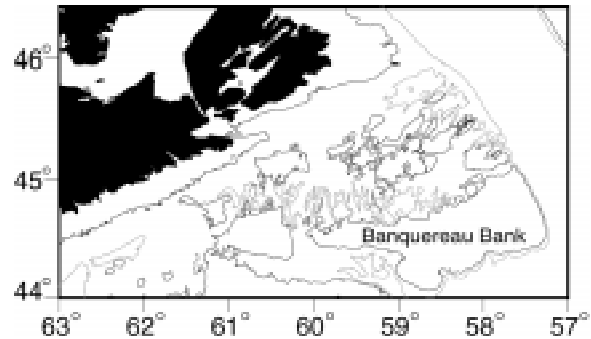


Banquereau Bank Arctic Surfclam



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 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 being 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 three 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 sashimi market in Japan.

Summary

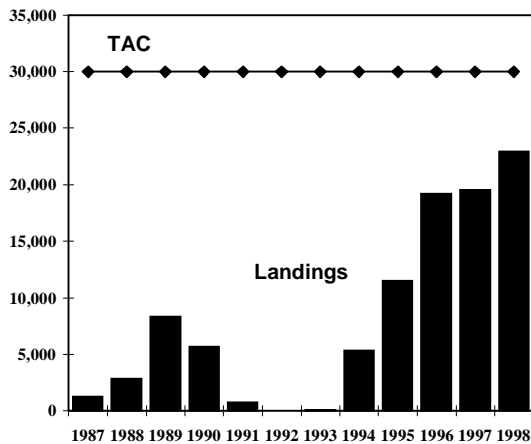
- A new estimate of harvestable biomass on Banquereau Bank is 344,000 t.
- The current TAC of 30,000 t is about 10% of this value.
- Exploitation should not exceed the assumed natural mortality rate of 8%.
- Good recruitment appears to be widespread, including areas that have had heavy exploitation in the past.
- A rotational fishery needs to be investigated in co-operation with industry.
- With the current biomass estimate, reducing the annual TAC to 24,000 t would result in an exploitation rate below the assumed natural mortality rate of 8%.

The Fishery

Landings (thousands of tonnes)

	1987-93 Avg.	1994	1995	1996	1997	1998
TAC	30	30	30	30	30	30
Total	2.2	4.6	10.4	18.7	19.0	24.0

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.

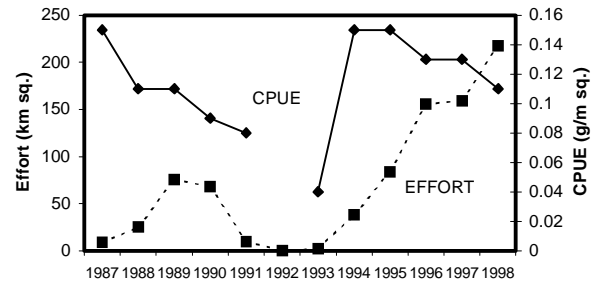


The fishery on Banquereau Bank grew until 1989, when effort switched to Grand Bank. Effort on Banquereau then declined until 1992, when all fishing took place on Grand Bank. Since then, effort and landings on Banquereau Bank have increased to the highest on record.

Resource Status

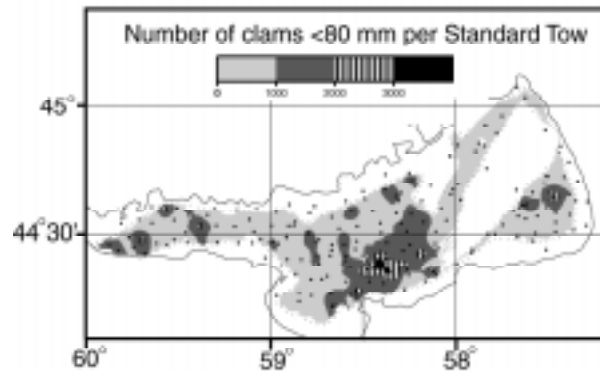
Commercial Catch rates (CPUE) are starting to drop as the vessels have fished most of the high-density areas on Banquereau Bank and are now fishing lower

density areas, or returning to areas previously fished.



Joint Industry - DFO surveys in 1996 and 1997 showed a total biomass of 470,000 t on Banquereau Bank, with a harvestable biomass of 344,000 t. This is about half of the original estimate of 600,000 t from the late 1980s.

The survey also showed areas of good recruitment on the Bank, coinciding with areas that were heavily fished in the early stages of the fishery.



Outlook

The current TAC of 30,000 t is about 10% of the harvestable biomass, and does not appear to be sustainable in the long term for Banquereau Bank. With the current biomass estimate, reducing the annual TAC to 24,000t would result in an exploitation rate below the assumed natural mortality rate of 8%.

There are signs of good recruitment on the Bank, but the slow growth rates mean that it will be many years before these clams enter the fishery.

Management Considerations

With the slow growth rates 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 rotation of fishing grounds, could be well suited to this type of fishery. The rotation of fishing areas would be on a schedule tied into the growth and recruitment pattern of the stock.

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