

## HARD CLAM

GENERAL INFO

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The hard clam, *Mercenaria mercenaria*, is a bivalve found in greatest abundance in the more saline areas of the Chesapeake Bay and near-shore ocean waters. It is an important member of the suspension-feeding, benthic fauna of the lower Chesapeake Bay, where it exists in salinities above 12 parts per thousand. Unlike the oyster, which tolerates a fairly wide range of salinity levels, the hard clam does well only in the saltier waters of the open Bay and ocean.

The hard clam is known by many names: round clam, quahog, littleneck, cherrystone and chowder clam. In most stages the hard clam has thick hard shells that contrast with the thin, easily broken shells of the soft-shell. "Littleneck" refers to the two barely visible siphons that can be seen in freshly shucked clams just below one of the cut muscles. They are separate from each other and short, so the hard clam does not burrow deeply.

The hard clam has a thick tan shell, usually egg- or heart-shaped, with concentric growth lines on its exterior. Its white interior has a deep purple stain surrounding its muscle scar, and its hinge has three white cardinal teeth. This species may grow to a width of four inches.

## Species of interest

## ► IMPORTANT TERMS

- [bivalve](#)
- [benthos](#)
- [salinity](#)
- [pelagic](#)
- [fecundity](#)

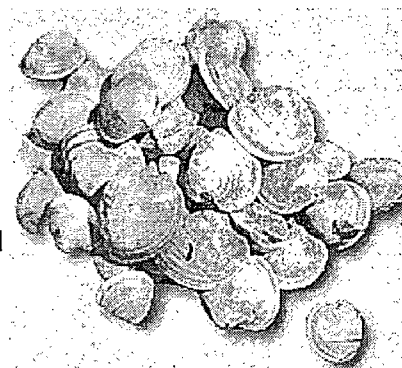
## ► BAY FACT

Hard clams can be found by walking in the shallows of the lower Bay with bare feet.



## Life Cycle and Habitat

- The life cycle of the hard clam includes a pelagic larval phase and relatively sedentary benthic juvenile and adult phases.
- Hard clams begin their adult lives as males, often become females with greater maturity, and require individuals of both sexes for reproduction.
- Clams develop functional male gonads during the first or second year of life.
- Spawning cycles are affected mainly by water temperature and the availability of food, and thus vary according to latitude. Spawning often occurs in "pulses" and may continue for months, but usually there are one or more distinct spawning peaks.
- In the Chesapeake Bay region, spawning usually commences when temperatures rise above 20-23 degrees C (68-73 degrees Fahrenheit).
- Female fecundity is high, and individuals can release 16 million to 24 million eggs per spawn, although laboratory studies often have recorded values of only 1-3 million eggs, and only a few will reach maturity.
- Individuals may release as many as 60 million eggs during one season.
- Eggs are 70 to 73 microns in diameter and are surrounded by a gelatinous membrane. Eggs and sperm of adults are expelled in the water current and fertilization occurs externally in the water column.
- In the Bay area, the most significant growth occurs in spring and fall, when abundant food and optimum water temperatures coincide. Growth decreases in summer and stops altogether in



winter. Growth rate also decreases with age, and when this happens, clams become thicker, rather than increasing in shell length.

- Most larval stages of the hard clam swim toward light (or opposite force of gravity), so most are concentrated in the surface waters and are dispersed by wind, waves, and current.
- The pediveliger stage is the final larval stage before settlement and metamorphosis to juveniles. At this stage the organism has a foot that extends from its shell.
- Once the hard clam settles to Bay bottom, it uses its foot to dig into the mud, and secretes a calcium carbonate shell that increases in size as the clam's internal organs grow.
- The most growth takes place in temperatures between 10 C (50 F) and 25 C (77 F). A cross-section of a hard clam's shell usually reveals a clam's age. Hard clams may live for more than 30 years, and occasionally reach 50 years.

The hard clam's natural enemies include several species of rays and the Atlantic blue crab. In some clam culture operations, fencing devices are used to protect the nursery areas of small hard clams.

The hard clam is given its grade name based on its size: chowders run more than 3 1/2 inches in width, cherrystones are 2 1/2 to 3 1/2 inches, top necks are 2-2 1/2 inches, and little necks are around 2 inches.

#### Other Sites of Interest:

- [Bivalve anatomy](#) - Assateague Naturalist
- [Clams Move From Spot to Spot - Migrating Mercenaria](#) - ABC News
- [Mercenaria mercenaria](#) - Smithsonian Marine Station at Fort Pierce

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