

**PART B. REPORT OF THE FISHERIES COMMISSION AND SCIENTIFIC COUNCIL JOINT
WORKING GROUP ON RISK-BASED MANAGEMENT STRATEGIES, 5-7 FEBRUARY 2014**

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**Report of Fisheries Commission and Scientific Council Joint Working Group on
Risk-Based Management Strategies (FC-SC Doc. 14-02)**

5-7 February 2014

1. Opening

The working group (WG) met at the Prince George Hotel, Halifax, Canada, during 5-7 February 2012. The meeting was attended by representatives from Canada, EU, Japan, Norway, the Russian Federation and the United States of America, as well as from the Scientific Council (SC). The NAFO Executive Secretary, Fisheries Commission (FC) Coordinator and Scientific Council (SC) Coordinator were in attendance. Observers from World Wildlife Fund and Dalhousie University were present. The meeting was co-chaired by Carsten Hvingel (Norway) and Kevin Anderson (Canada) (Part J, this volume).

The chairs opened the meeting at 10:00 hrs on Wednesday, 5 February.

2. Appointment of Rapporteur

With the agreement of the WG, the FC Coordinator, Ricardo Federizon, and SC Coordinator, Neil Campbell, were appointed as joint rapporteurs.

3. Adoption of Agenda

A proposal was made to add Div. 3L Shrimp to item 7c of the agenda. This was accepted and the agenda adopted otherwise as previously circulated (Part J, this volume).

4. Review of Terms of Reference

The terms of reference of the WG as documented in FC Doc 13/18 were reviewed. The WG considered membership, work form, reporting procedures, observers and future meetings. The chairs informed participants that at the suggestion of SC if the WG breaks from plenary session and reverts to delegation for the purpose of drafting recommendations, individual scientists would remain as part of their delegations and SC as a whole would be represented by the SC Chair or a designated alternate.

5. Review and Update of the Precautionary Approach Framework

The NAFO Precautionary Approach Framework (PAF) was reviewed (FC Doc. 04/18). The WG received a presentation from Bill Brodie (Canada) on the history and development of the NAFO Precautionary Approach Framework (PAF) (Annex 3, FC-SC Doc. 14-02). As a matter for consideration in revising the PAF, the co-chair Carsten Hvingel (Norway) introduced a paper and made an accompanying presentation outlining the current scope of the PAF, highlighting discrepancies surrounding risk-based assessment of stocks and the inconsistency in treatment of target and limit reference points for biomass and fishing mortality under the current system (Annex 4, FC-SC Doc. 14-02).

It was emphasised that the PAF forms the basis of risk based management strategies and for this reason it is important to ensure the PAF and the General Framework for Risk Based Management Strategies are well aligned.

It was further recognized that application of PAF is dependent on the existence of reference points and, the importance of SC in determining the reference points for all stocks was underscored.

To initiate the revision of the PAF, it was determined that feedback from the SC is needed particularly regarding the relevance and implications of having F_{lim} at F_{msy} and F_{msy} as a target, and the utility of buffer reference points (see item 9).

The risk values highlighted in the current PAF were discussed. The WG agreed that the noted percentages were not to be interpreted as prescriptive values/ ranges but rather directional amounts. It was also agreed that FC retains flexibility to specify acceptable levels of risk and that the degree of risk tolerance may be context specific.

6. Review and Update of existing interim Conservation Plans and Management Strategies

a) Div. 3NO Cod

A review of the interim 3NO Cod Conservation Plan and Rebuilding Strategy (CPRS), which is embodied in Articles 7.6 – 7.11 of the NAFO Conservation and Enforcement Measures, was conducted. In the absence of B_{msy} reference point, it was proposed that: an interim $B_{target} = 185\ 000$ t and an interim F_{target} of $F_{0.1} = 0.19$ be considered.



Annex 5 (FC-SC Doc. 14-02) reflects the revisions and represents the updated CPRS to be forwarded to FC with a recommendation for adoption (See item 9).

b) Div. 3LNO American Plaice

There were no changes proposed to the existing CPRS.

7. Follow-up to WGFMS-CPRS 2013 Recommendations

a) Evaluation and finalization of General Framework on Risk-based Management

In 2013, the FC adopted the *General Framework on Risk-based Management Strategies*. However, the section *Closing of Directed Fishing* still needed to be elaborated. The WG evaluated and finalized the *General Framework* by removing the brackets in the section and replace the word “fishery” with “stock”. Annex 6 (FC-SC Doc. 14-02) reflects the revision. It will be forwarded to FC with a recommendation for adoption (see item 9).

b) Discussion on development of alternative strategies for stocks that may not be suited to formulaic rules and/or for stocks where reference points do not exist or cannot be developed.

Alternative strategies would not be needed if robust reference points are determined. At its June 2013 meeting, SC indicated that reference points can theoretically be constructed for all stocks and that this work is given high priority. The WG agreed to recommend SC provide a status report and possible timeliness for this work for consideration of FC in September 2014 (see item 9).

It was noted that further discussion on alternate strategies for specific stocks may be required if SC’s review determines that robust reference points are not likely to be established in a reasonable period of time.

c) Development of CPRS

The process towards management strategies for priority stocks was initiated. Draft plans for 3M cod and 3LN redfish were developed based on the *General Framework on Risk-based Management Strategies*. It was noted that the drafts plans (Annexes 7 and 8, FC-SC Doc. 14-02) represent a first step and may need further elaboration and adjustment once feedback is received from SC and FC. It was also noted that while a framework is in place to guide development of management strategies, the strategies themselves are stock-specific and no single strategy is likely to be appropriate for all stocks.

There was concern expressed by some CPs on the use of F_{msy} (or its proxy) as a target versus a limit as well as consideration of consequences of fishing above this level.

i) Div. 3NO witch flounder

There was no progress to report on the development of a risk-based management strategy for this stock. The importance of the upcoming stock assessment, in particular, efforts to develop a limit reference point was noted.

ii) Div. 3LN redfish

The WG initiated the development of a risk-based management strategy for 3LN redfish (Annex 7, FC-SC Doc. 14-02). As noted in the preamble, NAFO identified the development of a risk-based strategy for 3LN redfish as a priority in 2012, and reaffirmed that priority in 2013. As next steps, the WG requests SC to evaluate the management strategy relative to the performance statistics prior to the 2014 NAFO Annual Meeting, and to comment on likely by-catch levels associated with the implementation of the proposed Harvest Control Rule (HCR) for this stock (see item 9).

iii) Div. 3M cod

The WG initiated the development of a risk-based management strategy for 3M Cod (Annex 8 FC-SC Doc. 14-02). As noted in the *Background*, NAFO identified the development of a risk-based management strategy for Cod in Div. 3M as a priority in 2012, and reaffirmed that priority in 2013. As next step, the WG recommends SC to discuss selection of operating models and evaluate the 3M Cod management strategy prior to the 2015 Annual Meeting (see item 9).

iv) Div. 3L shrimp

Recognizing that this stock is currently thought to be near B_{lim} , the WG agreed to give further consideration to development of a management strategy, subject to the outcome of the 2014 stock assessment, and requested that the item be retained on the agenda for future meetings.

8. Approach and workplan to review the Greenland Halibut Management Strategy Evaluation in 2017

In order to provide the Fisheries Commission with the opportunity to approve the review of the Greenland halibut MSE during its 2017 September meeting, the following work plan was proposed:

1. Until 2016 Scientific Council will continue to evaluate the harvest control rule based on the primary indicators (catches and surveys indices).
2. During its 2016 June meeting Scientific Council should update two assessment models, one XSA based and one SCAA based, and evaluate the development of the stock since the introduction of the MSE.
3. FC/SC WGRBMS should review the results before September 2016 and determine the next steps.
4. In advance of the 2017 Annual Meeting, the working group will develop recommendations on the way forward.

Noting the priority given to this stock by the *ad hoc* FC-SC Working Group on Catch Reporting it is expected that catch estimates will be available to carry out the MSE review.

9. Recommendations to forward to FC and SC

1. In order for the WG to start the process of revising the PA framework the WG **recommends** SC provide feedback on the following:
 - Discuss the relevance and implications of:
 - having F_{lim} at F_{msy}
 - F_{msy} as a target

These analyses should include situations where quantitative analysis of uncertainty are limited and situations where uncertainty has been well incorporated into evaluation of Harvest Control Rules.

- Consider the utility of buffers (particularly B_{buf}) in the framework and in management plans and provide advice on whether the use of buffers is considered appropriate for stocks which have B_{lim} .

Note: the WG recommends that B_{isr} is not considered part of the PA (but may be used as an interim milestone to aid decision making).

- The working group noted that SC, in its 2013 June report, concluded that reference points can theoretically be constructed for all stocks, and that this work is given high priority. The WG recommends SC provide a status report and possible timelines for this work for consideration of Fisheries Commission in September 2014.
 - In its assessments and advisory sheets, the working group **recommends** Scientific Council provide a table or list of reference points available for each stock that includes information on their derivation, and if reference points are missing, explain why.
2. The WG **recommends** FC adopt amendments to the interim management plan for Div. 3NO Cod (Annex 5, FC-SC Doc. 14-02).
 3. The WG **recommends** FC adopt amendments to the General Framework on Risk Based management (Annex 6, FC-SC Doc. 14-02).
 4. The WG **recommends** SC discuss selection of operating models and evaluate the Div. 3LN Redfish management strategy relative to the performance statistics prior to the 2014 Annual Meeting (Annex 7, FC-SC Doc. 14-02).
 5. The WG **recommends** SC comment on likely by-catch levels associated with the implementation of the proposed HCR for 3LN Redfish (Annex 7, FC-SC Doc. 14-02)



6. The WG **recommends** SC to discuss selection of operating models and evaluate the Div. 3M Cod management strategy prior to the 2015 Annual Meeting (Annex 8, FC-SC Doc. 14-02)

10. Other Matters

There were no other matters raised.

11. Adoption of the Report

The report was adopted by correspondence following the meeting.

12. Adjournment

The meeting adjourned at 1030 hrs on 7 February. The Chairs thanked the Secretariat for their support and the participants for their cooperation and input. The participants in turn voiced their thanks to the Chairs for their leadership.