

## **Statement from the Partnership for Observation of the Global Ocean (POGO) on the need for an Arctic Regional Component of the Global Ocean Observing System**

**Seeyave, Sophie<sup>1</sup> and Owens, Nicholas<sup>2</sup>**

<sup>1</sup> Partnership for Observation of the Global Ocean (POGO), UK; ssve@pml.ac.uk

<sup>2</sup> Scottish Association for Marine Science (SAMS), UK

The Partnership for Observation of the Global Ocean (POGO) was founded in 1999 by directors of oceanographic institutions around the world as a forum to promote and advance the observation of the global ocean. POGO's membership includes most of the world's leading ocean science and technology institutions, whose expertise, experience and infrastructure provide the unique and long term capability to design, build, operate and innovate the global ocean observing system.

POGO's vision is to have by 2030, world-wide cooperation for a sustainable, state-of-the-art global ocean observing system that serves the needs of science and society. POGO's mission is to:

1. Lead innovation and development of the crucial components of the ocean observing system.
2. Identify and contribute to the development of the key skills, capabilities and capacities needed to achieve the vision.
3. Work with governments, foundations and industry, to articulate the benefits to society and required funding to build and sustain the system.

POGO members recognise the uniqueness of the Arctic in terms of its current geopolitical position (and, for example, the ongoing United Nations Convention on the Law of the Sea (UNCLOS) process) and the rapidity of change occurring there, as well as the relatively poor coverage of monitoring and observational data collected in the Arctic, due to logistical and transnational challenges to circumpolar monitoring activities, and as a result have agreed to prioritise the need for international coordination of observational efforts in the Arctic Ocean.

Organizations such as the International Arctic Science Committee (IASC) are working on improving coordination and also re-establishing monitoring programmes in the Arctic. POGO has a role to play in this process but needs to liaise with organisations and programmes already active in the region to ensure that activities are complementary. POGO has strong connections to many other international organisations (including the Intergovernmental Oceanographic Commission and its Global Ocean Observing System (GOOS), and the Group on Earth Observations (GEO), within which POGO plays a lead role in the "Blue Planet" Initiative). POGO can therefore make a contribution towards enhancing communication and coordination among organisations and networks operating in the Arctic. POGO has begun to collaborate with IASC and Sustaining Arctic Observing Networks (SAON) through participation in meetings, and, in the last year, through the publication of a Community White Paper for the decadal conference on Ocean Observing, which saw its third edition (OceanObs'19) held in Hawaii in September 2019. The White Paper highlights the need for an Arctic Regional Component of the Global Ocean Observing System (ARCGOOS) underpinned by a broadly-endorsed framework grounded in: (i) high-level policy drivers and (ii) scientific and operational objectives that stem from these drivers. It argues that a requirements-based framework for an ARCGOOS begins with the identification of Societal Benefit Areas (SBAs), the societal requirements underpinning the system. Furthermore, SBAs should motivate investments and define the system's science and operational

objectives. The SBAs dictate diverse, overlapping needs for a sustained Arctic observing system, including documenting Arctic environmental change, understanding the Arctic Ocean's role in climate, supporting planning and decision making, and providing near real-time support for operators in the Arctic. These needs strongly constrain system design by defining spatial and temporal scope and resolution, and by dictating the speed at which data and products must be delivered. The White Paper calls for relevant Arctic organisations such as IASC and SAON to work with international organisations like GOOS, POGO and GEO, to develop the framework for ARCGOOS.

Working with the Scientific Committee on Oceanic Research (SCOR) and the Scientific Committee on Antarctic Research (SCAR), POGO supported the establishment of the Southern Ocean Observing System (SOOS) in 2011. SOOS has been very successful in bringing together the Southern Ocean observing community to work collectively to facilitate the collection and delivery of essential observations on dynamics and change of Southern Ocean systems to all international stakeholders (researchers, governments, industries), through design, advocacy and implementation of cost-effective observing and data delivery systems. Although there are additional challenges facing international coordination of Arctic observations, there are many lessons to be learnt from the experience of SOOS.

In summary, POGO is keen to support ongoing Arctic efforts, such as the biennial Arctic Observing Summit (AOS), and particularly the development of an ARCGOOS in collaboration with SAON, IASC, and other regional organisations and international organisations such as GOOS and GEO.