

# arctic surf clam



**Species Name:** *Mactromeris polynyma*

**Certification(s):** None.

**Harvest Area / Season:** The commercial fisheries are on Banquereau Bank and Grand Bank in FAO Area 21 (Northwest Atlantic). The fishery is conducted on a year round basis commencing on January 1 of each year.

**Quota System:** The Arctic Surf Clam TACs (Total Allowable Catch) for Banquereau Bank and Grand Bank have remained unchanged since 2000 and are set at 24,000 t and 20,000 t respectively. With the size of maturity below the age of commercial interest (10-15 years) and the TAC set as a small fraction of total biomass, the fishery is managed conservatively. Clearwater has participated in the clam fishery since its inception in 1986, and currently has 100% of the quota share in this fishery.

**Biomass Assessment:** The current scientific advice is based on DFO (Canadian Department of Fisheries and Oceans) and Industry stock assessments and survey programs, as well as commercial fishery and sampling data collected annually. The long-lived, slow growing nature of this species is respected in the management approach and harvest levels. The 2007 scientific assessment for Banquereau Bank has indicated the stock is healthy and the exploitation rate is low at the current quota of 24,000 t as appropriate for this species. The management plan for Offshore Clams includes a large research component and surveying is now being completed on the Grand Banks to update our understanding of that component of the stock.

**Participation in Research:** A multi-year joint project agreement (JPA) has been signed between DFO and Clearwater for the period of 2003-2009 with the intent to jointly conduct a series of studies on life history, biomass, and fishing performance for offshore clam species. An annual work plan is jointly developed based on current research priorities. It was through this JPA that the surveys were conducted on Sable Bank in 2003, Banquereau Bank in 2004, and a three-year survey of Grand Banks starting in 2006.

The overall program will assure that fishery conservation and management for offshore clams is based on the best scientific information available.

**Conservation / Management Measures:** According to the 2007 DFO Surf Clam assessment report, the size at which surf clams become sexually mature is far below that at which they are commercially harvestable, with the result that individual surf clams will likely spawn 10 times before they are recruited into the fishery, ensuring that future brood stock is well protected.

A sampling program to determine natural mortality rates for Surf Clams has been designed and implemented in an unfished area for two consecutive years. Size and age data from these surveys are used to estimate mortality, which is then used to determine the appropriate harvest levels and stock status.

**Practices to Minimize Bycatch:** Bycatch in the Arctic Surf clam fishery is low. A 2005 study indicated that Surf clams made up 80% of the catch by weight, with shell and rocks making up an additional 8.5%. Sand dollars and propeller clams were the only other species making up more than 0.5% of the catch.

Research is underway to evaluate the biology/abundance of cockle clam and Northern propeller clams, with a view to establishing quota limits for these species during the period of the management plan.

**Fishing Method:** The fishery is carried out with hydraulic clam dredges. In order to harvest clams from the seafloor in this offshore environment, the gear must come into contact with the sandy bottom where the clams live. The clam dredge is the only gear currently technologically capable of harvesting Arctic Surf Clams. Dive capture is not feasible in this environment.

Arctic Surf Clams live only in sandy bottom habitat. This sandy bottom has little biological diversity, a high level of natural disturbance, and is highly resilient to the disturbance caused by the hydraulic clam fishing gear. The gear is designed specifically for this bottom type and cannot be used in any other habitat type.

Clearwater has supported a 10-year habitat impact study undertaken by DFO to fully understand the impact of this gear on the benthic habitat. This study is considered to be one of the most rigorous gear impact studies available in Canada and internationally. Non-fished and fished sites have been monitored and compared over the 10-year period using sophisticated scientific sampling techniques such as sidescan sonar, benthic grab samples, underwater photography and video. The results of this study show that the sandy habitat where surf clams are fished is resilient and that all species, with the exception of the target species, recover within two years. The exploitation rate for surf clam is kept low in accordance with biological characteristics of the target species. As a result, fishing activity does not resume in previously fished areas for a period of approximately 10 years, resulting in full recovery and a significant fallow period between fishing events.

The footprint of this fishery is low and DFO calculates only 3% of the available clam grounds are in the recovery process at any given time, meaning 97% of the grounds are undisturbed or in a fully recovered state. Clearwater has also undertaken a multi-year 2 million dollar corporate research project to map the habitat on Banquereau Bank with multi-beam sonar technology. This technology will produce detailed bathymetry and habitat maps that will increase our understanding of clam habitats, allowing the fishery to better target and manage the footprint of the fishery on the bottom.

**Catch Monitoring:** The Arctic Surf Clam fishing fleet is subject to 100% Vessel Monitoring System (VMS) coverage. Industry sponsors 100% dockside monitoring and an at-sea Observer coverage program that provide information to DFO on catches. Daily logbook recording is mandatory. There is excellent monitoring of catches, bycatch and landings.

**Traceability:** Internal monitoring systems on our state of the art vessels and at our plant in Grand Bank, Newfoundland allow Clearwater to trace our product to the production day and fishing area where it was caught.



*Dedicated to Sustainable Seafood Excellence*

