NOAA Restoration Center

NOAA FISHERIES

Office of Habitat Conservation

Building Coastal Resilience through Living Shorelines

The NOAA Restoration Center, housed within the Office of Habitat Conservation in NOAA Fisheries, invests in habitat restoration across the country where our fisheries need it most.

The Restoration Center is NOAA's only office solely devoted to restoring the nation's coastal, marine, and migratory fish habitat.

With our national network of partners, we leverage funding and develop high-quality restoration projects to support sustainable fisheries, recover threatened and endangered species, reverse damage from oil spills and toxic releases, and strengthen coastal resilience.

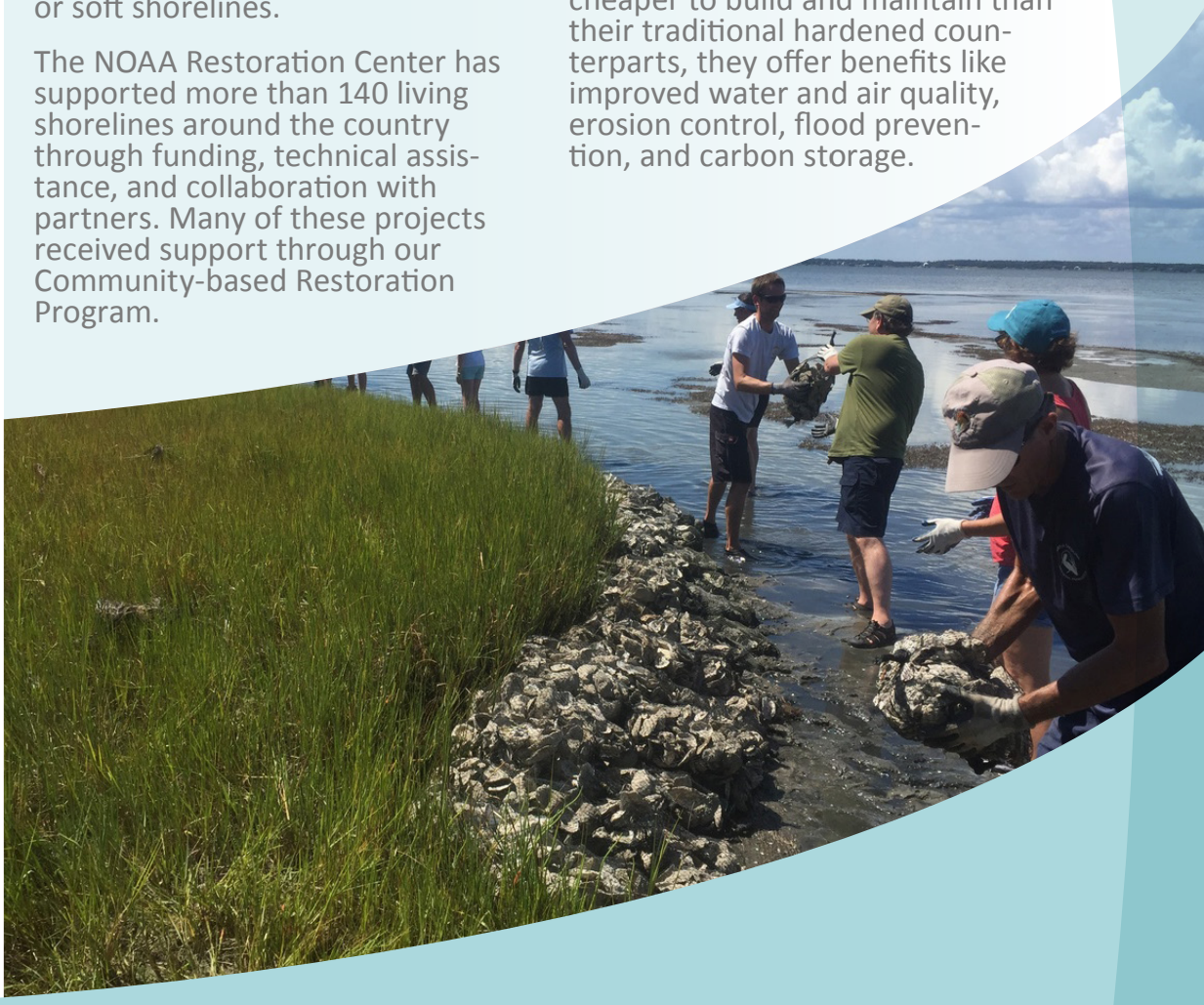
Support for Living Shoreline Projects

Living shorelines use natural materials such as plants, rocks, and oysters to help stabilize shorelines from erosion while maintaining and improving wildlife habitat and supporting the resilience of coastal communities. They may also be referred to as nature-based, green, or soft shorelines.

The NOAA Restoration Center has supported more than 140 living shorelines around the country through funding, technical assistance, and collaboration with partners. Many of these projects received support through our Community-based Restoration Program.

Living shorelines have gained national traction as an alternative to traditional, hardened structures used for shoreline stabilization, such as bulkheads, revetments, and concrete seawalls.

Not only are living shorelines often cheaper to build and maintain than their traditional hardened counterparts, they offer benefits like improved water and air quality, erosion control, flood prevention, and carbon storage.



Example Projects in the Southeast Region

North Carolina

For almost 20 years, the NOAA Restoration Center has partnered with the North Carolina Coastal Federation (NCCF) on living shoreline creation and oyster reef restoration.

With 2015 support from NOAA, NCCF worked to promote and increase the use of living shorelines, resulting in the stabilization of more than 6,200 linear feet of shoreline on 24 sites across the state. The work involved more than 6,300 volunteer hours and provided jobs and hands-on training to unemployed contractors.

South Carolina

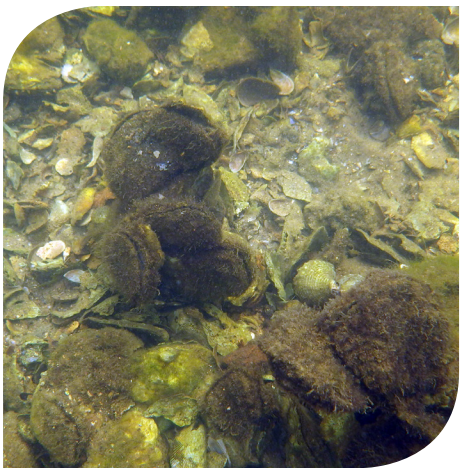
With 2019 support from the NOAA Restoration Center, the South Carolina Department of Natural Resources will construct 13 living shorelines to address habitat loss and erosion in the urbanized watershed of Charleston County.

The projects will engage a diverse communtiy of stakeholders to create three acres of oyster reefs and salt marsh along 3,800 linear feet of shoreline, benefiting species such as red drum, summer flounder, and white shrimp.

Alabama, Mississippi, and Florida

As part of NOAA's work restoring the Gulf of Mexico's natural resources after the *Deepwater Horizon* oil spill, we're partnering with Alabama, Mississippi, and Florida to implement three large-scale living shoreline projects. These projects offer a unique opportunity for studying long-term performance toward the goals of reducing shoreline erosion and increasing benthic habitat. Activities include both biological and physical monitoring, such as collection and measurement of epifauna, shoreline and breakwater position, elevation and area surveys, aerial photographs, and qualitative measurements such as fouling and siltation.

Two projects—the Swift Tract living shoreline in Alabama and Hancock County Marsh living shoreline in Mississippi—consist of breakwaters with marsh components. The third project, Project Greenshores II in Pensacola Bay, Florida, will build on a submerged breakwater, constructed in 2007 as Phase I of the project. Phase I is performing well, supporting a healthy oyster reef, numerous reef-associated fish and crabs, and a recent spat set. Phase II, which should be completed in 2020, will reduce wave energy, create and protect approximately 9.2 acres of marsh, and promote continued reef development with additional breakwaters.



PROJECT MONITORING

Performance criteria being monitored at all three sites include bivalve density and infaunal biomass on the breakwater structures, and shoreline erosion rates landward of the structures. While aspects of the projects are still being completed, initial results show the breakwater components are meeting performance criteria goals.

All three projects will be monitored for seven years post-construction, helping us continue to learn more about the performance at these sites. With the scale of these projects much greater than typical living shorelines, we look forward to sharing what we learn about how structures perform at this scale.

Story Map: NOAA Living Shorelines

NOAA has supported living shoreline projects around the country—from small-scale designs, to projects spanning several miles of shoreline.

In addition to the Restoration Center, other NOAA offices supporting living shoreline projects include the National Estuarine Research Reserves and the National Centers for Coastal Ocean Science.

To learn more about these projects, visit our living shorelines story map at: www.habitatblueprint.noaa.gov/living-shorelines/