



***Building Adaptive Capacity in the Southeast &
Caribbean through a Climate Community of Practice***

2016 Member Workshop

April 13-15, 2016

Tybee Island, Georgia

The **Southeast and Caribbean Climate Community of Practice (CoP)** brings together individuals from local, state, and federal governments, academia, non-profit organizations and the private sector to apply climate science and assess how coastal communities and ecosystems can adapt to the impacts of climate variability and change.

The CoP provides a forum for sharing lessons learned and best practices related to climate communication and adaptation. The CoP also provides education and networking opportunities to its members and their stakeholders to increase knowledge and awareness of climate science and to coordinate and perform outreach, extension and communication related to climate change and its impacts in the Southeast and Caribbean region.

Steering Committee

- Chris Bergh, South Florida Conservation Director, The Nature Conservancy*
- Amanda Farris, Climate Outreach Specialist, Carolinas Integrated Sciences and Assessments*
- Stephanie Fauver, Meteorologist, NOAA Office for Coastal Management*
- Liz Fly, Coastal Climate Extension Specialist, SC Sea Grant Consortium, Carolinas Integrated Sciences & Assessments*
- Blaik Keppler, Coastal Training Program Coordinator, ACE Basin National Estuarine Research Reserve, SCDNR*
- Jennifer Kline, Coastal Resources Division, GA Department of Natural Resources*
- Shelby Krantz, Coordinator, Southeast Climate Consortium*
- Michael Kruk, Research Scientist, ERT Inc., NOAA National Centers for Environmental Information*
- Geno Olmi, Coordinator, Southeast and Caribbean Regional Team, NOAA*
- Kelly Spratt, Local Government Outreach Coordinator, Georgia Sea Grant*
- Lauren Thie, Epidemiologist, Division of Public Health, NC Department of Health and Human Services*
- Suzanne VanParreren, Coastal Training Program Coordinator, Sapelo Island National Estuarine Research Reserve*
- Bethney Ward, Project Lead and NERR Liaison, NOAA Office for Coastal Management*
- Jessica Whitehead, Coastal Communities Hazards Adaptation Specialist, NC Sea Grant*

Workshop Planning Committee

- | | |
|--|--|
| <i>Holly Abeels, UF IFAS/Florida Sea Grant</i> | <i>Shelby Krantz, Southeast Climate Consortium</i> |
| <i>Amanda Farris, Carolinas Integrated Sciences & Assessments (CISA)</i> | <i>Shana Jones, Carl Vinson Institute of Government/GA Sea Grant</i> |
| <i>Stephanie Fauver, NOAA Office for Coastal Management</i> | <i>Geno Olmi, NOAA Southeast and Caribbean Regional Team</i> |
| <i>Elizabeth Fly, SC Sea Grant Consortium/CISA</i> | <i>Lillian Ramirez, Puerto Rico Sea Grant</i> |
| <i>Jill Gambill, GA Sea Grant/UGA Marine Extension Service</i> | <i>Jessica Whitehead, NC Sea Grant</i> |

Introduction

In 2015, the CoP received a National Sea Grant College Program 2014 Special Projects award to host its third in-person meeting. This meeting was held April 13-15, 2016, on Tybee Island, Georgia. 64 people attended from Virginia, North Carolina, South Carolina, Georgia, Florida, and Puerto Rico.



Workshop goals:

- Expand climate literacy of all participants, exploring common language among community members, extension professionals, and scientists.
- Provide a venue to share tools, training, and resources on actionable climate information.
- Sharing lessons learned and best management practices for implementing climate adaptation strategies through case studies from local community representatives.
- Provide a networking opportunity for a diverse representation of local communities in the Southeast and Caribbean.

Presentations are available on the [CoP website](#).

Overview of the Southeast and Caribbean Climate Community of Practice

The Southeast and Caribbean Climate Community of Practice (CoP) aims to build affiliations, partnerships, and networks through in-person meetings, workshops, webinars, and regular engagement.

Prior to the 2016 workshop, the CoP held workshops in [2010](#) and [2012](#).

The CoP has offered a series of webinars, including:

- a [briefing](#) on the southeast section of the report [Risky Business: The Economic Risks of Climate Change in the United States](#);
- an [overview](#) of how the [Community Rating System](#) may be used for sea level rise adaptation;
- and a [discussion](#) on lessons learned from the [October 2015 heavy precipitation and flooding event](#) in Charleston, South Carolina.

Visit our website at seaccop.wordpress.com for more information!

Climate Change: Communicating the Science

This session began with a very brief overview of the latest climate science in the Southeast and Caribbean region. The group then heard from two extension communicators who demonstrated strategies for sharing information about climate and related impacts. The audience had the opportunity to share experience and provide feedback on what does and does not work when talking about climate in their communities.

Key takeaways:

- Metaphors, analogies, and similes are effective ways to generalize complex scientific phenomena.
- Individuals often question or worry about the likelihood of stronger & more frequent weather events; a new method of communicating risk probability for storms should be discussed.
- Many scientific endeavors are closely tied to political contentions. Scientists and technical communicators must be sure to present information in an impartial and apolitical manner.

Assessing Vulnerability: What does it really mean?

In this session, representatives from local communities discussed work they have conducted to assess climate-related risks and vulnerabilities. Talks included information on who conducted the assessment, what the funding mechanisms were, what partnerships were beneficial, and next steps for using the information to increase climate resilience.

Key takeaways:

- Communication is a large part of assessing vulnerability; especially in communities facing irregular hazard occurrence, such as hurricanes.
- Appropriately conveying the “*reality*” of risk can be difficult to accomplish over time.
- It is difficult to proactively plan for areas which have not recently been hit by *impactful* consequences of sea level rise (SLR) because stakeholders don't realize/believe SLR is occurring. People seem to be much more receptive once they experience it firsthand.
- There are lots of short-term solutions currently implemented, but fewer long-term solutions.
- A lot of infrastructure has been lost or is at risk.
- There is a need to balance private and public interests in order to get stakeholder support and for projects to be feasible.

Case Studies from local communities: Responding to extreme events in both the short and long term

In this session, speakers discussed how extreme events can be used as a catalyst for rebuilding resiliently. Presentations were followed by small group discussions to share personal experience and key lessons learned.

Hyde County, North Carolina

- Hurricane Isabel negatively impacted the economy of Hyde County, which alerted stakeholders that flood resilience planning needed to be a priority.
- Because the County's budget is not very large, it must rely on federal government funding to improve resilience to sea level rise, hurricanes, and other climate-related impacts.
- Stakeholders agree that sea level rise/climate change is happening and needs to be dealt with. However, not everyone agrees that it is human-caused.
- NC Sea Grant is currently developing a locally tailored flood resilience based on FEMA guidelines.

Puerto Rico

- Drought is a serious threat to Puerto Rico; it is slow moving and is often underestimated.
- A watershed management protocol was created for both public and private stakeholders, and the US Drought Monitor was used to communicate drought impacts in Puerto Rico.
- Accommodating drought conditions is extremely expensive. Going forward more emphasis will be placed on proactive management practices.

Charleston, South Carolina

- The October 2015 rain event confirmed predicted flooding areas in sea level rise models.
- Nuisance flooding is a chronic threat to the city, and sea level rise is widely acknowledged even though there is no consensus that it is due to anthropogenic factors.
- Because sea level rise is agreed upon, the city is able to collaborate with other organizations to begin to address it.
- The City's Sea Level Rise Strategy has been passed, which allows for a great amount of community involvement. 40% of the measures mentioned in the strategy are already in effect.

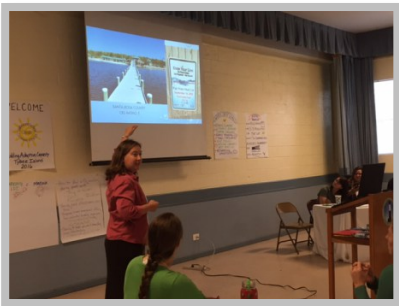
Heat Threatens Public Health

- Health risks due to climate change are currently not well understood.
- Heat strokes are a danger on the rise, and have a mortality rate of 50%. The elderly, children, and those who live without air conditioning are at the highest risk.
- Heat days are also tied to poor air quality days.
- [The Heat-Health Vulnerability Tool](#) translates weather and climate conditions into useful information regarding the probability of emergency department visits for heat-related illness. The tool is intended to help inform heat warnings, planning, and preparedness.

Tools Café

Developers gave a brief introduction to their tools, followed by a round-robin session where attendees circulated to different hands-on tool demonstrations.

- [AgroClimate](#)- A tool for managing climate risk in agriculture. Rainfall and temperature data for the continental US are displayed, including statistical information on a few crops for farmers.
- [Integrated Water Portal](#) - A portal for streamflow, groundwater, drought and precipitation data from a number of government and industrial sources.
- [NOAA Coastal Flood Exposure](#) – An interactive digital map which displays people, infrastructure, and natural resources facing coastal flood hazards.
- [Sea Level Scenario Sketch Planning Tool](#) - A planning tool for preliminary assessment of vulnerable transportation infrastructure due to sea level change.
- [South Atlantic Conservation Blueprint](#) - An ever-changing spatial representation of the areas most ideal for conservation in the South Atlantic region.
- [Southeast Global Changes Monitoring Portal](#) - A comprehensive map that catalogs a number of environmental parameters through an extensive observational network.
- [University of Florida Sea Level Rise Viewer](#) - A map that identifies vulnerable infrastructure and census block groups under different sea level rise scenarios.
- [Vulnerability & Consequences Adaptation Planning Scenarios](#) - A facilitated discussion process that helps communities identify their vulnerabilities to weather and climate threats and explore adaptation options.



Making the Climate Community of Practice Work for You

This session gave CoP members the opportunity to share ideas and consider ways to support an active and engaged network across the region.

- The backbone of the CoP is the combination of formal and informal institutions, all working towards a common goal.
- Many successful networks have horizontal control structures in which everyone shares information and expertise. A network that feels forced or top-down will not operate as efficiently as a network with high individual buy-in.
- Typically, you get out of a network what you put in; networks can increase organizational commitment by providing opportunities that build a sense of ownership.
- The strength of the CoP comes from its constituents and their knowledge, not outreach materials.
- The CoP should consider utilizing social media for more networking and outreach opportunities. A private Facebook or LinkedIn group for members could be useful, and Twitter could be used to send out quick ideas, links, tools, etc. to the general public.
- In-person interactions are seen as the most valuable by members. More funds should be committed to have the CoP meet in-person more often. A meeting annually or every other year should be the minimum, in order to keep momentum and enthusiasm for the group.
- The group's website needs to be improved. It needs links to other websites, tools, and articles, and needs to engage the general public more effectively.

Community Resilience Keynote Speaker - Mayor Billy Keyserling

Mayor Billy Keyserling of the City of Beaufort, SC, supports the efforts of a local citizen-led sea level rise task force to identify the most vulnerable areas in the community and recommend potential adaptation strategies to address current and future impacts from storm surge and sea level rise.

- The emphasis of our conversations about sea level rise should focus on the effects of SLR in our day to day lives; not why it is happening.
- Stronger neighborhood and community organizations make stronger local governments.
- Complex problems require careful coordination, communication, and collaboration between multiple levels of government, technical experts, and individual citizens.
- Efforts like those in Beaufort make the city “shovel ready and at the front line” when funding opportunities become available.

Climate Adaptation Exploration

Tybee Island, GA, worked with Georgia Sea Grant, the University of Georgia's Carl Vinson Institute of Government, Stetson University, and UGA Marine Extension Service to develop a Sea Level Rise Adaptation Plan. This plan was presented to and adopted by City Council on April 14, 2016. The city is already taking steps to mitigate the impacts of sea level rise, flooding, and storm surge, and participants of the CoP workshop took a tour of the island to view these actions.

View the Tybee Island Sea Level Rise Adaptation Plan [here](#).

- Living shorelines to reduce and/or eliminate erosion along a saltwater creek.
 - There was significant cost savings by building a living shoreline rather than a sea wall.
 - Living shorelines also improve water quality.
- Beach renourishment to address erosion on the beach.
 - The project was cost-shared 60/40 federal/local and cost ~\$11 million for 1.3 million cubic yards of sand.
- Water control structures to reduce/eliminate the flow of seawater back through the stormwater drainage system during extreme high tides.
 - Success was seen during high tide events at these structures; however, the trouble areas may shift to spots where there are no control structures.
- Ensuring access to freshwater by digging a new well.
 - The aquifer that is currently used is showing signs of saltwater intrusion.
 - The state of Georgia is providing \$5 million to drill the well to the Cretaceous Aquifer and the city of Tybee will be responsible for the \$5-8 million needed to add infrastructure to cool, treat, and deliver water.



Using the Community Rating System to Support Climate Adaptation

A brief overview of the Community Rating System (CRS) was followed by a description of specific CRS activities which can be implemented to support climate adaptation. Representatives from communities in Florida, Georgia, and North Carolina discussed how they have worked with extension agents to support this work.

- Flood insurance rates are rising; the Community Rating System is a way municipalities can save on flood insurance costs for all citizens in their jurisdiction.
- The CRS works by ranking your community based on the quality and quantity of preventative flood “activities” documented by your community.
- The CRS provides a solid framework for communities to implement modern floodplain management practices, although it can be administratively “intense.”
- Currently, the CRS focuses heavily on historic incidents of flooding, but when we think about climate adaptation, we need to think about how things will look in the future not how they were in the past.

Key Takeaways from Speakers:

Shana Jones, Carl Vinson Institute of Government/GA Sea Grant

- Documentation and *proof of activity* are the biggest hurdles to insurance discounts in most municipalities

Holly White, Town of Nags Head

- There are many high point activities in the CRS that do not require a lot of investment capital (open space, public outreach, LID standards). Flood insurance discounts don't *always* show up on flood insurance premiums, which can make people under-appreciate the rate reduction.

Courtney Reich, Ecological Planning Group

- Remember, flood insurance rating maps (FIRMs) are suggestions. A line on a map does not stop flood water from entering uncharted territory, or areas designated as “outside of the flood zone”

Madeleine Russell, GA Sea Grant

- Outreach and communication have enormous benefits to hazard preparedness. CRS user groups are a great way to learn about updates to the rating system, learn about new activities, network with ISO representatives, and work with FEMA and other CRS user groups nationwide to prevent property loss from floods.

Overall Workshop Takeaways and Suggestions

The 3rd in-person meeting of the CoP was viewed as a success by participants. They appreciated the opportunity to network and make new connections, and enjoyed the success stories and spectrum of case studies on adaptation. Below are key takeaways and future directions.

- In-person meetings are critical for the continued success of the CoP.
 - The CoP should work to find funding source(s) committed to a biennial in-person meeting, rather than relying on sporadic grant opportunities.
 - More time needs to be built into the meetings for more networking events and discussion time.
- The CoP needs to continue sharing information and find opportunities for partners to collaborate.
 - Expand the [Resource Directory](#) to highlight local community climate resilience projects in the region.
 - Continue providing webinars on topics of interest to the region.
 - Provides news stories in the monthly email roundup.
 - Consider a social media presence.
- Participants noted the diversity of attendees with widely varying background and skills, yet noted that the CoP should aim to engage even more audiences.
 - Work to better engage local governments and increase their attendance at the in-person meetings.
 - Explore the social justice issue of climate adaptation and how climate change will unequally affect smaller, less affluent communities.
- Most participants came away with a better understanding of the Community Rating System (CRS), floodplains, sea level rise, and management strategies.
 - The field trip around Tybee Island was a very successful way to highlight a local community's adaptation strategies.
 - The CRS remains a popular mechanism for discussing flood mitigation and future flood scenarios with local communities.

