

SAON Annual Report 2025

1. SAON is a facilitator and coordinator

SAON facilitates, coordinates, and advocates for coordinated international pan-Arctic observations and mobilizes the support needed to sustain them.

Addressing the goals of SAON requires the expertise and cooperation of a wide range of stakeholders and knowledge systems. With the Arctic Council (AC) and IASC as the parent organisations, SAON as members currently has 18 country members, three AC Permanent Participants (Arctic Indigenous Peoples organisations) and a series of regional and international organisations.

A strategy for SAON was approved in May 2018. It describes SAON's vision, mission, guiding principle and goals, and outlines in concrete steps the way the goals will be achieved (1). The strategy identifies these main goals for SAON:

1. Create a roadmap to a well-integrated Arctic Observing System;
2. Promote free and ethically open access to all Arctic observational data; and
3. Ensure sustainability of Arctic observing.

One of the themes for the 3rd Arctic Science Ministerial (2021) was *Observe: implementing observing networks; data-sharing*. In the Joint Statement from the Ministerial (2), near-term actions include "Strengthen the work of SAON:

- Encourage finalizing the Roadmap for Arctic Observing and Data Systems (ROADS) through the coordination and cooperation between national and international programs, small and large projects, and infrastructures, and prioritize implementation.
- Promote the expansion of the ROADS efforts to also reflect priorities of Indigenous Peoples.
- Encourage SAON to update a gap analysis of where Arctic observations are missing and recommend strategies to address priority gaps."

2. Achievements

2.1 A roadmap to a well-integrated Arctic Observing System

SAON has identified the need for a Roadmap for Arctic Observing and Data Systems (Arctic ROADS) (3) as a way of defining the needed observing and data system and to specify how the various partners and players are going to collectively work towards achieving that system.

The EU-funded program Arctic PASSION (4) ended in 2025. It was established as a response to the European Commission call for *Supporting the implementation of GEOSS in the Arctic in collaboration with Copernicus*. Through the AMAP Secretariat, the SAON Secretariat has been responsible for

several deliverables in the program. One of the work packages, worked to develop a series of *Shared Arctic Variables* (SAVs) (including permafrost and wildfires) and the framework necessary to document these. This work includes collaboration with Canadian partners (on sea ice as a SAV) and the University of Alaska, Fairbanks, USA on food security, wildfire, salmon and harmful algal blooms in the Pacific Arctic region (5).

One of the goals of the SAON Committee on Observations and Networks (CON) is to organize an inventory of national observational capacities. The Committee has been working to develop *use cases* for such an inventory, and the synthesis will be presented at the Arctic Observing Summit 2026 (AOS, see below).

The *Polar Observing Assets Working Group* (6) has developed the *Registry of Polar Observing Networks* (7), which currently holds 49 entries on systems and organizations that coordinate or track observing activities and infrastructure in the polar regions. Functionality is under development which allows *federated search* across the registered entries.

SAON has been a *Participating Organisation* to the *Group on Earth Observations* (GEO) (8) for a number of years. SAON has organised a series of Arctic PASSION data based Arctic services under the heading ArcticGEOSS and presented them to GEO for acknowledgement in the *Post-2025 GEO Work Programme*. ArcticGEOSS obtained status as *Convener* within the GEO programme in May 2025 (9).

2.2 Free and ethically open access to all Arctic observational data

The Arctic Data Committee (ADC) continues to advance international coordination and best practices for polar data management, with several major milestones achieved in 2025 and significant developments ahead in 2026. Activities in 2025 include:

- Since 2020 an open series of virtual workshops under the heading ‘Polar to Global Online Interoperability and Data Sharing’ (10) has been held. In 2025, three subgroups have worked under the headings
 - Federated Search (11)
 - Vocabularies and Semantics (12)
 - Updating the IASC 2013 Statement of Principles and Practices for Arctic Data Management (13)
- In October 2025, the ADC hosted a highly successful Polar Data Forum in Hobart (14), convening the global polar data community for 85 presentations and four interactive workshops. These sessions focused on data storytelling, polar semantics and vocabularies, ship and sea-ice navigation data, and the future of global polar data coordination. A full conference report will be released soon.
- Updating the IASC Data Statement, to be approved by IASC in March 2026. The statement is aligned with the SOOS and SCAR data policies and reinforces shared principles for open, ethical, and responsible polar data stewardship across the international community (13).
- In parallel, the Arctic Data Committee, together with SCADM and CODATA, is co-leading an International Polar Year Data Task Force. The task force remains open to community

participation, with engagement opportunities available through the ongoing Polar to Global Interoperability Hackathons.

- The Arctic Data Committee also continues to collaborate closely with partner initiatives supporting polar data discovery and interoperability. The *SAON Data Portal* (15) continues to harvest *discovery metadata* from a series of data centers and make them available to the user through a *federated search* mechanism. Through POLDER (16), ongoing modernization of the Polar Data Search infrastructure is improving performance, scalability, and long-term sustainability, while recent repository additions have expanded the breadth of discoverable polar data.
- The effort *Mapping the Polar Data Ecosystem* has been documented through ArcticPASSION (17).
- With other polar organisations, the ADC has been supporting efforts to understand Polar data at risk.

Together, these efforts underscore the Arctic Data Committee's central role in strengthening global polar data coordination and ensuring that polar data are discoverable, interoperable, and responsibly managed for the long term.

2.3 Arctic Observing Summit (AOS)

SAON is the co-organizer of the Arctic Observing Summit (AOS) (18). AOS is a high-level, biennial summit that aims to provide community-driven, science-based guidance for the design, implementation, coordination and sustained long-term operation of an international network of Arctic observing systems. SAON is a co-host of the event and holds one of the co-chair positions. The next AOS will be held in Aarhus, Denmark 30th March - 1st April, 2026.

3. References

- 1) SAON Strategy and Workplan: <https://www.arcticobserving.org/strategy>
- 2) Joint Statement of the Ministers: https://asm3.org/library/Files/ASM3_Joint_Statement.pdf
- 3) Sustaining Arctic Observing Networks' (SAON) Roadmap for Arctic Observing and Data Systems (ROADS): <https://journalhosting.ucalgary.ca/index.php/arctic/article/view/74330>
- 4) Arctic PASSION / Pan-Arctic Observing System of Systems: <https://arcticpassion.eu>
- 5) Report on SAON Progress in ROADS (Arctic PASSION deliverable):
<https://zenodo.org/records/15856556>
- 6) Polar Observing Assets Working Group: <https://www.polarobservingassets.org/>
- 7) Registry of Polar Observing Networks: <https://polarobservingregistry.org/>
- 8) GEO: <https://earthobservations.org/index.php>
- 9) GEO Initiative report for Arctic GEOSS (Arctic PASSION deliverable):
<https://zenodo.org/records/16925380>
- 10) Polar to Global Data Interoperability Hackathon series:
<https://arcticcdc.org/meetings/conference-calls-webinars>
- 11) <https://arcticcdc.org/activities/federated-search>

- 12) Vocabularies and Semantics WG: <https://arcticcdc.org/activities/core-projects/vocabularies-and-semantics-wg>
- 13) The International Arctic Science Committee, 2013. Statement of Principles and Practices for Arctic Data Management: <https://www.iasc.info/data-observations/iasc-data-statement>
- 14) Polar Data Forum: <http://www.polar-data-forum.org/>
- 15) SAON Data Portal: <https://data.arcticobserving.org/>
- 16) POLDER: Polar Data Discovery Enhancement Research: <https://polder.info>
- 17) Updated mapping of the Arctic Data System (Arctic PASSION deliverable):
<https://zenodo.org/records/17037136>
- 18) Arctic Observing Summit: <https://arcticobservingsummit.org>