

## Oyster Reefs are Important



- Hundreds of species are associated with oyster reefs. They provide habitat for juvenile fish and invertebrates as well as substrate for sessile organisms.
- One adult oyster can filter up to 50 gallons of water per day, contributing to the water clarity needed for seagrasses to thrive.
- Oyster reefs stabilize shorelines and reduce erosion.
- Oysters are an economically important species throughout the southeastern United States.
- Oyster reefs serve as feeding grounds for wading birds and gamefish such as snapper, grouper, and snook.

# O EASTERN Oyster

*Crassostrea virginica*

Eastern oysters are found along the east coast of North America from Canada to Key Biscayne, Florida, parts of the Caribbean, Yucatan, and Venezuela. Oyster habitat worldwide has decreased by 85% and many of the remaining areas are in poor condition. Restoration efforts can return reefs to functioning ecosystems that provide many benefits for humans and wildlife.

## Restoration

Restoring oyster reefs is an effective way to improve water quality and provide new habitat for fish and invertebrates.

Target restoration areas are determined by historical oyster beds, proximity to healthy oyster reefs, water quality and depth, navigation and recreation considerations, and bottom conditions (minimal muck layers).



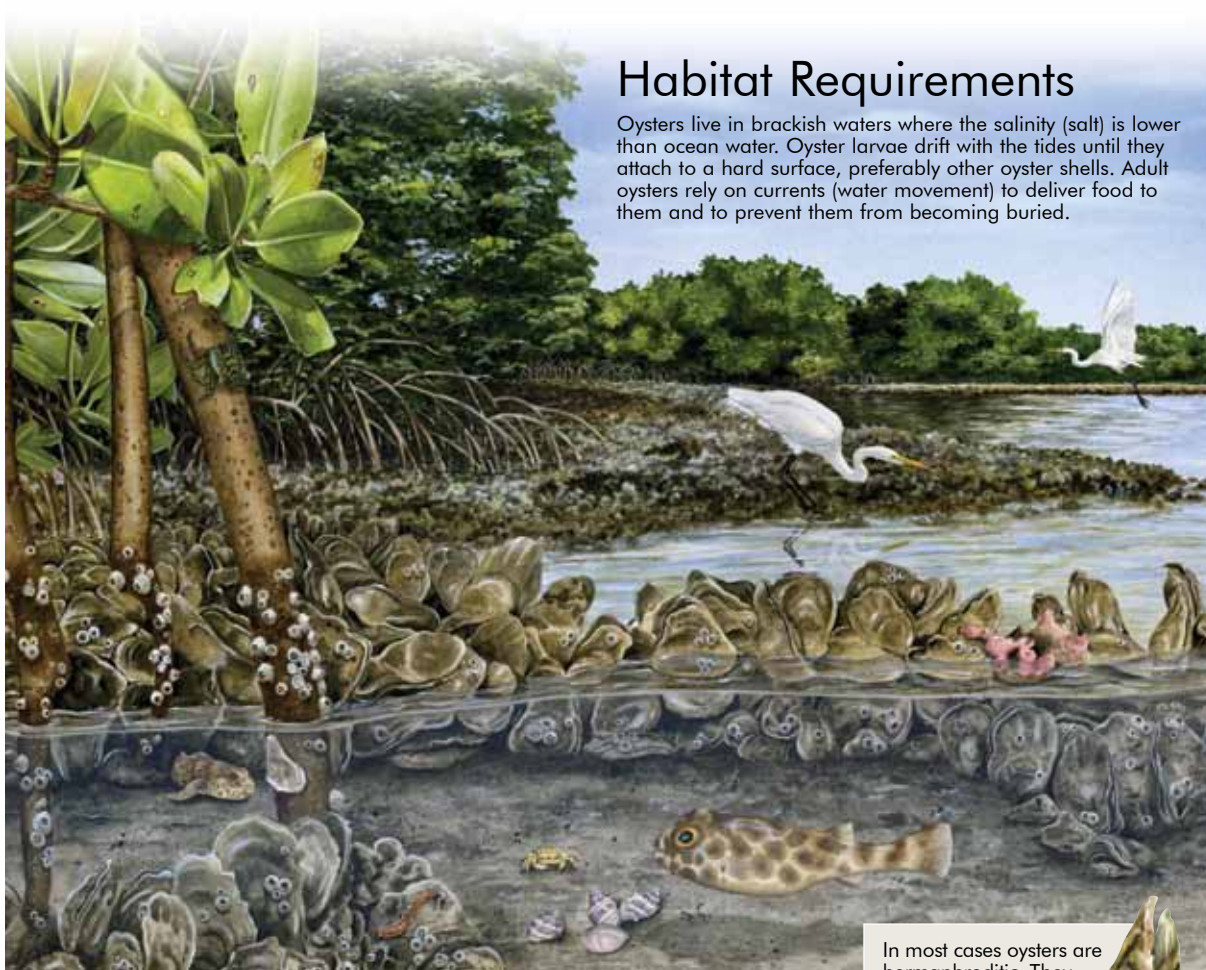
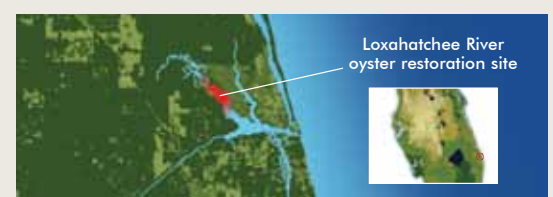
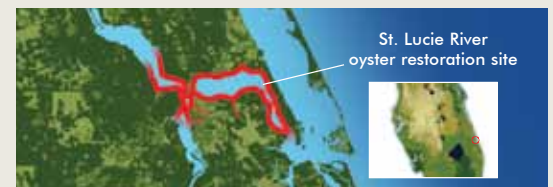
Volunteers place bags of shell along the shoreline to restore intertidal oyster reefs and prevent erosion. Oyster reef restoration can be as simple as placing an appropriate material in the proper location.



For large oyster reef restoration projects, heavy equipment works from barges to place suitable substrate for larval oysters. Recycled oyster shell, fossilized shell, concrete rubble, and even unwanted rocks and shells from beach nourishment projects have been used successfully in restoration projects.

## Restoration Sites

Over 25 acres of reef have been created in the St. Lucie and Loxahatchee Rivers.



## Habitat Requirements

Oysters live in brackish waters where the salinity (salt) is lower than ocean water. Oyster larvae drift with the tides until they attach to a hard surface, preferably other oyster shells. Adult oysters rely on currents (water movement) to deliver food to them and to prevent them from becoming buried.

In most cases oysters are hermaphroditic. They begin life as a male, change to a female, then change back to a male. Oysters may go back and forth between sexes several times during their lifetime.

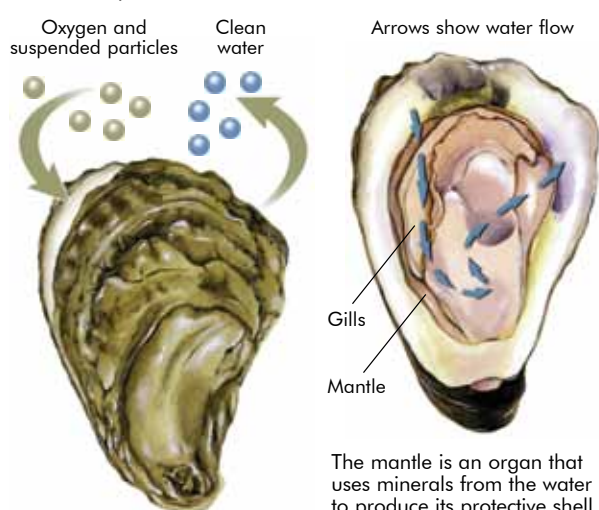


## Adaptations

The intertidal reefs (between high and low tides) are exposed to the air during low tide. Oysters are able to survive by tightly closing their shells until high tide returns. This adaptation allows them to avoid predation from organisms that must remain in the water (i.e. marine snails). Subtidal oysters (below low tide) have the benefit of extended feeding times and do not face the stress of exposure to air and increased temperatures. Their hard shells also prevent many predators from reaching their soft bodies.

## Filter Feeding

Oysters use their gills to absorb oxygen and strain food out of the water. One adult can strain plankton and organic matter at a rate of up to 50 gallons per day (or 1500 times its body volume). A healthy oyster reef contributes significantly to overall water clarity in the estuary.



## Threats

- **Poor water quality.** Salinity levels that are too high or too low, as well as excessive pollutants, are harmful to oysters.
- **Sedimentation.** Stormwater runoff can result in the burial of oyster reefs.
- **Boating impacts.** Boat wakes erode the shoreline and disturb oyster reefs. Boat props can drag along the bottom and dislodge oyster clumps.
- **Natural threats.** Oysters are more susceptible to disease and predation when they are stressed by other factors.



The use of time-released fertilizer on landscaping will reduce nutrient runoff to storm drains and surface waters.

## Oysters Are Thriving

Due to restoration efforts in our estuaries, oysters are once again thriving. Expanding oyster reefs improve water quality and benefit fish populations.



Over 3 million mature oysters per acre of new substrate are expected to grow on these reefs.



Loxahatchee River District  
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