15th Conference of the Arctic Regional Hydrographic Commission (ARHC)
Anchorage & Nome, Alaska, USA, 8 – 10 September 2025

Contribution to the IHO Work Programme 2025	
Task 3.2.2.1	Prepare for and report meetings of the Regional Hydrographic Commissions (RHC) / ARHC

High level summary:

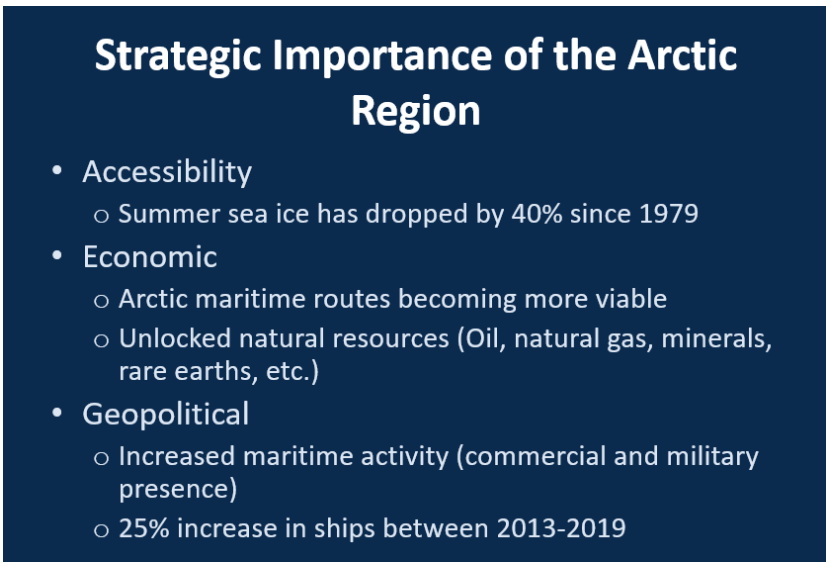
- Commission members informed each other about their recent hydrographic activities in the Arctic Region.
- Four out of five Commission members are ready to deliver S-101 ENCs and S-102 high resolution bathymetry datasets according to the timelines of IHO's S-100 roadmap from 2026 onwards.
- The Commission developed a refined method to access the adequacy of hydrographic survey to create automated input for IHO's global publication (C-55).
- Regarding collaboration with the Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME), the Commission discussed the update and joint republication of the Standing Cautionary Notice a broader (and more proactive) approach to Arctic navigation risks.

Details:

Twenty-five participants representing four ARHC Members (Canada, Denmark, Norway, and the USA and four Associate Members (Finland, Iceland, Italy and United Kingdom) participated in the Conference.

The ARHC Conference was chaired by Rear Admiral Benjamin Evans, NOAA, USA. The IHO Secretariat was represented by Secretary-General Dr Mathias Jonas.

The conference was preceded by a Science Forum which saw presentations from local experts who elaborated on the specifics of the conduct of hydrography in the Bering Strait and Alaska's holistic approach to manage the entirety of marine geospatial information.



The Meeting commenced with the IHO Secretariat's Report. ARHC Members were informed by the Secretary-General of the strategic issues discussed at this year's meetings of HSSC and IRCC, and that will be on the agenda of the upcoming 9th meeting of the Council. By means of his presentation, he put special emphasis on the parallel activities of the Hydrographic Commission on Antarctica in view of a bespoke regional

strategy to address the impact of climate change such as release of Antarctic waters from ice resulting in expanding navigable areas to be surveyed and mapped.

All participants reported on their respective national activities in the Arctic region since the last Conference. The Conference took note of items such as increasing uncrewed survey technology, national survey programs, definition of cross boundary ENC griding schemes, ENC provision and other themes of relevance for all Hydrographic Offices of the region. All four Commission Members present confirmed their principal readiness to start the regular provision of S-101 and S-102 products according to IHO's agreed S-100 roadmap implementation timelines with a focus on main harbours and shipping routes. Canada shared an interesting comment made by Navigators operating in the region: to their views detailed and up to date ENCs make extended deployment of Aids to Navigation redundant. The peak activity in the regional transition from S-57 ENCs to S-101 and amending S-100 based data services is expected between 2027 and 2029.

US reported about the public availability of basic geodetic datasets for the region such as the Arctic Digital Elevation Model and the World Magnetic Model to facilitate efficient survey.

US and Canada reported progress in unification of their respective national assessment of adequacy of hydrographic survey for all their international charting waters to feature IHO publication C-55. The engineering solution is based on water depth, CATZOC, and recent survey footprints and gains ways more adequacy compared to assessment of simply CATZOC. It was decided to establish an ARHC project team which will draft an agreed procedure to be brought forward to IRCC as the recommended method. The coded algorithm will be public domain and synchronized with the current IHO's Secretariats activity to harvest and ingest C-55 information automatically.

Denmark reported progress on the work undertaken by the ARHC Pame Project Team (PT) to update and jointly republish the Standing Cautionary Notice originally issued by the ARHC in 2017. The initiative builds upon the established cooperation framework between ARHC and the Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME), formalized through a Memorandum of Understanding established in 2020 and renewed through signature in January 2025.

The revised notice represents an evolution from the 2017 version, maintaining the essential safety message while adopting a broader (and more proactive) approach to Arctic navigation risks:

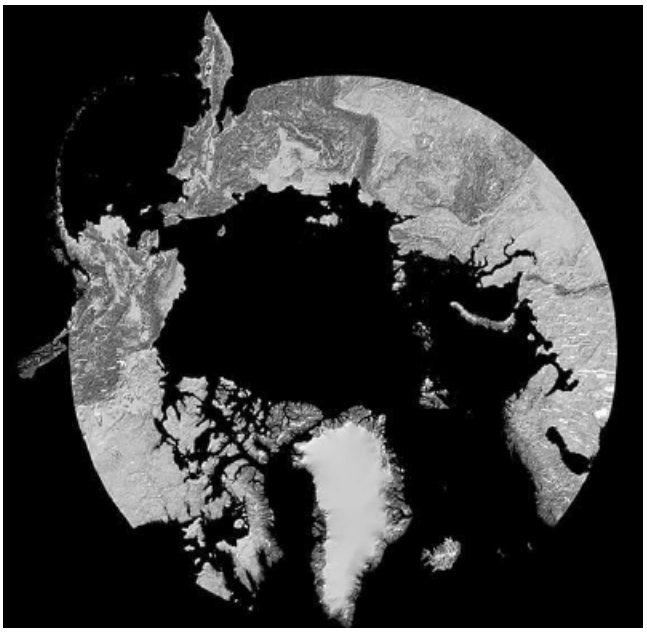
- Title evolution from "Caution Required when Using Nautical Charts of Arctic Waters" to "Caution Required when Navigating in Arctic Waters," moving beyond the focus on chart limitations, addressing a wider spectrum of Arctic navigation challenges reflecting the cooperation with PAME.
- Acknowledges the upcoming S-100 standards for ECDIS while simultaneously highlighting that ongoing limitations in chart data persist despite technological progress. This balanced approach aims to recognize that while modern chart display and digital systems offer improved capabilities, fundamental challenges remain with the underlying data for these modern products.
- Explicitly addresses environmental dynamics potentially leading to new shipping routes, while emphasizing that changing conditions and seasonal variations create an evolving risk environment that mariners must carefully consider. This perspective aligns the notice with current policy discussions surrounding the Arctic Marine Environment.
- Drafted jointly by ARHC and PAME, the document enhances its authority and reach. Also, the notice is to be issued by ARHC rather than by individual government Hydrographic Offices, reflecting the degree of regional hydrographic cooperation and the institutional development of ARHC itself.

It is expected that ARHC and PAME will jointly adopt the proposal in the first quarter of 2026.

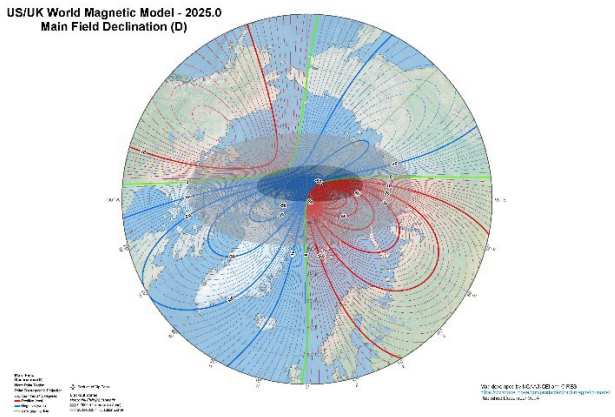
Photo

Group foto ARHC15 participants in Nome, Alaska, USA

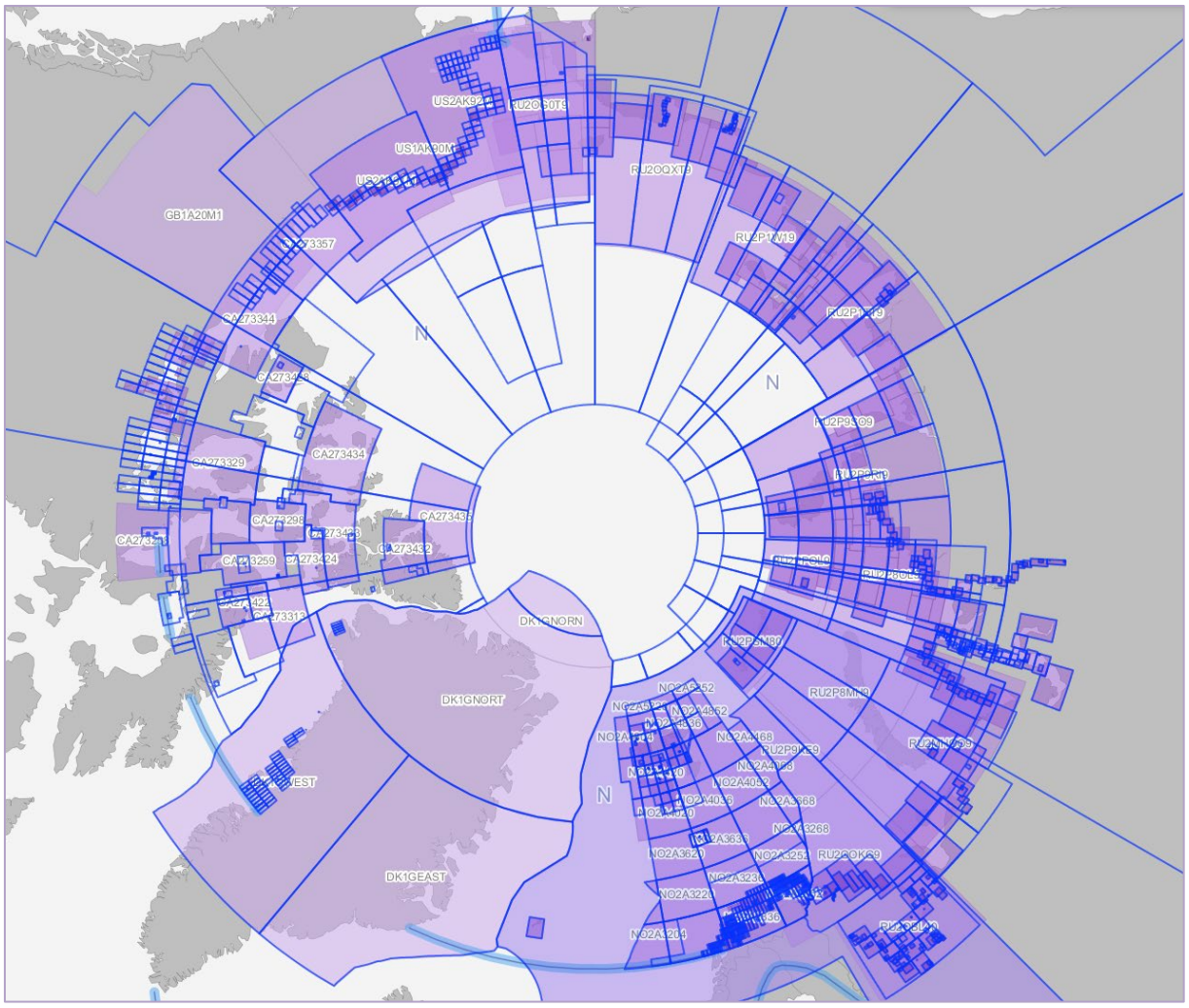
Port of Anchorage, Alaska, USA



Arctic Digital Elevation Model:
The ArcticDEM is a two-meter resolution, satellite-based elevation data map of the Arctic**.** It extends north of 60° north latitude, as well as all territory of Greenland, the State of Alaska in its entirety, and the Kamchatka Peninsula of the Russian Federation. The ArcticDEM is publicly available to view and download.



Magnetic and gravity surveys
The U.S. National Geospatial-Intelligence Agency, in partnership with the U.S. National Oceanic and Atmospheric Administration, and in agreement with the British Geological Survey and the U.K. Defense Geographic Centre, released the World Magnetic Model in December 2024.



1202 ENC's covering Region N

Upcoming meetings:

At the end of the meeting, Canada took over the chair of the ARHC and Denmark became Vice-Chair. It was agreed that the next meeting of the ARHC will be hosted by Canada in Victoria, Vancouver Island from 14 – 18 September 2026.