

REPORT

MEETING OF THE CONFERENCE OF THE PARTIES TO THE AGREEMENT TO PREVENT UNREGULATED HIGH SEAS FISHERIES IN THE CENTRAL ARCTIC OCEAN

**Incheon, Korea
November 23-25, 2022**

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**CONTRACTING PARTIES TO THE AGREEMENT TO
PREVENT UNREGULATED HIGH SEAS FISHERIES IN THE
CENTRAL ARCTIC OCEAN**

- Canada
- People's Republic of China
- Kingdom of Denmark, in respect of the Faroe Islands and Greenland
- Republic of Iceland
- Japan
- Republic of Korea
- Kingdom of Norway
- Russian Federation
- United States of America
- European Union

EXECUTIVE SUMMARY

The first in-person meeting of the Conference of the Parties (COP) to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean was held in Incheon, Korea on November 23-25, 2022. A total of 75 participants attended the meeting including 71 delegates from the 10 Parties to the Agreement and four representatives of two Observers. The meeting was chaired by the Provisional Chairperson, Mrs. Nadia Bouffard of Canada, with the support of the Provisional Vice-Chairperson, Ambassador Youngki Hong of the Republic of Korea.

The COP **endorsed** the reports of the second and third meetings of the Provisional Scientific Coordination Group (PSCG) held on March 1-3, 2022 ([Appendix 4](#)) and September 28-29, 2022 ([Appendix 5](#)) respectively. It formally **established** the Scientific Coordinating Group (SCG) as the successor body to the PSCG, **adopted** its Terms of Reference ([Appendix 7](#)), and **agreed** that it would hold its first in-person meeting at a date and a venue to be confirmed by its host, the United States, in March 2023, with options provided for virtual participation.

The COP **adopted** its Rules of Procedure ([Appendix 9](#)), and asked the Chairperson to lead an intersessional drafting group to review and propose revisions to Draft #9 of the Rules of Procedure for the SCG ([Appendix 10](#)) for submission at the next COP meeting.

In respect of conservation and management measures for exploratory fishing, the COP **agreed** to a three-step process for moving this work forward: 1) a virtual drafting group meeting early in February 2023 to be chaired by the United States, to develop questions for the SCG; 2) a virtual COP intersessional meeting mid-February 2023 to review and approve the questions; and 3) to submit the approved questions to the SCG for developing responses during its meeting in March 2023 and submit these to the COP for considering next steps.

The COP formally **elected** Mrs. Nadia Bouffard of Canada as Chairperson, and Ambassador Hong, as Vice-Chairperson, of the COP. The COP also **appointed** Dr. John Bengtson from the United States, as Chairperson and Dr. Sebastián Rodríguez Alfaro from the European Union, as Vice-Chairperson, of the SCG.

The Parties **agreed** to next meet in-person as a COP in June, 2023 in Korea, at a date to be confirmed by the hosts. A calendar of approved meetings is provided in ([Appendix 14](#)).

1. Opening of the session

1. The first in-person meeting of the Conference of the Parties (COP) to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean was opened and chaired by the Provisional Chairperson of the Conference of the Parties, Mrs. Nadia Bouffard of Canada from November 23-25, 2022, in Incheon, Republic of Korea.
2. The Provisional Vice-Chairperson, Ambassador Youngki Hong of the Republic of Korea, welcomed the meeting participants to Incheon, South Korea.

2. Admission of Observers

3. Consistent with the agreed to process, the Parties **admitted** the following Observers to the meeting:
 - International Council for the Exploration of the Sea,
 - World Wildlife Fund for Nature (WWF) Arctic Programme.

3. Adoption of the agenda and arrangements for the session

4. The adopted agenda (CAOFA-2022-COP1-01-Rev02) is provided in [Appendix 1](#). The documents presented to the COP are listed (CAOFA-2022-COP1-REF03-Rev04) and provided in [Appendix 2](#).

4. Opening Remarks by Delegations

5. The Parties and Observers provided opening remarks.
6. A list of Participants (CAOFA-2022-COP1-12) is provided in [Appendix 3](#).

5. Science

(a) Presentation of 2022 PSCG Meeting Reports

7. The Provisional Scientific Coordinating Group (PSCG) met twice virtually in 2022: on March 1-3, 2022, and on September 28-29, 2022. The Chairperson of the two meetings, Ms. Candace Nachman of the United States of America, presented the reports of both meetings and the recommendations of the PSCG to the COP.
8. The Chairperson's summary report of the PSCG second meeting of March 1-3, 2022 (CAOFA-2022-COP1-06), the full meeting report (CAOFA-2022-COP1-08) and the related PSCG recommendations (CAOFA-2022-COP1-07) are provided in [Appendix 4](#). The full meeting report of the third meeting of the PSCG held on September 28-29, 2022 (CAOFA-2022-COP1-09) is provided in [Appendix 5](#). The Chairperson's presentation to the COP (CAOFA-2022-COP1-14) is provided in [Appendix 6](#).

2nd Meeting of the PSCG

9. In her presentation to the COP, the PSCG Chairperson presented the report of the second PSCG meeting held March 1-3, 2022, indicating that it had made good progress in discussing the steps necessary to make further progress and finalise a Joint Program of Scientific Research and Monitoring (JPSRM) and Data Sharing Protocol for the consideration and adoption by the COP by June 25, 2023, as per the requirements of the Agreement. She flagged that the PSCG was not starting from scratch, as it could build on the work of the Meetings of Scientific Experts on Fish Stocks in the Central Arctic Ocean (FiSCAO) which were held in parallel to the negotiations of the Agreement to begin identifying the necessary scientific work and sources of data and information. She summarized that the PSCG agreed that their key task of developing a JPSRM was akin to developing a joint science plan with the associated implementation strategies for the Central Arctic Ocean (CAO). She indicated that the PSCG recognized that this plan should reflect the work performed under national science programs within the high seas portion of the CAO and in adjacent areas to the CAO, as well as joint objectives for future collaborative work in the Agreement Area.
10. She indicated that much of the discussion of the PSCG centred on the review of a list of guiding questions which had been developed by FiSCAO in previous meetings, but that the PSCG recognized the need to validate the questions as a group. Following its review, the PSCG concluded that the original questions remained largely relevant. Revisions to these questions discussed and debated were documented in the meeting report, and reflected the general support of the PSCG for broader ecosystems considerations to be factored into them and the JPSRM, as well as the need to ensure that all knowledge systems (scientific knowledge, Indigenous knowledge and local knowledge) are appropriately reflected in the questions to enable this knowledge from these sources to be taken into account in the JPSRM.
11. The PSCG Chairperson also summarized the discussions of the PSCG regarding the development of a Data Sharing Protocol, as required by the Agreement. PSCG Members recognized that such protocols exist in other organisations and agreed that the PSCG should not reinvent the wheel, but instead work with what exists, with the necessary adaptations for the CAO, based on the views of the Parties.
12. The PSCG Chairperson provided a summary of the PSCG's seven recommendations for the COP to consider and approve, to enable the PSCG to continue its work to finalise its proposed JPSRM and Data Sharing Protocol. In its May 31, 2022 virtual meeting, the COP considered four of these recommendations and approved the establishment of two working groups – one on mapping and monitoring (MM-WG), and one on the data sharing protocol (DSP-WG), and approved the holding of a PSCG meeting in the fall of 2022 to continue the work. The COP preferred to defer consideration of the Terms of Reference of the PSCG to its in-person meeting in Incheon. Longer-term recommendations from the PSCG regarding the holding of meetings of the PSCG in 2023, exploratory fishing and resources and infrastructure were left for future discussion by the COP.

3rd Meeting of the PSCG

13. In its third meeting convened virtually on September 28-29, 2022, the PSCG continued its discussions with a view to finalising the questions to be addressed by the JPSRM through its mapping and monitoring program. It was recognized that agreement on these questions was critical in advancing the work of the mapping and monitoring portion of the JPSRM. A revised list of questions was submitted by the PSCG in its meeting report, reflecting the views and input from PSCG Members.
14. The PSCG Chairperson indicated that the PSCG also continued its discussion on the scope of a Data Sharing Protocol. She indicated that the PSCG recognized that a hybrid approach involving a centralized system for the JPSRM and a distributed system for data from national programs for sharing information and data was the most practical way forward and supported by the PSCG Members.
15. The United States proposed to expand the current arrangement for hosting a website for the Agreement, for sharing information and data, reports and studies among the Parties, and with the public. They proposed to build a public interface for access to public information about the agreement and the work of the Parties and the PSCG, and a private component of the website for access only by the Parties, for sharing information and data in a confidential manner. The Chairperson indicated that the United States had presented a prototype for such a website at the PSCG meeting, which would allow the PSCG to communicate globally, share reports and data, create events and communicate with the public. It was not proposed to create a centralized database, but rather the website would enable the sharing of information and data by the Parties, including from their national science programs, in a secure way, when needed.
16. The PSCG recognized the need to further discuss this and the need for policies and standards to be adopted, for public access and protection of shared data, recognizing that several such standards already exist and should be considered instead of creating something specific for the PSCG. The Chairperson flagged that the PSCG was informed of Circumpolar Inuit Protocols for Equitable and Ethical Engagement which should be taken into account in the approach moving forward.
17. The PSCG Chairperson finally indicated that the EU and the United States had proposed to co-chair the MM-WG, and that China had proposed to co-chair the DSP-WG with another co-chair of a Party yet to be determined. She highlighted that all 10 Parties and two Observers had submitted names for participating in both working groups.
18. She closed by flagging the outstanding PSCG recommendations and the priority need to dedicate the resources and time of scientific experts to advance the implementation of the JPSRM.

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19. The COP thanked the United States for hosting the virtual PSCG meetings in 2022 and thanked the Chairperson for her excellent work in chairing the meetings. The COP also expressed appreciation for the work of the PSCG Members and their contributions to the work of the PSCG.
 20. The COP considered the reports of the PSCG meetings of 2022. While one delegation was of the view that human activities such as ship noise, ship traffic, industrial activity and pollution were irrelevant to the matter of sustainable fisheries and hence should not be included as factors in the questions to be answered by the SCG in the JPSRM, others believed that such matters were quite relevant to ensuring the sustainable management of fisheries and ecosystems as provided by the Agreement and hence supported the formulation of questions that touched on these topics. The delegation acknowledged that ecosystems impacts on by-catch species are relevant factors in determining measures to govern exploratory fishing and it recognized that the requirement to establish the JPSRM and related exploratory fishing measures are one of the necessary preconditions before decisions related to any fishing activities could be considered, while the absence of such requirements would not impact the prohibition on commercial fishing. Some delegations expressed the need for prioritizing the work of the PSCG and its successor, the Scientific Coordinating Group (SCG), along the objectives of the Agreement.
 21. The COP **endorsed** the two meeting reports of the PSCG (CAOFA-2022-COP1-08 [Appendix 4](#) and CAOFA-2022-COP1-09 [Appendix 5](#)), indicating support for the work conducted to date on the JPSRM, including the list of questions developed and revised, as proposed in the third PSCG meeting report.
 22. The COP highlighted the need for the Scientific Coordinating Group (SCG) to conclude its work on the JPSRM and the Data Sharing Protocol in a timely manner, including through the work of the two working groups, so that the COP may consider the JPSRM and Data Sharing Protocol for approval and adoption by the Agreement deadline of June 25, 2023. It was emphasized that the JPSRM should be considered as a framework for the future work of the SCG, and the COP recognized that this framework may need to be updated, and details added from time to time in the future, to reflect new information.
 23. Following a proposal by Canada, the COP **agreed** that China and the United States would co-chair the Data Sharing Protocol Working Group and that Canada and the EU would co-chair the Mapping and Monitoring Working Group.
 24. The COP agreed to have a future discussion on the public and private scope of a website for the Agreement work for use by the SCG and the COP, and accepted the offer from the United States to show a prototype to the COP at its next meeting, factoring in the comments and input already provided by the PSCG and the COP.

25. The COP also emphasized the need for the SCG to start turning its attention to the implementation of the JPSRM and develop an implementation plan for the JPSRM for the COP's consideration.

(b) Decisions sought from the COP:

26. The COP discussed the three outstanding recommendations from the PSCG regarding the provisional status of the PSCG, its provisional Terms of Reference and the need to consider holding joint scientific meetings in 2023.

- **Successor Body to the PSCG**

27. Satisfied with the work of the PSCG to date, but recognizing that the PSCG had been established by the Signatories in 2019 as a provisional body on an interim basis, the COP **established** the Scientific Coordinating Group (SCG), as the successor body to the PSCG.

- **Terms of Reference**

28. As per the recommendation of the PSCG, the COP considered the PSCG Terms of Reference adopted in 2019 (CAOFA-2022-COP1-04) and **adopted** the Terms of Reference for the newly established Scientific Coordinating Group (CAOFA-2022-COP1-13) both provided in [Appendix 7](#).

- **2023 Joint Scientific Meetings**

29. The COP **agreed** that the SCG would meet in person in March 2023 in the United States, at a date and venue to be confirmed by the United States, with options provided for virtual participation.

6. COP Rules of Procedure

30. The COP considered Draft #10 of the COP Rules of Procedure (CAOFA-2022-COP1-02; CAOFA-2022-COP1-02WD) provided in [Appendix 8](#).

31. Discussions focused on the outstanding issues in the draft Rules of Procedure, mostly centred on the decision threshold for COP decisions and the quorum for COP meetings.

32. The COP **adopted** the COP Rules of Procedure (CAOFA-2022-COP1-16) provided in [Appendix 9](#).

7. Rules of Procedure for Joint Scientific Meetings

33. The COP asked the Chairperson to lead an intersessional drafting group to review and propose revisions to Draft #9 of the Rules of Procedure for Joint Scientific Meetings (CAOFA-2022-COP1-03; CAOFA-2022-COP1-03WD) provided in [Appendix 10](#) to address the outstanding issues and align these rules with those of the COP, and to submit a new draft for the COP's consideration at its next meeting.

8. Report of KOPRI on November 22, 2022 Symposium

34. The COP took note of the mini-symposium hosted by the Korea Polar Research Institute (KOPRI) in commemoration of the first in-person COP meeting held on the following days in Incheon, Korea.
35. The event aimed to review the history and meaning of the Agreement, hear perspectives from various stakeholders and deliberate on how to generate and share knowledge. In addition to an overview of the Agreement provided by the Chair of the negotiations of the Agreement, Ambassador David Balton, the program touched on the significance and implications of the Agreement, scientific progress and challenges in Arctic fisheries and ecosystems, the role of Inuit and Indigenous knowledge in the context of Arctic Ocean ecosystems provided by representatives of the Inuit Circumpolar Council, international cooperation to integrate science across human sectors, pressures and ecosystem in the Central Arctic Ocean, lessons learned from the Antarctic provided by the Executive Director of CCAMLR, and the future of the central Arctic Ocean and the Agreement.
36. The COP thanked the KOPRI for hosting the informative event. The KOPRI undertook to share a report of the symposium with the COP.

9. Consideration of conservation and management measures to govern exploratory fishing in the Agreement Area

37. Mindful of the three-year deadline provided by the Agreement to develop conservation and management measures for exploratory fishing, and factoring in the comparative analysis of measures adopted by regional fisheries management organisations and CCAMLR¹ to regulate such exploratory fishing (CAOFA-2022-COP1-REF01) and a presentation made by the Chairperson to the COP on this analysis (CAOFA-2022-COP1-REF02) both provided in [Appendix 11](#), the COP considered the US proposal (CAOFA-2022-COP1-15) in [Appendix 12](#), and **determined** the following process moving forward:
- a. A drafting group to be chaired by the United States will meet intersessionally on a virtual basis, early in February 2023, to develop questions to pose to the SCG, as a first step to seek information for the development of exploratory fishing measures. These questions

¹ Commission for the Conservation of Antarctic Marine Living Resources

would be shared with the Parties for consideration and approval by the COP prior to being submitted to the SCG for its meeting in March, 2023;

- b. The COP will meet virtually shortly after receiving the questions, to review and approve the questions for the SCG;
- c. Once approved, the questions will be submitted to the SCG in a timely manner for developing responses during its meeting in March, 2023, which will be submitted to the COP for consideration and determining next steps.

10. Election of COP Chairperson and Vice-Chairperson

38. The COP **elected** Mrs. Nadia Bouffard of Canada as Chairperson of the COP, and Ambassador H.E. Youngki Hong of the Republic of Korea as Vice-Chairperson, both for a term of four years, in accordance with the COP Rules of Procedure.

11. Appointment of Chairperson and Vice-Chairperson to the Scientific Coordinating Group

39. The COP thanked the previous chairpersons of the PSCG, Mr. Ernesto Jardim and Ms. Candace Nachman, and **appointed** Dr. John Bengtson of the United States as Chairperson of the Scientific Coordinating Group, and Dr. Sebastián Rodríguez Alfaro of the European Union as Vice-Chairperson of the Scientific Coordinating Group, both for a term of two years, consistent with the draft SCG Rules of Procedure. Curriculum Vitae for both candidates (CAOFA-2022-COP1-05; and CAOFA-2022-COP1-12) are provided in [Appendix 13](#).

12. Next COP Meeting

40. The COP **agreed** to hold its next meeting in June 2023 in Korea, at a date and venue to be confirmed by Korea.

13. Report of COP Meeting

41. The report of the first in-person COP Meeting was **adopted** by correspondence on 22 December, 2022.

14. Other Business

42. No other business was raised by the Parties.

15. Meeting Closure

43. The Provisional Chairperson closed the meeting at 5pm on November 25, 2022.

**INAUGURAL MEETING OF THE
CONFERENCE OF THE PARTIES (COP) TO THE
AGREEMENT TO PREVENT UNREGULATED HIGH SEAS FISHERIES
IN THE CENTRAL ARCTIC OCEAN**

November 23-25, 2022
Incheon, Republic of Korea
Provisional Chairperson: Mrs. Nadia Bouffard

ADOPTED AGENDA

Day 1

Meeting 9:00–17:30 local time
Coffee Break 10:30-11:00
Lunch Provided 12:30-13:30
Coffee Break & Visit of KOPRI 15:00-15:45

1. Call to order and introduction by Provisional Chairperson
2. Welcome remarks and introduction by Provisional Vice-Chairperson
3. Adoption of agenda

[Document: CAOFA-2022-COP1-01-Rev01](#)
[CAOFA-2022-COP1-REF03](#)

4. Opening remarks by Delegations
5. Science

[Documents:](#) [CAOFA-2022-COP1-06](#)
[CAOFA-2022-COP1-07](#)
[CAOFA-2022-COP1-08](#)
[CAOFA-2022-COP1-09](#)

(a) Presentation of 2022 PSCG Meeting Reports

- Outstanding Matters from March 2022 PSCG Meeting
- Matters from Fall 2022 PSCG Meeting
 - Updates on JPSRM
 - Updates on Data Sharing Protocol

(b)

Decisions sought from the COP:

- Succession Body to PSCG
- Terms of Reference
[Document: CAOFA-2022-COP1-04](#)
- 2023 Joint Scientific Meetings

Day 2

Meeting 9:00–17:30 local time
Coffee Break 10:30-11:00
Lunch Provided 12:30-13:30
Coffee Break 15:00-15:30

5. Science (continued)

6. COP Rules of Procedure

- Draft #10
[Documents: CAOFA-2022-COP1-02](#)
[CAOFA-2022-COP1-02WD](#)

7. Rules of Procedure for Joint Scientific Meetings

- Draft #9
[Documents: CAOFA-2022-COP1-03](#)
[CAOFA-2022-COP1-03WD](#)

APPENDIX 1

COP - CAO Fisheries Agreement
CAOFA-2022-COP1-10

CAOFA-2022-COP1-01-Rev01

Day 3

Meeting 9:00–17:30 local time

Coffee Break 10:30-11:00

Lunch Provided 12:30-13:30

Coffee Break 15:00-15:30

8. Report of KOPRI on November 22, 2022 Symposium – ROK

9. Consideration of conservation and management measures to govern exploratory fishing in the Agreement Area

Documents: [CAOFA-2022-COP1-REF01](#)
[CAOFA-2022-COP1-REF02](#)

- Process to meet June 2024 deadline
- Questions for Science

10. Election of COP Chairperson and Vice-Chairperson

11. Appointment of PSCG Chairperson and Vice-Chairperson

Document: [CAOFA-2022-COP1-05](#)

12. Next COP Meeting

13. Report of Meeting

Document: [CAOFA-2022-COP1-10](#)

14. Other Business

15. Meeting Closure

CAOFA 2022 COP MEETING – DRAFT LIST OF DOCUMENTS

CAOFA-2022-COP1-01-Rev02	Adopted Agenda	Appendix 1
CAOFA-2022-COP1-02	Draft #10 COP Rules of Procedure	Appendix 8
CAOFA-2022-COP1-02 WV	Word Version of Draft #10 COP Rules of Procedure	
CAOFA-2022-COP1-03	Draft #9 Rules of Procedure for Joint Scientific Meetings	Appendix 10
CAOFA-2022-COP1-03 WV	Word Version of Draft #9 Rules of Procedure for Joint Scientific Meetings	
CAOFA-2022-COP1-04	2019 PSCG Terms of Reference	Appendix 7
CAOFA-2022-COP1-05	CV Sebastian Rodriguez Alfaro – for V-C PSCG	Appendix 13
CAOFA-2022-COP1-06	March 2022 PSCG Chairperson’s Report	Appendix 4
CAOFA-2022-COP1-07	March 2022 PSCG Recommendations and Timelines	Appendix 4
CAOFA-2022-COP1-08	Report of the PSCG Meeting of March 1-3, 2022	Appendix 4
CAOFA-2022-COP1-09	Report of the PSCG Meeting of September 28-29, 2022	Appendix 5
CAOFA-2022-COP1-10	Draft Report of CAOFA-2022COP1 Meeting	
CAOFA-2022-COP1-11	Dr. John Bengtson CV – for Chair of SCG	Appendix 13

CAOFA-2022-COP1-12	List of Participants at COP1	Appendix 3
CAOFA-2022-COP1-13	Adopted SCG Terms of Reference	Appendix 7
CAOFA-2022-COP1-14	PSCG Chair Presentation to COP on PSCG 2022 Meetings	Appendix 6
CAOFA-2022-COP1-15	US Proposal for Intersessional Meeting on Exploratory Fishing	Appendix 12
CAOFA-2022-COP1-16	Adopted COP Rules of Procedure	Appendix 9
CAOFA-2022-COP1-REF01	Comparative Assessment of Exploratory Fishing Measures	Appendix 11
CAOFA-2022-COP1-REF02	Presentation on Comparative Assessment of Exploratory Fishing Measures	Appendix 11
CAOFA-2022-COP1-REF03 Rev04	List of Documents	Appendix 2

WV: Word Versions provided for drafting and editing during meeting and not appended to report of meeting

Participants List of the Inaugural Meeting of the Conference of the Parties (COP) to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

#	Country	Title	Full Name	Email	Participation Type	Participation Format
1	Canada	Mr.	Adam Burns	Adam.Burns@dfo-mpo.gc.ca	Head of Delegation	In-person participation
2		Mr.	Robert Apro	robert.apro@dfo-mpo.gc.ca	Delegate (Designated Focal Point for the Delegation)	In-person participation
3		Mr.	Herbert Nakimayak	HNakimayak@inuitcircumpolar.com, icc@inuitcircumpolar.com	Delegate (Others)	In-person participation
4		Mr.	Alain Dupuis	alain.dupuis@dfo-mpo.gc.ca	Delegate (Others)	In-person participation
5		Mr.	Gerald Inglangasak	tuck-tuck@hotmail.com, icc@inuitcircumpolar.com	Delegate (Others)	In-person participation
6		Mr.	Thomas Campbell	fjmc-fisheries@jointsec.nt.ca, icc@inuitcircumpolar.com	Delegate (Others)	In-person participation
7		Mr.	Rainer Duschinsky	Rainer.Duschinsky@international.gc.ca, robert.apro@dfompo.gc.ca	Delegate (Others)	Virtual participation
8		Mr.	Patrice Laquerre	Patrice.Laquerre@international.gc.ca, robert.apro@dfompo.gc.ca	Delegate (Others)	Virtual participation
9		Mr.	John Crump	jjcrump@inuitcircumpolar.com, robert.apro@dfompo.gc.ca	Delegate (Others)	Virtual participation
10	People's Republic of China	Mr.	Feng Gao	gao_feng@mfa.gov.cn	Head of Delegation	In-person participation
11		Ms.	Yuanxin Qin	qin_yuanxin@mfa.gov.cn	Delegate (Designated Focal Point for the Delegation)	In-person participation
12		Ms.	Yanyan Shan	shanyanyan@pric.org.cn	Delegate (Others)	In-person participation
13		Dr.	Lizong Wu	wulizong@pric.org.cn	Delegate (Others)	In-person participation
14		Dr.	Lei Yang	Yanglei_caa@163.com	Delegate (Others)	In-person participation
15		Mr.	Yang Zhang	zhang_yang3@mfa.gov.cn	Delegate (Others)	In-person participation
16		Prof.	LUMIN WANG	lmwang@ecsf.ac.cn	Delegate (Others)	Virtual participation
17	Kingdom of Denmark in respect of the Faroe Islands and Greenland	Ms.	Birgitte Jacobsen	bija@nanoq.gl	Head of Delegation	In-person participation
18		Dr.	Hugo Hansen	hugoh@ummr.fo	Delegate (Designated Focal Point for the Delegation)	In-person participation
19		Mr.	Kuupik Kleist	kvk@ggnuuk.gl, kuupik@inuit.org	Delegate (Others)	In-person participation
20	European Union	Ms.	Fiona Harford	fiona.harford@ec.europa.eu	Head of Delegation	In-person participation
21		Dr.	Erik Molenaar	e.j.molenaar@uu.nl	Delegate (Others)	In-person participation
22		Mr.	Stanislovas Jonusas	stanislovas.jonusas@ec.europa.eu	Delegate (Others)	In-person participation
23		Prof.	Pauline Snoeijs-Leijonmalm	pauline.snoeijs-leijonmalm@su.se	Delegate (Others)	In-person participation
24		Mr.	Jérôme PERDREAU	jerome.perdreau@dgtresor.gouv.fr	Delegate (Others)	In-person participation
25		Dr.	Hauke Flores	hauke.flores@awi.de	Delegate (Others)	In-person participation
26	Republic of Iceland	Dr.	Matthías Pálsson	matthias.palsson@utn.is	Head of Delegation	In-person participation
27		Mr.	Jóhann Sigurjónsson	johann.sigurjonsson@utn.is	Delegate (Others)	Virtual participation
28	Japan	Prof.	Joji Morishita	jmoris0@kaiyodai.ac.jp	Head of Delegation	In-person participation
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Participants List of the Inaugural Meeting of the Conference of the Parties (COP) to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

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**Second Meeting of the Provisional Scientific Coordinating Group under the
Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic
Ocean
Virtual Meeting
March 1-3, 2022**

Chair's Statement¹

Introduction

Delegations from Canada, the People's Republic of China, the Kingdom of Denmark in respect of the Faroe Islands and Greenland, the European Union, Iceland, Japan, the Republic of Korea, the Kingdom of Norway, and the United States of America met virtually March 1-3, 2022, for the second meeting of the Provisional Scientific Coordinating Group (PSCG) to continue discussions and progress to ensure the Parties can meet the milestones in Article 4 of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* ("the Agreement") related to the Joint Program of Scientific Research and Monitoring (JPSRM). Although invited, the Russian Federation did not send any delegates to the meeting. Representatives of the International Council for the Exploration of the Sea (ICES), the North Pacific Marine Science Organization (PICES), and the Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group also attended the first two days of the meeting.

The meeting followed the 1st PSCG meeting of February 11-13, 2020, in Ispra, Italy and the June 15-16, 2021, virtual Preparatory Conference of the Signatories to the Agreement.

The PSCG made good progress in discussing the steps necessary to establish the JPSRM and data sharing protocol by June 25, 2023 per the Agreement. The PSCG also developed recommendations for the Conference of the Parties (COP) to consider and approve to allow this work to occur. Progress was also made on outstanding text in the Rules of Procedure (RoP), but further work is needed.

¹ This Chair's Statement attempts to capture the basic elements of the meeting but does not necessarily reflect the views of any individual delegation.

Establishing the Joint Program of Scientific Research and Monitoring

The delegates agreed that the JPSRM is a science plan, and the science plan and the associated implementation strategies are what must be established by the June 2023 deadline contained in Article 4 of the Agreement. Some delegates recommended that the JPSRM needs to include joint objectives and not just be a collection of national programs. Other delegates stressed the importance of including the work of the national programs in surrounding ecosystems given that few countries are currently sending expeditions to the Agreement Area. The United States presented a proposal regarding the scientific questions identified in the reports from the meetings between 2011 and 2017 of Scientific Experts on Fish Stocks in the Central Arctic Ocean (otherwise known as FiSCAO) prior to the signing of the Agreement. The proposal included a summary of the process the United States used to engage with the Inuit Circumpolar Council Alaska (ICC AK) since summer 2021 to incorporate Indigenous Knowledge in the questions to be answered through implementation of the JPSRM. The United States presented a proposed list of the key questions identified during the previous FiSCAO meetings and that also incorporated new or updated questions. Following this introduction, the delegates broke into five breakout groups to discuss the proposed list of key JPSRM questions and answer the following discussion questions:

- Are the four main questions identified during previous science meetings still relevant?
- Are additional science and Indigenous knowledge data/parameters needed? If yes, what are they?
- What process do we use to answer the questions in time to meet the Agreement deadlines?

In plenary, the groups reviewed the main discussion points. Some common themes that emerged included: the original FiSCAO questions are relevant but there is a need to consider the recent rapid rate of change occurring in the region; a need to create categories of questions to answer as some were more basic research-type questions while others were more qualitative- or operational-type questions; the need to prioritize the questions specific to the objectives of the Agreement; the need to leverage existing resources and programs already working to answer some of these questions; and, ensuring Indigenous Knowledge and local knowledge are taken into account in developing the questions and programs that will answer the questions. Finally, the delegates agreed to propose to the COP to establish a working group to commence immediately and operate between full PSCG meetings in order to meet the June 2023 deadline.

Development of a Data Sharing Protocol

Following review of the proposal by the United States that was guided by the previous Scientific Experts meetings prior to entry into force of the Agreement, the delegates broke into five breakout groups to discuss the following questions:

- Are the next steps identified during previous science meetings still relevant?
- Are additional data and knowledge sharing protocol requirements needed? If yes, what are they?
- Do we agree that a distributed data management system makes the most sense?
- What are the necessary next steps to finalize a data sharing protocol for approval by the COP?

The groups discussed whether it is best to use a centralized or distributed database. As a compromise among different views, there was support for a hybrid framework that recognized a centralized system for data collected specifically for the JPSRM and a distributed system for relevant, accessible data collected and voluntarily provided by national and multinational programs. There was also discussion about the differences between how scientific data and Indigenous Knowledge are collected, compiled, managed, shared, and archived and that this needs to be a consideration in the data sharing protocol. Finally, the delegates agreed to propose to the COP to establish a data sharing protocol working group to commence immediately and operate between full PSCG meetings in order to meet the June 2023 deadline.

Rules of Procedure

Ms. Nadia Bouffard, provisional Chair of the COP, shared initial remarks and direction to the PSCG delegates to guide their discussion of the PSCG RoPs. Ms. Bouffard noted the current schedule for completing the COP RoPs and noted that additional changes to the PSCG RoPs would be needed once outstanding issues within the COP RoPs are resolved. She suggested aligning the PSCG RoPs as much as possible with the COP RoPs, and she will suggest that the COP not approve the PSCG RoPs until it approves the COP RoPs.

The PSCG delegates reviewed the entire RoP document and inserted edits throughout the document. The meeting participants did not reach agreement on previously bracketed text. Given the ongoing discussions within the COP RoP drafting team regarding observers, the PSCG Chair recommended skipping discussion of certain sections of the PSCG RoP document related to the observer issue.

Recommendations to the Conference of the Parties and Next Steps

The PSCG meeting delegates discussed several recommendations for the COP as next steps towards establishing the JPSRM and associated data sharing protocol. The recommendations and requests include immediate needs and longer term requests:

Immediate Needs Requests

1. Call for the COP to establish a PSCG Mapping and Monitoring Working Group (MM-WG) to develop the mapping and monitoring plans for the JPSRM to achieve its aim, for approval by the PSCG, building on the draft plans from the 4th and 5th FiSCAO meetings and based on the 1st and this 2nd PSCG meeting discussions.
2. Call for the COP to establish a PSCG Data Sharing Protocol Working Group (DSP-WG) to develop an agreement on a data management policy and sharing protocols as part of the

JPSRM, for approval by the PSCG, building on the draft plan from the 5th FiSCAO meeting and based on the discussions from this 2nd PSCG meeting;

3. Request that the Parties call for a Fall 2022 PSCG meeting to:
 - a. Finalize the JPSRM mapping requirements and monitoring program drafted by the MM-WG; and
 - b. Finalize an agreement on a data management policy and sharing protocols drafted by the DSP-WG.

Longer Term Requests

1. Request that the Parties develop the Terms of Reference and other procedures for the function of the joint scientific meetings in accordance with Article 4 paragraph 6 of the Agreement, building on the Terms of Reference and the work of the PSCG, particularly to finalize the JPSRM and develop implementation plans for the JPSRM.
2. Request that the Parties call for a Spring 2023 PSCG/succeeding body meeting to:
 - a. Finalize cost and infrastructure (e.g., vessels) sharing program requirement to implement the JPSRM under multiple funding scenarios as outcomes from the Fall 2022 PSCG meeting; and
 - b. Focus on prioritizing key indicators of ecosystem change and triggers of productivity that lead to requirements for exploratory fishing.
3. Request that the Parties discuss exploratory fishing at their November 2022 COP meeting to provide guidance and identify issues for the PSCG to consider when taking up this topic at the proposed Spring 2023 PSCG/succeeding body meeting.
4. Recommend that the Parties identify resources and infrastructure to implement the JPSRM when it is approved; and in the meantime, support extensions of existing monitoring programs into the CAO and the Atlantic and Pacific Gateways to collect baseline mapping information.

The PSCG delegates agreed that receiving immediate approval to establish the MM-WG and DSP-WG and to convene meetings in Fall 2022 and Spring 2023 is critical to meeting the milestones in Article 4 of the Agreement.

The Chair agreed to circulate a draft of this Chair's Statement as soon as possible following the conclusion of the meeting for review by PSCG delegates and to circulate a draft report in time for the COP to consider it either at their upcoming April 28, 2022, COP RoP drafting meeting or as soon thereafter as the COP is able to discuss the report and associated recommendations and requests.

The Chair asked delegations to notify her of any delegations willing to host the Fall 2022 and Spring 2023 PSCG meetings.

Delegations thanked the Chair for her efforts and the United States for the proposals and documents shared in advance of the meeting.

Provisional Scientific Coordinating Group proposal to the Conference of Parties to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

March 2022

At the March 1-3, 2022 Provisional Scientific Coordinating Group (PSCG) meeting, delegates agreed upon seven recommendations for the COP as next steps towards establishing the Joint Program of Scientific Research and Monitoring (JPSRM) and associated data sharing protocol as established in the Agreement. The PSCG presents both immediate needs and longer-term requests in this proposal with a timeline required to meet the deadlines associated with development of the PSCG.

1. **Establish a PSCG Mapping and Monitoring Working Group (MM-WG)** to develop the mapping and monitoring plans for the JPSRM to achieve its aim, for approval by the PSCG, building on the draft plans from the 4th and 5th FiSCAO meetings and the 1st PSCG meeting and based on the questions and discussions from the 2nd PSCG meeting with the following Terms of Reference:
 - a. The MM-WG will consist of multiple representatives from each Party with expertise, including scientific, Indigenous and Local Knowledge, as well as appropriate external experts, of ecosystem components of the JPSRM (e.g. fish, marine mammals, oceanography, ecosystem production, birds, lower trophic level species).
 - b. The MM-WG will meet on a timeline determined by the working group with draft plans available for review and discussion at the Fall 2022 PSCG.
 - c. The MM-WG may form smaller teams to meet separately with similar objectives and products to contribute to the overall draft plans.
 - d. The MM-WG will focus efforts on scientific, Indigenous and Local Knowledge activities concerned with
 - i. Mapping requirements in the CAO, Atlantic, and Pacific gateways.
 - ii. Monitoring requirements consistent with Article 4 of the Agreement.
 - iii. Data collection (e.g. gear type) and data format standardization.
 - iv. Prioritization of mapping and monitoring parameters as well as spatial and temporal sampling scales.
2. **Establish a PSCG Data Sharing Protocol Working Group (DSP-WG)** of Party representatives and appropriate external experts to develop an agreement on a data management policy and sharing protocols as part of the JPSRM, for approval by the PSCG, building on the draft plan from the 5th FiSCAO meeting and informed by the discussions during the 2nd PSCG meeting with the following Terms of Reference:

- a. The DSP-WG will consist of no more than two representatives from each Party including a technical expert, and no more than two representatives from any one external group, as appropriate.
 - b. The DSP-WG will meet on a timeline determined by the working group with a data management policy and sharing protocols plan available for review and discussion at the Fall 2022 PSCG.
 - c. The DSP-WG will meet in two phases to 1) identify the framework and specific policy components to be developed and 2) identify appropriate technical requirements.
 - i. The DSP-WG will draft a hybrid framework that recognizes
 - ii. a centralized data management system collected specifically for the JPSRM and
 - iii. a distributed data management system for relevant accessible data collected in the JPSRM area.
 - d. The DSP-WG will consider other international data management policies and sharing protocols to benefit from state-of-the-art agreements already in use.
- 3. Develop the Terms of Reference and other procedures for the function of the joint scientific meetings** in accordance with Article 4 paragraph 6 of the Agreement, building on the ToR and the work of the PSCG, particularly to finalize the JPSRM and develop implementation plans for the JPSRM.
- 4. Call for a Fall 2022 PSCG meeting to**
- a. Finalize the JPSRM mapping requirements and monitoring program drafted by the MMWGs.
 - b. Finalize an agreement on a data management policy and sharing protocols drafted by the DSP-WG.
- 5. Call for a Spring 2023 PSCG/succeeding body meeting to**
- a. Finalize cost and infrastructure (e.g. vessels) sharing program requirement to implement the JPSRM under multiple funding scenarios as outcomes from the Fall 2022 PSCG.
 - b. Focus on prioritizing key indicators of ecosystem change and triggers of productivity that lead to requirements for exploratory fishing.
- 6. Discuss exploratory fishing at the November 2022 COP meeting** to provide guidance and identify issues for the PSCG to consider when taking up this topic at the proposed spring 2023 PSCG/succeeding body meeting.
- 7. Identify resources and infrastructure to implement the JPSRM** when it is approved; and in the meantime, support extensions of existing monitoring programs into the CAO and the Atlantic and Pacific Gateways to collect baseline mapping information.

Recommended timeline required to meet initial Agreement deadlines by June 2023

- May 2022: COP approves requests #1-4.
- May-October 2022: PSCG working groups (MM-WG and DSP-WG) meet regularly to draft JPSRM and sharing protocol documents.
- October 2022: Fall 2022 PSCG meeting
- November 2022: COP approves or acts upon requests #5-7.
- November-April 2022: PSCG working groups (MM-WG and DSP-WG) meet regularly to draft proposed cost and infrastructure requirements to implement the JPSRM.
- April 2023: Spring 2023 PSCG (or succeeding body) meeting
- June 2023: COP approves JPSRM and associated data sharing protocol.

MEETING DOCUMENT: CAOFA-2022-COP1-08

**Report of the Second Meeting of the
Provisional Scientific Coordinating Group
under the Agreement to Prevent Unregulated
High Seas Fisheries in the Central Arctic
Ocean**

1-3 March 2022

Convened Virtually

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List of Acronyms and Abbreviations

CAO:	Central Arctic Ocean
COP:	Conference of the Parties
DOI:	Digital Object Identifier
EU:	European Union
FISCAO:	Scientific Experts on Fish Stocks in the Central Arctic Ocean
ICC AK:	Inuit Circumpolar Council Alaska
ICES:	International Council for the Exploration of the Sea
JPSRM:	Joint Program of Scientific Research and Monitoring
NOAA:	National Oceanic and Atmospheric Administration
PAME:	Protection of the Arctic Marine Environment
PICES:	North Pacific Marine Science Organization
PSCG:	Provisional Scientific Coordinating Group
ToRs:	Terms of Reference

Executive Summary

Delegations from Canada, the People’s Republic of China, the Kingdom of Denmark in respect of the Faroe Islands and Greenland, the European Union (EU), Iceland, Japan, the Republic of Korea, the Kingdom of Norway, and the United States of America met virtually March 1-3, 2022, for the second meeting of the Provisional Scientific Coordinating Group (PSCG) to continue discussions and progress to ensure the Parties can meet the milestones in Article 4 of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* (“the Agreement”) related to the Joint Program of Scientific Research and Monitoring (JPSRM). The meeting was hosted by the United States. Although invited, the Russian Federation did not send any delegates to the meeting. Representatives of the International Council for the Exploration of the Sea (ICES), the North Pacific Marine Science Organization (PICES), and the Arctic Council’s Protection of the Arctic Marine Environment (PAME) Working Group also attended the first two days of the meeting. Ms. Candace Nachman (United States) served as the provisional Chair for the meeting.

The topics of discussion at the second PSCG meeting included: what is the JPSRM; the questions to be answered through implementation of the JPSRM; development of a data sharing protocol for the JPSRM; a review of the latest draft PSCG rules of procedure; and development of requests and recommendations to the COP.

The meeting delegates agreed that the JPSRM is a science plan, and the science plan and associated implementation strategies are what must be established by the June 2023 deadline. This led to discussion among the delegates about what efforts would constitute the JPSRM. Some delegates recommended that the JPSRM needs to include joint objectives and not just be a collection of national programs. Other delegates stressed the importance of including the work of the national programs in surrounding ecosystems given that few countries are currently sending expeditions to the Agreement Area. There was also a suggestion to employ a holistic, ecosystem approach and to consider objectives beyond fish abundance, such as the impacts of climate change on the entire food web, including Indigenous communities and local communities, and other activities occurring in the Arctic, such as vessel traffic and commercial fishing.

The United States presented a proposal regarding the scientific questions identified in the reports from the meetings between 2011 and 2017 of Scientific Experts on Fish Stocks in the Central Arctic Ocean (FiSCAO) prior to the signing of the Agreement. The proposal included a summary of the process the United States used to engage with the Inuit Circumpolar Council Alaska (ICC AK) since summer 2021 to incorporate Indigenous Knowledge in the questions to be answered through implementation of the JPSRM. The United States shared the questions and updates or additions made following the engagements with ICC AK.

The delegates broke into five groups to discuss the proposed list of key JPSRM questions and to answer the following discussion questions (although breakout group participants were not limited to only answering these questions):

- Are the four main questions identified during previous science meetings still relevant?
- Are additional science and Indigenous knowledge data/parameters needed? If yes, what are they?

- What process do we use to answer the questions in time to meet the Agreement deadlines?

In plenary, the groups reviewed the main discussion points from the breakout groups. Some common themes that emerged included: the original FiSCAO questions continue to be relevant, and there is not a lot of desire for major revisions, but there is a need to consider the recent rapid rate of change occurring in the region; a need to create categories of priority questions to answer as some were more basic research-type questions while others were more qualitative- or operational-type questions; the need to prioritize the questions specific to the objectives of the Agreement; the need to leverage existing resources and programs already working to answer some of these questions; and, to ensure Indigenous Knowledge and local knowledge are taken into account in developing the questions and programs that will answer these questions. Regarding the last theme, one breakout group suggested creating a glossary of terms and a common understanding of definitions. Regarding process and next steps, many delegates agreed that the work could not be accomplished by only meeting once every one to two years. There was general agreement to propose to the COP establishing a working group that would focus on finalizing the mapping and monitoring components of the JPSRM.

The United States presented a proposal shared with meeting participants ahead of time regarding the data sharing protocol. The report of the fifth FiSCAO meeting held in 2017 contained a proposed data policy for consideration with recommendations for how to develop data sharing protocols. Coordinated multi-national mapping and monitoring programs will require the establishment of an agreement on a data management policy and protocols that permit the sharing of monitoring and research data related to the JPSRM. This policy could be modeled after a number of other international data management policies.

The delegates broke into five breakout groups to discuss the following questions (although breakout group participants were not limited to only answering these questions):

- Are the next steps identified during previous science meetings still relevant?
- Are additional data and knowledge sharing protocol requirements needed? If yes, what are they?
- Do we agree that a distributed management system makes the most sense?
- What are the necessary steps to finalize a data sharing protocol for approval by the COP?

In plenary, the groups reviewed the main discussion points from the breakout groups. There was robust discussion within the breakout groups about whether it is best to use a centralized or distributed database. Many of the groups noted the pros and cons of both approaches. Several participants noted the importance of including data in the database that is relevant to answering the questions identified in the JPSRM. As a compromise among different views, there was general support for a hybrid framework that recognized a centralized system for data collected specifically in response to the JPSRM and a distributed system for relevant, accessible data collected and voluntarily provided by national and multinational programs.

Many participants also noted the existence of numerous Arctic databases already, so it is important not to recreate or start from scratch when other efforts can be leveraged. A few other issues noted about what type of database to create included: the difference between hosting data and sharing data (what is public versus private among the Parties), version control of data if data are duplicated between a centralized database and distributed national or organizational databases, the fact that different types

of data have different data storage needs, and that data sovereignty could be a limiting factor for distributed systems.

There was also discussion about how scientific data and Indigenous Knowledge are collected, compiled, accessed, managed, shared, and archived and that this needs to be a consideration in the data sharing protocol. ICC representatives shared examples of existing data sharing and management practices when working with Indigenous Knowledge, and these should be examined when developing the JPSRM data sharing protocol. The issue of confidentiality needs to be considered when discussing how to share and disseminate Indigenous Knowledge data, not just science data.

Regarding the next steps and how to move forward, there was general agreement that the PSCG should propose to the COP to establish a data sharing protocol working group to commence immediately and operate between full PSCG meetings in order to meet the June 2023 deadline.

Ms. Nadia Bouffard, provisional Chair of the COP, shared initial remarks and direction to the PSCG delegates to guide their discussion of the PSCG rules of procedure. Ms. Bouffard noted the current schedule for completing the COP rules of procedure and noted that additional changes to the PSCG rules of procedure would be needed once some outstanding issues with the COP rules are resolved. She suggested aligning the PSCG rules as much as possible with the COP rules. Ms. Bouffard also said she would suggest to the COP not to approve the PSCG rules of procedure until the body approves the COP rules of procedure.

The PSCG delegates reviewed the entire rules of procedure document and inserted edits throughout the document. The meeting participants did not reach agreement on previously bracketed text. Given the ongoing discussions within the COP rules of procedure drafting team regarding observers, the PSCG Chair recommended skipping discussion of certain sections of the PSCG rules of procedure document related to the invitation of observers.

The PSCG meeting delegates discussed several recommendations for the COP as next steps towards establishing the JPSRM and associated data sharing protocol. The recommendations and requests formulated by the delegates included both immediate needs and longer-term requests. Meeting delegates agreed that the COP should approve the recommendations contained in the immediate needs section at a spring virtual meeting of the COP to allow the working groups to get underway as soon as possible in order to meet the June 2023 deadlines with a request for the COP to approve or act upon the longer-term requests at the November 2022 in-person COP meeting.

1. Introduction

Delegations from Canada, the People’s Republic of China, the Kingdom of Denmark in respect of the Faroe Islands and Greenland, the European Union (EU), Iceland, Japan, the Republic of Korea, the Kingdom of Norway, and the United States of America met virtually March 1-3, 2022, for the second meeting of the Provisional Scientific Coordinating Group (PSCG) to continue discussions and progress to ensure the Parties can meet the milestones in Article 4 of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* (“the Agreement”) related to the Joint Program of Scientific Research and Monitoring (JPSRM). The meeting was hosted by the United States. Although invited, the Russian Federation did not send any delegates to the meeting. Representatives of the International Council for the Exploration of the Sea (ICES), the North Pacific Marine Science Organization (PICES), and the Arctic Council’s Protection of the Arctic Marine Environment (PAME) Working Group also attended the first two days of the meeting. Ms. Candace Nachman (United States) served as the provisional Chair for the meeting.

The meeting followed the first PSCG meeting of February 11-13, 2020, hosted by the EU in Ispra, Italy and the June 15-16, 2021, virtual Preparatory Conference of the Signatories to the Agreement.

The meeting opened with welcoming remarks from Dr. Kelly Kryc, U.S. National Oceanic and Atmospheric Administration (NOAA) Deputy Assistant Secretary for International Fisheries and NOAA Arctic Lead, Dr. Cisco Werner, NOAA National Marine Fisheries Service Chief Science Advisor & Director of Scientific Programs, and Ms. Nadia Bouffard, Provisional Chair of the Conference of the Parties (COP). All three stressed the importance of the science to inform future decisions by the COP regarding potential future sustainable fisheries in the High Seas portion of the Central Arctic Ocean (CAO) and the short timeframe in which to complete the work outlined in Article 4 of the Agreement.

The provisional PSCG meeting Chair (“Chair”) reviewed the milestones contained in Article 4 of the Agreement. In accordance with Article 11 of the Agreement, the Agreement entered into force on June 25, 2021, 30 days after ratification of the Agreement by all 10 Signatories. Article 4 states the Parties agree to establish, within two years of the entry into force of the Agreement, a JPSRM with the aim of improving the understanding of the ecosystems of the Agreement Area and, in particular, of determining whether fish stocks might exist in the Agreement Area now or in the future that could be harvested on a sustainable basis and the possible impacts of such fisheries on the ecosystem in the Agreement Area. Additionally, Article 4 requires the adoption of a data sharing protocol as part of the JPSRM within two years of entry into force of the Agreement. Therefore, the Parties need to establish both the JPSRM and finalize the associated data sharing protocol by June 25, 2023.

The topics of discussion at the second PSCG meeting included: what is the JPSRM; the questions to be answered through implementation of the JPSRM; development of a data sharing protocol for the JPSRM; a review of the latest draft PSCG rules of procedure; and development of requests and recommendations to the COP.

This report summarizes the discussions and decisions of the second PSCG meeting in relation to the agenda (Annex 1). A full list of meeting attendees is available in Annex 2.

2. Establishing the Joint Program of Scientific Research and Monitoring

The Chair opened this agenda item by ensuring there is common understanding about what the JPSRM is and what must be established within two years of entry into force of the Agreement per Article 4 paragraph 2. The meeting delegates agreed that the JPSRM is a science plan, and the science plan and associated implementation strategies are what must be established by the June 2023 deadline.

This led to discussion among the delegates about what efforts would constitute the JPSRM. Some delegates recommended that the JPSRM needs to include joint objectives and not just be a collection of national programs. Other delegates stressed the importance of including the work of the national programs in surrounding ecosystems given that few countries are currently sending expeditions to the Agreement Area. Delegates also noted the necessary connections between national programs and joint programs set up specifically to respond to the objectives of the Agreement and the opportunity that exists to identify gaps in national programs and to fill those gaps with the JPSRM. Delegates also noted the need for use of platforms for national programs to contribute to the JPSRM. One delegation also noted that it would be helpful to include guiding principles and mechanisms in the JPSRM so that it can allow for synergistic efforts and also help with funding decisions.

There was also a suggestion to employ a holistic, ecosystem approach and to consider objectives beyond fish abundance, such as the impacts of climate change on the entire food web, including Indigenous communities and local communities, and other activities occurring in the Arctic, such as vessel traffic and commercial fishing. Some delegates also shared views about considering the impacts of commercial fishing and other human activities on Indigenous communities and local communities.

The United States presented a proposal regarding the scientific questions identified in the reports from the meetings between 2011 and 2017 of Scientific Experts on Fish Stocks in the Central Arctic Ocean (FiSCAO) prior to the signing of the Agreement. The proposal included a summary of the process the United States used to engage with the Inuit Circumpolar Council Alaska (ICC AK) since summer 2021 to incorporate Indigenous Knowledge in the questions to be answered through implementation of the JPSRM. The United States stated the goal of the engagement with ICC AK and the discussions at this meeting are to ensure all delegates agree we are asking the right questions (i.e., are there any gaps) and that we ensure the questions include perspectives of all knowledge systems. A lot has changed in the Arctic since the questions were first developed in the mid-2010s, and Indigenous Knowledge was not included in many of those earlier FiSCAO meetings. Therefore, the United States worked directly with ICC AK to identify gaps in the original questions. The United States proposal regarding next steps towards establishing the JPSRM presented at the meeting is included in this report as Annex 3.

The United States shared the questions and updates or additions made following the engagements with ICC AK. Changes made by the United States from how questions appeared in previous FiSCAO reports are noted in bold text below. The questions are:

1. What are the distributions of species with a potential for future commercial harvests in the Central Arctic Ocean?
 - a. What fish species are currently present in the high seas?
 - b. Do fishable concentrations of commercial species exist in the high seas?

- c. What are their distributions and abundance patterns?
- d. What are their local life-history strategies, habitat associations, and demographic patterns?
- e. Do these strategies, associations, or patterns differ among regions of the Arctic?
2. What other information is needed to provide advice necessary for future sustainable harvests of commercial fish stocks and maintenance of dependent ecosystem components?
 - a. What are the trophic linkages among fishes and between fishes and other taxonomic groups (i.e., quantify food webs **identifying keystone forage species**)?
 - b. How do fish species abundances and distributions vary as a function of climate variability, **including declining sea ice and biogeochemical changes**?
 - c. Can the species be harvested sustainably with respect to both target fish stocks and dependent parts of the ecosystem? If not, what are the prospects for the development of fisheries in the future?
3. What are the likely key ecological linkages between potentially harvestable fish stocks of the central Arctic Ocean and the adjacent shelf ecosystems, **including Indigenous communities**?
 - a. What are the connections between fish in the High Seas and those in the adjacent regions?
 - b. What are the mechanisms that establish and maintain these linkages?
 - c. How might fisheries in the High Seas affect adjacent and congruent portions of the shelf ecosystems, including fish stocks, fishable invertebrates (crabs, shrimp, mollusks), marine mammals, birds, and fisheries-dependent communities (which include those communities that are dependent on subsistence harvests of fish, invertebrates, and mammals)?
 - d. **What is the potential for bycatch (marine mammals, seabirds, and keystone fish species) under different types of commercial fishing gear, and how will this be monitored?**
4. Over the next 10-30 years, what changes in fish populations, dependent species and the supporting ecosystems may occur in the central Arctic Ocean and the adjacent shelf ecosystems?
 - a. Who are the winners and losers in the next 10-30 years?
 - b. What changes in production and key linkages are expected in the coming 10-30 years?
 - c. What northward population expansions are expected in the next 10-30 years?
 - d. What are the anticipated impacts of changes in ocean acidification in the next 10-30 years?
 - e. **How will increased human activity in the region, including ship noise, industrial noise, and pollution, affect fish populations and ecosystem health in the next 10-30 years?**
 - f. **How will increased fishing activity affect migratory and wide-ranging marine mammals and the Indigenous and local communities that depend upon these species to sustain their ways of living?**
5. **How can Traditional Ecological Knowledge inform ecological baselines?**

Although question 5 was a new addition in the proposal shared with delegates ahead of the meeting, the United States offered an even newer version of question 5 during the presentation of the proposal. The updated language for question 5 as shared during the meeting read as follows: “**How will the**

monitoring process be set up and what types of data be collected to ensure that Indigenous observations and monitoring systems are supported in establishing the baseline data?”

The United States closed its presentation with a set of proposed future milestones and schedule for the PSCG:

- Spring 2022 PSCG (i.e., this second PSCG meeting)
 - Review scientific questions and add Indigenous Knowledge
- Fall 2022 PSCG meeting (Proposed)
 - With agreement on the guiding questions at this meeting, it is proposed that a fall 2022 meeting focus on finalizing the JPSRM 1-3 year mapping requirements in the CAO and Atlantic and Pacific gateways and a concurrent monitoring program.
 - The JPSRM would consider multiple tiers for priority mapping and monitoring to recognize the likelihood for inconsistent resources (vessels and funding).
 - Finalize an agreement on a data management policy and protocols that permit the sharing of monitoring and research data from the JPSRM.
- Spring 2023 PSCG meeting (Proposed)
 - Finalize cost and infrastructure (e.g., vessels) sharing program requirements to implement the JPSRM under multiple funding scenarios as outcomes from the Fall 2022 PSCG meeting.
 - Focus on prioritizing key indicators of ecosystem change and triggers of productivity that lead to requirements for exploratory fishing.

Following the presentation of the United States’ proposal, the delegates asked clarifying questions and shared some initial reactions and feedback. Some delegations expressed concern of going back to the beginning if we do not utilize the work that occurred at the FiSCAO meetings and the first PSCG meeting. There was general agreement not to start from scratch but to revisit these questions based on changes in the region and to ensure all knowledge systems are included in the development of the questions that will guide implementation of the JPSRM. One delegate also commented on the need to also include local knowledge, not just Indigenous Knowledge, in order to be consistent with the Agreement, which calls for the inclusion of Indigenous and local knowledge (Article 4 paragraph 4).

There was also some discussion around the two different proposed wordings for the new question 5 in the United States proposal and the altered version shared in the oral presentation. The United States updated the language in this question to focus on how to take monitoring processes and identify types of data to ensure that Indigenous data are supported and established as part of the baseline. Some delegates noted that the question was not a research question but rather a question related to implementation. Several delegations pointed out that the research questions should focus on what needs to be known instead of how to achieve this knowledge (i.e., methodology).

The delegates also asked questions and shared initial reactions to the new question 3d about bycatch. Some delegates felt it was not appropriate to include bycatch in a research question because it is a management issue not a scientific research issue. The United States explained the rationale for including this question in the proposal, indicating that their understanding related to bycatch is in the context of monitoring bycatch and how the ecosystem is monitored. Another delegation followed up indicating the need for the JPSRM to identify linkage of species, possible impacts of fishing to harvest species, and

potential impacts for other species (bycatch) into the surveys. One delegate shared a link to a United Nations Food and Agriculture Organization report titled “*Ecosystem approach to fisheries implementation monitoring tool*” (<https://www.fao.org/publications/card/en/c/CB3669EN/>) as a useful reference for discussions of the PSCG that provides a framework for ecosystem-based fisheries management.

The delegates broke into five groups to discuss the proposed list of key JPSRM questions and to answer the following discussion questions (although breakout group participants were not limited to only answering these questions):

- Are the four main questions identified during previous science meetings still relevant?
- Are additional science and Indigenous knowledge data/parameters needed? If yes, what are they?
- What process do we use to answer the questions in time to meet the Agreement deadlines?

In plenary, the groups reviewed the main discussion points from the breakout groups. Some common themes that emerged included: the original FiSCAO questions continue to be relevant, and there is not a lot of desire for major revisions, but there is a need to consider the recent rapid rate of change occurring in the region; a need to create categories of priority questions to answer as some were more basic research-type questions while others were more qualitative- or operational-type questions; the need to prioritize the questions specific to the objectives of the Agreement; the need to leverage existing resources and programs already working to answer some of these questions; and, to ensure Indigenous Knowledge and local knowledge are taken into account in developing the questions and programs that will answer these questions. Regarding the last theme, one breakout group suggested creating a glossary of terms and a common understanding of definitions. However, there is a lot of existing literature regarding definitions of Indigenous Knowledge and that information should be brought forward to the COP to help guide decision-making. Participants in the breakout groups also suggested wording changes to many of the overarching and sub-questions presented in the United States’ proposal.

The PSCG noted it would not be possible to come to agreement in this meeting on changes to the questions based on the robust discussions and diverse viewpoints shared during both the breakout group sessions and the plenary discussions. Those updates would be made during the intersessional period and would be revisited at the next PSCG meeting. Several participants noted that updates and changes to questions are a natural part of the process, but there is a need to finalize the questions in order to establish the JPSRM and to begin moving forward with implementation of the program.

Several participants also made suggestions about looking to existing efforts such as the ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment for the CAO to help guide establishment and implementation of the JPSRM. While the earlier FiSCAO meetings and the first PSCG meeting produced spreadsheets of current and planned expeditions, monitoring programs, and available vessels, there needs to be a way to keep that information current. One participant suggested a new cataloging exercise to identify existing groups with which the PSCG could collaborate.

Regarding process and next steps, many delegates agreed that the work could not be accomplished by only meeting once every one to two years. There was general agreement to propose to the COP establishing a working group that would focus on finalizing the mapping and monitoring components of

the JPSRM. Several delegates noted the importance to ensure issues and topics do not become siloed; however, given the many areas to be covered by the mapping and monitoring phases of the JPSRM and the different types of gear, etc. that would be needed, the group agreed that establishing sub-groups within the working group would be appropriate as an efficient way to manage the work. There was also discussion in plenary about ensuring Indigenous Knowledge and local knowledge are included in all topic areas of the working group and not solely discussed and considered in only one sub-group focused specifically on Indigenous Knowledge and local knowledge. The Chair reminded meeting participants that the draft PSCG rules of procedure allow for the establishment of working groups, to include external experts, including scientists, Indigenous Knowledge holders, and local knowledge holders not present at a PSCG meeting. The Chair noted it would be worth making a recommendation to the COP regarding a working group for the mapping and monitoring effort that is inclusive of external experts. The United States agreed to prepare draft Terms of Reference (ToRs) for such a working group to discuss later in the meeting.

3. Development of a Data Sharing Protocol for the JPSRM

The Chair opened this agenda item by reminding participants of the June 2023 deadline contained in Article 4 paragraph 5, which states that as part of the JPSRM, “the Parties shall adopt, within two years on the entry into force of this Agreement, a data sharing protocol and shall share relevant data, directly or through relevant scientific and technical organizations, bodies and programs, in accordance with that protocol.” The United States presented a proposal shared with meeting participants ahead of time (see Annex 3) regarding the data sharing protocol. The report of the fifth FiSCAO meeting held in 2017 contained a proposed data policy for consideration¹ with recommendations for how to develop data sharing protocols. The United States’ proposal builds from the report of the fifth FiSCAO meeting, which included an elaboration of next steps for the PSCG to consider for the development of a data sharing protocol for the JPSRM.

Coordinated multi-national mapping and monitoring programs will require the establishment of an agreement on a data management policy and protocols that permit the sharing of monitoring and research data related to the JPSRM. This policy could be modeled after a number of other international data management policies. Those early efforts identified current datasets and future data sources that could support the PSCG (see Appendix II of Annex 3 to this report). The United States stated one of the goals of this protocol is to combine international and Indigenous Knowledge data policies, possibly for the first time, into such a protocol document.

Some of the initial decisions points the United States noted during their presentation related to a data sharing protocol include:

- Establishing a centralized versus distributed data management system. A distributed system was encouraged during the FiSCAO meetings so that each Party to the Agreement would be responsible for the storage and maintenance of the data it collects, while software would provide search and query capabilities across the individual databases.
- Identifying levels of data sharing to separate publicly available data from protected data.
- Establishing protocols for sharing and archiving Indigenous Knowledge and observations.
- Developing a shared archive after data analysis and publication.

The United States shared some proposed next steps for the development of the data sharing protocol. These included the need to identify:

- Options for data archiving and data management of the JPSRM data after discussing data policies, a data sharing framework, and data management options with other international organizations.
- Protocols for archiving and management of Indigenous Knowledge and observations collected through the mapping and monitoring efforts.
- An existing organization to help data providers develop digital object identifiers (DOIs) if their institutional or national data archive cannot provide the service.

¹ See Appendix C in the 2018 Final Fifth FiSCAO report available online at: [Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean \(noaa.gov\)](https://www.noaa.gov/sites/default/files/2018-08/2018-Final-Fifth-FiSCAO-Report.pdf).

- A data-hosting source accessed through a website and develop sharing protocols to test sharing of the fish observation dataset developed during the fourth FiSCAO meeting and the inventory of monitoring programs in the High Seas portion of the CAO and adjacent waters.

The United States concluded their presentation by proposing the establishment of a working group to draft agreement on a data management policy and protocols that permit the sharing of monitoring and research data from the JPSRM for review at a fall 2022 PSCG meeting. Before dividing into smaller breakout groups for discussion, a couple of delegations shared some initial reactions and feedback. One delegation reminded participants that the recommendations from the fifth FiSCAO meeting were made before the Agreement was signed and entered into force, and that it may be more appropriate to consider a centralized database given the language in Article 4 of the Agreement regarding the JPSRM. Another delegation noted the short amount of time left to develop the data sharing protocol and that perhaps a centralized database would save time to allow the PSCG to meet the deadline².

The delegates broke into five breakout groups to discuss the following questions (although breakout group participants were not limited to only answering these questions):

- Are the next steps identified during previous science meetings still relevant?
- Are additional data and knowledge sharing protocol requirements needed? If yes, what are they?
- Do we agree that a distributed management system makes the most sense?
- What are the necessary steps to finalize a data sharing protocol for approval by the COP?

In plenary, the groups reviewed the main discussion points from the breakout groups. There was robust discussion within the breakout groups about whether it is best to use a centralized or distributed database. Many of the groups noted the pros and cons of both approaches. Several participants noted the importance of including data in the database that is relevant to answering the questions identified in the JPSRM. As a compromise among different views, there was general support for a hybrid framework that recognized a centralized system for data collected specifically in response to the JPSRM and a distributed system for relevant, accessible data collected and voluntarily provided by national and multinational programs. Several participants also noted the costs that would be associated with establishing and maintaining a centralized database, and this will need to be considered as decisions are made about how to move forward. Some participants also noted the absence of Russia from the discussion and the views they would have about a centralized vs. distributed database.

Many participants also noted the existence of numerous Arctic databases already, so it is important not to recreate or start from scratch when other efforts can be leveraged. A few other issues noted about what type of database to create included: the difference between hosting data and sharing data (what is public versus private among the Parties), version control of data if data are duplicated between a centralized database and distributed national or organizational databases, the fact that different types of data have different data storage needs, and that data sovereignty could be a limiting factor for distributed systems. Finally, one delegation suggested an initial scoping list of issues that could be

² It is important to note that the Agreement only calls for the establishment of a data sharing protocol within two years of entry into force. A database can be established after that date, but it is an important part of the discussion to help guide the development of the protocol.

included in the protocol: data management standards; submission process; access requests/release; and data confidentiality rules.

There was also discussion about how scientific data and Indigenous Knowledge are collected, compiled, accessed, managed, shared, and archived and that this needs to be a consideration in the data sharing protocol. An example was given on how Indigenous Knowledge leads scientific research in the co-management of marine mammal and fish resources, which includes indicators of what is occurring with the species by looking at the stomach content to understand the food web. The requirements for the two types of data and knowledge are not always the same. ICC representatives shared examples of existing data sharing and management practices when working with Indigenous Knowledge, and these should be examined when developing the JPSRM data sharing protocol. The issue of confidentiality needs to be considered when discussing how to share and disseminate Indigenous Knowledge data, not just science data. Some of the Indigenous participants also shared perspectives about ensuring the knowledge and observations they share are not used in a way that will harm their ways of life or cultural practices.

Regarding the next steps and how to move forward, there was general agreement that the PSCG should propose to the COP to establish a data sharing protocol working group to commence immediately and operate between full PSCG meetings in order to meet the June 2023 deadline. The United States agreed to prepare draft ToRs for such a working group to discuss later in the meeting.

4. Rules of Procedure, Recommendations to the Conference of the Parties and Next Steps

The third day of the meeting focused on more administrative matters. The session began with a review and discussion of the PSCG rules of procedure before discussing the recommendations and requests the PSCG would make to the COP at its upcoming virtual meeting on May 31, 2022.

4.1 Review of PSCG Rules of Procedure

The Chair opened this session by noting that there had been many changes made to the PSCG rules of procedure since they were originally drafted at the first PSCG meeting in February 2020. These changes were made in response to the development of the rules of procedure for the COP and to ensure alignment between the two sets of rules of procedure. The purpose for reviewing the PSCG rules of procedure in this meeting was to ensure that none of the changes would in some way limit or stymie the science efforts. The meeting participants then heard some initial remarks and direction to guide the discussion from Ms. Nadia Bouffard, provisional Chair of the COP. Ms. Bouffard noted the current schedule for completing the COP rules of procedure and noted that additional changes to the PSCG rules of procedure would be needed once some outstanding issues with the COP rules are resolved. She suggested aligning the PSCG rules as much as possible with the COP rules. Ms. Bouffard also said she would suggest to the COP not to approve the PSCG rules of procedure until the body approves the COP rules of procedure.

The PSCG delegates reviewed the entire rules of procedure document and inserted edits throughout the document. The meeting participants did not reach agreement on previously bracketed text. Given the ongoing discussions within the COP rules of procedure drafting team regarding observers, the PSCG Chair recommended skipping discussion of certain sections of the PSCG rules of procedure document related to the invitation of observers. Ms. Bouffard noted that the COP rules of procedure drafting group reviewed the confidentiality requirements contained in Appendix I of the rules of procedure document. The group is making changes, but she noted that none of the changes impact the PSCG discussions on the data sharing protocol. She said a change to article 4 in that document would be that the COP, not the PSCG will approve the data sharing protocol.

4.2 Recommendations to the COP

The PSCG meeting delegates discussed several recommendations for the COP as next steps towards establishing the JPSRM and associated data sharing protocol. The recommendations and requests formulated by the delegates included both immediate needs and longer-term requests. Regarding the two requests to establish working groups related to the mapping and monitoring program and the data sharing protocol, the meeting delegates spent time collectively reviewing a proposal prepared by the United States based on the discussions held during the first two days of the meeting. The text contained below reflects the final result of those discussions. Meeting delegates agreed that the COP should approve the recommendations contained in the immediate needs section at a spring virtual meeting of the COP to allow the working groups to get underway as soon as possible in order to meet the June

2023 deadlines with a request for the COP to approve or act upon requests 5-7 below at the November 2022 in-person COP meeting.

4.2.1. Immediate Needs Requests

1. Establish a PSCG Mapping and Monitoring Working Group (MM-WG) to develop the mapping and monitoring plans for the JPSRM to achieve its aim, for approval by the PSCG, building on the draft plans from the 4th and 5th FiSCAO meetings and the 1st PSCG meeting and based on the questions and discussions from the 2nd PSCG meeting with the following Terms of Reference:

a. The MM-WG will consist of multiple representatives from each Party with expertise, including scientific, Indigenous and Local Knowledge, as well as appropriate external experts, of ecosystem components of the JPSRM (e.g. fish, marine mammals, oceanography, ecosystem production, birds, lower trophic level species).

b. The MM-WG will meet on a timeline determined by the working group with draft plans available for review and discussion at the Fall 2022 PSCG.

c. The MM-WG may form smaller teams to meet separately with similar objectives and products to contribute to the overall draft plans.

d. The MM-WG will focus efforts on scientific, Indigenous and Local Knowledge activities concerned with:

i. Mapping requirements in the CAO, Atlantic, and Pacific gateways.

ii. Monitoring requirements consistent with Article 4 of the Agreement.

iii. Data collection (e.g. gear type) and data format standardization.

iv. Prioritization of mapping and monitoring parameters as well as spatial and temporal sampling scales.

2. Establish a PSCG Data Sharing Protocol Working Group (DSP-WG) of Party representatives and appropriate external experts to develop an agreement on a data management policy and sharing protocols as part of the JPSRM, for approval by the PSCG, building on the draft plan from the 5th FiSCAO meeting and informed by the discussions during the 2nd PSCG meeting with the following Terms of Reference:

a. The DSP-WG will consist of no more than two representatives from each Party including a technical expert, and no more than two representatives from any one external group, as appropriate.

b. The DSP-WG will meet on a timeline determined by the working group with a data management policy and sharing protocols plan available for review and discussion at the Fall 2022 PSCG.

c. The DSP-WG will meet in two phases to 1) identify the framework and specific policy components to be developed and 2) identify appropriate technical requirements.

i. The DSP-WG will draft a hybrid framework that recognizes

ii. a centralized data management system collected specifically for the JPSRM and

iii. a distributed data management system for relevant accessible data collected in the JPSRM area.

d. The DSP-WG will consider other international data management policies and sharing protocols to benefit from state-of-the-art agreements already in use.

3. Develop the Terms of Reference and other procedures for the function of the joint scientific meetings in accordance with Article 4 paragraph 6 of the Agreement, building on the ToR and the work of the PSCG, particularly to finalize the JPSRM and develop implementation plans for the JPSRM.

4. Call for a Fall 2022 PSCG meeting to:

- a. Finalize the JPSRM mapping requirements and monitoring program drafted by the MM-WGs.
- b. Finalize an agreement on a data management policy and sharing protocols drafted by the DSP-WG.

4.2.2. Longer Term Requests

5. Call for a Spring 2023 PSCG/succeeding body meeting to:

- a. Finalize cost and infrastructure (e.g. vessels) sharing program requirement to implement the JPSRM under multiple funding scenarios as outcomes from the Fall 2022 PSCG.
- b. Focus on prioritizing key indicators of ecosystem change and triggers of productivity that lead to requirements for exploratory fishing.

6. Discuss exploratory fishing at the November 2022 COP meeting to provide guidance and identify issues for the PSCG to consider when taking up this topic at the proposed spring 2023 PSCG/succeeding body meeting.

7. Identify resources and infrastructure to implement the JPSRM when it is approved; and in the meantime, support extensions of existing monitoring programs into the CAO and the Atlantic and Pacific Gateways to collect baseline mapping information.

4.3 Next Steps

The Chair agreed to prepare a Chair's Statement to briefly summarize the discussions and results of the meeting. A copy of the final statement is attached as Annex 4. At a minimum, a list of recommendations would be prepared and circulated for the COP to consider at either the April 28, 2022, COP rules of procedure drafting team meeting or as soon thereafter as the COP is able to discuss the recommendations and requests coming out of this meeting.

The Chair asked delegations to notify her of any delegations willing to host both a fall 2022 and spring 2023 PSCG meeting.

Delegations thanked the Chair for her efforts and the United States for the proposals and documents shared in advance of the meeting.

Annex 1: Final Meeting Agenda

**Meeting of the Provisional Scientific Coordinating Group under the auspices of the Agreement to Prevent Unregulated High Seas Fisheries of the Central Arctic Ocean
1 March through 3 March 2022**

8:00 AM to 12:00 PM New York Time each day

AGENDA

Meeting Documents (Attached to Distribution Email)

1. Meeting Agenda
2. Draft Rules of Procedure for this meeting
3. United States Proposal for Discussion regarding Next Steps towards establishing the Joint Program of Scientific Research and Monitoring of the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean
4. Provisional Scientific Coordinating Group Rules of Procedure Draft #5
5. Draft Confidentiality Text for Inclusion in the Conference of the Parties Rules of Procedure

Tuesday, 1 March 2022

- 8:00-8:30 Welcomes, Housekeeping and Agenda Review
- Welcome from Meeting Chair, Candace Nachman
 - Welcome from Dr. Kelly Kryc, U.S. NOAA Deputy Assistant Secretary for International Fisheries and Arctic Lead, and Dr. Cisco Werner, NOAA National Marine Fisheries Service Chief Science Advisor & Director of Scientific Programs
 - Welcome from Ms. Nadia Bouffard, Chair of the Conference of the Parties (TBC)
 - Technical WebEx Overview, Review of Agenda and Rules of Procedure for this Meeting (Candace Nachman)
- 8:30-9:00 Brief Introduction of Delegations
- The head of each delegation will introduce themselves and the members of their delegations.
- 9:00-9:45 Review of Article 4 Milestone Requirements (Candace Nachman)
- Define Joint Program of Scientific Research and Monitoring (JPSRM)
 - Review of milestones laid out in the Agreement and what that means for accomplishing our work
 - Questions and Group Discussion
- 9:45-10:30 Establishing the Joint Program of Scientific Research and Monitoring
- Review of the United States' proposal regarding scientific questions identified in previous science meeting reports and explanation of process to ensure incorporation of all knowledge systems in the questions to be answered to meet the objectives of the Agreement (Bob Foy; 15 minutes)

- Questions and Initial Brief Group Discussion (20 minutes)
- Instructions for breakout groups (10 minutes)

10:30-10:45 Break

10:45-11:50 JPSRM Discussion Breakout Groups

- Some of the questions the breakout groups may discuss include:
 - Are the 4 main questions identified during previous science meetings still relevant?
 - Are additional science and Indigenous knowledge data/parameters needed? If yes, what are they?
 - What process do we use to answer the questions in time to meet the Agreement deadlines?

11:50-12:00 Setting the stage for Day 2 (Candace Nachman; Return to plenary)

Wednesday, 2 March 2022

8:00-8:05 Day 2 Welcome (Candace Nachman)

8:05-9:10 Plenary Report out from JPSRM Breakout Sessions and Group Discussion

- Each breakout room will have 5 minutes to share the high-level, salient points from the breakout session (40 minutes)
- Group discussion of next steps (25 minutes)

9:10-9:25 Proposal for Development of a Data Sharing Protocol for the JPSRM (Bob Foy)

- Review of United States' proposal
- Instructions for breakout groups

9:25-9:40 Break

9:40-10:40 Data Sharing Protocol Discussion Breakout Groups

- Some of the questions the breakout groups may discuss include:
 - Are the next steps identified during previous science meetings still relevant?
 - Are additional data and knowledge sharing protocol requirements needed? If yes, what are they?
 - Do we agree that a distributed data management system makes the most sense?
 - What are the necessary next steps to finalize a data sharing protocol for approval by the COP?

10:40-11:50 Plenary Report out from Data Sharing Protocol Breakout Sessions and Group Discussion

- Each breakout room will have 5 minutes to share the high-level, salient points from the breakout session (40 minutes)
- Group discussion of next steps (30 minutes)

11:50-12:00 Setting the stage for Day 3 (Candace Nachman)

Thursday, 3 March 2022

8:00-8:05 Day 3 Welcome (Candace Nachman)

8:05-9:05 Review PSCG Rules of Procedure (Group Discussion facilitated by Candace Nachman)

- Some of the changes contained in the latest draft of the Conference of the Parties (COP) Rules of Procedure impact the wording in the Rules of Procedure for the PSCG. COP Chair, Nadia Bouffard, added the relevant changes to the PSCG Rules, which appear in a new draft #5 of the PSCG Rules of Procedure.
- The Parties requested we review this new draft #5 of the PSCG Rules of Procedure for consideration during this meeting and relevant recommendations to the COP.
- Draft #5 contains tracked edits reflecting the last comments from the PSCG drafting group, and some changes flagged by the Parties during discussions on the COP Rules that, to ensure consistency in the concepts found in both sets of Rules, impact on the PSCG Rules.
- Additionally, the new appendix on confidentiality requirements attached to the COP Rules of Procedures will be of relevance to the discussions of the PSCG regarding the development of a data protocol as required by the Agreement. Although not yet final, we will consider the draft confidentiality requirements during this agenda item.

9:05-10:00 Development of Requests, Recommendations, and Questions to the COP

10:00-10:15 Break

10:15-10:50 Schedule of upcoming PSCG Meetings and Intersessional Working Group Sessions to meet Agreement milestone dates (Bob Foy)

- Dates and topics for upcoming PSCG meetings
- Potential hosts for those meetings

10:50-11:10 Discussion of Meeting Report to the COP

11:10-11:30 Concluding Remarks and Meeting Close

Annex 2: List of Meeting Participants

Party/Organization	Name	Title	Organization
Canada	Adam Burns	Director General	Fisheries Resource Management, Fisheries and Oceans Canada (DFO)
	Robert Apro	Senior Policy Advisor	International Fisheries Policy, DFO
	Alain Dupuis	Science Advisor	Environment and Biodiversity Science, DFO
	Kevin Hedges	Research Scientist	Arctic and Aquatic Research Division, DFO
	Amber Lindstedt (Day 2 only)	Deputy Director	International Fisheries Policy, DFO
	John Crump	Senior Policy Advisor	Inuit Circumpolar Council-Canada (ICC-C)
	Stephanie Meakin	Senior Science Advisor	ICC-C
	Jeremy Ellsworth	Environment and Research Coordinator	ICC-C
China	Mr. Yang Lei	Deputy Head	International Cooperation Division, Chinese Arctic and Antarctic Administration
	Mr. Long Wei	Head	International Cooperation Division, Chinese Arctic and Antarctic Administration
	Ms. Li Honglei	Deputy Head	Division of Science Programs, Chinese Arctic and Antarctic Administration
	Shi Ximu	Staff	The Department of Treaty and Law, Ministry of Foreign Affairs of P.R.China
	Yu Yong	Head	Polar Ecology Division, Polar Research Institute of China
	TANG Jianye	Professor	Shanghai Ocean University
	Tian Yongjun	Professor	Ocean University of China
	Hai Li	Associate Professor	Third Institute of Oceanography, Ministry of Natural Resources
	Guangtao Zhang	Professor	Institute of Oceanology, Chinese Academy of Sciences
Kingdom of Denmark in respect of the Faroe Islands and Greenland	Helle SIEGSTAD	Head of Department	Greenland Institute of Natural Resources
	Birgitte JACOBSEN	Chief Advisor	Ministry of Fisheries and Hunting, Greenland
	Iben Funch DØJ	Special Advisor	Ministry of Fisheries and Hunting, Greenland
European Union	Stanislovas Jonusas	Policy Officer	DG MARE, European Commission
	Roderick Harte	International Relations Officer	DG MARE, European Commission

	Pauline Snoejis Leijonmalm		Stockholm University, Sweden
	Szymon Smolinski	Assistant Professor	Department of Fisheries Resources, National Marine Fisheries Research Institute, Poland
Iceland	Anna Heiða Ólafsdóttir	Fisheries Scientist	
Japan	Kenji Taki	Principal Researcher	Japan Fisheries Research and Education Agency
	Joji Morishita	Head of Delegation, Professor	Tokyo University of Marine Science and Technology
	Mashahiro Akiyama	Assistant Director	Internal Affairs Division, Fisheries Agency
	Yoichiro Kimura	Officer	Internal Affairs Division, Fisheries Agency
Korea	Doo Nam Kim	Director	National Institute of Fisheries Science
	Hae Won Lee	Researcher	National Institute of Fisheries Science
	Kyum Joon Park	Researcher	National Institute of Fisheries Science
	Hyoung Chul Shin	Vice President	Korean Polar Research Institute (KOPRI)
	Hyoung Sin La	Principal Research Scientist	KOPRI
Norway	Maria Fossheim	Head of Delegation, Program Director	Institute of Marine Research (IMR)
	Alf Håkon Hoel	Professor	The Arctic University of Norway (UiT)
	Randi Ingvaldsen	Senior Scientist	IMR
	Harald Gjøsæter	Senior Scientist	IMR
	Lis Jørgensen	Senior Scientist	IMR
United States	Bob Foy	Director	NOAA-Alaska Fisheries Science Center (AFSC)
	Brandon Ahmasuk		Inuit Circumpolar Council (ICC) Alaska-Kawerak
	David Allen	Program Manager	NOAA's Office of Oceanic & Atmospheric Research, Arctic Research Program
	Vernae Angnaboogok	Cultural Sustainability Advisor	ICC Alaska
	John Bengtson	Marine Mammal Laboratory Director	NOAA-AFSC
	Harry Brower, Jr.	North Slope Borough Mayor	ICC Alaska-North Slope Borough
	Cathy Coon	Science Policy Advisor- Arctic Specialist	Bureau of Ocean Energy Management
	Lauren Fields	Foreign Affairs Specialist	NOAA-NMFS Office of International Affairs, Trade, and Commerce (IATC)

	Elaina Jorgenson	Scientist	NOAA-AFSC
	Katheryn Patterson	Policy Advisor to the Deputy Assistant Secretary for International Fisheries	NOAA-NMFS IATC
	Demian Schane	Alaska Section Chief	NOAA-General Counsel
	James Stotts	President	ICC Alaska
	Sarah Wise	Scientist	NOAA-AFSC
	Mark Zimmerman	Scientist	NOAA-AFSC
	Elana Mendelsohn	Foreign Affairs Officer	Department of State Office of Marine Conservation
	Kelley Uhlig	Program Manager	NOAA OAR, ARP
	Cynthia Garcia-Eidell	Arctic Observing Fellow	NOAA OAR, ARP
	Tyler Loughran	International Fisheries Policy Fellow to the Deputy Assistant Secretary of International Fisheries	NOAA Office of the Undersecretary of Commerce for Oceans & Atmosphere
COP	Nadia Bouffard	Chair	Conference of the Parties
ICES	Mark Dickey-Collas	Chair	ICES Advisory Committee
	Ingio Martinez	Professional Officer	ICES
PAME	Jessica Nilsson	Chair	PAME
PICES	Sonia Batten	Executive Secretary	PICES
PSCG	Candace Nachman	Provisional Meeting Chair	

Annex 3: U.S. Proposal regarding establishing the JPSRM

Next steps towards establishing a Joint Program of Scientific Research and Monitoring of the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean
Considerations for the Provisional Scientific Coordinating Group: A U.S.A. proposal for discussion.

March 2022

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The intent of this document is to:

- I. Review milestones related to science objectives of the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (Agreement).
- II. Propose next steps for the Provisional Scientific Coordinating Group (PSCG) to provide science recommendations regarding development of the Joint Program of Scientific Research and Monitoring (JPSRM) to the Conference of Parties in time to support Agreement deadline requirements.
- III. Propose additional questions from Indigenous knowledge holders to previous scientific questions to be the basis for the JPSRM.
- IV. Propose next steps for the JPSRM Data Sharing Protocol.

I. Agreement Milestones (Proposed milestones in blue)

- **2018, October 3.** Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean signed.
- **2019, April 12-13.** Arkhangelsk, Russian Federation. Conference of the CAO of Member Countries scientific experts on the Central Arctic Ocean marine bio resources stocks condition research plan and their management in the Agreement area. Researcher conference of Scientific Experts.
- **2019, May 29-30.** Ottawa, Canada. First Preparatory Meeting of Signatories to the Agreement formed the Provisional Scientific Coordinating Group (PSCG)
- **2019, November 13-14.** Yellowknife, Canada. Co-Production of Indigenous and Science Knowledge Workshop, which Signatories agreed to hold prior to first PSCG meeting.
- **2020, February 11-13.** Ispra, Italy. First meeting of the PSCG.
- **2020, June, October and December.** Virtual. Series of Round Tables hosted by Inuit Circumpolar Council-Canada regarding Inuit Engagement in the Agreement.
- **2021, June 25.** Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean entered into force.
- **2022, March 1-3.** Virtual. Second meeting of the PSCG.

- **2022. Fall.** Location TBD. Proposed third meeting of the PSCG.
- **2023. Spring.** Location TBD. Proposed fourth meeting of the PSCG.
- **2023, June 25.** Deadlines contained in Article 4 of the Agreement for establishing a JPSRM and for developing data sharing protocol.
- **2024, June 25.** Deadline contained in Article 5 of the Agreement for establish exploratory fishing conservation and management measures.

Functions of the PSCG (as established at the May 2019 Preparatory Meeting of the Signatories to the Agreement)

- Develop interim Rules of Procedure for the PSCG.
- Develop the Joint Program of Scientific Research and Monitoring (JPSRM), and, in the interim, coordinate scientific activities by the Signatories in a manner consistent with Article 4 of the Agreement.
- Develop the data sharing protocol as called for in Article 4 in the Agreement.
- Identify processes and mechanisms to incorporate indigenous and local knowledge, through the inclusion of representatives of Arctic communities, including Arctic indigenous peoples, in the work of the PSCG.
- Provide scientific advice for the development of conservation and management measures for exploratory fishing, and other interim measures, as requested by the Signatories.
- Develop quantitative indicators based, inter alia, on data collected during the mapping phase.
- Facilitate the possible exchange of samples.
- Promote cooperation by the scientific experts of the Signatories with relevant scientific and technical organizations, bodies, and programs.
- Other functions as may be assigned.

II. Proposed outcomes of the March 2022 PSCG meeting

1. Agreement on questions to guide further strategic development of the JPSRM

Joint Program of Scientific Research and Monitoring (JPSRM)

The Agreement Article 4 paragraph 2 states that, “The Parties agree to establish, within two years of the entry into force of this Agreement, a Joint Program of Scientific Research and Monitoring with the aim of improving their understanding of the ecosystems of the Agreement Area and, in particular, of determining whether fish stocks might exist in the Agreement Area now or in the future that could be harvested on a sustainable basis and the possible impacts of such fisheries on the ecosystems of the Agreement Area.”

As the JPSRM is developed, the goal of the PSCG is to support the Agreement objective: “to prevent unregulated fishing in the high seas portion of the central Arctic Ocean through the application of precautionary conservation and management measures as part of a long-term strategy to safeguard healthy marine ecosystems and to ensure the conservation and sustainable use of fish stocks”.

The JPSRM is a science plan that will be developed, finalized, and submitted to the COP for approval by June 2023. The JPSRM will define the data and knowledge requirements

needed to assess populations of potential commercial species and identify drivers of population productivity and likely impacts that commercial fishing would have on the surrounding ecosystem. Once approved, the JPSRM will be implemented and operationalized by the Parties. Implementation plans will require decisions on resource commitments from the Parties.

2. Agreement on future milestones and schedule of the PSCG
 - a. Fall 2022 PSCG
 - i. With agreement on the guiding questions at this meeting, it is proposed that the Fall 2022 meeting focus on finalizing the JPSRM 1-3 year mapping requirements in the CAO, Atlantic, and Pacific gateways and a concurrent monitoring program.
 - ii. The JPSRM will consider multiple tiers for priority mapping and monitoring to recognize the likelihood for inconsistent resources (vessels and funding).
 - iii. Finalize an agreement on a data management policy and protocols that permit the sharing of monitoring and research data from the JPSRM.
 - b. Spring 2023 PSCG
 - i. Finalize cost and infrastructure (e.g. vessels) sharing program requirement to implement the JPSRM under multiple funding scenarios as outcomes from the Fall 2022 PSCG.
 - ii. Focus on prioritizing key indicators of ecosystem change and triggers of productivity that lead to requirements for exploratory fishing.
3. Recommendations and Requests to the COP
 - a. Formalization of the PSCG as the science body to finalize the JPSRM and develop implementation plans for the JPSRM.
 - b. In the absence of finalized and approved PSCG Rules of Procedure, call for the COP to immediately establish two informal working groups of the PSCG to:
 - i. Draft a multiple tier mapping and monitoring plan based on the fourth and fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean for review at the Fall 2022 PSCG. This plan would include data collection (e.g. gear type) and data format standardization.
 - ii. Draft agreement on a data management policy and protocols that permit the sharing of monitoring and research data from the JPSRM for review at the Fall 2022 PSCG.
 - c. Recommend that the Parties identify resources and infrastructure to implement the JPSRM when it is approved; and in the meantime, support extensions of existing monitoring program into the CAO to collect baseline information.
 - d. Request that the Parties discuss exploratory fishing at their November 2022 COP meeting to provide guidance and identify issues for the PSCG to consider when taking up this topic at the proposed spring 2023 PSCG meeting.

III. Indigenous Knowledge incorporation into scientific questions proposed

During the Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean (see [Appendix I](#)), participants developed a list of scientific questions that need to be addressed to assess fully the potential for sustainable commercial fishing in the High Seas of the Central Arctic Ocean. At the May 2019 Preparatory Conference of the Agreement, the then Signatories,

created the PSCG to carry out the work described in Article 4 of the Agreement. At the first PSCG meeting in February 2020, the delegations reaffirmed the science questions to be answered to meet the objectives of the Agreement. However, these questions were not developed with input from local and Indigenous knowledge holders, as called for in Article 4 of the Agreement. The Agreement states the Parties “Desiring to promote the use of both scientific knowledge and indigenous and local knowledge of the living marine resources of the Arctic Ocean and the ecosystems in which they occur as a basis for fisheries conservation and management in the high seas portion of the central Arctic Ocean”.

The United States’ National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) therefore worked with Indigenous leaders and knowledge holders with the guidance and assistance of the Inuit Circumpolar Council-Alaska (ICC-AK) to review the science questions developed between 2015 and 2017, looking at them through the lens of both science and Indigenous knowledge systems. Instead of developing a separate list of questions or knowledge requirements to meet the Agreement, it is proposed that both science and Indigenous knowledge systems be considered together. As such, the original questions developed in 2015 appear in plain text, with additional questions and considerations based on discussions between NMFS and ICC-AK in blue text. **We ask all delegations to review the list below and come prepared to discuss the following in breakout sessions during our upcoming meeting:**

1. What are the distributions of species with a potential for future commercial harvests in the Central Arctic Ocean?
 - a. What fish species are currently present in the high seas?
 - b. Do fishable concentrations of commercial species exist in the high seas?
 - c. What are their distributions and abundance patterns?
 - d. What are their local life-history strategies, habitat associations, and demographic patterns?
 - e. Do these strategies, associations, or patterns differ among regions of the Arctic?
2. What other information is needed to provide advice necessary for future sustainable harvests of commercial fish stocks and maintenance of dependent ecosystem components?
 - a. What are the trophic linkages among fishes and between fishes and other taxonomic groups (i.e. quantify food webs **identifying keystone forage species**)?
 - b. How do fish species abundances and distributions vary as a function of climate variability, **including declining sea ice and biogeochemical changes**?
 - c. Can the species be harvested sustainably with respect to both target fish stocks and dependent parts of the ecosystem? If not, what are the prospects for the development of fisheries in the future?
3. What are the likely key ecological linkages between potentially harvestable fish stocks of the central Arctic Ocean and the adjacent shelf ecosystems **including Indigenous communities**?
 - a. What are the connections between fish in the High Seas and those in the adjacent regions?
 - b. What are the mechanisms that establish and maintain these linkages?
 - c. How might fisheries in the High Seas affect adjacent and congruent portions of shelf ecosystems, including fish stocks, fishable invertebrates (crabs, shrimp, mollusks), marine mammals, birds, and fisheries-dependent communities (which include those

communities that are dependent on subsistence harvests of fish, invertebrates, and mammals)?

d. What is the potential for bycatch (marine mammals, seabirds, and keystone fish species) under different types of commercial fishing gear, and how will this be monitored?

4. Over the next 10-30 years, what changes in fish populations, dependent species and the supporting ecosystems may occur in the central Arctic Ocean and the adjacent shelf ecosystems?
 - a. Who are the winners and losers in the next 10-30 years?
 - b. What changes in production and key linkages are expected in the coming 10-30 years?
 - c. What northward population expansions are expected in the next 10-30 years?
 - d. What are the anticipated impacts of changes in ocean acidification in the next 10-30 years?
 - e. How will increased human activity in the region, including ship noise, industrial noise, and pollution, affect fish populations and ecosystem health in the next 10-30 years?**
 - f. How will increased fishing activity affect migratory and wide-ranging marine mammals and the Indigenous and local communities that depend upon these species to sustain their ways of living?**
- 5. How can Traditional Ecological Knowledge inform ecological baselines?**

IV. JPSRM Data Sharing Protocol

During the Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean, participant's recommended next steps on the development of data sharing protocols (see [Appendix II](#)). During those discussions, a distributed database was identified as being preferred over a single hosted database. A distributed database combines metadata on existing data sets and data collection programs within a small hosted database, simplifying data discovery. Data records would be hosted by member data centers, allowing data owners to maintain greater control over data access.

The United States recommends that the PSCG participants agree to these next steps as Terms of Reference to a PSCG working group recommendation to the Conference of Parties. These next steps are modified from the Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean to address the status of the Agreement. **We ask all delegations to review the steps below and come prepared to discuss in breakout sessions during our March 2022 PSCG meeting:**

1. Identify options for data archiving and data management of the JPSRM data after discussing data policies, a data sharing framework, and data management options with other international organizations.
2. Identify protocols for archiving and management of Indigenous knowledge and observations collected through the mapping and monitoring efforts.
3. Identify an existing organization to help data providers develop DOIs if their institutional or national data archive cannot provide the service.
4. Identify a data-hosting source accessed through a website and develop sharing protocols to test sharing of the fish observation dataset developed during the Fourth Meeting of

Scientific Experts on Fish Stocks in the Central Arctic Ocean, and the inventory of monitoring programs in the High Seas CAO and adjacent water.

Appendix I: Key science meetings leading up to the Agreement

2011, June 15-17. Anchorage, U.S.A. [First Meeting of Scientific Experts on Fish Stocks in Arctic Ocean](#). The first meeting of scientific experts addressed Terms of Reference to identify:

1. current information and data on fish stocks, their ecosystems, and patterns of migration,
2. ongoing and planned scientific activities,
3. current information gaps and options to address gaps,
4. priorities in regard to identified research requirements, and
5. opportunities for and impediments to closer cooperation.

2013, October 28-31. Tromsø, Norway. [Second Scientific Meeting on Arctic Fish Stocks](#). Four major scientific research themes were identified in 2013 at the Meeting of Governments. The meeting of scientific experts completed Terms of Reference:

1. Establish baseline conditions and define information needs for to monitoring changes in baseline conditions, which might influence patterns of distribution and abundance of finfish in the Arctic Ocean. This is viewed as a high-priority requirement.
2. Evaluate the outcome of relevant recent scientific meetings, such as the ICES/PICES (North Pacific Marine Science Organization) workshop in St. Petersburg in May 2013, and discuss strategies to communicate outcomes regarding implications of climate change on management of living marine resources in the Arctic context.
3. Consider meetings and other fora for future scientific cooperation.

2015, April 14–16. Seattle, U.S.A. [Third Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#). Terms of Reference:

1. Continuing the review of current programs for research and monitoring environmental parameters and patterns of fish distribution and abundance; establishing an inventory of research and monitoring programs and preparing a report on the status of and gaps in knowledge on the distribution and abundance of fish in the central Arctic Ocean. Such an inventory should include programs occurring in immediately adjacent shelf areas (i.e., within EEZs), which are linked and have relevance to the central Arctic Ocean (high seas).
2. Developing a framework for a Joint Program of Scientific Research and Monitoring for the Central Arctic Ocean, including the definition of baseline information needs and methods necessary to determine the likelihood of sustainable fisheries being present. Additionally, this framework should include one or more components that investigate the role of fishes and shellfish in the marine ecosystems (and vice versa) in the Central Arctic Ocean, as well as linkages with the shelf areas and likely impacts of climate change.
3. Considering the development of an action plan (e.g., notional schedules, areas of operations, costs) for the Joint Program of Scientific Research and Monitoring.

2016, September 26–28. Tromsø, Norway. [Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#). Framework and Terms of Reference drafted for a joint scientific research and monitoring plan program that included two survey elements, 1) a mapping phase and 2) a monitoring phase. Scientific questions were identified that need to be addressed to fully assess the potential for sustainable commercial fishing in the High Seas CAO. Terms of Reference:

1. Complete the synthesis of knowledge.
2. Develop a Joint Scientific Research and Monitoring Plan to address the four questions.
3. Provide a Framework for the Implementation Plan.

2017, October 24-26. Ottawa, Canada. [Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#). This final meeting of the science experts reported on a number of completed Terms of Reference:

1. Identification of baseline data (i.e., a mapping program) in the high seas CAO to achieve the goals of documenting species distributions, relative abundances, and key ecosystem parameters,
2. Development of a strategy for monitoring indicators of fish stocks and ecosystem components,
3. Determination of preliminary cost estimates to implement a mapping program in the high seas portion of the CAO and in the Pacific Gateway region, and
4. Development of a draft data sharing policy as the foundation for a future data sharing protocol.

2020, February 11-13. Ispra, Italy. [First meeting of the Provisional Scientific Coordinating Group](#). The first meeting of the PSCG reported on a number of completed Terms of Reference:

1. Development of Interim Rules of Procedure and a basis for future Rules of Procedure for the PSCG.
2. Identification of processes and mechanisms to incorporate indigenous and local knowledge, through the inclusion of representatives of Arctic communities, including Arctic indigenous peoples, in the work of the PSCG by specifically recommending direct participation in PSCG delegations, working groups, or sub-groups.
3. Update of current or upcoming scientific activities and platforms of opportunity list for scientific mapping work in the Central Arctic Ocean that could contribute relevant information and data to the Joint Program of Scientific Research and Monitoring and identification of the knowledge gaps addressed by each activity or platform.
4. Prioritization of mapping work based on identified gaps, and any updates to these gaps, and coordinate among Signatories opportunities for conducting scientific mapping work in accordance with the Joint Program of Scientific Research and Monitoring, including by using upcoming scheduled scientific activities and platforms of opportunity identified.
5. Updated the Inventory of Monitoring Programs in the High Seas Central Arctic Ocean and adjacent water

Appendix II. Proposed JPSRM Data Sharing Protocol

(Amended from Appendix C from the [Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic](#) [Based on DBO Data policy and release guidelines - 2015])

Current datasets to support PSCG

- Dataset of fish observations in the CAO and adjacent waters (started during the [Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#)). This database is continuing to be maintained by the U.S. National Oceanic and Atmospheric Administration (NOAA). An accessible database will be developed for all researchers to contribute new observations from the High Seas CAO and adjacent waters to the database.
- Inventory of monitoring programs and vessels of opportunity in the High Seas CAO and adjacent water.

Future Data Sources

- Mapping during first three years of JPSRM for initial assessments of species distributions and abundances to quantify trophic linkages.
- Long term monitoring to support regular reassessments of populations and ecosystem status.
- Future exploratory fishing data detected changes based on indicators in targeted areas in the CAO to evaluate potential commercial harvesting opportunities.

Coordinated multi-national mapping and monitoring programs will require the establishment of an agreement on a data management policy and protocols that permit the sharing of monitoring and research data related to the JPSRM. This policy could be modeled after a number of other international data management policies (e.g., DBO, SAON and the International Arctic Science Committee (IASC), ICES and the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)) for data standards and protocols for metadata, quality assurance and data sharing.

Initial decision points

- Centralized vs distributed data management system. A distributed system was encouraged during scientific expert meetings on fish stocks in the CAO so that each Party to the Agreement is responsible for the storage and maintenance of the data it collects, while software provides search and query capabilities across the individual databases.
- Identification of levels of data sharing to separate publically available data from protected data.
- Protocols for sharing and archiving Indigenous knowledge and observations.
- Development of a shared archive after data analysis and publication.

Proposed distributed data management system

- Data archive consisting of a series of distributed data centers, combining data from multi-national JPSRM and national sampling programs. A single site (website) will need to be developed for the submission of metadata that meet the standard JPSRM metadata profile.

- Data to be available to Agreement researchers in a timely manner for analysis, and to the larger community once initial analyses are completed. The first step in submitting data will be the completion of a metadata profile for the dataset. The data will then be submitted to a national or institutional data archive that is part of the JPSRM distributed data archive. Metadata should be submitted as soon as possible (i.e. within one month) after completion of a sampling program. Data should be made available as soon as possible after collection and completion of quality assurance programs. A common, password protected shared data archive may be established (e.g., Circumpolar Biodiversity Monitoring Programme, SAON data portals) to facilitate analyses upon completion of the mapping phase of the JPSRM and repeated analyses throughout the monitoring phase.
- Data centers that are part of the JPSRM distributed data archive will need to coordinate their data management activities, including developing consistent metadata generation, curation and interoperability. When data submitted directly to an institutional or national archive are deemed ready for long-term storage and distribution, a final version of the data and metadata will be uploaded or linked to a shared-archive.
- The JPSRM Data Sharing Protocol should be consistent and compliant with international standards and agreements such as the IASC Statement of Principles and Practices for Arctic Data Management. That is, free, timely, and unrestricted exchange of essential data and products to the maximum extent possible. The proposed JPSRM data policy approach is fully compatible with the World Meteorological Organization (WMO) Climate Variability and Predictability (CLIVAR) Data Policy. The proposed JPSRM data archive will follow the WMO Core Profile of the ISO 19115: Geographic Information --- Metadata standard.
- A JPSRM policy would not conflict with or supersede any national or international agency policy related to public access to these data.
- Citations from data downloaded from the archive and used in publications would include the data's origin should be acknowledged and referenced. Every user is responsible for referencing the Principle Investigator (PI) responsible for creating the dataset that is used and identifying that the dataset was obtained through the JPSRM data archive. If multiple sources have been used, acknowledgement must be provided for each dataset used.
- The JPSRM data management would include data Digital Object Identifier (DOI) standards supported by international coordination groups such as the Research Data Alliance (RDA).
- Co-authorship of JPSRM publications that make extensive use of JPSRM data is warranted if their work has contributed to the study in question, or if the investigator has directly contributed to the publication in other ways. It is highly recommended that any data user contact the responsible PI and discuss whether the PI's data collection warrants co-authorship or an acknowledgement.
- Research programs that contribute data to JPSRM use sophisticated, state-of-the-art instrumentation and comply with strict requirements for maintenance, exposure of instruments, calibration, quality assurance procedures and the like, in order to achieve the highest attainable standards of measurement, accuracy, representativeness, stability and repeatability. To ensure that this goal is reached, PIs who are leading experts for their instruments will take responsibility for individual instruments operated on the respective research program.

- Users of JPSRM data will be encouraged to establish direct contact with the Scientific Point of Contact for each data set used; this contact will be included in the metadata for each data set. The JPSRM Scientific Point of Contact will discuss the planned use of the dataset and, if necessary, put the data user in contact with the data set PI as the data provider for the purpose of complete interpretation and analysis of data for publication purposes.
- Users of JPSRM data are strongly encouraged to submit citations for any publications or products to the JPSRM shared archive. The JPSRM shared archive will develop a citation list of publications from the submitted citations. Whenever possible, the archive will use DOIs to link to a publication to its data source(s). The shared archive will make the citation list public via the archive website to provide a continuous record of applications and analyses of JPSRM data and JPSRM scientific achievements.

Annex 4: Chair's Statement of the Second PSCG meeting

Second Meeting of the Provisional Scientific Coordinating Group under the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

Virtual Meeting

March 1-3, 2022

Chair's Statement¹

Introduction

Delegations from Canada, the People's Republic of China, the Kingdom of Denmark in respect of the Faroe Islands and Greenland, the European Union, Iceland, Japan, the Republic of Korea, the Kingdom of Norway, and the United States of America met virtually March 1-3, 2022, for the second meeting of the Provisional Scientific Coordinating Group (PSCG) to continue discussions and progress to ensure the Parties can meet the milestones in Article 4 of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* ("the Agreement") related to the Joint Program of Scientific Research and Monitoring (JPSRM). Although invited, the Russian Federation did not send any delegates to the meeting. Representatives of the International Council for the Exploration of the Sea (ICES), the North Pacific Marine Science Organization (PICES), and the Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group also attended the first two days of the meeting.

The meeting followed the 1st PSCG meeting of February 11-13, 2020, in Ispra, Italy and the June 15-16, 2021, virtual Preparatory Conference of the Signatories to the Agreement.

The PSCG made good progress in discussing the steps necessary to establish the JPSRM and data sharing protocol by June 25, 2023 per the Agreement. The PSCG also developed recommendations for the Conference of the Parties (COP) to consider and approve to allow this work to occur. Progress was also made on outstanding text in the Rules of Procedure (RoP), but further work is needed.

Establishing the Joint Program of Scientific Research and Monitoring

The delegates agreed that the JPSRM is a science plan, and the science plan and the associated implementation strategies are what must be established by the June 2023 deadline contained in Article 4 of the Agreement. Some delegates recommended that the JPSRM needs to include joint objectives and not just be a collection of national programs. Other delegates stressed the importance of including the work of the national programs in surrounding ecosystems given that few countries are currently

¹ This Chair's Statement attempts to capture the basic elements of the meeting but does not necessarily reflect the views of any individual delegation.

sending expeditions to the Agreement Area. The United States presented a proposal regarding the scientific questions identified in the reports from the meetings between 2011 and 2017 of Scientific Experts on Fish Stocks in the Central Arctic Ocean (otherwise known as FiSCAO) prior to the signing of the Agreement. The proposal included a summary of the process the United States used to engage with the Inuit Circumpolar Council Alaska (ICC AK) since summer 2021 to incorporate Indigenous Knowledge in the questions to be answered through implementation of the JPSRM. The United States presented a proposed list of the key questions identified during the previous FiSCAO meetings and that also incorporated new or updated questions. Following this introduction, the delegates broke into five breakout groups to discuss the proposed list of key JPSRM questions and answer the following discussion questions:

- Are the four main questions identified during previous science meetings still relevant?
- Are additional science and Indigenous knowledge data/parameters needed? If yes, what are they?
- What process do we use to answer the questions in time to meet the Agreement deadlines?

In plenary, the groups reviewed the main discussion points. Some common themes that emerged included: the original FiSCAO questions are relevant but there is a need to consider the recent rapid rate of change occurring in the region; a need to create categories of questions to answer as some were more basic research-type questions while others were more qualitative- or operational-type questions; the need to prioritize the questions specific to the objectives of the Agreement; the need to leverage existing resources and programs already working to answer some of these questions; and, ensuring Indigenous Knowledge and local knowledge are taken into account in developing the questions and programs that will answer the questions. Finally, the delegates agreed to propose to the COP to establish a working group to commence immediately and operate between full PSCG meetings in order to meet the June 2023 deadline.

Development of a Data Sharing Protocol

Following review of the proposal by the United States that was guided by the previous Scientific Experts meetings prior to entry into force of the Agreement, the delegates broke into five breakout groups to discuss the following questions:

- Are the next steps identified during previous science meetings still relevant?
- Are additional data and knowledge sharing protocol requirements needed? If yes, what are they?
- Do we agree that a distributed data management system makes the most sense?
- What are the necessary next steps to finalize a data sharing protocol for approval by the COP?

The groups discussed whether it is best to use a centralized or distributed database. As a compromise among different views, there was support for a hybrid framework that recognized a centralized system for data collected specifically for the JPSRM and a distributed system for relevant, accessible data

collected and voluntarily provided by national and multinational programs. There was also discussion about the differences between how scientific data and Indigenous Knowledge are collected, compiled, managed, shared, and archived and that this needs to be a consideration in the data sharing protocol. Finally, the delegates agreed to propose to the COP to establish a data sharing protocol working group to commence immediately and operate between full PSCG meetings in order to meet the June 2023 deadline.

Rules of Procedure

Ms. Nadia Bouffard, provisional Chair of the COP, shared initial remarks and direction to the PSCG delegates to guide their discussion of the PSCG RoPs. Ms. Bouffard noted the current schedule for completing the COP RoPs and noted that additional changes to the PSCG RoPs would be needed once outstanding issues within the COP RoPs are resolved. She suggested aligning the PSCG RoPs as much as possible with the COP RoPs, and she will suggest that the COP not approve the PSCG RoPs until it approves the COP RoPs.

The PSCG delegates reviewed the entire RoP document and inserted edits throughout the document. The meeting participants did not reach agreement on previously bracketed text. Given the ongoing discussions within the COP RoP drafting team regarding observers, the PSCG Chair recommended skipping discussion of certain sections of the PSCG RoP document related to the observer issue.

Recommendations to the Conference of the Parties and Next Steps

The PSCG meeting delegates discussed several recommendations for the COP as next steps towards establishing the JPSRM and associated data sharing protocol. The recommendations and requests include immediate needs and longer term requests:

Immediate Needs Requests

1. Call for the COP to establish a PSCG Mapping and Monitoring Working Group (MM-WG) to develop the mapping and monitoring plans for the JPSRM to achieve its aim, for approval by the PSCG, building on the draft plans from the 4th and 5th FiSCAO meetings and based on the 1st and this 2nd PSCG meeting discussions.
2. Call for the COP to establish a PSCG Data Sharing Protocol Working Group (DSP-WG) to develop an agreement on a data management policy and sharing protocols as part of the JPSRM, for approval by the PSCG, building on the draft plan from the 5th FiSCAO meeting and based on the discussions from this 2nd PSCG meeting;
3. Request that the Parties call for a Fall 2022 PSCG meeting to:
 - a. Finalize the JPSRM mapping requirements and monitoring program drafted by the MM-WG; and

- b. Finalize an agreement on a data management policy and sharing protocols drafted by the DSP-WG.

Longer Term Requests

1. Request that the Parties develop the Terms of Reference and other procedures for the function of the joint scientific meetings in accordance with Article 4 paragraph 6 of the Agreement, building on the Terms of Reference and the work of the PSCG, particularly to finalize the JPSRM and develop implementation plans for the JPSRM.
2. Request that the Parties call for a Spring 2023 PSCG/succeeding body meeting to:
 - a. Finalize cost and infrastructure (e.g., vessels) sharing program requirement to implement the JPSRM under multiple funding scenarios as outcomes from the Fall 2022 PSCG meeting; and
 - b. Focus on prioritizing key indicators of ecosystem change and triggers of productivity that lead to requirements for exploratory fishing.
3. Request that the Parties discuss exploratory fishing at their November 2022 COP meeting to provide guidance and identify issues for the PSCG to consider when taking up this topic at the proposed Spring 2023 PSCG/succeeding body meeting.
4. Recommend that the Parties identify resources and infrastructure to implement the JPSRM when it is approved; and in the meantime, support extensions of existing monitoring programs into the CAO and the Atlantic and Pacific Gateways to collect baseline mapping information.

The PSCG delegates agreed that receiving immediate approval to establish the MM-WG and DSP-WG and to convene meetings in Fall 2022 and Spring 2023 is critical to meeting the milestones in Article 4 of the Agreement.

The Chair agreed to circulate a draft of this Chair's Statement as soon as possible following the conclusion of the meeting for review by PSCG delegates and to circulate a draft report in time for the COP to consider it either at their upcoming April 28, 2022, COP RoP drafting meeting or as soon thereafter as the COP is able to discuss the report and associated recommendations and requests.

The Chair asked delegations to notify her of any delegations willing to host the Fall 2022 and Spring 2023 PSCG meetings.

Delegations thanked the Chair for her efforts and the United States for the proposals and documents shared in advance of the meeting.

MEETING DOCUMENT: CAOFA-2022-COP1-09

**Report of the Third Meeting of the
Provisional Scientific Coordinating Group
under the Agreement to Prevent Unregulated
High Seas Fisheries in the Central Arctic
Ocean**

28-29 September 2022

Convened Virtually

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List of Acronyms and Abbreviations

CAO:	Central Arctic Ocean
CCAMLR:	Commission for the Conservation of Antarctic Marine Living Resources
COP:	Conference of the Parties
DOI:	Digital Object Identifier
DSP-WG:	Data Sharing Protocol Working Group
EU:	European Union
FiSCAO:	Scientific Experts on Fish Stocks in the Central Arctic Ocean
ICC:	Inuit Circumpolar Council
ICC AK:	Inuit Circumpolar Council Alaska
ICES:	International Council for the Exploration of the Sea
JPSRM:	Joint Program of Scientific Research and Monitoring
MM-WG:	Mapping and Monitoring Working Group
MOSAIC:	Multidisciplinary drifting Observatory for the Study of Arctic Climate
NOAA:	National Oceanic and Atmospheric Administration
PAME:	Protection of the Arctic Marine Environment
PICES:	North Pacific Marine Science Organization
PSCG:	Provisional Scientific Coordinating Group
SAS:	Synoptic Arctic Survey
ToRs:	Terms of Reference

Executive Summary

Delegations from Canada, the People’s Republic of China, the Kingdom of Denmark in respect of the Faroe Islands and Greenland, the European Union (EU), Iceland, Japan, the Republic of Korea, the Kingdom of Norway, and the United States of America met virtually September 28-29, 2022, for the third meeting of the Provisional Scientific Coordinating Group (PSCG) to continue discussions and progress to ensure the Parties can meet the milestones in Article 4 of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* (“the Agreement”) related to the Joint Program of Scientific Research and Monitoring (JPSRM). Due to an oversight of using the attendee list from the second PSCG meeting held in March 2022, in which the Russian Federation did not send any delegates to that second meeting, Russia did not receive the advance materials of this third meeting and therefore did not send any delegates to the meeting. Representatives of the International Council for the Exploration of the Sea (ICES) and the North Pacific Marine Science Organization (PICES) also attended portions of the meeting. Ms. Candace Nachman (United States) served as the provisional Chair for the meeting.

The COP Heads of Delegation approved several of the recommendations from the March 2022 PSCG at the May 31 COP meeting, which guided the agenda for this third PSCG meeting. Based on that approval, the primary topics of discussion at the third PSCG meeting included: the questions to be answered by the mapping and monitoring program of the JPSRM; development of a JPSRM data sharing protocol; and logistics for establishing the two working groups to advance the mapping and monitoring efforts and the development of the data sharing protocol.

The Chair provided a review of the terms of reference (ToRs) approved by the COP at the May 31, 2022, virtual meeting for the establishment of two PSCG working groups: a Mapping and Monitoring Working Group (MM-WG) and a Data Sharing Protocol Working Group (DSP-WG). The Chair noted that ToRs for both working groups were not able to be fulfilled within the timeline provided, as the working groups were not formally established and did not conduct intersessional work between the May 31, 2022, COP meeting and the time of the third PSCG meeting.

The Chair stated that one of the primary objectives of this PSCG meeting was to establish leadership and membership for the two working groups and to begin work prior to the November 23-25, 2022 COP meeting given that the work of the two groups needs to be ready for review and discussion at a spring 2023 PSCG meeting.

To begin the formal discussion on the next steps needed to complete the mapping and monitoring plan of the JPSRM, also referred to as the ‘science plan’ in the March 2022 second PSCG meeting report, the United States and China both presented overviews of the discussion papers provided by each delegation prior to the PSCG meeting. These discussion papers can be found in Annexes 3 and 4, respectively. The United States explained that section II of their discussion paper contains the questions discussed at the second PSCG meeting in March 2022. The black text contains the language as presented in advance of the March 2022 meeting with alterations based on discussions at the second PSCG meeting in blue text. The document does not include any new priorities for the PSCG to consider. China noted the overlap of their discussion paper with the one presented by the United States and that the two documents are complementary to one another. The Chinese paper contains a stepwise approach given the tight timeline to establish the JPSRM: (1) agree on a framework; (2) input priority elements and indicators;

and (3) develop standards and protocols to facilitate data sharing. China also noted that monitoring should be based on the mapping results.

Following the presentation of both papers, the EU noted they have already completed several expeditions in recent years that resulted in data collection relevant to the Agreement. The EU also has standard operating and sampling procedures in place that can provide a lot of information and input to the working groups moving forward. The EU shared a brief presentation of the results from some recent expeditions to provide a general perspective of the situation in the CAO and adjacent areas and to provide a better understanding of what the JPSRM monitoring program should look like.

The meeting attendees then discussed the proposed JPSRM questions based on the outcomes of the March 2022 PSCG meeting. The Chair reminded the meeting attendees that the overarching questions discussed at the second PSCG meeting have been developed over several years and a series of meetings of the PSCG and its predecessor discussions. The Chair also noted that there will need to be agreement on the overarching and sub-questions moving forward as they will guide the implementation of the JPSRM. The group reviewed and provided additional edits to the questions contained in Section II of the United States discussion paper. A clean version of the updates to the questions contained in the United States discussion paper based on the discussions at the meeting can be found in Annex 6.

One delegation requested to identify Indigenous and local communities separately instead of lumping them together. This distinction was made to emphasize the significance of Indigenous peoples' distinct status and rights recognized by their respective nation-states and by the international community. There was also a lot of discussion regarding including communities in the questions, and one delegation suggested striking the language altogether. Representatives from several delegations spoke to the linkages Arctic Indigenous communities have with the land and ocean and that they are a part of the ecosystem. Following robust discussion, a majority of the delegations agreed it was important to keep the language about both Indigenous communities and local communities in the questions where that language appears.

Other issues or items to note from the discussion include:

- The need to demarcate the extents or what is meant when talking about the Atlantic and Pacific Gateways;
- Having Parties provide updates of their recent research and scientific efforts in the CAO and surrounding ecosystems at the first meeting of the MM-WG;
- The need to be careful about being overly prescriptive in the questions with examples in parentheses (much of the detail would come out through discussions within the working groups);
- Since these questions are looking to provide answers about potential future scenarios, need to be careful about saying “will” versus “could” or “would”; and
- ICC requested to include a definition of Indigenous Knowledge in the U.S. discussion document moving forward. The definition appears on page 15 of the 2022 [*Circumpolar Inuit Protocols for Equitable and Ethical Engagement*](#) report.

The closing topic of discussion regarding mapping and monitoring was leadership of and next steps for the MM-WG. The United States and the EU volunteered to co-chair the MM-WG. There was agreement that efforts of the MM-WG needed to get underway immediately. Finally, the delegates were asked to

consider the questions contained in section III part 1 of the United States' discussion paper and the concepts contained in China's mapping and monitoring draft framework document to help begin the conversations within the MM-WG.

To begin the formal discussion on the next steps needed to complete the data sharing protocol for the JPSRM, the United States and China both presented overviews of the discussion papers provided by each delegation prior to the PSCG meeting. These discussion papers can be found in Annexes 3 and 7, respectively. China noted the need for the DSP-WG to develop standard specifications and made reference to the system used by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). China described the hybrid framework proposed using both centralized and distributed systems. The United States noted many similarities exist between the two discussion papers on the topic of data sharing with a recommendation to combine the two papers to help guide the work of the DSP-WG. The United States provided a review of main issues discussed at the second PSCG meeting on this topic, provided proposed guidance for moving forward, and proposed a framework for holding data until the PSCG finalizes and operationalizes a formal data sharing protocol.

The United States recommended adopting the recommendations from reports of earlier science meetings related to the Agreement regarding data sharing. In the interim, the United States recommends building on the current arrangement: the United States hosted a website for sharing information and final reports among the Parties and public. The United States proposed to build a public and confidential website for the PSCG. The United States presented a prototype of such a website which would allow the PSCG to communicate globally. The United States offered the same for the COP. This would allow for a single location for delegations to share results and reports. The United States recommended including a section of the website that would require log-in credentials to protect the data collected through the implementation of the JPSRM. The website could also be used to create events, which can serve as a way for the working groups to organize themselves, which would make this a transparent process. The United States did not recommend this should be a centralized database; rather, it would allow information sharing in the interim.

Following these presentations, ICC noted the release of eight protocols for equitable and ethical engagement of Inuit and Indigenous Knowledge developed through a synthesis report of Inuit produced materials and voices that address existing rules, laws, values, guidelines, and protocols for the engagement of Inuit communities and Indigenous Knowledge and through a series of workshops convening Inuit Delegates that captured Indigenous Knowledge perspectives, needs, priorities, and guidance on future engagement processes. These protocols were developed to inform decision-makers, policymakers, researchers, and others operating in the Arctic on the ethical and equitable engagement of Inuit and their Indigenous Knowledge.

One delegation noted the need to develop policies regarding how to deal with public data, data sharing, and connectivity to existing data infrastructure. Additionally, given current data transparency, open data movements, and the pressure in the scientific community to make data public, there will likely be pressures to make the data public. ICES shared that they have policies that can accommodate both open and closed data systems and can share those with the DSP-WG if that would be helpful. One delegation noted the existence of many data sharing standards and that the PSCG should consider which one is most appropriate. There is no need to invent a standard just for the PSCG, but the one the PSCG selects should have broad applicability.

The closing topic of discussion regarding the data sharing protocol was leadership of and next steps for the DSP-WG. China volunteered to co-chair the DSP-WG. No other delegation offered to co-chair the DSP-WG with China at the time, but Canada, Norway, and the United States all agreed to consider co-chairmanship. There was agreement that efforts of the DSP-WG needed to get underway immediately. There was also a request and agreement by the PSCG delegations that the membership would be raised from two to three representatives to allow for inclusion of Indigenous Knowledge and local knowledge holders in addition to technical experts.

The PSCG delegations reiterated the request for the COP to approve a spring 2023 PSCG meeting to be held in-person. The PSCG also reiterates the recommendation shared at the May 31, 2022, virtual COP meeting for the COP to develop ToRs and other procedures for the function of the joint scientific meetings in accordance with Article 4 paragraph 6 of the Agreement, building on the ToR and the work of the PSCG, particularly to finalize the JPSRM and develop implementation plans for the JPSRM.

The PSCG appreciates that the topic of exploratory fishing is on the provisional agenda for the November 2022 COP meeting and requests that when discussing that agenda item, the COP identify milestones for establishing the exploratory fishing measures and provide a vision for PSCG involvement in their development. The PSCG also reiterates the need for the COP to identify resources and infrastructure to implement the JPSRM when it is approved. Lastly, the PSCG requests that the COP develop specific messaging regarding the importance of the Agreement and the value of Parties putting effort into moving the JPSRM forward.

The final agenda item was a preliminary discussion about who might serve as the first official Chair and Vice-Chair of the PSCG. The Chair reminded the meeting attendees that according to the draft PSCG rules of procedure, it is up to the PSCG to nominate a Chair and Vice-Chair and for those nominations to be decided upon by the Heads of Delegation at the COP.

1 Introduction

Delegations from Canada, the People’s Republic of China, the Kingdom of Denmark in respect of the Faroe Islands and Greenland, the European Union (EU), Iceland, Japan, the Republic of Korea, the Kingdom of Norway, and the United States of America met virtually September 28-29, 2022, for the third meeting of the Provisional Scientific Coordinating Group (PSCG) to continue discussions and progress to ensure the Parties can meet the milestones in Article 4 of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* (“the Agreement”) related to the Joint Program of Scientific Research and Monitoring (JPSRM). Due to an oversight of using the attendee list from the second PSCG meeting held in March 2022, in which the Russian Federation did not send any delegates to that second meeting, Russia did not receive the advance materials of this third meeting and therefore did not send any delegates to the meeting. Representatives of the International Council for the Exploration of the Sea (ICES) and the North Pacific Marine Science Organization (PICES) also attended portions of the meeting. Ms. Candace Nachman (United States) served as the provisional Chair for the meeting.

The meeting followed the second PSCG meeting hosted by the United States and held virtually on March 1-3, 2022, and the first PSCG meeting hosted by the EU and held in Ispra, Italy on February 11-13, 2020. The meeting also followed virtual meetings of the Conference of the Parties (COP) held on May 31, 2022, and August 31, 2022.

The COP Heads of Delegation approved several of the recommendations from the March 2022 PSCG at the May 31 COP meeting, which guided the agenda for this third PSCG meeting. Based on that approval, the primary topics of discussion at the third PSCG meeting included: the questions to be answered by the mapping and monitoring program of the JPSRM; development of a JPSRM data sharing protocol; and logistics for establishing the two working groups to advance the mapping and monitoring efforts and the development of the data sharing protocol.

This report summarizes the discussions and decisions of the third PSCG meeting in relation to the agenda (Annex 1). A full list of meeting attendees is available in Annex 2.

2 Science-related Milestones in the Agreement and PSCG Tasks

The provisional PSCG meeting Chair (“Chair”) provided a brief review of the deadlines and milestones contained in the Agreement related to Article 4. In accordance with Article 11 of the Agreement, the Agreement entered into force on June 25, 2021, 30 days after ratification of the Agreement by all 10 Signatories. Article 4 states the Parties agree to establish, within two years of the entry into force of the Agreement, a JPSRM with the aim of improving the understanding of the ecosystems of the Agreement Area and, in particular, of determining whether fish stocks might exist in the Agreement Area now or in the future that could be harvested on a sustainable basis and the possible impacts of such fisheries on the ecosystem in the Agreement Area. Additionally, Article 4 requires the adoption of a data sharing protocol as part of the JPSRM within two years of entry into force of the Agreement. Therefore, the Parties need to establish both the JPSRM and finalize the associated data sharing protocol by June 25, 2023.

While not contained in the article specific to the JPSRM, the Agreement also requires the Parties to establish, within three years of entry into force of the Agreement, conservation and management measures for exploratory fishing in the Agreement Area (see Article 5 paragraph (1)(d)). While the issue of exploratory fishing will be discussed at the November 2022 COP meeting, the PSCG delegates anticipate receiving direction from the COP at a future date to assist with the development of any such measures as they relate to the execution of exploratory fishing operations. The deadline for establishing such measures is June 25, 2024.

The Chair provided a review of the terms of reference (ToRs) approved by the COP at the May 31, 2022, virtual meeting for the establishment of two PSCG working groups: a Mapping and Monitoring Working Group (MM-WG) and a Data Sharing Protocol Working Group (DSP-WG). The ToRs for the two working groups as agreed upon by the PSCG at the second meeting in March 2022 and approved by the COP on May 31, 2022 are as follows:

1. **Establish a PSCG Mapping and Monitoring Working Group (MM-WG)** to develop the mapping and monitoring plans for the JPSRM to achieve its aim, for approval by the PSCG, building on the draft plans from the 4th and 5th FiSCAO meetings and the 1st PSCG meeting and based on the questions and discussions from the 2nd PSCG meeting with the following Terms of Reference:
 - a. The MM-WG will consist of multiple representatives from each Party with expertise, including scientific, Indigenous and Local Knowledge, as well as appropriate external experts, of ecosystem components of the JPSRM (e.g. fish, marine mammals, oceanography, ecosystem production, birds, lower trophic level species).
 - b. The MM-WG will meet on a timeline determined by the working group with draft plans available for review and discussion at the Fall 2022 PSCG.
 - c. The MM-WG may form smaller teams to meet separately with similar objectives and products to contribute to the overall draft plans.
 - d. The MM-WG will focus efforts on scientific, Indigenous and Local Knowledge activities concerned with:
 - i. Mapping requirements in the CAO, Atlantic, and Pacific gateways.
 - ii. Monitoring requirements consistent with Article 4 of the Agreement.
 - iii. Data collection (e.g. gear type) and data format standardization.
 - iv. Prioritization of mapping and monitoring parameters as well as spatial and temporal sampling scales.

2. **Establish a PSCG Data Sharing Protocol Working Group (DSP-WG)** of Party representatives and appropriate external experts to develop an agreement on a data management policy and sharing protocols as part of the JPSRM, for approval by the PSCG, building on the draft plan from the 5th FiSCAO meeting and informed by the discussions during the 2nd PSCG meeting with the following Terms of Reference:
 - a. The DSP-WG will consist of no more than two representatives from each Party including a technical expert, and no more than two representatives from any one external group, as appropriate.
 - b. The DSP-WG will meet on a timeline determined by the working group with a data management policy and sharing protocols plan available for review and discussion at the Fall 2022 PSCG.
 - c. The DSP-WG will meet in two phases to 1) identify the framework and specific policy components to be developed and 2) identify appropriate technical requirements.
 - i. The DSP-WG will draft a hybrid framework that recognizes
 - ii. A centralized data management system collected specifically for the JPSRM and
 - iii. A distributed data management system for relevant accessible data collected in the JPSRM area.
 - d. The DSP-WG will consider other international data management policies and sharing protocols to benefit from state-of-the-art agreements already in use.

The Chair noted that ToRs for both working groups were not able to be fulfilled within the timeline provided, as the working groups were not formally established and did not conduct intersessional work between the May 31, 2022, COP meeting and the time of the third PSCG meeting.

The Chair stated that one of the primary objectives of this PSCG meeting was to establish leadership and membership for the two working groups and to begin work prior to the November 23-25, 2022 COP meeting given that the work of the two groups needs to be ready for review and discussion at a spring 2023 PSCG meeting.

3 Mapping and Monitoring

To begin the formal discussion on the next steps needed to complete the mapping and monitoring plan of the JPSRM, also referred to as the ‘science plan’ in the March 2022 second PSCG meeting report, the United States and China both presented overviews of the discussion papers provided by each delegation prior to the PSCG meeting. These discussion papers can be found in Annexes 3 and 4, respectively.

The United States explained that section II of their discussion paper contains the questions discussed at the second PSCG meeting in March 2022. The black text contains the language as presented in advance of the March 2022 meeting with alterations based on discussions at the second PSCG meeting in blue text. The document does not include any new priorities for the PSCG to consider. Section III part 1 includes mapping and monitoring priorities and draft discussion questions to help guide the discussions on this effort within the PSCG and the MM-WG. Following the presentation by the United States, Canada indicated the Inuit Circumpolar Council (ICC) would like to develop an Indigenous Knowledge map for the Central Arctic Ocean (CAO), something ICC has done for other regions as part of the International Polar Year and recently for the North Water Polynya (i.e., Pikialasorsuaq). The Chair noted that this would be a very helpful addition for the development of the JPSRM.

China noted the overlap of their discussion paper with the one presented by the United States and that the two documents are complementary to one another. The Chinese paper contains a stepwise approach given the tight timeline to establish the JPSRM: (1) agree on a framework; (2) input priority elements and indicators; and (3) develop standards and protocols to facilitate data sharing. China also noted that monitoring should be based on the mapping results.

Following the presentation of both papers, the EU noted they have already completed several expeditions in recent years that resulted in data collection relevant to the Agreement. The EU also has standard operating and sampling procedures in place that can provide a lot of information and input to the working groups moving forward. The EU shared a brief presentation of the results from some recent expeditions to provide a general perspective of the situation in the CAO and adjacent areas and to provide a better understanding of what the JPSRM monitoring program should look like. In summary, the EU presentation focused on a 2016 Oden expedition, the 2019-2020 Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) expedition, and from EU-supported surveys in 2021 as part of the Synoptic Arctic Survey (SAS). Some of the conclusions presented based on the results from these three expeditions are:

- There is a deep scattering layer everywhere;
- Fish density is extremely low;
- Most fish are small (10-15 cm) with very few larger predatory fish (40-60 cm);
- There is just enough fish to feed the few seals and polar bears in the CAO; and
- The Arctic shelf seas are highly productive, but the CAO is not.

The EU presented a few thoughts and recommendations for the PSCG to consider as the group moves forward, including:

- Study the shallower areas, especially the Chukchi plateau area;
- Pelagic fish are crucial in the ecosystem and should be monitored;

- Utilize standard sampling protocols based on experience from the CAO; and
- Utilize eDNA sampling buoys, acoustic devices and gliders in the High Seas and gateway areas.

A copy of the EU science presentation can be found in Annex 5, including the complete list of conclusions and recommendations for moving forward.

Following the presentation by the EU, the United States noted that the Indigenous peoples who live along the Arctic coast, especially on the North Slope of Alaska, are very familiar with the Pacific Gateway and are involved in guiding the research together with science in the region. They have a lot of Indigenous Knowledge of the region, such as related to bowhead whales, other marine mammals, ship strikes, ocean currents, the emergence of new species, and other topics. This Indigenous Knowledge is an important component to help accomplish the efforts of the PSCG. Canada added that in the Inuvialuit settlement region, the Inuit and the government of Canada co-manage the resources and that the people living in these areas see the changes that are occurring first-hand, especially when there are extreme events.

The meeting attendees then discussed the proposed JPSRM questions based on the outcomes of the March 2022 PSCG meeting. The Chair reminded the meeting attendees that the overarching questions discussed at the second PSCG meeting have been developed over several years and a series of meetings of the PSCG and its predecessor discussions. The Chair also noted that there will need to be agreement on the overarching and sub-questions moving forward as they will guide the implementation of the JPSRM. The group reviewed and provided additional edits to the questions contained in Section II of the United States discussion paper. A clean version of the updates to the questions contained in the United States discussion paper based on the discussions at the meeting can be found in Annex 6.

There was a lot of discussion around question 2.a. and the desire by several delegations to include language about extreme events given the impact such events are having with respect to changes in the region. One delegation requested to identify Indigenous and local communities separately instead of lumping them together. This distinction was made to emphasize the significance of Indigenous peoples' distinct status and rights recognized by their respective nation-states and by the international community. There was also a lot of discussion regarding including communities in the questions, and one delegation suggested striking the language altogether. Representatives from several delegations spoke to the linkages Arctic Indigenous communities have with the land and ocean and that they are a part of the ecosystem. In research with Inuit and scientists, Inuit have always grouped themselves as a part of the Arctic ecosystem. Following robust discussion, a majority of the delegations agreed it was important to keep the language about both Indigenous communities and local communities in the questions where that language appears.

Other issues or items to note from the discussion include:

- The need to demarcate the extents or what is meant when talking about the Atlantic and Pacific Gateways;
- Having Parties provide updates of their recent research and scientific efforts in the CAO and surrounding ecosystems at the first meeting of the MM-WG;
- The need to be careful about being overly prescriptive in the questions with examples in parentheses (much of the detail would come out through discussions within the working groups);

- Since these questions are looking to provide answers about potential future scenarios, need to be careful about saying “will” versus “could” or “would”; and
- ICC requested to include a definition of Indigenous Knowledge in the U.S. discussion document moving forward. The definition appears on page 15 of the 2022 “[Circumpolar Inuit Protocols for Equitable and Ethical Engagement](#)” report.

Several delegates shared links to documents that may help with the work of the PSCG moving forward, including:

- In reference to the discussion about the Indigenous Knowledge maps, a link to a recent example, the [Pikialasorsuaq Atlas](#) and the [IPY Circumpolar Flaw Lead Study](#); and
- ICES reports “[Ecosystem Assessment of the Central Arctic Ocean: Description of the Ecosystem](#)” and “[Central Arctic Ocean ecoregion – Ecosystem Overview](#)”.

The closing topic of discussion regarding mapping and monitoring was leadership of and next steps for the MM-WG. The United States and the EU volunteered to co-chair the MM-WG. Canada noted their ability to provide a level of leadership within some of the subgroups that will likely need to be established under the MM-WG. Norway also noted their willingness to participate in the group and asked if all Parties had submitted names for participation in the working groups in June following a request to do so at the May 31, 2022, COP meeting. Only half of the Parties had provided names prior to the third PSCG meeting. All Parties and other organizations were asked to share names of participants in the MM-WG within one week of the conclusion of the meeting. There was agreement that efforts of the MM-WG needed to get underway immediately and that an early update on the efforts would be shared at the November 2022 COP meeting. Finally, the delegates were asked to consider the questions contained in section III part 1 of the United States’ discussion paper and the concepts contained in China’s mapping and monitoring draft framework document to help begin the conversations within the MM-WG.

4 Data Sharing Protocol

To begin the formal discussion on the next steps needed to complete the data sharing protocol for the JPSRM, the United States and China both presented overviews of the discussion papers provided by each delegation prior to the PSCG meeting. These discussion papers can be found in Annexes 3 and 7, respectively.

China noted the need for the DSP-WG to develop standard specifications and made reference to the system used by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). All scientific data in CCAMLR is centralized from Member contributions with some submissions being mandatory while others are voluntary. CCAMLR could provide a model regarding data ownership and dissemination. China recommended using lessons from CCAMLR and MOSAiC to inform the work of the PSCG. China described the hybrid framework proposed using both centralized and distributed systems. The United States noted many similarities exist between the two discussion papers on the topic of data sharing with a recommendation to combine the two papers to help guide the work of the DSP-WG. The United States provided a review of main issues discussed at the second PSCG meeting on this topic, provided proposed guidance for moving forward, and proposed a framework for holding data until the PSCG finalizes and operationalizes a formal data sharing protocol.

The United States recommended adopting the recommendations from reports of earlier science meetings related to the Agreement regarding data sharing:

- Ensure data is made available;
- Data centers part of the JPSRM need to coordinate activities if we have a distributed process.
- Adopt international agreements for Arctic data management and adhere to existing data policies.
- Respect national and international data policies.
- Citations need to address data origin (speaks to concerns about use of data without attribution).
- Digital object identification (DOI) standards will be important.
- Address the issue of co-authorship on shared data.
- On data collection: meta-data and data included in the data sharing protocol, address standards used in measurements. Spoke to this a bit at the first PSCG meeting in February 2020. Need to agree on standards of measurement.

In the interim, the United States recommends building on the current arrangement: the United States hosted a website for sharing information and final reports among the Parties and public. The United States proposed to build a public and confidential website for the PSCG. The United States presented a prototype of such a website which would allow the PSCG to communicate globally. The United States offered the same for the COP. This would allow for a single location for delegations to share results and reports. The United States recommended including a section of the website that would require log-in credentials to protect the data collected through the implementation of the JPSRM. The website could also be used to create events, which can serve as a way for the working groups to organize themselves, which would make this a transparent process. The United States did not recommend this should be a centralized database; rather, it would allow information sharing in the interim. The United States welcomed views from other delegations about this proposal.

Following these presentations, ICC noted the release of eight protocols for equitable and ethical engagement of Inuit and Indigenous Knowledge developed through a synthesis report of Inuit produced materials and voices that address existing rules, laws, values, guidelines, and protocols for the engagement of Inuit communities and Indigenous Knowledge and through a series of workshops convening Inuit Delegates that captured Indigenous Knowledge perspectives, needs, priorities, and guidance on future engagement processes. These protocols were developed to inform decision-makers, policymakers, researchers, and others operating in the Arctic on the ethical and equitable engagement of Inuit and their Indigenous Knowledge. The link to the ICC report appears in Section 3, Mapping and Monitoring, of this PSCG report.

One delegation noted the need to develop policies regarding how to deal with public data, data sharing, and connectivity to existing data infrastructure. Additionally, given current data transparency, open data movements, and the pressure in the scientific community to make data public, there will likely be pressures to make the data public. ICES shared that they have policies that can accommodate both open and closed data systems and can share those with the DSP-WG if that would be helpful. One delegation noted the existence of many data sharing standards and that the PSCG should consider which one is most appropriate. There is no need to invent a standard just for the PSCG, but the one the PSCG selects should have broad applicability. The meeting participants agreed that there were a lot of detailed issues that needed to be discussed for this topic, and the large PSCG meeting was not the right place to do so. The Chair encouraged the members to move the discussion to the DSP-WG.

The closing topic of discussion regarding the data sharing protocol was leadership of and next steps for the DSP-WG. China volunteered to co-chair the DSP-WG. No other delegation offered to co-chair the DSP-WG with China at the time, but Canada, Norway, and the United States all agreed to consider co-chairmanship. All Parties and other organizations were asked to share names of participants in the DSP-WG within one week of the conclusion of the meeting. There was agreement that efforts of the DSP-WG needed to get underway immediately and that an early update on the efforts would be shared at the November 2022 COP meeting. There was also a request and agreement by the PSCG delegations that the membership would be raised from two to three representatives to allow for inclusion of Indigenous Knowledge and local knowledge holders in addition to technical experts.

5 Recommendations and Next Steps

The PSCG delegations reiterated the request for the COP to approve a spring 2023 PSCG meeting to be held in-person. The PSCG also reiterates the recommendation shared at the May 31, 2022, virtual COP meeting for the COP to develop ToRs and other procedures for the function of the joint scientific meetings in accordance with Article 4 paragraph 6 of the Agreement, building on the ToR and the work of the PSCG, particularly to finalize the JPSRM and develop implementation plans for the JPSRM.

The PSCG appreciates that the topic of exploratory fishing is on the provisional agenda for the November 2022 COP meeting and requests that when discussing that agenda item, the COP identify milestones for establishing the exploratory fishing measures and provide a vision for PSCG involvement in their development. The PSCG also reiterates the need for the COP to identify resources and infrastructure to implement the JPSRM when it is approved. Lastly, the PSCG requests that the COP develop specific messaging regarding the importance of the Agreement and the value of Parties putting effort into moving the JPSRM forward.

Regarding the spring 2023 meeting, no delegation offered to serve as host. Parties are asked to consider their willingness and ability to host the meeting. Given the June 25, 2023, deadlines for establishing the JPSRM and finalizing the associated data sharing protocol, the delegations agreed the meeting would need to occur in late February or early March 2023.

The final agenda item was a preliminary discussion about who might serve as the first official Chair and Vice-Chair of the PSCG. The Chair reminded the meeting attendees that according to the draft PSCG rules of procedure, it is up to the PSCG to nominate a Chair and Vice-Chair and for those nominations to be decided upon by the Heads of Delegation at the COP. While no delegation offered a formal nomination, the United States indicated their interest in potentially serving as the first Chair, and the EU indicated their interest in potentially serving as the first Vice-Chair.

Finally, meeting attendees thanked the Chair for her leadership during the meeting.

Annex 1: Final Meeting Agenda

**Meeting of the Provisional Scientific Coordinating Group of the Agreement to Prevent
Unregulated High Seas Fisheries of the Central Arctic Ocean**

28 - 29 September 2022

8:00 AM to 12:00 PM New York Time each day

FINAL AGENDA

Meeting Documents (To be made available prior to meeting)

1. Meeting Agenda
2. China Draft Framework for the Development of a Mapping and Monitoring program
3. China Draft Framework for the Development of a Data Sharing Protocol
4. U.S.A. Proposed JPSRM Strategic Plan
5. Current PSCG Terms of Reference

Wednesday, 28 September 2022

- 8:00-8:30 Welcomes, Housekeeping and Agenda Review
- Welcome from Meeting Chair, Candace Nachman
 - Technical WebEx Overview (Daniel Harris)
 - Review of Agenda and Rules of Procedure for this Meeting (Candace Nachman)
- 8:30-9:00 Brief Introduction of Delegations
- The head of each delegation will introduce themselves and the members of their delegations.
- 9:00-9:30 Review of Agreement timeline, PSCG tasks, and milestones
- Questions and Group Discussion
- 9:30-10:00 Mapping and Monitoring Revised Research Questions
- 10:00-10:15 Break
- 10:15-10:45 Mapping and Monitoring Next Steps
- Review document from China delegation
 - Review document from U.S.A. delegation
- 10:45-11:50 Mapping and Monitoring discussion
- 11:50-12:00 Day 1 wrap up and plan for Day 2

Thursday, 29 September 2022

- 8:00-8:05 Day 2 Welcome (Candace Nachman)
- 8:05-8:35 Mapping and Monitoring agreements and next steps for WG

- 8:35-9:00 Data Sharing Protocol discussion
- Review document from China delegation
 - Review document from U.S.A. delegation
- 09:00-10:00 Data Sharing Protocol discussion
- 10:00-10:15 Break
- 10:15-10:45 Data Sharing Protocol agreements and next steps for WGs
- 10:45-11:30 PSCG recommendations for the November COP
- Development of talking points
- 11:30-11:50 PSCG Chairman and host considerations
- Discussion of interest and leadership needs
- 11:50-12:00 Concluding Remarks and Meeting Close

Annex 2: List of Meeting Participants

Canada:

1. Robert Apro, HoD, Senior Policy Advisor, International Fisheries Policy, Department of Fisheries and Oceans
2. Alain Dupuis, Science Advisor, Environment and Biodiversity Science, DFO
3. Chris Rooper, Research Scientist, Pacific Region, DFO
4. Jennifer Blanchard, Manager, Intellectual Property and Licensing, Canadian Hydrographic Service
5. Kristen Westfall, Research Scientist, Pacific Region, DFO
6. Lisa Loseto, Research Scientist, Ontario and Prairie Region, DFO
7. Herb Nakimayak, ICC Canada VP International
8. Stephanie Meakin, Senior Science Advisor, ICC Canada
9. Jeremy Ellsworth, Environment and Research Coordinator, ICC Canada
10. Matthew Zammit-Maempel, ICC Canada
11. Colin Webb, Fisheries Specialist, Lands & Natural Resources Division, Nunatsiavut Government
12. Ezra Greene, Senior Research and Technical Advisor, Department of Wildlife and Environment, Nunavut Tunngavik Inc.
13. Kiyoo Campbell, Canada/Inuvialuit Fisheries Joint Management Committee, Fisheries Management Biologist
14. Burton Ayles Ph.D., Canada/Inuvialuit Fisheries Joint Management Committee, Canada Member

China:

1. YANG Lei, PSCG Representative, International Cooperation Division, Chinese Arctic and Antarctic Administration
2. LI Honglei, Deputy Director, the Division of Science Programs, Chinese Arctic and Antarctic Administration
3. ZHAO Xianyong, Senior Researcher, Yellow Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences
4. WANG Lumin, Senior Researcher, East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences
5. SHAN Yanyan, Senior Advisor, Polar Development and International Cooperation Division, Polar Research Institute of China
6. YU Yong, Senior Researcher, Polar Ecology Division, Polar Research Institute of China
7. WU Lizong, Senior Researcher, Data Center, Polar Research Institute of China
8. JIN Haiyan, Senior Researcher, Second Institute of Oceanography, Ministry of Natural Resources
9. LI Hai, Associate Researcher, Third Institute of Oceanography, Ministry of Natural Resources
10. ZHANG Guangtao, Professor, Institute of Oceanology, Chinese Academy of Sciences
11. TIAN Yongjun, Professor, Ocean University of China
12. SHI Ximu, Official, Department of Treaty and Law, Ministry of Foreign Affairs

Kingdom of Denmark in respect of Greenland and the Faroe Islands:

1. Birgitte Jacobsen, HoD, Chief Advisor, Ministry of Fisheries and Hunting, Greenland
2. Kuupik Kleist, President ICC Greenland

European Union:

1. Mr. Stanislovas Jonusas, Policy Officer, Directorate-General for Maritime Affairs and Fisheries, European Commission (Stanislovas.JONUSAS@ec.europa.eu)
2. Mr. Roderick Harte, International Relations and Legal Officer, Directorate-General for Maritime Affairs and Fisheries, European Commission (Roderick.HARTE@ec.europa.eu)
3. Professor Pauline Snoeijs-Leijonmalm, Professor in Marine Ecology, Stockholm University (pauline.snoeijs-leijonmalm@su.se)
4. Dr. Hauke Flores, Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung (Hauke.Flores@awi.de)
5. Dr. Szymon Smoliński, Department of Fisheries Resources, National Marine Fisheries Research Institute (ssmolinski@mir.gdynia.pl)

Iceland:

1. Lisa Libungan, Fisheries Scientist, Marine and Freshwater Research Institute

Japan:

1. Dr. Kenji Taki, Principal Researcher, Japan National Fisheries Research and Education Agency ([takisan@affrc.go.jp](mailto:takistan@affrc.go.jp))
2. Mr. Kengo Tanaka, Senior Expert, International Affairs Division, Fisheries Agency (kengo_tanaka860@maff.go.jp)
3. Dr. Yugo Shimizu, Principal Research Coordinator, Research and Technological Guidance Division, Fisheries Agency (yugo_shimizu980@maff.go.jp)

Korea:

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5. Mr. Jihoon Jeong, jj@kopri.re.kr

Norway:

1. Maria Fossheim, Programme Director, Institute of Marine Research, HoD
2. Randi Ingvaldsen, Senior researcher, Institute of Marine Research
3. Benjamin Planque, Senior researcher, Institute of Marine Research
4. Lis Lindal Jørgensen, Senior researcher, Institute of Marine Research
5. Alf Håkon Hoel, professor, UiT-The Arctic University of Norway and Institute of Marine Research

United States:

1. Robert Foy, NOAA Alaska Fisheries Science Center (NOAA/AFSC)
2. Kelly Kryc, NOAA Headquarters (HQ)
3. Lauren Fields (NOAA/HQ)
4. Eleanor Bors (NOAA/HQ)
5. Tyler Loughran (NOAA/HQ)
6. Kathryn Patterson (NOAA/HQ)
7. Mark Zimmermann (NOAA/AFSC)
8. Esther Goldstein (NOAA/AFSC)
9. Johanna Vollenweider (NOAA/AFSC)
10. Sarah Wise (NOAA/AFSC)

11. John Bengston (NOAA/AFSC)
12. Kelley Uhlig (NOAA/AFSC)
13. Libby Logerwell (NOAA/AFSC)
14. Elana Mendelson, Department of State
15. Erika Carlsen, Department of State
16. Taqulik Hepa, Inuit Circumpolar Council Alaska (ICC-AK)
17. Marie Greene, ICC-AK
18. Nicole Wojciechowski, ICC-AK
19. Cyrus Harris, ICC-AK
20. Vernae Angnaboogok, ICC-AK
21. Brandon Ahmasuk, ICC-AK
22. Leandra Sousa, North Slope Borough Department of Wildlife Management
23. John Citta, North Slope Borough Department of Wildlife Management

Observers:

1. Jörn Schmidt (ICES)
2. Sonia Batten, PICES, sonia.batten@pices.int

Chair:

Candace Nachman

Annex 3: U.S. Discussion Paper

Proposed Next steps towards establishing a Joint Program of Scientific Research and Monitoring of the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

Considerations for the Provisional Scientific Coordinating Group: A U.S.A. Delegation proposal for discussion.

September 2022

The intent of this document is to:

- I. Update milestones related to science objectives of the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (Agreement).
- II. Propose next steps for the Provisional Scientific Coordinating Group (PSCG) to provide science recommendations regarding development of the Joint Program of Scientific Research and Monitoring (JPSRM) to the Conference of Parties in time to support Agreement deadline requirements.
 - Propose PSCG priorities for Mapping and Monitoring based on scientific questions defined at March 2022 PSCG meeting.
 - Propose PSCG priorities for Data Sharing Protocol based on positions raised at March 2022 PSCG meeting.

I. Agreement-Science Coordinating Group Milestones (Proposed milestones in blue)

- **2018, October 3.** Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean signed.
- **2019, April 12-13.** Arkhangelsk, Russian Federation. Conference of the CAOF Member Countries scientific experts on the Central Arctic Ocean marine bio resources stocks condition research plan and their management in the Agreement area. Researcher conference of Scientific Experts.
- **2019, May 29-30.** Ottawa, Canada. First Preparatory Meeting of Signatories to the Agreement formed the Provisional Scientific Coordinating Group (PSCG)
- **2019, November 13-14.** Yellowknife, Canada. Co-Production of Indigenous and Science Knowledge Workshop, which Signatories agreed to hold prior to first PSCG meeting.
- **2020, February 11-13.** Ispra, Italy. First meeting of the PSCG.
- **2020, June, October and December.** Virtual. Series of Round Tables hosted by Inuit Circumpolar Council-Canada regarding Inuit Engagement in the Agreement.
- **2021, June 25.** Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean entered into force.
- **2022, March 1-3.** Virtual. Second meeting of the PSCG.
- **2022, September 28-29.** Virtual. Third meeting of the PSCG.
- **2023, Spring.** Location TBD. Proposed fourth meeting of the PSCG.
- **October 2022 - April 2023.** Mapping and Monitoring (MM-WG) and Data Sharing Plan (DSP-WG) workgroups (approved at May 2022 COP) meet virtually to complete Joint Program of Scientific Research and Monitoring (JPSRM) and draft proposed costs and infrastructure requirements to implement the JPSRM.

- **2023, June 25.** Deadlines contained in Article 4 of the Agreement for establishing a JPSRM and for developing data sharing protocol.
- **2024, June 25.** Deadline contained in Article 5 of the Agreement for establish exploratory fishing conservation and management measures.

II. Proposed JPSRM questions based on outcomes of the March 2022 PSCG meeting

Breakout groups were formed to update the questions that guide further strategic development of the JPSRM. A proposed revision from the U.S.A. Delegation. The intent of the review was to assess relevancy of previously discussed questions during FiSCAO meetings (see Appendix I) and to change or add question to support the final Agreement. Track changes represent recommendations based on the breakout discussions.

1. What are the distributions of species with a potential for future commercial harvests in the Central Arctic Ocean?
 - a. What fish species are currently present in the high seas?
 - b. Do fishable concentrations of commercial species exist in the high seas?
 - c. What are their distributions and abundance patterns?
 - d. What are their local life-history strategies, habitat associations, and demographic patterns?
 - e. Do these strategies, associations, or patterns differ among regions of the Arctic?
2. What other information is needed to provide advice necessary for future sustainable harvests of commercial fish stocks and maintenance of dependent ecosystem components?
 - a. What are the trophic linkages among fishes and between fishes and other taxonomic groups (i.e. quantify food webs identifying keystone forage species)?
 - b. How do fish species abundances and distributions vary as a function of climate variability (e.g. **timing of change, extreme events**, declining sea ice, and biogeochemical changes)?
 - c. Can the species be harvested sustainably with respect to both target fish stocks and dependent parts of the ecosystem? If not, what are the prospects for the development of fisheries in the future?
3. What are the likely key ecological linkages between potentially harvestable fish stocks of the central Arctic Ocean and the adjacent shelf ecosystems **that support** Indigenous **and local** communities?
 - a. What are the connections between fish in the High Seas and those in the adjacent regions?
 - b. What are the mechanisms that establish and maintain these linkages?
 - c. How might fisheries in the High Seas affect adjacent and congruent portions of shelf ecosystems, including fish stocks, fishable invertebrates (crabs, shrimp, mollusks), marine mammals, birds, and fisheries-dependent communities (which include those communities that are dependent on subsistence harvests of fish, invertebrates, and mammals)?
4. Over the next 10-30 years, what changes in fish populations, dependent species and the supporting ecosystems may occur in the central Arctic Ocean and the adjacent shelf ecosystems?
 - a. **What marine species will be productive in the CAO** in the next 10-30 years?
 - b. What changes in production and key linkages are expected in the coming 10-30 years?
 - c. What northward population expansions are expected in the next 10-30 years?
 - d. What are the anticipated impacts of changes in ocean acidification in the next 10-30 years?

- e. How will increased human activity in the region (e.g. ship noise, **ship traffic, industrial activity**, and pollution, affect fish populations, ecosystem health, **and communities** in the next 10-30 years?
 - f. How will increased fishing activity affect **other species bycatch**, migratory and wide-ranging marine mammals, and the Indigenous and local communities that depend upon these species to sustain their ways of living?
5. **What** Traditional Ecological Knowledge **is available to** inform ecological baselines?

III. Proposed discussions on Mapping and Monitoring for the September 2022 PSCG meeting

1. Proposed PSCG Mapping and Monitoring for the MM-WG to consider.

Mapping and Monitoring priorities (developed from the 5th FiSCAO meeting; October 24-26, 2017):

The mapping phase of the JPSRM will continue to provide a current understanding of species distributions, relative abundances, and population structure in relation to biotic and abiotic factors. The monitoring phase of the JPSRM will focus on identifications of temporal variability or trends in species distribution or ecosystem productivity.

Proposed Mapping and Monitoring priorities to refine:

- a. Document the current physical, chemical and biological oceanographic conditions and the distributions of marine invertebrates, fishes, mammals, and birds in the High Seas portion of the CAO and surrounding waters.
- b. Subareas of the High Seas CAO and adjoining seas will need to be prioritized for sampling. Criteria for prioritizing subareas include relative availability (or lack) of information, degree of sea ice loss, and water depth. Potential demersal areas include East Siberian Sea including the Chukchi Borderlands and waters northwest of Wrangel Island. Pelagic surveys should be conducted in areas where there have been documented, observed, or expected northward range expansions by potentially harvestable species.
- c. Surveys should also include areas where environmental changes have been documented or are expected to occur.
- d. Refuge areas for polar fishes from climate change effects, both physical and biological, within which species can complete their lifecycles are of particular ecological importance.
- e. Ideally, synoptic mapping surveys should be conducted over as much of the High Seas CAO as possible following standardized sampling protocols and use consistent data formats.
- f. Data collection priorities will focus on 1) identifying fish species distributions and relative abundances, 2) understanding population structure and the factors affecting species distributions and productivity and 3) managing fisheries in an ecosystem context.
- g. Historic and contemporary baseline data on species distributions and abundances, and environmental conditions in waters adjacent to the High Seas CAO, and to a lesser extent within the High Seas CAO, may be available through indigenous and local knowledge holders.
- h. Monitoring will focus on existing data collections with priorities for new data collection in the High Seas CAO, Atlantic gateway, and the Pacific gateway.

- i. Indicators for detecting change in the availability and viability of species of commercial interest are prioritized:
 - i. Distributions of potential commercial fishes and invertebrates.
 - ii. Fishing vessel activity in waters adjacent to the High Seas CAO
 - iii. Marine mammal and seabird abundance, distributions, diets, condition or foraging behaviors.
 - iv. Zooplankton transport and potential establishment into the High Seas CAO.
 - v. Deep scattering layer.
 - vi. Primary productivity and associated variables.
 - vii. Sea ice.
 - viii. Currents in the gateways.
 - ix. Temperature.
 - x. Ocean acidification.

Potential discussion questions:

- a. Should the timing of the mapping program to capture the current state of the High Seas CAO ecosystem, adjacent ecosystems be limited (e.g. 1-3 years) or should it be an ongoing effort given resource realities?
- b. How should the PSCG improve communication regarding vessels of opportunity and other platforms of opportunity to supplement data collected by a dedicated mapping program?
- c. How should the PSCG better leverage existing analytical groups that are conducting relevant assessments of how to monitor the CAO (e.g., the ICES/PICES/PAME)?
- d. The Atlantic and Pacific gateways were recognized as priority subareas to monitor because of their strong influences on the Arctic Ocean through the transport of water, heat, nutrients and plankton from subarctic to Arctic waters. Both gateways may also be important conduits for fish movement and northward distributional shifts. How should data collections be identified and prioritized in these specific regions that have some existing data collection programs?
- e. What are the next steps to operationalize the monitoring program based on identification of individual indicators that inform on the current and potential future status of fish stocks in the High Seas CAO?

2. PSCG Data Sharing Protocol for the DSP-WG to consider

Proposed next steps (based on PSCG March 2022 meeting):

- a. General agreement on next steps
 - i. Identify options for data archiving and data management of the JPSRM data after discussing data policies, a data sharing framework, and data management options with other international organizations.
 - ii. Identify protocols for archiving and management of Indigenous knowledge and observations collected through the mapping and monitoring efforts.
 - iii. Identify an existing organization to help data providers develop DOIs if their institutional or national data archive cannot provide the service.
 - iv. Identify a data-hosting source accessed through a website and develop sharing protocols to test sharing of the fish observation dataset developed during the Fourth

Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean, and the inventory of monitoring programs in the High Seas CAO and adjacent water.

- b. Aspects of data sharing structure:
 - i. Version control
 - ii. Data and knowledge confidentiality
 - iii. No consensus on distributed vs centralized database. There was some call for a hybrid approach that acknowledges data from multiple sources.
 - 1. High seas CAO collected jointly may be stored in central location
 - 2. Metadata from State-specific data collected on Arctic shelves and High seas CAO
 - 3. Linkages to metadata from sources external to the PSCG and the Agreement.
 - iv. No consensus on using existing database or data protocols from external to PSCG sources.
- c. Develop protocols for archiving and management of Indigenous knowledge, local knowledge, and observations.
- d. Identify geographic scope of data or metadata to include.
- e. Compile a survey of existing data sharing protocols.
- f. Develop a list of existing, relevant data from CAO and extending to adjacent shelves and areas outside the CAO. Potential sources include Arctic Council Working Groups, PICES/ICES, PAG, SAS, DBO, MOSAIC, SHEBA, and RUSALCA.

Proposed Data Sharing Protocol priorities (developed from the 5th FISCAO meeting; October 24-26, 2017; [Based on DBO Data policy and release guidelines - 2015]):

1. Data to be available to Agreement researchers in a timely manner for analysis, and to the larger community once initial analyses are completed. The first step in submitting data will be the completion of a metadata profile for the dataset. The data will then be submitted to a national or institutional data archive that is part of the JPSRM distributed data archive. Metadata should be submitted as soon as possible (i.e. within one month) after completion of a sampling program. Data should be made available as soon as possible after collection and completion of quality assurance programs. A common, password protected shared data archive may be established (e.g., Circumpolar Biodiversity Monitoring Programme, SAON data portals) to facilitate analyses upon completion of the mapping phase of the JPSRM and repeated analyses throughout the monitoring phase.
2. Data centers that are part of the JPSRM distributed data archive will need to coordinate their data management activities, including developing consistent metadata generation, curation and interoperability. When data submitted directly to an institutional or national archive are deemed ready for long-term storage and distribution, a final version of the data and metadata will be uploaded or linked to a shared-archive.
3. The JPSRM Data Sharing Protocol should be consistent and compliant with international standards and agreements such as the IASC Statement of Principles and Practices for Arctic Data Management. That is, free, timely, and unrestricted exchange of essential data and products to the maximum extent possible. The proposed JPSRM data policy approach is fully compatible with the World Meteorological Organization (WMO) Climate Variability and Predictability (CLIVAR) Data Policy. The proposed JPSRM data archive will follow the WMO Core Profile of the ISO 19115: Geographic Information --- Metadata standard.
4. A JPSRM policy would not conflict with or supersede any national or international agency policy related to public access to these data.

5. Citations from data downloaded from the archive and used in publications would include the data's origin should be acknowledged and referenced. Every user is responsible for referencing the Principle Investigator (PI) responsible for creating the dataset that is used and identifying that the dataset was obtained through the JPSRM data archive. If multiple sources have been used, acknowledgement must be provided for each dataset used.
6. The JPSRM data management would include data Digital Object Identifier (DOI) standards supported by international coordination groups such as the Research Data Alliance (RDA).
7. Co-authorship of JPSRM publications that make extensive use of JPSRM data is warranted if their work has contributed to the study in question, or if the investigator has directly contributed to the publication in other ways. It is highly recommended that any data user contact the responsible PI and discuss whether the PI's data collection warrants co-authorship or an acknowledgement.
8. Research programs that contribute data to JPSRM use sophisticated, state-of-the-art instrumentation and comply with strict requirements for maintenance, exposure of instruments, calibration, quality assurance procedures and the like, in order to achieve the highest attainable standards of measurement, accuracy, representativeness, stability and repeatability. To ensure that this goal is reached, PIs who are leading experts for their instruments will take responsibility for individual instruments operated on the respective research program.
9. Users of JPSRM data will be encouraged to establish direct contact with the Scientific Point of Contact for each data set used; this contact will be included in the metadata for each data set. The JPSRM Scientific Point of Contact will discuss the planned use of the dataset and, if necessary, put the data user in contact with the data set PI as the data provider for the purpose of complete interpretation and analysis of data for publication purposes.
10. Users of JPSRM data are strongly encouraged to submit citations for any publications or products to the JPSRM shared archive. The JPSRM shared archive will develop a citation list of publications from the submitted citations. Whenever possible, the archive will use DOIs to link to a publication to its data source(s). The shared archive will make the citation list public via the archive website to provide a continuous record of applications and analyses of JPSRM data and JPSRM scientific achievements.

Appendix I: Mapping and Monitoring Working Group

Mapping and Monitoring Working Group (MM-WG) Terms of Reference (agreed upon at PSCG March 2022 meeting and ratified by COP May 2022):

- a. The MM-WG will consist of multiple representatives from each Party with expertise, including scientific, Indigenous and Local Knowledge, as well as appropriate external experts, of ecosystem components of the JPSRM (e.g. fish, marine mammals, oceanography, ecosystem production, birds, lower trophic level species).
- b. The MM-WG will meet on a timeline determined by the working group with draft plans available for review and discussion at the Fall 2022 PSCG.
- c. The MM-WG may form smaller teams to meet separately with similar objectives and products to contribute to the overall draft plans.
- d. The MM-WG will focus efforts on scientific, Indigenous and Local Knowledge activities concerned with
 - i. Mapping requirements in the CAO, Atlantic, and Pacific gateways.
 - ii. Monitoring requirements consistent with Article 4 of the Agreement.
 - iii. Data collection (e.g. gear type) and data format standardization.
 - iv. Prioritization of mapping and monitoring parameters as well as spatial and temporal sampling scales.

Appendix II: Data Sharing Plan Working Group

Working Group (DSP-WG) Terms of Reference (agreed upon at PSCG March 2022 meeting and ratified by COP May 2022):

- a. The DSP-WG will consist of no more than two representatives from each Party including a technical expert, and no more than two representatives from any one external group, as appropriate.
- b. The DSP-WG will meet on a timeline determined by the working group with a data management policy and sharing protocols plan available for review and discussion at the Fall 2022 PSCG.
- c. The DSP-WG will meet in two phases to 1) identify the framework and specific policy components to be developed and 2) identify appropriate technical requirements.
 - i. The DSP-WG will draft a hybrid framework that recognizes
 - ii. a centralized data management system collected specifically for the JPSRM and
 - iii. a distributed data management system for relevant accessible data collected in the JPSRM area.
- d. The DSP-WG will consider other international data management policies and sharing protocols to benefit from state-of-the-art agreements already in use.

Appendix III: Key science meetings leading up to the Agreement

2011, June 15-17. Anchorage, U.S.A. [First Meeting of Scientific Experts on Fish Stocks in Arctic Ocean.](#)

The first meeting of scientific experts addressed Terms of Reference to identify:

1. current information and data on fish stocks, their ecosystems, and patterns of migration,
2. ongoing and planned scientific activities,
3. current information gaps and options to address gaps,
4. priorities in regard to identified research requirements, and

5. opportunities for and impediments to closer cooperation.

2013, October 28-31. Tromsø, Norway. [Second Scientific Meeting on Arctic Fish Stocks](#). Four major scientific research themes were identified in 2013 at the Meeting of Governments. The meeting of scientific experts completed Terms of Reference:

1. Establish baseline conditions and define information needs for to monitoring changes in baseline conditions, which might influence patterns of distribution and abundance of finfish in the Arctic Ocean. This is viewed as a high-priority requirement.
2. Evaluate the outcome of relevant recent scientific meetings, such as the ICES/PICES (North Pacific Marine Science Organization) workshop in St. Petersburg in May 2013, and discuss strategies to communicate outcomes regarding implications of climate change on management of living marine resources in the Arctic context.
3. Consider meetings and other fora for future scientific cooperation.

2015, April 14–16. Seattle, U.S.A. [Third Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#). Terms of Reference:

1. Continuing the review of current programs for research and monitoring environmental parameters and patterns of fish distribution and abundance; establishing an inventory of research and monitoring programs and preparing a report on the status of and gaps in knowledge on the distribution and abundance of fish in the central Arctic Ocean. Such an inventory should include programs occurring in immediately adjacent shelf areas (i.e., within EEZs), which are linked and have relevance to the central Arctic Ocean (high seas).
2. Developing a framework for a Joint Program of Scientific Research and Monitoring for the Central Arctic Ocean, including the definition of baseline information needs and methods necessary to determine the likelihood of sustainable fisheries being present. Additionally, this framework should include one or more components that investigate the role of fishes and shellfish in the marine ecosystems (and vice versa) in the Central Arctic Ocean, as well as linkages with the shelf areas and likely impacts of climate change.
3. Considering the development of an action plan (e.g., notional schedules, areas of operations, costs) for the Joint Program of Scientific Research and Monitoring.

2016, September 26–28. Tromsø, Norway. [Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#). Framework and Terms of Reference drafted for a joint scientific research and monitoring plan program that included two survey elements, 1) a mapping phase and 2) a monitoring phase. Scientific questions were identified that need to be addressed to fully assess the potential for sustainable commercial fishing in the High Seas CAO. Terms of Reference:

1. Complete the synthesis of knowledge.
2. Develop a Joint Scientific Research and Monitoring Plan to address the four questions.
3. Provide a Framework for the Implementation Plan.

2017, October 24-26. Ottawa, Canada. [Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean](#). This final meeting of the science experts reported on a number of completed Terms of Reference:

1. Identification of baseline data (i.e., a mapping program) in the high seas CAO to achieve the goals of documenting species distributions, relative abundances, and key ecosystem parameters,
2. Development of a strategy for monitoring indicators of fish stocks and ecosystem components,
3. Determination of preliminary cost estimates to implement a mapping program in the high seas portion of the CAO and in the Pacific Gateway region, and
4. Development of a draft data sharing policy as the foundation for a future data sharing protocol.

2020, February 11-13. Ispra, Italy. [First meeting of the Provisional Scientific Coordinating Group](#). The first meeting of the PSCG reported on a number of completed Terms of Reference:

1. Development of Interim Rules of Procedure and a basis for future Rules of Procedure for the PSCG.
2. Identification of processes and mechanisms to incorporate indigenous and local knowledge, through the inclusion of representatives of Arctic communities, including Arctic indigenous peoples, in the work of the PSCG by specifically recommending direct participation in PSCG delegations, working groups, or sub-groups.
3. Update of current or upcoming scientific activities and platforms of opportunity list for scientific mapping work in the Central Arctic Ocean that could contribute relevant information and data to the Joint Program of Scientific Research and Monitoring and identification of the knowledge gaps addressed by each activity or platform.
4. Prioritization of mapping work based on identified gaps, and any updates to these gaps, and coordinate among Signatories opportunities for conducting scientific mapping work in accordance with the Joint Program of Scientific Research and Monitoring, including by using upcoming scheduled scientific activities and platforms of opportunity identified.
5. Updated the Inventory of Monitoring Programs in the High Seas Central Arctic Ocean and adjacent water.

Annex 4: China Mapping and Monitoring Discussion Paper

Draft Framework for the development of a Mapping and Monitoring program

A discussion paper to be circulated to Parties at the request of China

The COP has adopted the recommendation from PSCG on the establishment of a PSCG Mapping and Monitoring Working Group (MM-WG) to develop the mapping and monitoring plans for the JPSRM to achieve its aim, for approval by the PSCG, building on the draft plans from the 4th and 5th FiSCAO meetings and the 1st PSCG meeting and the questions and discussions from the 2nd PSCG meeting. and approved to hold the PSCG meeting in the fall 2022 to review and finalize the work of the Working Group. As this work has been laid behind our schedule, China would like to propose a preliminary framework for the development of Mapping and Monitoring program as the first step to facilitate the discussion in the PSCG meeting and expedite our work toward the development of a Mapping and Monitoring program.

1. Characteristics of a joint Mapping and Monitoring Program

A collaborative Mapping and Monitoring Program as part of the Joint Program of Research and Monitoring provided in Article 4 of the CAO Agreement shall have the following 4 attributes:

- (i) Share the common objective as defined in Article 4.4 of the Agreement.
- (ii) Fit in the same spatial-temporal PLANNING framework outlined by PSCG.
- (iii) Apply the same STANDARDS or PROTOCOLS adopted by PSCG.
- (iv) Follow the DATA-SHARING PROTOCOL agreed by PSCG.

The Mapping and Monitoring program to be developed can be benefited from:

- (i) A jointly planned synoptic survey implemented by multi-ship operations with as many nations contributing as possible to obtain the best coverage and collaboration.
- (ii) Surveys conducted by Parties with participation of any kind from one or more signatories in accordance with criteria for the Mapping and Monitoring Program.
- (iii) Surveys conducted by Parties in accordance with criteria for the Mapping and Monitoring Program.

2. Mapping Program

2.1 Priority Sampling areas

- Ice-free areas of CAO extending to the adjacent eight LMEs relevant to the CAO ecosystem.
- Ice-covered areas of the CAO known to be important fish habitat.
- Atlantic Gateway extending to the ice-free area of CAO.
- Pacific Gateway extending to the ice-free area of CAO.

2.2 Prioritized data and indicators

- (i) Fishery resources

Biodiversity of Arctic fishes (species of Arctic fishes); Distribution and abundance of important Arctic fishes; Biology of Arctic fishes

(ii) Physical environment

Temperature, Salinity, Current, etc.

(iii) Chemical environment

Nutrients, pH, DO, etc.

(iv) Biological environment

Primary Production, Planktons, Benthos, etc.

(v) Top predators

Marine mammals and seabirds

(vi) Relevant Meteorological factors

3. Monitoring Program

To be determined later based on the knowledge gained from the Mapping efforts.

4. Future work

To identify priority parameters of the six disciplines listed in Section 2.2. building on the FiSCAO 4th and 5th and PSCG 1 reports.

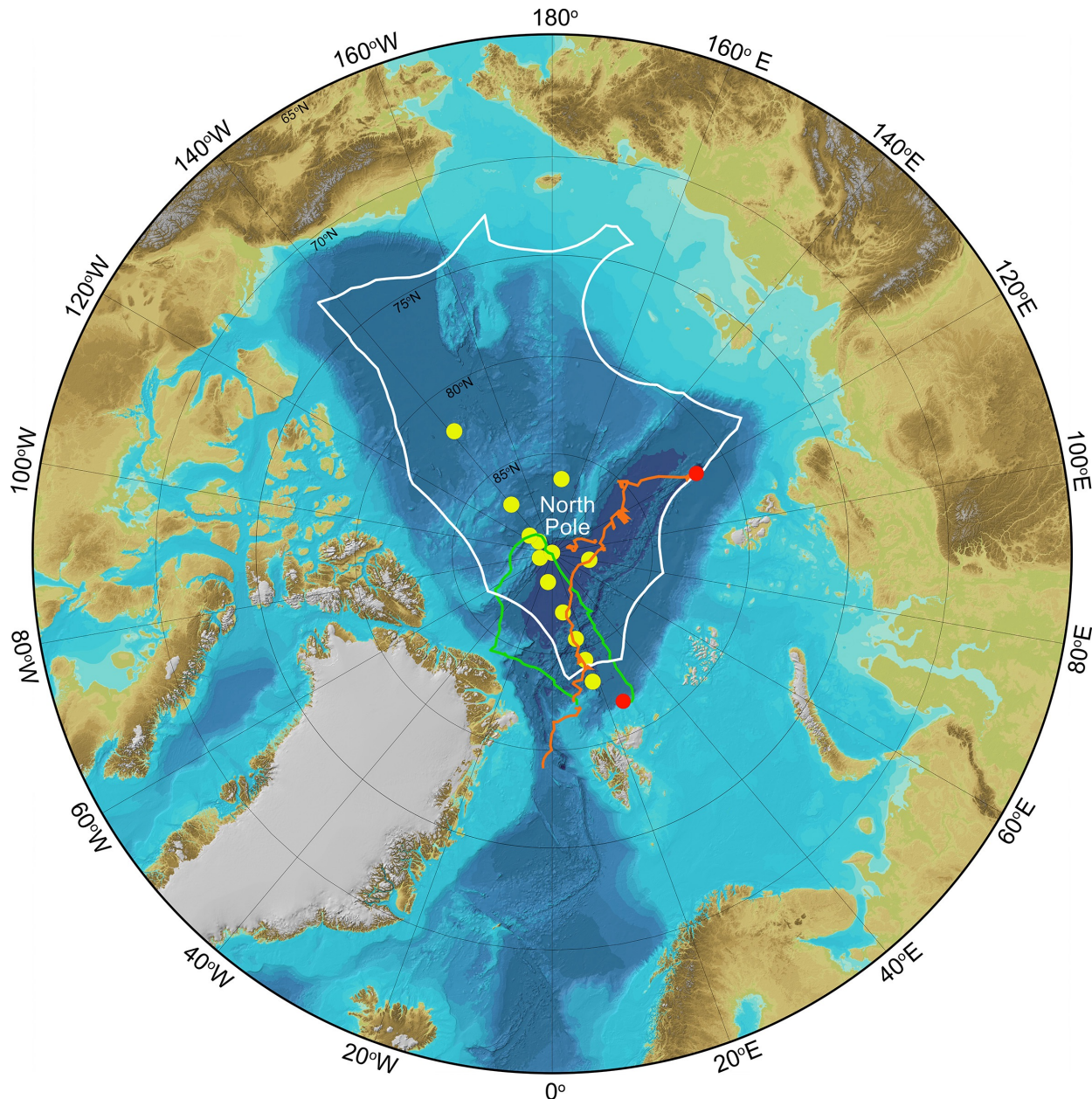
To develop relevant standards or protocols on survey and data processing/analysis.

Annex 5: European Union Science Presentation

Recent data on fish abundance

- Eurasian Basin
- Lomonosov Ridge
- Atlantic gateway

Fully ice-covered



2016 Oden expedition (yellow)

- Snoeijs-Leijonmalm, P et al. (2021) A deep scattering layer under the North Pole pack ice. Progress in Oceanography 194:102560 (collaboration with IMR, Bergen, Norway)

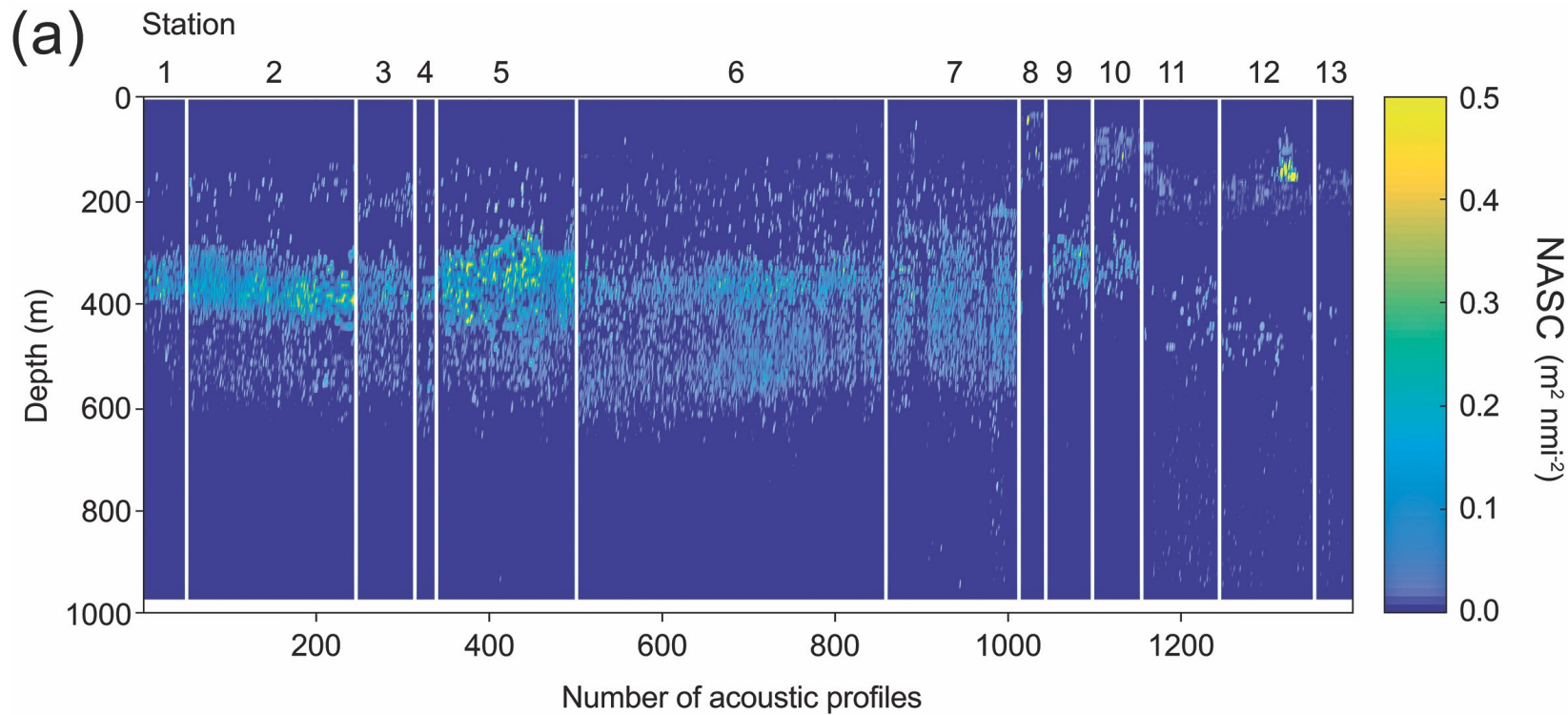
2019-2020 Polarstern MOSAiC expedition (orange)

- Snoeijs-Leijonmalm, P et al. (2021) Ecosystem mapping in the Central Arctic Ocean (CAO) during the MOSAiC expedition. Publications Office of the European Union, 2021
- Snoeijs-Leijonmalm, P et al. (2022) Unexpected fish and squid in the central Arctic deep scattering layer. Science Advances 8:eabj7536

2021 SAS-Oden expedition (green)

- Snoeijs-Leijonmalm, P et al. (2022) Ecosystem mapping in the Central Arctic Ocean (CAO) during the SAS-Oden expedition. Publications Office of the European Union, 2022

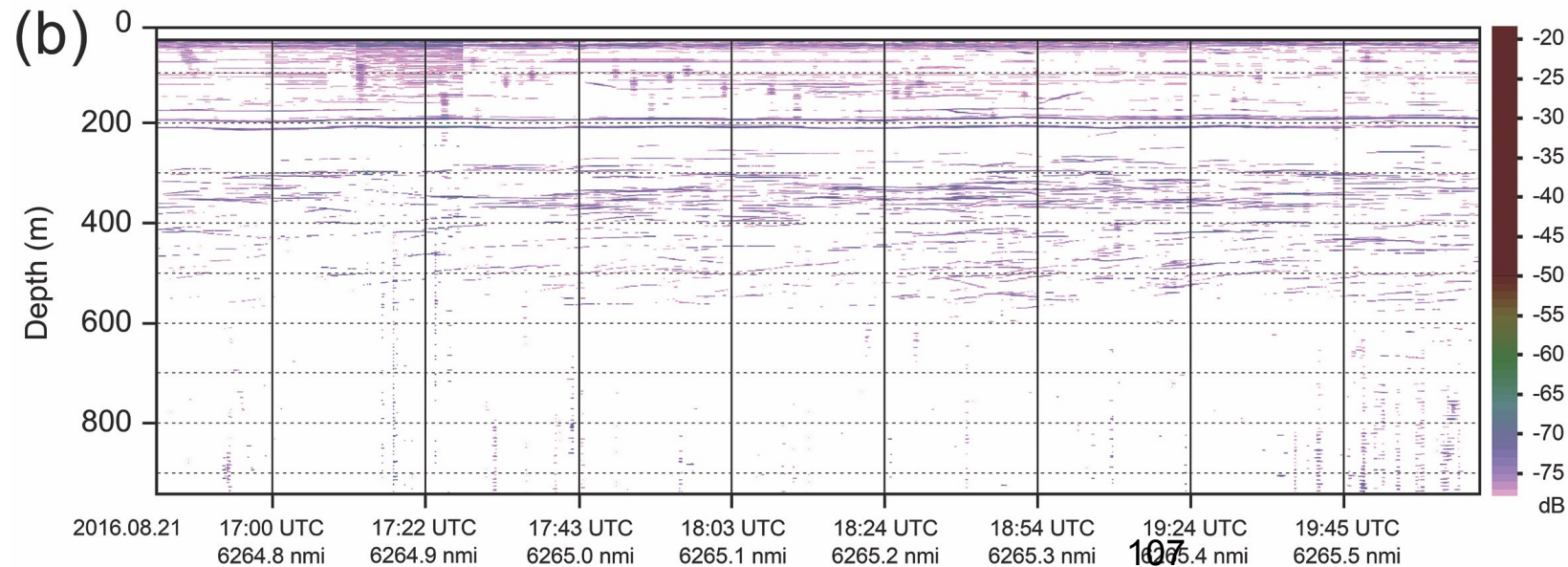
April 2023: EFICA project ends (EU-Report, scientific papers)



2016 Oden expedition

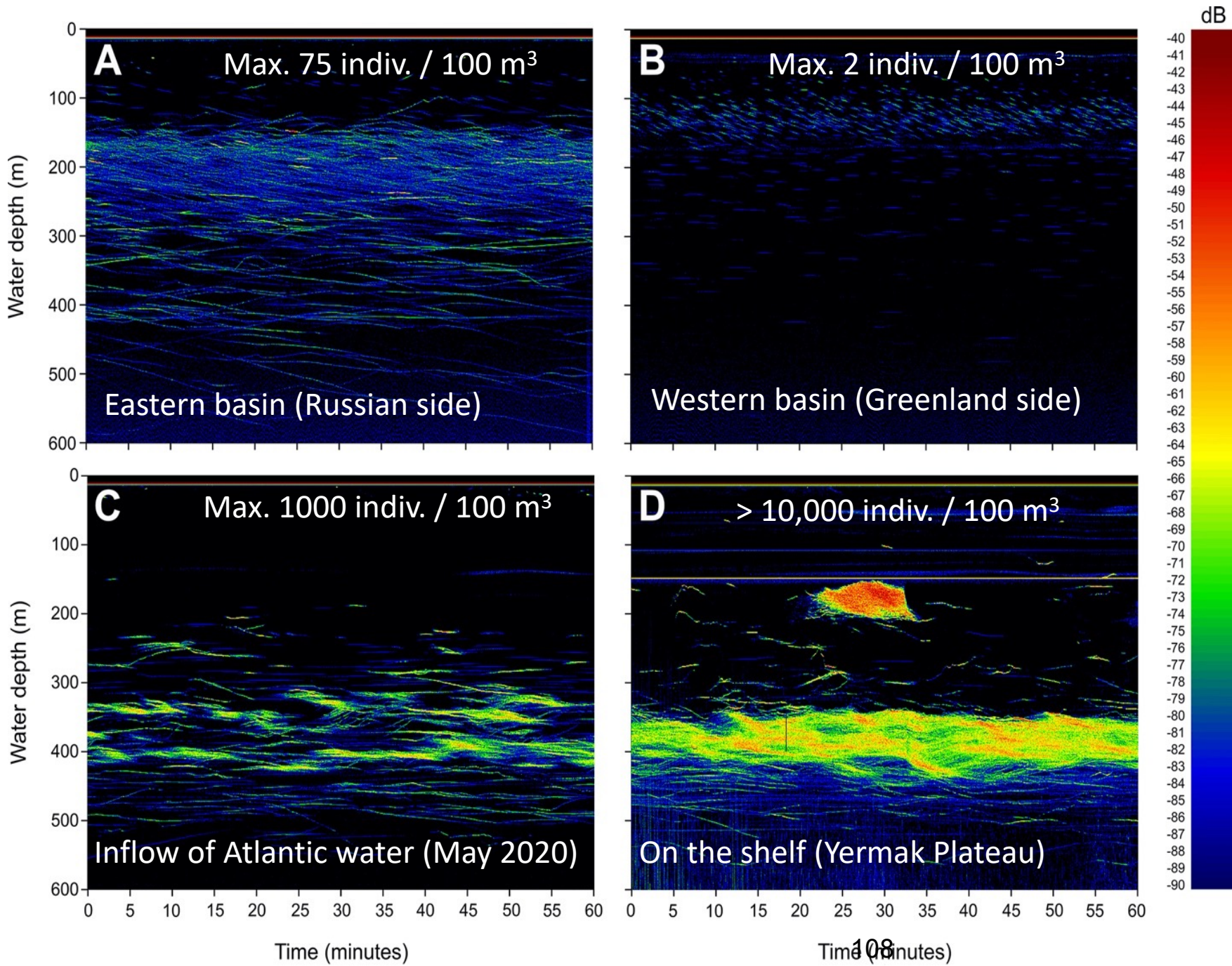
(a) Deep scattering layer
at 300 – 600 m depth

(b) North Pole station
single tracks of fish



CAO (North Pole area)
Max. **50 kg / km²**

Barents Sea (average)
Max. **1,386 kg / km²**
(only of *Boreogadus*)

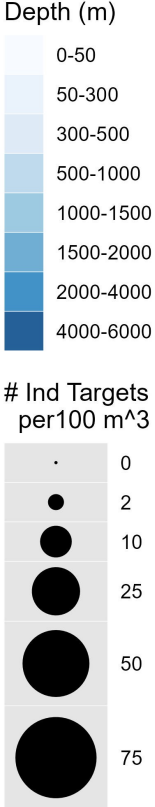
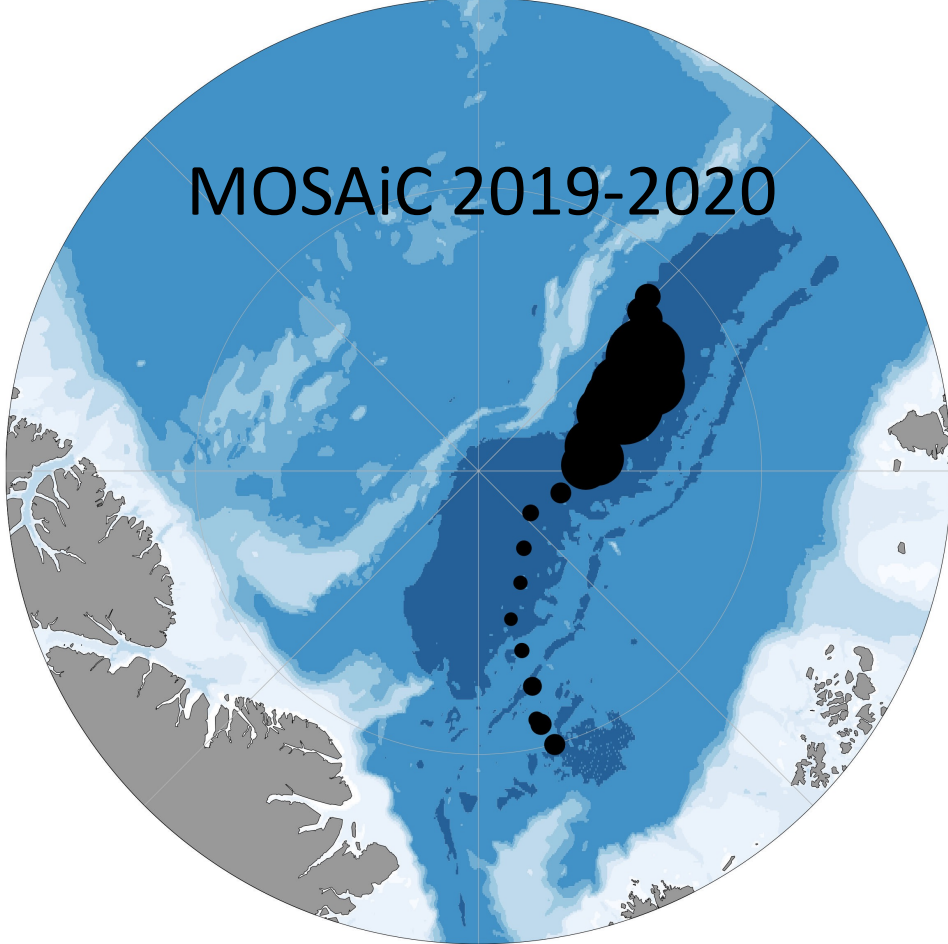


2019-2020
MOSAIC expedition

Shelf = high fish density
CAO = almost no fish

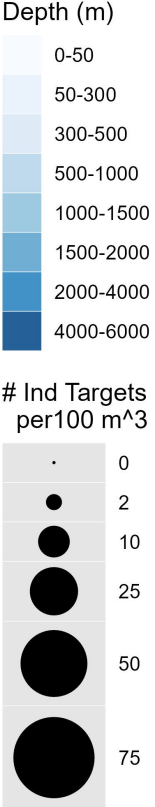
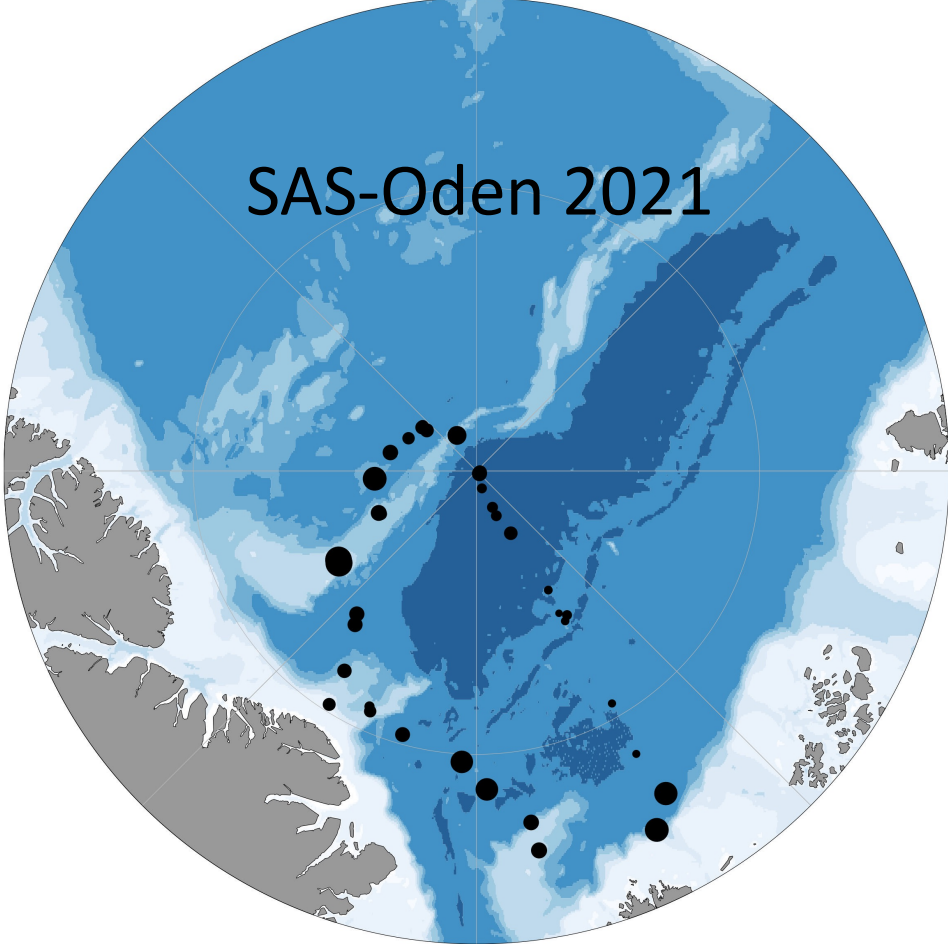
2021 SAS-Oden expedition

MOSAIC (2020) EK80

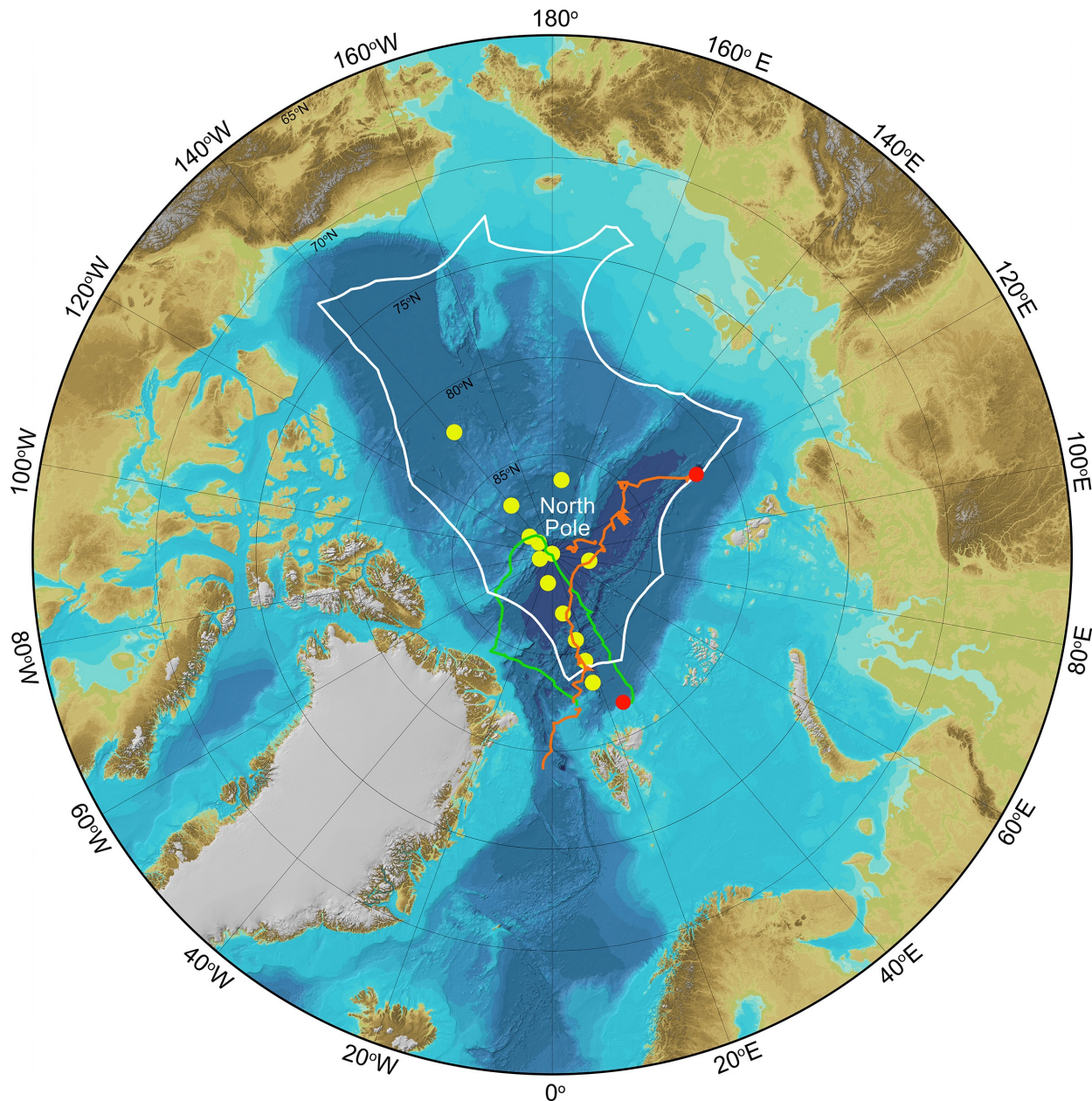


Max. 75 indiv. / 100 m³

EK80 measurements (ODEN 2021)



Max. 1-5 indiv. / 100 m³



Conclusions

There is a deep scattering layer everywhere

Fish density is extremely low

Most fish are small (10-15 cm)
very few larger predatory fish (40-60 cm)

There is just enough fish to feed the few seals
- and the few polar bears - in the CAO

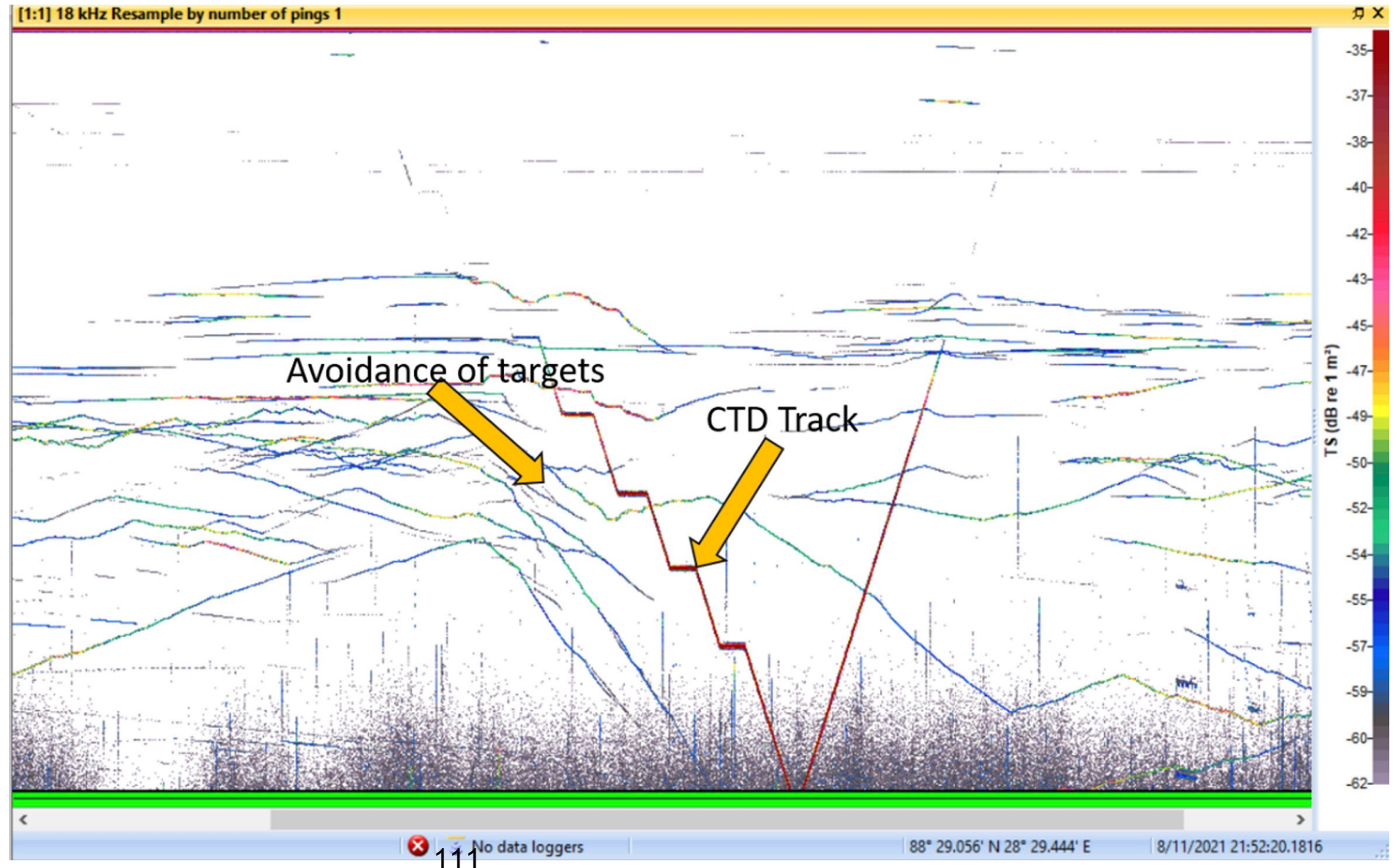
The Arctic shelf seas are highly productive,
the CAO is not

Problem: difficult to catch fish with vertical sampling gear

The fish are so very few and they see the gear coming down

We tried many different types of

Nets
Lines
Traps



The JPSRM is very important even if we found so little fish in the deep basins

- Study the shallower areas (especially Chukchi plateau area)
- Fish is expected to move northward with climate change in all slope areas / gateways
- Pelagic fish are crucial in the ecosystem and should be monitored

The JPSRM is very important even if we found so little fish in the deep basins

- Study the shallower areas (especially Chukchi plateau area)
- Fish is expected to move northward with climate change in all slope areas / gateways
- Pelagic fish are crucial in the ecosystem and should be monitored

Recommendations on methodology

- Standard sampling protocols based on experience from the CAO
 - Synoptic ecosystem surveys (lessons learnt from SAS, more structured than SAS)
 - eDNA (metagenomic and amplicon methods are currently being developed by EFICA)
 - Acoustics on all ships and drift stations in the High Seas / gateways areas
 - Acoustic, eDNA sampling buoys, gliders (real time data – relatively cheap)
 - Trawling if open water (areas with open water increase rapidly)
- Etc., etc.

Annex 6: Updated JPSRM Questions based on Discussions at the Third PSCG Meeting

1. What are the distributions of species with a potential for future commercial harvests in the Central Arctic Ocean?
 - a. What fish species are currently present in the high seas?
 - b. Do fishable concentrations of commercial species exist in the high seas?
 - c. What are their distributions and abundance patterns?
 - d. What are their local life-history strategies, habitat associations, and demographic patterns?
 - e. Do these strategies, associations, or patterns differ among regions of the Arctic?
2. What other information is needed to provide advice necessary for future sustainable harvests of commercial fish stocks and maintenance of dependent ecosystem components?
 - a. What are the trophic linkages among fishes and between fishes and other taxonomic groups (i.e. quantify food webs, including identifying keystone forage species)?
 - b. How do fish species abundances and distributions vary in response to climate variability (e.g. time scale of change, extreme events, declining sea ice, and biogeochemical changes)?
 - c. Can the species be harvested sustainably with respect to both target fish stocks and dependent parts of the ecosystem? If not, what are the prospects for the development of fisheries in the future?
3. What are the likely key ecological linkages between potentially harvestable fish stocks of the central Arctic Ocean and the adjacent shelf ecosystems which includes support for Indigenous communities and local communities?
 - a. What are the connections between fish in the High Seas and those in the adjacent regions?
 - b. What are the mechanisms that establish and maintain these linkages?
 - c. How might fisheries in the High Seas and that in the adjacent and congruent portions of the shelf ecosystems interact, including fish stocks, fishable invertebrates (crabs, shrimp, mollusks), marine mammals, birds, and fisheries-dependent communities (which include those communities that are dependent on subsistence harvests of fish, invertebrates, and mammals)?
4. Over the next 10-30 years, what changes in fish populations, dependent species and the supporting ecosystems may occur in the central Arctic Ocean and the adjacent shelf ecosystems?
 - a. Which marine species will likely increase and decrease in population size and/or productivity in the central Arctic Ocean in the next 10-30 years?
 - b. What changes in production and key linkages are expected in the coming 10-30 years?
 - c. What northward population expansions are expected in the next 10-30 years?
 - d. What are the anticipated impacts of change in ocean acidification in the next 10-30 years?
 - e. How will existing and increased human activity and pressures in the region likely affect fish populations and ecosystems, which includes support for Indigenous communities and local communities, in the next 10-30 years?
 - f. How could increased fishing activity affect bycatch species, seabirds, migratory and wide-ranging marine mammals, and Indigenous communities and local communities that depend upon these species to sustain their ways of living?
5. What Indigenous Knowledge and local knowledge is available, and how can it be taken into account, to inform ecological baselines?

Annex 7: China Data Sharing Protocol Discussion Paper

Draft Framework for the Development of a Data Sharing Protocol

A discussion paper to be circulated to Parties at the request of China

Summary: The COP have approved the PSCG to establish a working group to develop data sharing protocols, and agreed to hold the PSCG meeting in the fall 2022 to review and finalize the work of the Working Group. However, our work has been laid far behind the schedule to date. To facilitate the discussion in the coming PSCG meeting, China has urgently prepared this paper in case there will be no documents to be discussed as the basis of our work.

This paper draws on some international data management policies and practices, and provided a draft framework and some basic elements for the development of a Data Sharing Protocol for the consideration of Parties. It is recommended that the PSCG to adopt the framework for the development of a data sharing protocol on the basis of this paper as the first step, and request the DSP-WG to further draft a Data Sharing Protocol in accordance with the CAO Agreement for approval by the PSCG, then request the DSP-WG to develop standard specifications on the formats of the different types of data to be generated by the JPSRM for the centralized data management system, and encourage Parties to use the same format to collect data in their national research programs for the distributed data management system where appropriate.

1. Background

The CAO agreement obligated the Parties to establish a Joint Program of Scientific Research and Monitoring (JPSRM) and a data sharing protocol as part of it within two years of the entry into force of the Agreement. The JPSRM shall aim to improve understanding of the ecosystems of the Agreement Area and, in particular, of determining whether fish stocks might exist in the Agreement Area now or in the future that could be harvested on a sustainable basis, and the possible impacts of such fisheries on the ecosystems of the Agreement Area, and takes into account the work of relevant scientific and technical organizations, bodies and programs, as well as indigenous and local knowledge.

The 2nd PSCG Meeting in March 2022 recommended to establish a PSCG Data Sharing Protocol Working Group (DSP-WG) to develop an agreement on a data management policy and sharing protocols as part of the JPSRM, for consideration by the PSCG and approval by the Parties, building on the draft plan from the 5th FiSCAO meeting and informed by the discussions from the 2nd PSCG meeting. The DSP-WG will meet in two phases to identify the framework and specific policy components to be developed and, then identify appropriate technical requirements. The DSP-WG will draft a hybrid framework that recognizes *a centralized data management system* collected specifically for the JPSRM and *a distributed data management system* for relevant accessible data collected in the JPSRM area. The DSP-WG will consider other international data management policies and sharing protocols to benefit from state-of-the-art agreements already in use¹. The Parties approved the establishment of the proposed working group as a productive means of advancing the PSCG work on the development of data sharing protocols, and

¹ Provisional Scientific Coordinating Group proposal to the Conference of Parties to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean.

approved the holding of a PSCG meeting in the fall 2022 to review and finalise the work of the Working Group².

2. International data management policies and Sharing Protocols

2.1. CCAMLR's centralized data management and sharing system

All the scientific data collected in the centralized data management and sharing system of CCAMLR are originated from the contributions of members, either submitted by members on a mandatory basis in accordance with relevant legally binding provisions stipulated in CCAMLR Conservation Measures, or provided by members on a voluntary basis to aid the scientific work of CCAMLR. The “mandatory data” need to be submitted in accordance with the format specified in the relevant Conservation Measures, while the “voluntary data” are usually provided with a format discussed and adopted by the relevant Working Group of the SC-CAMLR.

The scientific data are stored in the centralized data management system operated by the Secretariat in CCAMLR Headquarter. The Secretariat is responsible for archiving and maintaining the data, while the ownership of the respective data still resides in the hands of the data originator. The data can be shared and used for the purpose of CCAMLR business through a series of Data Request, Permission-seeking, Permission-granting and Data-release procedures according to the *RULES FOR ACCESS AND USE OF CCAMLR DATA*; publication of the results originated from the data thus granted is also possible with additional consultation with and permission of the data owners in advance.

2.2 MOSAiC Data Policy

The Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC) is a collaborative, international project to address pressing scientific questions in the central Arctic. MOSAiC Data Policy regulates data management, access and release as well as authorship and acknowledgment. Signing the Data Policy is a pre-requisite for participation in MOSAiC field operations and being a member of the MOSAiC consortium.

The MOSAiC Central Storage (MCS) aboard Polarstern is the basis for gathering data during the year of operation, offering near-real-time access and early processing of the data to the users underway. The land MCS provided by AWI is the central and reliable storage and working database of MOSAiC data within the AWI storage platforms. Only MOSAiC consortium members with authentication/authorization will have access to the data prior to public release. PANGAEA is the primary long-term archive for the MOSAiC data set and all primary data, with the exception of the subsequently mentioned cases, must be submitted to the PANGAEA data base for long-term archival.

2.3 DBO Data Policy

The Distributed Biological Observatory (DBO) is an Arctic change detection array established along a latitudinal gradient that currently extends from the northern Bering Sea to the boundary between the Beaufort and Chukchi Seas near Cape Barrow, Alaska. DBO sampling focuses on cross-sections of areas with high productivity, biodiversity and rates of biological change.

² Summary Report of the Meeting of the COP to the CAO Agreement Virtual, May 31 and June 14, 2022.

The data centers that make up the "DBO Distributed Archive" will coordinate their data management activities, including the development of consistent metadata generation, management, and interoperability. When data submitted directly to the DBO AOOS workspace or national archive is deemed ready for long-term storage and distribution, final versions of these data and metadata will be updated or linked to the DBO EOL archive.

3. Framework for the development of Data Management and Sharing Protocol

To facilitate the discussion among members to expedite the implementation of CAO Agreement and the work plan approved by the COP, a draft Framework for the Data Sharing Protocol was developed drawing on the practices on international data management and sharing, particularly those experiences in the data management associated with joint marine surveys in the Arctic and Antarctic region:

3.1 Data Management

- i. Establish a hybrid framework of "centralized + distributed data management system". The data generated from the JPSRM is managed in centralized data management system, while the data generated by national scientific programs and other sources are managed in distributed data management system.
- ii. To promote efficient collaboration on centralized data management, Parties are encouraged to establish a Data Center to facilitate data collection, archiving, maintenance and sharing. The main responsibilities of the Data Center may include:
 - a) Establish and maintain a centralized data management and sharing system;
 - b) Carry out the data collection and prepare the annual data collection report;
 - c) Carry out the data quality checking, and provide feedback to the data provider;
 - d) Collect and managing metadata submitted by Parties;
 - e) Ensure the data safety and security, and make regular backup of the data;
 - f) Provide data to Parties that request data sharing in accordance with section 3.2 of this Agreement
- iii. Centralized managed data
 - a) The centrally managed data includes three levels: raw data, quality control data and data product. Raw data refers to machine recorded data without any processing, mainly used for data permanent preservation and data traceability; Quality control data refers to the data that can be directly used for fish population and ecosystem evaluation after quality accusation and standardization; Data products refers to the data generated from fish survey mapping and ecosystem evaluation.
 - b) To improve the data availability, the metadata and the data documentation must be submitted along with the data.
 - c) The raw data generated by the Joint Program for Scientific Research and Monitoring are recommended to be submitted within 3 months after the finish of the survey, while the quality control data be submitted within 1 year after the expedition.

- d) The quality control data adopts a unified data format and measurement unit, the metadata adopts the ISO 19115 standards or other standards approved by PSCG or its succeeding body.
- e) In order to protect the data intellectual property rights, the data generated by the Joint Program for Scientific Research and Monitoring suggests to be identified by DOI and to specify how the data is referenced. Parties must reference the data when using the data generated by the Joint Program for Scientific Research and Monitoring.

iv. Distributed-managed data

- a) Data generated by the national scientific program of Parties and other cooperative organizations adopt distributed management.
- b) Parties are encouraged to share the data generated by the national scientific program, and the relevant historical data. And the relevant metadata is transferred to the data center.

3.2 Data sharing

To implement the objectives and requirements of the Agreement, the Parties is entitled to use and analysis the data deposited in the centralized management system. In addition, the access to and use of the data managed in a centralized system for the purposes like publication shall be subject to the consent of the data provider.

Access to and use of the data deposited in the distributed management system should be requested from the relevant Parties and organizations. Parties and relevant organizations are encouraged to share those data.

4. Recommendations:

It is recommended that the PSCG to

- 1) adopt the framework for the development of a data sharing protocol on the basis of this paper as the first step;
- 2) request the DSP-WG to further draft a Data Sharing Protocol in accordance with the CAO Agreement for approval by the PSCG;
- 3) request the DSP-WG to develop standard specifications on the formats of the different types of data to be generated by the JPSRM for the centralized data management system, and encourage Parties to use the same format to collect data in their national research programs for the distributed data management system where appropriate.

**Update on the Work of the
Provisional Scientific Coordinating
Group (PSCG)**

Presented by: Ms. Candace Nachman, PSCG Provisional Chair

**Presentation to the 1st In-Person Conference of the Parties for the
Agreement to Prevent Unregulated High Seas Fisheries in the Central
Arctic Ocean**

23 November 2022

2nd PSCG Meeting Overview

- Convened virtually, 1-3 March 2022; hosted by United States
- Main Topics Covered
 - What is the Joint Program of Scientific Research and Monitoring (JPSRM)
 - Questions to be answered by the JPSRM
 - Development of a Data Sharing Protocol
 - Review draft PSCG Rules of Procedure
 - Development of requests and recommendations to the COP

2nd PSCG Meeting: JPSRM

- JPSRM = Science Plan, including implementation strategies
- Stand alone strategy vs. compilation of national programs
- Holistic, ecosystem approach
- Review of the questions to be answered through implementation of the JPSRM
- Proposal from the United States based on engagement with the Inuit Circumpolar Council Alaska (ICC AK)
- Ensure all delegates agree asking the right questions (i.e., any gaps)
- Ensure questions include perspectives of all knowledge systems

2nd PSCG Meeting: JPSRM Questions

1. What are the distributions of species with a potential for future commercial harvests in the Central Arctic Ocean?
 - a. What fish species are currently present in the high seas?
 - b. Do fishable concentrations of commercial species exist in the high seas?
 - c. What are their distributions and abundance patterns?
 - d. What are their local life-history strategies, habitat associations, and demographic patterns?
 - e. Do these strategies, associations, or patterns differ among regions of the Arctic?
2. What other information is needed to provide advice necessary for future sustainable harvests of commercial fish stocks and maintenance of dependent ecosystem components?
 - a. What are the trophic linkages among fishes and between fishes and other taxonomic groups (i.e., quantify food webs **identifying keystone forage species**)?
 - b. How do fish species abundances and distributions vary as a function of climate variability, **including declining sea ice and biogeochemical changes**?

c. Can the species be harvested sustainably with respect to both target fish stocks and dependent parts of the ecosystem? If not, what are the prospects for the development of fisheries in the future?

2nd

PSCG Meeting: JPSRM Questions (continued)

3. What are the likely key ecological linkages between potentially harvestable fish stocks of the central Arctic Ocean and the adjacent shelf ecosystems, **including Indigenous communities**?
 - a. What are the connections between fish in the High Seas and those in the adjacent regions?
 - b. What are the mechanisms that establish and maintain these linkages?
 - c. How might fisheries in the High Seas affect adjacent and congruent portions of the shelf ecosystems, including fish stocks, fishable invertebrates (crabs, shrimp, mollusks), marine mammals, birds, and fisheries-dependent communities (which include those communities that are dependent on subsistence harvests of fish, invertebrates, and mammals)?
 - d. **What is the potential for bycatch (marine mammals, seabirds, and keystone fish species) under different types of commercial fishing gear, and how will this be monitored?**

2nd

PSCG Meeting: JPSRM Questions (continued)

4. Over the next 10-30 years, what changes in fish populations, dependent species and the supporting ecosystems may occur in the central Arctic Ocean and the adjacent shelf ecosystems?
 - a. Who are the winners and losers in the next 10-30 years?
 - b. What changes in production and key linkages are expected in the coming 10-30 years?
 - c. What northward population expansions are expected in the next 10-30 years?
 - d. What are the anticipated impacts of changes in ocean acidification in the next 10-30 years?
 - e. **How will increased human activity in the region, including ship noise, industrial noise, and pollution, affect fish populations and ecosystem health in the next 10-30 years?**
 - f. **How will increased fishing activity affect migratory and wide-ranging marine mammals and the Indigenous and local communities that depend upon these species to sustain their ways of living?**

2nd

5. **(Option 1) How can Traditional Ecological Knowledge inform ecological baselines? Or (Option 2) How will the monitoring process be set up and what types of data be collected to ensure that Indigenous observations and monitoring systems are supported in establishing the baseline data?**

PSCG Meeting: JPSRM Main Discussion Points

- Original questions continue to be relevant
- Create categories of questions
- Prioritize questions specific to Agreement objectives
- Leverage existing resources and programs

2nd

- Ensure Indigenous knowledge and local knowledge are taken into account in developing the questions and programs that will answer the questions
- Proposal to establish a Mapping and Monitoring Working Group to advance the work intersessionally

2nd PSCG Meeting: Data Sharing Protocol

- Building from work done at earlier science meetings
- Initial decisions points proposed:
 - Centralized vs. Distributed data management system
 - Publicly available data vs. protected data
 - Protocols for sharing and archiving Indigenous Knowledge and observations
 - Developing a shared archive
- Proposal to establish a Data Sharing Protocol Working Group to advance the work intersessionally

2nd PSCG Meeting: Recommendations to the COP

- Immediate Needs (presented at and discussed by COP at May 31 virtual meeting)
- Establish a Mapping and Monitoring Working Group (MM-WG)
- Establish a Data Sharing Protocol Working Group (DSP-WG)
- Develop the Terms of Reference and other procedures for the function of the joint scientific meetings
- Call for a Fall 2022 PSCG meeting
- Longer Term Requests (presented at but discussed by COP at May 31 virtual meeting)

- Call for a spring 2023 PSCG/succeeding body meeting
- Discuss exploratory fishing at November 2022 COP meeting
- Identify resources and infrastructure to implement the JPSRM

3rd PSCG Meeting Overview

- Convened virtually, 28-29 September 2022; hosted by United States
- Main topics covered:
 - Questions to be answered by the JPSRM mapping and monitoring program
 - Development of a JPSRM data sharing protocol
 - Logistics for establishing the MM-WG and DSP-WG

3rd PSCG Meeting: JPSRM

- Reviewed discussion papers submitted by United States and China
- Presentation by the European Union on recently completed expeditions
- Importance of including Inuit and Indigenous Knowledge in accomplishing the efforts of the PSCG, including developing and implementing the JPSRM
- Inclusion of definition of Indigenous Knowledge
- Updated the questions based on discussions from 2nd PSCG meeting & further discussions at this meeting

- United States & European Union volunteered to co-chair MM-WG

3rd PSCG Meeting: Updated JPSRM Questions

1. What are the distributions of species with a potential for future commercial harvests in the Central Arctic Ocean?
 - a. What fish species are currently present in the high seas?
 - b. Do fishable concentrations of commercial species exist in the high seas?
 - c. What are their distributions and abundance patterns?
 - d. What are their local life-history strategies, habitat associations, and demographic patterns?
 - e. Do these strategies, associations, or patterns differ among regions of the Arctic?
2. What other information is needed to provide advice necessary for future sustainable harvests of commercial fish stocks and maintenance of dependent ecosystem components?
 - a. What are the trophic linkages among fishes and between fishes and other taxonomic groups (i.e. quantify food webs, including identifying keystone forage species)?
 - b. How do fish species abundances and distributions vary in response to climate variability (**e.g. time scale of change, extreme events**, declining sea ice, and biogeochemical changes)?

3rd PSCG Meeting: Updated JPSRM Questions

- c. Can the species be harvested sustainably with respect to both target fish stocks and dependent parts of the ecosystem? If not, what are the prospects for the development of fisheries in the future?
- 3. What are the likely key ecological linkages between potentially harvestable fish stocks of the central Arctic Ocean and the adjacent shelf ecosystems **which includes support for Indigenous communities and local communities**?
 - a. What are the connections between fish in the High Seas and those in the adjacent regions?
 - b. What are the mechanisms that establish and maintain these linkages?
 - c. How might fisheries in the High Seas and that in the adjacent and congruent portions of the shelf ecosystems **interact**, including fish stocks, fishable invertebrates (crabs, shrimp, mollusks), marine mammals, birds, and fisheries-dependent communities (which include those communities that are dependent on subsistence harvests of fish, invertebrates, and mammals)?

3rd PSCG Meeting: Updated JPSRM Questions

Deleted question 3.d. which was new for the 2nd PSCG meeting; incorporated the issue of bycatch into a new question 4.f. (next slide)

4. Over the next 10-30 years, what changes in fish populations, dependent species and the supporting ecosystems may occur in the central Arctic Ocean and the adjacent shelf ecosystems?
 - a. **Which marine species will likely increase and decrease in population size and/or productivity in the central Arctic Ocean in the next 10-30 years?**
 - b. What changes in production and key linkages are expected in the coming 10-30 years?
 - c. What northward population expansions are expected in the next 10-30 years?
 - d. What are the anticipated impacts of change in ocean acidification in the next 10-30 years?
 - e. How will **existing and** increased human activity **and pressures** in the region likely affect fish populations and ecosystems, **which includes support for Indigenous communities and local communities**, in the next 10-30 years? [Deleted specific examples of human activities]

3rd PSCG Meeting: Updated JPSRM Questions

- f. How **could** increased fishing activity affect **bycatch species, seabirds**, migratory and wide-ranging marine mammals, and Indigenous **communities and local communities** that depend upon these species to sustain their ways of living?
5. **What Indigenous Knowledge and local knowledge is available, and how can it be taken into account, to inform ecological baselines?**

3rd PSCG Meeting: Data Sharing Protocol

- Reviewed discussion papers submitted by United States and China
- In interim, build on current arrangement:
- United States proposed to build a public and confidential website for the PSCG (could do the same for the COP)
- Single location to share results, documents and other information
- Section that requires log-in credentials
- Could be used to create events
- Protocols for equitable and ethical engagement of Inuit and Indigenous Knowledge

- Ability to build on existing protocols and data management systems
- China volunteered to co-chair DSP-WG; awaiting second co-chair

3rd PSCG Meeting: Recommendations & Requests

- Approve a spring (early) 2023 PSCG meeting to be held in-person
- Develop Terms of Reference and other procedures for the function of the joint scientific meetings in accordance with Article 4, paragraph 6
- COP to identify milestones for establishing exploratory fishing measures and provide vision for PSCG involvement in their development
- COP to identify resources and infrastructure to implement the JPSRM

- COP to develop specific messaging regarding the importance of the Agreement and the value of Parties putting effort into moving the JPSRM forward

Thank You! Questions
and Discussion

THE CENTRAL ARCTIC OCEAN FISHERIES AGREEMENT
SCIENTIFIC COORDINATING GROUP

The Parties to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (“the Agreement”) hereby establish a Scientific Coordinating Group (SCG) to advance the implementation of the Agreement. The SCG is the successor body to the PSCG established by the Parties in 2019.¹

Terms of Reference for the Scientific Coordinating Group

1. The Scientific Coordinating Group shall lead the joint scientific research and monitoring work under the Agreement and govern the joint scientific meetings, including the provision of scientific support and advice to the Parties on matters referred to joint scientific meeting in accordance with the Agreement.
2. The SCG is to consist of delegations appointed by each Party, including scientists, technical experts, holders of Indigenous knowledge and holders of local knowledge as the respective Party deems appropriate. While not members of the SCG, other participants may attend the SCG meetings as per the SCG Rules of Procedure.
3. Functions of the SCG are to:
 - a. present a Joint Program of Scientific Research and Monitoring (JPSRM) and an associated implementation plan to the COP for approval, propose updates to these documents, as necessary, coordinate work under the JPSRM, and coordinate scientific activities by the Parties in a manner consistent with Article 4 of the Agreement;

¹ The establishment of a scientific group to support the work under the Agreement was originally proposed at the 5th Meeting of the Scientific Experts on Fish Stocks in the Central Arctic Ocean (FiSCAO) and was recommended at the Arkhangelsk Roundtable (April 12-13, 2019). The PSCG was established on an interim basis at the May 2019 Ottawa meeting of the Signatories building on the work previously conducted by FiSCAO with the understanding that a more formal body would be established when the Agreement enters into force as provided in Article 5 paragraph 2 of the Agreement, subject to any further guidance from the COP. In the interim, the PSCG operated under the Provisional Terms of Reference. The Provisional Terms of Reference were used as a basis to formulate the Terms of Reference for the SCG and reviewed by the Parties, taking into account, *inter alia*, the outcomes of the workshop aiming at the implementation of Article 4(4) and Article 5(2) of the Agreement regarding Indigenous and local knowledge and participation of Arctic Indigenous peoples to be hosted by Canada in the fall of 2019.

- b. identify processes and mechanisms to seek and incorporate Indigenous knowledge and local knowledge, through the inclusion of representatives of Arctic communities, including Arctic Indigenous peoples, in the work of the SCG;
 - c. present a data sharing protocol to the COP for approval as called for in Article 4 of the Agreement;
 - d. provide scientific advice for the development of conservation and management measures for exploratory fishing, and other interim measures, as requested by the Parties;
 - e. develop quantitative indicators based, *inter alia*, on data collected during the mapping phase;
 - f. facilitate the sharing of relevant data and the possible exchange of samples;
 - g. cooperate with relevant scientific and technical organizations, bodies, and programs; and
 - h. to implement other functions as may be assigned by the COP.
4. The outcomes of the functions provided in paragraph 3 will be included in the reports of the SCG meetings submitted to the COP.

CAOFA-2022-COP1-04**ESTABLISHMENT OF A PROVISIONAL SCIENTIFIC COORDINATING GROUP**

The Signatories to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (“the Agreement”) hereby establish a Provisional Scientific Coordinating Group (PSCG) to further prepare for the implementation of the Agreement. This action was proposed at the 5th FiSCAO meeting and was recommended at the Arkhangelsk Roundtable (April 12-13, 2019). The PSCG is established on an interim basis at the May 2019 Ottawa meeting building on the work previously conducted by FiSCAO with the understanding that a more formal body will be established when the Agreement enters into force as provided in Article 5 paragraph 2, subject to any further guidance from the Meetings of the Parties. In the interim, the PSCG will operate under the following Provisional Terms of Reference (PToR). The PToR will be reviewed and, as appropriate, revised by the Meetings of the Signatories, taking into account, *inter alia*, the outcomes of the workshop aiming at the implementation of Article 4(4) and Article 5(2) of the Agreement regarding indigenous and local knowledge and participation of Arctic indigenous peoples to be hosted by Canada in the fall of 2019.

Provisional Terms of Reference for the Provisional Scientific Coordinating Group

1. The Provisional Scientific Coordinating Group (PSCG) is established on an interim basis to provide scientific support and advice to the Signatories on matters related to implementing the Agreement, develop reports and advice for the biennial meetings of the Signatories, and provide support for the scientific work called for under the Agreement.
2. The PSCG is to consist of delegations appointed by each Signatory, which may include scientists and experts, as the respective Signatory deems appropriate.
3. Functions of the PSCG are:
 - a. Develop interim Rules of Procedure for the PSCG.
 - b. Develop the Joint Program of Scientific Research and Monitoring (JPSRM), and, in the interim, coordinate scientific activities by the Signatories in a manner consistent with Article 4 of the Agreement.
 - c. Develop the data sharing protocol as called for in Article 4 in the Agreement.
 - d. Identify processes and mechanisms to incorporate indigenous and local knowledge, through the inclusion of representatives of Arctic communities, including Arctic indigenous peoples, in the work of the PSCG.

- e. Provide scientific advice for the development of conservation and management measures for exploratory fishing, and other interim measures, as requested by the Signatories.
 - f. Develop quantitative indicators based, *inter alia*, on data collected during the mapping phase.
 - g. Facilitate the possible exchange of samples.
 - h. Promote cooperation by the scientific experts of the Signatories with relevant scientific and technical organizations, bodies, and programs.
 - i. Other functions as may be assigned.
4. The outcomes of the functions provided in paragraph 3 are for recommendation to and approval by the Meetings of Signatories.

DRAFT #10

Rules of Procedure for the Conference of the Parties to the *Agreement To Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean*

Definitions

For the purposes of these Rules of Procedure:

- a) “Agreement” means the *Agreement To Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean*, done at Ilulissat, Greenland on October 3, 2018 and entered into force on June 25, 2021;
- b) “Parties” means the Parties to the Agreement;
- c) “Conference of the Parties” (COP) is the decision-making body of the Agreement that advances the implementation of the Agreement through decisions pursuant to the Agreement and these Rules, including those decisions described in Article 5 of the Agreement;
- d) “Chairperson” means the Chairperson elected in accordance with Rule 2;
- e) “Vice-Chairperson” means the Vice-Chairperson elected in accordance with Rule 2;
- f) “Participants” means representatives of Parties, Observers and individuals or organisations authorised to attend meetings of the COP consistent with these Rules;
- g) “Information Material and Documents” means material and documents submitted to the COP for the purpose of informing the Parties on a relevant matter which does not contain a formal proposal for decision by the COP; and,
- h) “Working Material and Documents” means material and documents submitted to the COP for the purpose of seeking a decision by the COP.

Purpose

Rule 1

These Rules of Procedure apply to any meeting of the COP convened in accordance with Article 5 of the Agreement and intersessional work of the COP as provided in these Rules.

Chairpersons

Rule 2

2.1 The Chairperson and the Vice-Chairperson of the COP shall be elected from and by the Parties, as a general rule, at a meeting of the COP.

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- 2.2 The Chairperson and Vice-Chairperson shall each serve for a single term of four years that shall commence with immediate effect at the end of the meeting at which they are elected, or as otherwise decided by the Parties. Following the completion of this term, the Chairperson and Vice-Chairperson shall not serve an added term, unless otherwise agreed by the Parties.
- 2.3 The Chairperson, or the Vice-Chairperson when acting as the Chairperson, shall cease to act as a representative of a Party when performing the duties of the Chairperson.
- 2.4 The duties of the Chairperson, exercised in cooperation, as appropriate, with the Vice-Chairperson during meetings of the COP or the intersessional periods, include:
- i) Convening meetings;
 - ii) Drafting provisional agendas for meetings;
 - iii) Declaring the opening and closing of meetings;
 - iv) Presiding over the meetings;
 - v) Inviting observers and experts pursuant to Rule 5;
 - vi) Calling for and announcing the results of votes;
 - vii) Deciding on all questions of order;
 - viii) Drafting any material or documents requested by the COP;
 - ix) Drafting records of meetings, as described in Rule 11;
 - x) Disseminating adopted reports, including reports from any committees or other similar bodies established by the Parties;
 - xi) Presenting the report of the COP at external meetings; and,
 - xii) Ensuring that consultations with the Parties are extensive so that the views communicated by all Parties are taken into account.
- 2.5 Whenever the Chairperson is unable to perform duties set out in Rule 2.4, the Vice-Chairperson shall exercise the power and duties prescribed for the Chairperson.
- 2.6 If the office of the Chairperson is vacated during a term, the Vice-Chairperson shall, notwithstanding Rule 2.1, serve as Chairperson for the balance of the term, until a new Chairperson is elected. In such circumstances, the Parties may appoint a new Vice-Chairperson to serve in this role for the balance of the term.

Meetings

Rule 3

- 3.1 Pursuant to Article 5 of the Agreement, the Parties shall meet as a COP every two years, or more frequently if they so decide.

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- 3.2 All COP meetings shall be open to all participants, unless otherwise decided by the Parties pursuant to these Rules. Following consultations with the Parties, the Chairperson may conduct the work of the COP meetings in plenary sessions, or in smaller groups or *in camera*.
- 3.3. Where no other alternative exists and following consultations with the Parties and the host of the COP meeting, the Chairperson may seek to limit the number of participants per delegation, experts and observers for a COP meeting factoring in the available space for the meeting.
- 3.4. As a general rule, meetings of the COP shall be held in person. This does not preclude the Chairperson from convening the Parties by other means in exceptional circumstances, including by online or other electronic means, following consultations with the Parties.¹
- 3.5. At each meeting, the COP shall decide on the date of the next meeting. The location and hosting of such meetings shall rotate amongst the Parties based on the order of Parties provided in Annex 1, unless otherwise decided by the Parties.
- 3.6. Additional meetings of the COP as defined in Article 5 of the Agreement shall be convened by the Chairperson at the request of one third of the Parties or upon decision of the Parties following a recommendation of the Chairperson. The date and host of such meetings shall be determined by the Parties.
- 3.7. As soon as the host and date of the COP meeting is determined pursuant to Rules 3.5 or 3.6, the host shall provide secretariat services for the Chairperson and the COP in preparation for, and during the meetings. These functions include:
- i) Receiving the list of representatives of Parties and observers;
 - ii) Sending out formal invitations to the Heads of Delegation of the Parties, the points of contact designated pursuant to Rule 4.4, delegates, and to observers and experts as per Rule 5;

Commented [BN1]: 3.4 and footnote agreed to during August 31, 2022 meeting. The chair has adjusted wording of the footnote to add reference to the "Agreement" and to correct the grammar.

¹ The Parties understand that the words "following consultation with the Parties" in these Rules of Procedure requires the Chairperson to consult all Parties and subsequently inform them of the decision verbally or in writing. If a Party considers that the view it communicated is not reflected in the action taken by the Chairperson after the consultation, that Party may seek a decision pursuant to Article 6 of the Agreement. All decisions discussed intersessionally are communicated promptly by the Chairperson to all Parties via electronic means to ensure an accurate understanding of the positions of the Parties.

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- iii) Making all necessary logistical arrangements for hosting the meeting, in line with the guidelines provided in Annex 2;
- iv) Notifying all Parties of the dates and venue of the meeting; and,
- v) In consultation with the Chairperson, designating one or more rapporteurs to assist and support the work of the Chairperson during the meeting.

Representation

Rule 4

- 4.1 Each Party participating in a COP meeting shall be represented by a delegation consisting of a Head of Delegation, at least one alternate Head of Delegation, and other such representatives and advisers, including Indigenous knowledge holders and local knowledge holders, as it deems appropriate.
- 4.2 A preliminary list of representatives and their capacity to serve at the meeting shall be submitted by each Party to the host at least 20 calendar days in advance of the meeting. Final lists of representatives shall be submitted to the host by a formal letter from the relevant authority from each Party as soon as possible but no later than 24 hours after the opening session of the meeting.
- 4.3 Heads of Delegation and any alternate Heads of Delegation of each Party listed in the Final lists of representatives submitted pursuant to Rule 4.2 shall be authorized to represent the Party and participate in decision-making at the meeting.
- 4.4 Each Party shall designate at least one individual to be the national point of contact on behalf of that Party. Designation of such points of contact shall not preclude correspondence with Heads of Delegations as the need arises. The Chairperson shall be informed promptly of any changes in designation of the national point of contact.

Observers and Invited Individuals and Organisations

Rule 5

- 5.1 Observer candidates may submit a written request to the Chairperson to participate in a COP meeting, at least 60 calendar days in advance of the meeting. The Chairperson shall promptly submit the request to the Parties for decision through electronic means.
- 5.2 Any observer candidate that meets the requirements of Rules 5.1 and 5.3 may attend the meeting

Option 1: [unless 3 or more Parties object to the request.]

Option 2: [following a decision of the Parties pursuant to Article 6 of the Agreement.]

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Option 3: [unless the Parties decide otherwise pursuant to Article 6 of the Agreement, following consultations with the Parties.]

Any objecting Party shall notify the Chairperson within 50 days from the COP meeting and specify the reasons for the objection. The Chairperson shall convey the Parties' decision to the observer candidate at least 40 calendar days prior to the meeting of the COP. The Parties may impose terms and conditions for observer participation as referenced in Rule 5.5, Rule 12 and Appendix 1.)

5.3 Written requests from observer candidates shall include the following information:

- i) Name of the observer candidate;
- ii) Name(s) of the representative(s) of the observer candidate; and,
- iii) Brief description of the observer candidate and how its work or how its knowledge, including, where relevant, from scientific, Indigenous and local knowledge systems, contribute to the COP meeting and its committees and similar bodies at which the observer candidate wishes to attend, and to furthering the goals of the Agreement.

~~5.4 The following entities may request to attend a COP meeting as observers:~~

- ~~i) other States with an interest in the work of the Agreement that are not Parties;~~
- ~~ii) the Food and Agriculture Organisation, other specialised agencies of the United Nations, other regional fisheries management organisations and other relevant intergovernmental organisations, and a member thereof; and,~~
- ~~iii) non governmental organisations, Arctic regional organisations, Arctic communities, Arctic Indigenous peoples organisations, environmental organisations, academic institutions and fishing industry representatives and organisations;~~

~~5.4 Any entities with an interest in the work of the Agreement may request to attend a COP meeting as observers.~~

5.5. Subject to confidentiality requirements found in Appendix 1, observers that are permitted to attend a COP meeting and its committees and similar bodies:

- i) shall be given access to meeting material and documents;
- ii) may participate in the discussions in the COP meeting and meetings of its committees and similar bodies when given the floor by the Chairperson, but shall not vote; and
- iii) may submit relevant information material and documents to the meeting at least 35 calendar days in advance of the meeting.

5.6 The Chairperson and the Parties may nominate individuals or organisations to be invited to attend the COP meeting. **Option 1:** Unless 3 or more Parties object to the request [or any party views it to be a matter of substance pursuant to Article 6 of the Agreement] OR

Commented [BN2]: Alternative proposed by Japan during August 31 meeting is proposed by the Chair to replace previous wording of 5.4 on which no consensus was achieved. The Chair would also propose to move this up to 5.2, and change the numbering that follows.

Commented [BN3]: Given the proposed deletion by some delegation of bracketed text in option 1 and the reservation by the EU and the US on same text, the Chair proposes to delete this wording.

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Option 2: following a decision of the Parties pursuant to Article 6 of the Agreement, the Chairperson may invite an individual or organization to attend a COP meeting to provide any requested technical information or expertise or to provide any other information that is useful or informs the Parties.

Official and Working Language

Rule 6

6.1 English shall be the working language of the COP, including COP meetings. Other languages may be used with interpretation provided by the participant using the other language.

6.2 All official publications and communications of the COP shall be in English.

Agenda

Rule 7

7.1 The Chairperson shall prepare and circulate to the Parties for comment a draft provisional agenda for each COP meeting at least 70 calendar days before the meeting.

7.2 The provisional agenda of each COP meeting shall include, as appropriate:

- i) A review of the implementation of the Agreement;
- ii) A review of all available scientific information contributing to and developed through the Joint Program of Scientific Research and Monitoring;
- iii) Any items proposed by a Party and received by the Chairperson at least 45 calendar days prior to the meeting;
- iv) Reports or other items from any committees or similar bodies; and
- v) Any other items provided in Article 5 of the Agreement.

7.3 The Chairperson shall adjust the agenda based on comments received, and distribute a final provisional agenda to the Parties and to permitted observers and invited individuals and organisations at least 40 calendar days prior to the meeting.

7.4 At the beginning of each meeting, the Parties shall adopt the agenda for the meeting.

Material and Documents

Rule 8

8.1 Parties who wish to circulate working material and documents relevant to the meeting shall provide electronic versions of these to the Chairperson at least 35 calendar days prior to the meeting of the COP. Information material and documents may be provided by all participants 35 calendar days prior to the meeting of the COP.

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8.2 The Chairperson shall distribute the official material and documents of the meeting at least 30 calendar days prior to the meeting to the Parties and permitted observers.

Quorum for Meetings

Rule 9

9.1 A quorum for holding a COP meeting shall consist of **Option 1: [all] OR Option 2: [at least four-fifths]** of the Parties, **[including all Arctic Coastal States listed in Article 1(a) of the Agreement]** being present at the meeting or participating using electronic means following a decision made pursuant to Rule 3.4.

Decision-Making

Rule 10

10.1 Decision-making shall be undertaken in accordance with Article 6 of the Agreement.

10.2 Decisions of the Parties on questions of procedure shall be taken by a majority of the Parties casting affirmative or negative votes.

10.3 Decisions of the Parties on questions of substance shall be taken by consensus. For the purpose of the Rules of Procedure, “consensus” means the absence of any formal objection made at the time the decision was taken. A question shall be deemed of substance if any Party considers it to be of substance.

10.4 Each Party shall have one vote. The Chairperson shall record affirmative and negative votes. Only affirmative and negative votes shall be counted in calculating the number of votes cast.

10.5 A Party may abstain, in which case the abstention shall be recorded by the Chairperson.

10.6 Voting shall normally be taken by a show of hands, except when a secret vote is determined by the Parties to be more appropriate. Any Party may request a roll-call vote. The roll-call shall be taken in the order of the Parties specified in Annex 1. The name of the first Party to be called shall be designated by lot drawn by the Chairperson. If the election of the Chairperson or the vice-Chairperson is not decided by consensus, the decision shall be taken by secret vote, unless otherwise decided by the COP.

10.7 Voting shall only be undertaken by the Head of Delegation or a designated alternate.

10.8 Following a request from a Party or upon the Chairperson’s recommendation to the Parties, the Chairperson may seek a decision of the Parties intersessionally, using electronic means,

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such as by e-mail, or in virtual or hybrid meetings. In such instances, a roll call vote may be required in the virtual setting or in writing.

10.9 Unless otherwise provided by these Rules, the Chairperson shall clarify, in writing, a proposed process and deadlines by which the voting by electronic means shall take place, at least 30 calendar days in advance of the voting. The Parties may object to the matter being decided by electronic means and/or provide comments on the Chairperson's proposed process and deadlines within 21 calendar days from the date of the proposed vote. The Chairperson shall provide a final procedure for the voting by electronic means at least 14 calendar days before the date of the vote.

10.10 The Parties shall acknowledge receipt of any notification of a proposed decision for vote by email or other electronic means from the Chairperson within 7 calendar days of receipt of the notification.

10.11 The Chairperson shall endeavor to contact a Party, including the Party's designated point of contact, head of delegation and designated alternate head of delegation, that has not responded within the timeline referenced in Rule 10.10 before deeming the Party's silence as an abstention. If neither an affirmative nor negative vote has been received from the Party within the timeframe provided by the process described by the Chairperson, the Party shall be deemed to have abstained and the Chairperson shall record the abstention in the outcome of the voting procedure.

10.12 Intersessional decisions on observer status and on invitations to individuals or organisations pursuant to Rule 5 may be taken using electronic means. In such circumstances, the Chairperson shall circulate a list of all observer requests and proposed invited individuals or organisations to the Parties at least 57 calendar days in advance of the COP meeting. The Parties shall confirm receipt of the Chairperson's message within 3 calendar days of the message being sent, which may include a request for a telephone or virtual discussion on the matter. Any such discussion shall be scheduled no later than 50 calendar days before the COP meeting. The Parties shall provide any views they may have on the matter in accordance with Rule 5 at least 50 calendar days before the COP meeting. In accordance with Rule 5, the Chairperson shall convey the decision of the Parties to each observer candidate and invited individual or organisation no later than 40 calendar days before the COP meeting.

Commented [BN4]: As the process and timelines in this provision do not work for time sensitive matters requiring decisions in preparation for a COP meeting, such as decisions on the draft agenda and observer status and invited organisations, the Chairperson proposes to add this caveat at the beginning of this section. This means that where other timelines are provided in the Rules of Procedure, those timelines precede the ones in this Rule 10.9, such as 70 days for draft agenda and 45 days for comments on the draft agenda. In line with this, the Chair has also inserted new Rule 10.12 proposed by Russia during the August 31 meeting with some modifications and additions.

Commented [BN5]: New provision proposed by Russia with changes and additions proposed by the Chairperson. To give sufficient time for observer candidates and invited individuals and organisations to plan their participation in COP meetings, it is proposed to shorten the intersessional decision-making timeframe - for comment, discussion and decision - regarding these matters.

Records and Reports

Rule 11

11.1 A summary report of each COP meeting shall be drafted by the Chairperson, factoring in the confidentiality requirements of Appendix 1. The Chairperson shall endeavor to distribute a draft summary report to the Parties before the end of the meeting, for the Parties to provide input and comments, and for adoption by the Parties by the end of the meeting. Should this not be possible and the Parties agree, the Chairperson shall distribute a draft summary report

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within 30 calendar days of the close of the meeting to the Parties for their review and comment. The Parties may then provide comments on the report within 14 calendar days of receipt of the draft report. The final report shall be adopted by the Parties no later than 60 calendar days after the end of the meeting and distributed to all meeting participants. The final report shall be made publicly available by the Chairperson within 10 calendar days of dissemination to the Parties.

11.2 The report shall contain:

- i) a summary record of discussions, decisions reached and recommendations when requested;
- ii) the final agenda;
- iii) the complete list of working material and documents; and,
- iv) the list of participants.

Confidentiality Requirements

Rule 12

12.1 All participants at meetings of the COP, its committees and similar bodies shall comply with these Rules, including the confidentiality requirements set out in Appendix 1.

12.2 Failure by permitted observers and invited individuals and organisations to conform to these rules, or the confidentiality requirements set out in Appendix 1 may result in withdrawal of accreditation following discussions by the Parties.

Committees or Similar Bodies

Rule 13

13.1 In accordance with Article 5 of the Agreement, the COP may form committees or similar bodies as it deems necessary, in which representatives of Arctic communities, including Arctic Indigenous peoples, may participate.

13.2 The procedures for the committees or similar bodies established in accordance with Article 5 of the Agreement shall be governed *mutatis mutandis* by these Rules of Procedures, unless these committees or similar bodies have established their own Rules of Procedures.

Amendments

Rule 14

These Rules of Procedure may be amended by a decision of the COP. Notwithstanding Rule 10.2, all amendments shall be adopted in accordance with Article 6 of the Agreement.

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Overriding Authority of the Agreement
Rule 15

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In the event of any conflict between any provision of these Rules of Procedure and any provision of the Agreement, the Agreement shall prevail.

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Annex 1 – Order for Hosting Conference of the Parties (*under Rule 3.5*)

- Canada
- People’s Republic of China
- Kingdom of Denmark, in respect of the Faroe Islands and Greenland
- Republic of Iceland
- Japan
- Republic of Korea
- Kingdom of Norway
- Russian Federation
- United States of America
- European Union

Annex 2 – Logistic Guidelines for Hosting COP Meetings (Rule 3.7(iii))

Invitations

1. In making the necessary arrangements for meetings of the COP and its committees and similar bodies as per Rule 3.7, the Party hosting the meeting is expected to:

- a. Notify all Parties and the Chairpersons of the dates and venue of the meeting as soon as practically possible but no later than 90 days prior to the meeting;
- b. Request and receive the list of authorized delegates from the Parties and maintain an updated list of delegates and permitted observers and invited individuals and organisations, and their respective contacts, including any updates thereto, simultaneously with the Chairpersons;
- c. Send out, as soon as practicably possible and at the latest 40 days before the meeting, formal invitation letters to the meeting, including for travel entry requirement purposes (such as visas), to:
 - The Heads of Delegation,
 - The points of contact designated pursuant to Rule 4.4.,
 - Authorized delegates,
 - permitted observers and invited individuals and organisations as per Rule 5; and,
 - The Chairpersons; and,
- d. Inform and assist, as necessary, any participant with travel entry requirements.

Venue

2. The Party hosting the meetings of the COP and its committees and similar bodies shall endeavor to provide:

- a. Facilities with sufficient meeting rooms and space to accommodate meeting participants as follows:
 - i. plenary hall where all participants have seating space, and main meeting arrangement set-up to accommodate all Heads of Delegation plus one delegate, the Chairperson and a rapporteur;
 - ii. Breakout meeting room(s) to accommodate committees' and subsidiary bodies' sessions, as referenced in Article 5 of the Agreement and Rule 13;
 - iii. a room dedicated to the host Party for its secretariat functions, the rapporteur and the Chairpersons; and,
 - iv. where possible, rooms to enable larger delegation coordination meetings and other side meetings;
- b. Support staff on the ground at the meeting venue to provide necessary meeting services to the Chairpersons and to the meeting participants, including the rapporteur;

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- c. Internet access and sufficient access to power outlets to all participants in the meeting room;
- d. Multimedia facilities, as required;
- e. Services for printing, copying, organizing and distributing meeting material and documents prior to, during and following the meeting; and,
- f. Security for accessing and attending the meeting venue.

Electronic Meetings

3. When a COP meeting is to be held by electronic means as per Rule 3.4, the Party hosting the meeting is expected to use an electronic hosting platform that may be accessed by all Parties and the Chairperson, and provide information and assistance to the Parties and the Chairperson in using this platform.

Accommodations

4. The Party hosting the meeting is expected to identify a reasonable number of hotel choices at or in approximate distance from the meeting venue for participants' consideration. The Party hosting the meeting may reserve blocks of rooms for participants so as to ensure sufficient availability of accommodations for meeting participants.

Ground Transportation

5. The Party hosting the meeting may arrange for ground transportation for participants to reach the meeting venue from the airport or train station or from specific accommodations, especially when the meeting venue is in a remote area.

Refreshments and Meals

6. The Party hosting the meeting shall endeavor to provide water, coffee, and other refreshments during meeting times. Meal options should be available to ensure retention of participants at the meeting venue.

Costs

7. Costs associated with attendance to the meeting are paid for by the respective meeting participants, including costs for travel to and from the meeting, accommodations and meals not provided by the host Party.

Emergencies

8. The Party hosting the meeting is expected to ensure that measures and procedures are in place to assist meeting participants in cases of emergencies during the meeting, including by providing

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meeting participants with a contact list for medical and other emergency personnel (e.g. police, fire), and ensuring that evacuation procedures are in place for the meeting venue.

Other Functions

9. The Party hosting the meeting shall endeavor to perform other functions and services that may be entrusted by the Parties or the Chairpersons in respect of the hosting of the meeting.

APPENDIX 1

CONFIDENTIALITY REQUIREMENTS

Information Disclosure

1. As a general principle, all participants attending meetings of the COP, its committees and similar bodies may access information, material and documents produced for and during such meetings.
2. Any participant admitted to a meeting of the COP, its committees or similar bodies may not:
 - (a) use film, video, audio recording or other similar devices, to record meeting proceedings, without permission of the Parties;
 - (b) issue press releases or disclose other information to the media during the meeting in question on agenda items under discussion;
 - (c) disclose in the public domain any information that they have acquired at meetings before the adjournment of the meeting; or
 - (d) disclose in the public domain any information considered to be confidential under these rules or any other rules adopted by the COP.

Non-Disclosure of Confidential Information

3. Information, including data, under the following categories contained in reports, documents and other material provided to, or produced by, a meeting of the COP, its committees and similar bodies is deemed confidential:
 - (a) Commercial information contained in reports, documents and other material including:
 - (i) Specific vessels (position, catches);
 - (ii) Companies; and
 - (iii) Technology;
 - (b) Information contained in reports, documents and other material whose disclosure is likely to endanger the safety or security of:
 - (i) any individual, violates his or her rights, or invades his or her privacy; or
 - (ii) any Party or prejudice the security or proper conduct of any operation or activity by a Party pursuant to the *Agreement*;
 - (iii) the COP, its meetings and proceedings;

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(c) Information deemed to be confidential under the national laws of a Party and the Party indicates it as such when it is provided;

(d) Unpublished scientific and academic information deemed to be confidential by the provider of the document, report or other material.

4. Documents, reports and other material containing such confidential information shall not be publicly released or disclosed unless:

(a) permission has been granted for its release or disclosure by the provider; or

(b) the information has been arranged and/or aggregated in a way that prevents the identification of individual vessels, activities, company or personal information. The COP shall adopt rules for the aggregation of confidential data, including on the basis of a proposal of the PSCG.

(c) disclosure is necessary to implement a COP decision relating to the publication of lists of IUU vessels [or lists of authorized vessels.]

Commented [BN6]: Bracketed text reserved by ROK during June 14 2022 meeting.

**Rules of Procedure for the Conference of the Parties to the *Agreement To Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean*
Adopted November 25, 2022**

Definitions

For the purposes of these Rules of Procedure:

- a) “Agreement” means the *Agreement To Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean*, done at Ilulissat, Greenland on October 3, 2018 and entered into force on June 25, 2021;
- b) “Parties” means the Parties to the Agreement;
- c) “Conference of the Parties” (COP) is the decision-making body of the Agreement that advances the implementation of the Agreement through decisions pursuant to the Agreement and these Rules, including those decisions described in Article 5 of the Agreement;
- d) “Chairperson” means the Chairperson elected in accordance with Rule 2;
- e) “Vice-Chairperson” means the Vice-Chairperson elected in accordance with Rule 2;
- f) “Participants” means representatives of Parties, Observers authorised to attend meetings of the COP consistent with these Rules;
- g) “Information Material and Documents” means material and documents submitted to the COP for the purpose of informing the Parties on a relevant matter which does not contain a formal proposal for decision by the COP; and,
- h) “Working Material and Documents” means material and documents submitted to the COP for the purpose of seeking a decision by the COP.

Purpose

Rule 1

- 1.1 These Rules of Procedure apply to any meeting of the COP convened in accordance with Article 5 of the Agreement and intersessional work of the COP as provided in these Rules.

Chairpersons

Rule 2

- 2.1 The Chairperson and the Vice-Chairperson of the COP shall be elected from and by the Parties, as a general rule, at a meeting of the COP.
- 2.2 The Chairperson and Vice-Chairperson shall each serve for a single term of four years that shall commence with immediate effect at the end of the meeting at which they are elected, or as otherwise decided by the Parties. Following the completion of this term, the Chairperson and Vice-Chairperson shall not serve an added term, unless otherwise agreed by the Parties.
- 2.3 The Chairperson, or the Vice-Chairperson when acting as the Chairperson, shall cease to act as a representative of a Party when performing the duties of the Chairperson.
- 2.4 The duties of the Chairperson, exercised in cooperation, as appropriate, with the Vice-Chairperson during meetings of the COP or the intersessional periods, include:
- i) convening meetings;
 - ii) drafting provisional agendas for meetings;
 - iii) declaring the opening and closing of meetings;
 - iv) presiding over the meetings;
 - v) inviting observers pursuant to Rule 5;
 - vi) calling for and announcing the results of votes;
 - vii) deciding on all questions of order;
 - viii) drafting any material or documents requested by the COP;
 - ix) drafting records of meetings, as described in Rule 11;
 - x) disseminating adopted reports, including reports from any committees or other similar bodies established by the Parties; and,

xi) presenting the report of the COP at external meetings.

2.5 Whenever the Chairperson is unable to perform duties set out in Rule 2.4, the Vice-Chairperson shall exercise the power and duties prescribed for the Chairperson.

2.6 If the office of the Chairperson is vacated during a term, the Vice-Chairperson shall, notwithstanding Rule 2.1, serve as Chairperson for the balance of the term, until a new Chairperson is elected. In such circumstances, the Parties may appoint a new Vice-Chairperson to serve in this role for the balance of the term.

Meetings

Rule 3

3.1 Pursuant to Article 5 of the Agreement, the Parties shall meet as a COP every two years, or more frequently if they so decide.

3.2 All COP meetings shall be open to all participants, unless otherwise decided by the Parties pursuant to these Rules. Following consultations with the Parties, the Chairperson may conduct the work of the COP meetings in plenary sessions, or in smaller groups or *in camera*.

3.3. Where no other alternative exists and following consultations with the Parties and the host of the COP meeting, the Chairperson may seek to limit the number of participants per delegation and observers for a COP meeting factoring in the available space for the meeting.

3.4. As a general rule, meetings of the COP shall be held in person. This does not preclude the Chairperson from convening the Parties by other means in exceptional circumstances, including by online or other electronic means, following consultations with the Parties.¹

¹ The Parties understand that the words “following consultation with the Parties” in these Rules of Procedure requires the Chairperson to consult all Parties and subsequently inform them of the decision verbally or in writing. If a Party considers that the view it communicated is not reflected in the action taken by the Chairperson after the consultation, that Party may seek a decision pursuant to Article 6 of the Agreement. All decisions discussed intersessionally are communicated promptly by the Chairperson to all Parties via electronic means to ensure an accurate understanding of the positions of the Parties.

- 3.5. At each meeting, the COP shall decide on the date of the next meeting. The location and hosting of such meetings shall rotate amongst the Parties based on the order of Parties provided in Annex 1, unless otherwise decided by the Parties.
- 3.6. Additional meetings of the COP as defined in Article 5 of the Agreement shall be convened by the Chairperson at the request of one third of the Parties or upon decision of the Parties following a recommendation of the Chairperson. The date and host of such meetings shall be determined by the Parties.
- 3.7. As soon as the host and date of the COP meeting is determined pursuant to Rules 3.5 or 3.6, the host shall provide secretariat services for the Chairperson and the COP in preparation for, and during the meetings. These functions include:
- i) Receiving the list of representatives of Parties and observers;
 - ii) Sending out formal invitations to the Heads of Delegation of the Parties, the points of contact designated pursuant to Rule 4.4, delegates, and to observers and experts as per Rule 5;
 - iii) Making all necessary logistical arrangements for hosting the meeting, in line with the guidelines provided in Annex 2;
 - iv) Notifying all Parties of the dates and venue of the meeting; and,
 - v) In consultation with the Chairperson, designating one or more rapporteurs to assist and support the work of the Chairperson during the meeting.

Representation

Rule 4

- 4.1 Each Party participating in a COP meeting shall be represented by a delegation consisting of a Head of Delegation, at least one alternate Head of Delegation, and other such representatives and advisers, including Indigenous knowledge holders and local knowledge holders, as it deems appropriate.

- 4.2 A preliminary list of representatives and their capacity to serve at the meeting shall be submitted by each Party to the host at least 20 calendar days in advance of the meeting. Final lists of representatives shall be submitted to the host by a formal letter from the relevant authority from each Party as soon as possible but no later than 24 hours after the opening session of the meeting.
- 4.3 Heads of Delegation and any alternate Heads of Delegation of each Party listed in the Final lists of representatives submitted pursuant to Rule 4.2 shall be authorized to represent the Party and participate in decision-making at the meeting.
- 4.4 Each Party shall designate at least one individual to be the national point of contact on behalf of that Party. Designation of such points of contact shall not preclude correspondence with Heads of Delegations as the need arises. The Chairperson shall be informed promptly of any changes in designation of the national point of contact.

Observers

Rule 5

- 5.1 Any entity with an interest in the work of the Agreement may request to attend a meeting of the COP, its committees or similar bodies as an observer. Such an entity shall submit a written observer candidate request, including information referred to in 5.3 to the Chairperson at least 60 calendar days in advance of the meeting. The Chairperson shall promptly and no later than 57 calendar days before the COP meeting submit the request to the Parties for consultation and decision by the COP intersessionally, through electronic means. The Parties shall provide any views they may have on the request at least 50 calendar days before the COP meeting.
- 5.2 Unless the Parties decide otherwise pursuant to Article 6 of the Agreement, following consultations with the Parties², an observer candidate that meets the requirements of this Rule may attend the meetings of the COP its committees and similar bodies. Any Party objecting to the admission of an observer candidate shall specify the reasons for the objection. The Chairperson shall convey the decision of the Parties to each observer candidate no later than 40 calendar days before the COP meeting. The Parties may impose terms and conditions for observer participation as referenced in Rule 5.4, Rule 12 and Appendix 1.)

² See footnote 1 for the Parties understanding of the term “following consultations with the Parties”.

5.3 Written requests from observer candidates shall include the following information:

- i) Name of the observer candidate;
- ii) Name(s) of the representative(s) of the observer candidate; and,
- iii) Brief description of the observer candidate and how its work or how its knowledge, including, where relevant, from scientific, Indigenous and local knowledge systems, contribute to the meetings of the COP or its committees or similar bodies at which the observer candidate wishes to attend, and to furthering the goals of the Agreement.

5.4 Subject to confidentiality requirements found in Rule 12 and Appendix 1, observers that are permitted to attend a COP meeting and its committees or similar bodies:

- i) shall be given access to meeting material and documents;
- ii) may participate in the discussions in the COP meeting and meetings of its committees and similar bodies when given the floor by the Chairperson, but shall not vote; and
- iii) may submit relevant information material and documents to the meeting at least 35 calendar days in advance of the meeting.

Official and Working Language

Rule 6

6.1 English shall be the working language of the COP, including COP meetings. Other languages may be used with interpretation provided by the participant using the other language.

6.2 All official publications and communications of the COP shall be in English.

Agenda

Rule 7

7.1 The Chairperson shall prepare and circulate to the Parties for comment a draft provisional agenda for each COP meeting at least 70 calendar days before the meeting.

7.2 The provisional agenda of each COP meeting shall include, as appropriate:

- i) A review of the implementation of the Agreement;
- ii) A review of all available scientific information contributing to and developed through the Joint Program of Scientific Research and Monitoring;
- iii) Any items proposed by a Party and received by the Chairperson at least 45 calendar days prior to the meeting; iv) Reports or other items from any committees or similar bodies; and
- iv) Any other items provided in Article 5 of the Agreement.

7.3 The Chairperson shall adjust the agenda based on comments received, and distribute a final provisional agenda to the Parties and to permitted observers and invited individuals and organisations at least 40 calendar days prior to the meeting.

7.4 At the beginning of each meeting, the Parties shall adopt the agenda for the meeting.

Material and Documents Rule 8

8.1 Parties who wish to circulate working material and documents relevant to the meeting shall provide electronic versions of these to the Chairperson at least 35 calendar days prior to the meeting of the COP. Information material and documents may be provided by all participants 35 calendar days prior to the meeting of the COP.

8.2 The Chairperson shall distribute the official material and documents of the meeting at least 30 calendar days prior to the meeting to the Parties and permitted observers.

Quorum for Meetings

Rule 9

9.1 A quorum for holding a COP meeting shall consist of four-fifths of the Parties being present at the meeting or participating using electronic means following a decision made pursuant to Rule 3.4. The host Party shall make all efforts to equally enable all Parties to participate at COP meetings.

9.2 With regard to an in-person COP meeting, if a Party is unable to attend a COP meeting in person due to exceptional circumstances, this Party should notify the host Party in writing. In such cases, the host Party shall facilitate attendance of that Party to the COP through electronic means.

Decision-Making

Rule 10

10.1 Decision-making shall be undertaken in accordance with Article 6 of the Agreement.

10.2 Decisions of the Parties on questions of procedure shall be taken by a majority of the Parties casting affirmative or negative votes.

10.3 Decisions of the Parties on questions of substance shall be taken by consensus. For the purpose of the Rules of Procedure, “consensus” means the absence of any formal objection made at the time the decision was taken. A question shall be deemed of substance if any Party considers it to be of substance.

10.4 Each Party shall have one vote. The Chairperson shall record affirmative and negative votes. Only affirmative and negative votes shall be counted in calculating the number of votes cast.

10.5 A Party may abstain, in which case the abstention shall be recorded by the Chairperson.

10.6 Voting shall normally be taken by a show of hands, except when a secret vote is determined by the Parties to be more appropriate. Any Party may request a roll-call vote. The roll-call shall be taken in the order of the Parties specified in Annex 1. The name of the first Party to be called shall be designated by lot drawn by the Chairperson. If the election of the Chairperson or the vice-Chairperson is not decided by consensus, the decision shall be taken by secret vote, unless otherwise decided by the COP.

10.7 Voting shall only be undertaken by the Head of Delegation or a designated alternate.

10.8 Following a request from a Party or upon the Chairperson’s recommendation to the Parties, the Chairperson may seek a decision of the Parties intersessionally using electronic means, such as by e-mail, or in virtual or hybrid meetings. In such instances, a roll call vote may be required in the virtual setting or in writing.

10.9 Unless otherwise provided by these Rules, the Chairperson shall clarify, in writing, a proposed process and deadlines by which the voting by electronic means shall take place, at least 30 calendar days in advance of the voting. The Parties may object to the matter being decided by electronic means and/or provide comments on the Chairperson's proposed process and deadlines within 21 calendar days from the date of the proposed vote. The Chairperson shall provide a final procedure for the voting by electronic means at least 14 calendar days before the date of the vote.

10.10 The Parties shall acknowledge receipt of any notification of a proposed decision for vote by email or other electronic means from the Chairperson within 7 calendar days of receipt of the notification.

10.11 The Chairperson shall endeavor to contact a Party, including the Party's designated point of contact, head of delegation and designated alternate head of delegation, that has not responded within the timeline referenced in Rule 10.10 before deeming the Party's silence as an abstention. If neither an affirmative nor negative vote has been received from the Party within the timeframe provided by the process described by the Chairperson, the Party shall be deemed to have abstained and the Chairperson shall record the abstention in the outcome of the voting procedure.

Records and Reports

Rule 11

11.1 A summary report of each COP meeting shall be drafted by the Chairperson, factoring in the confidentiality requirements of Appendix 1. The Chairperson shall endeavor to distribute a draft summary report to the Parties before the end of the meeting, for the Parties to provide input and comments, and for adoption by the Parties by the end of the meeting. Should this not be possible and the Parties agree, the Chairperson shall distribute a draft summary report within 30 calendar days of the close of the meeting to the Parties for their review and comment. The Parties may then provide comments on the report within 14 calendar days of receipt of the draft report. The final report shall be adopted by the Parties no later than 60 calendar days after the end of the meeting and distributed to all meeting participants. The final report shall be made publicly available by the Chairperson within 10 calendar days of dissemination to the Parties.

11.2 The report shall contain:

- i) a summary record of discussions, decisions reached and recommendations when requested;
- ii) the final agenda;
- iii) the complete list of working material and documents; and,
- iv) the list of participants.

Confidentiality Requirements

Rule 12

12.1 All participants at meetings of the COP, its committees and similar bodies shall comply with these Rules, including the confidentiality requirements set out in Appendix 1.

12.2 Failure by permitted observers and invited individuals and organisations to conform to these rules, or the confidentiality requirements set out in Appendix 1 may result in withdrawal of accreditation following discussions by the Parties.

Committees or Similar Bodies

Rule 13

13.1 In accordance with Article 5 of the Agreement, the COP may form committees or similar bodies as it deems necessary, in which representatives of Arctic communities, including Arctic Indigenous peoples, may participate.

13.2 The procedures for the committees or similar bodies established in accordance with Article 5 of the Agreement shall be governed *mutatis mutandis* by these Rules of Procedures, unless these committees or similar bodies have established their own Rules of Procedures.

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Amendments

Rule 14

14.1 These Rules of Procedure may be amended by a decision of the COP. Notwithstanding Rule 10.2, all amendments shall be adopted in accordance with Article 6 of the Agreement.

Overriding Authority of the Agreement

Rule 15

15.1 In the event of any conflict between any provision of these Rules of Procedure and any provision of the Agreement, the Agreement shall prevail.

Annex 1 – Order for Hosting Conference of the Parties (*under Rule 3.5*)

- Canada
- People’s Republic of China
- Kingdom of Denmark, in respect of the Faroe Islands and Greenland
- Republic of Iceland
- Japan
- Republic of Korea
- Kingdom of Norway
- Russian Federation
- United States of America
- European Union

Annex 2 – Logistic Guidelines for Hosting COP Meetings (Rule 3.7(iii))

Invitations

1. In making the necessary arrangements for meetings of the COP and its committees and similar bodies as per Rule 3.7, the Party hosting the meeting is expected to:

- a. notify all Parties and the Chairpersons of the dates and venue of the meeting as soon as practically possible but no later than 90 days prior to the meeting;
- b. request and receive the list of authorized delegates from the Parties and maintain an updated list of delegates and permitted observers and invited individuals and organisations, and their respective contacts, including any updates thereto, simultaneously with the Chairpersons;
- c. send out, as soon as practicably possible and at the latest 40 days before the meeting, formal invitation letters to the meeting, including for travel entry requirement purposes (such as visas), to:
 - the Heads of Delegation,
 - the points of contact designated pursuant to Rule 4.4.,
 - authorized delegates,
 - permitted observers and invited individuals and organisations as per Rule 5; and,
 - to the chairpersons.
- d. inform and assist, as necessary, any participant with travel entry requirements.

Venue

2. The Party hosting the meetings of the COP and its committees and similar bodies shall endeavor to provide:

- a. facilities with sufficient meeting rooms and space to accommodate meeting participants as follows:
 - i) plenary hall where all participants have seating space, and main meeting arrangement set-up to accommodate all Heads of Delegation plus one delegate, the Chairperson and a rapporteur;

- ii) breakout meeting room(s) to accommodate committees' and subsidiary bodies' sessions, as reference in Article 5 of the Agreement and Rule 13;
 - iii) a room dedicated to the host Party for its secretariat functions, the rapporteur and the Chairpersons; and,
 - iv) where possible, rooms to enable larger delegation coordination meetings and other side meetings;
- b. support staff on the ground at the meeting venue to provide necessary meeting services to the Chairpersons and to the meeting participants, including the rapporteur;
- c. internet access and sufficient access to power outlets to all participants in the meeting room;
- d. multimedia facilities, as required;
- e. services for printing, copying, organizing and distributing meeting material and documents prior to, during and following the meeting; and,
- f. security for accessing and attending the meeting venue.

Electronic Meetings

3. When a COP meeting is to be held by electronic means as per Rule 3.4, the Party hosting the meeting is expected to use an electronic hosting platform that may be accessed by all Parties and the Chairperson, and provide information and assistance to the Parties and the Chairperson in using this platform.

Accommodations

4. The Party hosting the meeting is expected to identify a reasonable number of hotel choices at or in approximate distance from the meeting venue for participants' consideration. The Party hosting the meeting may reserve blocks of rooms for participants so as to ensure sufficient availability of accommodations for meeting participants.

Ground Transportation

5. The Party hosting the meeting may arrange for ground transportation for participants to reach the meeting venue from the airport or train station or from specific accommodations, especially when the meeting venue is in a remote area.

Refreshments and Meals

6. The Party hosting the meeting shall endeavor to provide water, coffee, and other refreshments during meeting times. Meal options should be available to ensure retention of participants at the meeting venue.

Costs

7. Costs associated with attendance to the meeting are paid for by the respective meeting participants, including costs for travel to and from the meeting, accommodations and meals not provided by the host Party.

Emergencies

8. The Party hosting the meeting is expected to ensure that measures and procedures are in place to assist meeting participants in cases of emergencies during the meeting, including by providing meeting participants with a contact list for medical and other emergency personnel (e.g. police, fire), and ensuring that evacuation procedures are in place for the meeting venue.

Other Functions

9. The Party hosting the meeting shall endeavor to perform other functions and services that may be entrusted by the Parties or the Chairpersons in respect of the hosting of the meeting.

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 - (a) use film, video, audio recording or other similar devices, to record meeting proceedings, without permission of the Parties;
 - (b) issue press releases or disclose other information to the media during the meeting in question on agenda items under discussion;
 - (c) disclose in the public domain any information that they have acquired at meetings before the adjournment of the meeting; or
 - (d) disclose in the public domain any information considered to be confidential under these rules or any other rules adopted by the COP.

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 - (a) Commercial information contained in reports, documents and other material including:
 - (i) Specific vessels (position, catches);
 - (ii) Companies; and
 - (iii) Technology;

- (b) Information contained in reports, documents and other material whose disclosure is likely to endanger the safety or security of:
 - (i) any individual, violates his or her rights, or invades his or her privacy; or
 - (ii) any Party or prejudice the security or proper conduct of any operation or activity by a Party pursuant to the *Agreement*; (iii) the COP, its meetings and proceedings;
 - (c) Information deemed to be confidential under the national laws of a Party and the Party indicates it as such when it is provided;
 - (d) Unpublished scientific and academic information deemed to be confidential by the provider of the document, report or other material.
4. Documents, reports and other material containing such confidential information shall not be publicly released or disclosed unless:
- (a) permission has been granted for its release or disclosure by the provider; or
 - (b) the information has been arranged and/or aggregated in a way that prevents the identification of individual vessels, activities, company or personal information. The COP shall adopt rules for the aggregation of confidential data, including on the basis of a proposal of the SCG.
 - (c) disclosure is necessary to implement a COP decision relating to the publication of lists of IUU vessels

DRAFT #9

**Rules of Procedure for Joint Scientific Meetings of the Parties to the Agreement
To Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean**

Preamble

AFFIRMING that the Provisional Scientific Coordinating Group (PSCG) was established by the Signatories to the *Agreement To Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean* during the May 2019 Ottawa meeting building on the work previously conducted by meetings of the Scientific Experts on Fish Stocks in the Central Arctic Ocean (otherwise known as the FiSCAO);

ACKNOWLEDGING that the PSCG was established on an interim basis to provide scientific support and advice to the Signatories on matters related to implementing the Agreement, develop reports and advice for the biennial meetings of the Signatories, and provide support for the scientific work called for under the Agreement;

RECOGNISING that the PSCG was established on the understanding that it would remain in place until a committee or other body is established by the Parties as provided in Article 5 paragraph 2 of the Agreement subject to any further guidance from the ~~meetings-Conference~~ of the Parties;

FURTHER RECOGNISING that Provisional Terms of Reference found in Appendix 1 were established by the Signatories to the Agreement for the PSCG, and amended or new terms of reference and other procedures for the function of the joint scientific meetings, shall be adopted by the Parties in accordance with Article 4(6) of the Agreement, building on the PSCG Provisional Terms of Reference;

The joint scientific meetings of the Parties shall be governed by the following Rules of Procedure:

1. Definitions

For the purposes of these rules:

- (a) “Agreement” means the *Agreement to Prevent Unregulated High Seas Fisheries In The Central Arctic Ocean*, done at Ilulissat, Greenland on October 3, 2018 and entered into force on June 25, 2021;

Commented [BN1]: Given the different wording proposed by China, the US and Russia, the Chair has reverted back to the original wording which mirrors Article 5(2) of the Agreement. Clearly, the intent is to reference the fact that the Signatories established the PSCG as an interim provisional group until a committee or other body is established by the Parties pursuant to Article 5(2).

(b) “Party” or “Parties” means a Party or Parties to the Agreement; or ~~collectively the Parties to the Agreement;~~

Commented [BN2]: For consistency with COP Rules, as per Russia’s comments

(c) “Conference of the Parties” (COP) is as defined in the Rules of Procedure for the Conference of the Parties; and

(d) “PSCG” refers to the Provisional Scientific Coordinating Group established by the Parties to the Agreement to lead the joint scientific research and monitoring work under the Agreement and to govern the joint scientific meetings.

2. Membership

- (a) Each Party shall be a Member of the PSCG.
- (b) Each Member of the PSCG shall be represented by a delegation appointed by each Party, including scientists, technical experts, holders of Indigenous knowledge and holders of local knowledge as the respective Party deems appropriate.
- (c) Observers referenced in Rule 9 and invited external experts referenced in Rule 4(e)(viii) are not Members of the PSCG.
- (d) Each Party shall send a preliminary list of its delegates and primary point of contact to the PSCG Chairperson at least 20 calendar days in advance of the PSCG meetings. Each Party shall submit a final list of delegates and primary points of contact to the PSCG Chairperson as soon as possible, but no later than 24 hours after the opening session of the PSCG meetings.
- (e) Each Party shall promptly notify the PSCG Chairperson of any changes to the primary point of contact for its delegation in the period between meetings.

3. Terms of Reference

- (a) The Terms of Reference (ToR) for the joint scientific meetings are set by the COP taking into account:
 - (i) Articles 4 and 5 of the Agreement;

- (ii) The PSCG's Provisional Terms of Reference and functions as set out in "Establishment of a Provisional Scientific Coordinating Group," adopted by the Signatories during its meeting of May 29-30, 2019, in Ottawa, Canada and included in Appendix 1; and,
- (iii) Any additional ToR set out by the COP.

4. Chairpersons

- (a) The Chairperson and Vice-chairperson are nominated by the PSCG from among the Parties for a term of two years, and approved by the COP. The chairpersons should preferably rotate among the Parties so as to ensure a fair sharing of responsibilities and opportunities, and should reflect a gender balance.
- (b) The Chairperson and Vice-chairperson shall be eligible for re-appointment but shall not serve for more than two successive 2-year terms in the same capacity.
- (c) The Chairperson and Vice-chairperson shall take office immediately upon approval of their appointment by the COP.
- (d) The Chairperson, and Vice-chairperson when acting as Chairperson, shall cease to act as a representative of a Party when performing the duties of the Chairperson.
- (e) The duties of the Chairperson, exercised in cooperation, as appropriate, with the Vice-Chairperson during meetings of the PSCG or the intersessional periods, shall include to:
 - (i) preside over meetings;
 - (ii) draft and distribute the provisional agenda;
 - (iii) establish subsidiary bodies as per Rule 8(1);
 - (iv) process requests and convey the Parties' decisions regarding observer status at PSCG meetings as per Rule 9;

Commented [BN3]: Russia proposed to add the words "where appropriate" after gender balance, to reflect a preferred consideration equal to that of the rotation. The wording proposed would not convey this intent and in fact, it is not clear what "where appropriate" would mean in the context of prioritising a gender balance for the chairpersons positions.

Should the Parties agree that gender balance be placed as a consideration equal to the rotation, the Chair would propose the following adjustments instead of that proposed by Russia:

"Preferably, the chairpersons should rotate among the Parties so as to ensure a fair sharing of responsibilities and opportunities and reflect gender balance."

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- (v) oversee the production of a report of the proceedings of each meeting as per Rule 7;
 - (vi) distribute the report to PSCG delegates, the Chairperson of the COP meetings and the Parties;
 - (vii) present the report of the PSCG at the COP meetings and in external meetings; and,
 - (viii) invite external experts to meetings of the PSCG and its subsidiary bodies unless [one or more / the majority] of the Parties object. External experts would attend in their personal capacity and not represent a Party or organization and would have no status at the meeting other than to provide specific advice to the PSCG on particular issues.
- (f) Whenever the Chairperson is unable to perform duties set out in Rule 4.e, the Vice-chairperson shall exercise the power and duties prescribed for the Chairperson.
- (g) If the position of the Chairperson is vacated during a term, the Vice-chairperson shall, notwithstanding Rule 4(a), serve as Chairperson for the balance of the term, until a new Chairperson is appointed by the COP. In such circumstances, the COP may appoint a new Vice-chairperson to serve in this role for the balance of the term.

5. Provision of advice and recommendations

- (a) The advice and recommendations of the PSCG shall be based on the Joint Program of Scientific Research and Monitoring approved by the COP, including the best available scientific information, and shall take into account the work of national scientific programs, relevant scientific and technical organizations, bodies and programs, as well as Indigenous knowledge and local knowledge.
- (b) The PSCG shall make all efforts to adopt its advice and recommendations to the COP by consensus of its Members.

- (c) If all efforts to reach agreement by consensus have been exhausted, the different views of the PSCG Members shall be set out in its report to the COP.

6. Order of Business

- (a) The PSCG shall meet every two years and at least 2 months in advance of the COP biennial meetings, or more frequently, as decided by the COP.
- (b) As a general rule, meetings of the PSCG shall be held in person. This does not preclude the Chairperson from convening the Parties by other means in exceptional circumstances, including by online or other electronic means following consultation with the Parties.
- (c) An invitation to attend PSCG meetings shall be made available to all PSCG primary points of contact at least 90 calendar days prior to the meeting. Following consultation with the Parties and the host of the PSCG meeting, where no other alternative exists, the PSCG Chairperson may seek to limit the number of participants per delegation, experts and observers for a PSCG meeting, factoring in the available space for the meeting.
- (d) A draft provisional agenda for the PSCG meeting shall be made available to all Members, together with any available relevant documents, 70 calendar days before the meeting.
- (e) Any PSCG Member may, at least 45 calendar days before the date of the meeting request the inclusion of one or more items in the provisional agenda. Such requests shall be accompanied by a memorandum and any relevant documents on the proposed item(s).

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(f) The Chairperson shall circulate the final provisional agenda to all Members and observers at least 40 calendar days in advance of the meeting.

(g) All documents for the PSCG meeting shall be made available to all PSCG Members and observers at least 30 calendar days in advance of the meeting.

7. Reporting

(a) Each time the PSCG meets, the PSCG Chairperson shall oversee the preparation of a written report, factoring in the confidentiality requirements set out in Rule 12 of the COP Rules of Procedures and its Appendix 1. The PSCG may appoint one or more rapporteurs from among the delegates to support the Chairperson in preparing this written report.

(b) The report shall contain:

- i) a summary record of discussions, decisions reached and advice and recommendations where appropriate and when requested;
- ii) the final agenda;
- iii) the complete list of working documents; and,
- iv) the list of participants.

(c) The PSCG reports shall reflect the best available scientific information, ~~used and discussed during the meeting and take into account~~ the work of national scientific programs, relevant scientific and technical organizations, bodies and programs, ~~as well as~~ indigenous knowledge and local knowledge, ~~used, discussed and taken into account during the meeting.~~

(d) The PSCG shall endeavour to adopt its meeting report by the end of each PSCG meeting. In cases where this is not possible and the PSCG agrees, the Chairperson

Commented [BN4]: The Chair proposes adjustments to this paragraph factoring in previous views expressed by China and most recent comments submitted by Russia.

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shall distribute the draft PSCG report to PSCG Members for review within 30 calendar days of the close of the meeting. The PSCG Members shall provide their comments on the draft report within 14 calendar days of receipt of the draft report. A final report shall be adopted by [consensus of] the PSCG [Members] and disseminated to the PSCG Members, the Chairperson of the COP meetings, and the Parties within 60 calendar days of the close of the PSCG meeting.

Commented [BN5]: Wording originally proposed by China opposed by the US, hence the brackets.

- (e) The final report shall be made publicly available by the PSCG Chairperson within 10 calendar days of dissemination to the PSCG Members, the Chairperson of the COP and the Parties.
- (f) All participants must report their affiliation and institutional role to be included in the PSCG report.

8. Subsidiary Bodies

(1) Sub-groups

- (a) The PSCG Chairperson may, [subject to consultation with / with the approval of] the Members, establish sub-groups for the duration of a meeting to deal efficiently with the assigned ToR.
- (b) A Chairperson and rapporteur of the Sub-group shall be appointed from among the delegates.
- (c) Attendance at sub-group meetings shall be determined by each PSCG Member.
- (d) Sub-groups shall report to the PSCG Chairperson at the plenary session and provide information for the PSCG meeting report.

(e) Sub-groups shall follow the PSCG Rules of the Procedure.

(2) Working Groups

(a) The PSCG[, with the Parties's approval,] may establish Working Groups and their terms of reference, and appoint their chairperson, to deal with tasks that cannot be accomplished by a single PSCG meeting, *e.g.* tasks that require participation of external experts, including scientists, Indigenous knowledge holders and local knowledge holders, not present in a PSCG meeting, or tasks that require long-term or intersessional work.

(b) Participation in any Working Group shall be determined by each Party and communicated to the PSCG Chairperson.

(c) Working Groups shall report to the PSCG plenary through the PSCG Chairperson.

(d) Working Groups shall follow these Rules of Procedure, except if otherwise decided by the COP.

9. Observers

(1) Observer candidates may attend PSCG meetings and its subsidiary bodies subject to the following:

a) Observer candidates shall submit a written request to the PSCG Chairperson to participate in meeting(s) of the PSCG and its subsidiary bodies. This request shall be submitted at least 60 calendar days in advance of the meeting. The PSCG Chairperson shall promptly submit the request to the Parties for their decision through electronic means.

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- (b) Any observer candidate that meets the requirements set out in this Rule may attend the meeting(s) unless [one or more a majority] of the Parties objects to the request by notifying the PSCG Chairperson by electronic means at least 50 calendar days prior to the meeting. Any objecting Party shall specify the reason for its objection. The PSCG Chairperson shall then convey the Parties' decision to the observer candidates at least 40 calendar days prior to the meeting. The Parties may impose terms and conditions for this participation as set out pursuant to Paragraph 9(2) and pursuant to Rule 12 of the COP Rules of Procedure and its Appendix 1. Observer status shall remain valid for future meetings until the Parties decide otherwise.
- (c) Written requests from observer candidates shall include the following information:
- (i) Name of the observer candidate;
 - (ii) Name(s) of proposed representative(s) of the observer candidate;
 - (iii) Brief description of the observer candidate and how its work or how its knowledge, including, where relevant, from scientific, Indigenous and local knowledge systems, contribute to the PSCG meeting and its subsidiary bodies at which they wish to attend, and the goal of increasing knowledge relevant to the living marine resources of the central Arctic Ocean and the ecosystems in which they occur; and
- (d) The following entities may request to attend as observers in meetings of the PSCG and its subsidiary bodies, consistent with this Rule:
- (i) other States with an interest in the work of the Agreement that are not Parties;
 - (ii) the United Nations Food and Agriculture Organization (FAO), other specialised agencies of the United Nations, other regional fisheries management organisations, other relevant intergovernmental organisations[, and members thereof]; and
 - (iii) non-governmental organisations, Arctic regional organisations, Arctic communities, Arctic Indigenous peoples organisations, environmental

organisations, academic institutions and fishing industry representatives and organisations.

(2) Subject to confidentiality requirements set out in Appendix 1 to the COP Rules of Procedure, observers that are permitted to attend a PSCG meeting and its subsidiary bodies:

(a) shall be given access to meeting material;

(b) may participate in the discussions in PSCG meetings and meetings of the subsidiary bodies when given the floor by the Chairperson, but for the purpose of formulating advice and recommendations to the COP, information from observers and from the Parties is distinguished; and

Commented [BN6]: Additional text proposed by Russia

(c) may submit to the PSCG Chairperson relevant material and documents at least 35 calendar days in advance of the meeting.

10. Language

(a) English shall be the working language of the PSCG and its subsidiary bodies. Other languages may be used, on condition that Parties doing so will provide interpreters.

(b) All official publications and communications of the PSCG shall be in English.

11. Interpretation

In the event that there are questions regarding the operation of the PSCG or the interpretation/application of its Rules of Procedure, the COP Rules of Procedure shall inform the PSCG.

12. Amendments

These Rules of Procedure may be amended by a decision of the COP. All amendments to these Rules of Procedure shall be adopted in accordance with Article 6 of the Agreement.

Appendix 1

ESTABLISHMENT OF A PROVISIONAL SCIENTIFIC COORDINATING GROUP

The Signatories to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (“the Agreement”) hereby establish a Provisional Scientific Coordinating Group (PSCG) to further prepare for the implementation of the Agreement. This action was proposed at the 5th FiSCAO meeting and was recommended at the Arkhangelsk Roundtable (April 12-13, 2019). The PSCG is established on an interim basis at the May 2019 Ottawa meeting building on the work previously conducted by FiSCAO with the understanding that a more formal body will be established when the Agreement enters into force as provided in Article 5 paragraph 2, subject to any further guidance from the Meetings of the Parties. In the interim, the PSCG will operate under the following Provisional Terms of Reference (PToR). The PToR will be reviewed and, as appropriate, revised by the Meetings of the Signatories, taking into account, *inter alia*, the outcomes of the workshop aiming at the implementation of Article 4(4) and Article 5(2) of the Agreement regarding indigenous and local knowledge and participation of Arctic indigenous peoples to be hosted by Canada in the fall of 2019.

Provisional Terms of Reference for the Provisional Scientific Coordinating Group

1. The Provisional Scientific Coordinating Group (PSCG) is established on an interim basis to provide scientific support and advice to the Signatories on matters related to implementing the Agreement, develop reports and advice for the biennial meetings of the Signatories, and provide support for the scientific work called for under the Agreement.
2. The PSCG is to consist of delegations appointed by each Signatory, which may include scientists and experts, as the respective Signatory deems appropriate.
3. Functions of the PSCG are:
 - a. Develop interim Rules of Procedure for the PSCG.
 - b. Develop the Joint Program of Scientific Research and Monitoring (JPSRM), and, in the interim, coordinate scientific activities by the Signatories in a manner consistent with Article 4 of the Agreement.
 - c. Develop the data sharing protocol as called for in Article 4 in the Agreement.
 - d. Identify processes and mechanisms to incorporate indigenous and local knowledge, through the inclusion of representatives of Arctic communities, including Arctic indigenous peoples, in the work of the PSCG.
 - e. Provide scientific advice for the development of conservation and management measures for exploratory fishing, and other interim measures, as requested by the Signatories.
 - f. Develop quantitative indicators based, *inter alia*, on data collected during the mapping phase.

- g. Facilitate the possible exchange of samples.
 - h. Promote cooperation by the scientific experts of the Signatories with relevant scientific and technical organizations, bodies, and programs.
 - i. Other functions as may be assigned.
4. The outcomes of the functions provided in paragraph 3 are for recommendation to and approval by the Meetings of Signatories.

May 2021 for Virtual PrepCon Meeting in June 2021

CAOFA-2022-COP1-REF01

**Comparative Assessment
of Existing Exploratory Fishing Measures of RFMOs**

**For Parties to the *Agreement to Prevent Unregulated High Seas
Fisheries in the Central Arctic Ocean***

Prepared by William Harris, Student, Carleton University
for and with input from the Chair of the Preparatory Conference for
the Agreement to Prevent Unregulated High Seas Fisheries in the CAO

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Purpose

Article 5(1) of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean* states that conservation and management measures governing exploratory fishing activities in the Agreement area will be developed within three years of the Agreement's entry into force. As part of the development process, signatories to the Agreement agreed that the Chair of the Preparatory Conference should provide a compilation and assessment of existing exploratory fishing conservation and management measures of regional fisheries management organisations (RFMOs) for consideration. This compilation and assessment may identify questions that may need to be posed to scientific experts in the later development of exploratory fisheries measures.

Executive Summary

As part of the mandate under *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean*, this document provides a comparative assessment of existing exploratory fishing measures from existing RFMOs: the Northwest Atlantic Fisheries Organization (NAFO), the North East Atlantic Fisheries Commission (NEAFC), the South Pacific Regional Fisheries Management Organization (SPRFMO), the North Pacific Fisheries Commission (NPFC), the South East Atlantic Fisheries Organization (SEAFO), and the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). The assessment of these measures was conducted factoring in the requirements of the CAO Agreement.

Premised on the precautionary approach, exploratory fisheries are conducted in search of new fishing grounds, new species, or to test new gear or methods, with a view to determining the sustainability of new fisheries.

In examining existing regional exploratory fisheries measures, a common structure was identified, beginning with a Contracting Party initiating the process through a proposal that requires certain information and/or documents be provided to the decision body: the Commission. The information required in the RFMOs is consistent, albeit achieved through different means in the cases of SPRFMO and CCAMLR. Generally, after submission of the proposal, the documents are then sent primarily to the RFMO's supporting scientific body for review, though *how* the review is undertaken is not always specified. Also, the deadline for submitting the proposal is not necessarily consistent. Following advice and/or recommendations from the scientific body, and any other relevant body in the RFMO, the governing body of the RFMO (Commission) will make its initial decision to approve, reject, or modify the terms of the proposed exploratory fishing activity.

Subsequently, should an approved exploratory fishing activity be conducted, in accordance with the RFMO's specifications, typically the Contracting Party conducting the fishing activity must report on its catch and its findings. This report is circulated back to the RFMO's supporting scientific body, and often to all Contracting Parties as well. The scientific body will review the report, though *how* the review is to be undertaken is not always specified. The Commission is typically the final decision-making body, and usually has the power to decide whether to establish a fishery based on all or part of the exploratory fishery, discontinue the fishery in all or part of the exploratory, or to authorize more exploratory fishing for further information.

There are also certain points of interest to consider alongside the common structure. These points, or additional requirements, often relate to completing the measures, such as filling in legal or operational gaps for optimal practice. For instance, there are provisions relating to replacing authorized exploratory vessels, and ensuring exploratory vessels operate in accordance with other conservation and management measures.

The CAO Agreement conditions the conduct of exploratory fishing on conservation and management measures to be developed by the Parties pursuant to the Agreement. The Agreement provides broad principles pursuant to which these conservation and management measures must be established. All details relevant to these principles and otherwise relevant to exploratory fishing, are to be developed and established in the conservation and management measures.

This comparative analysis is intended to provide CAO Agreement Parties with precedents of existing regional conservation and management measures governing exploratory fishing to assist in the development of such measures for exploratory fishing in the central Arctic Ocean.

Part I – Background

Exploratory fishing measures are regulations governing how states undertake fishing operations usually intended to search unexploited waters for new fishing grounds, to target new species in exploited waters, or to devise and/or test new fishing gear or methods in such waters. The principle underlying these regulations is the precautionary approach, which is essential to conservation and sustainable economic opportunity.

The CAO Agreement, signed in 2018, aims to prevent unregulated commercial fishing in the high seas of the central Arctic Ocean. Signatories to the Agreement include: Canada, China, Japan, Russia, Iceland, Norway, South Korea, the European Union, the United States of America, and Denmark (Greenland and the Faroe Islands). To date, 9 signatories have ratified the Agreement of the 10 required for the Agreement to enter into force.

The Agreement provides a framework for all signatories to cooperate to better understand the area's ecosystems, and prohibits commercial fishing until adequate scientific information is available and management measures are established to govern such fisheries. In line with this framework, the Agreement requires the establishment of conservation and management measures, within three years of the entry into force of the Agreement, for exploratory fishing activities. The measures shall provide, *inter alia*, that:

- i. exploratory fishing shall not undermine the objective of this Agreement,
- ii. exploratory fishing shall be limited in duration, scope and scale to minimize impacts on fish stocks and ecosystems and shall be subject to standard requirements set forth in the data sharing protocol adopted in accordance with Article 4, paragraph 5,
- iii. a Party may authorize exploratory fishing only on the basis of sound scientific research and when it is consistent with the Joint Program of Scientific Research and Monitoring and its own national scientific program(s),
- iv. a Party may authorize exploratory fishing only after it has notified the other Parties of its plans for such fishing and it has provided other Parties an opportunity to comment on those plans, and
- v. a Party must adequately monitor any exploratory fishing that it has authorized and report the results of such fishing to the other Parties.

As part of the development process for these conservation and management measures, parties to the Agreement agreed that the Chair of the Preparatory Conference should provide a compilation and assessment of existing exploratory fishing conservation and management measures of regional fisheries management organisations (RFMOs) for consideration. This compilation and assessment may identify questions that may need to be posed to scientific experts in the later development of exploratory fisheries measures.

Part II – Compilation and Assessment

In researching existing exploratory fisheries measures and protocols, not all regional fisheries management organizations or other fisheries management bodies have established or have made publicly accessible their measures. Some of these organisations have well-developed fisheries which may explain why they do not have measures to regulate exploratory fishing. Certain organizations did not mention exploratory fishing in their conservation and management regimes, such as in the Convention on the Conservation of Pollock Resources in the Central Bering Sea (CCBSP), whereas others did allow for exploratory fishing measures but had not yet developed them, as in the Western and Central Pacific Fisheries Commission (WCPFC).

Thus, this assessment is based on what was retrievable, namely: the Northwest Atlantic Fisheries Organization (NAFO), the North East Atlantic Fisheries Commission (NEAFC)¹, the South Pacific Regional Fisheries Management Organization (SPRFMO), the North Pacific Fisheries Commission (NPFCC), the South East Atlantic Fisheries Organization (SEAFO), and the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR).²

1. Common Structure

This section of the assessment focuses on identifying commonalities in the protocols or measures reviewed that form an exploratory fisheries process across various regional fisheries management organizations. Step-by-step (albeit generalized) comparisons of the exploratory fishing measures can be found in Annex 1. Throughout this assessment, there will also be references to how the common components of the exploratory fisheries process correspond to the obligations found in the Article 5(1) of the Agreement. The aim is to demonstrate where such obligations are, or are potentially, met, as well as where gaps may need to be addressed in the CAO measures.

It is useful to first examine the objectives which inform many of the exploratory fisheries measures mentioned below, though there is some difficulty in doing so considering the nature of some measures and provisions (e.g. some exploratory fishing provisions are embedded in broader bottom fishing measures, while others do not have a specific exploratory fishing objective text). For NEAFC and SEAFO, the exploratory fishing provisions are contained in broader measures related to bottom fishing and vulnerable marine ecosystems, with both objectives referring to the need for “effective measures

¹ The relevant NEAFC regulations/measure, unlike other RFMOs, already apply within a portion of the high seas of the CAO, as noted in the 2016 *Statement by the North-East Atlantic Fisheries Commission (NEAFC) Regarding the Conclusion of the Negotiations on the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean*.

² No exploratory fishery measures could be found for the following RFMOs: ICCAT; IOTC; WCPFC (though its Convention has a paragraph on it); AIDCP; CCSBT; IATTC; CCBSP; NASCO; SIOFA; GFCM. It should be noted, however, that CCAMLR is not an RFMO; rather, it is a conservation organisation with the responsibility for management of fisheries in the Southern Ocean.

to prevent significant adverse impacts of bottom fishing activities on vulnerable marine ecosystems” which are based on the best available scientific information.

Similarly, the exploratory fishing provisions for the NPFC are found in the annex to the broader measures concerning bottom fishing and vulnerable marine ecosystems. Here, the objective of the broader measure refers to “sustainable management of fish stocks and protection of VMEs”, as well as to ensure the long term conservation and sustainable use of the fisheries resources while protecting the marine ecosystems “in which these resources occur.” The objective also refers to the prevention of significant adverse impacts, like NEAFC and SEAFO.

SPRFMO has a dedicated, overarching exploratory fisheries measure wherein the objective is to “govern the management of new and exploratory fisheries” in its regulatory area. It makes reference to specific intentions such as ensuring sufficient information is available to evaluate the long and short term potential of new and exploratory fisheries, that new and exploratory fisheries are developed based on a “precautionary and gradual basis”, and to promote sustainable use.

NAFO and CCAMLR do not have a specific objective provision corresponding to their exploratory fishing measures, though the objective of the Conventions for both organizations refer to the conservation of resources (in NAFO, “fishery resources”, and in CCAMLR, “marine living resources). NAFO’s objective goes further in stating the need to also ensure the sustainable use of its fishery resources, as well as to “safeguard the marine ecosystems in which these resources are found” (similar to the text of the NPFC measure).

Finally, the CAO Agreement’s objective speaks generally to “prevent unregulated fishing in the high seas portion of the central Arctic Ocean”. This is to be achieved through the use of precautionary conservation and management measures in order to “safeguard healthy marine ecosystems and to ensure the conservation and sustainable use of fish stocks.”

A. Definition of “Exploratory Fishery”

The clearest definitions for an “exploratory fishery” come from NAFO, NEAFC, and SEAFO, though it should be noted that the Agreement uses the term “exploratory fishing”. Among the three organizations, an exploratory fishery is generally defined as bottom fishing activities conducted outside existing bottom fishing areas³ (or in the case of NEAFC, “within restricted bottom fishing areas”, which refers to areas outside closed areas and existing bottom fishing areas), or where there is a change to (for NAFO and NEAFC, “significant change”), or where there is a new (for SEAFO) method or technology for an existing fishing area. NEAFC and SEAFO differ from NAFO in that their respective definitions specifically refer to “all commercial bottom fishing activities.”

SPRFMO and CCAMLR offer different definitions from the aforementioned organizations. Their respective definitions are better characterized as defining an exploratory fishery *by what it is not*. In the case of SPRFMO, it introduces a time element wherein an exploratory fishery is a fishery that has not been subject to fishing, or has not been subject to a particular method or technology, within “the previous ten years.” For CCAMLR, an exploratory fishery is a fishery that was previously considered new, and one for which there is insufficient information to evaluate potential yield and impacts on dependent and related species to allow its scientific body to provide advice to its Commission on harvest catch levels and effort levels.

³ SPRFMOs definition of an “exploratory fishery” also includes bottom fishing when it is intended to be conducted outside the existing bottom fishing management areas.

For NPFC, an exploratory fishery is defined as “From 1 January 2009, all bottom fishing activities in new fishing areas and areas where fishing is prohibited in a precautionary manner or with bottom gear not previously used in the existing fishing areas.”

B. Exploratory Fisheries Proposal⁴ Documents

The exploratory fishing measures of existing RFMOs always start in the same manner – the Contracting Party or Member (and in SPRFMO’s case, also Cooperating non-Contracting Party) wishing to conduct exploratory fishing must submit certain documents to the RFMO as its proposal. Often these documents are sent to the secretarial body of the RFMO for later dissemination, although this is not always the case. SPRFMO, for instance, has one of its documents sent directly by the party to the supporting scientific body. While there is some variance in what documents are required, there are two common documents needed throughout each RFMO: (1) a “Notice of Intent,” and (2) a preliminary assessment of “known and anticipated impacts” of the proposed fishing.

Specific to SPRFMO and CCALMR, there is also a required “commitment” to implement a Data Collection Plan, which is a plan developed later by their respective supporting scientific bodies during review of the exploratory fishery proposal. It should be noted that in SPRFMO, in practice, the proponent drafts a data collection plan which is then reviewed by the scientific body.

The Agreement only goes as far as states that a Party may authorize exploratory fishing “only after it has notified the other Parties of its plans for such fishing.” There is no explicit mention of what information is required in terms of this notification. Parties could choose to elaborate specific details and information required in the notification, using precedents from RFMOs as shown here. It is also important to highlight a key difference between the terms used in other RFMOs and the Agreement. Though the term “proposal” (or words akin to it) are utilized in the measures of other RFMOs, and refers to a process where the Commission approves the “proposal” for exploratory fishing, that is *not* the case for the Agreement. Pivotaly, it has been presently agreed that each Party ultimately retains its sovereign right to authorize its vessels in the Central Arctic Ocean.

C. Required Information in Proposal Documents

Notice of Intent

In most cases, the Notice of Intent generally requires, at minimum⁵:

- a *harvesting plan*, which includes information such as vessel information, target species, proposed dates and areas, type of gear to be used, area and effort restrictions, etc.;

⁴ The word “proposal” may be used by RFMOs, but it is important to note that the CAO Agreement explicitly provides for the requirement of a notification to others of what it plans to authorize. It is up to each Party to authorize exploratory fishing in the CAO, and such Party must notify others of its plans, and allow others to comment.

⁵ Further details on what an RFMO’s respective “Notice of Intent” requires can be found in their respective measures and supporting annexes to those measures. For example, NAFO, NEAFC, NPFC, and SEAFO specify in their harvesting plan that “Area and effort restrictions shall be considered to ensure that fishing occur on a gradual basis in a limited geographical area.” Or, in NAFO’s annex, it is added that the recording/reporting for the catch monitoring plan should be “sufficiently detailed to conduct an assessment of activity, if required.”

- a *mitigation plan*, which includes information on measures to prevent significant adverse impacts⁶ to vulnerable marine ecosystems that may be encountered during fishing⁷;
- a *catch monitoring plan*, which includes information on reporting/recording of all species caught during fishing (NAFO and NPFC use the term “brought onboard” instead of “caught,” and specifies that the reporting/recording to the lowest possible taxonomic level); and
- a *data collection plan*, which includes information on facilitating the identification of vulnerable marine ecosystems⁸ and/or species in the proposed exploratory fishing area.

NEAFC and SEAFO both extend and add greater specification to this list of information requirements, albeit in slightly different ways.⁹ Both require:

- a sufficient system for recording/reporting of catch, detailed to conduct an assessment of activity, if required.

However, where NEAFC requires the following information, SEAFO simply requires that the Contracting Party “make every effort” to include the same information. Such information includes:

- fine-scale data collection plan on the distribution of intended tows and sets, to the extent practicable on a tow-by-tow and set-by-set basis;
- plans for monitoring of bottom fishing activities using gear monitoring technology, including cameras if practicable; and
- monitoring data obtained through the likes of sea-bed mapping programmes, such as data from echo-sounders, if practicable multi-beam sounders, and/or other data relevant to the preliminary assessment of the risk of significant adverse impacts on VMEs.

NPFC’s requirements under the data collection plan are more detailed and appear to encompass some of the data-related requirements enumerated in NEAFC and SEAFO. It requires, *inter alia*, vessel and observer data must be recorded for each observed trip, catch and effort data must be collected on a tow-by-tow and set-by-set basis, as well as biological sampling for target species and by-catch.

Preliminary Assessment of Known and Anticipated Impacts

A separate preliminary assessment of the known and anticipated impacts of the proposed exploratory fishing is required in all but one RFMO. There is considerable consistency among the RFMOs in what information is required in the preliminary assessment, with NAFO, NEAFC, and SEAFO containing the nearly identical account of information requirements. Generally speaking, the assessment must be

⁶ The definition for “significant adverse impacts” used by the RFMOs commonly refers to that of paragraphs 17 to 20 in the *FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas*.

⁷ As seen in the current revised draft text of the agreement under the UN Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ), found at: https://www.un.org/bbnj/sites/www.un.org/bbnj/files/revised_draft_text_a.conf_232.2020.11_advance_unedited_version.pdf, thresholds and criteria for environmental impact assessments of human activities in areas beyond national jurisdiction are currently under consideration, which may or may not be relevant, or of interest, in this context.

⁸ The definition for “vulnerable marine ecosystems” used by the RFMOs commonly refers to that of paragraph 42 and 43 of the *FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas*.

⁹ It should be noted that NEAFC and SEAFO use *nearly identical language* in their exploratory fisheries measures, with minor (though often important) differences (e.g. time frames for submitting documents).

based on the best scientific and technical information available as to the current state of the proposed exploratory fishery, and includes information on:

- type(s) of fishing conducted or contemplated, including vessels and gear types, fishing areas, target and potential by catch species, fishing effort levels and duration of fishing;
- existing baseline information on the ecosystems, habitats, and communities in the fishing area, against which future changes are to be compared;
- identification, description, and mapping of vulnerable marine ecosystems known or likely to occur in the fishing area;
- identification, description, and evaluation of the occurrence, scale, and duration of likely impacts, including cumulative impacts covered by the assessment on vulnerable marine ecosystems;
- consideration of vulnerable marine ecosystem elements known to occur in the fishing area;
- data and methods used to identify, describe, and assess the impacts of the activity, the identification of gaps in knowledge, and an evaluation of uncertainties in the information presented in the assessment;
- risk assessment of likely impacts by the fishing operations to determine which impacts on VMEs are likely to be significant adverse impacts; and
- the proposed mitigation and management measures to be used to prevent significant adverse impacts on vulnerable marine ecosystems, and the measures to be used to monitor the effects of the fishing operations.

SPRFMO and CCAMLR – Fisheries Operation Plan and Preliminary (Impact) Assessments

SPRFMO and CCAMLR achieve the same end as the Notice of Intent and the preliminary assessment. First, SPRFMO and CCAMLR demand a document that provides information on the specific vessels to be authorized to undertake exploratory fishing, with the information requirements being the same as their respective measures on vessel registration. Second, and more significantly, SPRFMO and CCAMLR utilize a Fisheries Operation Plan to convey similar information as that provided in the Notice of Intent (and for SPRFMO, the preliminary assessment). At minimum, the two RFMOs require:

- a description of the proposed exploratory fishery, such as target species, area, and proposed methods of fishing, and including proposed maximum catch limits (SPRFMO specifically refers to “any apportionment of that catch limit among areas or species,” whereas CCAMLR requires the catch limit “for the forthcoming season);
- specification and full description of the types of fishing gear to be used (and in SPRFMO, any modifications to that gear intended to mitigate effects on non-target, and associated or dependent species or marine ecosystems);
- biological information on the target species from comprehensive research and/or survey cruises, such as distribution, abundance, demographic data, and information on stock identity;

- details of non-target, and associated or dependent, species and the marine ecosystem and the degree or likelihood of being affected by the proposed fishing activity (and in SPRFMO, any measures taken to mitigate those effects);
- information from other fisheries in the region or similar fisheries elsewhere that may assist in the evaluation of potential yield; and
- where the proposed exploratory fishing activity involves bottom fishing (in CCAMLR’s case, specifically fishing “undertaken using bottom trawl gear”), an assessment of the impact of such activity (CCAMLR further specifies the “known and anticipated impacts of this gear on vulnerable marine ecosystems, including benthos and benthic communities” whilst SPRFMO specifies that the assessment must meet the SPRFMO Bottom Fishery Impact Assessment Standard¹⁰).

For SPRFMO, there is an additional and important consideration to be included: the anticipated cumulative impact of all fishing activity in the area of the exploratory fishery, if applicable.

CCAMLR, alongside its obligatory vessel information document and the Fisheries Operations Plan, calls for a preliminary assessment of the “impact of planned activities on vulnerable marine ecosystems if required” (under its broader bottom fishing measure). SPRFMO does not require that a separate preliminary assessment be submitted; rather, such an assessment is part of its Fisheries Operation Plan where the proposed exploratory fishing activity involves bottom fishing. The information requirements of this assessment largely align with the aforementioned requirements for the other RFMOs.

SPRFMO and CCAMLR – Data Collection Plan

Unique to SPRFMO and CCAMLR is an additional required document – a “commitment” to implement the Data Collection Plan that will be developed later by their respective supporting scientific bodies during the review of the submitted proposal. The content and form of this “commitment” is not specified in the framework measures. It should be noted that the specific Data Collection Plan is specified in each individual exploratory fishing measure.

Like the Fisheries Operations Plan, the Data Collection Plan covers much of what is required through the Notice of Intent and the preliminary assessment. It differs, however, in that the reviewing scientific body is the one that formulates it based off of the submitted documents of the proposal. Also, the information requirements therein go into much greater detail in a more broadly defined manner.

Generally speaking, both SPRFMO’s and CCAMLR’s Data Collection Plans “should include... as appropriate” either research requirements (SPRFMO) or research proposals (CCAMLR). Both must identify and describe the data necessary and any “operational research actions” necessary to conduct a stock assessment, with SPRFMO going further to demand that in addition to the stock assessment, it must enable an assessment of feasibility of establishing a fishery, as well as the impact of such fishing on non-target, associated, or dependent species and the marine ecosystem in which the fishery occurs.

¹⁰ The purpose of the SPRFMO BFIAS is to provide a standardized approach for assessing cumulative impacts of bottom fishing activities on VMEs, deep sea fish stocks and marine mammals, reptiles, seabirds and other species of concern within the SPRFMO Evaluated Area and associated “Management Areas” specified in CMM 03 (Bottom Fishing), as well as a standardized approach for assessing bottom fishing impacts of new and exploratory fisheries in accordance with CMM 13 (Exploratory Fisheries) paragraph 5(b)(viii).

Both SPRFMO and CCAMLR require that the Data Collection Plan include, at minimum:

- a description of the catch, effort, and related biological, ecological, and environmental data required to undertake the eventual evaluation to decide whether to move an exploratory fishery to an established one;
- a plan for directing fishing effort in an exploratory fishery to allow for the acquisition of relevant data to evaluate the fishery potential and the ecological relationships among harvested, non-target, and associated or dependent populations and the likelihood of adverse impact;
- where appropriate, a plan for the acquisition of any other research data by fishing vessels, including activities that may require the cooperative activities of scientific observers and the vessel, as may be required for their respective supporting scientific bodies to evaluate the fishery potential and the ecological relationships among harvested, non-target, and associated or dependent populations and the likelihood of adverse impact; and
- an evaluation of the time scales involved in determining the responses of harvested, dependent, and related populations to fishing activities.

It should be noted that SPRFMO also requires the dates by which the data must be provided to its secretarial body.

Relevant Agreement Obligation(s)

The Agreement does state that “a Party may authorize exploratory fishing only after it has notified the other Parties of its plans for such fishing,” which, though general and not specifying any content or form, does indicate that a notification mechanism is required in a potential exploratory fisheries measure. Furthermore, exploratory fishing under the Agreement must be “limited in duration, scope, and scale to minimize impact on fish stocks and ecosystems,” which would suggest that in order to abide by this provision, some degree of assessment of the proposed exploratory area would have to be conducted in advance. A similar line of reasoning can be applied to the subsequent obligation, where a Party can only authorize an exploratory fishery “on the basis of sound scientific research.” Conservation and management measures under the CAO Agreement could provide useful guidance to Parties on the details to be included in their notification so as to meet the Agreement’s requirements related to the scope, duration and scale of the exploratory fishery, including details related to an impact assessment for a proposed exploratory fishery in the CAO that would demonstrate that these requirements will be met.

D. Timing of Proposal Submission

There is not much consistency in when all required documents are submitted; for NAFO, the assessment is to be sent “no less than two weeks in advance of the opening of the June meeting of the Scientific Council,” whereas NEAFC requires all documents submitted “at least six months prior to the proposed start” of the exploratory fishery. However, the relativity of the date (i.e. what event or point the time frame revolves around) can be roughly distinguished into two categories: those that set the time frame relative to their organization’s scientific body’s meeting (such as in the NPFC and SPRFMO), and those to the proposed start of the exploratory fishery.

The Agreement obligations for exploratory fisheries measures does not specify anything about timing, except that the notification must be provided before the exploratory fishery is authorized, and allows

other Parties to comment. Conservation and management measures could elaborate on timing, factoring in a reasonable timeframe for Parties to review the plan, have it reviewed by the CAO scientific experts, and provide comments to the proposing party, so that it may factor these in its decision.

E. Review, Advice, and Recommendations

Once the required documents are properly submitted, the secretarial body of the RFMO will forward them to its supporting scientific body, except for SPRFMO and NPFC, in which case the documents are already at their intended scientific bodies. The documents may also be circulated to all other Contracting Parties at this time, such as in NEAFC and SEAFO.

The supporting scientific body (e.g. the Scientific Council for NAFO, or the Permanent Committee on Management and Science (PECMAS) for NEAFC) will then undertake a review or evaluation of the documentation. There is some difference in *when* the review has to be conducted, such as SEAFO stating that the evaluation will not go “later than 30 days following the date of submission,” or NAFO’s “immediately” after receiving the documents.

It is important to highlight that it is the practice of NEAFC’s scientific body (PECMAS) and its Commission to rely on scientific advice from the International Council for the Exploration of the Sea (ICES). This extends to analysis and advice with respect to conclusions on the scientific data coming out of the exploratory fisheries.

Notably, NEAFC and SEAFO also include a clear elaboration component in their provisions. This always relates to the preliminary assessment document, and it is presumed to mean that the Contracting Party wishing to undertake exploratory fishing must explain their assessment findings according to guidance developed by the supporting scientific body, or, where no such guidance is given, to the Contracting Party’s “best... ability.”

Importantly, *how* the review or evaluation is conducted is often not explicitly stated, but the common element is that it will be conducted according to procedures and standards or protocols developed by the RFMO’s supporting scientific body, particularly for the preliminary assessment. In most cases, it is expressly stated that the scientific body take into account the risks of significant adverse impacts on vulnerable marine ecosystems, and to be in accordance with the precautionary approach. Additionally, NAFO, NEAFC, and SEAFO add that their respective scientific bodies can draw upon “any available additional information, including information from other fisheries in the region or similar fisheries elsewhere.”

As for advice and/or recommendations, every organization has its supporting scientific body provide advice and/or recommendations following the review. The measures are quite similar in what advice can be provided. At minimum, all organizations require the scientific body to deliver advice on possible adverse impacts on vulnerable marine ecosystems, and on mitigation measures to reduce the impacts of the exploratory fishing on them. Only NEAFC explicitly includes in its provisions that their scientific body can provide advice on whether the proposed exploratory bottom fishing should be approved as well.

SPRFMO, for its part, has the clearest enumeration of matters to provide recommendations on:

- management strategies or plans for fishery resources;
- reference points, including precautionary reference points as described in Annex II of the 1995 UN Fish Stocks Agreement;

- an appropriate precautionary catch limit;
- the cumulative impacts of all fishing activity in the exploratory area;
- the impact of the proposed fishing on the marine ecosystem;
- sufficiency of information available to inform the level of precaution required and the degree of certainty with which the Scientific Committee’s advice is provided;
- the degree to which the approach outlined in the fisheries operation plan is likely to ensure the exploratory fishery is developed consistently with its nature as an exploratory fishery, and consistently with the objectives of the Convention; and,
- where bottom fishing is proposed, advice and recommendations relevant to deep sea fish stocks, bycatch species, and/or vulnerable marine ecosystems (as per the SPRFMO Bottom Fishing Impact Assessment Standard).

Some RFMOs have only their supporting scientific body provide advice and/or recommendations to the Commission, whereas other RFMOs have the submitted proposal information shared or forwarded to other bodies. For instance, NAFO has its scientific body send the proposal and its advice through the Joint Commission-Scientific Working Group on Ecosystem Approach Framework to Fisheries Management, a body which examines the scientific body’s advice, and then provides its own in addition to the Commission for decision. CCAMLR similarly has other working groups conduct a review, and SPRFMO involves its compliance and technical body.

There is also the question of making documents outwardly (i.e. publicly) available to entities (e.g. other States, intergovernmental organizations, non-governmental organizations), such as is the practice in SPRFMO which posts its documents on a public website for increased transparency and availability.

In the Agreement, there is no provision specifying a review in the sense that it is conducted in other RFMOs. Instead, following notification to other Parties to the Agreement of a Party’s plans to undertake exploratory fishing, authorization of the exploratory fishery can only occur after “other Parties [have] an opportunity to comment on those plans.”

F. Commission Decision

In terms of making a decision on the exploratory fishery proposal, the Commission is commonly the decision-making body. In the case of NPFC, however, it is not explicitly stated in the exploratory fisheries measure if the Commission is the decision-maker at this time. However, its Commission is the decision-making body which considers endorsing all recommendations from its subsidiary bodies, including its scientific body. The NPFC’s Rules of Procedure addresses this, stating that exploratory fishing is one of the binding decisions to be made by its Commission.

Nonetheless, there is often little explicit mention of *how* the decision-making body comes to its decision. NAFO may adopt conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems while taking into account the advice and/or recommendations made to it. Similarly, SPRFMO must consider all fisheries operations plans submitted to it alongside the advice and/or recommendations given to it, and if approved, adopt a conservation and management measure in that respect.

RFMOs have similar processes for responding to exploratory fishing proposals, though this is achieved through different means. Some summary examples:

- both NEAFC and SEAFO state that “within thirty days of receiving the advice,” the Commission shall decide to either approve or withhold on the proposal (SEAFO adds that the Commission can reject the proposal as well);
- NAFO states that the Commission can implement measures including:
 - allowing, prohibiting, or restricting bottom fishing activities;
 - requiring specific mitigation measures for bottom fishing activities;
 - allowing, prohibiting, or restricting bottom fishing gear types, or changes in gear design and/or deployment; and
 - any other relevant requirements or restrictions to prevent significant adverse impacts to vulnerable marine ecosystems.
- SPRFMO states that the Commission can decide whether to approve the proposed exploratory fishery according to its Fisheries Operation Plan, which the Commission also has the power to amend, as necessary, before approval¹¹. If the Commission does approve the fishery then it shall adopt a CMM in respect of the exploratory fishery, which shall include a precautionary catch limit and any other management measures the Commission considers appropriate;
- for NPFC, exploratory fishing is “permitted only where the assessment concludes that they would not have significant adverse impacts (SAIs) on marine species or any VMEs and on the basis of comments and recommendations” of its scientific body; and
- CCAMLR does not provide a specific enumeration of options available – simply that the Commission shall “annually consider adoption of relevant conservation measures for each exploratory fishery.”

In addition, NAFO is the only RFMO to include an explicit provision subjecting all exploratory bottom fishing activities to prior authorizations provided for the exploratory area. It is not specified what this means, but one potential explanation is that where a Contracting Party desires to undertake exploratory fishing in a previously determined exploratory fishing area, the Contracting Party is bound by the previous measures and assessments implemented in that previous exploratory fishery.¹² However, generally applicable exploratory fishing measures are utilized by other RFMOs, absent the explicit provision as seen in NAFO. For instance, a number of measures relating to exploratory fisheries in CCAMLR are written so as to be generally applicable to any Member or Contracting Party fishing in

¹¹ None of the subsidiary bodies appear to be enabled to amend, on their own initiative, the proposals for exploratory fisheries. This issue may only be practically relevant for those RFMOs that have their “own” subsidiary bodies, such as their own scientific body, independent from Members/Contracting Parties.

¹² This is a point of interpretation on the provision, not a statement of fact.

the exploratory area.¹³ Other RFMOs, alternatively, may implement exploratory fishing measures that are specific to a Member or Contracting Party, such as in SPRFMO.¹⁴

Also, NEAFC and SEAFO contain a provision stating that “preference” will be given to Contracting Parties whose proposed exploratory fishing will be conducted using gear and methods with the “least bottom contact, in well-mapped areas and at times when impacts are likely to have the least adverse impacts on organisms other than the target species.”

Term of Approval

Another important question is how *long* the terms are for exploratory fishing to be undertaken. In that respect, only one exploratory fisheries measure clearly refers to a term limit on exploratory fishing operations – SPRFMO, wherein a Fisheries Operation Plan (and also the related Conservation and Management Measure) cannot exceed a period of *three* years.¹⁵ Once the Fisheries Operation Plan has surpassed its specified limit, a new Fisheries Operation Plan is required to be submitted under the same rules as before and if an exploratory fishery has been fished for ten years then any further fishing in that fishery shall be undertaken only in accordance with a Conservation and Management Measure adopted by the Commission to management that fishery as an established fishery.

Additional Requirements for Exploratory Fishing

This section focuses on particular provisions, either specific to an RFMO measure or shared among the RFMOs, that are outside what could be considered the general rules for exploratory fishing. These are often provisions which complete the overall measures, such as those dealing with what authorized exploratory fishing vessels need on board, or those which fill in potential legal or operational gaps.

- It is common among the measures that vessels permitted to undertake exploratory fishing activities can only do so after, at minimum, authorization/approval by the Commission.
- NAFO includes a provision requiring exploratory bottom fishing activities to be subjected to “prior exploration” conducted according to their exploratory fishing protocol. In practice, should a Contracting Party wish to pursue exploratory fishing in NAFO’s regulatory area but not in already delineated fishing grounds (“fishing footprint”), the Contracting Party must abide by the steps of the exploratory fishing protocol.
- SPRFMO and CCAMLR have a provision where vessels which do not provide data related to the exploratory fishery to the Commission according to the procedures established in its Data Collection Plan will not be permitted to fish in the exploratory area until the data is submitted and the scientific body can review it.
- SPRFMO (and CCAMLR) also have a provision providing a mechanism where Members or Cooperating non-Contracting Parties (CNCs) whose authorized vessels are “prevented from fishing on account of legitimate operational or force majeure reasons” can propose a

¹³ For example, CMM 41-01 (2020) *General Measures for Exploratory Fisheries for Dissostichus spp. In the Convention Area in the 2020/21 Season*.

¹⁴ For example, CMM 14a-2019 *Exploratory Fishing for Toothfish by New Zealand-Flagged Vessels in the SPRFMO Convention Area*.

¹⁵ NEAFC and SEAFO measures appear to imply a two year limit for exploratory fisheries, by imposing this timeline as a condition for moving to an established fishery.

replacement vessel. The Members or CNCP must provide: (1) full details of the vessel; (2) comprehensive account of the reasons for the replacements, and supporting evidence; and (3) specification/description of gear to be used on the replacement vessel.

- SPRFMO also has a provision stating that any exploratory fishery will not be considered as “precedent for future allocation decisions.”
- It is common among the measures that only vessels which comply with relevant conservation and management measures, including those equipped with satellite monitoring device or observers, are permitted to conduct exploratory fishing activities.
- NPFC contains a provision which gives greater clarity to the application of the precautionary approach, and includes measures which fulfill its implementation, such as precautionary catch limits for reliable assessments of target and by-catch species, and regular review of indices of stock status for significant declines.
- CCAMLR includes a provision where its secretarial body must remind Members of the deadlines around submitting required documents for exploratory fishing proposals.

Relevant Agreement Obligation(s)

Under the Article 3(3) of the Agreement, it is the proposing Party that makes the decision to authorize its vessels to conduct exploratory fisheries. Prior to making such a decision, the proposing Party must notify other Parties of its plan and allow them to comment on the proposed plan. The Agreement states that exploratory fishing must not “undermine the objective” of the Agreement and must meet certain conditions: it must be limited in duration – hence a term is implied; it must be limited in scope and scale to minimize impacts on fish stocks and ecosystems; it is subject to requirements in the data sharing protocol adopted by the Parties; it must be proposed on the basis of sound scientific research and be consistent with the Joint Program of Scientific Research and Monitoring and its own national scientific program(s); and the exploratory fishery must be adequately monitored, and results reported to the other Parties.

G. Reporting on Exploratory Fishery

If the proposed exploratory fishery is approved, the Contracting Party is responsible for collecting data during exploratory fishing operations. The data to be collected is often specified in the relevant data collection plan implemented by the RFMO, such as in the case of NEAFC’s and SEAFO’s “VME Data Collection Plan,” and SPRFMO’s and CCAMLR’s and “Data Collection Plan” established by their respective supporting scientific bodies during review of the proposal. All existing measures contain provisions requiring an observer as part of the reporting mechanism.

Excluding CCAMLR, the RFMOs further require that a report be submitted, often to the secretarial body of the RFMO, on the results of the exploratory fishery. The format of the report is not commonly specified in the exploratory fisheries measure, as only NAFO expressly refers to their “Exploratory Bottom Fishing Trip Report,” and NPFC provides for what information to include but not necessarily the format of the report itself. The report is commonly shared or forwarded with at least all Contracting Parties or Members of the RFMO, with SEAFO and NPFC requiring that the report be shared with their respective supporting scientific body. NEAFC has its report sent to the International Council for the Exploration of the Sea (ICES), which provides supports and gives advice to NEAFC’s scientific body.

Notably, NPFC’s exploratory measure provides a time frame for the report – that being “within three months of the end of the exploratory fishing activities or within twelve months of the commencement of fishing, whichever occurs first.”

SPRFMO and CCAMLR¹⁶ take a different approach in that their measures do not explicitly require any sort of report on the fishing activities conducted in the exploratory fishery. However, the data collected according to their respective Data Collection Plans must still be sent to their respective organisations including their scientific body. In SPRFMO specifically, an annual scientific report is required to be submitted which contains information on *all* fishing, research, and management activities, including exploratory fisheries. This approach appears to establish an iterative and ongoing data reporting system where data is continuously gathered and evaluated by the RFMO and its various bodies in order to fulfill the functions of the exploratory fisheries measure (and potentially other functions of the RFMO), which in this case would be to inform an eventual decision on moving to an established fishery.

The CAO Agreement includes a provision relating to this stage of the exploratory fisheries process, stating that the Party “must adequately monitor any exploratory fishing that it has authorized and report the results of such fishing to the other Parties.” The provision does not elaborate on the content or the form of the report; however, the term “adequately” implies that a certain standard must be met, and hence could be elaborated by the Parties to the Agreement.

H. Evaluation

With the exploratory fishing report or data circulated, it is always reviewed as part of deciding on whether to create an established fishery. For RFMOs utilizing the exploratory fishing report, it is not usually stated *how* the review is to be conducted, though NPFC’s measure does state that its scientific body must “decide whether the exploratory fishing activities had SAIs (significant or adverse impacts) on marine species or any VME.”

At this stage in the exploratory fisheries process, the evaluation of the final report and any advice/recommendations provided to the Commission for decision (if the report is not already there, as is the case in NEAFC and SEAFO) comes down to the individual RFMO. In most cases, the supporting scientific body of the RFMO will receive the report and/or data, evaluate, and provide advice to the Commission therefrom. For SPRFMO and CCAMLR, providing advice to the Commission on appropriate management measures is another critical component in the Commission being able to decide to move an exploratory fishery to an established one.

Though NAFO also starts the evaluation process with a review of the exploratory fisheries report by its scientific body, which then provides advice, it also has its Joint Commission-Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management examine the advice provided by the scientific. The Joint Commission-Scientific Council Working Group then provides recommendations to the Commission as well.

The Commission for each RFMO either receives the reports and advice, or already possesses the reports, and then makes its final decision from there. The Commission may also use the preliminary assessments from the initial exploratory fisheries proposal in its evaluation, such as in NEAFC and SEAFO.

¹⁶ Although not explicit to the relevant conservation measure, there is a well-established framework for review in CCAMLR, that requires the results of research and data collection in exploratory fisheries to be reviewed on a regular basis by various working groups of the Scientific Committee (as seen in para. 6(iii) of CMM 21-02).

In terms of a review or evaluation process based on the reporting from the exploratory fishery, the provisions pertaining to exploratory fishing specifically in the Agreement do not refer to any obligations.

I. Moving to an Established Fishery

As mentioned above, the Commission is always the final decision-making body on whether to move the exploratory fishery into an established fishery. NAFO has the clearest enumeration of options available:

- authorize the bottom fishing activity for all or part of the exploratory area;
- discontinue the exploratory bottom fishing and, if necessary, close part or all of the exploratory area; or
- authorized continued exploratory bottom fishing to gather more information.

Nearly all measures provide for the same or similar decisions, though NPFC holds that the continuation of exploratory fishing activities or the “commencement of commercial fishing activity” can only be done on the “basis of the comments and recommendations” from its scientific body. SPRFMO and CCAMLR both require that the Commission only make its decision to “manage the fishery as an established fishery” if it has “sufficient” information available including:

- to evaluate the distribution, abundance, and demography of the target species to inform an estimate of the exploratory fishery’s potential yield;
- to review the exploratory fishery’s potential impacts on non-target and associated or dependent species and the marine ecosystems in which the fishery occurs; and
- to allow their respective supporting scientific bodies to formulate and provide advice to the Commission on appropriate management arrangements.

Annex 1 – Comparison of Common Exploratory Fisheries Structure

This table compares the different regional fisheries management organizations and the CAO Unregulated Fishing Agreement along the different stages of the exploratory fisheries process. For clarity, the first phase of the process is signified in **blue**, and focuses on how “exploratory fishery” is defined. The second phase of the process is signified in **orange**, and focuses on how the process is initiated, information requirements, and timing. The third phase of the process is signified in **yellow**, and focuses on how the submitted information is reviewed, and the decision on whether to approve the proposed exploratory fishery. Finally, the fourth phase of the process is signified in **green**, and focuses on how the exploratory fishery may move towards an established fishery.

For accuracy, the wording in the table is largely taken exactly (as represented by the quotations) from the relevant provisions and measures of the respective organizations. Unless stated otherwise in the table, the following documents are the measures from which the provisions are taken:

- **NAFO** – NAFO COM Doc. 20-01 Serial No. N7028 (“Conservation and Enforcement Measures 2020”)
- **NEAFC** – Recommendation 19 2014: Protection of VMEs in NEAFC Regulatory Area, as Amended by Recommendation 09:2015 and Recommendation 10:2018
- **SPRFMO** – CMM 13-2020 (CMM for “the Management of New and Exploratory Fisheries in the SPRFMO Convention Area”)
- **NPFC** – CMM 2019-05 (CMM for “Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northwestern Pacific Ocean”) and CMM 2019-06 (CMM for “Bottom Fisheries and Protection of Vulnerable Marine Ecosystems in the Northeastern Pacific Ocean”)
- **SEAFO** – Conservation Measure 30/15 on Bottom Fishing Activities and Vulnerable Marine Ecosystems in the SEAFO Convention Area
- **CCAMLR** – Conservation Measure 21-02 (2019) (“Exploratory Fisheries”)

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
Objective of Framework Measure	“The objective of this Agreement is to prevent unregulated fishing in the high seas portion of the central Arctic Ocean through the application	There does not appear to be a specific objective provision for the NAFO Articles concerning exploratory fishing. The objective of the NAFO Convention is:	“The objective of this Recommendation is to ensure the implementation by NEAFC of effective measures to prevent significant adverse impacts on bottom fishing on vulnerable marine ecosystems known to occur or	“This CMM details the framework which will govern the management of new and exploratory fisheries in the SPRFMO Convention Area. This CMM is intended to ensure	“General Purpose Sustainable management of fish stocks and protection of VMEs in the western part of the Convention Area. The objective of these Measures is to	“The objective of this Conservation Measure is to ensure the implementation by SEAFO of effective measures to prevent significant adverse impacts of bottom fishing activities on vulnerable marine ecosystems that,	There does not appear to be a specific objective provision for the CCAMLR provisions concerning exploratory fishing. The objective of the CCAMLR Convention is:

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
	of precautionary conservation and management measures as part of a long-term strategy to safeguard healthy marine ecosystems and to ensure the conservation and sustainable use of fish stocks." (Art. 2)	"The objective of this Convention is to ensure the long term conservation and sustainable use of the fishery resources in the Convention Area and, in so doing, to safeguard the marine ecosystems in which these resources are found." (Art. II)	likely to occur in the NEAFC Regulatory Area based on the best available scientific information provided or endorsed by the International Council for the Exploration of the Sea (ICES)." (Art. 1(1))	that sufficient information is available to evaluate the long term potential of new and exploratory fisheries, to assist the formulation of management advice, to evaluate the possible impacts on target stocks and non-target and associated and dependent species, to ensure new and exploratory fishery resources are developed on a precautionary and gradual basis and to promote the sustainable management of new and exploratory fisheries." (para. 1)	ensure the long-term conservation and sustainable use of the fisheries resources in the Convention Area while protecting the marine ecosystems of the North Pacific Ocean in which these resources occur. These measures shall set out to prevent significant adverse impacts on VMEs in the Convention Area of the North Pacific Ocean, acknowledging the complex dependency of fishing resources and species belonging to the same ecosystem within VMEs. The Commission shall re-evaluate, and as appropriate, revise, the definition based on further consideration of the work done through FAO and by NPFC." (para. 2)	based on the best available scientific information, are known or likely to occur in the Convention Area." (Art. 1(1)) "This Conservation Measure takes into account SEAFO's responsibility as a regional fisheries management organization to adopt measures with regards to bottom fishing activities in the Convention Area which contribute to fulfill the key objectives of the UN General Assembly Resolutions on the protection of vulnerable marine ecosystems." (Art. 1(2)) "The purpose of this Conservation Measure, SEAFO will take into account the guidance provided by the FAO in the framework of the Code of Conduct for	"The objective of this Convention is the conservation of Antarctic marine living resources." (Art. II(1))

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
						Responsible Fisheries and any other internationally agreed standards, as appropriate." (Art. 1(3))	
Definition of "Exploratory Fishery"	Under the CAO Agreement, "exploratory fishing" refers to "fishing for the purpose of assessing the sustainability and feasibility of future commercial fisheries by contributing to scientific data relating to such fisheries." (Art. 1(e))	"Exploratory bottom fishing activities conducted outside the footprint [area outside existing fishery area], or within the footprint with significant changes to the conduct or in the technology used in the fishery." (Art. 15)	"Exploratory bottom fishing means all commercial bottom fishing activities outside area closures and existing bottom fishing areas, or if there are significant changes to the conduct and technology of bottom fishing activities within existing bottom fishing areas." (Art. 2(d))	An "exploratory fishery" is: a) "if it has not been subject to fishing in the previous ten years; or" b) "for the purposes of fishing with a particular gear type or technique, if it has not been subject to fishing by that particular gear type or technique in the previous ten years; or" c) "if fishing in that fishery has been undertaken in the previous ten	"From 1 January 2009, all bottom fishing activities in new fishing areas and areas where fishing is prohibited in a precautionary manner or with bottom gear not previously used in the existing fishing areas, are to be considered 'exploratory fisheries.'" (Annex 1)	An "exploratory fishery means all commercial bottom fishing activities outside area closures and existing bottom fishing areas, or fisheries within existing bottom fishing areas when a new fishing method and/or strategy are attempted to be used." (Art. 2(d))	An "exploratory fishery" is (<i>para. 1</i>): a) "defined as a fishery that was previously classified as a 'new fishery,' as defined by..." b) "shall continue to be classified as such [exploratory fishery] until sufficient information is available: (i) to evaluate the distribution, abundance and demography of the target species, leading to an estimate of the fishery's potential yield;

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				<p>years pursuant to this CMM, and a decision has not yet been taken in accordance with paragraph 23 or 24 of this CMM to either close or manage the fishery as an established fishery; or”</p> <p>d) If it is of a kind listed in paragraph 15 of CMM 03-2020 (Bottom Fishing).”</p>			<p>(ii) to review the fishery’s potential impacts on dependent and related species; (iii) to allow the Scientific Committee to formulate and provide advice to the Commission on appropriate harvest catch levels, as well as effort levels and fishing gear, where appropriate.”</p>
Notice of Intent	<p>“A Party may authorize exploratory fishing only after it has notified the other Parties of its plans for such fishing...” (Art. 5(1)(d)(iv))</p>	<p>Contracting Parties wishing to conduct exploratory fishing must (Art. 18(2):</p> <ol style="list-style-type: none"> 1. “communicate to the Executive Secretary the ‘Notice of Intent to Undertake Exploratory Bottom Fishing’ in accordance with Annex I.E... 	<p>The Contracting Party wishing to conduct exploratory fishing must (Art. 6(2)):</p> <ol style="list-style-type: none"> 1. “forward to the Secretary a Notice of Intent to undertake exploratory bottom fishing.” 2. “submit to the Secretary, in addition to the 	<p>A Member or CNCP wishing to conduct exploratory fishing must submit (para. 5):</p> <ol style="list-style-type: none"> 1. “an application to the Commission to permit a vessel or vessels that fly its flag to fish in that exploratory fishery. This 	<p>A Member of the Commission wishing to conduct exploratory fishing must (para. 3):</p> <ol style="list-style-type: none"> 1. “circulate the information and assessment in Appendix 1.1 to the Members of the Scientific Committee” 	<p>The Contracting Party wishing to conduct exploratory fishing must (Art. 6(2)):</p> <ol style="list-style-type: none"> 1. “forward to the Executive Secretary a Notice of Intent to undertake exploratory bottom fishing.” 2. “submit to the Executive 	<p>A Member wishing to conduct exploratory fishing must (para. 6):</p> <ol style="list-style-type: none"> 1. “notify its intention to the Commission by submitting to the Secretariat a notification that includes the information

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		<p>2. “together with the assessment required under Article 19.1 [preliminary assessment of the known and anticipated impacts of the bottom fishing activity].”</p> <p>The Executive Secretary must “promptly forward the documents... to the Scientific Council and to the Commission.” (Art. 18(3)(a))</p>	<p>Notice of Intent, a preliminary assessment of the known and anticipated impacts of the proposed bottom fishing activity as described in Annex 4.” (Art. 7(1))</p>	<p>application shall include information that satisfies paragraphs 2 and 3 of Annex 1 of CMM 05-2019 (Record of Vessels);”</p> <p>2. “prepare... a Fisheries Operation Plan to the Scientific Committee. The Fisheries Operation Plan shall include the following information, to the extent it is available...”</p> <p>3. “provide a commitment in its proposal to implement the Data Collection Plan for the exploratory fishery developed in accordance with paragraph 9, should the Commission approve fishing</p>	<p>2. “together with the impact assessment.”</p>	<p>Secretary, in addition to the Notice of Intent, a preliminary assessment of the known and anticipated impacts of the proposed bottom fishing activity as described in Annex 3.” (Art. 7(1))</p>	<p>prescribed in Conservation Measure 10-02, paragraph 3, in respect of vessels proposing to participate in the fishery... Members shall, to the extent practicable, also provide in their notification the additional information detailed in Conservation Measure 10-02, paragraph 4, in respect to each fishing vessel notified.”</p> <p>2. “prepare and submit to the Secretariat... a Fishery Operations Plan for the fishing season...”</p> <p>3. “and a preliminary</p>

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				in accordance with the Fisheries Operation Plan.”			<p>assessment of the impact of planned activities on vulnerable marine ecosystems if required under Conservation Measure 22-06, paragraph 7(i).”</p> <p>4. “provide a commitment, in its proposal, to implement any Data Collection Plan developed by the Scientific Committee for the fishery.”</p> <p>5. There is an additional provision specific to a particular species (<i>para. 6(iii)</i>), but this analysis will not focus on it.</p>

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Information Requirements in Notice of Intent	There is no stated requirement in <i>Art. 5(1)(d)</i> which corresponds to this stage.	<p>Considering the relevant provisions simply refer to the overarching Annex I.E. when it comes to specifying what the Notice of Intent and preliminary assessment must contain, the enumeration below is the best estimation of what the respective documents required.</p> <p>(1) “Exploratory Protocol for New Fishing Areas” (<i>Annex I.E.I</i>)</p> <p>“The Exploratory Protocol shall consist of:”</p> <p>i. “A harvesting plan which outlines target species, dates and areas. Area and effort restrictions should be</p>	<p>(1) The Notice of Intent must “be accompanied by the following information:” (<i>Art. 6(2)</i>)</p> <p>i. “harvesting plan, which outlines target species, proposed dates and areas and the type of bottom fishing gear to be used. Area and effort restrictions shall be considered to ensure that fishing occurs on a gradual basis in a limited geographical area;”</p> <p>ii. “mitigation plan, including measures to prevent significant adverse impact to VMEs that may be encountered during the fishery;”</p>	<p>(1) Information which “satisfies paragraphs 2 and 3 of Annex 1 of CMM 05-2019 (Record of Vessels.” (<i>para 5(a)</i>)</p> <p>Includes information such as: name of vessel, registration number, port of registry, etc.</p> <p>(2) Information (<i>para. 5(b)</i>):</p> <p>i. “a description of the exploratory fishery, including area, target species, proposed methods of fishing, proposed maximum catch limits and any apportionment of that catch limit among areas or species;”</p>	<p>(1) “Information to be provided before exploratory fisheries start” (<i>Appendix 1.1</i>):</p> <p><u>Harvesting Plan</u></p> <ul style="list-style-type: none"> • “name of vessel: • “flag member of vessel” • “description of area to be fished” • “fishing dates” • “anticipated effort” • “target species” • “bottom fishing gear-type used” • “area and effort restrictions to ensure that fisheries occur on a gradual basis in a limited geographical area” <p><u>Mitigation Plan</u></p> <ul style="list-style-type: none"> • “measures to prevent SAIs to VMEs that may be encountered during the fishery” <p><u>Catch Monitoring Plan</u></p> <ul style="list-style-type: none"> • “recording/reporting of all species 	<p>(1) The Notice of Intent must “be accompanied by the following information:” (<i>Art. 6(2)</i>)</p> <p>i. “harvesting plan, which outlines target species, proposed dates and areas and the type of bottom fishing gear to be used. Area and effort restrictions shall be considered to ensure that fishing occur on a gradual basis in a limited geographical area;”</p> <p>ii. “mitigation plan, including measures to prevent significant adverse impact to VMEs that may be encountered during the fishery;”</p> <p>iii. “catch monitoring plan, including</p>	<p>(1) Information pertaining to the vessel(s), such as the name of the vessel, registration number, port of registry, etc.</p> <p>(2) “The Fishery Operations Plan shall include as much of the following information as the Member is able to provide, so as to assist the Scientific Committee in its preparation of the Data Collection Plan:” (<i>para. 6(ii)</i>)</p> <p>i. “the nature of the exploratory fishery, including target species, methods of fishing, proposed region and maximum catch levels proposed for the</p>

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		<p>considered to ensure fisheries occur on a gradual basis in a limited geographical area.”</p> <p>ii. “A mitigation plan including measures to prevent significant adverse impact to vulnerable marine ecosystems that may be encountered during the fishery.”</p> <p>iii. “A catch monitoring plan that includes recording/reporting of all species caught, 100% satellite tracking and 100% observer coverage. The recording/reporting of catch should be sufficiently detailed to</p>	<p>iii. “catch monitoring plan, including recording/reporting of all species caught;”</p> <p>iv. “a sufficient system for recording/reporting of catch, detailed to conduct an assessment of activity, if required;”</p> <p>v. “fine-scale data collection plan on the distribution of intended tows and sets, to the extent practicable on a tow-by-tow and set-by-set basis;”</p> <p>vi. “data collection plan to facilitate the identification of VMEs in the area fished;”</p> <p>vii. “plans for monitoring of bottom fishing activities using gear monitoring technology,</p>	<p>ii. “specification and full description of the types of fishing gear to be used, including any modifications made to gear intended to mitigate the effects of the proposed fishing on non-target and associated or dependent species or the marine ecosystem in which the fishery occurs;”</p> <p>iii. “the time period the Fisheries Operation Plan covers (up to a maximum period of three years);”</p> <p>iv. “any biological information on the target species from comprehensive</p>	<p>brought onboard to the lowest possible taxonomic level”</p> <ul style="list-style-type: none"> • “100% satellite monitoring: • “100% observer coverage” <p><u>Data Collection Plan</u></p> <ul style="list-style-type: none"> • “data is to be collected in accordance with ‘Type and Format of Scientific Observer Data to be Collected’ (Annex 5)” <p>(2) The format of the impact assessment is to be done in accordance with the “Science-Based Standards and Criteria for Identification of VMEs and Assessment of Significant Adverse Impacts on VMEs and Marine Species” provided in Annex 2, with “particular care... taken in the</p>	<p>recording/reporting of all species caught;”</p> <p>iv. “a sufficient system for recording/reporting of catch, detailed to conduct an assessment of activity, if required;”</p> <p>v. “data collection plan to facilitate the identification of VMEs in the area fished;”</p> <p>“And make every effort to also include the following information:”</p> <p>vi. “fine-scale data collection plan on the distribution of intended tows and sets, to the extent practicable on a tow-by-tow and set-by-set basis;”</p> <p>vii. “plans for monitoring of bottom fishing</p>	<p>forthcoming season;”</p> <p>ii. “specification and full description of the types of fishing gear to be used;”</p> <p>iii. “biological information on the target species from comprehensive research/survey cruises, such as distribution, abundance, demographic data and information on stock identify;”</p> <p>iv. “details of dependent and related species and the likelihood of their being affected by the proposed fishery;”</p> <p>v. “information from other fisheries in the</p>

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		<p>conduct an assessment of activity, if required.”</p> <p>iv. “A data collection plan to facilitate the identification of vulnerable marine ecosystems/species in area fished.”</p> <p>(2) The preliminary assessment of the known and anticipated impacts of the bottom fishing activity must: (Art. 19(2))</p> <p>i. “be in accordance with guidance developed by the Scientific Council, or in the absence of such guidance, to the best ability of the Contracting Party; and”</p>	<p>including cameras if practicable; and”</p> <p>viii. “monitoring data obtained pursuant to paragraph 1 of this Article.”</p> <p>To the above (viii) point, the “monitoring data” comes from prior to undertaking exploratory bottom fishing:</p> <p>“Contracting Parties shall gather relevant data to facilitate assessment of exploratory bottom fishing by the Permanent Committee on Management and Science (PECMAS) and ICES. Such data should preferably include data from sea-bed mapping programmes, i.e. data from echosounders, if practicable multi-beam sounders, and/or other data relevant to the preliminary assessment of the risk</p>	<p>research and/or survey cruises, such as distribution, abundance, demographic data and information on stock identity;”</p> <p>v. “details of non-target and associated or dependent species and the marine ecosystem in which the fishery occurs, the extent to which these would be likely to be affected by the proposed fishing activity and any measures that will be taken to mitigate these effects;”</p> <p>vi. “the anticipated cumulative impact of all fishing activity in the area of the exploratory</p>	<p>evaluation of risks of the significant adverse impact on vulnerable marine ecosystems (VMEs), in line with the precautionary approach” (para. 3(iii))</p>	<p>activities using gear monitoring technology, including cameras if practicable; and”</p> <p>viii. “monitoring data obtained pursuant to paragraph 1 of this Article.</p> <p>To the above (viii) point, the “monitoring data” comes from prior to undertaking exploratory bottom fishing:</p> <p>“Contracting Parties shall gather relevant data to facilitate assessments of exploratory bottom fishing by the Scientific Committee. Such data should preferably include data from sea-bed mapping programmes, i.e. data from echosounders, if practicable multi-beam sounders,</p>	<p>region or similar fisheries elsewhere that may assist in the evaluation of potential yield;”</p> <p>vi. “if proposed fishery will be undertaken using bottom trawl gear, information on the known and anticipated impacts of this gear on vulnerable marine ecosystems, including benthos and benthic communities.”</p> <p>(3) The preliminary assessment, contained in Annex 22-06/A of CMM 22-06, requires:</p> <p>i. “Scope” – “fishing method(s) notified... subarea/divisio</p>

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		<p>ii. “address the elements in accordance with Annex I.E.”</p> <p>In addressing “the elements” in Annex I.E., it is presumed to refer to Annex I.E.V., “Assessment of Bottom Fishing Activities” (<i>Annex I.E.V</i>)</p> <p><u>Assessment of Bottom Fishing Activities</u></p> <p>“Assessments should consider the best available scientific and technical information on the current state of fishery resources.”</p> <p>“Assessments should address, <i>inter alia</i>.”</p> <p>i. “type(s) of fishing conducted or contemplated, including</p>	<p>of significant adverse impacts on VMEs.” (<i>Art. 6(1)</i>)</p> <p>(2) “Assessments should address, <i>inter alia</i>.” (<i>Annex 4</i>)</p> <p>i. “type(s) of fishing conducted or contemplated, including vessels and gear types, fishing areas, target and potential by catch species, fishing effort levels and duration of fishing (harvesting plan);”</p> <p>ii. “best available scientific and technical information on the current state of fishery resources and baseline information on the ecosystems, habitats and communities in the fishing area, against which</p>	<p>fishery if applicable;”</p> <p>vii. “information from other fisheries in the region or similar fisheries elsewhere that may assist in the evaluation of the relevant exploratory fishery’s potential yield, to the extent the Member or CNCP is able to provide this information;”</p> <p>viii. “if the proposed fishing activity is bottom fishing, as defined in... the assessment of the impact of their flagged vessels’ bottom fishing activities, prepared pursuant to... and”</p> <p>ix. “where the target species is</p>		<p>and/or other data relevant to the preliminary assessment of the risk of significant adverse impacts on VMEs.” (<i>Art. 6(1)</i>)</p> <p>(2) “Assessments should address, <i>inter alia</i>.” (<i>Annex 3</i>)</p> <p>i. “type(s) of fishing conducted or contemplated, including vessels and gear types, fishing areas, target and potential by catch species, fishing effort levels and duration of fishing (harvesting plan);”</p> <p>ii. “best available scientific and technical information on the current state of fishery resources and baseline information on the ecosystems, habitats and communities in the fishing area,</p>	<p>n where fishing has been notified... period of notification... names of fishing vessels.”</p> <p>ii. “Proposed fishing activity” – “fishing gear details... fishing gear configuration... expected behaviour of fishing gear... estimated footprint associated with possible unusual fishing events... estimated footprint index... estimated ‘impact index’... scale of proposed fishing activity.”</p> <p>iii. “Methods used to avoid significant</p>

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		<p>vessels and gear types, fishing areas, target and potential by catch species, fishing effort levels and duration of fishing (harvesting plan);”</p> <p>ii. “existing baseline information on the ecosystems, habitats and communities in the fishing area, against which futures changes are to be compared;”</p> <p>iii. “identification, description and mapping of VMEs known or likely to occur in the fishing area;”</p> <p>iv. “identification, description and evaluation of</p>	<p>future changes are to be compared;”</p> <p>iii. “identification, description and mapping (geographical location and extent) of VMEs known or likely to occur in the fishing area;”</p> <p>iv. “identification, description and evaluation of the occurrence, character, scale and duration of likely impacts, including cumulative impacts of the proposed fishery on VMEs in the fishing area;”</p> <p>v. “data and methods used to identify, describe and assess the impacts of the activity, the identification of gaps in knowledge, and</p>	<p>also managed by an adjacent [RFMO] or similar organization, a description of that neighbouring fishery sufficient to allow the Scientific Committee to formulate its advice in accordance with paragraph 8.”</p> <p>{3} No specified information needed.</p>		<p>against which future changes are to be compared;”</p> <p>iii. “identification, description and mapping (geographical location and extent) of VMEs known or likely to occur in the fishing area;”</p> <p>iv. “identification, description and evaluation of the occurrence, character, scale and duration of likely impacts, including cumulative impacts of the proposed fishery on VMEs in the fishing area;”</p> <p>v. “data and methods used to identify, describe and assess the impacts of the activity, the identification of gaps in knowledge, and an</p>	<p>impacts on VMEs.”</p> <p>{4} No specified information needed.</p>

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		<p>the occurrence, scale and duration of likely impacts, including cumulative impacts covered by the assessment on VMEs;"</p> <p>v. "consideration of VME elements known to occur in the fishing area;"</p> <p>vi. "data and methods used to identify, describe and assess the impacts of the activity, the identification of gaps in knowledge, and an evaluation of uncertainties in the information presented in the assessment;"</p>	<p>an evaluation of uncertainties in the information presented in the assessment;"</p> <p>vi. "risk assessment of likely impacts by the fishing operations to determine which impacts on VMEs are likely to be significant adverse impacts; and"</p> <p>vii. "mitigation and management measures to be used to prevent significant adverse impacts on VMEs and the measures to be used to monitor effects of the fishing operations."</p>			<p>evaluation of uncertainties in the information presented in the assessment;"</p> <p>vi. "risk assessment of likely impacts by the fishing operations to determine which impacts on VMEs are likely to be significant adverse impacts; and"</p> <p>vii. "mitigation and management measures to be used to prevent significant adverse impacts on VMEs and the measures to be used to monitor effects of the fishing operations."</p>	

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		<p>vii. “risk assessment of likely impacts by the fishing operations determine which impacts on VMEs are likely to be significant adverse impacts; and”</p> <p>viii. “the proposed mitigation and management measures to be used to prevent significant adverse impacts on VMEs, and the measures to be used to monitor the effects of the fishing operations.”</p>					
Timing Requirements for Notice of Intent	There is no stated requirement in <i>Art. 5(1)(d)</i> which	It is not explicitly stated when the Notice of Intent is to be sent to the Executive Secretary;	The Contracting Party must submit the Notice of Intent “at least six months prior to the proposed start	The Member or CNCP must submit the required information “not less than 60 days in advance of the next	“Prior to the commencement of fishing, the member of the Commission is to circulate the information and	The Contracting Party must submit the Notice of Intent “at least 60 days prior to the proposed start of	The Member must submit the required information “by 1 June prior to the season in which it

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	corresponds to this stage.	however, the preliminary assessment is to be sent to the Executive Secretary “no less than two weeks in advance of the opening of the June meeting of the Scientific Council,” (Art. 19(2)(a)) thus it is presumed that the Notice of Intent follows the same deadline.	of the fishing.” (Art. 6(2)) It is not explicitly stated when the accompanying preliminary assessment is to be sent to the Secretary; however, it is presumed that it follows the same deadline.	annual meeting of the Scientific Committee.” (para. 5)	assessment... together with the impact assessment. Such information is to be provided to the other members at least 30 days in advance of the meeting at which the information shall be reviewed.” (para. 3(i))	the fishery.” (Art. 6(2)) It is not explicitly stated when the accompanying preliminary assessment is to be sent to the Executive Secretary; however, it is presumed that it follows the same deadline.	intends to fish.” (para. 6)
Initial Review	“A Party may authorize exploratory fishing only after it has notified the other Parties of its plans for such fishing and it has provided other Parties an opportunity to comment on those plans.” (Art. 5(1)(d)(iv))	“The Commission will request the Scientific Council to:” (Art. 19(3)) 1. “undertake an analysis of the preliminary assessment... at its meeting immediately following the submission by the Contracting Parties, according to procedures and standards it	“The Notice of Intent, along with the accompanying information, shall be forwarded by the Secretary to all Contracting Parties as well as to PECMAS for review.” (Art. 6(3)) “The Secretary shall promptly forward the assessment to all Contracting Parties and to PECMAS.” (Art. 7(2))	“At its annual meeting, the Scientific Committee shall consider all Fisheries Operation Plans submitted pursuant to paragraph 5, all information provided in accordance with a Data Collection Plan and any other relevant information.” (para. 7)	“The [Scientific Committee] is to review the information and the assessment... in accordance with “SC Assessment Review Procedures for Bottom Fishing Activities (Annex 3).” (para. 3(iii)) <u>Scientific Committee Assessment Review Procedures for Bottom Fishing Activities (Annex 3)</u>	“The Notice of Intent will be evaluated by the Scientific Committee... during [its]... annual meeting.” (Art. 6(3)) “The Executive Secretary shall promptly forward the assessment to all Contracting Parties and the Scientific Committee.” (Art. 7(2)) “The Scientific Committee shall,	The Fishery Operations Plan, as well as the preliminary assessment of the impact of planned activities on vulnerable marine ecosystems if required, shall be put “for review by the Working Groups on Statistics, Assessment and Modelling (WG-SAM), Ecosystem Monitoring and

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		<p>develops, and taking into account the risks of significant adverse impacts on VMEs;"</p> <p>2. "consider any available additional information, including information from other fisheries in the region or similar fisheries elsewhere."</p>	<p>"PECMAS shall, either at its next session or through correspondence, undertake an evaluation, in accordance with the precautionary approach, of the submitted documentation, taking account of the risk of significant adverse impact on VMEs. Such evaluation shall take place no later than three months following the date of submission of the Notice of Intent. It shall be undertaken according to procedures and standards developed by PECMAS, which shall use any other information required, including information from other fisheries in the region or similar fisheries elsewhere and, in particular, any advice provided by ICES." (Art. 7(3))</p>	<p><u>Data Collection Plan</u></p> <p>"When considering a Fisheries Operation Plan," the Scientific Committee "shall develop a Data Collection Plan in respect of that exploratory fishery which should include research requirements, as appropriate." (para. 9)</p> <p>"The Data Collection Plan shall identify and describe the data needed and any operational research actions necessary to obtain data from the exploratory fishery to enable an</p>	<ul style="list-style-type: none"> • "The Scientific Committee (SC) is to review identifications of vulnerable marine ecosystems (VMEs) and assessments of significant adverse impact on VMEs, including proposed management measures intended to prevent such impacts submitted by individual Members." • "Members of the Commission shall submit their identifications and assessments to members of the SC at least 21 days prior to the SC meeting at which the review is to take place. Such submissions shall include all relevant data and information in support of such determinations." 	<p>either at its next session or through correspondence, undertake an evaluation, in accordance with the precautionary approach, of the submitted documentation, taking account of the risk of significant adverse impact on VMEs. Such evaluation shall take place no later than 30 days following the date of submission of the Notice of Intent, including the preliminary assessment." (Art. 7(2))</p> <p>"The Scientific Committee shall undertake an evaluation of the impact assessment, according to procedures and standards it develops... The Scientific Committee may use in its evaluation additional information available</p>	<p>Management (WG-EMM), Fish Stock Assessment (WG-FSA), the Scientific Committee and the Commission." (para. 6(iii))</p> <p><u>Data Collection Plan</u></p> <p>"The Scientific Committee shall develop (and update annually as appropriate) a Data Collection Plan, which should include research proposals, as appropriate. This plan shall identify the data needed and describe any operational research actions necessary to obtain the relevant data from the exploratory fishery to enable an assessment of the stock to be made." (para. 2)</p>

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				<p>assessment of the stock, the feasibility of establishing a fishery and the impact of fishing activity on non-target, associated or dependent species and the marine ecosystem in which the fishery occurs." (para. 9)</p> <p>The Data Collection Plan must have, "as appropriate:" (para. 10)</p> <ol style="list-style-type: none"> 1. "a description of the catch, effort and related biological, ecological and environmental data required to undertake the evaluation described in paragraph 24;" 2. "the dates by which the data must be provided to the Commission;" 	<ul style="list-style-type: none"> • "In conducting the review... the SC will give particular attention to whether the deep-sea bottom fishing activity would have a significant adverse impact on VMEs and marine species and, if so, whether the proposed management measures would prevent such impacts." 	<p>to it, including information from other fisheries in the region or similar fisheries elsewhere." (Art. 7(3))</p>	<p>"The Data Collection Plan shall include, where appropriate:" (para. 3)</p> <ol style="list-style-type: none"> 1. "a description of the catch, effort and related biological, ecological and environmental data required to undertake the evaluations described in paragraph 1(ii), and the date by which such data are to be reported annually to CCAMLR;" 2. "a plan for directing fishing effort during the exploratory phase to permit the acquisition of relevant data to evaluate the fishery

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				<p>3. “a plan for directing fishing effort in an exploratory fishery to allow for the acquisition of relevant data to evaluate the fishery potential and the ecological relationships among harvested, non-target and associated or dependent populations and the likelihood of adverse impact;”</p> <p>4. “where appropriate, a plan for the acquisition of any other research data obtained by fishing vessels, including activities that may require the cooperative activities of scientific observers and</p>			<p>potential and the ecological relationships among harvested, dependent and related populations and the likelihood of adverse impacts;”</p> <p>3. “where appropriate, a plan for the acquisition of any other research data by fishing vessels, including activities that may require the cooperative activities of scientific observers and the vessel, as may be required for the Scientific Committee to evaluate the fishery potential and</p>

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
				<p>the vessel, as may be required by the Scientific Committee to evaluate the fishery potential and the ecological relationships among harvested, non-target, associated and dependent populations and the likelihood of adverse impacts; and”</p> <p>5. “an evaluation of the time scales involved in determining the responses of harvested, dependent and related populations to fishing activities.”</p>			<p>the ecological relationships among the harvested, dependent and related populations and the likelihood of adverse impacts;”</p> <p>4. “an evaluation of the timescales involved in determining the responses of harvested, dependent and related populations to fishing activities.”</p>
Initial Advice and/or Recommendations	There is no stated requirement in <i>Art. 5(1)(d)</i> which	“The Commission will request the Scientific Council to... in line with the precautionary	“PECMAS shall subsequently provide advice to the Commission as to whether the proposed	“The Scientific Committee shall provide recommendations and advice to the	“Based on the... review, the SC will provide advice and recommendations to the submitting	Following an evaluation of the impact assessment, the Scientific Committee will	There is no stated manner or method for providing advice or

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
	corresponds to this stage.	approach, provide advice to the Commission on possible adverse impacts on VMEs and on the mitigation measures to prevent them.” (Art. 19(3)(c))	exploratory bottom fishing should be approved, or would have significant adverse impacts on VMEs and, if so, on the mitigation measures to prevent such impacts.” (Art. 7(4))	Commission on each Fisheries Operation Plan on the following matters, as appropriate:” (para. 8) 1. “management strategies or plans for fishery resources;” 2. “reference points, including precautionary reference points as described in Annex II of the 1995 Agreement;” 3. “an appropriate precautionary catch limit;” 4. “the cumulative impacts of all fishing activity in the area of the exploratory fishery;” 5. “the impact of the proposed fishing on the	Members on the extent to which the assessments and related determinations are consistent with the procedures and criteria established in the documents identified above; and whether additional management measures will be required to prevent SAIs on VMEs.” (Annex 3, para. 5)	“provide advice to the Commission as to whether the proposed bottom fishing activity would have significant adverse impacts on VMEs and, if so, whether mitigation measures would prevent such impacts.” (Art. 7(3))	recommendations at this stage. The only mention of advice comes in the Commission making its determinations based off of “advice and evaluation provided by the Scientific Committee and the Standing Committee on Implementation and Compliance (SCIC).” (para. 7)

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
				<p>marine ecosystems;”</p> <p>6. “the sufficiency of information available to inform the level of precaution required and the degree of certainty with which the Scientific Committee’s advice is provided;”</p> <p>7. “the degree to which the approach outlined in the Fisheries Operation Plan is likely to ensure the exploratory fishery is developed consistently with its nature as an exploratory fishery, and consistently with the objectives of Article 2 of the Convention; and”</p>			

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
				8. "in respect of a Fisheries Operation Plan that proposes any bottom fishing activity, advice and recommendations in accordance with..."			
Subsequent (or Additional) Review	There is no stated requirement in <i>Art. 5(1)(d)</i> which corresponds to this stage.	<p>"The Joint Commission-Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management shall:" <i>(Art. 19(4))</i></p> <p>i. "examine the advice of the Scientific Council delivered in accordance with Article 19.3; and"</p> <p>ii. "make recommendations to the Commission in accordance</p>	There is no stated subsequent or additional review at this stage.	"The Compliance and Technical Committee shall consider any Fisheries Operation Plan submitted pursuant to paragraph 5 and any advice of the Scientific Committee thereon and provide advice and recommendations to the Commission on appropriate management arrangements, including in light of the obligations in CMM 03-2020 (Bottom Fishing), if applicable." <i>(para. 11)</i>	There is no stated subsequent or additional review at this stage.	There is no stated subsequent or additional review at this stage.	<p>There is no stated subsequent or additional review at this stage.</p> <p>The only mention of additional review comes in the Commission making its determinations based off of "advice and evaluation provided by the Scientific Committee and the Standing Committee on Implementation and Compliance (SCIC)." <i>(para. 7)</i></p>

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
		with its mandate.”					
Commission Decision	<p>“Exploratory fishing shall be limited in duration, scope and scale to minimize impacts on fish stocks and ecosystems and shall be subject to standard requirements set forth in the data sharing protocol adopted in accordance with Article 4, paragraph 5.” (Art. 5(1)(d)(ii))</p> <p>“A Party may authorize exploratory fishing only on the basis of sound scientific research and when it is consistent with the Joint Program of Scientific</p>	<p>“The Commission shall adopt conservation and management measures to prevent significant adverse impacts of the exploratory fishing activities on VMEs, taking account of advice and recommendations provided by the Scientific Council and the Joint Commission-Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management, including data and information arising from reports pursuant to Article 22.” (Art. 20(1))</p>	<p>“The Commission shall, within 30 days of receiving this advice, either give or withhold its approval for the proposed bottom fishing activities.” (Art. 7(4))</p> <p>“Exploratory bottom fishing shall only commence after having been assessed by PECMAS and approved by the Commission.” (Art. 6(4))</p>	<p>“At its annual meeting, the Commission shall consider all Fisheries Operation Plans submitted pursuant to paragraph 5, any advice or recommendations provided by the Scientific Committee and Compliance and Technical Committee pursuant to paragraphs 8 and 11, and any applicable obligations under CMM 03-2020 (Bottom Fishing) in respect of the proposed fishing activity.” (para. 12)</p>	<p>In the NPFC <i>Rules of Procedures</i>, it is stated that exploratory fishing is one of the binding decisions to be made by the Commission in accordance with the NPFC Convention Article 9.1(b).</p>	<p>“The Notice of Intent will be evaluated by the... Commission during [its]... annual meeting.” (Art. 6(3))</p> <p>“Exploratory bottom fishing shall only commence after having been assessed by the Scientific Committee and approved by the Commission.” (Art. 6(4))</p>	<p>“On the basis of the information submitted in accordance with paragraph 6, and taking into account the advice and evaluation provided by the Scientific Committee and the Standing Committee on Implementation and Compliance (SCIC), the Commission shall annually consider adoption of relevant conservation measures for each exploratory fishery.” (para. 7)</p> <p>“The Commission shall annually determine a precautionary catch limit at a level not substantially above that necessary to</p>

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
	Research and Monitoring and its own national scientific program(s)." (Art. 5(1)(d)(iii))						obtain the information specified in the Data Collection Plan and required to undertake the evaluation described in paragraph 1(ii)." (para. 4)
Commission Decision Option(s)	See above.	<p>"These measures may include:" (Art. 20(1))</p> <p>i. "allowing, prohibiting or restricting bottom fishing activities;"</p> <p>ii. "requiring specific mitigation measures for bottom fishing activities;"</p> <p>iii. "allowing, prohibiting or restricting bottom fishing with certain gear types, or changes in gear design and/or</p>	See above.	<p>"The Commission shall take a decision [on the basis of the above consideration], as to whether to approve fishing in the exploratory fishery in accordance with the Fisheries Operation Plan and for what period of time, up to a maximum period of three years." (para. 12)</p> <p>"The Commission may amend a Fisheries Operation Plan, as necessary, prior to approving fishing." (para. 13)</p>	<p>"The exploratory fisheries are to be permitted only where the assessment concludes that they would not have significant adverse impacts (SAIs) on marine species or any VMEs and on the basis of comments and recommendations of SC. Any determinations, by any Member of the Commission or the SC, that the exploratory fishing activities would not have SAIs on marine species or any VMEs, shall be made publicly available</p>	<p>The Commission, "within 30 days" of receiving the Scientific Committee's advice, "approve, withhold or reject the proposed bottom fishing activities." (Art. 7(3))</p>	There is no stated enumeration of the options available to the Commission at this stage.

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
		deployment; and” iv. “any other relevant requirements or restrictions to prevent significant adverse impacts to vulnerable marine ecosystems.”		“If the Commission approves fishing in accordance with the Fisheries Operation Plan it shall adopt a CMM in respect of the exploratory fishery which shall include a precautionary catch limit and any other management measures the Commission considers appropriate.” (para. 12)	through the NPFC website.” (para. 3(iv))		
Reporting of Exploratory Fishery	“A Party must adequately monitor any exploratory fishing that it has authorized and report the results of such fishing to the other Parties.” (Art. 5(1)(d)(v))	The Contracting Party must “have an observer with sufficient scientific expertise on board for the duration of the exploratory bottom fishing activity.” (Art. 18(2)(c)) The Contracting Party must “provide to the Executive Secretary an ‘Exploratory Bottom Fishing Trip	The Contracting Party “shall ensure that vessels flying its flag and conducting exploratory bottom fishing have a scientific observer on board. Observers shall collect data in accordance with the VME Data Collection Protocol as set out in Annex 3.”(Art. 6(6)) <u>VME Data Collection Plan</u>	“Members and CNCPs shall ensure that where their flagged vessels fish in an exploratory fishery, the data required by the Data Collection Plan is provided to the Commission. That data shall be provided to the relevant standard prescribed in...” (para. 17) “Once a Fisheries Operation Plan	“The member of the Commission is to ensure that all vessels flying its flag conducting exploratory fisheries are equipped with a satellite monitoring device and have an observer on board at all times.” (para. 4) “Within 3 months of the end of the exploratory fishing activities or within 12 months of the commencement of	The Contracting Party “shall ensure that vessels flying their flag conducting exploratory fishing have a scientific observer on board. Observers shall collect data in accordance with a VME Data Collection Protocol set out in Annex 4.” (Art. 6(6)) <u>VME Data Collection Protocol</u>	“Ensure that each vessel carries a CCAMLR-designated scientific observer to collect data in accordance with the Data Collection Plan, and to assist in collecting biological and other relevant data.” (para. 13(iv)) “Annually (by the specified date) submit to CCAMLR the data specified

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
		<p>Report' in accordance with Annex I.E. within 3 months of the completion of the exploratory bottom fishing activities."</p> <p>The Executive Secretary "circulates the 'Exploratory Bottom Fishing Trip Reports to the Scientific Council and to all Contracting Parties." (Art. 18(3)(b))</p>	<p>"Observers on fishing vessels in the Regulatory Area who are deployed pursuant to Article 6.6 of this Recommendation shall:" (Annex 3)</p> <ol style="list-style-type: none"> 1. "Monitor any set for evidence of presence of VMEs and identify coral, spongers and other organisms to the lowest level;" 2. "Record on data sheets the following information for identification of VMEs: vessel name, gear type, data, position... depth, species code, trip-number, set-number, and name of the observer on data sheets, if possible;" 3. "Collect, if required, representative samples from the entire catch... and" 4. "Provide samples to the scientific 	<p>expires, a Member or CNCP may prepare a new Fisheries Operation Plan in accordance with paragraph 5." (para. 22)</p> <p>"Members and CNCPs whose vessels participate in exploratory fisheries shall ensure that each vessel that flies its flag carries one or more independent observers sufficient to collect data in accordance with the Data Collection Plan." (para. 18)</p>	<p>fishing, whichever occurs first, the member of the Commission is to provide a report of the results of such activities to the members of the SC and all members of the Commission...</p> <p>The information to be included in the report is specified in Appendix 1.2." (para. 5)</p> <p><u>Information to be Included in the Report (Appendix 1.2)</u></p> <ul style="list-style-type: none"> • "name of vessel" • "flag member of vessel" • "description of area fished" • "fishing dates" • "total effort" • "bottom fishing gear-type used" • "list of VME encountered" • "mitigation measures taken in response to the encounter of VME" 	<p>"Observers on fishing vessels in the SEAFO Convention Area who are deployed pursuant to Article 6, paragraph 7 of this Conservation Measure shall: (Annex 4)</p> <ol style="list-style-type: none"> 1. "Monitor any set for evidence of presence of VMEs and the identify coral, sponges and other organisms to the lowest level possible." 2. "Record the following information for identification of VMEs: vessel name, gear type, date, position... depth, species code, trip-number, set-number, and name of the observer on datasheets." 3. "Collect representative biological samples from the entire 	<p>by the Data Collection Plan." (para. 13(v))</p>

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
			<p>authority of a Contracting Party at the end of the fishing trip.”</p> <p>The Contracting Party “shall provide a report of the results of such activities to the Secretary for circulation to ICES and to all other Contracting Parties. It shall ensure that the data which derives from exploratory bottom fishing, will be made available to ICES.” (Art. 6(7))</p>		<ul style="list-style-type: none"> • “list of all organisms brought onboard” • “list of VMEs indicator species brought onboard by location” 	<p>VME catch... For some coral species that are under the CITES list this will not be possible and for these species photographs should be taken.”</p> <p>4. “Provide samples to the scientific authority of a Contracting Party at the end of the fishing trip.”</p> <p>The Contracting Party “shall provide promptly a report of the results of such activities to the Executive Secretary for circulation to all Contracting Parties. It shall ensure that the data, which derives from exploratory bottom fishing, will be made available to the Scientific Committee.” (Art. 6(7))</p>	
Evaluation	There is no stated	“The Commission will request the	“The Commission shall review the	“At any time if the Commission is	“The SC is to review the report... above	“The Commission shall review the	“An exploratory fishery shall

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
	requirement in Art. 5(1)(d) which corresponds to this stage.	<p>Scientific Council to:" (Art. 21(1))</p> <p>i. "evaluate the exploratory bottom fishing activities at its meeting immediately following the reception of the 'Exploratory Bottom Fishing Trip Report' circulated... and"</p> <p>ii. "in line with the precautionary approach, provide advice to the Commission on the decision to be taken in accordance with Article 21.3, taking account the risks of significant adverse impacts on VMEs."</p>	<p>assessments undertaken in accordance with Article 7 and the results of the fishing protocols implemented by the participating fleets." (Art. 6(8))</p>	<p>satisfied that sufficient information is available:"</p> <p>1. "to evaluate the distribution, abundance and demography of the target species to inform an"</p> <p>2. "estimate of the exploratory fishery's potential yield; and</p> <p>3. "to review the exploratory fishery's potential impacts on non-target and associated or dependent species and the marine ecosystem in which the fishery occurs; and"</p> <p>4. "to allow the Scientific Committee to formulate and</p>	<p>and decide whether the exploratory fishing activities had SAIs on marine species or any VME. The SC then is to send its recommendations to the Commission on whether the exploratory fisheries can continue and whether additional management measures shall be required if they are to continue." (para. 6)</p> <p>"Members of the Commission shall only authorize continuation of exploratory fishing activity, or commencement of commercial fishing activity, under this protocol on the basis of comments and recommendations of the SC." (para. 7)</p>	<p>assessments undertaken in accordance with Article 7 and the results of the fishing protocols implemented by the participating fleets." (Art. 7(8))</p>	<p>continue to be classified as such until sufficient information is available:" (para. 1)</p> <p>1. "to evaluate the distribution, abundance and demography of the target species, leading to an estimate of the fishery's potential yield;"</p> <p>2. "to review the fishery's potential impacts on dependent and related species;"</p> <p>3. "to allow the Scientific Committee to formulate and provide advice to the Commission on appropriate harvest catch</p>

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
		<p>“The Joint Commission-Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management shall examine the advice of the Scientific Council delivered in accordance with Article 21.1 and shall make recommendations to the Commission in accordance with its mandate.” (Art. 21(2))</p>		<p>provide advice to the Commission on appropriate management arrangements;”</p> <p>“the Commission may take a decision, on the application of any Member, to manage the fishery as an established fishery.” (para. 24)</p>			<p>levels, as well as effort levels and fishing gear, where appropriate.”</p>
<p>Moving to Established Fishery</p>	<p>There is no stated requirement in Art. 5(1)(d) which corresponds to this stage.</p>	<p>“The Commission shall, taking account of advice and recommendations provided by the Scientific Council and the Joint Commission-Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management</p>	<p>“The Commission may decide to authorize new bottom fishing activities based upon the results of exploratory bottom fishing conducted in the previous two years. Areas where such new bottom fishing activities are authorized shall be defined as ‘existing bottom fishing areas’ pursuant to Article 4.” (Art. 6(8))</p>	<p>In addition to the possible decision above, “once an exploratory fishery has been fished for 10 years pursuant to this CMM, any further fishing in that fishery shall be undertaken only in accordance with a CMM adopted by the Commission in accordance with paragraph 24 to manage that fishery</p>	<p>“The Commission is to strive to adopt conservation and management measures to prevent SAIs on marine species or any VMEs. If the Commission is not able to reach consensus on any such measures, each fishing member of the Commission is to adopt measures to avoid any SAIs on VMEs.” (para. 6)</p>	<p>“The Commission may decide to authorize new bottom fishing activities based upon the results of the exploratory bottom fishing, taking due account of the rules and procedures set out in Annex 5. Areas where such new bottom fishing activities are authorized shall be defined as ‘existing</p>	<p>There is no stated manner or method for moving to an established fishery, except for the above provisions.</p>

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
		<p>either to:" (Art. 21(3))</p> <ol style="list-style-type: none"> 1. "authorize the bottom fishing activity for part or all of the area in which exploratory bottom fishing was carried out and include this area in the footprint, or" 2. "discontinue the exploratory bottom fishing activity and, if necessary, close part or all of the area where which exploratory bottom fishing was carried out, or" 3. "authorize the continued conduct of exploratory bottom fishing activity, in line with Article 18 with a view to 		<p>as an established fishery." (para. 23)</p>		<p>bottom fishing areas' pursuant to Article 4." (Art. 7(8))</p> <p><u>Rules and Procedures for Opening of New Fishing Areas</u></p> <p>"It is required to have exploratory fishing data within a specified area without reaching the VME threshold to open that area for fishing:" (Annex 5)</p> <ol style="list-style-type: none"> 1. "two years of data within 5 year period for an area (<2000 m) adjacent to an existing fishing area;" 2. "and three-years of data within 5 years for areas (<2000 m) not adjacent to an existing fishing area; and" 3. "archived fishing records/data collected prior to exploratory fishing 	

Exploratory Fisheries Process	CAO Agreement Obligation(s)	Regional Fisheries Management Organization					
		NAFO	NEAFC	SPRFMO	NPFC	SEAFO	CCAMLR
		gather more information.”				that contain VME data may be counted as a first year data set.” Further, “All 1x1° areas within the exploratory area that contain a VME encounter should be excluded from the proposed new fishing area,” and “exploratory data stations should be set in such a way that it covers the exploratory area representatively above the 2000 m depth isobar.”	

APPENDIX 11

CAOFA-2022-COP1-REF02



Comparative Assessment of Existing Exploratory Fishing Measures of RFMOs

Paper submitted to the Preparatory Conference for the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

Nadia Bouffard, Chair, PrepCon

June 15-16, 2021

Exploratory Fishing

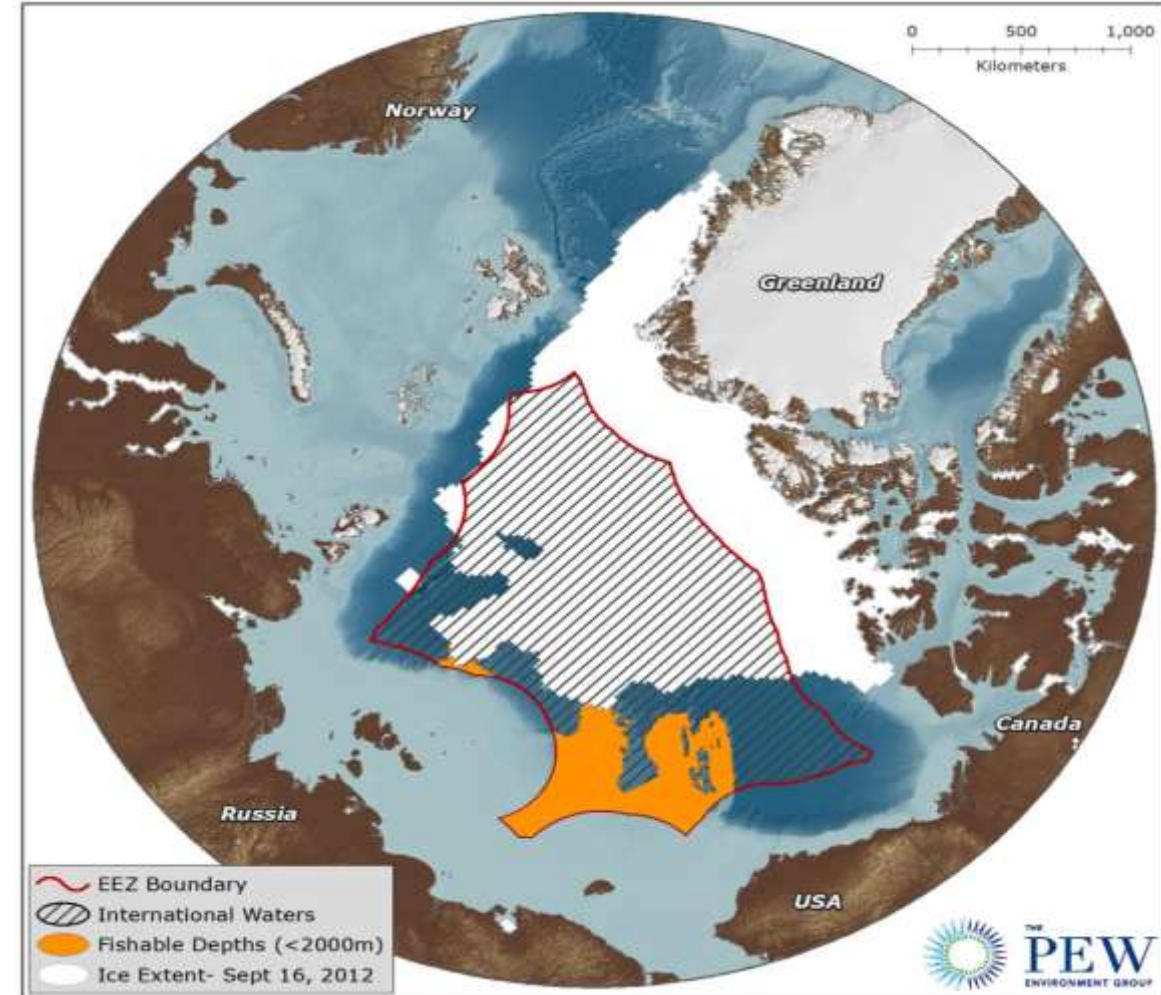
**under the Agreement to Prevent Unregulated High Seas Fisheries
in the Central Arctic Ocean**

- “Exploratory Fishing”

- means fishing for the purpose of assessing the sustainability and feasibility of future commercial fisheries by contributing to scientific data relating to such fisheries
- **Article 3(3)**
- A Party may authorize vessels entitled to fly its flag to carry out exploratory fishing in the Agreement Area only pursuant to conservation and management measures established by the Parties on the basis of Article 5, paragraph 1 (d).

Exploratory Fishing under the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (cont.)

- **Article 5(1)(d)**



5. (1) The Parties shall meet every two years or more frequently if they so decide. During their meetings, the Parties shall, *inter alia*:

(d) establish, **within three years** of the entry into force of this Agreement, conservation and management measures for exploratory fishing in the Agreement Area. The Parties may amend such measures from time to time. These measures shall provide, *inter alia*, that: **(i)** exploratory fishing shall not undermine the objective of this Agreement,

(ii) exploratory fishing shall be limited in duration, scope and scale to minimize impacts on fish stocks and ecosystems and shall be subject to standard requirements set forth in the data sharing protocol adopted in accordance with Article 4, paragraph 5,

(iii) a Party may authorize exploratory fishing only on the basis of sound scientific research and when it is consistent with the Joint Program of Scientific Research and Monitoring and its own national scientific program(s),

(iv) a Party may authorize exploratory fishing only after it has notified the other Parties of its plans for such fishing and it has provided other Parties an opportunity to comment on those plans, and

(v) a Party must adequately monitor any exploratory fishing that it has authorized and report the results of such fishing to the other Parties.



Mandate

May 2019 Meeting of Signatories of the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean

- Delegations noted that many regional bodies have developed conservation and management measures (CMMs) governing exploratory fisheries, and that these existing measures should be used as a basis for future discussions on this topic.
- **Delegations agreed that as a first step, the chair of the Preparatory Conference should provide a compilation and assessment of existing exploratory fishing CMMs for consideration by delegations.**
- Delegations also agreed that this compilation and assessment may lead to identification of questions which may need to be posed to scientific experts, as a second step for the development of CMMs for governing exploratory fishing in the CAO.



RFMOs Studied

- Not all RFMOs have CMMs to govern Exploratory Fishing
- The Comparative Assessment studies the following organisations:
 - Northwest Atlantic Fisheries Organization (NAFO)
 - North East Atlantic Fisheries Commission

(NEAFC)

- South Pacific Regional Fisheries Management Organization (**SPRFMO**)
 - North Pacific Fisheries Commission (**NPFC**)
 - South East Atlantic Fisheries Organization (**SEAFO**)
 - Convention for the Conservation of Antarctic Marine Living Resources (**CCAMLR**)
- **These organisations have provided input, which has been reflected in the final Comparative Assessment**



COMMON STRUCTURE OF RFMO MEASURES

See Annex 1 to the Comparative Assessment Paper for details



Definition of Exploratory Fishing

STAGES OF THE EXPLORATORY FISHERY PROCESS UNDER RFMO MEASURES

All RFMO Measures concerning exploratory fisheries contain a definition- Some restricted to bottom fishing while others broader

Materials and Timelines

Exploratory fisheries proposal documents

Required information in proposal documents

Timing of proposal submission

Decision-Making and Reporting

Review, Advice, and Recommendations

Commission decision

Reporting on exploratory fishery

Next Phase

Evaluation

Moving to an established fishery

Materials and Timelines

- **Notice of Intent: Harvesting Measures; Mitigation Measures; Catch Monitoring Plan; Data Collection Plan**
- **Preliminary Assessment of “Known and Anticipated Impacts”**
- **Commitment to implement a Data Collection Plan**

CAO CMMs:

Could require specific information and data, including that which is required by Art. 5(1)(d) of the Agreement, be provided with the Party’s notification of its plan to authorize exploratory fishing



Could also specify the deadline by which the notification must be provided, providing sufficient time for review and comments back to the Party



Decision-Making and Reporting

- Commission Decisions, based on review, advice and recommendations from various bodies, in particular their scientific bodies
- Specific requirements for fine-scale data collection, monitoring including technology details, and reporting requirements

CAO CMMs:

Up to each Party to authorize exploratory fishing. Such Party must notify others of its Plans and allow others to comment.

Could specify process for review and assessment by the CAO Parties and require that Proposing Party demonstrate how it has factored in the comments provided by the Parties.

Could specify data collection, monitoring and reporting requirements.

Next Phase

- **Evaluation: Scientific review and determine whether the exploratory fishing activities had significant or adverse impacts**
- **Provide advice on whether, and under what conditions, a commercial fishery may be conducted**
 - **Commission decision**

CAO CMMs:

Could specify the requirements and process for evaluating the exploratory fishery results, including how to assess the significant or adverse impacts.

Could specify detailed requirements and process for assessing and determining whether the requirements of Art. 5(1)(c) have been met

“whether the distribution, migration and abundance of fish in the Agreement Area would support a sustainable commercial fishery and, on that basis, once negotiations (of an RFMO) have commenced ... whether to establish additional or different interim conservation and management measures in respect of those stocks in



Conclusion and Next Steps



- Comparative Assessment of Existing Exploratory Fishing CMMs of RFMOs Paper and Annex provided as background information to Delegations
 - Information from RFMO CMMs and their experiences can be useful in developing CMMs on Exploratory Fisheries for the CAO
 - Topic is complex and will require some time to negotiate
 - Article 5(1) provides 3 years from entry into force of the Agreement to develop CMMs: 25 June, 2024.
- As per Art. 5(1)(d)(ii), associated to this work is the need to adopt a Data Sharing Protocol required by Art. 4(5) by 25 June, 2023.

Up to Parties to determine next steps...

Special Thanks to William Harris for his work on the
Comparative Assessment Paper



APPENDIX 12

COP - CAO Fisheries Agreement
CAOFA-2022-COP1-10

CAOFA-2022-COP1-15

United States Proposal for Intersessional Meeting on Exploratory Fishing

Proposal: Convene a virtual intersessional meeting in early or mid-February, 2023, to discuss and provide questions to the SCG to consider at their spring, 2023, meeting, that focus on the scientific information and advice required to inform future exploratory fishing.

JOHN L. BENGTON

Resume – November 2022

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living resource management and conservation –
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Education

University of Minnesota, Minneapolis, MN: Ph.D. – Ecology (1981)
University of Minnesota, Minneapolis, MN: M.S. – Ecology (1980)
University of Alaska, Fairbanks, AK: – Wildlife ecology (1975)
Carthage College, Kenosha, WI: B.A. with honors – Biology, Conservation (1975) Cornell
University, Shoals Marine Laboratory, ME: – Marine science (1973)

Professional Positions

Director, Marine Mammal Laboratory (2004-present), Alaska Fisheries Sci. Ctr./NMFS/NOAA, Seattle, WA
Leader, Polar Ecosystems Program (1998-2004), National Marine Mammal Laboratory, Seattle, WA
Leader, Antarctic Ecosystem Program (1987-1998), National Marine Mammal Laboratory, Seattle, WA
Wildlife Biologist (1985-1987), National Marine Mammal Laboratory, Seattle, WA
Research Associate (1984-1985), National Research Council, Washington, D.C. Research Associate (1981-1983), British
Antarctic Survey, Cambridge, United Kingdom

Experience with International Polar Science, Management, and Conservation

Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (CAO)
CAO Council of Parties (COP) – Member, U.S. Delegation (2019-present)
CAO Provisional Scientific Coordinating Group (PSCG) – Member, U.S. Delegation (2019-present)
Expert Group on Arctic Fish Stocks (FISCAO) – Member, U.S. Delegation (2015-2017)

Arctic Council

Integrated Ecosystem Assessment of the Central Arctic Ocean (WGICA) – Co-Chair (2017-2019)
Circumpolar Biodiversity Monitoring Prog. (CBMP-Marine) – Chair (2017-18), Member (2015-present)

Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)

CCAMLR Scientific Committee – Member, U.S. Delegation (1984-1994)
Working Group on Ecosystem Monitoring – Convener (1990-1994), U.S. Representative (1984-1994)

Scientific Committee on Antarctic Research (SCAR)

SCAR Group of Specialists on Seals – Convener (1996-2002), Secretary (1983-1996)
Antarctic Pack Ice Seals (APIS) Program (circumpolar research initiative) – Chair (1994-2004)

Polar marine research

U.S./Russia Intergovernmental Marine Mammal Working Group – Co-Chair (2004-present)
Arctic – 7 marine mammal species (1984-present)
Antarctic – 6 marine mammal species, 5 penguin species (1976-2000)

SEBASTIAN RODRIGUEZ

Introduction

Specialist on science-policy interface, integrating scientific advice in conservation and management decisions. Wide experience in the fisheries and aquaculture sectors from fisheries research and innovation to trade and market analysis. Team leader who relishes working with people from diverse nationalities and backgrounds. Communicative, team player, comfortable multitasking on complex responsibilities and committed to the efficient and effective management of financial resources and staff.

★ CORE COMPETENCIES

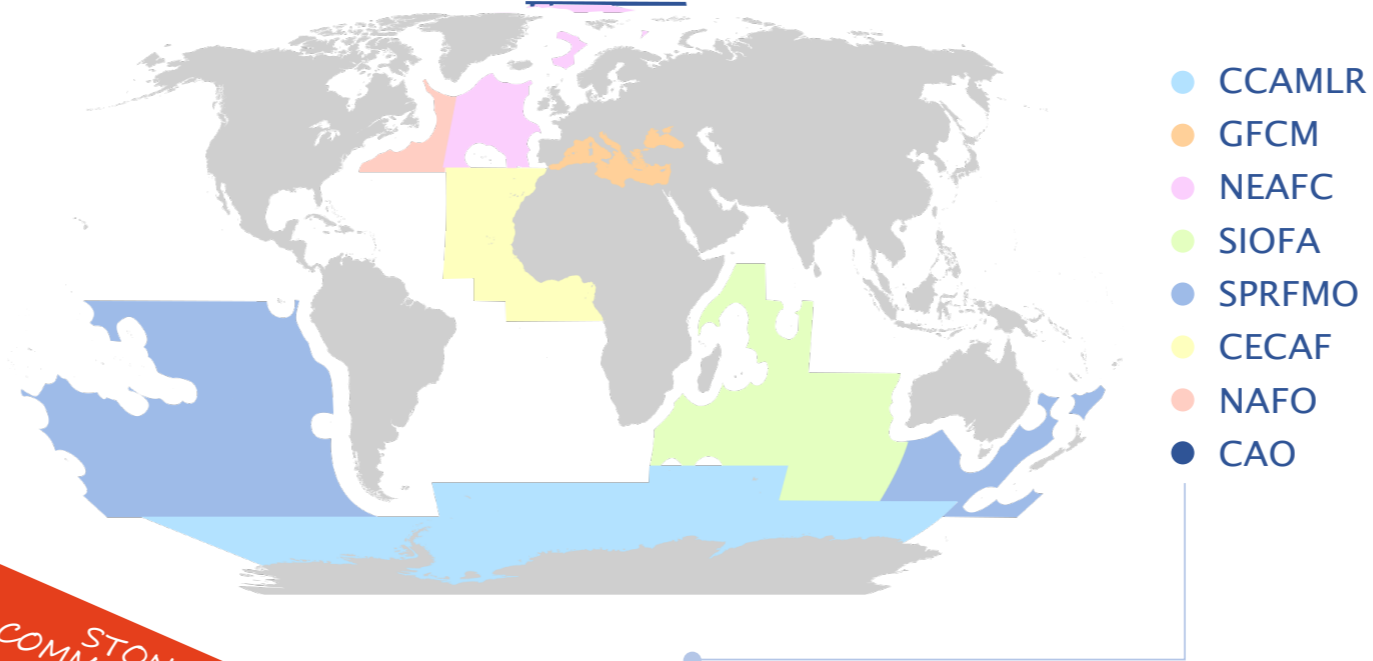


RELEVANT EDUCATION






 University of Las Palmas de Gran Canaria. PhD / BS Marine Sciences
2014 / 2000 Spain

 Peoples' Friendship University of Russia. Russian Language
2002 Russian Federation

INTERNATIONAL FISHERIES MANAGEMENT



LANGUAGE PROFICIENCY

	English	■ ■ ■ ■ ■ ■ ■ ■	C2
	Spanish	■ ■ ■ ■ ■ ■ ■ ■	C2
	French	■ ■ ■ ■ ■ ■ ■	C1
	Russian	■ ■ ■ ■ ■ ■ ■	C1
	Danish	■ ■ ■	A2

RELEVANT WORK HISTORY



Leading EU Scientist for CCAMLR, SIOFA and NEAFC. Associate teacher ULPGC.
2022-2020 Spain



South Pacific Regional Fisheries Management Organisation (SPRFMO) – Executive Secretary
2020-2018 New Zealand



Directorate General for Maritime Affairs and Fisheries – Scientific Officer
2018 - 2014 Belgium



Directorate General for Maritime Affairs and Fisheries – Research Officer
2013 - 2010 Belgium



EUROFISH International organization – Senior Project Manager
2010 - 2007 Denmark



Spanish Ministry of Agriculture, Fisheries and Food – Project Manager
2007 - 2003 Spain



EWOS Technology Center – Aquaculture researcher
1999 United Kingdom

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PRAISE

“I consider Dr Rodríguez an outstanding person, able to maximize the potential of any professional environment”.

Prof. Dr. A. Luque Full Prof. in Marine Ecology, Chairman of the UNESCO Chair

“Members have hailed your leadership and professionalism as remarkable, recognising your managerial skills and your exceptional capacity to motivate people to do their best. Your performance as resource manager has met all expectations”.

Mr O. Urrutia SPRFMO Chairperson

“His work ethics, his collaborative management and strong leadership skills made Dr Rodríguez a valuable member of every international forum having the ability to lead a common understanding in a multi-cultural environment”.

Mr. S. Depypere, Director European Commission

“We are losing a manager that treated us not only as employees, but as individuals with interests and feelings. Sebastián is leaving a team that is positively different to the one he met. We will remember him dearly for his kind, selfless attitude, approachability and his high work standards.”.

SPRFMO Staff Association

CALENDAR OF 2023 CAO MEETINGS*

1. Early February 2023	Drafting Group Virtual Meeting on Exploratory Fishing Questions
2. Mid-February 2023	Intersessional Virtual COP Meeting to consider Exploratory Fishing Questions
3. March 2023	SCG In-Person Meeting, with options for virtual participation
4. End of March 2023	Drafting Group Virtual Meeting on SCG Rules of Procedure
5. June 2023	In-Person COP Meeting, with options for virtual participation

* Dates to be confirmed by host Parties and Chairperson by end of Calendar year 2022.