EASTERN Oyster

Crassostrea virginica

Oyster reefs are vital to our estuaries. They provide suitable habitat for small organisms and are feeding grounds for important species such as snapper and grouper. Their reefs also provide stabilization for our shorelines. Oysters remove nutrients from the water improving water quality, which is critical for seagrasses and fish.

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 fish such as snapper, grouper, and snook.

Habitat Requirements

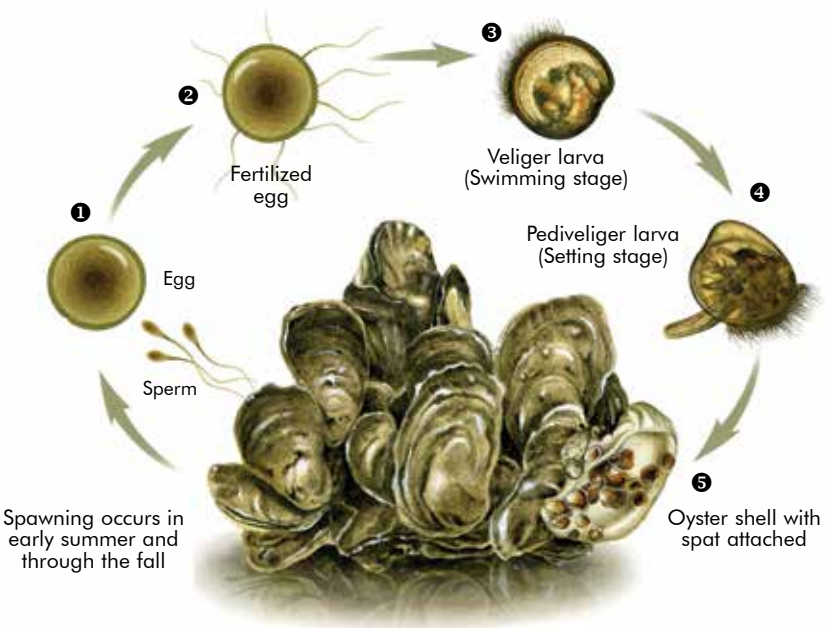
Oysters thrive in brackish waters where the salinity (salt) is lower than ocean water. They need a hard surface, preferably old oyster shells, on which to grow. They rely on currents (water movement) to deliver food to them and to prevent them from becoming buried.

Adaptations

Oysters are marine organisms that can live in both the intertidal (between high and low tides) and subtidal (always submerged) zones. The intertidal reefs are exposed to the air during low tide. Oysters are able to survive by tightly closing their shell until high tide returns. This adaptation allows them to avoid predation from organisms that must remain in the water (i.e. marine snails). Their hard shells also prevent many predators from reaching their soft bodies.

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.

Life Cycle



❶&❷ When water temperature warms above 68°, eggs and sperm are released into the water column where they must join together for fertilization.

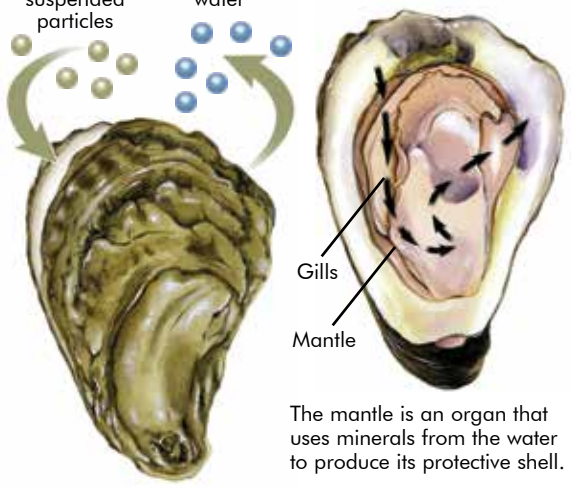
❸&❹ Within 24 hours a shell and cilia (tiny hairs for swimming and feeding) develop. The larvae swim for up to two weeks before settling to the bottom.

❺&❻ Spat (juvenile oysters) must settle out onto a hard surface, preferably other oyster shells. They reach adulthood in about two years and will remain attached to the same surface for the rest of their life.

Oysters can live up to 20 years.

Filter Feeding

Oysters use their gills to absorb oxygen and strain food out of the water. One adult can strain plankton and organic matter out of the water 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.



The mantle is an organ that uses minerals from the water to produce its protective shell.

Threats

- **Physical removal**. Oyster reefs are vulnerable to over harvesting and disturbance by development.
- **Sedimentation**. Dredging and stormwater runoff can result in the burying of oyster reefs.
- **Boating impacts**. Boat wakes can erode the shoreline and disturb oyster reefs. Boat props can drag along the bottom and dislodge oyster clumps.

Brackish water has a level of salinity between ocean water and fresh water. Oyster reefs thrive in brackish water.

Restoration

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

- Empty oyster shells collected from local restaurants are placed in depleted oyster reef areas to provide hard substrate for spat settlement and calcium needed for shell growth.
- Limestone, oyster mats, and artificial reef materials such as concrete ReefBalls™ are other methods being used to provide new substrate for spat to settle.

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