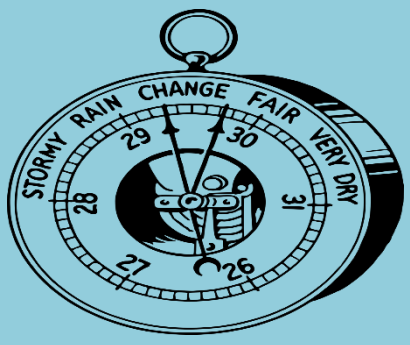


Blue Ridge Barometer

Welcome to the latest edition of Blue Ridge Barometer, the biannual newsletter of the National Weather Service (NWS) office in Blacksburg, VA! In this issue, you will find articles of interest about the weather and climate of our County Warning Area (CWA). We have included a review of last winter's flooding and snowstorms, and a summary of what is expected this hurricane season. We also reflect on the oldest method we have of notifying you of weather dangers, and the changes made to heat safety messaging. All this plus an example of our office providing "seismic" on-site decision support, and a fond farewell to a well-respected colleague. Stay safe and warm during the upcoming fall and winter seasons!

Inside this Issue:

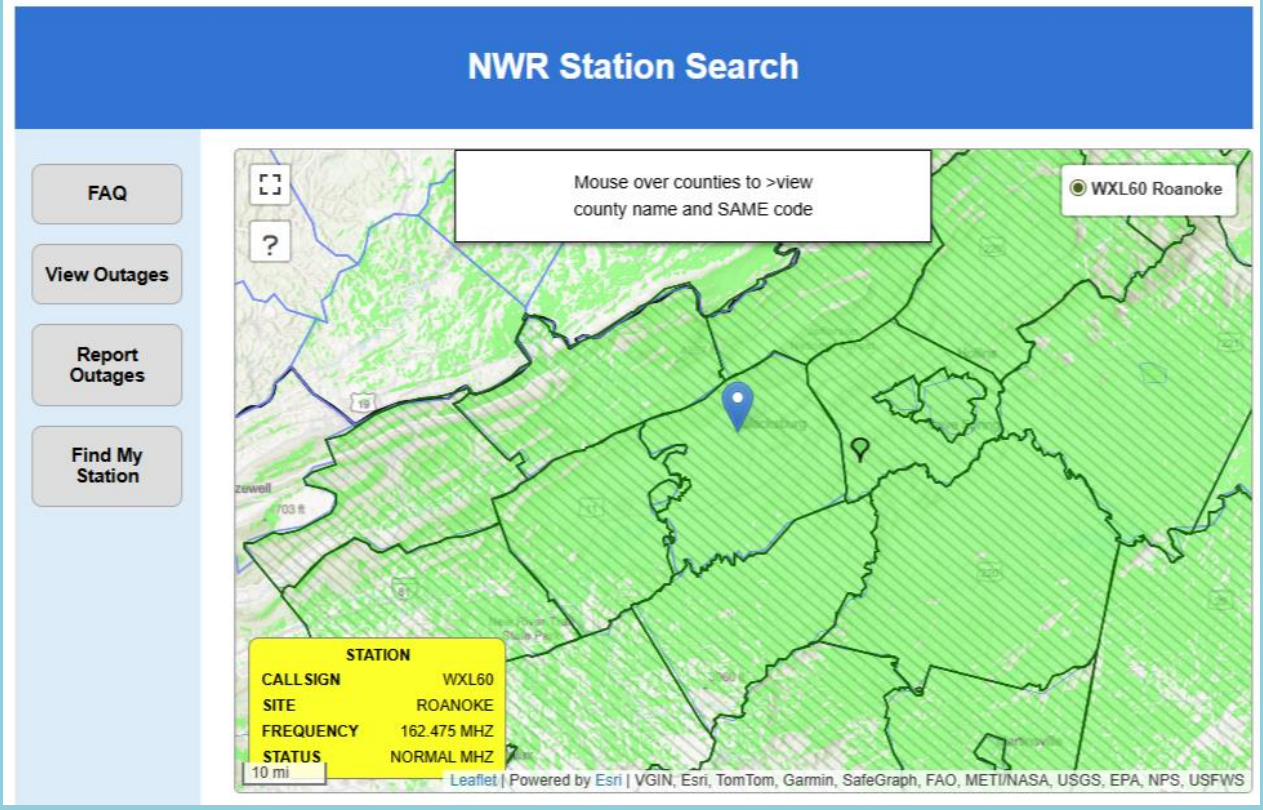
From the Desk of the Editor

The protection of life and property is paramount to the mission of the National Weather Service. Did you know that the oldest method we have of alerting you to weather dangers is still one of the most effective ways?

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information that originates from the nearest National Weather Service office. NWR broadcasts National Weather Service warnings, watches, forecasts, and other hazard information 24 hours a day, 7 days a week (source: weather.gov/nwr). If you are already familiar with NWR and have a NWR receiver at home and/or work, great! If you don't, NWR receivers are available online and in the electronics departments of many stores. These receivers, when programmed correctly, act much like smoke detectors. An alarm automatically sounds and/or lights glow when the National Weather Service issues alerts such as Watches and Warnings. To listen to the alert, one only needs to press a button on the receiver. The NWR is one of the first ways you or your family can learn about dangerous weather conditions over or approaching your region.

To make certain your receiver is working correctly, the National Weather Service conducts Routine Weekly Tests that cause the alert on the receiver to activate. Our office in Blacksburg conducts these tests every Wednesday. On the first Wednesday of the month, we run the tests between 7:00 pm and 8:00 pm. On the other Wednesdays of the month, we conduct the tests around Noon. If hazardous weather is occurring or expected later that same day, we postpone the test until the next available good weather day.

To know which NWR station is providing a broadcast for your location, you can visit station_search and enter your city name, address, or zip code. You will then be provided with the appropriate station. The output provides a map of your location, the location and call sign of the transmitter, and the broadcast frequency. The attached image shows the output after entering "Blacksburg, VA."



In the age of smart devices, it's easy to overlook the humble weather radio. But unlike apps that rely on cell towers or internet access, weather radios receive continuous phone service, delivering real-time emergency alerts even in the remotest areas. NWR may seem old-school, but its alerts will keep you informed when it matters most.

Winter 2024-2025 in Review

Stacie Hanes, Lead Meteorologist

Temperatures

Temperatures were near to below average across most of the area this winter. The greatest departures were across West Virginia and southwest Virginia, where most locations were 1 to 2 degrees below average (Figure 1). January was undoubtedly the coldest month of the season, with temperatures averaging 5 to 10 degrees below the daily average (Figure 2).

Blacksburg	-1.2
Roanoke	-2.3
Lynchburg	-0.9
Danville	-1.1
Bluefield	-1.9

Figure 1. *Temperature departure from normal 12/1/2024- 2/28/2025.*

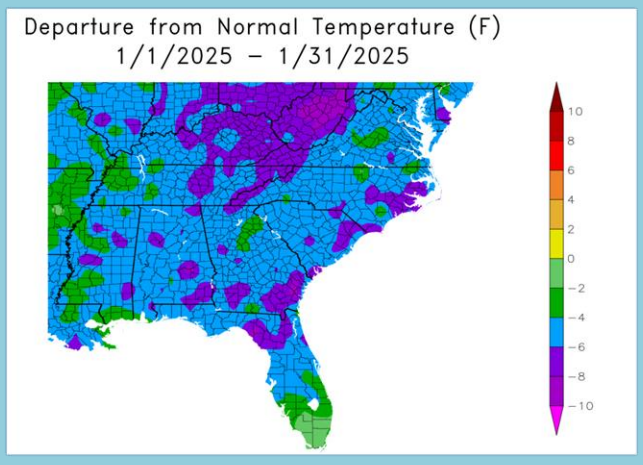


Figure 2. *January 2025 temperature departure from normal (Courtesy of NOAA/NWS/Southeast Regional Climate Center).*

December had a mix of troughing and ridging aloft, which helped drive cooler and warmer periods, respectively. In January, moderate to anomalously strong troughing was in place almost the entire month, leading to several cold spells as Arctic air arrived from the north. By February, this had transitioned to weak ridging aloft over the southern Appalachians, trending towards troughing for the end of the month.

Precipitation

Warmer temperatures in December meant the precipitation was mostly rain. A large and powerful system affected much of the country, bringing a variety of weather, including very heavy rain, snow, and even tornadoes. Between the evening of December 9 and midday on December 11, a whopping 2 to 6 inches of rain fell across much of the Blue Ridge, causing significant flooding.

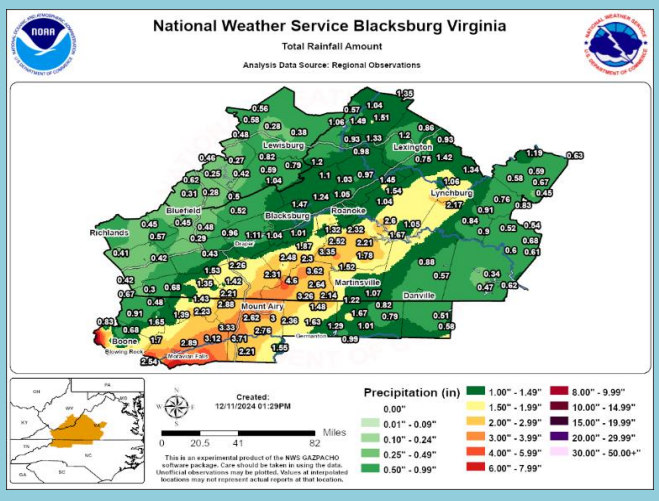


Figure 3. *Rainfall in the area from 12/9/24-12/11/24.*

There were also several winter storms, including those on January 4-7, when mostly freezing rain caused slippery roads and dangerous driving conditions. On January 10-12, between 2-6 inches of snow blanketed the entire area from southeastern West Virginia to North Carolina. Another storm on January 19-20 brought additional snow totals of over 5 inches to parts of the southern Blue Ridge and much of West Virginia. On February 11-13, a significant ice storm impacted parts of the region, with over an inch of ice reported for some areas of the Blue Ridge.

Tree at NWS Blacksburg during the January 4-7 winter storm. (Photo courtesy of NWS Blacksburg)

The warm temperatures, combined with several storm systems, resulted in precipitation amounts that deviated from normal. Figures 4 and 5 summarize the rainfall and snowfall received between the beginning of December and end of February.

Blacksburg	+2.71	-8.9
Roanoke	+2.63	-3.9
Lynchburg	+3.54	+3.3
Danville	-0.61	+0.3
Bluefield	+1.57	+4.0

Figure 4. *Precipitation departure from normal (left) and snowfall departure from normal (right) between 12/1/2024- 2/28/2025.*

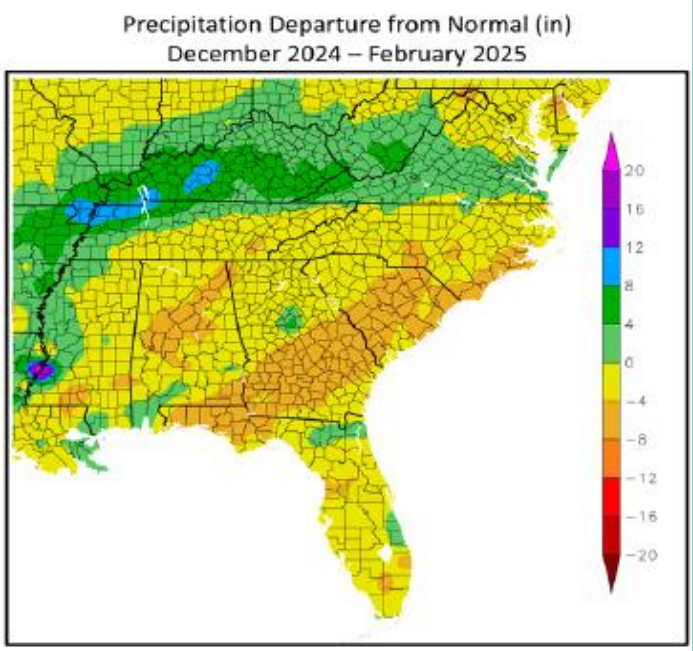


Figure 5. *Map of precipitation departure from normal between December 2024 and February 2025. (Courtesy of NOAA/NWS/Southeast Regional Climate Center)*

Drought Conditions

Winter began with parts of West Virginia, Virginia, and North Carolina in abnormally dry conditions to moderate drought. By the end of the winter, most locations had eliminated drought or had improved to abnormally dry.

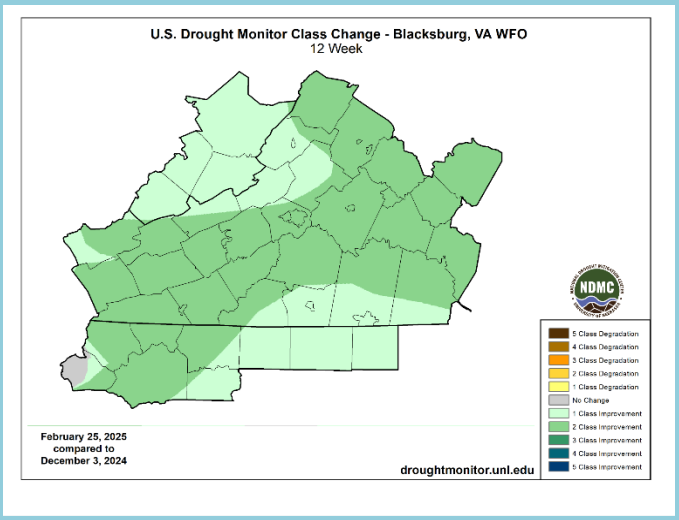


Figure 6. *Drought conditions improved between December 3, 2024 and February 25, 2025. (Courtesy of USDA/NDMC/NOAA/SERRC)*

ENSO (The El-Nino-Southern Oscillation)

Oceanic and atmospheric conditions in the tropical Pacific Ocean can influence weather across the globe. ENSO is characterized by two extreme modes: El Niño (warmer-than-normal sea surface temperature anomalies in the tropical Pacific) and La Niña (cooler-than-normal surface temperature anomalies). The absence of either of these modes is termed "ENSO-neutral" conditions. That was the case this winter.

Changes to Heat Safety Messaging

Phil Hysell, Warning Coordination Meteorologist (ret.)

In a move designed to improve public understanding and response, the National Weather Service officially retired the term "Excessive Heat Warning" and now uses "Extreme Heat Warning" instead.

The update was part of a broader effort to make weather alerts more intuitive and accessible. Research indicated that the term "excessive" was not always understood by the public. "Extreme," on the other hand, conveys a more urgent and recognizable threat—especially during life-threatening heat events. Extreme Heat Warnings signal dangerously hot conditions where temperatures and humidity could lead to heat illnesses or even death without proper precautions. These warnings are issued when Heat Index values are forecast to reach or exceed 110 degrees in the Piedmont, or 105 degrees in the mountains.

While the alert name changed, the safety steps remained the same. Stay hydrated and avoid outdoor activities during peak heat hours (10 a.m. to 4 p.m.); check on elderly family members, neighbors, and pets; and seek air-conditioned environments or know the location of cooling centers. The shift from "Excessive" to "Extreme" is part of an evolving approach to public safety. With clearer alerts, the hope is that more people will recognize threats and take swift action. For more details on this change visit: https://www.weather.gov/news/250310-heat-hazard

Extreme Heat Warning Criteria
Western (yellow) area: Heat Index of at least 105°F
Eastern (orange) area: Heat Index of at least 110°F

Above Average 2025 Atlantic Hurricane Season Expected

The 2025 Hurricane Season extends from June 1 through November 30. NOAA's National Weather Service is predicting an above normal season of named storms, ranging from 13 to 18 in total. A named storm could be a tropical storm or hurricane. Additionally, NOAA expects 5 to 9 of these named storms to become hurricanes, with 2 to 5 of the named storms reaching major hurricane criteria (winds of 111 mph or greater). Figure 1 displays the probabilities of named storms in comparison to normal, and the expected number of named storms, hurricanes, and major hurricanes. If you would like a technical explanation for the reasons behind the above numbers, we welcome you to visit noaa.gov to read the complete outlook publication from NOAA.

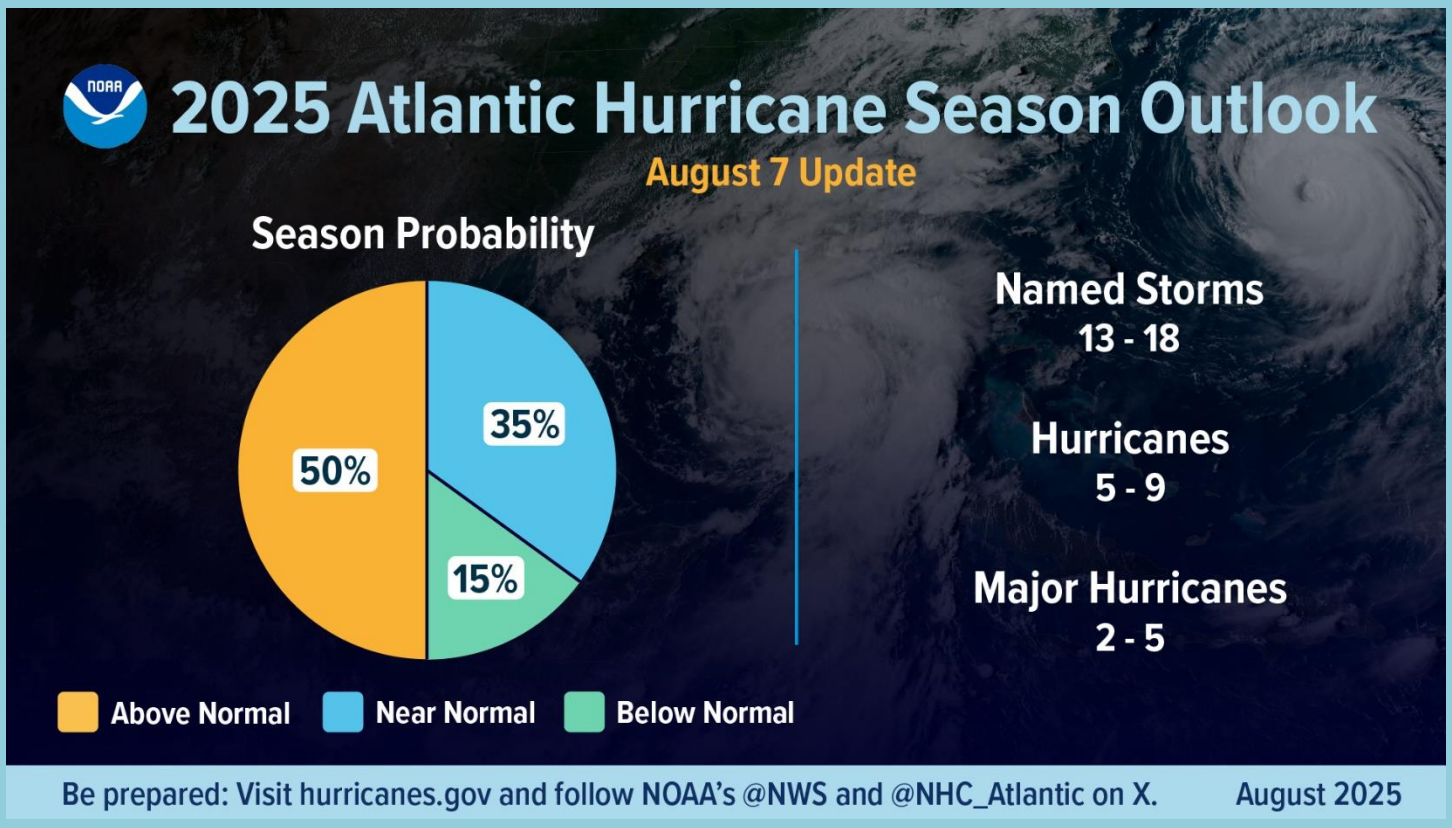


Figure 1. *A summary infographic showing hurricane probability and numbers of named storms based upon NOAA's Atlantic Hurricane Season Outlook. (Courtesy of NOAA NWS)*

An international committee of the World Meteorological Organization has a strict alphabetical naming procedure, followed each year, for tropical storms. For Atlantic hurricanes, there is a list of names for each of six years that only changes if a storm is so costly or deadly that future use would be inappropriate. Figure 2 provides the list for the 2025 season.

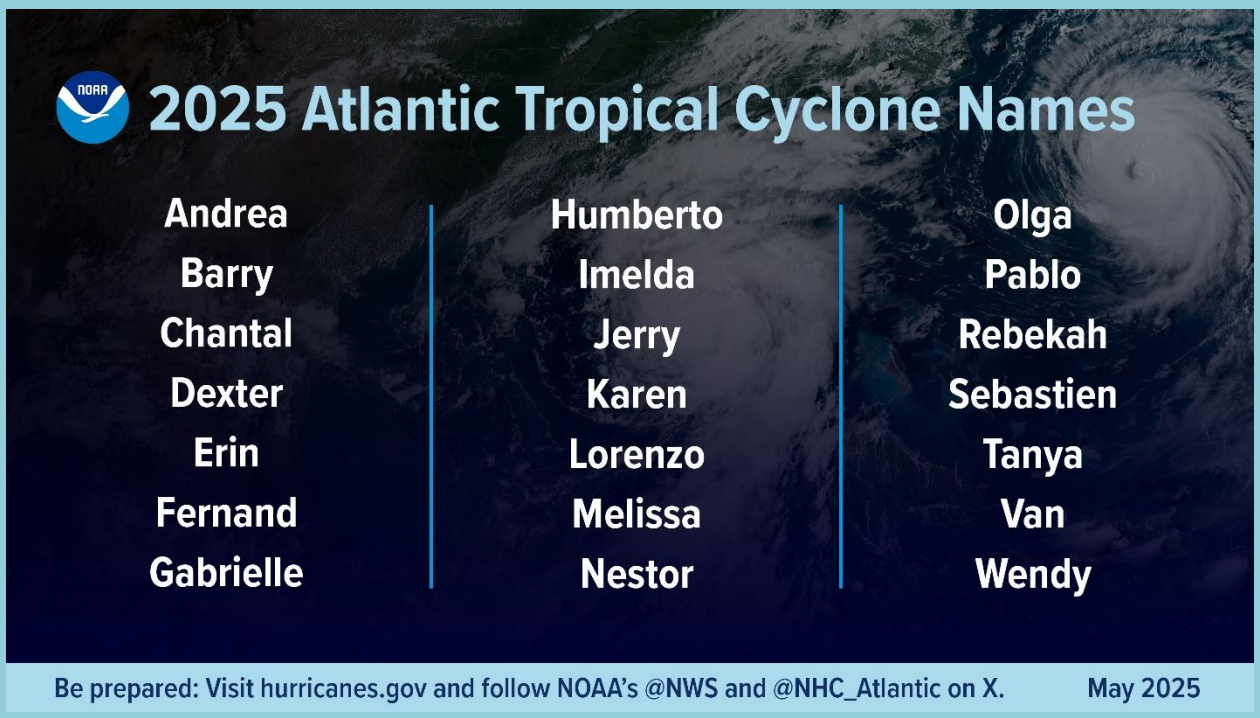


Figure 2. *The World Meteorological Organization's alphabetical list of named Atlantic basin storms for the 2025 season. (Courtesy of NOAA NWS)*

So far, there have been eight named Atlantic Basin storms. Of those, only two – Erin and Gabrielle – have become major hurricanes. Tropical Storm Chantal made the first US landfall of the season, bringing high winds and flooding to North and South Carolina over the Independence Day holiday weekend.

Weather Witticisms

What is a zombie's favorite type of weather? A brainstorm.

What do you call a weather joke with a bad punchline? An anti-climatic climactic joke.

What do you call a sunburned librarian? Well-red.

What do you call an alligator in a heatwave? A croc-pot.

NWS Blacksburg Provides On-Site Support at Seismic Metallica Concert

Amanda Sava, Meteorologist

According to Virginia Tech seismograph data, on May 7, 2025, Lane Stadium at Virginia Tech was literally rocking as Metallica's "Enter Sandman" dominated the stadium speakers. It has been the Hokies entrance song since August 2000, when Lane Stadium installed the new videoboard, and the song was selected in a student-body vote. However, this wasn't the recorded version that typically plays while the team charges onto the football field in one of the most recognized entrances in college football. For the first time ever, it was Metallica themselves performing live during their M72 World Tour from the 50-yard line to a sold-out stadium crowd of nearly 85,000 people.

Metallica performs in Lane Stadium, Blacksburg, Virginia. (Courtesy of Robert Stonefield, NWS Blacksburg Meteorologist)

The music and stadium crowds shook the campus, with activity registering on the Virginia Tech Department of Geosciences seismograph during this once-in-a-lifetime show (Figure 1). WFO Blacksburg Lead Meteorologist, **Ben Gruver**, and Senior Service Hydrologist, **Nick Fillo**, provided on-site decision support for Virginia Tech Emergency Management (VT-EM) and the Virginia Department of Emergency Management (VDEM) at the VT Emergency Operations Center (EOC), less than a quarter mile from the stadium.

The office's on-site support lasted from the moment the gates opened at 1:00 PM, to when the last attendees exited the stadium and campus, around 1:00 AM. Weather support included daily email briefings starting the weekend before, as crews began to set up the stage in Lane Stadium. The forecast included afternoon showers and thunderstorms almost every day from Saturday through Tuesday and the later part of the week. Luckily, the concert itself was on Wednesday, the "down" day between two impactful weather systems.

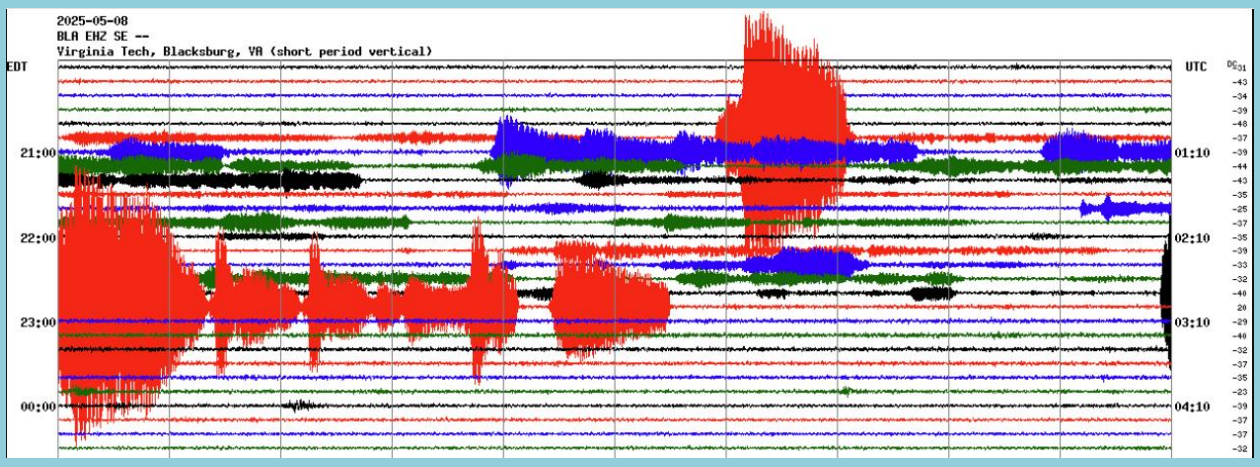


Figure 1: *Seismograph data from the show on Wednesday May 7, 2025. The red signature on the left that stretches to about the center of the image was recorded during the performance of "Enter Sandman." (Courtesy of Virginia Tech Department of Geosciences)*

VT and VDEM feedback for WFO Blacksburg's role was more than positive, lauding the critical and necessary support it provided for the university's musical event of the century so far. For example, VDEM Disaster Response and Recovery Officer, Jonathan Simmons, reported:

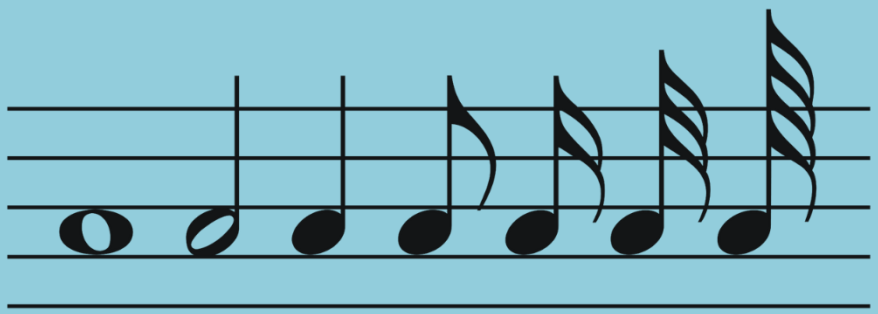
"[WFO] Blacksburg presence in the EOC at Virginia Tech was a vital tool for the public safety support of this event. Anytime there is a large outdoor venue of this magnitude, weather and the related impacts are always a concern. Thanks to the well-established relationship between all parties involved, the in-person NWS staff would have been able to provide real-time forecast[s] and situation updates to key decision makers for the safety of the crowd, performers and supporting staff. Thankfully the evening was a total success, but we were ready for anything with the right partners."

It wasn't just EOC officials who had nice things to say about WFO Blacksburg's performance during the Metallica concert. By coincidence, the NWS Director's Official Photographer and Videographer, Robert Hyatt, was attending the event while in the area for his daughter's college graduation. Through the roaring of Metallica's set, he could almost feel the NWS keeping watch:

"In all honesty, the weather was pretty much perfect. But having the luxury of being a part of the NWS myself and capturing images and videos of the work we do for weather events and disasters, I knew the local WFO was there and ready to help keep us safe. They were the reason I could be present and enjoy the concert…other than the fact that the concert was totally epic!"

The NWS Blacksburg desk in the VT Emergency Operations Center, located less than a quarter mile away from Lane Stadium, where the concert was taking place. (Courtesy of Ben Gruver, NWS Blacksburg Lead Meteorologist)

Meteorologist Ben Gruver summarized the experience, stating, *"I thoroughly enjoyed working with [VT-EM and VDEM] to provide support for the concert. Fortunately, the weather was benign, and it was an uneventful day in the weather department."* WFO Blacksburg looks forward to more IDSS opportunities with VT-EM, VDEM, and our other Core Partners across the forecast area, to further protect the lives of the community we serve and in which we live.



What's New in Our Office: A Fond Farewell

Patricia Douglass, an Administrative Support Assistant who served at the WFOs in Binghamton and Blacksburg, concluded her over 40-year federal career on February 28, 2025. Her career began at NASA's Langley Research Center in Hampton, VA, where she was a Co-op Student through Thomas Nelson Junior College. During her ten years there, she worked in two research branches (aeronautical and electronics), the Director's and Chief Scientist's Offices, and, what was at that time, the newly created Office of Education. After her time at NASA, she was employed at the Bureau of Mines' Helium Operations Plant in Amarillo, TX, before accepting an administrative position with the Department of Energy's Pantex Plant in the Area Counsel's Office. She then accepted a position with the Environmental Protection Team, where she worked with Natural Resources, National Environmental Protection Act documents, and a Memorandum of Agreement with Texas Tech University.

In 2001, Patricia and her family relocated to upstate New York, where she handled government contracts as a Procurement Technician with the Department of Defense. She joined the National Weather Service as the Administrative Support Assistant for WFO Binghamton in 2007. After seven years, she transferred to WFO Blacksburg in September 2014, where she remained until her retirement.

Patricia was in the first graduating class of the Eastern Region Leadership Program (ERLDP - now known as CLASS) and received the National Isaac Cline Award for Support Services in 2010 and 2016. Her skills, talents, and willingness to assist were known far and wide throughout the National Weather Service. She was regarded as a Subject Matter Expert and often called upon for guidance and assistance at both the local and regional level. She led a team to develop and update the Eastern Region Smart Book since its inception in 2010 (as part of her ERLDP assignment). Now that she has retired, Patricia is looking forward to spending more time with family, traveling, reconnecting with old friends, and embracing new adventures.

Congratulations on your outstanding career with the federal government and well-deserved retirement. We will miss you!

Kidz Korner

When you and your family and friends spend time outdoors, it's important that you be aware of the ever-changing weather. Playing sports, hiking, boating, bicycling, and swimming, among other activities, are impacted by the elements. It is necessary to watch out for lightning, as it can turn an enjoyable activity into a dangerous one.

Lightning originates in thunderstorms when there is a large electric charge difference between one part of a cloud and another part of the same cloud, a different cloud, the ground, or items on the ground. If this charge difference is great enough, lightning will occur. Lightning is similar, but on a much larger scale, to the shock you might receive from touching a doorknob or other metal object during the wintertime after wearing your slippers and scuffing through carpeting. If you are outside when lightning occurs, seek shelter inside a non-convertible vehicle or enclosed structure. If you are playing in a sporting event, an adult should monitor the weather for lightning and notify everyone there (players, coaches, and spectators) to seek shelter. You can play a role in public safety by notifying an adult if you observe lightning.

Once thirty minutes have passed since the last clap of thunder, you can consider resuming the outdoor activity. However, someone should monitor for additional approaching storms. There are apps from private weather vendors designed to notify users about lightning and other hazardous conditions, such as warnings and watches from the National Weather Service. So, enjoy your outdoor activities, but remember to seek shelter during thunderstorms. When thunder roars, go indoors! See a flash, dash inside! For additional safety information regarding lightning and outdoor activities, you can visit here.

The Oak

Alfred Lord Tennyson

Live thy Life,
Young and old,
Like yon oak,
Bright in spring,
Living gold;

Summer-rich
Then; and then
Autumn-changed
Soberer-hued
Gold again.

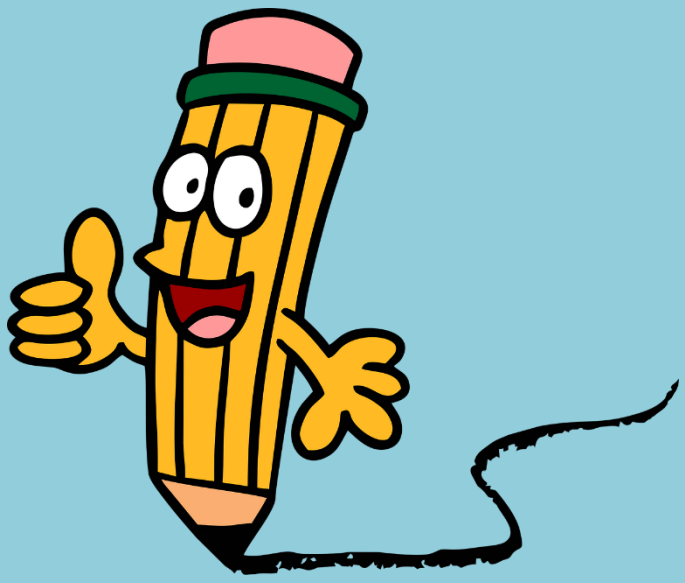
All his leaves
Fall'n at length,
Look, he stands,
Trunk and bough
Naked strength.

Feeling creative? Would you like to see your art or writings included in the next edition of Blue Ridge Barometer? If you are between the ages of 3 and 17, we would love to see your hand-drawn artwork, short poems, or short stories about the weather. Our meteorologists will review the submissions and select a few to include in the newsletter. Maybe yours will be one of them!

To submit your original drawing, poem, or story, scan your artwork or writing into a .jpg computer image file (with the help of an adult, if needed). You can also write your poem or story using Word and save it as a .doc or .docx file. Please keep any written material to 500 words or less. Artwork may also be completed using drawing or painting software, submitted as a .jpg file.

When submitting your drawing, poem, or story, please include your first name and first initial of your last name, age, and the city/town where you live. All entries should be submitted no later than November 1, 2025. Please email your entries here.

We look forward to hearing from you!

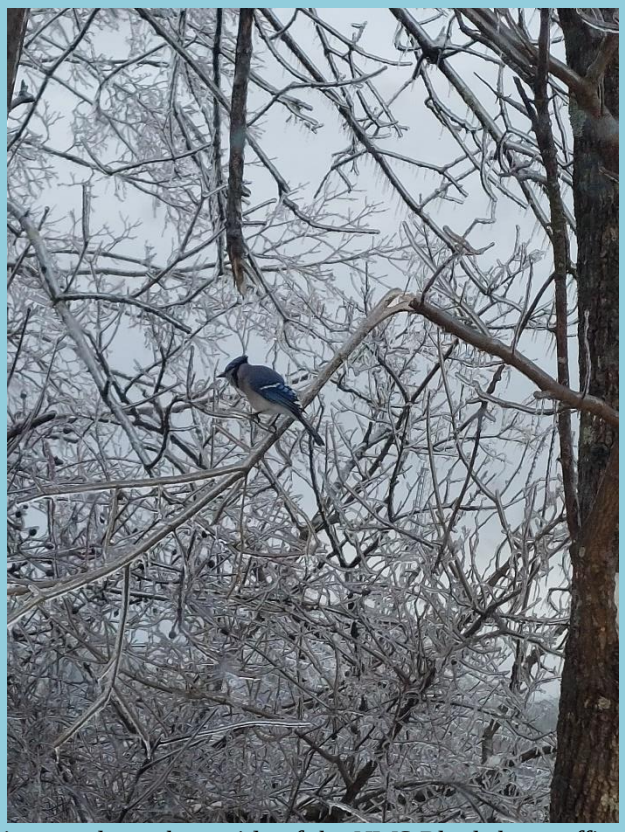


From Piedmont to Mountaintop

In this edition, we have images that our office's forecasters have captured from around the area. The first is a picture of a shelf cloud near the Food Lion parking lot on Franklin Street in Christiansburg, Virginia. The other pictures were taken at our office in Blacksburg and in Floyd County during the winter storm that brought a mix of snow, sleet, and freezing rain to the area in mid-February.

Shelf cloud near Food Lion on Franklin Street in Christiansburg, Virginia in October 2024.

National Weather Service office, Blacksburg, Virginia, after the February 2025 winter storm.



Blue jay on an icy tree branch outside of the NWS Blacksburg office, February 2025.

Snowfall in Floyd County, Virginia – February 2025

Do you enjoy taking weather pictures in your neighborhood? If so, we would really enjoy seeing them! We invite you to take some weather-related photos and share them with us. Please include with your photos your first name, the first initial of your last name, and where and when you took the picture. We will include your photos in upcoming newsletters and credit them appropriately. Also, by submitting a picture, you agree that we can use it on one of our social media platforms (Facebook and X) or in our local community outreach presentations (for example, a SKYWARN class). Photos used in these forums will also be credited appropriately.

Stay Safe & Stay Involved!

The upcoming fall and winter seasons will bring not only colder temperatures, but a wide range of potential weather hazards, including flooding, lightning, snow, and ice. Check out the NWS Weather Safety page for information on all types of weather hazards. We would love to hear how much snow and ice you receive in YOUR area! Please review our Guide to Measuring Snow and Sleet and scroll down the page to report your totals. If you are interested in helping the NWS with storm spotting and verification, please consider participating in the SKYWARN program. Additionally, the NWS can always use new rain and snow observers for the CoCoRaHS network, especially in West Virginia!

To keep up to date on what's happening in our office in between newsletters, please visit our website: https://www.weather.gov/rnk or follow us on X and Facebook.

For questions or comments about this newsletter, please contact the editor or via snail mail at:

Blue Ridge Barometer

National Weather Service

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