clearwater sustainability profile

arctic surf clam

(Hokkigai or Bei Gei Bei)

Species Name: *Mactromeris polynyma*

Marine Stewardship Council Certified since July 2012

Harvest Area / Season: Offshore Arctic surf clams are harvested year-round in FAO Area 21 (Northwest Atlantic) on Grand Bank (NAFO sub-area 3LNO) and Banquereau Bank (NAFO sub-area 4VsW).

Sustainable Removals: Fisheries in Canada are managed under the Precautionary Approach, meaning that removals must be set at levels that ensure the stock maintains high productivity and that overfishing does not occur. The Arctic surf clam Total Allowable Catch (TAC) for Banquereau Bank and Grand Bank is set at 24,000 t and 14,756 t respectively. Arctic surf clams are long-lived species and take many years to grow so the fishery is managed conservatively and the TAC set as a small fraction of total biomass. Clearwater has participated in the clam fishery since its inception in 1986 and has 100% of the quota share in this fishery.

Assessing Stock Health: Scientific advice for this fishery is gathered through a survey program jointly funded by the Canadian Department of Fisheries and Oceans (DFO) and Clearwater. Further assessment is carried out on data collected throughout the fishing season on-board commercial fishing vessels. The TAC is set in consideration of the long-lived, slow growing nature of this species and the nature of fishing activity that targets high-density clam beds. Through the scientific peer-reviewed processes, it was concluded the stock is very healthy and the management approach and harvest levels are appropriate.

Participating in Research: A multi-year joint project agreement signed between DFO and Clearwater guided a series of studies on life history, biomass, and fishing performance for the offshore clam species. Under this agreement scientific surveys were conducted on Sable Bank in 2003, Banquereau Bank in 2004 and 2010, and Grand Banks throughout 2006-2009. This independent scientific research is the foundation of the offshore fishery. Clearwater crew members, guided by DFO protocols continue to collect samples on regular fishing trips to monitor the size composition of the catch, the fishing footprint and the fishing effort.

Conservation & Management Measures: 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. Near-by conservation areas like The Gully Marine Protected Area and the Lophelia coral closure are clearly mapped on the vessels' on-board charting programs so that captains can avoid these sensitive areas.

Catch Monitoring: The Arctic surf clam fishing fleet is subject to 100% vessel satellite monitoring, 100% dockside monitoring and an independent at-sea observer program. Daily logbook recording is mandatory and requires that target catch and interactions with non-target species be reported.

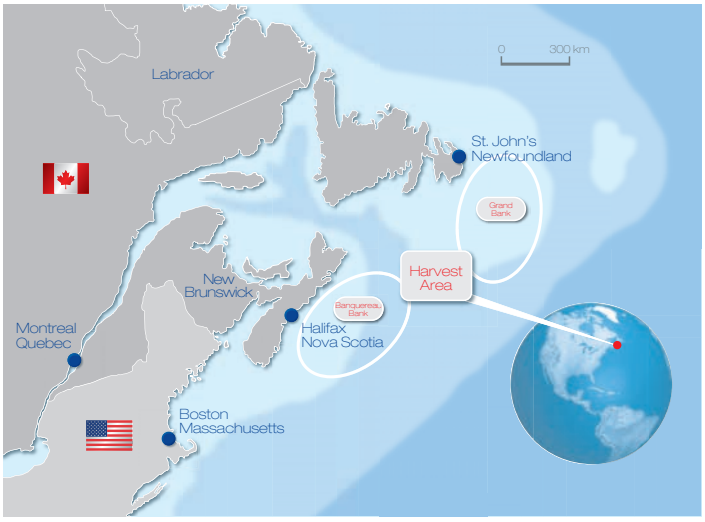
Managing Bycatch: Clearwater takes an active approach to appropriately manage bycatch. Bycatch in the Arctic Surf clam fishery is low. The most recent stock assessment of both fishing banks indicated that over 95% of the catch was Arctic surf clam or co-occurring clam species. All finfish species combined make up less than 1% of any recorded catch and there has never been a recorded interaction with a marine mammal, turtle or bird.

Fishing Method and Gear Type: The fishery is carried out with hydraulic clam dredges. In order to harvest clams from the seafloor in the 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.

The sandy bottom has 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 using sophisticated scientific sampling techniques such as sidescan sonar, benthic grab samples, underwater photography and video. The results show that the sandy habitat where surf clams are fished is resilient and that all non-target species recover within two years. The exploitation rate for surf clam is kept low in accordance with biological characteristics. 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 small 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 multiyear $2 million corporate research project that mapped the habitat on Banquereau Bank with multi-beam sonar technology. This technology has produced detailed maps that increase our understanding of clam habitats, allowing the fishery to better target and manage our footprint on the bottom.



Traceability: Internal monitoring systems on our state-of-the-art vessels and at our plant in Grand Bank, Newfoundland allow Clearwater to trace the product to the production day and fishing area where it was caught. The catch is entered into our traceability system and can be tracked throughout the entire Clearwater supply chain.

Other Clams: Clearwater also has the opportunity to retain cockle clams (Serripes groenlandicus) and Northern propeller clams (Cyrtodaria siliqua) during Arctic surf clam fishing. Using the same gear and conservative harvest strategy, Clearwater is evaluating the biology/abundance of cockle clam and Northern propeller clams, with a view to establish quota limits for these species during the period of the management plan.