

# Sterling Reporter

Newsletter of the National Weather Service's Baltimore/Washington Forecast Office

Volume 2, Issue 2

Summer 2003

## Loudoun and Fauquier Counties' Finest Assist the National Weather Service during Snowstorm

by David Manning, General Forecaster

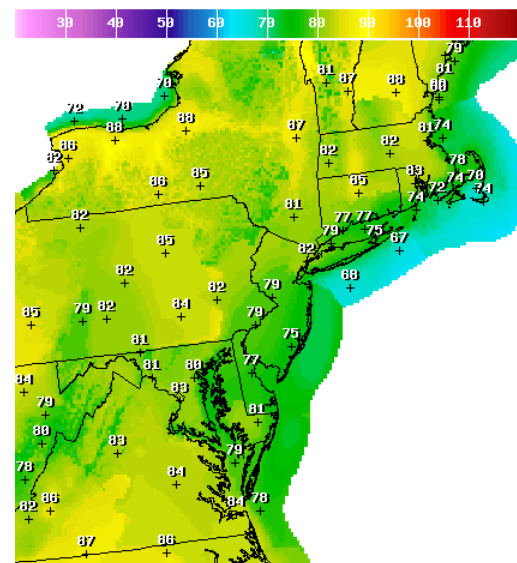
During the major winter storm that affected the Mid-Atlantic states during the period 14-18 February, the staff at your National Weather Service were aided by some very special people. The National Weather Service must maintain operations, 24 hours a day, no matter how bad the weather. We all know how much snow fell during this period, and this presented a very real problem to the people on duty at the NWS Forecast Office in Sterling, VA. Some of our staff members live a significant distance from the forecast office. Others live quite close. In some ways this snowstorm was an "equalizer." The author of this article lives a mere 4 miles from the office, while another one of our staffers, Jackie Hale, lives some distance away in Marshall, in Fauquier County. Neither of us lived near roads that were passable such that we could come to work.

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## The NWS National Digital Forecast Database

by John Margraf, Information Technology Officer

Over the past several years, many technological advances have allowed the NWS to improve the quality and accuracy of their forecast and warning information. The NWS is now embarking on a change in their production and dissemination methods, to allow users to benefit from these improvements in technology.



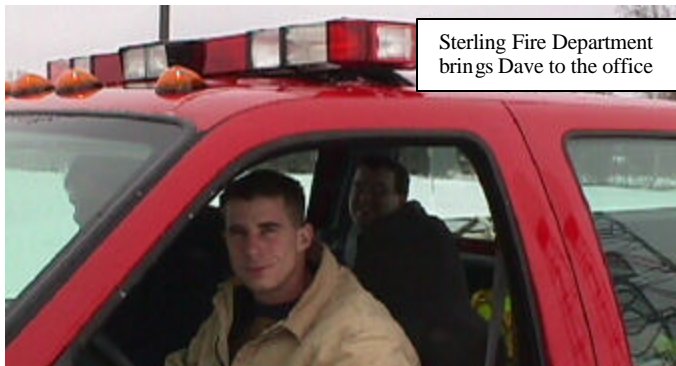
National Digital Forecast Database  
Experimental graphic created 07/02/2003 16:35Z



On September 30<sup>th</sup> of this year, the National Digital Forecast Database (NDFD) will be available to users nationwide. Forecasters at NWS offices have spent the past couple of years developing skills at preparing forecast information graphically, and the NDFD is a gridded database of this graphical forecast information. This database will contain a nationwide mosaic of weather forecast and warning information, which users can access in order to develop weather forecast applications specific to their needs and to the needs of their customers.

The NWS is now experimenting with using the NDFD to produce their basic forecast services in different formats. The NWS Sterling web site now offers our basic local forecast in several experimental formats, including a set of graphical

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We then turned to the people who we often provide support, with the hopes that they could support us and allow us to continue our operations. After coordinating with Emergency Management Officials in both Loudoun and Fauquier counties, a plan was developed.

Jackie had to trudge through waist deep snow in spots to walk to a main road with a large backpack (it was uncertain when she would be able to return home). When she arrived there, a Fauquier County Sheriff's Deputy was waiting for her to bring her to the Loudoun County line. After arriving at the county line, a Loudoun County Sheriff's Deputy transported Jackie the remainder of the way to the forecast office.

In my case, the Sterling Fire Department came to my aid (see picture on front page), and transported me to work. The heavy duty utility vehicle that the fire department brought had difficulty making it down my street, but alas, the firefighters were able to negotiate their way to my house, and I was able to climb through the snow to reach the truck. They then transported me to the forecast office on very treacherous roads. After being on duty for about 24 hours, they were also able to return me safely home, again, on very treacherous roads.

These are examples of how your National Weather Service, while normally in the business of helping other government agencies, is in need of help at times. We are very grateful for the efforts put forth by our partners in state and local government agencies. Their efforts afforded the National Weather Service the ability to maintain continuous operations throughout the storm, providing the only service we know how to provide: the best. For their efforts, the Sheriff's deputies, firefighters, and their respective departments will be awarded Special Service Awards from the National Weather Service.

Editor's Note: We would also like to thank the Ashburn Fire Department for bringing forecaster Andy Woodcock to work during the storm. We will be giving them an award as well.

NDFD continued from page 1...

forecast images, a digital forecast, and a 7-day text forecast for specific to a 5 sq. km. grid point inside a county.

More information on the NDFD can be found at the following address:

<http://www.nws.noaa.gov/ndfd>

Nationwide images from the NDFD can be found at:

<http://www.nws.noaa.gov/forecasts/graphical>

Experimental forecast products can be found at the NWS Sterling web site at:

<http://www.erh.noaa.gov/lwx>

## TURN AROUND DON'T DROWN™

Each year, more deaths occur due to flooding than from any other thunderstorm related hazard. Why?

The main reason is people underestimate the force and power of water. Many of the deaths occur in automobiles as they are swept downstream. Of these drownings, many are preventable, but too many people continue to drive around the barriers that warn you the road is flooded. That is why the National Weather Service has started a new safety campaign called **Turn Around Don't Drown™** in partnership with the American Red Cross, FEMA, The Salvation Army, and numerous other state and commercial organizations to spread the word of the dangers of flooding.



Whether you are driving or walking, if you come to a flooded road, **Turn Around Don't Drown™**. You will not know the depth of the water nor will you know the condition of the road under the water.

Follow these safety rules:

- Monitor the NOAA Weather Radio, or your favorite news source for vital weather related information.
- If flooding occurs, get to higher ground. Get out of areas subject to flooding. This includes dips, low spots, canyons, washes, etc.
- Avoid areas already flooded, especially if the water is flowing fast. Do not attempt to cross flowing streams. **Turn Around Don't Drown (TM)**
- Road beds may be washed out under flood waters. NEVER drive through flooded roadways. **Turn Around Don't Drown (TM)** If your vehicle is suddenly caught in rising water, leave it immediately and seek higher ground.
- Do not camp or park your vehicle along streams and washes, particularly during threatening conditions.
- Be especially cautious at night when it is harder to recognize flood dangers.

Except for heat related fatalities, more deaths occur from flooding than any other hazard. Why? Most people fail to realize the power of water. For example, six inches of fast-moving flood water can knock you off your feet. While the number of fatalities can vary dramatically with weather conditions from year to year, the national 30-year average for flood deaths is 127.

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## It's Hurricane Season along the Atlantic Seaboard!

### What's the outlook for this year?

Top hurricane experts from NOAA's National Hurricane Center said the 2003 Atlantic hurricane season will likely have above normal levels of activity. The outlook calls for the potential of 11 to 15 tropical storms, with six to nine hurricanes, and two to four classified as major hurricanes (category 3 or higher).

### Hurricane Forecasts Extended out to 5 Days!

NOAA's National Weather Service began issuing five-day hurricane forecasts this year, extending the 3-day forecasts issued since 1964. The forecasts have been extended after a two-year test showed forecasters were able to predict a hurricane's path 5 days in advance as accurately as they were able to 3 days in advance 15 years ago. The new forecast is particularly useful for those who need more than 72 hours advance notice to move people and resources out of harm's way. As people and infrastructure crowd coastal areas, earlier awareness to a potential problem was needed to increase public safety.

### 2003 Atlantic Hurricane Names:

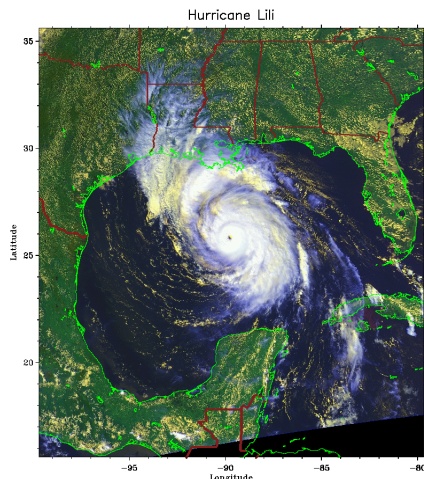
Ana, Bill, Claudette, Danny, Erika, Fabian, Grace, Henri, Isabel, Juan, Kate, Larry, Mindy, Nicholas, Odette, Peter, Rose, Sam, Teresa, Victor, Wanda

### A Rare Event in Hurricane History Kicks off the 2003 Hurricane Season...

A tropical storm formed just south of Bermuda on Sunday, April 20<sup>th</sup>. It was given the name Anna and it traveled eastward across the Central Atlantic Ocean before dissipating on Wednesday April 23<sup>rd</sup>. Anna is only the second known subtropical or tropical cyclone that has formed in April, with the other occurring in 1992.

For more information about hurricanes, check out the National Hurricane Center website at: <http://www.nhc.noaa.gov>

*Picture of Hurricane Lili, 18 October 2002, Gulf of Mexico*



AWHRR 3 Channel Color Composite  
NOAA-16 AWHRR 2002 Oct 02 19:47 UT  
Daytime: R=C1 G=C2 B=C4  
Copyright © 2002 by the Ocean Remote Sensing Group, Johns Hopkins University Applied Physics Laboratory, 2002-02

## Regional Weather Review January through April 2003

by Michelle Margraf, Storm Data Focal Point

**Jan. 1st-3<sup>rd</sup>:** Heavy rain-fall on the 1<sup>st</sup> caused flooding of roads and low lying areas in Western and North Central Maryland, the extreme eastern portion of the West Virginia



Panhandle, and scattered locations across Northern Virginia. River flooding was also reported on Seneca Creek, the Potomac River, the Monocacy River, Conococheague Creek, and Opequon Creek.

**Jan. 3<sup>rd</sup>:** An upper level disturbance dropped 2 to 5 inches of snow across Western Allegany County.

**Jan. 5<sup>th</sup>:** Low pressure dropped 2 to 6 inches of snow across the region. Hundreds of traffic accidents were reported, including a 35 car pileup on Interstate 695 near Baltimore.

**Jan. 8<sup>th</sup>-9<sup>th</sup>:** A rare downslope wind event similar to "Chinook" winds experienced east of the Rockies occurred just east of the Appalachian mountain ridges between 10 PM and 8 AM. Winds between 40 and 70 MPH downed numerous trees and power lines west of the Blue Ridge. The highest wind gust (72 MPH) was recorded in Harrisonburg.

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Flood continued from page 2...

That compares with a 30-year average of 73 deaths for lightning, 65 for tornadoes and 16 for hurricanes. National Weather Service data also shows that nearly half of all flash flood fatalities are vehicle-related.

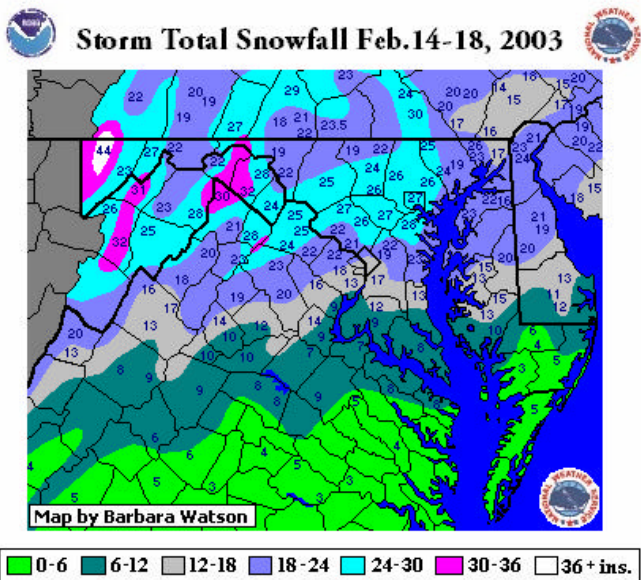
Most flash floods are caused by slow moving thunderstorms, thunderstorms that move repeatedly over the same area, or heavy rains from tropical storms and hurricanes. These floods can develop within minutes or hours depending on the intensity and duration of the rain, the topography, soil conditions, and ground cover. Flash floods can roll boulders, tear out trees, destroy buildings and bridges, and scour out new channels. Rapidly rising water can reach heights of 30 feet or more. Furthermore, flash flood-producing rains can also trigger catastrophic mud slides. These dangers are hard to judge when driving, especially at night.

Spread the word, **Turn Around Don't Drown™** For more information on this campaign, including graphics and publications that can be downloaded for distribution, check out the following website: <http://www.srh.weather.gov/srh/tadd/>

Review continued from page 3...

**Feb. 6th-7th:** Low pressure passing through North Carolina brought 3 to 8 inches of snow to the region. The heaviest amounts fell in a swath from Fredericksburg to Southern Anne Arundel County.

**Feb. 14th-18th:** A complex storm system produced copious amounts of snow and sleet across the region. Nicknamed the President's Weekend Snowstorm of 2003, it ranked in the top 5 of all-time regional snowstorms. The storm took a heavy toll on residents, structures, transportation systems, emergency responders, businesses, livestock, and travelers. Roads were covered by deep snow and sleet and were nearly impassible. Emergency personnel and those needing emergency transport had to be taken to their destinations in 4 wheel drives or military vehicles (see article "Loudoun and Fauquier Counties' Finest Assist the National Weather Service during Snowstorm"). Heavy accumulations weighed down on buildings and several structural collapses occurred. Several injuries and a handful of deaths were attributed to the storm.



**Feb. 22nd-23rd:** A total of 1.5 to 3 inches of rain fell across the region in two days. This excessive rainfall in addition to melt water from the heavy snowstorm 5 days before led to widespread minor to moderate flooding. Several rivers and creeks overflowed their banks, and numerous roads in low lying areas were flooded.

**Feb. 23rd:** A strong cold front moved through the region around dawn. Winds gusting up to 55 MPH downed a handful of trees and power lines weakened by saturated soil.

**Feb. 26th-28th:** A series of low pressure systems that tracked across Cape Hatteras dropped light snow off and on for 2 days. Snowfall totals for this period ranged from 2 to 8 inches, with the lightest amounts falling across the Potomac Highlands.

**Mar. 20th:** Between 1.5 and 2.5 inches of rain fell region wide. Minor flooding of waterways and roads occurred.

**Mar. 21st:** A deputy sheriff was struck by lightning while walking to his squad car near Culpeper.

**Mar. 29th:** A severe thunderstorm pushed from Fredericksburg to La Plata between 5 and 7 PM. Trees were downed in Fredericksburg and near Stafford where quarter sized hail fell. The storm strengthened rapidly as it pushed east across the Potomac River. In Charles County, two tornado touchdowns were reported. Near La Plata, a weak (F0) tornado briefly touched down just west and again just east of town. Minor tree damage was reported. In addition, penny sized hail fell in the city.

*Picture of Wall Cloud Passing over City Hall in La Plata*



**Mar. 30th:** A late season snowfall left 1 to 3 inches of accumulation west of a line from Charlottesville to Baltimore City. Above 1500 feet where nearly all of the falling snow was able to accumulate, 4 to 8 inches of snow was reported, with isolated locations above 3000 feet reporting up to 12 inches.

**Apr. 7th:** Freezing rain left one quarter inch ice accumulations on trees and power lines above 2500 feet in Western Allegany County.

**Apr. 9th:** A mixed bag of wintry precipitation fell across Allegany, Grant, and Mineral counties. Below 2500 feet, up to one half inch of snow and sleet accumulated. Above 2500 feet, up to three quarters of an inch of ice accumulated on trees and power lines and up to 1.5 inches of snow and sleet was reported.

**Apr. 30th:** A severe thunderstorm downed a few trees in Nelson and Albemarle counties.

## LWX Historical Chronicle: The Frostburg Tornado of June 2, 1998

Research by Barbara Watson  
Warning Coordination Meteorologist

A supercell thunderstorm produced a long-lived tornado that was on the ground for about 48 miles. The tornado began near Mount Pleasant, PA and then tracked southeast into Maryland.

It hit Finzel in Garrett County first, rose up and over Big Savage Mountain in Allegany County and headed for Frostburg. The tornado traveled up and down over several mountain ridges and valleys varying intensity between F2 and F3. Its intensity peaked at a low end F4 in Frostburg. Frostburg sits up on the Allegheny Plateau at an elevation of around 2000 feet and the homes hit the hardest were exposed on the ridge tops to the tornado's full force.

A fire crew from the Frostburg Fire Department saw the tornado coming over Big Savage Mountain. They were posted there after the 911 Center was given the tornado warning. The warning was issued about 10 minutes before the tornado arrived. It appeared as three funnels...a multi-vortex tornado. They put the word out over the radio as they headed for cover. The tornado hit the northern outskirts of the city and continued east to Eckhart Mines.

A mother and two children took shelter in the basement of this home and survived (F4 damage). Photo by Sean Thomas.



On Armstrong Avenue, four homes were destroyed or heavily damaged and cars were tossed as the tornado moved down a hillside. On the next rise, several more homes were destroyed and more cars were tossed. One two-story house was completely gone (see picture). All that remained was the basement and plywood on the first floor. The car that was in the garage laid upside down about 100 feet away in the back yard. The mother and two children in the house rode out the storm in their basement under a table. They were unharmed.

In fact, no one was seriously hurt or in need of transport to the hospital. Everyone either got the NWS warning or heard or saw the tornado coming and headed to their basement.

Eckhart Mines had heavy damage to both homes and businesses. The tornado crossed over Route 40 just east of Clarysville. It crossed Interstate 68, traveled over Dan's Mountain, flattening more trees. On the other side, the tornado ended just before hitting some residences along Route 53 about 2 miles north of Cresaptown.

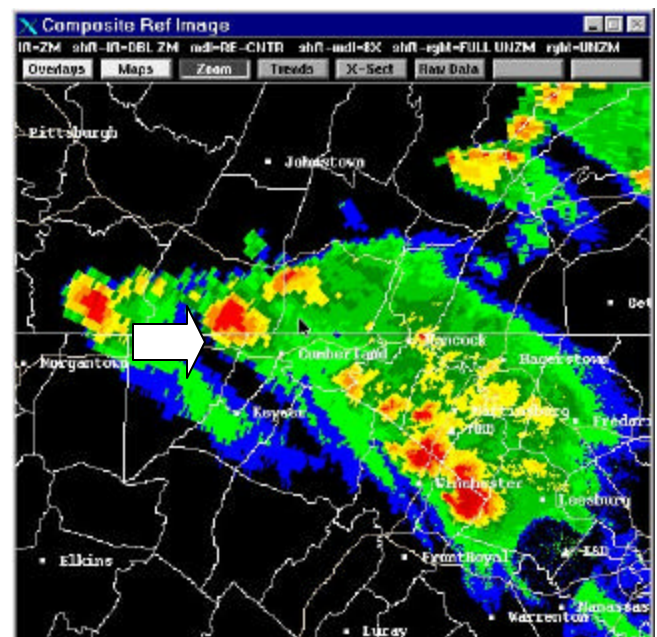
In all, 29 homes were destroyed, 29 homes had major damage, 67 homes had minor to moderate damage. Three businesses were damaged and one was destroyed. Frostburg Elementary School had heavy damage and a church was also damaged. Thousands of trees were destroyed.

F3 damage to a home on Armstrong Avenue. Photo by Sean Thomas.



Debris from Frostburg was found up to 100 miles away. A jacket was found near Levels, WV, 25 miles away. House debris was found in Paw Paw, WV. A catalog and a diploma were found in Winchester, VA, 60 miles away. A bill from the basement file cabinet of the house where the mother and two children took shelter was found in Sterling, VA, about 100 miles from Frostburg.

Frostburg Tornado on NWS Sterling, VA Radar



## 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.**

**Saturday, September 6<sup>th</sup> at the Howard County Fairgrounds. Class details will be posted on the SKYWARN website soon.**

**Sunday, September 7<sup>th</sup> from 10 AM to 1 PM at the University of Maryland in College Park. Register by sending an e-mail to Melanie at [mfollet@atmos.umd.edu](mailto:mfollet@atmos.umd.edu)**

### **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 want additional information and training. It reviews the basic spotting techniques and covers more information about thunderstorms and Doppler radar. You must have taken Basics 1 to attend this class.

**Sunday, September 7<sup>th</sup> from 2 PM to 4 PM at the University of Maryland in College Park. Register by sending an e-mail to Melanie at [mfollet@atmos.umd.edu](mailto:mfollet@atmos.umd.edu)**

## SKYWARN and Co-Op Observers...

You're cordially invited to the annual volunteer appreciation picnic! Bring your family for food and fun with other SKYWARN Spotters and Cooperative Observers at the Baltimore-Washington Forecast Office in Sterling, Virginia...



**Date: Saturday, August 9th**

**Time: 11 AM - 3 PM at the NWS Sterling Office**

We will provide the meat, buns, condiments, drinks, and paper products. Please bring a side dish to share (things that don't perish easily), chairs, blanket, etc. There will be a special balloon release, tours of the facility, an awards ceremony and more.

Register with Brian at [lwx\\_skywarn@comcast.net](mailto:lwx_skywarn@comcast.net)  
Please provide your SKYWARN Spotter ID and the number of people expected to attend in your group.

## The Drought is Over... Here are the Pictures to Prove It!

Here's a look at the Prettyboy Reservoir in Northern Baltimore County, Maryland. Pictures are courtesy of Jim Schuyler.

*Boat Ramp in October of 2002*



*Same Boat Ramp in March of 2003*



## *Sterling Reporter*

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