# Towards a pan-Arctic alliance for ocean observing

### What is an ocean observing alliance?

Ocean observing alliances identify, enable, coordinate, and develop sustained ocean monitoring and services to meet regional and national priorities. Several existing ocean observing alliances around the world are endorsed as **GOOS Regional Alliances** (GRAs), aligning the global goals of the **Global Ocean Observing System** (GOOS) with the need for services and products satisfying local requirements.

As an integral part of GOOS, the GRAs are tasked with adhering 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.

Existing GRAs include **EuroGOOS** (the GRA for Europe), the **US Integrated Ocean Observing System** (IOOS) and the **Canadian Integrated Ocean Observing System** (C-IOOS). Currently, there is no ocean observing alliance for the whole Arctic, with **Sustaining Arctic Observing Networks** (SAON) serving in this role.

# What is GOOS?

The **Global Ocean Observing System** (GOOS) is a permanent programme coordinating the functioning of a long-term, sustained ocean observing system serving societal needs for climate, operational services and ocean health. GOOS binds together contributions from diverse national organisations to create a sustained global network that benefits people all over the world.

# Why a pan-Arctic ocean observing alliance?

The Arctic hosts numerous national and international observing efforts, spanning coastal areas, continental shelves and the central Arctic Ocean. Challenges remain, including international coordination during planning and execution, 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. A GOOS Arctic regional alliance could work to address these needs.

# What could the benefits of a pan-Arctic ocean observing alliance be for Indigenous Peoples and coastal communities?

#### Making local voices and needs heard

Improved communication and understanding of local needs by regional and international ocean observing programmes, to co-create observing systems designed to meet these needs

#### Support of local management

Support for local environmental management, as well as search and rescue operations and emergency response

#### Making local data visible

#### Improved cooperation

Locally led, designed or developed observing activities can connect better with each other, as well as with the international frameworks creating synergy and improved efficiency

#### Improved access to data

Increased availability of ocean and sea ice information, data, products and services, such as weather and ocean forecasts, and improved early warning systems for harmful algal blooms, marine heatwaves and other events.

Greater ability to integrate local observations and information into a global framework, with proper credit and recognition according to Findable, Accessible, Interoperable, Reusable (FAIR), Collective Benefit, Authority to Control, Responsibility, and Ethics (CARE) and Transparency, Responsibility, User focus, Sustainability and Technology (TRUST) principles.

# What global benefits could a pan-Arctic marine observing alliance provide?

- Improved coordination of the currently fragmented landscape of Arctic ocean observing initiatives, programmes and projects, identifying efficiencies, reducing duplication, and better meeting user needs.
- Advocate for and support for the extension of existing global ocean observing networks into the Arctic.
- Greater coverage and accessibility of ocean information and data in the Arctic, helping to fill known gaps that limit the accuracy of climate models, ocean and weather forecasts, and scientific understanding of the Arctic in general.
- Support of knowledge-based decision-making on local to international levels.

### What might a pan-Arctic ocean observing alliance look like?

The nature of a pan-Arctic ocean observing alliance is to be determined through an inclusive co-design process with engagement of rights holders and stakeholders throughout the Arctic. Existing ocean observing alliances are heterogeneous in their design, organisation and governance. Potential options include endorsement as a GRA within the governance structure of GOOS, establishing an alliance as a body with SAON, or an alternative such as the Southern Ocean Observing System (SOOS), which is a joint initiative of the Scientific Committee on Antarctic Research (SCAR) and the Scientific Committee on Oceanic Research (SCOR). A combined status is also possible.

# What is the process for creating a pan-Arctic ocean observing alliance?

While the idea of a pan-Arctic ocean observing alliance has been discussed in the oceanographic community for some time, its development has been slowed by political concerns and by the COVID pandemic. In 2023 an international task team was formed to develop an inclusive process to co-design a potential future alliance, in partnership with rights-holders and stakeholders. The task team is still in development, working to ensure all necessary partners are included and represented. Once the necessary team has been assembled, work to design an Arctic alliance will begin.

# Contact info

#### Task teams co-chairs

Jari Haapala, Finnish Meteorological Institute, Finland (**jari.haapala@fmi.fi**) Craig Lee, University of Washington, United States (**craiglee@uw.edu**)

#### **Support**

Joseph Nolan, EuroGOOS (joseph.nolan@eurogoos.eu)