CAROLINAS INTEGRATED SCIENCES & ASSESSMENTS

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- NC Water Resources Research Institute
- NOAA Southeast and Caribbean Regional Team
- SC Sea Grant Consortium
- SC State Climatology Office
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Visit our website to subscribe to the CISA's quarterly newsletter and weekly listserv to stay up-to-date on climate news in the Carolinas.

CISA
A NOAA RISA TEAM

Established in 2003, CISA is 1 of 11 NOAA Regional Integrated Sciences and Assessments (RISA) teams. These interdisciplinary research teams expand and build the nation's capacity to prepare for and adapt to climate impacts by addressing science questions faced by decision makers.

CISA Integrates Climate Science with Decision Making

Our research and engagement projects increase climate resilience in the Carolinas by:

- **Advancing understanding of climate and its impacts in the Carolinas –** CISA conducts applied research to answer stakeholders' questions about climate variability and extremes, projections of future climate, and climate-related impacts on the Carolinas' resources and communities.
- **Providing decision support services –** CISA collaborates with local and regional stakeholders to produce tailored information, tools, and resources to support climate-related decision making.
- **Fostering adaptation and its implementation in the region –** CISA works directly with communities to assess climate vulnerabilities and identify potential adaptation strategies and avenues for implementation to foster more resilient communities and ecosystems.
- **Supporting climate information networks –** CISA seeks to be a trusted source of climate information and provides a variety of opportunities for dialogue around climate issues.

CISA Works Collaboratively to Support Climate Resilience

CISA has established long-term partnerships and collaborations with federal, tribal, state, and local partners. Working together enables us to leverage expertise from other agencies and organizations and build robust and coordinated efforts around climate research and decision support activities.

Our interdisciplinary, multi-state team creates, tailors, and communicates climate information to help improve planning and management approaches that support healthier, safer communities in the Carolinas.

CISA RESOURCES

Carolinas Climate Resilience Conference: www.cisa.sc.edu/ccrc

Carolinas Precipitation Patterns & Probabilities Atlas: www.cisa.sc.edu/atlas

Citizen Science Condition Monitoring Web Map: www.cocorahs.org/Maps/conditionmonitoring

SC Water and Climate Video Series: www.cisa.sc.edu/outreach_videos.html

Convergence of Climate, Health, and Vulnerabilities website and tools: convergence.unc.edu

- Hazardous Extremes for Risk Assessment (HERA) tool
- Heat Health Vulnerability Tool
- Wet Bulb Globe Temperature Forecasting Tool

Supporting Climate Resilience in the Carolinas

CAROLINAS INTEGRATED SCIENCES & ASSESSMENTS

ADVANCING UNDERSTANDING OF CLIMATE PROCESSES AND IMPACTS

Connections between Climate and Water

CISA uses and integrates historical climate and hydrological data, watershed models, and global and downscaled climate models to answer questions about climate impacts at the local level. Research seeks to provide information that can inform planning and preparedness for extreme rainfall events and drought. For example, the team used different methods of climate model downscaling to develop future climate scenarios for Georgetown, SC and Charleston, SC to support long-term planning projects.

Connections between Climate and Human Health

CISA and the Southeast Regional Climate Center (SERCC) collaborate to investigate links between climate and human health. Studies have focused on the vulnerabilities and impacts associated with extreme events, such as heat, heavy rainfall, and flooding. Based on heat-health research findings, SERCC developed the wet bulb globe temperature (WBGT) forecasting tool. This tool has the capacity to predict wet bulb globe temperatures that are used by high school athletic directors to ensure the safety of their athletes during practice and games. The Hazardous Extremes for Risk Assessment (HERA) tool provides county-level information about the occurrences and impacts of extreme events. Both the WBGT and HERA tools can be accessed on the Convergence website, which houses a wealth of resources about climate and public health in the Carolinas: https://convergence.unc.edu/.

DECISION SUPPORT SERVICES

Coastal Carolinas Climate Outreach Initiative

CISA, together with the SC Sea Grant Consortium, supports a coastal climate and resilience extension specialist. This partnership allows CISA to cultivate relationships with stakeholder groups, including coastal zone management, local municipalities, and NGOs in order to bridge the gap between coastal climate science and decision making. This work has supported sea level rise adaptation strategies in Charleston, Folly Beach, and Beaufort, SC.

Planning and Preparing for Drought in the Carolinas

CISA collaborates with national and regional partners on several drought-related projects. These include the development of a salinity index to monitor drought conditions on the coast, support for a network of citizen science observers to report the effects of drought on local communities and resources, an online atlas to provide information about drought and heavy precipitation risks and impacts, and support for the South Carolina drought response program. More information about CISA's drought-related research and projects is available at www.cisa.sc.edu/projects_drought.html.

FOSTERING CLIMATE ADAPTATION AND ITS IMPLEMENTATION IN THE REGION

Assessing Vulnerabilities and Identifying Adaptation Solutions in Local Communities

The Vulnerability, Consequences, and Adaptation Planning Scenarios (VCAPS) process was developed to help decision makers in small municipalities explore the potential outcomes and consequences of climate change in their towns, along with pathways to help plan and prepare. The process has been used in over 15 U.S. communities, including 8 in the Carolinas. For example, the City of Folly Beach, SC incorporated adaptation strategies generated during a VCAPS workshop into their Sea Level Rise Adaptation Report. Learn more at vcapsforplanning.org.

SUPPORT FOR CLIMATE INFORMATION NETWORKS

In addition to stakeholder engagements that are part of individual research and projects, CISA conducts a wide range of outreach and engagement activities to help create and support climate information networks in the Carolinas. The Carolinas Climate Resilience Conference is held bi-annually to provide an in-person opportunity for information exchange and networking. More information about this event is available at www.cisa.sc.edu/ccrc.