



Sterling Reporter

Volume 9, Issue 1

Winter/Spring Double Issue



MIC's Corner

James E. Lee
Meteorologist in Charge

There is never a slow day in the life of the National Weather Service (NWS) Baltimore/Washington Weather Forecast Office (WFO), and this past winter challenged our staff's skills to the maximum with record-breaking snowfalls. Since I last wrote this column in the fall, the WFO has completed several other projects that improve our services and relationships with NWS users and partners that I'd like to review with you.

As you can read in detail in an article by Jared Klein in this edition of the *Sterling Reporter*, winter snowfall records were broken in Washington, DC, and Baltimore, where records have been kept for 126 years and 118 years, respectively. You can imagine how the workload increases with the number of media and emergency manager calls, along with the increased pressure to perform. But that is what our office is here for; to be able to protect life and property with advance watches and warnings of hazardous and potentially life-threatening weather. Our staff made it through the winter in a big way, and I could not be more satisfied by the winter weather forecasting excellence our WFO provided to the region this past winter. To help affirm this statement, Arthur Patrick, who is our WFO's Electronic Systems Analyst, was named the NWS Eastern Region Employee of the Month in April 2010 for his work during the major winter storm on February 5-6, 2010. Congratulations to Art and the rest of the WFO staff, whom all should be very proud of their accomplishments of this winter!

On February 1, 2010, in the midst of the busy winter, WFO operations transitioned to "2010 Operations," which simply means we streamlined our standard operating procedures. This shift enables forecasters to focus on the digital forecast database, which is the source of our routine and hazardous weather products and services. It also frees up human resources to help provide critical decision support services to our local and state emergency managers. This is a major change, and the new procedures were put to test

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A Winter for the Record Books

By, Jared Klein, General Forecaster

After many recent winters of near or below normal snowfall, Mid-Atlantic snow lovers were in paradise with the record-setting snowfall that occurred this winter. In fact, the snowfall totals this 2009–10 season (through 1 March) of 77.0 inches at Baltimore (BWI), 56.1 inches at Washington DC (DCA) and 73.2 inches at Dulles (IAD) measured were comparable to the combined snowfall totals from the past six winters (84.5 inches at BWI, 60.4 inches at DCA and 77.7 at IAD). These staggering snowfall totals were approximately 425% of the normal seasonal snowfall at BWI and 350% at DCA and IAD. The 2009

(continued page 10)

Winter Media Workshop

*By, Christopher Strong
Warning Coordination Meteorologist*

On December 15th, NWS Baltimore/Washington hosted our annual winter media workshop for our media partners – both print and broadcast. It was a well attended event that covered all of our varied media markets, from Washington and Baltimore, to Charlottesville and Winchester, to Hagerstown and Harrisonburg. We conduct these winter and spring workshops annually to strengthen ties with those who are most directly responsible for getting weather information out to the public. If we all are sharing and communicating similar information, then people will hear a similar message and be more likely to take action when life threatening weather events roll through our area.



Front: Kevin Witt (NWS), Tom Tasselmyer (WBAL), Clayton Stiver (WVIR), Chris Smith (WHAG), Chris Strong (NWS), Mallory Brooke (WHSV), Cassie Behofist (TV3 Winchester), Topper Shutt (WUSA), Back: Jim Lee (NWS), Howard Bernstein (WUSA), John Collins (WBAL), Frank Roylance (Baltimore Sun), Mike Grogan (WHAG), Travis Koshko (WCAV), Sue Palka (Fox 5 DC), Lauryn Ricketts (TV3 Winchester), David Rogers (WVIR), Steve Glazier (TV3 Winchester), Kim Martucci (WUSA), Jared Klein (NWS), Matthew Kramar (NWS)

We covered both what winter brought to the region last year, as well as what we were expecting for the winter of 2009-2010. We discussed with them the multitude of atmospheric models that we all use to give us indications of what Mother Nature has up her sleeve looking at the week ahead. Many of those models are linked to our public internet page. We also discussed some of the changes to our operations for the upcoming winter, including a new bullet format for our Winter Storm Watches, Warnings, and Advisories that will allow everyone to quickly get the information they need from our winter products.

One of our forecasters, Jared Klein, gave a presentation on what the variations in the El Nino/Southern Oscillation may mean for our winter weather here in the mid Atlantic region.

Most importantly, there was plenty of time for good discussion between the NWS and our media colleagues on how we can work together most effectively to minimize the impact of weather events on our region.



Skywarn Recognition Day

*By, Christopher Strong
Warning Coordination Meteorologist*

The first snowstorm of the season didn't stop our dedicated contingent of Amateur Radio operators from holding Skywarn Recognition Day here at the National Weather Service Baltimore/Washington Forecast Office. This national event is held during the first Saturday in December from 00 UTC to 00 UTC (7pm Fri to 7pm Sat). National Weather Service Offices from around the country try to contact as many other offices as they can during the 24 hours of the event.

Skywarn Recognition Day requires quite a bit of setup, planning, organization, and post event deconstruction. This allows several amateur radio operators, using multiple means of communications technology, to operate simultaneously. Our group of HAM radio operators, coordinated by Virginia

Legowik (AK4EA1), braved an early December snowstorm to get all of our equipment up and running for the event. While atmospheric conditions that night and into the next day were not optimal, our group still managed to make two dozen contacts from locations all across the country – even a few outside the country.

Amateur radio is a crucial link for our operations. During weather events, they help to get information from the field into the office, and vice versa. Certainly if other communications systems are ever compromised, our HAM radio operators can always get information in and out of NWS Baltimore/Washington. Thanks to all who participated in another successful Skywarn Recognition Day!

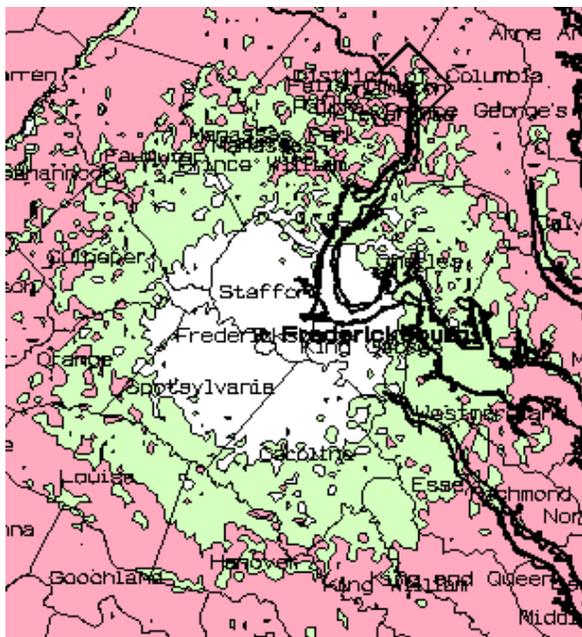
NWR Fredericksburg Becomes a Reality

*By, Christopher Strong
Warning Coordination Meteorologist*

After years of persistence and hard work, the brand new All-Hazards NOAA Weather Radio transmitter in Fredericksburg, Virginia is now broadcasting and ready for use by everyone in the surrounding area. FCC licensed station WZ-2527 broadcasts at a frequency of 162.425 MHz (the second of the seven NWR channels) from the roof of Mary Washington Hospital in Fredericksburg. The service area of this transmitter fills a broadcast hole that previously existed south and east of the City of Fredericksburg. (See graphic below.)

The counties, independent cities, and marine areas that are covered by NWR Fredericksburg are:

| | |
|----------------------------|-----------------------------|
| Caroline, VA | Stafford, VA |
| Culpeper, VA | Westmoreland, VA |
| The City of Fredericksburg | Charles, MD |
| Essex, VA | St. Mary's MD |
| Fauquier, VA | |
| King George, VA | On the Tidal Potomac River: |
| Orange, VA | Indian Head to Cobb Island |
| Prince William, VA | Cobb Island to Smith Point |
| Spotsylvania, VA | |



Anyone in the localities listed in the table above will be able to receive life saving weather alerts from the National Weather Service, as well as emergency alerts from the Department of Homeland Security, by the fastest means possible. Also, anyone with an All-Hazards NOAA Weather Radio will receive these alerts 24 hours a day, and it will wake you when impending disasters happen at off hours, not just when you are 'plugged in' during the day. NOAA Weather Radios are like smoke detectors for weather events, they provide you with advance warning to protect yourself and family. They let you know to activate your disaster plan you have set up with your family, school, or workplace. (Disaster plans are easy to set up in advance at www.ready.gov) Are you ready?

A joint partnership by the Rappahannock Emergency Medical Services Council, Mary Washington Hospital, and the National Weather Service – as well as plenty of support from Virginia Department of Emergency Management, and local and state governments – helped make this transmitter operational. We at the National Weather Service would like to thank all that assisted in this several year effort!

With the addition of NWR Fredericksburg, there are now nine transmitters that broadcast within the Commonwealth of Virginia, in addition to another dozen that broadcast into the Commonwealth from surrounding states. All Hazards NOAA Weather Radio is a proven life saver, get one today!



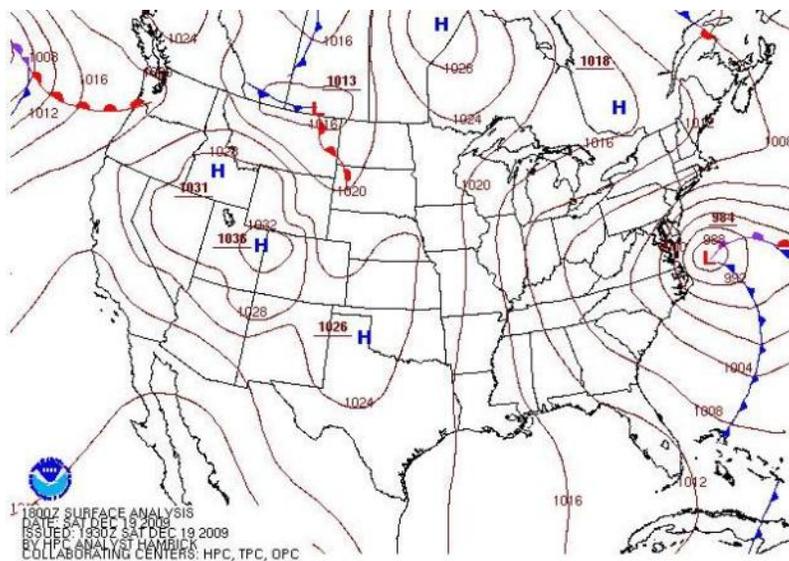
At the Dedication Ceremony (from left to right): Director Tina Skinner, REMS; President Kevin Dillard, REMS; WCM Christopher Strong, NWS Baltimore/Washington; COO Walt Kiwall, Medicorp Health System; Mayor Tom Tomzak, City of Fredericksburg; Director or Local Support Services Joe Coyle, VDEM

The December 18th and 19th 2009 Winter Storm

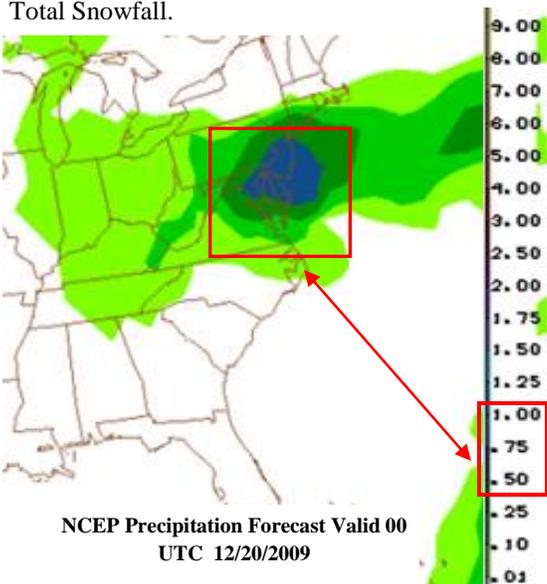
By, *Brian Lasorsa General Forecaster*



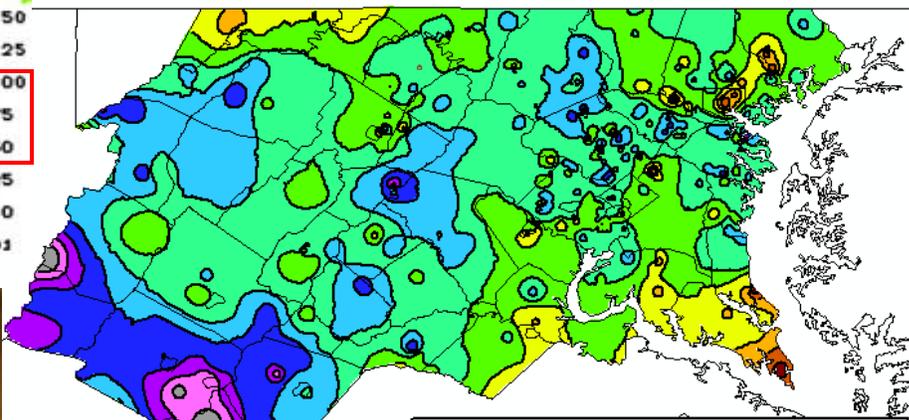
A major winter storm impacted the area beginning Friday night on the 18th of December and lasting through Saturday the 19th. Low pressure tracked across the southeastern United States Friday and up the Mid-Atlantic Coast Saturday. At the same time, high pressure to the north was ushering in plenty of cold air. Low pressure rapidly intensified off the Mid-Atlantic coast Saturday. The deepening storm system combined with plenty of moisture from the Gulf of Mexico as well as the Atlantic Ocean to dump heavy snow across the Mid-Atlantic. The picture below shows a computer model forecast for precipitation Saturday afternoon on the 19th of December.



Since this storm system was slow to move up the Mid-Atlantic coast, this resulted in a prolonged period of heavier snow on Saturday which caused record snowfall amounts across the portions of the Mid-Atlantic. Below and to the right is a chart that contains the daily snowfall totals for Saturday, December 19th across the three major Airports. Daily snowfall totals on Saturday are the highest for any day on record for the month of December. The chart also contains the Two Day Storm Total Snowfall.



| Location | Old Daily Snowfall Record for DEC (inches) | New Daily Snowfall Record for DEC (inches) | Two Day Storm Total Snowfall for DEC 18th & 19th (inches) |
|------------|--|--|---|
| Washington | 11.5 | 15 | 16.4 (6th Highest) |
| Baltimore | 11.5 | 17 | 18 (9th Highest) |
| Dulles | 10.6 | 16 | 18 (5th Highest) |



Steve Zubrick's (SOO) Car Buried in the Snow

Storm Total Snowfall Ending 7 AM 12/20/2009
 NWS Sterling, VA

- 8 to 10 inches
- 10 to 12 inches
- 12 to 14 inches
- 14 to 16 inches
- 16 to 18 inches
- 18 to 20 inches
- 20 to 22 inches
- 22 to 24 inches
- 24 to 26 inches
- 26 to 28 inches
- 28 to 30 inches

December 25th—26th Heavy Rain & Snowmelt Lead to Flooding

By, Stephen Konarik General Forecaster

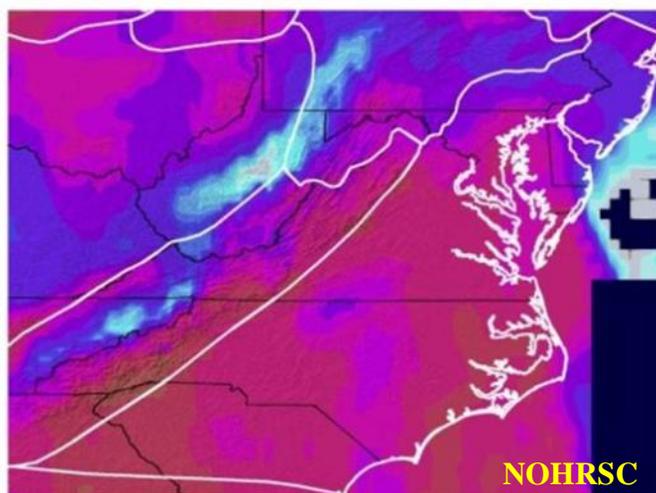


A warm front moved through the mid-Atlantic Christmas morning, bringing light precipitation followed by warmer temperatures during the afternoon. By evening, low pressure developed off the North Carolina coast, and moved northward up the Atlantic seaboard. This produced widespread moderate to heavy rain across the Baltimore/Washington NWS forecast area. The runoff from the rain combined with runoff from melting snow to create flooding across numerous locations in northern Virginia and Maryland.

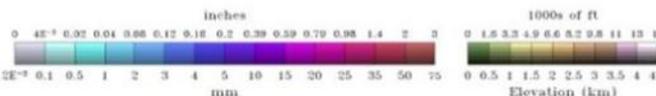
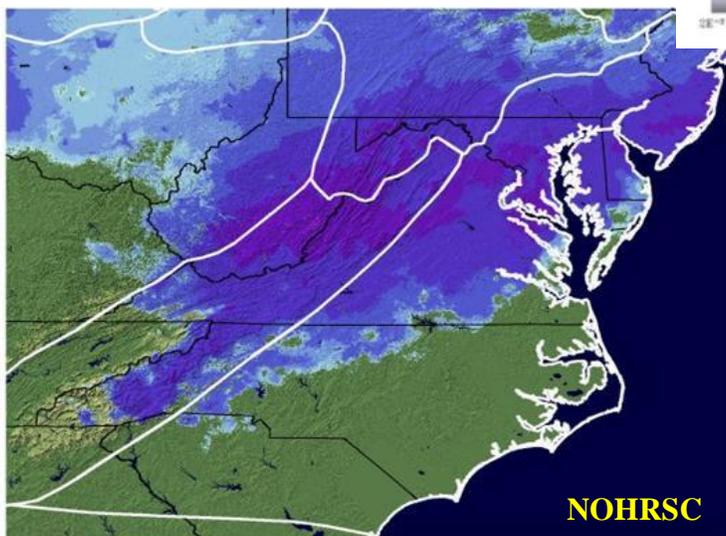
Monocacy River. Source: Guy Schmidt

Storm total rainfall across Northern Virginia, Maryland, and the District of Columbia from the afternoon of December 25th through the afternoon of December 26th ranged from 1" along the Mason/Dixon line (indicated in purple) to around 2" across much of northern Virginia and southern Maryland (pinkish-red). *(Graphic to the immediate right.)*

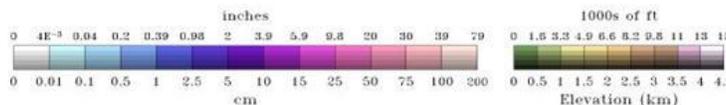
24 Hour Precipitation Total Ending 12/26/09



Liquid Water Equivalent of the Snowpack from 12/25/09



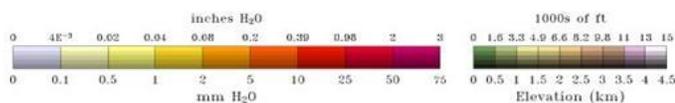
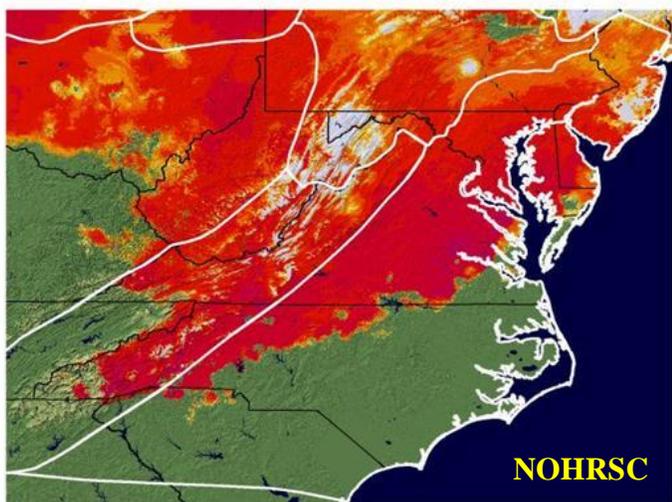
On Christmas morning, snow depths across much of the mid-Atlantic were still in excess of 10" from the snowstorm the previous weekend. The image to the left shows the liquid water equivalent (LWE) of the snowpack across the region, in other words, the amount of water contained in the snow. The entire Baltimore/Washington forecast area was covered with snow that contained an equivalent water content of over 1" of rainfall (the darker blue shaded areas), with the areas in purple having an LWE of over 2". The warmer temperatures combined with the rainfall prompted much of this snow to melt.



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Flooding (continued)

Snow Melt 24 Hour Total Ending 12/26/2009



The image to the left shows how much snow melted in the 24 hour period ending the morning of December 26th, in terms of LWE. From the Shenandoah Valley east to the Chesapeake Bay, melting snow added the equivalent of at least 0.5” (shaded in orange) of additional rain, with most areas seeing snowmelt add around 1” (red). Across areas east of Interstate 95, around 2” rainfall equivalent (pink) was added to the runoff due to melting snow.

The National Weather Service issued a Flood Watch on December 24th for most of the area, and the first Flood Warning was issued shortly after 400 p.m. on December 25th, for the Charlottesville, Waynesboro, and Staunton areas, where urban flooding was reported. Later in the evening, Flood Warnings for urban and small stream flooding were issued across southern Maryland, the western Washington DC suburbs, the Baltimore metropolitan area, and much of northern Maryland. Numerous roads were closed across the area during the night and into the

day December 26th, including portions of Interstates 97 and 695 in the Annapolis, MD area.

By the morning of December 26th, much of the runoff from urban areas and small streams had made its way into larger streams and rivers, which began to approach bankfull and flood in some areas. River flood warnings were issued for Seneca Creek in Montgomery County, MD; the Monocacy River in Frederick County, MD; Conococheague Creek in Washington County, MD; and the Rappahannock River in



A flooded Route 1 in Beltsville, MD. Source: WTOP



Stranded motorist along Monocacy River just southeast of Frederick, MD. Source: Frederick News-Post

Culpeper and Fauquier Counties in Virginia.

Seneca Creek overspilled its banks and flooded Berryville Road near Darnestown, MD. Across Frederick County, MD, around 3 dozen roads were closed when the Monocacy River swelled to near 17 feet, about 2 feet above stage and considered a moderate flood. No residential damage was reported, although there were at least two high water rescues when automobiles became stranded in rising floodwaters.

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Flooding (continued)

The photo to the right shows the narrow main channel of the Monocacy River in Frederick County in the background, with the broad expanse of water stretching across farmland in the foreground. Several rivers remained above flood stage through the day of December 27th, with the last warning being dropped at 735 pm that evening.



Flooded farmland on Monocacy River along MD-144 just east of Frederick, MD Source: snailstales.blogspot.com

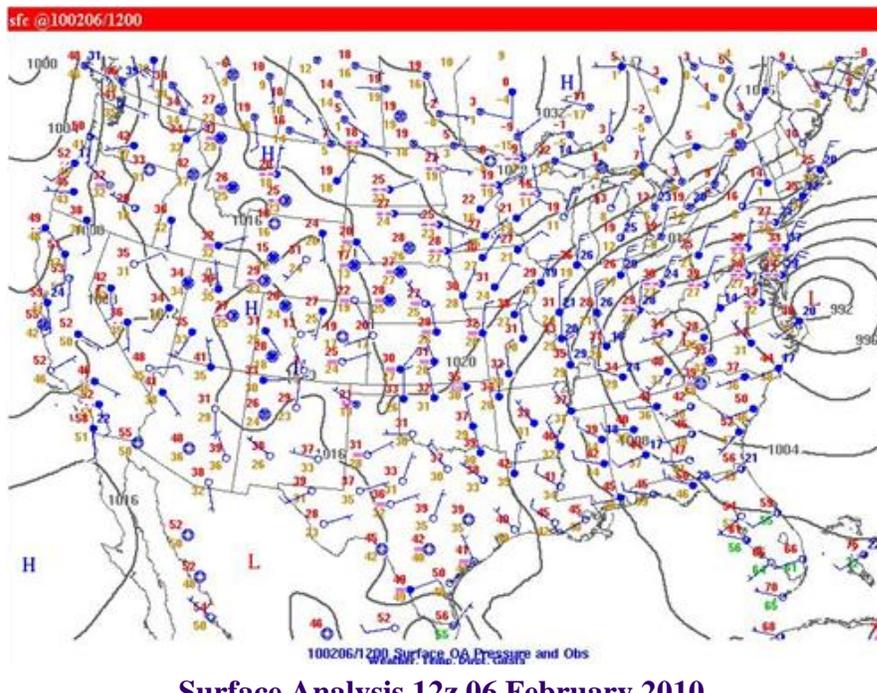
Snow, Snow & More Snow: February 2010

By, Brandon Peloquin
Senior Forecaster

After an already snowy December and January, February featured another snowy month. In fact, February 2010 was the snowiest month ever recorded at IAD and BWI and was the second snowiest ever recorded at DCA as two major winter storms affected the Mid-Atlantic region during the first half of the month.

The first major winter storm that affected the area occurred on February 5th and 6th. On the morning of the 5th, low pressure developed over the Gulf Coast states and then moved northeast up the Mid-Atlantic coast on the 6th. This storm wrapped in copious amounts of Gulf and Atlantic moisture, which resulted in heavy snowfall. The heaviest snow occurred across the northern portion of the County Warning Forecast Area (CWFA), where over 30 inches fell in some spots.

The snowfall was heavy and wet, which easily collected on trees and

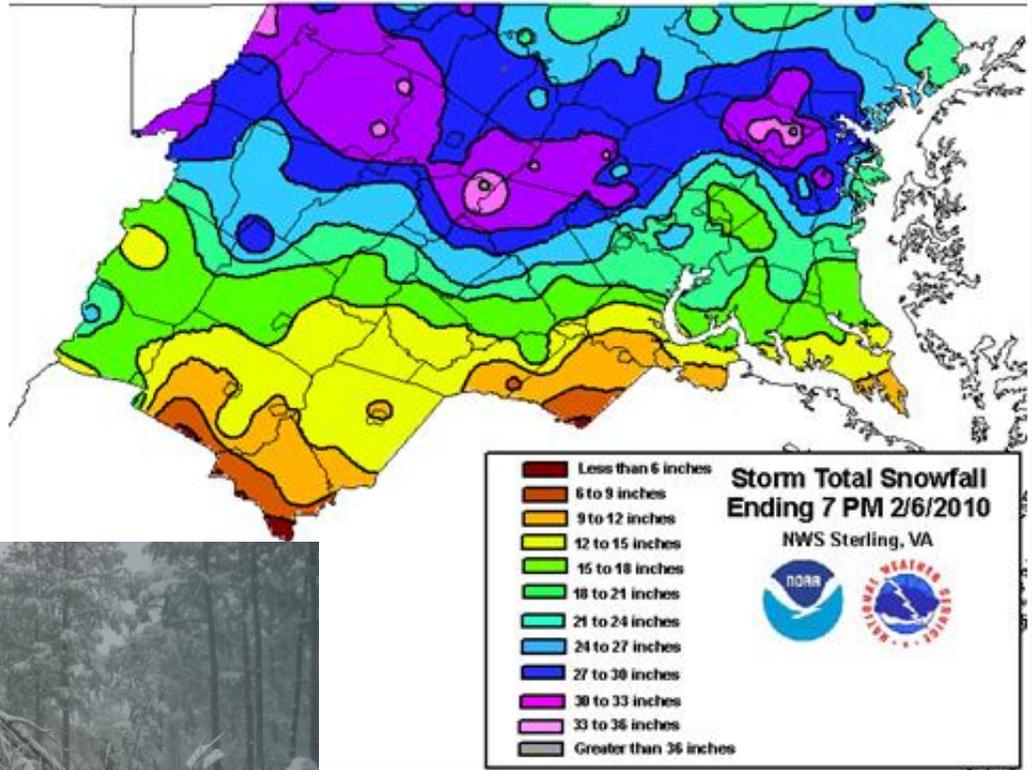


Surface Analysis 12z 06 February 2010.

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Snow, Snow & More Snow *(continued)*

power lines and resulted in some power outages. Winds were gusty and snow drifts added insult to injury to the already treacherous travel conditions. Near the Chesapeake Bay, winds gusted near 35 mph at times, which resulted in a period of blizzard conditions across southern Maryland.



← Rt. 606 Loudoun County, VA ↓

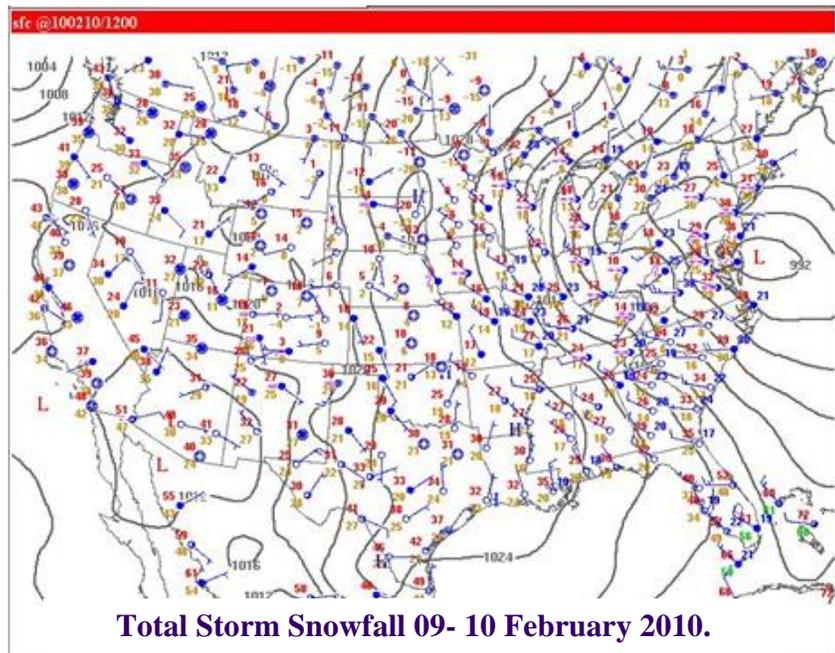


← High resolution MODIS imagery of the Mid Atlantic on the morning of 2/7.

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Snow, Snow & More Snow *(continued)*

The Mid-Atlantic barely had time to recover from the February 5th and 6th storm when another one hit on February 9th and 10th. A plethora of moisture fed into this storm, which lead to heavy precipitation. Warmer air mixed into the system across portions of Virginia, cutting down on snowfall accumulations.

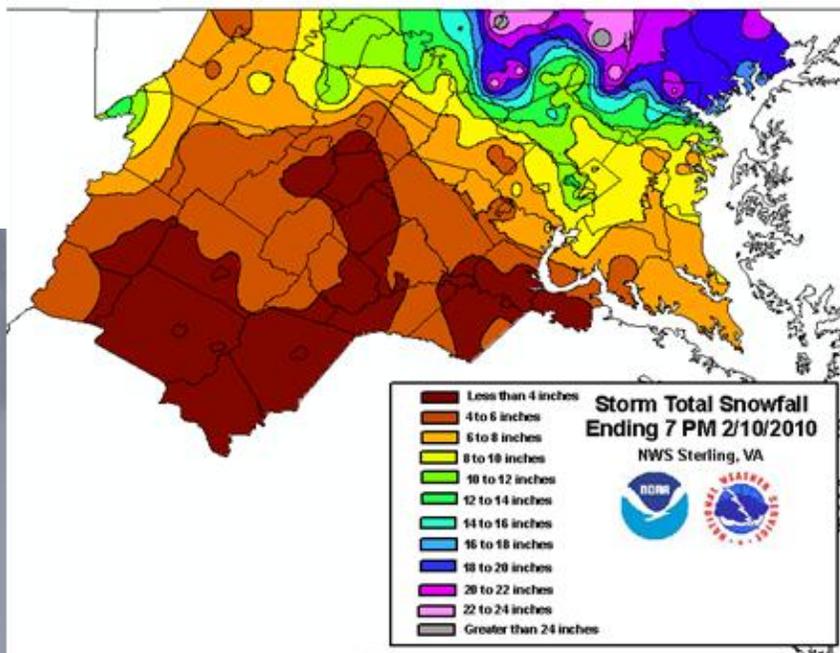


The highest totals occurred in northern Maryland, where some storm totals exceeded the February 5th and 6th storm totals.

Winds associated with this storm system were stronger over a larger area than its predecessor, which resulted in blizzard or near-blizzard conditions across much of the Mid-Atlantic region. Some employees opted stay overnight at the office during the storm as, during its peak, visibilities were near zero and driving conditions were very treacherous.

In the wake of these two storms, February 2010 became a historic month in terms of snowfall totals. These totals also culminated into a record-setting winter season. Even with the advent of meteorological spring (March 1), large mounds of snow were still commonplace on the sides of streets and parking lots – a reminder of just how historic this season has been.

Meteorologist Intern Kevin Witt taking the snowfall measurements.



Winter for the Record Books *(continued)*

–2010 winter season will be remembered as the snowiest in history for the Washington DC and Baltimore area (previous record was 62.5 inches in 1995–96 at BWI, 54.4 inches in 1898–99 at DCA, and 61.9 inches in 1995–96 at IAD).

Top Ten All-Time Seasonal Snowfall for Washington DC, Dulles, VA and Baltimore, MD

| Washington DC | | Dulles, VA | | Baltimore, MD | |
|---------------|------|------------|------|---------------|------|
| 2009–10 | 56.1 | 2009–10 | 73.2 | 2009–10 | 77.0 |
| 1898–99 | 54.4 | 1995–96 | 61.9 | 1995–96 | 62.5 |
| 1995–96 | 46.0 | 2002–03 | 50.1 | 2002–03 | 58.2 |
| 1921–22 | 44.5 | 1963–64 | 44.6 | 1963–64 | 51.8 |
| 1891–92 | 41.7 | 1966–67 | 44.4 | 1898–99 | 51.1 |
| 1904–05 | 41.0 | 1986–87 | 42.7 | 1960–61 | 46.5 |
| 1957–58 | 40.4 | 1978–79 | 40.6 | 1921–22 | 44.4 |
| 2002–03 | 40.4 | 1982–83 | 39.2 | 1966–67 | 43.4 |
| 1960–61 | 40.3 | 1965–66 | 30.6 | 1957–58 | 43.0 |
| 1910–11 | 39.8 | 1967–68 | 30.5 | 1978–79 | 42.5 |

All-time monthly snowfall records were approached or broken in the Baltimore and Washington DC area both this past December and February. At BWI, the 20.1 inches of snow in December 2009 was the second snowiest December all-time (second only 20.4 inches in 1966), while the 50.0 inches this February broke the previous February snowfall record of 40.5 inches in 2003. In fact, February 2010 was the snowiest of any month at Baltimore. At DCA, the 16.6 inches of snow in December 2009 went down as the snowiest December on record (previous record was 16.2 inches in 1962) while the 32.1 inches of snow in February 2010 was the second snowiest of any month on record- only second to the 35.2 inches in February 1899. At IAD, the 21.4 inches of snow in December 2009 ranks as the second snowiest December all-time (second only to 24.2 inches in 1966), while the 46.1 inches this February broke the previous February snowfall record of 34.9 inches in 2003. This past February and December will go down as the first and eighth snowiest months of all time at IAD.

A large chunk of the record-setting snowfall came from the three historic snowstorms that impacted the area this winter. These snowstorms were termed Snowpocalypse, Snowmageddon and Snoverkill from local media outlets for having a huge societal and economic impact on the entire



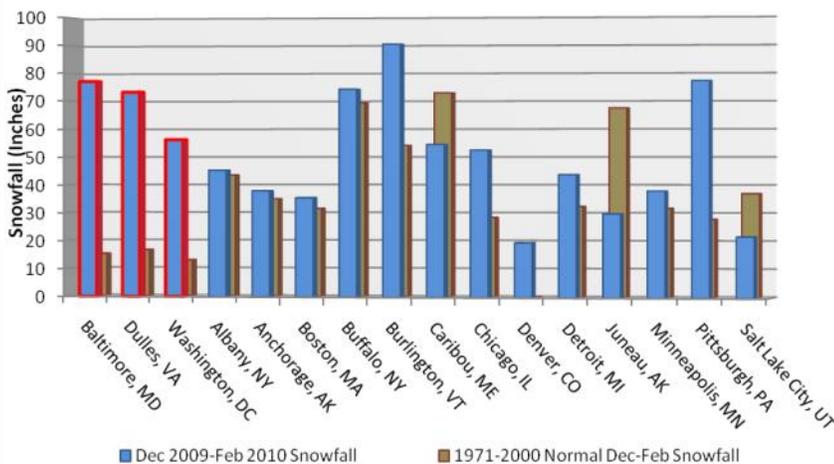
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Winter for the Record Books *(continued)*

Washington DC and Baltimore metropolitan area. The first snow event on 18–19 December dropped 18.0 inches of snow at BWI, 16.4 inches at DCA and 18.0 inches at IAD. These totals mark the highest two-day snowfall in December for all three locations and the 9th highest two-day snowfall of any month for Baltimore, 6th highest for Washington DC and 5th highest for Dulles. After seven weeks of relatively quiet weather, the biggest snowstorm of the season dumped another 25.0 inches of heavy, wet snow at BWI, 17.8 at DCA and 32.4 inches at IAD on 5–6 February. These two-day totals rank 2nd all-time for Baltimore, 4th for Washington DC and 1st for Dulles. Less than a week later and without much of a break from the previous storm, a strong low pressure system brought widespread blizzard conditions and deposited an additional 19.5 inches of snow at BWI, 10.8 inches at DCA and 9.3 inches at IAD on 9–10 February. The total at BWI marks the 8th highest two-day snowfall total on record for Baltimore and remarkably the third event of the season that landed in the top ten two-day snowfalls of all-time. The fact that these three big snow events impacted the region during the same season was even more astounding. This 2009–10 season marks the first time three double-digit (1, 2, or 3-day) snowfalls occurred during the same season at BWI and DCA since records began. Two double-digit snowfalls in the same season have occurred only five other times at DCA and four other times at BWI. The only other time two double-digit snowfalls were recorded during the same month at DCA and BWI was way back in February 1899.



2009-10 Winter Snowfall Totals



December 2009–February 2010 snowfall totals at select U.S. cities.

While the Baltimore and Washington DC area are not usually synonymous with snow-resort locales, snowfall across the region this winter season was comparable to many cities with snowier climates in the northern United States. During the meteorological winter (December–February) BWI, DCA and IAD recorded more snow than cities such as Albany, NY, Caribou, ME, Detroit MI and Anchorage, AK. This past winter, snowfall at BWI and IAD totaled around twice the seasonal snowfall in Boston, MA, Juneau, AK and Minneapolis, MN. Regardless of how you break down the statistics, the 2009–10 winter season will go down as one of the most memorable winters in Mid-Atlantic history.

Note: These records are preliminary until they are quality controlled by NOAA’s National Climatic Data Center over the next few months. Official snowfall records for date back 126 years to 1884 at Washington DC, 118 years to 1893 at Baltimore and 48 years to 1962 at Dulles.

MIC's Corner *(continued)*

immediately, as the WFO weathered both February blizzards after our transition to 2010 Operations.

For our readers down in King George, Spotsylvania, and Stafford Counties in Virginia, along with Charles County, Maryland, I am pleased that our office commissioned a new NOAA Weather Radio (NWR) transmitter this past winter in Fredericksburg, VA. I have seen numerous accounts over the years how NWR has saved lives and prevented weather tragedies. I encourage everyone to have a NWR in their home and business. To find out more information about NWR, go to <http://www.nws.noaa.gov/nwr/>.

I want to thank all emergency managers and broadcast meteorologists who attended the 2nd Biennial NWS Baltimore/Washington WFO Emergency Manager/Broadcast Meteorologist Conference, which was held April 7-8, 2010, in Leesburg, VA. Special thanks to the Loudoun County Department of Fire, Rescue, and Emergency Management, for hosting our conference at their training facility.

Finally, our office has transitioned from focusing on winter weather hazards to the types of hazards associated with thunderstorms that normally impact the mid-Atlantic region during the spring and summer. One thing of particular note is the change in our hail criteria for issuing a Severe Thunderstorm Warning, raising the hail size from 0.75 inches to 1.00 inches. For more information on this important change, please see Steve Zubrick's article in this edition of the *Sterling Reporter*.

If you have any questions or comments about the NWS Baltimore/Washington WFO, please email me at James.E.Lee@noaa.gov, or phone me 703-996-2200, extension 222.

New Warning Threshold for Hail Covered at Annual Severe Weather Workshop

*By, Steven Zubrick
Science and Operations Officer*

Staff gathered March 25, 2010 for the annual Sterling Severe Weather Workshop. This internal workshop is held every spring to re-acquaint staff on severe weather operations, discuss warning operations, review the science of severe storms and review changes that occurred from the previous year.

A big change this year, that started January 5, 2010, is use of a new 1 inch severe hail diameter criterion. Previously, hail was considered "severe" if it measured at least 3/4" in diameter; about the size of a penny. The new criterion of 1 inch corresponds to the size of a quarter, and is based on research indicating significant damage does not occur until hail size reaches 1 inch (quarter-size) in diameter. Refer to the following Web site for details on this important change: http://www.spc.noaa.gov/misc/scn09-52_1inch_hail_oper.txt.

This year, our workshop focused on two key topics: 1) detecting and responding to rapidly-developing, but typically small tornadoes associated with lines of severe storms, and 2) conducting warning operations in light of the change in severe hail diameter criteria. For the first topic, the focus was on examining radar data of lines of storms called "quasi-linear convective systems" (QLCSs).



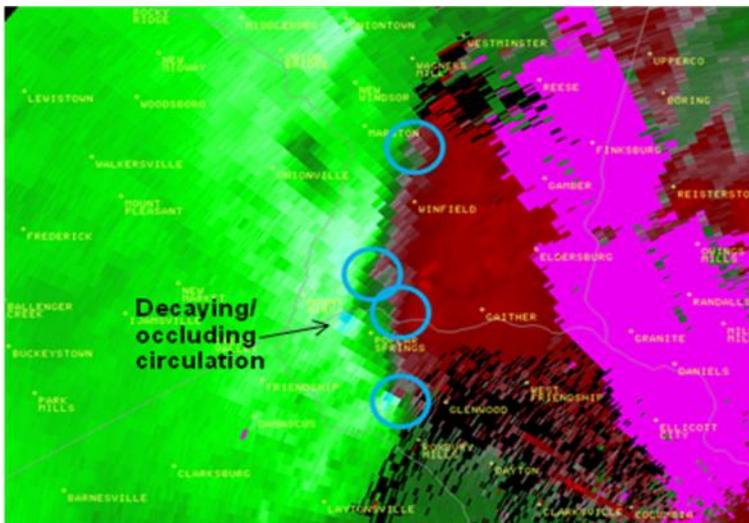
For the second topic, the focus was on examining radar data of lines of storms called "quasi-linear convective systems" (QLCSs).

QLCSs refers to squall lines and bow echoes. Rarely is a line of thunderstorms completely straight (linear) in extent. Often there are kinks, indentations and small, bow-shaped protuberances (see base velocity image). These features are what make the squall line "quasi-linear" and are often locations where rapid formation of small (EF0-1) tornadoes occur.

The second severe workshop topic dealt with how to evaluate storms in light of the new hail size criterion of 1 inch diameter

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Severe Weather Workshop/Hail (continued)



(quarter-size). A local research study was conducted last summer 2009 to address this issue. One of our Lead Forecasters, Matthew Kramar, and a summer 2009 volunteer student, Jeff Waters from Penn State, conducted the study. Their results showed a robust correlation between the radar-based 50 dBZ core heights and environmental freezing level. A statistically-based regression (or trend) line was determined. All reports of 1.00 inch hail fell within ± 5000 ft of the trend line. Thus, for a given environmental freezing level and 50 dBZ core height of a particular storm, a warning forecaster can better anticipate maximum expected hail size and potentially improve the accuracy of any warnings or statements. This study was presented at the 2009 National Weather Association's Annual Meeting in Norfolk, VA (the

following has more info: <http://nwas.org/meetings/nwa2009/presentations/NWA2009-P0.13.zip>.

The workshop was a great training opportunity. The SOO's double fudge (*oh so gooey!*) brownies provided the needed sugar rush to get everyone through the day.



2010 Emergency Management/Broadcast Meteorologist Workshop

By, Nikole Winstead Listemaa Senior Forecaster

On April 7th and 8th 2010, the Baltimore/Washington Forecast Office held its biennial Emergency Management and Broadcast Meteorologist Workshop. This year, the workshop was held at the Loudoun County Fire Training Academy in Leesburg, VA. These types of workshops help strengthen the ties between the National Weather Service, the Media and Emergency Managers – all organizations directly responsible for getting weather information out to the public.

The NWS Baltimore/Washington Forecast Office serves the eastern panhandle of West Virginia, Northern and Central Virginia, much of Maryland and the District of Columbia. Emergency Management Officials from all three states and the District of Columbia were able to attend the workshop. In addition, Broadcasters from the Washington DC, Charlottesville and Winchester markets were able to attend.

Many of the staff of NWS Baltimore/Washington Forecast Office presented at the workshop. Some of the topics discussed were Hurricanes, Climate Services, Wildfire Support, HAZMAT Support and the many facets of Flooding. Calvin Meadows, the Observations Program Leader, led an overview of the Cooperative Observer Program. The Equipment Systems Analyst, Arthur Patrick, also discussed maintaining and repairing the equipment and computing systems that are used to take observations.

In addition to the many presentations given by the staff of the Forecast Office, there were presentations given by members of the Emergency Management Community and the Media. Gene Stewart, Page County Virginia Emergency Services Coordinator, spoke at length about the advantages of having a close relationship with the National Weather Service. Bob Ryan, former Chief Meteorologist of WRC NBC 4 in Wash-



Forecasters Jared Klein (L) & Kevin Witt (R)

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2010 Emergency Management/Broadcast Meteorologist Workshop *(continued)*

ington DC, spoke about how to effectively communicate the forecast to the general public – both from a media standpoint and the NWS perspective. At the end of day two of the workshop, there were open panel discussions addressing how the NWS could better serve both the Emergency Management Community and the Media.

The National Weather Service Baltimore/Washington Forecast Office strives to work seamlessly with the Media and Emergency Management Community. Keeping the lines of communication open between the NWS and its partners will lead to better sharing and distribution of information important for the protection of lives and property. When people hear a similar message from the Media,

Emergency Managers and the NWS, they are better able to make decisions that will keep their families safe during hazardous weather situations.

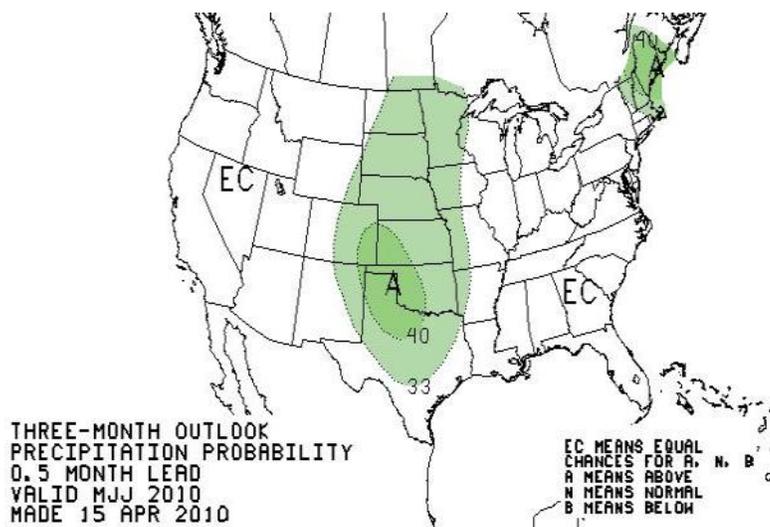


Seasonal Outlook

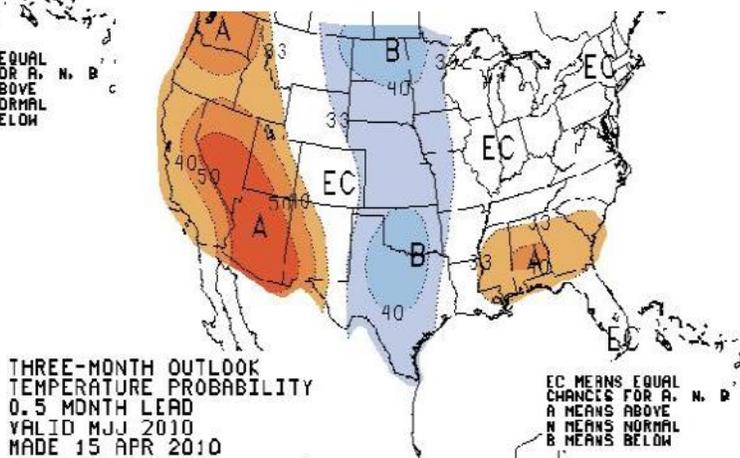
*By, Jared Klein
General Forecaster*

The National Oceanic and Atmospheric Administration/ Climate Prediction Center (NOAA/CPC) three-month outlook for May through July features equal chances for both temperatures and precipitation being either below, near or above average for the mid-Atlantic region. Although some may think a forecast of

equal chances is not very useful, it does tell a forecaster some important information. A prediction of equal chances implies that the probability of most likely category (above, neutral or below) could not be determined because the predictive tools used to construct this forecast were not able to show a strong enough signal to shift the statistical probabilities either way. To forecaster, this outlook indicates a lack of a



dominant climate signal (on a seasonal scale) to significantly influence the mid-Atlantic climate this May through July period.



Staffing News

By, *Nikole Winstead Listemaa*
Senior Forecaster



Calvin Meadows Promoted to Observations Program Leader

In December 2009, Calvin Meadows was promoted to the position of OPL (Observations Program Leader). Since September 1994, Calvin served as an HMT (Hydro-Meteorological Technician) at the Baltimore/Washington Forecast Office. In this position, he has held various program leadership responsibilities, including the Upper Air Program and the COOP Program. Calvin was also an HMT in Lynchburg, VA, and Camp Springs, MD.

Before joining the National Weather Service, Calvin spent 11 years with the US Air Force as a Weather Technician, serving in Anchorage, Vandenburg AFB, Yongsan Army Base, and at US Global Weather Central (Offutt AFB). While Calvin was stationed at Offutt AFB, he issued TAFs and weather watches and warnings for over 200 stations.

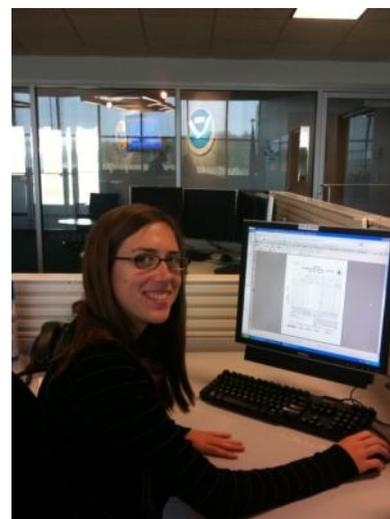
Calvin has completed college coursework with the University of Nebraska and the Community College of the Air Force. He also attended the University of North Carolina at Chapel Hill for a year.

Heather Sheffield Becomes Newest Meteorologist Intern

In May of 2009, Heather Sheffield was hired as a SCEP (Student Career Experience Program) Student at the National Weather Service Baltimore/Washington Forecast Office. Since that time, Heather has worked in the HMT/Intern Unit and has been doing local research for the Hydrology and Verification Programs. In addition, Heather has also been working in the University of Maryland (UMd) Department of Geography as an Administrative Assistant and a Teaching Assistant, while pursuing her Master's Degree.

Heather will graduate this this month with a Master's Degree in Geospatial Information Sciences from the UMd. She has already earned a B.S. in Meteorology from SUNY-Oswego in 2007.

Prior to enrolling at the UMd, Heather worked as an Operational Meteorologist for Meridian Environmental Technology in Grand Forks, ND, and The Research Foundation in Oswego, NY, as a Research Assistant.



David Evers Hired as an Electronic Technician



David Evers was hired as an Electronic Technician at the National Weather Service Baltimore/Washington Forecast Office in March of 2009. David served as an Electronic Technician for the US Navy for ten years. He also was a technician for the Department of Defense for nine years. David has advanced skills in calibrating and testing equipment. He is also knowledgeable in building inspection, construction, and other areas.

David is married with two teenagers. He enjoys motorcycles (Harley Davidson), off road rock crawling, boating, fishing, mountain biking and snow boarding.

Skywarn Reporting Procedures

1. Tornado or Funnel Cloud
2. Storm Rotation
3. Hail (any size and depth on ground)
4. Wind 50 MPH or greater (measured or estimated)
5. Wind Damage (downed trees and/or powerlines, structural)
6. Snow Accumulation (every two inches, storm total)
7. Ice Accumulation (any ice accumulation)
8. Heavy Rain (measured 1 inch, storm total)
9. Flooding (water out of banks and/or covering roadways)
10. Time of event & location

How to report:

Telephone: 1.800.253.7091

Amateur Radio: WX4LWX

This is very time critical information that needs to be relayed to the forecaster **immediately**. Give the person on the phone/radio your name and spotter number.

If you absolutely cannot get to a telephone to relay a report or to email *delayed* reports and storm totals:

LWX-report@noaa.gov



Upcoming Skywarn Classes

- Tropical: May 13 La Plata, MD
- Flood/Coastal Flood: May 19 Leonardtown, MD
- Basics I: May 27 Keyser, WV
- Basics I: June 10 Cumberland, MD
- Winter Storms: November 8 Kearneysville, WV



Visit our website for more details:

www.weather.gov/washington/skywarn/classes.html



weather.gov/washington or weather.gov/baltimore



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