

Get to know Oysters!

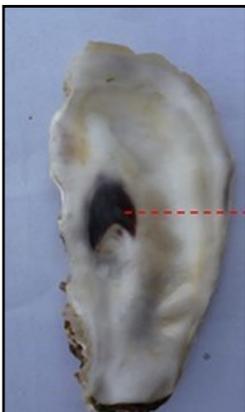
The Eastern oyster, *Crassostrea virginica*, and the lesser known Olympia oyster, *Ostrea lurida*, are two oysters native to North America. The Eastern oyster is found along the east coast of North America from the Gulf of St. Lawrence to the Gulf of Mexico and the Olympia oyster is found on the west coast from Baja California to British Columbia.



Oysters are aquatic organisms and typically live in shallow brackish or salty water with salinity between 5 and 30 ppt. Eastern oysters are often found in clusters on oyster beds, bars, rock or attached to each other, creating reefs that in turn provide habitats for other organisms, making them **ecosystem engineers** (the Olympia oyster does not form high reefs). Adults may inhabit both **intertidal** and **subtidal** areas.

Oyster reefs provide vital habitat to many species including shrimp, barnacles, mussels, crabs, sponges, small fish and many more. These complex structures also act as protective barriers against storms and waves reducing the impact on shorelines.

Oysters on average are 7.6 to 12.7 cm long, though they can grow as large as 20cm! They are **bivalves**, meaning their bodies are enclosed within two shells hinged together. The shells are typically a white to gray to beige color, rough in texture and unequally oval or pear shaped.



The inside of their shells are smoother, porcelain white color and have a purple **abductor** muscle scar. The inside spaces of the shell are always filled with water providing food and the ability to live out of water for a period of time.

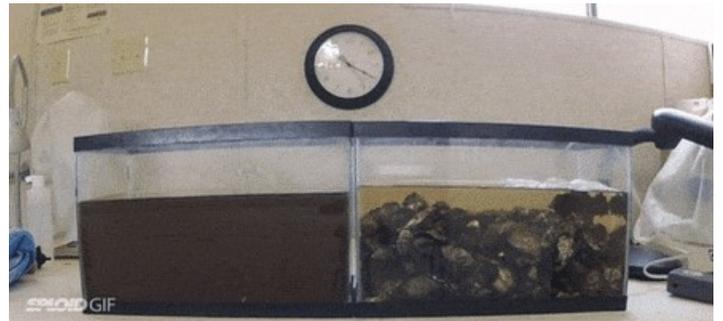


Oysters **spawn** at the beginning of the summer season as water temperatures begin to rise (optimal temperature is between 20°C and 30°C (68°F to 86°F)). Female oysters can produce approximately 100 million eggs each year and can even spawn their first year of life! Once a single oyster releases either eggs or sperm, oysters in the surround waters also begin to release **gonads**. Eggs and sperm are released directly into the surrounding water and once fertilized, the eggs develop into larvae within 24 hours.



An oyster **larvae** live in the currents for 2 weeks prior to growing a foot which it uses to explore bottom surfaces before settling on a suitable hard **substrate** becoming sessile organisms. After choosing an area, they produce a cement-like substance attaching themselves to the surface. Oysters typically grown up to an 2.5 cm a year and can live up to 20 years.

Eastern oysters are **filter feeders**. They open their shells and pump water through their **gills** trapping **plankton** and other food found in the water. Oysters help filter and clean water as they are feeding trapping sediment and excess nutrients. Whatever is not consumed by the oyster is deposited on the seafloor bottom and effectively removed from the water column. An adult oyster can filter as much as 50 gallons of water in a single day!



Did You Know?

- ◆ Oysters may change gender over their lifetime. Most oysters under 1 year old are male while most older ones are female.
- ◆ Oysters are important commercial catches in many estuaries and bays.
- ◆ Oysters make pearls as a defense mechanism! Pearls are formed when an irritant gets into the oyster (or other mollusk) mantle (the protective layer that covers their organs) . The oyster quickly forms layers of nacre —the same mineral that forms the inner shell—eventually creating the iridescent pearl!



Questions? Contact us! education@namepa.net

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Vocabulary

Abductor	Intertidal
Bivalve	Larvae
Ecosystem Engineers	Plankton
Filter Feeders	Spawn
Gills	Substrate
Gonads	Subtidal

NGSS

(DCI) Disciplinary Core Ideas

LS1A – Structure and Function

LS1C – Organization for matter and energy flow in organisms

LS2A – Interdependent relationships in ecosystems

LS2B – Energy transfer in ecosystems

LS2C – Ecosystems dynamics and Functioning

LS2D – Social interactions and group behavior

Works Cited:

Eastern Oyster. (n.d.). NOAA Fisheries. Retrieved August 23, 2020, from www.fisheries.noaa.gov/species/eastern-oyster.

Eastern Oyster. (n.d.). Chesapeake Bay Program. Retrieved August 23, 2020, from www.chesapeakebay.net/S=0/fieldguide/critter/eastern_oyster.