

**31st ANNUAL MEETING – SEPTEMBER 2009****Risk Management / Management Strategy Evaluation Approach to Greenland Halibut**
(Proposal by Canada & EU)**Introduction**

In 2003, NAFO agreed to a fifteen-year Rebuilding Plan for the Greenland halibut stock in Subarea 2 and Divisions 3KLMNO. The objective of the plan is to attain a level of exploitable biomass 5+ of 140,000t on average, allowing for a stable yield over the long term in the Greenland halibut fishery. The Plan provided for gradual reductions in the TAC from 2004 to 2007 with a TAC of 16,000t in 2007. From 2008 and onward the plan allowed for a +/- 15% change in the TAC adjusted based on Scientific Council (SC) advice.

In 2008 and 2009, the TAC of 16,000t was maintained in light of scientific uncertainty. For 2010, SC has advised that the stock is not rebuilding according to plan and recommended that the TAC be reduced to 8,807t based on 2009 catches being constant with the 2008 Scientific Council (SC) estimated catch (21,178t). SC notes that an updated assessment was not conducted due to survey coverage deficiencies with the 2008 Canadian fall survey; the absence of this information has increased uncertainty associated with this advice.

Further, in its June 2009 Report, the Scientific Council noted that the uncertainties with the present assessment may stem primarily from the structure of the input data and the underlying dynamics of the stock. Uncertainties with the data structure relate primarily to commercial catch data, difficulties in measuring abundance of pre-recruits, and difficulties in measuring abundance of age 10+.

In light of the continued uncertainty and the need to move forward with an appropriate management plan for this stock, there is a need to engage a process that allows for development of a risk management approach. This approach would be used by Fisheries Commission in establishing annual TAC's and for considering possible modifications to the longer term approach to the Greenland Halibut rebuilding plan. It is proposed that this work will draw from the 2007-09 Management Strategy Evaluation (MSE) study initiated by the Scientific Council.

Explanatory Notes

1. Management Strategy Evaluation is comprised of:
 - a reference set of operating models that specifies alternative possible realities regarding the true state of the stock,
 - the input data,
 - the "assessment model" that specifies what data to use,
 - the harvest control rules that explain mathematically how the rules will be triggered by the assessment information (e.g. when to increase or lower TAC),
 - performance statistics (stock growth, catch variability, etc.) and risk tolerances to be used in harvest control rule selection

2. In February 2008, a SC Study Group undertook efforts to evaluate alternative management approaches for Greenland halibut. Following from this, a study that includes results for seven alternative management strategies applied to eight different operating models was endorsed by Scientific Council in 2009. Management strategies incorporating feedback harvest control rules either based on survey data directly (model free approach) or the annual XSA assessment of the stock size and the TAC in the previous year, appear to show the most promise. SC presented a report on these findings and possible management application of MSE for Greenland halibut to FC at the 2010 NAFO annual meeting.

Proposal

1. Establish a Working Group of Fisheries Commission, co-chaired by someone from Scientific Council (SC), with representation from fisheries managers, SC and industry to consider and refine the current MSE framework to help inform management of Greenland Halibut. Specific focus of the group should include, reviewing models and revising if necessary, defining acceptable levels of risk, selecting appropriate performance indicators, considering alternative management strategies and related harvest control rules, and projecting/evaluating outputs of the risk management framework utilizing one or more assessment models.
2. The Fisheries Commission will consider the Report from this Working Group, including any recommendations and options contained therein as the basis for a risk management based decision on the TAC level for 2011 and beyond.
3. It is anticipated that the Working Group would need to meet / communicate regularly between September 2009 and June 2010. Further, the working Group would remain in place at least until 2011 to allow for further refinement of the framework following initial implementation.