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November 2015

# CISA & CoCoRaHS Condition Monitoring Newsletter

Dear CoCoRaHS Observer,

We hope all of you enjoyed a lovely Thanksgiving and November this year. The [Climate Update for the Carolinas](#) provides an overview of the past month's weather conditions and some future precipitation outlooks based on current El Niño patterns. You can also see how your Thanksgiving precipitation and temperature conditions compared to previous Thanksgiving weather by checking out the State Climate Office of North Carolina's [Holiday Climatology for the Southeastern United States](#).

Other articles in this month's newsletter focus on citizen science uses and initiatives. We interview Rebecca Cumbie-Ward from the State Climate Office of North Carolina on how she uses condition monitoring reports. We also highlight the White House's initiatives on promoting citizen science and crowdsourcing activities. Finally, Pat Momich, our condition monitoring star of the month, shares some information about what informs her weekly observations and tips for fellow observers.

As always, thank you for supporting the CISA and CoCoRaHS Condition Monitoring Project!

Sincerely,

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The CISA Team - Amanda, David, Kirsten, Kirstin, and Sumi

## Climate Update for the Carolinas

October and November were very wet this year. Both Carolinas received above average rainfall in October and are on track to do so for November as well. Analysis of monthly precipitation records (November 1-23) by the Southeast Regional Climate Center (SERCC) indicates that many local monitoring stations have measured total precipitation that ranks in the top ten wettest months on record based on those stations' historical climate records (Figure 1).

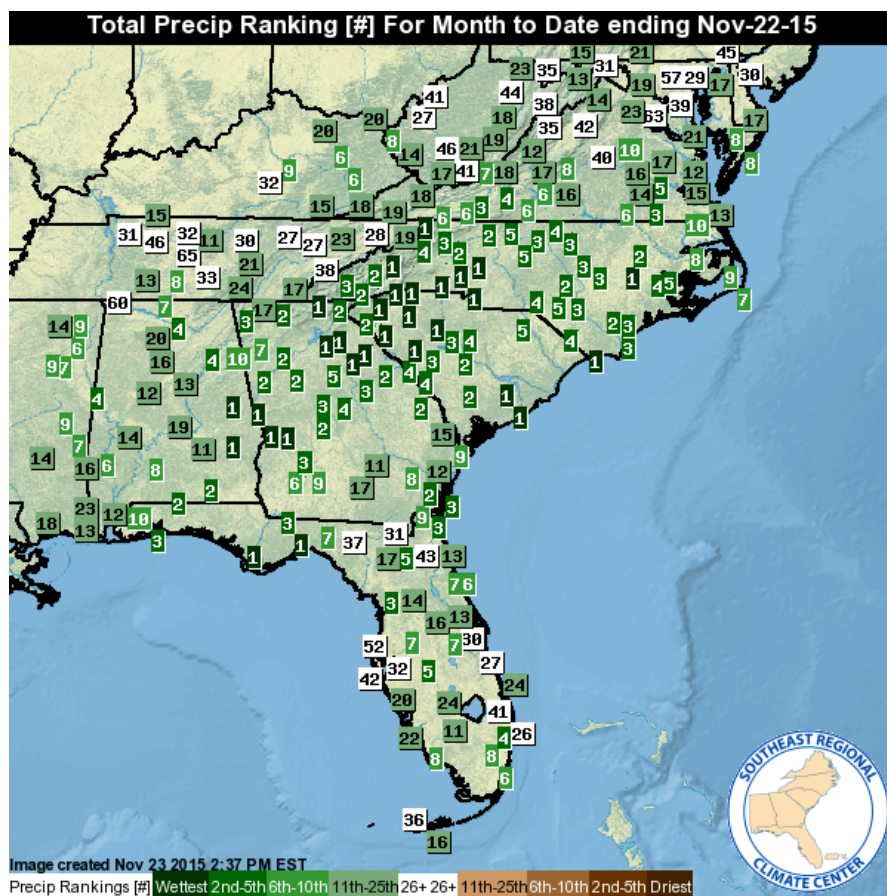


Figure 1. Total precipitation ranking at local stations for the period of 11-1-15 to 11-22-15 compared to historical data for the same period at the station. For more information visit the Southeast Climate Perspectives Map by SERCC.

And it looks like we will not be getting a break from the above normal precipitation during the upcoming winter. According to the El Niño Outlook for the Southeast by the SERCC, which forecasts conditions for December 2015 - February 2016, the coastal Carolinas will most likely have above normal precipitation and parts of Alabama, Georgia, and Florida might

have colder-than-normal temperatures. These seasonal outlooks align with conditions experienced during previous years when there was a strong El Niño. They provide us with information to plan for the possibility of more rain and potential impacts to our gardens and communities.

Based on current measurements of sea surface temperatures, the current El Niño may shape up to be one of the strongest El Niños on record. During the strongest El Niño recorded in 1997-1998, the Carolinas experienced above normal precipitation and warmer than average temperatures. NOAA also indicates that other atmospheric circulation patterns might alter precipitation patterns in the region, but scientists cannot tell at this time how these may interact with conditions created by El Niño to affect the seasonal climate.

If you would like to know more about current drought conditions, check out the U.S. Drought Monitor Map [here](#) which is released weekly on Thursday mornings, 7 am EST.

## Who uses CoCoRaHS condition monitoring reports? A profile on Rebecca Cumbie-Ward from the North Carolina Climate Office

During our [observer conference call](#) last month, participants told us that they would like to hear how different decision makers use condition monitoring reports and other CoCoRaHS data. This month, we reached out to Rebecca Cumbie-Ward, an extension climatologist with the [State Climate Office of North Carolina](#), to ask her about how she uses CoCoRaHS information. Rebecca also serves as the climatologist on the [North Carolina Drought Management Advisory Council](#) (NCDMAC), which meets once a week by phone to assess drought indicators and determine the status of drought across the state.

Rebecca uses CoCoRaHS condition monitoring reports to provide information for the NCDMAC weekly meetings. She reads the reports before the meeting every Tuesday, marks which counties the reports came from, and then shares relevant information with other NCDMAC members. Sometimes she highlights reports from areas where objective indicators show emerging dry conditions to better understand what is happening "on the ground" in that area. Rebecca also summarizes consistent topics she reads in reports. Regardless of whether or not there are drought conditions in North Carolina, Rebecca finds the qualitative information from the condition monitoring



Rebecca Cumbie-Ward  
Climatologist at the State Climate  
Office of North Carolina, and weekly  
reader of condition monitoring reports

reports very valuable and showcases reports so other NCDMAC members can appreciate the value of observers' consistent reporting of local conditions.

When asked about the types of information most useful in condition monitoring reports, Rebecca mentions, "I find it really helpful when there is a reporter consistently talking about the same thing week to week

because then you can really see a picture of how that changes and how it responds. For example, if they're talking about a particular stream in most reports." She always looks forward to pictures that observers submit, such as the weekly creek pictures submitted regularly by Christopher Lumppp, a North Carolina observer.

She also finds information about plant and animal responses very informative since she is well versed in climate impacts to native plants and agriculture. Rebecca notes, "reports that talk about trees that are starting to drop leaves or more birds out because they're not finding as much water - things like that you don't really notice them when you're sitting in your office all day. Those are really useful because those are some of the earliest indicators [of drought] that [are] tough to pick up on if you're not constantly looking at them." She has a preference for weekly condition monitoring reports since her calls with NCDMAC occurs every week. But, she finds all reports, whether monthly, bi-weekly, or weekly to be extremely helpful. Rebecca stressed that with



A sample of the monthly pictures submitted by Christopher Lumppp, a North Carolina CoCoRaHS observer



condition monitoring reports in general, "just having something is so much better than what it was a year ago."

Rebecca's favorite part of working with CoCoRaHS data is learning interesting tidbits of information from observers. She remembers reading a report from Craven County in which the observer mentioned that there were hardly any bagworms during a particular season. Rebecca found this very interesting since she grew up in nearby Carteret County and remembered seeing many of those insects. "I wonder as the climatologist...what makes that insect tick, and then maybe we can use climate to forecast whether we have a high incidence." These tidbits, which might seem random to some, can provide valuable insights about local conditions.

Rebecca expressed her gratitude for condition monitoring and all the volunteer observers, and emphasized how useful condition monitoring reports have been: "For drought monitoring, and now we're kind of into the water monitoring, it's not the only piece of the puzzle but it's such a helpful piece to know that we can now zero in on what's happening on the ground in some places. I really appreciate all of the dedication that they have and I really hope that they keep doing it."

## White House Forum on Citizen Science

Did you know that the White House also participates in CoCoRaHS? In March 2015, the [White House installed a CoCoRaHS rain gauge](#) in the First Lady's Kitchen Garden to contribute to CoCoRaHS precipitation measurements. The White House recognized CoCoRaHS as one of the most successful citizen science networks. It consists of over 20,000 contributing citizen scientist volunteers and produces the largest volume of precipitation data in the nation that many organizations, such as the National Weather Service, use on a daily basis. The White House's inaugural participation in CoCoRaHS occurred in conjunction with the 5th White House Science Fair where the Obama Administration announced that they will work with a range of private, public, and non-profit partners to bolster citizen science and crowdsourcing projects. These projects will allow students and other individuals to contribute to science by enabling them to become active collectors of information and data. Additional information about the steps that the Administration is taking to increase citizen science project participation can be found [here](#).

On September 30, 2015, the White House Office of Science and Technology Policy (OSTP) brought together federal

agencies and other organizations at a citizen science forum, "Open Science and Innovation: Of the People, By the People, For the People." The purpose of the forum was to collaborate on developing a vision and ideas on how to augment existing citizen science and crowdsourcing projects and foster new ones. The White House also launched the Federal Crowdsourcing and Citizen Science Toolkit at the forum. The Toolkit provides guidance on how to plan and implement a crowdsourcing or citizen science project, case studies of citizen science success stories, a resource library, and access to a database of federal crowdsourcing and citizen science projects hosted by the Commons Lab.



Locations of federal crowdsourcing projects and citizen science projects in the Commons Lab database.

The White House Director of the Office of Science and Technology Policy, John P. Holdren, also released a memorandum at the forum that outlines principles to support the use of citizen science and crowdsourcing information and specific steps for federal agencies on how to implement them.

With White House support for citizen science underway, the future of many of these programs seems very bright. Additionally, because of dedicated volunteers like those with the CoCoRaHS network, citizen science projects continue to provide useful and reliable information for decision makers as well as support research and educational initiatives.

## Condition Monitoring Star of the Month

For November, we have selected Pat Momich from Madison County, North Carolina as the observer of the month. Pat has been a CoCoRaHS condition monitoring observer since July 2014 and a precipitation observer since 2009. In the sample

observation below, Pat describes to us specific conditions not only in her yard, but in nearby parts of her local community:

*11/16/2015: At the beginning of this week we received .85" of rain, then it became clear and cold--down to 24.8°. The forest is quiet with deep green pines & rhododendrons standing in contrast to the naked, gray hardwoods. I watched a downy woodpecker silently fly from tree to tree. And yet, animals haven't entered hibernation. I saw a groundhog eating on the side of the road and we found a garter snake last week. So it's not quite winter. The rain raised river levels and kayakers and rafters came to enjoy the water. We cut back to just the large jet on the microhydro producing 3 kwh/day. (That may not seem like much, but with our conservative lifestyle, 3 kw is often our average use of electricity.) The drinking spring remains excellent quality and quantity.*

She makes connections between animal behavior and current weather, noting that she has not observed typical winter animal behavior such as hibernation. Pat's description of her microhydro gives readers information about how local water quantity impacts her energy production in addition to describing general water quality and quantity conditions. Pat also often comments on local activities, such as the kayakers and rafters recreating in the nearby river, which gives users of the condition monitoring reports a bigger picture of local conditions.

To learn more about how Pat writes her reports and what experiences inform her interest in condition monitoring and CoCoRaHS, CISA team member Sumi Selvaraj interviewed Pat earlier this month. Below are some highlights from the interview where Pat shares some of her experiences with us and provides some tips for fellow condition monitoring observers:

### **Why did you decide to participate in the Condition Monitoring project?**

*I heard about it and found it attractive because I always put notes into my CoCoRaHS reports but they're probably not read by anybody. Some guys at Colorado State probably looked at them because they always say if you have anything to add, put it in your observation, so this seemed like an opportunity to just get a little deeper into what your observations were.*

### **Outside of CoCoRaHS, what defines you? How does this inform your monitoring?**

*I'm a student of nature...and the fact that I'm an organic gardener make me keenly aware of what's happening with soils*

*and plants, and so forth. I've been a naturalist for a long time, never considered myself very good. I worked for the Park Service and the Forest Service, so in that regard, I was an observer of nature for a living and sharing it with people who came to visit parks and forests.*



*Pat's lush organic garden in July*

**What do you enjoy about condition monitoring? What are some memorable things that you have observed?**

*I like CoCoRaHS forcing you to go outside and look at that rain gauge and look at the sky every day. Knowing that you're going to do something at the end of the week in the way of an observation, makes you more observant of the world around you. We live in a very recreation centered part of the state, so [I pay]... attention to the river level and how many people are driving around with kayaks on their roofs and whether the raft companies are doing business or whether the water is too high or too low, all weather related of course. Just the opportunity to really pay attention to what's going on in the community and in your own garden... I keep a little journal of what I call "Nature Notes" of what things bloom and when birds arrive or migrate... The condition monitoring reports are just another way of keeping all those thoughts together in a precise way, trying to pick out the right things to report.*

**What tips do you have to other observers about recording precipitation and condition monitoring?**

*It's never too late to just start. There's always more to learn. I'm pretty good with birds, flowers, and trees, but I'm now trying to learn butterflies and dragonflies. It's just fun to gain greater*



*appreciation. You start noticing the teeny little skippers that I never really paid any attention to, and...my tip would be if you haven't spent a lot of time looking at the natural world, just start. Flower garden around your house or in a close park, wherever the opportunity presents itself. Nature always has something to teach you.*

Thank you again, Pat for your dedicated participation and detailed observations! If you're interested in reading more condition monitoring reports, check out the [List of Drought Impacts Reports](#) on the CoCoRaHS website to search for and view more reports from fellow observers.

Feel free to contact us with any questions.

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