Sterling Reporter

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

Volume 7, Issue 1 **Spring 2008**

Dan Gropper: A Local Environmental Hero

Chris Strong, Warning Coordination Meteorologist (WCM)

Daniel Gropper, a local entrepreneur, patent attorney, and part time emergency federal employee, was selected as an NOAA Environmental Hero honoring his twenty years of volunteer service to the NWS warning dissemination and Skywarn programs. The presentation of his award will be at the NWS Sterling Open House/New Office Dedication on the weekend of October 18th and 19th.

NOAA's Environmental Hero Awards were established in 1995 to commemorate Earth Day by honoring volunteers who help NOAA carry out its mission — to understand and predict changes in Earth's environment and conserve and manage coastal and marine resources to meet our nation's economic, social, and environmental needs. The award program also raises awareness about NOAA's volunteer programs.

"Thousands of people across the country join forces with NOAA each year and the Environmental Hero award is our way of saying 'thank you' to several of those individuals that have made a significant impact," said retired Navy Vice Admiral Conrad Lautenbacher, Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator. Daniel is an outstanding volunteer - he has been sharing his time, knowledge, and experience on behalf of the Citizens Observer Program for the last twenty years."

Over the last twenty years, Dan to helped to modernize the NWS Skywarn program, as the number of forecast offices were reduced from 350 to 122. He used his professional skills to help to create the current nationwide Skywarn program and wrote an operations manual that has been adopted throughout the country.

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Inside This Issue

MIC's Corner

James E. Lee, Meteorologist-In-Charge

It has been a busy time at our office since the last time I wrote in the Winter 2007-2008 edition of the Sterling Reporter. As of mid-June, our office has received over 350 reports of severe weather this year, which already exceeds the total number of reports we received during the entire year of 2007! The May 8th Stafford County EF-2 tornado event, Mother's Day flooding and the June 4 afternoon/evening squall lines have all contributed to a very busy convective season. Amazingly, we are just now hitting the climatological peak convective time of the year at the end of June, so more is yet to come.

I personally storm surveyed the EF-2 tornado which hit Stafford, Virginia on May 8th. After seeing the damage, it is a miracle that there was no serious injury. One of the major reasons for minimal injury was the use of NOAA Weather Radio All Hazards. Tim Kyburz, a City of Alexandria Police Officer, who resides in Stafford, was monitoring his weather radio at home after we issued a Tornado Watch for the region during the evening of May 8th. When our office issued the Tornado Warning for Stafford County, Officer Kyburz took his family to the basement of his home for safe cover. While waiting the storm out, he had the wherewithal to phone his neighbors to let them know that the National Weather Service had issued a Tornado Warning, and suggested that they too take cover in their basements. Unfortunately, Officer's Kyburz house took the worse of the damage, with the second story of his home being ripped away from the foundation and first floor. But fortunately, Officer's Kybruz actions most likely saved his and other families from harms way.

Officer Kyburz had an emergency plan and implemented it when the tornado hazard was imminent. I encourage every one of you to have a disaster plan, and think ahead about what you would do in case of an imminent hazard. One of our federal government partners, the Federal Emergency Management Agency (FEMA), has a webpage designed to help you plan and prepare for any disaster that we may face in our region. You can find it by going to http://www.fema.gov/plan/index.shtm.

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Maryland Severe Storms Conference

Chris Strong, WCM

The annual Maryland Severe Storms conference was held April 21st at the Conference Center of the Maritime Institute, in Linthicum Heights. The conference was well attended by the Maryland Emergency Management community, the media, and members of the National Weather Service. It addressed all weather threats that affect Maryland, but being that hurricane season is looming, tropical weather took center stage. John Droneburg , the Director of the Maryland Emergency Management Agency, led the event, and Vicki Nadolski, Deputy Director of the NWS, gave an opening speech.

Part of the mission of the conference was to build public awareness on severe weather in the state of Maryland, and most of the major Maryland media players (including WMAR-TV, WMAL-TV, WJZ-TV, WBFF-TV, and the Baltimore Sun) were there to help broadcast the message to the public at large. Jamie Rhome, one of the Hurricane Specialists from the National Hurricane Center, flew up from the TPC in Miami to give a summation of the 2007 hurricane season, as well as what we should look for in 2008. This included new products - like the Graphical Hazardous Weather Outlook and the Graphical Tropical Weather Outlook - which reflect a growing trend towards graphical presentations of forecasts and warnings. This reflects a broad NWS movement away from text products, and towards more easily understood graphics, which can display much more information in a small space than large text products.
Chris Strong and Joe Miketta (Warning Coordination Meteorologists (WCM) from NWS Sterling and NWS Mt Holly respectively) gave a presentation on ice storms, and their devastating effects. This was timely given the past winter that featured more ice storms than snow, including the Election Day storm in early February during Maryland's Presidential primary that left thousands stranded in their cars in massive traffic backups from a multitude of accidents on bridges and overpasses.

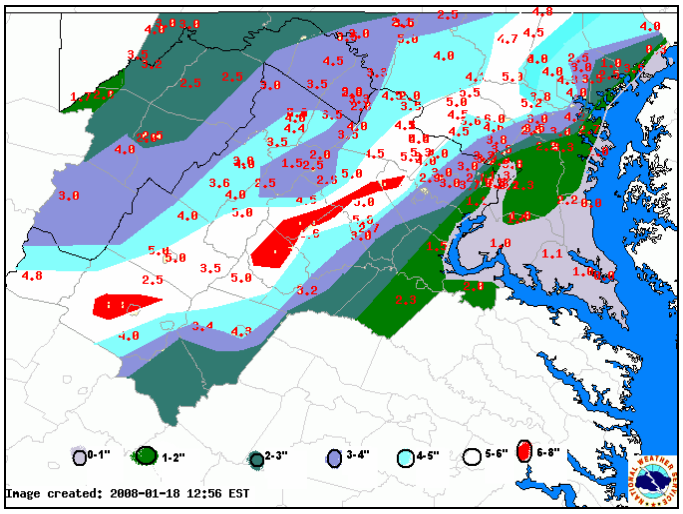
Bill Sammler (WCM from NWS Wakefield) finished with a fascinating presentation on how the NWS conducts damage surveys after severe thunderstorms and tornadoes. This included information on what we look for in determining the difference between straight-line damaging wind gusts and tornadoes, as well as rating tornado damage.

January – March Storm Data

Sarah Rogowski, General Forecaster

A strong cold front triggered upslope snow showers along and west of the Allegheny Front on January 1st and 2nd, producing up to 7 inches of snow. Upslope snow showers developed across this region on January 14th and continued through the evening of January 15th, producing up to 8 inches of snow.

An area of low pressure moved northeast from the central Gulf of Mexico off the North Carolina on January 17th. Precipitation began as snow before warmer air moved in aloft, changing snow to a mix of sleet and freezing rain. Significant accumulations of snow and sleet were reported with only a trace of ice.



A strong cold front crossed the region January 29th, bringing gusty winds on the 30th. Wind gusts between 40 and 60 mph were measured across the region, producing numerous power outages due to downed trees and power lines

An area of low pressure moved up the Appalachians on February 1st. Warmer temperatures aloft combined with subfreezing temperatures at the surface to produce widespread freezing rain across the region. Up to a ¼" of ice was reported, leading to numerous traffic accidents and power outages.

Light precipitation spread east across the region ahead of a low pressure system on February 12th. Temperatures at the onset of precipitation were cold enough to produce snow, temperatures aloft slowly rose above freezing, causing portions of the area to see a change over from snow to freezing rain. Road conditions rapidly deteriorated during the afternoon rush as roads became icy. Numerous traffic accidents were reported across the Baltimore Metro and across the northern Washington DC suburbs, including stranding dozens of cars on the Springfield interchange.

A strong cold front crossed the region on March 8th, triggering several strong to severe thunderstorms that produced large hail and gusty, damaging winds. Several downed trees and power lines fell into homes and vehicles. One fatality was reported in Harford County when a tree fell onto a moving truck, killing the passenger.

Storm of the Season – March 4th - 5th

Greg Schoor, General Forecaster

A strong low pressure system and its associated cold front intensified as it marched eastward across the Mid Mississippi River Valley on March 4. Atmospheric ingredients were coming together for local heavy rainfall and particularly, damaging winds. Plenty of low level moisture was being transported up across the eastern seaboard, along with relatively warmer air. Daytime high temperatures across the Mid Atlantic region reached into the low 70s.

The combination of a large mid level dry air region and increasing wind speeds into the late night hours, spelled the potential for damaging wind gusts. The 0-6 km wind speeds on the 00Z KIAD sounding increased to a staggering mean wind speed of nearly 50 KT (about 60 mph). Thunderstorm downdrafts would easily transfer these types of severe wind gusts toward the surface. Convective lines wasted no time in causing damage across the windward side of the Southern Appalachians, from western Georgia to eastern Kentucky during the late evening hours.

Just before midnight, an initial line of weak thunderstorms raced across the Interstate 95 corridor of northern Virginia and eastern Maryland, pushing 20 to 30 mph wind gusts ahead of the line. The line quickly dissipated, just as the cold front began to move east of the Appalachian chain (Figure 1). Just after midnight, an intense line of nearly continuous thunderstorm activity stretched from Myrtle Beach, SC to Hagerstown, MD. As the intense low pressure system approached from the west, this line of thunderstorms began to encounter small scale disturbances that would eventually lead to the most damaging and destructive parts of the storm.

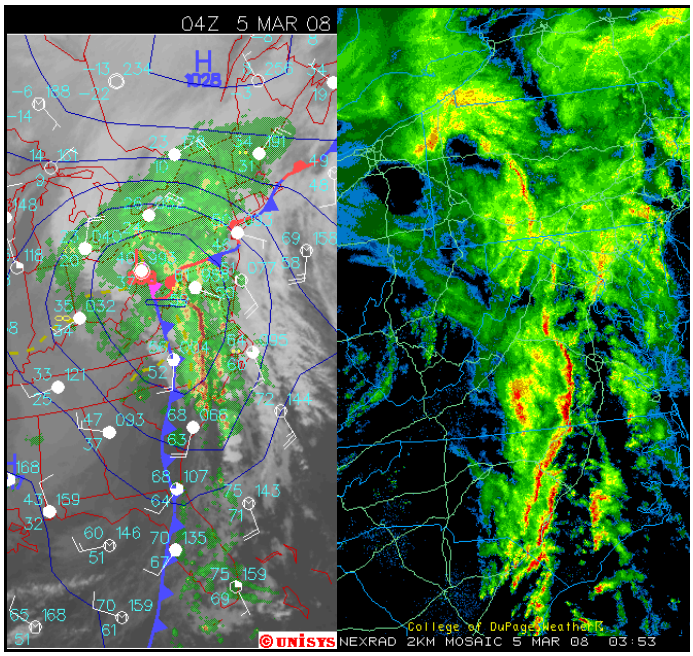


Figure 1: *The left image is an overlay of IR Satellite, derived regional radar, surface observations and computer analyzed surface pressures and surface fronts. The right image is regional derived radar values. These images show the large scale of this intense low pressure system, with an emphasis on the lines of higher reflectivities across the Mid Atlantic and the Carolinas around this time (~11pm EST March 4).*

Strong mid and low level winds steered the line in a general northeasterly direction, but much smaller scale deviations in the overall wind field created breaks in the convective line. These 'breaks' (Figure 2) appear as small protrusions in the higher reflectivity areas of the convective line (the bright red equating to the higher reflectivities). These features, called MARC (Mid Altitude Radial Convergence) signatures are basically, areas where strong winds just a few thousand feet above the ground are being diverted toward the surface by the storm's downdraft winds.

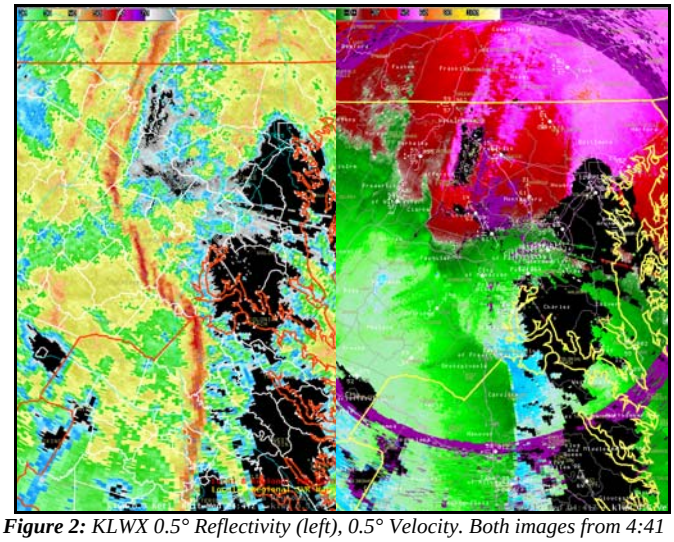


Figure 2: *KLWX 0.5° Reflectivity (left), 0.5° Velocity. Both images from 4:41 UTC March 5 (11:42 PM EST March 4). The small indentations in the long red line (on the left) correspond well to the higher localized velocity values (on the right) and consequently, areas where damage was reported.*

Across the length of Fauquier Co, VA, there are several small areas of very light green pixels (denoting very high velocities, 50 kts/~60 mph). Damage reports received from this event can be traced to several areas where these features were located. The Reagan National Airport observation site recorded a 74 mph (64 KT) wind gust at 12:35 AM EST as the line of thunderstorms moved over the site (Figure 3). Trees and power poles were knocked down across the Mid Atlantic, with the most significant damage occurring in St Mary's County. Severe thunderstorm warnings spread across this region ahead of approaching line.

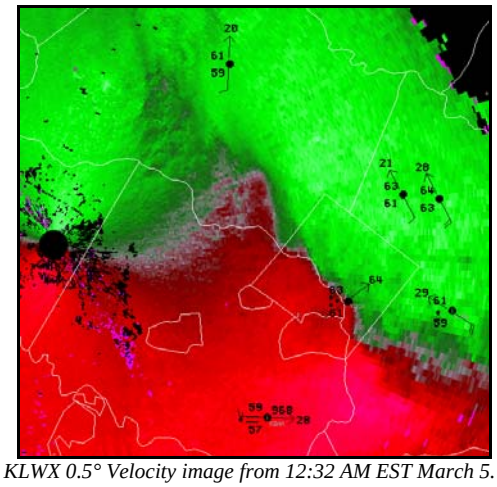


Figure 3: *KLWX 0.5° Velocity image from 12:32 AM EST March 5. At this time, the convective line is crossing over the Potomac near Reagan National Airport in Arlington, VA on the banks of the Potomac River.*

WJZ-TV hosts Weather Day Camden Yards

Chris Strong, WCM

WJZ-TV 13 in Baltimore hosted a day of weather education for area kids at the Baltimore Orioles Camden Yards baseball park on May 1st. Dubbed the 1st annual Weather Day, over 2,000 students from around Baltimore sat in the stands of Camden Yards to learn about hurricanes, tornadoes, the jet stream, and all sorts of weather systems that affect our region.

The WJZ weather team all had a hand in making presentations to the kids on the various subjects. All topics included short talks, video presentations on the jumbotron, and demonstrations. Chris Strong was invited to attend and be a part of the jet stream presentation. After a brief description of what the jet stream is, Chris brought out an inflated weather balloon and radiosonde (weather instrument), and discussed how they are used to measure the atmosphere above us two times a day. The weather balloon was launched from the field and streaked into the sky above the stadium.

After a question an answer period at the end of the presentations, the stadium was opened to the public, and the kids were treated to a day of Orioles baseball. We would like to thank WJZ-TV and the Orioles for letting us be a part of this great educational event!

Climate Summary – February through April

Brian LaSorsa, General Forecaster

Temperatures and precipitation for the period of February through April averaged above normal.

At Reagan National the average temperature for the month of February was 41.0 degrees which is 2.9 degrees above normal. Temperatures for the month of March turned out to be 2.5 degrees above normal while April turned out to be 2.8 degrees above normal. With all three months averaging above normal, this runs the string of months to twelve when the average temperature was above normal. This is the second longest stretch of above normal temperatures dating back to 1872. The longest stretch with above normal monthly temperatures was nineteen months spanning from October of 1990 through April of 1992.

Precipitation for February totaled to 4.17 inches which is 1.54 inches above normal. However, snowfall was once again below normal. In fact, for the winter of 2007-2008, only 4.9 inches of snow fell making it tied for the tenth least snowiest winter on record.

Precipitation averaged below normal for the month of March, but April was over two inches above normal.

Climate Summary

Continued…

At Baltimore/Washington International the average temperature for the month of February was 47.1 degrees which is 2.3 degrees above normal. Temperatures for the months of March and April were also above normal. Thirteen of the last fourteen months have averaged above normal. The last month of below normal temperatures at BWI was back in April of 2007.

Precipitation for the month of February was above normal while March was below normal. April turned out to be 1.62 inches above the normal of 3.00 inches. Only 1.3 inches of snow fell in February and no snowfall was recorded for March or April. Snowfall for the entire winter season totaled up to 8.5 inches which is well below the normal of 18.2 inches.

This climate data is preliminary. More information on climate across the NWS Baltimore/Washington Forecast area can be found on our website at http://www.weather.gov/climate/index.php?wfo=lwx.

Staffing News

Jared Klein has joined the office as the new Meteorologist Intern, filling the shoes of Brian LaSorsa who was promoted to General Forecaster.

Jared joins us from WSI Corporation in Andover, MA. Prior to WSI, Jared was a Researcher under the Collaborative Science, Technology, and Applied Research (CSTAR) Program at SUNY-Albany from September 2005 until October 2007, under faculty mentoring from Dr. Lance Bosart and Dr. Daniel Keyser. The research involved development of an ingredients-based forecast method for forecasting heavy precipitation accompanying land falling and transitioning tropical cyclones in the northeast U.S. Jared has gained considerable experience in this position performing climatological studies on tropical cyclone events in the northeast. Jared earned a M.S. in Atmospheric Science at SUNY-Albany in December 2007, and a B.S. in Meteorology from Cook College - Rutgers University, which was conferred in May 2005.

Above: Jared (left) taking the oath coming into the NWS from Meteorologist-in-Charge Jim Lee (right)

Welcome Jared!

Outreach of Note

Sarah Rogowski, General Forecaster

Tours will be suspended July 1st through October 20th due to the impending office move.

Members from the Maryland State Highway Administration (SHA) visited the office on February 20th.

Greg Schoor conducted a tour for a group of teachers from the Environmental Education Center from Rockville, MD on February 27th. The goal was for teachers to impart more weather knowledge to their students.

The Director of the NWS, Jack Hayes, and several high ranking members of NOAA and the NWS toured the office and visited with the LWX staff on February 29th.

Two students from the Rocky Run Middle School EXPLORE program visited with Sarah Rogowski on April 3rd and 7th.

On April 4th, Steve Zubrick and Brandon Peloquin visited with the Emergency Manager in Pendleton County. On April 8th, Brian LaSorsa conducted an office tour for several NOAA student employees.

Jim Lee led an office tour for the President of the World Meteorological Organization (WMO) and his Russian meteorological delegation on April 10th.

Chris Strong hosted the Spring Media Workshop on April 17th. Representative from the Washington DC and Baltimore TV stations were on hand to discuss the past winter season and the upcoming severe weather season.

On February 23rd, Sarah Rogowski visited with the 1st, 4th, 5th and 6th grades at Oakton Elementary School. Later that day, she taught a weather badge class to several Girl Scout and Brownie troops in Woodbridge.

Sarah Rogowski participated in the NOAA Bring Your Child to Work Day at NWS Headquarters in Silver Spring.

On April 24th, Chris Strong participated in the Virginia Department of Emergency Management meeting in Front Royal with several local Emergency Managers. On the 30th, he attended a meeting with Jefferson County volunteers and agencies involved with the StormReady program.

Tropical Weather

Luis Rosa, General Forecaster

The 2008 Atlantic Hurricane season is now here and the latest NOAA outlook predicts a near normal or above normal season. The outlook indicates that there is a 65% percent probability that this year's Atlantic season will have between 12 to 16 storms, including six to nine hurricanes, and two to five major hurricanes with only a 10% chance of being below normal. The NOAA outlook also emphasizes that this forecast does not predict whether, where or when any of these storms may hit land. This outlook is just a reminder that people living in coastal communities need to have a plan for each and every season and should review or complete their emergency plans before a storm threatens.

The outlook is based on the analysis and prediction of two main climate signals: the ongoing conditions that have been conducive to above-normal hurricane activity since 1995 and the likelihood of either weak La Niña or neutral conditions during the peak months of the season.

New for this 2008 season, the Baltimore/Washington Forecast Office will provide experimental Impact Graphics when tropical cyclone watches and warnings are in effect for any of our area of responsibility. These graphics will consist of four tropical cyclone hazards: wind, tornado, coastal flooding, and inland flooding. These graphics will provide an "at-a-glance" summary for the cumulative impacts expected from the storm. For more information on these graphics, visit: http://weather.gov/os/tropical. Click on Sterling, VA for more specific information for our area.

Also new for the 2008 season, the National Hurricane Center (NHC) will issue a graphical Tropical Weather Outlook (GTWO) four times a day. The GTWO will include a three-tiered, color-coded, categorical genesis forecast: a) low- meaning that the probability of genesis is less than 20%; medium- probability of genesis from 20-50% and high- meaning that the probability of genesis is greater than 50%.

People in the Mid Atlantic region are reminded that hurricane forecasts are imperfect and making the right decision for you and your family when a storm threatens is a very important and difficult decision to do. The Tropical Cyclone Surface Wind Speed Probability product issued by NHC is the best way to convey forecast uncertainty to the public. This product accounts for combined uncertainty in storm track, intensity and size. The cumulative probabilities indicate the chances that the event will happen at all, while the incremental probabilities indicate when the event is most likely to start. To learn more about this product visit: http://www.nhc.noaa.gov/aboutnhcprod.shtml#PWS.

For more information on Tropical Weather, visit the National Hurricane Center website at http://www.nhc.noaa.gov. For a brief summary to all the storms that have impacted the Washington-Baltimore region since 1933, visit: http://www.erh.noaa.gov/lwx/Historic_Events/hurricane_history/index.htm.

Dan Gropper: A Local Environmental Hero

Continued…

For these efforts, he was awarded a national Public Service Award from the Department of Commerce. He has also been a driving force in getting the Skywarn program trademarked with the U.S. Patent and Trademark Office. Dan continues to be a resource and supporter of the NWS and Skywarn programs around the country and often volunteers his legal and business background to assist NOAA in many areas.

"Dan Gropper has worked closely with our engineers to improve national reliability of the emergency alert system and NOAA Weather Radio All Hazards," said NOAA's NWS James E. Lee. "Dan continues to be a valuable technical resource to many forecast offices throughout the country and has a long history of helping us resolve and explain technical issues. I am thrilled this award was given to a man who tirelessly gives back to his community for the greater good."

For the past 15 years, Dan Gropper, has been designing pioneering commercial NOAA weather radio systems to link fire, police, public safety and corporations to the critical NOAA Weather Radio All Hazards alerts and has received a number of patents for these inventions. Dan developed a NOAA Weather Radio receiver that is used in many local schools, public buildings, and government agencies with nearly flawless performance and warning dissemination. Most recently, this receiver was procured for Fairfax County's new Emergency Operations Center.

Congratulations Dan!

StormReady®

Chris Strong, WCM

Two of our counties joined the StormReady® fold over the spring of 2008 – Page County, Virginia and Arlington County, Virginia. That brings the total to 11 counties, as well as the University of Maryland.

The StormReady® program is part of the NWS working partnership with the International Association of Emergency Managers and the National Emergency Management Association. The StormReady® program strengthens the ties between the NWS, county local government, and its citizens.

To be recognized as StormReady®, a community must:

- Establish a 24-hour warning point and emergency operations center;
- Have more than one way to receive severe weather forecasts and warnings and to alert the public;
- Create a system that monitors local weather conditions;
- Promote the importance of public readiness through community seminars;
- Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.
- The StormReady® recognition expires in three years, after which the county will go through a renewal process.

StormReady®

Continued…

Page County was certified on April 15th. Gene Stewart, Emergency Services Coordinator for Page County, worked tirelessly in getting Page County to be the first StormReady® County in the Shenandoah Valley of Virginia. Page County is along Skyline Drive/Shenandoah National Park and contains the towns of Luray, Stanley, and Shenandoah.

From Left: Chris Strong, Warning Coordination Meteorologist,) and Gene Stewart, Page County Emergency Manager

Arlington County was certified StormReady® on April 29th in their Office of Emergency Management. Bonnie Regan, Don Watkins, and Danny Bingham *(pictured below)* all worked with the OEM and Arlington local government to ensure that they are well prepared to handle any weather events that affect them.

"Arlington County is home to the Pentagon, National Airport, and the major urban centers of Crystal City, Ballston, and Rosslyn. In an era of threats, every community should be StormReady®," said Robert P. Griffin Jr., director of the county's office of emergency management. "The StormReady® program improves the community's ability to mitigate, prepare, respond and recover from a weather related incident and is an important component of Arlington County's integrated all hazards approach to emergency management."

MIC's Corner

Continued…

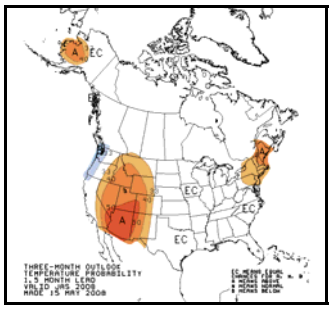
I also can't stress enough the benefits of NOAA Weather Radio All Hazards. It is the quickest way for you and your family to get hazardous weather information, and at the touch of a button you can get an instant weather forecast.

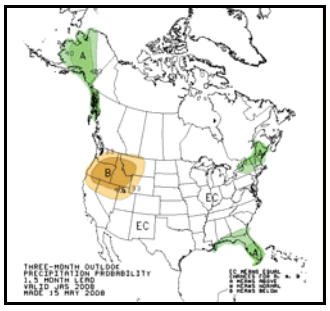
In cooperation with the Washington DC Emergency Management Agency, we will soon be adding another NOAA Weather Radio transmitter site in Washington, DC, to enhance coverage in downtown areas where the current signal gets attenuated due to the large number of buildings. You can find out more information about NOAA Weather Radio All Hazards at http://www.weather.gov/nwr.

If you have any questions or comments about the NWS Baltimore/Washington Weather Forecast Office, please email me at James.E.Lee@noaa.gov, or phone me 703-260-0107, ext. 222.

July – August – September Outlook

NOAA's National Weather Service Climate Prediction Center created these July – August – September temperature and precipitation outlooks during mid May. 'EC' means Equal Chance, 'A' stands for Above Normal, while 'B' is Below Normal. These are probabilistic forecasts; the forecast probability anomaly is the difference between the actual forecast probability of the verifying observation falling in a given category and its climatological value.





Climate Prediction Center outlooks, discussions and explanations are available at:
http://www.cpc.noaa.gov/products/predictions/long_range/index.php

Skywarn News

Skywarn Classes will resume in the early Fall. For more information on upcoming classes, check out the website:
http://www.erh.noaa.gov/lwx/skywarn/classes.html

ATTENTION ALL SKYWARN SPOTTERS:

Please email any changes to your contact information to Nikole Listemaa (Nikole.Winstead.Listemaa@noaa.gov).

Thanks to all Spotters for your reports. Please remember to provide storm reports as soon as possible. These reports are extremely valuable in the warning decision making process as well as for our verification effort. The ideal way to report hazardous weather is through Phone or Amateur Radio. There are several ways to report.

Telephone: 703-260-0107 or 800-253-7091
Radio Call Sign: WX4LWX
Email: LWX-Report@noaa.gov
**Please call or use Amateur Radio to report time-sensitive information such as tornadoes, hail, wind damage, flooding, ice accumulation, etc.*

What to Report:

Time (start and end)
Location (State, County, City/distance and direction from city)
Tornado (circulation on the ground)
Funnel (not on the ground)
Storm Rotation/Wall Cloud
Hail: size compared to a coin and depth on ground
Heavy Rain: measured 1 inch or more (duration)
Flooding: water out of banks or covering roadways
Wind: 50 MPH or greater (measured or estimated)
Damage: generally downed trees and/or power lines
Snow Accumulation: every 2 inches, storm total

Thank you for your time as a SKYWARN Spotter!

Sterling Reporter

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