3rd Quarter 2017

Carolinas Climate Connection

Carolinas Integrated Sciences & Assessments, a NOAA RISA Team

Integrating Climate Science and Decision Making in the Carolinas

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carolinas climate resilience conference

Save the Date!

We are pleased to announce that the 2018 Carolinas Climate Resilience Conference will be held September 17-19, 2018 in Columbia, SC. The 2016 event brought together nearly 275 practitioners, researchers, and staff from local, state, and federal agencies to share information about climate-related tools, resources, experiences, and activities in the Carolinas. Session topics included water resources management, coastal climate adaptation, conservation, and climate and public health connections. The 2018 event will provide even more opportunities to foster real-world solutions to climate adaptation in the region. Sign up for the conference e-mail list to stay informed about requests for speakers and presentations, registrations, and travel information. Contact Amanda Farris or Kerry Guiseppe with any questions.

Bob Inglis, former US Representative for South Carolina's 4th district, gives the keynote address during the opening session of the 2016 Carolinas Climate Resilience Conference.

Upcoming Events

NOAA Coastal Tools Training
October 17, 2017
Beaufort, NC

Our Coastal Future Forum
October 20-21, 2017
North Charleston, SC

Social Coast
February 5-8, 2018
Charleston, SC

North Carolina Water Resources Research Institute Annual Conference
March 14-15, 2018
Raleigh, NC

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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NOAA RISA Regional Integrated Sciences and Assessments

UNIVERSITY OF SOUTH CAROLINA

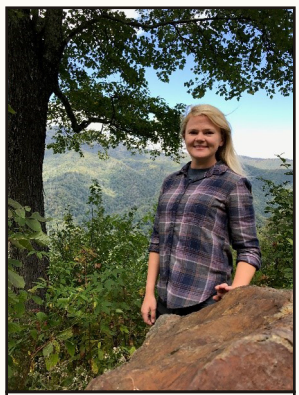
Getting to Know Your RISA

Featured Team Member: Ekaterina Altman

Ekaterina Altman is a Ph.D student at the University of South Carolina (USC) and CISA's newest Graduate Assistant. She is working to support the South Carolina Drought Response Program and related projects in climate, water, and health interactions. Ekaterina received a master's degree from USC and worked as a research assistant for CISA before starting a Ph.D. in Environmental Health Sciences this fall. Ekaterina's work includes assisting the South Carolina State Climatology Office with efforts to improve the state's drought preparedness and response. She is part of a project team working to develop new resources to meet demands of decision-makers for drought information, document the impacts of recent droughts, update the existing state drought-related documents, and collect information about other drought programs in the Southeast. Team accomplishments include updates to the SC Emergency Operations Plan - SC Drought Response Plan, proposed changes to the drought section of the SC Hazard Mitigation Plan, and the SC Drought Tabletop/Water Shortage Exercise held September 27, 2017.

Ekaterina is a resident of coastal Horry County and enjoys spending time at the beach, camping in state parks, practicing yoga, playing tennis, and spending time with her family and their dog Lux.

Name fact: in Russia, where Ekaterina was born, using multiple name derivatives is a common practice. The short form for Ekaterina is Katya.



Ekaterina on a hike in the North Carolina mountains

Improving South Carolina's Capacity to Prepare & Respond to Extreme Drought

By: Ekaterina Altman

South Carolina has experienced several prolonged and intense droughts over the past two decades, highlighting the need for multiple agencies and organizations to work together to effectively manage water resources during these events. On September 27, 2017, the first South Carolina Drought/Water Shortage Tabletop Exercise took place at the SC Emergency Operations Center in West Columbia, SC. The tabletop, organized by the SC Department of Natural Resources State Climatology Office, CISA, the SC Emergency Management Division, and SC Water Resources Center, gathered state and federal agencies, water utilities, and industry members who are engaged in drought response. The exercise focused on an overview of existing legislature, state-, basin-, and local-level responses to water shortages, and plans and procedures that govern responses to drought.

The idea for the drought tabletop exercise emerged at the SC Water Resources Summit: Back to the Future of Drought in Clemson, SC on April 21, 2017. Feedback from the Summit led to the tabletop exercise just five months later. Participants, including local water systems, reservoir managers (US Army Corps of Engineers, Duke Energy, Santee Cooper), water users, the State Emergency Response Team (SERT), and members of the SC Drought Response Committee walked through a series of drought scenarios and discussion points, rehearsing the actions that would take place at increasingly severe stages of drought. Participants had an opportunity to overview existing drought plans and procedures and to discuss their organization's drought response to increasing drought severity and the activation of the State's Emergency Operations Plan.

SC Drought Tabletop Objectives

1) Identify and understand the strengths and breaking points in the SC Drought Response Act, SC Drought Regulations, SC Emergency Response Plan Drought Annex, and local drought plans and procedures

2) Improve awareness of local, state, and federal players in South Carolina's drought response

3) Identify key mission areas for each state emergency support functions

4) Collect ideas and strategies for future exercises

South Carolina has multiple documents that guide state-, basin-, and local-level response to drought including the SC Drought Response Act, the SC Drought Response Plan (an annex to the SC Emergency Operations Plan), drought ordinances, and low inflow protocols. The tabletop highlighted the need to review local drought ordinances and state statutes, to update the existing drought response procedures, and to establish better communication networks between agencies and other water managers in the state. Challenges, opportunities, and lessons learned will become stepping stones to enhance local and state drought response and planning.

Carolinas Condition Monitoring Pilot Program Goes National

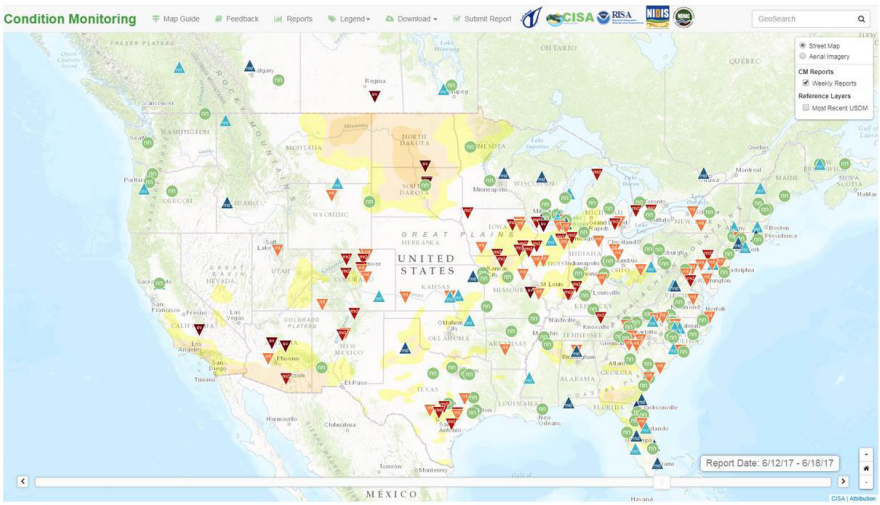
By: Ellie Davis & Kerry Guiseppe

For the last several years, CISA has partnered with the Community Collaborative Rain, Hail & Snow Network (CoCoRaHS) on a pilot program to add a condition monitoring component to their citizen science precipitation data collection. The project is supported by the National Integrated Drought Information System. Condition Monitoring reports are submitted by CoCoRaHS citizen scientists once a week. These reports include information about how recent rainfall, or a lack thereof, might have affected their local environment and community.

On Monday, September 11, 2017, three new tools to help volunteers and practitioners visualize and participate in the CoCoRaHS condition monitoring project were launched. The tools include the National Condition Monitoring Web Map, the Condition Monitoring Summary Data Page, and a Condition Monitoring Training Animation.

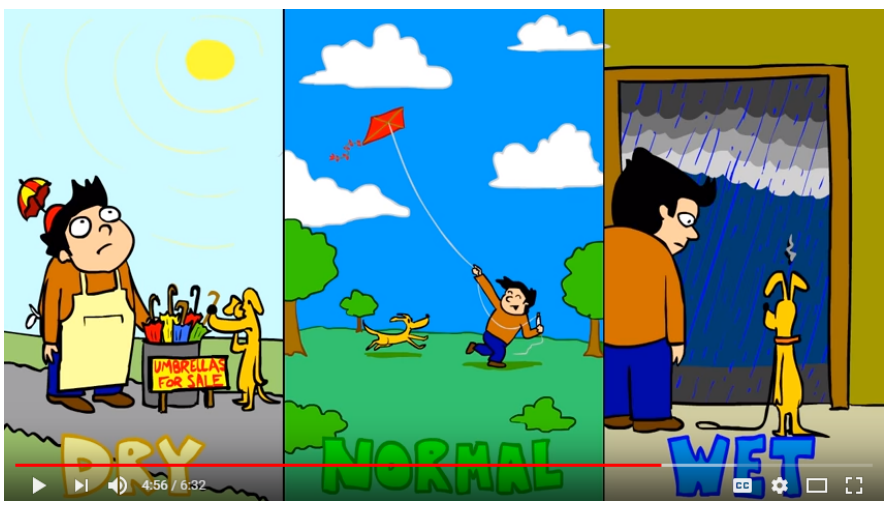
Condition Monitoring Web Map

The Carolinas Condition Monitoring Web Map was launched in 2016 based on decision maker feedback that improved access to the reports and a visualization would increase usability of the data. The newly launched National Condition Monitoring Web Map displays all of the condition monitoring reports on a weekly basis throughout the United States, Canada, Puerto Rico and the Bahamas! Each symbol on the map can be clicked to open an observers report. It also shows the corresponding US Drought Monitor map, to provide additional context about the status of drought conditions in an observer's area. Viewing reports from other observers around the country can also give volunteers ideas for the types of information they might include in their own reports.



Condition Monitoring Summary Data

Are you interested in looking at trends or how conditions have changed over time? The Condition Monitoring Summary Data Page uses a wide range of graphs to visualize the data reported by observers. These graphs can be used to review data submitted at one station or data by county, state or even country. These summary graphs help to show how conditions may have changed over time in an area. The graphs also have many interactive features, including the ability to create a customized link for your query, zooming into a particular period of time by highlighting a portion of the graph, and downloading report data for further analysis.



Condition Monitoring Animation

You may have seen some of CoCoRaHS's fun and educational animations and now there is a specific Condition Monitoring Training Animation! Join the CoCoRaHS hero and his dog on an adventure to learn about condition monitoring. The animation breaks down the process of condition monitoring, taking viewers step by step through determining the scale bar value, selecting reporting categories, writing the condition monitoring description, and submitting the report. The audience learns about who uses condition monitoring reports and what information those decision makers like to see. The animation emphasizes that observers are the experts for what is normal or abnormal in their area and that's why consistent reporting is so important.

Water, Climate, and Public Health Issues Converge at Charleston Workshop

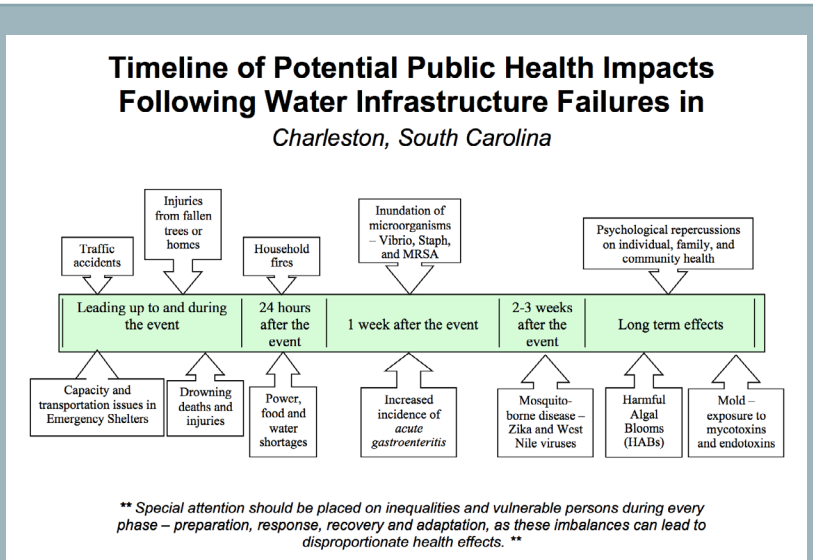
By: Amanda Farris

On Tuesday, September 19, I attended a tabletop exercise along with water and public health officials and other Charleston-area stakeholders to test a new guidebook designed to incorporate future climate scenarios with water and health infrastructure planning and preparedness. The exercise was part of a multi-year project led by the SC Sea Grant Consortium in collaboration with multiple partner intuitions, including CISA, and is funded by NOAA's Coastal and Climate Applications program. The goal of the project is to expand the capacity of public health officials, environmental agencies, emergency managers, and water and wastewater utility operators, among others, around the issues of critical coastal water infrastructure and public health. Project materials are being piloted in Charleston, SC and Morehead City, NC in order to consider how best to present the information so that it is transferable across different communities varying in size and types of coastal hazard risks.

At the September 19 tabletop exercise we worked through two decision-making matrices to consider both infrastructure vulnerabilities and organizational capacity to prepare for and respond to an extreme event. The project team set the stage for the tabletop placing us in the wake of a Category 2 hurricane having just swiped the South Carolina coastline in the year 2030, causing streets and buildings to flood in the Charleston region due to a combination of storm surge and projected future sea levels.

First, exercise participants worked through a 2x2 matrix for three different sectors, public health facilities, municipal government facilities, and water and wastewater infrastructure. Using detailed, interactive GIS map layers, we discussed how flooding might affect different types of infrastructure such as roadways, pumping stations, and access to hospitals or shelters. The matrix allowed us to consider which facilities might be inundated, compromised, or simply inaccessible due to impassable roads. The GIS maps were invaluable in helping to envision exactly which areas would be impacted.

After lunch, we once again broke into small groups by sector to work through a Resilience Matrix exercise. This exercise helped us to think about organizational capacity to prepare for, absorb the impacts of, recover from, and adapt to climate extremes. These are known as the four stages of the "disaster cycle." We also considered different types of organizational capacity with respect to the physical, informational, cognitive, and social components of our organizations. To determine a rating for each quadrant in this 4x4 matrix, which was developed based on the US Army Corps of Engineers Coastal Community Resilience Assessment, a series of organizationally-relevant questions were posed. For example, the "physically prepare" quadrant of the matrix for the public health sector includes questions such as "Is the healthcare facility prepared to operate in isolation for 96 hours?" and "Does the healthcare facility have a stockade of non-perishable foods that do not need to be cooked?" Questions receive scores based on the degree to which each component has been address, ultimately resulting in a susceptibility score. Charts are generated based on scores from the matrix, giving a picture of overall resilience.



This timeline was provided to help tabletop participants consider public health impacts of the hurricane at various points when response actions would be necessary.

During the final feedback session decision makers shared how they might incorporate these exercises into their own planning processes. The group especially thought that the Resilience Matrix would be helpful for their respective organizations to consider specific types of activities, such as those mentioned above, which they can incorporate into their operations to increase their ability to prepare for and respond to extremes.

The research team will host a second tabletop exercise Morehead City, NC this fall. Feedback from each exercise will be incorporated into the final version of the Guidebook for Community Level Assessment.