Blue Ridge Thunder

Newsletter of the NWS Blacksburg, VA

Welcome to the Spring 2014 Newsletter of the National Weather Service (WFO) in Blacksburg, VA. We have given a new name "Blue Ridge Thunder" to the newsletter to try and reflect the local area better. WFO staff submitted more than 35 name ideas reflecting the varied topography, weather and culture of our office region. With three states, several different mountain ranges, foothills, piedmont and four major river drainages it was almost an impossibility to devise one name to cover all the variety in this area. The Blue Ridge mountains were finally selected as they run through the center of the County Warning Area (CWA) and thunder, well it is loud and it can occur any time of the year!

Inside this Issue:

Weather Highlight:

February 12-13, 2014 Snowstorm

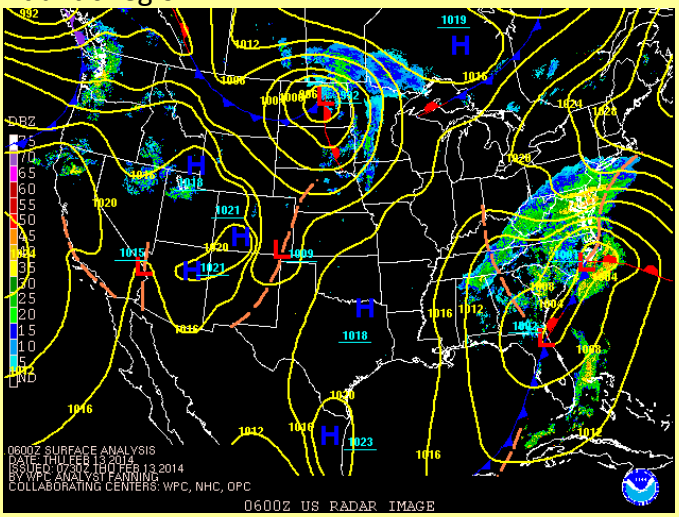
Steve Keighton, Science and Operations Officer

A classic coastal winter storm impacted the Appalachian and Mid-Atlantic regions February 12-13, 2014, resulting in major snowfall accumulations for the Blacksburg NWS County Warning Area (CWA). Some sleet and light icing from freezing rain also occurred over much of the Piedmont and some foothill locations, but with more significant icing south of our area. Snowfall amounts across parts of the Blue Ridge Mountains and foothills of Virginia exceeded two feet in a few spots, with over one foot for majority of the region, with the exception of the Piedmont where 8-10" was common, and a few spots in northwest North Carolina and far southwest Virginia where just under a foot fell. For two climate locations, Roanoke and Blacksburg, this was the 3rd highest snowfall on record for a single event. For other locations where long term data records are kept, this was a top ten or even top 5 event.

NWS office in Blacksburg: early morning February 13, 2014. Another six inches or more fell by early afternoon

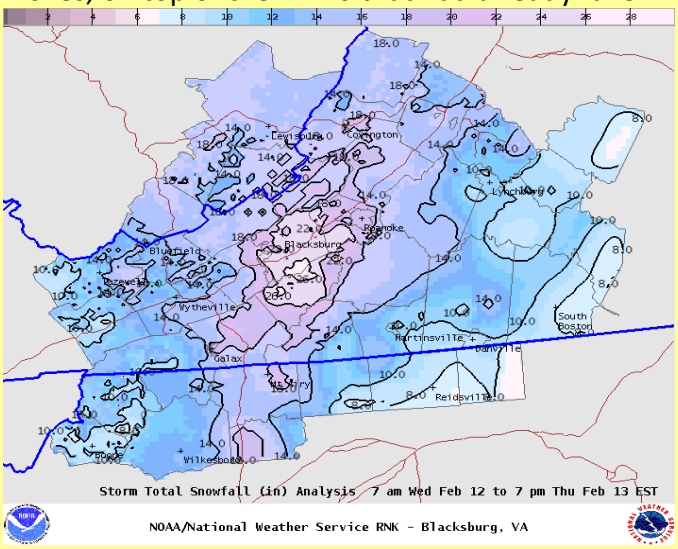
For two climate locations, Roanoke and Blacksburg, this was the 3rd highest snowfall on record for a single event. For other locations where long term data records are kept, this was a top ten or even top 5 event. The January 6-8, 1996 storm is still the benchmark snowfall event for most of this region, and there are other big events that are still high on the list for most locations, such as January 29-30, 1998, March 13-14, 1993, and more recently December 18-19, 2009. Impacts included long backups and partial closures on Interstates 81 and 77, many accidents, a few roof collapses, spotty power outages, and many sore muscles and aching backs from all the shoveling! February 12-13, 2014 will certainly be remembered for a long time as one of the biggest snowfalls in this region's history.

There are many similarities between this event and other major snow storms to have hit the region, most tending start with cold high pressure in place over New England, with a low pressure center moving northeast out of the Gulf of Mexico and up the Atlantic coast, bring abundant moisture with it. This kind of track is known to area meteorologists as "Miller A Cyclogenesis storms, and are historically our biggest snow makers. For comparison, please see the review of the December 18-19, 2009 storm which took a similar track. The figure below shows the coastal surface low along the North Carolina coast early on the 13th with a shield of heavy precipitation across the Mid-Atlantic region.



Radar and Surface Map at 0600Z (100 AM EST)

Overall however, this Feb. 2014 storm had more moisture, traveled a little more slowly, and produced more total snow for most locations, with the exception of the far northern part of our area such as the Alleghany Highlands and Greenbrier County WV. The track and radar evolution of the February 2014 storm showed widespread precipitation (snow) spreading well north of the developing low and into the colder high pressure, before tracking up along the Carolina Coast. This slightly inland track did spread some warmer air aloft into the Piedmont areas overnight Feb. 12th into the 13th, resulting in periods of sleet and some light freezing rain, while locations west of the Blue Ridge experienced only snow, and much of it fairly heavy with over a foot in some locations. As the low began to move off the Virginia coast during the day on the 13th, it interacted with an strong upper level wave, which helped produce another zone of heavy snow well behind the surface low pressure, known as a deformation zone, where deeper vertical motion and sometimes a layer of instability can form (which resulted in some very impressive snowfall rates). This zone near the upper level low center, pivoted and thus barely moved while it sat over parts of the southwest Virginia Blue Ridge and foothill region, as well as the New River and Roanoke Valleys. This allowed significant additional snow to fall in these areas; as much as 4-8 more inches, on top of the 12-16 that had already fallen.



Total snowfall map: February 12-13, 2014

Winter 2013-2014 Summary

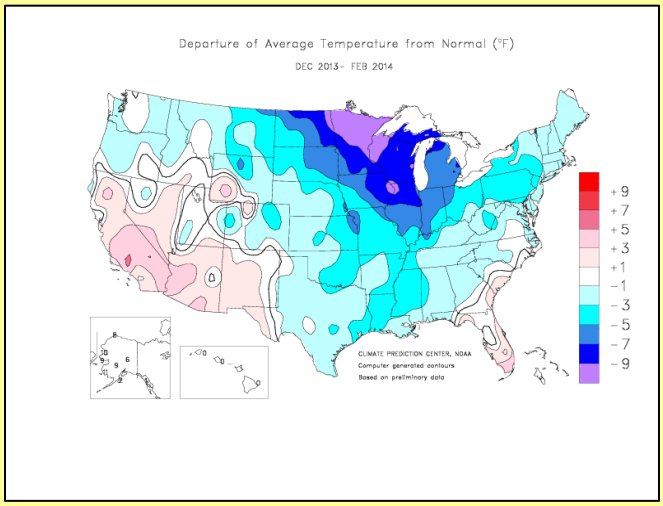
Robert Stonefield, General Forecaster

Snow was in the air frequently this past winter (Dec 2013-Feb 2014), such that the general impression of many seemed to be that it was a very cold winter. In fact, the data from our climate sites (Table 1 or Map 1) told a different story with the seasonal average just a degree or so colder than normal. At Roanoke, with over 100 years of records (since 1912) it was only the 25th coldest on record and the recent winters of 2009-2010 and 2010-2011 were both colder.

Average Temperature (Dec 2013-Feb 2014)			
Station	Obs (F)	Normal (F)	Depart (F)
Roanoke	36.7	38.3	-1.7
Lynchburg	36.0	36.9	-0.9
Danville	39.3	39.5	-0.2
Blacksburg	32.0	33.1	-1.1
Bluefield	35.0	36.2	-1.2

Table 1: Winter season temperature at official climate sites

As Map 1 below shows, the upper Midwest was the focus for the greatest negative temperature anomalies (>-9°F) and some of that unusual cold was felt over the southern Appalachians but in a considerably modified form. Meanwhile, the southwestern and far southeastern U.S. enjoyed well above normal winter temperatures.



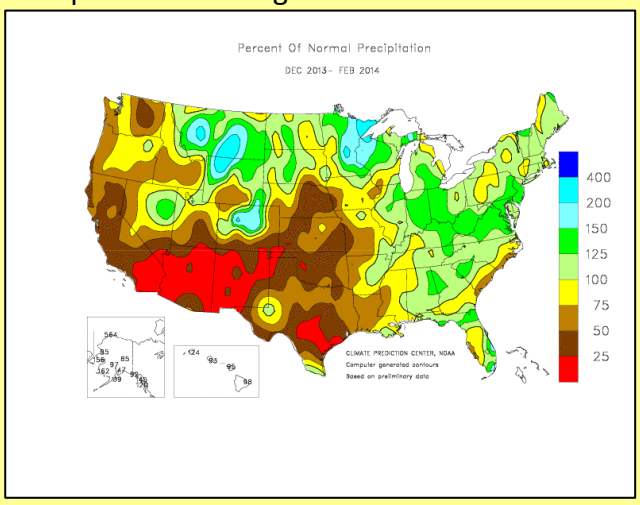
Map 1: Departure of Average Temperatures from Normal (F) (Dec 2013-Feb 2014)

Observed precipitation at the official climate sites was slightly above average for the winter as Table 2 and Map 2 below demonstrate, with the exception of Danville.

Precipitation (Dec 2013-Feb 2014)			
Station	Obs (in)	Normal (in)	Depart (in)
Roanoke	10.66	8.75	+1.91
Lynchburg	12.77	9.31	+3.46
Danville	9.35	9.70	-0.35
Blacksburg	10.89	8.84	+2.05
Bluefield	9.13	8.57	+0.56

Table 2: Winter season precipitation at official climate sites.

The much larger NWS Cooperative network (~60 stations) showed a similar pattern with average precipitation for the winter (Dec-Feb) at 11.67" versus the 1981-2010 normal of 9.65" or 121 percent of normal. December was the wettest month comprising nearly 50 percent of the seasonal total (5.61") while January was somewhat drier than normal (2.53") and February just slightly above. Flooding was infrequent this winter with only a few brief periods of isolated flooding. At the national level (Map 2 below) the axis of wetter than normal conditions can be seen extending from the upper Midwest through the Ohio Valley and into much of the Mid-Atlantic region. The desert southwest and much of the west coast meanwhile experienced an extremely dry winter with severe to extreme drought becoming widespread in that region.

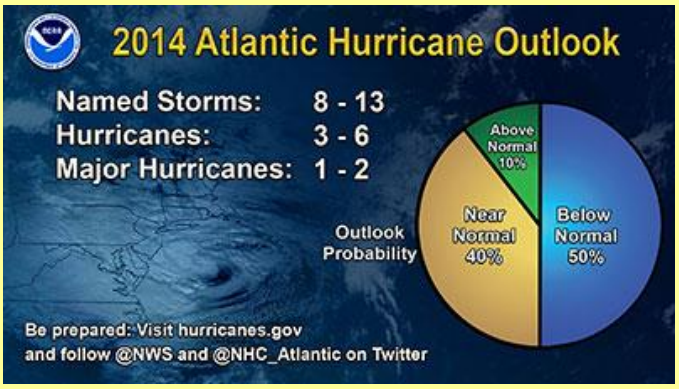


Map 2: Percent of Average Precipitation (Dec 2013-Feb 2014)

NOAA Forecast: A Below Normal 2014 Hurricane Season

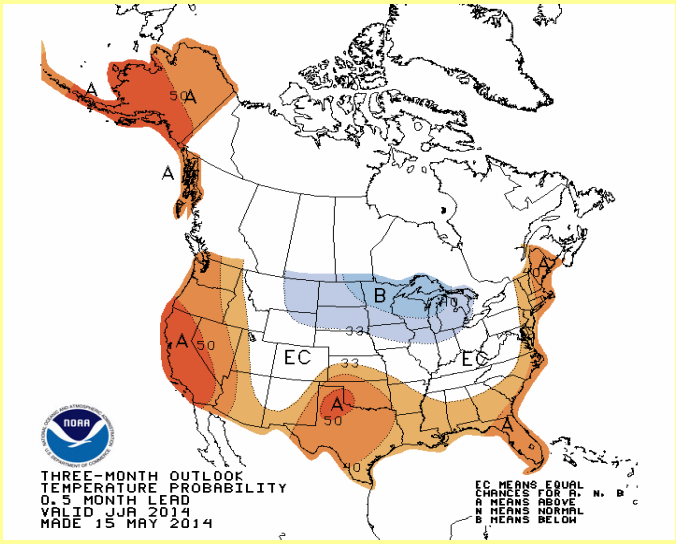
Jim Hudgins, Sr. Forecaster

After one of the most inactive tropical weather seasons seen in many years in 2013, the 2014 hurricane season possibly shapes up to again be on the quiet side with normal to slightly below normal activity. The official NOAA forecast released on May 22 suggests 8 to 13 named storms with 3 to 6 hurricanes and 1 to 2 Major hurricanes. The average number of named storms within the Atlantic basin is around 12, with 6 becoming hurricanes, and 3 major hurricanes of Category 3 or stronger. The main reasons behind the forecast include below normal sea surface temperatures being currently observed over the development zone in the far eastern Atlantic, and forecast unfavorable upper level winds due to the possible onset of a weak El Nino in the eastern Pacific Ocean. El Nino is defined as an extended warming of sea surface temperatures when compared to average of those in the east-central Pacific which is supported by several models later this summer. Past El Nino episodes of this magnitude in 2002 and 2009 have resulted in overall below average tropical activity in the Atlantic.

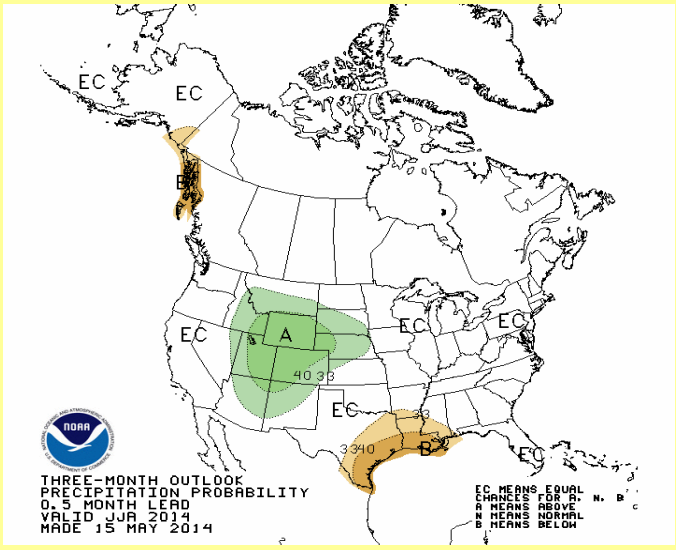


The tropical season officially begins on June 1st and ends on November 30th. Storm names for 2014 include: Arthur, Bertha, Cristobal, Dolly, Edouard, Fay, Gonzalo, Hanna, Isaias, Josephine, Kyle, Laura, Marco, Nana, Omar, Paulette , Rene, Sally, Teddy, Vicky, and Wilfred.

With the prognosis for fewer tropical cyclones, it might be surmsied that a hotter and perhaps drier than normal summer is in store for the region. However, the latest forecast graphics (see below) from the Climate Prediction Center show equal chances (EC) for above, below or normal temperatures in June, July and August (Fig. 1). An indefinitive outlook with regard to precipitation is also noted by the EC forecast in Fig 2.



Summer Temperature Outlook



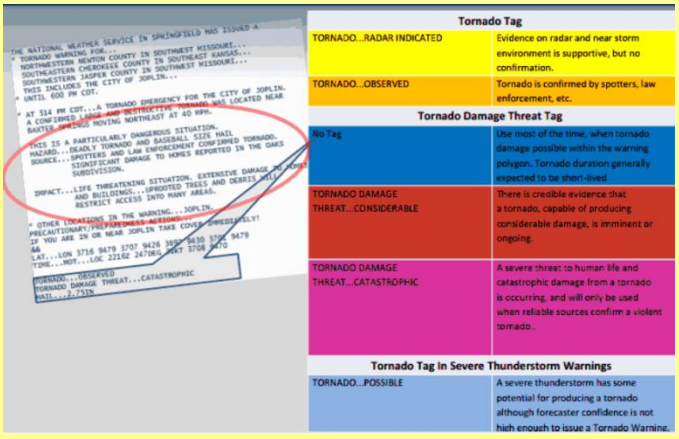
Summer Precipitation Outlook

New Information Added to Severe Thunderstorm and Tornado Warnings in 2014

NWS Blacksburg will be the only Eastern U.S. Office to Issue "Impact Based Warnings" this summer.

Phil Hysell, Warning Coordination Meteorologist

Severe Thunderstorm and Tornado Warnings from the National Weather Service (NWS) in Blacksburg will have a different look in 2014. In an effort to provide additional valuable information to core partners; facilitate improved public response; and better meet societal needs in the most life threatening weather events, NWS Blacksburg will be participating in the "Impact Based Warning" demonstration for 2014. This means information about storm hazards, the source of the event, and anticipated impacts will now be clearly visible in all severe thunderstorm and tornado warnings as well as follow-up statements called "Severe Weather Statements." Another enhancement will be 'tags' placed the bottom of all warnings and statements. These "tags" will allow users to quickly determine the forecast hail size, wind speed, and if the possibility exists for a short-lived weak tornado in a line of storms. Here is an example of an "Impact Based Warning" and a summary of tags:

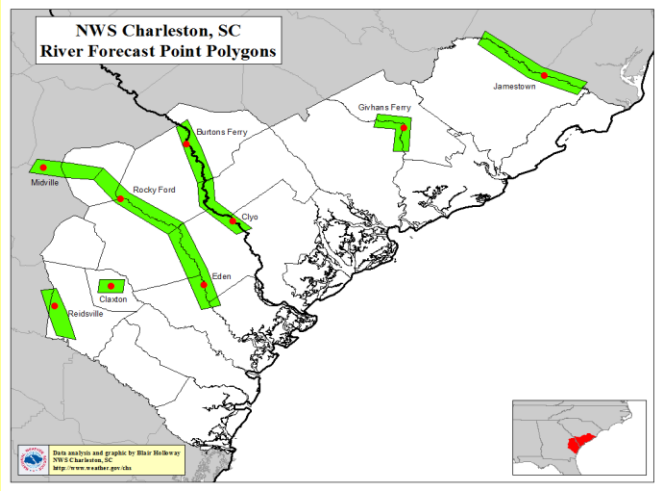


For tornado warnings, "tags" at the bottom of the warning will inform users if the tornado is radar indicated or observed. In extremely rare cases, "considerable" and "catastrophic" tags can be included to provide a quick means to alert partners about the potential high impact risk signals that prompt faster risk assessment and protective action. Visit www.weather.gov/impacts for more.

River Flood Warnings now issued as Polygons

Peter Corrigan, Service Hydrologist

Effective April 8 this year the WFO joined a number of other NWS offices with the issuance of river flood warning polygons. In the past, river flood warnings were county-based. WFO Blacksburg has warning responsibility for 30 river forecast points in southwest VA, southeast WV and northwest NC. River Flood Warnings are issued when the forecast point is expected to rise above a predetermined flood stage or an increase a category in severity. Flood Warning follow-up statements are issued to update the forecast as long as the river remains in flood. The transition to polygons will more accurately depict the area affected by flooding and greatly reduce the size of the warned area. These are not true inundation maps which are also being developed at many locations around the NWS, although not currently for any in the WFO Blacksburg area of responsibility.



Example of River Flood Polygons from NWS Charleston, SC

Smyth County now StormReady

Will Perry, Sr. Forecaster

Smyth County, Virginia became the latest county in our CWA to become StormReady in January 2014. A ceremony was held at the Board of Supervisors meeting in Marion, VA in March 2014 to officially recognize this accomplishment. Science and Operations Officer Steve Keighton and Senior Forecaster William Perry presented the certificates to Emergency Manager of Smyth County, Charles Harrington, and Virginia Department of Emergency Management, Regional Coordinator, Willie Richardson. In addition, a sign was given, showing the county is StormReady.

From left to right: William Perry, Willie Richardson, Charles Harrington and Steve Keighton.

StormReady, a program started in 1999 in Tulsa, OK, helps arm America's communities with the communication and safety skills needed to save lives and property--before and during the event. StormReady helps community leaders and emergency managers strengthen local safety programs. The StormReady website shows all the communities, counties, as well as supporters, including schools and businesses, across the nation. Visit here:
http://www.stormready.noaa.gov/communities.htm

There are now 16 participating counties, 4 independent cities, and 2 Universities in the RNK CWA in the StormReady program.

Map of StormReady Locations in Virginia

WFO staff moving south and west!

The NWS family in Blacksburg is sad to see the departure of two staff members within the next month or so as the inevitable career changes begin with the lifting of the nearly 2 year NWS-wide hiring freeze.

Kris Mattarochia

Kris has been a general forecaster at WFO RNK for seven years, since May 2007 when he transferred from WFO Charleston, WV. Kris recalls that his 'fondest' memory as a forecaster here was working the midnight shift before the historic December 2009 snowstorm. However, he has recently received a promotion to Senior Forecaster at WFO Miami, FL. Kris will be departing the mountains and snow of southwest Virginia in mid-June for the tropical excitement of south Florida. Best of luck in the southland Kris and watch out for the 'canes!

James (JV) Clark

JV reported for duty at RNK as a meteorologist intern in January 2012 after serving for several years at WFO Flagstaff, AZ as both a general forecaster and an Information Technology Officer (ITO). JV was recently selected as the new ITO at WFO Grand Junction, CO. He will be moving out to the Rocky Mountains with his family in early July. Exchanging the little mountains for bigger ones, good luck in the west JV!

Several positions have been advertised to replace Kris and JV as well as a long-vacant Electronics Technician position, so look for some new names and faces at Forecast Drive later this summer!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