

Northwest Atlantic Fisheries Organization



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

16-17 April 2024
via Webex

NAFO
Halifax, Nova Scotia, Canada
2024

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1. Opening by co-Chairs, Fernando González-Costas (European Union) and Ray Walsh (Canada)

The meeting was opened by the co-Chairs, Fernando González-Costas (European Union) and Ray Walsh (Canada), at 09:06 hours (UTC/GMT -3 hours in Halifax, Nova Scotia) on 16 April 2024. The co-Chairs welcomed representatives from Canada, European Union, Japan, Norway, Russian Federation, United Kingdom, and United States of America (Annex 1).

2. Appointment of Rapporteurs

The NAFO Secretariat (Dayna Bell MacCallum and Jana Aker) was appointed as rapporteur of this meeting.

The co-Chairs thanked the former Scientific Council Coordinator, Tom Blasdale, for his work with the WG-RBMS before his departure from the NAFO Secretariat.

3. Adoption of Agenda

The provisional agenda was adopted as previously circulated (Annex 2).

4. Progress on the MSE process for 2+3KLMNO Greenland halibut

Paul Regular (Canada), on behalf of the Greenland halibut Management Strategy Evaluation (MSE) technical team, presented an update on the MSE for Greenland halibut in NAFO Subarea 2 and Divisions 3KLMNO.

At the January 2024 Scientific Council meeting, a level of plausibility was assigned to each of the operating models (OMs), see Table 1. The plausibility levels are subjective and intended to serve as a means to weigh the operating models. As an example, it was explained that a high plausibility OM should pass the primary and secondary performance statistics requirements, however a low plausibility OM may fail a secondary performance statistic requirement, but that should not result in failing the management procedure. The working group supported moving forward with the inclusion of the plausibility levels in the robustness table, noting that discussions on how to use the levels assigned will continue in Scientific Council.

Table 1. The robustness tests and operating models (OMs) for the Greenland halibut management strategy evaluation.

OMs for GHL MSE from SC July meeting	Plausibility	SCAA	SSM
OM1: Base Case	High	✓	✓
OM2: Hockey-stick stock-recruit relationship	High	✓	✓
OM3: Assume allometric natural mortality	High	✓	✓
OM4: Include future random error in natural mortality	High	✓	
OM5a: Assume PROVISIONAL conversion factors are biased (10%)	High	✓	✓
OM5b: Assume the 3LNO conversion factor is biased (10%)	High	✓	✓
OM6: Increase the variance in natural mortality for younger ages	Intermediate	✓	
OM7: Zero selectivity on plus-group	Intermediate	✓	✓
OM8: Decrease the doming in the commercial selectivities	Intermediate	✓	
OM9: Decrease starting values $N(2022, a)$ by 10% for all ages a	Intermediate	✓	✓
OM10: 8 years with recruitment halved	Low	✓	✓
OM11: Assume senescence	Low	✓	✓
OM12: 8 years with increased natural mortality	Low	✓	✓
OM13: Catch = 110% TAC	Low	✓	✓
OM14: 8 years with limited survey data from 3LNO	Low	✓	✓
OM15: EU only data	Low	✓	✓

The preliminary results of the Candidate Management Procedure (CMP) testing were presented by Paul Regular and Doug Butterworth (Japan). These results are preliminary pending availability of the final calibration factors for the Canadian fall survey. It is expected that these calibration factors will be available soon and the final results will be presented at the Scientific Council in June. It was noted that, at the July 2023 WG-RBMS meeting (COM-SC Doc. 23-03), it was agreed to move forward with testing a probability-based alternative CMP. However, during the January 2024 Scientific Council meeting, due to time constraints, it was decided that this work was not able to be advanced; however, the alternative CMP will continue to be reviewed by the Scientific Council, and any significant updates will be brought forward to the WG-RBMS in the future.

Therefore, the CMP being considered is the current combined Slope and Target management procedure. The results of the performance statistics related to biomass and catches for each operating model are summarized in Figure 1. Additional details of the Statistical Catch at Age (SCAA) and the State-Space Model (SSM) management strategy trials and their results are outlined in SCR Doc. 24/001REV and SCR Doc. 24/002, respectively.

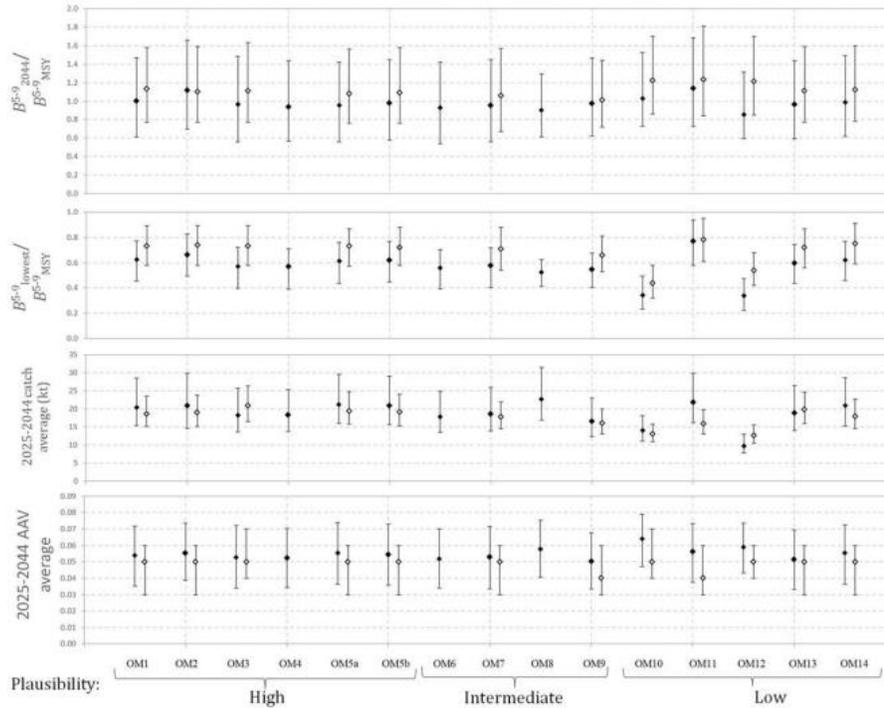


Figure 1. Performance statistics related to biomass and catches for each operating model under the new candidate management procedure for the SCAA (black diamonds) and SSM (white diamonds).

Paul Regular (Canada) presented a Scientific Council proposal to change the exceptional circumstances protocol in the new Greenland halibut MSE. The protocol was reviewed and revised (see Annex 1 of SCS Doc. 24/02) to reflect the current operating models and management procedure being considered, given the better balance of the weighting of surveys. In consideration of the ongoing exceptional circumstances work, the Scientific Council noted a preference to continue discussions on the revised exceptional circumstances protocol at its June 2024 meeting. The working group supported a review and further discussion of the exceptional circumstances protocol at the August 2024 meeting.

The working group thanked the Greenland halibut MSE technical team for all of the work that has gone into the process.

5. Progress on the MSE process for 3LN redfish

Andrea Perreault (Canada) presented an update on the progress of the 3LN redfish MSE process. The update included progress on the age-structured catch at length (SURBAL) and the surplus production (SPiCT) models. In January 2024, the Scientific Council **recommended** continuing the work of developing the OMs for both models, prioritizing the OMs based on the SURBAL for its higher flexibility since these models allow a flexible framework for simulating episodic recruitment (SCS Doc. 24/02). The Scientific Council also **recommended** that the Base Case OMs be based on the assumption of 3LN as a stock, and if time permits, other OMs with difference population structure be developed.

Following the workplan outlined in COM-SC RBMS-WP 23-06 (Rev. 3), the performance statistics were to be finalized at this meeting. Andrea Perreault presented draft performance statistics, noting that they are still subject to refinement following the results of additional testing, and will be discussed by the Scientific Council in tandem with the operating models. The working group reviewed the proposal for the performance statistics of the redfish MSE, and did not raise any concerns. It was agreed to delay the final proposal until having agreed on the final list of OMs and CMPs to be tested. The working group thanked Andrea for the update and the progress made so far on the 3LN redfish MSE process.

6. Next steps in the MSE processes

The working group reviewed the MSE workplan outlined in COM-SC RBMS-WP 23-06 (Rev. 3), and noted that the progress made is currently in line with the expected outcomes, recognizing that work is still in progress. The working group reflected on the monumental efforts of the Scientific Council in the MSE processes and that the working group is on target to meet its goals for the year. The workplan will be reviewed at the August 2024 WG-RBMS meeting, noting specifically that the timelines for the 3LN redfish MSE process will need to be updated.

7. Exceptional circumstances for 2+3KLMNO Greenland halibut in 2023

The Scientific Council, at its meeting in January 2024 (SCS Doc. 24/02), noted that it is anticipated that a new Harvest Control Rule (HCR), to be developed under the current MSE, will be used to compute the TAC for 2025. However, in the event that the new MSE is not completed and/or adopted by the Commission by September 2024, it suggested that it may be necessary to use the HCR and exceptional circumstances protocol adopted by NAFO in 2017 for 2018 to 2023 inclusive. Scientific Council subsequently, **recommended** *estimating the 2025 TAC using the same HCR that was used in 2023 to produce the 2024 TAC*. During further intersessional discussions with members of the Greenland halibut MSE technical team and Scientific Council Executive, it was recognized that this management strategy was no longer in force. Article 10.1 of the NAFO Conservation and Enforcement Measures states: *The current Management Strategy (MS) for Greenland halibut stock in Subarea 2 + Divisions 3KLMNO adopted by NAFO in 2017 shall be in force from 2018 to 2023 inclusive.*

The working group acknowledged that, in the Commission requests to Scientific Council for 2025 (COM Doc. 23-09), there was no clear direction on whether the Scientific Council should provide advice based on the expired management strategy, or based on the new management strategy that has yet to be adopted by the Commission. However, taking into account the work completed to date, the working group noted that there were no significant issues outstanding that would impede the adoption of a new management strategy to inform the 2025 TAC. The working group agreed that the Scientific Council should move forward with the new management strategy and that advice based on the expired management strategy is not required.

Formal advice is not expected following the conclusion of the June 2024 Scientific Council meeting; however, an update on the new MSE process will be provided at the August 2024 WG-RBMS meeting. If exceptional circumstances are occurring, the WG-RBMS will provide guidance to the Scientific Council at this time. The working group supported the Scientific Council providing final advice on the 2025 TAC at its meeting in September, pending the adoption of the new MSE harvest control rule by the Commission at the 2024 Annual Meeting.

The working group noted the importance of having a clear transition procedure established for future revisions of management strategies in MSE processes going forward and, for this year, agreed that when recommendations for the Commission are developed at its August meeting, that it should include a clearly defined process for the transition period.

8. Precautionary Approach Review progress

The Chair of the NAFO Precautionary Approach Working Group (PA-WG), Fernando González-Costas (European Union), presented a summary of the latest PA-WG meeting that took place on 04 April 2024 (SCS Doc. 24/05). The PA-WG Chair thanked the technical teams for their efforts and the progress made on the precautionary approach. The presentation included the different approaches that will be used in the testing of the PA framework, the formulation of the HCR as well as the different models and scenarios that will be used in the testing process. More detailed information on these points can be found in the PA-WG report (SCS Doc. 24/05).

As part of the presentation, the PA-WG Chair highlighted a management objectives proposal developed by the PA-WG, see Table 2. The working group reviewed and agreed to the management objectives as presented by the PA-WG. The working group acknowledged that the Scientific Council and the PA-WG will work intersessionally, in advance of the June Scientific Council meeting, to develop the performance statistics to measure the management objectives to facilitate testing. An update will be provided at the August 2024 WG-RBMS meeting.

Table 2. Management objectives for the Precautionary Approach Framework.

Management Objectives
Very low risk of stock depletion
Rebuild stocks to B_{MSY}
Maintain stocks above B_{MSY} more often than not
Maintain catches at approximately MSY in the long-term
Low risk of overfishing (fishing above F_{lim})
Good fishery performance (low interannual TAC variation, low yield loss while in the Cautious Zone)
Good stock recovery performance (good/rapid growth over time, good/short recovery times)

9. Other matters

No other matters were discussed under this agenda item.

10. Recommendations

There were no recommendations from this meeting, but the overall conclusions from the WG-RBMS are outlined below.

In relation to progress on the MSE process for 2+3KLMNO Greenland halibut:

The working group endorsed the OMs and the plausibility rankings agreed upon by the Scientific Council (Table 1).

The working group agreed with the Scientific Council proposal to test only the combined Slope and Target CMP in the MSE.

The working group discussed the first proposed protocol for the exceptional circumstances of this MSE presented by the Scientific Council and agreed to continue its development for final approval at the August meeting.

The working group supported the Scientific Council providing final advice on the 2025 TAC at its meeting in September 2024.

The working group noted the importance of having a clear transition procedure established for future revisions of management strategies in MSE processes going forward and, for this year, agreed that when recommendations for the Commission are developed at its August meeting, that it should include a clearly defined process for the transition period.

In relation to the progress on the MSE process for 3LN Redfish:

The working group reviewed the proposal for the performance statistics of the redfish MSE and agreed to delay the final proposal until agreeing on the final list of OMs and CMPs to be tested.

In relation to the Precautionary Approach Review progress:

The working group agreed with the table of management objectives (Table 2) developed and presented by the PA-WG.

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11. Adoption of report

The report was adopted via correspondence.

12. Adjournment

The meeting was adjourned at 12:10 hours (UTC/GMT -3 hours in Halifax, Nova Scotia) on 17 April 2024.



Annex 1. List of Participants

CO-CHAIRS	González-Costas, Fernando Walsh, Ray
CANADA	Burridge, Angela Devitt, Steve Dwyer, Shelley Fagan, Robert Johnson, Kate Koen-Alonso, Mariano Krohn, Martha Lapointe, Sylvie Lebeau, Amy Perreault, Andrea Regular, Paul Schleit, Katie Simpson, Mark
EUROPEAN UNION	Alpoim, Ricardo Belmonte, Luis Dybiec, Leszek Garrido Fernández, Irene Gonçalves, Patricia Gonzalez-Troncoso, Diana Granell, Ignacio Lopes, Luis Merino, Adolfo Pérez Rodríguez, Alfonso Teixeira, Isabel Tuvi, Aare
JAPAN	Butterworth, Doug Iwano, Taisuke Rademeyer, Rebecca Takehara, Toya Taki, Kenji
NORWAY	Hvingel, Carsten
RUSSIAN FEDERATION	Belyaev, Vladimir Fomin, Konstantin Tairov, Temur
UNITED KINGDOM	Fischer, Simon
UNITED STATES OF AMERICA	Jaburek, Shannah Kelly, Moira Mencher, Elizabethann Sosebee, Kathy Warner-Kramer, Deirdre
NAFO SECRETARIAT	Aker, Jana Bell MacCallum, Dayna LeFort, Lisa

Annex 2. Agenda

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