

Northwest Atlantic Fisheries Organization



**Report of the NAFO Joint Commission-Scientific Council Working Group on  
Risk-Based Management Strategies (WG-RBMS) Meeting**

20-21 August 2020  
via WebEx

NAFO  
Halifax, Nova Scotia, Canada  
2020

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### **1. Opening by the co-Chairs, Fernando González-Costas (European Union) and Jacqueline Perry (Canada)**

The meeting was opened at 08:30 hours (Atlantic Standard Time) on Thursday, 20 August 2020. The co-Chairs, Fernando González-Costas (European Union) and Jacqueline Perry (Canada) welcomed the scientists and fisheries managers from Canada, European Union, Japan, Norway, Russian Federation, Ukraine and the United States of America (Annex1).

### **2. Appointment of Rapporteur**

The NAFO Secretariat (Tom Blasdale, Scientific Council Coordinator and Ricardo Federizon, Senior Fisheries Management Coordinator) was appointed as Rapporteur.

### **3. Adoption of the Agenda**

The provisional agenda previously circulated was adopted without revision (Annex 2).

### **4. Presentation of the 3M cod MSE the summary document (Secretariat)**

The SC Coordinator referred the WG to COM-SC RBMS-WP 20-05: the 3M cod MSE guiding and summary document. This document will require some further revision following which it will be circulated for comments from SC and WG-RBMS participants by the end of November 2020.

### **5. Precautionary Approach Framework revision (Commission Request 8)**

In September 2019, the Commission identified this task as a priority for SC work in 2020. A meeting of WG-RBMS was held in February 2020 with the revision of the PA as the main point of the agenda (COM-SC Doc. 20-01). A key outcome of this meeting was the decision to re-activate the Scientific Council Precautionary Approach Working Group (PA-WG). In March 2020, the PA-WG was reconvened with Karen Dwyer (Canada) as the new chair. The WG held further meetings in April and May 2020 and the outcomes were considered during the June meeting of Scientific Council to respond the Commission Request 8 (COM-SC RBMS-WP 20-03).

#### **a. Review of Terms of Reference**

The co-Chair noted that the PA-WG terms of reference for the revision of the NAFO Precautionary Approach were reviewed by WG-RBMS in February 2020 (COM-SC Doc. 20-01) and by PA-WG in March 2020 where it was agreed that the terms of reference as outlined in SCS Doc. 16-15 remain appropriate.

#### **b. Progress on the Precautionary Approach Framework**

The Chair of PA-WG presented progress made by the Scientific Council in 2020 which is fully described in COM-SC RBMS-WP 20-09. Based on this information the SC responded to the Commission Request 8 in June 2020, describing the following about the progress made and how to focus future work on the PAF review, as follows.

SC compared the PA frameworks from a number of jurisdictions in the North Atlantic (PA Revision, ToR 3), and laid out a plan to address the other two Terms of Reference. In the development of the various framework components, consideration will be given to solutions for the full range of data availability with the goal that most of the PA framework elements could be adopted for all stocks. While this revision of the NAFO PAF is intended to retain its single-species focus, whenever appropriate, the proposed solutions will be informed by the ecosystem principles contained in the NAFO Roadmap for an Ecosystem Approach. SC emphasized that

continued progression on the review is dependent on commitments from Contracting Parties to provide the necessary resources.

Items in ToR 1 can be defined under three general headings, dealing with:

- **Mapping objectives.**

This involves items a), c), and g) where conceptual questions are presented, that address how the framework would represent basic convention objectives. Item a) reviews definitions, item c) explores the role of MSY-based reference points as limits and /or targets and g) asks about the conditions under which the reference points may need changing (keeping them constant may hinder the ability of the framework to achieve its objectives).

- **Structural aspects of the framework.**

This involves items b) and d) which ask about the structure of the framework; which reference points are to be considered, how they are going to be used, and how risk is considered in the design of the framework.

- **Quantification of uncertainty and risk.**

This involves items e) and f) which directly address the analytical methods in which risk is estimated and applied, including tiered approaches taking into account data quality/availability. This last point is also related to the structural aspects described above. Where probabilities are estimated to inform on risk, these should be based on the statistical estimation of imprecision for the best assessment, or through the development of management procedures within MSE exercises.

The review of the PA framework will be approached in a structured and sequential way by addressing conceptual issues first, and second addressing the more operational aspects. The overarching Ecosystem Approach to Fisheries Management umbrella will be given consideration at every step, by examining how the proposed solutions align with the principles laid out in the NAFO Roadmap. This will allow for the development of an updated PA framework in which there would be connection points to the ideas embedded in the Roadmap. Without being prescriptive, that could constitute the basic link between ToR 1 and 2 and foster a parallel treatment of both ToRs.

### **c. Plans for work going forward including a provisional timeline**

At its June 2020 meeting, SC proposed an initial work plan. WG-RBMS further developed this work plan to clarify the role of this working group and the timing of the various meetings. This revised workplan is presented in Annex 3.

Based on this workplan, a funding proposal will be developed for submission to the European Union by mid-September (see Annex 4).

## **6. Greenland halibut MSE problems detected with the confidence intervals of projections produced under the SSM operating model.**

Some inconsistencies in the SSM MSE results were detected by SC in June 2019, however lack of documentation prevented verification of calculations: consequently, SSM MSE results were not used by SC when checking for Exceptional Circumstances in 2019. In 2020, SC conducted a review of the SSM MSE simulations. Several mistakes were found and corrected and a reconstructed MSE was ran for the base case SSM operating model. Performance statistics of the agreed Harvest Control Rule (HCR) were also revisited for the reconstructed SSM base case simulations. Preliminary revised reference points were calculated using  $F_{0.1}$  and  $B_{0.1}$  as proxies for  $F_{MSY}$  and  $B_{MSY}$ . The reconstructed base case SSM simulations indicate the agreed HCR meets all performance criteria.

Consequently, WG-RBMS is comfortable that no additional configurations of the SSM MSE runs will be required. The WG suggested that SC focus their attention on planning for the next full review of this MSE in 2023.

## 7. 3LN redfish Conservation Plan and Harvest Control Rule (Commission Request 11)

Recognizing that the 3LN Redfish Conservation Plan and Harvest Control Rule as outlined in Annex I.H of the NAFO CEM prescribes an annual TAC until 2020, the Commission at its September 2019 Annual Meeting made a request to SC (Request 11 in COM Doc. 19-29):

*The Commission requests that Scientific Council do an update assessment for 3LN and five year projections (2021 to 2025) to evaluate the impact of annual removals at 18 100 tonnes against the performance statistics from NCEM Annex I.H. If this level of catch does not result in fulfilling these performance statistics, SC should advise the level of catch that would.*

In June 2020, SC formulated the response to the request. The SC Chair provided a detailed presentation of the response, including the update assessment and 5-year projections (COM-SC RBMS-WP 20-07). In its meeting report (SCS Doc. 20-14), the SC response is encapsulated as:

SC conducted an update assessment of Redfish in Division 3LN followed by five-year projections (2021 to 2025) to evaluate the impact of annual removals at 18 100 tonnes on stock biomass and fishing mortality in relation to  $B_{lim}$ ,  $B_{msy}$  and  $F_{msy}$  by 2026. At the beginning of 2020 the stock was in the safe zone, with a probability of biomass being above  $B_{msy} > 90\%$ , and with the probabilities of biomass being below  $B_{lim}$  and fishing mortality being above  $F_{msy}$  less than 1%.

Annual catch of 18 100 tonnes during 2021 - 2025 will maintain biomass above  $B_{msy}$  at the beginning of 2026 with very high probability ( $> 90\%$ ). Also the probability of  $B_{2026} < B_{lim}$  or  $F_{2025} > F_{msy}$  is  $< 1\%$  if the 2020 HCR TAC is maintained during 2021-2025.

However, the probability of  $B_{2026} > B_{2020}$  is close to being very low (12%), and most likely in the medium term this catch level will trigger a marginal biomass decline already suggested by the majority of recent observed data. In general, recent recruitment appears to be low. Despite these circumstances, the stock is projected to remain in the safe zone.

Scientific Council will continue to assess this stock on a 2 year schedule.

According to Annex I.H of the NAFO CEM, a full review/evaluation of the management strategy at the end of the 7-year implementation period (which will be in 2021). Discussions ensued in WG-RBMS on to how the review/evaluation should proceed as it was realized that no guidance exists to this effect.

WG-RBMS would request the SC, through the Commission, reflect on this issue in September. Cognizant of the current workload of the SC (e.g. PA Review, Ecosystem Approach, deferred agenda items from the June 2020 meeting), it was clarified that it would be a "scoping" exercise, and not necessarily a development of a workplan per se, as the process would need input by the Commission. SC discussions emanating from the scoping exercise will feed into this WG in the development of a workplan on the review/evaluation of the management strategy. A recommendation to this effect was drafted, to be forwarded to the Commission (see agenda item 11).

Canada circulated a working paper pertaining to the review of management strategy/Harvest Control Rule for 3LN Redfish (COM-SC RBMS-WP 20-04). The paper contains draft objectives, and introduces the concept of adaptive harvest control approach to managing fully recovered stocks, and recognizes the stock dynamics for 3LN Redfish including being driven by episodic recruitment with a period of biomass growth followed by a period of decline.. It was emphasized that the working paper is not a proposal. Rather, it is a discussion paper intended to engender participants' feedback and comments for consideration in the development of the review/evaluation workplan. The review/evaluation process is anticipated to have a 2-year timeline.

In view of the expiration of Annex I.H and the absence of the review/evaluation which could not be conducted at this meeting, it was agreed that a recommendation of a 2-yr Total Allowable Catch (TAC) of 18 100 tonnes

applicable for 2021 and 2022 be maintained. The TAC-recommendation is consistent with the projections results made in June by the SC. Consequently, the Annex I.H should be updated to reflect the applicability of Management Strategy/Harvest Control Rule until 2022 (Annex 5). A recommendation will be forwarded to the Commission for consideration and adoption. (See agenda item 11).

## **8. SC report on its work on Ecosystem Approach (Commission Request 5)**

WG-ESA co-Chair Pierre Pepin (Canada), on behalf of SC, reported on the SC's work on the Ecosystem Approach, specifically on the SC response to this request (COM-SC RBMS-WP 20-06). WG-RBMS discussed its involvement in this process and committed to continue coordinating the work with the joint Working Group on Ecosystem Approach Framework to Fisheries Management (WG-EAFFM) to keep each other updated.

## **9. Implementation of the 2018 Performance Review Recommendations relevant to this working group**

WG-RBMS recalled the 2018 NAFO Performance Recommendations and noted that three (3) recommendations identified this WG as the lead NAFO Body to implement (COM-SC RBMS-WP 20-02):

- PR Recommendation 2, pertaining to Precautionary Approach Framework (PAF) review;
- PR Recommendation 3, pertaining to “data-poor” stocks in the PAF;
- PR Recommendation 27, pertaining to acceptable risk regarding the outcomes of conservation and management measures.

WG-RBMS is in agreement that its actions in performing its work are in alignment with the *Action Plan for the Implementation of the Recommendations from the 2018 Report of the NAFO Performance Review Panel* (NAFO COM Doc. 19-32), as reflected in the agenda of this and the previous meetings. Regarding Recommendation 27, it was noted that this is a process that entails dialogue between the Commission and SC and that this WG serves as the forum of the continuing dialogue. It was also noted that this issue would also likely come up as part of discussions during the upcoming NAFO PA Framework Review.

WG-RBMS committed to continue its work in accordance with the PR recommendations and the Action Plan.

## **10. Other matters**

The WG recalled the three (3) suggested meeting windows for 2021 (COM-SC WP 20-02): 22 February – 05 March, 19-April – 30 April 2021, and 12-23 July 2021. It noted that the next regular meeting will occur in the July 2021 window.

## **11. Recommendations**

**The WG-RBMS recommends:**

- 1. that in relation to the Precautionary Approach Framework revision, the Commission endorses the proposed workplan outlined in Annex 3, and the proposed funding proposal outlined in Annex 4.**
- 2. that in relation to 3LN redfish Conservation Plan and Harvest Control Rule (Annex I.H of the NAFO CEM),**
  - a. the Commission requests the Scientific Council to provide guidance on the process of conducting of a full review/evaluation of the management strategy at the end of the 7-year implementation period.**
  - b. the Commission adopts a TAC of 18 100 t for 3LN Redfish, applicable for 2021 and 2022.**

- c. **the Risk-based Management Strategy for 3LN Redfish outlined in Annex I.H of NAFO CEM be updated in accordance with Annex 5.**

## **12. Adoption of Report**

The report was adopted via correspondence.

## **13. Adjournment**

The meeting adjourned at 13:00 hours on 21 August 2020.

## Annex 1. List of Participants

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**Annex 2. Agenda**

1. Opening by the co-Chairs, Fernando González (European Union) and Jacqueline Perry (Canada)
2. Appointment of Rapporteur
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### **Annex 3. Precautionary Approach Framework revision – Proposed Workplan**

- Review of and proposal for ToRs related to mapping objectives: ToRs 1a, 1c and 1g. Deadline for results to SC: June 2021
- Present results to WG-RBMS after the June SC
- Review of and proposal for ToRs related to structural aspects and quantification of uncertainty and risk. Deadline for results to SC: ToRs 1b, 1d, 1e and 1f. Deadline for results November 2021
- The work in the previous bullet points would need to cover the data continuum, so that the framework could be applied to all NAFO stocks (data rich and data poor).
- Consider broad associated implications for stocks managed using a Management Procedure (HCR) based on a MSE.
- Workshop - (including the group of scientists and managers), around March 2022, to address the entire ToR and make a proposal of revision of the NAFO PA framework (to be later reviewed by the WG-RBMS).
- WG-RBMS 2022, based on the SC review work, would propose a new framework for the NAFO PA, to be presented to the NAFO Commission in September 2022.
- Time for CP's internal discussions and further work if required
- Final version of framework to be considered by the NAFO Commission in September 2023

SC and WG-RBMS will be kept informed of all progress in the work

All timings are subject to change in response to the evolving COVID situation.

A second SC workshop (including the group of scientists and managers) would be held to develop the guidelines to support the implementation of the new NAFO PA framework, (between September 2022 and April 2023). The workshop would include case studies for reference points for, at least, several data-rich and data-poor stocks.

A small group would be responsible for carrying out technical work during a 2- to 3-year period going from November 2020 to October 2022/23. They would have to dedicate substantial work time over this period of time and would report to SC and WG-RBMS. This group would include some current SC members, possibly other scientists from Contracting Parties, and likely external experts, given SC workload concerns.

#### **Annex 4. Precautionary Approach Framework revision – Plan for the Work of External Experts**

The **financial resources** used to support the contracting of **three external experts**;

These three independent experts should each: a. Assist in steering, b. Follow the process and c. (according to ToRs) Contribute to the work of the SC;

Their work should be detailed by proper Terms of Reference;

In terms of time allocation: Two different levels of time dedication. One expert with more time and closely accompanying the works, and the other two experts joining in key periodic moments (each six months for example). These levels do not intend to identify different levels of responsibility amongst the three experts.

**In the light of the above, next steps should be:**

- Preparation of the Grant application. Should happen between now and the NAFO Annual Meeting. This is a Task to be developed in close collaboration with the NAFO Secretariat (Who: European Union together with NAFO Secretariat)
- Identification of Independent experts; (Who: Contracting Parties by the NAFO Annual Meeting propose independent experts that potentially can do de job)
- Preparation of the Terms of Reference (ToRs) for the work of the Independent Experts (Who: SC, before November 2020)

Report of WG-RBMS,  
20-21 August 2020

## **Annex 5. Proposed update of Risk-Based management Strategy for 3LN Redfish as outlined in Annex I.H of the NAFO CEM**

### **Risk-Based Management Strategy for 3LN Redfish**

Adopted by NAFO in September 2014 for implementation effective January 1, 2015

#### **Management Strategy/Harvest Control Rule:**

A stepwise biannual catch increase reaching 18 100 tonnes by 2019-2020. (18 100t is the equilibrium yield in the 2014 assessment under the assumption of an MSY of 21 000 tonnes).

2015 TAC:	10 400 t
2016:	10 400 t
2017:	14 200 t
2018:	14 200 t
2019:	18 100 t
2020:	18 100 t
<b>2021 TAC:</b>	<b>18 100 t</b>
<b>2022:</b>	<b>18 100 t</b>

#### **Review/Monitoring:**

1. Scientific Council will monitor the performance of the HCR by examining the trends in the survey indices and by conducting a full assessment every 2-3 years and for the first time in 2016.
2. Conduct a full review/ evaluation of the management strategy at the end of the 7-year implementation period.