



Notes From the Field

INDIAN RIVER LAGOON

Oyster Reef Restoration Project

Why Restore Oyster Reefs?

The Nature Conservancy is working with University of Central Florida (UCF) and community volunteers to restore oyster reefs in the Mosquito Lagoon. Oyster reefs benefit marine flora and fauna, improve water quality, and help protect shorelines.

Oysters face a number of threats that include overharvesting, habitat degradation, reduced water quality and disease. In Mosquito Lagoon they are also impacted by boat wakes. Boat wakes dislodge oyster shells from the reef and push them towards the shore in large piles. These piles are generally above the water line, causing the oysters to die. Additionally, the piles create “dead margins,” dam-like structures that restrict water flow over the surrounding reef and seagrasses, resulting in eventual loss of these areas.



Volunteers preparing a dead margin for restoration.



Why Oysters and Oyster Reefs Are Important

Oysters are filter feeders that improve water quality and clarity by filtering water.

Oysters are a food source for many species of fish, birds and invertebrates.

Oyster reefs stabilize and protect shorelines.

Oyster reefs provide habitat and refuge for a variety of wildlife, including shrimp, blue crab, redfish and sea trout.

Oysters are an important part of Florida's seafood industry.

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Working on the oyster reef.

Project Goals and Successes

The Oyster Reef Restoration Project began in 2005 with a goal of using science-based restoration to restore oyster habitat within the boundaries of Canaveral National Seashore. By 2007, seven acres had been restored with the help of more than 5,100 volunteers who made and deployed 3,556 “oyster mats.” Within one year, these mats had turned into healthy oyster reefs.

How It Works

New oyster reefs are being created where healthy reefs previously existed using “oyster mats.” These mats are made of oyster shells attached to a mesh material. The shells provide a stationary natural substrate on which oyster larvae will settle.

Each mat is made up of 36 oyster shells attached vertically with zip ties. The mats are attached to each other forming a large quilt-like structure. They are then submerged and anchored with concrete sprinkler weights. Within about 18 months of being placed on the reefs, the mats are covered with live oysters. Newly created reefs provide habitat and food for fish, crab and other important estuarine species.

Monitoring Restoration Progress

To evaluate success, scientists closely monitor restoration projects like this one. In the Mosquito Lagoon the number of new oysters on the mats and the diversity of species using the new oyster reefs are tracked. Results have shown that the oyster mat restoration technique has been successful in the shallow, intertidal system of the Mosquito Lagoon. After only six months in the water, an average of 34 new oysters settled on each mat, or approximately 121,000 new oysters on the 3,556 mats. Within 12 months the restored reefs are nearly impossible to tell apart from healthy reefs. More than 100 different species have been identified using the oyster mats, and seagrass is returning. The mats will be monitored every six months for the next two years to determine the success of this method over time.

How You Can Help

To meet the goal of restoring 20 additional acres of oyster reefs in Mosquito Lagoon, volunteers are needed to help make approximately 4,500 oyster shell mats.

This is a great volunteer project for civic groups, schools, clubs, boating groups, recreational clubs, church groups — any group looking for an easy and fun way to help the lagoon.

A Nature Conservancy representative will bring all materials and give a presentation to your group about oyster reefs, the lagoon environment and instructions on how to create the oyster mats. Conservancy staff will then collect the completed mats, which will be “planted” in the Mosquito Lagoon to serve as the building blocks for new oyster reefs.

Project Funding

This project is being funded through a national partnership grant between the National Oceanic and Atmospheric Administration Community-Based Restoration Program and The Nature Conservancy. This project would not be possible without support from the following partners:

- University of Central Florida
- Canaveral National Seashore
- Indian River Lagoon National Estuary Program
- St. Johns River Water Management District
- Royal Caribbean and its Mariner of the Seas crew
- New Smyrna Beach Marine Discovery Center
- Disney Wildlife Conservation Fund
- Brevard Zoo
- Brevard County Watershed Action Volunteers
- Citizen volunteers throughout the lagoon region



Volunteers gather to make oyster mats.



Mats form the foundation of a new oyster reef.



Aerial view of a new oyster reef created in 2007.

For More Information

For more information, and to learn how your group can volunteer, please contact:

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