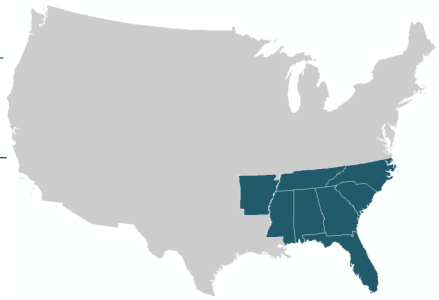
SOUTHEAST
Climate Adaptation Science Center

CLIMATE ADAPTATION SCIENCE CENTERS
FORMERLY KNOWN AS THE CLIMATE SCIENCE CENTERS

SOUTH CAROLINA

PROJECT HIGHLIGHTS

South Carolina falls within the domain of the Southeast Climate Adaptation Science Center (CASC), managed by the USGS.



ADAPTING FOR CHANGE AT CAPE ROMAIN NWR

Cape Romain NWR is home to 293 bird species and is a critical nesting ground for the threatened loggerhead sea turtle. The refuge also provides storm surge protection, improved water quality, and recreation opportunities. Yet in the last century, coastal ecosystems have been altered by development, sea-level rise, and more frequent extreme storms.

WHAT:

- Southeast CASC is working with managers throughout the South Carolina Lowcountry Wildlife Refuge Complex to forecast future coastal change, identify needs, and design management strategies.

RESULTS:

- Focusing on Cape Romain, a land use planning decision making process was developed that considers possible future climate and land use scenarios and analyzes the effects of different management options.

IMPACT:

- Helps South Carolina's coastal refuge managers understand potential future changes in climate and land use, identify what those changes could mean for coastal ecosystems and the services they provide, and incorporate this information into adaptation planning.

>> Learn More: bit.ly/CoastalRefugeDesign

PREDICTING FUTURE RIVER FLOW

Robust predictions of river flows are essential to managing water resources for healthy aquatic ecosystems and human communities into the future. While many different models for predicting flow changes based on climate and land use exist, no study has examined the differences in these predictions.

WHAT:

- Southeast CASC evaluated a range of river flow models commonly used by resource managers in the Southeast region.

RESULTS:

- Found that more complex, detailed models are not necessarily more accurate than simpler, regional-scale models.

IMPACT:

- Helps managers better understand the scientific information available for predicting future water availability in the Southeast, and how changes in flow might impact aquatic ecosystems.

>> Learn More: bit.ly/SEHydroModeling

Sea-Level Rise Handbook for Coastal Managers

Sea-level rise poses widespread and continuing threats to the Southeast's economy and environment. In South Carolina, seas are rising 1-1.5 inches every decade, higher than the global average. Higher water levels are changing the state's coastal habitats, through beach erosion, submerging low lands, and coastal flooding.

WHAT:

- Southeast CASC met with federal, state, and NGO coastal managers in the Southeast to evaluate their understanding and use of the resources currently available for projecting sea-level rise and its impacts on coastal habitats and wildlife.

RESULTS:

- Created a user-friendly guide that synthesizes the science and tools currently available for projecting future sea-level rise and its potential consequences.

IMPACT:

- Provides coastal managers with a condensed yet comprehensive resource on how sea-level rise and its impacts are currently assessed, enabling managers to effectively incorporate considerations of sea-level rise into long-term coastal planning.

>> Learn More: bit.ly/SLRModelHandbook

Climate Change & State Wildlife Action Plans

The Southeast is experiencing high rates of urbanization, land use change, and shifting climatic conditions. These changes present considerable near and long-term challenges to the health and sustainability of the region's fish and wildlife.

WHAT:

- Southeast CASC assessed how states addressed current and projected climate change in their 2015 state wildlife action plans (SWAPs), which serve as important resources to help states identify and protect declining species and their habitats.

RESULTS:

- South Carolina's plan recognizes the need to continually re-evaluate the state's priority species list, as species adapt to and react to changing climate conditions. The state also used climate change vulnerability as a criterion for prioritizing species of greatest conservation need.

IMPACT:

- Identifying how each state in the Southeast addresses climate change in their SWAPs enables the identification of opportunities for further action and potential areas for regional coordination.

>> Learn More: bit.ly/VitalFutures

NC STATE UNIVERSITY · Duke University · The University of Tennessee Knoxville · Auburn University · University of South Carolina · UF University of Florida

The Southeast CASC is hosted by North Carolina State University and has five partner institutions. The CASC works with natural and cultural resource managers to gather the scientific information and build the tools needed to help fish, wildlife, and ecosystems adapt to the impacts of climate change. ***Learn more: globalchange.ncsu.edu/secsc/***