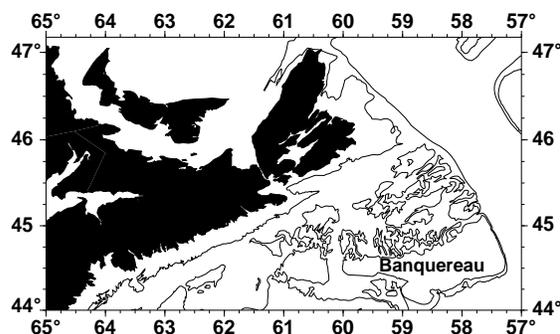




## BANQUEREAU BANK ARCTIC SURFCLAM



### Background

The Arctic surfclam (*Mactromeris polynyma*) is a large clam (75-125 mm), similar in appearance to the more common Atlantic surfclam. The main distinguishing feature is that most specimens have a purple color in the foot and mantle that turns red upon cooking, similar to lobster and shrimp. It is found in both the Atlantic and Pacific oceans in medium to coarse sand bottom. In the Atlantic there are commercial fisheries on Banquereau and Grand Bank, and small inshore fisheries off southwest Nova Scotia, and in the Gulf of St. Lawrence. These clams are slow growing and long lived, the oldest aged to date was over 56 years old and the largest was 157 mm. A good part of the unharvested population on Banquereau Bank reaches 40 years of age.

They reach reproductive maturity between 5 and 8 years of age and spawn in the fall. There is some indication that the inshore population may have a spring spawning event as well.

They are filter feeders and are preyed upon by large groundfish.

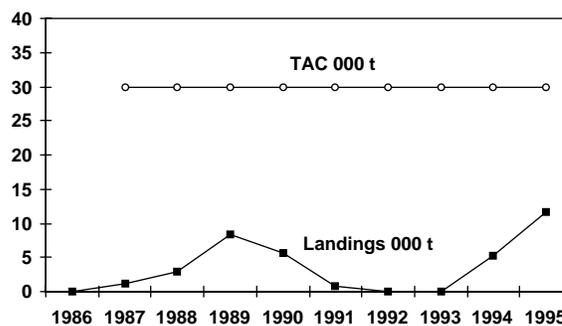
The fishery on Banquereau Bank started with developmental surveys conducted by DFO in 1980-83. After a three month test fishery, a commercial fishery was managed with a TAC/EA program and limited entry. It is now conducted by 3 large (60 m) freezer processors using hydraulic dredges. The fishery targets clams in the 10-15 year old age range and the main market is for the foot portion of the clam which goes to the sushi and surimi market in Japan.

### The Fishery

#### Landings (thousands of tonnes)

	1986-90.	91	92	93	94	95
Avg.						
TAC	30	30	30	30	30	30
Total	5.6	0.7	0.0	0.0	5.4	11.6

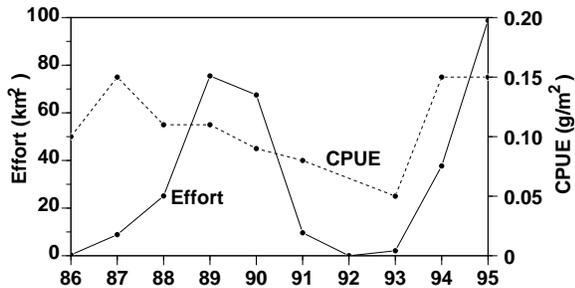
This fishery started in response to developmental surveys in the 1980s on the Scotian Shelf, which showed a large biomass of this species on Banquereau Bank. It has grown to a fishery that is conducted on both Banquereau Bank and Grand Bank by large freezer processor vessels under a single management plan, but with separate TACs. The TAC on Banquereau Bank has been 30,000 t since 1987.



The fishery on Banquereau Bank grew until 1989, when effort switched to Grand Bank.

**Effort** on Banquereau declined until 1992, when all fishing took place on Grand Bank. Since then, effort and landings on Banquereau Bank have increased to the highest on record.

Catch rates (CPUE) remain at high levels, as the vessels can still shift to unfished areas and have not had to return to previously fished areas.



As the TAC is set in round weight and the vessels involved in this fishery are landing a processed product, accurate conversion factors are essential. There have been different conversion factors used, both between and within regions. In 1995, a single conversion factor of 5.5, applied to both raw and blanched Individually Quick Frozen (IQF) products, was used in both Maritimes and Newfoundland Regions. Preliminary data gathered through the Observer program indicates that this factor can underestimate the round weight by close to 20%. Separate conversion factors for raw and blanched product (5.38 for raw and 6.67 for blanched) should be used.

### Resource Status

The survey in the 1980s gave a biomass estimate of 561,000t of Arctic surfclam on Banquereau Bank. The distribution of catch and effort as the fishery has developed, indicates that the area containing commercial concentrations may be smaller than originally estimated from the survey. A joint industry DFO survey is currently taking place to resolve this.

### Outlook

With the slow growth rates, unknown recruitment levels and probable high mortality of clams left on the bottom, the fishery would not be able to return to an area that had been fished out for at least 10-15 years and maybe longer. Under these conditions, other management measures could be used with, or in place of a TAC. Management techniques, such as permanently closed broodstock areas and a rotation of fishing grounds could be well suited to this type of fishery. Permanently closed broodstock areas would prevent recruitment overfishing, while rotational fishing areas, which are in use for a few clam fisheries on the West coast, would prevent growth overfishing. The rotation of fishing areas would be on

a schedule tied into the growth and recruitment pattern of the stock.

### For More Information

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### References

- Amaratunga, T. and T.W. Rowell. 1986. New estimates of commercially harvestable biomass of Stimpson's Surf Clam, *Spisula polynyma*, on the Scotian Shelf based on the January through April 1986 test fishery and new age data. Can. Atl. Fish. Adv. Comm. Res. Doc. 86/112: 24p.
- Roddick, D. 1996. The Arctic surfclam fishery on Banquereau Bank. DFO Atl. Res. Doc. 96/36 17p.
- Roddick, D. 1996. A preliminary look at conversion factors for the offshore clam fishery. DFO Atl. Res. Doc. 96/37 8p.
- Roddick, D. and E. Kenchington. 1990. A review of the Banquereau bank fishery for *Mactromeris polynyma* for the 1986 to 1989 period. . Can. Atl. Fish. Adv. Comm. Res. Doc. 90/14: 27p.