ACE BASIN
NATIONAL ESTUARINE
RESEARCH RESERVE

RESTORING NATURAL BARRIERS TO COASTAL EROSION

Stay in touch

The NERRS Science Collaborative is committed to sharing information about the projects we fund in the most effective way we can. Updates about this project will be communicated through nerrs.noaa.gov, webinars, conferences, and meetings. If you would like to stay in touch with this project, contact our program coordinator Cindy Tufts: cindy.tufts@unh.edu.

For information about the overall coordination of this project, contact John W. Leffler, ACE Basin NERR research coordinator, at 843.953.3903 or LefflerJ@dnr.sc.gov

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For information about the collaborative aspect of this project, contact Blaik Pulley Keppler, ACE Basin NERR coastal training program coordinator, at 843.953.9024 or KepplerB@dnr.sc.gov

What's happening?

An interdisciplinary team led by South Carolina's ACE Basin National Estuarine Research Reserve (NERR) has received a $585,622 grant to reduce coastal erosion, build community resiliency, improve water quality, and protect habitats through the creation of oyster reef-based living shorelines. The team will use the Collaborative Learning method to engage community leaders, nonprofits, and other stakeholders to identify priority oyster restoration sites within the ACE Basin, establish a project advisory committee, and recruit volunteers to help construct the reefs and monitor the success of the restoration efforts.

Why this project?

In South Carolina, the Eastern oyster is an ecosystem "all-star." In addition to being a local delicacy, it filters water, creates habitat for other commercial and recreational fisheries, and plays an especially critical role as an "ecosystem engineer."

The majority of Eastern oysters in South Carolina are intertidal and are exposed during low tide. This allows them to act as natural breakwaters that protect fringing marshes from wave action and erosion. Yet as the coast is developed, oyster reefs are lost or unable to populate disturbed areas, causing coastal erosion to accelerate. These impacts are especially apparent along the heavily trafficked Intracoastal Waterway and the state's barrier islands,

Volunteers stand beside a newly constructed reef on the Intracoastal Waterway in South Carolina's ACE Basin.

which protect the mainland from the Atlantic's waves and storms. A potential increase in the frequency and intensity of storms and sea level rise due to climate change threatens to increase this erosion and place communities and habitats at further risk.

Widespread stakeholder concern about this issue has led South Carolina's Department of Natural Resources (SCDNR) to launch several, highly successful Eastern oyster restoration projects that utilize scientific expertise to match the best restoration techniques to the unique habitat characteristics of specific sites. However, scarce resources have limited the impact of this work. In response to a wide range of interest groups who have expressed support, this project team aims to engage community support and contribute the scientific resources needed to bolster current Eastern oyster restoration efforts and protect the ACE Basin NERR's coastal areas that are the most valued by the community and that need it most.

Learn more on back page...

ACE Basin National Estuarine Research Reserve
DNR
National Estuarine Research Reserve System Science Collaborative
NOAA
University of New Hampshire

About the funder

The NERRS Science Collaborative puts Reserve-based science to work for coastal communities coping with the impacts of land use change, stormwater, non-point source pollution, and habitat degradation in the context of a changing climate. Our threefold approach to connecting science to decision making includes:

- Funding: We award an average of $4 million annually to projects that incorporate collaboration and applied science to address a coastal management problem.
- Transfer of knowledge: We are committed to sharing the knowledge generated by the local, place-based research we fund. If you're interested in following this project, contact cindy.tufts@unh.edu.
- Graduate education: We sponsor two fellowships in TIDES, a Master's of Science program at UNH that provides the skills needed to effectively link science to coastal decision making.

The program operates by a cooperative agreement between the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration.

Learn more at....
nerrs.noaa.gov/ScienceCollaborative.aspx

In South Carolina most oysters live in the intertidal zone and serve as natural breakwaters to protect adjacent shorelines from erosion.

How will this project work?

Working with the SCDNR, this project team will engage the perspectives and interests of diverse groups like coastal conservationists, sailing clubs, a local Audubon chapter, fly fishers, and neighborhood associations. Researchers will work with these stakeholders to address challenges to coastal communities and accomplish the following project goals:

- Create living shorelines that restore and conserve habitat by reducing erosion, improving water quality, and creating ever-growing breakwaters to protect shorelines in an era of climate change-driven sea level rise;
- Enhance communication and cooperation among local user groups;
- Establish habitat restoration lay advisors and monitors who will continue their activities beyond the scope and timeframe of this project;
- Increase public commitment to stewardship.

The team will use a multi-step collaborative learning process to guide this two-year project. Initially, they will engage stakeholders in establishing criteria for selecting restoration sites, identifying sites for restoration based on stakeholder values and experience, and forming a Project Advisory Committee (PAC) made up of representatives from several interest groups that will inform decisions and coordinate project tasks. They also plan to train citizen scientist volunteers, who will work closely with ACE Basin NERR and SCDNR staff to install reef materials and monitor restoration sites.

At the end of the first year, they will work with the PAC and other stakeholders to evaluate progress at restored sites and select a second round of sites for restoration. During year two, they will continue to train volunteers and build reefs at new sites. They aim to work with all project participants to generate final reports to promote continued restoration after this project concludes.

Volunteers load bags of oyster shells in stakeholder-provided john boats for deployment to a restoration site.