SEARCH for DAMOCLES ("S4D")

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DAMOCLES General Assembly

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http://www.arcus.org/SEARCH/index.php

Outline

- The SEARCH Program
- SEARCH for DAMOCLES
- Next Steps

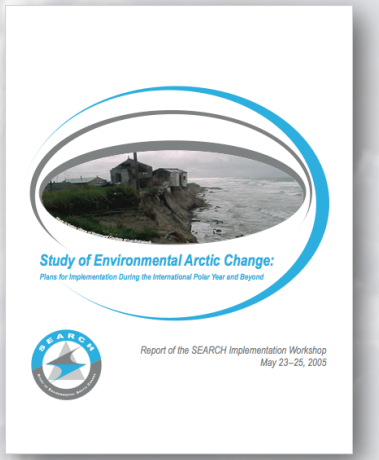
Goal of SEARCH

SEARCH is a U.S. multi-agency program designed to understand the nature, extent, and future development of arctic change

- **Interrelated arctic changes** are occurring across terrestrial, oceanic, atmospheric, and human systems
- Observed changes have **significant impacts** on ecosystems and society
- **Anthropogenic activities** are a major cause of the observed changes

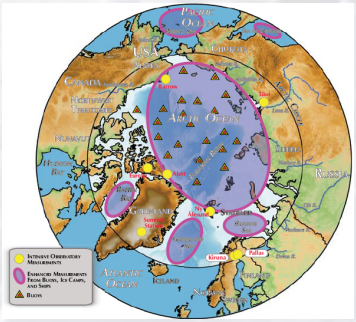
Development of SEARCH

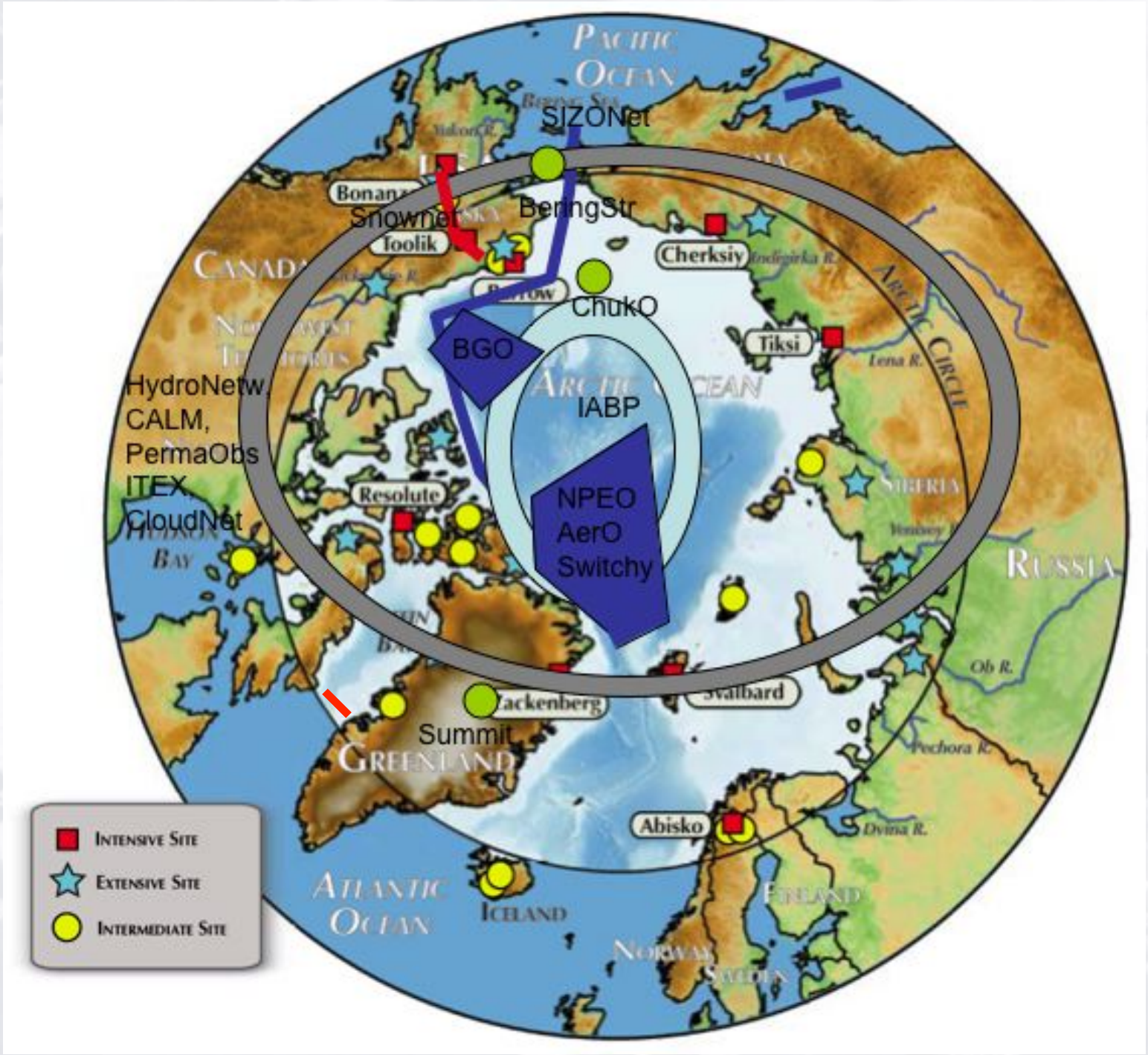
- **Science Plan** published in 2001 and initial implementation strategy published in 2003.
- **Multi-agency sponsorship** 8 U.S. agencies - NSF, NASA, NOAA, Department of Defense, Department of Energy, Department of the Interior, Smithsonian Institution, Department of Agriculture.
- **Open Science Meeting 2003** assessed the state of arctic change science and established research priorities.
- SEARCH **Implementation Workshop 2005** - plan for IPY and beyond.



SEARCH Activities & Implementation

- **Over 150 projects and activities:** "Observing", "Understanding", and "Responding" to change
  - **Observing Change: Ocean and Sea Ice,** Atmosphere, Hydrology and Cryosphere, Terrestrial Ecosystems, Human Dimensions, Paleoclimate
  - **Understanding Change:** Modeling and Analysis
  - **Responding to Change:** Applications focused on social and economic concerns
- **International connections:** Expanding international connections

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Abisko
Iceland
Intensive Site
Extensive Site
Intermediate Site

SEARCH for DAMOCLES (S4D)

- The SEARCH for DAMOCLES (S4D) partnership was established to:
  - Coordinate systematic ocean, atmosphere and ice observations
  - Consolidate long-term observations required for documentation and modeling of change
  - Establish common European/U.S. databases and contribute to international programs

S4D Steering Committee

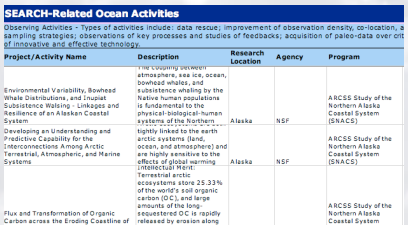
- Jean-Claude Gascard, co-chair, Universite Pierre et Marie Curie
- Peter Schlosser, co-chair, Columbia University
- Cecilie Mauritzen, Norwegian Meteorological Institute
- Hajo Eicken, University of Alaska
- Ralf Döscher, Swedish Meterological and Hydrological Institute
- John Walsh, International Arctic Research Center
- Greta K. Hovelsrud, Center for International Climate and Environmental Research
- Jack Kruse, University of Massachusetts
- Øystein Godøy, Norwegian Meteorological Institute
- Matthew Berman, University of Alaska
- Klaus Dethloff, Alfred Wegener Institute
- Mark Parsons, National Snow and Ice Data Center
- Ursula Schauer, Alfred Wegener Institute

Possible S4D Next Steps

SEARCH has moved from planning stage to implementation stage and is now well-placed for research coordination activities within the S4D framework:

- **Assessment and comparison of funded activities** within SEARCH and DAMOCLES to advance integration of Arctic Ocean research
  - SEARCH has begun a comprehensive assessment of currently funded SEARCH-related activities in the U.S.

- Potential **future workshops** (spring 2008, follow-up to October 2007 Paris workshop)
  - Integration: Ongoing observing and analysis activities. Specific science foci- causes and consequences of the unexpectedly rapid decline in the arctic sea-ice cover during 2007, others…
  - Autonomous and Lagrangian platforms in an Arctic Ocean with shrinking ice



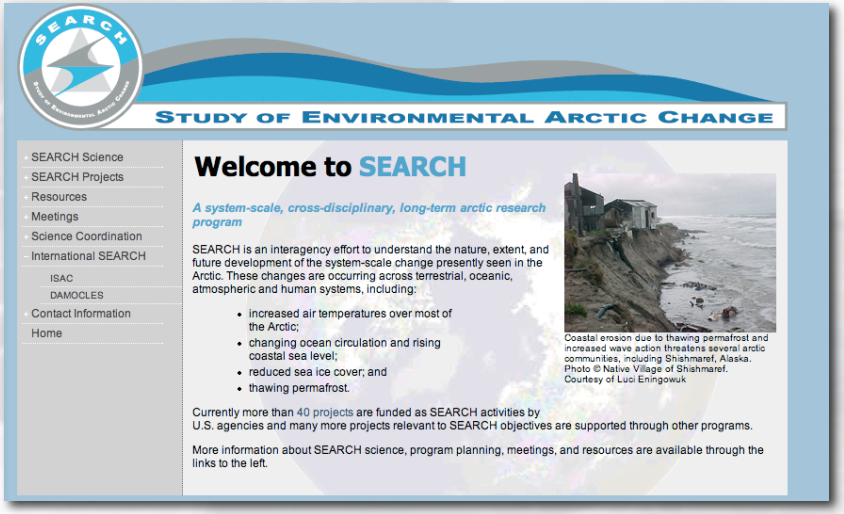
SEARCH-Related Ocean Activities

Observing Activities - Types of activities include: data rescue; improvement of observation density, co-location, a sampling strategies; observations of key processes and studies of feedbacks; acquisition of paleo-data over oft of innovative and effective technology.

Project/Activity Name	Description	Research Location	Agency	Program
Environmental Variability, Bowhead Whale Distributions, and Inupiat Subsistence Walsing - Linkages and Resilience of an Alaskan Coastal System	The coupling between atmosphere, sea ice, ocean, bowhead whales, and subsistence whaling by the Native human populations is fundamental to the physical-biological-human systems of the Northern	Alaska	NSF	ARCSS Study of the Northern Alaska Coastal System (SNACS)
Developing an Understanding and Predictive Capability for the Interconnections Among Arctic Terrestrial, Atmospheric, and Marine Systems	tightly linked to the earth arctic systems (land, ocean, and atmosphere) and are highly sensitive to the effects of global warming	Alaska	NSF	ARCSS Study of the Northern Alaska Coastal System (SNACS)
Flux and Transformation of Organic Carbon across the Eroding Coastline of	Intellectual Merit: Terrestrial arctic ecosystems store 25.33% of the world's soil organic carbon (OC), and large amounts of the long sequestered OC is rapidly released by erosion along			ARCSS Study of the Northern Alaska Coastal System

Thank You

SEARCH Website:
http://www.arcus.org/SEARCH/index.php



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