

Science

Sciences

GREENLAND HALIBUT EXPLORATORY FISHERY DEVELOPMENT IN HIGH ARCTIC COMMUNITIES (JONES SOUND, ARCTIC BAY AND RESOLUTE) - EMERGING FISHERY PHASE 1

Context

The Hunters and Trappers Association (HTA) in three high Arctic communities have requested an Exploratory Fishery license to fish using long-line gear for Greenland halibut: Grise Fiord, Arctic Bay and Resolute. They have each requested a Total Allowable Catch (TAC) of 2,000 kg. The fishery would be conducted during April to July, 2008 through the land-fast sea ice covering Jones Sound (Grise Fiord HTA), Admiralty Inlet (Arctic Bay HTA) and Parry Channel (Resolute HTA). Approximately five fishermen would fish at one or two locations in each area, Fishermen from Qikiqtarjuaq will visit each community to provide training in winter long-line fishing methods.

Background

This is the first request for a Greenland halibut license for these waterbodies. As no Greenland halibut surveys have been conducted in Jones Sound, Admiralty Inlet or Parry Channel, Greenland halibut abundance in any of these areas is unknown. An offshore fishery for Greenland halibut does exist in Baffin Bay. Catch data from the Baffin Bay fishery (Treble *et al.* 2007) and research surveys (Treble 2002) show Greenland halibut can be found to at least 75.5°N Latitude at depths from 500 m to 1500 m. Jones Sound, Admiralty Inlet and Parry Channel are connected to northern Baffin Bay at approximately 76°N Latitude. Jones Sound, Admiralty Inlet and Parry Channel all have areas where water depths exceed 500 m and would therefore be considered suitable habitat for Greenland halibut.

Assessment

The long-line gear proposed for use by each of the communities is an acceptable choice for use in these areas. Long-lines pose a minimum risk to bottom habitat and marine mammals such as belugas and narwhals that can be found in Jones Sound, Admiralty Inlet and Parry Channel during summer.

Greenlandic fishermen often prefer to fish just below the glaciers that enter Disko Bay, near Illulisaat. The Jakeman Glacier that enters Jones Sound just east of the community of Grise Fiord may not be as large as the glaciers in Disko Bay but the bathymetric chart shows an area of deep water (almost 300 m) adjacent to the glacier that may provide good habitat for Greenland halibut. Other glaciers in the area may also have adjacent deep water habitat.



Central and Arctic Region

Science Response: High Arctic Emerging Turbot Fishery

There are features within Jones Sound that are similar to Cumberland Sound, where there has been a winter long-line fishery for Greenland halibut since 1986. Both areas have deep waters within the sound connected to offshore waters through a relatively deep channel cutting across the shelf that lies across the entrance. However, Jones Sound is located further north, adjacent waters in Baffin Bay are colder than the waters of Davis Strait that lie adjacent to Cumberland Sound and so we might not expect the same abundance of Greenland halibut in Jones Sound as we find in Cumberland Sound.

Exploratory fisheries for Greenland halibut conducted in Scott Inlet and Sam Fiord by the Namautaq HTA in 2006 and 2007 and in Eclipse Sound by the Mittimatalik HTA in 2006 were successful at locating Greenland halibut. However, catch rates were better in Scott Inlet/Sam Fiord than they were in Eclipse Sound. The difference in catch rates may be due to availability of suitable habitat and could be related to the fact that Eclipse Sound is located further north. The influence of the cold arctic current may be more pronounced and a limiting factor to Greenland halibut production in those areas located in the High Arctic.

There are no data available from Jones Sound, Admiralty Inlet or Parry Channel with which to provide scientific advice concerning an appropriate TAC for Greenland halibut. At this early stage it would be important to collect information on fish distribution and abundance by fishing in a number of different locations. An effort based allocation could be considered. For example, fishing could occur at several spots over a 2-3 month period. If the setting of a TAC is preferred then an amount of 2-3 t would be reasonable. This is comparable to the TACs set for the first (2006) and second year (2007) of the Scott Inlet/Sam Fiord Greenland halibut exploratory fishery. If the average weight of a fish caught by long-line is assumed to be 2-3 kg then a TAC of 2 t would result in a sample of approximately 1000 fish. This is a good sample size, comparable to the 1000-1500 samples set as a minimum for the Cumberland Sound fishery monitoring program.

Regardless of the approach taken, Greenland halibut should be sampled for length and catchper-unit effort (CPUE) data in addition to the standard date, fishing location, gear description information typically collected. In addition data on all other fish (e.g. sharks and rays) or invertebrates (e.g. coral and snails) or any marine mammals caught on the hooks or entangled in the lines should be recorded.

Conclusions

There are no data on Greenland Halibut abundance for the three areas where local HTAs have requested exploratory licences to fish. Jones Sound, Parry Channel and Admiralty Inlet have areas of deep water which may be suitable Greenland Halibut habitat. There are no data with which to base a harvest level. For other inshore Greenland Halibut exploratory fisheries either an effort based allocation or a small TAC was considered. A limited fishery using long-line gear should have minimal impact on the populations but would provide basic distributional data for these areas. It is recommended that length and CPUE data be collected for Greenland Halibut and all bycatch be recorded as a minimum requirement.

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Sources of information

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