



# THE ARCTIC OBSERVING SUMMIT 2013, 2014, 2016

## Progress Towards an Integrated, Multipurpose, International Arctic Observing System

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### THE INTERNATIONAL STUDY OF ARCTIC CHANGE AND THE ARCTIC OBSERVING SUMMIT

The **International Study of Arctic Change (ISAC)** is a multidisciplinary Arctic environmental change research program. ISAC engages researchers, community members, managers, and others in research planning, implementation, data-sharing and synthesis, and knowledge translation to advance observing and understanding of Arctic change for improved decision making.

The biennial **Arctic Observing Summit (AOS)** is key to implementation of the observing component of the ISAC Science Plan (Murray 2010). The AOS is coordinated by the ISAC Program Office, the ISAC Science Steering Group and ISAC partners. **The AOS facilitates community-driven, science-based guidance for the design, implementation, coordination and sustained operation of an international pan-Arctic observing system.** It is a forum for planning and priority-setting that links diverse needs for information with observing system design, data accessibility, and timely and relevant products useful for decision making.

The AOS is a **SAON (Sustaining Arctic Observing Networks)** task to identify and pursue activities to improve Arctic observing across the full spectrum Arctic system components.

### AOS 2013 AND AOS 2014 - THEMES

The inaugural AOS was held in Vancouver, Canada in 2013. In advance, participants contributed perspectives and white papers on issues related to Arctic observation. These white papers served as the foundation for developing themes for the Summit, focusing discussion during the event and recommending next steps for 2014.

The AOS 2014 (Helsinki, Finland) continued and expanded 2013 themes and recommendations. Participation increased both with respect to both nations and sectors engaged and areas of expertise (Figure 1).

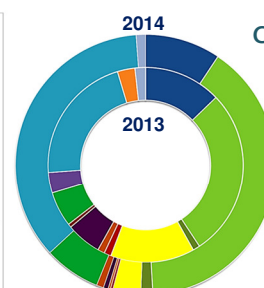
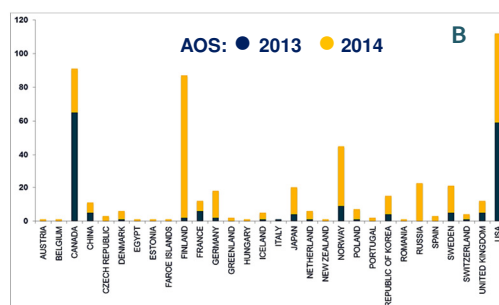
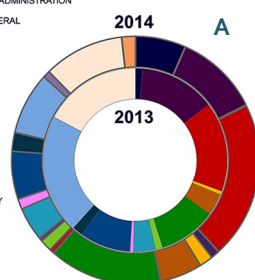
#### AOS 2013 THEMES

1. State of the current observing system
2. System design and coordination
3. Stakeholder needs and perspectives
4. Coordination, support, sustainability, operation

#### AOS 2014 THEMES

1. Stakeholder engagement
2. Coordination
3. Technology and innovation
4. Remote sensing solutions
5. Data management, accessibility, and interoperability

- POLICY, INTERNATIONAL DEVELOPMENT & ADMINISTRATION
- ARCTIC AND ANTARCTIC RESEARCH - GENERAL
- CLIMATE & ATMOSPHERIC RESEARCH
- COMMUNICATIONS (INCL. JOURNALISM)
- COMPUTER SCIENCE - DATA & MODELING
- EARTH SCIENCES
- ECOLOGY
- ECONOMICS
- EDUCATION & OUTREACH
- ENGINEERING
- ENVIRONMENTAL SCIENCES & HYDROLOGY
- HEALTH
- ICE DYNAMICS
- INDUSTRY, TOURISM & RESOURCES
- MARINE SCIENCE
- NATURAL SCIENCES (OTHER)
- ANTHROPOLOGY & SOCIAL SCIENCES
- GEOGRAPHY & SPACE SCIENCES (INCL. GIS, RS)



- EDUCATIONAL INSTITUTE: RESEARCH GROUP/CENTRE
- EDUCATIONAL INSTITUTE: UNIVERSITY/COLLEGE
- FUNDING BODIES
- GOVERNMENT: FEDERAL/NATIONAL
- GOVERNMENT: PROVINCIAL OR REGIONAL
- INDIGENOUS: INTERNATIONAL REPRESENTATIVE
- INDIGENOUS: LOCAL OR REGIONAL REPRESENTATIVE
- MUSEUM
- ORGANIZATION: GOVERNMENT AGENCY
- ORGANIZATION: INTERNATIONAL
- ORGANIZATION: NON-GOVERNMENT/NON-PROFIT
- PRIVATE SECTOR: CONSULTANT
- PRIVATE SECTOR: BUSINESS/INDUSTRY

**FIGURE 1.** Summit participants and areas of expertise represented at AOS-2013 and AOS-2014.  
A - areas of expertise, B - country representation, C - institution or sector represented.

### RESULTS AND RECOMMENDATIONS FROM 2013 AND 2014

A selection of white papers prepared for the AOS 2013 are being published as a special issue of *Arctic* and a report on AOS achievements is forthcoming. Progress has been made on identifying Arctic observing needs and capacities, and priority areas for future attention, and on building an international consensus on the need for coordination including a collaborative, international funding mechanism. The Summits illustrate that circumpolar nations, as well as non-Arctic countries, are ready and willing participants to contribute to a sustained, coordinated Arctic observing system. AOS recommendations include:

- Support for a body to coordinate cyber-infrastructure, data accessibility and products, interoperability among systems and projects, policy, support funding initiatives, and participate in communication.
- Improve international site accessibility and data collection; ensure coverage and continuity of programs, identify temporal/spatial gaps; improve coverage of the Eurasian sector.
- Improve the diversity of participants, and include the diversity of observing systems (e.g., array networks, programs including monitoring, traditional knowledge, academic, private sector, community-based programs, health surveillance, and logistics).
- Link efforts, standards, methods, variables and indicators in use (e.g. Arctic Council, SAON, GEOSS, WMO, GCW, etc.)
- Engage stakeholders at all stages, from assessing needs to the creation of solutions-based, useful products
- Incorporate technology for real-time data capture and accessibility; invest in data rescue and baselines.

### GUIDING THE FUTURE: AOS 2016

AOS 2016 will be held in Fairbanks, Alaska, during March, in conjunction with Arctic Science Summit Week, and other activities ([www.assw2016.org/ASSW2016/](http://www.assw2016.org/ASSW2016/)). Work is underway to ensure that many of the needs and issues identified in 2013 and 2014 are addressed in 2016.

**AOS 2016 themes under development:** status of the current observing system – inventory, identification of gaps design and implementation; broader engagement – northern and indigenous peoples, private sector, human health sector; coordination – mechanisms, funding, technology, innovation; data – management, sharing, rescue, products; linkages to national and global initiatives – resource, data sharing, and platform sharing.

### PARTICIPATE: AOS 2016

To learn more about the AOS and how to engage in AOS activities, visit us on the web at [www.arcticobservingsummit.org](http://www.arcticobservingsummit.org), contact the ISAC International Program office, attend our upcoming Town Hall meetings at AGU 2014 (San Francisco, USA) and ASSW 2015 (Toyama, Japan), or contact a member of the AOS 2016 Executive Committee.



**AOS Executive Committee:** Hajo Eicken (SEARCH), Larry Hinzman (IARC/UAF), Eva Krummel (ICC Canada), Jan Rene Larsen (AMAP), Maribeth Murray (ISAC/AINA), Peter Schlosser (ISAC/Columbia U) and Volker Rachold (ASC). **References Cited:** Murray, M.S., L. Anderson, G. Cherkashov, C. Cuyler, B. Forbes, J.C. Gascard, C. Haas, P. Schlosser, G. Shaver, K. Shimada, M. Tjernström, J. Walsh and J. Wandell, Z. Zhao, 2010. *International Study of Arctic Change: Science Plan*. ISAC International Program Office, Stockholm.

