

**33rd ANNUAL MEETING – SEPTEMBER 2011****Greenland Halibut Management Strategy Evaluation**

Recalling the adoption of the Greenland halibut Management Strategy by the NAFO Fisheries Commission in 2010;

Bearing in mind the recommendation of the WGMSE to Fisheries Commission in September 2010 calling on the FC to consider undertaking a revision of the Greenland halibut rebuilding programme to reflect the implementation of the Management Strategy;

It is recommended that:

1) Articles 7.1, 7.4 and 7.5 of the NAFO Conservation and Enforcement Measures be amended as follows:

1. The current Management Strategy (MS) for Greenland halibut stock in Subarea 2+ Divisions 3KLMNO adopted by NAFO in 2010 shall be in force initially until 2014.
2. The total allowable catch (TAC) shall be adjusted annually according to the harvest control rule (HCR) specified in Annex XXVI.
3. *The Exceptional Circumstances Protocol (Annex XXVII)* shall be invoked in response to an event or observation by Scientific Council which is outside of the range of possibilities considered within the MSE.

2) Article 7.3 be deleted

3) Technical specifications of the HCR should be outlined in a new Annex XXVI:

Annex XXVI
Greenland halibut Management Strategy

The harvest control rule (HCR) will adjust the total allowable catch (TAC) from year (y) to year (y+1), according to:

$$\text{TAC } y+1 = \text{TAC } y (1 + \lambda \times \text{slope}),$$

where slope = measure of the recent trend in survey biomass and, $\lambda = 2.0$ if slope is negative and $\lambda = 1.0$ if slope is positive.

The TAC generated by the HCR is constrained to $\pm 5\%$ of the TAC in the preceding year.

Annex XXVII
Exceptional Circumstances Protocol
(as recommended by the WGMSE and adopted by the Fisheries Commission)

1. Background:

Fisheries Commission (FC) adopted in 2010 a new Management Strategy (MS) for the Greenland halibut stock in Subarea 2 + Divisions 3KLMNO. This MS is applied annually to automatically adjust the TAC based on the recent trend in the survey biomass.

Exceptional Circumstances provisions are intended to respond to an event or observation which is outside of the range of possibilities considered within the MSE. In such cases, Fisheries Commission may have reason to over-ride the TAC provided by the MS and/ or also require the MS to be reviewed/ revised. To this effect, Scientific Council (SC) will annually monitor the situation and provide advice to Fisheries Commission on whether or not ‘exceptional circumstances’ may be occurring.

2. Exceptional Circumstances

Some examples, identified by the Scientific Council, which could constitute exceptional circumstances in the Greenland halibut application may include catches in excess of the range tested or observed surveys outside the range simulated. The range of catches and the survey indices are the only information that allow a direct comparison of observed data with modeled results. These should therefore be considered at a primary level. Other indicators should be considered at a secondary level of importance.

- Data Gaps - Incomplete/Missing survey data or termination of a survey time series;
- Biological Parameters - Biological inputs which differ from the range of possibilities included within the MSE (e.g. natural mortality);
- Recruitment - Estimated recruitments in the assessment no longer appear to be consistent with the range of recruitments considered in the MSE, where the same model is used for the estimation as used in the MSE; and /or
- Fishing Mortality –Estimates of fishing mortality that are outside the range of values generated in the MSE, where the same model is used for the estimation as used in the MSE; and/or
- Exploitable Biomass –Estimates of Exploitable Biomass that are outside the range of values generated in the MSE, where the same model is used for the estimation as used in the MSE.

Ongoing Scientific Council analysis related to this stock may also identify other situations which warrant consideration as exceptional circumstances.

The 90% probability intervals obtained from the projection from the MSE process should be considered as a reference.

Advice provided by Scientific Council which suggests the occurrence of exceptional circumstances should be based on compelling evidence and should include sufficient detail to allow FC to take an informed decision on implementation of the MS and possible next steps.

3. Implementation/ Next Steps

When SC advice indicates that exceptional circumstances may be occurring, FC will consider a range of responses/ possible courses of action taking into account the degree and type of circumstance noted. In order, those that would be considered are as follows:

1. Review the information, but maintain the MS as the management tool; additional research/monitoring may be recommended to determine if the signal detected warrants moving to step 2;
2. Advance the review period (currently 2014), and potentially revise the MS, but implement the MS outputs;
3. Set a catch limit that departs from the MS, and revise the MS.