ON-THE-GROUND PROJECTS

Spotlight on Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula

Project Partners

Friends of the Guana Tolomato Matanzas Reserve

Guana Tolomato Matanzas National Estuarine Research Reserve

University of North Florida

US Fish and Wildlife Service

Atlantic Coastal Fish Habitat Partnership

The Tolomato River (Intracoastal Waterway) on the Guana Peninsula in northeast Florida was once home to oyster reefs, which provided important habitat for a number of resident and transient finfish species, and emergent vegetation such as *Spartina alterniflora,* which lent valuable feeding habitat to juvenile fishes, and improved water quality. Over time however, the area has been impacted by over-harvesting, expanded human occupancy near the waterway, water pollution, increasing wave action as a result of river traffic and channel dredging, climate change, and sea level rise. The resulting disappearance of oyster reef and *Spartina alterniflora* salt marsh has reduced habitat for important fish and associated species. This project aimed to reduce shoreline erosion, preserve damaged salt marsh environment and accelerate *Spartina* growth.

Southern portion of the proposed restoration site.

This project, located specifically at Wright's Landing, in the Guana Tolomato Matanzas National Estuarine Research Reserve, aimed to restore and enhance fish habitat by preventing shoreline erosion and promoting shoreline accretion using a combination of mussel and oyster-based living shorelines. Combined with *Spartina alterniflora* planting, living shorelines have stopped or reversed erosion and provided critical habitats for plants, fishes, and invertebrates. Specifically, restored marsh and reef provide nursery and feeding habitat for forage fishes (mummichog, silversides) that utilize emergent salt marsh habitats, as well as juvenile commercial and recreational species (drum, shrimp) that utilize oyster reef and shallow nearshore habitats.

Created oyster shell reefs, and coir fiber logs with ribbed mussels were established separately and in combined fashion to examine their relative effectiveness on erosion reduction, sediment capture and enhancement of success of *Spartina* plantings. Marsh accretion, fish and invertebrate habitat usage, and *Spartina* seedling success were monitored by researchers and volunteers.

The U.S. Fish and Wildlife Service provided the Atlantic Coastal Fish Habitat Partnership with conservation dollars to fund numerous components of the project, including supplies for restoration, monitoring, and personal safety, in addition to travel and contracted services. On-the-ground, local level efforts, such as the Restoring Coastal Fish Habitat Using Oysters, Mussels, and Marsh Grass at Guana Peninsula project, helped to address regional habitat priorities and coastwide conservation objectives identified by the Atlantic Coastal Fish Habitat Partnership.

Project text provided by Guana Tolomato Matanzas National Estuarine Research Reserve. Photo provided by Matt Kimball.

For more information on the Partnership visit us at: www.atlanticfishhabitat.org