



FAMOUSLY HOT

# FORECASTS



## Spring/Summer 2022

## A January to Remember

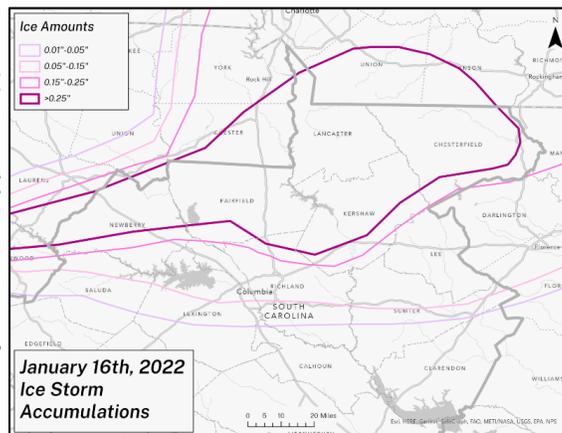
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by Pierce Larkin - Meteorologist

After quite the winter drought across the area, January of 2022 brought 3 separate impactful winter storms to the area for the first widespread winter events in central SC since 2014. The first event on 1/16 was the result of strong high pressure over the Mid-Atlantic which led to cold-air damming across the Carolinas, where shallow cold air is trapped in the low levels, a classic setup for freezing rain around here. Freezing rain is so dangerous because it is basically just freezing water on any surface below freezing at the surface. This leads to a layer of ice

encasing everything. Once this accumulates to  $>0.25"$ , trees and power lines really struggle with the weight on them. Precipitation began as rain in the central Midlands, and sleet in the northern Midlands. However, everyone north of I-20 saw at least some period of freezing rain, with several places seeing significant amounts accumulating. This led to plenty of power outages by Sunday afternoon, with over 100,000 without power in SC at the peak, and over 200,000 without power across the southeast.



**Afternoon Update: Winter Storm Warning Expanded West!**  
 Weather Forecast Office Columbia, SC  
 Richland, Lexington, Fairfield, and Sumter added to Warning  
 Issued Jan 21, 2022 3:53 PM EST

**...WINTER STORM WARNING IN EFFECT UNTIL 7 AM EST SATURDAY...**

- WHAT...** Heavy mixed precipitation. Snow accumulations of up to two inches and ice accumulations of up to one tenth of an inch.
- WHERE...** Fairfield, Chesterfield, Kershaw, Lee, Southern Lancaster, Lexington, Richland and Sumter Counties.
- WHEN...** Until 7 AM EST Saturday.
- IMPACTS...** Plan on slippery road conditions. The hazardous conditions could impact the morning or evening commute.

If you must travel, keep an extra flashlight, food, and water in your vehicle in case of an emergency.

NWSColumbia weather.gov/cae

Given that it had been nearly 8 years since our last widespread & significant winter weather, why not make it two winter storms within one week in 2022? Who would have thought! As the Ice Storm was winding down, our attention turned to another impactful winter storm only 5 days after the ice storm on 1/21. There was much more uncertainty with this event than the previous with the potential for sleet, snow or additional freezing rain. In the end, we ended up issuing a winter storm warning for the northeastern portion of the forecast area with a winter weather advisory elsewhere.

# January to Remember – Continued

This ended up working out and actually resulted in a record snow for the day at Columbia Metropolitan Airport! 2.0" fell, breaking the old record of 0.1" in 1983. To the northeast of Columbia, upwards of nearly 4" fell in parts of Chesterfield County. The snowstorm came at a perfect time, with all of the snow falling after rush hour, remaining overnight, and largely melting (at least in the Columbia and Lexington areas) by noon on Jan 22. It did result in a very pretty snow, though.

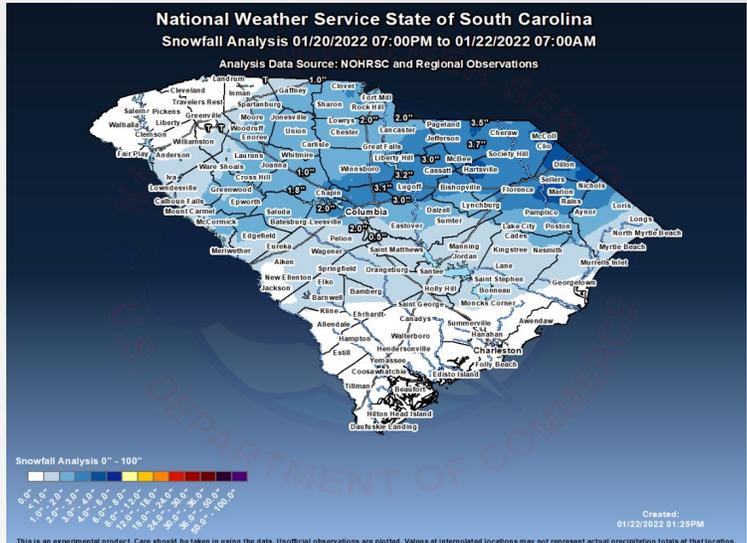
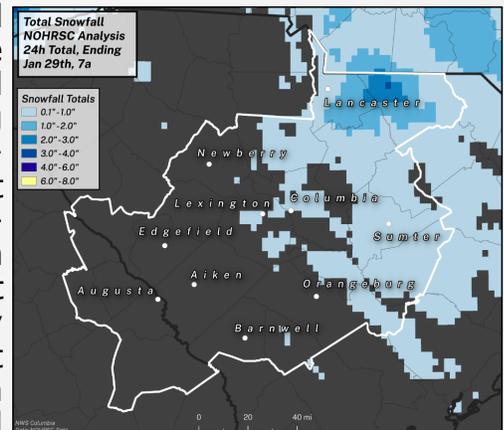


Photo: Chief Dennis Ray  
Lugoff, SC



Photo: NWS Employee

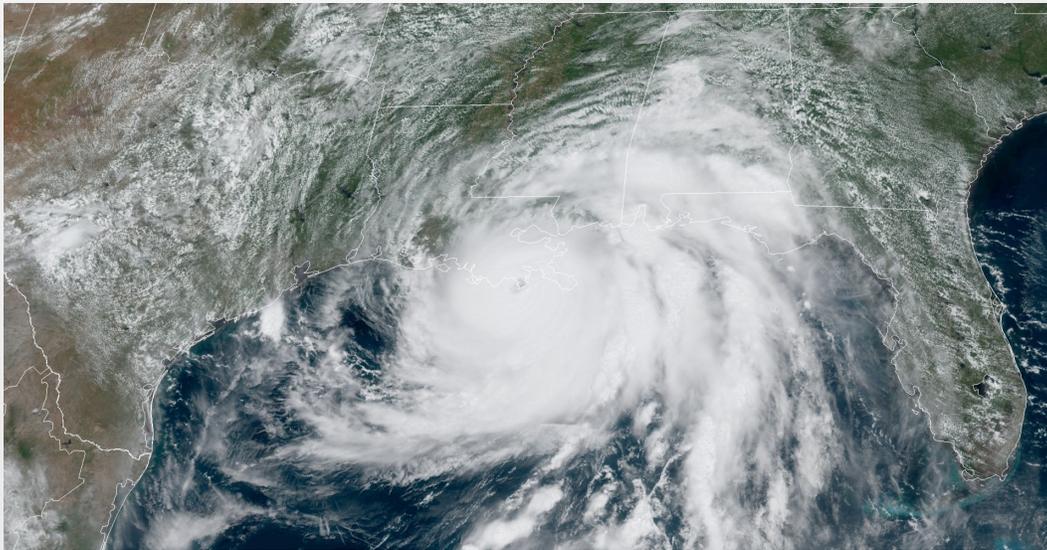
Finally, on January 28th a fast moving system pushed into the area and as temperatures cooled through the night, snow showers developed. This was a fairly well forecast event, with a Winter Weather Advisory being issued by the office a day ahead of time, and the snowfall forecast working out well. Much like our snow event the weekend before, this snow melted quickly and didn't really lead to any issues across the region. Even still, it is rare to get one snow event around here - let alone two within a 7 day timespan! This event really put us over the top in terms of an active winter. Not only did we have one winter storm, we had three in three weeks. This is very uncommon around here, and is one of the most active winter weather periods we have had in the last 10-15 years. January of 2022 will go down as one of the more active winter weather months we've seen, and surely be memorable to the residents of central SC and the CSRA of Georgia. We'd like to take a minute to thank all of our CO-OP observers and all who tweeted in or sent in reports! Your measurements are very valuable during and after the event. We'd also like to thank our state partners and neighboring NWS offices for smooth collaboration and work!



# Hurricane Ida Retired by the WMO

by Steve LaVoie - Meteorologist

The World Meteorological Organization (WMO) Hurricane Committee held their annual meeting at the end of April 2022. This group convenes to review the previous hurricane season including impacts to member nations and to determine if any tropical cyclones should have their names removed from the official list. Name lists are repeated every six years with the exception of tropical cyclones that produce a high amount of damage and/or loss of life which are retroactively “retired” by the WMO, never to be used again in the North Atlantic basin. A total of twenty-one named storms developed in the Atlantic in 2021, the third time that a name list was exhausted. Of these storms, only Ida was retired and will be replaced by Imani in 2027. A Category 4 Hurricane on the Saffir-Simpson Hurricane Wind Scale, Ida was the costliest and deadliest tropical cyclone of the year accounting for roughly 93% of the property damage and 55% of the fatalities last season.



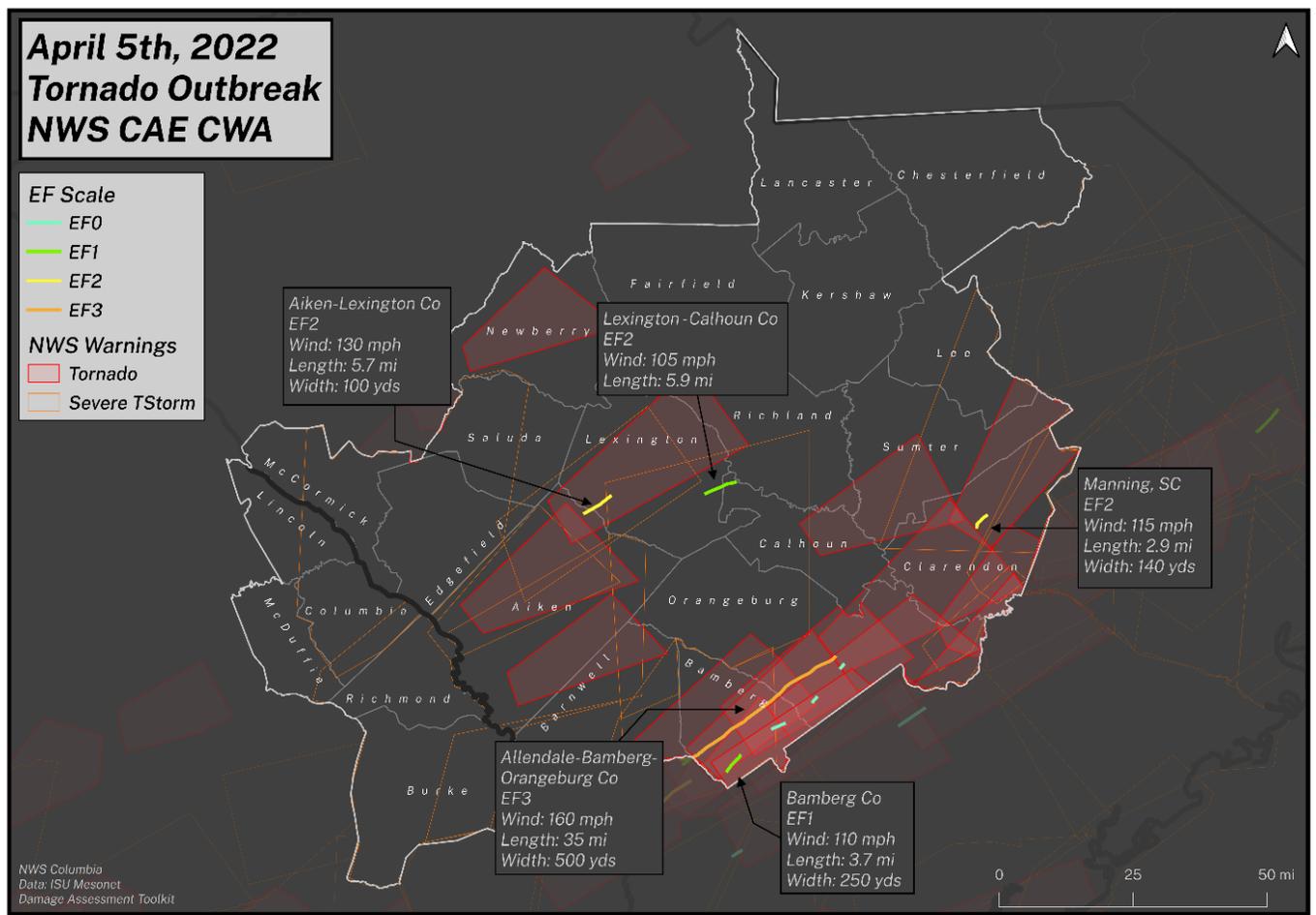
GOES 16 Satellite Image of Hurricane Ida at 12:01 PM CDT on August 29, 2021.

Looking ahead to this year, the National Hurricane Center will utilize a predetermined list of twenty-one storm names in 2022. An auxiliary list is also available should a twenty-second named storm develop by year's end. These names alternate between male and female and are typically from languages that represent the countries impacted by tropical cyclones in the North Atlantic. The 2022 list will reuse the one from 2016 with two new names: Martin and Owen which replaced Matthew and Otto respectively. Of these, Matthew had significant impacts in the Southeastern United States as the center passed just offshore producing prolific flooding in parts of the Carolinas. Hurricane Otto was a late season hurricane that caused devastation in parts of Central America. The 2022 list was first used in 1980 and contains three other unused names: Tobias (replaced Tomas starting in 2016), Virginie, and Walter. Of the twenty-one names that originally appeared on the 1980 list, only twelve of them remain in use today.

# April 5th Tornado Outbreak

by Pierce Larkin - Meteorologist

On April 5th, the most significant severe weather event in 2 years struck the NWS Columbia warning area, and was a widespread tornado outbreak across the southeast. In all, it brought 8 tornadoes to our warning area and 66 tornadoes overall across the southeast. This included 13 strong tornadoes (EF2+ in strength). The first storms to impact our area came out of Allendale County, which repeatedly produced supercells through the evening. This group of supercells produced 5 of our 8 tornadoes. As the evening progressed, a QLCS (a line of storms) pushed through the region and produced three different tornadoes before finally giving the region a break. The event itself took its origins over Louisiana and Mississippi early on April 5th. A shortwave trough emerged out of the ArkLaTex region, and forced a surface low to push through northern MS and Alabama and eventually into western NC. This shortwave helped to force an area of rain that initially pushed through the region during the late morning and early afternoon hours, and helped to keep things fairly stable at least initially. The environment quickly became primed after the initial bout of rain pushed through. Instability quickly advected into the region, and this was one of the primary uncertainties leading up to the event. With shortwave forcing and high-end wind shear, only 500 j/kg or more of MLCAPE was necessary. It certainly helped that much of that was contained in the lower levels of the atmosphere, favoring tornadoes if supercells could get going.



Summary of Warning and Tornado Tracks from April 5th, 2022

## April 5th Outbreak - Continued

Every supercell to impact our warning area originated in Allendale County, with the first of three major supercells producing an EF3 tornado in Charleston's warning area. This went on to produce 3 EF0 or EF1 tornadoes in our warning area. The second supercell scraped along the edge of our warning area, and didn't produce a tornado. The last of the supercells was the strongest, and produced a strong EF3 tornado that tracked from Allendale County through Bamberg and Orangeburg Counties. This was rated EF3 with peak winds estimated around 160 mph. The damage was most intense in a heavily forested area of southern Bamberg County, where 80-100% of trees in a softwood forest were snapped. Some young trees even had their pine needles stripped off, and had some debarking occur.



Young pine trees stripped of their bark and needles

Thankfully, no one was killed in our warning area from the tornadoes and only minor injuries occurred where there were some. This is a good opportunity to remind everyone to have a plan in place for tornadoes and severe weather!

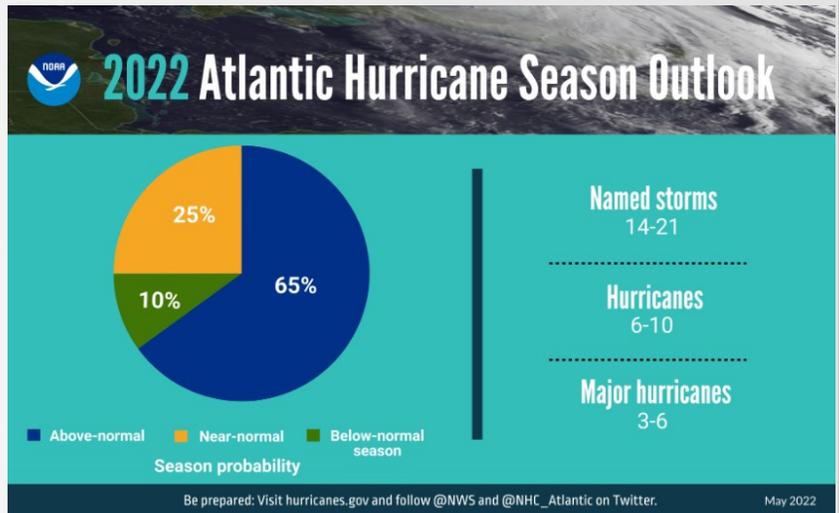


Total blowdown and loss of a pine forest in southern Bamberg County.  
Photo courtesy of SC Forestry Commission

# Tropical Outlook for 2022

by Chris Landolfi - Meteorologist

On May 24, NOAA's Climate Prediction Center released its Hurricane Outlook for the 2022 season. Forecasters predict a 65% chance of an above-normal season, a 25% chance of a near-normal season, and a 10% chance of a below-normal season. The increased activity anticipated this hurricane season is attributed to several climate factors, including the ongoing La Niña that is likely to persist throughout the hurricane season, warmer-than-average sea surface temperatures in the Atlantic Ocean and Caribbean Sea, weaker tropical Atlantic trade winds and an enhanced west African monsoon. An enhanced west African monsoon supports stronger African Easterly Waves, which seed many of the strongest and longest lived hurricanes during most seasons. All official tropical cyclone forecasts are made by the National Hurricane Center in Miami, FL ([hurricanes.gov](https://www.hurricanes.gov)). There is a wealth of information on their website, including tropical weather outlooks, forecasts, any watches/warnings, etc. NOAA will update the 2022 Hurricane Outlook in early August.



## Improved Products and Services for this Season

- To improve the understanding and prediction of how hurricanes intensify, NOAA's Atlantic Oceanographic and Meteorological Lab and Pacific Marine Environmental Lab will operate five Saildrone uncrewed surface vehicles during the peak of the 2022 hurricane season and coordinate for the first time with uncrewed ocean gliders, small aircraft drone systems, and NOAA Hurricane Hunter aircraft to measure the ocean, atmosphere and areas where they meet.
- The Excessive Rainfall Outlook (ERO) has been experimentally extended from three to five days of lead time, giving more notice of rainfall-related flash flooding risks from tropical storms and hurricanes. The ERO forecasts and maps the probability of intense rainfall that could lead to flash flooding within 25 miles of a given point.
- In June, NOAA will enhance an experimental graphic that depicts the Peak Storm Surge Forecast when storm surge watches or warnings are in effect. Upgrades include an updated disclaimer and color coding that illustrates the peak storm surge inundation forecast at the coast. This tool is currently only available in the Atlantic basin.



# Spring/Summer Weather Hazards

by Pierce Larkin - Meteorologist



Usually, the months of May through July feature our most interesting and brutal weather of the year. Temperatures warm to uncomfortable levels, thunderstorms are a daily threat, and our severe weather chances begin ramping up. There are many threats to be prepared for during the hottest portion of the year, and this article seeks to provide some tips to help be prepared!

Threats from thunderstorms usually are the first to ramp up during the summer time. Our severe weather reports typically begin to increase in frequency during the first week of May and continue to increase through early June, peaking, and then falling through mid-August. This owes to the gradual increase in daily thunderstorm coverage, and the occasional cold front that can still pass through or get hung up around our area in June. Usually, these are driven by wind and hail threats, as our tornado threat usually peaks in late winter and early spring.

As with any severe thunderstorm, you want to be sure you seek shelter inside your home and away from windows. This protects you in the case of a tree falling and hitting said window, or lightning striking a tree and causing damage that way! Lightning is another hazard we deal with in the summertime. Protecting yourself from it is similar to the steps you'd take during a severe thunderstorm. As long as it has been 30 minutes since the last time you heard thunder, you should be safe to return back to outdoor activities. Remember - When Thunder Roars, Go Indoors! As with any severe weather, feel free to send us hail or wind damage reports @NWSColumbia on Twitter or Facebook, but only after it is safe to do so!



Another threat that we face with summer time thunderstorms is flash flooding. It occurs when rain or thunderstorms pour a high amount of rain (usually 2-3" or more) over a short amount of time (such as 1-3 hours). Flash flooding is the second leading cause of weather-related deaths in the US, and is almost always preventable! Flash flooding will cause creeks or streams to rise well above their normal pool and flood over roads. This includes regularly flood prone locations, exacerbating issues in those locations. The easiest way to protect yourself: TURN AROUND DON'T DROWN! Over half of flash flooding deaths are vehicle-related. It only takes 18-24" of water to sweep a vehicle away. If you come across a flooded roadway, always remember to Turn Around Don't Drown, and you will ensure your safety.

# Weather Hazards—Continued

Heat is the other significant weather threat we face during the summer time. Central South Carolina and east-central Georgia regularly see temperatures in the upper 90s during the summer months, with oppressive humidity to boot. It can feel unbearable at times! To ensure you are as safe as possible in the heat, follow these tips:

- Take frequent breaks if you have outdoor activities
- Stay hydrated! Dehydration can lead to heat exhaustion or heat stroke.
- Pay attention to the signs of Heat exhaustion/stroke.
- Always check the backseat for children or pets before you exit your car. A car can become too hot for a child in as little as 10 minutes!
- Wear sunscreen or protective clothing on days with high Ultraviolet (UV) exposure to protect against skin damage.

Heat is the leading cause of weather-related fatalities in the United States, and many can be prevented by following these steps and paying attention to warning signs.

HEAT EXHAUSTION	OR	HEAT STROKE
Faint or dizzy		Throbbing headache
Excessive sweating		No sweating
Cool, pale, clammy skin		Body temperature above 103° Red, hot, dry skin
Nausea or vomiting		Nausea or vomiting
Rapid, weak pulse		Rapid, strong pulse
Muscle cramps		May lose consciousness
<ul style="list-style-type: none"> <li>• Get to a cooler, air conditioned place</li> <li>• Drink water if fully conscious</li> <li>• Take a cool shower or use cold compresses</li> </ul>		<p style="font-size: 2em; font-weight: bold; color: white;">CALL 9-1-1</p> <ul style="list-style-type: none"> <li>• Take immediate action to cool the person until help arrives</li> </ul>
<a href="https://www.weather.gov/socialmedia">Weather.gov/socialmedia</a> <a href="https://www.weather.gov/heat">Weather.gov/heat</a>		<a href="https://twitter.com/SacramentoOES">@SacramentoOES</a> <a href="https://www.sacramento-ready.org">SacramentoReady.org</a>

# COOP Corner

by Doug Anderson - Observation Program Leader

## \*NEWS FLASH\*

We are looking for volunteers in or near the following communities: **(SC) Bishopville, Blackville, Branchville, Camden, Eutawville, Kershaw, Lancaster, Pageland, Patrick, McBee, Rimini/Santee, Jackson, Springfield, St. Matthews and Wedgefield. In Georgia, Hepzibah.**

## Cooperative Weather Stations Serve Our Nation

The Cooperative Weather Observing Program's roots can be traced back to 1797 when Thomas Jefferson envisioned a nationwide network of weather observers. The program itself was created in 1890 under the Organic Act passed by Congress. Its mission is two-fold:

- To provide climatological records, usually consisting of daily high and low temperatures, snowfall and precipitation totals. This data is essential to defining U.S. Climate and measure long-term climate trends.
- To supply observational meteorological data in near real-time to support forecast, warning and other public service programs (drought, agricultural, fire weather, etc.) programs of the NWS.

Cooperative stations (COOP) are locations at which volunteers take daily weather observations using NWS-supplied equipment, filling in gaps between other types of observing stations such as airports, mesonets, etc. The equipment meets NWS standards and is installed in accordance with strict guidelines to ensure accuracy and uniformity. About 10,000 volunteers around the country from all walks of life provide this valuable service. We are always looking for new observers to join the NWS CAE team and are willing to take observations over many years to come. Contact Doug Anderson, [douglas.anderson@noaa.gov](mailto:douglas.anderson@noaa.gov) for more information. On the web: <https://www.weather.gov/coop/>



# COOP Corner - Continued

## WELCOME TO OUR 2 NEW COOPERATIVE OBSERVING STATIONS!

We are very excited to have 2 new COOP stations join our team! Both groups of observers are filling critical gaps in our network in Lexington and Newberry Counties.

Saluda River Resort, near Silverstreet, SC is located on the Saluda River, and will give us temperature, rainfall, snowfall and in the future river stage data every day. This area is critical for drought and flooding forecasts along with hydrological programs here at NWS Columbia.



Many thanks to Kayla Bennett and the Saluda River Resort Staff for joining our team!

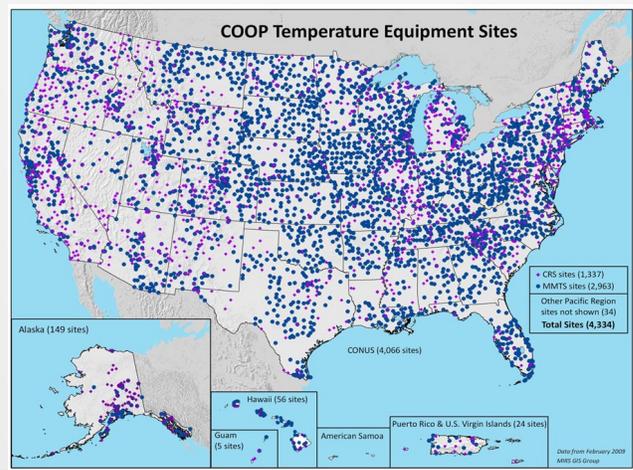


Our next new station is near Chapin, and in an area that experiences areal flooding during heavy rains. The Meetze Family will be providing us with important weather data from their location. Thanks to Alison, Travis and Andrew for joining our team!



## HOW CAN YOU HELP?

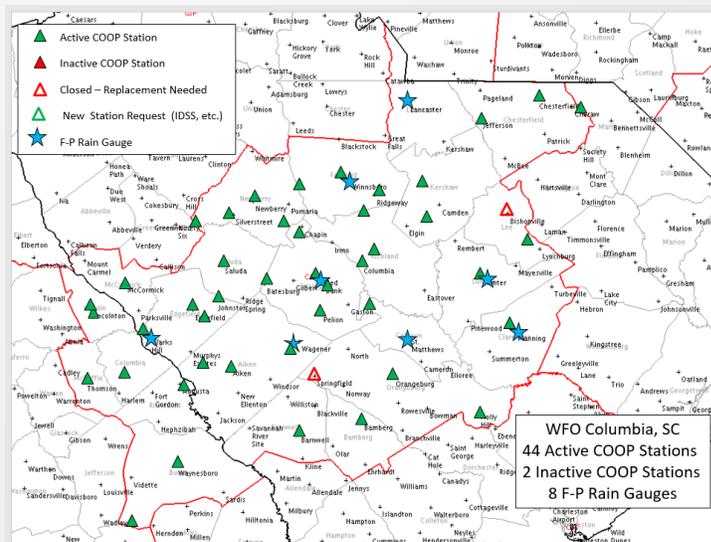
We are always in need of high-quality weather data, along with timely reports of significant weather. COOP observers help to fill in large gaps between stations in our automated network. These stations are most commonly known as ASOS (Automated Surface Observing Stations). They are intended to support primarily aviation operations. In order to get a more complete picture of what's happening every day (very important for hydrology and climate), our volunteer COOP observers really help to fill in the gaps!



## COOP Corner - Continued

So who are ideal COOP weather observers? Many have a lifelong interest in watching the weather. All are motivated to help support their community and contribute to the art and science of weather, water and climate science. If you're interested in weather and are willing to contribute a few minutes a day for at least several years at the same location helping us with our mission of protecting life and property...we have a place for you!

Currently, there are 44 active COOP Observing Stations across the CSRA and Midlands. There is a mixture of volunteers observing from their homes, and stations observing at institutions such as Fire Stations, Water Plants and County Emergency Operations Centers. As you can see, we have some pretty large gaps on our map. We're especially hoping to find volunteers for closed stations in Bishopville and Springfield, SC. Springfield started taking observations back in 1947, stopping in 2016, and Bishopville began in 1933, stopping in 2018. Regardless, our goal is to have at least 50 stations or more by the end of the year!



The process is simple. If you are interested in joining the COOP observer team, contact Doug at [douglas.anderson@noaa.gov](mailto:douglas.anderson@noaa.gov). One of our staff will meet with you to see if our equipment can be installed. Then we wait for approval. If a new station is approved, we will install temperature, rainfall and snowfall measuring equipment and train you to take daily weather observations.

Not all proposed stations are approved, especially if they are too close to another station BUT virtually everyone who applies joins our team. If you aren't interested in becoming a CCOP observer but still want to contribute, consider becoming a SKYWARN Storm Spotter, CoCoRaHS observer, or downloading the mPING app to send in critical weather data! Here are some links for more information:

[www.weather.gov/coop](http://www.weather.gov/coop)

[www.weather.gov/cae/skywarn.html](http://www.weather.gov/cae/skywarn.html)

[www.cocorahs.org](http://www.cocorahs.org)

<https://mping.nssl.noaa.gov/>

**NEXT ISSUE: WE REMEMBER ONE OF OUR OWN, AND A PICTURE TOUR AROUND OUR COOP PROGRAM**

# Weather-Ready Nation Ambassadors

by Chris Landolfi - Meteorologist

One of NOAA's missions is to save life and property by providing critical environmental intelligence, including weather forecasts and warnings, to our partners and the general public. NOAA wants everyone, from communities across the country, businesses, and the public at large to be ready, responsive, and resilient to extreme weather, water, and climate events. Weather-Ready Nation Ambassadors (WRN Ambassadors) are formally recognized by NOAA as organizations committed to collaborating with NOAA, sharing preparedness messaging in outreach to the public, and serving as examples themselves by implementing resilience best practices.



## Expectations

Weather-Ready Nation Ambassadors will promote awareness of and preparedness for hazardous weather within your organization and/or community. Periodic emails from NOAA will be sent to WRN Ambassadors to provide information such as links to newly posted outreach material on relevant hazards, as well as updates on experimental or newly operational NOAA products, services, or data.

## Who Can Become a WRN Ambassador?

- Any organization across all levels of government
- Businesses large and small
- TV, Radio, and Print media
- Non-profit and non-governmental organizations
- Churches
- Home Owner Associations
- Academia

## 2021 WRN Ambassador of Excellence

Our 2021 Weather-Ready Nation Ambassador is:

**Columbia County Emergency Management Agency**



In addition to their role in sharing vital weather information as a core partner, the Columbia County Emergency Management Agency is proactive in promoting weather safety and preparedness within Columbia County, GA. They organized a Public Safety and Preparedness Fair, which featured agencies responsible for preparedness and response at the county, state, and federal level, including the National Weather Service, with interactive and fun activities for families. Additionally, they have distributed about 125 NOAA Weather Radios to citizens, host multiple Pack a Bag/Ready Kit classes that highlight recommended items if there is a need to evacuate and/or shelter in place, promote National Safety Campaigns, and are working to implement a stream gauge plan for areas prone to flooding.

# Our Weather-Ready Nation Ambassadors!

- 28th Operational Weather Squadron Shaw AFB
- Aiken County Emergency Management Division
- Aiken Regional Medical Centers
- Augusta-Richmond County EMA
- Augusta Mall
- Augusta University
- Bamberg County Emergency Services
- Barnwell County Emergency Management
- Buford Fire & Rescue
- Burke County EMA
- Calhoun County Emergency Management Agency
- Carolinas Integrated Sciences & Assessments (CISA)
- Challenger Learning Center of Richland District One
- Chris Wolfe SC Weather
- City of Columbia Police Department
- City of Sumter
- Clarendon County Emergency Management
- Columbia County Emergency Management Agency
- Columbia International University
- Columbia Metropolitan Airport
- Columbiana Centre Mall
- CSRA East Central District Amateur Radio Emergency Service
- CSRA Weather
- District Five of Lexington and Richland Counties
- Dominion Energy SC
- Edgefield County EMA
- Fairfield County Emergency Management
- GA Dept. of Public Health - East Central Health District
- Gold Cross EMS
- Kershaw County Amateur Radio Club, Inc.
- Kershaw County Emergency Management
- Lady Starr Radio
- Lancaster County Emergency Management
- Lee County Emergency Management
- Lexington County Emergency Management Division
- Livingston Insurance
- McCormick County Emergency Services
- McDuffie County Fire Rescue Service
- Michelin Tire North America - Lexington, SC
- @Midlands\_Wx
- Montmorenci Volunteer FD
- Newberry County Emergency Services Alliance
- Orangeburg County Emergency Services
- Orangeburg County Fire District
- Palmetto Chapter - American Meteorological Society
- Pantagraph.online
- Pee Dee Ice & Fuel, Inc.
- Reach Out Security Services
- Richland County Emergency Services
- Richland Library
- Right at Home Columbia, SC
- Robert Bryant & Son, Inc.
- SC Department of Transportation - Emergency Management
- SC Department of Transportation - Traffic Management
- SC State Fire
- Simply Flood LLC
- South Carolina Emergency Management Division
- South Carolina Farm Bureau Insurance
- South Carolina State Climatology Office
- The Times and Democrat
- University of South Carolina Emergency Management
- USGS South Atlantic Water Science Center
- US Postal Service (National Preparedness)
- Wagener Fire Department
- WAGT (Augusta, GA)
- Wilbur's Last Ride
- WFXG FOX 54 NEWS NOW (Augusta, GA)
- WIS-TV (Columbia, SC)
- WJBF-TV (Augusta, GA)
- WLTX-TV (Columbia, SC)

For more info on the Weather-Ready Nation ambassadors and how to apply, go to: [weather.gov/cae/wrn](https://weather.gov/cae/wrn)

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Columbia Weather Forecast Office  
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(803) 822-8135**

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**Is there a topic you'd  
in the next edition?**



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