



Your Link to Research and Resources for a Healthier Coast

17,627 students

reached in grades K-12

62 researchers

participating in projects

\$6.3 million

in economic benefits realized

165 jobs

created or retained

117 university students

supported



Supporting Stewardship of an Urban Creek

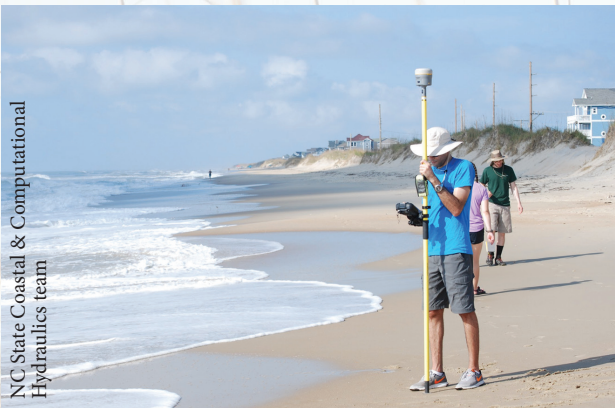
To address the impairment of Walnut Creek, a stream in an underserved area of Raleigh, community partners sought a North Carolina Sea Grant extension specialist's expertise. Through her facilitation of several meetings, a task force identified social and environmental goals, as well as sites to meet those goals. As a result, a faith-based collaboration held a rain garden event. Not only did volunteers enhance green infrastructure and reduce stormwater runoff, but also they expanded intergenerational dialogue on environmental issues.

Documenting Damage to Shellfish Farms

In 2018, North Carolina Sea Grant was among founders of the NC Shellfish Initiative. Weeks later, Hurricanes Florence and Michael severely affected NC shellfish mariculture. Sea Grant extension led efforts, with the National Ocean Service and NC Department of Agriculture and Consumer Services, to help growers assess losses. In eight counties, 58 producers reported damage to property and product: \$2.3M and \$8.3M respectively. Combined efforts by Sea Grant and partners led to state-funded disaster relief for the mariculture industry.



Baxter Miller



NC State Coastal & Computational Hydraulics team

Improving Wave/Surge Guidance for Communities

Using a high-resolution modeling tool developed in an earlier North Carolina Sea Grant project, researchers expanded the utility and accuracy of wave and storm-surge forecasts. During Hurricane Florence, emergency managers benefited from new guidance products and formats that combined flood predictions with other geospatial data, leading to better-informed decisions about evacuation and deployment of resources. Led by an NC State researcher, the team also is looking at storm-induced and long-term erosion on Hatteras Island in particular.

Focusing Research on Coastal Ecosystems

Through 2018, North Carolina Sea Grant and the NC Coastal Reserve and National Estuarine Research Reserve have funded 11 graduate fellows. Their projects have increased managers' understanding of ecology, nutrient cycling, geomorphology, invasive species and climate change. New findings and products also have helped the Reserve set plans, identify restoration options and deliver educational programs. Fellows' applied research skills have enhanced their careers in academia, government and science communications.



Courtesy Chris Moore

Adding Resilience to Land-Use Planning

To assist the Town of Swansboro in resilience planning, North Carolina Sea Grant, the NC Division of Coastal Management, The Nature Conservancy, the NC Coastal Federation and Stewart Consulting conducted asset mapping and adaptation assessments. The collaboration led to a cost-effective update of the town's land-use plan that now also accounts for climate change and sea level rise. The plan additionally preserves shorelines and wetlands, bringing added protection against extreme weather.



Courtesy John Althouse/The Daily News



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Initiating Conversations Via Science & Humanities

Through multiple disciplines, RISING has fostered and broadened discussions about climate change. In 2018, dialogues included a Carteret County event, where community members identified local examples of change and anticipated even more — with some quickly becoming evident as Hurricane Florence struck soon thereafter. In Dare County, the exhibit and related activities benefited secondary school students, who held a mock debate. RISING, funded by North Carolina Sea Grant, set the stage for these important discussions.

Identifying Neuse Flood Mitigation Measures

As the state suffers economically and socially from Neuse River flooding, North Carolina Sea Grant secured funding from the NC Department of Transportation for research to better understand flooding causes and identify potential abatement measures. A Sea Grant extension expert led a team that held stakeholder meetings to gather valuable input. Her team continues to develop and test models to reduce flooding in communities in the Neuse Basin, including Smithfield, Goldsboro and New Bern.



Ken Blevins/Star-News



Ken Blevins/Star-News

Assessing Chemicals in Alligators & Striped Bass

Determining levels of poly and perfluorinated substances in fish and alligators in the Cape Fear River is an example of a “One Health” approach that connects the health of people to that of animals and the environment. A North Carolina Sea Grant-funded collaborative study — including university and community partners — shows a significant increase in exposure to poly and perfluorinated substances in striped bass and alligators in the Cape Fear River, compared to other NC populations of the species.

What Is North Carolina Sea Grant?

Since 1970, North Carolina Sea Grant has been a valuable resource for scientists, educators, local officials, government agencies, coastal businesses and the public to gain scientifically sound information about the state's coastal ecosystems. As part of the National Sea Grant Network, we receive federal funding through the U.S. Department of Commerce's National Oceanic and Atmospheric Administration.

OUR MISSION: Through integrated, unbiased research and outreach efforts, North Carolina Sea Grant enhances sustainable use and conservation of ocean, coastal and watershed resources to benefit communities, economies and ecosystems.

OUR VISION: North Carolina Sea Grant is a key leader in addressing the state's urgent and long-term needs in ocean, coastal and watershed resource management. The program shares sound science, develops educational excellence, and builds extensive and effective partnerships.

Access our strategic plan, as well as a video about our program, at ncseagrant.org.

How We Work

We lead and support innovative programs that reflect key concepts:

- Healthy coastal ecosystems are the foundation for life along the coast.
- The future of our natural, cultural and economic resources depends on an informed citizenry and skilled workforce.
- With increasing population growth and seafood consumption, ensuring safe and sustainable domestic fisheries and aquaculture operations is paramount.
- Coastal communities face high-stakes decisions regarding coastal hazards and economic resilience.

By powering university-based research and outreach, North Carolina Sea Grant answers complex questions about the state's diverse coastal ecosystems and meets the needs of coastal communities. Our work fuels lifelong education programs, and supports dozens of undergraduate and graduate students through fellowships and other opportunities. Our varied communications efforts include *Coastwatch* magazine.

Where We Work

North Carolina Sea Grant is part of the University of North Carolina system. With headquarters at North Carolina State University, we also have coastal offices in Manteo, Morehead City and Wilmington. Our researchers come from public and private universities across the state, often working in collaboration with hundreds of partners, state and federal agencies, educators, businesses and community organizations.

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Numbers represented in this snapshot are from the 2018-2019 reporting period.