7. International Cooperation

Arctic observing, in order to be comprehensive, must be pan-Arctic and involve cooperation with international partners. Recognizing the need for international cooperation in the enhancing Arctic observing capabilities, SEARCH, with the help of the International Arctic Science Committee (IASC) and the Arctic Ocean Sciences Board (AOSB), initiated ISAC, a multilateral effort that, like SEARCH, is designed as a long-term, cross-disciplinary, pan-arctic program that will document and increase understanding of changes in the Arctic. As such, ISAC should play an important role in developing AON and ensuring it is well coordinated with other international Arctic observing efforts.

Additionally, SEARCH has entered into a Memorandum of Understanding (MOU) with the European Union's DAMOCLES program which will study air-ice-ocean interactions during the IPY. The SEARCH 4 DAMOCLES (S4D) MOU emphasizes the importance of integration of SEARCH and DAMOCLES observational data, and forms the basis for an international approach to comprehensive pan-Arctic observing.

SEARCH and DAMOCLES are strongly represented on the ISAC scientific steering group which reports to IASC and AOSB, at least in the near term. Thus, these organizations will provide leadership in science-driven observations and scientific research, and will have an important role to play in the coordination of international science in the North.

Bilateral and regional partnerships involving government agencies are important. Bilateral arrangements can provide a basis for coordination among nations on a site- or discipline-specific basis. For example, partnerships between NASA and its counterparts in other nations make possible coordinated campaigns to collect remote sensing data critical to monitoring and measuring change in the Arctic. A partnership among NOAA, NSF, and the Russian Federal Service for Hydrometeorology and Environment Monitoring (Roshydromet) provides the basis for supporting the international observing station at Tiksi, Russia. NOAA and NSF are also cooperating with Russia in the RUSALCA program. The parties intend this program to be a pilot for international cooperation in AON development.

Regional arrangements are crucial for access to and understanding of the Arctic environment, particularly in multi-site and multi-disciplinary contexts. European-US linkages are strong in ISAC and S4D, but those programs need to engage with Canada, Russia and Asian countries. The latter have growing Arctic research and observation programs, and regional groups such as the Pacific Arctic Group (PAG), founded by IASC in 2003, provide a crucial forum to coordinate activities initiated and implemented by research organizations in Asian nations, Canada and the USA (NOAA plays an active role in the PAG organization). As the lead US representative to the Arctic Council's CAFF program, USFWS is contributing to the development and implementation plan for the Circumpolar Biodiversity Monitoring Program (CBMP) (CAFF, 2007).

On a global basis, Arctic observing contributes to internationally-coordinated observing frameworks. Cooperation with global observing programs such as GCOS and its component programs — among them the Global Ocean Observing System (GOOS) and Global Terrestrial Observing System (GTOS) — will be important. Representatives from US federal agencies such as NASA, NOAA and NSF serve on the boards and/or scientific steering groups for these global programs providing the necessary link between AON and these programs. Similarly, the Federal inter-agency GEO, co-chaired by NASA and NOAA, provides a link to GEOSS.

All of the eight Arctic countries, as well as many other countries, are actively engaged in observing and monitoring. Coordination with these programs, where appropriate, will lead to more comprehensive data and information for the scientific and policy community to consider. Sustaining networks with

infrastructure, personnel, and sophisticated instrumentation requires international cooperation and a commitment of resources. International efforts to coordinate and sustain observing networks are underway. ISAC, IASC and AOSB are all members of the Sustained Arctic Observing Networks Initiating Group (SAON IG). NSF is also a member of the SAON-IG. An IPY project lead by the Arctic Council's Arctic Monitoring and Assessment Program (AMAP), the SAON-IG was formed in response to an Arctic Council (AC) declaration of November 2006 urging all eight AC member countries to maintain and extend long-term monitoring of change in all parts of the Arctic.

SAON IG has initiated a process to develop a set of recommendations for the future coordination and promotion of sustained, integrated Arctic observing activities that provide free, open and timely access to high quality data that will realize value-added services and provide pan-Arctic and global societal benefits. The SAON process includes three workshops (to be held in Sweden, Canada and Finland) that are open to all interested individuals and organizations, including the research observing community, the operational observing community, and northern residents engaged in community-based observing programs and documenting local and traditional knowledge. The SAON IG recommendations will be presented to the AC and other entities at the end of the IPY.

Useful links

Arctic Monitoring and Assessment Program
http://www.amap.no/

Arctic Ocean Sciences Board
www.aosb.org

Conservation of Arctic Flora and Fauna (CAFF)
http://arcticportal.org/en/caff/

Developing Arctic Modelling and Observing Capabilities for Long-term Environmental Studies (DAMOCLES) *http://www.damocles-eu.org/index.shtml*

IPY Workshops on Sustaining Arctic Observing Networks
http://www.arcticobserving.org/

Global Climate Observing System
http://www.wmo.ch/pages/prog/gcos/index.php

Group on Earth Observations and GEOSS (Global Earth Observing System of Systems)
http://www.earthobservations.org/index.html

International Arctic Science Committee
http://www.iasc.se

International Polar Year
http://www.ipy.org

International Study of Arctic Change
http://www.aosb.org/isac.html

Pacific Arctic Group
http://www.pagscience.org/

Sustained Arctic Observing Networks Initiating Group (SAON IG)
http://www.arcticobserving.org/index.php?option=com_content&task=view&id=14&Itemid=28

United States Group on Earth Observations
http://usgeo.gov/