

INFORMATIONAL TO ARHC-14:

Marine Protected Areas within the bounds of the Arctic Regional Hydrographic Commission

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Executive Summary: This paper is the result of a preliminary assessment of existing marine protected areas (MPAs) (as defined by IUCN and inventoried and classified as such by the World Database of Protected Areas (WDPA)) and ProtectedSeas.org in the Arctic region. The paper aims to inform the hydrographic offices of the member governments of the ARHC and facilitate consideration of the implications of the WDPA and ProtectedSeas.org Arctic MPA inventory in light of the IHO intent to promulgate the S-122 product specification ("Marine Protected Areas") of the S-100 Hydrographic Data Model in the context of nautical charting. Although no other MPA databases were considered in this initial review, there may be some, such as the U.S. National Marine Protected Area Center's MPA inventory, that merit consideration at a later date.

Related Documents: [S-122 Product Specification](#) (ed. 1.0.0)

[IHO NIPWG 2023 - S-122 Theory and Practice](#)

[IHO Secretariat Report to ARHC13²](#)

[C8-04.2a](#) "Report Of The IHO Inter-Regional Coordination Committee (IRCC) to the 8th Meeting of the IHO Council"³

Related Projects: <https://www.protectedplanet.net/en>

<https://protectedseas.net/>

<https://marineprotectedareas.noaa.gov/aboutmpas/mpacenter/>

<https://marineprotectedareas.noaa.gov/>

"NOAA's use of or reference to information from ProtectedSeas or the WDPA doesn't necessarily reflect the agency's recognition or endorsement of the "Marine Protected Areas" (MPAs) and "Marine Managed Areas" (MMAs) depicted or described therein, nor does it prejudice any view NOAA may take with regard to the nature, status, or geographic scope of any particular MPA or MMA contained in either database."

"No statement or representation in this paper should be misconstrued as a national position of any government"

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² HCA has established an HCA S-100 Implementation Working Group. Some actions are planned to prepare the governance and production strategies for the top priority S-100 based products (S-101, S-102, S-104, S-111, **S-122**, S-124, S-128, and S-411). https://iho.int/uploads/user/Inter-Regional%20Coordination/RHC/ARHC/ARHC13/ARHC13_2023_B1_EN_Presentation_IHO_SEC_Report_V1.pdf

³ Recommendation (d) page 13: "Approve modifying the task of MSDIWG regarding S-122 to "MSDIWG to monitor and provide assistance to the S-122 Protected Seas pilot project with specific focus on the High Seas and MPAs adopted by IMO, to demonstrate the benefits of S-122 for **non-navigation purposes.**"

Introduction/Background

This paper is intended to serve as a “first” step in raising a shared awareness of existing Marine Protected Area (MPA) information that exists within the Arctic Regional Hydrographic Commission boundary (IHO Region N) and within the UNEP/IUCN World Database of Protected Areas (WDPA) and the ProtectedSeas organization database. This paper uses datasets available on the two organizations’ websites together with common GIS tools available to the authors (GIS software) to isolate features attributed as MPAs within the ARHC boundary.

For purposes of this paper, please consider that the IUCN defines a protected area as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values.”⁴

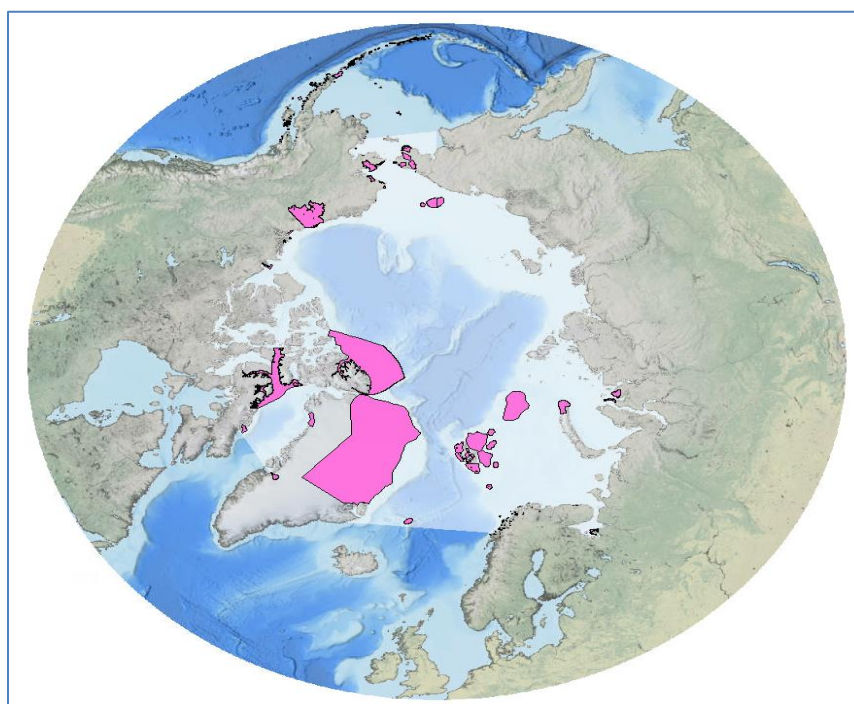


Figure 1: MPA features (pink) within the ARHC boundary (translucent white). Note: Some features appear outside of the boundary because they are objects encoded as an MPA with multiple areas, including at least one existing in the ARHC boundary.

World Database of Protected Areas Inventory

According to the WDPA, “The World Database on Protected Areas (WDPA) is the most comprehensive global database of marine and terrestrial protected areas. It is a joint project between UN Environment Programme and the International Union for Conservation of Nature (IUCN), and is managed by UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), in collaboration with

⁴ <https://marineprotectedareas.noaa.gov/aboutmpas/>

governments, non-governmental organizations, academia and industry. The WDPA is updated on a monthly basis, and can be downloaded....”⁵

A cursory search of the database of areas characterized as “Marine Protected Areas” located in the Arctic indicates 171 sites (12 Canada, 3 Denmark, 141 Norway, 9 Russian Federation, 4 USA).

PROTECTEDSEAS.NET

ProtectedSeas captures many different types of marine areas beyond what many traditionally understand when referring to a “marine protected area.” ProtectedSeas provides data for such areas as fisheries managed zones, endangered species and marine mammal protections, reserves, sanctuaries, and other areas that are managed or have regulations that affect human activity within them in some way. The primary focus of the ProtectedSeas.org database is on areas with regulations that pertain to fishing or extraction of living resources, yet some areas identified in the database are subject to other types of restrictions (e.g., vessel speed and access).

On cursory examination, most areas identified in the two databases appear to be located in nearshore waters. It does not appear that 30% of the high seas in IHO Region N are included within an area defined as an MPA by the two databases. The Global Biodiversity Framework adopted by the Parties to the Convention on Biological Diversity calls for the conservation of 30% of marine and coastal areas through systems of protected areas by 2030.

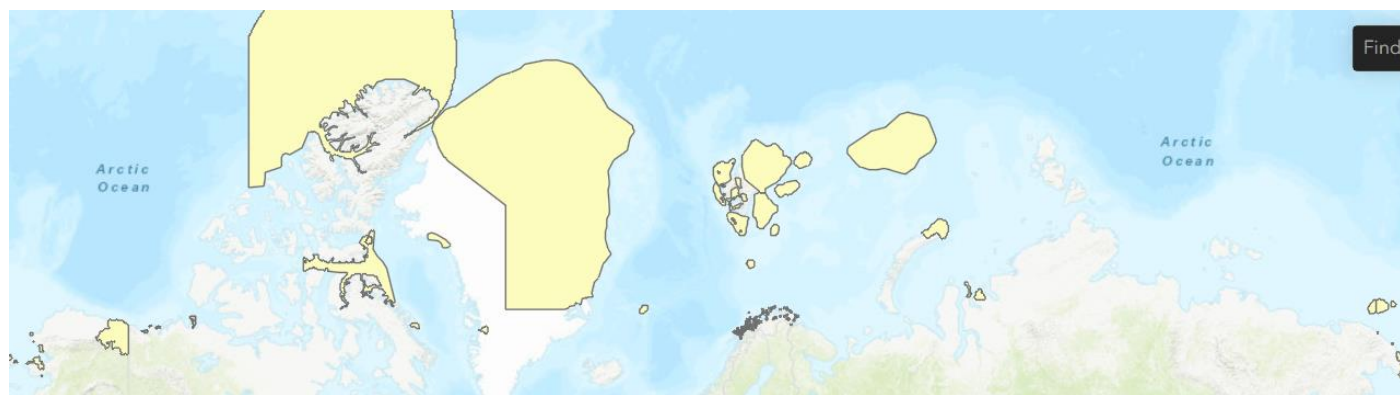


Figure 2 ⁶ MPA features (yellow) within the ARHC boundary (translucent white).

Total features provided by ProtectedSeas in global dataset: 21,328

Total MPAs worldwide (features with ‘category_name’ attributed as ‘IUCN MPA’): 11,359

Total MPAs within Region N limits: 170

Due to the file sizes, the lists of individual MPAs inventoried are available on request from Julio.Castillo@noaa.gov (Protectedseas) and Mimi.Diorio@noaa.gov (WDPA).

⁵ <https://www.protectedplanet.net/en/thematic-areas/wdpa?tab=WDPA>

⁶ <https://noaa.maps.arcgis.com/apps/instant/basic/index.html?appid=312b931a4ae84412ae415db734e3629a>

Other Reference Points (not considered in this summary)

- *International Maritime Organization Particularly Sensitive Sea Areas*

“IMO has a process to designate Particularly Sensitive Sea Areas (PSSAs), which are subject to associated protective measures such as mandatory ship-routing systems. There are currently 15 areas (plus two extensions) protected in this way, including those covering UNESCO World Heritage Marine Sites, such as the Great Barrier Reef (Australia), the Galápagos Archipelago (Ecuador), the Papahānaumokuākea Marine National Monument (United States), and the Wadden Sea (Denmark, Germany, Netherlands).”⁷ The relationship of IMO measures to the understanding of S-122 MPAs should be considered and articulated. These were not examined or considered in this paper.

- *Nationally recognized Marine Protected Areas and inventories*

This review did not consult nationally recognized inventories of Marine Protected Areas to cross reference them with those contained in the ProtectedSeas.org or WDPA databases. For example, the United States maintains the National MPA Inventory, managed by the National Marine Protected Area Center, a joint effort of the National Oceanic and Atmospheric Administration and the Department of the Interior. The National MPA Center partners with ProtectedSeas.net to ensure U.S. MPA data is accurately represented in the ProtectedSeas database, so the U.S. MPA Inventory was not independently consulted for this paper as it does not include the entire Region N. In addition, it is assumed other national inventories may exist as well. These were not consulted.

- *Protection of the Arctic Marine Environment (PAME) Marine Protected Area Expert Group*⁸

The PAME has an MPA Expert Group with substantial experience inventorying nationally-established MPAs and looking at connectivity among such MPAs. This group and its efforts would be relevant to the ARHC investigation of MPAs in the Arctic for charting. But, due to time constraints, discussion has not been meaningfully initiated with PAME in the context of this effort. Pending ARHC14, the project team, or alternative ARHC body, should engage more actively with the PAME MPA Expert Group.

Analysis/Discussion

Several bodies of the IHO have indicated an interest in demonstrating the value of the S-122 (MPA) product specification standard to the global ocean community. Considering the S-100 framework is a Hydrographic Data Framework developed by the IHO, this paper sought to consider currently inventoried MPAs in the Arctic for awareness of the hydrographic offices of ARHC member governments to further consider potential implications to the development of S-100 products and services over time.

Several issues were encountered

- 1) The definition of MPAs should be clearly understood within the S-100 framework. It should be asked if “MPA” is the correct term as defined and strictly understood for this initiative going forward or if a broader understanding of the term should be articulated. The IHO should

⁷ <https://www.imo.org/en/MediaCentre/HotTopics/Pages/oceans-default.aspx>

⁸ <https://www.pame.is/index.php/projects/marine-protected-areas>

consider clearly articulating what kinds of areas are significant for marine navigation with the S-122 product specification as most MPAs do not regulate access or navigation.

- 2) It is important to understand that there are multiple sources communicating the status of a/the global inventory of MPAs. Interestingly, the IMO, a relevant internationally recognized authority highlighted by the IHO IRCC, does not use the term “MPA.” PSSAs themselves do not appear to fall within the IUCN definition of MPA although it is possible that the associated protective measures (APMs) that must underlie any PSSA might meet this definition. Implications on S-122 to IMO initiatives relevant to the Arctic have not been adequately investigated at this juncture.
- 3) From this cursory review, many “MPAs” listed in the databases consulted appear likely to have little to no navigation significance. It does not appear the indicated MPAs will cover an area of 30% or more of the Arctic Ocean, or the general ocean area of the ARHC.

Preliminary Conclusions

IHO Region N (ARHC) encompasses a significant portion of the global oceans. The S-100 hydrographic data model, the S-122 MPA product specification, and navigation services are of core importance to the hydrographic offices of IHO member governments. The ARHC community should monitor developments and prospects of the S-122 product specification and potential areas of opportunity to support the UN Ocean Decade by demonstrating the value of the S-100 data model.

Data Sources

- WDPA (MPA Features)
- [ProtectedSeas](#) (MPA Features)
- [IHO](#) ARHC Boundary. Note: There are inconsistencies in the region boundaries between this source, and the [INT_boundary_line](#) feature on the [ENC Coverage Catalogue](#) maintained by the IHO.

Recommendations

ARHC is invited to:

- Note and discuss this paper;
- Consider, decide, and formulate guidance to the members of the ARHC (as warranted) on this effort;
- Consider any guidance to the S-122 (MPAs) product specification, such as including a recognized definition of MPA or other;
- Investigate whether any IMO measures would qualify as an MPA as defined by the IUCN or other globally recognized definition of MPA;
- Consider opportunities (if any) through which the hydrographic community can leverage the S-100 hydrographic data model to support the UN Ocean Decade goal to “protect” 30% of the world’s oceans by 2030 and/or in concert with the Hydrographic Commission of Antarctica; and
- Consider designating an ARHC focal point for MPAs in the Arctic for any subsequent actions.