

## DEVELOPING A DROUGHT EARLY WARNING INFORMATION SYSTEM FOR COASTAL ECOSYSTEMS IN THE CAROLINAS

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The National Integrated Drought Information System (NIDIS) and the Carolinas Integrated Sciences and Assessments (CISA), a National Oceanic and Atmospheric Administration (NOAA)-funded Regional Integrated Sciences and Assessments (RISA) program, are partnering to develop and support a Carolinas Drought Early Warning System pilot program. Research and projects focus on the unique coastal ecosystems in North and South Carolina. In the Carolinas, drought effects on environmental resources, particularly in coastal areas, are not as well-understood, or as well-integrated into existing drought planning and response processes, as other impacts and resources (such as, agriculture, surface water supplies).

Key concerns related to drought and coastal ecosystems focus on impacts to water quality and quantity, habitats, species, and estuarine processes.

- Drought contributes to increased salinity and saltwater intrusion, reduced flushing and assimilation of pollutants, and overall water quality changes.
- Ecosystem impact concerns center on habitat loss or conversion and consequent effects on recruitment, distribution, and migration patterns as well as on primary and secondary production.
- Saltwater intrusion, low stream flows, and low water levels contribute to impacts and are attributed to both drought and human actions (e.g. changes in dam releases due to drought).

This poster will highlight current activities to develop a drought early warning information system in the Carolinas:

- Development of a coastal drought index based on U.S. Geological Survey (USGS) real-time salinity data
- Assessment of ecological indicators of drought in southeastern coastal ecosystems
- Development of an 'Atlas of Hydroclimate Extremes' for the Carolinas
- Assessment of drought indicators for coastal zone fire risk
- Forecasting the SC blue crab fishery using real-time freshwater flow data
- Increasing coastal observations of drought through citizen science and the Community Collaborative Rain, Hail, & Snow Network (CoCoRaHS)

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