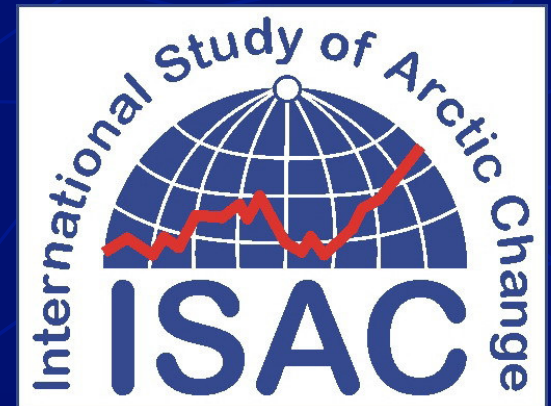


International Study of Arctic Change

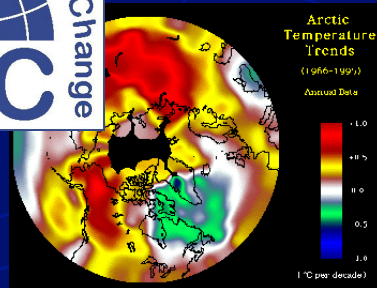
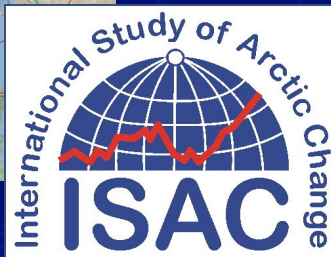
<http://www.iasc.se/isac.htm>

Overview and Upcoming Activities



ISAC (<http://www.iasc.se/isac.htm>)

- ▶ Long term
 - ▶ International
 - ▶ Cross-disciplinary
 - ▶ Pan-arctic
- ▶ Concerned with arctic change due to enhanced greenhouse warming and other anthropogenic interferences, and the effects of natural variability on the Arctic system

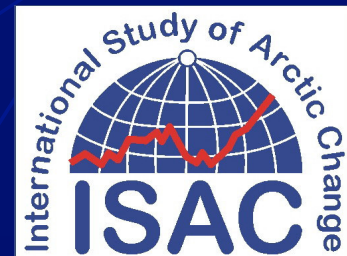
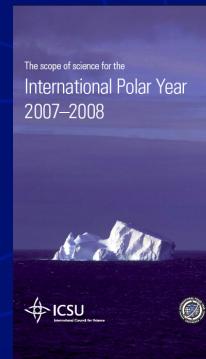
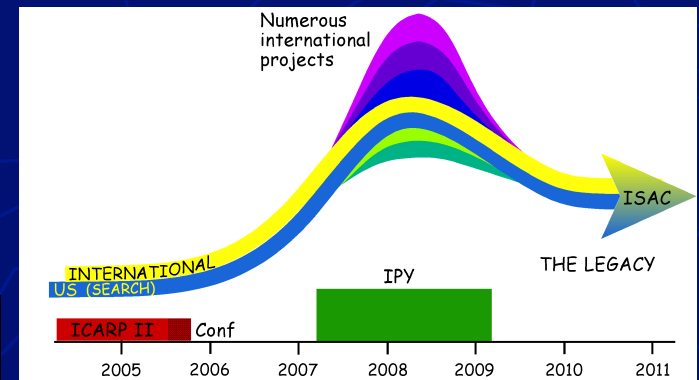




ISAC Background



- ▶ Initiated in 2003 under the umbrella of the International Arctic Science Committee (IASC) (http://www.iasc.se/about_iasc.htm) and the Arctic Ocean Sciences Board (AOSB) (<http://www.aosb.org/>)
- ▶ Interim Science Planning Group (ISPG) formed in 2004
- ▶ January 2005 the ISPG published the ISAC Science Overview Document
 - scientific rationale
 - the theoretical framework
 - overarching goals
 - guiding objectives and hypotheses
- ▶ Endorsed as an IPY project
- ▶ Science Steering Group formed 2006



Science Steering Group

Co-Chairs

Michael Tjernström (Sweden)

Grete K. Hoverud (Norway)

SSG

Monica Tennberg, Social

Georgy Cherkashov (Russia), Geo

Jean-Claude Gascard (France), Marine

Christian Hass (Germany), Cryo

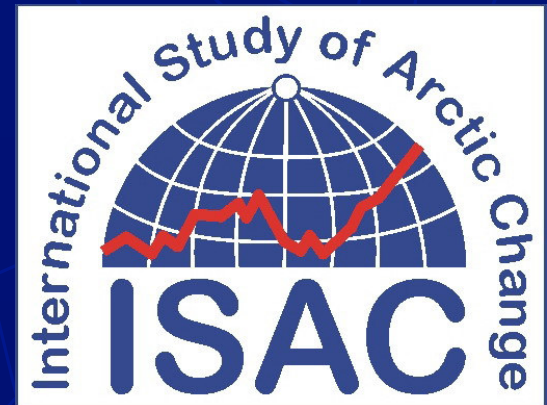
Inga Svala Jonsdottir (Iceland), Terrestrial bio

John Walsh (USA), Climate

Paul Wassmann (Norway), Marine bio-system

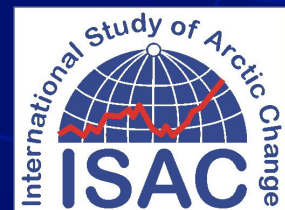
Peter Schlosser (USA), Circum-Arctic

Leif G. Anderson (Sweden), Advisor



Objectives

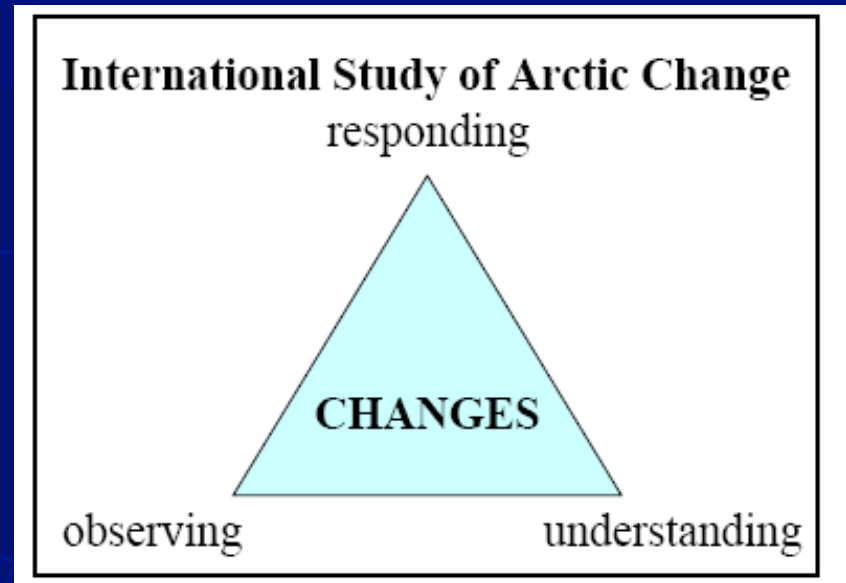
- ▶ To take a system approach to expansion of knowledge about the Arctic system
- ▶ To further document and track arctic changes, understand their causes, nature and connectivities
- ▶ To project changes into the future
- ▶ To provide the underpinning for an expanded knowledge base and lead to improved assessments of the impacts of environmental change (including climate change in the Arctic.
- ▶ To study socioeconomic, political, and cultural responses and feedbacks to change in order to minimize and mitigate negative effects.

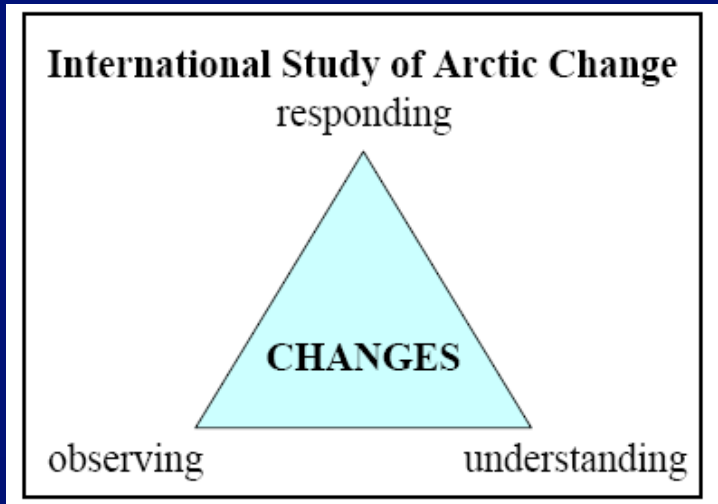


▶ Based on the Study of Environmental Arctic Change (SEARCH) initiative

▶ ISAC is guided by four principle hypotheses:

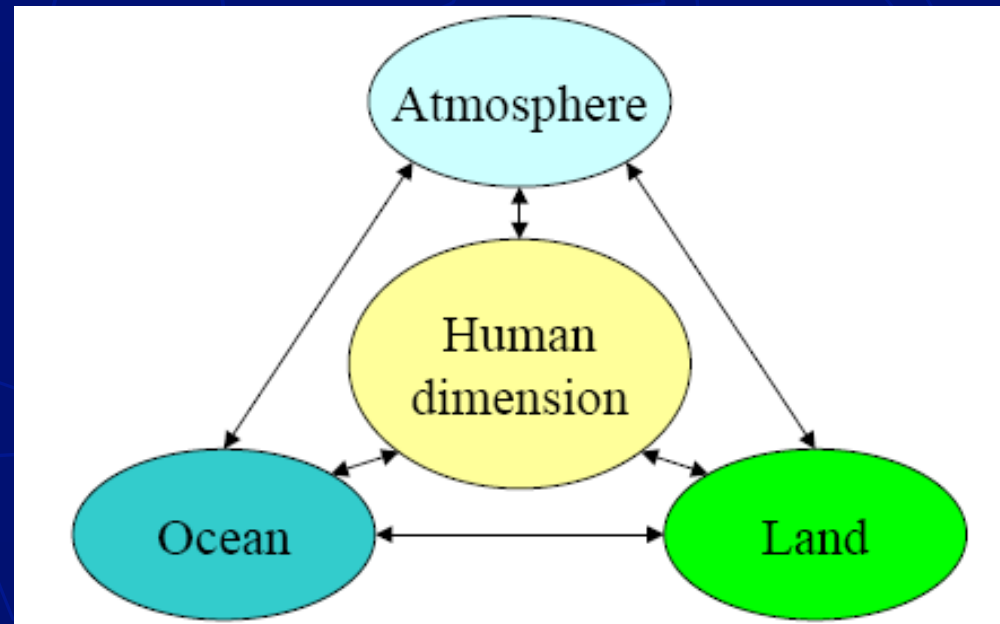
- The complex of interconnected changes is driven by global change but also influenced by regional Arctic feedbacks.
- Amplification of climate signals in high latitudes, especially in the Arctic, lead to amplitudes of observed changes that are larger than those observed in lower latitudes.
- The observed changes are expected to continue and possibly accelerate in the future.
- The observed changes in the Arctic have large impacts on ecosystems and societies



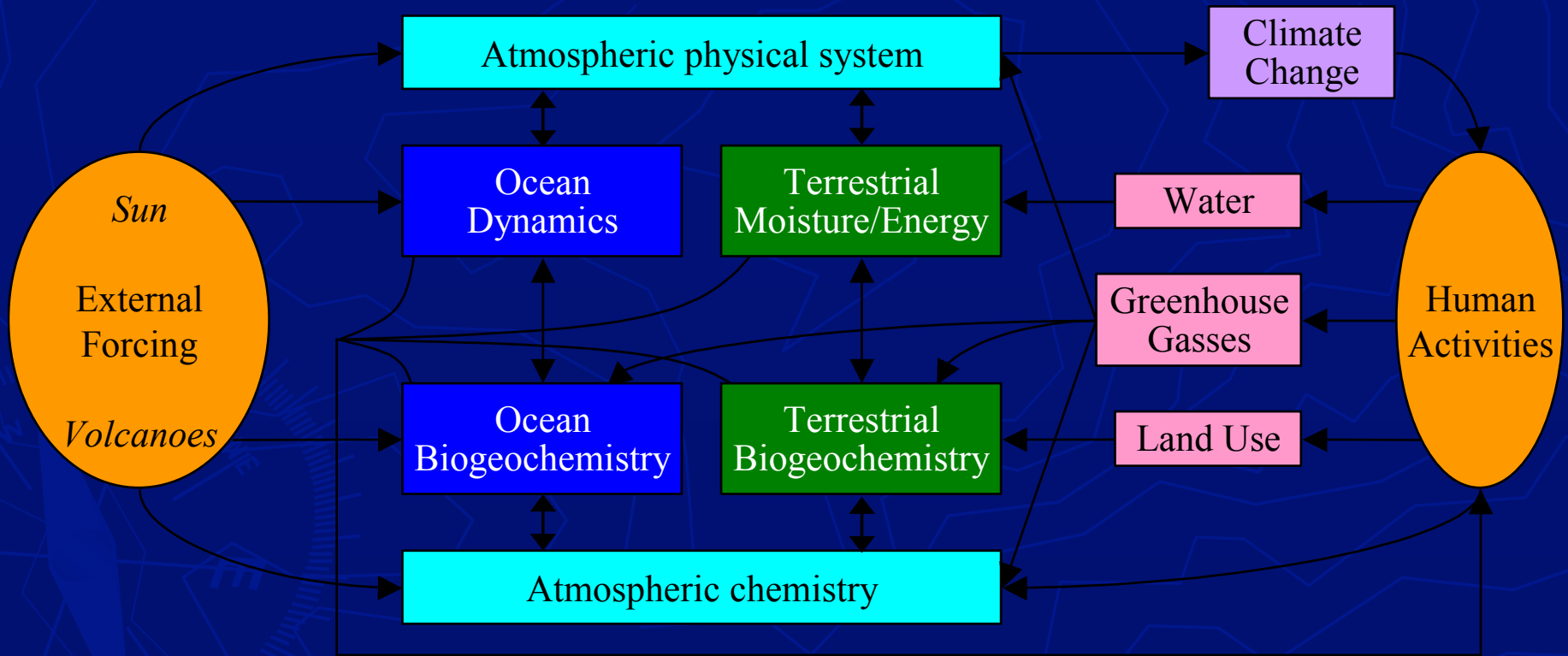


The three cornerstones of ISAC are observing past, present and future arctic changes, understanding their causes and effects, and examining responses on regional to global scales.

Future assessments of the Arctic will rely on an increased & integrated knowledge of all components, including the human domain.



This requires understanding the behavior of the Arctic system – past, present and future, understanding the role of the Arctic as a component of the global system, and including society as an integral part.

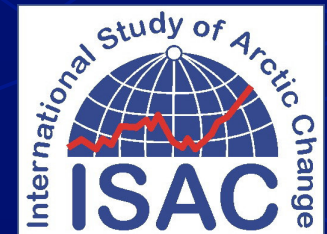


Couplings between the components: Atmosphere – Ocean - Land and People

Program Implementation

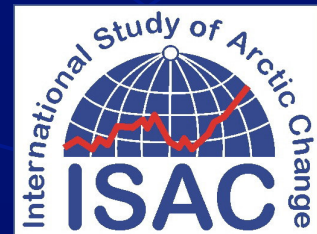
- ▶ Requires a strategic vision for integrating diverse areas and constituents and providing focused research on arctic change.
- ▶ Development of a science plan that guides decision-making about the kinds of observations, that are best suited for addressing ISAC scientific hypotheses
- ▶ Basis for science plan is ISAC Science Overview Document

http://www.iasc.se/isac/ISAC_SOD.pdf



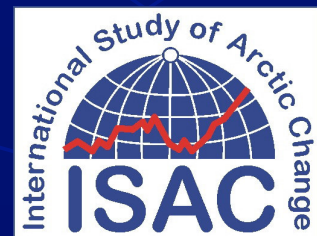
International Project Office (IPO)

- ▶ ISAC will foster a community of arctic researchers and research programs that are united in efforts to remove obstacles to observation, synthesis, modeling, and understanding.
- ▶ The ISAC IPO should provide such opportunities for interaction at the pan-arctic level where possible through various initiatives
 - beginning with the development of the community-created science and implementations plans in partnership with the SSG



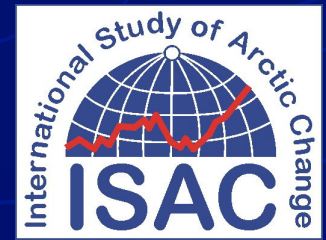
Challenges

- ▶ Creating scientific & stakeholder partnerships.
- ▶ Collaboration on issues of data management, integration, access and availability.
- ▶ Increasingly engaging the scientific community in conveying information to the public, to policy makers, to resource managers and other stakeholders.
- ▶ Developing best practices for communicating scientific information including models results, and predictions (and error ranges) in aid of decision making Flexibility in decision-making & significant community input to the development of research plans and priorities and to relevant funding and government agencies.



Challenges and Needs...

- ▶ Flexibility in decision-making & significant community input to the development of research plans and priorities and to relevant funding and government agencies.
- ▶ Success contingent upon collaborators investing in problem definition from the start
- ▶ Recognition that the processes of observation, modeling & synthesis are subordinate to the common tasks
 - advancing system-scale knowledge
 - establishing relevance to societal needs
 - enabling assessment and response.
- ▶ Linking to similar programs considering Arctic and Global Change



Upcoming Activities

- ▶ SEARCH SSC Meeting
Washington DC 5-7 November 2007



- ▶ Sustaining Arctic Observing Networks (SAON),
Stockholm 12-14 November 07



- ▶ DAMOCLES General Assembly
Nov 27-30 Oslo



- ▶ Arctic Science Summit Week, Sykktyvkar, March 2008

Major Tasks in the Coming Year

- ▶ Completion of the ISAC Science Plan
- ▶ Construction of a web accessible catalogue of ISAC projects
- ▶ Transition the IPO to Stockholm where it will be co-located with IASC at the Swedish Polar Research Secretariat

Other General Activities

- ▶ Provide information to other arctic programs
- ▶ Provide information to other stakeholders
- ▶ Provide a forum for scientific discussion
 - standards or norms;
 - sharing of such information between organizations
 - Of best practices for communication of scientific information
- ▶ Foster cooperation and communication among ongoing initiatives and activities
- ▶ Identify data gaps in research and monitoring and foster synthesis
- ▶ Ensure appropriate data dissemination
- ▶ Engage in capacity building

