



ARCTIC DATA COMMITTEE



The Arctic Data Committee: advancing polar science, research policy and society

Peter L. Pulsifer
Chair, IASC-SAON Arctic Data Committee

Research Scientist, National Snow and Ice Data Center, University
of Colorado

Arctic Observing Open Science Meeting
November 17 – 19, 2015
Seattle, WA





The First International Polar Year

1881-1884

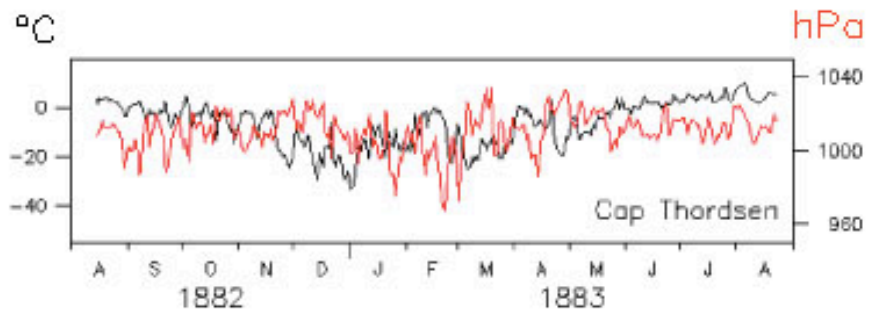
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The Arctic Environment in Historical Perspective

The records of the first International Polar Year (IPY) offer a unique opportunity to study the Arctic as it existed prior to the present era of environmental change.

Meteorological data from IPY stations have been collected and are presented here for the first time in digital format. An extensive documentary image collection may also be viewed.

[Access Data](#) | [View Images](#)



Weather station and meteorological data recorded at Cap Thordsen, Spitzbergen, during the first IPY.

Overview of Developments

- International Polar Year 2007-09 catalyzed development in the area of polar data management
- Formal and informal international networks developed
- A series of major meetings/workshops held before during and after IPY (e.g. GeoNorth Yellowknife, IPY OSLO, IPY Montreal, ELOKA Boulder, Polar Data Forum Tokyo)

Minutes of the workshop of the
Arctic Data Coordination Network
IPY 2012, Palais des Congrès, Montréal, Québec, Canada
27 April 2012, 13:30-17:00

Sustaining Arctic Observing Network (SAON)

SAON Data Management Workshop Report

Developing a Strategic Approach

Prepared By:
Gillian B. Lichota, NOAA Arctic Research Program
Simon Wilson, AMAP

Mark Parsons (USA) and
Gillian Lichota (Canada) were the developers



Polar Geography

Publication details, including instructions for authors and
subscription information:

<http://www.tandfonline.com/loi/tpog20>

Introduction: local and traditional knowledge and data management in the Arctic

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^a Exchange for Local Observations and Knowledge of the Arctic
(ELOKA), National Snow and Ice Data Center, University of
Colorado, 449 UCB, Boulder, CO 80309, USA



International Forum on Polar Data Activities in Global Data Systems Communiqué

River, AK

quaculture,
Hobart,

Data Science Journal, Volume 13, 30 October 2014

TOWARDS AN INTERNATIONAL POLAR DATA COORDINATION NETWORK

P L Pulsifer¹, L Yarmey¹, Ø Godøy², J Friddell³, M Parsons⁴, W F Vincent⁵, T de Bruin⁶,
W Manley⁷, A Gaylord⁸, A Hayes⁹, S Nickels¹⁰, C Tweedie¹¹, J R Larsen¹², and J Huck¹²*

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¹⁰University of Texas at El Paso, El Paso,

¹¹2, T6G 2J8, Canada

*of documents reporting on meetings of
are identified. These include the need
engage stakeholders. Network theory is
factors to improve understanding of the
Arctic Data Coordination Network, we propose a model
to improve connectivity between*

Arctic Polar Year, Interoperability, Data

to moving Arctic observing initiatives
to a common system advancing a common

Lessons Arising From the Arctic Data Forum¹

(Pan)

Scientists, and research coordinators) share their
experiences for enhancing and sustaining core data services

(www.ipy.org) there are still unresolved deficiencies
in our ability to discover and reuse existing and new
national and international research programs is
likely available for reuse and verification purposes.
data managers. Achieving these goals requires
strategies to support data repositories, and a change
in ideas and interpretations that have traditionally
influenced the costs of managing and publishing data
in research/observing system plans.

Arctic Science Committee (IASC), the two lead non-
governmental organizations on long-term science planning activities
in the Arctic (Arctic Research Planning). Both organizations are
not only that the development of robust polar
science visibility in IASC- and SCAR-sponsored science
countries are encouraged to promote the funding
contribute to the
of the



Statement of Principles and Practices for Arctic Data Management April 16, 2013

All IASC-endorsed scientific results shall be verifiable and reproducible through ethically open access to all data necessary to produce those results. Data shall be preserved, accessible, and used in accordance with scientific norms of fair attribution and use.

To this end, IASC Council approves the following actions:

1. Endorsement of the Statement of Principles and Practices for Arctic Data Management;
2. Establishment of an IASC Data Standing Committee;
3. To undertake measures towards adoption of national data policies consistent with

IASC DM Actions

Statement of Principles and Practices for Arctic Data Management April 16, 2013

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FEATURED MEETING



Research Data Alliance (RDA) Meeting

[2015-09-23 to 2015-09-25](#)

[Read More >](#)

SWIPA Follow up Workshop

[2015-10-05 to 2015-10-06](#)

AACA Barents Workshop

[2015-11-03 to 2015-11-05](#)

AMAP Arctic Ocean Acidification (AOA) Meeting

[2015-11-04 to 2015-11-06](#)

SAON: COMMITTEE ON DATA AND INFORMATION SERVICES (CDIS) RSS

Date	Monday 10th November, 2014 to Tuesday 11th November, 2014
Location	Potsdam, Germany
Duration	1 day
Link	

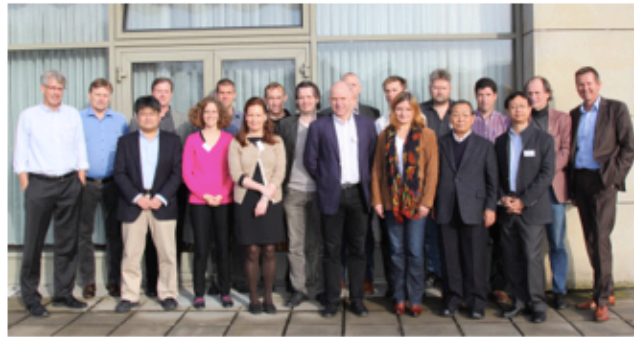


Meeting @ Potsdam, , Germany

Formation of the Arctic Data Committee, Nov. 2014

1st Meeting of the IASC Data Standing Committee (IDSC) and SAON Committee on Data and Information Services (CDIS)

Report of the 1st Meeting of the Arctic Data Committee



Meeting Details

Meeting: 1st Meeting of the IASC Data Standing Committee (IDSC) and SAON Committee on Data and Information Services (CDIS)

Time: 10 November 2014, 14:00 - 18:00; 11 November 08:30 - 13:00 (CET)

Location:

Mercure Hotel Potsdam City
Lange Brücke
14467 Potsdam
Germany
Room: Studio 1+2.

General Working Model

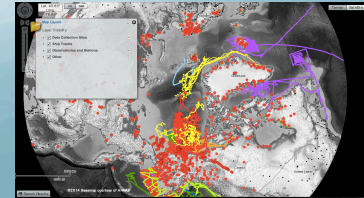
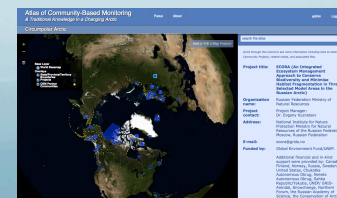
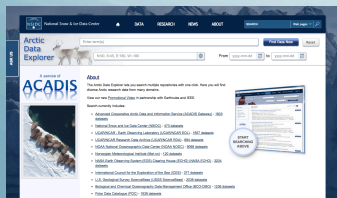
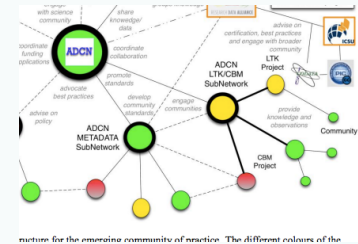
- Tangible deliverables over a short time frame
- Deliverables contribute to addressing strategic priorities over the short, medium and long term
- Nominated national representatives, but open to all “interested and engaged” participants
- Use existing capacity while working to generate new resources
- Work collaboratively... but recognize individual contribution

Key Priorities (WPs)

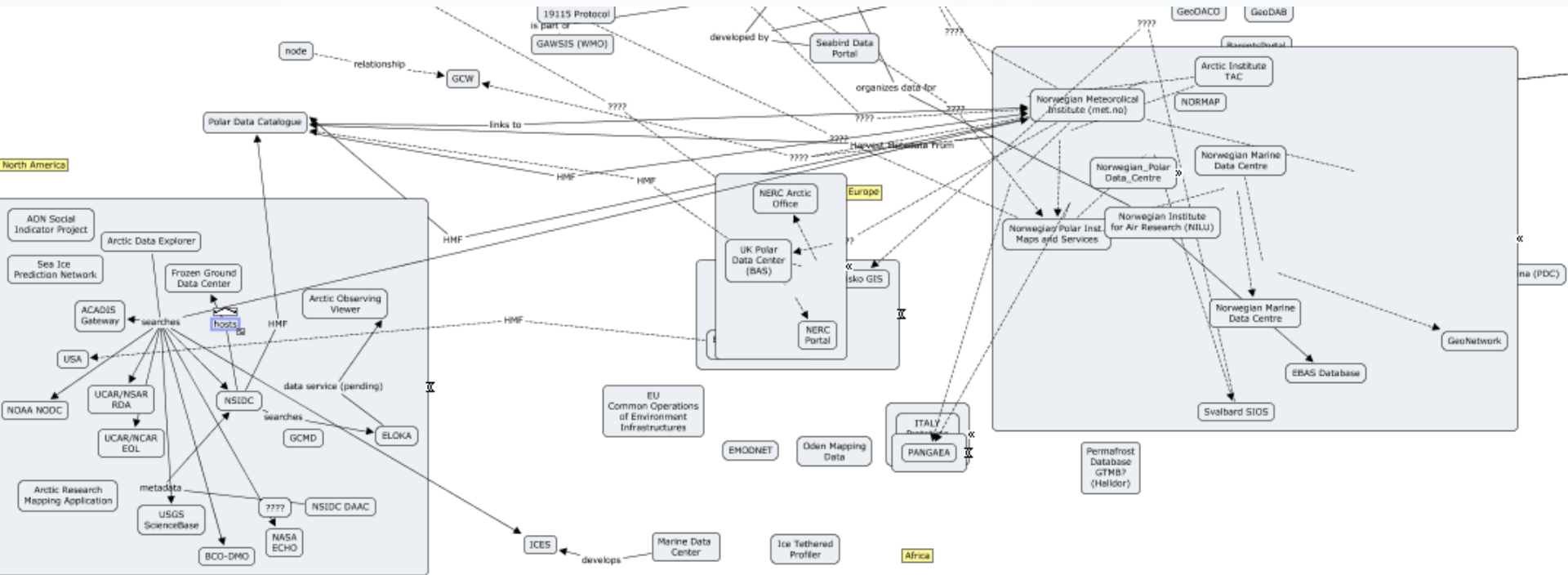
1. Documenting and understanding the Arctic data management ecosystem
2. Identifying and promoting common metadata elements
3. Engaging in data citation and publication movement
4. Communications, outreach and partnership

Documenting and understanding the Arctic data management ecosystem

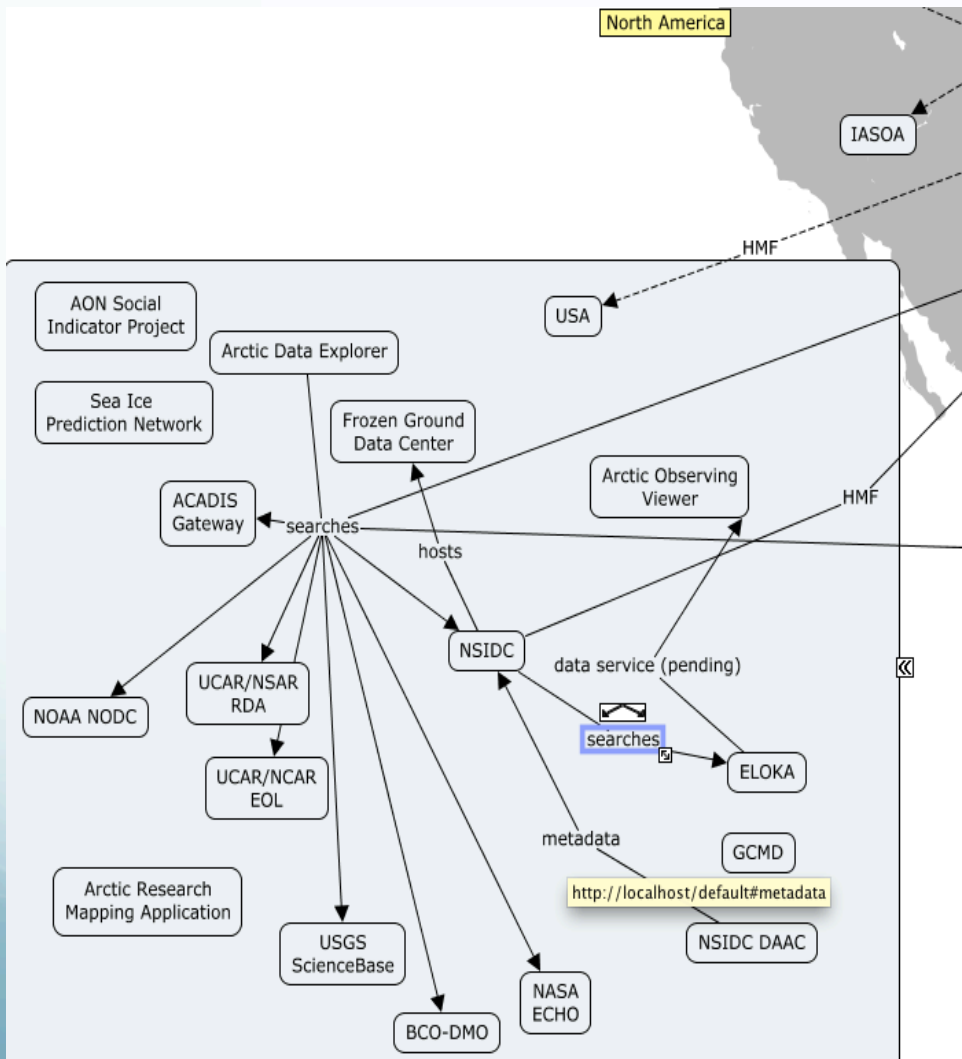
- Foundational Work Package
- Goal of understanding system elements, relationships and structure
- Network/concept map & geographic map
- Visual product... built on “linked data” database
- Initially using manual methods to build database – over time this can be complemented by (semi-)automatic methods



Building the “Map”



Complex System



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³Canadian Cryospheric Information Network, University of Waterloo, 200 University Ave. W., Waterloo, ON, N2L 3G1, Canada

⁴Research Data Alliance, Rensselaer Polytechnic Institute, Troy, NY 12180, USA

⁵CEN: Centre d'Etudes Nordiques, Laval University, Quebec City, G1V 0A6, Canada

⁶NIOZ Royal Netherlands Institute for Sea Research, Texel, The Netherlands

⁷Institute of Alpine and Arctic Research, University of Colorado, Boulder, CO 80309-0450, USA

⁸Nuna Technologies, PO Box 1483, Homer, AK 99603, USA

⁹Geomatics and Cartographic Research Centre, Carleton University, 1125 Colonel By Dr., Ottawa, ON, K1S 5B6, Canada

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ABSTRACT

Data management is integral to sound polar science. Through analysis of documents reporting on meetings of the Arctic data management community, a set of priorities and strategies are identified. These include the need to improve data sharing, make use of existing resources, and better engage stakeholders. Network theory is applied to a preliminary inventory of polar and global data management actors to improve understanding of the emerging community of practice. Under the name the Arctic Data Coordination Network, we propose a model network that can support the community in achieving their goals through improving connectivity between existing actors.

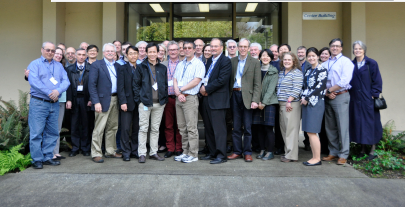
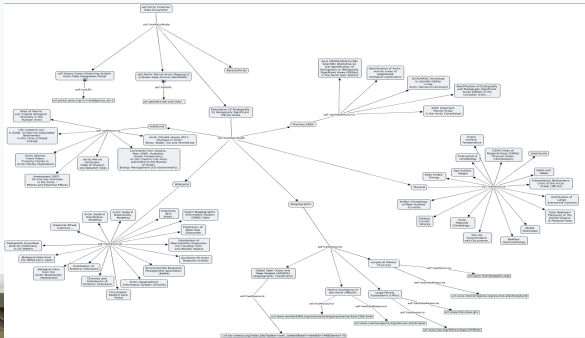
Keywords: Data management, Network, Arctic, Antarctic, International Polar Year, Interoperability, Data sharing

1 INTRODUCTION

Well defined, efficient, and sustainable data management is a prerequisite to moving Arctic observing initiatives from a loose collection of individual projects and missions to a unified observing system advancing a common

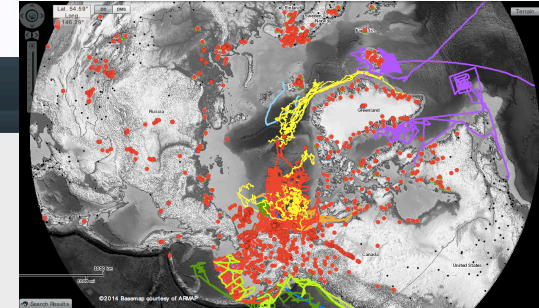
Developing Partnerships with Communities of Practice

Arctic Fisheries Science



Integrative Projects

Arctic Observing

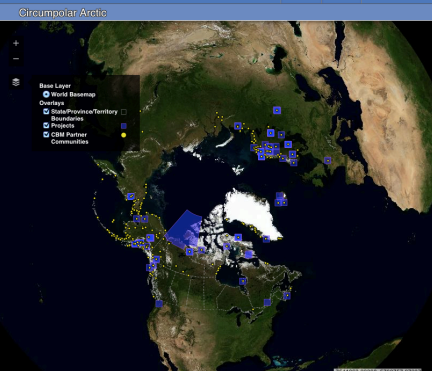


<http://www.arcticobservingviewer.org/>

Regional Initiatives

TK & CBM

Atlas of Community-Based Monitoring & Traditional Knowledge in a Changing Arctic



Dynamically Published

Arctic Data Ecosystem Map

The objective of this activity is to establishing a map of the arctic data management "ecosystem" or "universe". This will be both a concept map indicating projects, services and relationships as well as a geographic map indicating location. The effort was started during the first meeting of the ADC in Potsdam, Germany, November 2014 and is an ongoing activity. The roadmap for this project includes establishing a linked open data end point that will allow people to query the database (i.e. using SPARQL).



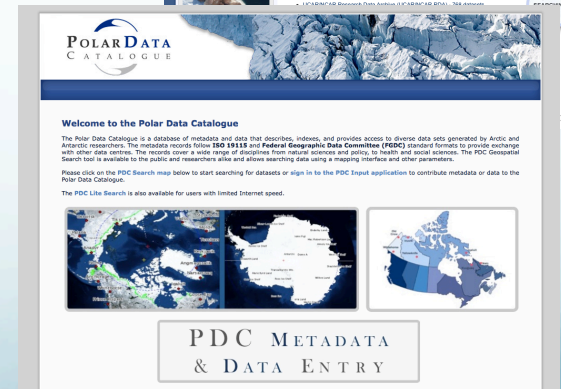
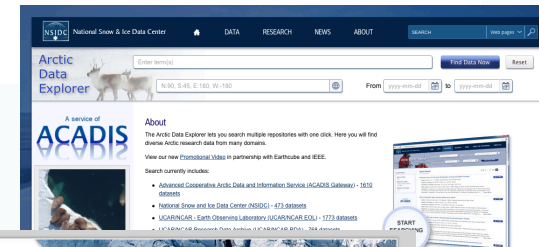
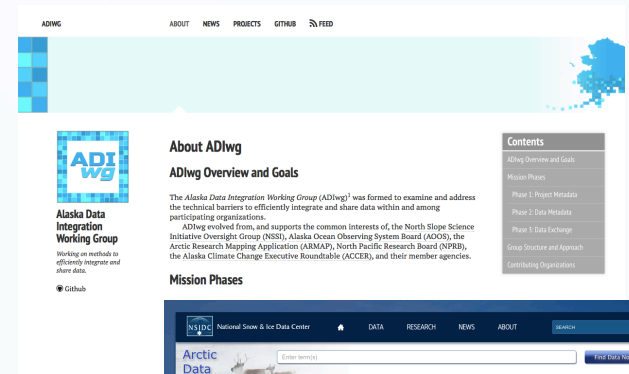
The first version live version of the concept map will be released here by the end of 2015

Task lead: Dr. Peter Pulsifer, NSIDC/ELOKA, University of Colorado, USA



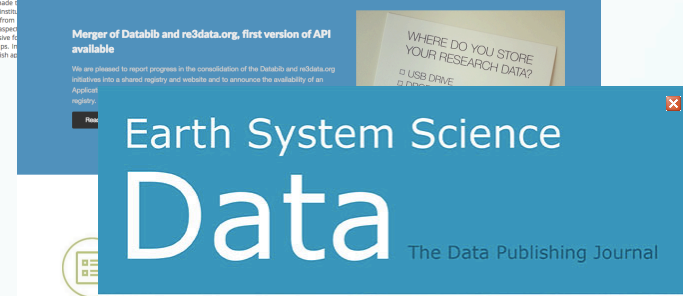
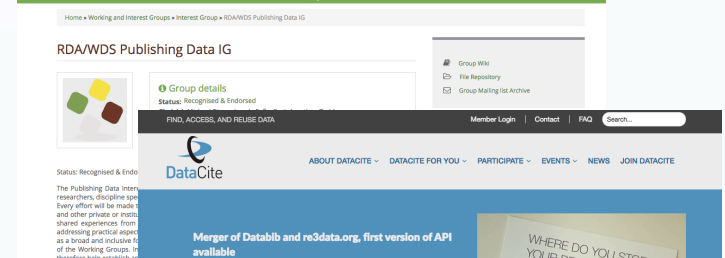
Identifying Common Metadata Elements

- Important need identified by the broader polar and global science and data management communities
- Many existing projects
- ADC working to identify existing consensus as a starting point for international specification
- Led by: Julie Friddell, Canada



Engaging in Data Citation and Publication Movement

- Data citation and publication movement rapidly advancing
- ADC research revealed many existing resources available
- Summary document for polar research under development (June 2015)
- Led by: Alex Tate, UK



Polar Data Forum II:

International Collaboration for Advancing Polar Data Access and Preservation

Search this site

27-29 October 2015

University of Waterloo, Waterloo, Ontario, Canada

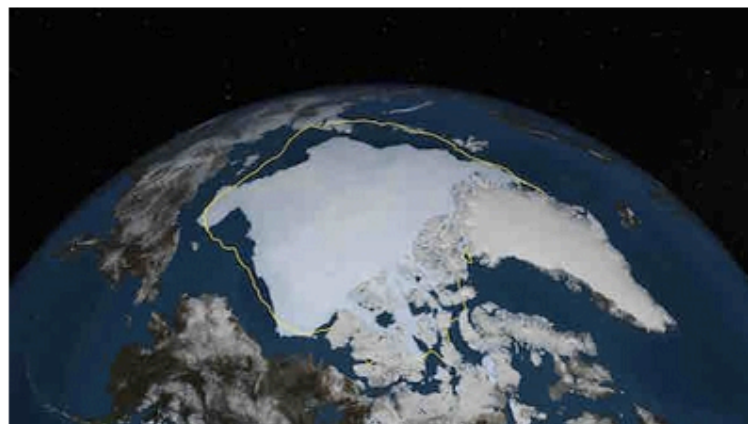
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Welcome to the Polar Data Forum II website!

Scope of the Forum

<http://www.polar-data-forum.org/>

Governments, scientists, and society are increasingly recognizing the importance of data and proper data management. The polar science community has been a leader in international, interdisciplinary data management with a history beginning with the International Polar Year (IPY) programs starting in 1881-1884. Advances in open, networked, and ubiquitous digital technologies come at the same time as unprecedented changes in the polar regions. Together, these shifts present an urgent opportunity for the polar science community, Arctic residents, and other stakeholders to establish a clear global vision, strategy, and action plan to ensure effective stewardship of and access to valuable Arctic and Antarctic data resources.



Arctic Sea Ice minimum, September 2013 (NASA)



SAON
SUSTAINING ARCTIC
OBSERVING NETWORKS



Related documents

- [First Circular](#) and [Summary](#) –posted 22 April 2015

Important dates

- Registration and Abstract Systems

The Second Polar Data Forum (PDF II) will be held October 27 - 29, 2015 in Waterloo, Ontario, Canada to build on successes

Next Steps



- Finalize Memorandum of Cooperation with Standing Committee on Antarctic Data Management
- Launch of new web site
- Establishment of other collaborative infrastructure
- Completion of current workplan
- Continue establishing partnerships (i.e. RDA, GEO, ESIP etc.) + engagement in major meetings e.g. AOS