides doing NOAA Weather Radio, phone interviews and taking spotter reports, I was also responsible for the weather balloon release. During the heavy snow and strong wind, I released the balloon but by the time I was back in the office to check the data, the balloon had already started to descend. The more balloon data you have, the better the forecast models. Since there was still time to release another balloon, I was sent out to try it again. It took a bit longer, after the car got stuck in the snow and I trudged my way back to the office to find the balloon once again was heading back down. It was determined there would not be a flight this time, but we gave it a good try.

This area usually has one major flood every 10 years but soon after becoming Hydrologist, there were 3 major floods in a little over a year; Madison county in June 1995, and two in 1996 with the Blizzard/thaw in January and the remnants of Fran in September. There were also record flash flood events such as in June 1995 in Cumberland MD and in August 2001 in Washington DC. There was also near record storm surge with the remnants of Isabel in September 2003. The three major floods will be well remembered, since they were all so different.

Working with the volunteers has been rewarding. As SKYWARN Program Manager, I scheduled classes, taught classes, assigned spotter ids and maintain the spotter database as well as answered several questions about the program and spotting severe weather. As Hydrologist, I drafted a few SKYWARN spotters to become a part of the Precipitation Network. You can never have enough precipitation reports and I have been able to expand the network into areas where we didn't have any observations. I've also worked with our Cooperative Observer Network. They are amazing, taking observations everyday at the same time, no matter what the weather or day of the week. When on vacation, someone takes the daily observations for them. It is a major commitment and they are all volunteers; some who have done it for generations, keeping it in the family. Many have gone above and above what we normally ask the volunteer to do and others have made weather a passion. There are so many people I've met and several have become friends. The people are what I'll miss most.

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"Melody" continued from previous column…

Some of my favorite phone calls from the Public asking all sorts of questions:

*My daughter is getting married in 26 months and I want to know the forecast. Is it going to rain?

*I know you said clear with high temperatures in the middle 70s but is it going to rain?

*Remington. (*Do you want the forecast for Remington?*) Yeah.

*What is the forecast? (*For Washington DC?*) No, for Alexandria.

You also have to remember that the National Weather Service "knows all:"

*What are the road conditions?

*When are the lights turned off at the Washington Monument?

*How do I get to Boston from here?

2004 Washington Boat Show

Howard Silverman

Meteorologists from the NWS Forecast Office in Sterling VA and the Ocean Prediction Center in Camp Springs, MD staffed a booth at the 43rd annual Washington Area Boat Show in Washington DC. The Show ran from February 18-22, 2004.

Approximately 750 of the show's attendees dropped by the NWS booth during the 5 day period. We had weather related pamphlets, safety guides, and information resources available to distribute. Of course, much of the literature had a marine-related theme to it. Hurricane tracking charts were also very popular.

Events such as this gives us an opportunity to provide safety information to area residents, and to spread the word about our products and services. It also affords us an opportunity to listen to our users, and take the feedback they provide in order to improve operations.

The Winter of 2003/2004

Chris Strong

The winter of 2003/2004 started off as one of the colder and snowier winters of recent times, but then in February it faltered. During February, snowfall was non-existent, and temperatures moderated to near normal. After it was all over, the result was a slightly cooler than normal winter, with slightly less than normal precipitation, and below normal snowfall for Baltimore and Washington.

December started the winter off…well wintry. Most of the first half of the month was rather cold with daytime temperatures in the 30s and 40s. There were also two snow events, the first on the 4th through 6th, and the second on the 14th. The first left 6 to 10 inches of snow west of Washington and Baltimore, and 2 to 4 inches southeast of the cities. The second left 4 to 8 inches west of Washington and Baltimore, and 1 to 3 inches to the southeast. Lower southern Maryland was the exception, and failed to see any accumulating snow in December.

There was some moderation towards the end of the month. Christmas ended up being just about typical for the holiday with mostly sunny, breezy and cool conditions, with high temperatures around 40. As the month came to a close, 2003 was rewarded for being the wettest year on record for Baltimore, and the second wettest for Washington. Both cities have records dating back to the late 1800s. Then, as December came to a close, the deluge finally stopped.

During January, winter took its shot. January 2004 was the fourth coldest January in a generation, behind 1977, 1982, and 1994. Although it was somewhat dry, most of the precipitation did fall as snow and there was another moderate snowstorm on the 25th through the 27th. On that late month event, five to eight inches of snow fell over the area. There were three mornings with widespread single digit temperatures on the 6th, 7th, and 25th, as well as two afternoons that spend most of their time in the teens - on the 10th and 25th. January as a whole ended up about 4 degrees below normal.

February, ended up very close to normal in terms of temperatures, and only slightly below the average precipitation expected for the month. The only place it really was atypical was in the total lack of snowfall for most of the area. Both Baltimore and Washington did not see a flake of snow in February, only a bit of sleet. The lack of snow proved to be an interesting contrast to last February, when thirty to forty inches of snow fell to produce one of the snowiest Februaries on record.

For December through February, seasonal snowfall ended up between 12 and 20 inches for much of the region. Temperatures were a little cooler than normal, and precipitation ended up a little drier than normal. That was the first seasonal deficit in precipitation since the summer of 2002.

Meteorologists Judge Science Fair

Andrew Woodcock and Chris Strong

The Loudoun County Science Fair occurs every March, and is an opportunity for young high schoolers to put learned scientific methods into practice. Every year NWS Sterling sends forecasters to serve as judges at the event. This year's event was held at Stone Bridge HS in Ashburn. Senior Forecaster Chris Strong and I served as judges for the earth science category. We arrived to a gym filled with experiments - 200 students took part.

Presenters in our category were freshmen and sophomores. Among the projects Chris and I saw were an attempt to grow plants in a Martian atmosphere, analysis of meteorite slices using an electron microscope, a plate techtonic model, and a student who used his telescope to monitor a Cepheid variable - a star which changes brightness due to contractions and expansions. Aside from judging, Chris and I both use the time as an opportunity to stress the importance of science and math, and urge the kids to consider a career in science, whether in meteorology or another field.

Given the variability of projects, it is easy to see that judging is no easy matter. Several people from other scientific realms joined us in discussion afterwards to determine a ranking of projects. This was no easy matter, but after much discussion a consensus was finally reached on who should receive the top prize. All students involved, however, got a glimpse of using the scientific method to attack problems and issues facing our society.

Meteorologist Andrew Woodcock judiciously studies a student's project

Weather Review – Sept/Oct/Nov 2003

Cindy Woods, Storm Data Focal Point

For the detailed report on these weather events, see the Storm Data monthly reports on our website at:
http://www.erh.noaa.gov/lwx/Storms/Strmdata/index.htm

September 1st: A thunderstorm downed trees in Fauquier County (VA).

September 2nd: Thunderstorms downed trees across St. Mary's, Stafford and Madison Counties (VA). Severe thunderstorms also produced hail in King George, Madison and Stafford counties (VA), and on the Lower Tidal Potomac. A waterspout was reported near the Route 301 Bridge and a funnel cloud was spotted in Stafford County.

September 3rd-4th: An area of showers and thunderstorms produced heavy rainfall across Northeast Maryland, the Panhandle of West Virginia, portions of the Potomac Highlands, and the Northern Shenandoah Valley. The 4 to 6 inches of rainfall produced widespread flooding.

September 15th: Showers and thunderstorms produced heavy rainfall across Harford County (MD). The 4 inches of rain in 5 hours caused flooding on roads, creeks and low lying areas.

September 18th-21st: Tropical Storm Isabel brought storm force winds and flooding to the region. Widespread flooding and wind damage resulted. There were several downed trees.

September 23rd: Heavy rainfall fell on top of grounds that were saturated by Tropical Storm Isabel. The added 2 to 3 inches of rain caused more flooding problems in Northeast Maryland, Northern Virginia and the District of Columbia.

September 27th: A severe thunderstorm produced quarter sized hail and flash flooding in Allegany County (MD).

October 14th: Thunderstorms produced strong winds that downed trees In Fairfax (VA) and Anne Arundel (MD) Counties. Strong winds of 39 knots were also recorded over portions of the Chesapeake Bay and the Lower Tidal Potomac.

October 15th: A cold front moved through the region. Strong winds ahead of the front downed trees and power lines across Maryland and Northeast Virginia.

October 22nd: Thunderstorms produced pea and penny sized hail in Prince Georges County and the Baltimore metro area.

October 26th-27th: A large area of moderate to heavy rain move through the area and produced 1 to 2 inches of rain in Maryland. Some river flooding was reported in Montgomery County.

November 5th: Localized dense fog caused a large car pile up in Montgomery County (MD) early in the morning. Later in the afternoon scattered severe thunderstorms produced weak tornadoes in Loudoun County (VA) and Montgomery County (MD). A man was injured by lightning in Leesburg. Trees were downed across Howard and Anne Arundel Counties and the City of Baltimore.

November 13th: Scattered thunderstorms downed trees and power lines across Maryland, the District of Columbia, Virginia and Eastern West Virginia. Strong winds measured 40 to 45 knots over portions of the Chesapeake Bay and the Lower Tidal Potomac.

November 19th: Thunderstorm winds downed trees in Northern Virginia and Northeast Maryland. Flash flooding occurred in Allegany, Montgomery, Frederick, Howard and Harford Counties (MD) and the District of Columbia. A funnel cloud was reported in Harford County. Strong winds of 35 to 40 knots were also recorded over portions of the Chesapeake Bay and the Lower Tidal Potomac.

November 19th-24th: River flooding occurred on the South Branch of the Potomac at Franklin and Springfield and the Potomac at Shepherdstown.

November 28th: Thunderstorms produced wind gusts of 35 to 48 knots over the Chesapeake Bay from Drum Point to Smith Point and from Pooles Island to Sandy Point.

How Thunderstorm Warnings are Issued

Steve Rogowski

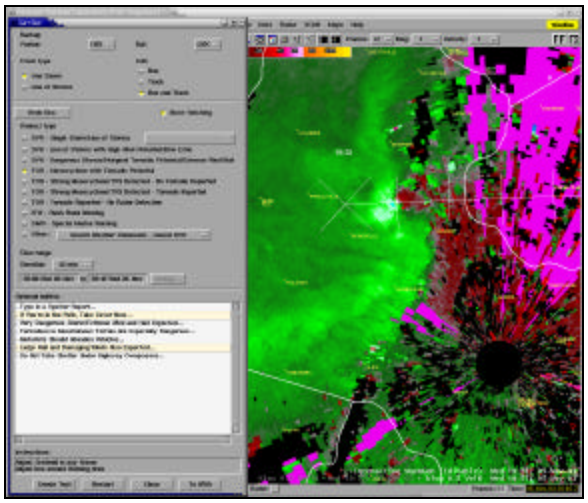
With April here, the severe weather season is upon us. A question we are often asked is how we decide when to issue a warning, and then how do we actually do it. Let's take a look at the process.

Our forecasters actually start preparing for severe weather before a thunderstorm even develops. We forecast the environment which the storms will develop in, and from that anticipate where the storms will form, how they will be organized (a line or individual cells for example), and the likeliness of flooding, wind damage, large hail and tornadoes.

Once storms develop, and the severe weather episode begins, we heavily depend on our Doppler Radar, while still keeping an eye on other atmospheric observations. Using reflectivity tilts from our Doppler Radar, we monitor each storms structure, shape and track. Doppler Radar also detects air motion towards and away from the radar, allowing forecasters to locate areas of implied rotation within a storm.

Determining the severity of a storm is a difficult task. A storm with one set of attributes could be severe in one environment, while remaining below severe limits in a different environment. This is why we study the atmosphere so closely before and during an event, and depend on reports from our spotters.

When a forecaster determines the need for a warning, he or she uses a software program named "WarnGen". This interface allows for a linear extrapolation of the storm's motion using radar (inserting towns which may be affected by the storm), while the forecaster selects from a predefined list of wording choices to formulate the warning with (type of warning, length of warning, predefined actions statements, etc). The warning text is then generated on our text workstation, and after final editing from one of our forecasters, is sent to NOAA weather radio, Emergency Managers, and local media. Once we determine the need for a warning, this entire process takes about one minute!



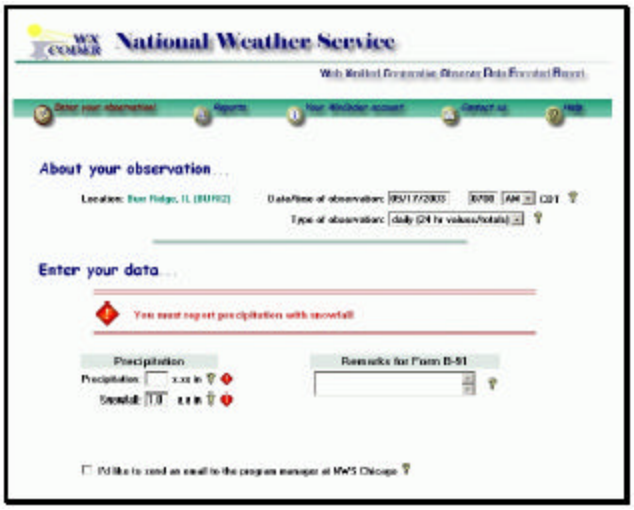
The WarnGen user interface next to a velocity radar image as a warning is being prepared

WxCoder Provides Web-Based COOP Reporting

Steve Rogowski and John Newkirk

Cooperative observers now have a way to submit data and correspond with their local National Weather Service office electronically. Developed in 1999 by staff at the Chicago National Weather Service Office, **W**eb **X**mitted **C**ooperative **O**bserver **D**ata **E**ncoded **R**eport is quickly becoming a preferred method to transmit and receive Cooperative data.

Cooperative Observers currently either call in weather reports to the National Weather Service Office, mail data at the end of the month, or use an archaic phone system named ROSA. WxCoder is the first web-based reporting system that has been widely used across the National Weather Service.



A screen shot of the WxCoder data entry form

WxCoder provides many advantages to traditional reporting methods for both the observer and the National Weather Service. WxCoder performs an extensive quality control to inputted data, providing immediate feedback for the observer. In addition, observer data is immediately inserted into a database, allowing for further analysis by both the observer and National Weather Service. WxCoder also provides an easy way to correspond with National Weather Service Officials, by transmitting free text messages regarding equipment problems and form replacement. Unlike other data transmitting methods, WxCoder provides an intuitive interface and help for each data entry.

To send data via WxCoder, Cooperative Observers need a personal computer at home with an Internet connection. Interested observers should contact Calvin Meadows (Calvin.Meadows@noaa.gov) to set up their WxCoder account.

About ten percent of the Baltimore-Washington Cooperative Observer Network currently reports via WxCoder. Interested observers should contact our office!

A copy of the WxCoder manual is available online at: http://www.srh.noaa.gov/ohx/dad/coop/UsersGuide.pdf

Upcoming SKYWARN Classes

For more information check out the SKYWARN website at:
http://www.erh.noaa.gov/er/lwx/skywarn/classes.html

BASICS I SKYWARN CLASS

This class is essential for becoming a SKYWARN Spotter. It is a 3-hour class that covers the basics of how SKYWARN and the National Weather Service operate, what you need to report and how, and how to spot severe thunderstorms and tornadoes. This class is a pre-requisite for all other classes.

BASICS II SKYWARN CLASS

This class is an optional sequel to the Basics I class. It is 2 1/2 hours long. It is good for spotters who need a refresher or feel they what additional information and training. It reviews the basic spotting techniques and covers more information about thunderstorms and Doppler radar. You must have taken Basics I to attend this class.

WINTER STORM CLASS

This is an optional 2 1/2 hour class that is offered seasonally (November - January). Its focus is on the Mid-Atlantic snow storms and nor'easters. It looks at the frequency and history of the storms, how they form and the difficulties in forecasting them, how to be prepared, how to measure snow and ice, and how SKYWARN operates during a winter event. You must have taken Basics I to attend.

Flash Flood Tips

- ✓ Keep alert for signs of heavy rain (thunder and lightning), both where you are and upstream. Watch for rising water levels.
- ✓ Know where high ground is and get there quickly if you see or hear rapidly rising water.
- ✓ Be especially cautious at night. It's harder to recognize the danger then.
- ✓ Do not attempt to cross flowing water which may be more than knee deep. If you have doubts, don't cross.
- ✓ Don't try to drive through flooded areas.
- ✓ If your vehicle stalls, abandon it and seek higher ground immediately.
- ✓ During threatening weather listen to commercial radio or TV, or NOAA Weather Radio for Watch and Warning Bulletins.

Watch and Warning Definitions!

Tornado Watch: Conditions are favorable for tornadoes to develop. It is normally issued for 6 hours, and includes many counties. If you are in or near the tornado watch area, stay informed via NOAA Weather Radio, commercial radio or television. Keep your eye on the sky, and be prepared to take cover at short notice, as tornadoes can occur with little or no warning.

Tornado Warning: Means that a tornado has been sighted, or a developing tornado is reported by trained spotters or indicated on Doppler radar. A warning is typically issued for a small area for less than an hour. If a tornado warning is issued for your area...**take cover immediately!**

Severe Thunderstorm Watch: Conditions are favorable for thunderstorms to produce wind gusts to 58 mph or stronger or hail to 3/4 inch or larger in the watch area. These watches are issued for 6 hours at a time and for a large number of counties. Stay informed, watch the sky, and take cover if a severe thunderstorm approaches you.

Severe Thunderstorm Warning: Means that a severe thunderstorm has been detected by radar, or by a trained spotter. **Take cover if you are near the severe thunderstorm!**

Flood Watch: Issued when heavy rain may develop and result in future flooding in or near the watch area.

Flash Flood Warning: Flash flooding in the warning area has developed or is imminent. **Move to higher ground at once!**

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National Weather Service
44087 Weather Service Rd.
Sterling, VA 20166
703-260-0107

Editor:
Steve Rogowski Steve.Rogowski@noaa.gov