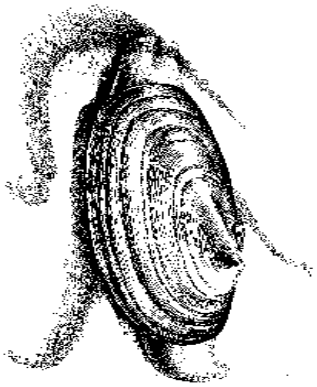
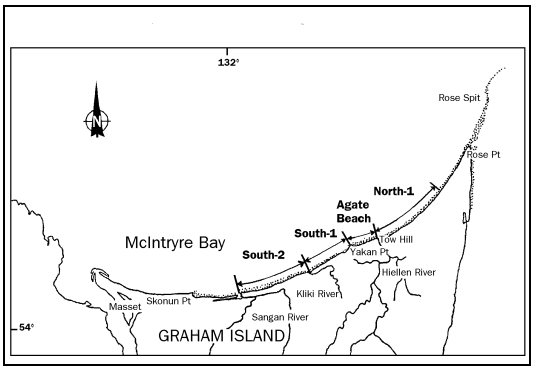


Razor Clam

Background

Razor clams (Siliqua patula) are found on surf-swept sandy beaches from Pismo Beach, California to the Aleutian Islands in Alaska. There are two major stocks in British Columbia: the largest occurring at North Beach near Massett in Haida Gwaii and smaller populations at Long Beach and other west coast of Vancouver Island beaches. Razor clams are found from the mid intertidal beach region to subtidal depths of 20 m.

Razor clams are molluscs having a long siphon, a prominent muscular foot and brittle elongated valves. They can use their foot to burrow at rates exceeding 20 cm per minute and are found up to 25 cm in the sand. Adults left on the surface of the beach will quickly re-burrow. Adult razor clams reach shell lengths up to 160 mm and ages of 18 years. Time of spawning varies with location, but generally occurs from April to September, occurring later at northern latitudes. Age and size of sexual maturity varies with latitude, but most clams are sexually mature at 2 to 4 years of age and 100 mm in length.



Summary

Status of the only commercially fished population located in McIntyre Bay at North Beach (Management Subarea 1-5) near Massett, Haida Gwaii is as follows:

- Catches were at record levels in 2000 (237.2 t which was the highest since 1943 and 5th highest since 1923)
- Surveys of beach sections (see map) over the past seven years show that biomass was at a peak of about 1,699 t in 2000, which was three times the average biomass during the period 1994-1998. The outlook for 2001 is good, due mainly to an abundance of two-year old clams in 2000, many of which will recruit to the fishery in 2001.
- An annual catch ceiling of 232.8 t (520,000 pounds) was put in place for the 2001 season. The ceiling is within the recommended range of potential yield (163 to 240 t). Yield was calculated based on 12.3% of the exploitable biomass at the end of 2000. The range is conservative since it did not include recruitment and some portions of the beach were not surveyed. Survey-based catch limits will continue to be

used as a means of estimating sustainable harvest levels in this fishery.

- The fishery is being closely monitored with some beach sections being added to the surveys and catch information by beach section being collected in 2001.

The Fishery

Intertidal clams, including razor clams, have been and continue to be an important staple food item for First Nations throughout the coast. As well, small but important recreational fisheries for razor clams take place at both North Beach near Massett (Management Subarea 1-5) and Long Beach and other West Coast of Vancouver Island beaches. First Nations also continue to be the majority participants in several small commercial clam fisheries, including the only commercial fishery for razor clams in British Columbia that occurs at North Beach. Clams are harvested exclusively by hand-digging and at North Beach effort focuses on tides that are generally less than 1.3 m (4.0 ft).

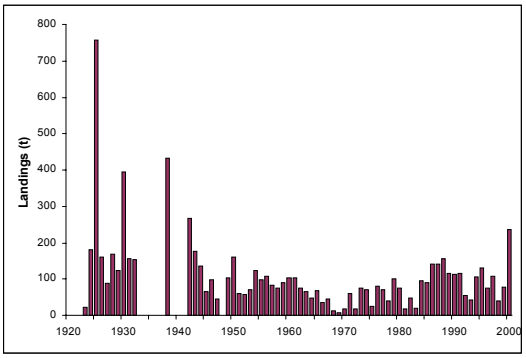


Figure 2: North Beach razor clam landings

The first commercial landings at North Beach took place in 1923 and led to construction of a cannery in 1924. Markets have shifted from food to other uses, such as bait, over the years. In the past few decades the main market for razor clams has been for crab bait. However, an increasing portion of the catch has gone to food markets in the last few years. In 2000, landings were 237 t with a value of $465,000 (average $1.96/kg or $0.89/lb).

Catch and Effort

Haida Gwaii razor clam landings have been relatively stable since the 1920s, with closures due mainly to the temporary shutdown of local processing facilities. Commercial landings of 237 t in 2000 were a record going back to 1943. Overall landings were considerably higher in the 1920s and 1930s than in recent decades. The main source of information on fishing effort is from fish slips. But fish slips may not be an accurate indicator of effort because more than one fishable tide may occur in a day. Commercial fishing effort in 2000 was 1,772 digger-days (assuming that one delivery is equivalent to one digger-day).

Food and recreational harvests are small, relative to the commercial fishery (3.4 t in 1994, see Jones et al. 1998).

Fishery Management

The Haida Gwaii razor clam fishery is co-managed by the Council of the Haida Nation and Fisheries and Oceans Canada (Jones and Garza 1998). The details of the management arrangement are described in the Razor Clam Sub-Agreement, an agreement negotiated through DFO's Aboriginal Fisheries Strategy in 1994. The agreement was renewed with minor changes in 1998 and 1999 and the current agreement extends to March 31, 2003. Two joint Haida/DFO committees are responsible for implementing and monitoring the agreement.

The Haida fishery is managed through a Communal Licence and the CHN issues

designations to Haida participants. DFO issues licences to six individuals to participate in the fishery – these licences are personal and non-transferable and were limited in 1995. Under the Communal Licence, CHN is responsible for collecting and compiling fish slip data and collection of samples for marine toxin monitoring. The number of Haida participants under the Communal Licence is not limited. From 100 to 275 persons registered in the fishery from 1995 to 2000, although not all of these actually fished.

The main management measures for the commercial fishery at North Beach in 2001 are monthly catch limits, a catch ceiling of 235.8 t (520,000 pounds), and a 90 mm size limit. The size at 50% maturity is 87 mm, so the present commercial size limit of 90 mm may not allow all individuals to spawn at least once. The catch ceiling is within the recommended range of potential yield of 163 to 240 t based on a 12.3% harvest rate (2/3 of maximum sustained yield) of the exploitable biomass at the end of the season. The range is conservative since it did not include recruitment and some portions of the beach were not surveyed.

In recent years, commercial and recreational razor clam fisheries at North Beach have been open year-round except for occasional marine toxin (PSP or ASP) closures. As well, there are a few small sanitary shellfish closures on the West Coast of Vancouver Island. Due to the high landings in 2000, the fishery at North Beach was closed on September 7, 2000 for the balance of the year. The fishery was reopened in February 2001 with an annual catch ceiling that were based on preliminary analysis of survey data.

Recreational clam diggers at North Beach (Subarea 1-5) are limited to a daily catch of 75 clams and a possession limit of 150 clams. Recreational catch limits for the west coast of Vancouver Island (Area 12 to 29) are a daily limit of 12 and a possession limit of 24 clams. There is no recreational size limit.

There is no possession or size limit in the traditional Haida food fishery.

Resource Status

Information is only available for North Beach. The Haida Fisheries Program has conducted surveys of razor clams on North Beach since 1994 that have been used to estimate population and biomass. The surveys show that the biomass was at a historic high in 2000 and that there was a large number of two-year old clams in the population, many of which will recruit to the fishery in 2001. In 2000 the number of harvestable razor clams ($\geq$ 90 mm) on 18.8 km of beach accessible to the commercial fishery was estimated to be about 12.5 million clams, and the exploitable biomass was estimated to be 1,699 t at the time of the survey, with a range of 1,385 to 2,013 t (95% confidence limits). In 2001, surveys were expanded to include additional sections of beaches that were being fished more frequently and had not been part of the regular survey. As well, catch information for individual beach sections is being collected in 2001 in order to prevent local overexploitation.

Outlook

Razor clam biomass at North Beach is at a peak for the seven years for which surveys have been conducted. Recruitment in 2001 was expected to be high (Jones et al. 2001/152). Catches are at record levels and their continuation will depend on whether recent recruitment trends continue. If biomass declines then catch quotas will have to be reduced.

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