

Pteria colymbus (Atlantic Winged Oyster)

Order: Pterioida (Pearl and Winged Oysters)

Class: Bivalvia (Clams, Oysters and Mussels)

Phylum: Mollusca (Molluscs)



Fig. 1. Atlantic winged oyster, *Pteria colymbus*.

[http://en.wikipedia.org/wiki/Pteria_colymbus#/media/File:Pteria_colymbus, downloaded 1 April 2015]

TRAITS. *Pteria colymbus*, the Atlantic winged oyster, is a bivalve mollusc (with two, hinged shell valves). The shell is asymmetric, with a lengthy hinge extended at the anterior end, and matures to a length of 6-9cm. Its exterior has small ridges in a centrifugal pattern, the interior of the shell is of a shiny greyish colour, while the younger winged oysters frequently have prickly-looking spines outside. The upper valve has a brownish colour with some lighter marks, while the lower valve has a slightly smaller and flatter shape (Fig. 1). Some shells may be seen covered with barnacles. A matted brown fur-like covering, known as the periostracum, could also be seen on some living Atlantic winged oysters. They possess very strong adductor muscles that keep their shells closed (National Geographic Society, 2015; Signorelli et al., 2015).

DISTRIBUTION. The Atlantic winged oyster is prevalent as the name suggested in the western Atlantic and the Caribbean, in areas ranging from North Carolina to south Brazil, and may also be seen around Bermuda (Fig. 2) (Red Orbit, n.d.).

HABITAT AND ACTIVITY. The Atlantic winged oyster can be found in shallow waters ranging from approximately 3-30m in depth. It is usually anchored to gorgonians, offshore corals, sea fans, rocks, oil platforms, wharf pilings, and other objects, through the use of its threadlike byssus. The approximate temperature range is 22-25°C (Encyclopedia of Life, 2008).

FOOD AND FEEDING. When the Atlantic winged oyster attaches itself to rocks and other objects, they are then able to feed by taking plankton, algae and other food particles from the water that is constantly passing over their gills, which is known as filter feeding (What's That Fish, 2015; National Geographic Society, 2015).

POPULATION ECOLOGY. With the right environmental conditions the Atlantic winged oyster may reach a great population density. The spawning period occurs with environmental signals like warm temperature, as well as enough phytoplankton to feed on. Under healthy environmental conditions there would be a great increase in oyster development forming a group of oysters known as a colony, bed or reef (Fig. 3). The average life span of the oyster in captivity is up to approximately 20 years (National Geographic Society, 2015). The fertilized female oyster releases millions of eggs into the water and with the right conditions they would mature into larvae and juveniles.

REPRODUCTION. Adult Atlantic winged oysters are able to reproduce at the age of 3 years. Spawning begins when a male oyster discharges his sperm in the water, other oysters would detect sperm in the water and start their spawning process as well. For fertilization to occur the sperm and egg must encounter each other in the water. They form a fertilised egg which then forms a larva, which would take two weeks to mature through various stages. At two weeks old the larva is in the pediveliger stage, and attaches itself to a hard surface by secreting a glue, at the bottom of the water. The larva then undertakes metamorphosis of its internal anatomy and turns into a juvenile oyster or spat. The spat feeds in order to gain energy into shell development. The Atlantic winged oyster naturally grows up to 2.5cm each year, dependent on environmental conditions. The Atlantic winged oyster may change sex during its lifespan (University of Maryland Center for Environmental Science, n.d.).

BEHAVIOUR. With warm temperature the spawning process would begin thus obscuring the water with thousands of eggs and sperm. A female oyster can produce more than 100 million eggs yearly. The fertilized egg develops into a juvenile oyster that attaches onto a desired hard surface, this is called a spat which then matures in the next few years. Collectively oysters are able filter great amounts of water which allows them to feed, however they are not permanently open. Their behaviour is based on the level of the tide, which depends on the moon and sun locations (Tran et al., 2011). The predators of oysters include crabs, seabirds, starfish, and humans and muscles close the shell valves together each time the oyster is threatened (National Geographic Society, 2015).

APPLIED ECOLOGY. Marketable reaping of oysters is frequently done but they are not listed as threatened or endangered. However, being filter feeders they are very susceptible to pollution, thus decreasing the populations (National Geographic Society, 2015). A study in Chesapeake Bay (USA) found that the population of the area had decreased to less than 1% of its previous value (National Oceanic and Atmospheric Administration, n.d.).

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Fig. 2. Atlantic winged oyster geographic distribution (presence by country).

[<http://eol.org/pages/449752/overview>, downloaded 1 April 2015]



Fig. 3. Clusters of Atlantic winged oysters at low tide.

[<http://beaver-kerrie.blogspot.com/2011/11/murrells-inlet-sc.html>, downloaded 1 April 2015]

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