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November 2017

CISA & CoCoRaHS Condition Monitoring Newsletter

This month's newsletter includes:

- Turkey Day Temperatures
- A Southeast Regional Climate Update
- CoCoRaHS Data Assists Citizen Scientists
- Observer Spotlights

As always, do not hesitate to reach out to us at cisa@sc.edu if you have any other questions or comments.

The CISA Team - Amanda, Ellie, Kirsten, and Kerry

Turkey Day Temperatures



Mother Earth News 2005

As you are getting ready to gobble gobble up a delicious Thanksgiving meal, it's a good time to think about past Thanksgiving weather.

The Carolinas have seen some very warm Thanksgivings. In 1985 Lewiston, NC and Dillon, SC experienced the hottest temperatures on record, 82°F and 87°F respectively. That would be fabulous turkey grilling weather!

In This Issue

Turkey Day Temperatures

SE Regional Climate Update

CoCoRaHS Data Assists Citizen Scientists

Observer Spotlights

Quick Links

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[CoCoRaHS Condition Monitoring Webpage](#)

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Not all Thanksgivings are so toasty; in 1945 Roaring Gap, NC experienced the lowest recorded daily high of 6°F. South Carolina's coldest Thanksgiving was in Camden, which had a high of 43°F and a low of 11°F. Typically, North Carolina hovers in the low 50s while South Carolina is in the high 50s to low 60s. Based on these averages, if you want a warmer T-Day, go to South Carolina.

Bent Creek, NC and Rimini, SC hold the record for wettest Thanksgivings in the Carolinas! In 1999, Bent Creek received 3.57 inches of rain and in 1992, Rimini received 3.85 inches of rain.

Here at CISA we hope you have your favorite weather and a delightful meal on Thanksgiving!

SE Regional Climate Update

The [October Southeast Climate Overview](#) has been released by the [Southeast Regional Climate Center](#). Temperatures were above average across the Southeast region during October. The warmest weather of the month occurred from the 9th through the 11th, as unseasonably warm and humid air surged northward ahead of an approaching cold front.

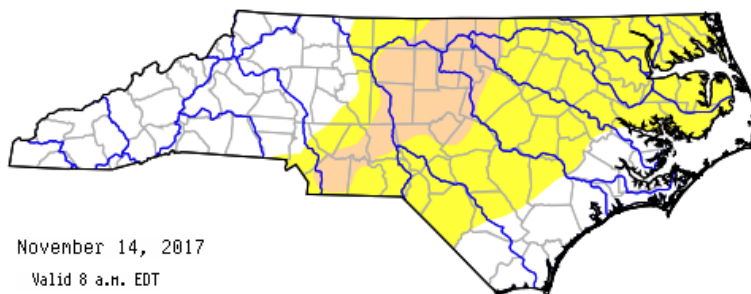
Precipitation was variable across the region with several wet extremes recorded. Unusual dryness was found in portions of north-central Florida, east-central and southeastern Georgia, central and southern South Carolina, and central North Carolina, where monthly precipitation totals were 50 to less than 25 percent of normal. In contrast, the wettest locations were found primarily across broad portions of Alabama, southern and eastern Florida, the western half of the Florida Panhandle, northern and west-central Georgia, upstate South Carolina, western North Carolina, and southwestern Virginia.

Over 97 % of the region was drought-free at the end of October, but abnormally dry (D0) conditions were observed in portions of every state except Florida. The coverage of abnormally dry conditions across the region increased from 13 % on October 3rd to 23 % on October 31st.

There were 113 severe weather reports across the Southeast, with approximately 80% occurring in the Carolinas and Virginia.

The [North Carolina Drought Management Advisory Council](#) updated their drought status as of November 14, 2017. There are currently 43 counties with abnormally dry (D0) conditions and 16 counties with Moderate Drought (D1) conditions.

US Drought Monitor of NORTH CAROLINA



November 14, 2017

Valid 8 a.m. EDT

Drought Classifications

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought



County Boundaries



Major River Basins ([View Map](#))

S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
L = Long-Term, typically >6 months (e.g. hydrology, ecology)

[Hi-Resolution Image](#) | [Print Version](#) |

Map released by the North Carolina D.M.A.C. on November 14, 2017.

The State Climate Office of North Carolina has released its [SCOfficial 2017-2018 Winter Outlook](#). According to the outlook, overall they expect this winter will be drier than normal with near- to above-normal temperatures in North Carolina due to the La Niña pattern that should remain weak but persistent throughout the season.

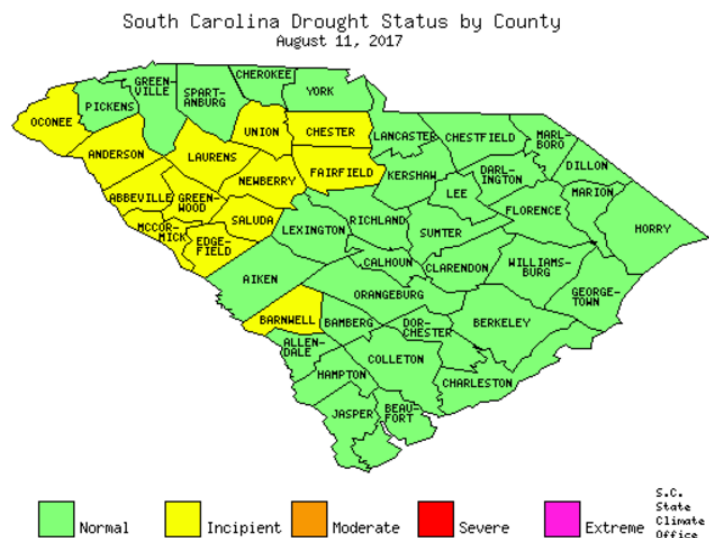
As a continuation of our warm fall, they predict warm weather will dominate in December. The best chances for cooler weather will be in January if the polar vortex weakens and the polar jet stream sags southward. They expect to see fewer than normal wintry events.

With the expected dry pattern, drought is likely to remain and even intensify this winter. Although impacts to agriculture are limited this time of the year, water supply could become a concern since above-normal rainfall is already needed to quench reservoirs across the Piedmont.

While our confidence is low in temperatures later in the winter, it's always worth remembering that even if we're in a warmer pattern in February or March, we can never rule out a damaging late-spring freeze event.

The [South Carolina Drought Response Committee](#) has not updated their map since August 11, 2017. There are currently 13 counties in the state with an incipient drought status while the rest of the state remains under normal conditions. There is a meeting of the Drought Response Committee scheduled within the next several weeks.

Summer rains have eliminated drought status for five counties



Map released by the United States Drought Monitor on August 11, 2017.

CoCoRaHS Data Assists Citizen Scientists

Data that CoCoRaHS observers collect is used in a variety of ways including by the National Weather Service, other meteorologists, hydrologists, emergency managers, city officials, insurance adjusters, the USDA, engineers, mosquito control, ranchers and farmers, outdoor & recreation interests, teachers, students, and neighbors in the community, according to the CoCoRaHS website.

Here in South Carolina there is another group of citizen scientists who use CoCoRaHS data. These scientists participate in a [Volunteer Water Quality Monitoring Program](#) for the Waccamaw River, Murrells Inlet and Surfside Beach. This program is lead by Dr. Susan Libes from Coastal Carolina University. Water quality is being monitored as part of a stormwater management program. Water quality concerns include turbidity, E. Coli, and dissolved oxygen amounts which can impact recreation usage, lake and pond management, shellfish harvesting, sediment pollution, and nutrient enrichment of waters which can cause "blooms" of phytoplankton.

Data has been collected from monitoring sites since 2006 (Waccamaw River), 2008 (Murrells Inlet) and 2010 (Surfside Beach). CoCoRaHS has been contributing to this project by providing precipitation data that is used in collaboration with water quality monitoring data. When a CoCoRaHS station is near a water quality sampling site, precipitation data from the CoCoRaHS station is utilized.

Why is this important? The amount of precipitation we received influences the amount of runoff into rivers, lakes, and streams. If the amount of runoff can be attributed to

recent rainfall measured at CoCoRaHS observer stations, it helps volunteers answer questions about runoff. For example, if there is runoff that can't be attributed to a recent rainfall event, volunteers help scientists determine where that runoff may be coming from, such as construction or agricultural sites.

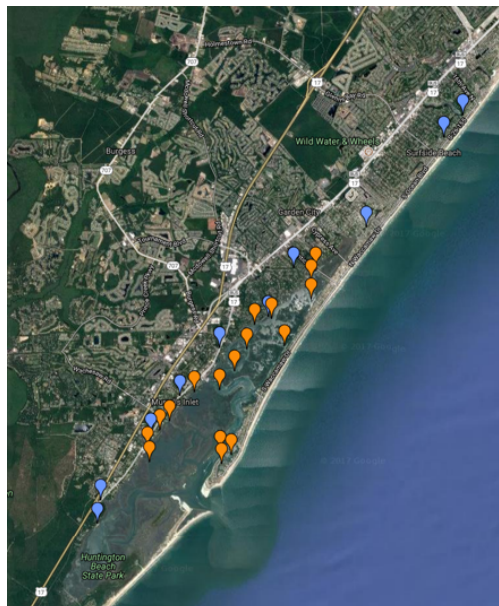
Recruiting more CoCoRaHS observers to these areas would help our fellow citizen scientists!

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Blue Markers are collection Sites

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Observer Spotlights

This month, we have Billy Tholborn from South Carolina and Peter Callen from New Mexico. They are both frequent reporters and we appreciate their participation!

Billy Tholborn from South Carolina

Billy was born and raised in Baton Rouge, Louisiana and relocated to the Central Savannah River Area (CSRA) in March, 2015, due to his career in construction. After moving, he started submitting CoCoRaHS precipitation reports. "In the Fall of 2016, I received an email message about CoCoRaHS Condition Monitoring and Soil Moisture Observer Programs. I eagerly signed-up for both programs."



Billy explained that most of his reports feature the Plants and Wildlife indicator. "I observe how my front and rear lawns respond to current weather and climate conditions. I am a SCDOT Highway and Bridge Inspector and due to the nature of my outdoor workplace environment, I am fortunate to observe a wide range of condition monitoring indicators and how they respond to current weather and climate conditions. Studying the indicator reporting requirements has increased my awareness."

When asked about the most memorable event on which he has reported, Billy replied, "The storm total rainfall accumulation of Hurricane downgraded to Tropical Depression Irma. A storm total rainfall accumulation of 3.47 inches was observed and recorded 12 SEP 17 (occurred 11 SEP 17). Most of the monthly rainfall accumulation for September occurred that day. Within a week, my lawns changed from lush green to light brown. From 14 SEP 17 through 7 OCT 17, twenty-three (23) consecutive days of no precipitation were recorded, not even a trace!"

Finally, we asked about Billy's advice for other observers. "As an amateur surface weather observer and National Weather Service (NWS) severe storm spotter, my advice to you is to perform quality control inspection on your weather station sensor siting (location) and weather station sensor readings (data) for accuracy. (Your location may not afford an anemometer sensor location of 30 feet above ground surface, rain gauge 5 feet above ground surface, etc.) Be cautious locating anemometer, temperature and humidity sensors next to roof eaves and housing exterior sidings. Compare your weather station sensor data with other weather stations in your specific reporting region to ensure your station sensor readings are within reasonable tolerances. Recognize that the location of your weather station sensors is representative of current weather conditions within your specific reporting vicinity. (NOTE: IF YOU ARE A FAA METAR OR NWS COOPERATIVE PROGRAM OBSERVER, PLEASE DISREGARD THE AFOREMENTIONED STATEMENTS OF ADVICE. I WISH I COULD BE SELECTED AS A NWS COOP OBSERVER.)

"As a CoCoRaHS precipitation, condition monitoring and soil moisture observer, my advice to you is to study the training slides on rain gauge siting and recording of both liquid and solid precipitation daily accumulations. BE CONSISTENT, EVEN IF REPORTING ZERO ACCUMULATIONS! Also, study the condition monitoring indicator requirement training slides to increase your awareness of how current weather and climate conditions affect your local reporting vicinity and observe how these conditions change and respond. When you observe and report, be accurate! When reporting severe weather observations, your accuracy could save lives!"

Peter Callen from New Mexico

To continue our national CoCoRaHS observer spotlights, we are featuring Peter Callen from New Mexico. Peter has been reporting with CoCoRaHS since 2010. He heard about Condition Monitoring from the CoCoRaHS website and the "Message of the Day."



He explained to us his motivation for condition monitoring. "Drought is pretty much a permanent condition here in the SW now and usually starts right after our last rain (which was Oct. 1st in this case). I was tired of hearing how "normal" our rainfall amounts/totals were on the news and how most people really would go by the news instead of what was happening in their own back yard. So this also

[prompted me to start my own reporting on the ongoing story of drought in New Mexico."](#)

Peter's favorite category to report on is Plants and Wildlife. He says, "I always include [Plants and Wildlife], as that is really how I can tell what is going on. The rainfall numbers are just that sometimes, numbers, they don't tell the story of how long and hot and low RH and windy that last spell was. The plants and wildlife are dependent, especially the native plants, which we have a lot of around here, they depend on rain, snow, clouds, high RH, calm winds, and if we miss a season of snow, or rain, it impacts the whole rest of the year."

Peter says his most memorable report was on 9/11/13, "3 years of hard drought were finally breaking with a good monsoon season of rain for the previous months of July, August and Sept. It was hard to recall what wildflowers grew or even the common birds, as everything seemed to have died and gone away during that awful time of drought."

What is Peter's advice for other observers? "I would say that CoCoRaHS is providing you with a good opportunity to tell your story, of where you are, what you are passionate about, whether it's skiing or birding, growing corn or staying healthy, the condition of the land is going to drive all that. [So pay attention to what is happening, start now, start today, and write it down. 'Faded ink is better than best memory'. You will be surprised by how much you learn about the land where you live."](#)

Feel free to contact us with any questions.

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