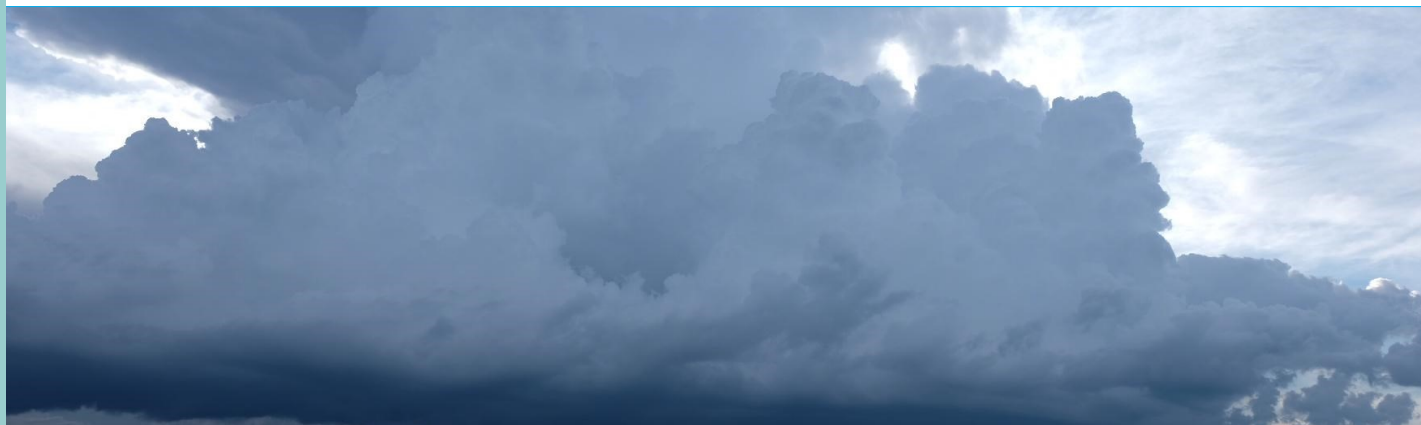


THE WEDGE FRONT

NATIONAL WEATHER SERVICE GREENVILLE-SPARTANBURG SC



Volume 4, Issue 1

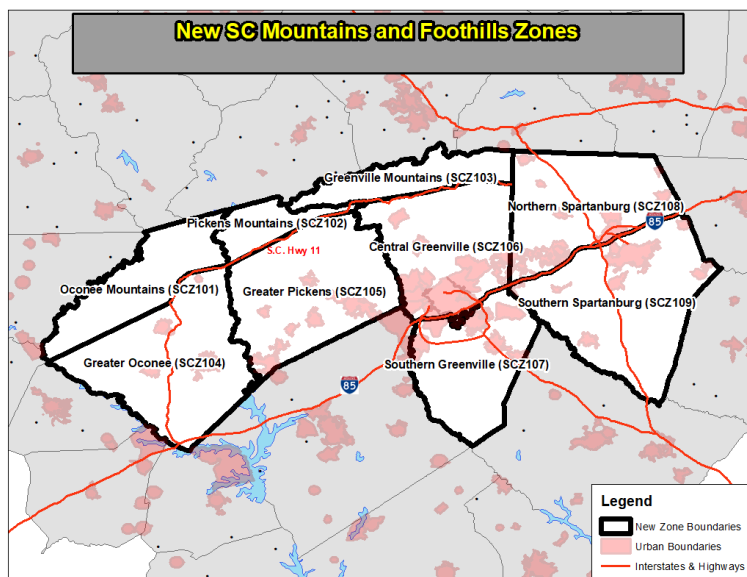
Summer

New Upstate Zones

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On April 5, our office introduced new “zone splits” for our several of our Upstate counties. These changes are intended to provide increased flexibility and improved accuracy of forecasts and various watches, warnings, and advisories in our public and fire weather programs. A map showing the location of these splits is located below:



New Upstate zones for Oconee, Pickens, Greenville, and Spartanburg Counties implemented on April 5, 2022.

So what is a “zone split” anyway? NWS offices have the option to split counties for issuing what we call “zone-based” products (for example, Winter Storm Warnings) based on geography, topography, or any other element necessary. Many of our mountain counties have been split based on elevation since our office was first spun up in the 1990s; we know that we often see snow at higher elevations and rain at lower elevations, and splitting these zones gives us the option to issue a Winter Storm Warning for those higher elevations and maybe just a Winter Weather Advisory (or nothing!) at the lower elevations.

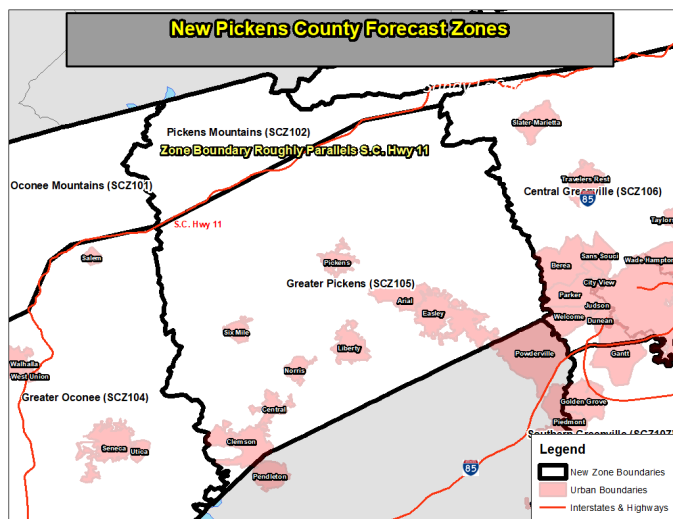
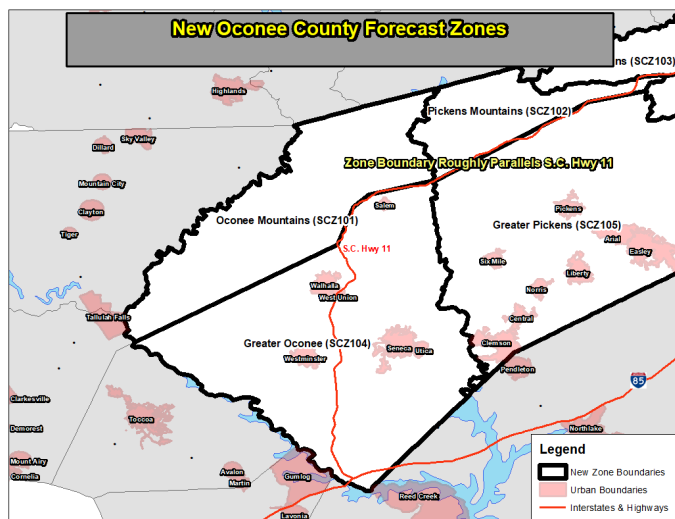
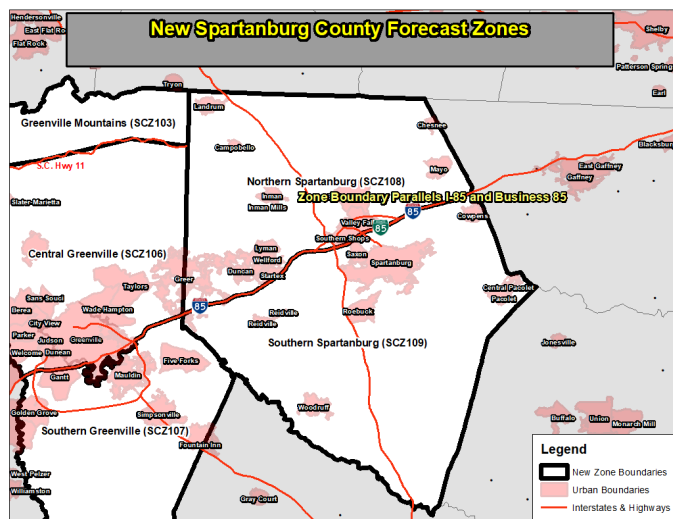
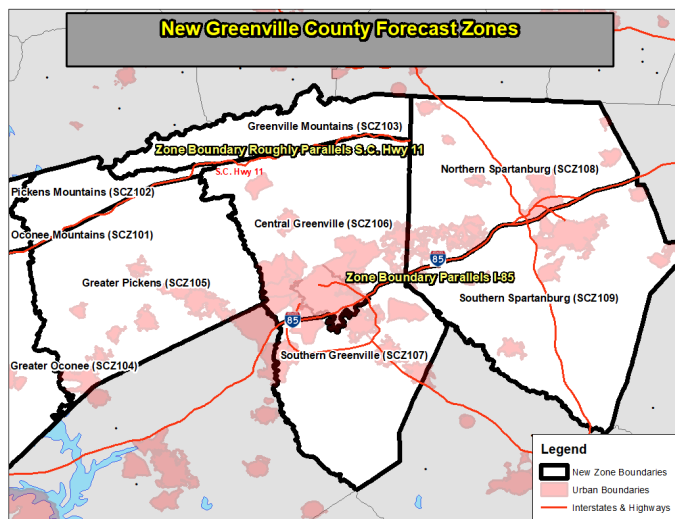
For the Upstate Zone splits, the first order of business was to fix a long-standing issue with the location of the Oconee, Pickens, and Greenville Mountain zones, which were originally drawn too far south. We moved these zones farther north to line up roughly with Highway 11 in northern Greenville and Pickens Counties, and where Highway 11 veers south in Pickens and Oconee Counties, the zone boundary follows approximately the 1500ft elevation line. This should significantly enhance services especially in the winter by eliminating unnecessary elevation-based winter products in non-mountain areas.

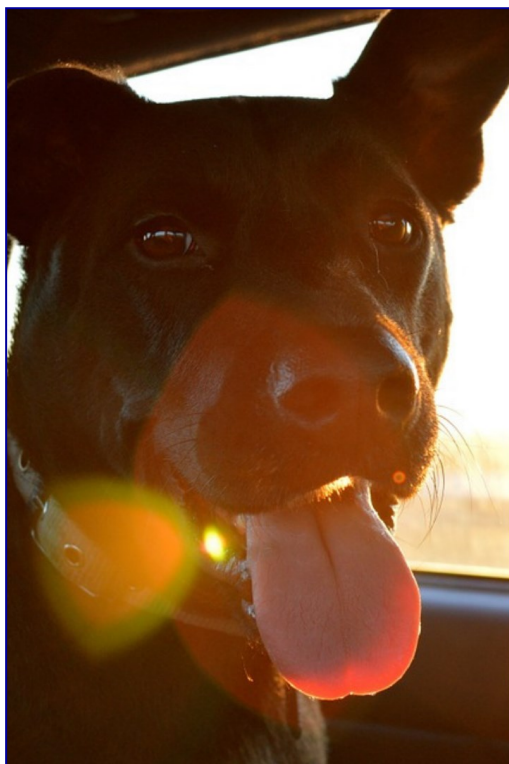
Continued on Page 2

The other part of this change was introducing a new zone split for Greenville and Spartanburg Counties. We all know that these are tall counties and weather impacts can vary greatly across a distance that large. At a meeting in the spring of 2021 with the seven Spartanburg school districts discussing severe weather safety, Warning Coordination Meteorologist Trisha Palmer fielded a question that could be roughly paraphrased as “Is there any way you could not issue a Winter Storm Warning for the whole county if you’re expecting snow in Landrum but only a cold rain in Woodruff?” This spurred conversation amongst our staff on how to fix this service problem, and we asked for a meeting with Greenville and Spartanburg Emergency Management as well as the Spartanburg school districts to discuss the issue. We reached a consensus and submitted a proposal to NWS Headquarters to introduce a new split across Greenville and Spartanburg Counties along roughly I-85, with minor adjustments.

Britt McKinney, Director of State and Federal Programs for Spartanburg District Four, offered this input: “The Greenville Spartanburg Zone Split is beneficial for District Four because we are at the southern most part of the county where temperatures rise more quickly than in the areas in the northern part of the county near the mountains. This rise in temperatures allows the Woodruff area to see icy conditions diminish before the northern part of the county. Many instances have occurred when our district had to stay out of school because of conditions in the northern part of the county. Having the split allows us to decide based on our area and the roads within our district. While we are in the same county, there is a vast difference in the weather conditions above and below the 85 corridor. We are thankful to have this split zone, and we think it benefits the students, parents, and our community in decision making where weather is concerned.”

Clearly, this will allow for more location-specific watches, warnings, and advisories, and by decreasing the area included in these products for hazardous weather events, unnecessary closures of schools and businesses should be reduced in the appropriate circumstances. For more detailed graphics as well as a list of products impacted, please visit: www.weather.gov/gsp/newGSPZones.





PET HEAT SAFETY

SAVE A PET'S LIFE IN A HOT CAR

Animals can die of heatstroke within 15 minutes.

Cracking the windows does not help, the inside still gets dangerously hot.

During hot weather, keep your pets at home.

If you see a pet in an unattended vehicle, do not leave until the problem has been resolved!



weather.gov/heat

Last year **twenty three** children died in hot vehicles. So far in 2022, two deaths have been reported. Heat is one of the leading and underestimated weather-related killers in the United States. During the hot summer months, it's extremely important to **NEVER** leave children, the elderly or disabled, or pets in the car. Unfortunately, children like to play in cars as well and can accidentally lock themselves in the car, as well. Be sure to know where they are at all times!

For more information on Heat Safety, visit www.weather.gov/safety/heat

Heat Related Deaths **ARE** Preventable

LOOK BEFORE YOU LOCK

weather.gov/heat

nhtsa.gov

The temperature in your car can quickly become deadly!

Outside Temperature 80°



New Plain Language Headlines Coming in 2024

Have you ever been confused about what an “Advisory” is? Or a “Special Weather Statement”? If you have, you’re not alone, and National Weather Service Headquarters has decided it’s time to do something about that confusion.

As part of the Hazard Simplification process, which we have been slowly implementing for the past few years to eliminate and reduce redundant products, the NWS will be eliminating the terms “Advisory” and “Special Weather Statement” from our product suite in 2024.

To be 100% clear up front: Watches and Warnings will stay the same! Research has shown that overwhelmingly, people understand what a Watch means (be prepared!), and what a Warning means (take action now to protect life and property!).

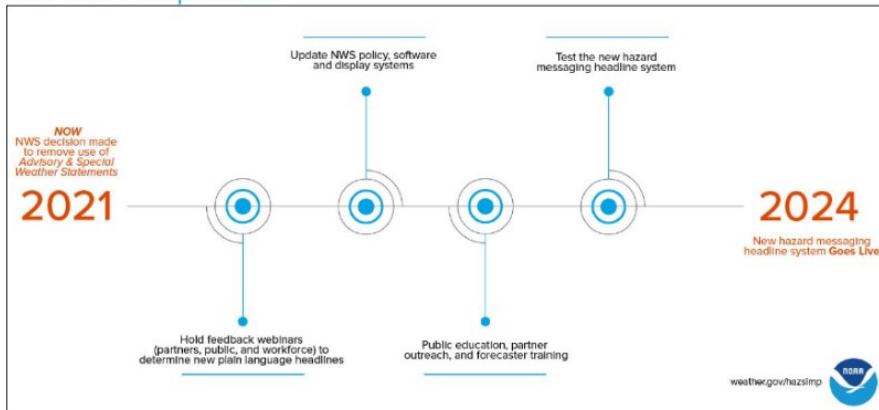
But, the terms “Advisory” and “Special Weather Statement” aren’t quite as clear: **these are “nuisance” events that don’t rise to the level of urgency of a warning.** An Advisory is less serious than a Warning, and a Special Weather Statement is usually less serious (and of shorter duration) than an Advisory. We want to be clear to the public and partners that there is a definite distinction between the impacts of these lower-end events to the Warning events. Recently, societal response to Warning events versus Advisory and even Special Weather Statement events, especially in the winter, seem to have been blurred more and more, which dilutes the point of having separate products for events that are *threats to life and property* (Warnings) versus *those that are not* (Advisories and Special Weather Statements). Perhaps by converting to a plain language headline, the impacts for these “nuisance” events that don’t rise to the urgency of a Warning level can be more properly conveyed, and unnecessary closures can be reduced for these lower-end “nuisance” events.

In the end, while the *terms* are going away, *products* to convey these events will still exist. So instead of “Wind Advisory in effect today”, you might see a plain language headline that says something like “WINDY: Westerly winds gusting to 40 mph.”

All that said, we don’t quite know yet what these plain language headlines will look like. NWS Headquarters continues to work with social scientists, the public and our partners to refine wording and compare different types of headlines. They will be short messages to clearly and simply describe the event while still signaling people to exercise caution for the weather or water event and avoid impacts.

For more information on the Hazard Simplification process, please see www.weather.gov/hazardsimplification.

Path Toward Simplification:



Rough timeline for implementing the Hazard Simplification process to eliminate the terms “Advisory” and “Special Weather Statement” from NWS prod-

Trisha Palmer, WCM

Summer Hazards: Are You Prepared?

Summer means vacation, outdoor activities, and fun in the sun! It’s a time when families hit the road to visit national parks or distant relatives. The warm months and long days mean there is plenty of time for baseball games and barbecues. The hot temperatures practically invite you to take a dip in the pool or ocean. But don’t let the sunny days and warm nights fool you. Summer also holds significant weather hazards. Heat waves can be lengthy and deadly. Lightning deaths are at their peak during the summer. Beach hazards such as rip currents can catch the unprepared. And, it’s the start of hurricane season.

To learn more about summer safety, visit <https://www.weather.gov/wrn/summer-safety>

Building a Weather-Ready Nation



Know your Risk, Take Action, Be a Force of Nature!

SAFE BOATING TIPS



HIGH WINDS/WAVES
Know Your Action
Reduce speed
Head to shore

KNOW BEFORE YOU GO
Check the forecast at [weather.gov](https://www.weather.gov)
Always wear a life jacket!



COLD WATER
Know Your Action
Remain calm and control your breathing
Minimize time in the water
Get dry and warm ASAP



LIGHTNING
Know Your Action
Remain weather-ready
If you hear thunder, it's time to stay in the cabin or head to shore



CAMPING SAFETY TIPS



FLASH FLOODING
Know Your Action
Avoid hiking in canyons
Don't camp near streams or rivers

KNOW BEFORE YOU GO
Check the forecast at [weather.gov](https://www.weather.gov)
Always pack for inclement weather, regardless of the forecast!



HEAT
Know Your Action
Remain hydrated/bring extra water
Wear light, loose fitting clothing
Use sunscreen
Take breaks in shade



LIGHTNING
Know Your Action
Remain weather-ready
If you hear thunder or see lightning... go immediately to an enclosed building or hard-topped vehicle.
Avoid isolated tall trees or ridge tops.



BEACH SAFETY TIPS



RIP CURRENTS/DANGEROUS WAVES
Know Your Action
Swim at a beach with lifeguards
Never swim alone
If caught in rip...relax and call for help and swim along the shoreline

KNOW BEFORE YOU GO
Get beach-specific forecasts at [weather.gov/beach](https://www.weather.gov/beach)



HEAT
Know Your Action
Remain hydrated
Use sunscreen
Find shade - beach umbrella
Cool off in water



LIGHTNING
Know Your Action
Remain weather-ready
If you hear thunder or see lightning...go immediately to an enclosed building or hard-topped vehicle.

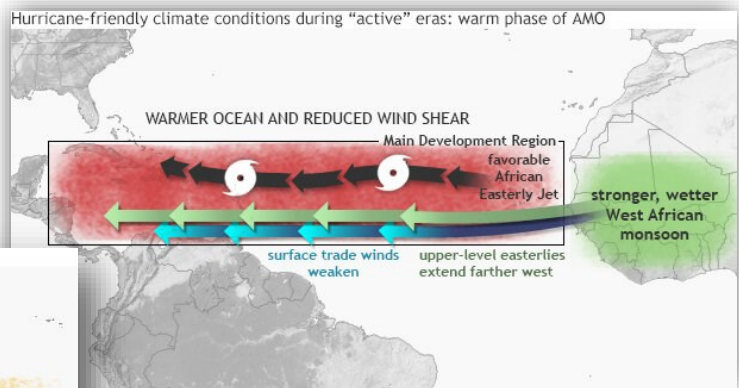


NOAA's 2022 Tropical Outlook

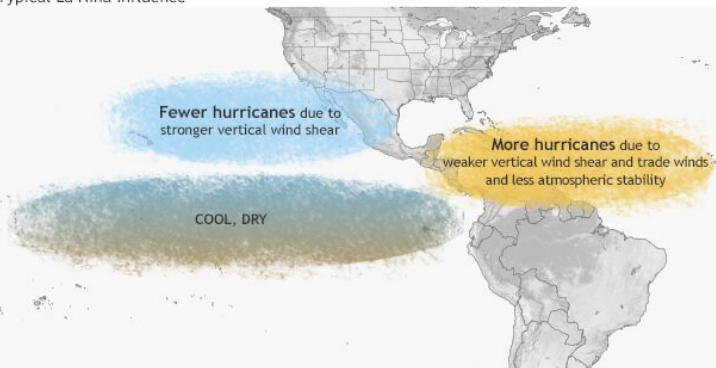
The previous two hurricane seasons have generated two of the top three most named storms for any Atlantic hurricane season; 30 in 2020 and 21 in 2021. The 2022 Atlantic Hurricane Season Outlook from NOAA's Climate Prediction Center is another above average hurricane season, making this the seventh consecutive year for a forecasted above average season. Similar to the previous two hurricane seasons, sea surface temperatures remain above normal in the Atlantic basin and La Niña remains ongoing in the east-central tropical Pacific leading to weaker wind shear in the Atlantic. This led NOAA to predict 14 to 21 named storms, with 6 to 10 of the named storms becoming hurricane strength (winds of 74 mph or higher), and 3 to 6 of these hurricanes becoming major hurricanes (winds of 111 mph or higher) .



The phase of the El Niño-Southern Oscillation (ENSO) can be a primary factor in how active the hurricane season is for both the Atlantic and Pacific basins due to its influence on sea surface temperatures in the equatorial Pacific, rainfall patterns, and changes in atmospheric pressure and circulation. Since the Climate Prediction Center is forecasting La Niña to last through much of the 2022 hurricane season, expect suppressed hurricane activity in the central and eastern Pacific, with enhanced hurricane activity in the Atlantic. La Niña is associated with cooler sea surface temperatures and drier conditions in the equatorial eastern Pacific, resulting from stronger trade winds. The upper-level pattern associated with La Niña tends to produce an amplified trough over the subtropical Pacific, with a somewhat less-pronounced upper-level ridge over the Caribbean Sea and much of the western Atlantic. This ultimately leads to weaker wind shear over the Atlantic Ocean, allowing for a more favorable environment for tropical cyclone development, which is fueled by the west African monsoon. Although the link between La Niña and Atlantic sea-surface temperatures is not fully understood, it seems that for the third year in a row, they are above-average, and this is likely to enhance tropical development as well. With warm oceans and a weakly-sheared atmosphere, it's clear why NOAA is predicting another above-average Atlantic hurricane season.



Typical La Niña influence



Hurricane Preparedness in the Carolinas

It is always good to be prepared for hurricane season as impacts often extend well outside the cone of uncertainty. Even if you live hundreds of miles inland, tropical systems can bring devastating impacts. Roughly 25% of tropical-related deaths do not occur along the coast.

The best thing to do prior to the start of hurricane season is to determine your risk. There are several weather hazards that come into play with tropical systems. This is why it is important to have a hurricane preparedness plan, even if you live hundreds of miles inland. Because, as we have discussed, impacts can be felt well outside the cone of uncertainty. A good way to start your hurricane preparations is to put together an emergency kit. You can also find ways to strengthen your home to better protect it from tropical cyclones and help your neighbors prepare, especially those who are elderly. Finally, here are some general tips that may help you in making a hurricane preparedness plan:

- Write down your plan.
- Don't assume your family or friends will have it all together. Have an out-of-town contact, a meeting place both in and out of town, and a communication plan.
- Don't assume you will have cell phone or internet service (for communication or warning purposes).
- Don't assume first responders will be able to reach you right away.
- Don't assume you will be able to leave your home to get supplies, or that supplies will be available immediately before, during, or after a tropical cyclone.

Did You Know...
NWS Greenville-Spartanburg

...hurricanes pose multiple inland threats to our area?

- Ivan, 2004: Peeks Creek debris flow
- Fay, 2008: Flooding in NC Foothills
- Fay, 2008: Tornadoes in SC Piedmont
- Matthew, 2016: Trees down in Charlotte

Facebook.com/NWSGSP @NWSGSP www.weather.gov/GSP

Preparing an Emergency Kit

Keep this kit in your safe room.

MUST Have Supplies

- First Aid Kit
- Phone/Charger
- NOAA Weather Radio
- Water
- Non-Perishable Food
- Flashlight
- Batteries
- Whistle (to signal help)

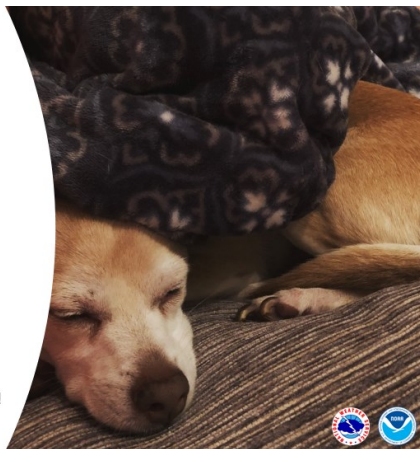
Additional Supplies

- Extra Infant Food
- Pet Supplies
- Books/Games
- Extra Cash
- Fire Extinguisher
- Important Records
- Change of Clothes

Are Your Pets Ready for a Tropical System?

You Need:

- At least 3-day supply of dog/cat food
- Water – 1 gal/pet/day for at least 3 days
- Crate/carrier or leash and collar
- Identification tags
- Microchip information
- Picture of you with your pet
- Vaccination records
- Remember: many shelters don't allow pets!



Don't forget about your furry friends when making a preparedness plan! Be sure to gather the necessary supplies they will need, such as food and water. Most shelters and hotels don't allow pets, so keep this in mind when getting your pets ready for a Tropical System.

It is also important to know if you live in a flood prone area. If so, you will want to brush up on your insurance policies as flood insurance must be obtained separately from a homeowners policy and takes roughly 30 days to go into effect. Make sure you know where your insurance policies are located. If the policies are not available online, it is a good idea to put the physical copies in a waterproof container with your emergency kit so they do not get lost or destroyed.

5 THINGS TO KNOW ABOUT UPDATING YOUR INSURANCE

- 1 Have an insurance checkup with your agent once a year, well before hurricane season, whether you own or rent.
- 2 Make sure you have flood insurance that must be obtained separately and has a 30-day waiting period to take effect.
- 3 Visit floodsmart.gov to learn about your flood risk and flood insurance options for your area.
- 4 Prepare your home and vehicles according to your specific insurance policies to ensure damages are covered.
- 5 Know where your insurance documents and contact information are located. Take them with you if you evacuate.

For more Hurricane Safety Information, visit weather.gov/hurricanesafety

When a Tropical system threatens your area and there are less than 24 hours before the arrival of tropical storm conditions, here are some preparedness tips to consider:

- Pay attention to the instructions of local authorities.
- Keep cell phones charged. Cell phone chargers for vehicles and rechargeable battery packs are good for during and after the storm. Locate chargers and keep them with your devices.
- Closely monitor NOAA Weather Radio, the National Hurricane Center’s page, or local news/social media outlets for official storm information. Make sure you have multiple ways to get information, even if you lose power.
- Be ready to adapt to possible changes in the forecast.
- Secure outdoor lightweight objects.

5 THINGS TO KNOW ABOUT WHERE TO GET HURRICANE INFO

- 1 Television - Tune in to your trusted local news source.
- 2 Phone - Access mobile.weather.gov on your mobile phone and get Wireless Emergency Alerts.
- 3 Radio - Receive forecast information and news on your NOAA Weather Radio.
- 4 Social Media - Stay in touch with friends and family and receive updates from your trusted sources of information.
- 5 Computer - Access information from weather.gov, ready.gov and flash.org

For more Hurricane Safety Information, visit weather.gov/hurricanesafety

HURRICANE PREPAREDNESS

weather.gov/hurricane

- Determine Your Risk.
- Develop An Evacuation Plan.
- Assemble Disaster Supplies.
- Get An Insurance Check.
- Strengthen Your Home.
- Help Your Neighbor.
- Complete A Written Plan.

Clay Chaney, Meteorologist

Hurricane Hazards in the Carolinas

As tropical systems move inland, land interaction leads to a gradual weakening trend in regards to wind speeds. However, other threats such as heavy rainfall and flooding continue despite this weakening trend. This poses a serious threat for inland flooding, especially along lakes, rivers and streams. Most deaths associated with inland tropical cyclones are from flooding, and can be avoided as roughly half of flood deaths are from people driving around barricades and/or into flooded roadways.

Heavy rainfall over a short duration of time, as well as training heavy downpours, can lead to flooding concerns. Landslides are another hazard to be aware of during hurricane season as rainfall amounts of 5+ inches in a 24 hour period can lead to enhanced landslide risk. If you live in an area of steep terrain or a modified slope, it is important to have an evacuation plan if your area is prone to landslides. The National Weather Service does not issue warnings for landslides. However, we do mention the potential for landslides when a Flash Flood Watch and/or Flash Flood Warning is in place, especially if rainfall totals in excess of 5 inches are anticipated or observed.

Despite weakening wind strength from land interaction as tropical systems track farther inland, wind gusts can be strong enough to knock down trees and power lines hundreds of miles away from the coast. Even when a tropical system weakens to Tropical Storm, Tropical Depression, or to Remnants status, the wind threat still exists due to the magnitude of the tropical low. Trees and power lines become vulnerable in tropical systems, especially if high antecedent moisture conditions are in place prior to a tropical system impacting the area.

Tropical systems tend to produce favorable environments for tornadoes as well. The majority of tornadoes are more focused in the front right quadrant as this area is where the best available shear and instability are located. As a tropical cyclone makes landfall, it begins to weaken quickly as the winds at the surface diminish rapidly, while winds just above the surface remain strong. This leads to a relatively strong vertical wind shear profile, which allows tropical cyclone tornadoes to form very quickly and are usually short lived.

Clay Chaney, Meteorologist

Inland Tropical Cyclone **Flooding**

Tips to stay safe:

- Don't drive into flood waters.
- Assess your need for flood insurance. It's not just areas in the flood plain!
- Remember, there is a 30-day waiting period for flood insurance.
- Don't allow your children or pets to play in flood waters.



Charlotte Observer: Hurricane Florence 2018



Inland Tropical Cyclone **Landslides**

Tips to stay safe:

- Assess your landslide risk. Do you live in an area of steep terrain? A modified slope?
- If you're in a prone area, make an evacuation plan.
- Rainfall amounts of 5"+ in 24 hours increase landslide risk. Stay aware of the forecast!



Peek's Creek Debris Flow, 2004



Inland Tropical Cyclone **Wind**

Tips to stay safe:

- Trim loose or dead limbs near your home. Have dead trees removed.
- Secure or put away any yard furniture or other objects.
- Stay aware of the potential for falling trees and power lines, especially while driving.



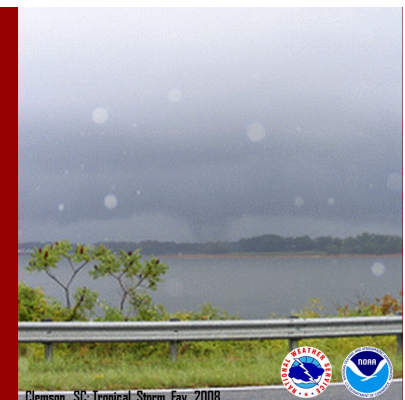
WCNC: Charlotte, NC, Hurricane Matthew 2016



Inland Tropical Cyclone **Tornadoes**

Tips to stay safe:

- Have multiple ways to get warnings. Make sure at least one will wake you up!
- Identify a safe shelter within your home, work and school.
- If you live in a mobile home, make plans to abandon it and get to a safe shelter.



Clemson, SC: Tropical Storm Fay, 2008



How Do Wireless Emergency Alerts Work?

Most of us have gotten them – the blaring Wireless Emergency Alert (WEA) on your phone. It does its job, startling you into action! WEAs are emergency messages sent by authorized government alerting authorities, such as FEMA, the Federal Communications Commission, the Department of Homeland Security, state and local public safety agencies, and of course, us here at the NWS. Alerts are automatically sent to WEA-capable phones during an emergency.

Types of alerts:

- Weather and water emergencies
- Local emergencies requiring evacuation or shelter
- AMBER alerts
- Blue alerts
- Presidential Alerts during a national emergency

WEAs look like short text messages that pop up on your phone. On 4G LTE networks and beyond, these are 360 characters; for 3G and earlier networks, these are 90 characters, as in the example text here of a Flash Flood Emergency:

Flash Flood Warning (Emergency)

- **English Short Message:** NWS: FLASH FLOOD EMERGENCY this area til 11:00AM EDT. Avoid flooded areas.
- **Spanish Short Message:** SNM: EMERGENCIA DE INUNDACIONES REPENTINAS hasta 11:00AM EDT. Evite areas inundadas.
- **English 360 Character Message:** National Weather Service: A FLASH FLOOD EMERGENCY is in effect for this area until 11:00AM EDT. This is an extremely dangerous and life-threatening situation. Do not attempt to travel unless you are fleeing an area subject to flooding or under an evacuation order.
- **Spanish 360 Character Message:** Servicio Nacional de Meteorología: EMERGENCIA DE INUNDACIONES REPENTINAS en efecto para esta area hasta las 11:00AM EDT. Esta es una situacion extremadamente peligrosa y amenaza la vida. No intente viajar a menos que sea para abandonar un area propensa a inundaciones o bajo una orden de desalojo.

All new wireless devices since 2012 have WEA capability, and WEA upgrades since then have introduced new enhancements. The most recent upgrade in summer 2021, WEA 3.0, introduced geographical targeting accuracy of 0.1 mile. If your phone was purchased since last summer, it likely has WEA 3.0.

WEAs do not use your cell phone's location. WEA sends a signal from cell phone's towers to all phones in that broadcast area, such that if you are receiving a signal from that tower, you can receive a WEA. So the way this works is that we issue a "polygon" for the warning, and then cell phone towers within the geographical polygon send out the broadcast of the WEA using radio-like technology to all phones using that tower. When we issue the warning, it includes in the product the latitudinal and longitudinal outline of the polygon. If your phone has WEA 3.0 technology, the geographical targeting of 0.1 mile should result in fairly accurate reach of the WEA. However, for phones that do not have WEA 3.0, then often the alert can reach phones outside the actual warning area depending on the broadcast range of the cell towers which broadcast the alert.

Please note, that WEA is only one of many ways to receive warnings. If you are in a data sparse area with no cell towers, or if your phone is off, you cannot rely on WEA to receive a warning! Many other warning reception methods are available, such as NOAA Weather Radio, news media coverage, desktop and mobile applications, and other alerting methods from local and state public alerting authorities. **It is important to have multiple ways to receive warnings when hazardous weather is expected.** However, if you are relying on WEA as your primary source, please know in advance whether or not you have cell phone coverage, and make sure your phone is charged and on in the middle of the night! The WEA has become a go-to method for receiving emergency alerts for many, especially for overnight hazards, and has been responsible for saving countless lives. In one real-world example, an elected official was calling into a local radio show during the tornado warnings that were being issued during the remnants of Tropical Storm Fred on August 17, 2021; the elected official received a tornado warning via their WEA and relayed it on-air, conveying to constituents to "please take [the tornado warning] seriously." This real-world example of the utility of the WEA is one of many! For more information, FAQs, and additional links, please see www.weather.gov/

&&

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LAT...LON 3589 8037 3588 8042 3587 8039 3585 8039
3585 8042 3583 8043 3583 8046 3584 8048
3583 8049 3581 8047 3579 8048 3577 8079
3598 8082 3605 8057 3604 8049 3606 8046
3601 8042 3599 8042 3597 8039 3592 8037
TIME...MOT...LOC 0201Z 258DEG 15KT 3588 8071
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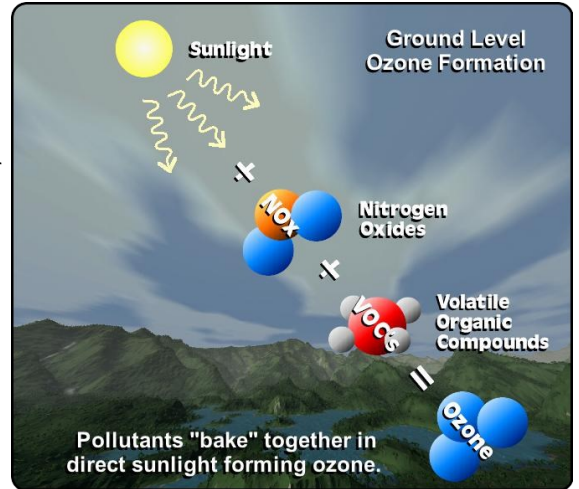
*Latitude and longitude points for the vertex points
that outline the polygon of a warning.*

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HAIL THREAT...RADAR INDICATED
MAX HAIL SIZE...1.00 IN
WIND THREAT...RADAR INDICATED
MAX WIND GUST...60 MPH
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Air Quality Forecasts for the Carolinas

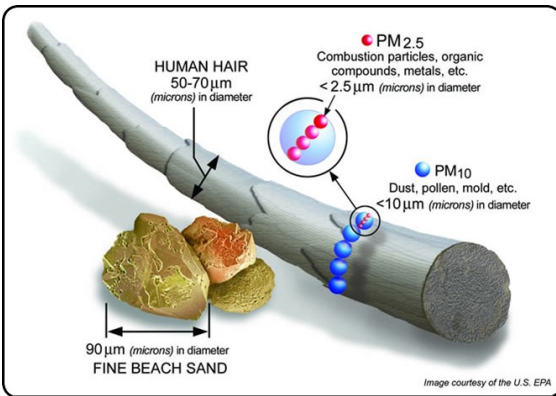
The National Weather Service does not generate or issue air quality forecasts. However, we have close partnerships with state health agencies and help get the word out during poor air quality days. For our area, air quality forecasts are issued by the North Carolina Division of Air Quality and the South Carolina Department of Health and Environmental Control. These agencies forecast when ground-level ozone and fine particulate matter (PM2.5) will reach potentially hazardous levels, especially for people with existing health concerns like asthma. Ozone season begins in March and continues through October, while PM2.5 is forecasted all year round.

Ozone is beneficial when it is located high in the atmosphere (more than 10 miles in the air). At this level, ozone blocks a lot of ultraviolet radiation from the sun, which would be really harmful for our skin if it were to reach us at the ground level. However, ozone becomes a pollutant when it develops near the surface. Ground-level ozone forms when nitrogen oxides (NOx) reacts with volatile organic compounds (VOCs) generated from cars and factories as well as from trees and vegetation sources in the presence of heat and sunlight.



Ozone forms in high sunshine combined with VOCs

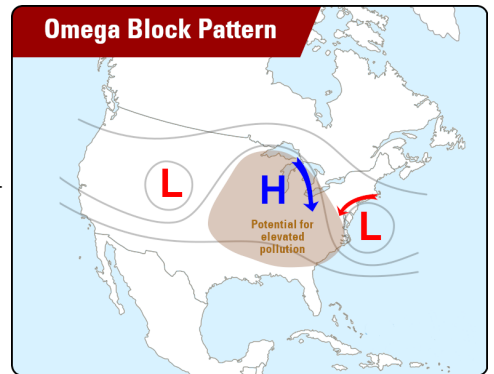
Particulate matter consists of tiny solids and liquid droplets suspended in the air. Particles include acids, nitrates, sulfate, and other organic chemicals including pollen, mold spores, and smoke. Particulates in the Carolinas and northeast Georgia are generally formed from local burning of wood or trash, however, smoke can be transported into our area from large fires out west and dust can traverse the Atlantic Ocean due to violent storms across the Saharan desert in Africa!



Fine Particulates are very small and can remain lodged deep within the lungs.

Poor air quality episodes often share a common feature: a stagnant air mass. Stagnant air masses occur when surface winds become light, which allows slow-moving air molecules to collect increased amounts of pollutants as they move across an area. When an air mass stagnates, it is typically the result of an upper-level ridge, or a large area of high pressure aloft, which results in mostly sunny skies, hot and dry air, and light winds at the surface. Additionally, during periods of strong high pressure, the air aloft sinks which can trap pollutants near the surface for several days.

Regional air quality meteorologists consider the weather forecast and combine it with the expected effects on ozone development and/or PM2.5 transfer to derive an air quality forecast. The Environmental Protection Agency (EPA)



An "Omega Block" indicating slow moving high pressure and strong downward motion.

has devised a scale called the Air Quality Index (AQI), which forecasters use to quantify their final forecasts based on an 8-hour rolling average concentration.

Air Quality Index (AQI) Values	Levels of Health Concern
0 to 50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301 to 500	Hazardous

The EPA's Air Quality Index. Orange and higher is considered unhealthy.

The AQI color codes (Green, Yellow, Orange, Red, Purple, and Maroon) give the public a clear message about the expected air quality on any given day. When the AQI is forecasted to be in the **Code Orange** range or higher, pollutant levels are expected to pose a threat to human health and state air quality agencies will issue an "Air Quality Alert", which is when the NWS disseminates their message through official NWS websites, our social media pages, and on NOAA Weather Radio.

The good news is, over the past ten years regulations enacted to reduce emissions of pollutants from vehicles and power plants have dramatically reduced occurrences of ozone concentrations exceeding levels deemed unhealthy by the EPA. However, this makes bad air quality days even harder to forecast. This is a good trade off, as less hazardous air quality leads to fewer health issues. For the latest information on air quality, please visit the Environmental Protection Agency AirNow page at: www.airnow.gov/.

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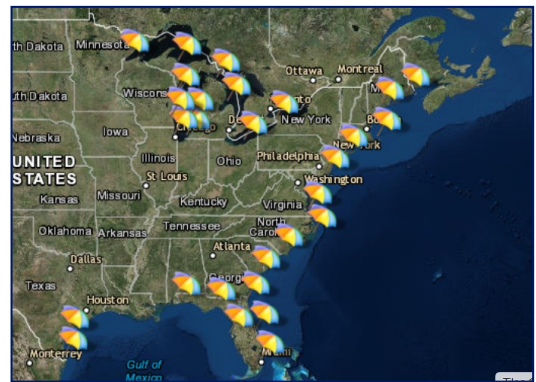
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Stay Safe at the Beach This Summer

Headed to the beach this summer? Did you know that a majority of rip current fatalities are linked to those who are from the inland areas? Make sure you know the hazards before heading to the beach! Your biggest risks will be the heat and rip currents. National Weather Services along the coast issue a Surf Zone Forecast each day. This forecast provides important information to all beachgoers, including the daily rip current risk ("low", "moderate", "high"), as well as expected weather conditions, water temperatures, UVI index, and any additional hazardous information, including waterspout risk. Before heading to the beach, make sure to be go over the expected beach conditions. When at the beach, always swim near lifeguards— never swim alone! NWS Beach Forecast Page: www.weather.gov/beach



Rip Currents: The Basics

What Is A Rip Current?

A rip current is a powerful channel of water that moves away from the shore

Rip currents are more intense near inlets, jetties, and piers

A rip current is dangerous because it can sweep even the strongest swimmers out to sea

Rip currents can be ***LIFE THREATENING*** to anyone entering the surf



Always Swim Near a Lifeguard and Follow Advice of Beach Patrol and Beach Flag Warning System



Caught In A Rip Current?

Don't Fight The Current

Swim parallel to the beach

If you can't escape, **YELL** for help! Try to relax and float or tread water