

Oyster Reefs

Food
Filters
Fish Habitat
Breakwaters



Oysters as Filters

- A single adult oyster can filter 2.5 gallons water per hour
- Controls phytoplankton
- Removes silt
- Improves water quality
- Nutrient transfer



Intertidal Oysters Create Habitat



Spottailed bass
Gray snapper
Southern flounder
Summer flounder
Spot
Sheepshead
Darter goby
Naked goby
Striped blenny
Striped mullet
White mullet
Oyster toadfish
Bay anchovy
Striped anchovy
Mummichog
Atlantic silverside
Inland silverside
Spotfin mojarra
Pinfish
Silver perch
Pigfish
Speckled worm eel
Chain pipefish

Marsh grass shrimp
Daggerblade grass shrimp
Brown shrimp
White shrimp
Blue crab
Lesser blue crab



Oysters are a keystone species



Oysters as natural breakwaters

- **Protect saltmarsh**
- **Reduce bank erosion**
- **Trap silt**
- **Reduce wave energy**



Results of recent research in SC

- **Intertidal oyster banks provide natural ‘bulkheads’ in salt marsh fringed creeks**
- **Boat wakes are a factor in shoreline erosion (including oyster reefs and saltmarsh habitats)**
- **Intertidal oysters are frequently restricted by a lack of suitable hard substrate for attachment**
- **Oysters readily recruit to shell placed in appropriate areas**
- **Even newly planted shell attracts more species than mudflats**
- **Fully functional reef requires >3 years to develop**

Reduction of Natural Oyster Habitat

Over-harvesting

Removal of habitat

Physical disturbance

Diseases

Reduced water quality

Alteration of flow

and salinity

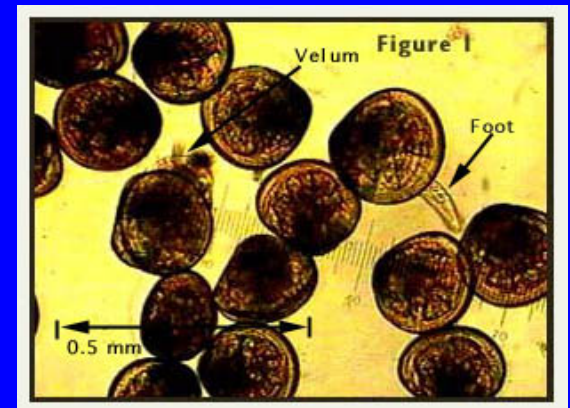
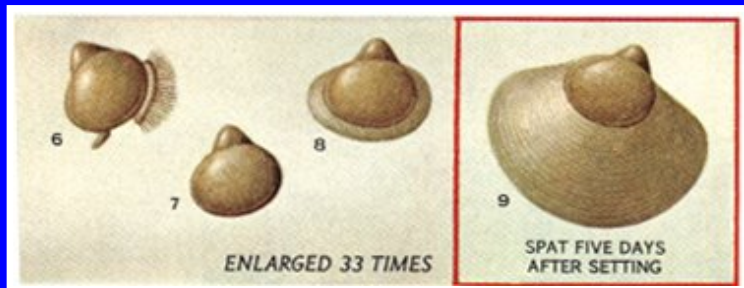
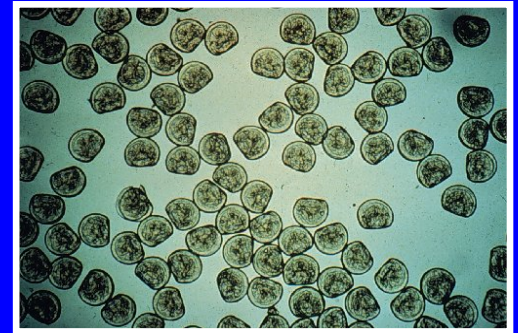
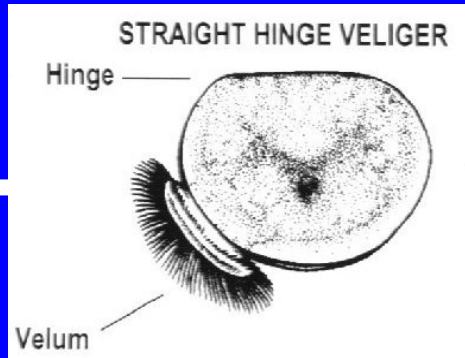
Predators and competitors



Where did all the reefs and shell go?



One year's shell from a single Chesapeake Bay shucking house



Oyster Habitat Restoration

- Oyster habitats can be restored and enhanced by planting of oyster shell
- Juvenile oysters will cement to the shell in the summer months and eventually form a new reef
- Shell is in short supply so DNR is encouraging shell recycling

SCORE Community-Based Oyster Restoration Program

- **Augments state workforce**
- **Volunteers**
 - work with scientists to build oyster habitat
 - monitor water quality and reef progress
- **Constructed habitats serve as research platforms to improve restoration success**
- **Volunteers gain a vested interest in oyster habitats**



Volunteer Roles

- Site Selection
- Shell Recycling
- Shell Bagging
- Reef Building
- Post-construction monitoring
 - Water quality
 - Reef progress
- Field trips
- Local area contact - volunteer coordinator

Site Selection

- Oysters naturally occurring in general area or evidence of oyster habitat in past
- Firm bottom
- Gentle slope
- Salinity, flow conducive to oyster growth
- Siltation/erosion factors
- Accessibility
 - Reef construction/monitoring
 - School activities
- Exposure to boat wakes/wind-generated waves
- Contaminants
- Potential for human disturbance

Shell Recycling



**Environmental Action volunteers
recycle about 1000 bushels each
year!**

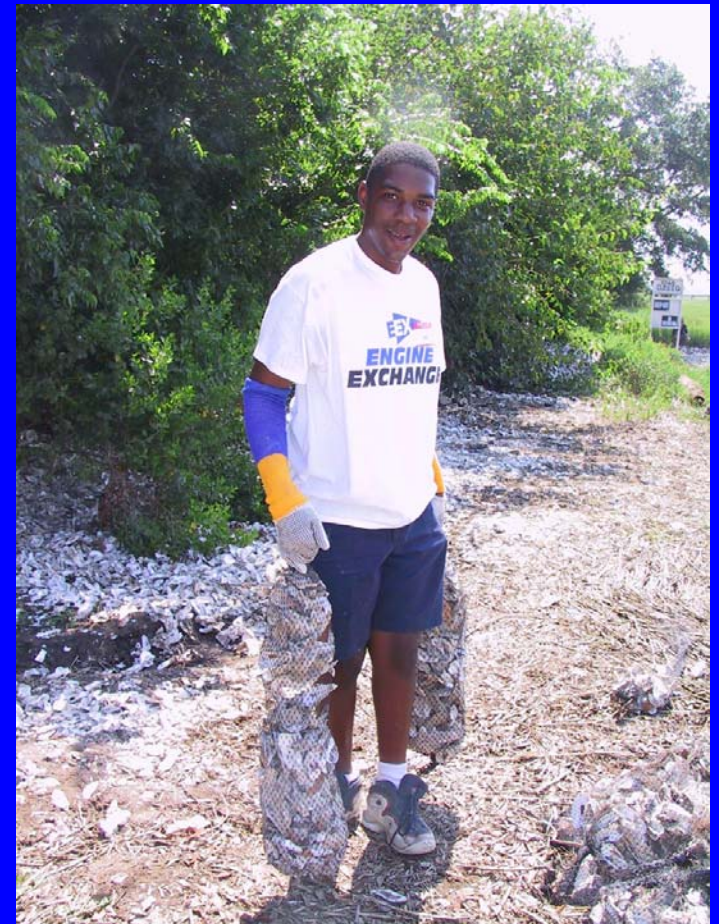
For assistance call: (843) 953-9396

For locations and maps: <http://saltwaterfishing.sc.gov/oyster.htm>



Shell Bagging

More than 15,000 bags in
4 years!



Reef Building



98 reefs at 28 sites since 2001!

Reef at Palmetto Islands County Park



3 months after
construction



South Carolina Oyster Restoration and Enhancement Sites

