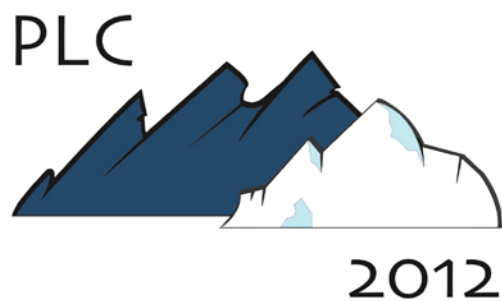# Cold Regions: Pivot Points, Focal Points

Proceedings of the 24th Polar Libraries Colloquy

June 11–14, 2012
Boulder, Colorado, United States

edited by
Shelly Sommer and Ann Windnagel

colloquy organized by
Gloria Hicks and Allaina Wallace, National Snow and Ice Data Center
Shelly Sommer, Institute of Arctic and Alpine Research

December 2012

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Photo of participants
24th Polar Libraries Colloquy

In front of the ATLAS Center on the University of Colorado campus, where the Colloquy was held. *Front row:* Yoriko Hayakawa, Sue Olmsted, Lisa Adamo, Erin Palmer, Shannon Vossepoel, Sandy Campbell, Hilary Shibata, Gloria Hicks, Susanna Parikka, Jo Milton. *Middle row:* Elaine Maloney, Heidi McCann, Flora Grabowska, Ron Inouye, Chris McNeave, Suzanne Larsen, Laura Kissel, Katherine Arndt, Daria Carle, Sharon Rankin, David Ongley, Bolethe Olsen, Lynn Yarmey. *Back row:* Shelly Sommer, Liisa Hallikainen, Vibeke Jakobsen, Charlotte Andersen, Berit Jakobsen, Marcel Brannemann, Ivar Stokkeland, Ross Goodwin, Garrett Campbell. (Photo credit: Peter Gibbons, NSIDC.)

Opening and closing speakers
24th Polar Libraries Colloquy

Keynote speaker: **Dr. James W. C. White**
"Climate is changing faster and faster"

"Every generation faces fantastic challenges. Sustainability is our challenge."

Dr. James White is a noted climate scientist working on abrupt climate change, sea ice and sea-level changes, and carbon cycles.

At the University of Colorado Boulder, Dr. White is Professor of Geological Sciences, a Professor in the Environmental Studies Program, and Fellow and Director of INSTAAR. He is one of Web of Science's most highly cited scientists (one of the top 1% most highly cited authors in his field). He received his PhD from Columbia University in 1983.

Dr. White's research interests are broad but revolve around the use of environmental stable isotope ratios that tell us about paleoclimate, biogeochemistry, and global change. His research includes modeling the global carbon cycle, reconstructing past environments using ice cores and isotopes in organic materials, and tracing groundwater flow and recharge.

Since the 1980s, his research has helped to show that large climate changes tend to occur as abrupt shifts in mode probably driven by internal adjustments in the Earth climate system (rather than gradual adjustments to changing external conditions like energy received from the sun). Shifts of more than 10 ˚C in mean temperature in less than a human lifetime are common in the paleoclimate record, and serve as a warning that adaptation to future climate changes may not be easy.

In his keynote talk, Dr. White showed the basic science behind climate change. He explained clearly and succinctly how the climate system works at the global scale and outlined what changes are imminent. We've reached a point of dominance on the planet and are at a moment of reckoning: will we deal well or ill with the changing shape of our world? Jim challenged us to create a sustainable world in the face of global change: 1) by bringing ethics – not just economics – into the picture and 2) by being nicer to each other (through empowering women, etc.) He framed the issue of sustainability as one of human responsibility.

See more online
instaar.colorado.edu

*Closing speaker: **Leilani Henry***
 "We are all Antarctica"

"What I learned from this is that we're all in the same boat, literally."

We are All Antarctica is a story about Ms. Henry's father, George W. Gibbs, Jr., and his adventures as the first person of African descent to set foot on the continent of Antarctica. He sailed on the *USS Bear* from 1939–1941 on Admiral Byrd's third expedition to the South Pole. Gibbs went on to a life of strong community service, paving the way for not only people of color in the community of Rochester, Minnesota, but for all people to become more human, serve their community, and appreciate differences. As the lowest ranked person on the ship, he was honored for his contribution at a time when people with dark skin were considered less than human.

We are All Antarctica is also the story of Ms. Henry's own exploration, following along with the entries Mr. Gibbs left in his journals. It took her across the country and around the world, to the Byrd Polar Center, the Smithsonian, the homes of explorers, and eventually to Antarctica in a tangled web of connections and community.

Ms. Henry's talk was sponsored by Hollinger/MetalEdge.

See more online
http://southcontinent.blogspot.com/
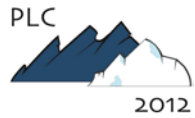
Session 1
Arctic higher education and library networks

University of the Arctic Digital Library: Update 2012
Sandy Campbell

University of Lapland going to be really Arctic university – challenges for the library
Susanna Parikka

University of the Arctic Digital Library: Update 2012

Sandy Campbell

John W. Scott Health Sciences Library, University of Alberta, Edmonton, Alberta, Canada

Abstract

The University of the Arctic Digital Library project is an ongoing project in which PLC takes an interest. Some digital library functions are now operational at a level, integrated into the Arctic Virtual Learning Tools environment. This session will report on the 2011 meeting in Tornio/Kemi and Rovaniemi, Finland and review the developments to date and the future expectations for the library. A proposal has been developed for the June 2012 Council Meeting to establish a lead institution that would be responsible for the Digital Library. Developments in the University of the Arctic, itself, will also be discussed.

Background

The University of the Arctic is a virtual university that began in 2001 and currently has more than 120 members from around the Arctic region. Many members of the Polar Libraries Colloquy work in post-secondary institutions that are members of the University of the Arctic. PLC joined the University of the Arctic in 2005 and has continued since that time to work in an advisory capacity with UArctic on information issues, most notably the development of a digital library. The digital library project was discussed at the Colloquy in Rome (Campbell and Snellman 2008, 64-65), during the joint PLC/UArctic meeting in Edmonton, Canada in 2008 (Dana 2010, 131-132).The ongoing work on the project has been reported in the Polar Libraries Bulletin (Campbell 2009, 6; Campbell 2009, 2-4; Campbell 2007, 7-8) and at the last PLC meeting (Campbell 2011, 125).

University of the Arctic Council Meeting 2011 – Kemi/Tornio and Rovaniemi, Finland

In June 2011, I represented PLC at the Council Meeting of the University of the Arctic, which took place initially at Tornio/Kemi, Finland and then moved to Rovaniemi, Finland. The UArctic Digital Library has been developed as a facet of the Arctic Virtual Learning Tools (VLT) environment developed by the UArctic VLT team with funding from The Council of Nordic Ministers. In Tornio, I attended the VLT team meeting, where we discussed some of the technical details of how the Digital Library would work within the VLT. The VLT, including the library, is housed on the Arctic Portal servers at the University of Akureryi in northern Iceland. In addition to supplying a search interface, Arctic Portal also supplies a digital repository service.

At the subsequent Council Meeting at Rovaniemi, it became apparent that further discussions about a digital library at the Council level would be inappropriate without a UArctic member university volunteering to take the lead in developing the library. Because there was no lead institution in place at the time, there was no break-out session for the discussion of the Digital Library. Leena-Kaisa Viitanen (Arctic Portal) included the Digital Library in her presentation to the Council about the accomplishments of the VLTproject.

Subsequent discussions and developments

Since the Council Meeting, the VLT group has met numerous times through Skype to continue to work on defining what an institutional lead for the digital library might be asked to undertake. The goal of this work was to place a call for volunteers before the 2012 Council Meeting, to find member institution that would take the lead on the digital library project. Members of the VLT team have made a further presentation on the project, including the digital library at the IPY Conference in Montreal in April, 2012.

In the interim two events impacted this process. First the Canadian government severely reduced its funding to University of the Arctic(Foreign Affairs and International Trade Canada 2011), preferring to direct that funding to the three "northern colleges". This precluded any Canadian university member from seeking funding to undertake leadership on the project.

Second, on a more positive note, PLC members will have been aware of the launch by The University of Tromsø Library (UTromsø) of the High North Research Documents service (University of Tromsø Library 2012). Following the launch in January, 2011, discussions took place between UArctic and UTromsø about how UArctic might make use of this service. While High North is primarily a metadata harvester, UTromsø Library expressed an interest in integrating High North with the UArctic Digital Library. A small pilot project is now underway in which UTromsø Library is testing the adding of content and metadata to the Digital Library and repository housed by the Arctic Portal. The test will serve to document processes and determine costs.

The 2012 UArctic Council Meeting is being held at UTromsø, (simultaneously with the 2012 PLC meeting). More testing and study needs to be done to determine whether or not UTromsø Library will be able to take the lead on the UArctic Digital Library. UTromsø Library received permission seeking funding from a UArctic-specific fund to

support an ongoing project investigation. If UTromsø Library is able to take on the lead role for the Digital Library, a proposal to that effect would be put before the UArctic Council at its 2013 meeting, for approval by the membership.

Any plan for a member university to take the lead with the Digital Library would include an advisory board, which would include librarians from member institutions and a PLC representative.

The UArctic Digital Library

www.vlt.is

UArctic Library

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Browse the items in the repository by subject.

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Policy for use of material in this repository.

UArctic Library supports OAI 2.0 with a base URL of http://library.vlt.is/cgi/oai2

UArctic Library

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		☐ Other	

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UArctic Library

BCS 100 Module 7: Climate Change

Boone, Richard D. (2011) *BCS 100 Module 7: Climate Change.* [Teaching Resource]

PDF (BCS 100 module 7, part 1, 2011)
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PDF (BCS 100 Module 7, Part 2, 2011)
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Maps
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Databases

Abstract

This module will give students an overview of the factors that cause climate change, the shortterm and longer-term records for global and Arctic air temperature, and forecasted temperatures for the next century. As well, some of the observed and predicted biophysical impacts of climate change are discussed.

Item Type:	Teaching Resource
Related URLs:	
Uncontrolled Keywords:	BCS, 100, module 7, climate, change
Subjects:	Website
Divisions:	UNSPECIFIED
Date Deposited:	04 Nov 2011 10:36
URI:	http://library.vlt.is/id/eprint/45

Actions (login required)

View Item

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BCS 100: Introduction to the Circumpolar North
University of the Arctic

MODULE 7 Climate Change (Part 1)

Developed by
Richard D. Boone
Department of Biology & Wildlife and Institute of Arctic Biology
University of Alaska Fairbanks

Overview

This module will give students an overview of the factors that cause climate change, the short-term and longer-term records for global and Arctic air temperature, and forecasted temperatures for the next century. As well, some of the observed and predicted biophysical impacts of climate change are discussed.

Learning Objectives & Outcomes

Upon completion of this module you should be able to:

1. Differentiate between weather and climate.
2. Describe the major causes of climate change.
3. Compare the general patterns of Arctic and global temperatures during the 20th century with those in the more distant past.
4. Identify the sources and limitations of temperature and precipitation data.
5. Project the biophysical and societal impacts of climate change.

Required Readings

Gregoire, L. 2008. "Cold Warriors," *Canadian Geographic*, October 2008, pp. 34-50.

Module Appendix A: Sources for High Quality Information on Climate Change / How to Evaluate the Quality of Climate Change Information.

Key Terms and Concepts

• Aerosols
• Albedo
• Climate
• Earth's orbital cycles
• Energy balance
• Feedback loops
• Greenhouse gases
• Proxy data
• Radiative forcing factor
• Reflectivity

1

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—. 2009. UArctic digital library project update. *Polar Libraries Bulletin* 62: 6.

—. 2007. University of the arctic council meeting report, *Polar Libraries Bulletin* 59 (Fall): 7–8.

Campbell, Sandy, and Outi Snellman. 2008. UArctic librarians open forum. Paper presented at Building Polar Networks, a strategy for the future: 21st Polar Libraries Colloquy, Rome, Italy.

Dana, Kathleen Osgood. 2010. Virtual UArctic library: Proposal on behalf of UArctic teachers. Paper presented at Currents of Change: The Future of Polar Information: 22nd Polar Libraries Colloquy Proceedings, Edmonton, Alberta, Canada.

Foreign Affairs and International Trade Canada. Summative evaluation of the northern dimension of Canada's foreign policy. 2011 [cited April 26, 2012]. Available from http://tiny.cc/b03ddw

University of Tromsø Library. High north research documents. 2012 [cited April 26, 2012]. Available from http://highnorth.uit.no/

University of Lapland going to be really Arctic university – challenges for the library

Susanna Parikka

Library Director, Lapland University Consortium Library, University of Lapland

Abstract

This paper is about changes in higher education library organizations in Lapland and about how arctic issues will be dealt with in a new situation.

It is stated in the University of Lapland strategy that "The University of Lapland will implement cutting-edge research on the Arctic and the North and strengthen its research focus on these regions." The University of the Arctic (UArctic) is a cooperative network of universities, colleges, and other organizations committed to higher education and research in the North. UArctic activities are currently implemented and supported by an International Secretariat hosted by the University of Lapland.

The three institutions of higher education in Lapland: University of Lapland, Rovaniemi University of Applied Sciences and Kemi-Tornio University of Applied Sciences have formed **The Lapland University Consortium (LUC)**. LUC is a unique form of strategic alliance in Finland, as it comprises a union between a university and two universities of applied sciences. **Lapland University Consortium Library** is a new organisation from 1.1.2010, a common library for LUC. LUC Library consists of ten libraries in three towns. LUC Library serves the Lapland area and it's also a part of the international scientific community and the global library network.

LUC Library as a whole has to answer to the arctic challenge. Arctic issues are an important specialty of the library. International library cooperation, both on Barents and Arctic level, is part of that. The Arctic and Antarctic electronic collections are available in MetaLib portal. There is cooperation with teaching via integrating information literacy in teaching process, also in Arctic Studies Program. LUC Library has a common catalogue and a transport system for materials between the ten libraries.

Arctic Centre Library is now a unit of LUC Library and has a special arctic responsibility, the library staff there has arctic expertise. Also arctic collections (e.g. the new national Antarctica collection) are placed there. There are book exhibitions relating to current arctic research in the Arctic Center including posters edited in cooperation with scientists and library staff.

As the University of Lapland is actively directing to international cooperation, so does also the LUC Library with the possibility for European Union Arctic Information Centre.

University of Lapland

University of Lapland is the northernmost university in Finland and in the European Union. The University is located in the city of Rovaniemi (http://www.rovaniemi.fi/Intro.iw3?lang=en) on the Arctic Circle, Lapland, Finland.

University of Lapland is an international, multidisciplinary university. As a research-based higher education institution, the teaching and research facilities offer students and scholars the opportunity to pursue academic excellence, at all levels – all the way up to PhD studies – in the fields of arctic issues, tourism, art and design, law, education, and the social sciences.

Originally established in 1979 to provide higher education opportunities for those living in the far reaches of northern Finland, the university has now become an important educational institution for the entire country. The University of Lapland has turned out every fourth lawyer, every third university-educated expert in art and design, close to ten percent of the social scientists, and many talented educational professionals in Finland.

The university community consists of around 4800 students and around 6400 adult students from Open University, continuing education and University of the Third Age (lifelong learning). The university has 641 employees, 68 professors and 134 docents. The budget for 2012 is 53,3 million Euros. In recent years over 20 doctoral degrees and over 400 master's degrees have been achieved annually.

Profile areas of the University of Lapland are Arctic and Northern research, and tourism research.

It is stated in the University of Lapland strategy that, "The University of Lapland will implement cutting-edge research on the Arctic and the North and strengthen its research focus on these regions." In the vision part of the strategy it is stated among others that, "In 2020 the University of Lapland will be an international institution with a distinctive academic and artistic profile. The University will have a profile distinguished by high-quality, international research on the people, societies and environment in the Arctic and the North and on the interaction of these elements."

The University of the Arctic (UArctic) activities are currently implemented and supported by an International Secretariat hosted by the University of Lapland. UArctic is

a cooperative network of universities, colleges, and other organizations committed to higher education and research in the North.

Lapland University Consortium

There are three institutions of higher education in Lapland: University of Lapland, Rovaniemi University of Applied Sciences and Kemi-Tornio University of Applied Sciences. These three institutions have formed **The Lapland University Consortium (LUC)**. LUC is a unique form of strategic alliance in Finland, as it comprises a union between a university and two universities of applied sciences.

Through this co-operation, these higher education institutions are able to offer enhanced quality in expertise and future prospects to benefit students, personnel, and the surrounding society. The Lapland University Consortium has been established to ensure the possibility to continue conducting and offering nationally and internationally high-grade research, education, and art in some of the northernmost higher education institutions in Europe.

The mutual area of expertise lies within the fields of tourism and culture. The higher education institutions have co-operated with vocational schools of the area, and have set up two joint institutes: the Lapland Institute for Tourism Research and Education and the Institute for Northern Culture.

The university and the two universities of applied sciences operate as independent, accountable higher education institutions within the mutually approved strategic principles.

Lapland University Consortium Library

Lapland University Consortium Library is a new organisation from 1.1.2010, a joint library for Lapland University Consortium. LUC Library comprises the libraries of University of Lapland, Arctic Centre, Kemi-Tornio University of Applied Sciences, Rovaniemi University of Applied Sciences and Lapland Institute for Tourism Research and Education. These library units have ten library sites in three towns: Rovaniemi, Kemi and Tornio. LUC Library serves the Lapland area and it's also a part of the international scientific community and the global library network.

LUC Library, as all libraries in Finland, is open for all. The basic use of the library´s services and resources is free for everybody. LUC Library is the only academic library in Lapland area (1/4 of Finland's area and 3.5 % of its population). The customers vary from students on all educational levels, teachers and researchers to companies, tourists and general public.

LUC Library was formed with a mutual agreement. It is governed by a board with members from all three institutions. Lapland University Consortium is a strategic alliance, not a united organization, so it can't act as an employer. Every member of library staff has one of the universities as her employer. Accordingly there is staff from three different organizations in the library. There are two different collective labour agreements, three organizational cultures and three ways and habits for doing something.

LUC Library in a nutshell (statistics 2011)
- Serves 11.000 students and 1200 personnel of the universities as well as their partners, regional economy and the general public.
- 385 000 copies of printed publications, 4 800 titles of printed journals, 506 000 eBooks, 40 000 eJournals, hundreds of databases.
- Staff 54 persons.
- Budget 4,4 million Euros.
- 1 020 742 loans and renewals.

LUC Library and arctic issues

LUC Library as a whole has to answer to the arctic challenges. All three institutions of higher education emphasize arctic issues in their strategies and activities. Arctic issues are a national important specialty of the library. International library cooperation, both on Barents and Arctic level, is part of that. Libraries that form the LUC Library now have been independent libraries before and have a long history in participating in international cooperation in different forms: building personal contacts and wider contact nets, carrying out different projects (e.g. Berenice-project), organizing and participating in conferences like Barents Library Conference and Polar Libraries Colloquy. In the LUC Library the Arctic Centre Library has had a very strong role in all this. Arctic Centre Library has particularly built contacts and contact nets, a specialty being north-west Russia and Komi. Arctic Centre Library (like two other units of LUC library) is a member of the northern information service Lapponica and their joint

internet service. The service collects Lapland experts from libraries, museums and research institutes.

A challenge: Long distances

To win one of the permanent arctic challenges, long distances, LUC Library has an online common catalogue for all materials. This has raised the visibility of all materials, also the arctic materials. And the Arctic Centre Library is better known among the catalogue users. The arctic collections are placed in the AC Library. Among the collection is to mention as an example the national Antarctica collection, quite recently received from University of Helsinki.

Electronic materials, among others The Arctic and Antarctic electronic collections, are available everywhere via MetaLib portal for users with university affiliation. It provides them with access to a variety of electronic information resources, such as e-books, reference databases, library catalogues and e-journals.

LUC Library has a common transport system for printed materials between the ten library sites. It consists of two separate systems: a system between three cities (Rovaniemi, Kemi, Tornio) and a local system in every university. The common transport system has raised the circulation of all materials, even Arctic materials. But the distant learning students need something more. Lapland is sparsely populated, so we have also a common transport system with the Lapland public libraries to get the printed materials to the students living far away. As well, they can use all our electronic resources there with a remote access. The students can also choose an IL-course totally on the internet and information service is available as online chat, too. In a common project we trained the librarians from public libraries to assist our distant students with our services.

A challenge: International students and IL

Information literacy training is very highly valued in all the three institutions of higher education. Now there is more and more cooperation with teaching and the trend is to integrate information literacy in teaching process. That is also case for the University of Lapland's Arctic Studies Program, which has a special class of information literacy for this multidisciplinary program. And even for some years the international students have had the opportunity to choose arctic information sources as a specialty on their IL-course. IL-courses for international students are challenging. How to provide students

with different backgrounds from many countries and considerable variations in their IL skills with good knowledge of our Arctic e-resources? There are three kinds of international students at University of Lapland: exchange students, international degree students and doctoral students.

A challenge: Scientific information and the world outside

Arctic Centre Library is now a unit of LUC Library and has a special arctic responsibility. Inside Arctic Centre the AC Library staff has a good cooperation with AC scientists and other library customers. E.g. there are book exhibitions relating to current arctic research in the Arctic Center including posters edited in cooperation with scientists and library staff. Exhibitions are one way of reaching the public. A special task for universities and their libraries is to disseminate scientific information to the surrounding society. This is a challenge: how to reach the world outside with Arctic information in the future?

One answer might be in increasing cooperation. The AC Library has always been very international and that is natural. The library staff there has arctic expertise and despite of possible future changes in premises or organizational structures I deeply hope that we will have resources to keep that staff, and develop and strengthen the expertise. A very valuable part of that for the whole library are the personal contacts and networks created through years. LUC Library is willing to develop that cooperation, e.g. to take part in UArctic's Virtual Library. And we are glad to hear of the information harvesting project started in Troms. University of Lapland has now a tool for e-publishing and little by little we will develop our Open Access-publishing, also Lapland University Press (LUP) has started e-publishing. I hope we can cooperate in disseminating our research results to the world.

As the University of Lapland is actively directing to international cooperation, so does also the LUC Library with the possibility for European Union Arctic Information Centre.
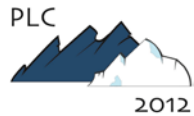
Session 2
Best practices in collecting, searching, and using digital resources

The network surrounding the Library of the National Institute of Polar Research (NIPR)
Yoriko Hayakawa

All you can get (?): Finding (full-text) information using a discovery service
Marcel Brannemann

Breaking the ice: integrating information literacy into Antarctic Studies
Alison Hicks

The network surrounding the Library of the National Institute of Polar Research (NIPR)

Yoriko Hayakawa
National Institute of Polar Research Library, Research Organization of Information and Systems

Abstract

This presentation introduces NIPR Library resources and subscriptions, and places the NIPR Library in the context of its extensive academic library community in Japan. It concludes with an interesting find from the collection: books containing handwritten notes between famous scientists.

Presentation
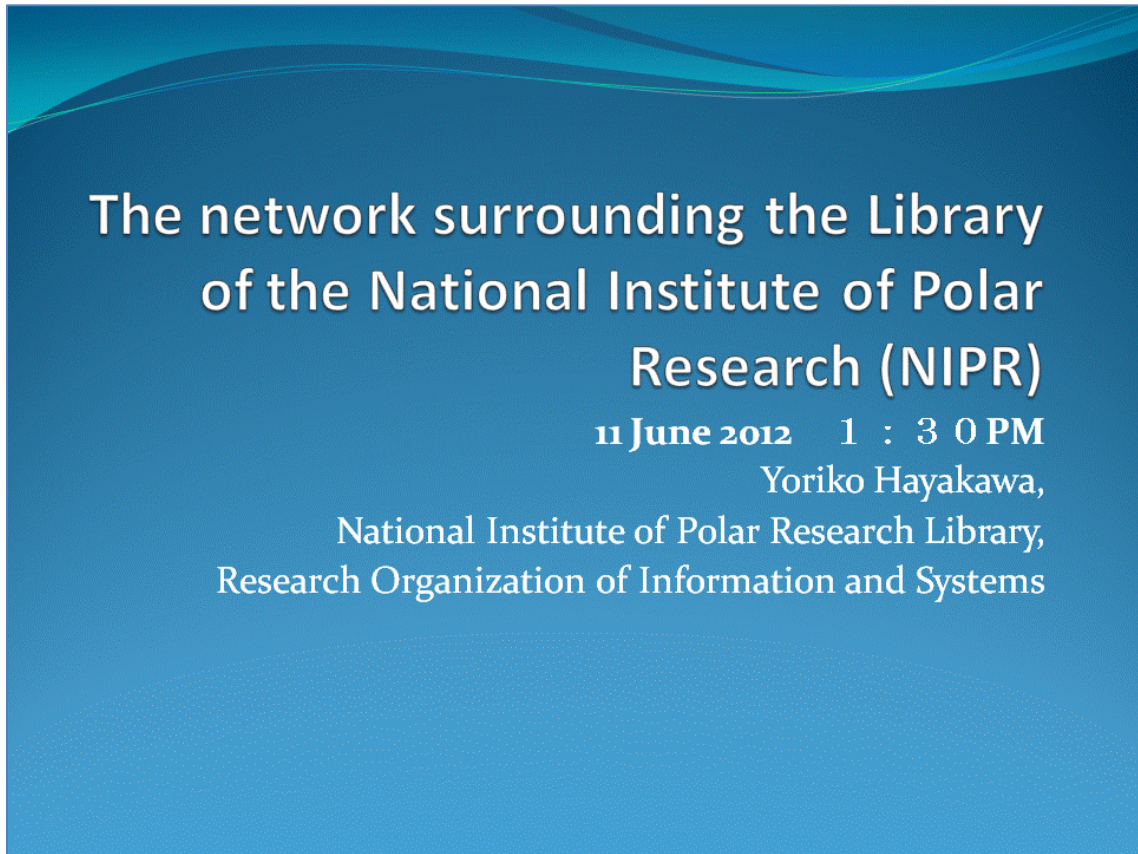
Today's story

First, I will introduce our library resources:
- The library has some NIPR subscriptions.
- The library also has some ROIS subscriptions. I will show them lates.
- The branch library of the Graduate University for Advanced Studies (SOKENDAI) also has some subscriptions.
- We can subscribe to e-journals platforms as a member of JANUL.

The NIPR library's position in Japanese Academic Libraries.
- ROIS is the most powerful at relationship activities in Inter-University Research Institute Corporation
- The most useful communication and network for NIPR is SOKENDAI libraries.
- JANUL has become JUSTICE.
- JUSTICE is a big consortium of Japanese Academic Library.

I found an old book containing handwritten notes between famous scientists in our collection.

Resources in our library

Books	Japanese	8,590	24,465
	Other languages	15,875	
Booklets	Japanese	1,936	3,520
	Other languages	1,584	
Bound journals	Japanese	3,111	25,799
	Other languages	22,688	
Total			53,784

Books are written in several languages

Text language	Books
Japanese	8,590
English	11,531
Russian	1,976
German	276
French	258
Norwegian	73
Spanish	53
Chinese	42
Italian	33

Resources in our library: Journals

	Subscribing titltes	Current titles	Holding titles	Available e-journal titles
Japanese	31	351	921	441
Other languages	94	553	2,910	4,686
Total	125	904	3,831	5,127

How many E-journals are available in NIPR LAN in 2012?

Name of platform	E-journals	Our position

Several publishers
  Nature, Am. Meteorol.Soc.
  Am. Geophysical Union
	235	As a library of NIPR or ROIS

Oxford Univ. Press	165	As a library of NIPR in JANUL Consortium
Elsevier SD Standard Collection	194	As a branch library of The Graduate University for Advanced Studies (SOKENDAI)
Wiley Online Library	1,250	As a branch library of SOKENDAI
SpringerLink	1,710	As a branch library of SOKENDAI
BioOne 1	105	As a branch library of SOKENDAI
JSTOR(Arts & Sciences I-III,VII, Ecology and Botany)	1,027	As a branch library of SOKENDAI
Total	4,686	

What kinds of databases can our users use?

Name of plattform	Our position
AIREX	As a library of NIPR corp. with JAXA
Arctic and Antarctic Regions	As a library of NIPR
Web of Science from 1971- includes JCR	As a branch library of ROIS
SCOPUS	As a branch library of SOKENDAI in JANUL Consortium
Zentralblatt MATH	As a branch library of ROIS
JapanKnowledge	As a branch library of ROIS
Link Resolver: SFX	As a branch library of ROIS

E-journal titles list at NIPR 1/3

- Am. Meteorological Society
  - Bulletin of the American Meteorological Society
  - Journal of Applied Meteorology and Climatology
  - Journal of Atmospheric and Oceanic Technology
  - Journal of the Atmospheric Sciences
  - Journal of Climate
  - Journal of Physical Oceanography
  - Monthly Weather Review

E-journal titles list at NIPR 2/3

- Am. Geophysical Union
  - Geophysical Research Letters
  - Global Biogeochemical Cycles
  - Journal of Geophysical Research A B C D E and F
  - Paleoceanography
  - Radio Science
  - Reviews of Geophysics
  - Water Resources Research
  - From 2012, G3: Geochemistry geophysics geosystems

E-journal titles list at NIPR 3/3

- Nature
  - Nature
  - Nature Geoscience
  - ISME Journal

Eighteen titles of other ROIS institute subscriptions are also available.

Nature Communications, Nature Biotechnology, Nature Cell Biology, Nature Genetics, Nature Immunology, Nature Medicine, Nature Methods, and others.

Two databases are available

Two databases,

Web of Knowledge 2012- and

SFX (e-journals management systems) are available.

These institutes have subscribed:

- National Institute of Informatics-ROIS
- The Institute of Statistical Mathematics-ROIS
- National Institute of Polar Research-ROIS

The National Institute of Genetics did not subscribe to them.
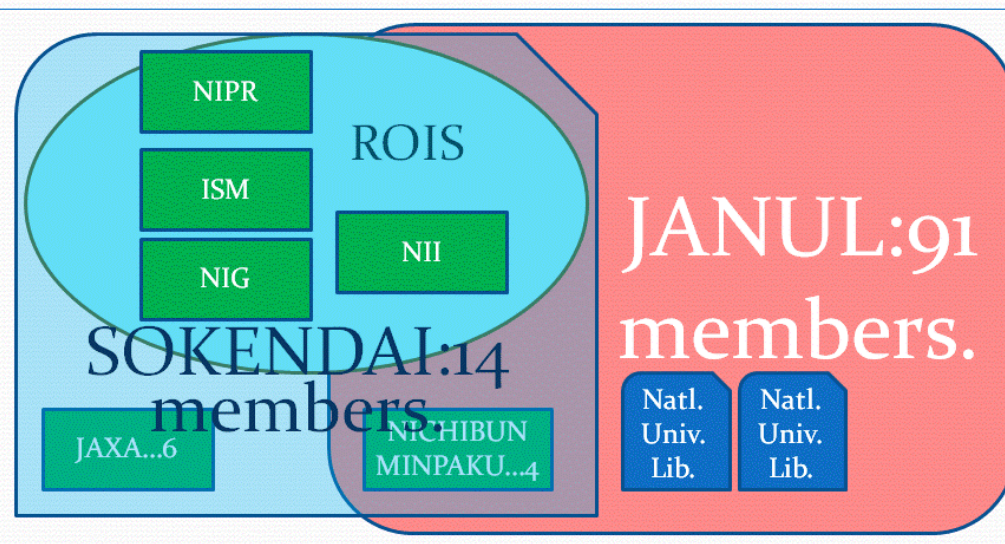
E-journal titles list at SFX

How many E-journals are available in NIPR LAN in 2012?

Name of platform	E-journals	Our position
Several publishers Nature, Am. Meteorol.Soc. Am. Geophysical Union	235	As a library of NIPR or ROIS
Oxford Univ. Press	165	As a library of NIPR in JANUL Consortium
Elsevier SD Standard Collection	194	As a branch library of The Graduate University for Advanced Studies (SOKENDAI)
Wiley Online Library	1,250	As a branch library of SOKENDAI
SpringerLink	1,710	As a branch library of SOKENDAI
BioOne 1	105	As a branch library of SOKENDAI
JSTOR(Arts & Sciences I-III,VII, Ecology and Botany)	1,027	As a branch library of SOKENDAI
Total	4,686	

Names of each organization

- ROIS-Research Organization of Information and Systems
- SOKENDAI-The Graduate University for Advanced Studies
- JANUL-Japan Association of National University Libraries
- JUSTICE-Japan Alliance of University Library Consortia for E-Resources

The NIPR Library position for e-journal subscription

NIPR

ISM

NIG

ROIS

NII

JANUL:91 members.

SOKENDAI:14 members.

JAXA…6

NICHIBUN MINPAKU…4

Natl. Univ. Lib.

Natl. Univ. Lib.

NIPR was established in 1973

1963 • A branch section of the National Science Museum

1973 • Inter-University Research Institute

1988 • NIPRbecame responsible for the SOKENDAI of Department of Polar Science
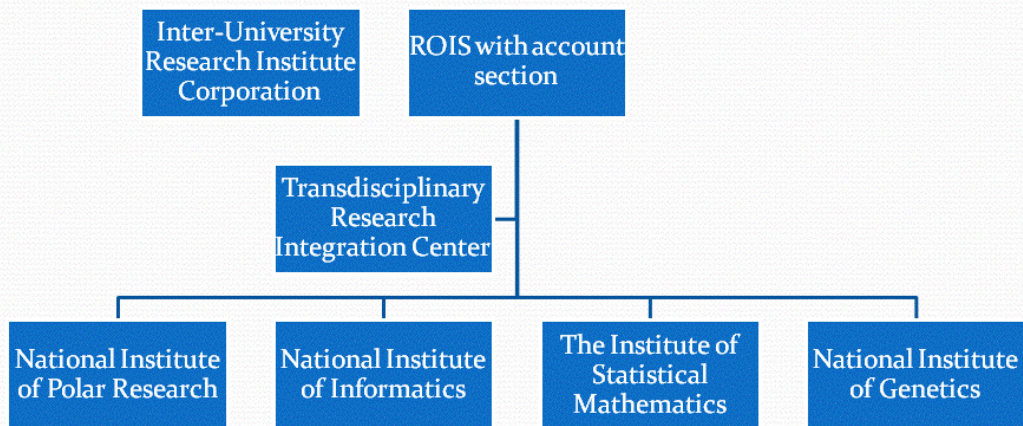
NIPR is an institute of ROIS

2004 • Research Organization of Information and Systems

2009 • NIPR moved to Tachikawa,
• NIPR Library – ISM Library

Research Organization of Information and Systems (ROIS)

Inter-University Research Institute Corporation	ROIS with account section

Transdisciplinary Research Integration Center

National Institute of Polar Research	National Institute of Informatics	The Institute of Statistical Mathematics	National Institute of Genetics

NIPR library has a relationship with SOKENDAI Library

1988
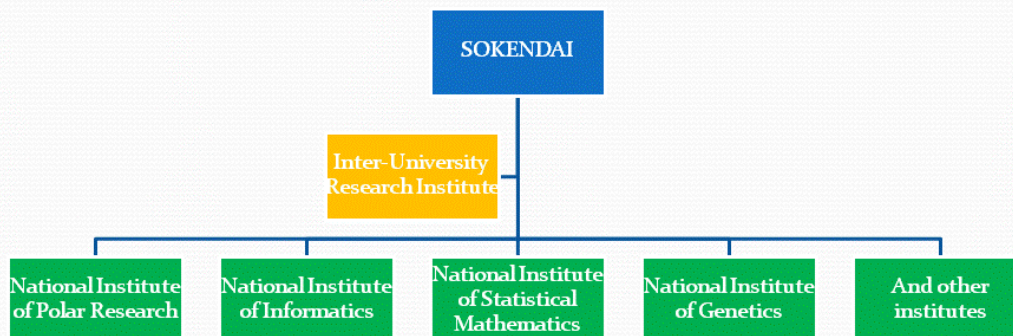- NIPR is responsible for the SOKENDAI of Department of Polar Science

1993
- SOKENDAI Library makes the network in each Department small library

2003
- SOKENDAI Library subscribes to e-journals platform through the JANUL contract.

The Graduate University for Advanced Studies (SOKENDAI)

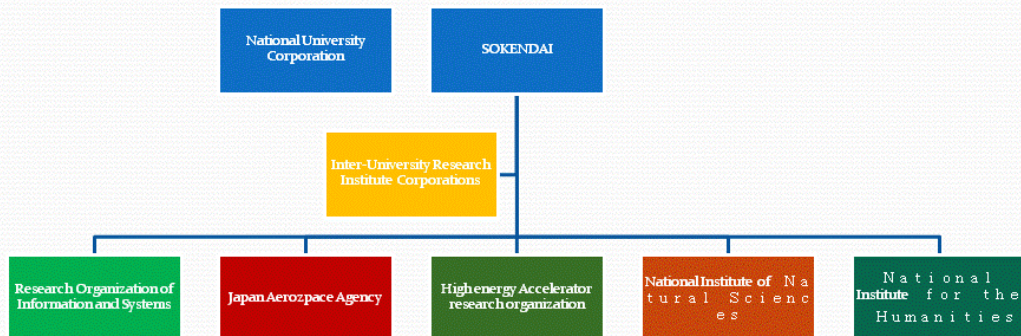# The Graduate University for Advanced Studies (SOKENDAI)

GUAS Libraries

"GUAS Libraries" consists of libraries at the GUAS Parent Institutes and the library in Hayama Main Campus. Each library has the individual catalog and the individual regulations of library use. For more information, please refer each homepage.
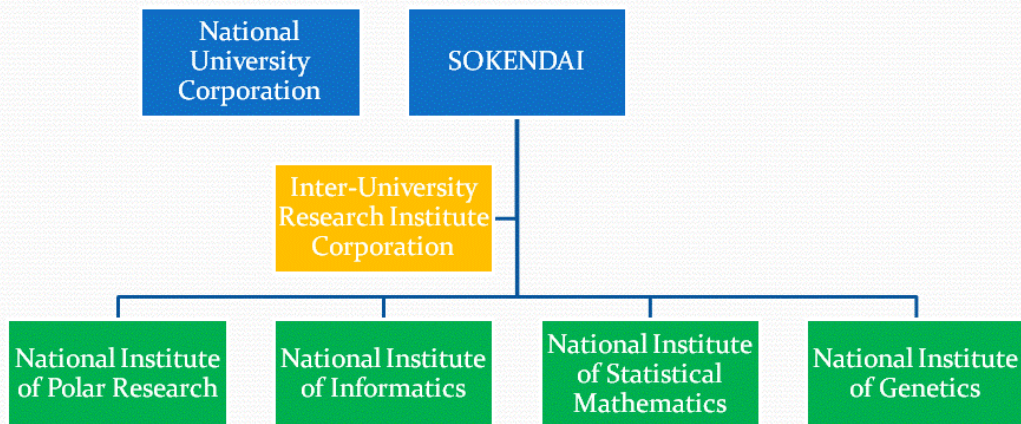
Parent Institutes	Libraries	Location
National Museum of Ethnology	Library(in Japanese)	Osaka
International Research Center for Japanese Studies	Library	Kyoto
National Museum of Japanese History	Library	Chiba
National Institute of Multimedia Education	Library(in Japanese)	Chiba
The Institute of Statistical Mathematics	Center for Information on Statistical Sciences	Tokyo
High Energy Accelerator Research Organization	KEK Library Guide	Ibaraki
Okazaki National Research Institutes	Welcome to Okazaki National Research Institutes Library	Aichi
National Astronomical Observatory	The Library of N.A.O. Japan	Tokyo
National Institute for Fusion Science	NIFS Library	Gifu
National Institute of Polar Research	Library(in Japanese)	Tokyo
National Institute of Genetics	Library	Shizuoka
National Institute of Informatics	Library(in Japanese)	Tokyo
The Institute of Space and Astronautical Science	Library(in Japanese)	Kanagawa
National Institute of Japanese Literature	Library(in Japanese)	Tokyo

http://www.lib.soken.ac.jp/sokenlib/libs-e.html

The Graduate University for Advanced Studies (SOKENDAI), 2004

National University Corporation

SOKENDAI

Inter-University Research Institute Corporations

Research Organization of Information and Systems

Japan Aerozpace Agency

High energy Accelerator research organization

National Institute of Natural Sciences

National Institute for the Humanities

The Graduate University for Advanced Studies (SOKENDAI), 2004

National University Corporation

SOKENDAI

Inter-University Research Institute Corporation

National Institute of Polar Research

National Institute of Informatics

National Institute of Statistical Mathematics

National Institute of Genetics

JANUL

- Japan Association of National University Libraries (JANUL) is a membership organization comprising libraries of national universities in Japan
- There are 91 members.
- JANUL has one big meeting and workshops 2 or 3 times per year.
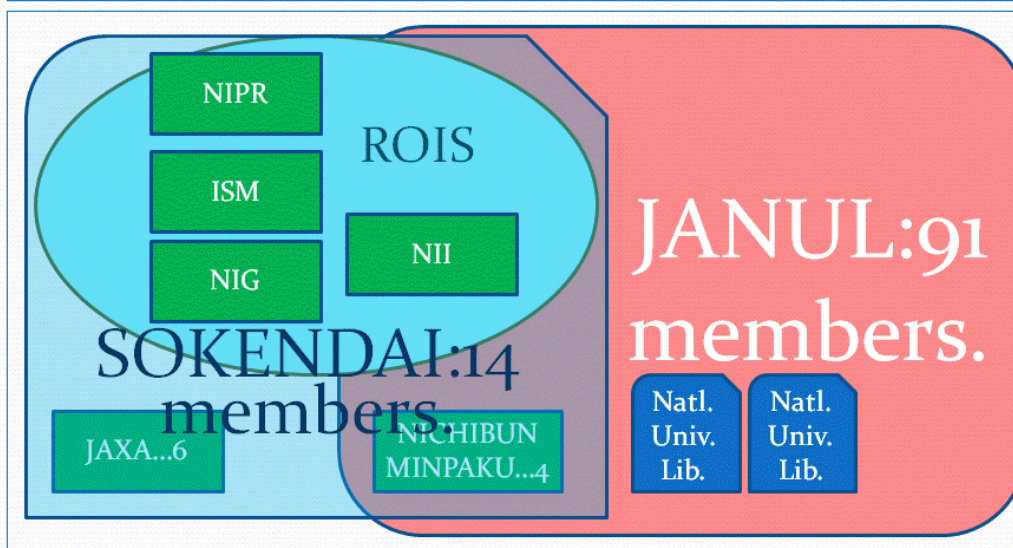- Also JANUL holds an annual meeting in each regions.

JANUL and PULC

National University Libraries	Private University Libraries	Local Public University Libraries
JANUL	PULC	PULC
National University Libraries Human Resources		
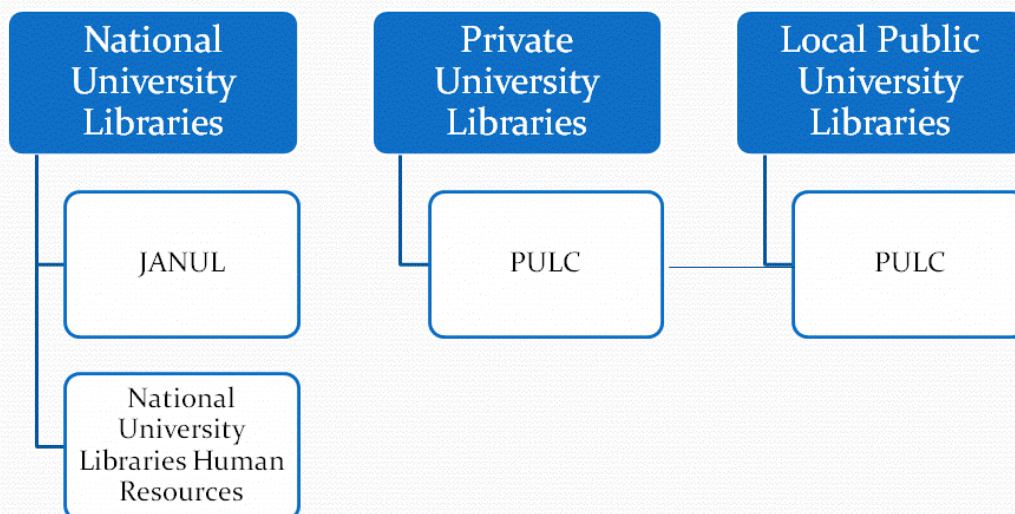
2011: JUSTICE established
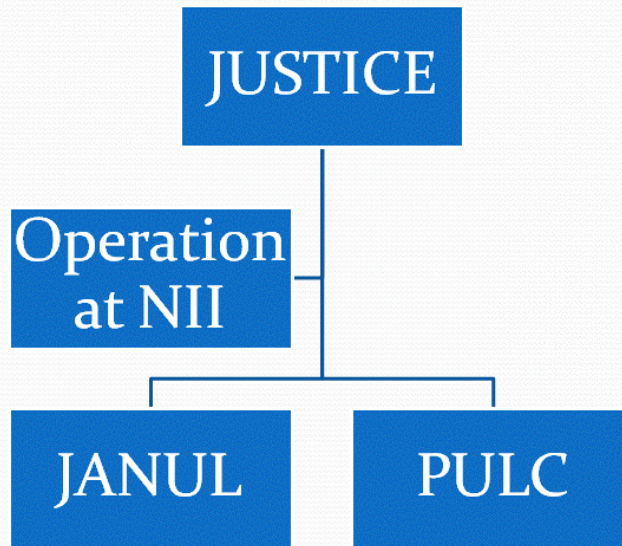
The NIPR Library position for e-journal subscription

From **Comments and suggestions by** Prof. Harvey J. Marchant (Australian National University) in March 2012

- Internet is available within NIPR by both LAN Ethernet plugs as well as a secure wireless network. Online access to a very wide range of journals is available. There is a LAN network plug in each unit of the guest house for after-hours work. Please access only appropriate sites. Do not access illegal, pornographic or extremist sites. Your internet usage is monitored.

- The NIPR library on the ground floor (first floor) has one of the best collections in the world of polar books and journals. It is a significant resource.

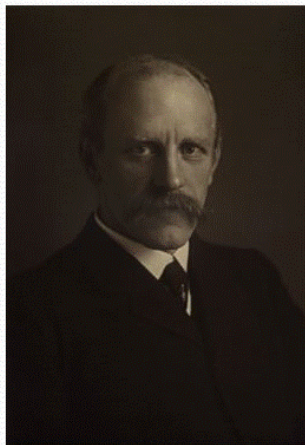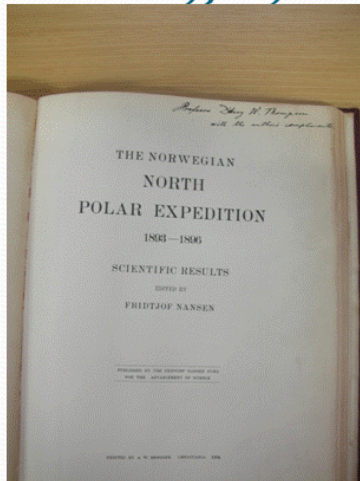# Invisible communication was found in our collection

Fridtjof W.-J. Nansen
1861-1930

Nansen's books on a shelf in our library
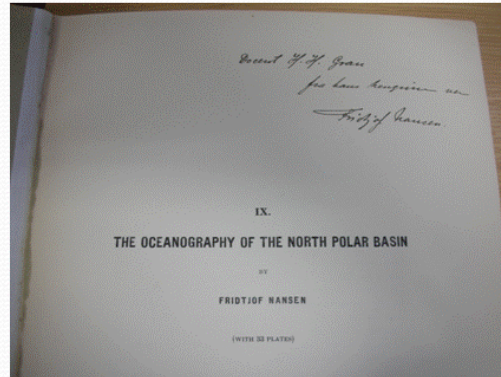

Photo: National Library of Norway

Invisible communication was found in our collection

The Norwegian North Polar Expedition 1893-1896
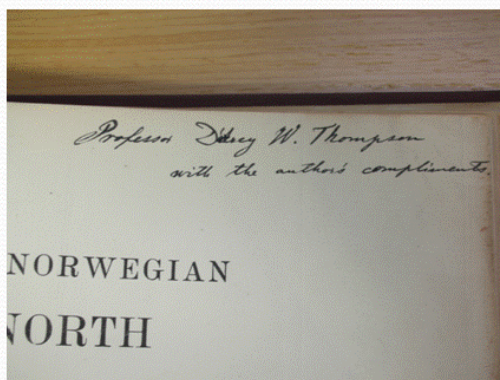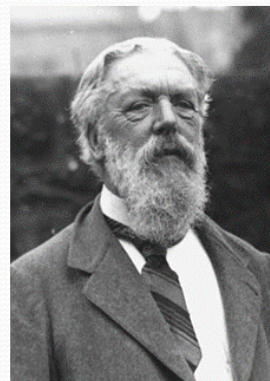
The oceanography of the North Polar Basin

Invisible communication was found in our collection

With the author's compliments, he signed.

D'Arcy Wentworth Thompson (1860-1948)

http://www.darcythompson.org/

Invisible communication was found in our collection

D'Arcy W. Thompson

"On growth and form"
First published in 1917.

Thanks for your attention!
ご清聴ありがとうございました。

All you can get (?): Finding (full-text) information using a discovery service

Marcel Brannemann
AWI-Library, Bremerhaven, Germany

Abstract

This presentation describes the implementation of a discovery service in the AWI-Library, from the state of searching before implementation, through decision making and selection of a product, to thoughts after the service had run for a time.

Presentation

Content

- Searching the AWI-Library „before"
- Decision Making
- Experiences Made
- The Eisberg – 'life'
- Conclusion

Searching the AWI-Library „before"

- eJournals
- Bibliographic Databases
  - Web of Science
  - ASFA, Georef etc.
- Catalogues
  - local OPAC
  - Union OPAC
- Inst. Repository

11-Jun-12   Marcel Brannemann   Page 4
                   AWI-Library, Bremerhaven, Germany

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ASFA, GeoRef

Catalogues

Marcel Brannemann
AWI-Library, Bremerhaven, Germany

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AWI ePIC

HELMHOLTZ | ASSOCIATION

AWI

HELMHOLTZ | ASSOCIATION

Decision Making

- ## Content to Vendors
  - Annual Librarians' Meeting [BIB/VDB] (2011)
  - Biannual German SLA Conference (2011)

- ## Checking Referenced Libraries
  - Univ. of Konstanz (Summon)
  - Univ. of Freiburg (EDS)
  - Albert Einstein Science Park Lib. (ALBERT)

- ## Checking Conditions for a (Paid) Trial

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Univ. of Konstanz

Univ. of Freiburg

Albert Einstein Science Park Lib.

Experiences Made I
AWI Eisberg [Summon]

- eJournals
- WoS
- ASFA, Georef etc.
- Union Cat. [Pica]
- Local OPAC [Pica]
- ePIC [ePrint]

[May 29, 2012]

Experiences Made II
AWI Eisberg [Summon]

❖Problems encountered:

- ProQuest DB (ASFA etc.) still not included
- Pica: Including Pica data into Summon Knowledge Base – very complex and error-prone
- ePIC: ‚Quality' of original data

Experiences Made III
AWI Eisberg [Summon]

- Support / Helpdesk
  - fast response time
- German speaking user group
  established Spring ´12

The Eisberg – 'life

Search the AWI-Eisberg

http://awi.summon.serialssolutions.com/

Conclusion

- Discovery Service Tools may address the contents of library holdings faster and more easily
- Implementation of Library OPAC is still a challenge

Thank You

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Breaking the ice: integrating information literacy into Antarctic Studies

Alison Hicks
University of Colorado, Boulder

The research paper is a common rite of passage for most university students. Designed to ground students in scholarly disciplines, academic discourse and research methodologies, the research assignment and the associated library seminar often focus heavily on teaching students "how to use the library" rather than engaging critically with the wider information landscape. Information is thus interpreted as an object that is bounded and static, and the research process is perceived as irrelevant beyond academia. This is particularly troublesome in newer fields, such as Antarctic Studies, where research forms a participatory and ongoing conversation.

Personal Learning Environments (PLEs) have been defined as "the digital tools you use to gather information, to connect with others and to produce content of your own as you engage in learning."[1] Encompassing theories of lifelong and informal learning, as well as drawing on David Lankes' and Henry Jenkins' ideas of participatory media, digital literacy and new librarianship, PLEs use web 2.0 tools to connect students to learning in a human networked world. Resources such as Diigo, Symbaloo, Netvibes and blogs help students develop their skills in effectively accessing, evaluating, and sharing information as part of a community of learners: an ideal process for the changing and unique Antarctic information landscapes.

This paper reports on the collaboration between a librarian at the University of Colorado, Boulder and a faculty member at Colorado State University who are designing an undergraduate Capstone Antarctic Studies research assignment using personal web 2.0 learning technologies for Fall 2012. Drawing on techniques used in a graduate seminar, and situated within a critical information literacy framework, the research assignment was designed to introduce students to the multi-faceted nature of Antarctic research. The first half of this paper will examine core observations and trends to provide background and theory for the conception of this class. The second half of the paper will then examine why Antarctica provides the perfect environment to explore these issues in teaching and learning. It will also provide an overview of the class research assignment that was designed to not only capture the collaborative and

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[1] Hodgson, "Personal Learning Environment."

participatory nature of Antarctic research, but also to help students gain real world research experience that would serve them in their careers, as well as their academic, work and personal environments. Lastly, as the librarian and the faculty member were not members of the same university, the paper will also report on the techniques that were used to scaffold student learning at a distance.

Rationale

This collaboration draws together key thinking on IL in order to create a class research component that meets 21st century Antarctic Studies information challenges.

A world that is too big to know

We live in a world that is growing at "over 2,000 gigabytes of new information per second."[2] Information overload is becoming an increasingly popular complaint, both in the workplace and everyday life, as new online tools promise to help streamline the flow, but end up exposing how much we are missing. Before the explosion of the internet and the low barriers to online participation, human designed systems of classification and collection development filtered knowledge and prevented material being published or shelved, a control for the printed flow of information.[3] Nowadays, however, our library systems struggle to keep up with the torrent of information. And, as the field of critical information studies shows us, these systems of strict editorial or library control meant that many ideas were excluded from this process according to political, social or economic rules of the day. Not only are we struggling to cope with an enormous increase in the quantity and type of information, but our traditional filter systems are inadequate too.

Web 2.0 tools have played a part in bringing about this information revolution. Often characterized as merely a technological revolution, Web 2.0 has engendered massive societal and philosophical change by enabling a new focus on collaboration, creativity, conversation, community and control.[4] Thus the very concept of knowledge and information is changing too. One major change is the "radical shift in how we establish authority, significance and even scholarly validity."[5] The challenge that social media and the alt-metrics movement bring to the concept of academic authority is an example of

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[2] Wesch, "A vision of students today (and what teachers must do)"

[3] Weinberger, *Too big to know.*

[4] Hicks and Graber, "Shifting paradigms"

[5] Jensen, "The new metrics of scholarly authority"

this.[6] For Weinberger the non-linked age of paper made it hard to follow connections between ideas, and this formed the basis for our confidence in credentialed authority. In a networked world, however, he questions why we should "trust what one person - with the best of intentions - insists is true when we instead could have a web of evidence, ideas, and argument?"[7]

A second major shift in thinking involves our conception of knowledge. With the growing amount of knowledge available on the web, we can no longer try and help people understand the world by filtering, ordering and reducing the knowledge to a beautiful ordered whole; there is too much to comprehend. Content is no longer knowledge. Instead, knowledge has grown to encompass the connections between entities, and can only be found through the "recognition of patterns emergent in the network of connections and interactions."[8] In a miscellaneous world, the focus has to be on building meaning.[9] The network is more than just linked content though. The network also refers to networks of people that connect to each other and ideas in order to process, learn and create knowledge. In this way, networks have become sense-making mechanisms, ensuring that "knowledge is becoming inextricable from – literally unthinkable without – the network that enables it."[10]

Accordingly, as the nature and scope of information changes around us, we need to ensure that our teaching adapts to these new realities. It is clear that instruction designed for the ordered world of print based information realities will not work in the chaotic age of abundance. Similarly, pedagogies where the instructor forms the control of learning and posits learning as an individual act sit equally uneasily with the Web 2.0 world and its focus on collaboration, community and conversation. Connected learning, collaborative learning, connectivism, networked learning and participatory learning are all major theories that attempt to provide a framework for scaffolding the new information skills and competencies that students need today. While all bring different aspects to the table, key ideas state that 21st century pedagogy focuses on:
   1. A shift from education to learning. Education is what institutions do, learning is what people do. Digital media enable learning anywhere, anytime; formal learning must also be mobile and just-in-time.

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[6] Hermida, "Social media is inherently a system of peer evaluation"

[7] Weinberger, "Transparency is the new objectivity"

[8] Downes, *Connectivism and Connective Knowledge*, 9.

[9] Weinberger, "Transparency is the new objectivity"

[10] Weinberger, "Transparency is the new objectivity"

2. A shift from consumption of information to participatory learning. Learning happens best when it is rich in social connections, especially when it is peer-based and organized around learners' interests, enabling them to create as well as consume information.
3. A shift from institutions to networks. In the digital age, the fundamental operating and delivery systems are networks, not institutions such as schools, which are one node of many on a young person's network of learning opportunities. People learn across institutions, so an entire learning network must be supported.[11]

And, as John Seely Brown and Richard Adler state, "participatory learning ecosystems" are the perfect environment in which this learning occurs.[12] Within this framework, learners create a community of practice where they draw upon their own prior knowledge and motivations to bring together information from different domains and form a network of learning. In sum, learners practice how to be a full participant in the networked field rather than merely learning about a topic.

Local context

What do these changes mean for librarianship? On the one hand, it is apparent that information literacy is more important than ever and "by responding to changes that are occurring in today's information culture... librarians can facilitate learning experiences that situate information literacy as a fundamental literacy shaped by today's society, culture, and ever-evolving technologies."[13] On the other hand, to ensure the scalability of these new projects, librarians must work with content faculty in order to embed information literacy throughout the curriculum. This means that both librarians and teaching faculty must be aware of - and can adapt and design for these changes in the field of information and education.

Traditional research assignments and instruction sessions can often fall short. Firstly, despite the growing quantities of networked information, librarians often persist in focusing solely on how to navigate library databases. By focusing so narrowly, students fail to learn to negotiate multiple streams of information, or to wrestle with the concept of source authority. Similarly, research assignments that focus on finding and citing a certain number or type of sources means that the research process can often be

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[11] Yowell, "Connected learning: Designed to mine the new social, digital domain."
[12] Seely Brown and Adler, "Minds of fire: Open education, the long tail, and Learning 2.0."
[13] Hamilton, "Embedded librarianship: A high school case study"

reduced to the formulaic. Thus, as Barbara Fister points out "by making it sound as if the point of the paper is to find and use sources, we're practically begging them to patchwrite."[14] Furthermore, by solely focusing on locating materials, we strip information of its context. Thus research is perceived as an isolated, individual act rather than a dynamic conversation. And, by negating the human focus, and the fact that information is shaped by people, values and institutional cultures, we fail to let students engage critically with texts.[15] Most poignantly, most content experts rarely rely just on databases. Instead, they have built and cultivated a wide range of trustworthy sources (conferences, journals, people etc) to answer their information needs. Fister points out "once we're deeply into subject matter we forget how sophisticated our filters are." Therefore, asking students to solely rely on databases is inauthentic and limiting - nor does it help scaffold the novice to expert process.

Secondly, traditional assignments and instruction sessions still focus narrowly on the consumption of information rather than creation, a hallmark of participatory learning. Creation is an integral part of digital literacy, and helps students "learn... how to be part of someone else's learning network."[16] For Henry Jenkins, creative expression is a key part of 21st century literacies, and could potentially lead to "a changed attitude toward intellectual property, the diversification of cultural expression, the development of skills valued in the modern workplace, and a more empowered conception of citizenship."[17] Furthermore, information production, or writing for a non-campus audience helps students see research as a conversation that they can enter. Creation breaks down the academic boundaries and helps students participate in the wider community of practice. As Booth says "the larger and more realistic the audience, the more compelling and potentially significant the experience."[18]

Lastly, by focusing on the narrow world of subscription-based databases, we negate the transferability of the research process. Although IL is a lifelong skill, academic IL mainly focuses on teaching text-based sources. Anne-Maree Lloyd shows that workplace information literacy relies on the navigation and interpretation of institutional, social and physical information, as well as textual sources.[19] By failing to engage students with

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[14] Fister, "Sources of confusion."

[15] Elmborg, "Critical information literacy: Implications for instructional practice."

[16] Fisch, "Creating personal learning environments: Part I."

[17] Jenkins, *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century.*

[18] Booth, "project curve, part seven: open access publishing for learner engagement (aka oa ftw)."

[19] Lloyd, *Information literacy landscapes: information literacy in education, workplace and everyday contexts.*

these broader concepts, such as the concepts of experts or networks, we deny students the transferable skills they will need. Furthermore, after graduation, students may not have access to library resources again. "Somewhere along the line, we agreed to curtail sharing and define access in a parochial, stingy way, access that leaves our graduates out."[20]

Why Antarctica?

So why does Antarctic Studies form an "ideal environment" for introducing these new concepts into research assignments? Firstly, Antarctic Studies is a newer field of research, which means that much relevant information is available online. Furthermore, research is often inter-disciplinary and multi-faceted, and as such, it is found in a wide variety of places, including international organizations, national governments, data sets, legal documents, archives, blogs and digital libraries, as well as more traditional sources. As a niche subject, there is often only a small library collection to support research anyway and so it is vital that students learn to negotiate multiple sources of information. Although students may consider themselves expert searchers, Project Information Literacy found that students often rely on the same small set of common information sources for research projects, showing "little inclination to vary the frequency or order of use."[21] Secondly, the field of Antarctic Studies is growing in relevance and popularity. The internationalization of the continent coupled with the key role that Antarctica plays in topical issues such as climate change means that research forms an ongoing and participatory conversation among many different researchers from many different countries. This may be further complicated by the image that the "Great White South" holds in the public imagination. It is vital that students do not conceive that research is isolated or mechanical, instead forming a vibrant and ever changing conversation.

Furthermore, Antarctic Studies is often disputed and open for interpretation. The discovery of Antarctica provides a perfect example of the contested nature of Antarctic history. What is discovery? What does it mean to discover Antarctica? Can we ever say definitively who discovered the continent? This simple question cannot rely on the memorization of facts but requires deeper consideration. It is thus vital that students learn to explore information and the field critically. Lastly, while the field of Antarctic Studies is developing, many areas remain underexplored. By engaging in sustained study of a particular area and curating topical resources, student researchers often become

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[20] Fister, "Access, openness, and why we teach."
[21] Head, "Lesson learned."

experts in their topic. Sharing this knowledge is a key part of developing the literature and study within the Antarctic field. It also makes the student research process more authentic, and can break down academic barriers, providing "transformative learner insight into what it means to participate in a community of practice."[22] Some of these students will go on to work in some capacity in the Antarctic field. It was vital that this class not only introduced them to a research process that would form a framework for lifelong learning and their workplace, but also started to introduce them purposefully to the wider network of the Antarctic community.

In sum, thinking about information sources, the research process and workplace IL helped guide the collaboration between the librarian and the professor. Ultimately, the entire research assignment aimed to help students start thinking like an Antarctic researcher, by immersing them in the field, the process and the network of established researchers. This involved firstly identifying the threshold concepts or the core problems of Antarctic research without which the learner (who could include the student, the librarian or the faculty) cannot progress and then designing a purposeful research assignment and IL class around these ideas. In this way the librarian and the professor hoped to scaffold the novice-expert process. While the development of digital literacy skills was important to this project, Web 2.0 technologies would not cause student learning to occur. Instead, the technology would make visible "the steps in the learning process that are often invisible but critical to development" thus making the student learning process more holistic, purposeful and meaningful.[23]

Research assignment

In Fall 2012, this research assignment will be given to students enrolled in HIST492, Capstone Seminar: History of the Antarctic Treaty System at Colorado State University. Although focused around the Antarctic Treaty System (ATS), the course investigates the intersections of science, politics and the environment in Antarctica, and gives opportunities for writing environmental histories of the continent. While this will be the first time that the Capstone class will have worked with the assignment, a modified version was successfully used in a graduate student reading seminar of World Environmental History in Spring 2012. Students enrolled in the Antarctic classes are typically juniors and seniors, and are often drawn from the departments of History, International Affairs, Environmental Studies, Communication and Political Science. After

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[22] Booth, "project curve, part seven: open access publishing for learner engagement (aka oa ftw)."

[23] Bass, "Capturing the visible evidence of invisible learning."

taking this class some students have gone on to graduate work in Antarctic Studies, or have taken positions in the US base, McMurdo.

In previous seminars, class requirements included writing an extended (16-20 page) essay on some aspect of the ATS using primary and secondary sources. Past topics have included the question of discovery of Antarctica, race and gender in the heroic era, imperialism, climate change, or the relationship between science and politics. The first half of the semester was dedicated to discussion and reading, while the second half of semester was dedicated to student writing and oral presentations. A class blog had already been introduced to facilitate reading discussions and to promote peer-to-peer learning opportunities. Grades were allocated for blog contributions, as well as the paper proposal, oral presentation and the final paper. There was no grade allocated for research, although the final paper expected students to construct and sustain an extended historical argument through substantial use of primary and secondary documents.

The new research assignment aims to focus more thoroughly on student research, in particular aiming to slow down the research process, thus "shifting the focus of the assignment from a final product to the experience of inquiry."[24] By breaking down the research steps and making the research goals more transparent, the instructors hoped to make the research process less intimidating and more meaningful for the students. They decided to build on the class blog and employ Diigo, a social bookmarking site, as the other main web 2.0 tool to support student learning.

Social bookmarking is a method to process, manage, organize resources in an online library. Diigo is well known as a personal research tool. However, because Diigo facilitates sharing, it can also be used as a collaborative research platform to group "relevant resources, findings and thoughts together". In addition, Diigo allows group members to highlight and add sticky notes to resources, thus making annotations and evaluations visible. Used in this way, Diigo becomes a knowledge sharing community. Therefore, throughout the first half of semester students will add links to the class Diigo site to explore key sources of information, as well as authors, texts, organizations and journals within the field. Students will be introduced to ways of tracking conversations around their topic online, including searching databases for articles, and then tracking relevant organizations, experts and journals in the field. By looking at research in context and tracking "clues" in the literature, students will start to gain a wider sense of

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[24] Sinkinson, "Unraveling the research process: Social bookmarking and collaborative learning"

the connections and conversation within their topic, the network of people and ideas. Students will also add annotations to resources as well as tags or metadata; engaging recursively with this information will deepen their understanding of key ideas in the field. As they save resources to the class library, students will also begin to find related material and groups in Diigo- as well as finding that they are adding to the network of information, thereby demonstrating the social construction of knowledge and their role within it.

By mid-semester, the class library will be substantial. Students will then be expected to choose 5 of the most relevant resources and provide an in depth analysis of these sources on the class blog. Students will also be encouraged to interview one of the experts they have found in the research process. This provides further practice with primary source research and highlights the dynamic nature of Antarctic research, where, unlike some historical fields, many experts are still active. Students will then remix and synthesize sources in their final paper to make their own contributions to the conversation. Grades will be allocated for contributions to the group library as well as their evaluations of sources. In this way, the research process is slowed down but also rewarded, rather than being hidden within the final paper. It is hoped that this will enable a more complete and transferable understanding of research in the digital age.

Finally, the class will also integrate reflection on the research process, including research techniques and strategies. Reflection plays a key role in digital literacy, helping students self-assess their own learning. In a world of informal and lifelong learning this is a key skill. Reflective assessment will be held before the class, to assess needs and prior knowledge, as well as mid class and post class to enable a thorough reflection on the research process and assessment of goals met.

Course mechanics

As the professor and the librarian are not members of the same institution, they will have to rely on several creative techniques in order to scaffold and support the students throughout the research process. Firstly, a small library of video tutorials will be established on the class blog that will cover several key steps in the research process. Videos will focus on potentially new topics for students such as citation tracking, finding experts and organizations as well as how to monitor non-traditional sources of information such as blogs and Twitter for relevant information. Jing, a free screencasting software will be used to create these videos (http://www.techsmith.com/jing.html). Jing allows the user to record up to five minutes of a computer screen and upload the mini

video to the web. It provides a cheap and easy way to create learning objects, and has very little learning curve. It will thus be possible for the librarian to create new videos to meet student needs as the course progresses.

The librarian will also be available for online office hours through the Google + social media service. (https://plus.google.com/) A key advantage of the Google + service is the introduction of the hangouts feature, where up to 10 people can video conference for free making it a perfect alternative to a physical meeting. As well as video conferencing, participants can also screenshare, enabling the librarian and the student to see each other's screen- and where the bottleneck or research problem lies. Google + also enables document sharing, including the collaborative editing of a new document. This will serve as a good way to keep notes and suggestions about specific steps taken, as well as a way for students to reflect on the progress they have made.

Conclusion

In conclusion, it is essential that librarians continue exploring how to integrate IL into student learning as collaborations such as these bring pitfalls as well as opportunities. One major hurdle may be the scalability of these programs. While this class took a considerable amount of planning, the final framework is transferable to other classes and disciplines, which will help in the future. It also speaks to the fact that librarians need to focus their efforts on programs that embed IL principles within the curriculum, rather than relying on embedding the librarian in the class. It is only by positioning the librarian as a node in the learning network, rather than as the IL "guest lecturer" or curriculum add-on that we can add the most value to the mission of the institution.

A further hurdle may be related to the changing role of the librarian. In collaborations such as these there is a specific (but achievable) requirement for librarians and faculty to be comfortable with technology and the fast-changing information environment, as well as being able to design appropriate research assignments and assessment. Teachers need to be willing to move past teaching students "how to use the library" rather than engaging with the wider information landscape, as well as accepting that IL is not a skill that is "achievable" in first year classes. Educators must also be willing to engage with students who may not immediately see the relevance to their lives or who find it hard to embrace the freedom of taking responsibility for their learning.[25]

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[25] Hamilton, "Embedded librarianship: A high school case study."

For many, these collaborations may be outside an individual's comfort zone. Are partnerships such as these the future of libraries? Or, are we taking on yet more duties as our resources get cut even further? These questions are at the heart of conversations about the future of libraries, and it is clear that there is no easy answer. David Lankes, in his insightful book The Atlas of New Librarianship posits that in order to adapt to new realities, we need to return to our original mission of facilitating knowledge creation in our communities.[26] This used to be done by providing access to knowledge in the shape of content. In the digital age, we're still providing access to knowledge- but in a time where knowledge is negotiated through conversation, discussion and participation, we must ensure that we can provide the right tools to achieve this. It thus seems key that in the library of the future, teaching and learning must be our highest priority.

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[26] Lankes, *The Atlas of New Librarianship.*

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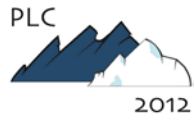
Session 3
Indigenous peoples and libraries

Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik (IPY 2008-2011): A report on our creations
Sharon Rankin

Archiving local and traditional knowledge of the Arctic: Managing data and information in partnership with indigenous communities and earth scientists
Heidi McCann, Chris McNeave, Julia Collins, Peter L. Pulsifer, Mark A. Parsons, Shari Gearheard, and Henry Huntington

Finding Canadian polar Indigenous studies in Medline
Sandy Campbell, Lisa Tjosvold, Marlene Dorgan, and Danièle Behn-Smith

Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik (IPY 2008-2011): A report on our creations.

Sharon Rankin

McGill University Library, Montreal, Quebec, Canada.

Abstract

Two university partners, the Université du Québec à Montréal and McGill University were funded by the Canadian program of the International Polar Year (IPY), from 2008 to 2011 to create and disseminate works documenting the written heritage of the Inuit of Nunavik (northern Quebec). With the collaboration of Quebec Inuit partners, Makivik Corporation, and the AVATAQ Cultural Institute, the *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik* project has been a tri-cultural (Inuit, French and English) effort and has achieved significant results beyond the expectations of the research team. This paper describes the project goals and introduces the project partners and collaborators. The works that were created have expanded the corpus of literature written by or about Nunavimmiut.

Introduction

The project was funded by a grant from the Canadian Government's International Polar Year program, as a Communication and Outreach project.[27] The project received funding over a three year period for a variety of initiatives. The project deliverables were completed between 2008 and 2011.

The project goal was to create and disseminate works documenting the written heritage of the Inuit of Nunavik. This humanities and social sciences IPY project was a tri-lingual (Inuit, French and English) effort.

We are very pleased with the project outcomes and believe that our efforts have made significant and lasting contributions to Inuit culture and to the corpus of literature written by or about Nunavimmiut.

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[27] "Following a rigorous review process, which included a northern regional review and a national review by an expert panel made up of communications professionals, northerners, writers and outreach experts, 21 communications and outreach projects were selected for funding." "International Polar Year, Highlights and Achievements," Government of Canada, accessed August 30, 2012, http://www.api-ipy.gc.ca/pg_IPYAPI_071-eng.html#s6

The written heritage of Nunavik is part of the idea of Quebec, Canada, the Arctic and the circumpolar world. It is an important part of world culture, little known outside of specialized circles and not readily available to readers; including those of the Inuit communities of Nunavik.
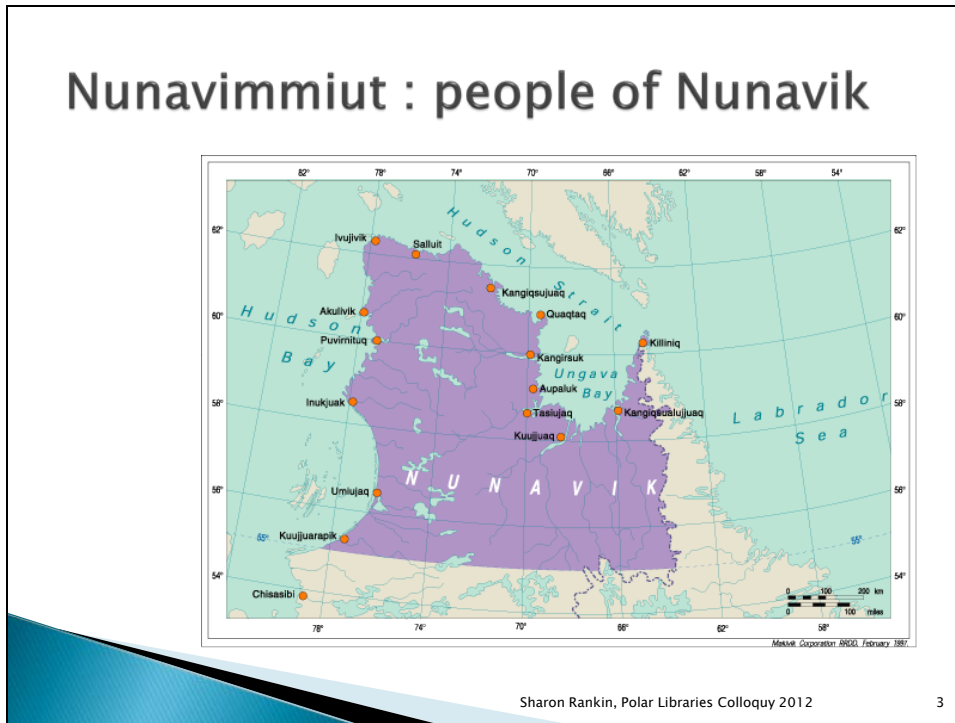
Figure 1: Nunavimmiut: people of Nunavik.[28] (slide 3)

Nunavik is a vast territory covering the northern most part of the province of Quebec in Canada, north of the 55th parallel. The Inuit people of Nunavik call themselves Nunavimmiut. As of the 2006 Canadian census, 11,000 inhabitants resided in Nunavik and 10,000 of these inhabitants are Nunavimmiut. The population is a young one, with 60% of the residents under the age of 30. The *Quebec Map* in Figure 1 shows 15 villages on the coastal regions, of Hudson Bay, Hudson Strait and Ungava Bay.

The *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik* project objectives were to create partnerships between institutions from three cultural communities (Inuktitut, French and English) and to enable the wider dissemination of the written heritage of Nunavik by creating publications (print and web-based) and educational opportunities in the classroom and at public events.

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[28] "Quebec Map," Nunavik Maps, Makivik Corporation, accessed August 30, 2012, http://www.makivik.org/media-centre/nunavik-maps/

Project researchers

The principal researcher for the *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik* project was Daniel Chartier a professor in the Department of Literary Studies and Director of the Laboratoire international d'étude multidisciplinaire comparée des représentations du Nord (International Laboratory for the Comparative Multidisciplinary Study of Representations of the North) at the Université du Québec à Montréal (UQAM). The Imaginaire Nord laboratory is a centre for research, documentation and expertise on Nordic and winter imaginary in literature, film, visual arts and popular culture, intended primarily to encourage comparison between the different Nordic cultures.[29]

Co-investigator, Marianne Stenbaek is a professor of Cultural Studies in the English Department at McGill University. She has carried out research for many years in the Canadian Arctic and in Greenland and published on Greenlandic traditional knowledge and Greenlandic literature. Marianne has also broadcast regularly about the Arctic on Kalaallit Nunaata Radioa (Radio Greenland) and Radio Denmark for twenty-five years.

Co-investigator, Sharon Rankin is a librarian at McGill University, whose research has focused on Canadian Inuit periodical collections, including the *Caninuit*[30] website, providing bibliographical information about the newspapers, magazines, newsletters and journals written by or about Canadian Inuit.

Project partners and collaborators

The project had several Inuit partners, providing gifts-in-kind and expertise.

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[29] "Imaginaire|Nord," UQAM, accessed August 30, 2012, http://www.imaginairedunord.uqam.ca
[30] "Caninuit," Reference Press, accessed August 30, 2012, http://www.libris.ca/inuit/go.exe

Figure 2: Makivik Corporation (slide 10)

The Makivik Corporation has been the legal representative of Quebec's Inuit people, since 1978 under the terms of the James Bay and Northern Quebec Agreement, the agreement that established the institutions of Nunavik. The corporation's principal responsibilities are to administer Inuit lands and promote the economic and social development of Inuit society in Nunavik using land claims agreement compensation funds.[31]

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[31]"Makivik Corporation," Makivik Corporation, accessed August 30, 2012, http://www.makivik.org/

Figure 3: AVATAQ Cultural Institute (slide 12)

AVATAQ Cultural Institute was created in 1981 by the Inuit elders of Nunavik, gathered together at a regional conference. This cultural institute focuses on language, heritage and cultural programs that support and preserve Inuit culture for present and future generations. AVATAQ collects oral histories, transcribing and translating its interviews and creating source material for its publications. AVATAQ's "goal is to ensure that Inuit culture and language continue to thrive into the future, so that our descendants can benefit from the rich heritage passed down to us through the wisdom of our ancestors."[32]

We were also fortunate to have the assistance of two Inuit collaborators on the project, Minnie Grey and Bob Mesher. Minnie Grey has been active in Canadian and international Inuit organizations throughout her career. Since 2002, she has been the chief negotiator for Nunavik self-government. Bob Mesher is the long-serving editor of *Makivik Magazine* and a professional photographer.

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[32] "AVATAQ Cultural Institute," AVATAQ, accessed August 30, 2012,
http://www.avataq.qc.ca/en/Home

Digitization and dissemination partner

The Bibliothèque et Archives nationales du Québec (BAnQ), is a national library, national archives and a major public library for the province of Quebec located in Montreal. The BAnQ is responsible for acquiring, processing, preserving and developing the heritage collections of all publications created in Quebec. The principal means for acquiring documents for this collection has been through legal deposit, which is governed by the *Act respecting Bibliothèque et Archives nationales du Québec* implemented in 1968.

It has been apparent for many years to the BAnQ librarians, that the collection of Nunavik periodicals has been incomplete. They were enthusiastic to support a project that would allow the collection gaps to be filled for two important Inuit periodical publications.

In 2008 and 2009 there were several partners' meetings to share expertise and discuss a plan for the digitization of Nunavik periodicals by the BAnQ's highly specialized teams at the BAnQ's preservation centre (Centre de conservation).

Figure 4: Makivik periodicals (2008) (slide 19)

The Makivik periodicals consist of five distinctly named publications; *Tagralik* (1974-1986), *Atuaqnik* (1974-1986), *Makivik News* (1980-1998), *Makivik Magazine* (1998-

2011) and the *Annual Reports* of Makivik Corporation (2000-2011). The BAnQ's preservation centre coordinated the digitization of the 10,000 pages that comprise these publications.

Figure 5: AVATAQ periodical (2009) (slide 20)

As a second agreement, the AVATAQ Cultural Institute's magazine *Tumivut* (1990-2000) was digitized by the BAnQ. *Tumivut* is rich in oral history interviews of Inuit elders, photographs, and genealogies.

Providing free online access through the BAnQ portal ensures that these significant Nunavimmiut publications have wide spread access. The publications can be keyword searched and the interface is bilingual, French or English. The gaps in the print collection at the BAnQ Library have been filled and the publications are now preserved in climate-controlled conditions at the BAnQ conservation centre.

Having a digital collection of full-text periodicals provided an essential infrastructure for the next initiative at McGill University, the indexing of the Makivik periodicals for the ASTIS *Nunavik Bibliography*[33].

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[33] "ASTIS: *Nunavik Bibliography*," Arctic Institute of North America, University of Calgary, accessed August 30, 2012, http://www.aina.ucalgary.ca/nunavik/

Figure 6: The Nunavik Bibliography (2009) (slide 22)

ASTIS (The Arctic Science and Technology Information System) staff provided the training for librarian, Sharon Rankin to create index entries for significant articles in the Makivik publications. The ASTIS subject and geographic thesaurus was used by the record creators at McGill University Library to add headings and codes. ASTIS staff provided record review and loading into the *Nunavik Bibliography* and added a full-text link to the article on the BAnQ portal in the index entry. A total of 963 records were added to the database, complimenting the 100 records already created by ASTIS staff.

Nunavimmiut publications are rarely indexed by the primary research databases in use by students and professors. This indexing work for the *Nunavik Bibliography,* which can be searched free of charge was completed in 2009.

The campuses of UQAM and McGill saw increased course engagement with Nunavik literature beginning in 2009. The written heritage of Nunavik was a topic and perspective in undergraduate classes taught at UQAM for 200 students. With the exception of a few students, most had no previous knowledge of Inuit culture. On the graduate side, UQAM has one Ph.D. student[34] and two MA students actively working on research projects involving Nunavik literature. McGill University has three MA students engaged in Nunavik Inuit studies. The publications that our project has created are

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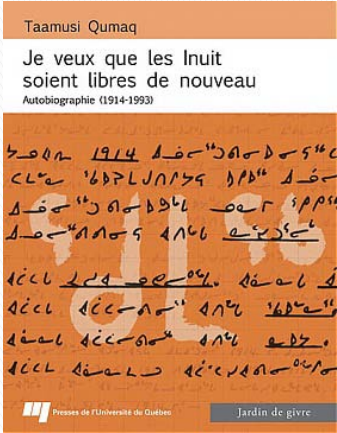
[34] Nellie Duvicq, "Phénomènes contemporains de la culture inuit," *Spirale*, 225 (mars-avril 2009): 15.

fundamental to the study and research that students and their professors have begun and will continue to undertake in the future.

Print dissemination partners

The *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik* project creations were published by two presses. Press UQAM (PUQ), a university press that has published primarily French language publications from UQAM researchers and professors for the past forty years. The PUQ catalogue contains close to 1,200 titles in print and online and it has well-established international distribution channels.[35] IPI Press (International Polar Institute) is a small specialized press managed by Peter Mittenhal. IPI distributes its publications through the University of New England Consortium (UPNE).[36]

Publications

Figure 7: Je veux que les Inuit soient libres de nouveau (2010) (slide 24)

In 2010, the project researchers published four monographs. At UQAM, Daniel Chartier created two new bilingual publications.

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[35] *"Presses de l'Université du Québec,"* PUQ, accessed August 30, 2012, *http://www.puq.ca/*

[36] "UPNE," UPNE, accessed on August 30, 2012, http://www.upne.com/

The autobiography of Taamusi Qumaq, a Nunavik hunter, fisherman and trapper who lived from 1914 to 1993 in the Inukjuak area was translated and published for the first time. Taamusi Qumaq is considered to be an "exceptional person", one of the great philosophers of the Nunavimmiut. *Je veux que les Inuit soient libres de nouveau* is the French language translation of Taamusi's life story written in 1987.

Figure 8: Le harpon du chasseur (2010) (slide 25)

Le harpoon du chasseur is the first French language translation of Markoosie's *Harpoon of the Hunter*. This publication is the first time the complete Inuktitut (syllabic text) has been published in novel form. Markoosie Patsauq is the first Canadian Inuit to write an original novel.

Voice and Images of Nunavimmiut Volume I:
Stories and Tales (2010)

Minnie Grey & Marianne Stenbaek
282 pages, IPI Press
ISBN–10: 0982170351

Sharon Rankin, Polar Libraries Colloquy 2012   33

Figure 9: Voice and Images of Nunavimmiut Volume I: Stories and Tales. (2010) (slide 33)

At McGill University, Marianne Stenbaek together with Minnie Grey created the first in a series of books called *Voice and Images of Nunavimmiut.* The first volume, *Stories and Tales* brings together recollections from the 1970s and 1980s from selected excerpts from the Makivik publications.

The Moravian
Beginnings
of Canadian
Inuit
Literature

Exhibition catalogue (2010)

The Moravian Beginnings of Canadian Inuit Literature
112 pages, IPI Press
ISBN 978-0-9821703-6-6

Sharon Rankin, Polar Libraries Colloquy 2012   29
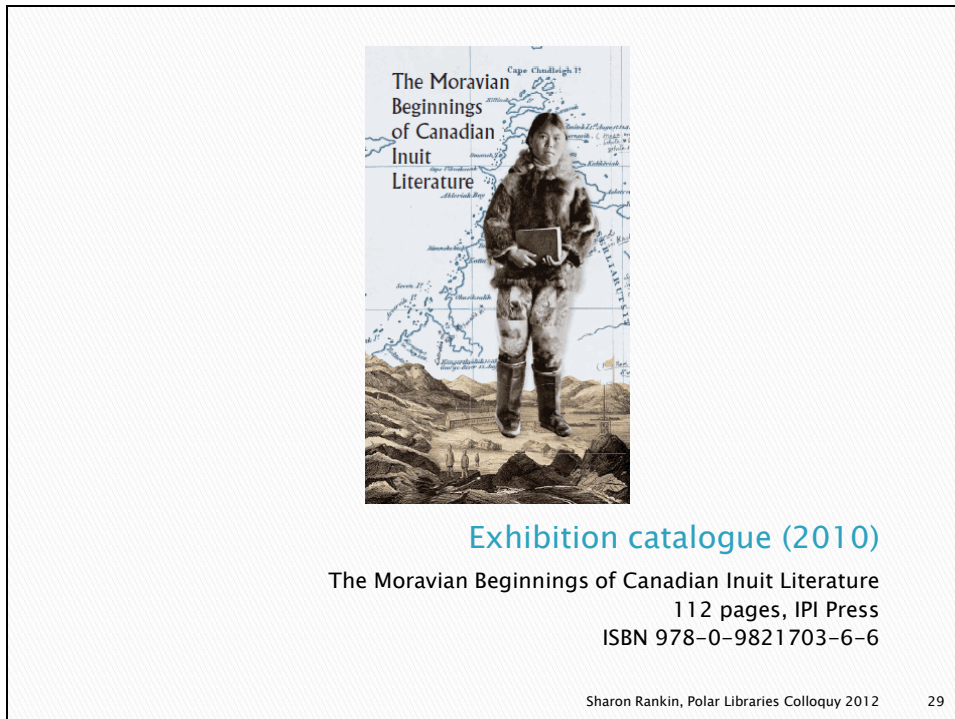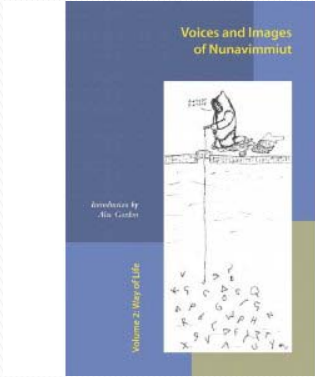
Figure 10: The Moravian Beginnings of Canadian Inuit Literature (2010) (slide 29)

At McGill University Library, Sharon Rankin created an exhibition, brochure and
catalogue based upon selections from the Lawrence M. Lande Collection of Canadiana,
in Rare Books and Special Collections. This collection of books and periodicals from the
Moravian missions along the northern coast of Labrador provides a historical view of the
development of Canadian Inuit's written languages. The Moravians transcribed their
biblical texts into Inuktitut (Roman orthography) and set about bringing literacy to the
Labrador Inuit in the late 19th century. These same publications were used by Anglican
missionaries in Nunavik to create syllabic Inuktitut. The public exhibition entitled "*The
Moravian Beginnings of Canadian Inuit Literature*" took place from February to June
2009. An exhibition brochure was published, in four languages; French, Inuktitut, Roman
orthography and English. An English language catalogue containing all the exhibition
works was published in 2010. A virtual website for the exhibition provides a lasting
digital publication.[37]

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[37] "The Moravian Beginnings of Canadian Inuit Literature," McGill University Library, accessed on August
30, 2012, http://digital.library.mcgill.ca/moravian/index.php
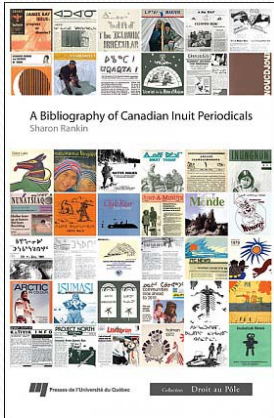
Voice and Images of Nunavimmiut
Volume II: Way of Life (2011)

Minnie Grey & Marianne Stenbaek
292 pages, IPI Press
ISBN-10: 0982915519

Sharon Rankin, Polar Libraries Colloquy 2012   34

Figure 10: Voice and Images of Nunavimmiut Volume II: Way of Life. (2011) (slide 34)

In 2011, the project researchers created two monographs. Marianne Stenbaek and Minnie Grey published a second volume in the series *Voice and Images of Nunavimmiut*. *Volume II: Way of Life*.

A Bibliography of Canadian Inuit Periodicals (2011)

Sharon Rankin
294 pages, Press UQAM
ISBN 978-2-7605-3151-2

Sharon Rankin, Polar Libraries Colloquy 2012   32

Figure 11: A Bibliography of Canadian Inuit Periodicals. (2011) (slide 32)

The website *Caninuit* was updated and transformed into a published bibliography by Sharon Rankin. *A Bibliography of Canadian Inuit Periodicals* contains entries for 200 publications, an abstract summarizing the nature of the publication, a subject and regional index and libraries with significant holdings are identified.

The *Entendre et communiquer les voix du Nunavik* project publications

Year	Number of Publications
2008	4
2009	6
2010	4
2011	3
Total	**17**

Sharon Rankin, Polar Libraries Colloquy 2012   35
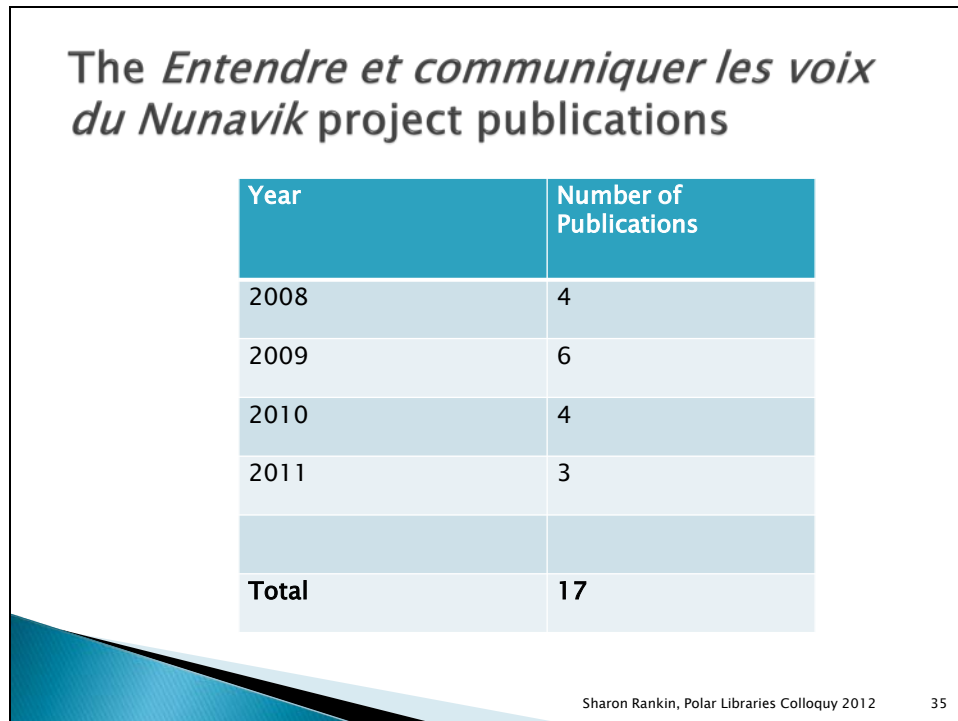
Figure 12: *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik project publications* (slide 35)

The *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik* has created seventeen print and web-based publications over four years. Another way of looking at the project achievements is to review the corpus of Nunavik literature (published monographs) over time. Before 2008, there were two novels published (*Harpoon of the Hunter* and *Sanaaq*). As of 2011, there are now five more for a total of seven.

Future projects

To discuss future research projects, Marianne Stenbaek organized a workshop at McGill University in September 2011, entitled "*Preserving the written heritage of Nunavik.* The workshop participants discussed the Nunavimmiut books and how they contribute to Inuit knowledge and plans for more publications.

At UQAM, Daniel Chartier has four publications in progress. An *Anthologie du patrimoine écrit du Nunavik: littérature, textes, documents* (French and Inuktitut, forthcoming in 2012), a photographic album in the "Imagoborealis" series, *Umiujaq. Inuit View on Landscape* by F. Foliet[38] and *Labrador: Bob Mesher's photographs* edited by D. Schaub (French, English and Inuktitut, forthcoming in 2012).

McGill Queen's Press, with assistance funding from Makivik Corporation will publish four more volumes in the *Voice and Images of Nunavimmiut* series: Environment (Introduction by Shelia Watts-Cloutier), Youth & Children (Introduction by Peter Aatami), Health (Introduction by Minnie Grey) and Economic Development.

The *Entendre et communiquer les voix du Nunavik/Hearing and sharing the voices of Nunavik* project has created heritage publications that provide the Inuit point of view, without a southern or anthropological filter. The written heritage of Nunavik is a new field of study. Scholars working in this area are few and there are many questions to be investigated. We believe that our efforts have provided valuable new texts to support future research projects on the written heritage of Nunavik.

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Duvicq, Nellie. "Phénomènes contemporains de la culture inuit." *Spirale*, 225(mars-avril 2009):15. http://id.erudit.org/iderudit/16671ac

Joliet, Fabienne. *Umiujaq Inuit silami takugnanigna, Regards inuits sur le paysage, Inuit Views on the Landscape.* Montreal: Press UQAM, 2012.

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Archiving local and traditional knowledge of the Arctic: Managing data and information in partnership with indigenous communities and earth scientists

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Abstract

Local and traditional knowledge (LTK) provides rich information about the Arctic environment at spatial and temporal scales that scientific knowledge often does not have access to (e.g. localized observations of fine-scale ecological change potentially from many different communities, or local sea ice and conditions prior to 1950s ice charts and 1970s satellite records). Community-based observations and monitoring are an opportunity for Arctic residents to provide 'frontline' observations and measurements that are an early warning system for Arctic change. The Exchange for Local Observations and Knowledge of the Arctic (ELOKA) was established in response to the growing number of community-based and community-oriented research and observation projects in the Arctic. ELOKA provides data management and user support to facilitate the collection, preservation, exchange, and use of local observations and knowledge.

ELOKA fills a critical gap in Arctic research by providing data management services to social and physical science projects, community-based research projects, and other projects with 'non-traditional data' that currently have few options for support. ELOKA continues to develop methods for collection, management, and distribution of these important data. Management systems and processes include services for metadata authorship; online presentation of research including maps, photographs, and interactive hunter and elder interviews with translations. ELOKA is also investigating techniques for sharing geographic information over the Internet with computer-based mapping as well as providing data discovery and access via keyword-based catalogue searches.

This presentation provides details on some of the methods and procedures developed by ELOKA to support the wider research community and beyond with collection support, and access and discoverability services.

Introduction

Local and traditional knowledge (LTK) data has proven to provide rich information about the Arctic environment at spatial and temporal scales that scientific knowledge often does not have access to (e.g. localized observations of fine-scale ecological change

potentially from many different communities, or local sea ice and conditions prior to 1950s ice charts and 1970s satellite records) while Community-based observations and monitoring (CBM) are an opportunity for Arctic residents to provide 'frontline' observations and measurements that are an early warning system for Arctic change. This 'non-western data' has and will continue to make significant contributions to understanding recent environmental, social and cultural change, however there are key challenges to managing this type of data. These challenges include having an effective and appropriate means of recording, storing, and managing data and information to avoid the loss of extremely precious data from Elders who have passed away, to prevent lack of awareness of previous studies occurring in the same communities causing repetition of research and wasted resources, and a reluctance or inability to initiate or maintain community-based research. Another challenge is to, where appropriate, find an effective means of sharing such data and make it available for Arctic residents and researchers, as well as other interested groups such as teachers, students, and decision makers in an ethical manner over time. The Exchange for Local Observations and Knowledge of the Arctic (ELOKA) was established in response to the growing number of community-based and community-oriented research and observation projects in the Arctic. Its mission is to provide data management and user support to facilitate the collection, preservation, exchange, and use of local observations and knowledge of the Arctic (ELOKA Team 2012).

ELOKA aims to address the critical challenges described in partnership with social and physical science projects, community-based research projects, and other projects with 'non-western data' that currently have few options for support. We are doing this by continuing to develop methods for collection, management, and distribution of these important data, and by building a community of researchers and practitioners. In our experience, LTK and CBM projects will each have different needs and goals for their data; there is not a one size fits all solution. Some will be simple while others will require more advanced methods. Management systems and processes range from services for metadata authorship to online presentation of research including maps, photographs, and interactive hunter and elder interviews with translations. ELOKA is also developing advanced systems to share geographic information over the Internet with computer-based mapping (ELOKA Team 2012).

ELOKA's overarching philosophy is that LTK and scientific expertise are complementary and reinforcing ways of understanding the Arctic system. Collecting, documenting, preserving, and sharing knowledge is a cooperative endeavor, and ELOKA is dedicated to fostering understanding and shared knowledge between Arctic residents, scientists,

educators, policy makers, and the general public. ELOKA operates on the principle that all knowledge should be treated ethically, and intellectual property rights should be respected (ELOKA Team 2010).

One important objective of ELOKA is to foster collaboration between resident Arctic experts and visiting researchers. Following are samples of current collaborated projects with Indigenous community members and researchers within the Arctic region. As stated before projects will have different needs and goals for their data preservation, access, visualization and communication. Collaboration between the two can make significant contributions to understanding the Arctic and recent changes and communicate their observations both within and outside the communities (ELOKA Team 2010).

Projects

Sanikiluaq Sea Ice project

The hamlet of Sanikiluaq is located in the Belcher Islands in southeastern Hudson Bay of Nunanvut, Canada. Following the long tradition of Inuit society, it is a community which relies heavily on subsistence hunting for food, clothing, and other necessary supplies. The wildlife in the Belcher Islands is home to a variety of wildlife such as eider ducks and other Arctic sea birds. Beluga whales, walrus, ringed seals, harbor seals and Arctic char inhabit the cold waters between and surrounding the islands (ELOKA Team 2012).

In this project three hunters (Johnassie Ippak, Lucassie Takatak, and Peter Kattuk) were interviewed to share their knowledge and observations on the local sea ice and environment. Their interviews were recorded in both English and Inuktitut with verbal translations. Also produced were maps with overlays of their sea ice observations. The website and underlying data are documented using formal metadata and is included in a catalogue (http://nsidc.org/data/eloka002.html). A data package is available for download through the metadata record.

These observations in their documented form tell researchers and others about the changing conditions of the ice floe edge around the islands. All three hunters are highly respected in the Sanikiluaq community for their experience as guides and assistants to western scientific researchers and as leaders in their community, but most of all for the knowledge that was handed down to them from their Elders and their new knowledge of sea ice and environmental conditions around Sanikiluaq (ELOKA 2012). Preserving

this knowledge is important and the content included in the website is one part of a preservation strategy.

Hunters in Sanikiluaq play a vital role in the cultural traditions of the local people. At one time not long ago they were able to time hunting treks that would last for several days supported by strong sea ice that would carry heavy sleds and abundant game by reading the skies, winds and ocean currents. This local traditional knowledge has been a reliable predictable source of information for them and the community, but over the past few decades the sea ice has become less stable and more unpredictable. With the recent changes in sea ice conditions hunting trips are now limited, dangerous and make it difficult for the hunters and elders to determine which traditional knowledge is still safe and reliable to pass on to the young hunters and community members. Changes in the quality of the animals hunters find are also affected such as the Beluga whale. Belugas usually have a thick layer of fat that makes them buoyant and float after a kill thus making it easier to retrieve from the water. Now the whales drown and sink and are lost to the hunter and the community. These stories of change are told to a broad audience through the Sanikiluaq Sea Ice Project website. Adjusting to rapid environmental change in the Arctic, Sanikiluaq hunters have had to learn about new ways to hunt, new places to hunt in the islands, and how to get to these places. At the same time, members of the community are seeking new ways to share and preserve their knowledge using information and communication technology and data management best practices (ELOKA Team 2012).

Narwhal Tusk Research

High Arctic communities in Nunavut, Canada, and in Northwestern Greenland have long been familiar with narwhals. For centuries, the narwhal has been part of the Inuit diet, providing food and nourishment. Although the Arctic is home to many unique animals, it is the narwhal's long, protruding tusk that has inspired legends and puzzled scientists for centuries (ELOKA Team 2012).

Available in this data set are videos of interviews in several dialects of Inuktitut with English translations; similar to captioning, that accompanies the video in real time. Untranslated videos are also available. These will be translated as resources allow. There is information about the Canadian and Greenlandic communities in which research has been conducted, as well as information that strongly focus on the science and laboratory work on the narwhal (ELOKA Team 2012).

This collaborative data-sharing project between ELOKA, Dr. Martin Neewia of the Harvard School of Dental Medicine and the Inuit hunters and Elders of these Arctic communities integrates traditional knowledge and western science in the study of the narwhal tusk.

Snowchange Oral History – Work among the Kolyma River indigenous societies of Siberia, Russia

Collaborating with ELOKA, the Snowchange Cooperative presents the history, culture and contemporary environmental situation of Turvaurgin and Nutendli, two Indigenous Chukchi communities living near the settlement of Kolymskaya located in the northeastern corner of the Republic of Sahka-Yakutia, Siberia, in the Russian Federation. Seasonal nomadic reindeer herding and other subsistence activities are traditional practices carried on by community residents. The data consists of written oral histories documenting life in the nomadic reindeer herding communities through maps, poems, songs, and scientific documentation of thawing permafrost in the region and other projects in which Snowchange participates (ELOKA Team 2012). With the growing impact of melting permafrost and changing weather patterns, it was important for the communities to widely share their story with others through the easy access of web pages hosted by ELOKA. Future plans include a Russian language version of the Website.

Silalirijiit

This is a three-year project that links Inuit knowledge with climate science and environmental modeling to understand weather patterns and their changes in the Clyde River area. An Inuktitut word, Silalirijiit (pronounced *see-lah-LEE-ree-yeet*) means "those who work with or think about weather." Clyde River (Kangiqtugaapik), Nunavut, is located on the east coast of Baffin Island. Starting in 2009, local hunters and Elders partnered with researchers from the University of Colorado Boulder and Colorado State University to initiate the Silalirijiit Project. Weather stations have been installed in three locations that provide up-to-date information on measurements of air temperature, relative humidity, wind speed and direction and many other meteorological conditions from the network of regional weather stations. The three chosen sites for the stations are areas that are frequently used by Clyde River hunters. What is unique about the data is that it is available in both Inuktitut and English (ELOKA Team 2012).

Merging different tools, methods and ways of knowing the environment to evaluate the nature and significance of weather changes in the Arctic requires collaboration and consultation in the management of various types of data. In this case, data from contemporary electronic instrumentation and information and communications technology is being used to support hunting and other local activities. Data are useful on a day to day basis and the archive, which ELOKA will assist in managing, will providing historical data that can support future research.

Seasonal Ice Zone Observing Network (SIZONet)

The Seasonal Ice Zone Observing Network (SIZONet), in collaboration with the Exchange for Local Observations and Knowledge of the Arctic (ELOKA), has developed an online application for collecting, storing, and analyzing sea ice observations contributed by local experts from coastal Alaskan communities. SIZONet is an interdisciplinary project, which implements an integrated program for observing seasonal ice in the context of a changing Arctic. CBM projects play a vital role in understanding change that is going on with the environment. Entry forms provide a variety of input methods, including menus, check boxes, and free text input. Input options strive to balance flexibility in capturing concepts and details with the need for analytical consistency. At the time of writing, access to the application is limited to researchers and community members, the intention is to make the system widely available in 2013. While the system currently has strict data validation and backup procedures, the ELOKA team is working together with the Data Conservancy (http://dataconservancy.org) to establish a long-term preservation system for the SIZONet collection (ELOKA Team 2012.

Data discovery

ELOKA is housed at the National Snow and Ice Data Center (NSIDC) located in Boulder, Colorado USA on the University of Colorado campus and is a part of the Cooperative Institute for Research in Environmental Sciences (CIRES). Established in 1976, NSIDC serves at the forefront of cryospheric data management practice; supports research into our world's frozen realms, frozen ground, and climate interactions that make up the Earth's cryosphere; manages and distributes scientific data, creates tools for data access, supports data users and performs scientific research and educates the public about the cryosphere. Considering that NSIDC already holds a significant collection of scientific data sets, ELOKA is in good position to connect LTK and CBM to relevant scientific holdings (NSIDC 2012).

Challenges and approaches

As with many LTK projects ELOKA faces many challenges in managing data types of this nature; challenges such as data ownership, metadata authorship, long-term preservation, access controls and user constraints.

ELOKA has and continues to face challenges related to data ownership, possession and intellectual property rights of LTK. LTK has deep roots and is usually oral and informal unlike the western scientific paradigm(World Intellectual Property Organization 2012). With traditional knowledge comes much responsibility in stewardship of LTK. Practices for protecting LTK needed to be innovative in their development in a realm where no such system or legislation exists. Most legal systems treat Indigenous knowledge as part of the "public domain" and can be used by any person(s) once it leaves the community (Berkes 2012). Current and emerging practices are seeing requirements for operation within explicit research guidelines and licensing regimes, along with requirements for community consultation and informed consent. Funding agencies and other organizations are now revising or releasing formal directives on ethical research conduct for studies involving Indigenous peoples. More and more, ethical research requires, at minimum, effectively sharing the results of research with communities, and at best involving local communities as full partners in research or facilitating research that is led by community members (World Intellectual Property Organization 2012). ELOKA acknowledges that Indigenous peoples and local communities have unique needs and expectations for the LTK they share with regional communities and others outside those boundaries. ELOKA operates on the principle that all knowledge should be treated ethically, and intellectual property rights should be respected.

Another aspect of ELOKA's work relates to metadata or data documentation. Metadata is defined as "data about data" and describes who, what, where, when, why and how of the data. Data management best practices promote a strong emphasis on data documentation. Local observations and knowledge can lose value at best, and be misleading at worst when presented in the absence of the local and cultural context in which it was collected, therefore LTK research and collection projects run the risk of value loss in its attempt to make complex knowledge understandable. It is important for LTK data to not be separated from its cultural context and at the same time control of the data must remain within the communities in which it was collected, but still be able to be useable, understandable, discoverable as ethically appropriate and preserved for its usefulness over time for all (ELOKA Team 2012). Thus, sound data documentation

is particularly important in the context of managing data resulting from documenting LTK.

One of the many core values of ELOKA is long-term stewardship of LTK, another is encouraging open access to data while maintaining ethical data use. Both present challenges. Concerns about access, housing of data and lack of experience with formal LTK data management were issues that arose during the early part of the project. ELOKA addressed these concerns by listening closely to community members concerns and ideas during outreach efforts on its part in meetings and workshops held in various parts of Canada and the U.S. (ELOKA Team 2012).   This collaborative approach takes time, but participants find value in creating a flexible best practice model that contrasts old ways, which dictated that a western linear standard must be universally adopted. The ELOKA model is by no means absolute; rather it is a starting point for integrating culturally appropriate solutions to issues of data management. In other words it is a flexible working model; some parts may be used in part or total depending on the needs of a particular community (ELOKA Team 2012).

Conclusion

The ELOKA project is one part of effectively and appropriately managing LTK and CBM data of the Arctic. Along with the project partners, ELOKA has made significant progress in meeting its' challenges by working with researchers and communities to establish their needs for appropriate data management. ELOKA is continuing its development of a sustainable system designed for long-term storage and perseveration of invaluable knowledge and information while facilitating management practices that allow communities to maintain control of their data. For the broader research community, ELOKA has created systems and methods for data and information discovery and distribution. By promoting and facilitating collaborative mutually respectful partnerships with Indigenous communities and researchers of the Arctic, ELOKA is preserving valuable knowledge of the Indigenous peoples whose lives and histories are intertwined with the voices of the Arctic.

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Finding Canadian polar Indigenous studies in Medline

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Abstract

The polar library community has made much progress over the past thirty years in the development of bibliographic search tools that allow fast and easy access to publications about the Arctic and Antarctic. Many of us rely heavily on tools such as Arctic and Antarctic Regions to satisfy our need for information organized with a geographic focus. For Circumpolar health researchers, there is now the growing Circumpolar Health Bibliographic Database, a subset of the Arctic Science and Technology Information System (ASTIS), which is improving access to polar health materials. However, when conducting systematic review searches, searchers are required to be as comprehensive as possible, which means that all relevant subject databases must be searched, even if overlap is substantial.   As a result, Medline must be searched as part of any systematic review search related to Indigenous health issues in Canada's Arctic regions. While the MESH Subject Headings and Geographic Headings do supply some controlled vocabulary access, keywords must also be searched to make the search comprehensive. This goal of this project is to create a Medline search filter that will assure comprehensive retrieval of Canadian Indigenous materials

Background

A systematic review is a specialty type of literature review that originated in medical research. Systematic reviews are designed to gather together all of the relevant publications on a specific topic, and evaluate and synthesize the findings of all of the various works into a single plain language summary which describes the state of the evidence. Hemingway and Brereton describe the goals of a systematic review in the following terms.

High quality systematic reviews seek to:
- Identify all relevant published and unpublished evidence.
- Select studies or reports for inclusion.
- Assess the quality of each study or report.
- Synthesize the findings from individual studies or reports in an unbiased way.
- Interpret the findings and present a balanced and impartial summary of the findings with due consideration of any flaws in the evidence (Hemingway & Brereton 2009, 1-8).

The systematic review search embodies all of the activities implied by Hemingway and Brereton's first point "identify all relevant published and unpublished evidence" and extends to the detailed documentation of the search process in the published systematic review. The quality of a systematic review search can be evaluated using the PRESS Checklist *(Sampson et al. 2008)*.

The first step in "identify[ing] all relevant published and unpublished evidence" is identifying all of the relevant bibliographic sources to be searched. For any systematic review related to health questions, including those related to Indigenous health in the Canadian Arctic, Medline must be among the databases searched.

Medline is one of the largest health-related databases, containing over 19 million references and indexing more than 5600 biomedical journals. Content coverage is world-wide. Medline employs the MESH Subject Headings and Geographic Headings as a controlled vocabulary. Controlled vocabularies, when applied thoroughly, consistently and accurately can make searching much more efficient. However, when conducting a systematic review search, in which comprehensive recall is the goal, searches necessarily include both controlled vocabulary terms and keywords. Further, in the cases of Canadian Indigenous people and the Canadian Arctic region, there are numerous problems with the MESH headings that make their use less effective.

MESH headings are not applied immediately as the reference is added to the database. So there are always current references in the database that are not indexed at all (Example 1). There are also references included in Medline, that pre-date the point at which a journal started being indexed in Medline, so some older materials are not indexed at all.

Example 1

Too new or too old to be indexed.

In-Data-Review
Montgomery-Andersen RA. Borup I.
Family support and the child as health promoting agent in the
Arctic – "the Inuit way" Rural & Remote Health. 12(2):1977, 2012 Apr.

INTRODUCTION: In the context of UN's 1990 'Convention on the Right's of the Child' 1990, and the associated definition of health promotion as a community's ability to recognise, define and make decisions on how to create a healthy society, this article describes and analyses how family support networks are conceived and present themselves in perinatal Inuit families.

In the indexing of publications related to Canadian Arctic peoples, the MESH Headings do not have the granularity required to separate Canadian subjects from non-Canadian subjects or to separate Canadian Arctic subjects from other Canadian subjects (Example 2).

Example 2

Hendrie HC.
Lessons learned from international comparative crosscultural studies on dementia.
American Journal of Geriatric Psychiatry. 14(6):480-8, 2006 Jun.

African Americans / sn [Statistics & Numerical Data]
Aged
Alzheimer Disease / bl [Blood]
*Alzheimer Disease / eh [Ethnology]
Apolipoprotein E4
Apolipoproteins E / bl [Blood]
Asian Continental Ancestry Group / sn [Statistics & Numerical Data]
Cross-Cultural Comparison
*Dementia / eh [Ethnology]
Dementia / me [Metabolism]
Humans
Indians, North American / sn [Statistics & Numerical Data]
*International Cooperation
*Learning
Mass Screening / mt [Methods]
Nigeria / eh [Ethnology]

High level indexing to Indigenous subjects.

No geographic indexing.

International and crosscultural comparative studies of Alzheimer disease (AD) offer significant advantages in elucidating risk factors for the disease by providing a wider diversity of environmental exposures as well as greater genetic diversity than do studies confined to a single ethnic group in a developed country. They also present with major methodological problems. The problems and their possible solutions are discussed in this article by describing three projects involving the Cree and English-speaking residents of Manitoba, blacks from Indianapolis, Indiana, and Yoruba from Ibadan and residents

Further, the headings appear to be applied inconsistently, both in terms of the level of the term in the hierarchy and also in whether or not the term is applied at all (Example 3).

Example 3

Hegele, R.A. Genetic prediction of coronary heart disease: lessons from Canada. Scandinavian Journal of Clinical and Laboratory Investigation Supplement. 230:153-67, 1999.

Canada / ep [Epidemiology]
Coronary Disease / ep [Epidemiology]
*Coronary Disease / ge [Genetics]
Coronary Disease / pc [Prevention & Control]
Disease Susceptibility
Family Health
*Genetic Testing
Humans
Predictive Value of Tests
Risk Factors

No indexing to Indigenous subjects.

High level geographic indexing.

Before it can find clinical application, a panel of genetic tests to predict coronary heart disease (CHD) risk will need to be shown to be more effective than either a determination of family history or the assessment of intermediate phenotypes such as plasma lipoproteins, diabetes and blood pressure. Our studies in Canadian Hutterites and Oji-Cree indicate that a single genetic factor has a small effect on an

All of these shortcomings with MESH indexing in Medline highlight the need to combine the controlled vocabulary searching with keyword searching to create a strong systematic review search strategy. Keyword searching for both Canadian Arctic geographic terms and Canadian Arctic Indigenous people is complex and difficult. The goal of this project is to create and publish a search filter for Canadian Arctic Indigenous people that other searchers will be able to apply in their searches.

Building a Canadian Arctic Indigenous filter for Medline

Search filters (also called hedges) are pre-defined search strategies that have long been recognized as a way to enhance literature searches. In 1994 Klatt observed that "the use of a subject hedge can greatly improve the quality and accuracy of a mediated search on MEDLINE or any other database".(Klatt 1994, 438-441)
While the creation of the Canadian Arctic Indigenous filter is a part of a larger project to create a Canadian Indigenous filter, it raises most of the challenges inherent in the larger project.

Searching for the "Canadian Arctic" concept

The development of geographic filters for Medline is not new. Most recently, Radut and Sanz-Valero described a filter for the European Union (Radut and Sanz-Valero 2010, 227-234). A broad filter for retrieving health information from PubMed has been developed (Murray 2012), however, no detailed Medline filter exists for Canada's North. In defining the part of the filter that will capture the "Canadian Arctic" concept, there are several challenges. The first is the fact that the MESH vocabulary for Canada's north is restricted to the names of the three territories (Yukon, Northwest Territories and Nunavut) and the term "Arctic Regions", which can be coordinated with other terms such as "Canada" (Example 4).

Example 4
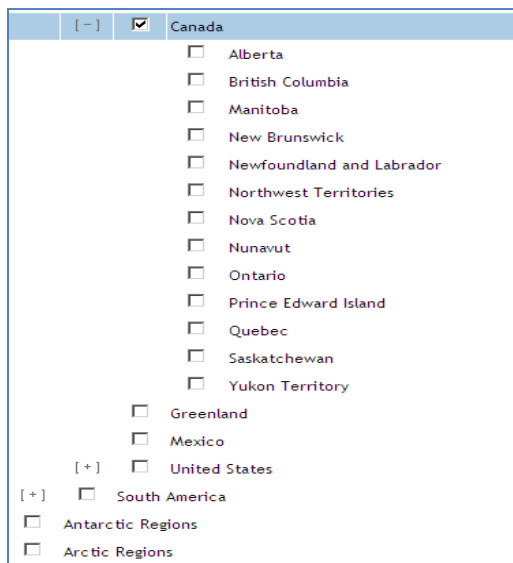
A variety of types of keywords that indicate northern geography must also be searched to increase recall. In creating this list, the following kinds of conceptual synonyms must be considered:

- Keywords that mirror the MESH terms.
- Names of regions (*e.g.,* "high Arctic"/"western Arctic"/"eastern Arctic" "Arctic islands" - remembering that Arctic, by itself, refers to areas outside Canada—as well as river basins/island names/bodies of water/Keewatin/ Franklin/Ungava/Nunavik).
- Names of cities, towns, villages, settlements, settlement areas and reserves (*e.g.,* Yellowknife, Amadjuak, Inuvaluit Settlement Region/Moosehide Creek 2).
- Current and former place names (*e.g.,* Eskimo Point/Arviat).
- Names in different languages (*e.g.,* Hudson Bay/Kangiqsualuk ilua/baie d'Hudson).
- Spelling variants and common errors in spelling (*e.g.,* Hudson Bay/Hudson's Bay).

Searching for the "Canadian Indigenous" Concept

Challenges involved in defining Canadian Arctic Indigenous people are even more complex. The MESH terms for Indigenous people are too high-level and do not distinguish people by geography. When the MESH terms for Indigenous people are coordinated with the vocabulary for northern Canada, the results are incomplete. Apart from the "Ancestry Group" Headings, only a single term, "Health Services, Indigenous," indexes Indigenous content.

Keyword search strategies designed to retrieve Northern Canadian Indigenous people must include or account for the following concepts:
- Keywords that mirror the MESH terms.
- Linguistic group names (*e.g.,* Athapascan) coordinated with geographic terms.
- Broader and narrower names for groups of people (*e.g.,* Dene and Sahtu).
- Names for broad groups of people unique to northern Canada (*e.g.,* Dene, Inuvialuit).
- Names for broad groups of people not unique to northern Canada that must be coordinated with geographic terms (*e.g.,* Inuit, Cree, Metis).
- Former and current names (*e.g.,* Yellowknives/T'atasaot'ine).
- Names in various languages (*e.g.,* Innu/Montagnais/Naskapi).
- Variant spellings and common spelling errors (*e.g.,* Gwich'in/Kutchin/Gwitch'in).
- Names that have other meanings (*e.g.,* Hare/Dogribs).

In addition there are terms that imply the presence of information about Indigenous people:
- Numbered treaties (*e.g.,* Treaty 8).
- "off-reserve/on-reserve"
- "traditional use"
- "urban Indian*"
- "Native people*" ("native" retrieves plants, etc.)
- "first nation*"
- "country food*"

Validation and publication

Once the filter is constructed and tested, it will be validated. Validation is the process of determining the efficiency by comparing a sample of the results (2 to 5 years) against a known set of data, such as a standard bibliography, a set of journals that specialize in the subject of the search. Validation could also be done through scrutiny by an expert who is familiar with the publication patterns of this literature. Devising a validation set for this filter will be complex because polar health literature is scattered widely through an array of general medical and clinical specialty journals, journals dedicated broadly to northern subjects and journals in

disciplines such as sociology and anthropology. Further, several journals which cover Canadian Indigenous subjects (*e.g.,* Rural and Remote Health, Pimatsiwin, and Journal of Aboriginal Health) are not indexed by Medline.

Potential journals to be used in a validation study of this filter include
1. Canadian Medical Association Journal
2. Canadian Family Physician
3. Canadian Journal of Dietetic Practice and Research
4. Canadian Journal of Infectious Diseases
5. Canadian Journal of Nursing Research
6. Canadian Journal of Psychiatry
7. Canadian Journal of Public Health
8. Canadian Journal of Rural Medicine
9. Chronic Diseases in Canada
10. Health Policy
11. Harm Reduction Journal
12. International Journal of Circumpolar Health (prev. Arctic Medical Research)
13. Journal of Ethnopharmacology

Once the filter is validated, it will be published so that anyone may use it to restrict searches to Canadian Arctic Indigenous references.

Conclusion and future research

The product of this part of the project will be a validated search filter that will identify Canadian Arctic Indigenous references in Medline. It will improve the ability of searchers to isolate this material in their searches. We predict that the filter will also enable searchers to remove Canadian Arctic Indigenous references from searches focused on other parts of Canada or other countries. It is part of a larger project that will create a filter for all Canadian Indigenous studies in Medline. Future research could involve constructing individual filters for Canadian Provinces and Territories or Indigenous people in other countries and adapting the filters for other health databases, such as EMBASE or CINAHL.

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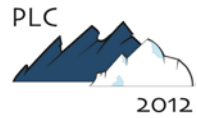
Session 4
Arctic and Antarctic Regions: History, status, moving forward

Panel discussion: Arctic and Antarctic Regions
Sharon Tahirkheli, Martha Andrews, Ross Goodwin, and Craig Brandt

Panel discussion: Arctic and Antarctic Regions

Sharon Tahirkheli
Information Systems Director, American Geosciences Institute

Martha Andrews
Institute of Arctic and Alpine Research, retired

Ross Goodwin
Arctic Science and Technology Information System, Arctic Institute of North America, University of Calgary, Canada

Craig Brandt
Senior Director, Product Management, EBSCO Publishing

Summary

This summary is modified from Shelly Sommer's PLC blog post about day 2 of the Colloquy (http://www.plcblog.blogspot.com/2012/06/day-2-plc-24.html).

Sharon Tahirkheli chaired this panel discussion about the Arctic and Antarctic Regions database. Discussion focused on how we can get past the stalled process that means new records from contributors like SPRI and ASTIS have not been added to AAR.

Sharon gave an account of funding cuts, personnel changes, and what has happened between EBSCO and AAR participants over the last few years. Martha reviewed the history of AAR: why it was begun within PLC, who was involved, and how the records were handled and became a CD-ROM subscription product from NISC. In 2009 EBSCO bought AAR and converted it to an online database as part of its suite of products.

Craig Brandt expressed a desire for better communication with the PLC and came as a product developer (rather than sending a sales rep). He discussed how EBSCO processes work and listed their concerns. The NISC version of AAR was designed to ingest records from nine different organizations, each with different controlled vocabularies and formats, but EBSCO can only build one ingest tool for each database. They were stymied by how to de-dup records and standardize the controlled vocabularies used by various contributors. They identified several journals with polar content, and added cover-to-cover records from those journals. In retrospect, that added a large number of records that had nothing to do with polar subjects, diluting the quality of search results.

Discussion revolved around how we can move on from here, building a smooth pipeline for contributors' records into AAR and improving database quality. EBSCO was already aware of the problem of irrelevant content; Craig relayed that many records about tropical and temperate environments will be removed. Only 3-4 of the organizations that originally contributed records to AAR are still adding to their bibliographies, which reduces the number of

players to worry about. PLC members agreed that duplicate records were not a major problem for our users, which removes an EBSCO concern. EBSCO will convert records to their own, less specific controlled vocabulary, but can maintain contributors' vocabularies in a different field for use in search.
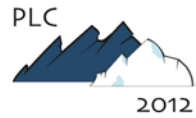
Session 5
Trials by fire

Asking for trouble: Preparing for emergency to prevent the disaster
Allaina M. Wallace

Information Services in Canada's Arctic: Successes and Challenges
Erin Palmer

Antarctic resources at the USGS
Lisa Adamo

Asking for trouble: Preparing for emergency to prevent the disaster

Allaina M. Wallace
National Snow and Ice Data Center, Boulder, Colorado, USA

Abstract

Digital data and analog data, particularly historic analog materials, require very different precautions and care in the event of a disaster. As caretakers of these archival collections, there are simple, easy, and low-cost steps we can take to prevent, prepare, and manage emergencies before they become disasters. This paper presents some of these steps and provides parts of the ROCS at NSIDC emergency plan as an example.

Background

Several minor events happened in and around the National Snow and Ice Data Center, home of the Roger G. Barry Resource Office for Cryospheric Studies (ROCS). In February 2009, a small water leak occurred outside of the office space next door to the librarians' office. While not a significant event and no damage, other than to the ceiling tiles was recorded, this was noteworthy due to the location. This room would soon house the analog archives collections. The following spring, in June 2010, the Boulder Creek was closed as a result of fast moving and rapidly rising water. This too was not a direct threat to the collections, however, the event served as a reminder of the threats to NSIDC, which sits one tenth of a mile (160KM) from the creek. One year later, the same event happened, this time prompting emergency alerts via text and email messages from the university. In February 2011, there was a water event at the university's Earth Sciences and Map Library. This event allowed us insight into the process of emergency management and disaster recovery at the University of Colorado.

These events and others provided us an opportunity to build awareness, within NSIDC, of the need for a ROCS emergency plan, build awareness of our collections outside of NSIDC with partner institutions and planners, participate in training sessions and workshops to learn more about how to write an effective emergency plan, to take steps to begin to protect the collections, and continue to monitor and evaluate the dangers to the collections.

Actions

Emergency protocols were established. Using student labor and time, we covered the shelving units in the library and archives with polyethylene sheeting. The plastic is stored above the shelves in a way that makes it easy to deploy. The plastic is often used, as a preventive measure, ahead of any construction work around or above the library and archives collections.

Emergency grab buckets were established. These contain tools inside a bucket with a lid, which may be useful for small emergencies. Items, shown below, such as flashlights, paper towels, plastic bags, plastic gloves, etc. will come in handy in the event of a small contained water leak. (See appendix A for more details.)

Two types of emergency plans were written. The Pocket Response Plan, or PReP, is a short plan that folds to the size of a credit card. It contains the names and phone numbers of individuals who may need to be reached as an emergency develops. The "ROCS@NSIDC Emergency Manual" is a longer, more detailed plan, containing contact information as well as instructions for recovering damaged materials. (Below is an image of the cover of the emergency manual, shown as an iBooks PDF accessible via iPhone.)
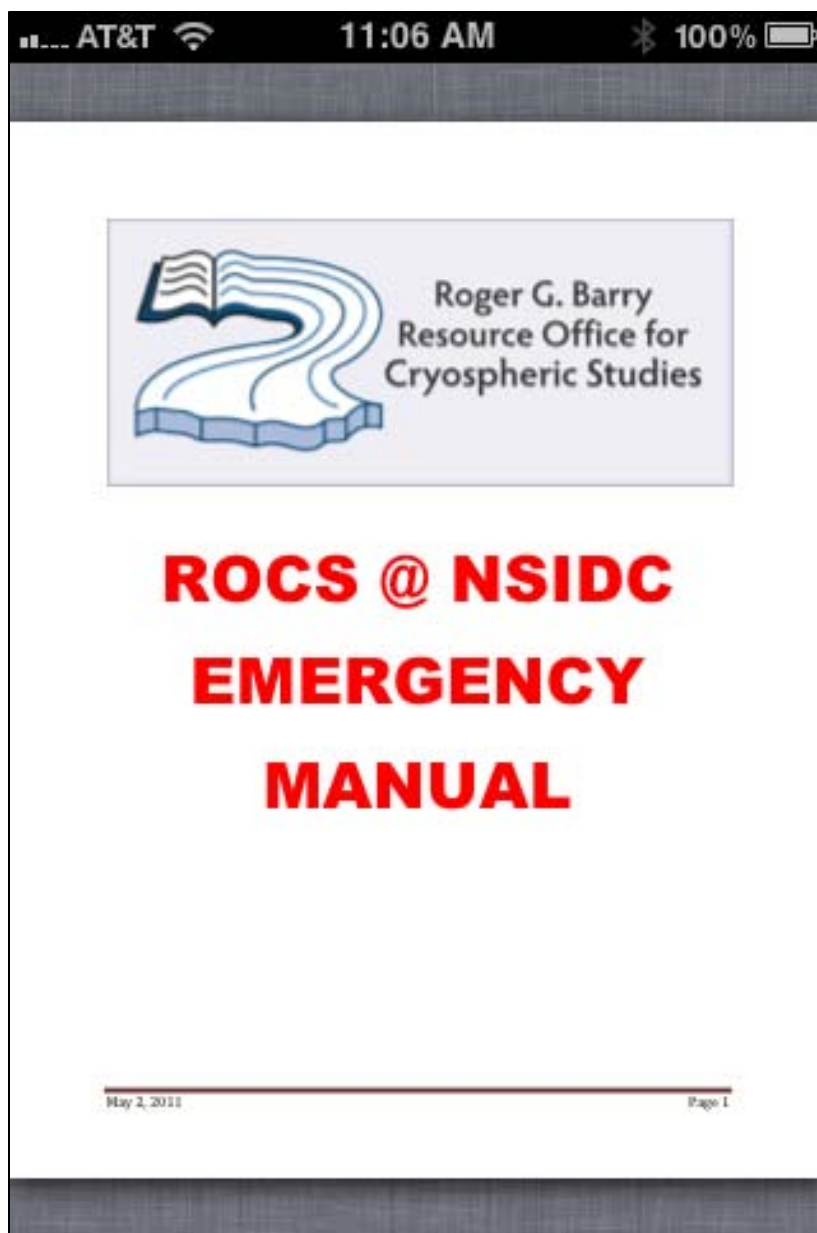
ROCS staff participated in several outreach activities. During an NSIDC all staff meeting, we simulated a water event in the ROCS Information Center. The demonstration illustrated the type of damage that can occur if even a small-water event is not managed correctly. Four days prior to the meeting, about one inch of water was poured into a plastic tub. Books had been placed on the bottom of the tub, and others were placed on a wire basket above the water line. All were lightly sprinkled with water. A lid was placed on the tub and a blanket covered it to keep out light. This set up simulated a room that would remain closed and free of light over a period of days, for example a four-day weekend. Four days later, the presentation was delivered. At the start of the meeting, a second bucket was poured over dry books. About one inch of water was left in that bucket. The books in the first bucket had absorbed all of the water

and mold had formed. The two buckets of wet books demonstrated the need to act quickly to rescue non-digital collections.

ROCS staff also began attending campus meetings coordinated by the University Libraries. These meetings included curators and other collection keepers from across the campus to begin a dialog about emergency planning and prevention. These meetings also included university staff from Risk Management, information about emergency freezer locations on campus, and other information that could be shared and utilized. Additionally, ROCS staff participated in a citywide event, "Alliance for Response." This free one day forum brought together collection curators as well as emergency planners and first responders. Dialog at this workshop centered on communicating the needs of each group so that during an emergency, rescue can be conducted more effectively.

ROCS staff also attended various training workshops. WESTPAS, a free service for 14 western states and territories, conducts emergency planning workshops. These workshops are "designed to help institutions protect the asset value of their collections, to promote stewardship of the heritage of the West and the Pacific, and to create a culture of preservation management." The first workshop provided the tools for creating an emergency plan. The second workshop offered an opportunity to test the emergency plan and improve disaster preparedness. The University also offered a free "Flash Flood Safety" training course. This useful class provided valuable information about our flash flood risk and the proper course of action during such an event.

Conclusion

Nearly all of the steps taken by ROCS staff were no cost or low cost solutions to problems we were facing. Being part of a larger university system means we have access to experts and individuals who have experience with emergencies. The opportunity to draw from their experience made our tasks much easier. WESTPAS, as well as, the Alliance for Response forum, are resources made freely available through funding from the National Endowment for the Humanities. The PReP template is available for free through the Council of State Archivists. Many other free resources (see appendix B) are available on the Internet. Even with limited staff, time, and funds, appropriate actions can be taken to create emergency plans and protocols for your institution and collections.

Appendix A: Emergency Grab Buckets

Emergency Grab Buckets provide what is needed to respond to a minor emergency, or to take first steps in a major disaster if the building is not evacuated. Each bucket should be located in a central spot in the department and be known to all staff and students who work in the department. Grab buckets will be inventoried, checking batteries and documents for currency etc., at least once a year on May 1st by the ROCS Staff. Annual inventory of bucket by department is recommended. Contents of buckets are listed below.

Documents (in zip lock bag):
- Inventory of bucket contents
- Map and list of campus freezers
- Procedures: —Air-Drying Books & —Packing out for freezer
- Extra copies of these procedures for quick on-site training
- List of collection's salvage priorities
- Telephone numbers of ROCS Librarian and Archivist—underside of lid

Supplies:
- 5-gallon plastic bucket with lid—labeled, numbered and tattle-taped
- 2 x 3 notebook and pencil
- Flashlight with batteries—labeled and tattle-taped
- Absorbent sponge
- Two 9'x12' plastic drop cloths
- Two sturdy large plastic bags
- Two pairs rubber gloves
- Roll of duct tape
- 20' yellow Caution tape
- Three yards of bailing wire
- Two good dust masks
- Mat knife
- Clothesline and clothes pins
- As many paper towels as will fill rest of bucket (3 packages)

Appendix B: Resources

Connecting to Collections
Prepare for and Respond to Emergencies
http://www.imls.gov/collections/prepare.aspx

Council of State Archives
Pocket Response Plan (PReP) Template
http://www.statearchivists.org/prepare/framework/prep.htm

Emergency Plan for the University Libraries
(See link to PDF on the left.)
http://ucblibraries.colorado.edu/preservation/

Heritage Preservation
Alliance for Response
http://www.heritagepreservation.org/AfR/index.html

National Park Service
Conserv O Grams
http://www.nps.gov/history/museum/publications/conserveogram/cons_toc.html

Northeast Document Conservation Center
Preservation Leaflets
http://www.nedcc.org/resources/leaflets.list.php

Society of American Archivists
May Day – Saving Our Archives
http://www2.archivists.org/initiatives/mayday-saving-our-archives

Western States and Territories Preservation Assistance and Service (WESTPAS)
http://westpas.org/

Information Services in Canada's Arctic: Successes and Challenges

Erin Palmer
Northwest Territories Geoscience Office

Abstract

In the Yukon, Northwest Territories and Nunavut, the three Territories of the Canadian Arctic, information services of all types are growing and building. Stretched out across a sparsely populated landscape; facing challenges of distance, literacy, language variation and communication infrastructure, libraries and archives of the Canadian north are none-the-less working hard to meet users' needs. This update on state-of-the-art information services in Canada's Arctic regions investigates what's new, what's changed and what's next.

The research for this paper was done informally by sending out a general email to library contacts in each of the three territories and relying on feedback and referrals received from those individuals for additional information. Some chose not to provide any information therefore what is included here is what was received. This is not meant to be a comprehensive survey but rather a general overview. Although each library has its own unique set of challenges and successes, there are many commonalities. This is a snapshot of some of the activities of the various libraries and archives in northern Canada.

Northwest Territories

The population of the Northwest Territories (NWT) is approximately 43,000 half of which is aboriginal. This is small given the land mass is about 1.2 million square kilometers.

The Government of the Northwest Territories (GNWT) Public Works and Services Technical Services Library run by library technician Janet Diveky supports the Asset Management Division of the Department. Their clients include engineers, architects, interior designers, quantity surveyors, purchasing, maintenance and financial officers. They provide technical support and facility management for all of the regions of the NWT (from design and construction to maintenance and demolition). The collections of the Technical Services Library include books, codes and standards, drawings in various storage media, and reports from granular and geotechnical to environmental and building status evaluations. Some materials are being converted to electronic format. Services are offered to consultants, contractors, students and client departments.

ENR-ITI Departmental Library

The ENR-ITI Shared Services departmental library is a technical library that serves staff of the Department of Environment and Natural Resources (ENR) and the Department of Industry,

Tourism and Investment (ITI). Ainsley Zock is the manager of Information Services. This library also provides service to other GNWT staff and external patrons, with limited borrowing privileges. The collection consists of approximately 22,000 print titles and several hundred video and CD materials, covering subject areas for which the two Departments have responsibility. There are more than 100 journals, including print and online subscriptions, some online databases and reference resources. Services include research and reference, article reprints, bibliographic searches, current awareness updates, database searches, and interlibrary loans. GNWT staff have access to color scanners and other equipment through the library's media services. Ainsley's group is also responsible for 4500 slide images and 3000 raw footage tapes.

Recently the library was relocated to the basement of the same office building it was in. The move provided an opportunity to evaluate the collection and plan for the future. During the last year the library inherited about 10,000 titles from Aboriginal Affairs and Northern Development Canada's (AANDC) Water Resources collection concerning water management in the North over the last 40 years. About half of these materials are uncatalogued. The GNWT encourages support of Northern vendors; however, they have less selection and often charge more for books and other library materials and supplies. Getting adequate systems support and training is also something with which they must cope.

Aurora College Library – Yellowknife Campus

The impending reduction of services at Library and Archives Canada including interlibrary loan services is one of the things that will impact the services provided by Carolynn Kobelka, Manager, Library & Information Services and her staff at the Aurora College Yellowknife campus. The College has several hundred full time equivalent students yet the library is only able to provide study space for 10 students and 9 computer workstations. While the library faces these and other challenges, there have been many successes along the way including membership in the NWT library network, a group of libraries in the Northwest Territories with a shared automated library system, collection development and technical services and a central collection that allows for current material to be rotated to smaller libraries.   Aurora College also has academic partnerships with Southern universities such as the University of Victoria. Online resources enable students to access much of the same information available to their southern counterparts. Library services are critical to students such as those in the MN (Master of Nursing) program who became nurse practitioners and make significant contributions to healthcare in the north. Students and staff are anticipating WiFi on campus this autumn.

NWT Public Library Services

NWT Public Library Services (PLS) falls under the Department of Education, Culture and Employment. Alison Hopkins is the Territorial Librarian and Brian Dawson is Head of Technical Services. The PLS coordinates public library services in the NWT including collection development and training in addition to providing the automated library system for the NWT Library Network consisting of Public Libraries, Legislative Library, Aurora College Libraries, Aurora Research Institute Library and the Prince of Wales Northern Heritage Centre Reference Library.

NWT Public Library Services faces different issues than libraries themselves. There are various complexities around starting a library in a community that has never had a public or school library before. Often community libraries are combination school and public libraries. Community members have been known to get concerned when books that were donated from the 1960's and 70's and were never looked at are weeded out and discarded. Shipping books to communities is expensive as is travel to train new library staff. Travel to remote communities can be an adventure so it is necessary to be flexible and expect the unusual. Finding and keeping staff is a struggle. For example, a very capable person in a small remote community may have never been in a library, never mind worked in one, and there are varying literacy levels throughout the communities. Most libraries are staffed by one person and often only on a part time basis during the school year. NWT PLS provides summer reading programs to communities who want to have a summer reading program and each year a Canadian Children's author visits three or four communities during Canadian Children's Book Week. Interlibrary loan services are available to all community libraries. People in communities without a public library are offered a Borrow by Mail service (BBM) at no charge.

NWT Archives

The NWT Archives under the direction of Territorial Archivist Ian Moir holds all the heritage resources and government records for the Northwest Territories. The primary responsibility is to archive the records of the government and secondarily to collect records from private individuals and organizations. There is a newspaper collection that contains one copy of almost every newspaper published in the NWT. Work continues on making these materials discoverable and accessible to those who are at a distance. Even though the Internet has created new opportunities such as online catalogues and digital versions of documents, the lack of infrastructure and the reliability on satellite

communication and data delivery hinder what archival material can easily be provided to the public.

One of the successful projects has been to select images from every community with a variety of common activities so that almost everyone searching can find something pertinent. There are online exhibits and travelling exhibits that visit schools. Future projects include revamping the web site for better collection delivery and developing a high resolution gallery of a portion of the photograph collection.

School libraries

Yellowknife is becoming more and more a global village and the challenge in the school library is to have books and resources for students from other countries such as Australia, India, Africa, Vietnam, Philippines, Eastern Europe, and Asia. There are limited resources in Aboriginal languages although the Department of Education, Culture and Employment (ECE) has published some colour illustrated books in English and aboriginal languages.

E-book readers have been around in the schools for a few years but the goal is to have e-book readers available to more students. There are workshops being organized to familiarize staff with the technology including how to purchase and use e-readers and catalogue and share e-books.

Limited material is available in French and English at appropriate grade levels. Web sites are often designed for university levels rather than grade school levels. Similarly, finding DVDs in French for lower grade levels that comply with Public Performance Rights is limited.

Indigo Love of Reading Foundation

Since the school book budget has to be stretched considerably these days, Indigo Books began a program after realizing many teachers were spending their own money on books & learning materials for students. The mission of the program is to encourage a love of reading in every child and give them a chance to reach their full potential. Anyone can donate to the foundation, adopt a school, purchase merchandise or encourage governments to support literacy in schools. As of May 2012 the Foundation had funded 1 million books for high needs schools in Canada. Several schools in the NWT have benefited from this program.

Vera Raschke is the Legislative Librarian for the Northwest Territories. The Legislative Library has depository status for NWT Government documents so government publications represent a large and vital part of the Legislative Library's collection. Government departments publish, sometimes exclusively, in electronic format distributed via the Internet. While there are advantages to electronic publications on the Internet there are concerns about the permanent availability of these documents as websites constantly change. The Legislative Library has developed a system of archiving the electronic documents onto a dedicated server and adding the links to the catalogue records. Then if a web site no longer exists, the documents from that site are still accessible to clients. Web sites for Northwest Territories departments, agencies, boards and commissions, are monitored by library staff to ensure electronic documents are not missed and any documents found are then harvested from these sites. These documents are fully catalogued and archived as soon as they are identified. Access is provided via the Legislative Library's catalogue which is available on the Internet.

The Legislative Library continues to obtain published print copies for their collection. If a title is only available in electronic format and it describes a government policy or program or it is believed to be historically significant, it is printed and added to the collection. Both print and electronic versions of the document are catalogued on the same record. As of March 31, 2012, there were 1585 documents archived on the server.

In the Fall of 2009 the Branch Library of the Legislative Assembly officially closed its doors and the Branch Librarian position moved to main Legislative Library. There was not enough space to accommodate the branch collection in the Legislative Library and no other libraries in the NWT were available or able to take on a collection not pertinent to their library's collection policy. Since losing this collection would be a loss of northern history a decision was made to downsize the Branch Library's collection and move it into a smaller space and maintain it as an unstaffed, storage collection. The library technician continues to work in the Legislative Branch Library one morning a week to maintain the collection. With it being unstaffed and not open, it adds to the workload and requires staff in the Legislative Library to make trips to retrieve material.

NWT Geoscience Office

The Northwest Territories Geoscience office (NTGO) represents a partnership between the Government of the Northwest Territories Department of Industry, Tourism and

Investment and the Federal Department of Aboriginal Affairs and Northern Development Canada - NT Region. It houses a comprehensive Geological Library that is the largest technical library in the NWT. The library maintains collection of books, journals, topographic maps, government publications, theses, and air photos. In addition to this, the librarian is responsible for scanning and making available mineral exploration assessment reports once publicly released. There is a collection of donated historical industry exploration data that is slowly being scanned and catalogued. Unfortunately with budget limitations, work continues sporadically. The Information Services group at the NTGO is responsible for the web applications that disseminate data to clients. These applications are NT GoMap, NT GoData and Gateway. Information that can be queried and downloaded includes NTGO publications, mineral showings, exploration reports, petroleum industry reports and digitally submitted geophysical and geochemical data, and diamond / kimberlite sample data. In the near future reference records will be added to the new Can GeoRef database, a subset of GeoRef.

The library is a one person library and from time to time has some student assistance; even so it is challenging to get things accomplished. Budgets continue to shrink and subscription costs of pertinent online databases continue to increase making it difficult to provide timely access to current geological research. Interlibrary loans are frequently used to obtain materials.

As of May 2012 a fibre optic cable was implemented between Edmonton and the Yellowknife area making Internet communication faster, smoother and more reliable that the previous microwave signal used to transmit across the Mackenzie River. It will be interesting to see what kind of difference this makes to data downloads.

The responsibilities of many current federal government functions in the NWT will devolve to the Territorial government within the next two to three years. The details are being worked out; however, at this point exactly what it means is unknown.   As a joint office already, the impact is anticipated to be minimal.

Yukon

Population of the Yukon is approximately 36,000 of which approximately 26% is aboriginal. It represents 4.8% of Canada's total land area and is the 9th largest of Canada's 10 provinces and 3 territories. Mount Logan in the St. Elias Mountains in Yukon's Kluane (Kloo-wah-nee) Park is the highest point in Canada with an elevation of 5,959 meters above sea level.

Energy Mines and Resources Departmental Library

Aimee Ellis is the Manager of the Yukon Energy Mines and Resources Departmental Library.

Work continues on digitizing as much of their collection as they can afford and can legally do under copyright. The Library recently received a donation from the Yukon Chamber of Mines of over 1000 rare and historical books, reports and other material spanning the last century. The Chamber wanted to ensure the collection is preserved and accessible.

Yukon Archives

The mission of the Yukon Archives administered by Territorial Archivist Ian Burnett is to provide and make accessible public records from the Yukon government and private records from individuals. All record formats such as maps, video, sound, and electronic are found in the Archives. Their mandate is to collect anything from any source.

Since materials cannot be borrowed and must be used onsite the Archives is open late on Fridays as well as Saturdays. Reference assistance is available by email or mail and the first three hours are free.

The exhibits in the gallery space in downtown Whitehorse are reproductions of original materials. Panel displays are developed and circulated to communities. As added value, some of their online exhibits include curriculum components. Unique, out of copyright versions of publications can be found online at the Yukondigitallibrary.ca.

Technology issues are minimal unlike the other territories. Similar to the other territories the Yukon archives faces capacity issues in terms of staffing and expertise. Since there is limited expertise elsewhere in the Yukon most staff is recruited from Southern Canada.

The Archives has been expanded with a new vault and the climate controlled cold storage area is being renovated. For the 40th anniversary this year a commemorative book entitled *For the Record: Yukon Archives 1972-2012* was published*.*

Julianne Ourom is the Director of the Public Library Services Branch of the Department of Community Services. The Yukon Public Library Service (YPLS) provides public library service throughout the Yukon through a main library in Whitehorse and 14 branch libraries in Yukon communities. Services include collections, programmes for children and adults, and Internet access. Last year Whitehorse Public Library moved from a 1967 Centennial Library into the brand-new Kwanlin Dun Cultural Centre. The Cultural Centre is an initiative of Kwanlin Dun First Nation, the largest First Nation and is part of a major downtown revitalisation. Recently YPLS launched the Yukon e-library with downloadable e-books and audio books plus WIFI access was upgraded, one of the smaller branches moved, a French version of the OPAC was implemented, and their Facebook presence was enhanced.

Nunavut

Nunavut's population is approximately 33,330 of which Inuit make up 85%. It is 2 million square kilometers or 20% of Canada's land mass and 67% of Canada's coastline. The 25 communities range in population from 130 to about 6700.

The number of operating libraries in Nunavut has remained relatively stable since 1999 despite the constant turnover of staff and often periods of high vacancy rates. As with the other territories "lack of capacity" is an ongoing issue. Employers try to meet the requirements of Article 23 in the Nunavut Land Claim Agreement (affirmative action for beneficiary hiring) and also to entice credentialed southerners to work and live in small northern communities. Broadband has improved, yet limitations continue to make offering some electronic resources and services difficult or impossible. The iPortal has been accessible online for over 10 years and it provides one URL to access the catalogues of 4 libraries (Legislature, NPLS, Nunavut Arctic College and Nunavut Court of Justice). Upgrading the VTLS Virtua system to the VTLS Chamo catalogue that has more social media features is being considered for 2012. Records in Inuit languages for Inuit language items continue to increase as Nunavut Public Library Services converts older records and adds the increasing numbers of books being published in the Inuit languages.   The Nunavut Wildlife Resources Coalition (NWRCC) still continues spearheaded by the Nunavut Wildlife Management Board. The Nunavut Research Institute realigned its library under the Nunavut Arctic College library. Nothing new is being added to the NWRCC database but all holdings up to June 2011 remain. The Nunavut Wildlife Management Board moved into a new space so their library no longer has to double as a Boardroom. The Pond Inlet Archives acquired funding which enabled

a significant portion of their documents to be catalogued and added to the NPLS database. Many of these items are rare and are available for in-house research only. This valuable collection has been built over the years through the dedication of Philippa Ootoovak. Plans for a Nunavut Heritage Centre which would include the Nunavut archives are on hold. The Community Access Program (CAP) initiative of the Federal government that brought computer and Internet technologies to Canadians across the country is no longer being supported. Every small community in Nunavut relied on that funding to have at least one community access Internet site. For many people in Nunavut, the library is their only access to the Internet and in small communities that is often the only access to information and services.

The Partnership (http://www.thepartnership.ca/)

The Partnership is Canada's national network of provincial and territorial library associations. Initiatives include the Education Institute, an electronic journal and a job board. The Northwest Territories, Nunavut and the Yukon are all members and participate in The Partnership activities. All three associations have respond to issues that impact library services with letters to relevant government Ministers and Members of Parliament. Recent issues of concern included the reduction of services at the Library and Archives Canada and other federal libraries and impact of this on interlibrary loans that are valuable for getting information in small, remote communities. The individual associations are primarily social groups.

Additional information

Additional information on issues impacting library services in northern Canada can be obtained from the First Mile (www.firstmile.ca). This initiative deals with local broadband infrastructure and networks and focuses on connectivity from the community perspective. Effective systems are designed and implemented from the local level right from the beginning. Broadband access and proper training for community members is needed in order to help shape technologies to meet local needs.

Carol Rigby's 2008 MSc thesis entitled "Improving Access to Aboriginal Language Materials in the Unicode Age: A Nunavut Case Study in Developing Multilingual and Multiscript Descriptive Cataloguing Standards for an Integrated Library System" is another interesting study. The study outlines the descriptive cataloguing practices that are most helpful, those which may require changes, and the resources that may be required in order to have an effective catalogue that will meet user needs in many languages, including endangered aboriginal languages.

Even though the three Territories of Canada's arctic are stretched out across a sparsely populated landscape and face challenges of distance, capacity, expertise, literacy, language variation and communication infrastructure; the libraries and archives of the Canadian north are none-the-less working hard to meet users' needs.

Antarctic resources at the USGS

Lisa Adamo

Manager of Public Services, Clarence King Library/U.S. Antarctic Resources Center, USGS Libraries Program

Abstract

The USGS Libraries Program is introducing their holdings to the Polar Libraries community. This presentation highlights its unique holdings and limitations, financial and academic support for the collection, the challenges we are facing, as well as goals and outreach plans as we bring this collection into the fold of the main library collection.

Introduction

Established in 1882, the USGS Libraries Program is one of the largest Earth and natural science repositories. The Libraries Program operates 5 branches whose collections are strategically managed to support the research needs of their local and regional interests. The Clarence King Library is co-located with the USGS Headquarters in Reston, Virginia, and maintains materials related to concerns east of the Mississippi River, as well as an extensive collection of foreign publications, due to our exchange program.

Prior to 2012, the US Antarctic Resource Center (USARC) was managed as a separate entity at the USGS, but due to a variety of factors, the USARC was merged into the USGS Libraries Program and absorbed by the Clarence King Library. The management of Antarctic resources continues to be funded by the National Science Foundation (NSF), maintains its designation as the Scientific Committee on Antarctic Research (SCAR) repository for the United States, and supports the Board of Antarctic Names. The Antarctic collection consists of maps published by Peace Treaty nations, charts, geodetic controls, satellite imagery, aerial photography, and field and technical documents.

The USARC

The focus of the USARC collection is on geodetic and geographic information. These materials include aerial photography, satellite imagery, maps and charts, published and unpublished information (i.e. books, serials, field notes, research documents, and technical reports), and media (i.e. film, photos, slides, and video). Some of the imagery and maps have been made available online at usarc.usgs.gov and eros.usgs.gov. The

historical value of the collection is immeasurable due to its volume of unpublished information, field notes, and in-house research documents. Besides the extensive aerial photography, there are early satellite and LIDAR imagery, maps published by 26 Antarctic Treaty nations, the field notes and papers of US Antarctic Explorers, and artifacts such as the Postal Cachets for the US Antarctic Program (USAP) designed by each research team.

The mission of the USARC was to simply make the materials available to the Antarctic research community, but this has been largely limited to physical access. According to their 2011 NSF Grant proposal, the USARC's goals were to (1) assess collections for digital presentation, (2) prepare digital and non-digital material for public use, (3) manage access to digital and print collections, (4) archive materials, as appropriate, and (4) support cartographic studies, geodetic controls, logistics planning, and geographic naming. These NSF funds employed 1 full-time geographer, maintained the USARC website, supported the manual indexing of undocumented aerial photographs, and the digitization of print materials (maps and imagery) for static online access and limited interactive capabilities.

Transition Challenges

Due to a declining budget and rising costs at the USGS, the organization is reducing its physical footprint and investing in solutions that are collaborative and efficient. Information providers, such as the library and the USARC, are being asked to eliminate duplication of physical collections and use digital venues to access and provide information. Therefore, the relocation of the USARC collection to the library was the first step towards this effort. The second step, reduction of materials, has not been as simple.

The organizational budget decline directly translates into less staff. In this case, attrition was due to retirements and job opportunities, and the positions were not refilled. Therefore there has been a lack of knowledgeable staff to support the transition of management or collection organization. This was not detrimental for published materials, which were quickly cataloged and added to the library's holdings. This has been nearly catastrophic for the unpublished materials because it was not stored, organized or cataloged by any standard. The USARC management team was anchored by individuals who had been in place for a minimum of 40 years, and a librarian was never considered because the management team knew what and where everything was. Unfortunately, their short-sightedness and lack of documentation has resulted in the loss of item significance, since the purpose or value of some materials is now unclear. Another similar issue, whose impact is not entirely known yet, is the failure to

migrate formats and technologies, such as 8mm film, VHS, and a variety of data files created using obsolete software.

Collection relocation

The mission of the USGS Libraries Program is to make the USARC collection discoverable and accessible to the public to include the Antarctic research community, and house the materials in locations that are best able to support the format under the care of specialists. Therefore, monographs, serials, and other similar published materials have been cataloged and uploaded to OCLC, an online shared cataloging cooperative, and incorporated into the regular library collection. Currently, the maps, charts, and other similar large format flat files will be maintained as a separate collection but housed adjacent to the library's existing Antarctic map collection. They have not yet been cataloged and await assessment for their value, retention, and digitization. Prints of imagery are to be managed, indexed/geo-referenced and digitized by the USGS Earth Resources Observation and Science (EROS) Center. It was anticipated that the USGS Denver Library would manage the Field Notes and various print media (slides and photographs), however due to cost and space limitations, these items are under further review for their retention value and eligibility for digitization. Historical artifacts are expected to be curated by the USGS Museum staff. The conversion of formats, such as 8mm film to digital, will be assessed once a complete inventory is performed.

Future goals

The USGS Libraries Program intends to improve the visibility of this obscure material by managing them through the library and increasing the quality and quantity of content available online via a variety of resources, including the USGS website (usgs.gov), the USGS Publications Warehouse (pubs.er.usgs.gov), and the Hathi Trust or Internet Archives. We have initiated conversations with Universities and Peace Treaty nations to collaborate on information formats, distribution, and storage. Our over-arching goal is to support the generation of more research and discussion on Antarctica, its landscape, ecosystems and global role.

Summary

Historically, the USARC has been our Nation's designated repository of Antarctic maps, charts, geodetic controls, satellite imagery, aerial photographs, and field and technical reports. However, the management of this material did not maximize the visibility of the USARC's contents to the research community and it was not organized in such a way to

make it useable by the public. Although it was convenient to have it housed in a single location, the USGS Libraries Program is disseminating the contents to locations where the physical items will be managed best, cataloging the collection to library standards, and planning to increase the online content, all of which will provide greater visibility for the collection. The digitization and improved access to content will increase information accessibility to historical information and contribute valuable insight to the global conversation.
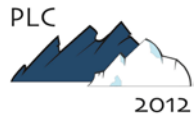
Session 6
International Polar Year

The IPY Publications Database: Slow progress
Ross Goodwin, Sharon Tahirkheli, Heather Lane, Ruth Duerr, Allaina Wallace, P.T. Dheerendra, and Igor Krupnik

Putting DAHLI to Bed: Preservation tactics for managing collections with limited means
Liz Schlagel

The IPY Publications Database: Slow progress

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Abstract

The International Polar Year Publications Database (IPYPD) is attempting to identify and describe all publications that result from, or that are about, IPY 2007-2008 and the three previous IPY/IGYs. The IPYPD is produced by an informal consortium of the Arctic Science and Technology Information System (ASTIS), the Cold Regions Bibliography Project (CRBP), the Scott Polar Research Institute (SPRI) Library, the IPY Historical Data and Literature (IPYHDL) project at NSIDC, and NISC Export Services Pvt. Ltd. (NES).

The IPYPD is endorsed IPY 2007-2008 project number 51, and is part of the IPY Data and Information Service (IPYDIS). Both the IPY Data Policy and the IPY Scholarly Publications Policy require that all IPY publications be reported to the IPYPD. The IPYPD is available at www.nisc.com/ipy, was made public on March 1, 2007, and is updated four times per year. As of August 2012 the database described 5600 publications from all four IPY/IGYs. The records in the IPYPD contain citations, abstracts, detailed subject and geographic indexing terms, and DOI or URL links to online publications. Reporting a publication to the IPYPD ensures that it is also cited, depending on its subject and geographic scope, in the Bibliography on Cold Regions Science and Technology, the Antarctic Bibliography, the SPRILIB databases and the ASTIS databases.

The IPYPD is growing steadily, but is facing several difficulties. Most IPY 2007-2008 researchers have not yet reported their publications to the IPYPD. The CRBP is currently in a funding hiatus, and is able to add to the IPYPD only those publications that fall within the scope of the GeoRef database. The IPYPD lacks funding to provide complete coverage of the publications of the three previous IPY/IGYs. On a more positive note, a team at the Smithsonian Institution has taken the lead to identify IPY 2007-2008 publications in the social sciences and humanities, and will have a list of at least 1000 publications to report to the IPYPD later this year. Also, the IPYPD's coverage of Canadian IPY/IGY publications is close to comprehensive, thanks to ASTIS's close cooperation with, and funding from, the Government of Canada Program for IPY.

Work on the IPYPD will continue for several more years. Please encourage your researchers to report their publications by e-mailing lists of references to one of the three cataloguing institutions as described on the database website. Where possible, sending hardcopy or electronic copies of publications to the appropriate cataloguing institution would also be appreciated.

Introduction

The International Polar Year (IPY) 2007-2008 was an intensive burst of interdisciplinary internationally coordinated observations and scientific research focused on the Earth's polar regions. The observational period extended from March 1, 2007, to March 1, 2009, to allow researchers to conduct two annual observing cycles in each polar region. The data gathered during this observational period will be used to conduct research and publish results for many years to come. (Krupnik et al., 2011; Lane and Goodwin, 2011) It is difficult to estimate how many publications will result from IPY 2007-2008. The bibliography prepared for the second IPY in 1932-1933 contained about 1000 references and took almost eighteen years to complete (Laursen, 1951). The bibliography of the International Geophysical Year (IGY) 1957-1958 (Beynon, 1970) contained almost 6000 references and was completed twelve years after the end of the IGY. IPY 2007-2008 could result in two or three times as many publications as the IGY.

A bibliographic database, and statistics on the disciplinary and geographic distribution, of the publications that result from IPY 2007-2008 will be of great benefit to polar researchers, to the managers of polar research programs, and to those working on future polar education, outreach and communication (EOC) activities. Many IPY publications will be cited in discipline-oriented databases, but such databases are often unknown to researchers in other disciplines. Social science publications, EOC publications and grey literature are often not cited in any database. Without an IPY bibliographic database, obtaining an inter-disciplinary view of IPY overall results, or a view of results by geographic region, would require searching many databases and would miss many publications. An IPY bibliographic database will be of even greater value if its design ensures that IPY publications are also included in all appropriate ongoing polar bibliographic databases, so that IPY publications remain accessible in the distant future when users no longer think to search the IPY database itself.

Building the IPY Publications Database

In the spring of 2005, four organizations agreed to work together to create an IPY Publications Database (IPYPD). This database would attempt to identify and describe all

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publications resulting from, or about, IPY 2007-2008 and the three previous IPY/IGYs. The Cold Regions Bibliography Project (CRBP) at the American Geosciences Institute produces the Bibliography on Cold Regions Science and Technology and the Antarctic Bibliography. The Scott Polar Research Institute (SPRI) Library at the University of Cambridge produces the SPRILIB databases and assists the CRBP with the Antarctic Bibliography. The Arctic Science and Technology Information System (ASTIS) at the Arctic Institute of North America, University of Calgary, produces the ASTIS databases. National Information Services Corporation (NISC) was, at that time, combining these databases and others to produce the Arctic & Antarctic Regions (AAR) database describing more than one million polar publications.

These four organizations formed an informal consortium and prepared a proposal to create an IPYPD as part of the IPY Data and Information Service, led by the National Snow and Ice Data Center (NSIDC) at the University of Colorado. The IPY 2007-2008 Joint Committee endorsed the proposal as IPY project 51 in August 2005. In fall 2005 the members of the consortium began creating new records for IPY/IGY publications, as well as identifying existing IPY/IGY publication records in their databases. Beginning in September 2006, programmers at NISC's related company, NISC Export Services Pvt. Ltd. (NES), used ideas and feedback from the other members of the consortium to create the IPYPD database and website. In early 2007 the Discovery and Access of Historic Literature of the IPYs (DAHLI) project (later renamed the IPY Historical Data and Literature (IPYHDL) project) at NSIDC joined the IPYPD consortium to provide coverage of publications from the first three IPY/IGYs (IPY 1882-1883, IPY 1932-1933 and IGY 1957-1958).

The IPYPD was made available online at http://www.nisc.com/ipy on March 1, 2007, the first day of IPY 2007-2008.

NISC has since been purchased by EBSCO Publishing, which began producing AAR in-house in summer 2009. Because EBSCO does not have the ability to accept records from the many polar libraries and databases that were contributing records to AAR, no records from those sources, or from the IPYPD, have been added to AAR since that time. NES was not purchased by EBSCO, and continues to make the IPYPD available.

Database design

As described in detail elsewhere (Goodwin et al., 2007; 2010a; 2010b; Lane and Goodwin, 2011), the IPYPD makes use of the existing system for indexing polar literature. Depending on their subject and geographic scope, IPY 2007-2008 publications are reported to ASTIS, CRBP or the SPRI Library. Simplified somewhat, the rule that

researchers are requested to follow is that publications about northern Canada are reported to ASTIS, about the Antarctic and about non-living things to CRBP, and about biological and human research to SPRI. The number of indexing organizations was limited to three in order to avoid making this reporting rule more complicated. The three organizations prepare records in their usual ways for use in their existing databases, but tag IPY records so that they can be identified and sent to NES quarterly for inclusion in the IPYPD.

Publications from the first three IPY/IGYs are identified, indexed and digitized by the IPYHDL project, as that project's resources allow. In addition, the other three indexing organizations are identifying publications from previous IPY/IGYs that are already in their databases, and doing some new indexing of publications from previous IPY/IGYs. Records from the first three IPY/IGYs are tagged for inclusion in the IPYPD in the same manner as records for IPY 2007-2008 publications. The IPYPD Basic Search page allows users to restrict their searches to any of the four IPY/IGYs by using the "IPY" menu.

Using NES's BiblioLine software and the infrastructure that had been created for the AAR database allowed the IPYPD consortium to create its database at a very low cost. Because of NES's automatic duplicate detection there is no problem if more than one of the indexing organizations indexes the same IPY/IGY publication. NES's COMPARE technology identifies duplicate bibliographic records, no matter in which format or publication type they arrive. This technology merges similar records provided by more than one contributor into a composite record that binds index terms and abstracts from all the merged records. The BiblioLine software provides Basic, Advanced and Expert search modes, with many powerful search and display capabilities.

The records in the IPYPD include citations, detailed subject and geographic indexing terms, and, in most cases, abstracts. Most IPY 2007-2008 publications are available online, and the records describing these publications contain DOIs or URLs linking to PDF files of the publications. Some of the publications from the previous IPY/IGYs were also already available online, or have been recently digitized by the IPYHDL project.

The IPYPD considers IPY publications prepared for education, outreach and communication (EOC) purposes to be equal in importance to research publications, and provides a method to search for just EOC publications using the "Audience" menu. Most EOC publications that describe IPY 2007-2008 activities are being created by IPY projects, but it was decided to also include those publications about IPY 2007-2008 activities created by non-IPY organizations such as general-interest magazines.

The Reporting Your Publications page of the IPYPD website tells researchers how to determine to which organization an IPY publication should be reported, describes what information researchers should send when reporting a publication, and defines what is meant by IPY publications.

The four consortium members that create IPYPD records are responsible for finding funding to pay for their own IPYPD activities. NES is paid for its services.

One of the objectives of the IPYPD project was to index a publication once and then use the resulting bibliographic record in many ways. In addition to being available in the IPYPD database itself, all IPYPD records created up to June 2009 are available in the AAR database, which is widely used by polar research organizations. (Records created since that date may also eventually appear in AAR, if EBSCO develops the capability to accept external records.) The IPY records prepared by each of the indexing organizations also appear in those organizations' main databases: the Bibliography on Cold Regions Science and Technology, the Antarctic Bibliography, the SPRILIB database and the ASTIS database. Some of the indexing organizations also make their IPY records available in other databases, as described in a later section of this paper. Users of all of these databases will learn of IPY publications that are relevant to their needs, even if they are unaware of the IPYPD or of the IPY/IGYs. The IPYPD will leave a legacy of records in many databases describing IPY publications, thus ensuring that the results of the IPY/IGYs are always available and accessible.

Current database contents

As of August, 2012, the IPYPD described 5600 publications. The distribution of publications by IPY/IGY is shown in Table 1. Because some publications are about more than one IPY/IGY the sum of the numbers of publications is greater than 5600. The database lists only 28% of the approximately 1000 known second IPY publications and only 34% of the approximately 6000 known IGY publications.

International Polar Year 1882-1883	467
International Polar Year 1932-1933	282
International Geophysical Year 1957-1958	2027
International Polar Year 2007-2008	2974

Table 1: Distribution of Publications by IPY

The distribution of IPYPD publications by year of publication is shown in Figure 1. Publications produced to commemorate the 100th anniversary of the first IPY caused

the small peak in publications during the 1980's. IGY publications peaked in 1958, the second observational year of that program. It will be interesting to see in which year IPY 2007-2008 publications peak. Because of the time delays in identifying publications and creating database records, the peak can only be determined in retrospect several years from now. Although the peak year is currently 2008 because of EOC publications (see next paragraph), our guess is that ultimately the peak will be in 2010 or 2011.
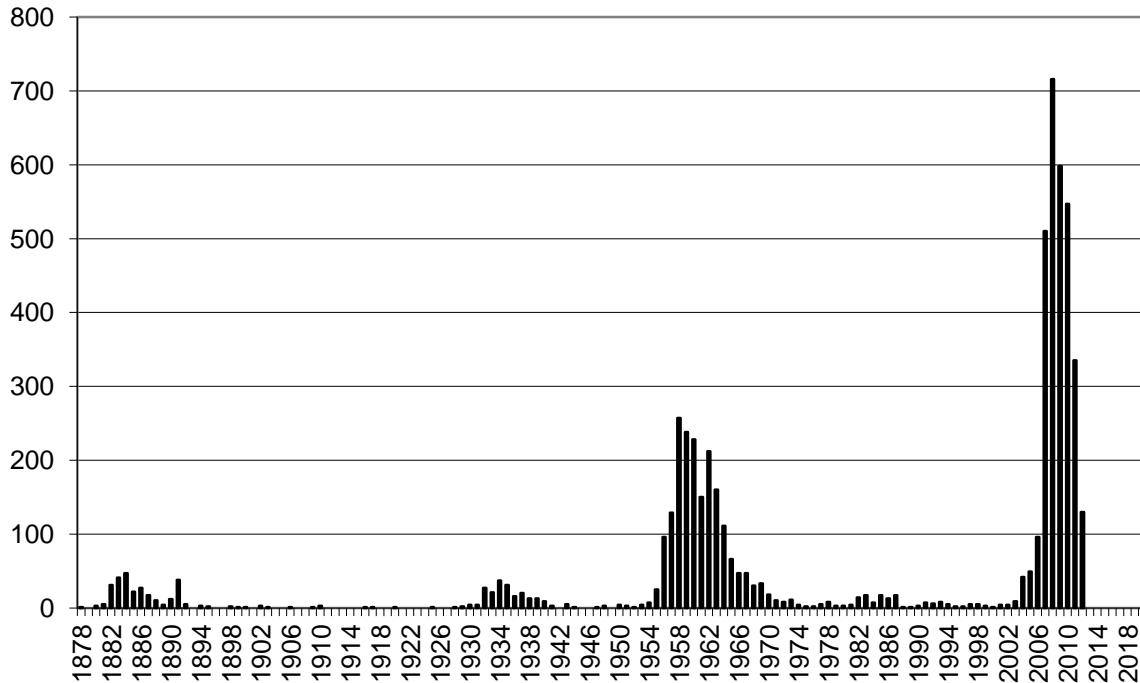
Figure 1: IPYPD Publications by Publication Year, 5600 Publications, August 2012

The distribution of IPYPD publications by audience is shown in Table 2. (The IGY is usually considered to be the third IPY, making IPY 2007-2008 the fourth IPY.) Education, outreach and communication (EOC) publications are those that were written for members of the public or for K-12 students. Surprisingly, the first IPY has the highest proportion of EOC publications. This is because of the many accounts of first IPY expeditions, especially the disastrous Greely expedition to Ellesmere Island, which have been written for the general reader. The production of IPY 2007-2008 EOC publications has ceased, while the production of research publications is near its peak.

Audience	IPY 1	IPY 2	IGY	IPY 4
Research	265	201	1550	2230
EOC	273	106	578	916

Table 2: Distribution of Publications by Audience

IPY bibliographic activities by Individual IPYPD participants

Arctic Science and Technology Information System (ASTIS)

ASTIS has created the bilingual Canadian IPY Publications Database at http://www.aina.ucalgary.ca/ipy, which describes publications from Canadian IPY/IGY projects, as well as publications from foreign IPY/IGY projects that have studied northern Canada. Because of their importance to Canadian IPY researchers and funding agencies, ASTIS has chosen to include published conference abstracts in the Canadian IPY Publications Database, even though conference abstracts are not included in the IPYPD.

As of September, 2012, the Canadian database described 4201 publications, of which 3717 are from IPY 2007-2008 and the remainder are from the previous IPY/IGYs. Of the 3717 IPY 2007-2008 publications in the Canadian database, 1827 are conference abstracts. ASTIS has examined the available bibliographies for the first three IPY/IGYs and has created records for all Canadian IPY/IGY publications that could be identified.

A unique feature of the Canadian database is that in addition to tagging records by IPY, ASTIS is also tagging them by individual research project. A large menu currently lists about 140 projects, subprojects and expeditions, including about 115 IPY 2007-2008 projects.

ASTIS uses Canadian IPY/IGY records in its many subset databases, all of which are accessible from http://arctic.ucalgary.ca/databases. These databases include the Yukon Biodiversity Database, the Inuvialuit Settlement Region Database, the Nunavut Environmental Database, the Nunavik Bibliography, the Circumpolar Health Bibliographic Database, the ArcticNet Publications Database, etc.

Cold Regions Bibliography Project (CRBP)

The CRBP, produced by the American Geosciences Institute (AGI), is attempting to document IPY/IGY publications in the areas of physical science and engineering for the Arctic region and in all sciences for Antarctica. An online list of current IPY/IGY publications sorted by author surname is maintained at http://www.coldregions.org/ipypubs.htm. These publication references are derived from either the Bibliography on Cold Regions Science and Technology or the Antarctic Bibliography. The list is now long enough that the CRBP is considering revising the

format to allow easier access. Initially, these references were primarily to publications about planning for the IPY. Scientific research results have been appearing slowly and, with the exception of lists provided by a few national programs, large numbers of publications have not yet been reported to the CRBP.

In addition to IPY 2007-2008 publications, the CRBP has begun to identify and mark references from the first three IPY/IGYs that are contained within the Bibliography on Cold Regions Science and Technology or the Antarctic Bibliography. As of May 2010, the CRBP had tagged 1224 references across all of the IPY/IGYs. The Arctic Bibliography (Arctic Institute of North America, 1953-75), a collection of more than 114,000 references spanning the time periods of the first three IPY/IGYs, has also been examined by AGI. 341 records had been identified as of May 2010. To identify and tag these records, AGI has depended primarily on data contained within the references themselves. Comparison of the AGI databases to bibliographies for the various IPY/IGYs has not been attempted to any great degree and is not currently funded.

Scott Polar Research Institute (SPRI) Library

The broad remit of SPRI's collecting policy has meant a considerable overlap with that of the other IPYPD participants. SPRI is primarily responsible for recording publications from IPY projects concerned with the biological, medical, social and human sciences, and about the IPY in general (e.g., publications about the organization and operation of the entire IPY; education, outreach and communication publications that discuss the entire IPY rather than focusing on a particular subject or geographic region). Until the closure in 2010 of the International Programme Office of the IPY, also based in Cambridge, material was regularly deposited by the IPO. The IPO has been instrumental in ensuring the collection of much ephemeral material which might otherwise go unrecorded.

SPRI's IPY/IGY records also appear in the SPRILIB databases at http://www.spri.cam.ac.uk/resources/sprilib and monographic records in the University of Cambridge Newton catalogue at http://www.lib.cam.ac.uk/newton. They are also included in the Institute's serial publication, *Polar and Glaciological Abstracts,* issued three times per year. As an adjunct to the project, library staff have also begun to tag published material from the first three IPY/IGYs.

IPY Historical Data and Literature (IPYHDL) Project

The IPYHDL digitized materials from the first three IPY/IGYs in the holdings of the Carnegie Institute, the University of Colorado library and the University Corporation for Atmospheric Research (UCAR). Bibliographic records were created for all of these materials, and appear in both the IPYPD and the ROCS Archives Catalog at http://nsidc.org/rocs/archives-catalog/index.php.

Some significant problems

The following three problems have slowed the progress of the IPYPD.

Lack of funding to cover publications from the first three IPY/IGYs

The IPY Historical Data and Literature project was unsuccessful in obtaining funding from the U.S. National Science Foundation for the majority of its planned coverage of publications from the first three IPY/IGYs. The Cold Regions Bibliography Project and the Scott Polar Research Institute Library have done some work to identify records that are already in their databases for publications from the first three IPY/IGYs. Ideally, this would involve searching their databases for every publication listed in the bibliographies of both the second IPY and the IGY. No funding is currently available for this task.

It was hoped that the IPYPD would provide an opportunity to convert to online databases the references to publications from the first three IPY/IGYs that are now available only in paper bibliographies. We were not successful in achieving this goal.

Lack of funding for CRBP coverage of IPY 2007-2008 publications

The Cold Regions Bibliography Project is currently in a funding hiatus, and is able to add to the IPYPD only those publications that fall within the scope of the American Geoscience Institute's GeoRef database. Approximately one-third of the IPY 2007-2009 publications that are being reported to the CRBP are within GeoRef's scope. Creation of IPYPD records for the remaining two thirds of the reported publications awaits the resumption of CRBP funding. The 24th Polar Libraries Colloquy has sent a letter to the U.S. National Science Foundation requesting a decision on the CRBP's funding proposal.

Most IPY 2007-2008 researchers have not yet reported any publications to the IPYPD

The International Polar Year 2007-2008 Data Policy (IPY Joint Committee, 2008) and the IPY 2007-2008 Scholarly Publications Policy (IPY International Programme Office, 2008) both required that all IPY 2007-2008 publications be reported to the IPYPD. When the consortium members began work on the IPYPD in 2005 we assumed that this requirement would make it relatively easy to identify IPY publications. Discussions with IPY researchers have taught us that while researchers were very attentive to the wishes of the organizations that funded their research, they were much less attentive to the wishes of the international IPY Joint Committee, which provided no funding. We suspect that many IPY researchers did not visit the international IPY websites, let alone read the policy documents that were available there.

The members of the IPYPD consortium have taken many actions to encourage the reporting of IPY publications. Frequent announcements have been made in polar research e-mail lists, newsletters and multidisciplinary journals, and on the consortium members' websites. Conference presentations about the IPYPD are made as frequently as time and money allow. In April 2010 the Director of the IPY International Programme Office made a personal appeal to the members of all of the IPY 2007-2008 Google Groups to report their publications, and asked national IPY contacts to forward his e-mail to all of the IPY researchers in their countries. In January 2012 an e-mail was sent to the 8000 people on the mailing list created for the IPY Oslo Science Conference requesting that they report their IPY publications.

In spite of these measures, the number of IPY publications being reported is much lower than expected, and is certainly significantly lower than the number being published. Self-reporting has had only limited success. Without other means of identifying IPY publications it will be impossible to measure the overall publication footprint of IPY 2007-2008, the productivity of individual international IPY projects (that often produce publications in different languages), as well as the rate of publication success in different IPY research fields and geographic regions.

Conclusion

Work on the IPYPD is well underway, and will continue for several more years. Although work has been slowed by the three problems discussed in the previous section, there have also been two notable successes. A team at the Smithsonian Institution's National Museum of Natural History has taken the lead to identify IPY 2007-2008 publications in

the social sciences and humanities. By late 2012 this team will have a list of approximately 1000 publications to report to the IPYPD.

The IPYPD's coverage of Canadian IPY/IGY publications is close to comprehensive, thanks to support from the Government of Canada Program for IPY. This program has its own Canadian IPY 2007-2008 Data Policy (Canadian IPY Data Management Subcommittee, 2009) which requires the reporting of publications to the IPYPD via ASTIS. Until its closure at the end of March 2012, the Government of Canada Program for IPY forwarded to ASTIS the lists of references from the annual reports of all of its researchers. Because of this, the IPYPD's coverage of Canadian IPY publications is currently much more complete than its coverage of IPY publications from other countries. Of the 2974 IPY 2007-2008 publications in the IPYPD as of August 2012, 63% are Canadian IPY publications indexed by ASTIS.

Perhaps by presenting IPY publication statistics by language, country and discipline we could appeal to national pride, or to the personal frustration of leading researchers in each discipline. This approach could lead to the creation of small national or disciplinary search teams that would "follow the money" to identify IPY researchers and their publications. We welcome suggestions from Colloquy members of ways in which our search effort could be improved.

To make the IPYPD easily available to potential users, and to remind IPY researchers that they should report their publications, the members of the IPYPD consortium would appreciate it very much if Colloquy members could put links to the IPYPD on their libraries' websites. Please encourage the researchers in your organization or country to report their IPY publications by e-mailing lists of references to:

- coldregions@agiweb.org – non-living things or the Antarctic
- librarian@spri.cam.ac.uk – living things (including humans)
- astis@ucalgary.ca – Canada

Thanks in advance for your help.

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Putting DAHLI to Bed: Preservation tactics for managing collections with limited means

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Abstract

It is a common theme that many archives and libraries are faced with collection management issues. It is every librarian and archivists' goal to best present their collections to the public. This task involves everything from providing both local and digital access to materials, maintaining or creating relationships between items of interest for the purpose of intellectual association, and carefully preserving resources for long-term reference. However, many institutions are limited in their ability to carry out collection management initiatives due to financial or other personnel constraints. By showcasing one historical collection of polar-research related items managed by the National Snow and Ice Data Center, a few local tactics for accomplishing preservation and access needs are reflected on and were presented at the 24th Polar Libraries Colloquy in Boulder, Colorado in June 2012[39].

DAHLI's big picture

Discovery and Access of Historic Literature from the IPYs (DAHLI) was a joint effort which involved collecting IPY analog material, digitizing them and making them accessible to the public. The goal of this initiative was to involve the Polar Library community in the International Polar Year 4 (2007-2008) through an archival effort to preserve past IPY research and media materials that were not yet accessible digitally to the public. The IPY 4 observational period extended from March 1, 2007, to March 1, 2009, to allow researchers to conduct two annual observing cycles in each polar region. The data gathered during this observational period will be used to conduct research and publish results for many years to come[40].

The original intent of the Discovery and Access of Historic Literature from the IPYs (DAHLI) project was to create relationships with other scientific institutions and archives that held International Polar Year historical collections. Their participation would lead to a collection effort of materials from scientific research done over the course of the IPY events (1882-1883, 1932-1933, and 1957-1958) into an online bibliography of data records and publications. Scientists were also asked about their potential interest in an IPY-focused online bibliography and the idea was well received.

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[39] http://plc24.blogspot.com

[40] http://www.awi.de/fileadmin/user_upload/Infrastructure/Library/Brannemann/Abstracts/Goodwin.pdf

These materials were the legacy of past IPYs and stood as milestones of scientific progress but are largely inaccessible and uncatalogued. They continue to be of scientific, historical, and sociological value; but their value cannot be exploited if inaccessible. The need was to identify and catalogue these materials while these researchers are still available to advise. DAHLI hoped to, and partially succeeded in, correcting this situation.

History of DAHLI

In January of 2005, NSIDC submitted an Expression of Intent (EOI) to the International Polar Year Joint Committee to provide on-line access to gray literature from the first three International Polar Years. The proposed approach was to create a searchable portal to materials from prior IPYs. Seventeen organizations holding historical IPY literature expressed interest in collaborating on the project. The EOI was approved by the International Council for Science (ICSU), World Meteorological Organization (WMO) Joint Committee for IPY. As a follow on to the EOI, NSIDC submitted a full proposal to the IPY Joint Committee in December 2005 as well as a proposal for funding to the National Science Foundation (NSF) in 2006. Both proposals specified that NSIDC/WDC would create an online bibliographic database of historic IPY materials.
Rather than accepting the full proposal as is, the IPY Joint Committee suggested that the DAHLI project join the existing International Polar Year Publications Database project (IPYPD) which hoped to provide similar support for the publications of the then upcoming 4th International Polar Year. Consequently the DAHLI project agreed to join The Arctic Science and Technology Information System (ASTIS), the Cold Regions Bibliography Project (CRBP), the Scott Polar Research Institute (SPRI) Library, and the NISC Export Services (NES) in populating the IPYPD.

Establishing an IPY Historical Collection

Led by the National Snow and Ice Data Center's Roger G. Barry Resource Office for Cryospheric Studies (ROCS)[41], the original participating centers were the University of Colorado Libraries[42], the Carnegie Institution for Science[43] in Washington D.C., the National Center for Atmospheric Research (NCAR) Library[44], and staff from the National Oceanic and Atmospheric Administration (NOAA). Initially, materials domestically

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[41] http://nsidc.org/rocs/index.html

[42] http://ucblibraries.colorado.edu

[43] http://carnegiescience.edu

[44] http://library.ucar.edu

located were acquired. Satisfied with an initial start to the collection, NISDC began conducting its pilot test in 2006 for digitization of IPY-related materials. This pilot was conducted under the sponsorship of the National Oceanic and Atmospheric Administration (NOAA) Climate Data Modernization Program (CDMP), using their contractor, Lason. The pilot began with materials held locally by NSIDC and continued with materials held by the libraries of NOAA's Boulder Labs and other local collections. The pilot helped develop a model for collaboration with outside entities; metadata creation, specifications for bibliographic entries, imaging, keying, and product output; and procedures for materials and stewardship.

The first set of materials, IGY General Reports and IGY Glaciological Reports, were sent to Lason for digitization 2 May 2006. In addition, some 700 images taken during the IGY were digitized and added to NSIDC's Glacier Photograph Collection[45]. Items were obtained from the first two IPYs, the IGY, as coverage included diverse international research and data records focused in the Arctic and Antarctic. The spatial coverage is global and includes locations in North America, Europe, Asia, Antarctica, and South American, as well as certain glaciers. The collection consisted originally of mostly analog materials, but also included some previously digitized data records from NSIDC.

The extended temporal coverage of this data collection is between the years 1882 and 1958. Some highlights from the collection include 30 slides taken by John Hollin, Fellow of INSTAAR and Research Scientist Emeritus of the University of Colorado, at Wilkes Station, Antarctica during the IGY. Also included in the collection are USGS Survey images at Fletcher's Ice Island in Antarctica, audio interviews from NCAR's Oral Histories project[46], USGS Survey images at Fletcher's Ice Island, a video on Drifting Station Alpha during the IGY published by NSIDC, and some interesting materials from the first International Polar Year. Publications within this collection primarily consist of government (national and international) bulletins and reports on activities during the International Polar and International Geophysical years. The data collection contains approximately 800 digital objects and most objects are freely accessible and downloadable, except where prohibited by copyright.

At NSIDC the DAHLI collection is now called the IPY Historical collection[47] and is managed by the ROCS archive and information center[48]. The digital objects without use

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[45] http://nsidc.org/data/glacier_photo/

[46] https://nldr.library.ucar.edu/archon/index.php?p=collections/findingaid&id=3&q=

[47] http://nsidc.org/data/docs/noaa/g02201_dahli/index.html

[48] http://nsidc.org/data/g02201.html

constraints are available to the public through the ROCS Archives Catalog and the International Polar Year Publications Database (IPYPD). Reference images and PDFs of publications and data are available for immediate viewing and download through the Catalog. Hi-resolution TIFF files are also available upon request.

Initial observations about the collection concluded that it was heavily focused on the IGY year. Only a few research materials from the IPY 1 and 2 were available and are thought to be lost or missing from the collection. Observing this, a goal was set to continue investigating where these materials may be loaned from if additional funding was granted. The question of the missing materials is a continued discussion amongst those interested in historical IPY collections.

Putting DAHLI to bed

As of October 2008, funding from the proposal submitted by NSIDC to the NSF IPY had still not materialized. However, digitization funding continued to be made available to the project through the NOAA CDMP. The implications of this funding situation were that several of the activities originally planned did not happen, including organization of an advisory board, quality control of digitized materials and web interface development, and data rescue.

Despite the funding situation and its implications, DAHLI digitization efforts through the auspices of the NOAA CDMP continued. In 2008, digitization of the holdings of the Carnegie Institute in Washington, D.C. began. In 2009 over 9,000 pages (45 documents) were digitized. Still, DAHLI project staff sought out additional sources of funding to continue this process but to no avail. Perhaps the original grant was seen only as a digitization project or it may not have been renewed because the project focused on historical content rather than processing recent works from the IPY 2007-2008.

With the cancellation of the CDMP in 2011 and with no resolution to the grant proposal submitted to NSF several years earlier, DAHLI project staff began to think about how to put the project to bed. The overall goal was still the same as well, to allow what was digitized to become readily accessible online.

Under these circumstances, it is crucial to identify best practices for handling a situation where no or limited funding affects the archival processes of a historically rich collection. Sadly, this is a common problem amongst information centers, libraries, and archives where collection expansion, processing, or interest seems to elapse for

different reasons. DAHLI project staff identified both general and archival issues that would assist with defining the project's next priorities.

General issues:
- Need for interested and well-informed volunteers or interns.
- Management and training of personnel.
- Workspace and technical equipment.
- Local staff time (IT, system administrators, web developers, etc.).
- Need a bibliographic database or an archival management system to store information and digital objects.

Archival issues:
- Decide how to organize diverse content from variable resources.
- Diverse data formats.
- Digitization errors.
- Incorrect or missing metadata.
- Different languages.
- Non-preservation standard file formats.

After continued funding was not received, DAHLI project staff began to look at how to address these issues. Interns and other staff time were appropriated and work began in the summer of 2010 to process these materials. The following steps outline how the DAHLI collection was reviewed, processed, and made accessible.

Step 1. Processing the collection

Looking at the digitized collection, it was obvious that the first step towards public accessibility was to review and standardize these resources' metadata and files. At times, some files needed to be rescanned and refitted in order to preserve the overall quality and information of the digital asset. Often, processing a digitized collection can be time consuming, but the general quality of the metadata and files affects search efficiency and provides the insurance of provenance and reassures the hosting institution's pride in their collection. Generally speaking, it is worth the time and investment to review the information products being made available to the public.

The project staff performed the following tasks in order to process these materials. These tasks can be applied locally to any newly digitized collection and definitely addressed many of the archival issues discussed previously:
- Standardized all files in access and preservation formats.

- Corrected digitization and display errors.
- Reviewed, adjusted and stored metadata for all materials in one local file.
- Performed research for missing information.
- Added bibliographic citations from OCLC.
- Applied a file naming convention[49].
- Allow for relationships between assets to be maintained.

Many of these tasks require a local staff planning and commitment to educate and manage volunteers. Creating a plan for processing is essential for ensuring that quality is preserved. Identifying what will be the end result is necessary during this process, and is often overlooked. During the International Polar Year historical collection's processing, many issues were identified initially, which assisted with the efficiency of metadata and file standardization.

Step 2. Identifying an archival management system

In order to complete the initial goal of allowing the collection to be made accessible and searchable online, an online bibliographic database or archival management system need to be identified, installed, and ingested with the newly reviewed and digitized collection. The selection process for a collection management system can be somewhat limited in choices due to funding. Luckily, many archival management systems are non-proprietary because their creators realize that most archives are bounded by budget constraints.

NSIDC staff and interns looked at several options for storing and managing the digitized materials from DAHLI. These included both open-source archival management options as well as internal existing databases. When looking at what was available, the options were diverse depending on their functionality. NSIDC staff looked for an open source system specifically that could also double as a digital asset management system and a way for managing analog archives stored locally, one way of validating its implementation.

Other key features to look for when searching for a nonproprietary archival management system include:
- Technical support available online.
- Diverse community of implementers.
- Ability to export metadata in an archival metadata standard.

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[49] http://nsidc.org/data/docs/noaa/g02201_dahli/index.html

- Allows the option to manage, make searchable, and relate digital objects and analog materials.
- Provides the ability to easily manage and enable multiple contributors to the system.
- Options for implementing access restrictions for restricted materials.

After several options for archival management systems were reviewed, the DAHLI project staff selected Archon[50]. Archon is software for archivists and manuscript curators. Created by the staff at the University of Illinois Archives, it automatically publishes archival descriptive information and digital archival objects in a user-friendly website. Currently, this system serves as a platform for managing digital and analog NSIDC collections, now available via the ROCS Archives Catalog.

Step 3: Adapting an archival management system to fit your needs

An open source system is basically a preconditioned package. When deciding on a 'package', it is important to think about how to organize a collection within it. How would users search? How would the materials be displayed and associated? These are all important questions to think about and discuss as it not only affects how current holdings are managed and represented, but it also will determine how future collections are represented.
- **Metadata**: Consider whether or not your institution requires that your metadata adheres to particular standards for description, or whether sharing interoperable metadata is needed. Some packages offer preconditioned metadata, and it is necessary to address whether or not it compliments the schema of the hosting institution.
- **Search**: Consider how users will search for these materials. What is important to the community? Take advantage of local researchers and volunteers with usability testing.
- **Display and security**: Consider how the pre-built package may need to be changed in order to fit display or security needs. Web-development requires local staff time and adhering to security requirements may be more complicated than originally scoped.
- **Continued management**: The digital assets may need to be adjusted or organized differently based on the other collections. A plan for managing existing content within an archival management system is just as or more important as a plan for incorporating new collections.
- **Preservation needs**: With a commitment to preserve all digital assets, there are many tasks to think about when adopting a new archival management system. Necessary tasks include;
    - Back up and storage plans: This involves versioning and maintaining file structure.

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[50] http://www.archon.org

- o Considering the difference between web display (thumbnails) and preservation copies of digital assets. This may involve format migration
- o Provenance and ongoing research: Will the digital assets continue to be researched and associated with related materials? Creating a plan for provenance-seeking provides a structure for volunteer research as well as enhances the historical value and searchability of a collection when it is well-described.
- o Validity: Using checksums or other forms of validation ensure that the digitized file can be checked against changes in any way. While this is less common, it may be necessary for certain digital objects that are popularly viewed or invaluable.
- **Data citations**: More and more authors and bibliographic interfaces are requiring citations for data and publications. While some archival management systems are slowly adopting citation fields, this may need to be personalized within a localized system.

Addressing the DAHLI project's experience with incorporating an archival management system to manage digital and analog collections, there were a few takeaways to note. One is that nonproprietary software continuously needs to be updated and maintained, which takes staff time and dedication. Usually, updates need to be manually implemented and may affect display and the search functionality of the interface. Secondly, documentation for maintaining the collection needs to be created and stored locally. Volunteers and staff time on non-funded projects are usually variable and sporadic. Maintaining 'How-tos' and other live documentation is essential.

Looking forward

Over the course of the summer of 2011 all of the collected digitized materials (bibliographic items, images, and video and audio files) were organized, documented, and published in in the ROCS Archives Catalog, where it is intended they will remain accessible to the public for the long-term. Submission and description of the digitized materials completed, the DAHLI project came to a close in August of 2011.

The National Snow and Ice Data Center (NSIDC) continues to collect and distribute materials through the IPYPD and the ROCS Archives Catalog. The DAHLI project is a perfect example of a community-based commitment to present these international assets in a way that they are able to speak for themselves. The situation of loss of funding and the commitment to preserve and make accessible historically valuable collections is a common theme amongst small archives, information centers, and libraries. The enthusiasm of the archival community reflects in the tools and information

available for doing so, which is progressing as the interest in historical scientific research and our environment continues.

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Discovery & Access of Historic Literature from the IPYs (DAHLI)

- An IPY4 project led by NSIDC. Focused on...
  - Collecting & cataloging world-wide holdings of IPY data from the past three IPYs
  - Long-term management and accessibility of these holdings
  - Educating the public about these historical assets
  - NSIDC as an active member in the IPY4 effort

- Original Participants
  - NOAA: Climate Database Modernization Program (CDMP)
  - National Snow & Ice Data Center

DAHLI's Big Picture

- Establish relationships with institutions with IPY historical assets
- Digitize these materials and capture provenance information and essential metadata
- Create a publicly searchable database of these data records and literature from the three previous IPYs
- Initial Progress
  - Creating an inventory of who has what IPY materials and where (scattered around the world)
  - Safely acquiring some of these materials
  - Shipped to contractor. Digitized 800+ IPY historical records and publications and captured minimal metadata.

Establishing an IPY Historical Collection

- Participating Holding Institutions:
  – University of Colorado Libraries
  – Carnegie Institution for Science of Washington
  – National Snow and Ice Data Center (NSIDC)
  – The National Center for Atmospheric Research (NCAR)

- Collection Coverage:
  – International Polar Years (IPY) 1882-83 and 1932-33
  – International Geophysical Year (IGY) 1957- 1958
  – Research coverage from many countries, the Arctic, & Antarctic

A Closer Look at the IPY Materials

- Contents:
  – Datasets and other research documentation from observational research projects
  – Photographs, log books, publications, interviews, government records, and data tables

- Other Observations:
  – Many data records and research materials were lost, especially from IPY 2 (1932-33).
  – The collection is incomplete - there are a lot more materials that may have made the collection more robust
  – Heavily focused on the IGY year because it's the most recent
  – Expect the diversity of contents will affect the organization and description of the collection

DAHLI Collection Highlights

- **Images:**
  - Wilkes Station, Antarctica (IGY)
  - USGS survey at Fletcher's Ice Island

- **Audio files of Interviews:**
  - NCAR's Oral Histories Project

- **First IPY materials really interesting:**
  - Oldest from 1885. A German publication about geomagnetic and ground currents data & research results completed in a lab in St. Petersburg

- **John Hollin's (INSTAAR) digitized work** accessible at NSIDC exclusively

- **The IPY2 materials from Carnegie**

Seal peaking through hole in ice
John Hollin, 1958

Summer at Wilkes Station
John Hollin, 1958

Aerial View of the Vanderguild Glacier, John Hollin, 1958

Living quarters at the end of the 1958 melt season
USGS Survey at Fletcher's Ice Island - Keller, G.V., et all. 1958.

Termins-Beobactungen: Der Erdmganetischen Element Und Erdstrome, IM Observatorium Zu Pawlowsk, H. Wild, Published May 21, 1885.
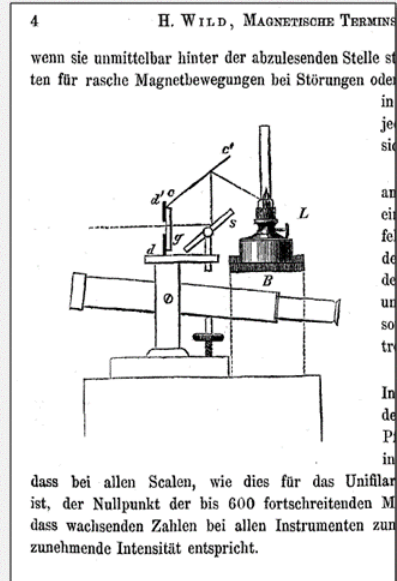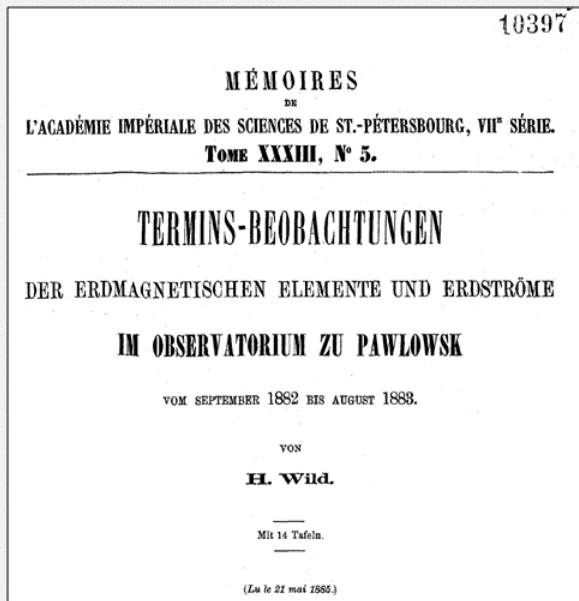
Continued Progress of the DAHLI Project

- Plans at this point in the project
  - Analog collections distributed back to their holding institutions
  - Looked for additional funding from NSF

- NSIDC staff began to think about how to continue the project without funding
  - Searching for a database in which to manage and describe the collection
  - Contribution by volunteers, interns, technical staff, library staff
  - What are the best practices in this situation?

Where is the DAHLI Collection available?

- Now called the IPY Historical Collection at NSIDC and managed by ROCS Library and Archives staff
- Digital objects now available to the public through the
  - NSIDC ROCS Archives Catalog
  - International Polar Year Publications Database (IPYPD)
- Right now most activities other than just general maintenance have been halted
- Meanwhile, the NSIDC Archives Catalog is currently used and being expanded.
- How did we get here?

Current or replicated versions of NSIDC databases

archivematica.

There are a lot of considerations when choosing from what is out there…

greenstone digital library software

Major considerations in selecting an Archival Management System

- What is available?
- How easy is it to implement and personalize?
  - Limited development time available
  - Technical support through the hosting site
- How easy is it to contribute more materials to?
- Does it have other functions?
  - Interoperable metadata
  - Are the objects relational?
  - Multiple users and secure login
  - Distribution and access restrictions

ARCHON

- An PHP-based open-source archival management system built by staff at the University of Illinois Archives
- Now serves as the public digital catalog for the ROCS Archive
- Why we chose Archon
  - Updated regularly, displays well in browsers
  - Being integrated with Archivist's Toolkit, therefore.. long-term support
  - Allows enough flexibility to fit the needs of the Archive without a lot of backend work
  - Easy to use and contribute new records and track analog box locations
  - Option to bulk upload metadata by using CSVs/xml

How to adapt a system to fit your needs

- Think about how to organize a collection within an archival management system
- Metadata
  - Adhering to a particular metadata standard or process of description
  - What metadata is important for discovery, identification, etc.?
- Display
  - Changing the system to fit the agency brand and website (CSS, Logo)
  - Web content – If public-facing, important to describe what it is
- Administrative Permissions - who can edit, manage what is stored? Is registration required to access materials?

Application within the ROCS Archives Catalog

- Organization
  - Analog: Box and room location, accession ID
  - Digital Content: Organized by collection or holding institution

- Metadata
  - Added preservation metadata fields; Checksum, identifier, etc
  - Major search fields; Subject, author, title

- Display:
  - Changed to meet NSIDC site design requirements
  - Other; i.e. Removed shopping cart, updated toolbar labels

- Permissions: Only NSIDC Staff can currently make changes

Now that the Catalog is structured, what best practices are there for adding content to the system?

- Review digitized files
  - Are they organized correctly? Relationships maintained?
  - Other potential issues, e.g. inconsistent formats and file names, corrupted files, pages scanned upside-down
- Digitization metadata inconsistent and often inaccurate
  - Digitizers not familiar with context
  - Materials are in different languages
  - One template for metadata cannot easily address all important information for diverse material types (images, publication, etc)
- Manual metadata collection as needed
  - Using external resources as needed (Ex; OCLC, LOC)
  - Directly from the files (ReadMes, notes, actual content)

Data Management Tactics

- Automation for productivity
  - Bulk modifications (i.e. filename changes adhering to a convention)
  - Movement of metadata (csv upload)
- File validation and duplication, recursion, merging
- Standardization of Formats
  - Files digitized into many different formats. Many of these were migrated to reference and archival formats
  - Reference (JPEG, PDF) for thumbnails and web display. Available immediately through the catalog.
  - Archival (TIFF, MPEG, MP3) as a preservation copy. TIFFs available through FTP or email.
- Adding preservation metadata
  - Checksums, unique identifiers (UUID), file size

Take-Aways

- Review digitization process with contractor or staff
- Consider how a collection and a single digital object should be described within a catalog in order to enable functional user search
- Maintaining your digital assets from a data management and preservation focused perspective
- Have a back up plan for if & when a project gets 'put to bed'

Access the DAHLI collection at

- NSIDC Archive Catalog
- NSIDC IPY Historical Literature Dataset record
- International Polar Year Publications Database (IPYPD)
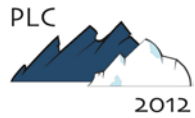
Session 7
Developments in data

Nimbus satellite data recovery from visible film archive: 1964, 1966, 1969
G. Garrett Campbell, Dave Gallaher, Carl Gallaher, and Alex Calder

Nimbus satellite data recovery from visible film archive: 1964, 1966, 1969

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Introduction

It is important for understanding the earth's climate and climate change to go back as far as possible in the observational record to establish base line observations when human climate change is smaller than today. The modern satellite data for sea ice studies begins with microwave observations in 1973. Here we discuss the rescue of satellite observations from 1964 to 1969, potentially extending our record almost a decade.

The Nimbus satellites were designed and launched by NASA to experiment with different sensor systems for remote sensing of the Earth's weather. The Advanced Videocon Camera System grew out of aircraft observations systems dating back to World War II. The video signal was recorded on the satellite and then transmitted by radio to the ground and finally archived on 35 mm black and white film. This was the state of the art large archive system of the 1960's. This film sat neglected in storage at NASA and NOAA/NCDC for more than 40 years until we began a project to scan the film into digital form so that we could study sea ice variations in the 1960's. In this paper will discuss the processing of the film as it may be of interest to others in the library community who also have large film archives.

Procedures

The Nimbus visible film archive consists of 400-foot rolls of 35 mm film. As the satellite moved through its orbit, about 100 images (figure 1) were collected from 3 video cameras on the satellite. About 40 film strips from each orbit were concatenated into this long roll of film. The scanning, that is the conversion of the picture into digital form was done with a Kodak 2500 scanner. That technology was originally developed for the commercial institutions who were converting 35 mm film rolls (36 frames) into digital format. These scanners are now surplus and we found a refurbished one which has served out needs well. Basically it scans the film by moving the film past a charged coupled linear detector. Care was taken in mechanical design to minimize distortion of the digital image relative to the raw film image. We have scanned more than 120,000 images in recovering the Nimbus 1, 2 and 3 data.

The next step was to document every frame with a time and a center point. Initially a program was written to display every image and have the student operator click on the center point and type in the time. This was extremely tedious, time consuming and more important prone to errors. To stream line the process, we realized that the frames were usually separated in time by 91 seconds. One could then enter one time for a whole orbit of 100 images and have the computer fill in all 100 values. Sometimes the numbers were hard to read or some frames were skipped in the sequence but checking the predicted times versus the printed times was more accurate that entering them individually. Figure 2 shows a typical set of time stamps from the images. Figure 3 shows a display used by the operators to select the center point of many images. [In the presentation at the conference a movie was shown.]
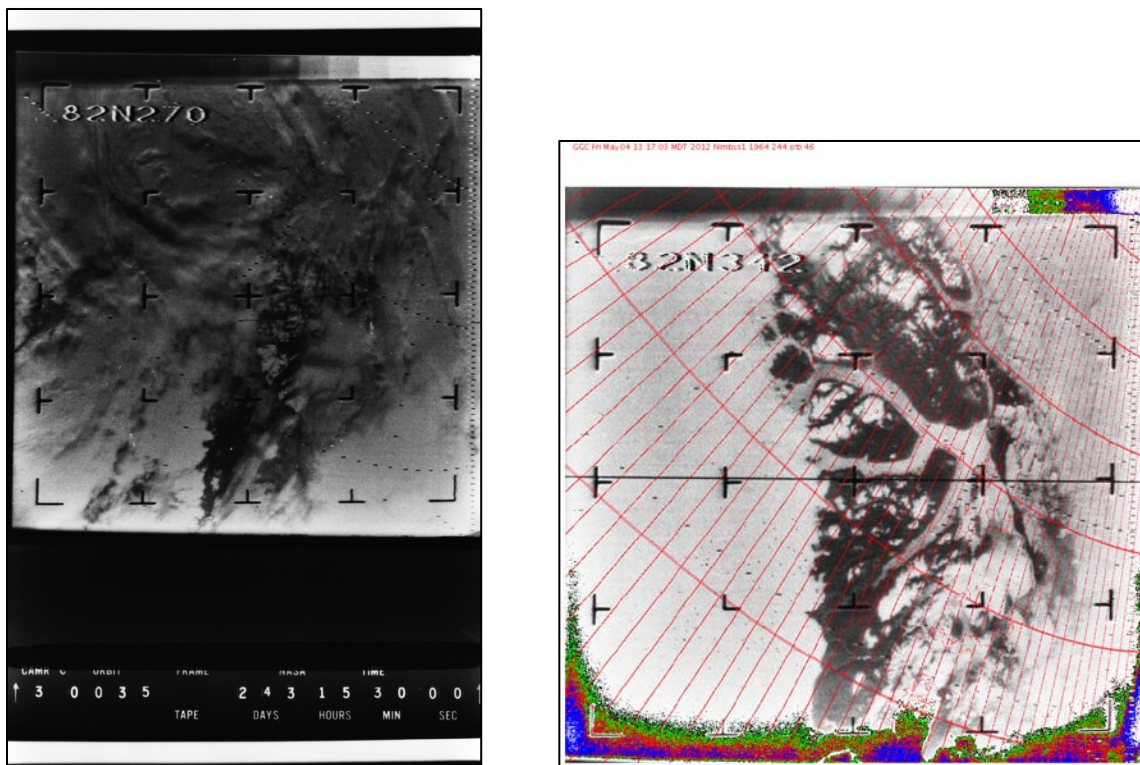
Figure 1: Sample image from Nimbus 1 from 1964. To navigate the image, one needs to capture the center point pixel location and the time stamp at the bottom every image. The right image shows a trimmed image with navigation superimposed. (This is Independence glacier and fjord in north Greenland.)
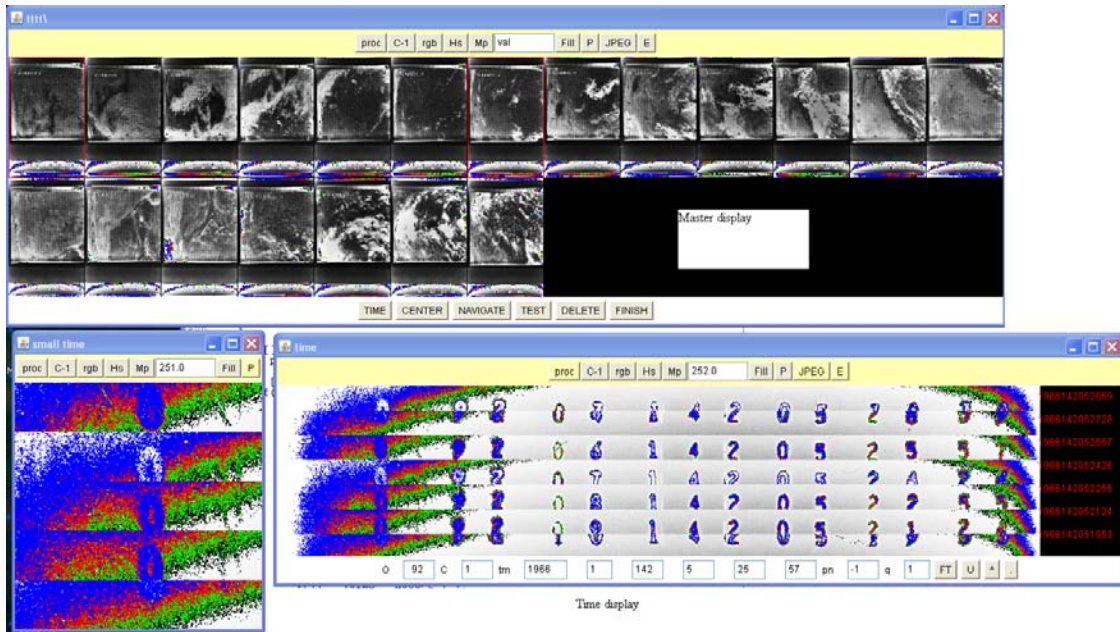
Figure 2: Sample display shown to the operator for checking the time stamps and camera numbers.
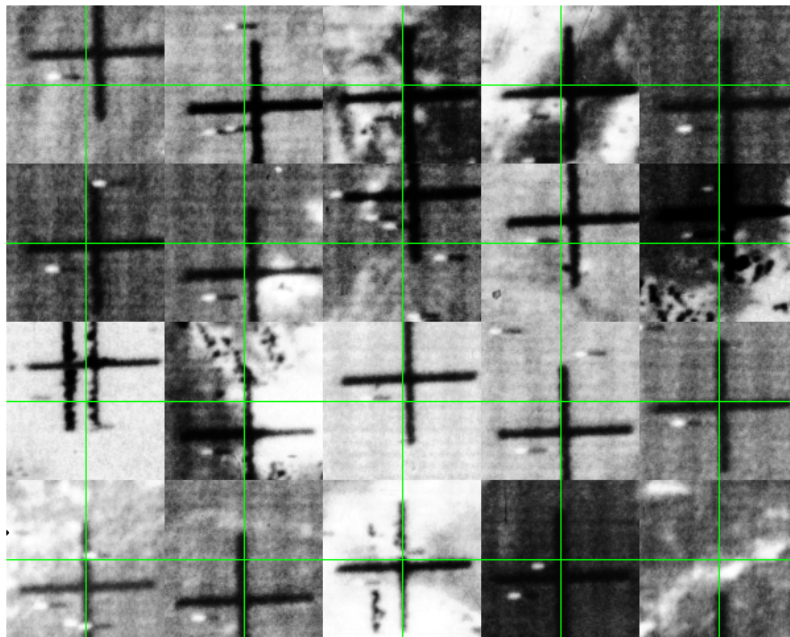
Figure 3: Center selection (part of a movie).

This software was custom built for this process. The take away point here was that documenting all the images accurately could not be done in a brute force examination of individual frames. Often individual time stamps were unreadable and using adjacent

frames allowed a good guess to fill in the result. It was well worth the effort to write special software to handle this documentation. Second we took advantage of student labor to handle this tedious task. It is not possible to do the manual processing on a 40 hour a week basis. One's attention span is just not enough to handle this as a full time job.

Results

To actually derive the sea ice extent, we had to review many images and select the ice edges by hand. We have not come up with an automatic scheme to detect ice extent for large groups of images or time composites. Figure 4 shows a sample analysis of sea ice.
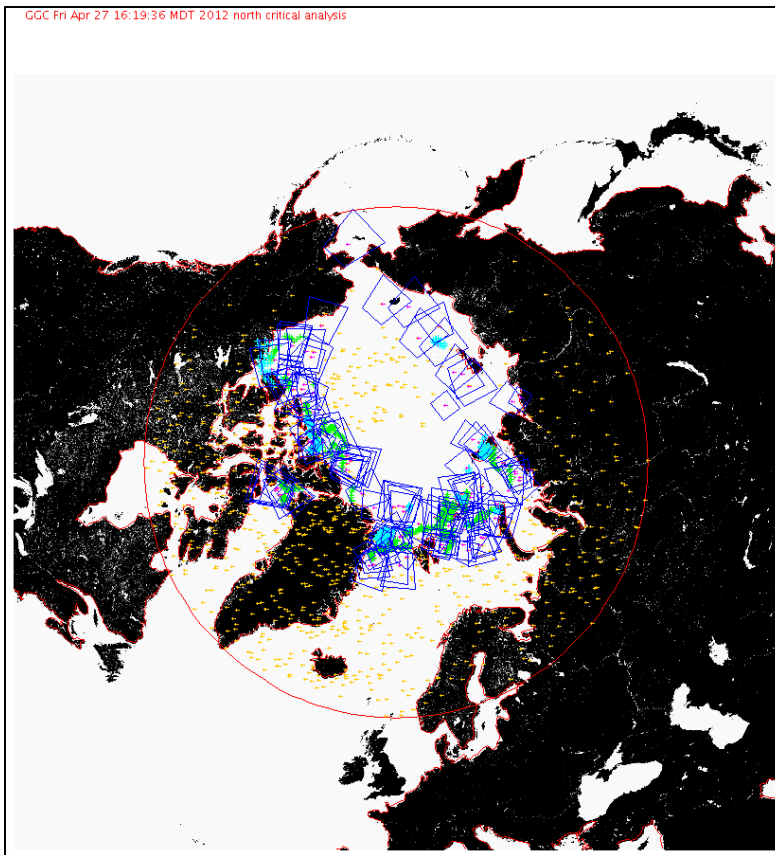
Figure 4: Sea ice analysis. Each blue box represents the area seen in individual image (see fig 1). The cyan marks represent our visual interpretation of the sea ice in those pictures with identifiable edges.

We are now putting together the online archive of the film images at NSIDC and should have access to the data available in the fall of 2012.

Conclusion

The work to digitize this satellite film archive is now bearing fruit in our analysis of sea ice extent from the 1960's. For any other similar project, we suggest that custom software to manage the construction of meta data for the digital files would be critical to accurate management of the data.

Acknowledgement
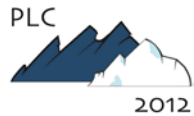
Session 8
Transforming libraries: New services and structures

Models for the EU Arctic Information Centre – engaging the Polar Libraries Colloquy
Heather Lane

Is there a future for specialized libraries?
Vibeke Sloth Jakobsen

EU Arctic Information Centre
Liisa Hallikainen

Models for the EU Arctic Information Centre – engaging the Polar Libraries Colloquy

Heather Lane

Librarian & Keeper of Collections, Scott Polar Research Institute, University of Cambridge, UK

Hilary Shibata presented this paper for Heather Lane, who was unable to attend in person.

Abstract

The Library of the Scott Polar Research Institute (SPRI) is embarking on a new phase of development. Work has begun on a feasibility study for remodelling part of the library space to provide a state-of-the-art information point for readers, new special collections storage and high density open shelf storage. This work is preparatory to a move away from the Library's in-house information management system, Muscat, now over 25 years old. Data migration to the Ex Libris Voyager system in use elsewhere within the University of Cambridge will entail mapping the current non-standard record structure to MARC21 (and then to RDA), essential to ensure that records can be shared with other libraries worldwide.

The stimulus for this move is the initiative taken by the Arctic Centre in Rovaniemi to create the EU Arctic Information Centre, for which the SPRI has been asked to develop the pan-European library component. This paper will examine the implications for joint working towards a unified Arctic library catalogue by PLC member libraries within and beyond Europe. It will consider whether there are good existing models for library cooperation in this arena and what this EU-funded development might mean for polar libraries worldwide.

Background

SPRI was founded in 1920 as a national memorial to Captain Robert Falcon Scott and his four companions, Evans, Wilson, Oates and Bowers, who died on their return from the South Pole in 1912. The Institute's founder, Professor Frank Debenham, envisaged it as a place where anyone with an interest in the polar regions might meet to discuss matters of mutual interest and concern. SPRI forms a living legacy for the scientific work of Scott's expeditions. The Institute's academic, library and support staff together with postgraduate students, associates and fellows attached to its research programmes provide a strong core of intellectual activity focused on the Arctic and Antarctic and their adjacent seas. SPRI offers two Graduate Degree courses a one-year Master's Degree (M.Phil.) course in Polar Studies and a three-year

Doctoral Degree course leading to a Ph.D. degree. Both courses are closely tied to the research activities of the Institute.[1]

The SPRI Library

The Library of the Scott Polar Research Institute (SPRI Library) is widely regarded as one of the world's premier polar information centres. Sited within a department of the University of Cambridge, this is a resource of national and international importance consulted by governments, industry, scientists and scholars. The Library also houses World Data Centre for Glaciology, Cambridge,[2] with special responsibilities for the provision of information to British and European glaciologists, and the SPRI Archives, containing the one of the world's finest collections of unpublished material relating to the polar regions.

For scientists and scholars, SPRI Library offers a collection developed since the 1920s with over 700 current journals and over 250,000 volumes covering all subjects relating to the Arctic, the Antarctic, and to ice and snow wherever found. For industry, it is a prime information source on such subjects as exploration and exploitation of natural resources and on the environmental implications of such activities in the polar regions; on the design of ice-strengthened shipping and selection of sea routes; and on problems of construction and transportation in cold environments. For Government users, the Library offers an unrivalled resource on the ethnography and anthropology of the circumpolar North and for the needs of international relations and strategic defence.

The library's cataloguing software is now over 25 years old and does not conform to modern standards or permit record sharing with other libraries. This results in large parts of SPRI's holdings effectively having become a "hidden collection" – inaccessible to anyone unable to visit the library in person. Only a small proportion of the collection is visible through the University's Newton catalogue and the Library's own SPRILIB database. In addition, SPRI is one of the few libraries worldwide to undertake the analytical cataloguing of polar material (abstracting and indexing material to article level within periodicals and to chapter level within edited works). This provides multiple access points and a depth of subject retrieval unmatched elsewhere and enables production of the journal Polar and Glaciological Abstracts. It is the single most valuable aspect of the collection mentioned by researchers.

Work has begun on a feasibility study for remodelling part of the library space to provide a state-of-the-art information point for readers, new special collections

storage and high density open shelf storage. This work is preparatory to a move away from the Library's in-house information management system, Muscat, now over 25 years old. Data migration to the Ex Libris Voyager system in use elsewhere within the University of Cambridge will entail mapping the current non-standard record structure first to MARC21, essential to ensure that records can be shared with other libraries worldwide. The Cambridge University Library has already announced its intention to move to RDA (Resource Description and Access), although this is already viewed in some quarters as a 'transitional' standard[3]. The hope is that the SPRI data migration will have taken place in time for our records to be integrated into the new system, with the advantage of being able to participate fully in the training which will be rolled out across the University's library system.

The first phase of the improvement of Muscat data to conform more closely to international MARC standards has already taken several years. By exporting the entire dataset (some 8 million lines of information) to an SQL database as an intermediary stage, library staff at SPRI will be able to identify the remaining category errors which must be addressed before the catalogue can be exported to Voyager. A further phase of record enhancement is then planned, using z39.50 to access suitable records find best matches and correct or improve our records once migration is complete.

Other initiatives within the EU

Within the EU, the UK is widely held to have little interest in the Arctic. Within the EU at a political level, some surprise has been expressed that the UK has a strategic interest, mainly because we sit outside the geographic Arctic. However, the British government has recently set up a Polar Regions All Party Parliamentary Group. SPRI's strategic value, our scientific work in the Arctic and our deep historical/cultural understanding of the region is regarded as an asset. SPRI's Arctic collections are unique in covering all countries of the circumpolar north for all subjects and in all languages. No other European library is similarly comprehensive. Particular strengths are the substantial collections relating to the Arctic Ocean, to the European Arctic, and to the Russian North. The Russian North holdings are considered to be the most extensive outside the former Soviet Union and the Library of Congress.

The definition adopted for the Arctic is broadly that of The Circumpolar North (Armstrong, Rogers and Rowley, 1978), with minor modifications affecting south-east Alaska and Labrador. Seas covered are the Arctic Ocean and adjacent waters: the various seas north of Russia (Chukchi, East Siberian, Laptev, Kara and White seas);

Barents Sea; Norwegian Sea; Greenland Sea; Labrador Sea; Davis Strait and Baffin Bay; Hudson Bay; Lincoln Sea; waters of the Canadian Arctic Islands; Beaufort Sea; Bering Sea; the Sea of Okhotsk; and the Gulf of Alaska. Land areas covered include Alaska (except for the Panhandle); the Canadian Territories (Yukon and Northwest); those parts of Quebec and Labrador occupied by the Inuit; Greenland; Iceland (natural history only); Svalbard; the European Arctic south to the Arctic Circle; and the Russian Federation south to 63° in European Russia and to 57° in Asia, including all of Kamchatka and Sakhalin.

An Arctic Foundation has already been set up in Brussels with the intention of being a forum for business and science, one that is aware of the politics, but is more focused on the commercial opportunities in the European Arctic and the role that science plays. The International Polar Foundation was co-founded by Belgian explorer and civil engineer Alain Hubert, and Professors emeriti André Berger, climatologist at the Université Catholique de Louvain, and Hugo Decleir, glaciologist at the Vrije Universiteit Brussel, the International Polar Foundation (IPF) was established as a charitable non-profit organisation in 2002. At least two other new think-tanks were set up in 2011, with a view to selling services to the EU. Several key Arctic states have been approached at Foreign Secretary level, as have Polar institutes such as the Alfred Wegener Institut, as well as banks and other institutions. The help of big business is also being recruited. Washington's CSIS Think Tank is also invited, amongst various Think Tank centres. Germany, Sweden, Norway and Canada are already on board. The timing is noteworthy in terms of the EU's failed bid to obtain permanent observer status at the Arctic Council. The failure of bid focused attention on the Arctic and its political significance, particularly in the opening up of the Northern Sea Route and the fact that both China and Russia are positioning themselves to gain strategic control over the route, its ports, satellite observing and safety systems.

The EUAIC

As its brochure states:

The EU Arctic Information Centre does not carry out research, it does not have a representative or a policy development role and it is not a database or an archive. Instead, **it will be a "one stop shop" which aims to disseminate information and activities** that require outreach and communication. [4]

The Scott Polar Research Institute is keen to be involved in the development of the EUAIC. SPRI has been approached to become the lead partner coordinating the

library and archival components of the Information Centre, bringing together librarians and others from EU polar libraries willing to work on initiatives for open access catalogues, data harvesting and information exchange.

The emergence of a European Union Arctic Information Centre is an understandable, and timely, response to current strategic and political changes in the EU's thinking with regard to the Arctic. Arctic policy making within the EU will, of course, require substantial analysis and evaluation of any data collected and provided by the Information Centre. The data alone, in other words, are insufficient to assist in policy formulation.

It would be tactically astute to market the importance of the network in this EUAIC initiative, rather than the centre, highlighting the strengths of working with, and coordinating the expertise of, existing partner organisations across EU countries. We are marketing to the EU decision makers in Brussels in the first instance. Stressing the point that the EUAIC is a network of well-established research units, mainly within higher education, and already working together, has been an important factor in persuading the EU to fund the initiative. It is recognised that the participating nodes already have good connections to Arctic information sources. In this context, SPRI is an obvious candidate as the United Kingdom's central node, already linked to other university and government departments, as well as to industry, and with a highly developed library and information service well adapted to international cooperation. Recent chairmanship of the Polar Libraries Colloquy has strengthened a number of these key partnerships across Europe. However, it should not be forgotten that the breadth and reliability of information on the Arctic relies heavily on circumpolar and global partnerships with entities outside the EU, such as the PLC and the Arctic Council. The model of cooperation already provided by the Barents region should inform the way the EUAIC develops.

Existing networks

The SPRI Library recognises the value of networks for acquiring and disseminating information to the widest range of audiences. We do not function solely as a departmental library within the University of Cambridge. We open our doors to researchers from around the world, as well as to members of the public. Over 60% of our enquiry work is carried out electronically, either via the web, email or telephone. We already see ourselves as just one node in a worldwide network of libraries and archives with polar collections, serving a variety of patron groups.

The WDC for Glaciology at SPRI continues to be funded and maintained by the UK government, with assistance from the Royal Society, on behalf of the international science community. The World Data Center (WDC) system was created to archive and distribute data collected from the observational programmes of the 1957-1958 International Geophysical Year (IGY). Originally established in the United States, Europe, the Soviet Union and Japan, the WDC system expanded to other countries and to new scientific disciplines. It is now being superseded by the World Data System, which supports ICSU's mission and objectives, ensuring the long-term stewardship and provision of quality-assessed data and data services to the international science community and other stakeholders[5]. The SPRI Library is currently discussing membership with the WDS Secretariat. However, as much of the material collected on Arctic glaciology since the early 1960s remains in printed form, despite efforts to digitise some of the major journals, the WDC may be ineligible in its curent form.

The Library works closely with other members of the Polar Libraries Colloquy (PLC) to share polar information and resources and to make those resources accessible to our clientele. The PLC has had a number of initiatives in the past to develop shared catalogues, such as PolarPac[6], a CD-ROM bibliographic database containing monographic records and a union list of serials. At the time of writing, further development to a web based service has been hampered by the lack of funding for a suitable technological solution that can be readily shared by all PLC member organisations. There may soon be further developments to be announced in light of AGI's use of EP XML. As a membership organization, the PLC is not a fund holder in its own right, nor does it have a permanent secretariat, but opportunities exist for member institutions within the European Union to work with the EU, under the new 2020 Framework, to leverage funding which could benefit the wider membership. Members already contribute data to international bibliographic databases, such as the EBSCO database (available online and on CD-ROM) on Arctic & Antarctic Regions and the International Polar Year Publications Database[7] , set up to replicate the information-gathering work of the WDCs for the IPY 2007-08. The efficacy of this approach has been challenged with the development of search algorithms.[8]

Models for cooperation

In an increasingly interconnected world, there has been a proliferation of models. Brian Lavoie[9] from OCLC poses the problems very succinctly:

- *Institutional repositories:* what is the role of the library in collecting, managing, and preserving institutional scholarly output, and what services should be offered to faculty and students in this regard?
- *Metasearch:* how can the fragmented pieces of library collections be brought together to simplify and improve the search experience of the user?
- *E-learning and course management systems:* how can library services be lifted out of traditional library environments and inserted into the emerging workflows of "e-scholars" and "e-learners"?
- *Exposing library collections to search engines:* how can libraries surface their collections in the general Web search environment, and how can users be provisioned with better tools to navigate an increasingly complex information landscape?

This complexity increases with the drive to collect information across national boundaries, languages and cataloguing standards. In seeking a cooperative model, we need to be particularly alert to the needs of the end user. Considerable research is required before the EUAIC can begin to answer questions on the information needs of EU citizens, let alone politicians, with regard to the Arctic.

Historically, we have worked with 'push' models of data sharing, submitting batches of records to a central repository which manages the storage and dissemination on behalf of the participating libraries. Many of the PLC's own initiatives, including PolarPac, began on this basis.

Extending the scope of the library catalogue, the Northern Areas open scholarly documents (NAROS)[10] project is an example of what we might describe as a 'pull' model. It was planned to exploit the resources of the OAIster database, a union catalogue of millions of records representing open access resources built by harvesting from open access collections worldwide using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). Using such protocols to harvest catalogue records from participating libraries is still hampered by the lack of compatibility in metadata standards between the Anglophone and non-Anglophone worlds.

In the OAIS Reference Model, on which OAISter is based, long-term preservation is the business requirement. Some of the key business entities relevant to preservation are defined in terms of the concept of an information package – i.e., digital content and its associated metadata viewed as a single, logical package moving into

(submission information package, or SIP), through (archival information package, or AIP), and out of (dissemination information package, or DIP) the archival system.

One further possible model for library cooperation within the EUAIC (and by extension the PLC) is the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) Distributed Library project,[11] aimed at facilitating international information resource sharing among marine and aquatic science libraries. This was developed as a joint project of the IAMSLIC Resource Sharing Committee, the California State University, Monterey Bay Library and the NOAA Coastal Services Center in Charleston, South Carolina, USA. It was modelled on the Coastal Information Library developed by the NOAA Coastal Services Center and utilizes the PHP/YAZ open source Z39.50 protocols. This model assumes, however, that contributing libraries have the facilities to make information available via z39.50.

The differences between data archives and library catalogues have been discussed at length elsewhere[12], but the EUAIC should use the systems expertise gained by data managers in considering any new initiative. The PANGAEA information system, for example, described in detail by Hannes Grobe at the PLC[13] meeting in Bremerhaven, is operated as an Open Access library aimed at archiving, publishing and distributing georeferenced data from earth system research. The system guarantees long-term availability of content through the commitment of its operating institutions.

Re-imagining Libraries is the 5-year strategic plan of National & State Libraries Australasia. A good example of a national strategy based on an ingest mechanism, Trove[14] has been developed by the National Library of Australia as the central portal for access to Australian collections. Trove, the national discovery service for Australia, was released in December 2009. At that time it contained metadata for 80 million freely accessible items, including those harvested from 1,000 contributing Australian institutions. The focus was on Australia and Australians. Trove demonstrated innovation in resource discovery and access.

In 2010 it was decided to extend the scope of Trove to include selected sets of e-resources subscribed to by Australian libraries. The work to implement this was undertaken over six months from November 2010 — May 2011, in partnership with the National State and Territory Libraries of Australasia (NSLA) and two e-resource vendors. A primary goal of the development work was to see if a theoretical model for national access of subscription resources translated into a practical workable model. The work was successful and in May 2011, version 4.0 of Trove was released, containing 120 million subscription e-resources for Australians. This took the Trove

content total to almost 240 million items. Australian users of Trove are now able to access subscription e-resources within Trove when they are a member of an Australian library that has subscribed to a product included in Trove.

If EU funding is forthcoming, SPRI will begin to engage, first with partner libraries within the European Union, to consider these and other potential models. The University's Centre for Applied Research in Educational Technologies (CARET)[15] is an obvious partner in research and development, but the EUAIC should not overlook the wealth of commercial products already available[16],[17].

Next steps

From a library perspective what will an Arctic Information network require? The need for funding and available technical expertise aside, unified access to relevant, high-quality information will be crucial. This will only be achieved if a pan-European approach is taken to making library catalogues accessible, so that researchers know where to look for information. In the initial phase, an assessment needs to be made of the volume of likely requests from the centre to the nodes of the network, so that individual partners can gauge the additional workload that joining the partnership might create. Requests for information may be of any type from all stakeholders (EU politicians, economists, scientists, citizens, etc.) The library component is envisaged as providing fact rather than opinion and we can undertake to provide information in support of policy-making, but will not provide policy advice per se. A far better understanding of users needs and expectations is also required.[18]

In the medium term, given the current lack of standardisation, more work is needed to ensure that partner organisations have common frameworks for metadata, and are prepared to provide unfettered access to metadata harvesting tools. Those tools themselves need to be further developed to be able to work seamlessly across a range of European languages. Open access to existing catalogues on the IAMSLIC model could replace the need for a single, pan-European (or worldwide) polar library catalogue, as envisaged in the 1990s by the Polar Libraries Colloquy, but some potential partner libraries may not be z39.50 compliant[19]. This may be an area that the Polar Libraries Colloquy could consider investing in from existing funds; alternatively, do we seek sponsorship; or do we require a partnership model with a host institution willing to bear the infrastructure costs? We could consider PLC partnership with EUAIC as a means of investigating the potential of Europe2020 funding. Apart from access to library metadata, further work will be needed to ensure that the EU Arctic Information Centre is effective in channelling requests for

specific information to partner libraries, particularly if it has the expectation that these requests can be met within an acceptable timeframe without undue pressure on existing resources.

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Is there a future for specialized libraries?

Vibeke Sloth Jakobsen
Danish Polar Library

A number of specialized libraries in Denmark have been closed down in the last couple of years. The reason most often being that the organizations have been faced with severe budget cuts, and looking for places to cut have decided that libraries are dispensable. In some cases it has been a rather quick decision, in other cases it has been a prolonged process where budget cuts and lack of qualified staff have made collections slowly deteriorate and thereby made the decision to close down easy to make. There have been protests from researchers and students, but to no effect. The library materials have often been transferred and integrated into bigger libraries.

A similar development has taken place at the universities, where restructuring and the creation of new departments has proven a challenge to the established research fields. Small departments have been merged into large departments covering a broad number of disciplines. The Department of Eskimology at the University of Copenhagen has now become a section in the Department of Cross-Cultural and Regional Studies, which includes subjects like East European studies, American Indian languages, Middle East studies, Japanese language, and minority studies just to mention a few.

The Danish Polar Library was facing a similar fate. Originally established in 1993 as a consortium library for three institutions, the Dept. of Eskimology (University of Copenhagen), the Danish Polar Center and the Arctic Institute, and administered by the Danish Polar Center. In 2009 a political decision was made to close the Danish Polar Center. The library was to transfer the materials belonging to the Polar Center to the University of Copenhagen, and continue operation within the university, and still include the Arctic Institute's books and photo collection in the operation. For a number of reasons it was not possible to make an agreement to that solution, and negotiations were broken off. This was in August 2009 and it was then decided to close the library by the end of 2009. So from a process of transferring to a new platform, we were instead in the process of recalling library materials, and discontinuing periodical subscriptions. The plan was to split the library, so that the Section of Eskimology and Arctic Studies would move to the premises of their bigger department and take their materials with them. The Arctic Institute would have to

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find new lodgings somewhere else in town. The materials belonging to the Danish Polar Center would be transferred to the University of Copenhagen.

Three researchers took it upon themselves to make a petition against the closure and more than 100 researchers from Denmark and abroad signed the protest. Also the media got interested in the matter and a number of newspaper articles appeared in the Danish press. Then the Greenlandic government sent a protest to the Danish parliament, and one of the Greenlandic members of parliament summoned the Minister for Research for consultation on the matter. At this point the Ministry started up new negotiations with the university and the Arctic Institute. A somewhat reduced model was agreed upon and the library was saved last minute. The reduced model meant reduced budget and reduced staff, but after a more than turbulent year the library was saved.

 The library is now a part of CULIS, which is an abbreviation for Copenhagen University Library and Information Service. CULIS has been established by an agreement between the university and the Royal Library. It is made up of Copenhagen University Library, which is a division of the Royal Library, and of the faculty and departmental libraries run by the university itself. Organizationally the library belongs to the Section of Eskimology and Arctic Studies, and as such still functions their departmental library. The materials that belonged to the Danish Polar Center have been transferred to the university. The library still houses the books belonging to the Arctic Institute, whereas the photo collection is now entirely handled by the Arctic Institute itself. The polar database has been integrated more fully in the university library's database REX, as all of the university's other departmental databases have. It is however still possible to narrow your search to the polar library's holdings.

So how did the transition go and how do we plan to survive the next decade.

Not alone was the budget cut considerably, we also had to vacate a quite big store house, where most of the Arctic Institute's books were held. So we had to make some decisive choices as to where the library would be going. Previously the library had covered all subject fields with the geographical limitation to the polar regions. Focus has been narrowed so that it is now mainly on humanities and social sciences and geographically on the Arctic and Greenland in particular. We will only hold a few general materials on the Antarctic. The reason for this decision is that these are the areas that Eskimology holds expertise in and we feel that we need to narrow our holdings to the areas we are really good at as opposed to trying to cover all fields.

As a result we pruned the collection and discarded all outdated material (which we should have done anyway). A lot of more general material within the natural sciences and technology were also weeded out. No duplicates are held any longer.

As the library is now closer associated with the university library we have access to all the digital information resources in their holdings. They have a department who negotiates licenses and subscriptions and deals with all the legal rights associated with these. We can make suggestions for new periodical subscriptions and new databases, which we would like included in the collection. So in our periodical section almost all the hardcopy periodicals that are electronically accessible were discarded, as well as all the more general periodicals. That left us with really good space on the periodical shelves.

The library is still open to the public, but whereas there were restrictions on the materials belonging to Eskimology before the reconstruction, it is now possible for the public to borrow these too. This has naturally increased both interlibrary loans and loans to the public.

A pruned and focused collection, better access to electronic materials and more accessibility to the public, is part of the strategy for the library's survival.

The library will tend more towards a study environment for the students instead of a traditional library collection. We could wish for more study desks for the students, but space is limited. We have managed however to make room for a reading group. We have access to digitized material through the university library, but need to guide the students and researchers on how to use it. The challenge is to teach the young students that "googling" is not similar to true research.

We try to convey the fact that academic tradition and cultural heritage is important, and that not everything can be found on the Internet. That special libraries still hold invaluable resources of information, which have not all been digitized.

We need to challenge the students in this respect, and that requires a joint effort from librarians and academic teaching staff. Luckily we have a committed staff at the section for Eskimology and Arctic Studies who have fought for the library's survival, and are an invaluable source of knowledge in the fields we concentrate on.

We find that students and researchers using the Polar Library appreciate the fact that they find all the relevant materials in one place, and that the staff and researchers are there to help and guide them to the right materials. This as opposed to the self-service counters you are met with in may bigger libraries now.

So we are optimistic that there will still be a Polar Library in Denmark ten years from now.

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http://eskimologi.ku.dk/bibliotek/
http://culis.ku.dk/

EU Arctic Information Centre

Liisa Hallikainen
Arctic Centre Library, Lapland University Consortium Library

Abstract

EU Commission Arctic Communiqué put forward an idea of EU Arctic Information Centre in November 2008. Since then the idea has been developed in the Arctic Centre at the University of Lapland into a proposal of EUAIC, the most experienced professional network of European institutions for information, outreach and insight into Arctic issues.

The proposed EUAIC provides a channel for dissemination of Arctic Information within and outside the EU. The EUAIC offers access to relevant and updated Arctic information. The EUAIC gives support to the formation and continuation of EU's Arctic policy and helps to guarantee its coherence.

The tasks of the EUAIC consist of
- Exchange of timely information by briefing analyses.
- Information analysis service to popularize scientific information.
- Interaction service and dialogues with indigenous peoples to help participation of different groups into "knowledge production", to offer targeted support and services for EU Arctic Indigenous Sami peoples in dialogues and to promote use of Traditional Ecological Knowledge.
- Exhibitions, school cooperation and information campaigns.
- Library cooperation for better access of their materials.
- Tailored education packages.
- Website for basic information and current activities in the Arctic.

The overall aim of the proposed EUAIC is to facilitate two-way information exchange between the EU and the Arctic, as well as offering targeted services by processing and aggregating information for different needs and target groups. In general the EUAIC aims to increase awareness and understanding about the circumpolar as well as European Arctic affairs and related strategies, policies and activities.

The intended users of the EUAIC are the EU institutions, European countries, and their citizens including Arctic Indigenous Peoples, research institutions, the private sector and other stakeholders. In addition, it is envisaged that governments, citizens and stakeholders outside Europe will also be using the EUAIC to gain access to European policies and activities in or affecting the Arctic.

Background – EU Arctic policy

The European Union launched in November 2008 the Communication "The European Union and the Arctic Region."

EU's interest in arctic issues is based on historical, geographic, economic, environmental and political facts. Three of the member states – Denmark (Greenland), Finland and Sweden – have territories in the Arctic when the Arctic is defined by the Arctic Circle. Two other European Arctic states – Iceland and Norway – are members of the European Economic Area. Canada, Russia and the United States are strategic partners of the EU. European Arctic areas are a priority in the Northern Dimension policy.

The Arctic region is undergoing a rapid environmental change and that has huge consequences on various human activities, like shipping, fisheries, oil & gas industry and the indigenous peoples living in the Arctic. The environmental changes are also altering the geo-strategic dynamics of the Arctic with potential consequences for international stability and the European security matters.

On the whole, Arctic challenges and opportunities will have significant repercussions on the life of European citizens for generations to come.

This Communication sets out three main policy objectives:
- Protecting and preserving the Arctic in unison with its population.
- Promoting sustainable use of resources.
- Contributing to enhanced Arctic multilateral governance.

There are very many proposed actions to attain these objectives. Some of them are very practical like environmental monitoring or cooperation on prevention, preparedness and disaster response. But many of the proposed actions are more or less concerning communicating, disseminating and processing information – it means filling the gap between research and policymaking:
- Assessments of policies and agreements.
- Promoting the use of assessments of environmental and social impacts.
- Promoting dialogue between stakeholders, including indigenous peoples.
- Sharing experience with the Arctic states.
- Applying for permanent observer status in the Arctic Council.
- Developing further research programmes.
- Supporting the establishment of the Sustained Arctic Observing Network.
- Ensuring open access to information from Arctic monitoring and research.
- Providing an overview of all the EU's relevant Arctic-related activities on a thematic web-site.
- Establishing closer links with Arctic education networks.

- Exploring — together with the Nordic countries — possibilities for creating a *European Arctic Information Centre .*

From the idea to the proposal of European Arctic Information Centre

The EU Arctic Communication was published in November 2008. In September 2009 the Arctic Centre at the University of Lapland was celebrating its 20th anniversary. The initiative of formation of the European Arctic Information Centre to the Arctic Centre was launched during the celebration.

The Council of the EU welcomed the Communication and issued Council Arctic Conclusions in December 2009. One of the 23 conclusions was written: "The Council invites the Commission together with Member States to examine the merits of establishing an information centre on Arctic issues in the EU".

The Arctic Centre of the University of Lapland started in winter 2010 negotiations with various research institutes and other organizations. The aim has been to build a network of European actors with extensive activities in, and knowledge of, the Arctic. During this process the proposal for cooperation with Polar Libraries Colloquy was made in Bremerhaven in 2010.

European Parliament published a report on the sustainable EU policy for the High North, in January 2011. There was a sentence: "[The Parliament]…requests the Commission to explore as a key priority the establishment of an EU Arctic Information Centre as a joint, networked undertaking, taking into account suitable proposals; notes the proposal by the University of Lapland in this respect; considers that such a centre needs to be capable both of organizing permanent EU outreach to the major actors relevant to the Arctic and of channeling Arctic information and services towards the EU's Institutions and stakeholders."

The negotiations have resulted in a network of 17 institutions around Europe taking part in the preparation of the plan:
- Arctic Centre, Rovaniemi, Finland
- Alfred Wegener Institute, Bremerhaven, Germany
- Arctic Centre, Groningen, The Netherlands
- Arctic Portal, Akureyri, Iceland
- University of Tromsø
- Polish Academy of Sciences, Warsaw

- Ecologic Institute, Berlin, Germany
- European Polar Board, Strasbourg, France
- Finnish Meteorological Institute, Helsinki
- International Polar Foundation, Brussels, Belgium
- National Research Council of Italy, Rome
- Sami Education Centre, Inari, Finland
- Scott Polar Research Institute, Cambridge, UK
- Swedish Polar Research Secretariat, Stockholm
- UArctic Thematic Networks / Thule Institute, Oulu
- Pierre and Marie Curie University, Paris, France
- UNEP/GRID-Arendal, Norway

The EUAIC network in October 2011

Basic ideas of the European Arctic Information Centre

Motivation

EU is spending around twenty million euros per year on Arctic research and nobody has calculated the amount of money used in Arctic research in EU member countries. So, a wealth of information already exists, from EU and Member States, regional organizations, agencies, local practitioners, research institutes, Arctic Indigenous Peoples and research organizations all over the world. However, easily accessible information is not currently available, especially related to results of ongoing research projects and discussions with indigenous peoples' representatives.

A clear, science and research-based focus taking into account all stakeholder viewpoints and ensuring responsible decision-making is needed.

The proposed EU Arctic Information Centre will cater to this need – providing a storehouse for information, a forum for all related work being carried out and an outreach function to ensure that relevant information is available to all audiences.

It will promote a shared vision for the Arctic and build trust by providing and popularizing information and stimulating an atmosphere of participation, dialogue, networking and partnerships between all who have an investment and stake in the Arctic.

Target groups and potential users

The EU Arctic Information Centre will target a diverse range of stakeholders. EU policy and decision makers, media and interested citizens, leaders of European research projects, science exhibitions and museum centres, teacher's networks and private entrepreneurs are a few examples of stakeholders who have expressed an early interest in a European Arctic information service. Thus, the main intended clients are:
- EU institutions and decision makers
- Residents in the Arctic and indigenous people
- Experts, researchers, academics
- Local and national administrations
- The private sector, industry and technology development sector
- General public (e.g. schools, tourists, media) both inside/outside EU
- NGOs

Added value

The aim of this proposal is to create synergy that goes much further than any institution or single unit can serve separately. Therefore, the EU Arctic Information Centre is supported by a network of institutions with a long history of providing professional Arctic communication and educational services. By combining forces, the users can be served considerably better than what can be done by an individual institution alone.

A substantial amount of information about the Arctic is available already within research institutions in the EU as well as in agencies and libraries. The same applies to EU related information. The EU Arctic Information Centre can bring added value in:

- A holistic understanding of the Arctic and its role in the EU.
- Increasing the visibility for the EU in the Arctic region.
- Connecting Arctic Indigenous Peoples to the EU.
- Providing audience to Barents Euro-Arctic Region information.
- Connecting non-EU Arctic information providers to this new information system.
- Offering an easy tool to professionally distribute information and creating channels for dialogues.
- Channeling services from the Arctic areas to the users in the European Union.
- Developing an international archive that stores satellite images for future use, research or otherwise.

Philosophy

The network model allows participating institutions to bring their own experience and develop special activities into an all new structure of co-operation. This strategy will also contribute to make the functioning costs of such a centre more economically efficient. The EU Arctic Information Centre is only realistic if it is built on existing Arctic outreach and communication structures that co-operate as a network. This has been taken into account when determining which European institutions should be included in the initial network model. Each node already has a wide co-operation network that covers especially the Arctic research institutions in Europe, which are essential information sources for the outreach activities. However, more institutions are expected to join and co-operate with the network as the Centre grows and develops further.

The aim of the network model is to make this proposal realistic, cost effective and avoid overlapping use of resources.

Even though the EU Arctic Information Centre leans on the best available information, either carried out by the participating nodes themselves or their partners, the EU Arctic Information Centre is not a research entity by itself and it does not carry out research. The participating nodes have good connections to Arctic information sources, like research institutions, as well as to their surrounding regional setting, local communities and national media.

The Centre will also have capacity if needed to contribute and help Arctic discussions and dialogue inside EU institutions

Tasks

The plan is still in a very flexible phase. The organization and the concrete tasks are not yet fixed. The Commission of EU has not expressed clearly its priorities or needs, neither has the EU Parliament. Anyway, the tasks can be listed on a general level like this:
- Exchange of timely information by briefing analyses.
- Information analysis service to popularize scientific information .
- Interaction service and dialogues with indigenous peoples .
    - to help participation of different groups in "knowledge production".
    - to offer support and services for EU Arctic Indigenous Saami peoples in dialogues.
    - to promote use of Traditional Ecological Knowledge.
- Exhibitions, school cooperation and information campaigns.
- Library cooperation for better access of their materials.
- Tailored education packages.
- Website for basic information and current activities in the Arctic.
- Etc.

EUAIC today

In December 2011 the European Parliament expressed its intent that 3 mill € should be allocated to the preparatory action of strategic environmental impact assessment on the development of the European Arctic during the next three years. The Commission has allocated this year 1 million € for the preparatory action.

On June 26th, 2012, the European Commission and High Representative of the EU for foreign affairs and security policy published a Joint communication to the European Parliament and Council: "Developing a European Union Policy towards the Arctic

Region". This document states as follows: "The Commission will implement a preparatory action, approved by the Budgetary Authority with a budget of €1 million, for a strategic assessment of the impact of development in the Arctic. The project will also follow up the suggestion in the 2008 Communication to explore possibilities for creating a European Arctic Information Centre and, for this purpose, will test the feasibility of an Arctic information platform based on a network of leading Arctic research centres and universities within and outside the EU."

In July EU Commission put the preparatory action out to tender. The results of the tender will show how the idea of the EU Arctic Information Centre proceeds.

References

Commission of the European Union. 2008. Communication from the Commission to the European Parliament and the Council: The European Union and the arctic region. http://www.eeas.europa.eu/arctic_region/docs/com_08_763_en.pdf

Commission of the European Union and High Representative of the European Union for Foreign Affairs and Security Policy. 2012. Joint Communication to the European Parliament and the Council: Developing a European Union Policy towards the Arctic Region: progress since 2008 and next steps. http://www.eeas.europa.eu/arctic_region/docs/join_2012_19.pdf

Council of European Union. 2009. Council conclusions on Arctic issues. 2985th Foreign Affairs Council meeting, Brussels, 8 December 2009.

European Parliament 2011. European Parliament resolution of 20 January 2011 on a sustainable EU policy for the High North. (2009/2214(INI))
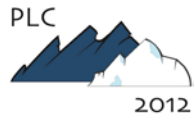
Session 9
Open access and institutional repositories

Promoting open access publishing to scientists using library funds to pay author fees: Part 1
Flora Grabowska

The Canadian Circumpolar Institute community in the University of Alberta's institutional repository
Elaine Maloney

Promoting open access publishing to scientists using library funds to pay author fees: Part 1

Flora Grabowska

Keith B. Mather Library, Geophysical Institute, University of Alaska Fairbanks

Abstract

This presentation defines open access and outlines its benefits to librarians, authors, and scholars. It then discusses an initiative at the University of Alaska Fairbanks to encourage scientists to publish in open access journals by paying page fees out of a library budget.

Presentation

Benefits of Open Access(OA) Overview

- What is OA?
- Why should you care?
- How can you ensure OA for your work?
- Where is the best place?
- When?
- Who?

What is OA? OA Scholarly Communication is available via the internet to:

- Anyone
- Anywhere
- Anytime
- Free of charge
  - No need for library/personal journal subscription
  - No need to pay $20 - $40 to download instantly
  - No need to make an Inter Library Loan

Why is OA Important?

- Libraries' budgets for many years - flat/shrinking
- Journal subscription costs continue to increase
- Therefore journal cancellations inevitable
- Therefore less access to information
- Extremely difficult for most libraries to add a new subscription unless cancel $ equivalent
  - Frustrating for new, junior faculty in new areas

Why is OA Important? (cont.)
## OA *increases* research impact -
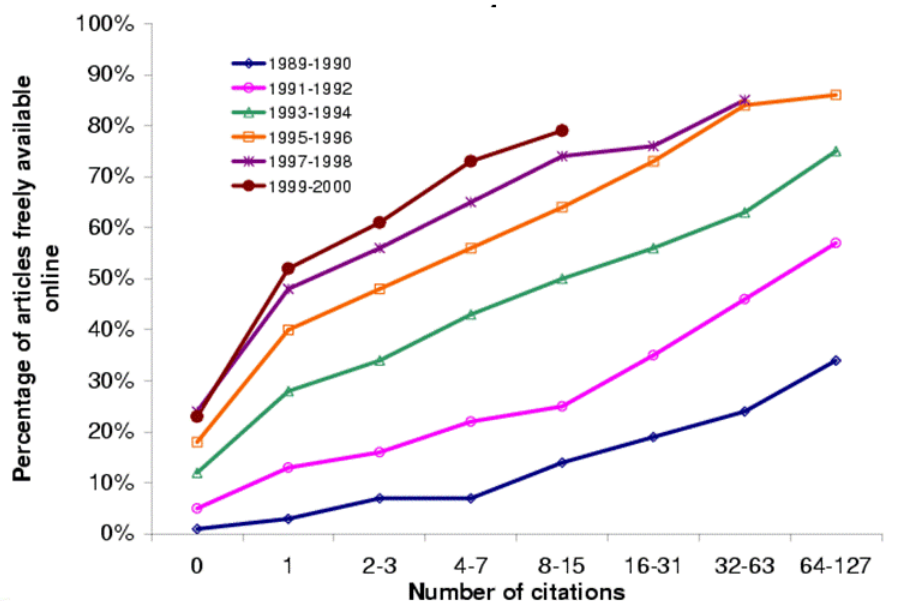
Lawrence, S. Nature 2001

Why is OA Important? (cont.) OA *increases* research impact - 2

- Using arXiv for OA **doubled** citation rate of *Astrophysical Journal* papers over non OA
- "Author choice", i.e. author pays! led to 3 X downloads in one study
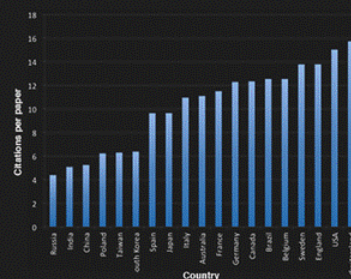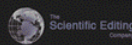- Further examples ad nauseam at the Open Citation Project
  - http://opcit.eprints.org/oacitation-biblio.html

The top 20 countries for scientific output
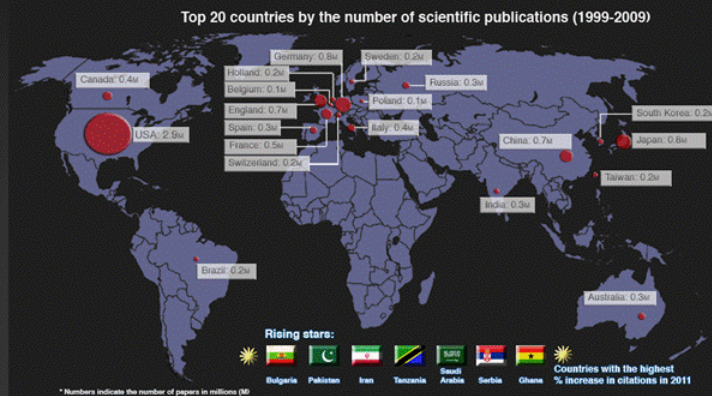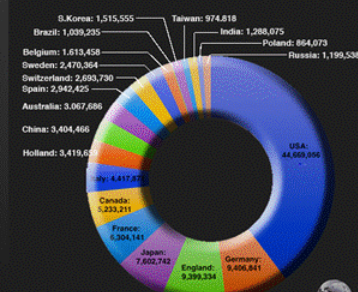
How can you ensure OA for your scholarly communications?

- Publish in an OA journal,
  - e.g. Atmospheric Chemistry and Physics
- Publish in a "toll access" journal with "Author Choice"
- Deposit pdf in arXiv – most publishers now allow at least archiving preprint
- Deposit pdf in Institutional Repository(IR)
- Post pdf on your own webpage

How can you ensure OA?
Protect your rights as an author

- SPARC addendum - handout
  - http://www.arl.org/sparc/bm~doc/Access-Reuse_Addendum.pdf
- Science Commons: Scholar's Copyright Addendum Engine
  - http://scholars.sciencecommons.org/

- Most important to grant publishers the rights they need but also to safeguard your right to disseminate your own work

Where is the best place?

- High impact journals
  - PLoS ONE – new kid on the block regularly featured in *Science* week's highlights
- IR/arXiv advantage
  - Harvested by Google Scholar (an OA citation index)
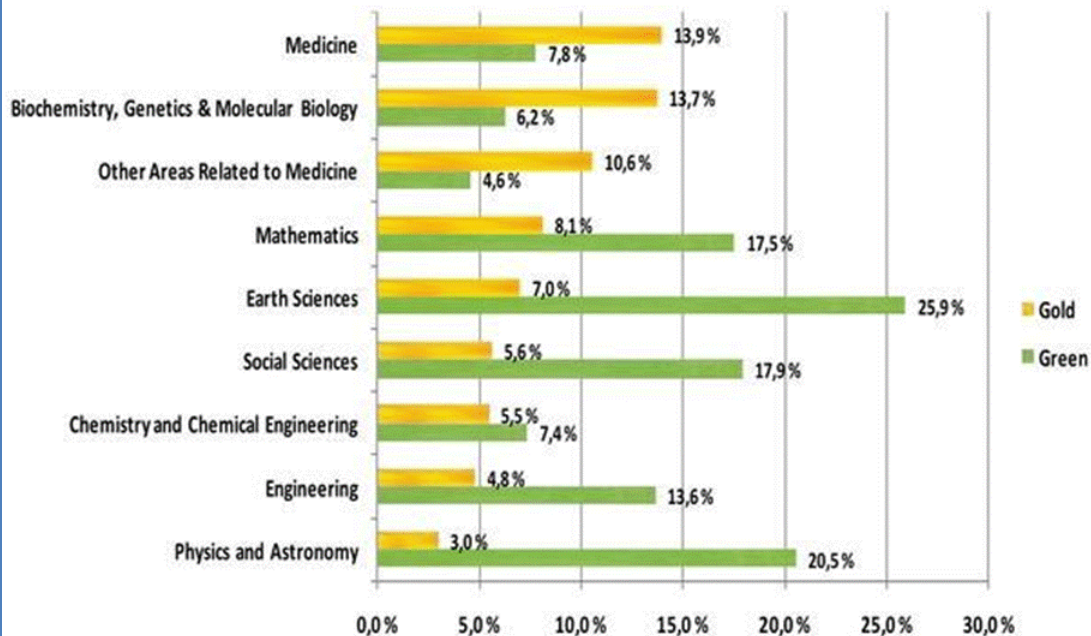- LOCKSS – means everywhere/anywhere you can is the best strategy to maximize impact

When?

- Currently OA is a growing trend but not yet predominant
- Therefore do it *now* to get OAA
  - If/when OA takes over scholarly communication the advantage disappears

OA by discipline, 2009

Björk B-C, Welling P, Laakso M, Majlender P, Hedlund T, et al. 2010 Open Access to the Scientific Journal Literature: Situation 2009. PLoS ONE 5(6): e11273. doi:10.1371/journal.pone.0011273

FRPAA
Federal Research Public Access Act

- Already passed for NIH
  - NIH funded work OA 12 months after publication
- 2nd part to apply to **all federally** supported 6 months after publication
  - NSF
  - NASA
  - etc

Who Supports FRPAA?

- 27 major research institutions
- 41 Nobel laureates
- Presidents of 6 New England public universities
- Presidents of liberal arts colleges
- I would but I'm an alien
- You should – contact your federal legislators (by October 1st)

OA Timeline - excerpts

2001 Dec   Budapest OA Initiative

2001   PLoS startup

2003 Oct   Berlin Declaration on OA to knowledge in the Sciences and Humanities

2006   PLoS One startup - 138 articles

2008 Feb   Harvard Faculty adopt OA policy

2010   PLoS first covers its costs

2011 Jan   Nature copies PLoS One with Scientific Reports

2011 Sep   Princeton Faculty adopt OA policy

OA Timeline -excerpts continued

2011 Dec PLoS One 13,798 papers, 1/60 PubMed, (138 in 2006)

2012 June Nature editor-in-chief, Philip Campbell, states OA will "happen in the long run"

Flora's OA evolution @ VC

2000-1Didn't see need for VC to buy into PLoS

2001? Inspiring SPARC talk at SUNY Albany

200x? URSI seminar at VC

2008 Presentation at SLA in Seattle

200x? Presentation to VC faculty workshop on getting published

200x? OA website for VC authors

- 2010 Emails to sci depts, one on one @VC

Flora's OA evolution @ GI

2010 May Included OA pitch in interview presentation for GI Librarian position

2010 Oct OA talk for Physics Journal club during OA week

2011 OA seminar to UAF Library

2011 Hire OA supportive new GI director

2011 Huge journals cancellation, $ to OA author support

2012 Jan Announced OA author support

Uptake Feb 2012 - May 2012

11 requests funded $95 - $3,000, $21,822 total

4 - 6 requests pending $10,000

Lessons learned

Can be hard to get invoice once OA elected

Need to resolve year end cutoff issue

Establish policy that library pays to top up what would have been page charges

Encourage inclusion of OA fees in grant proposal

Request $70,000 for OA author fees FY12-13

Director agrees that total library budget request less than 2010-2011

Short Webliography

Open Access Directory

http://oad.simmons.edu/oadwiki/Main_Page

OA Guidance for authors and editors

https://docs.google.com/document/d/1P7z0vSn1XGeTtFS4_Offx4T3IJ2ZMcycpJOMaqf7LA4/edit

SPARC Author Addendum

http://www.arl.org/sparc/author/addendum.shtml

Retraction Watch

http://retractionwatch.wordpress.com/

Is OA inevitable?

"will happen in the long run" Philip Cambell, editor-in-chief, Nature

Movement clearly not going away, clearly growing, but hasn't reached tipping point.

If/when OA becomes predominant OAA disappears so don't wait. The time to enjoy OAA is now!

Thanks for listening

Questions, discussion, debate?

The Canadian Circumpolar Institute community in the University of Alberta's institutional repository

Elaine Maloney
Canadian Circumpolar Institute, University of Alberta

Introduction

The Canadian Circumpolar Institute (CCI) promotes and supports research, education and training related to the boreal and circumpolar regions (Arctic and Antarctica). The core activities of the CCI relate to its role as a service provider to faculties and units across campus by facilitating, developing and supporting interdisciplinary circumpolar research and education programs, as well as community engagement. It aligns its programs to support faculty- and department-based initiatives in northern research and scholarship. The core of its regular activities include: research support and services; grants and scholarships; communication and knowledge transfer; and graduate research support and training

CCI's mandate is to promote and enhance the knowledge, awareness and sustainability of polar environments for all, through quality research, education and outreach programs by:
- Promoting and supporting interdisciplinary research about the circumpolar regions including northern Canada, the Arctic and Antarctica;
- Promoting and supporting education and outreach programs involving national and international partners;
- **Fostering communication among northern and circumpolar-oriented researchers**;
- Encouraging the involvement of residents from all circumpolar regions in the activities of the Institute;
- **Promoting and supporting the CCI library as a distinctive polar research collection of international importance**
- **Disseminating information about the circumpolar regions**.

Digital initiatives at the University of Alberta

Digital repositories and the local hosting of intellectual content in the form of journals and conference proceedings allow universities to gather research and administrative output for preservation and global dissemination. Developed in response to changing

trends in academic publishing, institutional repositories are typically created and maintained by libraries and are in place or under development at all major universities in Canada and around the world. Trends include faculty and university needs to increase their research exposure and citation rates, an increasing reliance on electronic knowledge discovery, expanding open access to research output, and recent funder mandates requiring deposit of research output in repository environmental by key funding agencies (UofA Libraries, ERA pamphlet, nd).

Education and Research Archive (ERA)

At the University of Alberta (UofA), the creation and hosting services of a digital repository is part of the Learning Services Strategic Business Plan, which defines the creation, content hosting, and delivery of associated services of the digital repository as one of its key deliverables (UofA Libraries, ERA pamphlet, nd).
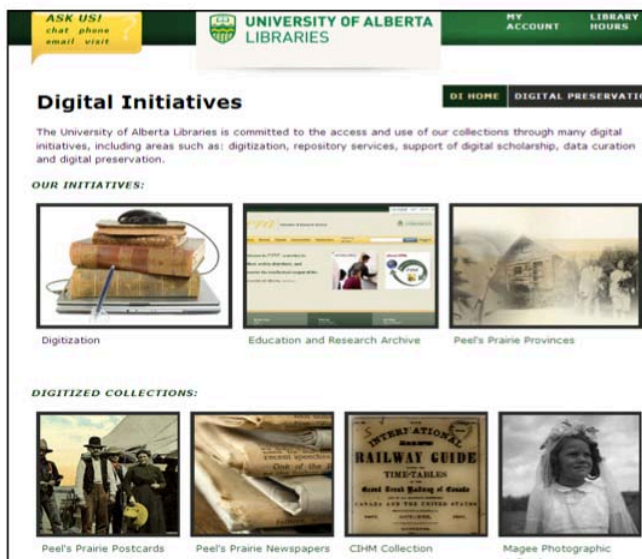
ERA, the 'Education and Research Archive,' is a digital repository to collect, disseminate, and preserve the intellectual output of the University of Alberta. It is a database with robust supporting storage and preservation infrastructure, which promotes open access wherever possible to promote the institution. Such a policy promotes global opportunities for discovery and promises to maximize the impact of knowledge generated. The repository also preserves items of research importance that cannot currently be distributed due to copyright restrictions, along with all other content in the database. ERA provides an easy and convenient solution for faculty who must deposit their research in an open access repository to meet funding agency requirements (UofA Libraries, ERA pamphlet, nd)

The UofA Libraries has a permanently staffed Digital Repository Services Librarian position responsible for leading the development, implementation, and maintenance of ERA's technology and service support. Additional Learning Services staff provides
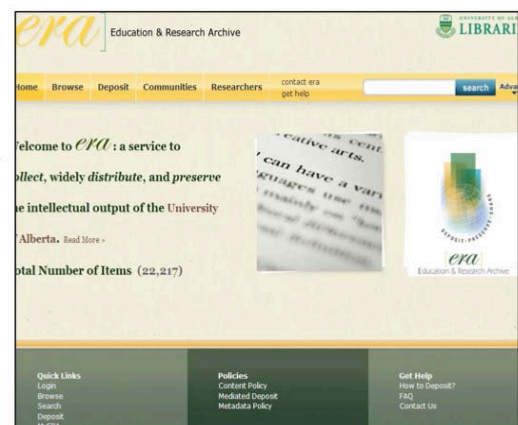
information technology services, research description and keyboard development, communication and marketing support, and dedicated assistance by professional librarians.

The ERA currently holds 24, 297 items posted to 39 'community' sites.

The Canadian Circumpolar Institute community

One of the communities in the UofA's ERA is hosted by the Canadian Circumpolar Institute, Members include CCI Administration, CCI Press, UofA Northernist Faculty, Graduate Students, Senior Undergraduate students, Adjunct and Affiliated researchers, Professors Emerti and alumni, Community partners, interdisciplinary research teams. The audience for this collection include administrators, researchers, northern community partners, and the general public.

What can be deposited?

- Books
- Book chapters
- Conference/workshop posters
- Conference/workshop presentations
- Databases
- Bibliographies
- Images
- Journal articles (drafts or published)
- Learning objects (syllabi, surveys, exams, powerpoint presentations, etc).
- Reports
- Research materials: images, field notebooks
- Reviews: book reviews, data reviews, etc.
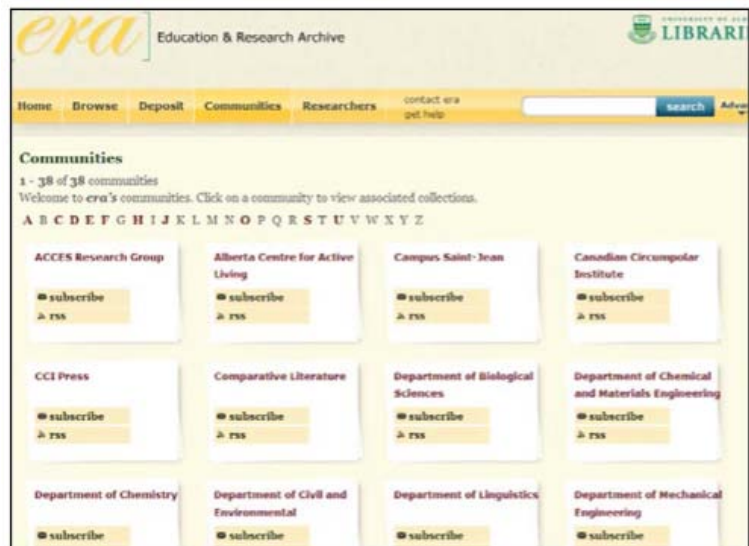
Deposit requirements

Specific requirements for contributing to the Circumpolar Collections are that the item must have Arctic or Antarctic content; and copyright must reside with the University of

Alberta (the depositor must have the authority to give copyright to the UofA). Stipulations for researcher deposits are that the material must be from work done at the University of Alberta, and the researcher must have copyright clearance to deposit the item in an institutional repository.

Use of materials

Materials in the Circumpolar Collections are available to be freely used for non-commercial purposes. Attribution is required. For other purposes, users should contact the Canadian Circumpolar Institute.

Licensing: In ERA, all items will require an associated license. There are three basic options available to the depositor for use of their contribution: Everyone - this option makes the item open access and freely accessible to the general public; U of Alberta community - this option makes the item CCID protected; and, No one - here the item will be preserved but not shared, in the "dark" portion of Era. For these items, a Creative Commons Zero Waiver license must be used. The license will always be supplied or displayed with the item.

Copyright: For items that everyone will be able to see in Era, you will have the option of choosing one of three different Creative Commons licenses. These choices will appear in a drop-down box in the Era application. The different licenses determine how the item can be used, distributed, and adapted, as well as how the item should attribute the original publication. For further explanation of the different types of Creative Commons Licenses, please see the section in the guide titled "Creative Commons Licenses", or visit http://creativecommons.ca Alternatively, if you have a document (i.e. email, file) from a journal/publisher/copyright holder that stipulates the license attributed to the item, you will have the ability to upload this document or copy-paste this text into a text box in the license section of ERA (ERA website https://era.library.ualberta.ca/public/home).

Collections within the Circumpolar Community

Within the Canadian Circumpolar Community are focused collections. Some of the current collections include the 50th anniversary collection, the circumpolar collection, the circumpolar digital image

collection, and the Dr. Otto Schaefer collection.

The 50th Anniversary Collection (7 + items): CCI celebrated its 50th year of operation in 2010-2011; a number of events were organized and publicity about the Institute and programs, and northern research at the UofA resulted from this. This collection will house a number of items produced for the occasion, such as: articles and contributions describing the history of the Institute and library collection; published media pieces; ephemerals such as brochures describing the institute and 50th anniversary exhibits; and photos of the *Magadan, Polar Impacts*, *Polar Maps*, and *Inuit Dolls* exhibits.

Circumpolar Collection (8+ items): To date, this collection includes contributions from students and academic staff affiliated with the Institute such as editorials, opinion pieces, field notes, text of oral presentations given at seminars or workshops, and some journal contributions.

This collection will also host various digital productions, such as webcasts of CCI hosted seminars such as the *Polar Impact Conversation Series*, and presentations at the *Data Summit 2012*
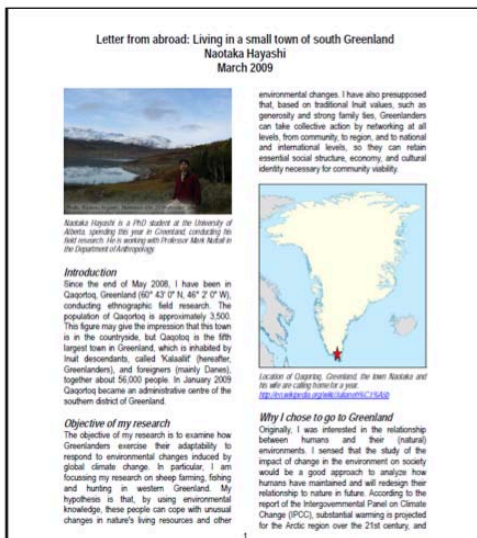
CCI Press Open Access and Archives: This collection is under development, and will be launched as soon as the policy for the collection has been finalized. At this time, it is thought that the open section of the collection will provide access to all backlist titles of the CCI Press at least

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five years after release or when the initial print run is depleted (newer tiled would be darkened for 5 years). The exception would be publications that are 'born digital', such as the IPY Report *Understanding Earth's Polar Challenges*, which was released in digital edition at the same time as traditional print.

CCI Press has more than 110 titles in six series. Current efforts are focused on digitizing older publications and producing online versions of new releases.

Circumpolar Digital Image Collection (216 items): This is the most developed part of the community's general collection at this time. It houses images from all northern and circumpolar regions of the world (including Antarctica), collected by the institute through the years and/or contributed by various individuals affiliated with the institute who have agreed to make their images available on open access.

Dr. Otto Schaefer Collection (347 items posted to date): Dr. Otto Schaefer, born in Germany, spent 32 years (from 1953 to 1985) of his outstanding medical career in the barren lands of northern Canada, a pioneer of health care for the Inuit.


Otto Schaefer came to Canada after the Second World War to fulfill a lifelong dream of working in the arctic with the Inuit. After a few years repeating his residency in Edmonton so he could practice medicine in Canada, Otto and his wife Didi moved to Inuvik, NWT for a two year term (1953-1955). Then came two years in Pangnirtung, NU (1956-1958) followed by two more in Yellowknife, YK (1960-1961). When Otto's appointment in Yellowknife ended the family moved to Edmonton permanently with their four children (the fifth was born after the last move). Initially Otto found work at the Charles Camsell Hospital, a hospital for First Nations and Inuit patients only, but was shortly after appointed the director of the Northern Medical Research Unit. Over the next twenty years, Otto traversed the arctic collecting medical

data on the overall health of the Native populations to better understand the implications of the move from traditional lifestyles on health. He travelled by dogsled, stayed in igloos in remote Inuit camps, learned the Inuktitut language, ate raw frozen caribou meat, and operated by the light of a seal-oil lamp. What he found was an ethnic group so well adapted to survival in the harsh climate of the arctic struggling to adapt to the rapid change brought by modernization.

His friendship and rapport with the Inuit enabled him to travel the Arctic from the Yukon to Baffin Island, treating sick people and documenting their health problems for the Northern Medical Research Unit. This research would become more than 100 papers and publications published in medical journals, presented at international conferences, and shared with the medical community in Canada, an outstanding contribution to medical literature.

When upload is completed, the collection will comprise more than 4000 slides, 650 photographs and 800 negatives. In addition to medical slides and images, the collection provides tremendous insight into a world in transition. Schaefer photographed everything: the view out airplane windows while flying between remote communities, his growing family, plants of the tundra, friends in each town, various types of traditional shelters, the more extreme medical cases he treated, the different anthropological types of Inuit (often complete highlighting their tattooing traditions), as well as the amazing natural scenery he encountered on a daily basis. Most of the images are of smiling groups of people, celebrations and dances, the breath-taking landscape, and traditional aspects of Inuit life. These slides show the transition from traditional hunting and fishing by dog sled to snowmobiles and the movement away from foods from the land in favour of processed foods imported from the south. Through the slides it is possible to watch how quickly relocation and the influence of the south changed everything for the Inuit and Schaefer's notes and medical graph slides support these observations with data on how these changes affected Inuit health. The range and diversity of these images provide a valuable alternative archive to the transformation of the North. Schaefer also made copious notations about the images that provide a context (Wheeler 2010).
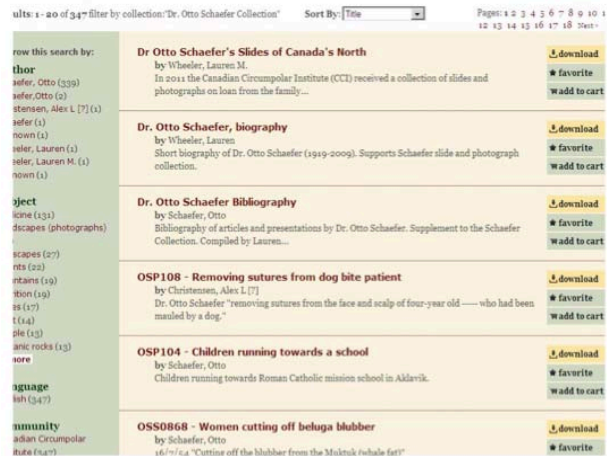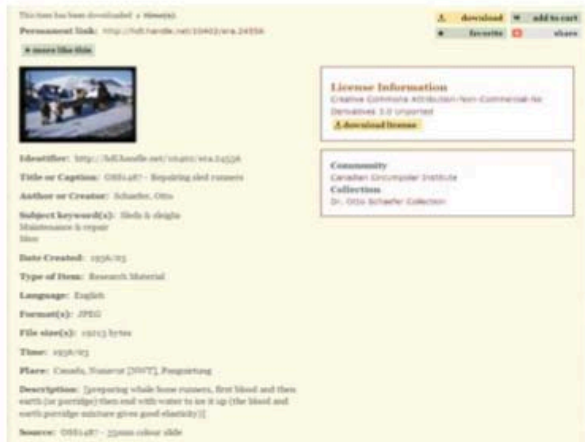
Other image collections to be added

Freeman Collection (Anthropology): Dr. Milton MR Freeman is an Anthropologist specializing in cultural studies, traditional knowledge, and adaptive management systems. This collection includes research expeditions (complete with field notes and journals), indigenous, artisanal and small-type coastal whaling events, and fieldwork related to natural resource co-management practices.

Grainge Collection (Engineering): Dr. Jack Grainge was a civil and environmental engineer who designed and installed the first water and sanitation systems in the North. His donation of approximately 2,000 annotated slides covers the period 1940 to 1980, aerial photos of townsites, town plans, personal photos of local residents and landmarks.

Wonders Collection (Geography): Dr. William C. Wonders a geographer accomplished in the field of Polar and Boreal Geography. Bill's legacy is a lifetime of commitment and excellence to Canadian Geography. The collection is currently being assessed, but initial examination estimates approximately 10,000 fully annotated slides and photographs covering the period of the mic-1950s to 2010.

Researcher pages
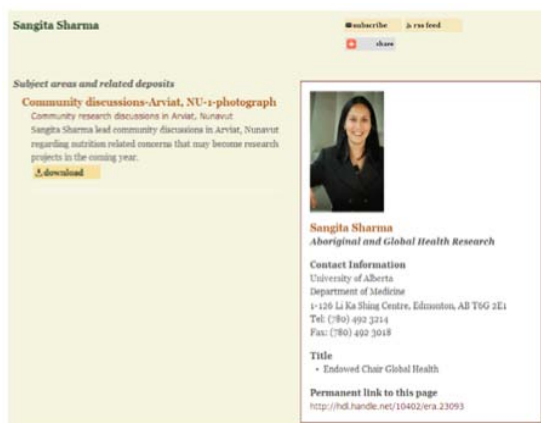
Researchers create a profile with a description of their research interests and contact information. As they post items to the archive, the items will be tagged to their profile and to any of the collections to which they link the

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item/s. The researchers are listed alphabetically by last name; however, a user may also search by keyword to find a researcher working in a particular subject area. Again, the more complete and detailed the profile, the more successfully will a user be able to search.

Student contributions

Students are encouraged to develop a profile in the early stages of their careers; the profile builds as they move through graduate programs. Contributions include submissions to the 'Letters from abroad' series for students on an exchange experience, or research program that takes them to northern or polar field destinations. As part of the grant reporting to CCI, students are required to submit 'Research Poster Series.'

One student is working with the library to upload a time lapse video showing ice movement over a 12 month period off the north cost of Ellesmere Island, the result of an experiment conducted as part of his field research.

How to deposit in ERA

The process for depositing items to ERA is fairly straightforward; most of the information is prompted by the system, and the author can chose from drop-down menus for standard items and regular treatment of items.

Important at this stage is for the author to provide useful metadata for future searching of the collection. The author is asked to give the item a title, provide keyword descriptors, indicate a date, or a particular place, a full description of the item can be added, as well as a citation for a previous publication (e.g., a journal paper), the date the item was created in ERA and the source of the item.

Once the description of the item is complete, the author can link the c item to other items of a similar nature or genre. The item can be tagged to a particular community or to one or more collections.

We encourage authors to provide as much information as possible, and to think of what a researcher of the collection might be interested in knowing. For example, if it is an image, it might be important to know what tool was used to take it (a digital camera vs. an image scanned from an original photo or slide). If detailed information is know, such as the camera settings, this might of interest to certain audiences.

Finally, the author needs to register licensing information. Here, the author can chose from the three standard licenses provided by the system, or they can create their own licences.

This is also where the author can program the item to remain in the 'dark' archive until a certain date (this is useful for published material that can only appear in open access after a certain period, such as stipulated by publishers).

The last task is to upload the item.

Benefits of the archive

Benefits and impact of participation in the University of Alberta's Education and Research Archives and the Circumpolar Community include the following:

- Faculty will be able to meet or augment any required mandate for deposit of research output using ERA.
- The UofA will have a functioning and supported research output storage and preservation system which will enable it to digitally collate and measure its contribution to global knowledge.
- Faculty members will be able to host and distribute their research from a centralized storage location while maintaining the identify and cohesion of individual, research group, community, or collection-based groupings of research output.
- Permanent URLs assigned to all objects in the institutional repository will ensure that citations containing links to research papers will remain functional.

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- Measures of research access and downloads will be available.
- Depositors are able to assign permissions and associated copyright to their research output to define its intended use.
- Outstanding student work at the University of Alberta will attain widespread visibility.
- Exposure of deposited research should increase as research items will be indexed by major search engines including Google.

References

UofA Library (n.d.). Pamphlet: Education and Research Archive (ERA) pamphlet.

UofA Library ERA website https://era.library.ualberta.ca/public/home

Wheeler, L. (2010). *Dr. Otto Schaefer's Slides of Canada's North* available online at The Otter (http://www.niche-canada.org/node/10055)

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