

Carolinas Climate Connection

Carolinas Integrated Sciences & Assessments, a NOAA RISA Team

Integrating Climate Science and Decision Making in the Carolinas

Newsletter Contents

- 2 Getting to Know Your RISA
Featured Team Member: Amanda Farris
- 2 The October 2015 Flood - One Year Later
Applying Lessons Learned to Hurricane Matthew
- 3 Let's Talk: The 2016 Carolinas Climate Resilience Conference
- 4 CISA Launches Phase 2 of the CoCoRaHS Citizen Science Condition Monitoring Project

Many thanks to all of the participants at the 2016 Carolinas Climate Resilience Conference!



- » Did you participate as a speaker, poster presenter, or tools demonstrator at the 2016 Carolinas Climate Resilience Conference?
- » Are you interested in sharing your climate adaptation success story with a national audience?

Then consider submitting a proposal to the 2017 National Adaptation Forum!

The [National Adaptation Forum](#) provides opportunities for the professional adaptation community from across the U.S. to convene to share strategies, lessons, tools, and information through formal trainings, facilitated practitioner presentations, and informal information exchange. This event affords participants the opportunity to learn more about how to make their work climate smart, share what they have learned with others, and develop a stronger network to be climate savvy in all that they do.

- » Proposals are now being accepted for individual presentations, posters, and adaptation tools for Tools Café. The deadline for submissions is **December 16, 2016**.
- » The National Adaptation Forum will be held May 9-11, 2017 in St. Paul, MN.

Posters, Tools Café and Oral Presentations

ARE NOW OPEN

Start planning today!



Upcoming Events

[American Water Resources Association Annual Meeting](#)
November 13-17, 2016
Orlando, FL

[Coastal GeoTools](#)
February 6-9, 2017
North Charleston, SC

[NC Water Resources Research Institute Annual Conference](#)
March 15-16, 2017
Raleigh, NC

[NC Coastal Conference](#)
April 4-5, 2017
Raleigh, NC

[National Adaptation Forum](#)
May 9-11, 2017
St. Paul, MN

Carolinas Climate Listserv

Subscribe to the [Carolinas Climate Listserv](#) to learn about the latest climate research and information, upcoming events, funding opportunities, and other relevant news for the Carolinas.



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Carolinas Climate Connection

Carolinas Integrated Sciences & Assessments

[Back to Page 1](#)

Getting to Know Your RISA

Featured Team Member: Amanda Farris

Amanda Farris grew up in York, SC, received her BA from Wofford College, and her Master's degree from the University of South Carolina. During her time as a Master's student, she worked with local municipalities on greenhouse gas emissions accounting and worked with CISA on contributions to the 3rd National Climate Assessment. Amanda was hired as CISA's Climate Outreach Specialist in 2012. Her work centers on bridging the gap between climate science research and stakeholder communities. She is invested in the development of a network of climate practitioners in the Carolinas through a variety of communications and outreach materials she produces. Amanda is the lead organizer for the biannual Carolinas Climate Resilience Conference which drew over 250 people to the Charlotte area in September for 3 days of presentations and discussions about advancing adaptive capacity in the region. At a regional level, she plays a leadership role in organizing the Southeast and Caribbean Climate Community of Practice.

Amanda particularly enjoys her work with the volunteers for the CoCoRaHS Citizen Science Condition Monitoring project. She has worked to foster this network of observers to demonstrate the value of regular reporting to support on-the-ground drought impacts monitoring for drought decision making.

Outside the office, Amanda enjoys spending time with family, running, and practicing yoga.



Amanda and her niece, Larken, hiking at Blowing Rock, NC

The October 2015 Flood - One Year Later

Last October's heavy rainfall and flooding event left scars in the Carolinas that continue to serve as a reminder of the strength of Mother Nature and the havoc she can wreak. Relief, response, and recovery from this event were a main discussion topic at this year's SC Water Resources Conference, held October 12-13 in Columbia, SC. Just days before this convening of water resource managers and experts from throughout the state, the Carolinas were once again faced with an extreme event as Hurricane Matthew ripped up the East Coast of the U.S.

The one year anniversary of the October 2015 event combined with the impacts of Hurricane Matthew serve as a reminder that, when rebuilding our communities, considering resilience to climate extremes is a high priority in order to decrease future potential impacts. Below are a few resources that provide additional information about the event.

- » The [4-pager](#) produced by the CISA team last fall provides insight into the climatological and hydrological context of the October 2015 event and highlights the need for rebuilding resiliently.
- » This [online interactive journal](#) developed by the SC State Climatology Office provides a variety of information and linked resources about the event and its impacts to include maps of the event and a synoptic and chronological summary of how the event unfolded.
- » A recently released report by ISET International and Zurich entitled "[A Post-Event Review of the October 2015 Floods in South Carolina: A Deep Dive into the Columbia and Charleston Event](#)" is part of Zurich's flood resilience program which provides research and independent reviews of large flood events. The report "seeks to answer questions related to aspects of flood resilience, flood risk management, and catastrophe intervention."

Using Lessons Learned from 2015 in Preparation and Response to Hurricane Matthew

The Southeast & Caribbean Climate Community of Practice (CCoP) recently released a [newsletter](#) highlighting some of the major impacts of Hurricane Matthew in the region. In addition to the recap of the event, CCoP members are also interested in documenting the preparation, impacts, and response along the southeastern coastline in order to compile lessons learned and best practices for future storm threats. This will be done through the creation of a public Google Map ([similar to this example](#)) where information such as the storm track; wind speeds, rainfall amounts, storm surge, and record high tides; pre-storm preparations; impacts; and post-storm response and recovery information can be compiled. The map will be posted to the CCoP website and publicly available for anyone to utilize.

Would You Like to Contribute? The CCoP welcomes any information or pictures that can help tell this story. They are particularly interested in documenting any climate adaptation or resilience efforts that may, or may not, have been effective in mitigating the impacts of the storm. This might include information about early warning and communications with residents or images of how different types of infrastructure fared through the storm. If you have any information or images to share, please e-mail them to Liz Fly at elizabeth.fly@scseagrant.org. Be sure to include a source for all submissions.



Flooded businesses in the Gills Creek Watershed in Columbia, SC on October 4, 2015. Photo credit: George Herron



A breached dam in the Arcadia Lakes neighborhood located in the Gills Creek Watershed in Columbia, SC. Photo credit: George Herron

Carolinas Climate Connection

Carolinas Integrated Sciences & Assessments

Back to Page 1

Let's Talk: The 2016 Carolinas Climate Resilience Conference

By: *Ellie Davis*

Communication was a main focus of the 2nd Carolinas Climate Resilience Conference, hosted by CISA on September 12-14 in Charlotte, NC. Conference attendees heard from many well-known climate communicators, including a keynote address from Bob Inglis, former US Representative and head of the Energy and Enterprise Initiative. Rep. Inglis emphasized the need to "speak the language" of your listener. His new initiative, RepublicEn, aims to unite conservatives around free-enterprise climate change solutions through social media campaigns and word of mouth.

Think you can explain your passion for climate change in 9 seconds? During a plenary session and pre-conference workshop, Susan Hassol, founder of Climate Communication, underscored concise climate communication. If you can't Tweet your message, it's too long for a shareable soundbite. Bonus points for making it rhyme!

It wasn't just the presenters who were talking. The conference was designed to be very interactive. Sessions had designated formats from the traditional Q&A at the end of a presentation to fully interactive sessions where the presenter asked the audience questions. There were also tool demonstrations where participants had hands-on experience with various climate adaptation support tools. Even if you missed the conference, you can access these presentations and tools on the [CCRC website](#).

Two meteorologists and a film director walk on stage... it sounds like the beginning of a joke but the final plenary focused on the hard questions around climate communication. The plenary was completely run by audience participation and questions, bringing together the interactive nature of the conference and a final group of outstanding speakers. Greg Fishel, WRAL's chief meteorologist, described his struggle to accept climate change but how data finally convinced him. However, some people are not always convinced by data, and David Salvesen (UNC Chapel Hill) uses film to connect. *Climate Stories NC* tells the tale through everyday people who are seeing environmental changes in their lives. What about that second meteorologist? Jim Gandy from WLTX created *Climate Matters* to do short news segments on climate change. It's safe to say that we all communicate climate a little differently but at the CCRC conference, everyone was involved in the conversation.



Conference attendees sent out some great Tweets. Below are a few highlights. Check out more with #CCRC2016.

» @NCIPL: @NCWF Richard Mode talks about filming his @climatestorync with a packed room at #CCRC2016 <http://climatestoriesnc.org>



» @SelfHelpGreen: Folks at #CCRC2016 are taking on the crucial questions about climate resilience for Carolinas. Thanks for sharing highlights, y'all!

» @AP_clim: Susan Joy Hassol: #scicommiss is simple, clear msgs, repeated often, by variety of trusted sources #CCRC2016

» @jjrennie: @DekeArndt: In OK, 50s had worse drought than 30s. Resilience after 1st event helped people 20 years later #CCRC2016

Many Thanks to All of Our Generous Sponsors

Carbon Neutral

- » SC Sea Grant Consortium
- » USDA Southeast Regional Climate Hub

Gold

- » AECOM
- » Clean Air Carolina / Medical Advocates for Healthy Air
- » EcoAdapt / National Adaptation Forum
- » State Climate Office of North Carolina

Silver

- » National Environmental Modeling and Analysis Center (NEMAC)
- » NC SeaGrant
- » NC Water Resources Research Institute

Bronze

- » Four Twenty Seven Climate Solutions
- » Hazen and Sawyer
- » SC State Climatology Office
- » USC School of Earth, Ocean and Environment

The 2016 CCRC was covered by several media outlets. Check out these stories:

- » "A conservative Republican tackles climate change", by Bruce Henderson, The Charlotte Observer, September 9
- » "Carolinas water managers brace for a drier - or sometimes wetter - climate future", by Bruce Henderson, The Charlotte Observer, September 14
- » "Columbia could again see floods like last year's", by Sammy Fretwell, The State, September 14
- » "Climate Conference Attendees Range from Duke Energy to NAACP", by Laura Wenzel, Medical Advocates for Health Air, September 22

Carolinas Climate Connection

Carolinas Integrated Sciences & Assessments

[Back to Page 1](#)

CISA Launches Phase 2 of the CoCoRaHS Citizen Science Condition Monitoring Project

CISA's Citizen Science Condition Monitoring project began in 2013 in response to recommendations made at the NIDIS Carolinas Drought Early Warning System (DEWS) scoping workshop. Stakeholders at this meeting noted the need for more on-the-ground drought impacts monitoring and reporting to help inform drought planning and preparedness. Using existing tools developed by the Community Collaborative Rain, Hail, and Snow (CoCoRaHS) network, citizen scientists submit weekly reports about how recent precipitation amounts and weather affects local conditions. During the initial phase of the project, CISA recruited and trained volunteers, launched a monthly newsletter and blog to communicate with observers, analyzed report content, and generated maps and graphics to share the information with drought decision makers. Feedback interviews were conducted with these decision makers to learn how they might utilize condition monitoring reports as part of their ongoing responsibilities.

Decision Maker Feedback Leads to New Project Components

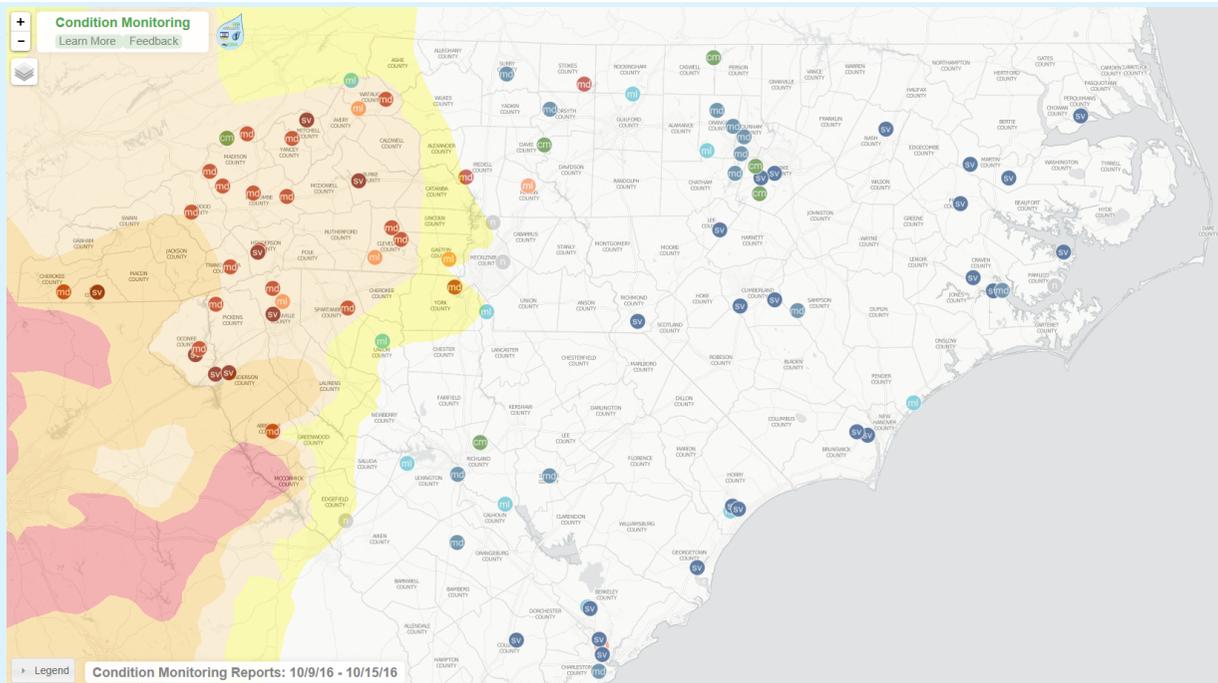
The feedback we received led to new and exciting ideas on how to expand the project. Working with collaborators at CoCoRaHS headquarters and the National Drought Mitigation Center, a new CoCoRaHS report form with a condition monitoring scale bar was developed. The scale bar enables observers to designate current conditions from "severely wet" to "severely dry" and gives a snapshot of local conditions so that those viewing the reports can identify where change might be occurring. This national transition from the drought impact report form to a condition monitoring report form reflects a general consensus that regular reporting, rather than one-off drought impact reports, provides useful information about incremental changes in conditions that allow drought decision makers to identify the onset, intensification, and recovery of dry conditions more easily. To make condition monitoring reports more accessible, a [web map](#) was created to display the reports spatially and in conjunction with other contextual information such as the current US Drought Monitor map. An [interview with Rebecca Ward](#), Extension Climatologist with the State Climate Office of North Carolina, showcases how she uses the condition monitoring reports to help monitor drought conditions across the state.

These new project components were launched on October 10, 2016. *To date, more than 1500 reports have been submitted nationally!* The web map is only available for the Carolinas as we continue to pilot the project and ground-truth the utility of citizen science observations for decision makers. As part of the ongoing assessment of the project, we will survey observers to learn about their experiences with this type of reporting. We will also conduct another round of interviews with those using the condition monitoring reports and web map for different types of decision making.

Interested in participating?

We welcome any and all volunteers who would like to be a part of the CoCoRaHS network to submit daily precipitation measurements and weekly condition monitoring reports. If you are interested in participating, please complete this [volunteer information form](#) and return it to Amanda Farris at afarris@sc.edu.

Additionally, if you think that you might be able to utilize condition monitoring reports and the [web map](#) in your work, we would also appreciate the opportunity to hear feedback from you about your impressions of the project. If you are interested in sharing this type of feedback, please e-mail Amanda Farris with your contact information.



The [condition monitoring web map](#) was developed in order to spatially display condition monitoring reports and make the information more accessible and useful for drought decision makers. Each dot on the map represents a condition monitoring report submitted through the CoCoRaHS website. The dot colors correspond to the scale bar selection made by the observer in their report. The seven scale bar levels range from "severely dry" to "severely wet". Red dots represent drier conditions. Blue dots represent wetter conditions. The screen shot of last week's report submissions shows a clear picture of the range of current conditions in the Carolinas. The coast is still recovering from heavy rainfall and flooding caused by Hurricane Matthew while the western parts of the states are suffering from drought conditions. Map users can click on each dot to see the full observer report. Additional layers are also available to toggle on and off, including the US Drought Monitor Map, climate divisions, and HUC 6 watersheds, which provide additional contextual information for map users.

We want to hear from you!

If you visit the web map, please take 2-3 minutes to click on the "feedback" button at the top of the screen. Answer a couple of short questions to tell us if and how condition monitoring reports and the web map might be useful for your work.