International Study of Arctic Change
Program History, and Recent and Planned Activities

SEARCH Science Steering Committee Meeting
5-6 November 2009, Washington DC

ISAC Program History

2003  International Arctic Science Committee (IASC)
      http://www.arcticportal.org/iasc/

      Arctic Ocean Sciences Board (AOSB)
      http://www.aosb.org/

2004  Interim Science Planning Group (ISPG) formed.

2006  ISPG publishes  ISAC Science Overview Document (SOD).
      www.arcticchange.org
ISAC Program History

2006    ISAC endorsed as an IPY project.
2007    ISAC Science Steering Group formed and Council members invited.
2008    International Program Office activities begin in October.

SSG Chair:  Michael Tjernström, Stockholm U, Sweden
SSG Members:    David Barber, University of Manitoba
                  Christine Cuyler, Natural Resources, Greenland
                  Bruce Forbes, U Lapland, Finland
                  Jean Claude Gascard, U Pierre et Marie Curie, France
                  Christian Haas, U Alberta, Canada
                  Gus Shaver, Woods Hole, USA
                  Peter Schlosser, Columbia U, USA
                  Koji Shimada, Tokyo University of Marine Science and Technology
                  John Walsh, U Alaska Fairbanks, USA
                  Johanna Wandel, U of Waterloo, Canada
                  Jinping Zhao, Ocean University, China

Executive Director:  Maribeth Murray, Swedish Polar Research Secretariat, Sweden
ISAC Implementation

- Establish the international program office.
- Develop the science plan and implementation strategy.
- Implementation of concrete activities.
- Expansion of partnerships.
International Program Office

- Located at the Swedish Polar Research Secretariat (SPRS), Royal Swedish Academy of Sciences.

- Current support is provided by SPRS and the U.S. National Science Foundation (NSF).

- Coordinates ISAC activities, builds partnerships in international arctic science, provides information to wide variety of stakeholders, facilitates scientific workshops and planning activities.
ISAC Science Plan and Implementation Strategy

- Draft released for public comment during ASSW 2009.
- Public comment period from 27 March mid-June 2009.
- May be downloaded from ISAC website. [www.arcticchange.org](http://www.arcticchange.org)
- Now in revision to be published with the assistance of IASC.
- Short summary version for AGU.
Meeting ISAC Objectives

- The development of an integrated Arctic Observing System covering all domains including the anthroposphere. This is based on existing and new long-term observing sites as well as new observing methods. (observing)

- Quantification of the anthropogenically driven component arctic change within the context of natural variability. (observing)

- Understanding the causes of pan-Arctic changes including changes in the human component in the context of global change. (understanding)

- Projecting future changes in the Arctic System. (understanding)

- Exploring options for adaptation to and mitigation of arctic change and suggest ways that will lead to a path of sustainable use and development. (responding)

- Dissemination of data and results from ISAC research to the scientific community, stakeholders and the general public. (cross-cuts observing, understanding, responding)
Dealing with arctic change is urgent.

ISAC requires strong observing, understanding and responding to change components in order objectives.

Speed of change and the rapid evolution of knowledge require a flexible approach.

Flexibility ensures continued acquisition of the necessary data and effective translation of data into useful information useful for meeting the scientific and societal challenges.
Pan-Arctic Observing System

- Multinational commitment to long-term, multi-disciplinary, systems-scale observing programs.
- Recording past, present, and future changes.
- Sustained to establish meaningful time series.
- Flexible to respond to changing scientific requirements, new insights and shifting theoretical, methodological, and political frameworks.
- Integrated into an international, integrated pan-Arctic Observing System.
Understanding Change

- Developed through synthesis of results from the observing system, from process studies, studies of system dynamics and modeling.
- Modeling on several levels - conceptual to high-resolution coupled numerical models.
- Model improvement - physical components, ecosystems and the human component.
- Useable and relevant model output.
- Upscaling current data through reanalysis and downscaling pan-Arctic models to the regional and local levels.
- People need regional/local scale information on projected environmental/ecosystem changes.
Responding to Change

- Need to understand how ecosystems might be structured and how they might function in the near and distant future.
- Strategies that consider potential alternatives.
- Stakeholder participation in building research that leads to useful observation and predictive capabilities.
- Development of co-management and risk mitigation strategies, hazard assessments, and planning initiatives.
- Access relevant data in real-time.
- Data that is technologically, linguistically, and culturally accessible.
- Assessment for relevance to place-based interpretation and use.
- Translation and dissemination of good scientific information to a wide audience.

In Alaska, important fishing and hunting areas are often managed under state or federal jurisdiction. This sign stands at the Minto Village boat launch, which is within the boundaries of a state game refuge. During prime hunting and fishing seasons, boat launches such as this overflow with tourist activity, and local residents face much competition for, and witness much waste of, the wild food resources on which they depend. Photo: P. Loring
Recent Activities

- Science Steering Group Meeting, Villefranche sur Mer, September 2009.
  - Development of Strategic Plan for the next 18 months
  - Revision of Science Plan
  - Plan for 4th day of SoA

- Synthesis of Understanding of Hydrological Changes in the Arctic System, Fall 2009, Stockholm. In partnership with NSF Freshwater Initiative and ArcticHydra.

- Follow-up meeting, 10-11 December, Victoria, Canada to complete report.
Forthcoming Activities

- ISAC Open Science Discussion, AGU Annual Fall Meeting, 2009.

  - 4th Day – International Cooperation in Arctic Science
  - White paper on responding to change
  - Report/publication to carry ISAC into the future

- Responding to Change Workshop (ca. 50 people), Summer/Fall 2010.
Contact Information

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