

Washington Clams

History of the Fishery

The Washington clam fishery is almost exclusively a sport fishery. The *Fish and Game Code* allows commercial fishing in Humboldt Bay by daily market or restaurant order and by special bag limits. These clams are highly perishable and are dug as required and consumed locally. From 1954 to 1963, commercial landings averaged 5,000 pounds per year, with a high of 11,000 pounds in 1956 and a low of 2,000 pounds in 1960. Landings decreased following this period due to more stringent public health regulations pertaining to the marketing of shellfish. By the early 1980s, commercial landings of Washington clams ceased with the retirement of a longtime commercial clammer.

Two principal species of Washington clam are harvested in California. The Washington clam (*Saxidomus nuttalli*) is the principal species sought, and the best yielding localities are Humboldt Bay, Bodega Bay, Tomales Bay, Drakes Estero, and Elkhorn Slough. Bolinas Lagoon and Morro Bay have historically been good yielding localities. However, in the past decade clam populations in these two areas have declined significantly. The second popular Washington clam, the butter clam (*Saxidomus giganteus*), formerly known as the smooth Washington clam, is seldom taken south of Humboldt Bay. In only one California locality, near Fields Landing in Humboldt Bay, is this clam common enough to support a minor fishery. Results of a sport clamming survey of Humboldt Bay, from 1975 through 1989, produced a mean estimated total take of both clam species of 42,000 per year.

The Washington clam catch is considerably less than that of gaper clams, primarily because the latter are more predominant in most bays, and the Washington clam siphon holes are more difficult to locate. The recent Humboldt Bay survey found that the Washington clam and the butter clam comprised 20 percent and 13 percent, respectively, of the total estimated harvest of all species taken in that bay. In Bodega Bay, Washington clams are the predominant take, comprising an estimated 30 to 40 percent of the total clam harvest, with an occasional butter clam also taken.

Sport clammers may take 10 Washington clams per day throughout the state except in Elkhorn Slough, where the limit is 12 in combination with gaper clams, and in Humboldt Bay, where the limit is 50 in combination with no more than 25 gaper clams.

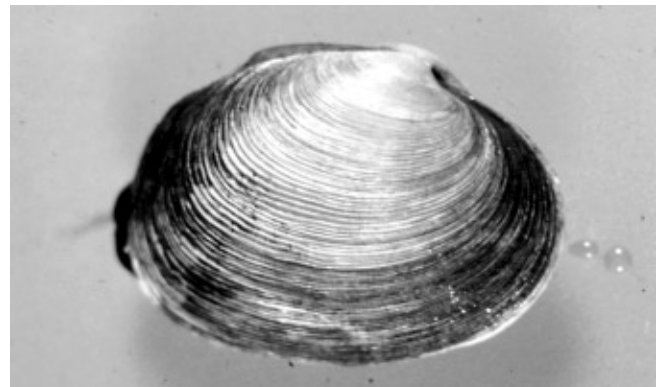
Skiffs are used to transport diggers to intertidal areas where these clams occur, but some locations have populations accessible by foot. The clams are dug by shovels to a depth of 12 to 18 inches near the low tide line. Washington clams have excellent flavor and texture and may be used in clam chowder, or fried and served as a main dish.

Status of Biological Knowledge

The range of the Washington clam is from Humboldt Bay, California, to San Quentin Bay, Baja California. This species lives at depths of 12 to 18 inches in mud, sandy mud or sand of bays, lagoons and estuaries. Its shell is thick and firm, oval in outline, and roughened on the outer surfaces by numerous concentric ridges. Inside, the shells are shiny white with dark purple markings at the posterior end. Though the harvest is from bottoms exposed at low tide, this clam also occurs subtidally in the same general area.

The butter clam ranges from Sitka, Alaska, to San Francisco Bay, California, but is infrequently taken south of Humboldt Bay. Its shell is thick and firm, oval in outline, but more rounded than that of the Washington clam. The interior of the shell is entirely white with no purple markings. This clam lives at depths of 10 to 14 inches in mud or sandy mud of bays, lagoons and estuaries in areas that are usually exposed at low tide.

Spawning occurs during a period from spring to fall, presumably as a result of warmer water temperature. A study of the Washington clam in British Columbia revealed that about half of these clams spawned at the end of their third year. The larvae appeared as bivalve veligers in two weeks and, at the end of four weeks, when less than 0.2 inches long, settled to the bottom. Tidal currents play an important role in the distribution of these animals due to their pelagic larvae life-stage. Successful spawning and settlement may be somewhat sporadic, with a period of years between settlements of consequence. Upon completion of a free-swimming larval period, both species settle down to a fixed position and a comparatively inactive existence. About the only movement is downward as the clams grow older and increase in size. Age studies reveal that most Washington clams harvested in central California are from four to eight years old. Occasional individuals of both species up to 10 years old are found in California, while some butter clams over 20 years old have been



Washington Clam, *Saxidomus nuttalli*
Credit: Windy Montgomery, University of California

found in British Columbia. The Washington clam grows to a length of nearly seven inches and attains a weight of about two pounds. The butter clam may attain a length of five inches.

Paralytic shellfish poisoning (PSP) is of widespread concern to consumers of shellfish. Both the Washington clam and the butter clam have been shown to retain high levels of paralytic shellfish toxin in the viscera and in the dark colored tips of the siphons for long periods of time after a PSP event. California clammers can call a toll-free biotoxin hotline at 1-800-553-4133 to obtain recorded information on PSP events and areas with posted biotoxin warnings.

Status of the Population

Densities and distributions of these clams have been determined for some of the more frequently used bay and estuarine intertidal areas, but knowledge is lacking about subtidal densities and distribution. Estimates have not been made of the total population size of the Washington clam resource in California, however, the present level of harvest can be easily sustained.

Management Considerations

See the Management Considerations Appendix A for further information.

Thomas O. Moore
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References

- Collier, P.C. 2000. Distribution, abundance, and use of clam populations in Humboldt Bay, Humboldt County, California. Calif. Dept. Fish and Game, unpublished.
- Collier, P.C., and R. Warner. 1992. Sport clamming survey of Humboldt Bay from 1975 through 1989. Calif. Dept. Fish and Game, unpublished Report. 15 p.
- Fitch, J.E. 1961. Common marine bivalves of California. Calif. Dept. Fish and Game, Fish Bull. 90. 102 p.
- Hardy, R.A. 2000. Distribution, abundance, and use of clam populations in Morro Bay, San Luis Obispo County, California. Calif. Dept. Fish and Game, unpublished.
- Mello, J.J. 1981. A one year survey of recreational clamming on the Morro Bay mudflats for the period of April, 1979 to March, 1980. Calif. Polytech. State Univ., Dept. Bio. Sci., San Luis Obispo, Calif. 18 p.
- Spratt, J.D. 1982. Results of sampling clammers in Elkhorn Slough during 1978 and 1979. Calif. Dept. Fish and Game, Mar. Resour. Admin. Rep. 82-11. 12 p.