

carolinas integrated sciences & assessments

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research and project partners

- » Clemson University
- » East Carolina University
- » National Estuarine Research Reserves
- » National Integrated Drought Information System
- » NC State Climate Office
- » NC Sea Grant
- » NOAA's Center for Coastal Environmental Health & Biomolecular Research
- » North Carolina State University
- » North Carolina Water Resources Research Institute
- » Northeast Regional Climate Center
- » SC Sea Grant Consortium
- » SC State Climatology Office
- » USGS SC Water Science Center



Established in 2003, CISA is 1 of 11 NOAA-funded Regional Integrated Sciences & Assessments (RISA) teams. The RISA program supports research teams that help build the nation's capacity to prepare for and adapt to climate variability and change.

integrating climate science & decision making

Working at the intersections of climate with water, coasts and public health, the CISA team connects climate science with decision making in the Carolinas through:

- » applied research to produce relevant climate information
- » assessments of climate impacts and adaptation strategies
- » processes to support and inform community planning
- » fostering climate networks and climate communities of practice

focus on regional priorities and needs

CISA conducts applied climate research in collaboration with a wide range of stakeholders across the Carolinas, including federal, state and local agencies, resource managers, non-governmental organizations and the private sector.



connect with cisa

CISA publishes a quarterly newsletter, the *Carolinas Climate Connection*, and manages the *Carolinas Climate Listserv* in order to share up-to-date information about climate research, upcoming events, funding opportunities, or other relevant news.

Contact us if you would like to subscribe to the newsletter or listserv or to request additional information about our projects and resources.

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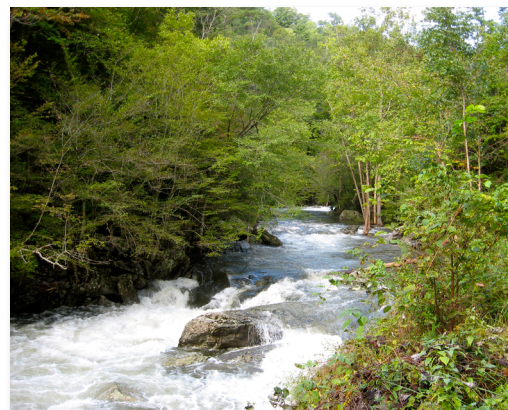
cisa focus areas

carolinas
integrated
sciences &
assessments

water

CISA works with decision makers to assess information needs and questions about climate impacts on water supply and quality in the Carolinas. Research to improve understanding, planning and preparedness for drought is also a key component of CISA's water-related work. Recent projects include:

- » Collaboration with the National Integrated Drought Information System (NIDIS) to improve understanding of the unique impacts of drought in coastal ecosystems and develop a drought early warning system for the coastal Carolinas. Projects include the development of an "Atlas of Hydroclimate Extremes" and a coastal drought index, citizen science drought monitoring, and identification of ecological indicators of coastal drought.
- » Development of a watershed model to assess the potential impacts of climate change on the Congaree and Wateree rivers. This model was also coupled with a flood inundation model to evaluate corresponding effects on floodplain connectivity and habitat quality at Congaree National Park.
- » Development of a tool to provide information about current and future saltwater intrusion in coastal areas. The tool can be used to examine the frequency and duration of saltwater intrusion events and associated impacts on industry, water and sewer districts, and resource management.



coastal climate

CISA works with coastal communities to help them better understand and prepare for climate impacts. Projects address waterfront management, sea level rise, saltwater intrusion, natural hazards, and community planning. Recent efforts include:

- » Work with local stakeholders and government officials in Beaufort County, SC to assess vulnerabilities to sea level rise and identify potential adaptation strategies to be incorporated into the County's Comprehensive Plan.
- » Assessment of the potential vulnerability of municipal water and wastewater infrastructure in the communities of Manteo, New Bern, and Plymouth, NC to coastal hazards including sea level rise, storm surge and riverine flooding.
- » Partnership with the ACE Basin and North Inlet-Winyah Bay National Estuarine Research Reserves (NERR) to develop customized, downscaled climate data to meet specific project needs for a Low Impact Development (LID) manual for coastal South Carolina and a coastal habitats vulnerability assessment tool.

health

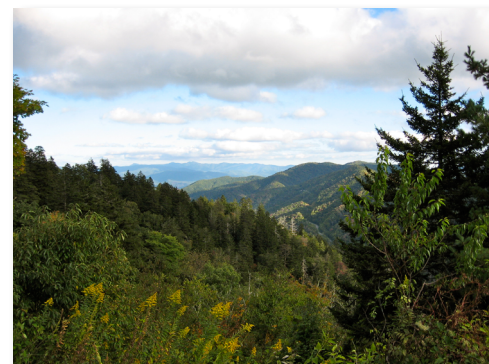
Several of CISA's projects investigate the links between climate and human health. These projects include:

- » A heat stress vulnerability assessment in North Carolina and identification of methods to improve existing warning systems.
- » Collaboration with the NOAA Center for Coastal Environmental Health and Biomolecular Research (CCEHBR) to quantify the occurrence and distribution of the marine bacteria *Vibrio* in the Waccamaw River and to evaluate how future climate change (i.e. temperature increase, changing precipitation regimes) might influence the bacteria.
- » Development of a climate-public health toolbox for North Carolina which will provide researchers and health officials with a platform to study, visualize, and predict the health impacts of weather and climate events.

adaptation

Supporting the development of adaptive capacity to address current climate variability and projected climate change is a cross-cutting element of CISA's efforts. Activities include:

- » Organizing the Carolinas Climate Resilience Conference, assisting the SC State Climate Office with climate workshops, and facilitating and participating in the Southeast & Caribbean Climate Community of Practice.
- » Providing technical inputs to the 2014 National Climate Assessment and editing the resulting book, *Climate of the Southeast United States*.
- » Developing the Vulnerability and Consequence Adaptation Planning Scenario (VCAPS) process, a tool to facilitate dialogue among researchers and community representatives as they work together to plan climate adaptation and resilience projects. (www.vcapsforplanning.org)



CISA researchers work with stakeholders in the Carolinas from the mountains to the coast.