

PAME II-2021 WORKING GROUP MEETING REPORT

27 SEPTEMBER - 8 OCTOBER 2021

VIRTUAL ONLINE MEETING



ARCTIC COUNCIL

PAME

Protection of the Arctic Marine Environment

PAME II-2021

SUMMARY MEETING
REPORT
27 SEP. – 8 OCT. 2021

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PAME II-2021 SUMMARY

PAME's 2nd biannual meeting of 2021 (PAME II-2021) was held online from 7-8 October. This was the third online PAME plenary meeting with 165 registered participants. PAME's five thematic expert group meetings (shipping, marine protected areas, ecosystem approach, marine litter and resource exploration and development) were held online from 27 September-5 October.

Marine Protected Areas (MPAs)

The development of additional Information Briefs on the Arctic marine environment under change is underway and PAME has approved one on ecological connectivity as a joint PAME/CAFF project. The Kingdom of Denmark is in the process of developing a project proposal for an Information Brief on Arctic invasive species. Other PAME members have been invited to submit additional ideas for Information Briefs that are timely and relevant to ongoing PAME and Arctic Council work. Translations of the two Information Briefs on the Arctic marine environment under change, approved at the 2021 Ministerial, into other Arctic State and Indigenous languages is underway.

PAME is in the process of revisiting the *Framework for a Pan-Arctic Network of Marine Protected Areas (2015)* for relevant updating. Such updating may benefit from updates to existing topics and inclusion of new topics such as alignment with discussions on new targets in global fora, other effective area-based conservation measures (OECMs), Indigenous-led conservation, climate change, connectivity, and management effectiveness. There is also a potential for other 2021-2023 PAME projects to contribute to Framework updates. Expected completion of this update is February 2024.

The work on further *expansion and refinement of PAME's MPA-network Toolbox* project will consider topics and materials as a

matter of course during the MPA Framework update, including the *Modelling Arctic Oceanographic Connectivity* report.

The project on: *Different Ways of Knowing: Applying Indigenous and Local Knowledge and Scientific Information to Arctic Conservation Planning* will engage young Indigenous professionals in the development of case studies. This project and the OECM project have jointly proposed a knowledge exchange session at the Fifth International MPA Congress (IMPAC5) in 2022.

Continued work on the joint PAME/CAFF project on: *Other effective area-based conservation measures (OECMs) in the Arctic Marine environment* to include an overview of the current range and understanding of international and national criteria used for identification of OECMs in the Arctic; and facilitate an exchange of information among the Arctic Council members on the range of information and application of OECMs.

The joint PAME/CAFF updated 2017 Arctic Protected Areas Indicator Report is being updated and will have a new title: *Status and Trends for Arctic Area-based Conservation Measures*. The aim is to have the updated report approved by PAME and CAFF in Feb. 2022.

Invasive Species

Development of the joint PAME-CAFF project: *Marine Invasive Alien Species in Arctic Waters* aims to implement priority actions from The Arctic Invasive Alien Species

(ARIAS) Strategy and Action Plan. The projects' focus is on the potential for unwanted transfer of marine invasive alien species by ships via ballast water and biofouling into and within Arctic waters. The project leads have reached out to the PAME Shipping Expert Group as a means of awareness and communication.

Arctic Marine Shipping

PAME and its Shipping Expert Group (SEG) continues to advance twelve projects and initiatives to promote safe and sustainable navigation in the Arctic with the following activities:

Linking with International Organizations

The 5th annual Arctic Shipping Best Practice Information Forum meeting will take place online from 16-18 November 2021. The Forum is currently chaired by the Russian Federation and the Forum Coordinating Committee will submit a report on its outcomes to PAME I-2022.

PAME is in the process of modifying the Terms of Reference of the Arctic Shipping Best Practice Information Forum and the Forum's Coordinating Committee will submit a revised draft for finalization and approval at PAME I-2022. The Forum's Coordinating Committee will continue to expand and enhance the Forum's Web portal.

The project on *raising awareness in the Arctic Council of the provisions of the 2021 Cape Town Agreement* is underway. A correspondence group has been established and a template prepared and sent out to seek input on Implementation of the 2012 Cape Town Agreement Provisions from Arctic States and Observer States. They have also been invited to submit any national fishing vessel analyses that they may have carried out in the Arctic region.

PAME continues its *collaboration with the Arctic Regional Hydrographic Commission (ARHC)* on the three projects identified in PAME's 2021-2023 Work Plan with an update at PAME I-2022.

IMO Measures for Arctic Shipping

Arctic States and Observer States have been invited to submit to PAME I-2022 information on Polar Ship Certificates that have been issued by or on behalf of their maritime administrations since their last submission of such information. The information is posted to the Arctic Shipping Best Practice Information Forum's Web-Portal.

PAME approved a letter which has been sent to the Antarctic Treaty Secretariat requesting support by Antarctic Treaty Contracting Parties for a Polar Code Inspection Campaign by the Paris Port State Control MOU and the Tokyo Port State Control MOU.

The standardized Arctic Ship Accident and Spill reporting Information template for the Arctic Ship Traffic Database (ASTD) has been approved. The development of the mechanism for Arctic States and Observer States to report accident and spill reporting information on a regular basis directly to the ASTD System using the approved template will be reported to PAME I-2022.

The development of a questionnaire is underway with the aim to ensure sufficient survey data to facilitate the implementation of the project on *Selected Wastewater Discharges in Arctic Waters*.

Work continues on the project *towards a harmonized implementation of the Polar Code* and a status report will be submitted to PAME I-2022.

Addressing Impacts on Marine Mammals

Work is underway on the project: *Underwater Noise in the Arctic: Understanding Impacts and Defining Management Solutions - Phase II*. Arctic States, PPs, and Observers have been invited to submit to the PAME Secretariat any projections, analyses, or reports that forecast anticipated maritime activity changes in the Arctic Region or any part of the Arctic Region.

Addressing the Infrastructure Deficit

Arctic States have been invited to confirm their willingness to co-sponsor the draft document on proposed amendments to *MARPOL and 2012 Guidelines for the Development of a Regional Reception Facilities Plan* to allow regional arrangements for ports in Arctic Waters. The aim is to arrange the timely submission of the final document to the 9th Session of the IMO's Sub-Committee on Pollution Prevention and Response.

Arctic States have been invited to review the *Arctic Port Reception Facility (PRF) Inventory* and provide any corrections, and updates as well as information on current waste reception capacities which will be incorporated into a revised inventory and submitted with a report to PAME I-2022.

Arctic Marine Traffic Systems

The *Arctic Ship Traffic Database (ASTD)* continues to be augmented with additional modules, functionalities, data, and data layers as appropriate. A plan for financing such future modules, functionalities, data, and data layers will be developed. Effort to raise awareness of the ASTD System will continue.

PAME continues to develop the *Arctic Shipping Status Reports (ASSR)* according to the agreed protocol for consultation with appropriate subject matter experts and Head of Delegation approval prior to issuance. Work is

underway with the Russian Federation to finalize and seek intersessional approval for *ASSR #4: Shipping in the Northern Sea Route: Comparing 2013 to 2020*." Arctic States, PPs, and Observers have been invited to review the informal list of subjects for potential ASSR Reports and provide comments as well as suggestions for future ASSR Reports.

Engagement of Observers in PAME's Shipping-Related Activities

Continued work on the *Systematically Strengthening Observer Engagement in PAME's Shipping Work* project and comments are being sought on the draft "PAME 101 for Observers" frequently asked questions (FAQ), including suggestions for additional questions that should be added to those listed in the draft document.

SEG Monthly Conference Calls

Arctic States, PPs, and Observers have been invited to review and comment on the draft list of potential topics for PAME's monthly SEG calls. Feedback and recommendations from SEG call participants is welcomed on how to further improve the utility, structure, focus, and timing of those calls.

Arctic Offshore Resource Exploration and Development

Translation of the *Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities (MEMA) Reference Guide (&brochure)* is proceeding into Russian. Continued work to pursue Indigenous language translations.

MEMA outreach includes the development of a focused outreach/communications plan to disseminate MEMA products broadly and strategically to targeted groups.

Ongoing work on updating the *Offshore Oil and Gas Activities and Regulatory*

Frameworks in the Arctic (AOGRR) information resource, including the redesign of the website.

Work is underway on the *Management of Arctic Marine Oil and Gas Associated Noise* project. A contractor has been secured to begin the literature research and outreach to Arctic States on mitigation and avoidance measures for noise associated with offshore or near shore oil and gas activities. Synergies will be explored during its next phases, with PAME's ongoing work on addressing underwater noise from shipping, as well as with CAFF's Pan-Arctic Passive Acoustic Monitoring Network, in particular relating to ambient noise levels and their impact on marine species.

The project on *Existing Best Practices for Marine and Coastal Mining* is in the process of developing a survey template for current mining projects. Initial summary of responses to the survey will be brought forward to PAME I-2022. The plan is to convene a workshop back-to-back with PAME II-2022. Synergy with the CAFF "Mainstreaming Biodiversity in Arctic Mining" project will be explored, including collaboration.

Ecosystem Approach to Management (EA)

MPA and EA expert groups (EGs) continue to exchange knowledge and discuss synergies and mutual learnings, including integrating area-based conservation into the EA implementation framework and leveraging EA to inform MPA network design and implementation.

The *draft Concept Paper on further cooperation under the Arctic Council on Ecosystem Based Management (EBM/EA) of Arctic marine ecosystems* will be discussed, based on comments received, at the December 2021

PAME Heads of Delegation meeting, to identify what is to be presented at PAME I-2022 and subsequent update at the Spring 2022 SAO meeting.

Work continues with *joint ICES/PICES/PAME Working Group for Integrated Ecosystem Assessment of the Central Arctic Ocean (WGICA)*. WGICA's plan is to have a first draft of a report detailing human impacts on the Central Arctic Ocean ecosystem ready by late 2021 which will be circulated for PAME review.

A draft outline has been developed for the project on *Synthesis Report on Ecosystem Status, Human Impacts and Management Measures in the Central Arctic Ocean (CAO-SR)*. The CAO-SR project will draw on peer-reviewed published information and the report by the WGICA, other Arctic Council working groups, and other readily available information sources as relevant. Ongoing collaboration between the CAO-SR project and WGICA has been established.

The planning of the 7th EA workshop on element No. 5 of the EA framework, *Value the cultural, social, and economic goods and services produced by the ecosystems* is well underway and PAME has approved the objectives and scope as outlined in the workshop prospectus. This workshop will be convened from 20-22 February 2022, back-to-back with the PAME I-2022 Meeting. Norway has offered to host the planned 3rd International Conference on EA in spring 2024 and a Conference Steering Committee will be established after the 7th workshop.

Efforts continue to strengthen the communication between the EA-EG co-chairs and the relevant Arctic Council Working Groups to secure coordination of work plans and efforts on EA implementation.

CAFF provided an update on the AMAP/CAFF project on *Climate change impacts: Arctic Ecosystems and feedbacks*. Shared interests in this project between AMAP, CAFF and PAME was acknowledged. To facilitate communication among Working Groups on this project, PAME Chair will communicate with the Chairs of CAFF and AMAP after PAME II-2021. PAME also requested EA-EG co-leads to reach out to the AMAP/CAFF project's co-leads and members of the EA-EG to discuss details of the project and opportunities to collaborate.

Continued work on the *Report on development in defining or setting Ecological objectives* (Part 1 and Part 2) which communicates experiences with Ecological Objectives of relevance for the Arctic.

Development on the *EA Framework project* supports further development of existing elements and expands the current six-element Framework to include research, monitoring and advice, and a figure illustrating a circular and iterative EA Framework.

Discussions on the potential development of a tool that may function as a voluntary reporting mechanism on EA implementation has been initiated with further follow-up in 2022.

Arctic Marine Pollution: Marine Litter

The 1st annotated outline on the *development of an Implementation Plan for the Regional Action Plan on Marine Litter in the Arctic (ML-RAP)* has been prepared and next steps include the circulation of revised annotated outline to PAME and other Arctic Council Working Groups to seek their input and feedback by November 15 as well as expressions of interest in participating in a drafting team.

PAME welcomes the development of additional marine litter projects intersessionally and urges its members to submit possible

project ideas to PAME I-2022 that identify a follow-up to one or more of the ML-RAP Strategic Actions for further consideration and possible inclusion to the 2023-2025 PAME Work Plan.

AMAP Working Group will be invited to give a presentation on their ML-RAP related work on monitoring at PAME I-2022.

The project on *Arctic Coastal Cleanup* is underway and aims to contribute to enhancing efforts to remove litter from Arctic beaches and waterways. PAME welcomes project work to date, notes that the timeline has been extended to 2024 due to Covid-19, and encourages other Arctic States and PPs to become partners in this project to ensure circumpolar coverage.

The project on *Fishing Practice & Gear Inventory: Enhancing Understanding of Abandoned Lost or otherwise Discarded Fishing Gear (ALDFG)* is underway and aims to increase understanding and develop reliable informational resources of fishing activity in the Arctic and near-Arctic, to inform gear identification as part of monitoring or removal of ALDFG.

Continuation of the marine litter communication and outreach activities include the launching of 3 GPS tracking capsules (*message in a bottle*) in 2021 (one by the Netherlands and two by Finland).

Targeted update of the Arctic Council Arctic Marine Strategic Plan

The 1st Scoping Workshop on the targeted update of the AMSP project was convened back-to-back with PAME II-2021 meeting with participation from PAME members and other Arctic Council Working Groups. Workshop participants reviewed current strategic actions and identified those that may need updating and/or have been completed in

addition to possible new ones. This process is important to reflect the changes underway in the Arctic marine environment and the project co-leads will reach out to PAME members and other Arctic Council Working Groups to follow-up on the discussions of the Scoping Workshop.

Collaboration and coordination with other Working Groups

PAME works towards strengthening the coordination and collaboration with other Arctic Council working groups by inviting them to nominate experts in PAME's expert groups working on activities of mutual relevance. Furthermore, PAME strives to participate in meetings of other WGs, e.g., through its Heads of Delegations (HoDs) for coordination purposes, and shares work on progress to seek input, as relevant.

PAME continues to liaise with CAFF on MPAs and invasive species work. PAME continues to coordinate its work with EPPR, noting the joint PAME-EPPR *"New Low Sulphur Fuels, Fate and Behavior in Cold Water Conditions"*

project. Inputs from all WGs has been sought in the development of the RAP-ML Implementation Plan and the update of the AMSP.

Observers at the PAME II-2021 Working Group Meeting

PAME continues to strengthen its engagement with Observers in PAME's shipping-related activities by inviting one representative for each meeting to give a presentation on its Arctic interest and activities. PAME II-2021 and its expert group meetings were collectively attended by almost 170 participants, of which 45 were Observers; 28 representing Spain, Italy, France, Germany, Poland, United Kingdom, Republic of Korea, Singapore, China, The Netherlands; and 17 representing Observer Organizations: European Commission, UNEP, IMO, Northern Forum, Oceana, WWF, ACOPS and IASC.

PAME Next Meeting and Administration

The next PAME meeting (PAME I-2022) will be hosted by Sweden in Stockholm from 14-18 February 2022.

ANNEX I: PAME I-2021 RECORD OF DECISIONS AND FOLLOW-UP ACTIONS

Opening of the Meeting

The PAME Chair, Dr. Jessica Nilsson, welcomed participants to the PAME II-2021 virtual Meeting.

PAME notes with appreciation the welcoming remarks from the Arctic Ambassador, Louise Calais, the Senior Arctic Official for Sweden.

Information and various updates (Agenda 3)

PAME takes note of the outcomes from the Arctic Council Ministerial Meeting 20 May 2021 and the SAO Executive Meeting 29-30 June 2021.

PAME thanks the Russian Federation for the summary on their 2021-2023 Arctic Council Chairmanship Program and events of relevance to PAME's work, noting in particular the Conference on Litter and Microplastics in the Arctic (April 2022) and the Meeting of Arctic Ministers of the Environment (May 2023). Further information on upcoming events can be found here: [Russian Chairmanship Program 2021-2023](#).

PAME thanks Sabine Jessen for her presentation on the the 5th International Marine Protected Areas Congress (IMPAC5) and notes that it has been postponed to 1-8 September 2022.

PAME thanks all of the speakers for their presentations in the pre-meetings and in plenary.

Framework for a Pan-Arctic Network of Marine Protected Areas (MPAs) (Agenda 4)

PAME welcomes Finland's work to coordinate translations of two Information Briefs on the Arctic marine environment under change, approved at the 2021 Ministerial, into other Arctic State and Indigenous languages.

PAME thanks the co-leads (USA and Finland) for the update on the development of additional Information Briefs during this biennium and approves one on ecological connectivity as a joint project with CAFF. PAME appreciates Sweden's offer of support and invites any other members to submit expressions of interest or experts to the co-leads by November 1, 2021.

PAME welcomes the Kingdom of Denmark to provide a project proposal for an Information Brief on Arctic invasive species by November 1 and also invites other

PAME members to submit additional ideas for Information Briefs that are timely and relevant to ongoing PAME and Arctic Council work.

PAME looks forward to reviewing draft Info Brief(s) at subsequent PAME meetings.

PAME thanks Sweden for its update on the “Modelling Arctic oceanographic connectivity to further develop PAME’s MPA-network Toolbox” project, noting it will now include the Central Arctic Ocean. PAME notes the potential application of the report’s data to other PAME projects in the 2021-2023 Work Plan and other Arctic Council Working Groups’ projects as relevant.

PAME appreciates the ongoing work of the PAME and CAFF Secretariats to update the 2017 Arctic Protected Areas Indicator Report and notes the new title of this updated report to “Status and Trends for Arctic Area-based Conservation Measures”. PAME notes that the intention to cooperate with UNEP WCMC on a single database for this version met challenges related to data management and harmonization and welcomes continued cooperation with WCMC to explore how future iterations of the dataset might be merged.

PAME notes the delays in finalizing this update and accepts the following revised timeline:

- ✓ *Oct-Nov 2021: PAME and CAFF Secretariats to circulate 1st draft of the report for review by PAME and CAFF.*
- ✓ *Nov-Dec 2021: PAME and CAFF Secretariats to send out revised report for PAME and CAFF working group meetings.*
- ✓ *Feb 2022: PAME I-2022 to consider the report for approval.*
- ✓ *March 2022: Indicator report, dataset & website released.*

PAME supports working with CAFF to explore the development of an interactive online MPA map to provide more current and accessible information on MPAs and OECMs and invites the PAME Secretariat to provide a timeline for the CAFF and PAME I- 2022 meetings.

PAME supports updating the Framework for a Pan-Arctic Network of Marine Protected Areas, noting that the relevant and comprehensive 2015 Framework for a Pan-Arctic Network of MPAs may benefit from updates to existing topics and inclusion of new topics such as alignment with discussions on new targets in global fora, other effective area-based conservation measures (OECMs), Indigenous-led conservation, climate change, connectivity, and management effectiveness. PAME notes the potential for other 2021-2023 PAME projects to contribute to Framework updates and accepts a timeline for Framework completion in February 2024.

PAME supports updating the PAME MPA-Network Toolbox and recommends that specific topics and materials be considered as a matter of course during the MPA Framework update.

PAME thanks the co-leads (Canada, United States, AIA, Saami Council and WWF) of the “Different Ways of Knowing” project for the update, appreciates the engagement of young Indigenous professionals in the development of case studies, requests the partners of this project and the OECM project to jointly propose a knowledge exchange session at the Fifth International MPA Congress (IMPAC5) in 2022 (noting the submission deadline of 20 October 2021), and looks forward to receiving an update on progress at PAME I-2022.

PAME thanks the project co-leads (Canada, Kingdom of Denmark and USA) for the update on the PAME/CAFF OECM project and notes the robust discussion on topics and links to global work and the role of Indigenous sustainable management practices for consideration in the report. PAME welcomes the project co-leads’ plan to submit a draft report for discussion at PAME I-2022 and also invites additional nominations of PAME members to the PAME/CAFF project advisory group by October 15 2021.

PAME welcomes Norway’s suggestion to invite to PAME I-2022 the authors of the 2021 study on „Poleward shifts in marine fisheries under Arctic warming“ in order to share their findings and engage in discussion with PAME participants.

Protection from Invasive Species (Agenda 5)

PAME thanks the project co-leads (Kingdom of Denmark, Canada and Norway) for the update on the PAME/CAFF project “Joint project on Identification and risk assessment of Arctic Marine Invasive Species”, which aims to implement priority actions from The Arctic Invasive Alien Species (ARIAS) Strategy and Action Plan, and notes the project focus on the potential for unwanted transfer of marine invasive alien species by ships via ballast water and biofouling into and within Arctic waters. Project co-leads welcome additional nominations for the PAME-CAFF project advisory group provided to the Secretariat no later than 15 October 2021.

Arctic Marine Shipping Assessment (SEG) (Agenda 6)

Theme I: Enhanced Arctic Maritime Safety

AMSA I(A) - Linking with International Organizations

PAME invites the Arctic Shipping Best Practice Information Forum (Forum) Coordinating Committee to provide a report to PAME I-2022 on the outcome of the 5th Annual Forum Meeting (16-18 November 2021).

PAME invites Arctic States, PPs, and Observers to review the proposed modifications to the Terms of Reference of the Arctic Shipping Best Practice Information Forum as set forth in Annex I of PAME(II)/21/SEG Pre-Meeting/4/c/i/ (Proposed Modifications to the Terms of Reference of PAME's Arctic Shipping Best Practice Information Forum By the Forum's Coordinating Committee) and provide any comments to the PAME Secretariat by 15 November 2021. PAME instructs the Forum's Coordinating Committee to address any comments received and submit a revised draft of the Forum's Terms of Reference for finalization and approval at PAME I-2022. PAME also invites the Forum Coordinating Committee to continue to expand and enhance the Forum's Web portal.

PAME invites the IMO Secretariat to report to PAME I-2022 on IMO issues and developments of interest to PAME.

PAME invites the SEG co-chairs to identify an Observer State interested and willing to make a presentation at PAME I-2022 on its Arctic interests, particularly with respect to Arctic shipping.

PAME invites Arctic States and Observer States that have not done so to complete the template on Implementation of the 2012 Cape Town Agreement Provisions (PAME(II)/21/SEG Pre-Meeting/4/a/i/TEMPLATE-Cape Town Agreement-Fishing Vessels in the Arctic). PAME encourages Arctic States and Observer States that have not done so to nominate a designated expert to the project correspondence group by notifying the PAME Secretariat by 1 November 2021. PAME invites Arctic States to submit to the project correspondence group any national fishing vessel analyses that they may have carried out in the Arctic region.

PAME encourages the United States to continue to lead PAME's collaboration with the Arctic Regional Hydrographic Commission (ARHC) on the three projects identified in PAME's 2021-2023 Work Plan and invites an update to PAME I-2022.

PAME invites Sweden to extend an invitation to the Swedish Shipowners' Association/Swedish Chamber of Commerce to make a presentation at PAME I-2022 on national Arctic shipping interests and activities.

AMSA I(B) - IMO Measures for Arctic Shipping

PAME invites Arctic States and Observer States to submit to PAME I-2022 information on Polar Ship Certificates that have been issued by or on behalf of their maritime administrations since their last submission of such information. PAME recommends that submissions be made using the optional template developed by the SEG for that purpose, available at the PAME Shipping Expert Group Password Protected Site, [here](#).

PAME invites Norway to continue to advance the joint PAME-EPPR “New Low Sulphur Fuels, Fate and Behavior in Cold Water Conditions” project and to provide a status update to PAME I-2022. PAME also invites Arctic States, Permanent Participants (PPs,) and Observers to participate and contribute in the fuel oil sample collection process that will take place in several Arctic States and Observer States.

PAME notes the approval by the Heads of Delegation of all the Arctic States of the draft letter prepared by the Russian Federation, the Kingdom of Denmark, and Finland to the Antarctic Treaty Secretariat requesting support by Antarctic Treaty Contracting Parties for a Polar Code Inspection Campaign by the Paris Port State Control MOU and the Tokyo Port State Control MOU. PAME requests that the PAME Chair sign the letter on behalf of PAME, and with the assistance of the PAME Secretariat transmit it to the Antarctic Treaty Secretariat.

PAME approves the draft standardized Arctic Ship Accident and Spill reporting Information template, the elements of which are set forth in Annex I of PAME (II)21/SEG Pre Meeting/4/e/ii/ASTD. PAME invites the project co-leads to report to PAME I-2022 on the development of the mechanism for Arctic States and Observer States to report accident and spill reporting information on a regular basis directly to the ASTD System using the approved template.

PAME requests the assistance of Arctic States in putting ship operators and national shipping associations in their countries in touch with Environics (shippingwastewater@environics.ca), the consultant for the Selected Wastewater Discharges in Arctic Waters Project co-led by Iceland, CCU, and WWF by 22 October as further recruitment efforts are needed to ensure sufficient survey data is available for the project. PAME notes the recommendation for Environics to develop a questionnaire, which could be used for survey data in addition to the interview format, to facilitate the implementation of the Project.

PAME encourages Arctic States to continue to work towards a harmonized implementation of the Polar Code. PAME invites Norway to provide a status report to PAME I-2022 on its Harmonized Implementation of the Polar Code Project.

Theme II: Protecting Arctic People and the Environment

AMSA II(G) - Addressing Impacts on Marine Mammals

PAME thanks Alyson Azzara from the U.S. Department of Transportation and Kevin Heaney from Applied Ocean Sciences for their presentation on behalf of the project co-leads (Canada, USA and WWF) on the “Underwater Noise in the Arctic: Understanding Impacts and Defining Management Solutions - Phase II” project to the SEG pre-meeting on ongoing work to predict underwater radiated noise from

shipping in the Arctic Region. PAME invites Arctic States, PPs, and Observers by 30 October 2021 to notify the PAME Secretariat of one or more subject matter experts with knowledge of Arctic marine traffic analysis and forecasting to participate in a USA, Canada, and WWF co-led project expert group that will support the project's predictions of future patterns in underwater noise due to shipping in the Arctic by 2030. PAME also invites Arctic States, PPs, and Observers by 30 October 2021 to submit to the PAME Secretariat any projections, analyses, or reports that forecast anticipated maritime activity changes in the Arctic Region or any part of the Arctic Region.

Theme III: Building the Arctic Marine Infrastructure

AMSA III(A) - Addressing the Infrastructure Deficit

PAME invites Arctic States to confirm with the project co-leads (Russian Federation and USA) by 1 November of their willingness to co-sponsor the draft document regarding the proposed amendments to MARPOL and 2012 Guidelines as presented in the draft paper in Annex I of PAME(II)/21/SEG Pre-Meeting/4/b/i (Proposed Amendments to MARPOL Annexes and 2012 Guidelines for the Development of a Regional Reception Facilities Plan to allow regional arrangements for ports in Arctic Waters) and requests the project co-leads to arrange the timely submission of the final document to the 9th Session of the IMO's Sub-Committee on Pollution Prevention and Response.

PAME invites Arctic States to review the port reception facility (PRF) inventory in Appendix A of PAME(II)/21/SEG Pre-Meeting/4/e/vi/ (Arctic Port Reception Facilities Inventory submitted by USA) and provide any corrections, and updates as well as information on current waste reception capacities to the USA by 30 November 2021. The United States will incorporate all information received into a revised inventory and submit it with a report to PAME I-2022.

AMSA III(B) - Arctic Marine Traffic Systems

PAME requests that the ASTD Expert Group and the project co-leads (USA, Norway, PAME Secretariat) continue to augment the ASTD System with additional modules, functionalities, data, and data layers as appropriate. The project co-leads will make a plan for financing such future modules, functionalities, data, and data layers. PAME requests that each participating Arctic State that has not done so designate a subject matter expert to serve on the ASTD Expert Group. PAME invites the project co-leads to continue their efforts to raise awareness of the ASTD System, and to provide a status update to PAME I-2022.

PAME invites the Arctic Shipping Status Report (ASSR) project co-leads (USA and PAME Secretariat) to continue to develop ASSRs according to the agreed protocol for consultation with appropriate subject matter experts and Head of Delegation approval prior to issuance. PAME requests the project co-leads to work with the Russian Federation to finalize and seek intersessional HoD approval for “ASSR #4: Shipping in the Northern Sea Route: Comparing 2013 to 2020.”

PAME invites Arctic States, PPs, and Observers to review the informal list of subjects for potential ASSR Reports (available on the PAME II-2021 password-protected website) and provide comments as well as suggestions for future ASSR Reports by 15 November 2021 to the PAME Secretariat.

Engagement of Observers in PAME’s Shipping-Related Activities

PAME invites review and comment on the draft “PAME 101 for Observers” frequently asked questions (FAQ) document set forth in Annex I of PAME(II)/21/SEG Pre-Meeting/4/e/iv (PAME 101 for Observers) by 15 November 2021. In particular, PAME invites suggestions for additional questions that should be added to those listed in the draft document.

PAME encourages the project co-leads (USA, Poland, Republic of Korea, Northern Forum) of the “Systematically Strengthening Observer Engagement in PAME’s Shipping Work” project to continue to advance the project by pursuing additional tasks identified previously.

Other

PAME thanks Mr. Tom Christensen for his presentation on the joint PAME/CAFF project on “Arctic Marine Invasive Alien Species in Arctic Waters”.

PAME thanks Mads Qvist Frederikson, Arctic Economic Council (AEC) Director, for his presentation on the AEC’s shipping interests and activities. PAME invites the ASSR project co-leads (USA and the PAME Secretariat) to explore with AEC the preparation of an ASSR report of mutual interest.

PAME thanks the representative of Spain, Ms. Ana Núñez, for her presentation on Spain’s Arctic interests and contributions to PAME’s work.

PAME thanks France’s Prof. Hervé Baudu for his presentation on a project undertaken within the Arctic Shipping Best Practice information Forum to inventory nautical training centers in Arctic States and Observer States that offer Polar Code related maritime training courses related to safe and environmentally sound Arctic shipping.

PAME invites Arctic States, PPs, and Observers to review and comment on the draft list of potential topics for PAME’s monthly SEG calls (available on the PAME SEG

password-protected website) by notifying the PAME Secretariat by 15 November 2021. The SEG co-chairs welcome feedback and recommendations from SEG call participants on how to further improve the utility, structure, focus, and timing of those calls.

Arctic Offshore Resource Exploration and Development (REDEG) (Agenda 7)

Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities (MEMA)

PAME notes interest in proceeding with translation of MEMA Reference Guide (& brochure) into Russian and thanks Northern Forum for its offer to assist.

PAME requests co-leads (United States, Canada, AIA, ICC, Saami Council and Northern Forum) to continue to pursue Indigenous language translations and welcomes any offers of assistance from PAME members.

MEMA Outreach

PAME thanks the Secretariat for its work to date on MEMA outreach and notes that project co-leads will work with the Secretariat to develop a focused outreach/communications plan to disseminate MEMA products broadly and strategically to targeted groups.

PAME encourages REDEG to consider developing outreach videos or multimedia products and invites expressions of interest by November 1, 2021 for participating in a sub-group to brainstorm a path forward.

Offshore Oil and Gas Activities and Regulatory Frameworks in the Arctic (AOGRR)

PAME welcomes the update of the AOGRR information resource, including the redesign of the website lead by the Secretariat. PAME reminds states to update their information every 2 years (in the 1st year of the two-year work plan).

Management of Arctic Marine Oil and Gas Associated Noise

PAME thanks project co-leads (United States, UK and WWF) for the update on the “Management of Arctic Marine Oil and Gas Associated Noise” and welcomes the progress with securing a contractor to begin the literature research and outreach to Arctic States on mitigation and avoidance measures for noise associated with offshore or near shore oil and gas activities.

PAME encourages project co-leads to seek synergies of this project, during its next phases, with PAME’s ongoing work on addressing underwater noise from shipping,

as well as with CAFF's Pan-Arctic Passive Acoustic Monitoring Network, in particular relating to ambient noise levels and their impact on marine species.

PAME requests its Heads of Delegation to identify relevant contacts by November 1, 2021 to the project team, and to follow-up with for information and identification of experts for the information exchange meeting (planned for Fall 2022).

Existing Best Practices for Marine and Coastal Mining

PAME appreciates the progress to date on the "Best Practices for Marine and Coastal Mining" project with developing a survey template for current mining projects and notes the timeliness of this topic. PAME requests its Heads of Delegation submit names of mining contacts within their State to project co-leads as soon as possible.

PAME notes the initial steps in finding synergy with the CAFF "Mainstreaming Biodiversity in Arctic Mining" project and welcomes co-leads proceeding with further cooperation.

PAME welcomes co-leads (Canada and Kingdom of Denmark) bringing forward an initial summary of national responses to the survey to PAME I-2022, with a view to hosting a workshop to coincide with the PAME II-2022.

PAME sincerely thanks Dennis Thurston (USA) for his valuable contributions over the last 25 years and wishes him the very best for a happy retirement.

Ecosystem Approach to Management (Agenda 8)

PAME welcomes the dialogue between the MPA and EA working groups to exchange knowledge and discuss synergies and mutual learnings, including integrating area-based conservation into the EA implementation framework and leveraging EA to inform MPA network design and implementation.

PAME thanks Norway for the presentation on the draft Concept Paper on further cooperation under the Arctic Council on Ecosystem Based Management (EBM/EA) of Arctic marine ecosystems. PAME notes the importance of EBM/EA in the Arctic, and PAME requests its members to provide written comments on the draft concept paper to the PAME Secretariat by 15th November 2021. PAME notes the Concept paper will be discussed, on the basis of comments received, at the December 2021 Heads of Delegation meeting, to identify what is to be presented at PAME I-2022 and subsequent update at the Spring 2022 SAO meeting. The PAME Chair will inform the next SAO meeting (30 Nov-2 Dec. 2021) on this process.

PAME thanks Debbi Pedreschi, chair of the ICES Integrated Ecosystem Assessment (IEA) Study Group, for her presentation and appreciates insight into ICES operations,

priorities (e.g., ecosystem science, human impacts, IEA), and advice products such as Ecosystem Overviews.

PAME welcomes the information on the work of the joint ICES/PICES/PAME Working Group for Integrated Ecosystem Assessment of the Central Arctic Ocean (WGICA) following the ICES guidelines. PAME notes that the “Ecosystem Overview” is being reviewed by the ICES advisory board and is expected as a final product in late 2021. PAME also notes WGICA’s plan to have a first draft of a report detailing human impacts on the CAO ecosystem by late 2021 to be circulated for PAME review soon after this.

PAME thanks the co-leads (Canada, Finland, Sweden and United States; partner: WWF) of the “Synthesis Report on Ecosystem Status, Human Impacts and Management Measures in the Central Arctic Ocean” (CAO SR) project for their update and draft outline. PAME notes that the CAO SR will draw on peer-reviewed published information and the report by the WGICA, other Arctic Council working groups, and other readily available information sources as relevant. PAME values the ongoing collaboration between the CAO SR co-leads and WGICA and notes the complementarity of their work. PAME takes note of the following timeline:

- ✓ *May 2021-Feb 2022: Co-leads to continue data/information gathering for each chapter.*
- ✓ *November 1, 2021: Deadline to confirm lead authors for each report chapter.*
- ✓ *December 31, 2021: Deadline for chapter outlines from lead authors.*
- ✓ *PAME I-2022: Co-leads to present on project status and guidance.*
- ✓ *Spring 2022 (TBC): Workshop to bring together chapter lead authors, launch synthesis process and draft findings.*
- ✓ *February-September 2022: PAME Secretariat to circulate draft(s) for comment.*
- ✓ *PAME II-2022: Presentation from project co-leads and discussion of draft report.*
- ✓ *PAME I-2023: Final report for PAME consideration for approval and forwarding to SAOs.*

PAME welcomes the ongoing planning of the 7th EA workshop on element No. 5 of the EA framework, ‘Value the cultural, social, and economic goods and services produced by the ecosystems’ and approves the objectives and scope as outlined in the workshop prospectus. PAME notes that the venue and time are decided to be 20-22 February, after PAME I-2022 in Sweden and thanks Sweden and Norway for financial contributions to date. PAME requests additional funding support (estimated

total of \$13,000 USD) for travel expenses of selected experts and invited speakers, including PPs, and welcomes being informed of additional funding opportunities via the PAME Secretariat. PAME also appreciates possible funding opportunities from Canada, the Saami Council, and IASC to cover travel expenses for Indigenous knowledge-holders, PPs, and/or invited speakers.

PAME welcomes efforts to strengthen the communication between the EA-EG co-chairs and the relevant Arctic Council Working Groups to secure coordination of work plans and efforts on EA implementation. PAME appreciates SDWG involvement with planning the 7th EA Workshop, the EA Revision Report, and in strengthening communication with other Working Groups.

PAME thanks CAFF for the update on the AMAP/CAFF project on „Climate change impacts: Arctic Ecosystems and feedbacks“ and acknowledges the shared interests in this project between AMAP, CAFF and PAME. To facilitate communication among Working Groups on this project, PAME requests its Chair set up a call with the Chairs of CAFF and AMAP after PAME II-2021. PAME also requests EA-EG co-leads reach out to project co-leads and members of the EA-EG to discuss details of the project and opportunities to collaborate.

PAME welcomes the update on the status of the Report on Ecological Objectives (Part 1 and Part 2), which communicates experiences with Ecological Objectives of relevance for the Arctic, and the Draft of Part I (for information). PAME notes the revised project timetable:

- ✓ *15 October: PAME members to reconfirm the contacts in the small group of experts that will assist with developing this report, especially Part 2 on practical experience, and to send contact details to the PAME Secretariat.*
- ✓ *15 November: Deadline for PAME members to provide general comments on the first draft of Part 1 of the Ecological Objectives report i.e., is it understandable and clear, and does it help in understanding the underlying concepts.*
- ✓ *PAME I-2022: PAME Secretariat to circulate a revised draft report prior to the meeting.*

PAME welcomes the ongoing report on the EA Framework that supports further development of existing elements and expands the current six-element Framework to include research, monitoring and advice, and a figure illustrating a circular and iterative EA Framework.

PAME notes the discussion on the potential development of a tool that may function as a voluntary reporting mechanism on EA implementation and requests a project

proposal with detailed information be developed for consideration by PAME in 2022.

PAME thanks Norway for offering to host the planned 3rd International Conference on EA in spring 2024. PAME notes EA-EG co-leads will establish a Conference Steering Committee after the 7th workshop and report in 2022.

Arctic Marine Pollution: Marine Litter (Agenda Item 9)

PAME thanks the project co-leads (Kingdom of Denmark, Finland, Norway, and United States) for the 1st annotated outline on the development of an Implementation Plan for the Regional Action Plan on Marine Litter in the Arctic (ML-RAP). PAME notes the following timeline:

- ✓ *October 2021: Co-leads to revise the draft annotated outline of the ML-RAP Implementation Plan based on PAME II-2021 discussions.*
- ✓ *October 31, 2021: PAME Secretariat to circulate revised annotated outline to PAME and other Arctic Council Working Groups to seek their input and feedback by November 15^{as} well as expressions of interest in participating in a drafting team.*
- ✓ *Nov/Dec 2021: PAME Chair to present at the SAO meeting and seek guidance, as appropriate. Project co-leads develop 1st draft of the ML-RAP Implementation Plan.*
- ✓ *January 3, 2022: PAME Secretariat to circulate 1st draft to PAME and other Arctic Council Working Groups for review and comments by January 15th.*
- ✓ *February 2022: Presentation by project co-leads and discussions/inputs at PAME I-2022.*

PAME welcomes the development of additional marine litter projects intersessionally and urges its members to submit possible project ideas to PAME I-2022 that identify a follow-up to one or more of the ML-RAP Strategic Actions for further consideration and possible inclusion to the 2023-2025 PAME Work Plan.

PAME Invites the AMAP Working Group to give a presentation on their ML-RAP related work on monitoring at PAME I-2022.

PAME thanks Norway for the update on the „Arctic Coastal Cleanup“ project, which aims to contribute to enhancing efforts to remove litter from Arctic beaches and waterways. PAME welcomes project work to date, notes that the timeline has been extended to 2024 due to Covid-19, and encourages other Arctic States and PPs to become partners in this project to ensure circumpolar coverage.

PAME thanks the leads (Norway and United States) for their update on the „Fishing Practice & Gear Inventory: Enhancing Understanding of Abandoned Lost or otherwise Discarded Fishing Gear (ALDFG)“ project, which aims to increase understanding and develop reliable informational resources of fishing activity in the Arctic and near-Arctic, in order to inform gear identification as part of monitoring or removal of ALDFG. PAME notes the following timeline:

- ✓ *November 1, 2021: Arctic States to provide points of contact (government and industry experts) to facilitate collection of relevant fishing data.*
- ✓ *January 31, 2022: Data submission by Arctic States due.*
- ✓ *PAME II-2022: Co-leads complete data analysis and first draft of report.*
- ✓ *PAME I-2023: Co-leads present final report to PAME for approval.*

PAME notes with appreciation the marine litter communication and outreach activities implemented by its Secretariat, in particular the launching of 3 GPS tracking “message in a bottle” capsules in 2021 (one by the Netherlands and two by Finland). PAME also notes the interest expressed by Norway to launch a capsule.

Targeted update of the Arctic Council Arctic Marine Strategic Plan (AMSP 2015) (Agenda 10)

PAME thanks project co-leads (Canada, Norway and USA) for facilitating the 1st Scoping Workshop on the targeted update of the AMSP project with PAME members and the other Arctic Council Working Groups. PAME thanks workshop participants for reviewing current strategic actions and identifying those that need updating and/or have been completed in addition to possible new ones.

PAME emphasizes the importance of this process to reflect the changes underway in the Arctic marine environment and notes project co-leads will reach out to PAME members and other Arctic Council Working Groups to follow-up on the discussions of the Scoping Workshop.

PAME requests its Chair and Secretariat to coordinate a session with other Arctic Council Working Groups back-to-back with the next in-person SAO meeting to seek additional inputs and feedback. PAME requests the Chair to present and seek guidance on the AMSP update at the next SAO meeting.

PAME takes note of the following timeline leading up to PAME I-2022:

- ✓ *October-December 2021:*
 - *Co-leads to develop a summary report from the scoping workshop.*

- *Chair and Secretariat to facilitate coordination session with the other Arctic Council Working Groups back-to-back with the SAO meeting.*
 - *Chair to present at the SAO meeting and seek guidance , as appropriate.*
 - *Co-leads to prepare the 1st draft annotation of new strategic actions.*
- ✓ *February 2022: Co-leads to present for discussion/inputs at PAME I-2022.*

PAME Administration and Next Meeting

PAME requests its Chair/Vice-Chair to contribute to the upcoming SAO meeting (30 Nov-2 Dec 2021), in addition to submitting a two-page PAME progress report as requested by the Arctic Council Chairmanship.

PAME invites its delegations to include experts on shipping, oil and gas/resource exploration and development, ecosystem approach, MPAs, marine litter, and invasive species for the PAME I-2022 meeting.

PAME requests its Chair to inform Heads of Delegation on requests to present on PAME's work in other fora and make best efforts to share the presentations in advance to allow an opportunity for comments and input.

PAME welcomes the offer from Sweden to host PAME I-2022 in Sweden (location to be confirmed) from 14-18 February.

ANNEX II: LIST OF PARTICIPANTS

PAME CHAIR AND PAME SECRETARIAT

1	Jessica	Nilsson	PAME Chair-Swedish Agency for Marine and Water Management	Sweden
2	Soffía	Guðmundsdóttir	PAME Secretariat - Executive Secretary	Iceland
3	Hjalti	Hreinsson	PAME Secretariat	Iceland
4	Olga	Pálsdóttir	PAME Secretariat	Iceland

ARCTIC STATES

5	Maya	Gold	Fisheries and Oceans Canada	Canada
6	Katharine	Ferri	Fisheries and Oceans Canada	Canada
7	Marina	Petrovic	Fisheries and Oceans Canada	Canada
8	Salim	Hayder	Fisheries and Oceans Canada	Canada
9	Sarah	Bailey	Fisheries and Oceans Canada	Canada
10	Caroline	Longtin	Fisheries and Oceans Canada	Canada
11	Jody	Willis	Fisheries and Oceans Canada	Canada
12	Cortney	Wheeler	Fisheries and Oceans Canada	Canada
13	Alain	Dupuis	Fisheries and Oceans Canada	Canada
14	Bethany	Schroeder	Fisheries and Oceans Canada	Canada
15	Kyle	Laplante	Fisheries and Oceans Canada	Canada
16	Marilyn	Sweet	Fisheries and Oceans Canada	Canada
17	Jesica	Goldsmid	Fisheries and Oceans Canada	Canada
18	Hilary	Ibey	Fisheries and Oceans Canada	Canada
19	Matt	Sweeting-Woods	Fisheries and Oceans Canada	Canada
20	Alexis	MACISAAC	Fisheries and Oceans Canada	Canada
21	Debra	Beauchamp	Fisheries and Oceans Canada	Canada
22	Maribeth	Murray	Arctic Institute of North America	Canada
23	Maureen	Copley	Crown-Indigenous Relations and Northern Affairs Canada	Canada
24	Sarah	Da Silva	Environment and Climate Change Canada	Canada
25	Christian	Holloway	Environment and Climate Change Canada	Canada
26	Cynthia	Bainbridge	Environment and Climate Change Canada	Canada
27	Lauren	Hogan	Government of Canada	Canada
28	David	VanderZwaag	Marine & Environmental Law Institute, Dalhousie University	Canada

29	Virginie	Galindo	Ministry of Sustainable Development, Environment, and Fight Against Climate Change (MELCC)	Canada
30	Ferland	Joannie	Ministry of Sustainable Development, Environment, and Fight Against Climate Change (MELCC)	Canada
31	Béatrice	Baz-Laberge	Ministry of Sustainable Development, Environment, and Fight Against Climate Change (MELCC)	Canada
32	Caroline	Gravel	Transport Canada	Canada
33	Dominique	Jolicoeur	Transport Canada	Canada
34	Drummond	Fraser	Transport Canada	Canada
35	Dan	Cowan	Canadian Coast Guard	Canada
36	Amin	Virani	Canadian Coast Guard	Canada
37	Carolina	Reyes Marquez	Ministry of International Relations	Canada
38	Sabine	Jessen	IMPAC5 Secretariat	Canada
39	Ana Maria	Araujo	Global Affairs Canada	Canada
40	Charlotte	Mogensen	Ministry of Environment, Denmark	Kingdom of Denmark
41	Andreas Haugaard	Christensen	Ministry of Agriculture, Self-Sufficiency, Energy and Environment	Kingdom of Denmark
42	Anna Borg	Dahl	Ministry of Environment, Industry and Trade	Kingdom of Denmark (Faroe Islands)
43	Julie	Grauslund	Danish Maritime Authority	Kingdom of Denmark
44	Anders	Mosbech	Aarhus University / Danish Center for Environment	Kingdom of Denmark
45	Tom	Christensen	Aarhus University	Kingdom of Denmark
46	Jan	Ekebom	Ministry of the Environment	Finland
47	Harri	Kuosa	Finnish Environment Institute	Finland
48	Anita	Mäkinen	Finnish Transport and Communication Agency	Finland
49	Eero	Hokkanen	Ministry of Transport and Communications	Finland
50	Hermann	Kaartokallio	Finnish Environment Institute	Finland
51	Paula	Kankaanpää	Finnish Environment Centre	Finland
52	Timo	Koivurova	Arctic Centre, University of Lapland	Finland
53	Katharina	Heinrich	University of Lapland	Finland
54	Stefán	Einarsson	Ministry for the Environment and Natural Resources	Iceland
55	Sigurrós	Friðriksdóttir	Environment Agency of Iceland	Iceland
56	Katrin Sóley	Bjarnadóttir	Environment Agency of Iceland	Iceland
57	Þórdís Björt	Sigþórsdóttir	Environment Agency of Iceland	Iceland
58	Sverrir	Konráðsson	Icelandic Transport Authority	Iceland
59	Sólrun	Svandal	Ministry for Foreign Affairs	Iceland

60	Fredrik	Theisen	Norwegian Ministry for Climate and Environment	Norway
61	Lis	Jørgensen	Institute of Marine Research	Norway
62	Siv Christin	Gaalaas	Ministry of Trade, Industry and Fisheries	Norway
63	Anne	Berteig	Ministry of Climate and Environment	Norway
64	Lill	Benjaminsen	Ministry of Climate and Environment	Norway
65	Bodil	Pedersen	Norwegian Maritime Authority	Norway
66	Cecilie	von Quillfeldt	Norwegian Polar Institute	Norway
67	Helene	Kaltenborn	Norwegian Ministry of Petroleum and Energy	Norway
68	Irmelin	Skigelstrand	Norwegian Maritime Authority	Norway
69	Lise	Langård	Norwegian Environment Agency	Norway
70	Jon-Arve	Royset	Norwegian Coastal Administration	Norway
71	Andrea	Skarstein	Norwegian Maritime Authority	Norway
72	Hilde Sofie	Berg	Norwegian Directorate of Fisheries	Norway
73	Mitra	Zarabi	The Norwegian Ministry of Transport	Norway
74	Natalia	Kutaeva	Ministry of Transport of the Russian Federation	Russian Federation
75	Vladimir	Kuzmin	RF PSC/FSC Directorate	Russian Federation
76	Dmitrii	Iudin	Administration of the Western Arctic Sea-ports	Russian Federation
77	Vladimir	Kuzichev	Administration of the Western Arctic Sea-ports	Russian Federation
78	Tamara	Dalgatova	Ministry of National Resources and Environment of the Russian Federation	Russian Federation
79	Sergey	Tolmachev	Mission of the Russian Federation to the IMO	Russian Federation
80	Anna	Karlsson	Swedish Agency for Marine and Water Management	Sweden
81	Helén	Johansson	The Swedish Transport Agency	Sweden
82	Fredrik	Lindgren	Swedish Agency for Marine and Water Management	Sweden
83	Elizabeth	McLanahan	National Oceanic and Atmospheric Administration (NOAA)	United States
84	Catherine	Coon	Bureau of Ocean Energy Management	United States
85	Laura	Strickler	Bureau of Ocean Energy Management	United States
86	Caleb	Taylor	US Committee on the Marine Transportation System: CMTS	United States
87	Erik	Federman	National Oceanic and Atmospheric Administration (NOAA)	United States
88	Zachary	Cannizzo	National Oceanic and Atmospheric Administration (NOAA)	United States
89	Joseph	Fader	National Oceanic and Atmospheric Administration (NOAA)	United States

90	Peter	Oppenheimer	National Oceanic and Atmospheric Administration (NOAA)	United States
91	Thalia	Lewis	National Oceanic and Atmospheric Administration (NOAA)	United States
92	Leila	Hatch	National Oceanic and Atmospheric Administration (NOAA)	United States
93	Jason	Gedamke	National Oceanic and Atmospheric Administration (NOAA)	United States
94	Megan	Price	National Oceanic and Atmospheric Administration (NOAA)	United States
95	Elizabeth	Logerwell	National Oceanic and Atmospheric Administration (NOAA) Fisheries	United States
96	Peter	Murphy	National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program	United States
97	Alyson	Azzara	U.S. Department of Transportation	United States
98	Galia	Kaplan	United States Coast Guard	United States
99	Benjamin	Mazyck	United States Coast Guard	United States
100	Melissa	Perera	United States Coast Guard	United States
101	Michael	Simbulan	United States Coast Guard	United States
102	Tiffany	Duffy	United States Coast Guard	United States
103	Jaideep	SIRKAR	United States Coast Guard	United States
104	Brian	Page	United States Coast Guard	United States
105	Timothy	Cabana	DOT/OST	United States
106	Dennis	Thurston	US Bureau of Ocean Energy Management	United States

PERMANENT PARTICIPANTS

107	Nicole	Kanayurak	Inuit Circumpolar Council	United States
108	Frances	Olemaun	Inuit Circumpolar Council	United States
109	Stephanie	Meakin	Inuit Circumpolar Council	Canada
110	Gunn-Britt	Retter	Saami Council-Arctic and Environmental Unit	Norway

OBSERVERS

111	Andres	Galvan	Embassy of Spain in London- Directorate General of the Merchant Marine	Spain
112	Ana	Núñez	Directorate General of the Merchant Marine/Ministry of Transportation, Mobility and the Urban Agenda/subdirector general for safety, pollution and maritime inspections.	Spain
113	Luca	Fiorani	ENEA	Italy
114	Hervé	Baudu	ENSM	France
115	Sébastien	Gadal	Aix-Marseille Université, CNRS ESPACE UMR 7300	France

116	Stanislovas	Jonusas	European Commission (DG MARE)	Belgium
117	Ziad	Tarabay	Ministry of the Sea/DAM/Sten2	France
118	Georg	Hanke	European Commission Joint Research Centre	EU
119	Janos	Hennicke	Federal Agency for Nature Conservation	Germany
120	Heike	Herata	German Environment Agency, UBA	Germany
121	Rita	Fabris	German Environment Agency	Germany
122	Dieter	Piepenburg	Alfred Wegener Institute Bremerhaven	Germany
123	Tiina	Kurvits	GRID-Arendal	Canada
124	Tina	Schoolmeester	GRID-Arendal (for UNEP)	Norway
125	Piotr	Graczyk	NORCE	Poland
126	Natsuhiko	Otsuka	Hokkaido University Arctic Research Center	Japan
127	Sascha	Pristrom	International Maritime Organization	United Kingdom
128	Loukas	Kontogiannis	International Maritime Organization (IMO)	United Kingdom
129	Michael	Kingston	International Maritime Organization (IMO) Consultant	Ireland
130	Bryony	Corr	UK FCDO	United Kingdom
131	Minsu	Kim	Korea Maritime Institute	Republic of Korea
132	Jeehye	Kim	Korea Maritime Institute	Republic of Korea
133	Seong-Yeob	Jeong	Korea Research Institute of Ships and Ocean Engineering (Advanced Ship Research Divi- sion)	Republic of Korea
134	Carmel	Cheng	Maritime and Port Authority of Singapore	Singapore
135	Amanda	Mah	Maritime and Port Authority of Singapore	Singapore
136	Qui Jun	Fu	Maritime and Port Authority of Singapore	Singapore
137	Jun Ming	Lim	Maritime and Port Authority of Singapore	Singapore
138	James	Gamble	Northern Forum	United States
139	Ben	Enticknap	Oceana	United States
140	Zhibo	Lu	Tongji University	China
141	Takehiro	Nakamura	UNEP	Kenya
142	Martin	Sommerkorn	WWF Arctic Programme	N/A
143	Andrew	Dumbrille	WWF	Canada
144	Jan	Dusik	WWF Arctic Programme	Sweden
145	Melanie	Lancaster	World Wildlife Fund	Canada
146	Sarah	Bobbe	CCU	United States
147	Arthur	EIJS	Ministry of Infrastructure and Watermanage- ment (7021)	The Netherlands
148	Wouter Jan	Strietman	The Netherlands/Wageningen Economic Re- search	The Netherlands
149	Sian	Prior	ACOPS	United Kingdom
150	Dita	Liliansa	ACOPS	Singapore
151	Louisa	Wood	ACOPS	United Kingdom
152	Amy	Applin	ACOPS	United Kingdom

153	Brooks	Kaiser	IASC	Kingdom of Denmark
154	Antaya	March	ACOPS	United Kingdom

ARCTIC COUNCIL SECRETARIAT-ICELANDIC CHAIRMANSHIP-AC WORKING GROUPS

155	Kathy	Nghiem	EPPR Chair	Canada
156	Jennifer	Spence	Sustainable Development Working Group	Canada
157	Thomas	Barry	CAFF	Iceland
158	Jan Rene	Larsen	AMAP	Denmark
159	Mario	Acquarone	AMAP	Norway
160	Nina	Ågren	EPPR	Norway

OTHERS - INVITED EXPERTS/SEG UNDERWATER NOISE PROJECT

161	Mads	Frederiksen	Arctic Economic Council	Norway
162	Irina	Zhilina	Arctic Economic Council	Norway
163	Christopher	Verlinden	Applied Ocean Sciences (invited expert for SEG underwater noise project)	United States
164	Jennifer	Brandon	Applied Ocean Sciences (invited expert for SEG underwater noise project)	United States
165	Kevin	Heaney	Applied Ocean Sciences	United States

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