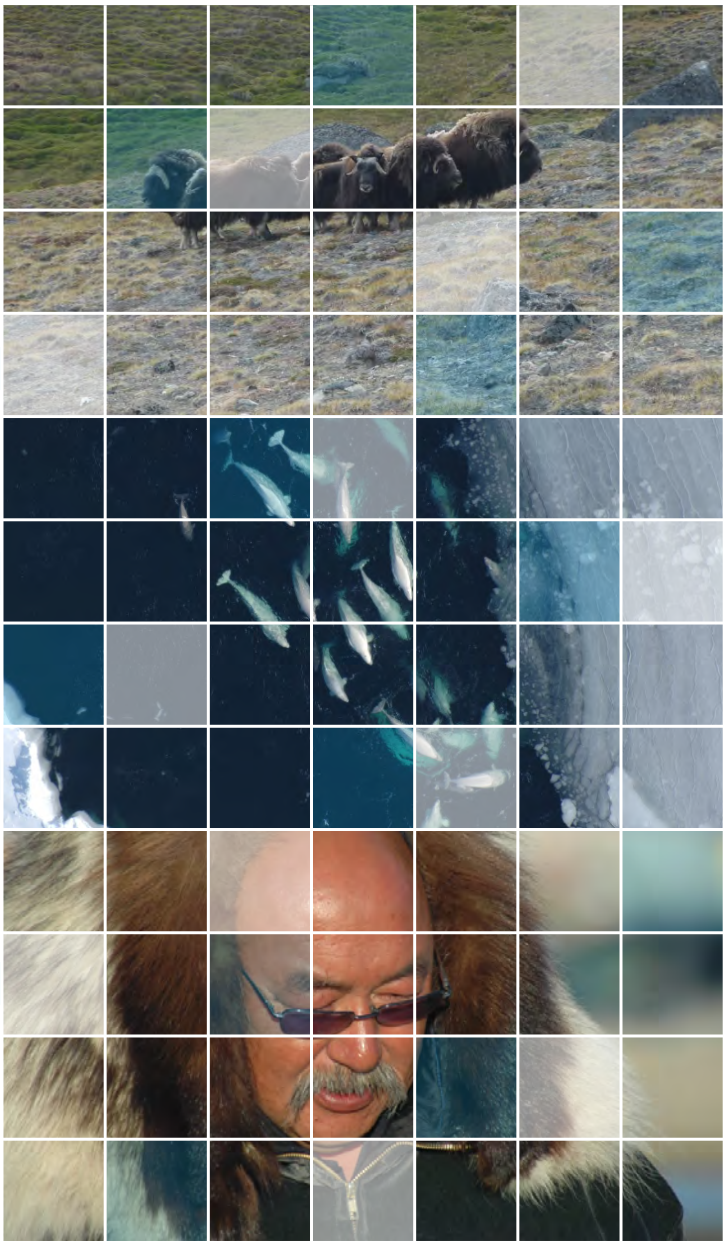
U.S. Arctic Observing Network Coordination Workshop Report

20 – 22 March 2012 ■ Anchorage, Alaska, USA



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The U.S. Arctic Observing Network Coordination Workshop Organizing Committee consisted of co-chairs John Payne and Don Perovich, Hajo Eicken, Mark Ivey, Martin Jeffries, Erica Key, Craig Lee, Carl Markon, Philip Martin, Molly McCammon, Jim Moore, James Partain, Jonathan Pundsack, Craig Tweedie, and Robert Winfree.

We sincerely thank all of the workshop participants for their time, ideas, and expertise.

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Executive Summary

photo: Ute Kaden

The Arctic is undergoing tremendous change. Arctic landscapes are greening, permafrost is thawing, ice sheets are melting, sea ice is thinning and retreating. These changes are impacting ecosystems and human activities. The U.S. Interagency Study of Environmental Arctic Change (SEARCH) is a collaborative scientific program that brings together academic and government agency scientists as well as a broad representation of stakeholders in the Arctic to prioritize, plan, conduct, and synthesize research on arctic environmental change.

The Arctic Observing Network (AON) is a key piece of the U.S. SEARCH effort. The Arctic Observing Network Coordination Workshop, held in Anchorage, Alaska, in March 2012, brought together researchers, agency representatives, and stakeholders involved with long-term observations of arctic change to:

- Develop a shared vision of a successful AON
- Identify steps needed to accomplish that vision
- Identify specific tasks and timelines for activities associated with these steps
- Identify "showcase" projects for observing activities, with recommendations for short-term implementation (5 years or less), including designated task leads

The workshop was funded primarily by the National Science Foundation (NSF) Arctic Sciences Division with co-sponsorship from the North Slope Science Initiative (NSSI), the Arctic Landscape Conservation Cooperative (ALCC), the North Pacific Research Board (NPRB), the Office of Naval Research (ONR), and the Alaska Ocean Observing System (AOOS). The workshop was organized by the Arctic Research Consortium of the U.S. (ARCUS) and brought together 104 participants with broad representation from arctic scientists; local, state, and federal agencies; decision makers; data managers; and other stakeholders—with an equal mix of university researchers and agency representatives (Workshop Participants – Appendix 5).

The workshop consisted of plenary sessions, intensive breakout sessions, and a poster session (Workshop Agenda – Appendix 4). The plenary session presentations covered the observational needs of stakeholders, agencies, decision makers, and modelers, as well as the status of SEARCH science goals.

Workshop participants recommended showcase projects, data management plans, and next steps to improve coordination of long-term arctic observations.

Showcase Projects

The main focus of discussions was to develop showcase projects that would demonstrate effective approaches towards interagency collaboration for the AON. Criteria for showcase projects:

- An advanced level of readiness
- A high potential for cross-agency collaboration and support

- Balance between the research interests of the scientific community and the information needs of agencies and stakeholders
- Potential to use resulting datasets and information products for both fundamental and applied research

The breakout groups developed 11 showcase projects spanning disciplinary perspectives; these showcase projects are recommended for implementation through agency coordination and/or funding:

1. From Observations to Management: Science to Inform Decisions Regarding Offshore Oil and Gas Activities in the Chukchi Sea
2. A Distributed Environmental Observatory for Terrestrial Change Detection
3. What are the Causes and Consequences of the Greening of the Arctic?
4. The Distributed Biological Observatory
5. Multidisciplinary Drifting Observatory for the Study of Arctic Climate – MOSAiC
6. Community-based Observation Network for Adaptation and Security
7. Ocean Observations to Improve Sea Ice Forecasting
8. Long-term Sea Level Measurements Along the Alaskan Chukchi and Beaufort Coasts
9. Arctic Ocean Freshwater and Heat Observing System
10. Utilizing the State of the Existing Knowledge to Guide Infrastructure Development
11. Connecting Arctic Communities with One Another and with Scientists: Building a Community-based Observation Network

Summaries and in-depth descriptions of the showcase projects are given in Section III and Appendix 1, respectively.

Data Management

A data management group identified an important first step as the development and implementation of an Arctic Observations Data Policy; paramount is the exchange of data among all providers. Recommendations to foster the discovery of and access to a rich AON dataset are:

- Provide an inventory of data archives and access points
- Activate an interagency data collaboration team or forum to discuss an improved process for sharing arctic data
- Implement metadata exchange standards and protocols across the various archives
- Identify the most used or highest priority AON datasets and the science or management questions answered with those data

The showcase projects will foster the use of resulting datasets and information products, as well as demonstrate improved data and metadata collection, archiving, and sharing.

Next Steps

To move the workshop recommendations forward, the workshop Organizing Committee recommends that the SEARCH Observing Change Panel, under the guidance of the SEARCH Science Steering Committee, work with the showcase project contacts and the data management group to follow up with relevant funding agencies. The Organizing Committee also suggests that the workshop recommendations be formally presented to the Interagency Arctic Research Policy Committee (IARPC), for implementation where the workshop recommendations can contribute to the IARPC 5-year goals.

Other implementation activities may take the form of topical working groups created to focus on specific aspects of the recommendations and/or a combined focus on a flagship site or regional study that integrates more than one of the showcase projects and data management plans. These recommendations should also be considered by the International Study of Arctic Change (ISAC) during planning for the spring 2013 Arctic Observing Summit (AOS) in Vancouver, B.C., Canada (**www.arcticchange.org/arctic-observing-summit-2013/**) in concert with the recommendations from the report ***Designing, Optimizing, and Implementing an Arctic Observing Network*** (2012).

Participants achieved the workshop goals and developed a series of actionable and concrete recommendations. Because of the diversity of participants, a challenge in workshop discussions was the 'cultural' differences between academic scientists and agency personnel, for example, differences in vocabulary and scientific goals. This challenge should be recognized and addressed in future AON activities.

The Organizing Committee thanks the workshop participants' efforts and the sponsors' support, and looks forward to implementation of the workshop recommendations and a well-coordinated and successful Arctic Observing Network.