

CAROLINA COCORAHS



SPRING 2016

Community Collaborative Rain, Hail, and Snow Network
“CoCoRaHS-Because Every Drop Counts!”

October 2015 Historic Rain and Flood Event

In South Carolina, the historic heavy rainfall event of October 1-5, 2015, produced record rainfall rates and totals. The rainfall amounts and distributions across the state were similar in pattern to those normally produced by hurricanes making landfall; however, although the moisture drawn over the state was from deep in the tropics, the synoptic features, or mechanism, that produced the heavy rainfall was of a mid-latitude nature rather than that of a tropical cyclone. The rainfall created dam failures, urban flooding, compromised drinking water, and resulted in much more statewide destruction. **Without CoCoRaHS, we would not have been able to accurately document the extreme range in rainfall values.** This local variability is too great to be picked up by Doppler radar. With the additional volunteers, there were more than four times the amount of CoCoRaHS daily precipitation reports than those from the National Weather Service (NWS) Cooperative Observer Program (COOP) stations during the flood. The dedication and service by CoCoRaHS volunteers was essential. The highest October flood event rainfall total (26.88”) was recorded by a CoCoRaHS volunteer in Mt. Pleasant (Mt. Pleasant 6.4 NE). For more information about the flood, visit our interactive journal (www.dnr.sc.gov/climate/sco/flood2015). (Continued on pages 2-3)

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Columbia Canal Breach

Photo: Wes Tyler, SC Climatology Office

October 2015 Historic Rain and Flood Event Cont.

October 1-6, 2015: CoCoRaHS Observers

Total Daily Precipitation Reports Submitted	2,215
Date with Most Reports	October 3 (380)
Highest Daily Precipitation Report	13.17", Mt. Pleasant 6.4 NE, Oct. 4
Total Number of Comments	360
Daily Precipitation Reports ≥ 10.0 "	22
Top Five Daily Precipitation Reports	13.17", Mt. Pleasant 6.4 NE, Oct. 4 12.07", Hopkins 3.9 NNE, Oct. 4 12.03", Kingstree 9.5 NW, Oct. 4 11.68", Holly Hill 0.4 N, Oct. 4 11.50", Moncks Corner 3.6 E, Oct. 4



Photo: Wes Tyler

Cary Lake Dam Failure at Skii Lane



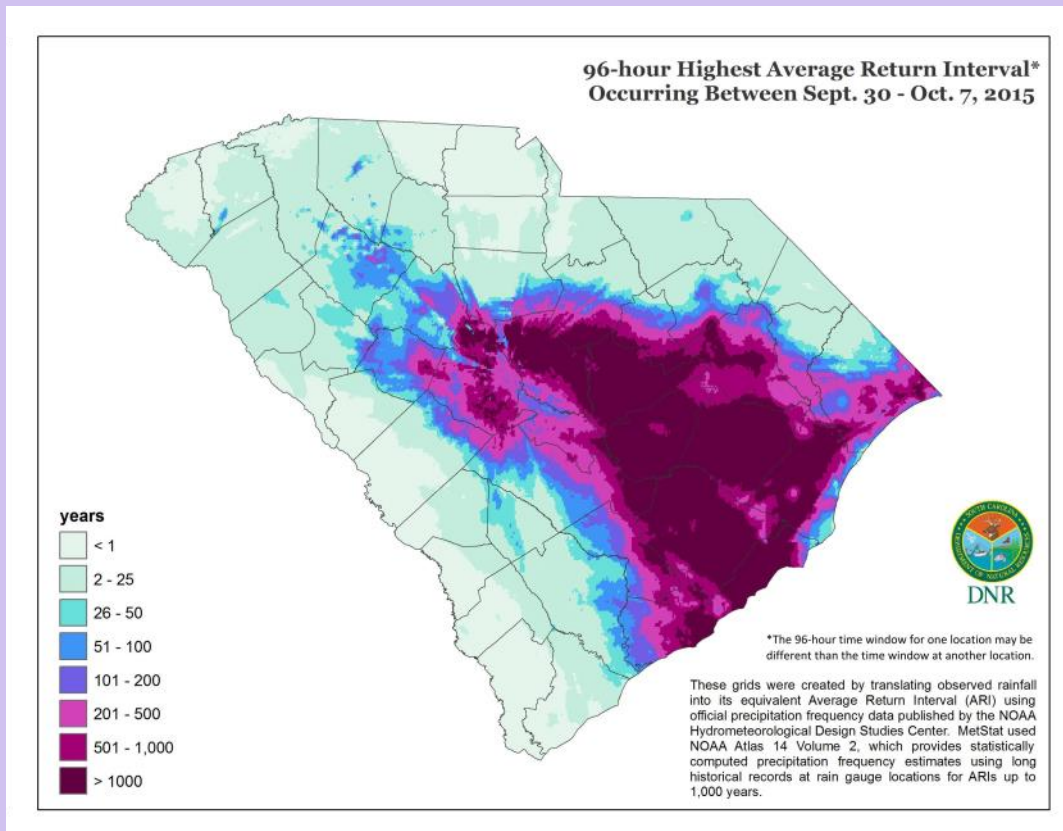
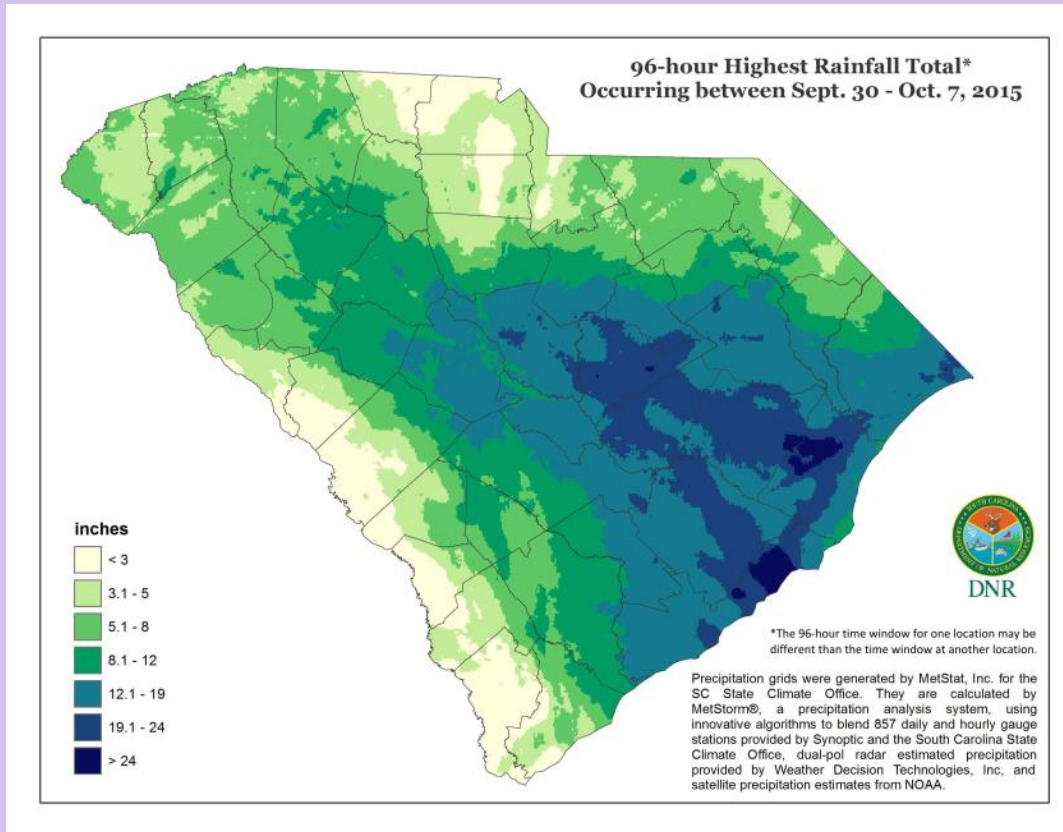
Photo: Wes Tyler

Title Max Bldg. Collapse on Garners Ferry Rd.

2015 YEARLY RECAP

The year of 2015 was eventful for South Carolina. From January to March, South Carolina witnessed a great variation in temperatures, winter precipitation, and many events with strong winds greater than 40 mph. February 19th brought the season's coldest air with temperatures at or below freezing in all of South Carolina. On March 4th, temperatures climbed into the 80s for the first time in the previous four months. Shortly after, there was a winter cold on March 7th. On April 19, the year's first violent weather impacted the state. There were five tornadoes in South Carolina: EF2 in Aiken, EF1 on the south side of Lake Murray, EF1 near St. Matthews, EF0 near Trenton, and a EF0 near Lamar. In May, much of the weather consisted of cool mornings and warm afternoons. Tropical Storm Ana made landfall in Myrtle Beach on May 10 and was the earliest known landfall of a tropical storm in South Carolina. Ana brought 50 mph+ winds and 5.88" of rain to the northern SC beach city. On September 25th, there was a EF2 tornado on Johns Island that damaged an estimated 80 homes. In the summer and fall months prior to the October flood, the SC Drought Response Committee declared South Carolina in a state of drought. All counties were in a drought severity index level ranging from incipient to severe drought due to the continued pattern of below normal precipitation. That quickly changed with the October heavy rainfall. South Carolina continued to experience above normal rain into November. The climatological fall of September—November in 2015 was the wettest on record based on the South Carolina statewide average. The year ended with Columbia Metro AP having its warmest average December and Charleston AFB with its wettest year on record (74.89").

CoCoRaHS observers helped provide the detailed observations needed to accurately document the extreme rainfall values during the October flood.



DAILY REPORT COMMENTS

Don't forget to enter descriptive comments like these below. They help us better understand the precipitation and weather phenomena occurring throughout South Carolina.

SC-BK-19 "The rain started yesterday just after noon & continues this morning. Backyard has become a lake. I expect there was some street & field flooding." January 24, 2015

SC-PC-31 "Began raining [at] 10:15pm with a 10 minute downpour. Still raining as of 7am." June 9, 2015

SC-OC-6 "Quick thunderstorm [at] about 1pm then about 4pm a heavy storm, wind and all, rain lasted about 20 minutes but long rumbling thunder last until at least 9pm." July 15, 2015

SC-SP-51 "Severe t-storm, high winds, frequent lightning, all rain fell in 45 min." July 19, 2015

SC-HR-20 "Clear w/ abundant sunshine yesterday. Right now, sun is burning off a light frost. Temp is a chilly 39° & humidity at 77%." November 24, 2015

SC-BF-23 "A weak front easing thru the area w/showers beginning at sundown & ending past mid-night. Nothing but very light & very quiet rain." December 15, 2015

Eight Year CoCoRaHS Accomplishments

Number of Drought Reports	649
Number of Significant Weather Reports	1,085
Number of Hail Reports	274
Largest Hail Size	2.75" (SC-YR-3)
Number of Daily Precipitation Reports $\geq 5"$	404
Number of Daily Precipitation Reports $\geq 7"$	154

Special thanks to the observers who reached the milestone of reporting for five years!

111 observers in 2008-2013

40 observers in 2009-2014

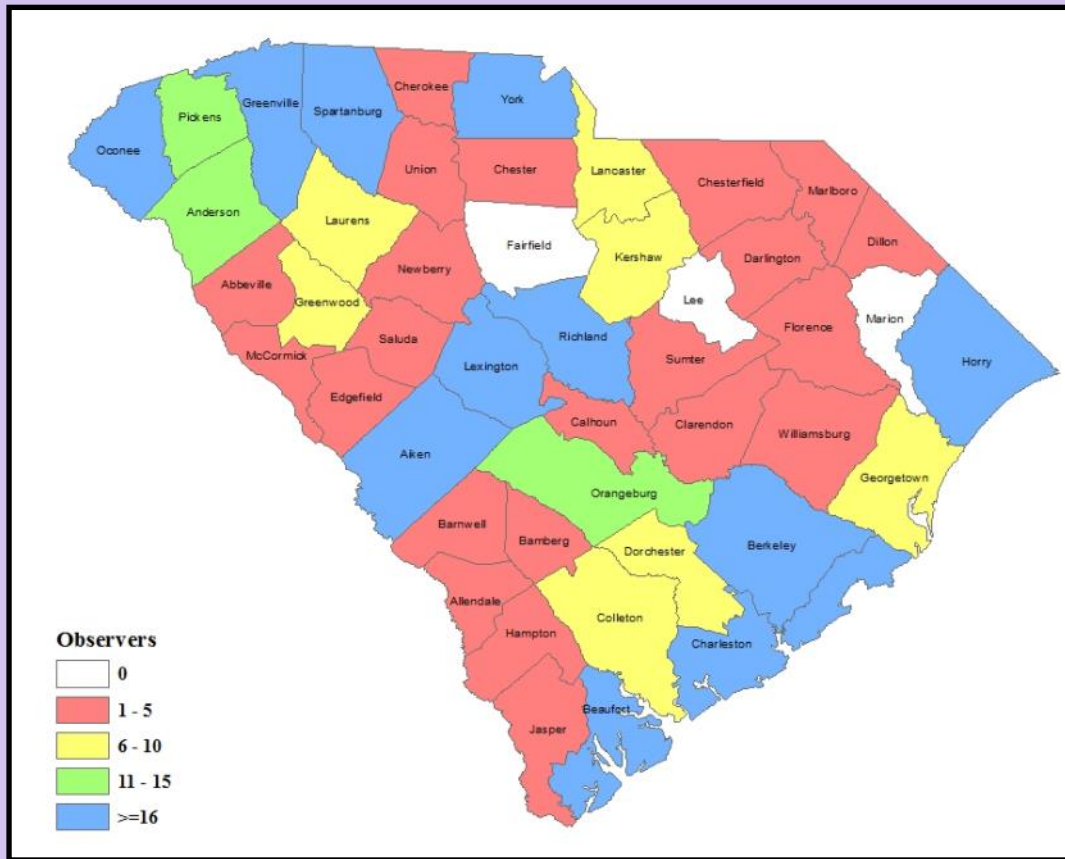
22 observers in 2010-2015



Photo: CoCoRaHS

CAROLINA COCORAHHS BY THE NUMBERS

Active Observers by County



The map above shows the number of observers reporting at least 50% of the time since activation and still reporting at the end of 2015. A majority of the state has only 1-5 observers per county, with three counties having no one reporting over 50% of the time. As of December 2015, Fairfield, Lee, and Marion counties continue to have no observers. This is an area of the program that we should aim to improve. South Carolina has a total of 413 active observers. The table below shows the counties with the highest numbers of active observers as well as the counties with less than 3 active observers.

Statewide-Spring 2016

Number of Active Observers	434
5 Counties with Highest Number of Active Observers	Aiken, Charleston, Greenville, Oconee, Spartanburg
Counties with Under 3 Active Observers	Allendale, Bamberg, Barnwell, Calhoun, Chester, Chesterfield, Dillon, Fairfield, Lee, Marion, Marlboro, McCormick, Union, Williamsburg

A NOTE FROM YOUR STATE CLIMATE OFFICE...

South Carolina CoCoRaHS Observers,

We are excited to share that 173 South Carolina CoCoRaHS observers have reached the milestone of five-years of volunteering for CoCoRaHS! During the October flood, we saw firsthand what a difference CoCoRaHS makes. We are still recruiting new participants! See the CoCoRaHS website for information about becoming an observer and joining the program. (<http://www.cocorahs.org/application.aspx>)

Daily rainfall reports and comments continue to support the SC State Climatology Office's climate and drought programs. While the spatial resolution for CoCoRaHS monitoring has improved, volunteers are still needed for Fairfield, Lee, and Marion counties. We would like to see the program grow statewide, but especially in these counties. Three goals moving forward are to improve our retention rates, increase our active observers by county, and reduce the number of missing reports.



Thank you !

Your Team at the South Carolina State Climatology Office

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If you are not a CoCoRaHS observer and are interested in joining, please visit cocorahs.org to sign up!
More information: <http://portal.dnr.sc.gov/climate/sco/Office/cocorahs.php>



Visit our Facebook page:
www.facebook.com/CoCoRaHS.SouthCarolina



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