Second Polar Data Forum - Communiqué

International Collaboration for Advancing Polar Data Access and Preservation
27-29 October 2015, Waterloo, Ontario, Canada
http://www.polar-data-forum.org/

The Importance of the Polar Regions for Humankind

The polar regions are experiencing dramatic change. Understanding their complex dimensions (environmental, climatic, social, economic, and geophysical) is critical to grasping the global system and defining our future. Data are an invaluable resource. The coordinated capture, analysis, storage, stewardship, and sharing of scientific data along with Indigenous knowledge helps society better understand the regional and global impacts of polar changes. But these data management activities present considerable technical, social, policy, and economic challenges.

The Second Polar Data Forum

In October 2015, more than 110 people gathered at the Second Polar Data Forum (PDF II) at the University of Waterloo, Canada, to address these challenges. Data managers, scientists, funding program managers, Indigenous people and their representatives, students, and others from eighteen nations shared their knowledge, experience, and ideas on how to make polar data more useful and valuable in solving global problems.

Photo Credit: Marten Tacoma

In 2013, at the First Polar Data Forum (PDF I) in Tokyo, Japan, the community identified issues and made observations and recommendations on polar data management. PDF I focused on improving how people and systems can share data in a meaningful way. The goal was to move towards open and connected systems based on a culture of trust and acknowledgement of data production and use.

PDF II highlighted the significant progress in polar data management made since PDF I and also identified priorities as we move forward. The community reconfirmed the themes of PDF I, identified key new themes that have evolved, and planned a set of action-oriented recommendations and activities.

Key Themes Emerging from PDF II

Including Arctic Indigenous Perspectives: In this time of change, Indigenous knowledge and the underlying observations of Arctic peoples are more important than ever. Along with the knowledge of non-Indigenous local inhabitants, this knowledge is being increasingly documented and represented as digital data, but the nuances of these data are not well understood by the broader data management and science community. The perspectives of Indigenous people and other northern residents

must be heard directly. This will enhance understanding of how Indigenous and local knowledge and observations can be used appropriately.

Community building: Improved polar data sharing that is part of a broader global system will require community building, collaboration, and coordination of efforts. To do this we need to better understand the nature of the polar data community (who is doing the work, where, what systems, etc.) across many scales and what we are collectively trying to achieve. Improved communication, outreach, and coordination within the polar community is needed while we recognize the importance of engaging with broader global initiatives.

Data Preservation and Rescue: We must continually re-use and re-purpose past observations to increase our current understanding. Therefore, data, Indigenous knowledge (especially of Elders), and all the necessary descriptive information must be preserved. Too often, preservation is forgotten and data managers must pursue "data rescue" activities. Even current data are at risk of loss. Now, only seven years after the International Polar Year (IPY), we must develop a data rescue campaign for much valuable IPY data because adequate preservation support was being developed at the time and was limited in scope. Strategic data rescue programs must be developed, and preservation must be prioritized as a long-term investment and cost-saving measure.

Interoperability: Interoperability, the ability to easily share data across systems and users, is one of the most important priorities identified by the polar data community. An interoperable system must enable data access that can support many different users. This may require visualization or other mediation such as translating vocabularies to make data usable by different communities. Achieving interoperability will require adequate resources, a certain level of standardization, and a connected community.

Adequate Resources: Making progress will require adequate financial, technical, and human resources. More focus on training of early career scientists and youth is required, ensuring that they have the necessary data literacy to engage in intensive research while contributing to and benefitting from an open, interoperable system.

Recommendations:

1. Prioritize inclusion of Indigenous perspectives and knowledge.
2. Concentrate effort on understanding and coordinating the polar data management community by enabling "bottom up" initiatives while using existing coordination bodies.
3. Ensure connections to the broader global data community.
4. Focus on action-oriented, intersessional activities such as thematic workshops to link initiatives and make progress in key areas.
5. Make data broadly available and encourage use beyond their original purpose through creation of information and knowledge products.

Early Outcomes:

- Representatives from a group of data-oriented projects using Indigenous knowledge stated their intention to link their efforts to the broader polar data community.
- The Arctic Data Committee and Standing Committee on Antarctic Data Management agreed to draft a Memorandum of Cooperation to enhance collaboration and efficiency between these groups and other global initiatives such as the Research Data Alliance, World Data System, Group on Earth Observations and others.