



Arctic Observing Open Science Meeting

17 – 19 November 2015

Seattle, Washington, USA

Parallel Session Summary

Meeting the Needs of Managers and Decision Makers

Session Chairs: David Payer and Sandy Starkweather

Overview. The “Meeting the Needs of Managers and Decision Makers” session focused on how scientific output from existing networks is or is not meeting societal needs for natural resource management. The seven presentations in this session provided examples of how observing systems are designed to meet management and stakeholder needs, how data and other products are (or are not) made available to mission agencies and others, and how Arctic observing activities can assist with emergency preparedness. Presenters called for greater stakeholder participation in research planning, identified logistical, social, and other challenges inherent in Arctic observing, and contrasted the state of Arctic vs. Antarctic observing. The ensuing discussion focused primarily on challenges and potential solutions to creating Arctic observing systems that are inclusive of all stakeholders, are responsive to management needs, and are sustainable.

Question 1: What scientific or operational advances have been facilitated by the network(s) of Arctic observations?

- Practices that increase discoverability and interoperability of information enhance usefulness of observations to decision makers.
- The Alaska Ocean Observing System (AOOS) provides an example of such practices. AOOS increases data access and makes data available in formats useful to stakeholders.

Question 2: What opportunities exist to address new science questions, operational challenges, or questions of Arctic communities through enhanced collaboration and a robust interagency observing system?

- Researchers should consider stakeholder needs for data format and accessibility, and work with portals such as those hosted by AOOS to meet those needs.
- When using research to support decision making, researchers must consider decision-making time frames and design/report accordingly to maintain relevancy. Temporal scale varies from immediate (emergency response) to long-range planning.
- Collaboration Teams organized under IARPC include both Federal and non-Federal partners, and provide valuable opportunities to increase collaboration.
- Discussants noted that high costs of technology and logistics create challenges. E.g., this was discussed in the context of tide gages.

- Community observations (i.e., citizen science in remote communities) will help control costs and builds a sense of stewardship.
- Local observers require sustained support; in the past there have been problems with sustainability of local observer networks.
- Technology must be rigorously tested under Arctic conditions prior to deployment.
- Often, lower-cost and lower-tech solutions may be preferable for sustainability and to encourage local involvement.
- Discussants felt that much data that have been collected haven't been fully documented or analyzed; emphasize data rescue in an integrative framework.
- Some participants felt that there should be more emphasis on efficiencies and engaging more broadly, while others urged that scientific rigor should be the primary emphasis in Arctic observing. Ideally of course, study designs should strive for all of these factors.
- Interoperability between observing systems is key. We discussed the example of AOOs working with NOAA's Environmental Response Management Application (ERMA) at multiple organizational levels.
- There have been significant recent increases in multidisciplinary, multi-agency and cross-institutional efforts such as the Landscape Conservation Cooperatives (LCCs), North Slope Science Initiative (NSSI) and the Alaska Center for Climate Assessment and Policy (ACCAP, a NOAA Regional Integrated Science and Assessments program), which serve at the interface of observing activities and mission-agency management needs. Increased engagement in these efforts will increase relevancy and sustainability of observing efforts.
- There is also greater awareness among the American public that the US is an Arctic country. This has been enhanced by news coverage of Arctic climate change and its sequelae (e.g., endangerment of ice-dependent species), Arctic resource development (including environmental controversies and politicization), and US chairmanship of the Arctic Council. The Arctic Observing community can take advantage of this awareness to increase momentum through outreach and by adapting to stakeholder needs.

Question 3: How have observing activities contributed to the science needs of mission agencies or stakeholders?

- Traditionally, researchers and managers tended to be stove-piped by institution and specialty. Observing activities will be most relevant to mission agencies and stakeholders if those barriers are breached in the initial planning stages. Identifying management-relevant observing targets will enhance sustainability of observing systems.
- Managers in remote regions appreciate map-based data such as that provided by Spatial Tools for Arctic Mapping and Planning (STAMP), which provides managers

of commercial fisheries with data integration and visualization tools for decision making. STAMP is available at the AOOS Arctic Portal.

- Observing activities provide vital information for resource protection in the event of environmental disasters such as contaminant spills. Some data are sensitive, e.g., spatially explicit information about archeological resources and endangered species distribution, but must be readily available for response.
- Observing activities are most useful to mission agencies when they are firmly grounded in meeting needs for decision making. Meetings such as the AOOSM that bring together managers and scientists are vital to maintaining relevancy of Arctic Observing Systems.