

## **Ecological Effects of Sea Level Rise in North Carolina: Maps, Marshes, and Management Applications**

**Investigators:** Thomas Allen (ECU, lead), Brian Boutin (TNC), Michelle Covi (RENCI), Otis Brown (CICS)

**Institutions:** East Carolina University (ECU, lead), The Nature Conservancy (TNC), Renaissance Computing Institute (RENCI), NOAA Cooperative Institute for Climate and Satellites (CICS)

The earlier North Carolina (NC) Ecological Effects of Sea-Level Rise (EESLR) research project sponsored by NOAA's Center for Sponsored Coastal Ocean Research improved our understanding of ecological processes and landscape changes anticipated in response to sea-level rise, including inundation, accretion, shoreline erosion, and estuarine transgression across the vast low-lying coastal plain. Results of these observational and simulation studies provide scientific insights that enhance future model development and understanding of the high degree of uncertainty in marsh responses and landscape evolution. Subsequent to this research, conservation management agencies have communicated a need for synthesized maps and information on impacts and uncertainty. Several coastal managers, planners, policy-makers, and restoration project leaders have identified specific needs for maps and geospatial data for decision-making and communication. Towards filling this gap, this follow-on effort to the NC EESLR project will develop and refine information products for managers via engaged collaboration, emphasizing communicative cartography, analytical and interactive tools and a geospatial database. Outcomes of this follow-on work will include a web-accessible data repository, website with interactive maps and animations, downloadable geospatial data, and a collaboratively developed set of use case scenarios and success stories that document models, tools, and applications for coastal managers, planners, and restoration projects.