ARHC13-D5

Arctic Regional Hydrographic Commission (ARHC)

Nuuk, Greenland September 2023

Update on PAME Developments and Proposed ARHC-PAME Cooperation until ARHC14

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This report summarizes of relevant PAME developments since ARHC12 and identifies possible ARHC-PAME cooperative activities that could be incorporated into a work plan to ARHC-14 (2024)

References:
ARHC Basic Commission Documents
Arctic Shipping Best Practices Information Portal
PAME's MPA-Network Toolbox
PAME Work Plan 2021-2023

Background

The Arctic Regional Hydrographic Commission and the Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME) have cooperated on activities of mutual interest for several years. The two bodies signed an MOU (March 2020), issued a Joint Policy Statement "Hydrography in the Arctic" (May 2021), and shared with each other reports and information relevant to navigational safety and marine environmental protection in the Arctic. To stimulate planning and engagement, ARHC and PAME designated points of contact to identify, explore, and vet collaboration. In 2023, the primary anticipated deliverable from ARHC to PAME is the "Arctic Hydrographic Risk Assessment-2023 Update" (see ARHC13-C1) (subject to decision at ARHC-13).

PAME has not met in person or virtually since 2021. Until the Arctic Council's Senior Arctic Officials (SAOs) modify their June 2023 guidance, there will be no PAME meetings. However, project leads/co-leads for previously-approved PAME projects (those in PAME's 2021-2023 Work Plan) may meet virtually or in person to advance those projects. The PAME 2021-2023 Work Plan contains five goals[1] and 33 approved projects, one of which is "Collaborate with the ARHC." (see attachment A) The PAME Secretariat and the chairs of PAME's several expert groups are soliciting ideas for new projects for PAME's next Work Plan.

PAME's new Chair, Dr. Katrine Nissen (Kingdom of Denmark- Environmental Protection Agency Deputy Director) assumed this role on May 11, 2023, when the Arctic Council Chairship rotated from the Russian Federation to Norway.

[1] Arctic Marine Shipping, Marine Litter, Marine Protected Areas, Ecosystem Approach to Management, and Resource Exploration and Development.

The incoming Chair of the Senior Arctic Officials is Mr. Morten Hoglun, Norway. Norway has defined its objective as Chair: "The overall objective of Norway's chairship of the Arctic Council will be to promote stability and constructive cooperation in the Arctic" and identified four priority topics (i. the oceans, ii. climate and environment, iii sustainable development, and iv., people in the North).

Discussion

Generally, it is understood that the ARHC is engaging in important hydrographic work relevant to navigation safety and environmental protection. Importantly, this work can inform deliberations in the Arctic Council on these topics, especially regarding future projects, initiatives, and Work Plans.

The Joint Policy Statement outlines two areas for attention:

> 1) Review, update, and improve existing bathymetric and hydrographic data, collect new bathymetric data in the Arctic region, and
>
> 2) Endeavor to find additional resources for improving hydrographic surveying in the Arctic region. (Please see attachment B).

At ARHC-13, we could identify potential topics of mutual interest and timeliness, communicate those to PAME and discuss the development of possible cooperative projects and work plans for the upcoming year. To spur discussion, the following list of potential activities for the upcoming year is generated from a brainstorming exercise of the respective ARHC and PAME points of contact:

- Recap and Review Dr. Katrine Nissen's report at the ARHC Open Forum
- Update the ARHC Notice "Caution Required When Using Nautical Charts of Arctic Waters (28 June 2017)" as a joint ARHC-PAME product
- Provide an annual report reviewing developments regarding each recommendation element of the Joint Policy Statement. This could compile information on many ongoing and progressing efforts, such as new data holdings acquired from the IHO's Crowd Sourced Bathymetry initiative, Seabed 2030 efforts, and others. (See Attachment C)
- Link the topics of marine protected areas in the Arctic with the prospects of S-122 (Marine Protected Areas)[2] as potentially applied to S-101 ENCs. Cross reference the PAME MPA Network Toolbox with existing or prospective identified MPAs. For the U.S., we could start with the existing inventory found in the National Marine Protected Area Center identified by NOAA and the U.S. Department of the Interior. This effort could be a desktop exercise of scope, feasibility, prospects, and implied requirements for S-122 development in the Arctic. (see Attachment D)
- Communicate the vision, merits and prospects for S-100 in the region by including IHO member state assessments for a pan Arctic picture. Highlight any resource requirements that PAME might be able to communicate to the Arctic Council. Include results of the IGIF update and offer any recommendations to PAME.

[2] The S-122 Product Specification is intended to encode Marine Protected Area (MPA) information for use in ECDIS and other information systems. MPAs are protected areas of seas, oceans, estuaries or large lakes. Marine Protected Area information may be considered supplementary additional information that complements the S-101 ENC.

- Review and provide updated or additional information in support of the Arctic Shipping Best Practices Information Portal . The ASBPIF's most recent meeting was May 2021 "Navigating the future of Arctic Shipping." Discussions as to when the next Forum meeting will take place are underway. If the opportunity presents, does the ARHC wish to attend and report?
- Submit a report or "ARHC Year in Review-2023" to PAME before PAME's next meeting (tbd)
- Review the PAME 2021-2023 Work Plan and engage in identifying activities, if appropriate, to contribute to the forthcoming 2023-2025 PAME Work Plan
- Initiate review and renewal of the current ARHC-PAME MOU for signature at an appropriate time. The current MOU expires in March 2025.
- Engage and understand efforts to update the Arctic Council's Arctic Marine Strategic Plan (2015-2025) . Do we wish to inform the next plan with new concepts, language, or other? The current plan includes the following statements:
    - *7.1.9 Strengthen, where feasible, the collection, observation, monitoring and dissemination of relevant data on the Arctic marine environment. This could include hydrographic and bathymetric data; oceanographic data (including tides and currents) and meteorological information for numerical modeling and forecasting; pollutants; climate change-related impacts (especially ocean acidification); and ecosystem and biodiversity status and trends (including invasive species and other metrics of environmental change).*

    - *7.3.11 Promote cooperation to improve and expand a) hydrographic and bathymetric data collection and b) Safety of Navigation services and products (including nautical chart and publication production) to support safe and efficient marine shipping in the Arctic.*
- Take an ARHC action for hydrographic offices to review the IMO Polar Code, provide any comments to inform an anticipated update
- Inform PAME of the INToGIS platform and explore cross fertilization and awareness of data, platforms, directions
- Define ways to support ARMSDIWG efforts and connection to Arctic SDI
- Other

Some of the activities represent opportunities to communicate on efforts already underway and could potentially be packaged and communicated to PAME in a structured manner.

Recommendation

The ARHC is invited to:

A) Discuss the content of this report
B) Provide guidance on communications and engagement with PAME
C) Identify areas of promising engagement and a potential plan of action
D) Take any other action as warranted

Attachment A Excerpt from the PAME 2021-2023 Work Plan

AMSP Goal 1

Improve knowledge of the Arctic marine environment, and continue to monitor and assess the current and future impacts on Arctic marine

ARCTIC MARINE SHIPPING (12 activities)

Collaboration with the Arctic Regional Hydrographic Commission (ARHC)

Rationale and overall objective: To foster greater communication between PAME and ARHC in line with the SAO approved (Nov 2019) non-binding MOU between these two bodies to support Arctic maritime safety and the protection of the Arctic marine environment.

Main activities: In collaboration with the ARHC:

- Consider the development and dissemination of reports and other information that support navigational safety and environmental protection in the Arctic along the lines of the *Arctic Navigation Risk* summary bulletin issued by the ARHC in 2017(available here) ;
- Review the potential interoperability of databases (including the ASTD System) that contain Arctic geospatial information to determine their potential utilization across platforms for improved analysis; and,
- Undertake work to issue a 2023 update of ARHC's 2018 Arctic hydrography risk assessment (available here) by designating a PAME representative to communicate with the ARHC on the approach, structure, usability and other aspects of the update.

Timeline: 2021-2023

Funding: In-kind

Lead: United States

Attachment B Excerpt from the Joint Policy Statement

Arctic Council-ARHC Joint Statement on Hydrography in the Arctic Region

(May 2021)

The Arctic States,

As stewards of the Arctic region, recognizing the diminishment of sea ice and the increased accessibility of the Arctic Ocean and adjacent seas, including for oil and gas exploration, cruises, fishing activity, and other maritime pursuits;

Noting the paramount importance of better understanding current and developing new maps, charts, and data pertaining to Arctic hydrography and bathymetry to further promote safe maritime operations and the protection of the Arctic marine environment;

Acknowledging the current lack of adequate nautical maps, charts, and data, coupled with the vastness and harshness of the Arctic marine environment, significantly complicates emergency response in the region;

Recognizing the unpredictability of sea ice, including inter-annual ice variability, scattered hidden ice floes, icebergs, ice moved by winds and currents, and variability in the onset of autumn-freeze, and other hazards, solidifies the critical need for accurate bathymetric and hydrographic maps, charts, and data;

Considering that the understanding of current and the development of novel Arctic hydrographic and bathymetric maps, charts, and data will significantly improve navigational safety and further support other applications, including scientific research, management and monitoring of the marine environment, search and rescue activities, emergency incident response, and other operational activities;

Mindful of international initiatives to improve knowledge of the oceans such as the UN Decade of Ocean Science for Sustainable Development and the Seabed 2030 Project;

Acknowledging the efforts of the International Hydrographic Organization ("IHO"), specifically the Arctic Regional Hydrographic Commission ("ARHC"); and

Further, recognizing the efforts of the Arctic States;

Recommend that the Governments of Arctic States:

I Review, update, and improve existing bathymetric and hydrographic data, and collect new bathymetric and hydrographic data in the Arctic region by:

1. sharing data with others in the international hydrographic community, to the extent practicable;

2. supporting the increased analysis and exchange of meteorological, oceanographic, sea ice, and iceberg information;

3. encouraging cooperation between national Arctic-focused research and mapping institutions and authorities on hydrographic surveying and charting in the Arctic region to ensure the maps, charts, and data collected are of the highest utility;

4. encouraging the vessels under their jurisdiction, including non-governmental vessels, as appropriate, to:

   i. increase efforts to produce hydrographic surveys to improve the quality of navigation charts, including in areas not yet surveyed or surveyed with low accuracy or detail, to a standard that supports current and future safe navigation in the Arctic region;

   ii. undertake hydrographic and bathymetric data collection on all their Arctic voyages, as practicable;

   iii. review existing data holdings to share, either directly or through their national hydrographic office, with the IHO Data Center for Digital Bathymetry ("DCDB");

   iv. share all data collected on future Arctic voyages with the IHO DCDB, through their national hydrographic office, where applicable, or directly; and

   v. utilize IHO guidelines where appropriate, such as those contained in the IHO Guidance on Crowdsourced Bathymetry, in IHO Publication B-12; and

5. Invite Arctic Council Observers and Associate Members of the ARHC to support the Arctic States in their efforts under this Statement.

II Endeavor to find additional resources for improving hydrographic surveying and charting in the Arctic region by:

1. researching technologies to improve hydrographic data collection in the Arctic region, including the use of autonomous, uncrewed, or underwater (under-ice) craft, multi-beam technology, through-the ice data collection, and airborne systems for the collection of nearshore depths and shoreline identification;

2. researching satellite remote sensing and surface validation to further develop means of monitoring ice thickness across the Arctic Ocean; and

3. developing Electronic Chart Display and Information Systems ("ECDIS"), which will provide precise, real-time positioning along with the holistic display of navigation and environmental information critical for safe navigation in the Arctic.

Attachment C Excerpt from ARHC report to IRCC (IRCC15-06.1O)

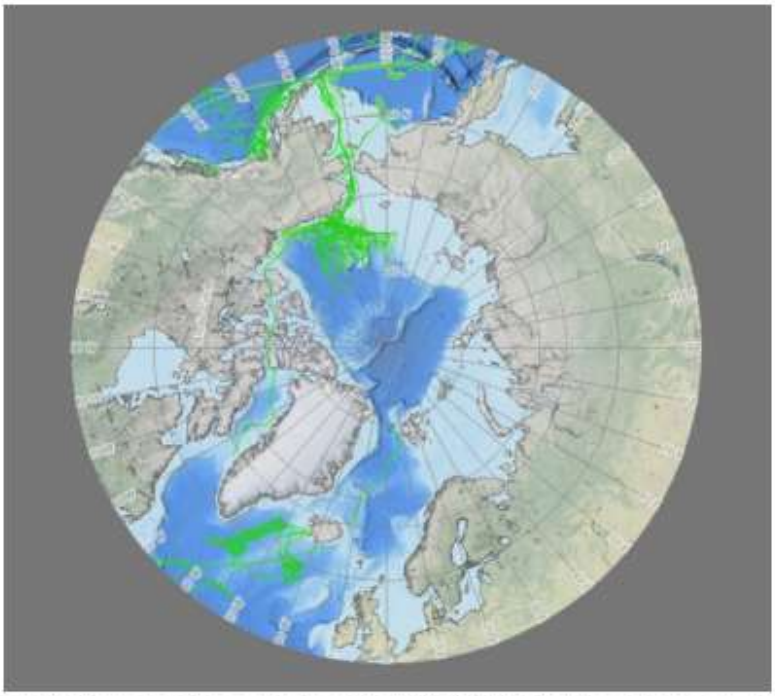


Figure 1: Multibeam bathymetry data added to the IHO DCDB database between June 2022-present.

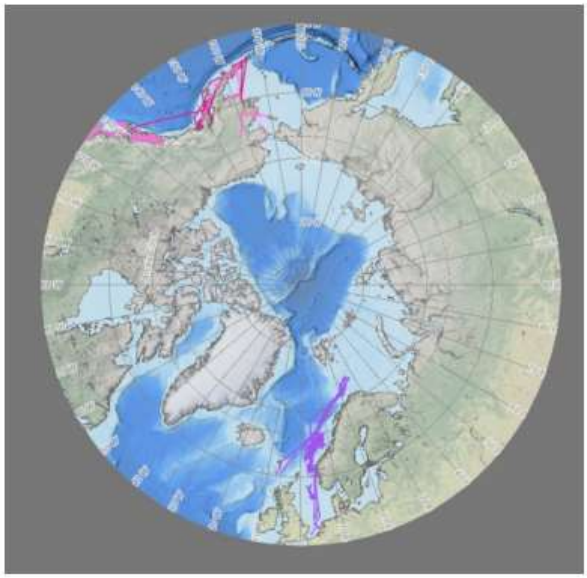


Figure 2: Crowdsourced bathymetry data added to the IHO DCDB database between June 2022-present.

Attachment D National Marine Protected Area Center (USA)

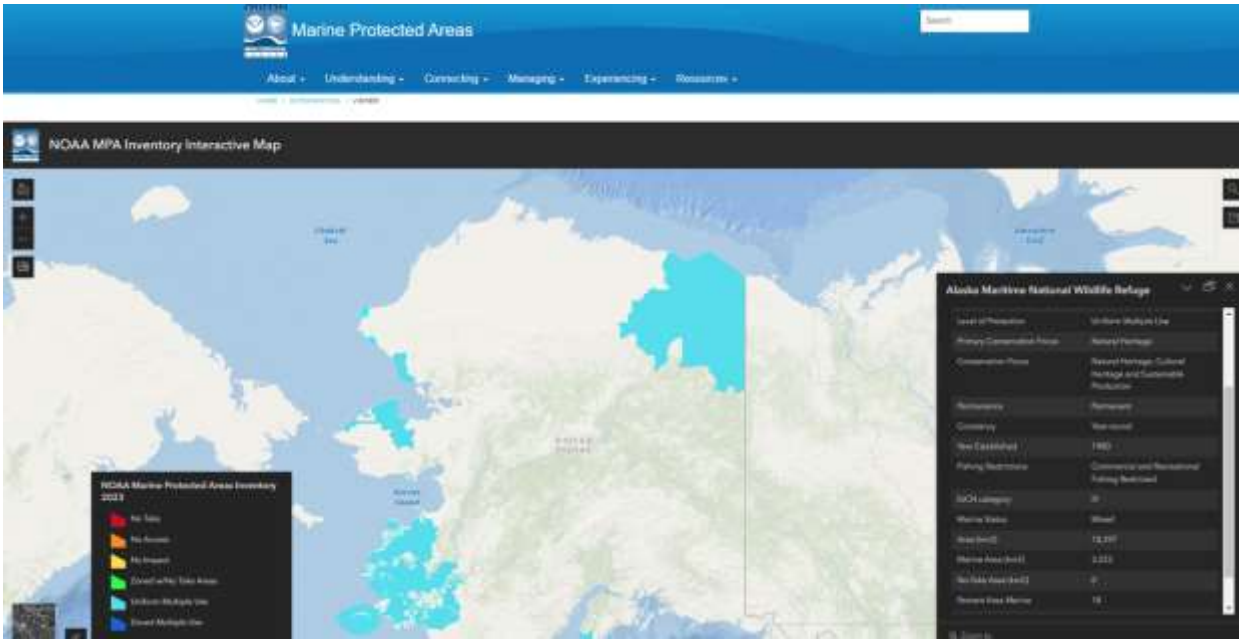
The National Marine Protected Areas Center was established in 2000 to strengthen and connect the nation's marine protected areas, as called for in Executive Order 13158. The MPA Center is a partnership between NOAA and the Department of the Interior to serve as a resource to all federal, state, territorial and tribal programs responsible for the health of the nation's oceans. It is located within NOAA's Office of National Marine Sanctuaries.

The National MPA Center has three goals:

- Improve MPA design, stewardship and effectiveness
- Connect MPA programs
- Advance public understanding and partnerships about MPA programs

The MPA Center is also actively engaged with MPA programs around the world, and serves as the hub for the Office of National Marine Sanctuaries' international work.

The website is: https://marineprotectedareas.noaa.gov/



Site name	Year Established
Management Agency	Fishing Restrictions
Level of Government	IUCN Category
Designation	Marine Statis
State	Area (km2)
Level of Protection	Marine Area (km2)
Primary Conservation Focus	No-take Area)km2)
Conservation Focus	Percent Area Marine
Permanence	URL
Constancy	