

# 2016 Carolinas Climate Resilience Conference



SEPTEMBER 12–14, 2016 | CHARLOTTE, NC

## Conference Agenda

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|---|---|
|  Illustrated Presentations |  Sharing Lessons Learned |
|  Tool Demonstration        |  Connecting the Dots     |
|  What's Going On?          |  Ask a Climatologist     |

### Monday, September 12, 2016

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#### 9:00 AM – 11:30 AM Pre-Conference Workshops

##### Workshop A

##### ▶ [Inclusive Climate Adaptation and Resilience Building](#)

- Jacqui Patterson — *NAACP Environmental and Climate Justice Program*
- Ronny Bell, — *Maya Angelou Center for Health Equity at Wake Forest/ Chair of the Indian Health Board representing the Lumbee Tribe in NC*
- Rev Leo Woodberry — *Woodberry & Associates, Pastor at Kingdom Living Temple, Florence, SC*

##### Workshop B

##### ▶ [Climate Communications in the Carolinas](#)

- Susan Joy Hassol — *Climate Communication*

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#### 12:00 Noon – 7:00 PM

Exhibits Open

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#### 1:00 PM – 2:30 PM

Opening Plenary

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2:30 PM – 2:45 PM Break

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2:45 PM – 3:45 PM

Session A

▶ Ask a Climatologist, Part I

- Ryan Boyles – *State Climate Office of North Carolina* 🙋
- Greg Carbone – *University of South Carolina, CISA* 🙋

Session B

▶ Working Together for Climate Resilience: Linking Local Planning Efforts, Part I

- Session Overview – *Linda Rimer* ✓
- A Controlled Burn Approach to Stimulate Change – *Alba Polonkey* ✓

Session C

▶ Teaching Effective Climate Communication Strategies, Part I

- Effective Strategies for Communicating Risk – *Chris Mack* 🗨️
- The Climate Communication Challenge – *Stephanie Fauver* 🗨️

Session D

▶ Integrating Climate into Conservation & Natural Resources Management, Part I

- Coastal Vulnerability Assessments for National Park Service Infrastructure: Examples in the Carolinas – *Blair Tormey* ✓
- The Climate Change Vulnerability Assessment Tool for Coastal Habitats – *Jennifer Plunkett* ✓

Session E

▶ Sea Level Rise Solutions for Communities in the Carolinas, Part I

- Community Leadership in Planning for Sea Level Rise – *Frank Knapp* 🗨️
- Deadline Data Determination: Sea Level Rise and Resilience in Charleston, SC – *Carolee Williams* 🗨️

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3:45 PM – 4:00 PM Break

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## 4:00 PM – 5:00 PM

### Session A

#### ▶ Ask a Climatologist, Part II

- Chip Konrad – *Southeast Regional Climate Center, CISA* 🖱
- Hope Mizzell – *SC State Climatology Office* 🖱

### Session B

#### ▶ Working Together for Climate Resilience: Linking Local Planning Efforts, Part II

- Leveraging University Resources to Integrate Climate Adaptation and Hazard Mitigation in the Eno-Haw Region – *Sierra Woodruff* ☑
- Maintaining Military Missions: Coordinated Approach to Sea Level Rise Infrastructure Impacts – *Ginnie Kozak* ☑

### Session C

#### ▶ Teaching Effective Climate Communication Strategies, Part II

- The Science of Science Denial and How to Debunk Climate Myths – *Michelle LaRocco* ☑
- Building Resilience in Agriculture and Forestry: A Regional Extension Perspective – *Leslie Boby* 🗨

### Session D

#### ▶ Integrating Climate into Conservation & Natural Resources Management, Part II

- The South Atlantic Conservation Blueprint: From Planning to Action – *Hilary Morris* ☑
- Hopeful Solutions for North Carolina's Birds in the Face of Climate Change – *Greg Andeck* ☑

### Session E

#### ▶ Sea Level Rise Solutions for Communities in the Carolinas, Part II

- Community Resilience: Understanding Infrastructure Vulnerability – *Phil Prete* 🗨
- Next Steps in Climate Adaptation in Nags Head, NC – *Holly White* 🗨

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## 5:15 PM – 7:00 PM

### Evening Reception

Tuesday, September 13, 2016

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**7:30 AM – 8:30 AM**

Continental Breakfast

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**8:00 AM – 5:00 PM**

Exhibits Open

**8:30 AM – 10:00 AM**

**Morning Plenary: Water Resources and Climate Resilience**

Edward D. Bruce, P.E. – *Lead Engineer, Duke Energy*

Sydney Miller – *Water Resources Planning Manager, Department of Water Management, City of Durham, NC*

Eric McClam – *Co-Owner, Farm Manager; City Roots*

Maria Whitehead – *Director of Landscape Conservation Projects, SC Chapter of The Nature Conservancy*

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**10:00 AM – 10:30 AM** Break

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**10:30 AM – 12:00 Noon**

Session A

▶ [Tool Demonstrations: Community Resilience](#)

- The Local Climate Analysis Tool (LCAT) Demonstration: An Enterprise Approach to Strengthen Climate Resiliency and Capacity – *Annette Hollingshead* ❖
- Tools for Building Community Climate Resilience Through Public-Private Partnerships – *Jeff Hicks* ❖
- Mapping the Health Impact – *Lauren Thie* ❖
- Data and Tools for Integrating Climate Adaptation Assessments and Hazard Mitigation Plans – *Susan Cutter* ❖
- EnviroAtlas: A Spatially Explicit Tool Combining Climate Change Scenarios and Ecosystem Service Indicators – *Megan Mehaffey*

Session B

▶ [Climate Change and Public Health Impacts](#)

- The Public Health Impacts of Climate Change – *Laura Wenzel* ☑
- A Public Health Risk Assessment of Vulnerable Water Infrastructure in Coastal Cities – *Armon Hanks* ☑
- The Heat Health Vulnerability Tool – *Ashley Ward* ☑

Session C

▶ [Incorporating Climate into Water Supply Planning](#)

- Modeling and Optimizing Multi-reservoir System for Savannah River Basin under Changing Climates – *Yi Xuan* ✓
- Developing Information for Integration of Climate Change in Long-Term Water Supply Planning – *Aashka Patel* 🗨️
- Are Water and Wastewater Utilities Ready for Climate Change? – *Katie Connolly* ↻

Session D

▶ [Working Land Management Tools for Use in a Changing Climate](#)

- What, When, Where and What Now: Changing Climate Email Alerts – *Jennifer Moore Myers* ↻
- Towards Integrating Agricultural Land Adaptation and Conservation Planning – *Aurelia Baca* ✓
- Building a Climate Smart Mobile Application for Foresters: The Service Forester's Mobile Application Toolkit Version 2 – *Bill Hubbard* ✓
- Southeast Agriculture Adaptation Workbook: A Hands-On Tool for Extension Agents, Land Managers and Growers – *John Lee* ✓

Session E

▶ [Panel Discussion: Mobilizing the Charleston Resilience Network](#)

- Dan Burger – *SC DHEC Office of Coastal Resources Management* 🗨️
- Rick Devoe – *SC Sea Grant* 🗨️
- Mark Wilbert – *City of Charleston* 🗨️
- Liz Fly – *SC Sea Grant* 🗨️

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**12:00 Noon - 1:30 PM**

Lunch Break

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## 1:30 PM – 3:00 PM

### Session A

#### ▶ [Tool Demonstrations: Coastal Climate](#)

- MyCoast: South Carolina - Enhancing Awareness of Coastal Hazards Through Citizen Engagement – *Liz Hartje* ❖
- Using Maps to Build Coastal Resilience – *Stephanie Fauver* ❖
- North Carolina Coastal Resilience Tool: Applications for Identifying Nature-Based Solutions – *Kate Murray* ❖
- Perspective Matters: Three-Dimensionally Visualizing Projected Sea Level Rise for Charleston, SC – *David Treadaway* ❖
- Coastal South Carolina Water Monitoring Locations: A Visualization and Access Portal – *Andrea Sassard* ❖

### Session B

#### ▶ [Climate Communications through Film](#)

- Changing Expectations: Using Film to Help Hyde County Residents Prepare for Floods – *Daniel Brinn* 🗨️
- Putting Climate in Context through Local Videos – *Greg Carbone* 🗨️
- Communicating Climate in the Carolinas through the Power of Film: a Mini-Film Festival – *David Salvesen* 🗨️

### Session C

#### ▶ [Tailoring Climate Data and Information for the End User](#)

- Success Stories on User-Engagement with NOAA National Centers for Environmental Information (NCEI) Data – *Amanda Rycerz* 🗨️
- Climate Uncertainty for Coastal and Estuarine Environments – *Geneva Gray* 🗨️
- Building, Evaluating, and Sharing Climate-Based Decision Support for Professional Foresters – *Heather Aldridge* 🗨️

## Session D

### ▶ [Fostering Resilience through Stakeholder Collaboration](#)

- Development of a Groundbreaking Sea Level Strategy Plan for the City of Charleston – *Robert Osbourne* ✓
- Jobs, Forests, & Rivers - Accomplishing Climate Change Resiliency in Rural NC Through Model Forest Policy Tools – *Jenny Edwards* 🗨️
- Climate Change Resilience Planning at the Department of Energy's Savannah River Site– *David Werth* ✓

## Session E

### ▶ [Strategies for Protecting Coastal Communities](#)

- Evaluating Living Shorelines in South Carolina – *Blaik Keppler* ✓
- The South Carolina Stormwater Ponds Research and Management Collaborative – *Rick Devoe* ✓
- Building Resilience through the Community Rating System: Using Sea Grant Resources to Assist Local Communities – *Madeleine Russell* ✓

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**3:00 PM – 3:30 PM** Break

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**3:30 PM – 5:00 PM**

## Session A

### ▶ [Tool Demonstrations: Natural Resources Management](#)

- NC State Climate Office Integrated Water Portal – *Rebecca Ward* ❖
- Climate Voyager: A Web-Based Visualization System for Future Climate Projections – *Heather Aldridge* ❖
- Explore the South Atlantic Conservation Blueprint – *Hilary Morris* ❖
- Incorporating Climate Change into Conservation Planning: An Approach and Tools You Can Use – *Bethney Ward* ❖

## Session B

### ▶ [Overcoming Climate Skepticism](#)

- Citizen Direct Congressional Lobbying for Climate Solutions – *Donald Addu* ✓
- Public Support for Climate Change Adaptation Among SC's Coastal Residents – *Matthew Nowlin* ✓
- Constraints to Implementing Sea Level Rise Mitigation Strategies in Rural Eastern NC – *Christine Avenarius* ✓

## Session C

### ▶ [Ask the Audience: What are Your Climate Data & Information Needs](#)

- NOAA's State Climate Summaries for the National Climate Assessment – *Laura Stevens* ✓
- Shaken or Stirred: How Do You Want Your Climate Data? – *Jared Rennie* ↻
- Sharing Statewide Climate Expertise Through North Carolina's Climate Blog – *Corey Davis* ↻

## Session D

### ▶ [Climate Adaptation Case Studies for Local Governments](#)

- The Application of the U.S. Climate Resilience Toolkit and its “Five Steps to Resilience” to Support Municipal Planning – *Matt Hutchins* ✓
- Helping Local Governments Take the Lead on Sea Level Rise Adaptation – *Skip Stiles* 🗨️
- Planning for an Unknowable Future: Uncertainty in Climate Change Adaptation Planning – *Sierra Woodruff* ✓

## Session E

### ▶ [The Hampton Roads Sea Level Rise & Resilience Intergovernmental Planning Pilot Project](#)

- Session Overview – *Emily Steinhilber* 🗨️
- Legal Lessons from an Intergovernmental Approach – *Emily Steinhilber* 🗨️
- Hampton Roads Infrastructure Planning Challenges – *Carol Considine* 🗨️
- What is a "Whole of Community" approach to Planning for Adaptation? – *Michelle Covi* 🗨️



Wednesday, September 14, 2016

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**7:30 AM – 8:30 AM**

Continental Breakfast

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**7:30 AM – 1:30 PM**









Exhibits Open

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**8:30 AM – 10:00 AM**




Session A

▶ [Illustrated Presentations \(Decision Support, Coastal Resilience Tools\)](#)

- Best Practices for Accessing and Interpreting Climate Projections at Local Scales – *Heather Aldridge* 
- The State of Climate-Informed Water Resources Action in the Southeast and Caribbean– *Whitney Reynier* 
- Gridded Fire Danger Estimates for Spatially Continuous Fire Risk Monitoring – *Corey Davis* 
- Spatial Visualization of Historical Drought Impact on Agriculture in North and South Carolina – *Junyu Lu* 
- Developing a Coastal Resiliency Assessment for North Carolina's Cape Fear River Basin– *Greg Dobson, Ian Johnson, and Kim Rhodes* 
- Using 3D GIS Visualization to Communicate Flood Risk and Climate Change Information in Coastal Communities – *Greg Dobson* 
- A Coastal Flood Climatology for the Lowcountry – *Joseph Coz* 
- Averting Disaster: Strategies to Avoid, Respond, and Plan for Major Floods in Coastal South Carolina – *Bridget Callahan-Lussier* 

Session B

▶ [Climate Education for the Next Generation](#)

- From Conversation to Action: Motivating Adolescents Towards Climate Change Mitigation Behaviors – *Rene Valdez* 
- Engaging University Students as Stakeholders in Climate Change – *Brian Magi* 
- Lessons from Lessons: Making Climate Impact Videos with Ninth Grade World Geography Students – *David Shelley* 

Session C

▶ [The October 2015 Flood: New Information to Understand the Historic Event](#)

- The Flood of October 2015 and Other Major Floods in South Carolina – *Toby Feaster* ✓
- How Extreme was the October 2015 Precipitation Event in South Carolina – *Greg Carbone* ✓
- Online Interactive Journal Outlines 2015 South Carolina Historic Rain and Flooding – *Hope Mizzell* ✓
- October 2015 Flood: Response and Recovery – *Maria Lamm* ✓

Session D

▶ [Insurance, Hedges, Markets, and Adapting to Climate Change](#)

- Climate Risk, Insurance, and Reinsurance – *Victor Flatt* ✓
- The Potential for Water Hedging to Increase Resilience – *Greg Characklis* ✓
- Resilience From Environmental and Energy Markets – *Victor Flatt, Heather Payne* ✓

Session E

▶ [Vulnerability at the "Edge of the Earth"](#)

- Community Flood Resilience Planning in Hyde County, NC – *Daniel Brinn* 🗨️
- Rural Coastal Community Resilience: Adapting to Rising Seas and Salinization on the Albemarle Pamlico Peninsula – *Matthew Jurjonas* 🗨️
- Adaptation Planning in the Outer Banks: Overcoming Barriers in a Multiple Decision-Maker Environment – *Holly White* 🗨️

Session F

▶ [Building Resilience and Climate Adaptation with Clean Energy](#)

- Lights Out? Climate Impacts, Blackouts, and How Clean Energy Can Help – *Steve Clemmer* 🗨️
- Wind Power: Keeping the Lights On – *Simon Mahan* 🗨️
- How Solar + Energy Storage Builds Resilience – *Todd Olinsky-Paul* 🗨️

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10:00 AM – 10:15 AM Break








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10:15 AM – 11:45 AM




Session A

▶ [Illustrated Presentations \(Climate Perceptions & Resilience Strategies, Hydrological Extremes & Impacts\)](#)

- Climate Change Risk Perceptions and Household-Level Adaptive Capacity of Citizens in a Landlocked City in North Carolina – *Katheryn Selm* 
- Rural Coastal Communities: Adapting to Sea Level Rise with a Changing Economy – *Matthew Jurjonas* 
- Business Owner Perceptions of Economic, Social and Environmental Vulnerability: The Case for Ecosystem Services in Coastal Communities – *Priscilla Morris* 
- Financing Stormwater Resilience: How Energy Efficiency Can Inform Decision Making for GSI – *Kendall Starkman* 
- Using Climate Variability to Predict Precipitation at Various Time Scales throughout the Carolinas – *Jason Giovannettone* 
- Long-Term Quantification of Extreme Precipitation in Relation with Tropical and Extra-Tropical Cyclonic Activity over the Carolinas – *Olivier Prat* 
- Impact of Precipitation on Motor Vehicle Fatalities in the Carolinas – *Scott Stevens* 
- Analysis of Soil Moisture Metrics to Assess Societal Risks to Hydrological Extremes – *Ronald Leeper* 




Session B

▶ [Visualizing Climate Impacts on the Web](#)

- The Emperor's New Clothes: Redressing the U.S. Climate Resilience Toolkit – *Nina Flagler Hall, Caroline Dougherty* 
- Communicating the Risk of Tropical Storm Surge to the Public in Charleston, SC – *Lee Lindner* 
- Making the Invisible Visible Using Tools, Science, and Art – *Terry Lansdell* 



Session C

▶ [Drought Impacts Monitoring in the Carolinas](#)

- Measuring Drought – *Rebecca Ward, Mike Money Penny* 
- Hydrologic Record Extension of Salinity Data to Evaluate Long-Term Coastal Drought Conditions – *Paul Conrads* 
- Obtaining Drought Information – *Rebecca Ward, Corey Davis, Mike Money Penny* 




## Session D

### ▶ [Increasing Resilience through Disaster Recovery](#)

- Buy-In for Buyouts: Buyout Best Practices and Their Implications for Hazard Mitigation and Climate Change Adaptation – *Ashton Rohmer* 
- Disaster Resilience Scorecard: A Tool to Support Community Preparedness and Resiliency – *Kerri Hartung* 
- Enhancing Resilience and Long-Term Recovery Planning through Multi-State Regional Partnerships – *Kristine Cherry*


## Session E

### ▶ [Designing Infrastructure for an Uncertain Climate Future](#)

- The Effect of Inclusion of Sea Level Rise on the Evolution of Roadway Design Modeling – *Paul Carroll* 
- Urban Heat Island and Urban Form in Durham, North Carolina and Levers for Change – *Elizabeth Doran* 
- Perspective Matters: Three-Dimensionally Visualizing Projected Sea Level Rise for Charleston, SC – *David Treadaway & Kelsey McLellan* 

## Session F

### ▶ [Adaptation Support for Energy Utilities: Needs, Data, and Case Studies](#)

- Key Findings from Engagement with the Utility Sector – *Jenny Dissen*
- Utility adaptation case study for the Carolinas region – *Terry Thompson*
- Demonstration of the Texas Water Simulator – *Paul Faeth*
- Accelerating Climate Services for Utilities – *James McMahon* 

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**11:45 AM – 12:15 PM**

Lunch Break

**12:15 PM – 1:30 PM**

### **Lunch/Closing Plenary: Climate Communications in the Carolinas**

*Susan Joy Hassol, Climate Communication*

*Greg Fishel – Chief Meteorologist, WRAL Raleigh*

*Jim Gandy – Chief Meteorologist, WLTX Columbia*

*David Salvesen – University of North Carolina at Chapel Hill, Institute for the Environment*