



Towards an Arctic Ocean Regional Alliance (ArORA)

Enhancing collaboration among communities, researchers, funders, organizations, and decision-makers to advance and coordinate ocean observations in response to rapid environmental change in the Arctic.

BACKGROUND

The Global Ocean Observing System and Regional Alliances

The **Global Ocean Observing System (GOOS)** is a programme led by the Intergovernmental Oceanographic Commission (IOC) of UNESCO, and co-sponsored by the World Meteorological Organization (WMO), UN Environmental Programme (UNEP) and the International Science Council (ISC). GOOS provides leadership and coordination for a global system of sustained ocean observations. It is the foundation for data-driven solutions for weather and extreme event forecasting, climate adaptation, coastal and maritime risk responses, biodiversity stewardship, and sustainable ocean economies. Through

a globally integrated infrastructure of ocean observing networks, national and regional observing initiatives, and with the guidance of its expert panels, GOOS ensures the delivery of essential ocean information that supports ecosystems, economies, and communities worldwide.

The GOOS Regional Alliances (GRAs) enable regional coordination of global priorities, strengthen national capacities in observation and data sharing, and improve linkages between observing initiatives and national development goals. There are currently 14 GOOS Regional Alliances and 3 associated organizations around the world.

As an integral part of GOOS, the GRAs adhere to the GOOS Principles (1998) of shared ocean observations, data policy, best practices, and capacity development in their implementation of regional and national ocean observation systems.

The Need for a pan-Arctic Ocean Observing Alliance

The Arctic hosts a large number of national and international ocean observing efforts, spanning coastal areas, continental shelves and the central Arctic Ocean. However, these are not always well connected with each other, and the potential for best meeting regional and local needs often remains unrealized. Current challenges include international planning, coordination, and implementation of observing activities, engagement with rights holders and stakeholders,

production and delivery of data products to users outside the research community and coordination with established global ocean observing programs.

An **Arctic Ocean Regional Alliance (ArORA)** could work to meet these challenges.

Though existing GRAs - the **European Global Ocean Observing System (EuroGOOS)**, the **US Integrated Ocean Observing System (IOOS)** and the **Canadian Integrated Ocean Observing System (C-IOOS)** have regional Arctic components, there is no ocean observing alliance for the whole Arctic.

LOCAL, REGIONAL, AND GLOBAL BENEFITS

Empowering Communities and Supporting Local Needs

- **Prioritizing local voices:** Strengthen communication among coastal communities and researchers to better understand local needs and co-design observing programs and systems that address them.
- **Working across knowledge systems:** Enhance local partnerships which bring together local and traditional knowledge with scientific monitoring.
- **Supporting local needs:** Provide services such as data products, consultation, and training to support environmental management, search and rescue, and emergency response and create opportunities for youth involvement.

Contributing to Global Understanding

- **Extending global networks:** Advocate for the inclusion of Arctic regions in existing global ocean observing systems.
- **Supporting informed decisions:** Provide robust, inclusive knowledge to support decision-making from local to international levels.

Strengthening Regional Coordination

- **Broadening collaboration:** Connect fragmented Arctic scientific observing initiatives to improve coordination, identify efficiencies, and better meet user needs. Promote connections between local and regional efforts to create synergies and strengthen cooperation across scales.
- **Making local data visible:** Expand coverage and accessibility of Arctic Ocean data to fill critical gaps in climate models and forecasts. Support integration of local observations into regional and global frameworks, guided by FAIR, CARE, and TRUST principles.

ArORA TASK TEAM

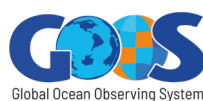
Defining and creating ArORA

The initial form and function of ArORA will be determined through an open, co-design process that aims for broad engagement of Arctic rights holders and stakeholders. Both the design process and the resulting Regional Alliance will remain open to the addition of new members and will be structured to allow evolution in response to changes in membership and objectives. The ArORA will be designed to complement the efforts of established Arctic planning and coordination bodies, focusing on connecting these diverse entities across the breadth of the Arctic stakeholders and rights holders.

The idea of a **pan-Arctic ocean observing alliance** has been discussed in the oceanographic community for over a decade. In 2023 an **international task team** was formed to develop an inclusive process to co-design a future alliance, in partnership with rights holders and stakeholders. The first two years of effort were directed at entraining a broad range of partners - an effort which will continue for the lifespan of the task team. Work to shape an implementation plan for the ArORA began in early 2025, in parallel with continued efforts to broaden representation within the team. Public review of a complete draft is scheduled towards the end of 2025, followed by revisions and submission to the **GOOS** and the **Sustaining Arctic Observing Network (SAON)** governing bodies.

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February 2026



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