American Society of Adaptation Professionals

SNAPSHOT

Restore Coastal Alabama

Photo credit: Erin Kinney, www.flickr.com

LEAD ORGANIZATION
The Nature Conservancy

STATE
Alabama

TYPE OF ADAPTATION
Natural Coastal Protection

coastalresilience.org/kickstarting-recovery-in-alabama

Challenges

Sea level rise and enhanced coastal flooding threatens natural ecosystems and coastal communities along the Alabama Coast. Solutions to these problems can be costly and are often limited by lack of engineering capacity.

CHALLENGES
Sea level rise

CHALLENGES
Coastal flooding

Solution

SOLUTIONS
100 miles of oyster reefs

SOLUTIONS
1,000 acres of coastal marsh

The Nature Conservancy (TNC), working alongside its key partners (Alabama Coastal Foundation, Mobile Baykeeper and The Ocean Foundation), have successfully formed a coalition to build 100 miles of oyster reefs that will create the conditions needed to plant, support and promote more than 1,000 acres of coastal marsh and seagrass. Community-based restoration efforts are enhancing the natural environment of Mobile Bay by providing habitat for oyster larvae to colonize, serving as nursery habitat for fisheries, stabilizing sediments, and dampening wave energy while decreasing coastal erosion.

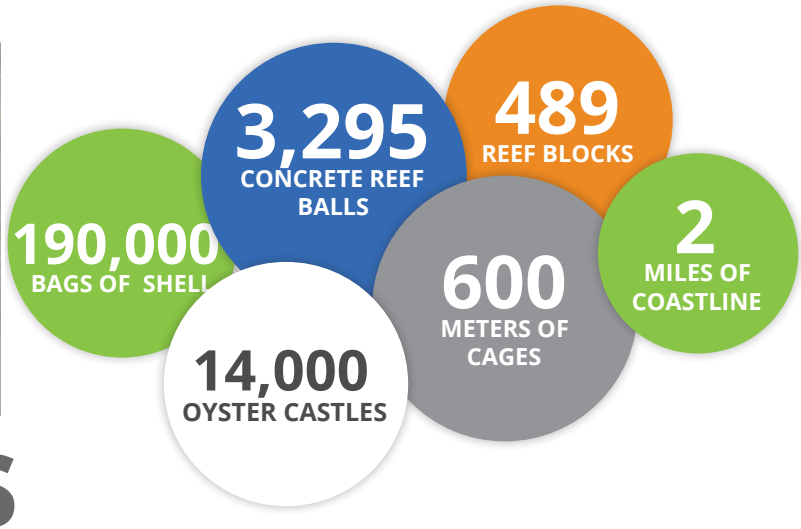
Deciding where to place the permitted oyster reefs was largely dependent on feedback from the key stakeholders and developing partnerships, but also through utilization of the Coastal Defense app designed specifically for this project. The app helps stakeholders identify and place appropriate nature-based solutions to reduce risk and increase community resilience. In supporting restoration site location, Coastal Defense helps to: identify areas that may be at risk of coastal erosion and inundation from wave action and storm surge; interactively examine the role of coastal habitats in attenuating wave height and energy; and determine appropriate adaptation strategies that incorporate green (habitats) and grey (seawalls and other manmade structures) infrastructure trade-offs.

Results

The project has overcome numerous regulatory barriers, funding limitations, and the technical challenges of designing and developing a new web-based application to support restoration that is scientifically accurate and user friendly.

Ten recently constructed restoration sites are actively being monitored in Mobile Bay. These projects brought communities together to discuss and plan for the future of the bay while deploying 3,295 concrete reef balls, 489 reef blocks, 600 meters of cages, 14,000 oyster castles and 190,000 bags of shell that provide substrate for future oyster reefs. The sites range in size from 15 meters to 1,500 meters in length for a total of approximately 3,600 meters, covering just over two miles of coastline. In the process of planting structures for oysters to grow on, TNC has engaged with 1,500 volunteers who put in over 10,500 hours of labor. One monitoring result example at Helen Wood Park shows the marsh grass expanded its footprint by 7.5% in less than a year without any marsh planting. At Swift Tract the shoreline remained stable during Tropical Storm Isaac that made landfall in late August of 2012. The shoreline to the south suffered erosion ranging from one–six feet, while the shoreline behind the reefs were stable and did not experience any significant erosion.

Equally important to the technical success is the capacity this program has built in the local communities. Technical and institutional capacities were expanded due to a wide network of partners who have connected TNC to resources for engineering, contractors, supplies, support and volunteers. Volunteers and community members who have been engaged with the program and reef-building events contributed to increasing human and social capacities for adaptation success.



Next Steps

Continue to monitor current projects and gather lessons learned from the methods, materials and designs of oyster reefs that work in different environmental settings. This information will help foster communication with landowners and stakeholders by providing them with data and concrete information that can assist with their decisions on future oyster reefs. Currently in Mobile Bay, there is a proposition in progress to engage landowners and municipalities to build their own oyster reef or living shoreline through a cost-share approach and with the assistance of the Coastal Defense app. There is also opportunity to further engage landowners through an online open forum where they can post their pictures of current conditions to help other landowners see what is happening along the coast.

CONNECT WITH ASAP TO LEARN MORE:

adaptationprofessionals.org
facebook.com/AmericanSocietyAdaptationProfessionals
twitter.com/adaptpros