

APPENDIX I: GENERAL INFORMATION

Scientific Council Meeting, 27 May-11 June 2021

1. Agenda

Due to ongoing restriction relating to the COVID-19 pandemic, it was agreed that SC will meet from 27 May to 11 June by correspondence and videoconference to address the requests for advice received from the Commission and coastal States to the extent possible. Priority requests from the Commission, all coastal State requests and requests relating to the work of the joint COM-SC working groups will be addressed during this meeting, however it is expected that certain other requests may be deferred until September or next year. SC will decide during its meeting in June if an additional meeting would be useful and possible.

2. Time and Place

- a) The Scientific Council and its Standing Committees will meet by correspondence from 27 May –11 June 2021 (excluding weekends). Plenary sessions will be held each day by WebEx, beginning at 08:00 hours and continuing until 12:00 hours (possibly 13:00), ADT (Halifax time). Outside these times, participants will continue to work individually or in small sub-groups according to their local working hours.
- b) The Provisional Timetable for the Scientific Council and its Standing Committees is in Appendix II.

3. Documentation

Documentation concerning the June 2021 Meeting is also on the Scientific Council SharePoint site at <https://meetings.nafo.int/sc/2021/june/>. Please contact the Secretariat if login information is required.

Designated Experts

- a) Further to the Scientific Council nominations at its Meetings in 2020, Designated Experts responsible for providing preliminary assessments for certain stocks to STACFIS are listed in Appendix III.
- b) The Scientific Council has recommended that National Representatives to the Scientific Council take an active role in ensuring that all data (see Item 4 below), including the STATLANT 21A reports for 2020, are prepared and submitted to the Secretariat in advance of the Meeting. Special attention is required of them to ensure Designated Experts receive the necessary data for assessments and other relevant data by **07 May 2021**.
- c) Designated Experts are requested to forward their **assessment papers to the Secretariat before 20 May 2020**, for pre-meeting distribution. These preliminary assessments will be first issued as working papers and then will be revised as necessary before the end of the meeting for issue as formal documents. Papers sent to the Secretariat will be posted on the SC SharePoint site (see above).

Scientific Papers

- d) Scientists submitting papers (Research Documents (SCR Docs), Summary Documents (SCS Docs)), for consideration at the Meeting are **requested to submit their papers in advance for pre-meeting distribution before 20 May 2021**. Title, Author(s) and Abstract (250 words or less) must be submitted in order for documents to be assigned a number. The Scientific Council prescribed format guidelines for preparation of scientific papers (and assessment papers) are given on the SharePoint site. All papers being submitted are requested in electronic form (MS Word compatible format). Documents must be presented to the meeting in person or by a designate.
- e) Author(s) are requested to inform the Secretariat (personally or through the representative) at the time of submission, whether or not STACPUB should consider its suitability for publication in the *Journal of Northwest Atlantic Fishery Science* (information for preparing manuscripts for primary publications is given at <https://jnafs.scholasticahq.com/for-authors>).

4. Data Requirements

- a) In accordance with the *Rules of Procedure: Scientific Council* (Rule 4.4), **STATLANT 21A** data from Contracting Parties containing provisional nominal catches in 2020 for all species by Division, are required to reach the Secretariat before the deadline of **01 May 2021**.
- b) In accordance with the *Rules of Procedure: Scientific Council* (Rule 4.4), **STATLANT 21B** data from Contracting Parties containing final nominal catches and fishing effort in 2020 for all species by Division and Month, are required to reach the Secretariat before the deadline of **31 August 2021**.

Designated Experts should recognize that the STATLANT 21B returns for 2020 are not normally available for the June meeting.

This letter also serves as a reminder of other data requirements (NAFO/21-069):

- National Research Reports for 2020.
- Inventories of biological surveys in 2020, and planned for 2021 and early 2022.
- List of Biological sampling data for 2020.
- RV Surveys on a stock-by-stock basis by Designated Experts

These should be submitted to reach the Secretariat by **07 May 2021**.

Similarly, environmental data to the Fisheries and Oceans Canada, Oceans Science Branch, Marine Environmental Data Section (MEDS), formerly the Integrated Science Data Management (ISDM), to facilitate the work of the Standing Committee of Fisheries and Environment (STACFEN) should be submitted directly to MEDS (NAFO/21-035).

5. Representatives, Alternates, Experts and Advisers

In accordance with Rule 1 of the *Rules of Procedure: Scientific Council*, each Contracting Party shall notify the Executive Secretary of the names of its representatives, alternates, experts and advisers who will attend the Meeting, before the commencement of the Meeting.

APPENDIX II: PROVISIONAL AGENDA

**Scientific Council Meeting, 27 May-11 June 2021 (by correspondence and videoconference)
The meeting will be held from Monday to Friday. Weekends will not be working days.**

Note:

- For STACFEN, STACPUB and STACREC (items III, IV and V below), the Committee Chairs will produce a draft of the report offline and upload it to the Scientific Council SharePoint, either in June or September, depending on workload. Scientific Council will be informed and given the opportunity to comment before the approval of these reports.
- The same working procedure will be applied to some of the STACFIS and Scientific Council items. All stock assessments and other scientific work directly used in responding to this year's requests for advice will be presented in plenary sessions by WebEx.

I. Opening (Scientific Council Chair: Carmen Fernández)

1. Appointment of Rapporteur
2. Presentation and Report of Proxy Votes
3. Adoption of Agenda
4. Attendance of Observers
5. Appointment of Designated Experts
6. Plan of Work
7. Housekeeping issues

II. Review of Scientific Council Recommendations in 2020

III. Fisheries Environment (STACFEN Chair: Miguel Caetano)

1. Opening
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of Recommendations in 2020
5. Department of Fisheries and Oceans Canada, Oceans Science Branch, Marine Environmental Data Section (MEDS) Report for 2020
6. Review of the physical, biological and chemical environment in the NAFO Convention Area during 2020
8. Formulation of recommendations based on environmental conditions during 2020
9. Other Matters
10. Adjournment

IV. Publications (STACPUB Chair: Margaret Treble)

1. Opening
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of Recommendations in 2020
5. Review of Publications
 - a) Annual Summary
 - i) Journal of Northwest Atlantic Fishery Science (JNAFS)
 - ii) Scientific Council Studies
 - iii) Scientific Council Reports
6. Other Matters
7. Adjournment

V. Research Coordination (STACREC Chair: Karen Dwyer)

1. Opening
2. Appointment of Rapporteur
3. Review of Recommendations in 2020
4. Fishery Statistics
 - a) Progress report on Secretariat activities in 2020/2021
 - i) Presentation of catch estimates from the CESAG, daily catch reports and STATLANT 21A and 21B
5. Research Activities
 - a) Biological sampling
 - i) Report on activities in 2020/2021
 - ii) Report by National Representatives on commercial sampling conducted
 - iii) Report on data availability for stock assessments (by Designated Experts)
 - b) Biological surveys
 - i) Review of survey activities in 2020 and early 2021 (by National Representatives and Designated Experts)
 - ii) Surveys planned for 2021 and early 2022
 - c) Tagging activities
 - d) Other research activities
6. Review of SCR and SCS Documents
7. Other Matters
 - a) Summary of progress on previous recommendations
 - b) NAFO Catch Estimates Methodology Study
8. Adjournment

VI. Fisheries Science (STACFIS Chair: Kathy Sosebee)

- I. Opening
- II. General Review of Catches and Fishing Activity
- III. Stock Assessments
 1. Greenland halibut (*Reinhardtius hippoglossoides*) in SA 0+1 offshore (monitor)
 2. Greenland halibut (*Reinhardtius hippoglossoides*) Div. 1A inshore Divs. 1BC inshore, Div. 1D inshore and Divs. 1EF inshore (monitor)
 3. Demersal Redfish and deep-sea redfish (*Sebastes* spp.) in SA 1 (monitor)
 4. Wolffish in SA 1 (monitor)
 5. Golden redfish (*Sebastes norvegicus* aka *S. marinus*) in Div. 3M (monitor)
 6. Cod (*Gadus morhua*) in Div. 3M (full assessment)
 7. Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Div. 3M (full assessment)
 8. American plaice (*Hippoglossoides platessoides*) in Div. 3M (monitor)
 9. Cod (*Gadus morhua*) in Divs. 3NO (full assessment)
 10. Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Divs. 3L and 3N (monitor)
 11. American plaice (*Hippoglossoides platessoides*) in Divs. 3LNO (full assessment)
 12. Yellowtail flounder (*Limanda ferruginea*) in Divs. 3LNO (full assessment)
 13. Witch flounder (*Glyptocephalus cynoglossus*) in Divs. 3NO (monitor)
 14. Capelin (*Mallotus villosus*) in Divs. 3NO (full assessment)
 15. Redfish (*Sebastes mentella* and *Sebastes fasciatus*) in Div. 3O (monitor)
 16. Thorny skate (*Amblyraja radiata*) in Divs. 3LNO and Subdiv. 3PS (monitor)
 17. White hake (*Urophycis tenuis*) in Divs. 3NO and Subdiv. 3PS (full assessment)
 18. Roughhead grenadier (*Macrourus berglax*) in SA 2 and 3 (monitor)

19. Greenland halibut (*Reinhardtius hippoglossoides*) in SA 2 + Divs. 3KLMNO (under management strategy: (monitor, COM request #2)
20. Northern shortfin squid (*Illex illecebrosus*) in SA 3+4 (monitor)
21. Splendid alfonsino (*Beryx splendens*) in SA 6 (monitor)

IV. Other Matters

- a) FIRMS Classification for NAFO Stocks (Note: expected to be deferred to September)
- b) Other Business

V. Adjournment

VII. Management Advice and Responses to Special Requests (See Annex 1)

Because of the difficulties caused by the online meeting format, it may not be possible to address all the requests during the June meeting. The following priority order will be applied to the requests:

Priority level	Schedule for SC addressing the request
1	June
2	June (but could be delayed to September if no time in June – to be decided during the June meeting, depending on progress)

1. NAFO Commission (Annex 1)

- a) Request for Advice on TACs and Other Management Measures (request #1, Annex 1)

[Priority level 1 for all of them]

For 2022

- Cod in Div. 3M

For 2022 and 2023

- Redfish in Div. 3M
- White hake in Divs. 3NO

For 2022, 2023 and 2024

- American Plaice in Divs. 3LNO
- Capelin in Divs. 3NO
- Cod in Divs. 3NO
- Yellowtail Flounder in Divs. 3LNO

- b) Monitoring of Stocks for which Multi-year Advice was provided in 2019 or 2020 (request #1)

[Priority level 1 for all of them, except squid which is for September]

- American plaice in Div. 3M
- Redfish in Divs. 3LN
- Witch flounder in Divs. 3NO
- Redfish in Divs. 3O
- Thorny skate in Divs. 3LNO and Subdiv. 3PS
- Greenland halibut in SA 2 + Divs. 3KLMNO
- Alfonsino stocks in the NAFO Regulatory Area
- Roughhead grenadier in SA 2 and 3
- Northern shortfin squid (*Illex illecebrosus*) in SA 3+4 [note: to be done in September]

c) Special Requests for Management Advice

Request #2 [Priority level 1]: Greenland halibut in SA2 + Divs. 3KLMNO: monitor, compute the TAC using the agreed HCR and determine whether exceptional circumstances are occurring

Request #3 [Priority level 1]: Continue the evaluation of scientific trawl surveys in VME closed areas and the effect on stock assessments of excluding the surveys from these areas

Request #4 [Priority level 1]: Implement the steps of the bycatch and discards action plan relevant to SC: Task 2.2 (already responded to in September 2020 SC report); Tasks 3.1 and 3.2 for June 2021.

Request #5 [Priority level 2]: Continue to refine work on the Ecosystem Roadmap

Request #6 [Priority level 1]: Re-assessment of NAFO bottom fisheries in 2021

Request #7 [Priority level 2]: Review the proposed revisions to Annex I.E, Part VI

Request #8 [Priority level 1]: Continue progress on the NAFO PA Framework review

Request #9 [Priority level 1]: Identify areas and times where bycatch and discards of Greenland sharks have a higher rate of occurrence

Request #10 [Priority level 2]: Continue to develop a 3-5 year work plan

Request #11 [Priority level 1]: Scoping exercise for 3LN redfish MSE

Request #12 [Priority level 1]: Review submitted protocols for a survey methodology to inform the assessment of splendid alfonsino

Request #13 [Priority level 2]: Presentation of the stock assessment and the scientific advice of Cod 2J3KL (Canada), Witch 2J3KL (Canada) and *Pelagic Sebastes mentella* (ICES Divisions V, XII and XIV; NAFO 1)

Request #14 [Priority level 1]: Conduct ongoing analysis of the Flemish Cap cod fishery data by 2022

Request #15 [Priority level 1]: Consider whether other measures, such as depth restrictions, spatial and mesh changes, could reduce the catch of juvenile and immature cod across all fisheries in 3M

Request #16 [Priority level 2]: Provide updates on relevant research related to the potential impact of activities other than fishing in the Convention Area & work with other organizations (FAO, ICES...) to bring in additional expertise to inform SC's work

Request #17 [Priority level 2]: Information on sea turtles, sea birds, and marine mammals that are present in NAFO Regulatory Area

Request #18 [Priority level 2]: Ecosystem summary sheets for 3M and 3LNO & move toward joint workshop with ICES

2. Coastal States

a) Request by Denmark (Greenland) for Advice on Management in 2022 (Annex 2)
None: requests for advice on Management in 2022 were for monitoring only

b) Request by Canada and Denmark (Greenland) for Advice on Management in 2022 (Annex 2, Annex 3)
None: requests for advice on Management in 2022 were for monitoring only

VIII. Review of Future Meetings Arrangements

1. Scientific Council (in conjunction with NIPAG), 8 to 14 Sep. 2021
2. Scientific Council, 20 – 24 Sep. 2021
3. WG-ESA, Nov. 2021
4. Scientific Council, June 2022
5. Scientific Council (in conjunction with NIPAG), 2022
6. Scientific Council, Sep. 2022

7. WG-ESA, Nov. 2022
8. NAFO/ICES Joint Groups
 - a) NIPAG, 2021
 - b) NIPAG, 2022
 - c) WG-DEC
 - d) WG-HARP

IX. Arrangements for Special Sessions

1. Topics for future Special Sessions (Note: expected to be deferred to September)

X. Meeting Reports (Note: some may be deferred to September)

1. Working Group on Ecosystem Science and Assessment (WG-ESA), Nov. 2020
2. Report from ICES-NAFO Working Group on Deepwater Ecosystems (WG-DEC), 2020
3. Report from Joint COM-SC Working Group on Catch Estimation Strategy Advisory Group (CESAG), March and April 2020
4. Meetings attended by the Secretariat

XI. Review of Scientific Council Working Procedures/Protocol

1. General Plan of Work for September 2021 Annual Meeting
2. Priority actions for Scientific Council from the Performance Review Panel WG (adopted by the NAFO Commission in September 2019):
 - peer review process for the science underlying the SC advice, applied consistently to all SC science used in advice [note: to be discussed by SC in June if time permits, otherwise in September]

XII. Other Matters

1. Designated Experts
2. Election of Chairs
3. Budget items
4. Proposed MoU with the Sargasso Sea Commission
5. Other Business

XIII. Adoption of Committee Reports

1. STACFEN
2. STACREC
3. STACPUB
4. STACFIS

XIV. Scientific Council Recommendations to Commission

XV. Adoption of Scientific Council Report

XVI. Adjournment

ANNEX 1. COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 2022 AND BEYOND OF CERTAIN STOCKS IN SUBAREAS 2, 3 AND 4 AND OTHER MATTERS

(from SCS Doc. 21/01)

Following a request from the Scientific Council, the Commission agreed that items 1, 2, 8 and 11 should be the priority for the June 2021 Scientific Council meeting subject to resources and COVID-related restrictions.

1. The Commission requests that the Scientific Council provide advice for the management of the fish stocks below according to the assessment frequency presented below. In keeping with the NAFO Precautionary Approach Framework (FC Doc. 04-18), the advice should be provided as a range of management options and a risk analysis for each option without a single TAC recommendation. The Commission will decide upon the acceptable risk level in the context of the entirety of the SC advice for each stock guided and as foreseen by the Precautionary Approach.

Yearly basis	Two-year basis	Three-year basis
Cod in Div. 3M Northern shrimp in Div. 3M	Redfish in Div. 3M Northern shrimp in Div. 3LNO Thorny skate in Div. 3LNO Witch flounder in Div. 3NO Redfish in Div. 3LN White hake in Div. 3NO	American Plaice in Div. 3LNO American Plaice in Div. 3M Capelin in Div. 3NO Northern shortfin squid in SA 3+4 Redfish in Div. 3O Yellowtail flounder in Div. 3LNO Cod in Div. 3NO

To implement this schedule of assessments, the Scientific Council is requested to conduct a full assessment of these stocks as follows:

In 2021, advice should be provided for 2022 for Cod in Div. 3M and Northern shrimp in Div. 3M. With respect to Northern shrimp in Div. 3M, SC is requested to provide its advice to the Commission prior to the 2021 Annual Meeting based on the survey data up to and including 2021.

In 2021, advice should be provided for 2022 and 2023 for: Redfish in Div. 3M, Northern shrimp in Div. 3LNO, and White hake in Div. 3NO

In 2021, advice should be provided for 2022, 2023 and 2024 for: American plaice in Div. 3LNO, Capelin in Div. 3NO, Cod in Div. 3NO, Yellowtail flounder in Div. 3LNO

Advice should be provided using the guidance provided in **Annexes A or B as appropriate**, or using the predetermined Harvest Control Rules in the cases where they exist (currently Greenland halibut 2+3KLMNO).

The Commission also requests the Scientific Council to continue to monitor the status of all other stocks annually and, should a significant change be observed in stock status (e.g. from surveys) or in bycatch in other fisheries, provide updated advice as appropriate.

2. The Commission requests the Scientific Council to monitor the status of Greenland halibut in Subarea 2+Div. 3KLMNO annually to compute the TAC using the agreed HCR and determine whether exceptional circumstances are occurring. If exceptional circumstances are occurring, the exceptional circumstances protocol will provide guidance on what steps should be taken.
3. The Commission requests that the Scientific Council continue its evaluation of the impact of scientific trawl surveys on VME in closed areas, and the effect of excluding surveys from these areas on stock assessments.
4. The Commission requests the Scientific Council to implement the steps of the Action plan relevant to the Scientific Council and in particular the tasks identified under section 2.2 of the Action Plan, for progression in the management and minimization of Bycatch and discards (COM Doc. 17-26).
 - Tasks outlined in Tasks 3.1 and 3.2 of the NAFO Action Plan in the Management and Minimization of Bycatch and Discards (COM Doc. 17-26).

5. The Commission requests that Scientific Council continue to refine work on the Ecosystem Road Map:
 - Continue to test the reliability of the ecosystem production potential model and other related models
 - Report on these results to WG-EAFFM and WG-RBMS to further develop how it may apply to management decisions
 - Develop options of how ecosystem advice could inform management decisions, an issue which is directly linked to the results of the foreseen EAFM roadmap workshop.
 - Continue its work to develop models that support implementation of Tier 2 of the EAFM Roadmap."

6. The Commission requests that the Scientific Council, in preparation of the re-assessment of NAFO bottom fisheries in 2021 and discussion on VME fishery closures:
 - Assess the overlap of NAFO fisheries with VME to evaluate fishery specific impacts in addition to the cumulative impacts for NRA fisheries;
 - Consider clearer objective ranking processes and options for objective weighting criteria for the overall assessment of significant adverse impacts and the risk of future adverse impacts;
 - Maintain efforts to assess all of the six FAO criteria including the three FAO functional SAI criteria which could not be evaluated in the current assessment.
 - Provide input and analysis of potential management options, with the goal of supporting meaningful and effective discussions between scientists and managers at the 2021 WG-EAFFM meeting;
 - Continue to work on the VME indicator species as listed in Annex IE, Section VI to prepare for the next assessment.

7. The Commission requests that the Scientific Council review the proposed revisions to Annex I.E, Part VI as reflected in COM-SC EAFFM-WP 18-01, for consistency with the taxa list annexed to the VME guide and recommend updates as necessary.

8. The Commission requests the Scientific Council to continue progression on the review of the NAFO PA Framework in accordance to the PAF review work plan approved in 2020 (NAFO COM-SC Doc. 20-04)

9. The Commission requests that the Scientific Council Work with WG- BDS to identify areas and times where bycatch and discards of Greenland sharks have a higher rate of occurrence in time for consideration by the Commission in 2021 to inform the development of measures to reduce bycatch in the NRA.

10. The Commission requests the Scientific Council to continue to develop a 3-5 year work plan, which reflects requests arising from the 2020 Annual Meeting, other multi-year stock assessments and other scientific inquiries already planned for the near future. The work plan should identify what resources are necessary to successfully address these issues, gaps in current resources to meet those needs and proposed prioritization by the Scientific Council of upcoming work based on those gaps.

11. The Commission requests that the Scientific Council, carry out a scoping exercise to provide guidance to the WG-RBMS on the process of conducting of a full review/evaluation of the management strategy of Div. 3LN redfish.

12. The Commission requests the Scientific Council review submitted protocols for a survey methodology to inform the assessment of Splendid Alfonsino. The Scientific Council to report on the outcome of this work at next Commission annual meeting.
13. The Commission requests that results from stock assessments and the scientific advice of Cod 2J3KL (Canada), Witch 2J3KL (Canada) and Pelagic *Sebastes mentella* (ICES Divisions V, XII and XIV; NAFO 1) to be presented to the Scientific Council (SC), and request the SC to prepare a summary of these assessments to be included in its annual report.
14. The Commission requests the Scientific Council, jointly with the Secretariat, to conduct ongoing analysis of the Flemish Cap cod fishery data by 2022 in order to:
 - (1) monitor the consequences of the management decisions (including the analysis of the redistribution of the fishing effort along the year and its potential effects on ecosystems, the variation of the cod catch composition in lengths/ages, and the bycatch levels of other fish species, benthos in general, and VME taxa in particular), and
 - (2) carry out any additional monitoring that would be required, including Div. 3M cod caught as bycatch in other fisheries during the closed period.
15. The Commission requests the Scientific Council, in its future work, to consider whether other measures, such as depth restrictions, spatial and mesh changes, could reduce the catch of juvenile and immature cod across all fisheries in 3M.
16. The Commission requests the Scientific Council to continue to monitor and provide updates resulting from relevant research related to the potential impact of activities other than fishing in the Convention Area. Further, that the Secretariat and the Scientific Council work with other international organizations, such as the FAO and ICES, to bring in additional expertise to inform the Scientific Council's work.
17. The Commission requests the Scientific Council to provide information to the Commission at its next annual meeting on sea turtles, sea birds, and marine mammals that are present in NAFO Regulatory Area based on available data.
18. The Commission requests that the Scientific Council proceed with developing the ecosystem summary sheets for 3M and 3LNO move toward undertaking a joint Workshop with ICES (International Council for the Exploration of the Sea) as part of a peer review of North Atlantic ecosystems.

ANNEX B. Guidance for providing advice on Stocks Assessed without a Population Model

For those resources for which only general biological and/or catch data are available, few standard criteria exist on which to base advice. The stock status should be evaluated in the context of management requirements for long-term sustainability and the advice provided should be consistent with the precautionary approach.

The following graphs should be presented, for one or several surveys, for the longest time-period possible:

- a. time trends of survey abundance estimates
- b. an age or size range chosen to represent the spawning population
- c. an age or size-range chosen to represent the exploited population
- d. recruitment proxy or index for an age or size-range chosen to represent the recruiting population.
- e. fishing mortality proxy, such as the ratio of reported commercial catches to a measure of the exploited population.
- f. Stock trajectory against reference points

And any information the Scientific Council deems appropriate.

**ANNEX 2. DENMARK (ON BEHALF OF GREENLAND) REQUESTS FOR SCIENTIFIC ADVICE ON
MANAGEMENT IN 2022 AND BEYOND OF CERTAIN STOCKS IN SUBAREA 0 AND 1**
(from SCS Doc. 21/02)

Denmark (on behalf of Greenland) requests scientific advice on management in 2020 of Certain Stocks in NAFO Subarea 0 and 1. Denmark (on behalf of Greenland) requests the Scientific Council for advice on the following species:

1. **Golden Redfish, Demersal Deep-Sea Redfish, Atlantic Wolffish and Spotted Wolffish**
Advice on Golden Redfish (*Sebastes marinus*), Demersal Deep-Sea Redfish (*Sebastes mentella*), Atlantic Wolffish (*Anarhichas lupus*) and Spotted Wolffish (*Anarhichas minor*) in Subarea 1 was in June 2020 given for 2021-2023. Consequently, the Scientific Council is requested to continue its monitoring of the above stocks and provide updated advice as appropriate in the event of significant changes in stock levels.
2. **Greenland Halibut, Offshore**
Advice on Greenland Halibut, Offshore in Subareas 0 and 1 was in 2020 given for 2021 and 2022. Consequently, the Scientific Council is requested to continue its monitoring of the above stocks and provide updated advice as appropriate in the event of significant changes in stock levels. The Scientific Council is also asked to advice on any other management measures it deems appropriate to ensure the sustainability of these resources.
3. **Greenland Halibut, Inshore, West Greenland**
Advice on Greenland Halibut in Division 1A inshore, Division 1BC inshore, Division 1D inshore and Division 1EF inshore was in 2020 given for 2021-2022. Consequently, the Scientific Council is requested to continue its monitoring of the above stocks and provide updated advice as appropriate in the event of significant changes in stock levels. The Scientific Council is also asked to advice on any other management measures it deems appropriate to ensure the sustainability of these resources.
4. **Northern Shrimp, West Greenland**
Subject to the concurrence of Canada as regards to Subareas 0 and 1, Denmark (on behalf of Greenland) requests the Scientific Council before December 2021 to provide advice on the scientific basis for management of Northern Shrimp (*Pandalus borealis*) in Subareas 0 and 1 in 2022 in line with Greenland's stated management objective of maintaining a mortality risk of no more than 35% in the first year prediction and to provide a catch option table ranging with 5,000 t increments. Future catch options should be provided for as many years as data allows for. Furthermore, Scientific Council is requested to provide a catch level corresponding to a mortality risk of exact 35% in the first year of prediction.
5. **Northern Shrimp, East Greenland**
Furthermore, the Scientific Council is in cooperation with ICES requested to provide advice on the scientific basis for management of Northern Shrimp (*Pandalus borealis*) in Denmark Strait and adjacent waters east of southern Greenland in 2022 and for as many years ahead as data allows for.

ANNEX 3. REQUESTS FROM CANADA FOR ADVICE ON MANAGEMENT IN 2022 AND BEYOND
(from SCS Doc. 21/03)

1. Greenland halibut (Subarea 0 + 1 (offshore))¹

Advice on Greenland Halibut in Subareas 0 and 1 was provided in 2020 for 2021 and 2022. Canada requests that the Scientific Council monitor the status of this stock in 2021, and, should a significant change be observed in stock status (e.g. from surveys or in bycatches in other fisheries), provide updated advice as appropriate.

2. Shrimp (Subarea 1 and Division 0A)

Canada requests the Scientific Council to consider the following options in assessing and projecting future stock levels for Shrimp in Subarea 1 and Division 0A:

The status of the stock should be determined and risk-based advice provided for catch options corresponding to Z_{msy} , in 5,000-10,000t increments (subject to the discretion of Scientific Council), with forecasts for 2022 to 2024. These options should be evaluated in relation to Canada's Harvest Strategy (attached) and NAFO's Precautionary Approach Framework, and presented in the form of risk analyses related to B_{msy} , 80% B_{msy} , B_{lim} (30% B_{msy}) and Z_{msy} .

Presentation of the results should include graphs and/or tables related to the following:

- Historical and current yield, biomass relative to B_{msy} , total mortality relative to Z_{msy} , and recruitment (or proxy) levels for the longest time period possible;
- Total mortality (Z) and fishable biomass for a range of projected catch options (as noted above) for the years 2022 to 2024. Projections should include both catch options and a range of effective cod predation biomass levels considered appropriate by the Scientific Council. Results should include risk analyses of falling below: B_{MSY} , 80% B_{msy} and B_{lim} (30% B_{msy}), and of being above Z_{msy} based on the 3-year projections, consistent with the Harvest Decision Rules in Canada's Harvest Strategy; and
- Total area fished for the longest time period possible.

Please provide the advice relative to Canada's Harvest Strategy as part of the formal advice (i.e., grey box in the advice summary sheet).

¹ The Scientific Council has noted previously that there is no biological basis for conducting separate assessments for Greenland halibut throughout Subareas 0-3, but has advised that separate TACs be maintained for different areas of the distribution of Greenland halibut.

APPENDIX III: PROVISIONAL TIMETABLE**Scientific Council Meeting, 27 May-11 June 2021 (by correspondence and videoconference)**

- The meeting will be held from Monday to Friday. Weekends will not be working days.
- All times below correspond to Halifax times.
- Every day the WebEx connection will be open at 07:30 for participants to join and test connection and sound in advance of an 08:00 start.
- A 20-minute break will be included each day.

<u>Date</u>	<u>Time</u>	<u>Provisional schedule of plenary sessions</u>
27 May (Thurs.)	0800-0815 0815-0930 0930-1010 1010-1030 1030-1230	SC Opening STACFEN presentation of key information for SC + discussion SC + STACFIS: round the table of status of work and available documents for each stock assessment and all other requests Break SC: WG-ESA presentation of Request #6 + discussion
28 May (Fri.)	0800-1000 1000-1020 1020-1230	SC: WG-ESA continue Request #6 (if needed) Break STACFIS (start presentation of stock assessments)
31 May (Mon.)	0800-1230	SC: Requests #2 (GHL), #4 (Action Plan Bycatch & Discards) STACFIS
01 June (Tues.)	0800-1230	SC: Requests #12 (Alfonsino), #7 (Revisions Annex I.E) STACFIS
02 June (Wed.)	0800-1230	SC: Requests #11 (3LN redfish MSE) STACFIS
03 June (Thurs.)	0800-1230	SC: Requests #14 & 15 (3M Cod), #16 (Non-fishing), #17 (Sea mammals & birds) STACFIS
04 June (Fri.)	0800-1230	SC: Requests #9 (Greenland sharks), #8 (PAWG) STACFIS
07 June (Mon.)	0800-1230	SC: Requests #3 (surveys in VME closures), #13 (cod, witch, redfish) STACFIS (if needed)
08 June (Tues.)	0800-1230	SC: Request #10 (workplan) SC
09 June (Wed.)	0800-1230	SC
10 June (Thurs.)	0800-1230	SC (including approval of Standing Committee Reports)
11 June (Fri.)	0800-1230	SC

APPENDIX IV: EXPERTS FOR PRELIMINARY ASSESSMENT OF CERTAIN STOCKS

Designated Experts for 2021:

From the Science Branch, Northwest Atlantic Fisheries Centre, Department of Fisheries and Oceans, St. John's, Newfoundland & Labrador, Canada

Cod in Div. 3NO	Rick Rideout	rick.rideout@dfo-mpo.gc.ca
Redfish Div. 3O	Danny Ings	danny.ings@dfo-mpo.gc.ca
American Plaice in Div. 3LNO	Laura Wheeland	laura.wheeland@dfo-mpo.gc.ca
Witch flounder in Div. 3NO	Dawn Maddock Parsons	dawn.parsons@dfo-mpo.gc.ca
Yellowtail flounder in Div. 3LNO	Dawn Maddock Parsons	dawn.parsons@dfo-mpo.gc.ca
Greenland halibut in SA 2+3KLMNO	Paul Regular	paul.regular@dfo-mpo.gc.ca
Northern shrimp in Div. 3LNO	Katherine Skanes	katherine.skane@dfo-mpo.gc.ca
Thorny skate in Div. 3LNO	Mark Simpson	mark.r.simpson@dfo-mpo.gc.ca
White hake in Div. 3NO	Mark Simpson	mark.r.simpson@dfo-mpo.gc.ca

From the Department of Fisheries and Oceans, Winnipeg, Manitoba, Canada

Greenland halibut in SA 0+1	Margaret Treble	margaret.treble@dfo-mpo.gc.ca
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From the Instituto Español de Oceanografía, Vigo (Pontevedra), Spain

Roughhead grenadier in SA 2+3	Fernando Gonzalez-Costas	fernando.gonzalez@ieo.es
Splendid alfonsino in Subarea 6	Fernando Gonzalez-Costas	fernando.gonzalez@ieo.es
Cod in Div. 3M	Diana Gonzalez-Troncoso	diana.gonzalez@ieo.es
Shrimp in Div. 3M	Jose Miguel Casas Sanchez	mikel.casas@ieo.es

From the Instituto Nacional de Recursos Biológicos (INRB/IPMA), Lisbon, Portugal

American plaice in Div. 3M	Ricardo Alpoim	ralpoim@ipma.pt
Golden redfish in Div. 3M	Ricardo Alpoim	ralpoim@ipma.pt
Redfish in Div. 3M	Vacant from Antonio Avila de Melo	
Redfish in Div. 3LN	Vacant from Antonio Avila de Melo	

From the Greenland Institute of Natural Resources, Nuuk, Greenland

Redfish in SA1	Rasmus Nygaard	rany@natur.gl
Other Finfish in SA1	Rasmus Nygaard	rany@natur.gl
Greenland halibut in Div. 1A	Rasmus Nygaard	rany@natur.gl
Northern shrimp in SA 0+1	AnnDorte Burmeister	anndorte@natur.gl
Northern shrimp in Denmark Strait	Frank Rigét	frri@natur.gl

From Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), Russian Federation

Capelin in Div. 3NO	Konstantin Fomin	fomin@pinro.ru
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From National Marine Fisheries Service, NEFSC, Woods Hole, Massachusetts, United States of America

Northern Shortfin Squid in SA 3 & 4	Lisa Hendrickson	lisa.hendrickson@noaa.gov
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