



Scallop

The giant **Pacific weathervane scallop** (*Patinopecten caurinus*), is one of several species of the true scallops, family Pectinidae, found in the eastern North Pacific Ocean. This scallop supports a sporadic but important commercial fishery in Alaska waters from Yakutat to the eastern Aleutians.

General description: Weathervane scallops are bivalves, referring to the two flattened shelly valves which are hinged together. Shell lengths may reach 8 inches or larger at maturity. The shells are a brownish color on the outside and have many prominent heavy ribs.

Life history: Generally weathervane scallops are sexually mature at age 3 or 4 and are of commercially harvestable size at 6 to 8 years. Age is determined by counting the annuli, concentric rings on the shell, which are formed with the colder or warmer water temperatures of winter or summer. Scallops are found in beds (areas of abundant numbers), and are dioecious, having separate sexes. Spawning occurs in June and July where the spermatozoa and ova are released into the water. Ova which are fertilized will settle to the bottom. In approximately one month hatching occurs and the larvae drift with the tides and currents. After two or three weeks the larvae will have gained shell weight, settled to the bottom, and attached to seaweed. Within four to eight weeks after settling, the juvenile will develop the ability to swim for locomotion. At this time, the juvenile scallop is approximately 3/8 of an inch in diameter and will take on the adult form. Growth is very rapid the first few years and is minimal after age 10. Scallops may live to age 18.

Weathervane scallops have several specialized adaptations which enable the scallop to escape predation or other disturbing conditions. Scallops are the only bivalves which are capable of swimming. This ability is accomplished by the rapid ejection of water from the interior of the shell in a jet-like action. Swimming can be maintained for 15-20 seconds and rarely exceeds 20 feet. Another unique adaptation of scallops includes the presence of many jewel-like eyes which are capable of detecting changes in light intensity or moving objects. Additionally, scallops are equipped with small tentacles which are highly sensitive to odors and changes in water temperature. The prominent heavy ribs found on the shell halves also serve as strengthening structures to complete the scallop's defenses.

Habitat: Weathervane scallops are found on sand, gravel, and rock bottoms from 25-100 fathoms (a fathom equals 6 feet).

Food habits: Weathervane scallops feed by filtering microscopic plankton from the water.

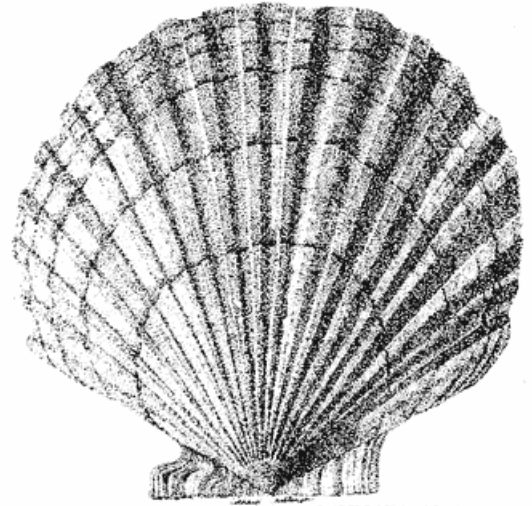
Commercial fishery: The scallop fishery in Alaska began in 1967 in the Kodiak Island waters and expanded the following year to Yakutat waters. Since then Cook Inlet, Alaska Peninsula, and eastern Aleutian waters have been explored, and scallop fisheries have decreased. The Alaska scallop fishery has a history of being sporadic due to exploitation of limited stocks, market conditions, and the availability of more lucrative fisheries. Annual catches for the state averaged 800,000 pounds shucked weight (shells removed), and an average annual value of approximately \$1 million.

Fishing gear for scallops consists of a dredge made up of a rectangular metal frame approximately 12 feet wide. Steel rings connected together by chain links and webbing along the top form a net. Generally, a vessel will fish two such dredges, which may weigh around a ton each, and are towed through the beds. Due to the sea conditions associated with offshore scallop beds, vessels average around 83 feet in length. Mounted on the foremast are two booms which are used in hauling the dredges.

A crew on a scallop vessel may have as many as 11 members. Only the disc-shaped or round muscle is eaten. Scallops are generally shucked, washed, and bagged on ice by crew members on a shift basis, while the vessel fishes continuously.

Recent legislation has authorized the farming of bivalve shellfish. Although considerable interest has been generated in scallop farming, it is too early to predict results.

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