

**Polar Libraries Colloquy 2008**

# ***Currents of Change***

***The Future of Polar Information***

22nd Polar Libraries Colloquy  
2-6 June 2008, University of Alberta  
Edmonton, Alberta, Canada



**PROCEEDINGS**

**Polar Libraries Colloquy 2008**  
***Currents of Change: The Future of Polar Information***  
**June 2-6, 2008**  
**Edmonton, Alberta, Canada**

**PROCEEDINGS**

**Sandy Campbell and Elaine Maloney, Editors**

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ISBN  
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## Introduction

The Polar Libraries Colloquy is a wonderful network of librarians, archivists and others who are interested in preserving and promoting information about the polar regions. This meeting was unique in that the Colloquy met in conjunction with the Council Meeting of the University of the Arctic. While the focus and function of the two organizations is quite different, there are common interests. Several Colloquy members work in UArctic institutions.

The meetings ran as parallel currents, with some sessions and all social events shared by both groups.

We all got to meet some new people and make some new friends. UArctic operates as a business meeting, so there are no papers from their sessions. This volume is the collected papers submitted by presenters at the 2008 Polar Libraries Colloquy. Where no paper was submitted, the original abstract has been included.

*Sandy Campbell and Elaine Maloney, Editors*



## ***Life of an Arctic Filmmaker and Tar Sands: Canada for Sale***

**Niobe Thompson, Director and Producer  
Clearwater Media**

*Tar Sands: Canada For Sale* captures the intersecting storylines of a remarkable cast of characters eager to cash in on the oil boom in Fort McMurray, Alberta. Washington lobbyists, pipefitters from Newfoundland, Chinese investors and Norwegian industrialists descend on tar-soaked 'Fort McMurray,' a modern-day Eldorado, where rents are sky rocketing and cocaine abuse is four times the provincial average. Up for grabs—a stake in a \$100 billion energy bonanza and Canada's economic sovereignty.

This hour-length documentary, commissioned by the CBC, tracks the growth of the world's largest reserve of 'unconventional' oil. This Florida-sized 'environmental sacrifice zone' has become Canada's contribution to U.S. energy security in the post-9/11 world. Yet, for many, the tar sands are a global warming disaster.

As Fort McMurray bursts at the seams, children from Thunder Bay to Cape Breton are made tar-sands orphans by their migrant-worker parents. Canada's petrodollar breaks the back of the manufacturing economy in the East. Cancer rates skyrocket downstream of Fort McMurray while Rocky Mountain glaciers melt and disappear. And all the while, Alberta crude goes south to U.S. markets while Eastern Canada pays ever more for insecure Middle East oil.

In an isolated region of the north, Canada's future is being carved out of the forest at a breakneck pace. *Tar Sands: Canada for Sale* questions how much Canada is willing to sacrifice for a stake in this century's greatest energy bonanza.



**Niobe Thompson** joined Clearwater as director of development in 2006, bringing his experience as an anthropologist and human rights worker in Africa, South Asia, Scandinavia and the Russian Far East. With a doctorate from the University of Cambridge, he has published on the global trade in light weapons, diamonds and insurgency in West Africa, and rebuilding judiciary systems in post-conflict states. After five years of research in the Russian Far North, Thompson will publish *Settlers on the Edge* this month.

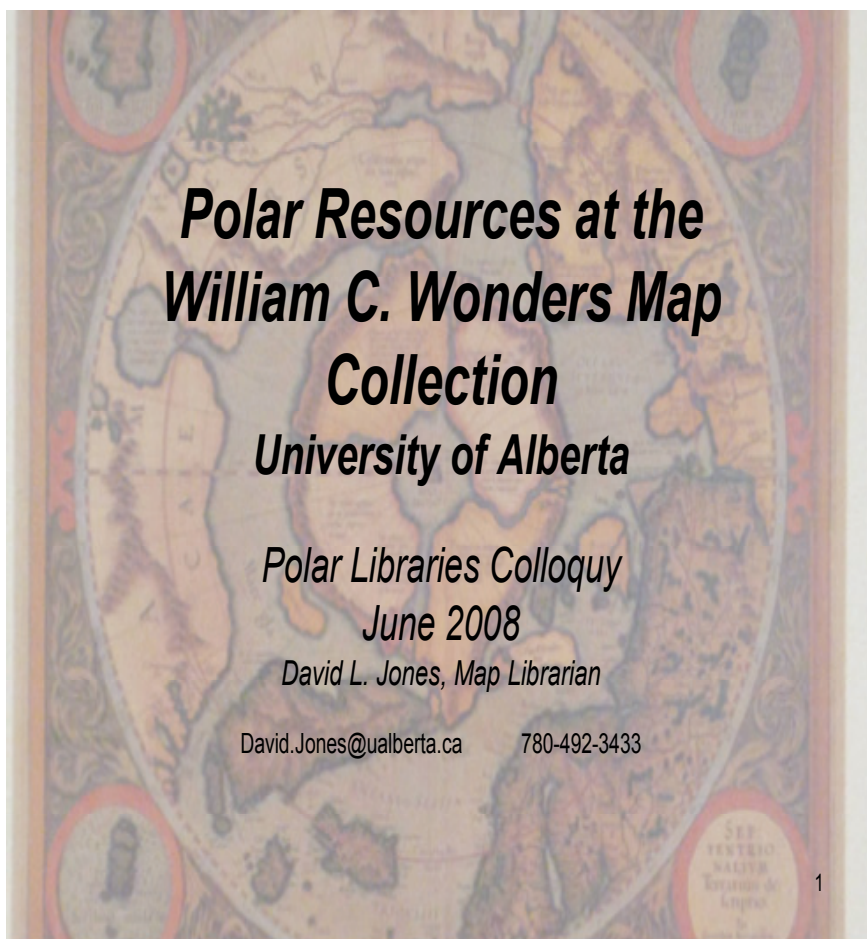


## ***Polar Maps at the University of Alberta Library***

**David L. Jones**

**William C. Wonders Map Collection, University of Alberta**

**Abstract:** The University of Alberta's William C. Wonders Map Collection (WCWMC) is the second largest in Canada. It incorporates the maps collected by the Canadian Circumpolar Institute and its predecessors. The presentation will introduce the WCWMC, its online database, current Arctic and Antarctic research resources and some of its many antiquarian and rare polar region maps.



## **The W.C. Wonders Map collection**

- **Largest academic map collection in Canada**
- **Over 550,000 maps, 1,000,000 air photos**
- **Begun in 1960s by Geography Department**
- **Transferred to U A Libraries in 1990s**
- **Includes maps collected by the Boreal Institute and Canadian Circumpolar Institute**
- **Areas of special focus are; Alberta, Canada, Polar Regions, U.S, Europe**
- **<http://www.library.ualberta.ca/subject/maps/index.cfm>**

1

## **• Cartographic Resources**

- **Individual Maps**
  - Monographic
  - Serial (Topographic etc.)
- **Atlases, Gazetteers, Reference materials**
- **History of Cartography**
- **Maps in Books**
- **Globes**
- **Air Photos**
- **Spatial Data & online resources**

1

- **Individual Maps**
- **Three main locations:**
  - **General Collection –**  
**4<sup>th</sup> Floor Cameron Library**
  - **Rare/Archival Collection -**  
**Map Room, (4<sup>th</sup> Fl. Cameron)**
  - **Superseded, low priority**  
**BARD (Book and Record Depository - off campus storage)**

1



Map of the Region of the City of Narym (on the River Ob, in the present-day District of Tomsk) [Чертеж земли Нарымского города]

- ***Bibliographic Access***
- Pre-1995 imprint maps
  - In-house database ‘***The William C. Wonders Map Collection Database***’
    - Monographic and series records
    - Keyword searchable
    - Classified geographically, uses L.C. subclasses
    - Location and call number
    - Web accessible <http://maps.library.ualberta.ca/>
    - Approximately 33,000 records and growing

1

- ***Bibliographic Access***
- 1995 → imprint maps
  - Full L.C. Cataloguing in NEOS Library Consortium Catalogue  
<http://www.library.ualberta.ca>
  - Monographic and series records
  - LC Classification and Call Numbers
  - Over 7,000 records and growing

1

**Map records**

**Specific polar areas**

• Holdings by class	Database pre 1995	Catalogue 1995 →
– Arctic	79	26
– Northern Canada	91	
– Alaska	196	51
– Northwest Territories	272	167
– Yukon	152	150
– Nunavut	2	114
– Iceland	48	8
– Greenland	42	5
– Europe, Northern (Scandinavia)	57	12
– Finland	123	13
– Norway	195	16
– Sweden	228	18
– Antarctica	126	88

1

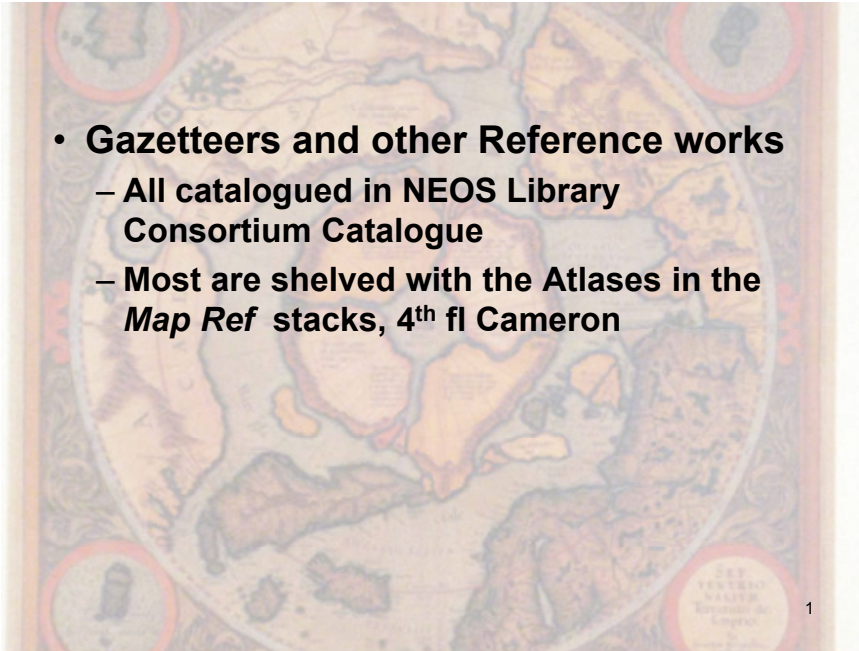
• **Atlases**

- Over 3000 atlases
- All catalogued in NEOS Library Consortium Catalogue
- Main collection divided by size:  
*Map Ref* and *Atlas Oversize*
- Other atlases in *Atlas Archives*, and *BARD*

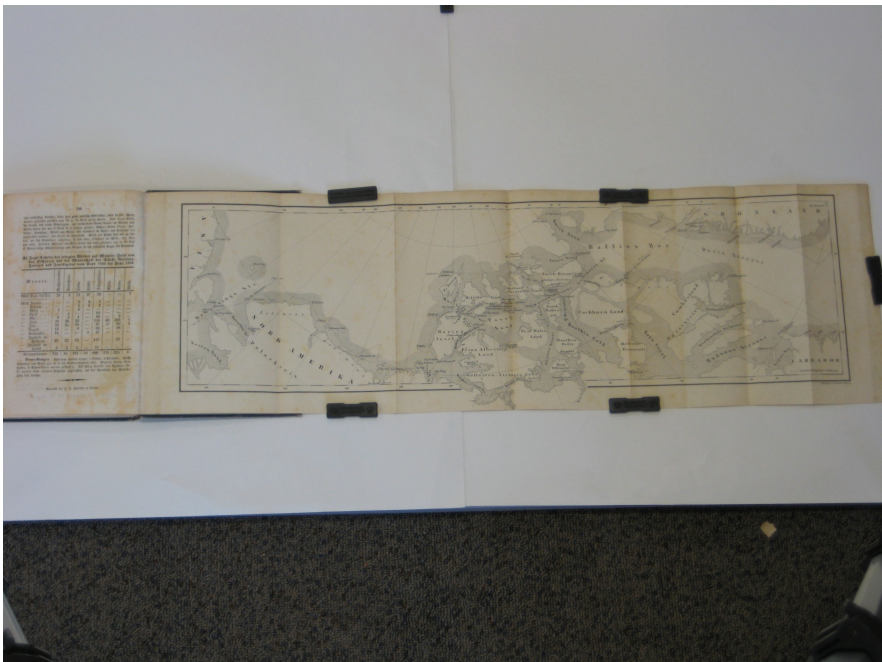
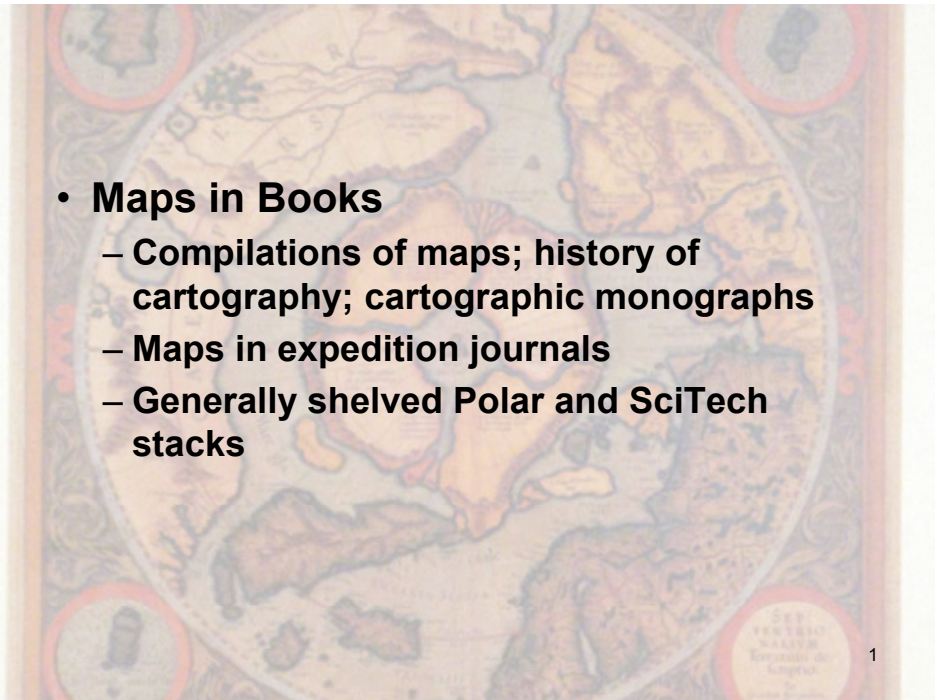
1

- **Gazetteers and other Reference works**

- All catalogued in NEOS Library Consortium Catalogue
- Most are shelved with the Atlases in the *Map Ref* stacks, 4<sup>th</sup> fl Cameron



Wytfliet 1597



Reise-tagebuch des missionars Joh. Aug. Miertsching ... Sir John Franklin 1855

- **Globes:**

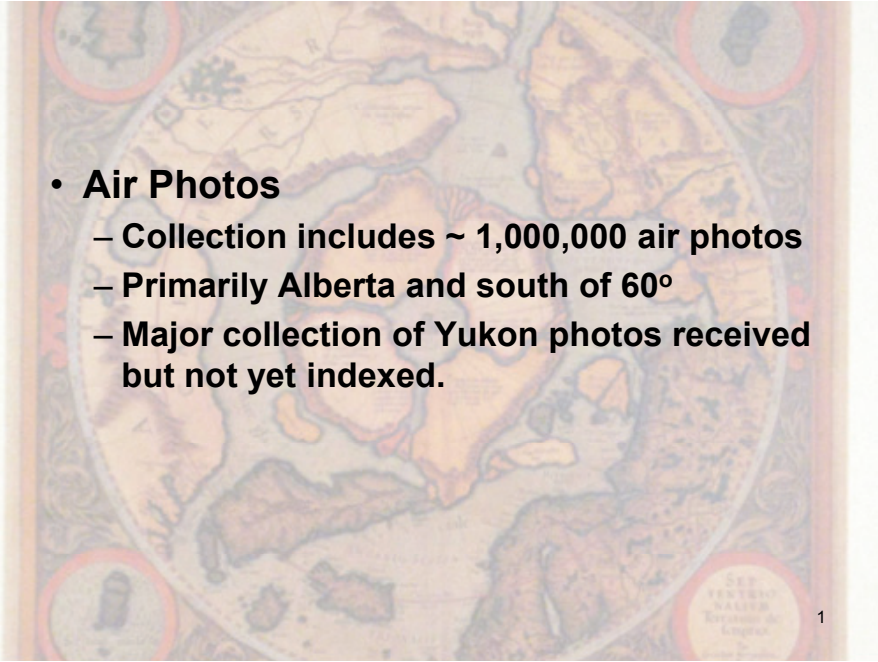
- Facsimile of Behaim Globe shows Ptolemaic view of Arctic



1



William Blaeu ca. 1645.

- 
- **Air Photos**
    - Collection includes ~ 1,000,000 air photos
    - Primarily Alberta and south of 60°
    - Major collection of Yukon photos received but not yet indexed.

- 
- **Spatial Data and online resources**
  - **Natural Resources Canada**
    - GeoConnections Discovery Portal  
<http://geodiscover.cgdi.ca/>
    - Geobase
    - [GeoGratis](#)
    - [Quicklook Swath Browser](#)
    - Atlas of Canada
    - [Toporama](#)
    - NAPL Online
    - [CEOCat](#)

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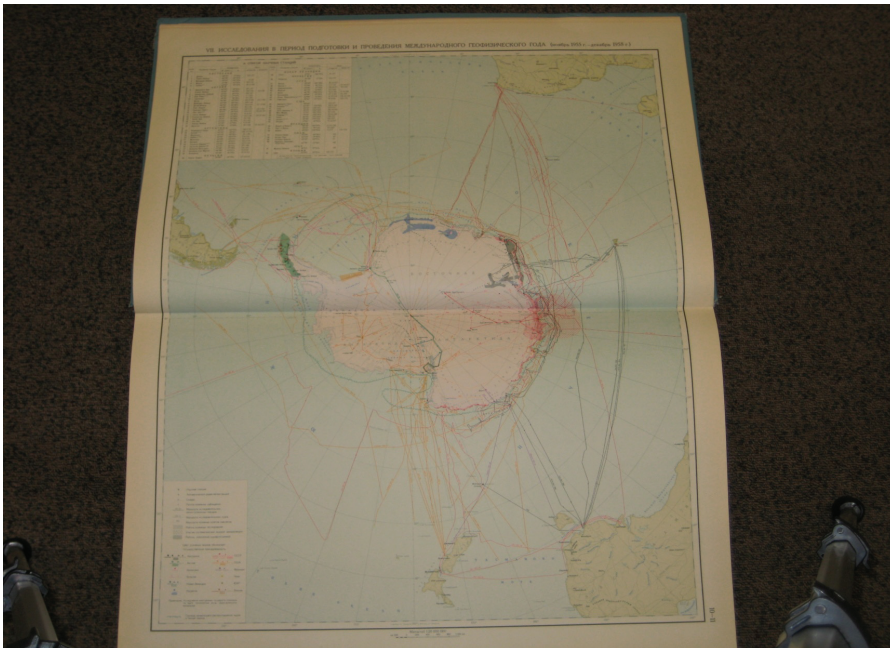


Plate 10-11 Atlas of Antarctica 1966



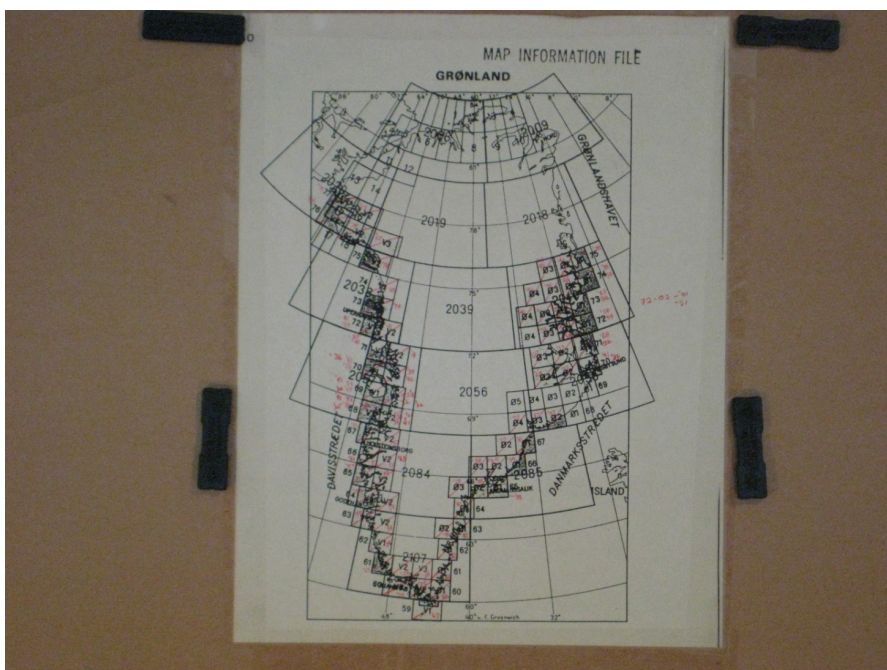
1:50 K sheet 340D16 Henrietta Nesmith Glacier



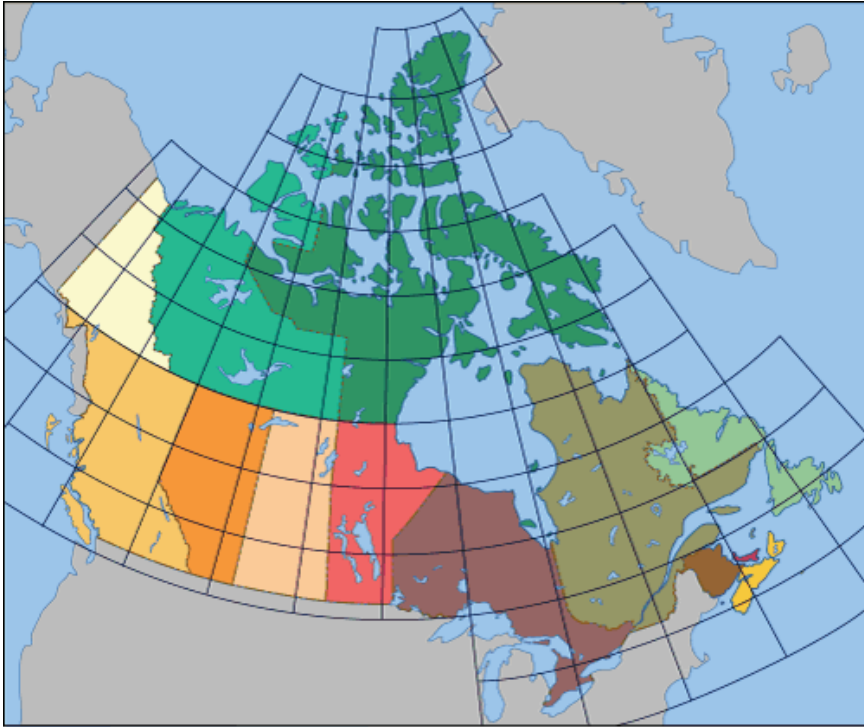
NTS Index No. 6 The North



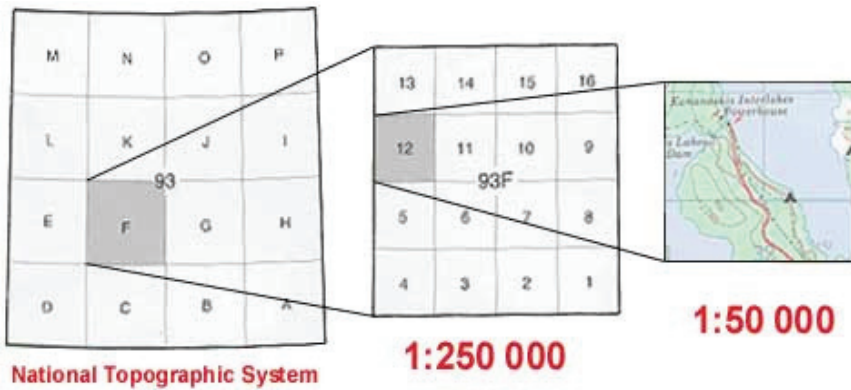
De L'Isle 1703/1740



Greenland Index map



National Topographic System (NTS) grid: Divides Canada into units  
1:1,000,000; 1:250,000; 1:50,000



Canada National Topographic System (NTS) grid: Divides Canada into units  
1:1,000,000; 1:250,000; 1:50,000

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The screenshot shows a web browser window with the address <http://maps.library.ualberta.ca/>. The page features a header with the University of Alberta Libraries logo and a navigation bar. The main content area is titled "The William C. Wonders Map Collection Database". It includes a "Browse" section with a dropdown menu for "Title" and a "Search" button. Below this is a "Keyword Search" section with a "Find" input field and a "Search" button. The page also includes a footer with the University of Alberta logo and copyright information.

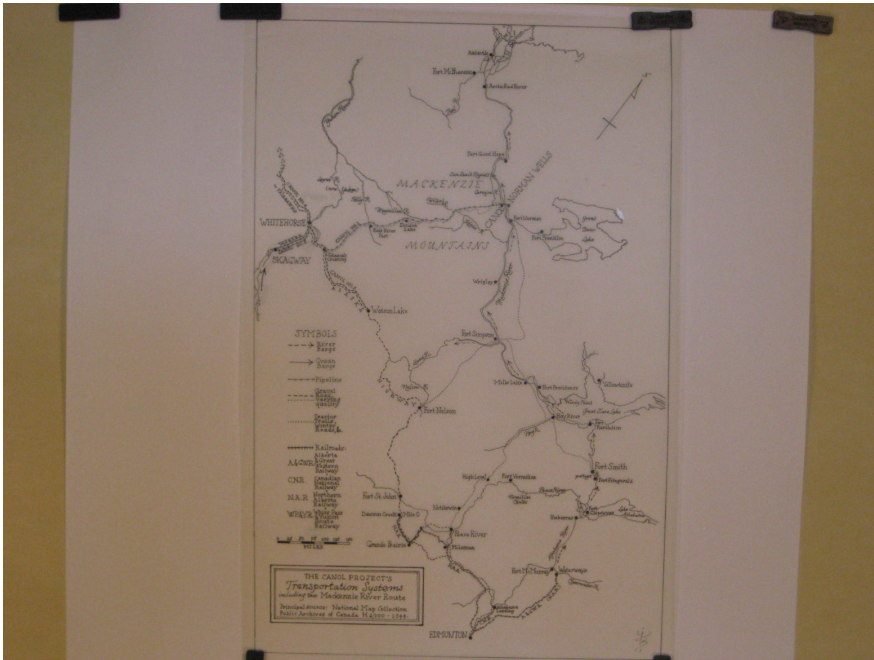
The William C. Wonders Map Collection Database  
<http://www.library.ualberta.ca/> CHEK LINK

The screenshot shows a web browser window with the address <http://ualweb.library.ualberta.ca/ualweb/cgsis/nbe/REWcom/UARCHIVES/93980031/601180/X>. The page features a header with the University of Alberta Libraries logo and a navigation bar. The main content area is titled "NEOS Library Consortium Catalogue". It includes a "Find Items" section with a search input field and a "Search" button. Below this is an "Optional Limits" section with a "Library" dropdown menu. The page also includes a footer with the University of Alberta Libraries logo and copyright information.

Library Home Page → other search options : <http://www.library.ualberta.ca/>

[illegible]

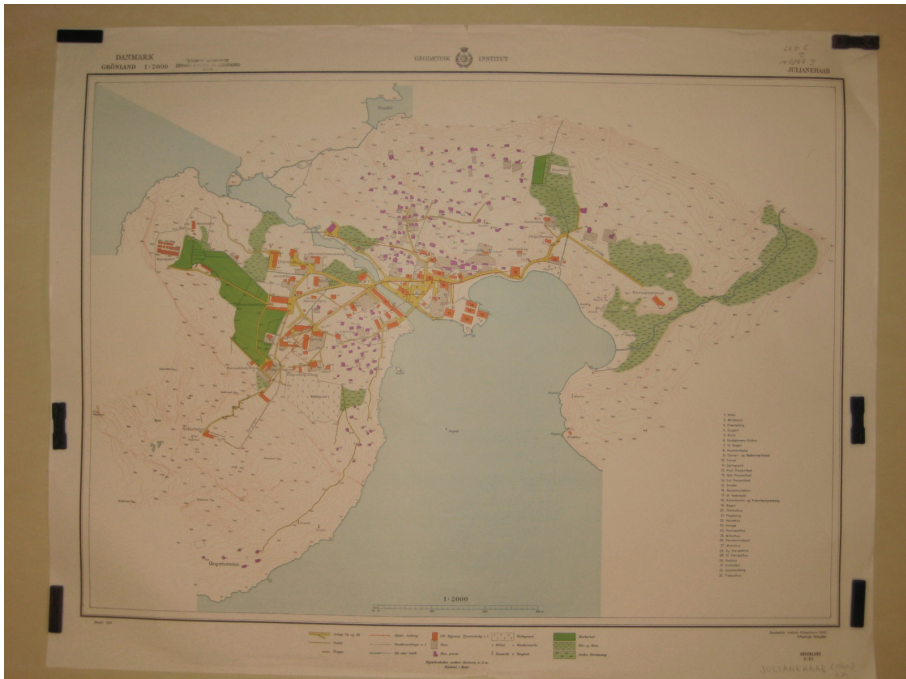
17



P.S. Barry 1985



H. Moll North America 1719



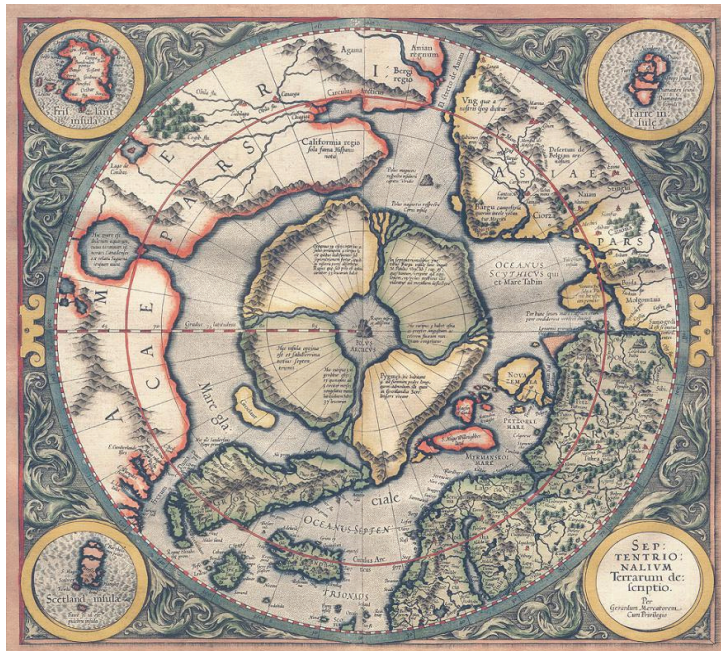
Gronland 1:2000 Julienhaab



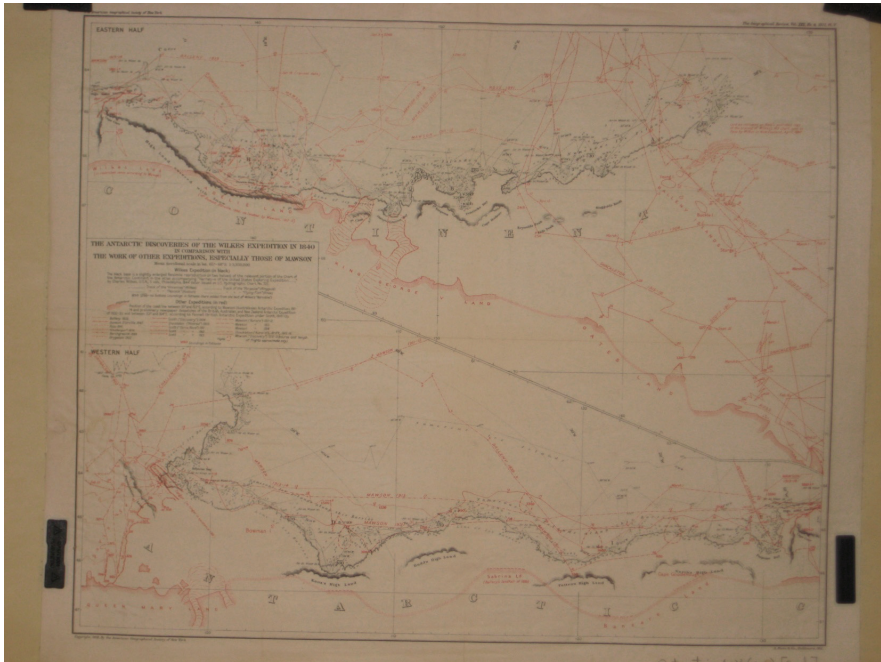
1:250 K Prins Christians Sund Sheet 60 ø.1



Fourth Floor , Cameron Library, University of Alberta



Mercator 1595



American Geographical Society 1932



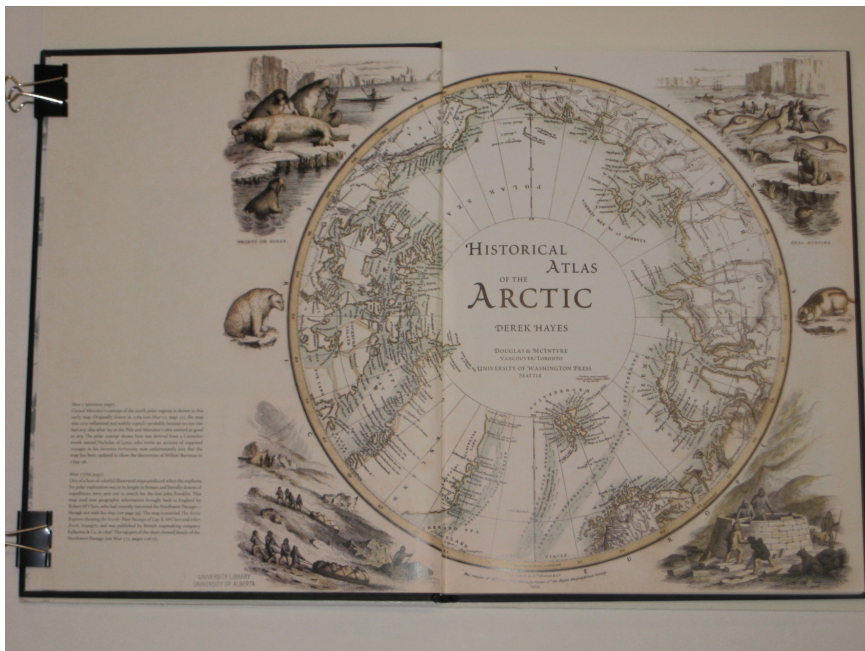
J.J. Ruhle von Lilienstern 1824



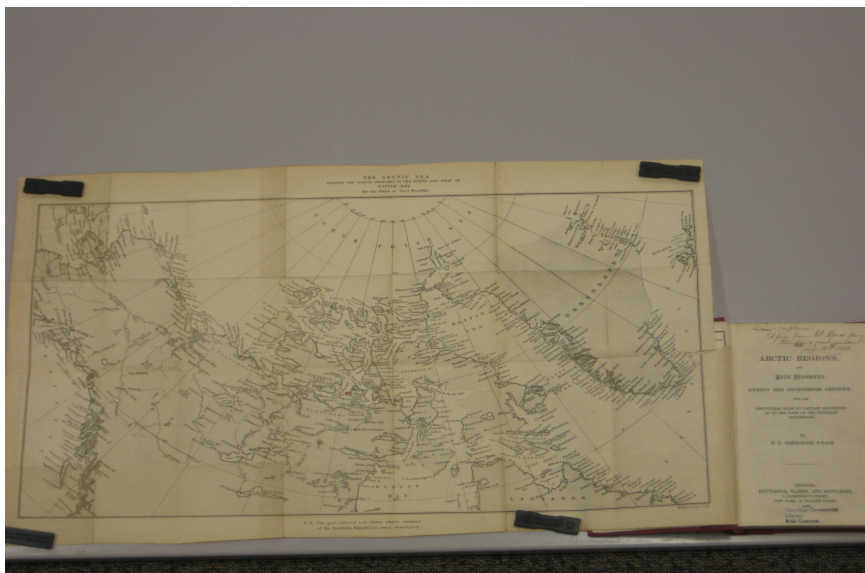
Carte des nouvelles decouvertes 1752



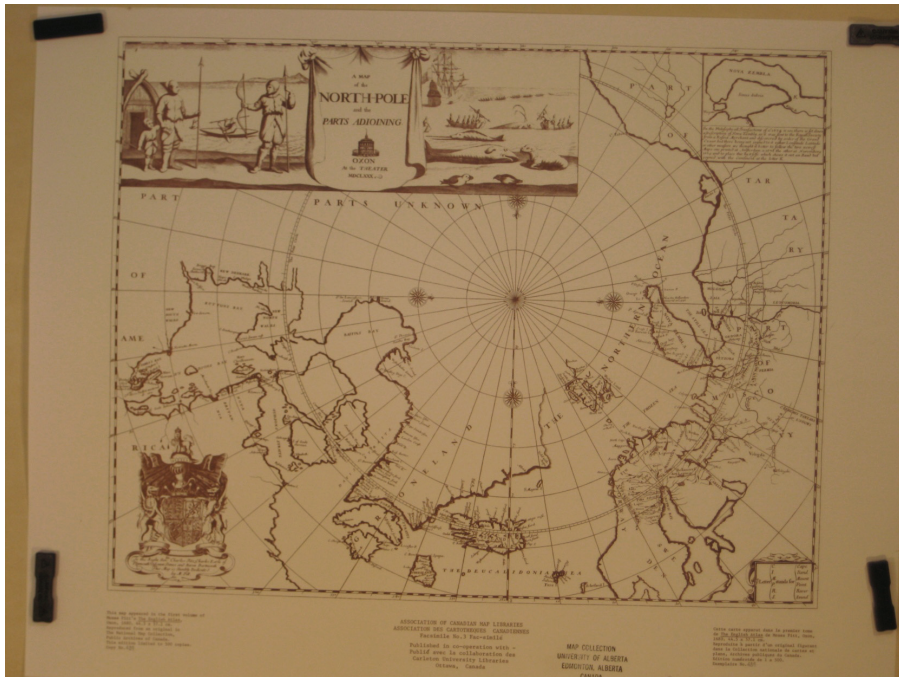
Remondini 1784



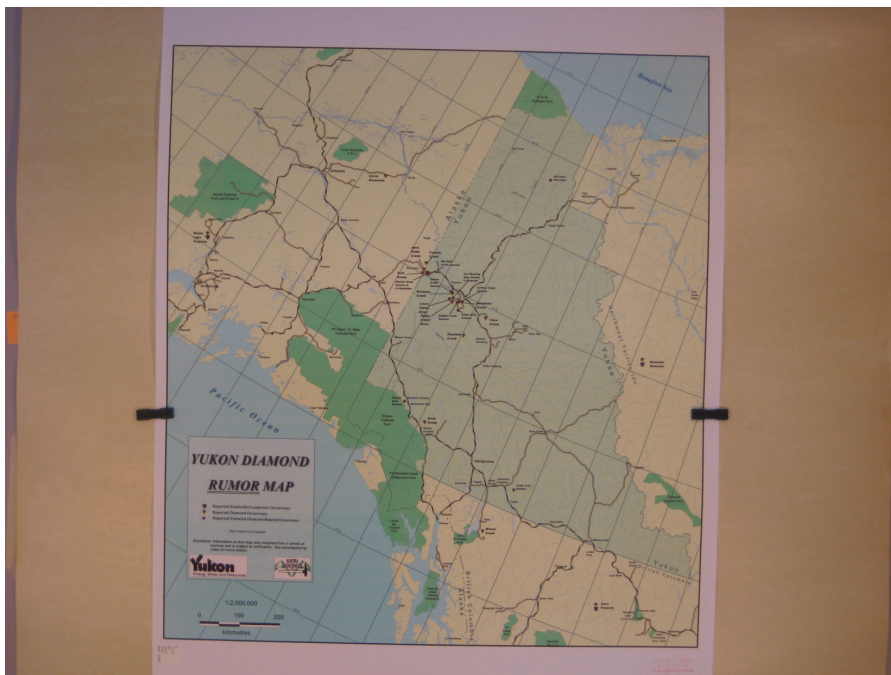
Historical atlas of the Arctic 2003



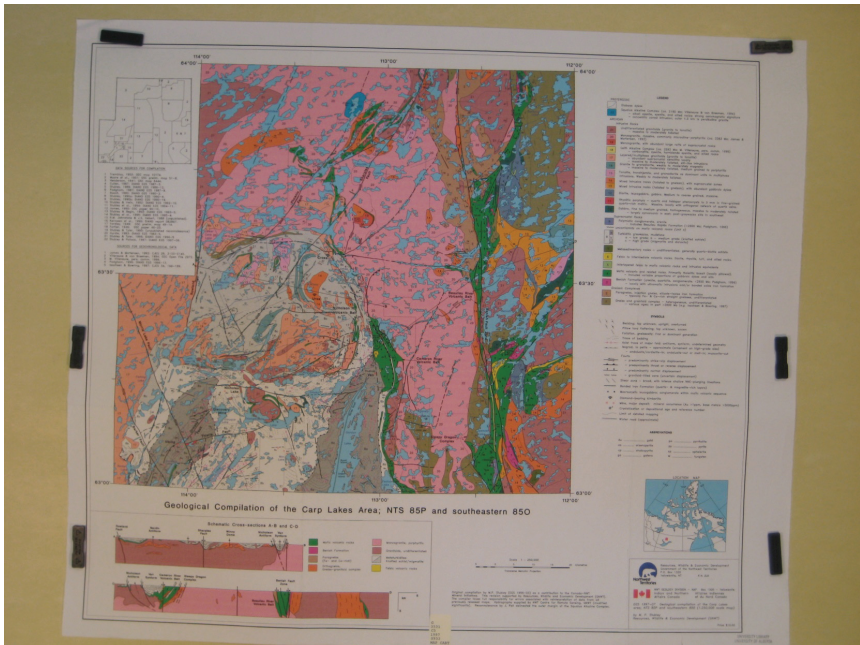
The Arctic regions and polar discoveries. ... Captain McClintock as to the fate of the Franklin Expedition 1860



Moses Pitt 1680



Yukon diamond rumor map 2003



Geological compilation of the Carp Lakes area 1997

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Email This Record To:

ID/BCN	7621/AAA-7773
Location	UA Cameron Staff Access-Maps
Call Number	Northern Hemisphere C-19
Title	Carte reduite des parties Septentrionales du Globes situees entre l'Asie et l'Amerique.
Scale	Ca. 1:24,000,000.
Place	Paris :
Publisher	M. Bellin,
Publication Date	1758.
Subject	Northern Hemisphere--Physical sciences.
Note	Col. map 19 x 30.5 cm. "Pour servir a l'Histoire Generale des Voyages".

Browse

Keyword Search

Find  IN

AND  IN

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# Polar Libraries Colloquy 2008

## Currents of Change: The Future of Polar Information

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record 2 of 62 for search **Any field "baffin"**

**Geology, Baffin Island (south of 70°N and east of 80°W), Nunavut [cartographic material]**

**Personal Author:** St-Onge, M. R.  
**Title:** Geology, Baffin Island (south of 70°N and east of 80°W), Nunavut [cartographic material] / M.R. St-Onge, G.D. Jackson, J. Henderson.

**Mathematic map data:** Scale 1:500,000 ; Lambert Conformal Conic Projection, Standard parallels 63°07'N and 68°28'N, North American Datum 1983

**Publication info:** [Ottawa, ON] : Geological Survey of Canada, 2008.

**Physical description:** 3 maps : col. ; 94 x 180 cm, or smaller - on sheets 123 x 192 cm, or smaller - [legend sheet] 93 x 111 cm.

**Series:** Open file (Geological Survey of Canada) : 4931

**Other title:** NTS 25 I-P, 26, 27 A-D, and parts of 16, 36, 37 [cartographic material]

**Subject term:** Geology--Nunavut--Baffin Island--Maps.

**Geographic term:** Baffin Island (Nu.)--Maps.

**General Note:** Includes location map and diagram of "National Topographic System Reference and Index to adjoining Geological Survey of Canada maps."

**General Note:** Legend sheet (i.e. sheet 2) also includes bibliographical references, 2 auxiliary maps on Sources of information for compilation map (fig. 1) and Simplified geological summary map for northern Quebec and Baffin Island (fig. 2), and 1 table on geotechnological data.

**General Note:** In upper margin: Natural Resources Canada, Logos of Polar Continental Shelf Project and Canada-Nunavut Geoscience Office.

**Series:** (Open file : 4931)

**Added author:** Jackson, M. R.

**Added author:** Henderson, J.

**Added author:** Canada, Natural Resources Canada.

**Added author:** Polar Continental Shelf Project (Canada).

**Added author:** Canada-Nunavut Geoscience Office.

**Added author:** Geological Survey of Canada.

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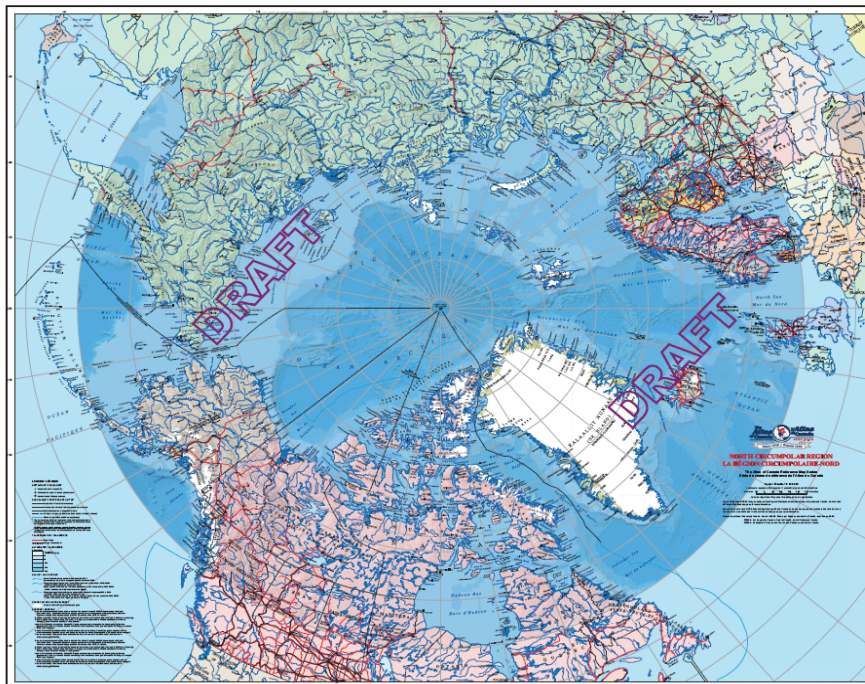
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Draft of 2008 edition of MCR001: North Circumpolar Region

## *Aboriginal Voices: What makes an Authentic Book?*

### **Larry Loyie and Constance Brissenden**

**Presentation:** Twenty-five years ago, Larry Loyie walked into a library looking for books by Aboriginal authors. When he saw how few there were, he vowed to fulfill his dream of becoming a writer and to promote writing in Aboriginal



communities. Assisted by his partner, writer Constance Brissenden, Larry will give a behind-the-scenes look at the challenges that must be overcome before experiencing the joys of being published. He will talk about how Aboriginal and Metis publishers consider manuscripts for publication and the editorial process behind their development. Based on a combined 35 years' experience in Canadian publishing, Larry and Constance will share insights into what makes an authentic Aboriginal voice and what to look for when purchasing Aboriginal-themed books.

Award-winning Cree author Larry Loyie and partner, editor and writer Constance Brissenden have worked together since 1993. They created Living Traditions Writers Group ([www.firstnationswriter.com](http://www.firstnationswriter.com)) to encourage writing in Aboriginal communities. Larry Loyie was born in Slave Lake, AB and lived a traditional Cree life until the age of nine. He spent six years in residential school before going to work at fourteen. Larry returned to school in his fifties to accomplish his lifelong dream of becoming a writer. He has written plays, short stories and four children's books with First Nations themes. *Goodbye Buffalo Bay*, his first youth chapter book, will be published in Fall 2008 by Theytus Books. It follows *When the Spirits Dance*, *As Long as the Rivers Flow* and *The Gathering Tree*. Larry Loyie has received a Canada Post Literacy Award for Individual Achievement, The Norma Fleck Award for Canadian Children's Non-Fiction and the First Nation Communities Read Award. Larry and Constance live in a log house near High Prairie, AB.



# William Mills Book Prize

## Sharon Rankin and Gloria Hicks

Good afternoon. My name is Sharon Rankin and I am one of five members of the William Mills Book Prize Committee this year, together with Gloria Hicks, we will be announcing the winner of this year's prize.

### Origin and History of the Award

Established and first awarded in 2006, the William Mills Prize for Non-Fiction Polar Books honours the best non-fiction titles published from around the world during the two years between the Polar Library Colloquies. The winning title's author receives \$300.00 U.S. and the right to use the William Mills Prize logo when advertising the winning book.

The winner will be announced on the PLC web-site, in the *Polar Libraries Bulletin*, on the PLC and in other appropriate library publications. This year we will be awarding an honourable mention for the first time, spurred by the quality and number of the award nominees.

This award is given to honour William Mills, a former librarian at the Scott Polar Research Institute, who devoted his professional life and career to the expanding world's knowledge of polar regions. William Mills left this world in 2004, but his legacy of publication, the *Exploring Polar Frontiers: a Historical Encyclopedia* and his work to build the Shackleton Memorial Library building and collections is well known and respected by his colleagues. The William Mills Book Prize honours similar accomplishments.

The PLC website describes the award selection criteria and I will describe for you the process used in general terms.  
<http://arcticcentre.ulapland.fi/polarweb/plc/mills.asp>

The qualifications for nomination are:

1. The book must be non-fiction, about the Arctic or Antarctic.
2. The book may be any type of substantive work of nonfiction, or reference resource. Textbooks, anthologies, edited works, and other small-scale efforts will not be considered unless they are truly outstanding contributions to the polar literature.
3. The book must have been published for the first time between the dates of the last Colloquy and the Colloquy at which the award will be given. Re-releases, translations of older materials, and updated editions will not be eligible.
4. The official language of the Colloquy is English. For this reason books must be published in an English language version to be eligible.

The members of the 2008 selection committee for the William Mills Prize for Non-Fiction Polar Books are:

Chair - Jude Baldwin, Fairbanks North Star Borough Public Libraries (Alaska)

Ron Inouye, University of Alaska Fairbanks (retired)  
Sharon Rankin, McGill University (Quebec)  
Clare Flemming, American Museum of Natural History (NY); Pratt Institute (NY)  
Gloria Hicks, National Snow & Ice Data Center / U. of Colorado at Boulder  
Milbry Polk, Wings WorldQuest (NY); The Explorers Club (NY)

Participating on the committee involves reading or carefully examining the nominated titles, reading any reviews or statements of support sent in with the nomination and then casting a ballot for the most deserving title.

The committee reviewed eleven titles this year and cast two separate ballots to find the winner. The following books were nominated:

The nominations for the award can be found on the PLC website at  
<http://arcticcentre.ulapland.fi/polarweb/plc/mills2008.asp>

1. Alia, Valerie. *Names & Nunavut: Culture and Identity in the Inuit Homeland*. New York, Oxford: Berghahn Books, 2007.
2. Fienup-Riordan, Ann. *Yuungnaqpiallerput / The Way We Genuinely Live : Masterworks of Yup'ik Science and Survival*. Seattle: University of Washington Press, 2007.
3. Fukuchi, Mitsuo and Harvey J. Marchant. *Antarctic Fishes*. Illustrated in the gyotaku method by Boshu Nagase. Baltimore, MD: Johns Hopkins University Press, 2007.
4. Green, Jeannine M. and Robert J. Desmarais. *A Most Dangerous Voyage: An Exhibition of Books and Maps Documenting Four Centuries of Exploration in Search of a Northwest Passage*. Edmonton, Alberta: University of Alberta Libraries, 2008.
5. Herbert, Sir Wally. *The Polar World: The Unique Vision of Sir Wally Herbert*. Edited by Kari Herbert. Weybridge, Surrey: Polarworld Ltd., 2007.
6. Korhonen, Marja. *Resilience: Overcoming Challenges and Moving On Positively*. Ottawa: National Aboriginal Health Organization, 2007.
7. Pfeffer, W. Tad. *The Opening of a New Landscape: Columbia Glacier at Mid-retreat*. Washington, D.C.: American Geophysical Union, 2007.
8. Potter, Russell A. *Arctic Spectacles: The Frozen North in Visual Culture, 1818-1875*. Seattle: University of Washington Press, 2007.
9. Riffenburgh, Beau, ed. *Encyclopedia of the Antarctic*. New York, London: Routledge, 2007.
10. Semeniuk, Robert. *Among the Inuit*. Foreward by Hugh Brody, afterword by Wade Davis Vancouver: Raincoast, 2007.
11. Weber, Andrzej, Katzenberg, M. Anne and Olga I. Goriunova, eds. *Khuzhir-Nuge XIV, a Middle Holocene Hunter-Gatherer Cemetery on Lake Baikal, Siberia: Volume 1: Osteological Materials and companion Volume 2: Archaeological Materials*. Edmonton: CCI Press, 2007

### **Announcement of the award**

I'm Gloria Hicks, and I have the privilege of announcing the winner of the William Mills Award. Winning in the final round of balloting with four votes is *Encyclopedia of Antarctic* edited by Beau Riffenburgh.

*Yuungnaqpiallerput / The Way We Genuinely Live : Masterworks of Yup'ik Science and Survival* was second with two votes and receives Honourable mention.

A review of *Encyclopedia of Antarctic* is published in Library Journal June 1, 2007 0-415-97024-5; 978-0-415-97024-2

### **Comments from award panel**

"I voted for the *Encyclopedia* because it consolidated vast "expert" authored material into a consolidated set and had good maps. Beau and Liz did a great job of scoping out the topics and coordinating all the contributors on what must have been a tight schedule".

Ann's *Yuungnaqpiallerput* deserves a mention because it integrates science into what many see as soft anthropology. Thank goodness the Yup'ik informants' living knowledge could be so well coordinated with museum collections, obviously Ann's magic! Yes, I definitely urge Anne Fienup Riordan's book be acknowledged, particularly for the nice interplay among archival materials, museum artifacts, and personal knowledge illustrating science in the daily lives of Yup'ik people."

### **Thank-you speech on behalf of the winner**

Since Mr. Riffenburgh was unable to join us, Heather Lane, the librarian of the Scott Polar Research Institute, is accepting the award on his behalf.

### **Thank you on behalf of the honourable mention**

[Yuungnaqpiallerput is young-nak-pee-all-put [the "all" is a glottal stop, with no English equivalent, so this isn't entirely correct, but should be OK. If the presenter wants to give me a call, I'm happy to say it over the phone. My number is 907-346-2952] [Jude's note: Ann is in Anchorage, Alaska]

Ann Fienup-Riordan was also unable to be here, but she sent a letter of thanks for her honorable mention, which I would like to share with you: [

Thanks!

On behalf of the Calista Elders Council, the Anchorage Museum, and myself, I thank you from the bottom of my heart for the award that the Polar Libraries Colloquy has bestowed upon us.

The Honorable Mention for the William Mills Prize for Non-Fiction Polar Books is wonderful recognition for the collaboration that made our book possible. So many people and organizations were involved in its creation—the Calista Elders Council, the Anchorage Museum Foundation, our Yup'ik steering committee, Yup'ik language experts (especially Alice Rearden and Marie Meade), and most of all the Yup'ik elders whose generosity was our foundation.

Generosity in all things is fundamental to the Yup'ik way of life. As they say, "Don't be stingy with your knowledge or it will rot your mind." And, "Those who share are given another day," meaning a long life.

As much as recognizing a way of working together, to me your award recognizes a way of writing. In putting together Yuungnaqpiallerput, I was encouraged by some reviewers to summarize elders' statements as they feared that readers would find the many quoted statements confusing. On the contrary, my Yup'ik collaborators and I felt strongly that, as so much of Native knowledge in the Arctic is based on personal experience, quoting individual elders was foundational.

This principle of editing over authoring guided my work. For each idea I wanted to make clear to readers, if I looked in the transcripts, I would inevitably find that an elder had said it better than I ever could. Even more important than preserving the vitality of texts, foregrounding particular elders lets Yup'ik readers recognize authorship, and own it in ways no restatement of mine ever could.

In the end, this book is first and foremost about sharing knowledge. And more important than specific information Yup'ik people share an attitude toward knowledge that is both humane and wise. In this world of legal ownership and property rights, they gave something beyond price, the gift of history. First because they value it. But also because they believe that sharing it was the right thing to do.

Thank you again for this great honor.

*Ann Fienup-Riordan*

**Plenary Session 1**  
***Aboriginal Knowledge and Nunavut Publishing***

**Convenor: Fred Inge Presteng**  
**Norwegian Polar Institute, Polar Environmental  
Centre**

***Locating Literature: Western and Aboriginal  
Knowledge Systems in Place***

**Lia Ruttan, Research Associate,  
Canadian Circumpolar Institute**

**Abstract:** In the context of northern research, libraries and archives hold western texts, documents and photographs. In the context of Indigenous communities, stories hold empirical, relational and revealed knowledge and experience. Work in the area of northern history must be sited not only in western literature but also in place, relationships and lived experience. This presentation will explore these issues in the interaction of knowledge and knowledge storage systems. Examples from the presenters' work with both oral and western historical accounts and further discussion of the differences that worldview makes to these accounts will be given. Implications for both curriculum development and polar libraries will be discussed.

## ***A Survey of Book Publishing in Nunavut***

**Rae-Lynne Aramburo**  
**Nunavut Arctic College Library**

**Abstract:** This paper describes key book publication efforts in Nunavut, followed by a discussion of notable characteristics common to these publishers, and the importance of their publications.

### **Introduction**

Given the long-standing popular fascination with the extreme north and south, and the flurry of research activity experienced in the polar regions around International Polar Year, ‘polar information’ abounds. From accounts of historical expeditions, to repositories of polar physical science data—we as library and information professionals with interests in this field can describe many examples of how polar information has been gathered, shared, and used. As a librarian who lives and works in a polar region (Nunavut), I can confirm that polar information, and specifically northern information, is certainly sought after by local library patrons. The publications that are especially relevant to, and capture the attention of local patrons though, are not only *about* their region, they come from *within* the region. This paper will describe key book publication efforts in Nunavut, followed by a discussion of notable characteristics common to these publishers, and the importance of their publications.

Before describing Nunavut’s book publishing initiatives, I feel it is important to address the methodology used in gathering this information, and the scope of the paper. Firstly, given the relative lack of printed record in Nunavut in general, and on this topic specifically, the information for this paper has been drawn almost entirely from conversations with northerners knowledgeable in this area. A representative from each publishing organization was contacted and asked a series of questions either in person, by phone, or email.

Secondly, although this paper focuses on printed books published wholly in Nunavut, it is important to acknowledge that there are many other publishing projects outside of this scope that are of significance in Nunavut. Serial publications, audiovisual materials, and mapping projects developed in the territory all have their own remarkable histories, for example. Likewise, there are several examples of successful book collaborations that have partnered northern voices with southern publishers. Furthermore, there are gaps within the information presented below, so that certain publications that do fall within the scope of the paper have not been covered. At least three organizations that have been involved with publishing project: Baker Lake’s Inuit Heritage Centre, the Kitikmeot Heritage Society, and Blacklead Books. Also, a number of governmental departments and organizations have produced books in Nunavut sporadically. Agencies that have published irregularly, or have only produced single titles are not discussed here. However, having examined a number of these publications, it is clear that the majority of the comments made in the discussion part of the paper can be applied to these publishers and publications

in general. The apparent exception is Blacklead Books, a publishing company run by Kenn Harper in Iqaluit (then Frobisher Bay) in the 1980s, which seems to be the only example of a commercial publishing operation in Nunavut.

## **The Publishers**

### **1. Inuit Cultural Institute**

**History:** The Inuit Cultural Institute was created in 1974 and based in Arviat (then Eskimo Point), to promote, preserve, and develop Inuit culture and knowledge. The institute was involved in a vast range of programs and projects, from the collection of interviews and artifacts, to the development of a standardized Inuktitut writing system. Publishing was not the primary function of the institute, but it was carried out for the purpose of communication and as an extension of the institute's cultural projects.

**Purpose:** Publications were produced to provide educational materials, preserve Inuit cultural practice, and disseminate information on Inuit to the rest of Canada.

**Publishing process:** The Inuit Cultural Institute employed several staff, and had a Publications and Information Department. Materials published were sometimes derived from conferences, workshops, or other institute projects (e.g., interviewing). Layout was taken care of in-house as much as possible and printing was done in Ottawa. Funding for the Inuit Cultural Institute was received from the Northern Affairs Program of Indian and Northern Affairs Canada.

**Materials published:** In addition to magazines and newsletters (e.g., *Ajurnarmat*), the Inuit Cultural Institute published over a dozen books in the 1980s, focusing on traditional Inuit knowledge and culture. These publications include elders' conferences proceedings, cultural programming information for schools, a glossary, and a series of autobiographies. The majority of the publications were produced in English and Inuktitut, with both syllabics and roman orthography.

**Distribution:** Materials were promoted in *Inuktitut* magazine and by Indian and Northern Affairs Canada, and were distributed by staff from the Arviat office. Magazines were distributed freely. The Inuit Cultural Institute dissolved in 2001, and their materials are no longer in print.

(Kutluk; Qitsualik; Shouldice)

### **2. Nunavut Teaching and Learning Centre (Department of Education, Government of Nunavut)**

**History:** Teaching and Learning Centres were set up regionally throughout the Northwest Territories with federal government funding in the 1980's, with the aim of promoting Aboriginal languages and cultures through publishing for schools. The initial funding was furthered by ongoing support from the Government of the Northwest Territories, and then in turn by the Government of Nunavut. With the creation of Nunavut, the three regional centres which had been operating individually within the territory were merged into one body, under the Government of Nunavut's Department of Education, although offices are still maintained in each region.

**Purpose:** Publishing was the primary function assigned to the Teaching and Learning Centres at their formation. The Nunavut centre publishes to provide resources in schools in the Inuit language (most commonly Inuktitut, but also Inuinnaqtun).

**Publishing process:** Books at the Teaching and Learning Centre may be initiated in a variety of ways: text or illustrations may be received already developed; certain topics may be actively commissioned; or funding and partnerships with other territorial or federal departments or individuals may drive a publication. Most books start in Inuktitut. Texts are then reviewed by a committee, an illustrator is hired, as much work as possible is done in-house through desktop publishing, and printing is tendered out.

**Materials published:** Currently, the centre's catalogue of publications lists over 500 items, with 10 to 25 books produced annually. The majority of items published are books, but there have been a few audio recordings produced in the past, and classroom aids (such as posters) are presently produced as well. All books are produced in Inuktitut or Inuinnaqtun, with a selection also including English translations. Storybooks for kindergarten to grade 6 students are produced, as are novels for the upper grades. Generally subject matter is based on local people and culture.

**Distribution:** Publishing operations are designed to run at a loss, as all materials are distributed freely (at great expense) to all of the schools and libraries in Nunavut. The Teaching and Learning Centre acknowledges that the level of support (financial and otherwise) received from the Department of Education has been essential in the centre's publishing successes. Individuals may purchase publications, however with a lack of staff and resources available to handle such interactions, the materials are not advertised as being available for sale. Due to the department's financial system, money received from publication sales do not make it back into a publishing budget, but are absorbed by the department as a whole.

(Frankton)

### **3. Nunavut Arctic College**

**History:** Publishing began at Arctic College (now known as Nunavut Arctic College) in 1988, when the Interpreter Translator program began in Iqaluit. Dr. Susan Sammons, the coordinator for the program immediately recognized the need for publishing, as there were no resources available to support the program. Having a background in linguistics, she worked to develop and publish topical glossaries of terminology, an Inuktitut dictionary, and ISL (Inuktitut as a second language) materials. At the time, there was funding available federally to support Aboriginal languages, and this funding was accessed to support publishing. With the formation of the Inuit Studies program in 1996, the publication efforts shifted from a focus on language to Inuit culture and knowledge.

**Purpose:** Materials are published primarily to support the Interpreter Translator and Inuit Studies programs at Nunavut Arctic College, and also to provide information from Inuit perspectives.

**Publishing process:** Different methodologies are used to create these books. The most common is to run a special topics course through the college program,

involving the students, outside academic experts on a particular subject, and Inuit elders with specialized knowledge on the subject. Typically a course will run for three weeks and include a week of background research and preparation, a week of interviews with elders, and a week of transcribing. Other methodologies include conducting interviews with elders on the land, and examining and enhancing existing archival materials or dissertations to make connections with the needs of the program. After the information is gathered, the works are transcribed, translated, edited in both languages, augmented with illustrations and maps, and sent out for printing. The Language and Culture program staff and students carry out this work, as do the academic subject experts. The printing company most often contracted at present has been chosen as it offers reduced rates if the college takes care of some layout work in-house. Almost all of the books are financed through outside funding sources.

**Materials published:** Over 50 books have been published by Nunavut Arctic College. They focus on the Inuktitut language and also Inuit culture and knowledge, and are often produced in series format (e.g. Interviewing Inuit Elders Series, Memory and History in Nunavut, etc.). Select materials are accompanied by audio recordings or CD-ROMs, and several of the books are accessible online. The majority of the books are produced in Inuktitut and English, either as a single bilingual work, or as two separate unilingual works.

**Distribution:** With no budget or time allocated for advertising, the Nunavut Arctic College publications are not well advertised. They are listed on the college website, and are infrequently reviewed in relatively obscure academic journals. However, there are plans to publicize the completion of a new series later this year with a book launch tour. Books are available for sale to individuals, and the work of distributing the materials falls on college administrative staff in addition to all regular duties. As more materials become available, the distribution process has become more difficult to stay on top of in a timely manner. Several of the books are also available online in English, French, and Inuktitut at a website titled “Listening to Our Past” ([www.traditional-knowledge.ca](http://www.traditional-knowledge.ca)). A number of the books are sold at Iqaluit’s only bookstore, Arctic Ventures. The books are priced so as to recover costs, with the money received from sales put back into a publishing account to keep all of the books in print.

(Sammons)

#### **4. Nunavut Literacy Council**

**History:** The Northwest Territories Literacy Council was born out of a conference on literacy for northerners financed by federal funding in 1989. The council divided into two with the creation of Nunavut in 1999. The Nunavut Literacy Council is administered by a board of directors, and five staff members operating out of three offices located in Cambridge Bay, Rankin Inlet, and Ottawa. Publishing resources for adult educators, librarians, teachers, and learners has always been an integral part of the Literacy Council’s activities.

**Purpose:** Materials are published for educators and libraries with the aim of improving the quality and quantity of family and adult literacy programming in Nunavut.

**Publishing process:** Publications are written and edited by the staff of the Nunavut Literacy Council. If funding is available, a graphics company will be hired to do the layout of a document and in some cases, the printing. More commonly, the printing and binding is done in-house, out of the Cambridge Bay and Rankin Inlet offices. It is a constant challenge to find adequate funding for publishing and distributing materials.

**Materials published:** The Nunavut Literacy Council has produced approximately 50 items, ranging from fact and activity sheets, reports, flash cards, funding guides, kits, and books. The majority of the publications are available in Inuktitut and English, with a number also in Inuinnaqtun and French. Most of the materials are available in an electronic format, in addition to the hard copies.

**Distribution:** Publications are advertised in the organization's newsletter, *NLC Links* and also through their website. They are available for sale from the council's offices, and many can be downloaded freely from their website. Generally, prices have been set to recover costs. Recently, the price structure has been revisited though, in an effort to start selling resources at a cost that will enable the council to purchase or produce new stock, in the interest of sustainability.

(Crockatt)

### **5. Nunavut Bilingual Education Society**

**History:** The Nunavut Bilingual Education Society originated in Iqaluit, in 2003, in response to a common complaint from Inuit teachers about a lack of Inuktitut materials. Neil Christopher, an instructor with the Nunavut Teacher Education Program at Nunavut Arctic College investigated funding opportunities to support publishing, and decided that the best way to proceed would be to form a non-profit society. The society began with a membership of local educators and artists.

**Purpose:** Initially, the primary mission of the Nunavut Bilingual Education Society was to publish Inuktitut resources for educators. The society's scope has widened now, to also include publications in English, as the members recognize the value of northern developed English materials. Through these publications, the society aims to promote Inuit language and culture.

**Publishing process:** As the sole function of the Nunavut Bilingual Education Society is to publish, the group only meets when publishing projects are underway. Individuals gain membership in the society by working on a publication. Generally a member who suggests a publication project becomes the project editor and assembles a team from the other members of the society, which has expanded so that now a roster of a variety of individuals and their roles (e.g. artists, cultural consultants, graphic designers, translators, etc.) is available. Once a project is suggested, outside funding is sought to finance the publication; most commonly a grant is received from the Government of Nunavut's Department of Culture, Language, Elders and Youth. Generally all of the work is done by the membership in the north, except for the printing, which is contracted out. However, with the publishing work depending heavily on volunteers, the society has exceeded their capacity at points, and has had to outsource a certain tasks on some projects. They are now investigating a more

sustainable model, which includes generating revenues from book sales and the possibility of hiring a part-time staff person.

**Materials published:** The Nunavut Bilingual Education Society has published approximately 20 items to date. The majority of the items are books, but there are also magazines, DVDs, web-based documents, and audio-recordings available. Currently, all of the materials are in Inuktitut, with most the items also available in English, usually in the format of a single, bilingual volume. The subjects featured in the publications are cross-cultural science education; traditional knowledge, tools and techniques; and traditional stories. There has been a conscious effort to present stories re-written in Inuktitut, as opposed to translated into Inuktitut.

**Distribution:** The Nunavut Bilingual Education Society publications are admittedly poorly advertised. Currently, the society has hired the Department of Education's Teaching and Learning Centre to distribute the publications to all of the schools in Nunavut, although a number of promotion and distribution methods were tried unsuccessfully previous to this agreement. Up until recently, the society has run at a loss; publications could not be sold because funding grants stipulated free distribution. Recently though, the Government of Nunavut's Department of Culture, Language, Elders and Youth, which is the society's main source of funds, is encouraging a more sustainable distribution system, with a wider audience and book sales. Prices have just recently been assigned to the society's list of publications. The society has also recently set up an account with a web-based digital printing company, which allows for printing on demand for a fee.

(Christopher)

## Discussion

When examining each of the outlined publishing organizations, a number of interesting commonalities become apparent. There are some common challenges, such as difficulties with distribution. Distributing books in such a vast territory, connected only by air, is a costly venture. In some cases, the challenge of distribution is exacerbated by a lack of dedicated staff to take care of this aspect. The problem of staff extends also beyond the distribution of books, and affects a number of the publishers: Nunavut Bilingual Education Society operations depend entirely on volunteers, and projects have been discontinued because the time commitments were too demanding ; Nunavut Arctic College publications are produced by staff in addition to their regular duties, an arrangement that staff would like to see reflected more accurately in their job descriptions; and, federal funding cuts to literacy programs have put Nunavut Literacy Council staff numbers in jeopardy at times. Another challenge facing most of the publishers is the need to find outside funding sources. None of the publishing initiatives are commercially motivated. These organizations are not profiting financially from producing books, and in fact, at least two of them are operating at a loss. In the cases where the publishers are planning to restructure their book pricing, it is for the purpose of sustaining publication operations, not to turn a profit.

In addition to the challenges facing these publishers, there are also more positive characteristics in common. Perhaps the most important is the shared emphasis on producing materials in Inuktitut. Not only do the publishers produce books in Inuktitut, they point to the creation of Inuktitut materials as a fundamental goal of their publication efforts. Each recognizes that the development of Inuktitut resources is essential in preserving the language.

Also, the books produced by each publisher mostly focus on subjects of Inuit culture and knowledge, and from an Inuit perspective. While the Nunavut Literacy Council materials may at first be considered an exception to this point, a look through their publications list reveals that although literacy is this publisher's primary focus, the resources produced are created with an Inuit audience and world-view in mind. Dr. Susan Sammons remarked on the Inuit perspective found in Nunavut Arctic College publications: "Most publications on IQ<sup>1</sup> have been run from a southern academic perspective. We have purposely, other than short introductions, not included any analysis. People can interpret this stuff the way they want; but this is how Inuit think of these topics. It's amazing how over-researched Inuit have been, but from a western perspective. There is amazing over-interpretation."

Sammons' comments not only illustrate a characteristic that is common to the publishers of Nunavut, they also reveal why these Nunavut-based publishing initiatives are important. Mary Ellen Thomas of the Nunavut Research Institute echoes Sammons' view, noting that Nunavut-based publishing is important in that it supports Inuit in presenting their own world view. She sees Inuit involvement in publishing as a continuum, with materials published *on* Inuit in the past, and materials produced entirely *by* Inuit as the goal. Neil Christopher of the Nunavut Bilingual Education Society shared a telling example of how a home-grown operation can make a difference in encouraging Inuit participation in the publishing process: an experienced Inuit author expressed concern to him about her work being sent south for editing, and was entirely relieved to discover that editing would take place in Nunavut, by a local editor.

Nunavut-developed publications are also important in that they help to add value to local information. Producing items that are recognized as valuable by local people was highlighted by two of the publishers who noted that they wanted their books to look as good as the competition (i.e. southern-produced mass-market books). Creating valuable locally-based information goes beyond aesthetics, however. Neil Christopher remarked that, "Right now, in high schools, any of the knowledge holders, any of the story tellers you read are not Inuit, not northern... There's an implication that knowledge holders, people with valuable knowledge aren't coming from the north. We're receiving; we don't generate knowledge or have knowledge to contribute." In producing locally-generated printed knowledge, publishers in Nunavut are working to dispel this myth.

Books published in Nunavut may be little known outside of the territory, but there is a small and dedicated group of publishers that have been and continue to produce materials locally. These publishers provide much needed

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<sup>1</sup> Inuit Qaujimajatuqangit (IQ) is an Inuktitut phrase that is commonly used to refer to traditional Inuit knowledge.

Inuktitut resources and present information and stories from Inuit perspectives; their books are popular with and valuable to the local population.

I gratefully acknowledge the time and valuable information shared by the interviewees: Neil, Kim, Gwen, Rachel, Susan, Mike, and Mary Ellen; and also the support received from Yvonne Earle.

## Sources

- Christopher, Neil. [President, Nunavut Bilingual Education Society.] Phone interview. 10 April 2008.
- Crockatt, Kim. [Executive Director, Nunavut Literacy Council.] E-mail interview. 14 April 2008.
- Frankton, Gwen. [Co-Principal, Nunavut Teaching and Learning Centre.] Personal interview. 16 April 2008.
- Kutluk, Tom. *The Inuit Cultural Institute*. **Inuktitut** 46 (November 1980): 38-44.
- Qitsualik, Rachel [Formerly of the Inuit Cultural Institute.] Personal interview. 9 April 2008.
- Sammons, Susan. [Senior Instructor, Interpreter/Translator and Inuit Studies, Nunavut Arctic College.] Personal interview. 8 April 2008.
- Shouldice, Mike. [Formerly of the Inuit Cultural Institute.] E-mail interview. 15 April 2008.
- Thomas, Mary Ellen [Executive Director, Nunavut Research Institute]. Phone interview. 25 April 2008.

**Plenary Session 2**  
***Bibliography and Data Management***

**Convenor: Erin Palmer,**  
**Government of the Northwest Territories**



## ***Do We Really Need the Cold Regions Bibliography Project When We Have Web-Based Search Engines?***

**Sharon Tahirkheli**  
**American Geological Institute**  
**Alexandria, VA**

**Abstract:** The increasing tendency for everyone to depend on web-based search engines such as Google™ for every information need has caused some researchers, students, and administrators to question why they should seek out subject-specific bibliographic services. During the last round of funding review for the Cold Regions Bibliography Project in 2005, the question was raised about the future need for bibliographies in a Google™-based world. Last summer, geoscience librarians engaged in a brief listserv discussion of user feedback on Google™ usage vs. GeoRef, the primary geoscience bibliographic database, which resulted in the preparation of a report outlining the potential uses of each system. The *Bibliography on Cold Regions Science and Technology* and the *Antarctic Bibliography*, being both subject and region-specific, have many similarities to the broader subject bibliographies like GeoRef and a similar examination was initiated. Currency, comprehensiveness, ease of use, user expectations, search features, and access to full-text vary considerably and were examined using Google Scholar™ and both of the Cold Regions bibliographies. An outline of the current differences and similarities was developed and the strengths and weaknesses of each system are outlined.

### **Introduction**

The increasing use of web-based search engines such as Google™ or one of its domains like Google Scholar™ raises significant questions concerning the value of subject-specific bibliographies. The *Bibliography on Cold Regions Science and Technology* and the *Antarctic Bibliography* are a part of the Cold Regions Bibliography Project (CRBP), jointly sponsored by the U.S. National Science Foundation and the U.S. Army Cold Regions Research and Engineering Laboratory. In 2005, during the last round of funding review for the bibliographies, the question of the future need for subject-specific bibliographies was raised. With the expected further development of web-based search engines and improvements in speed and information distribution, the possibility that subject-specific bibliographies would become less valuable to the scientific community was considered and remained as an open question for future study. A similar listserv discussion began in 2007 on Geonet, the Geoscience Information Society's listserv, regarding the use of GeoRef and Google™. Some initial testing of GeoRef and Google Scholar™ resulted in a presentation on the strengths of each system at the Geoscience Information Society's annual meeting in 2007 (Tahirkheli, in press.)

### **Background**

#### *Bibliography on Cold Regions Science and Technology*

This *Bibliography* currently contains 222,000 citations to scientific and engineering research. The citations are related to the study of the nature of snow, ice and permafrost; the materials and operations in a winter battlefield; the nature and impact of cold on facilities and activities; cold-related environmental problems; and the impact of human

activity on cold environments. Coverage begins with 1951 with 6667 new references added in 2007. The *Bibliography on Cold Regions Science and Technology* is funded in part by the National Science Foundation and the U.S. Army Cold Regions Research and Engineering Laboratory. The *Bibliography* was compiled by the Library of Congress from its inception until 2000 when the maintenance was transferred to the American Geological Institute.

#### *Antarctic Bibliography*

The *Antarctic Bibliography* contains 84,000 references covering all disciplines related to the Antarctic and subantarctic regions including: biological and geological sciences, medical sciences, meteorology, oceanography, atmospheric and terrestrial physics, international treaties, cartography, expeditions, logistics, equipment and supplies, and tourism. Coverage began with 1951 and about 2200 new references are currently added each year. The *Antarctic Bibliography* is produced with support from the National Science Foundation with contributions from the Scott Polar Research Institute, University of Cambridge. The *Bibliography* was jointly compiled with the *Bibliography on Cold Regions Science and Technology* at the Library of Congress until 1998. Since 2000 the American Geological Institute has been responsible for updating it.

The current funding cycle for both bibliographies extends through August 2011.

## Questions and Procedure

As part of the GeoRef and Google Scholar™ comparison, the following questions were considered: (1) What are the characteristics of a subject-specific bibliographic service like GeoRef and a search engine like Google Scholar™? (2) What does a traditional abstracting and indexing service like GeoRef provide that Google Scholar™ does not and vice versa?

Why perform a similar comparison using the Cold Regions bibliographies and Google Scholar™? First, the original GeoRef/Google Scholar™ comparison was limited in scope to three standard types of searches (author, subject, known-item). Additional search tests using these and other types of searches would be instructive. Second, the subject coverage of the Cold Regions bibliographies differs from GeoRef. The *Bibliography on Cold Regions Science and Technology* is limited by its interdisciplinary subject matter. The *Antarctic Bibliography* is limited by its interdisciplinary subject matter and its restricted geographic extent.

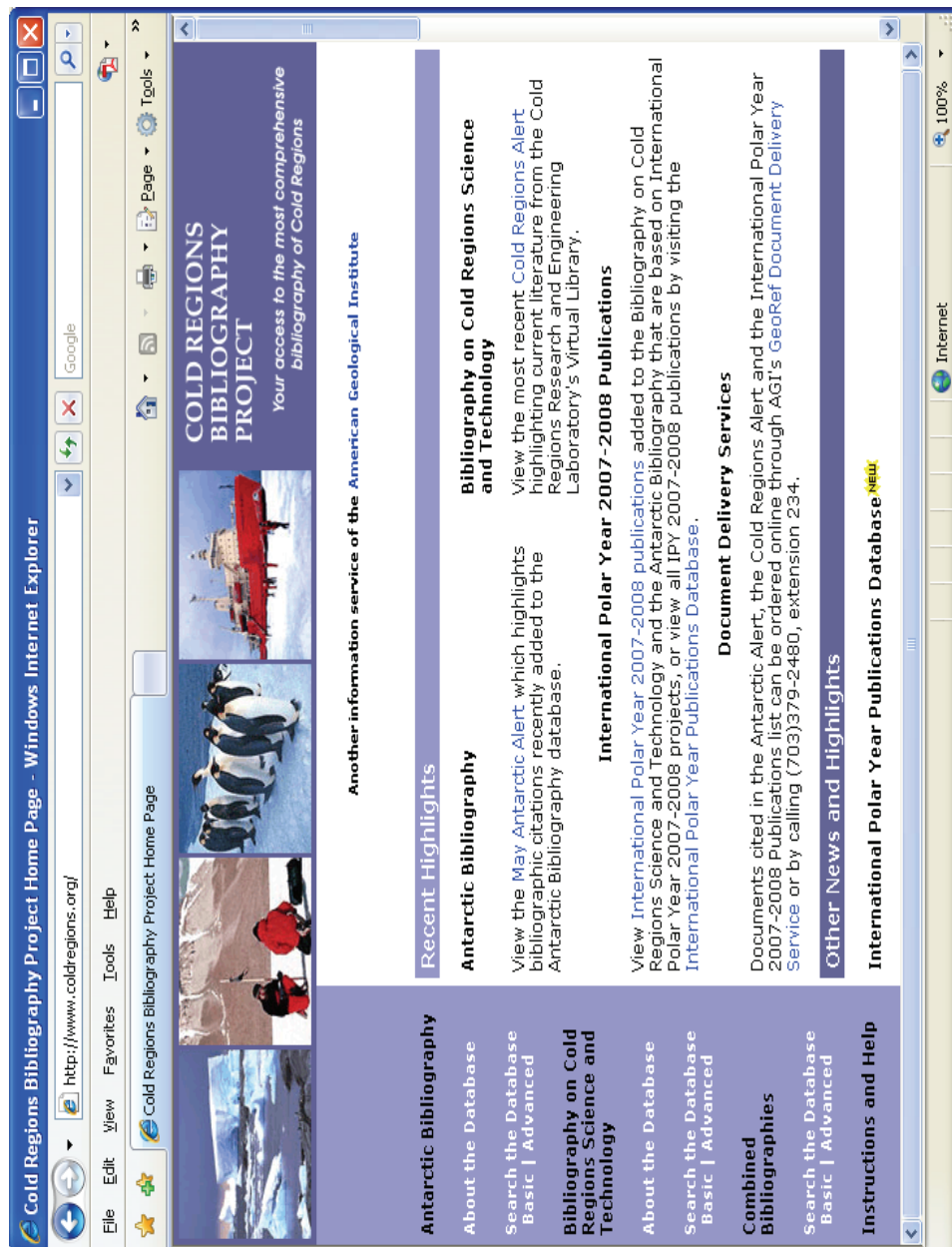
The following procedure was followed to investigate the CRBP and Google Scholar™. The web sites for both were examined. Information from the descriptions of each service on their respective web sites was compared. Search interfaces were tested using six different searches. The search features, display of results and the available search tools were explored. Finally, the strengths for each system as indicated by the web sites and from the search tests were outlined.

## Descriptions of Each Service

### Cold Regions bibliographies

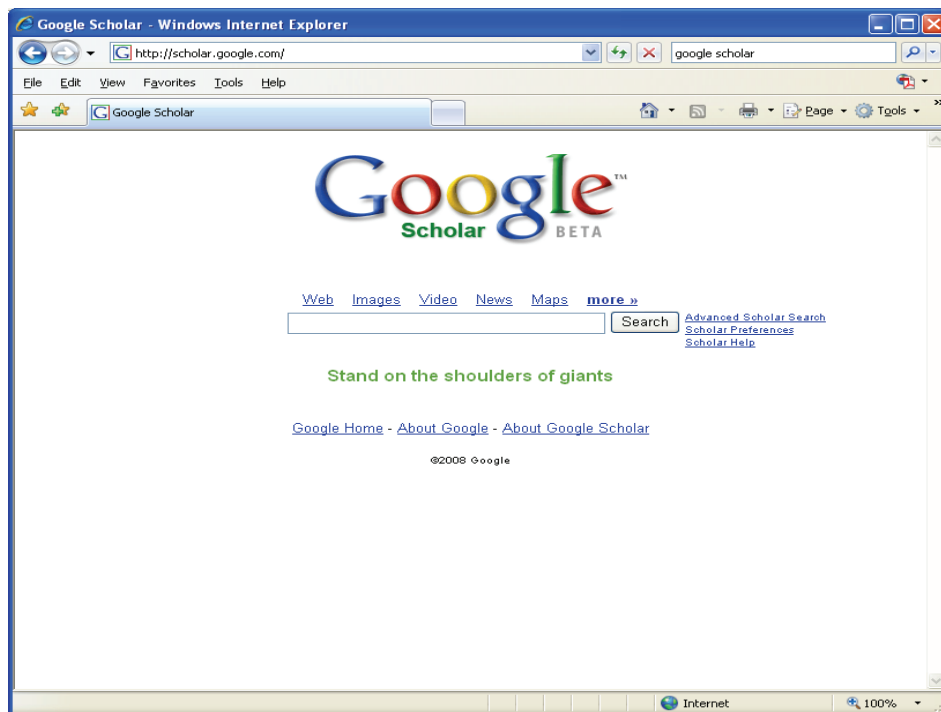
The Cold Regions bibliographies are traditional abstracting and indexing services that provide subject-specific bibliographic databases. The databases aim to cover the formal literature as well as some gray literature. An explanation of coverage is provided on the

CRBP web site and the target audience for the databases is the researcher. As the target audience is a knowledgeable scientist or engineer, two Controlled Vocabularies are used in the metadata to describe the subject content of the databases. The Controlled Vocabulary provides a means of insuring consistency and precision of retrieval. The databases are freely available on the web at <http://www.coldregions.org>



### Google Scholar™

Google Scholar™ is a freely available web-based search engine that aims to cover many disciplines and many sources. Only limited information was found on the Google Scholar™ web site regarding which databases or publishers are included, but coverage is indicated to be restricted to ‘scholarly work.’ Ranking of articles retrieved in Google Scholar™ is based on the search criteria and the availability of the full-text. Since Google Scholar™ looks at web-based materials, access to the articles or sources is assumed to be immediate. <http://scholar.google.com/>



## **Web Site Search Options**

### Cold Regions bibliographies

The search options available to the user on the CRBP web site include a ‘Quick Search’ and an ‘Advanced Search’. Queries can be developed using both single words and exact phrases and options exist for the use of wildcards, proximity operators, Boolean operators and fielded searches. The fields available for searching include: title, author, source, publication date, publication type, CRREL series (for the Bibliography of Cold Regions and Technology only), and record ID. Browse lists are available for the following: single words from the title and source; the author in the form Last Name, Initials; and type of publication. A drop-down list is available for the CRREL series.

The search results can be displayed in a table, brief record of full record format. Users can select references from a list and save them to a file for later use, print them, or e-mail them to colleagues. The citations displayed on the screen frequently have links to full-text. The back arrow can be used to allow the user to re-use the search strategy, edit or

refine the search for improved results or to combine the search with another query. A controlled structure is used for the 'Source' field to allow users to search consistently for journal titles, report numbers, and language information. Two Controlled Vocabularies can be searched as part of the 'Search All Fields' option.

### Google Scholar™

The Google Scholar™ search options include a 'Simple Search' and an 'Advanced Search'. Single words or exact phrases may be searched and Boolean operators are available. 'Author' and 'Publication' may be used for fielded searching. Results can be limited by publication date or to seven broad subject areas or seven languages. The subject areas employed by Google Scholar™ for limiting are not closely aligned with cold-regions topics. The interdisciplinary nature of studies in the cold regions of the world forces results to be spread across six of the seven subject areas as defined by Google Scholar™ (Biology, Chemistry, Engineering, Medicine, Physics and Business (Economics) groupings).

Google Scholar™ subject areas:

- ☐ Biology, Life Sciences, and Environmental Science
- ☐ Business, Administration, Finance, and Economics
- ☐ Chemistry and Materials Science
- ☐ Engineering, Computer Science, and Mathematics
- ☐ Medicine, Pharmacology, and Veterinary Science
- ☐ Physics, Astronomy, and Planetary Science
- ☐ Social Sciences, Arts, and Humanities

Google Scholar™ provides live links from results to full-text and, according to the web site, can be linked to a local library collection. Downloads to citation managers are possible. Author names from previously retrieved items may be used to perform a secondary search. 'Cited by' and 'Related article' searches are possible and potential typos in search queries are monitored and suggestions for corrected searches are supplied. While it is clear that Google Scholar™ searches online text, the web site did not provide much specific information about what materials were available to the search engine.

## **Testing the Systems**

For the testing of the two systems, six types of search queries were selected: an author search, a subject search, a known-item search, a search by type of publication and two searches using controlled vocabulary terms (one geographic and one scientific). Results were examined and compared in terms of content and accuracy.

1. For the author search, Jerry Brown, a well-known permafrost researcher, was selected. Jerry uses only a single first name and no middle initial. His last name is fairly common.
2. The subject search selected was the fairly specific topic: bearing capacity of foundations in permafrost. This topic was chosen to test the subject-search capabilities of both systems – including the use of phrases and Boolean operators. It was also part of the original examination of GeoRef and Google Scholar™ from the fall of 2007.

3. The known-item search was an article published in *Polar Biology*, a widely-distributed journal on cold-regions biology. Tarling, G.A.; Cuzin-Roudy, J., External parasite infestation depends on moult-frequency and age in Antarctic krill (*Euphausia superba*), *Polar Biology*, Vol. 31, No. 2, January 2008.
4. The Type of Publication search focused on the publications produced by the U. S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. The Laboratory produces several hundred reports each year and makes most freely-available on the web.
5. For the Geographic Controlled Vocabulary search, 'Lake Vostok', the site of a subglacial lake in Antarctica, was selected. Most of the publications on Lake Vostok have appeared in the Russian scientific literature.
6. For the Scientific Controlled Vocabulary search, 'Sphenisciformes', the formal name for the Order in which penguins are classified, was selected.

## **Author Search**

### Cold Regions bibliographies

Jerry Brown, a permafrost researcher, was used for the author search. The 'Author' help information provided on the CRBP site indicated that author names are shortened to the form Last Name, Initials. As Jerry Brown uses only a first name, the search string 'Brown, J' was entered in the 'Author' field in the 'Advanced Search' screen. 249 items were retrieved, but because of the general nature of the search string, some were false hits (e.g., Webster-Brown, J. G.) The 'Author Browse' was used and 'Brown, J' was selected. 187 references were retrieved which, on general inspection, all appeared to be correct.

### Google Scholar™

Using the 'Author' field provided on the Google Scholar™ website, 'Brown J' was searched. 17,800 references were retrieved when searched in combination with the Engineering subject area. This was too large a group to scan for relevant materials. Using the 'Author' help, a further attempt was made to pare the number to a manageable level by searching 'J Brown' in the 'Author' field. This search string retrieved 6,400 references, still too many to cope with. Adding 'permafrost' to the search using the general search field reduced the number found to 12. Two were references to publications, two were search queries, one was a press release, and the rest were citations to two other publications. While reviewing the lists of citations, several cases were noted where the publication was not authored by J Brown. As Jasco noted, the Google Scholar™ search software extracts the author's names from full-text, occasionally leading to false hits (Jasco, 2008.)

## Subject Search

### Cold Regions bibliographies

Using the option to 'Search All Fields', the following string was entered: 'permafrost & foundation\* & bearing & capacity'. This search string took advantage of the Boolean '&' and the wildcard '\*'. Fifty two items were retrieved with all appearing to be right on target for the desired subject.

### Google Scholar™

The search for 'bearing capacity of foundations in permafrost' was performed using the Google Scholar™ 'Advanced Search' option and clicking on the option 'with all the words': permafrost bearing capacity foundations. 1240 references were retrieved when this search was performed in November 2007. In May 2008, 2850 references were located. While Google Scholar™ located more publications than the Cold Regions bibliographies, the relevance of many items on the list to the topic sought was limited. The first item was relevant, but was a citation to another publication on another topic. Seven out of the first 10 were marginal (three were small portions of larger books, two were citations). Nine of the next 10 were relevant. The relevance of items retrieved remained essentially the same until about 180. After that point in the list, relevance began to decline. The list was useful assuming the user has sufficient time to review.

## Known-item search

### Cold Regions bibliographies

For the known-item search an article by G. A. Tarling in the common polar journal 'Polar Biology' was selected. Using the *Antarctic Bibliography* the author's name 'Tarling' was entered in the 'Author' field and 'polar biology' was entered in the 'Source' field. Only two items were found and the first was the one sought.

### Google Scholar™

The same reference was sought in using Google Scholar™ by entering 'Polar Biology' in the 'Publication' field and 'Tarling' in the 'Author' field. Two items were found and the second was the one being sought.

## Type of Publication search

### Cold Regions bibliographies

For the Type of Publication search the *Bibliography on Cold Regions Science and Technology* was selected because of the option to choose a drop-down box and search directly for the publication series of the U. S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. 'CRREL Reports' was selected from the drop-down. 519 CRREL Reports were retrieved, published between 1976 and 1999.

### Google Scholar™

Google Scholar™ contains a 'Publication' field. 'CRREL Reports' was entered in the field. Only two citations were retrieved. One was a reference to a CRREL Technical Report (not the same series) and the other was a reference to a mysterious CRREL File report from 1966.

## Geographic Controlled Vocabulary Search

### Cold Regions bibliographies

For the Controlled Vocabulary search using geographic terminology, 'Lake Vostok' was chosen as the location of interest. Selecting the *Antarctic Bibliography* and using the 'Search All Fields' option, 'lake vostok' was entered as a phrase. 228 publications were retrieved. Quick scanning of the list of publications revealed that all of the items that were retrieved were relevant and were formal publications. The publications were a mix of English-language and Russian-language publications. After finding that the publication date range for the citations was concentrated in the late '90s and later, further investigation of the use of 'Lake Vostok' revealed that this term was not a Controlled Vocabulary term in the *Antarctic Bibliography* until recently. An older term 'Vostok Station' was used in earlier publications for the scientific station that is located near Lake Vostok. Searching 'vostok & station' in the 'Search All Fields' option produced 1284 references, primarily Russian-language materials dating back to the 1960s.

### Google Scholar™

A search of 'lake vostok' using the 'Exact Phrase' option in Google Scholar™ revealed 1279 items—many more than were retrieved through the CRBP (this number declined slightly on subsequent searches). Examination of these items indicated that many were meeting abstracts—items not included in the *Antarctic Bibliography*, but potentially useful as starting points for the user. The long list of items highlighted several Google Scholar™ features: 'Cited by'—which presents listings of publications that cite the item found (these might lead to some additional materials, but were extremely repetitive when compared with the initial list); 'Related Articles'—items that are related in some way to the original item (again, these might lead to additional materials, but often repeated things also found in the original list); 'Versions'—links to different versions of the same item (valuable for users who are not located in libraries with easy access to many journals—author versions of published papers or other freely available versions can sometimes be located).

## Scientific Controlled Vocabulary Search

### Cold Regions bibliographies

For the Controlled Vocabulary search using scientific terminology, Sphenisciformes, the formal name for the Order of penguins, was used. The 'Combined Bibliographies' option was used and the term was entered into the 'Basic Search' screen. 1645 references were retrieved. All records were references to publications, predominantly journal articles, and appeared to be relevant to the subject. Articles published in 2007 and 2008 occurred first in the list.

### Google Scholar™

The Google Scholar™ search for Sphenisciformes was performed using the 'Basic Search' screen. 972 items were retrieved. The first 300 were reviewed for relevance; some were citations, some were book reviews. Almost all were closely relevant. After the first 300 citations, relevance declined significantly.

## Strengths

### Cold Regions bibliographies

- Search Features
  - Includes powerful search options (Boolean operators, wildcards, proximity, and options to combine of many search statements;
  - Provides browsable indexes (Author, Title, Source, Publication Type) and Controlled Vocabulary which allow precise retrieval; Results can be manipulated in a variety of ways including selection of subsets, emailing and downloading of results.
- Ease of Use
  - Simple and varied interface.
- Coverage
  - Restricted to a known universe of formal publications.

### Google Scholar™

- Coverage
  - Includes more than formal publications (abstracts, book announcements, citations/references);
  - Covers all disciplines.
- Currency
  - Frequent updating with new publications.
- Ease of Use
  - Search box embedded in browser;
  - Free with no access limitations.
- Results
  - Includes 'Cited By', 'Related Articles' links;
  - Provides typos correction suggestions.
- User Expectations
  - Quick and easy;
  - One click to full-text.

Other aspects of the systems varied greatly depending on the users situation. Full-text access, while available through both systems, depends on the type of publication (web-based, open-access, or subscriber-only), depends on the library access system (library catalog links or IP access control), and depends on the location of the user (in the library, on a campus, or remote).

## Conclusion

Both the Cold Regions bibliographies and Google Scholar™ provide relevant publications, but the results vary significantly. Each system has strengths that make it preferable under differing circumstances.

In general, the subject-specific bibliographies are necessary for comprehensive research and for locating any non-web based materials. The powerful search features permit precise and flexible queries and eliminate false retrievals.

Google Scholar™ is good for simple, fast location of information where completeness is not a concern and irrelevant results are easily ignored.

For further information on the strengths of scholarly databases and Google Scholar™ see:

Google Scholar™ vs. Other Scholarly Databases

[http://www.oberlin.edu/library/science/google\\_tips.html](http://www.oberlin.edu/library/science/google_tips.html)

and

Online review of Google Scholar™ by Marian Burright, *Issues in Science and Technology Librarianship*, Winter 2006

<http://www.istl.org/06-winter/databases2.html>

**Acknowledgments:** The Cold Regions Bibliography Project is supported by the U. S. National Science Foundation and the U.S. Army Cold Regions Research and Engineering Laboratory under Grant No. OPP-0440772. The assistance of AGI staff members MaryAnn Theresa Eitler and Lawrence Berg in the compilation of the data for, and the editing of, this paper is appreciated.

## References

GeoRef Information Systems. Alexandria, VA: American Geological Institute.

<http://www.georef.org>

Google Scholar (beta). <http://scholar.google.com/>

Jasco, Peter. *Peter's Picks & Pans*: Amazon, Google Book Search, and Google Scholar. Online, Vol. 32, No. 2, p. 51-54, 2008

Tahirkheli, Sharon. *GeoRef and Google Scholar: Similarities and Differences*: Geoscience Information Society Annual Meeting Proceedings (in press).

***Information and Data Management in the Barents cooperation  
and the role of the Arctic Centre Information Service in  
Information Dissemination and Implementation of New  
Information Technologies***

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**Abstract.** This paper deals with the information and data management within international cooperation in the Barents region. The need for a common information and data management strategy for international cooperation in the Barents region was recognized, when the structure and strategy for the international cooperation was revised. Improving the usability and availability of information is important and challenging in a region where four languages, besides indigenous languages, are spoken. The Arctic Centre received an official role in the information management dealing with the governmental and regional cooperation in the Barents Euro-Arctic Region, when the International Barents Secretariat was formed.

The other part of the presentation deals with new tools and technologies which can improve the availability, usability, and interoperability of information. Semantic web is a technology where the content of the information is made understandable and able to be processed by machines, by binding it to some formal and meaningful description of itself. The Semantic web concept makes finding the correct data and information more effective, also ensuring the validity of the information, and enabling language independence.

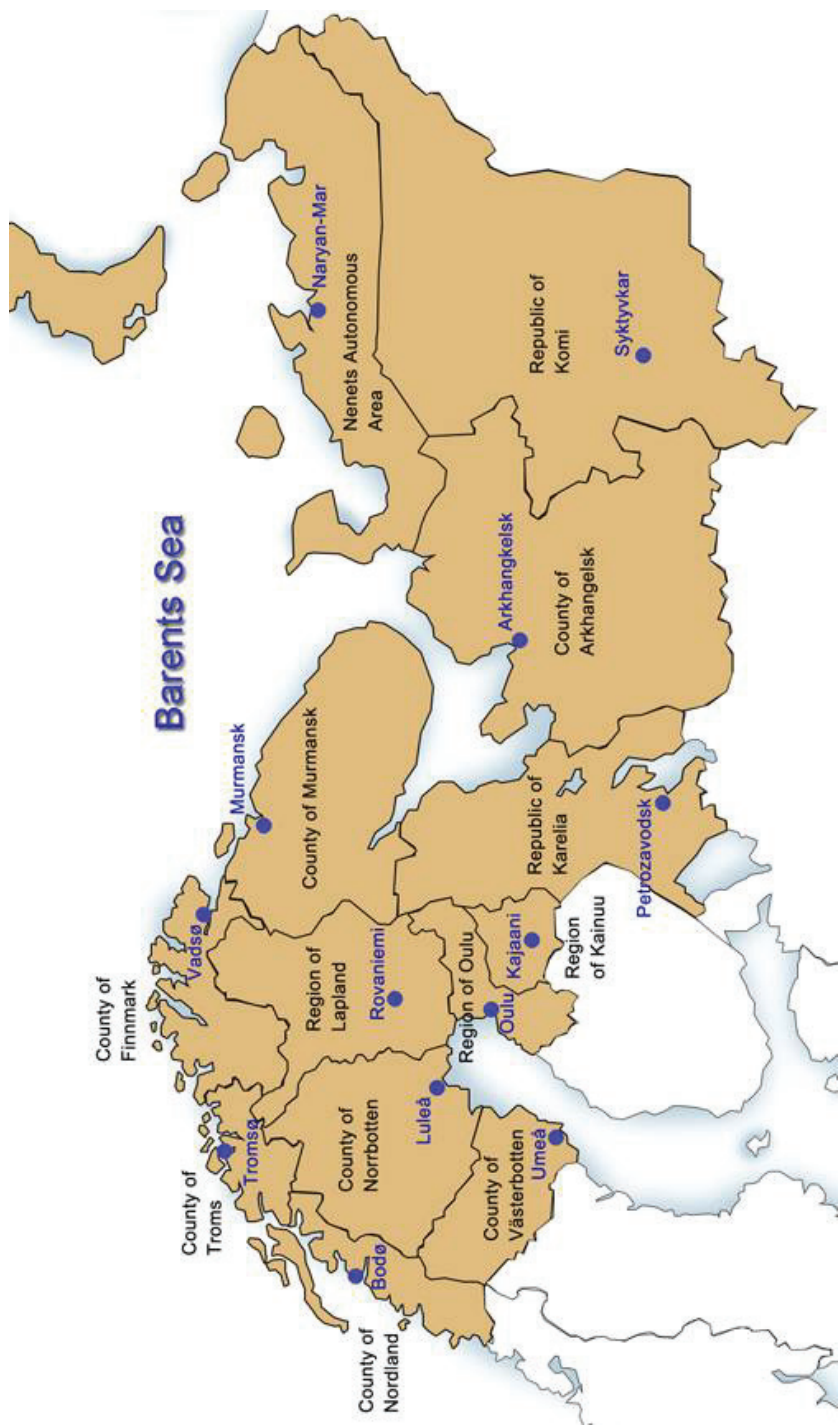
## **Background**

### **The Barents Euro-Arctic Region**

This is a vast region with the population of about 5.54 million people (2005). It is an area as large as France, Portugal, Spain and Germany put together (1,75 million km<sup>2</sup>). Approximately 75% of the area and people are in the Russian part of the region. Several indigenous peoples and minority groups live in the region, e.g., the Sami, Nenets, Vepsians and Komi.

The region is extremely rich in natural resources: oil, gas, forests, minerals and fish. This is both a great opportunity for the region, but also there are great risks for the environment and the local people, when these resources are exploited. Economic activities in the Barents region are widely dependent on natural resources but the importance of tourism is increasing continuously. Besides the large scale industrial activities there is the traditional use of natural resources by indigenous peoples, and others living here, which has been based on careful and rational use of resources.

The majority of the Barents Region belongs to the temperate conifer zone, whereas the Scandinavian mountain chain, the northern parts of the Kola Peninsula, the Nenets Area and Novaja Zemlja are part of the Arctic tundra.



**Figure 1:** *The Barents Euro-Arctic Region* (source: [www.barentsinfo.org](http://www.barentsinfo.org))

### **Cooperation in the Barents Euro-Arctic Region**

Cooperation in the Barents Euro-Arctic Region was launched in 1993 on two levels: intergovernmental (Barents Euro-Arctic Council, BEAC), and interregional (Barents Regional Council, BRC). The overall objective of the cooperation is sustainable development. The region was an area of military confrontation during the Cold War. The underlying premise was that close cooperation would secure long-term stability in political and other relations and reduce possible tensions.

Norway, Russia, Sweden and the European Commission. The chairmanship of the Barents Euro-Arctic Council rotates between Finland, Norway, Russia, and Sweden. Thirteen regions (counties or similar sub-national entities) form the Barents Regional Council. The representatives of the three indigenous peoples, the Sámi, the Nenets, and the Vepsians, cooperate in the Working Group of Indigenous Peoples which has an advisory role in relation to the cooperation.

### **Information and data management in the Barents region cooperation**

During the Finnish chairmanship of the Barents-Euro-Arctic Council (2005-2007) the structure of cooperation was renewed. There were several reasons for revising the structure. Cooperation was withering due to a lack of resources, motivation, and overlapping work. There was not a permanent structure for cooperation, and rotating chairmanships for governmental and regional cooperation caused gaps in information exchange, and other problems with information management.

The need for a permanent international secretariat was recognized, as was the need to improve information management. When the international Barents Secretariat was established in November 2007, within the founding agreement, the information management was outsourced to the Arctic Centre with a four year agreement.

The tasks according to the agreement are to develop in cooperation, a general information and data management strategy for the Barents Cooperation, with a view to improve the information dissemination. One goal of the strategy is to improve the flow of information to the general public. The Arctic Centre will also be responsible for maintaining the two websites [www.barentsinfo.org](http://www.barentsinfo.org) and [www.beac.st](http://www.beac.st).

### **Two websites for Barents related information**

Until this agreement there has been two independently maintained websites for Barents related information, one general portal, and one for official cooperation. These portals have not been overlapping in content, but need for better coordination was obvious.

The first website, [www.barentsinfo.org](http://www.barentsinfo.org) is a general portal to the region and it also serves as a platform where Barents related projects can publish information. This portal was built in a project together with Norwegian, Russian, and Swedish partners during 2003-2004. After the project the Arctic Centre has taken the responsibility to maintain the portal. Some thematic parts of the portal have been updated and developed with external funding. For example, organizations have found it to be a good platform for publishing information, and have paid the Arctic Centre for creating theme pages. Some examples to be mentioned are the Barents Road Safety Forum and Economy, and Business in the Barents Region.

The cultural part of the portal was rebuilt by a two year BarentsCultureWindow project. In the project a comprehensive database containing information on artists, architecture, theatre, museums, libraries etc. was built.

The [www.beac.st](http://www.beac.st) website contains official information for authorities and decision making. It is a website dedicated to the official cooperation between regions and

governments, with the main target audience being the officials involved in the cooperation. It was set up during the Swedish chairmanship over 10 years ago, and has since its establishment not been developed at all. In the beginning the main tasks are to create a new structure and layout for the website, as well as design and build a document database.

This agreement makes hiring a person to update both portals possible. This is a major improvement compared to the present situation. By keeping the links and content in the portal the barentsinfo.org up to date, will hopefully make it a more popular, useful, and trusted source of information.

### **Information strategy for the cooperation in the Barents region**

Another task in the agreement is to create an information strategy for the international cooperation in the region. The goal is to improve the information dissemination, as well as the flow of information to the general public, thus making the Barents cooperation better known to the general public. It is important to be able to provide useful, correct, and updated information in a form which can be easily used by the people in the Barents cooperation, as by the media, and general public.

The strategy will be executed together with the International Barents Secretariat, national Barents secretariats in Finland and Norway, and also by involving other parties who have roles in the cooperation. The strategic work will start later during the year 2008.

### **New technologies**

There are new technologies existing and emerging which can improve the availability and usability of information. Especially the semantic web technology could notably improve the finding, combining and interoperability of information. There are also free and easy to use tools like the Google translator which is a great help when finding information from the Russian websites.

### **Semantic web**

The Semantic web—the Internet of meanings—is the next generation of the Internet. Semantic web concept makes finding the correct data and information more effective, also ensuring the validity of the information and enabling language independence. The semantic web standards and tools provide us with the next generation of intelligent web services.

The idea of the semantic web is to make content understandable for machines by binding it to some formal and meaningful description. In order to build semantic web applications, standards covering metadata, descriptive terminology, and ontologies are needed. Ontologies are the infrastructure of the semantic web. Ontologies serve to make metadata understandable by computers, they define the way descriptive terms are interrelated and used in a given domain of interest.

### **Semantic web development in Finland**

At the moment there is a lot of work going on in the development and building of ontologies in different domains of interest. In Finland the FinnONTO project built the Finnish General Upper Ontology (YSO) where there are ca. 20 000 concepts. Besides general ontology there are several special ontologies for example ontologies on history, agriforest, health, time-location and museum. These ontologies have been created either based on existing vocabularies or from scratch. The Finnish General Upper Ontology has been made available for users (ontology developers, content indexers, information search) by setting up ontology library server and providing mash-up applications for integrating the ontology into existing content management systems.

The project also produced open source tools for building semantic applications, for example, tools for creating semantic search and browsing portals, search engines, and tools for automatic annotation. More information on the tools and development is available at the website of the Semantic Computing Research Group at [www.seco.tkk.fi](http://www.seco.tkk.fi)

### **Interoperability of contents of different domains**

The ease of integration and linkage of information is one of the improved features that semantic web offers. This could in best cases create some new information and knowledge that could not be foreseen when independent databases or portals were built. For example, one could combine museum collections, research databases, literature databases, web pages of individual persons or organizations, spatial information, etc.

As mentioned earlier, BarentsCultureWindow is a part of the BarentsInfo.org portal. One aim within the project was to integrate the Norwegian cultural calendar ([culture.no](http://culture.no)) into the BarentsCultureWindow. But it was seen that shortly after the project would end, there would be changes in the hardware and software in Norway, and thus it would not be wise to integrate these two systems, because after the systems in Norway change, the connection between the two portals would stop working. Usually when two or more systems are integrated and something changes in the software or hardware in one of the systems re-programming and changes are needed in others. This is expensive and frustrating.

If the information were semantically annotated using common ontology, the integration and reusability of information would be much easier. As long as the contents of the databases or portals are described semantically, changes in the hardware or software in the hosting systems does not affect the usability or integration of the information in other systems.

### **Polar Ontology and Semantic Polar Web**


In the future the semantic web technology could enable the creation of a Semantic Polar Web which could contain diverse polar related databases, portals, websites, or web documents. When the information is annotated using common ontology this would enable integration of the information into one portal, independent on the language of the information and hardware, or software used. It would be easy to include new parts into the portal, and inside the portal it also would be easy to create theme portals.

But unfortunately all these good and fine things do not happen automatically. The technology dealing with the semantic web is maturing and there are open source tools for building portals and ontologies and for annotating information. But in order to build the next generation Semantic Polar Web the annotation of information must be automatic or semi-automatic and someone needs to build the infrastructure for the semantic web, that is the ontology, and provide it to the polar communities as open access service, like the Finnish General Upper Ontology is available in Finland.

### **Google translator and access to information in Russian language**

As mentioned earlier, about 75 % of the area and population in the Barents region are in Russia. Since most of the content in the Russian servers are in Russian, a great deal of information is not available for those not understanding Russian. For that problem Google offers a great tool: [translate.google.com](http://translate.google.com).

To see how it works in practice you can see in the following pictures the website of the Statistics Service of the Komi Republic. In the first picture is the original homepage in Russian and in the second is the same page seen through <http://translate.google.com/#>



**ТЕРРИТОРИАЛЬНЫЙ ОРГАН ФЕДЕРАЛЬНОЙ СЛУЖБЫ ГОСУДАРСТВЕННОЙ СТАТИСТИКИ ПО РЕСПУБЛИКЕ КОМИ**

Главная

О Комистате

Новости


Публикации

Статотчетность

Методология


Мультиязычность

**Новости**



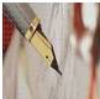
23.05.2008

**Выпущен сборник «Полезная информация для малого бизнеса»**  
 В сборнике представлена информация о роли малого бизнеса в Республике Коми, о количестве малых предприятий и индивидуальных предпринимателей в разрезе городов и районов.  
[Далее...](#)




23.05.2008

**Руководители государственной статистики Северо-Запада намерены расширить доступ общественности к статистической информации**  
 27 мая 2008 года в г. Сыктывкаре начнет работу региональный семинар-совещание по вопросам распространения статистической информации и развития проекта «Электронная статистическая библиотека» для территориальных органов Росстата по Северо-Западному федеральному округу.  
[Далее...](#)



22.05.2008

**Выпущен доклад «Социально-экономическое положение Республики Коми за январь-апрель 2008г.»**  
 В предлагаемом докладе приведена основная информация, характеризующая экономическую ситуацию в республике за январь-апрель 2008г. в сравнении с соответствующим периодом предыдущего года.  
[Далее...](#)



20.05.2008

**Выпущена аналитическая записка «Миграционные процессы в Республике Коми»**  
 Республика Коми относится к регионам России, где спад численности населения определяется, главным образом, миграционными процессами. Миграционные потери населения за 1990-2007 г. составили 251,5 тысячи человек, или 89% общей убыли населения.  
[Далее...](#)

**Индикаторы соц.-эконом. развития РК за апрель 2008г. (в % к аналогич. мес. пред. года)**

Индекс промышленного производства ▲ 104,7%

Северо-Западный федеральный округ

Республика Коми в цифрах

- Население
- Труд
- Уровень жизни населения
- Образование
- Здравоохранение
- Охрана окружающей среды
- Преступность
- Валовой региональный продукт
- Производство
- Сельское хозяйство
- Строительство
- Транспорт и связь
- Торговля и услуги населению
- Финансы
- Инвестиции
- Цены и тарифы
- Внешняя торговля

**Полезные ссылки**

- Росстат
- Евростат
- Статистическая Комиссия ООН
- Официальный сервер Республики Коми

Поиск по сайту

Искать

Figure 2: Statistics Service of the Komi Republic: [www.gks.ru](http://www.gks.ru)



Figure 3: Statistics Service of the Komi Republic ([www.gks.ru](http://www.gks.ru)) translated by <http://translate.google.com/#>

This service is partly used in the [www.barentsinfo.org](http://www.barentsinfo.org) portal, especially in pages dealing with statistics. For example this website is linked under statistics in the portal both to the original page in Russian and directly to the translated version of it like this:

- Statistics Service of the Republic of Komi - statistics on population, economy, education, health, trade, etc. See machine-translated version in English (google translator).

## Conclusions

The Arctic Centre has been active and visible in the work regarding information within the Barents region by taking part in numerous projects, and thus having good contacts to the organizations in the region. The Arctic Centre was coordinating the Barents Information Service project (2003-2004) in which the general information portal BarentsInfo.org was built. This was a very important step in gaining an official part in the information cooperation in the Barents region.

The new technologies that have been discussed here can both individually, and especially when used together, notably improve the availability, usability, and interoperability of information. The semantic web technology is being prepared for use and is in a state where a killer application could really make a break-through, and thus make it available for wider use. The creation of the open source and open access Polar Ontology server could be one goal for the library and information cooperation. Combining the ease of finding relevant and right information using the semantic search with the translator tools can change the future of the internet drastically.

## Links and sources

- The Finnish General Upper Ontology (YSO) and ontology server (ONKI): <http://www.seco.tkk.fi/ontologies/ysa/>
- Semantic Computing Research Group, Helsinki University of Technology: [www.seco.tkk.fi](http://www.seco.tkk.fi)
- Google translator: <http://translate.google.com/#>
- Arctic Centre, University of Lapland.: [www.arcticcentre.org](http://www.arcticcentre.org)
- Arctic Documentary Films: [www.arcticcentre.org/afbare](http://www.arcticcentre.org/afbare)
- General portal to the Barents Region: [www.barentsinfo.org](http://www.barentsinfo.org)
- The Barents Euro-Arctic Council: [www.beac.st](http://www.beac.st)

**Plenary Session 3**  
***Images and Archival Resources***

**Convenor: Alexandra Hook,  
Aurora College, Thebacha Campus Library**



## ***Towards Image and Knowledge Management: A Pilot Project***

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### **Introduction**

The Byrd Polar Research Center (BPRC) and the Polar Archival Program (AP) at The Ohio State University are working together on a pilot project to identify images and documentation that members of the Center may have in their possession created in the course of their work. The goal of this project is to create a web-accessible database of images and related documentation pertaining to research created by BPRC scientists as well as individuals who have transferred their collections to the BPRC. Ultimately, this database will facilitate the sharing of information at the BPRC, serve to preserve and make available the history of the Byrd Center as documented by its scientific activities, and be a resource of images, information and documentation for educators and students of science and environmental change.

From a small number of digital collections and using OSU's web Media Manager (MM) (<https://mediamanager.osu.edu>) a prototype of the database has been created (<https://byrdpolarmedia.osu.edu>). Focusing on images at first, we also intend to have links for other sources of information, including biographical information, data, BPRC monographs and collections of the Polar Archival Program. This project is a learning experience that engages issues of selection, metadata, and ownership, as well as technical issues.

There are three phases to this pilot project. The first phase entailed developing a survey instrument and interviewing members of the Center to have an understanding of what members may have in their possession to contribute to the database. The second phase of the project consists of the actual scanning of materials and inputting the images into the Media Manager. The third and final phase will be an evaluation of the pilot project. Along with an internal evaluation by the project team, a focus group comprised of the Byrd Center community and potential users of the Media Manager will be asked to comment on the BPRC collections in the database and make recommendations.

## **Start of the Project**

Members of the project team include a librarian, an archivist, and the Center's education and outreach specialist. The University Archivist and the director of the Center act in an advisory capacity to help shape the direction of the pilot project. From the very beginning, responsibilities were assigned with the hope that working on this project would not become overly burdensome to any one team member. The project is jointly funded by the Archival Program and the Byrd Center. With those funds a graduate student was hired to work in the library to free up time for the interviews and another person was hired to work on the scanning and inputting into the database. The authors of this paper were assigned the responsibility of emailing prospective interviewees information about the project, setting up interviews with members of the Center, and finally conducting the interviews. The Center's education and outreach specialist was responsible for supervising the input of data and for interfacing with the technical experts of the Media Manager.

An open members' meeting was held to discuss the project in general terms and to demonstrate the capabilities of the OSU Media Manager. An email was sent out to all the members of the Center inviting them to participate in the project.

## **Survey Instrument and Interviews**

The survey instrument (Appendix 1) was developed to ascertain what types of materials members of the Center have in their possession as it relates to their work at the Center, and whether or not some of that material would be suitable for input into the database. The survey instrument was designed to ask specific questions to find out what types of data and media individual researchers own, the date ranges of their collections, and finally where their materials are located. Another goal of the interview process was to identify already existing digital assets that could easily be added to the Media Manager. One reason for talking directly to the members is to let them know about the Archival Program and the kinds of materials the AP is interested in collecting, such as field notebooks or logbooks, slide collections and correspondence. Many of the researchers, particularly newer faculty, did not realize the scope of the Archival Program and its mission. Detailed questions also help the interview team assess where there is a need for preservation and conservation. Recommendations were made during the interviews that stressed backing up disks, labeling slides while the information is easily remembered, and requesting that members resist the urge to pitch material before consulting with the archivist. At the end of each interview, the interviewee was given a copy of the AP Collection Development Policy and asked if they had any questions. Each actual interview took no more than an hour to complete; however much time was spent requesting interviews from the members, editing their responses and following up with them.

The team began interviewing members of the Center who initially volunteered. After that, requests were sent out to specific people to ensure that every group within the Center was represented. The interview team participated in the interviews by taking turns asking the questions; one person used a laptop

computer to record answers, the other person took handwritten notes. This ensured accuracy in recording of interview data, as it was assumed that one member might have noted something that the other team member missed. After the interview, the interview team reviewed and edited the survey instrument and sent it back to the interviewee for approval and signature. The signature of the interview on the survey instrument was not used as a guarantee for a donation to the archives or for obtaining material for the MM, but to make sure that what the team recorded was accurate. Once signed, the instrument became a permanent record for the archives. The completed survey was also shared with the scanning team so that they could request material for inclusion in the database.

To date, nine interviews have been conducted with representation of all but two research groups. While many members of the Center agreed that the project would be valuable, it was difficult to schedule interviews. This was due in part because of teaching schedules, traveling schedules, getting ready for fieldwork and/or being in the field when the request was first issued. Almost everyone we contacted agreed to be interviewed, but when it was time to actually commit to the place and time for the interview, we were in large part unsuccessful. Despite our having a well received open meeting and sending out blanket emails about the project very few members knew why we were requesting an interview. Those that were interviewed were more than willing to supply images and all were willing to talk about what they have in their possession, how they use their data and who collaborates with them. Some also made suggestions about who should be contacted next for interviews. Fortunately, some members agreed to give us material without being interviewed and we will pursue interviews with them, even after the pilot project is finished.

## **The Media Manager (MM)**

The College of the Arts and Sciences at The Ohio State University is responsible for OSU's Media Manager. Individual OSU faculty, staff and graduate students may register for an account for free. Version two of the Media Manager software allows departments and groups to create accounts. Media Manager was designed to be a user-friendly, temporary work and storage space where account holders are able to make decisions regarding how they want their collections to look, who may have access to their collections and how much and what kind of material is uploaded to the site. It should be noted, however, that the account holder is able to extend end dates for any of his collections in the MM, so in reality, it could become a permanent work space and management tool. Once an account is set up, authorized users can add any digital media in any format they desire, and they can create metadata for the media. Metadata requirements are flexible, allowing account holders to enter complete and detailed metadata, or basic skeletal metadata. Account holders can also give permission to their colleagues to access their collections; access is given on a collection level basis. Batch uploading of images is allowed and authorized users have the capability to add metadata at a later date. In the MM, they can store or produce PowerPoint presentations from images they have already added to the database, or transfer images to a web site or to use in an off-line slide show. For authorized users

accounts are accessible from anywhere in the world by logging on to the MM site. Images can be uploaded directly from digital cameras wherever the user happens to be, at the office, in the field or at a conference.

The system developers of the Media Manager recognize the need to work with other entities on campus that also have digital collection initiatives. They are interested in collaborating with OSU librarians to determine if collections that are stored in the MM, might one day be seamlessly transferred to the University's institutional digital repository, the Knowledge Bank (<https://kb.osu.edu/dspace/index.jsp>). Another collaborative effort currently in place is the coordination of the MM and Carmen, the University's online course management tool. Carmen allows instructors, staff and TAs to share material with their students by posting such things as syllabi, assignments and reading material, class instructions and notes. In Carmen, students can be automatically redirected/connected to the MM to view a particular PowerPoint presentation or set of slides and then automatically sent back to their Carmen account. The development group is making a concerted effort to seek input from others involved in digital collections initiatives. The goal is the continual enhancement of the MM so that it is a viable product readily accessible and used by the wider OSU community.

For the Center, a nominal fee was requested for storage space on the MM server; however, this was waived through negotiations. In exchange for space and technical expertise the project team agreed to make presentations about the Media Manager to different groups on campus, and wider audiences, such as science teachers at education conferences. We also agreed to let the Media Manager design team use the Center's collections to illustrate the usefulness and capacity of the Media Manager to the University's Research Foundation. And finally, we agreed to help write a collaborative case study about our use of the Media Manager. As is the case for many university initiatives, funding is always in question. The Media Manager design team is hopeful that funding for the Media Manager will continue based on the utility of the product within the University community. For these commitments we received their help and support in designing our interface and they incorporated some of our requests and suggestions for version two of the Media Manager. As mentioned previously, version two allows departments and groups to create accounts within Media Manager. When we began this pilot project, version two was in the design phase, but not yet implemented. In version one, most of our scanned collections were not visible to the public. When version two became operational, our collections migrated to version two and some were made public. As the project proceeds more collections will be available to the public. We have up to 10 Gb of space available to us. If more storage space is needed at a later date, decisions will be made regarding what should be migrated to a web page, another server or added to the Knowledge Bank.

Several design and utilitarian decisions needed to be made at the onset of the project in regard to the web portion of the project. Since this is a pilot project, we opted for simplicity wherever possible. Treefort Design Group previously designed and donated a poster about the Center for our Learning Center and with their permission we reused some of their design elements for our MM site. With the assistance of the MM technical experts, two student

workers with extensive IT knowledge designed and set-up templates for our site. Though more sophisticated programming for the interface could have been implemented, the pilot project team determined that it was best to keep these elements standard to ensure that any changes in the future could be made with minimal involvement from programmers.

The project team was allowed to choose the URL; several different versions of the URL were explored, but ultimately byrdpolarmedia.osu.edu was chosen. Unfortunately, this site is not accessed through the Arts and Sciences Media Manager site, which means that end users will need to know the address of our MM website in order to find it and that we will need to market it on our own BPRC homepage and the Polar Archives homepage.

Questions regarding metadata and controlled vocabulary were frequent enough to request guidance from others who have established collections in the MM and metadata librarians from OSU Libraries. The project team chose to have controlled vocabulary for a few fields: donor, creator, geographic location of the images and ownership of the collections. This will facilitate searching consistency. In addition, it makes data entry somewhat easier. Menu options available to users include information about the website, the purpose of our MM, how to search and some information about the scope of the pilot project and the goals.

One of the primary advantages of the MM is the variety in which digital images can be displayed. When an image is selected, the image can be manipulated in several ways. There are zoom tools, including panning, different size options up to XXL, and downloading of the original image. PowerPoint presentations and Pdf documents can also be opened and saved. Other useful menus include thumbnails of individual collections, lists of collections and sorting features. Within the public collections users can sort by relevance, uploaded date, modified date, creator, date, geographic location, donor, title, project, and subject and media type. The search screen is user friendly and there is an easy explanation for novice users. Several options are available for logged in users and contributors in the collections: view, manage, share, upload, and export.

Account holders may grant or not grant permission to use materials by the use of water-marks. Individual members of the Center were asked to stipulate what should be made public, what is available for educational use only and whether they wanted to be contacted if someone wanted to use their image in a commercial product. Members were also asked to sign a standard release form when they agreed to have their material added to the MM. Most of the images are scanned at 600 dpi.

One of the end results for this pilot project will be the inclusion of several types of digital materials to demonstrate the usefulness of the MM and all of its capabilities. At the beginning of the project, we were reliant on members to give us their material for scanning. We offered to scan analog slides into digital images and give them to the owner on cds. This was our way of enticing them to be participants. It was left up to the BPRC member to decide what they wanted to give us, although we did make suggestions and requests. Several members had material already in digital format ready to be uploaded to the MM site.

In order to illustrate the utility of the MM in presenting a wide variety of digital media, additional materials were scanned and included in our MM. The scanning team enhanced our MM site by including a listing of articles found in BPRC scrapbooks, highlights from BPRC annual reports and strategic plans, as well as links to other sources of information found in the archives and pdf documents. At this time, video clips are being edited for inclusion in the MM.

Currently, we have 41 collections, with 7757 files and 13 of those collections are public. Included in these public collections are images from different field seasons and trips to Antarctica and Greenland, a 1960 winter-over at Byrd Station in Antarctica, and images taken at a modern day snow school in Antarctica. On the front page of our Media Manager, we have the ability to highlight four collections and we have some images continually flash on the main screen as a way of focusing attention on our collections. The collections we highlighted have the most complete metadata and descriptions. Organization of some of the other collections still need work as there are no subcollections within the collections and some of the collections are interrelated, but that is not readily evident. Version two of the MM software is supposed to allow for subcollections and other organizational tools, but it is still in development.

One of the weaknesses of this project so far is the lack of metadata for some of the individual collections. While the MM requirements for metadata are very flexible, without accurate and more complete metadata some of the images lose their potential as teaching tools and the historical material may lose some of its impact if it is viewed without context or explanation. Members who donated the original material obviously know what the images are and the science they represent, but the end user may not have the background to make the interpretation valuable or useful to them. Will the researchers have the time and/or the inclination to go back through their individual collections and update this information? This is a question that will need to be addressed, as it is obvious that the level of metadata directly impacts the searchability and possible utility of the database. Our members did agree to help with this task, but this would require a time commitment that may not be realized, especially in the confines of the pilot project. One member suggested that she would be willing to dictate the information into a recorder and have a student transcribe it, which would be a quick way for us to obtain the information we need. From the beginning of this project we agreed that we should enhance the collections by including not only images, but also documents and linkages about the researchers and their research programs. The researchers have quite a significant web presence and linking this information would not be a substantial burden for the project team. These linkages and documents may circumvent part of the problem of the absence of detailed metadata.

### **What's Next for the Pilot Project?**

The pilot project is only in the second phase, as we are still inputting material into the database. When that portion of the project is complete, we intend to showcase it to the members of the Center and other interested parties. The technical experts from the College of the Arts and Sciences Media Manager use our MM site as a prototype to get others from the OSU community interested in

using their product and securing continuing funding. The education and outreach specialist intends to use portions of the database at a summer workshop for science teachers. We are hoping to get feedback about the usefulness of our MM from the teachers as well as Byrd Center members. In 2010 the Byrd Center will be celebrating its 50<sup>th</sup> anniversary and we intend to prepare an overview of the history of the Center using images and documentation we have gathered and added to the Media Manager.

## **What Have We Learned?**

Interest in the pilot project has attracted several groups on campus. The project team met with other members of the university community, primarily librarians, who are tackling issues regarding data. Digital data collection by scientists has resulted in an overwhelming quantity of data sets. More and more science is conducted electronically by working and reworking existing data sets, resulting in the need to provide storage and access to original data. The Media Manager could provide one solution to this issue. The interview team learned that some Center members do indeed retain original data in a variety of formats, such as on CDs, on their hard drives, or backed up on University servers. One goal of the project team is to engage in further discussion about data storage and access, based on the results of our surveys of Center members.

The Byrd Center is comprised of eight research groups that interact in varying degrees with each other. We have learned that it is not always easy to communicate with the scientists and that their priorities do not necessarily align with ours in the library and the archives. They often do not view the materials created from their work of interest to anyone outside their immediate research team. Those that we interviewed did find value in spending one hour with us; we had one interviewee comment that she was going to back up her files immediately after our meeting. We also had one interviewee donate materials to the Archival Program. Several interviewees now have collections in the MM. The difficulty lies in persuading the scientists that this is worth their time. Somehow, we need to continue to work on making participation in this project mutually beneficial. We are hopeful that once members see the utility of the MM, they will want to participate.

## **Appendix 1**

### **Towards Image and Knowledge Management: Pilot Project Survey Instrument**

1. Date of Interview:
2. Name of Interviewer(s):
3. Interviewee Name/Title/Research Group:
4. What materials do you have? NOTE: We do not need exact counts, but estimates. Examples: 20 slide carousels full of original slides; 18 boxes of original photos; 32 boxes of documents, etc.

Check all that apply:

- ☐ digital images. If yes, how many?
  - ☐ analog slides. If yes, how many?
  - ☐ prints. If yes, how many?
  - ☐ negatives. If yes, how many?
  - ☐ documents. If yes, how many?
  - ☐ artifacts. If yes, please list/describe:
  - ☐ equipment. If yes, please list/describe:
  - ☐ specimens. If yes, please list/describe:
  - ☐ other. If yes, please list/describe:
5. Which of the above described materials do you own?  
Which of the above described materials did you create?  
Comments:
  6. What is the time span of your materials?
  7. Are the materials described in any way? For example, are images captioned or sorted by field season, location, etc? Are documents grouped in folders, envelopes, boxes, etc.?
  8. What are the subjects of your materials? (people, location, technology, etc.)
  9. Where do your materials reside? (BPRC, home, other OSU office, partner/collaborator, etc.)
  10. If you have orphan data (data not destined for a data center): What formats are used? How much do you have? Is it backed up?
  11. Which of your materials exhibit preservation problems, such as mold, tattered, image fading, obsolete software or hardware, etc?

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12. Which of your materials have been altered or modified (color-corrected, cropped etc.)?
13. You can control the access to your materials in the Media Manager. Are you willing to grant access for educational use?      mDo you want to control access for commercial uses, such as use on websites or in published materials?      Additional comments/notes:
14. Would you prefer to input your own information and images?  
Comments:
15. If you prefer that we scan your images and input them, would you like your original materials back, or are you ready to send them to the Archives?  
Comments:
16. Would you like a copy of your scanned images and associated metadata on CD?      Comments:
17. We would like to get a copy of your most recent CV or bio as the creator and/or donor. Can you provide this to us?      Comments:
18. We are providing you with a copy of the Polar Archival Program Collection Development Policy. Do have any questions about this, in particular, as it relates to the scientists/members of the Byrd Center?
19. Comments or other information?

Interviewee Signature/Date: \_\_\_\_\_

Your signature on this form indicates that we have recorded your answers to the questions accurately.



***Beyond text: using library and archival collections  
at the Scott Polar Research Institute to  
contextualise the visual image***

**Heather Lane  
Librarian and Keeper of Collections  
Scott Polar Research Institute  
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**Abstract:** The Freeze Frame project aims to develop an online database of freely available visual and textual resources to support learning, teaching and research into topics relating to the history of Arctic and Antarctic exploration and science. Through a series of interpretative web pages and e-learning resources the project will provide access to hidden collections for all educational levels. We will encourage users to discover polar environments through the eyes of those explorers and scientists who dared to go into the last great wildernesses on earth.

This paper examines the process of decision making by SPRI's Library and Archive staff and members of the project team to evaluate and select appropriate contextual materials. It considers the likely impacts which the project will have on the physical collections and their management, as well as the perceived benefits. It also provides a brief outline of the digitization programme, documentation and scheduling, as well as the use of the University of Cambridge's digital repository and delivery mechanisms.

## **Introduction**

The collections held by the Scott Polar Research Institute, University of Cambridge, are among the richest in the world for the study of polar environments. Supported by funding from the UK Joint Information Systems Committee (JISC) Capital Programme, work began in April 2007 on the **Freeze Frame** project (<http://www.spri.cam.ac.uk/resources/freezeframe/>) to capture and preserve our archive of historical images in digital form. The project will be completed by March 2009.

Our photographic negatives are a unique resource but also an extremely fragile one. We are in the process of digitizing over 20,000 photographic negatives from 1845-1980, representing some of the most important visual resources for research into British and international polar exploration. Digitization of related documents—information from personal journals and official reports from expeditions on which these photographs were taken - will provide historical and cultural context for the images. We also intend to add context to the images by displaying them alongside selected items from our pre-eminent collection of polar fine art, prints, drawings, and of its kind for fifty years. The timing of the IPY, coupled with growing interest in climate change, provides a unique opportunity for online resources at the Scott Polar Research Institute to reach a wider learning community than ever before. The forthcoming

centenaries of the 'Heroic Age' expeditions to discover the Poles also demand of us that this visual archive is accessible to a global audience. The contextualization of the images, using published and manuscript sources, requires careful consideration and understanding of our intended audiences.

## **Objectives**

The main objective of the Freeze Frame project is to contextualize our visual holdings to assist in teaching, research and understanding of the polar regions. We are committed to making accessible, via remote use, collections not previously available to the public, and to ensuring the preservation of material for present and future use. This has entailed assessment of management and conservation needs for the entire photographic negative archive. Up to 20,000 historic polar images are being newly digitized, and a range of web-based educative components will be made available to the public. Inevitably, this will have an effect on the range and type of enquiries to be handled by the Library, Archives and Museum, and it was critical that the project should involve all departmental staff from the earliest stages.

Analysis of requests by visitors to the Picture Library and Archives over the past three years shows that the most frequently requested items are either already published on the web or are from closely allied collections, suggesting that picture researchers are increasingly reliant upon the web for resource discovery. One of the chief concerns of Library and Archives staff during the initial consultation period for the project was that provision of a wider range of images, with easily surfaced metadata, should result in the SPRI being able to satisfy an increased demand for polar images stimulated by the International Polar Year (IPY 2007-2008). Research use of the collections has increased with the publication of the archival catalogue via the Archives Hub ([www.archiveshub.ac.uk](http://www.archiveshub.ac.uk)), with enquirers often requesting information on the SPRI's related image holdings.

## **Project planning**

Initial detailed project planning took place in August and September 2006, with funds for a scoping study provided by JISC after their acceptance of the Institute's initial bid into the Digitisation2 Programme. This is the second round of capital funding for the digitisation of UK Higher Education collections. All members of the SPRI's Information Services Division senior management team were involved in the discussions, and a core group of objectives for the project were identified, as follows:

- To create a web-based collection of digital images exemplifying and promoting understanding of polar history, science and exploration for use in a range of educational contexts.
- To develop a series of interpretative web pages, e-learning and online learning resources.
- To encouraging discovery and interpretation of resources by users with a range of educational requirements and skills.

- To bring to public attention, through the provision of digital surrogates, aspects of the SPRI's collections that are unknown or inaccessible.
- To preserve original, rare and fragile materials before reproduction is no longer feasible.
- To make use of appropriate technology to enable on-line close scrutiny of objects, which are normally too fragile to be handled.
- To make image resources and metadata freely available to as wide an audience as possible.
- To create a scalable resource, allowing the addition of digitised images and texts beyond the funding requested.
- To enable the long-term sustainability and preservation of the resources through innovative collaboration with partners within the University of Cambridge and other UK HEIs.

The outcomes of the scoping study provided the Steering Group (which comprises external academic and museum advisers and project staff) with:

- a) lists of materials from which a selection of the related archival resources for individuals, expeditions, scientific ventures, ships, etc. could be made. This enabled document digitization to be scheduled from the outset of the project;
- b) contextual support for decision-making on the content of archives chosen for educational support;
- c) support for decision-making on vocabulary control;
- d) complete listings of images in addition to the collection level information already available. This provided the basic information required to establish an order for scanning, a timeframe for cataloguing each collection and an accurate assessment of item types.

The scoping study also enabled the team to produce a statement on the mapping of the relationships between the UK Learning Object Metadata Core Schema and the Visual Resources Association Core 4.0 Schema to the XML metadata schema (based on the UK Spectrum museum object cataloguing standard) generated by the Modes collection management system in use within the Institute. Library staff also provided a statement on subject classification for use by the Steering Group, with a natural language mapping document of the classified sequences available from the Polar Universal Decimal Classification.

With appropriately funded clerical assistance, we were able to deliver a proof of concept document for cataloguing outputs, a list of brief collection level records for all negatives within the collection, with detailed breakdown of item types and numbers and a list of manuscripts relating to images from which the Steering Group could select sections suitable for inclusion in the contextual material.

Written project standards were required for a number of elements, and much work went in at an early stage to investigate appropriate national and international examples of best practice. The detailed project plan, now in version 5, covers protocols for Digitization; Metadata (Image, Text, Subject, Technical

and Preservation); Systems architecture and delivery; Accessibility; Quality Assurance and Control; Evaluation; Legal and commercial considerations; Educational outreach and an Exit strategy and considerations of project sustainability. A detailed risk assessment was also required. The plan is available on the university intranet to team and steering group members at present, but will be published as part of the Freeze Frame web site in due course, to benefit other institutions considering a digitization project.

## Methodology

The Freeze frame project is scheduled over twenty-four months. The project plan identified twelve work packages, each with its own list of clearly identified objectives, timetable. Nine relate to workflow starting in Year One and the final three relate directly to work flow to commence in Year Two. For each package there is a set of outputs, including deliverables and reports, milestones, and an indication of who on the project team has responsibility to ensure delivery.

- 1: Project initiation
- 2: Drafting policies
- 3: Training
- 4: Image Selection
- 5: Digitization of images at SPRI
- 6: Archives selection
- 7: Digitization of negatives by external agents
- 8: Database development
- 9: Metadata creation
- 10: Database population
- 11: Website development and delivery
- 12: Project administration

The project is being conducted through a thoroughly planned workflow of image selection, conservation, digitization, and interpretation. The critical success factor is the provision of access to a minimum of 20,000 polar images by the end of the project timetable, in March 2009. image capture from the negatives is carried out with a Kodak IQSMART ES Supreme II scanner, using an XY stitch scanning method with a maximum optical resolution of 5,600 x 14,000 dpi. This has an excellent dynamic range with a Dmax of suitable for scanning dense historic negatives.

Our methodology for materials selection is designed and undertaken using the specialist subject knowledge of Institute staff and is informed by published guidance, for example, the Joint RLG and NPO Preservation Conference Guidance for Selecting Materials for Digitization (<http://www.rlg.org/preserv/joint/ayris.html>). One major difficulty identified is that the collections are not easily quantifiable as not all are fully recorded. The archival collections, for example, are complex and often lacking full documentation. This makes it essential that the selection process be guided by those familiar with the range of materials available elsewhere in electronic format and with an understanding of their value to academic constituencies. The

final decisions on selection are made by the academic steering group, using criteria provided by the Project Manager.

The Project Manager has established conventions for evaluating the quality of existing digital image collections and metadata. In addition, consultancy has been available for digital imaging, conservation, longer-term preservation, content packages and web technologies, either from JISC itself, from the Technical Advisory Service for Images (TASI) or from other departments within the University of Cambridge, such as the Centre for Applied Research in Educational Technologies (CARET). One major benefit of the project has been that all Information Services Division staff have been trained to be aware of the conservation needs of materials and their suitability for digitization.

## **Staffing**

The project is directed by Professor Julian Dowdeswell, BA, MA, PhD, Director of the Scott Polar Research Institute, University of Cambridge, with Deputy Project Director Heather Lane, MA, DipLIS, MCLIP, Librarian & Acting Keeper of Collections, overseeing the project during any absence of the Project Director and providing routine supervision of the Project Manager.

The Project Manager is a qualified Archivist, who co-ordinates and oversees all activities and manages associated staff. She leads on the development of the project metadata schema, establishment of project workflows and oversees Quality Assurance procedures. She is also responsible for the project plan and other reports required by the JISC.

A Research Curator assisted the Project Manager and the Deputy Project Director, during the first three months to define the research agenda and undertake detailed collection level description. His remit included image selection and contextualisation, preparatory to the work of the Documentation Assistant, who is responsible for the creation of image metadata and indices for the items captured and for the creation of administrative metadata. A Digitisation Assistant is responsible for image assessment and capture, using scanners and cameras, and is required to provide research reports into the conservation of the collection and technical metadata, as well as maintaining a record of procedural and technical developments for further dissemination. This post is full time, but duties are shared with the Post Processing Assistant, who is responsible for all post processing work carried out on the images captured. This job-sharing arrangement enables the scanner to be in constant use from 8:00am to 5:30 pm daily throughout the lifetime of the project, as breaks and vacations are staggered.

An Education Officer was appointed at the start of the second year of the programme and is responsible for the development of educational content packages and for liaison with CARET on the development of web delivery, using a combination of WordPress and the database to provide visual and written content. There is also close cooperation with the Museum's Schools Liaison Officer, to ensure that content can be repurposed for education and outreach within the Museum. A part-time Clerical Officer is responsible for the administration of technical and administrative metadata and for record-keeping.

Consultancy is available from a number of other organizations without charge or at minimal cost to the project. DSpace@Cambridge, the university's digital repository, hosts all the image and related metadata files and has developed a project-specific SOAP interface for ease of transfer and retrieval. DSpace@Cambridge operates on an open source platform and is OAI-PMH compliant. It provides a means to preserve and distribute data into the long term and will allow additions to the digital collection, storing all metadata and both raw and processed master files (as uncompressed TIFFs), and a low-resolution JPEG provided to the web site. Photography and digital imaging is overseen by the CU Photography and Illustration Service, with additional advice from the University Library's Photographic Department. Conservation advice is sought from Museum Conservation Services Ltd., based at the Imperial War Museum, Duxford, with whom the Institute has a long standing partnership. Web design and maintenance is provided jointly by the CU Department of Geography and by representatives from CARET, who also assist with technical metadata standards, usability testing and user feedback.

## **Decisions and impacts**

The process of decision making by SPRI's Library and Archive staff and members of the project team can be divided into a number of key areas. First, the decision to pursue funding for the project had to be taken in the knowledge that this would add a minimum of four additional full time staff posts to an existing team of eleven, and that it would require considerable time and effort on the part of the permanent staff to ensure adequate levels of planning, supervision and training. Establishing the precise number of images in each format (daguerreotype, glass plate, lantern slide, modern cellulose nitrate and acetate) to be digitised and producing conservation reports on materials has led to improved management of the physical collection and a refinement of detail in recorded locations and preservation metadata.

Making the collections accessible electronically in the longer term to reduce some of the current burdens on staff time was viewed as a positive potential outcome. The project also represented an opportunity for all department heads to become much more familiar with the contents of each of the separate collections, library, archival, museum and image, which would be represented in digital form as context for the photographs. This recognition of the conceptual relationships between areas of the overall collection has been one of the major, if unlooked for, benefits of the project. It is likely that this will lead, in turn, to a better understanding of the Institute's content management requirements within the heritage collections.

Secondly, the team understood the importance of maintaining the motivation to evaluate and select appropriate manuscripts and published materials over a two year period. Ratification of these decisions by the Steering Group was seen as providing a significant counterbalance to internal interests, by providing information on the wider academic and cultural context in which these images might find eventual use. It is also vital to convey all this information to the Education Officer as clearly and concisely as possible and to be prepared to provide feedback on the contextual materials produced. The

project has delivered significant value in helping to build a more cohesive and strategically-focused team at senior management level and below.

Thirdly, a great deal of emphasis was placed on assessment of the project's potential audiences. Existing expertise within the Museum's staff on audience evaluation and the development of generic learning outcomes was recognized and has also been of benefit to project members. This, in turn, has stimulated enhancements in data gathering and performance measurement for each of the departments. Based on a more scientific approach to analyzing existing user groups for each collection, the team was able to refine its requirements for contextual material and to decide to focus upon users within UK Higher Education Institutions as a primary target. This does not preclude use of the web resources by other groups and there has already been interest from schools at primary and secondary level, for whom the Museum is already developing additional learning resources using information on expeditions and individuals which is provided by the project. This also influenced the decision to make the images freely available in low-resolution to academic audiences, with links to the Picture Library's web site generating sales of high resolution images for publication or advertising.

Fourthly, the requirement by the funding agency JISC to provide evidence of an exit strategy and sustainability was quickly followed by the realization that additional funding will be required to convert the project into a continuing resource. Financial projections for the impact of an online image base for the Institute's existing commercial Picture Library show a sufficient increase in turnover to provide at least one additional staff salary to support the project. In the last three months of the project means of attracting new funding will be considered, using project deliverables to demonstrate the value added to the collection for teaching, learning and research. At the institutional level, local assets to extend and maintain the project will be developed, based upon the enhanced expertise of the permanent staff involved. The overall strategy will be to shift from a project basis to process basis, following a subject portal model for polar studies. In addition, the Project Manager will be required to ensure that the website is sufficiently functional to attract and retain a user base, that it can be updated dynamically as material is added to DSpace and that links are made with other on-line museums with related aims and other appropriate networks of digital resources.

One final impact should be included. The development of expertise in copyright and intellectual property matters amongst staff has proved to be a major legacy of the project. Initial decisions on selection of material wholly owned by the Institute have given way to broader considerations of the value of providing relevant contextual materials, particularly from archival sources, where IP ownership and provenance may not be clear

## **Conclusions**

Even at this pre-launch stage, it is evident that the project will deliver:

- New digitization of the photographic negatives and significant related manuscripts and other materials held by the Institute
- Aggregation of existing digital image collections

- Creation of new standards-based metadata records
- Enhancement and standardization of existing metadata records
- Creation of a supporting suite of learning and teaching materials
- Delivery of the above via a sustainable Open Source system
- Engagement with partners outside Cambridge, e.g. Higher Education Academy Subject Centres

Assessment of learning outcomes and integration of research and evaluation as part of the development and continuation of the project have been critical to ensure that the project provides value for money, meets its objectives and has an appropriate exit strategy.

The Institute is committed to making its entire photographic holdings available online, with the collections' database and image resources applicable for independent use in life-long learning. Phase II of this project now forms part of the Picture Library's Forward Plan and will involve digitization of other parts of the photographic collection, as funding becomes available, generated in part by sales of publication quality images. Use of DSpace ensures the sustainability of the archived resources into the medium to long term and provides a platform for global enhancements within the system as new technologies are developed. The resources delivered by the project, including metadata, will be freely available to the UK and international education community, including life-long learners, for a minimum of ten years.

## **References**

- Lewis-Jones, H.W.G. 2007. Freeze Frame: historic polar images. *Polar Record* 43(4), October 2007: 366-368 doi: 10.1017/S0032247407006924.  
Published online by Cambridge University Press, 5 Sep 2007.
- Joint Information Systems Committee. 2007. The JISC Digitization Programme: five centuries of unique resources for learning, teaching & research. [http://www.jisc.ac.uk/media/documents/programmes/digitisation/digitisation\\_brochure\\_v2\\_final.doc](http://www.jisc.ac.uk/media/documents/programmes/digitisation/digitisation_brochure_v2_final.doc)
- Joint RLG and NPO Preservation Conference Guidance for Selecting Materials for Digitisation  
<http://digitalarchive.oclc.org/da/ViewObjectMain.jsp?sessionId=84ae0c5f82402c8802c91afe44beafed9cff919e2583?fileid=0000070504:000006277803&reqid=7>

## **Further resources**

- Archives Hub <http://www.archiveshub.ac.uk>  
DSpace@Cambridge <http://www.dspace.cam.ac.uk/>  
Centre for Applied Research in Educational Technologies (CARET)  
<http://www.caret.cam.ac.uk/>  
Technical Advisory Service for Images (TASI) <http://www.tasi.ac.uk/>

**Plenary Session 4**  
***University of the Arctic and the  
International Polar Year***

**Convenor: Elena Sparrow**  
**University of the Arctic IPY Secretariat**

**International Polar Year and its Legacy**  
Dave Carlson, Head of IPY International Office

**IPY, some highlights in Canada**  
David Hik, Executive Director of the Canadian  
IPY Coordination Office,  
University of Alberta

**UArctic and IPY: Education and Outreach**  
Elena Sparrow, Director of the UArctic IPY Coordination Office,  
University of Alaska

**UArctic on the Map: the UArctic Atlas**  
Scott Forrest, Project Manager, UArctic International Secretariat



**Plenary Session 5**  
***International Polar Year and Information***

**Convenor: Julia H. Triplehorn**  
**Keith B. Mather Library, Geophysical Institute**



## ***The International Polar Year Publications Database: A Progress Report***

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**Abstract:** Since the last Polar Libraries Colloquy the International Polar Year Publications Database (IPYPD) consortium has welcomed a fifth member, has created the IPYPD database and a website for searching it, and has added more than 600 records describing IPY publications. The purpose of the IPYPD is to identify and index all publications that result from the International Polar Year (IPY) 2007-2008 and the three previous IPYs. The original members of the IPYPD consortium are the Arctic Science and Technology Information System (ASTIS), the Cold Regions Bibliography Project (CRBP), the Scott Polar Research Institute (SPRI) Library and National Information Services Corporation (NISC). In early 2007 the Discovery and Access of Historic Literature of the IPYs (DAHLI) project joined the IPYPD consortium to provide coverage of publications from the three previous IPYs. Beginning in September 2006, programmers at NISC used ideas and feedback from the other members of the consortium to create the IPYPD database and website. At the same time, the members of the consortium began creating IPYPD records, and the database was made public on March 1, 2007, the first day of IPY 2007-2008. Funding is still

an issue for one of the consortium members, and more work must be done to encourage researchers to report their publications.

## **Introduction**

The International Polar Year (IPY) 2007-2008 is an intensive burst of interdisciplinary internationally coordinated observations and scientific research focused on the Earth's polar regions. The IPY observational period extends from March 1, 2007, to March 1, 2009, to allow researchers to conduct two annual observing cycles in each polar region. The data being gathered during this observational period will be used to conduct research and publish results for many years following the IPY.

It is difficult to estimate how many publications will result from the IPY. The most recent similar research program was the 1957-58 International Geophysical Year (IGY). The final IGY bibliography (Beynon 1970) contained almost 6000 references and was completed twelve years after the end of the IGY. It is probably reasonable to assume that the IPY will result in at least 20,000 publications.

A bibliographic database of the publications that result from the IPY will be of great benefit to IPY researchers, to the managers of IPY programs, and to those working on IPY education, outreach and communication 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 and grey literature are often not cited in any database. Without an IPY bibliographic database, obtaining an inter-disciplinary view of IPY 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 the IPY database itself is no longer used.

## **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 publications resulting from, or about, IPY 2007-2008 and the three previous IPYs. The Cold Regions Bibliography Project (CRBP) at the American Geological 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 database. National Information Services Corporation (NISC) combines 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, which is led by the National Snow and Ice Data Center at the University of Colorado. The IPY 2007-2008 Joint Committee endorsed the proposal in August 2005. During 2006 the members of the consortium began creating new records for IPY publications, as well as identifying existing IPY publication records in their databases. Beginning in September 2006, programmers at NISC 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 at the National Snow and Ice Data Center, University of Colorado, joined the IPYPD consortium to provide coverage of publications from the three previous IPYs (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. Publications containing the research results of IPY 2007-2008 will not be available in large numbers until 2009. Coverage of the publications of the three previous IPYs is being developed during 2007 and 2008. As of April 2008, the database described 677 publications.

## **Aspects of the Database Design**

As described at the previous Polar Libraries Colloquy (Goodwin, et al, 2007), the IPYPD makes use of the existing system for indexing polar literature and aggregating the resulting bibliographic records. 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 living things 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. NISC includes all records from the three organizations in the Arctic & Antarctic Regions database as usual, but then copies the tagged IPY records to create the separate IPY Publications Database.

Publications from the three previous IPYs are identified, indexed and digitized by the DAHLI project, supplemented by some retrospective indexing work by the other three indexing organizations. Records from the three previous IPYs 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 IPYs by using the "IPY" menu.

Using NISC's BiblioLine software and the existing infrastructure for the Arctic & Antarctic Regions (AAR) database allowed the IPYPD consortium to create its database at a very low cost. The disadvantages of this method were that the IPYPD, like AAR, is updated only quarterly, and that the design of the IPYPD web pages was constrained by the table-driven nature of BiblioLine, which must look and work the same across many different databases.

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 IPYs were also already available online, and others are being digitized by the DAHLI 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 describing IPY 2007-2008 activities are being created by IPY projects, but it was decided to also include in the IPYPD those publications about IPY 2007-2008 activities that are being 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 Contributing Records page of the IPYPD website describes how other polar libraries and databases can contribute to the IPYPD by using special subject terms to tag records, and by contributing those records to NISC's Arctic & Antarctic Regions database. Because of NISC's automatic duplicate detection there is no problem if more than one contributor reports the same IPY publication. Libraries and databases that don't contribute directly to NISC can report publications from IPY 2007-2008 to ASTIS, CRBP or SPRI as described on the Reporting Your Publications page, and can report publications from the three previous IPYs to DAHLI.

One of the objectives of the IPYPD project was to index a publication once and then to use the resulting bibliographic record in many ways. The IPYPD database will describe all, and only, IPY publications. All IPYPD records will also be available in the Arctic & Antarctic Regions database, which is widely used by polar research organizations. 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 below. Users of all of these databases will learn of IPY publications that are relevant to their needs, even if they are unaware of the IPYs. The IPYPD will leave a legacy of records in many databases describing IPY publications, thus ensuring that the results of the IPYs are always available and accessible.

## **Potential Problems**

### **Funding**

Fundraising for the IPYPD has, for the most part, been very successful. The Acknowledgments section below lists the seven organizations that have provided funding so far.

As of early May, 2008, the DAHLI project is still waiting for a decision from the National Science Foundation about a major part of its funding. Without that funding it will be difficult for the IPYPD to provide comprehensive coverage of the publications from the three previous IPYs. Despite that problem, NOAA's Climate Data Modernization Program (CDMP) continues to fund DAHLI digitization activities. This year materials in the Carnegie Institute's holdings will be digitized in addition to materials at the University of Colorado library.

### **Identifying Publications**

The *International Polar Year 2007-2008 Data Policy* and the *IPY 2007-2008 Scholarly Publications Policy* both require that all IPY 2007-2008 publications be reported to the IPYPD. When the consortium members began work on the IPYPD in 2005 we naively assumed that this requirement would make it relatively easy to identify IPY publications. Discussions with IPY researchers during the past year have shown us that while researchers are very attentive to the wishes of the national organizations that fund their research, they are much less attentive to the wishes of the international IPY Joint Committee, which provides no funding. We suspect that many IPY researchers will never even visit the international IPY website, let alone read the policy documents that are available there.

This is not a problem in the case of researchers funded by national programs established specifically to provide funding for IPY projects, since such programs will usually enforce the reporting requirements on the projects that they fund. For example, the Government of Canada Program for IPY has its own *Canadian IPY 2007-2008 Data Policy* which requires the reporting of publications to the IPYPD. However, many countries don't have specific programs for IPY funding, and, even in those countries that do, IPY projects can obtain their funding from any source. For example, Canadian researchers are participating in more than 150 IPY projects, but only 44 of those projects receive funding from the Government of Canada Program for IPY.

We are therefore no longer expecting that a high proportion of IPY publications will come to us automatically. We will have to use all of the tricks familiar to librarians and bibliographers in order to identify IPY publications.

### **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 will describe all publications from Canadian IPY projects, as well as publications from foreign IPY projects that have studied northern Canada. As of early May, 2008, this database describes 430 publications, of which 172 are from IPY 2007-2008 and the remainder are from the previous IPYs. A unique feature of this database is that in addition to tagging records by IPY, we are also tagging them by individual research project. A giant menu currently lists approximately 100 projects, subprojects and expeditions, with many more remaining to be added.

ASTIS also uses Canadian IPY records in its many subset databases, all of them accessible from [http://arctic.ucalgary.ca/index.php?page=astis\\_database](http://arctic.ucalgary.ca/index.php?page=astis_database). 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 Kluane Lake Research Station Bibliography, etc.

### **Cold Regions Bibliography Project (CRBP)**

The Cold Regions Bibliography Project (CRBP), produced by the American Geological Institute, supplies an online list of current IPY publications at <http://www.coldregions.org/ipypubs.htm> which are contained in either the Bibliography on Cold Regions Science and Technology or the Antarctic Bibliography. The CRBP is attempting to document IPY publications in the areas of physical science and engineering for the Arctic region and in all sciences for Antarctica. The list is arranged alphabetically by author surname and currently contains 76 references. These references are primarily to publications about research planning for the IPY. As scientific research results will appear slowly, large numbers of publications are not expected to appear in the list until 2009 or later.

The American Geological Institute (AGI) also maintains the Arctic Bibliography, a collection of more than 114,000 references spanning the time periods of the earlier IPYs. As time permits AGI is identifying and tagging records within the Arctic Bibliography that are contributions to the earlier IPYs. After they are tagged, these references will become available in the IPYPD.

### **Scott Polar Research Institute (SPRI) Library**

SPRI attempts to record publications primarily 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). However, due to its broad remit, SPRI's collecting policy overlaps to a considerable extent with those of the other project participants.

It is aided in collecting IPY records by the regular deposit of material from the International Programme Office of the IPY, also based in Cambridge. The IPO has been instrumental in ensuring the collection of much ephemeral material which might otherwise go unrecorded. SPRI's IPY records 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.

#### *Discovery and Access of Historic Literature of the IPYs (DAHLI)*

DAHLI's records currently appear on the DAHLI Bibliography page at <http://nsidc.org/dahli/bibliography.html>.

## **Conclusion**

The IPYPD has been very successful so far, but the work of identifying and indexing IPY publications has barely begun. We look forward to reporting on our problems and successes at future Polar Libraries Colloquies.

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. Colloquy members that provide records to NISC for AAR could also consider tagging their current and historic IPY/IGY publication records when submitting future updates.

## **Acknowledgments**

The Cold Regions Bibliography Project's work on the IPYPD is supported by the U.S. National Science Foundation and the U.S. Army Cold Regions Research and Engineering Laboratory under NSF Grant No. OPP-0440772. Work by the Arctic Science and Technology Information System (ASTIS) on the IPYPD has been made possible by the generous support of the Government of Canada Program for International Polar Year and EnCana Corporation. The Royal Society supports the work of the World Data Centre for Glaciology at the Scott Polar Research Institute in its contribution to the IPYPD. SPRI is also supported by the Directorate of Naval Surveying, Oceanography & Meteorology. The Discovery and Access of Historic Literature of the IPYs (DAHLI) project would like to thank the NOAA Climate Data Modernization Program for digitization funding.

We would also like to thank David Carlson and Rhian Salmon of the IPY International Programme Office, and Mark Parsons of the IPY Data and Information Service, for their advice and for their help in publicizing the IPYPD.

Each of the IPYPD consortium members would also like to thank the many organizations and people, too numerous to mention individually, that have assisted their work on the IPYPD.

## **References**

- Beynon, W.J.G. 1970. Bibliography and index. *Annals of the International Geophysical Year*, volume XLVIII. Oxford : Pergamon Press.
- Goodwin, R., S.N. Tahirkheli, H. Lane and F. Durr. 2007. The International Polar Year Publications Database. In: *Building polar networks: A strategy for the future*. Proceedings of the 21st Polar Libraries Colloquy, May 8-12, 2006 - Rome, Italy, Edited by S. Sarti and M. Cecconi. - Rome : PNRA S.C.r.l., p. 90-102.

***The Coolest Panel Session—IPY***

**Chair: Julia H. Triplehorn**

**Panellists:**

**Susan Olmsted - IPY at NSF**

**Anna Fiolek- IPY at NOAA**

**Berit Jakobsen - IPY in Norway**

**Marianne Douglas - IPY in Antarctica**

**Abstract:** Highlights of the International Polar Year activities from a variety of perspectives will be the focus for this session. Specialized websites will be reviewed with attention to science and social science research and outreach. Since this is the first IPY to include social science and outreach it is important that the library community be alert to these information sources. This is an opportunity for these agencies to showcase their activities

***International Polar Year 2007–2008  
Resources on Polar Research in the NOAA Central  
Library Network***

**A. Fiolek**

**NOAA Central Library, National Oceanographic Data Center,  
National Environmental Satellite, Data, and Information  
Service**

**SSMC3, 2ND Floor, 1315 East-West Highway  
Silver Spring, MD 20910 USA**

**Abstract:** The NOAA Library Network collections are unique: over 40% of the items in NOAALINC (the online catalog) and in WorldCat (the world's largest bibliographic database) are not found anywhere else. The Central Library also has the original collections of the U.S. Weather Bureau and the Coast and Geodetic Survey—approximately 110,000 items which include documents related to the three preceding International Polar Years and related expeditions. Unique polar research materials contain historic and current reports from various polar expeditions, including the Arctic and Antarctic regions. The presence of these unique and historical resources in NOAA prompted the Library to participate in 4th International Polar Year (IPY) 2007-2008 activities. In addition, unique and historically valuable NOAA polar research documents and scientific data, in the forms of digital videos, still images, and datasets, have also been entered into NOAALINC, the National Oceanographic Data Center (NODC) Ocean Archive System (OAC), and other oceanographic information catalogs and databases. These additional resources are possible thanks to the Library's collaboration with other NOAA projects and programs, such as the Video Data Management System (VDMS), Climate Data Modernization Program (CDMP), and NODC Cruise Report Program. Over one hundred fifty unique and historically valuable publications were selected, cataloged, imaged and entered into NOAALINC with online links to assure open access to these fulltext documents. A comprehensive printed and online bibliography was created to provide additional resources to the polar material. The online bibliography also serves as an Internet locator for printed and related sources for polar research. It is available via the NOAA Central Library's Bibliographies' home page at: <http://docs.lib.noaa.gov/rescue/Bibliographies/IPY2007.pdf> During the 4th International Polar Years 2007-2008, the NOAA Library Network collections are authoritative resources for polar data and research.

## **INTRODUCTION**

The International Polar Year is a cooperative effort "to fully investigate every possible aspect of the Polar Regions - the seas, the land and the ice; the life and peoples who are at home at the Poles, and even the view of the universe from the 'ends of the Earth'." [1] The 4th International Polar Year is an opportunity to

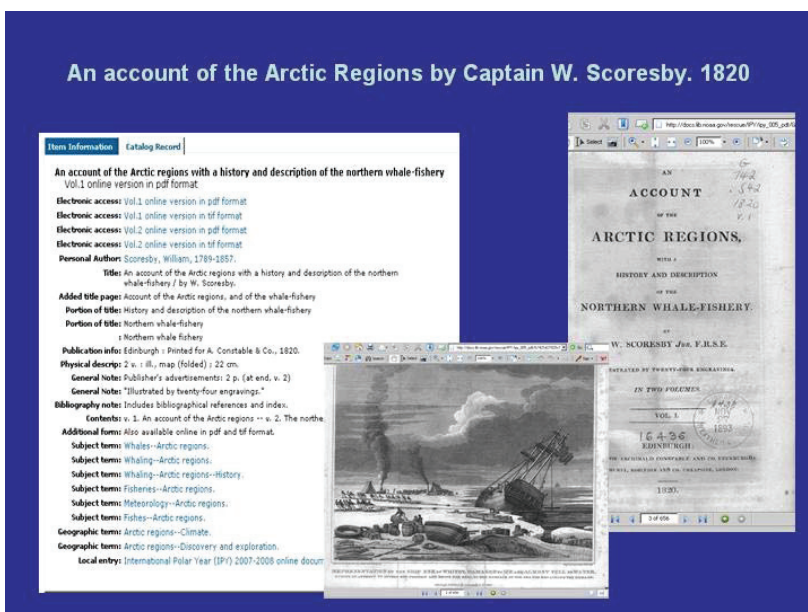
increase public awareness of research into weather and climate conditions at the poles, including incremental temperature and ice thickness changes, and other phenomena. To better understand the historical patterns of climate change, early oceanographic and atmospheric observations and data are significant to this research. NOAA's national data centers and their libraries are primary scientific resources in the search for the answers to global climatic anomalies. The NOAA Central Library and Information Network maintains collections of over 3 million volumes in all formats from 30 NOAA libraries nationwide. Collections include books, technical reports, maps, scientific observations, photographs, professional journals, digital videos, images, and artifacts. Many are in electronic format and widely available to NOAA scientists and to the general public via NOAALINC, online catalog <http://www.lib.noaa.gov/uhtbin/webcat>. The online catalog contains links to over 45,000 full-text documents and other web resources. These include historical documents containing observations in climate, oceanography, fisheries, and early surveys of the coasts of United States. Over 40% of the NOAA libraries' collections are unique. These include historical data from early polar expeditions, and polar cruises sponsored during the first three International Polar Years. The NOAA Central Library considers participation in the 4th International Polar Year activities as an unique opportunity to support the NOAA scientists and the research community in their projects during IPY 2007-2008. The events of the 4th IPY provided a great chance to better assess, catalog, preserve, archive and provide online access to historical documents concerned with polar regions. An objective of this project was to make rare and unique historical material available in full-text on Web. NOAA's historical collections are in all formats: books, government reports, expedition reports, videos, photographs and other forms of documentation concerning explorers, scientists and organizations prominent in the advancement of knowledge about polar regions.

## **HISTORICAL POLAR DOCUMENTS**

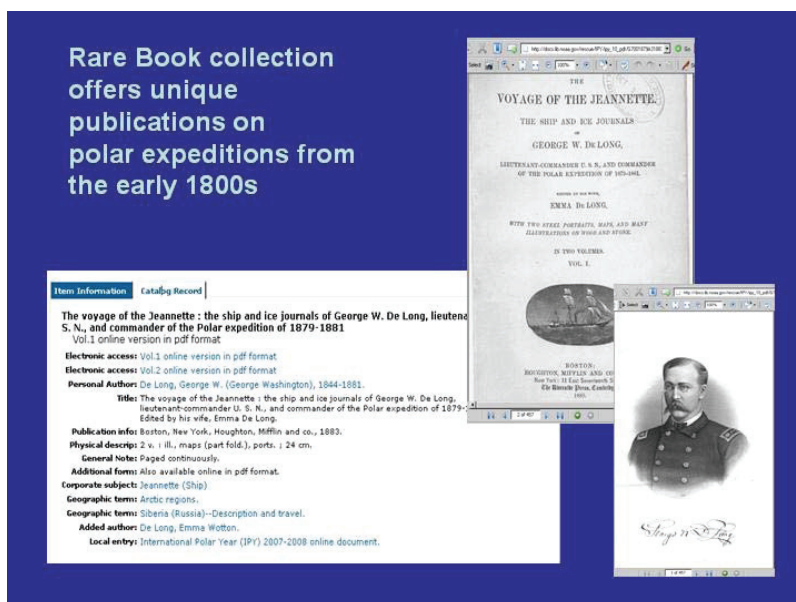
Located in Silver Spring, Maryland, the NOAA Central Library (NCL) networks over thirty NOAA libraries nationwide. NCL is considered the historically richest and most comprehensive multidisciplinary scientific collection in hydrographic surveying, oceanography, ocean engineering, atmospheric sciences (climatology and meteorology), meteorological satellite applications, living marine resources, geophysics, cartography, and mathematics in the Western Hemisphere. It incorporates holdings of NOAA's predecessor agencies, including the Coast and Geodetic Survey, the Weather Bureau, and the Bureau of Fisheries. The collections reflect the history of these organizations, their scientific research, observations and data from 1820 to the present. NOAA Central Library is also recognized as an important resource on history of polar discoveries and polar research. These historical publications include reports from early Arctic and Antarctic expeditions from the European countries, Australia, Canada, and the United States. Its Rare Books Collection offers unique accounts of early polar explorations from 1700s though 1950s when 3rd IPY activities concluded. Significant examples are:

1. *An Account of the Arctic Regions with a History and Description of the Northern Whale-Fishery.* W. Scoresby. 1820 (see Fig.1).
2. *Narrative of a Second Voyage in Search of a North-West Passage: and of a Residence in the Arctic Regions During the years 1829, 1830, 1831, 1832, 1833.*
3. *Arctic Explorations: the Second Grinnell Expedition in Search of Sir John Franklin, 1853, '54, '55.*
4. *The Open Polar Sea: a Narrative of a Voyage of Discovery Towards the North Pole, in the Schooner "United States."* 1867.
5. *Report of the Cruise of the U.S. Revenue-Steamer Corwin in the Arctic Ocean.* 1881.
6. *Instructions for the Commanding Officers of the International Polar Stations Occupied by the Signal Service.* 1881.
7. *International Polar Expedition to Point Barrow, Alaska.* 1881.
8. *The Voyage of the Jeannette: the Ship and Ice Journals of George W. De Long, Lieutenant- Commander U. S. N., and Commander of the Polar Expedition of 1879-1881.* (see Fig.2).
9. *Die meteorologischen Beobachtungen und die Analyse des Schiffcurses während der Polarexpedition unter Weyprecht und Payer, 1872-1874.*
10. *Narrative of the North Polar Expedition: U.S. Ship Polaris, Captain Charles Francis Hall commanding.* 1876.

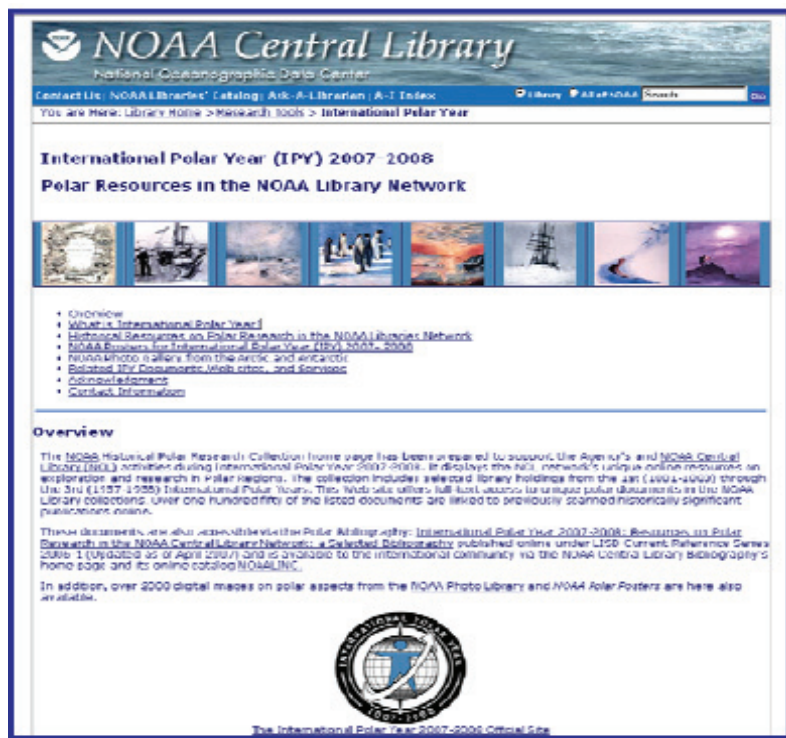
The following figures are examples of the one hundred fifty polar-related documents that have been imaged and are available in full-text online via NOAALINC at <http://www.lib.noaa.gov/uhtbin/webcat> and the library's IPY web site. The *International Polar Year (IPY) 2007-2008: Polar Resources in the NOAA Library Network* Web site (see Fig. 3) supports the Agency's and NOAA Central Library (NCL) activities during International Polar Year 2007-2008. It displays a selection of exclusive online resources on exploration and research in Polar Regions. The collection includes library holdings from the 1st (1881-1883) through the 3rd (1957-1958) International Polar Years. The selected documents are available online full-text at: <http://www.lib.noaa.gov/collections/ipy.html>



**Figure 1.** An Account of the Arctic Regions with a History and Description of the Northern Whale-Fishery, W. Scoresby. 1820. Book in full-text available via NOAALINC



**Figure 2.** The Voyage of the Jeannette: the Ship and Ice Journals of George W. De Long, Polar Expedition of 1879-188. Book in full-text available via NOAALINC



**Figure 3.** Polar Resources home page developed in the NOAA Central Library for IPY 2007-2008 (<http://www.lib.noaa.gov/collections/ipy.html>)

## PRINTED AND POLAR ONLINE PUBLICATIONS

To provide additional access to NOAA's polar resources beyond NOAALINC and WorldCat, a bibliography was compiled, entitled: *International Polar Year (IPY) 2007-2008: Historical Documents on Polar Research in the NOAA Library Information Network*. It reflects the NCL network's unique print and online resources on this subject. This bibliography includes over 2000 citations and is organized by title. The data and listings are comprehensive from the 18th century to the present. The formats represented include print, CD-ROM, online full-text documents, digital videos, digital images, online cruise data and Web resources.

The bibliography is organized into four sections: I. What is the International Polar Year? II. Historical Resources on Polar Research in the NOAA Central Library Special Collections. III. Current Resources on Polar Research in the NOAA Central Library Network. IV. Internet Resources on Polar Research.

This publication was updated on April 2007 and is available online at NOAA's home page <http://docs.lib.noaa.gov/rescue/Bibliographies/IPY2007.pdf>

## RESOURCES FOR CURRENT POLAR OBSERVATIONS AND CRUISE REPORTS

In addition to historical polar documents, the National Oceanographic Data Center (NODC) and the NOAA Central Library provide access to contemporary oceanographic observations, cruise information, and digital video data. These cruise reports, digital videos, and scientific data sets are also available online via the NODC Ocean Archives System (OAS) at: <http://www.nodc.noaa.gov/search/prod/>, and also via NOAAINC, library online catalog at: <http://www.lib.noaa.gov/uhtbin/webcat>.

Fig. 5 is an example of NOAAINC metadata information on a cruise to the Antarctic Ocean in 1969 and 1970 (*Eltanin reports. Cruises 37-39, 1969. 42-46, 1970 : hydrographic stations, bottom photographs, current measurements, nephelometer profiles*). A hot link from the library record in MARC21 standards provides direct access to the raw observations from the same cruise via NODC OAS database displayed in Fig. 6.

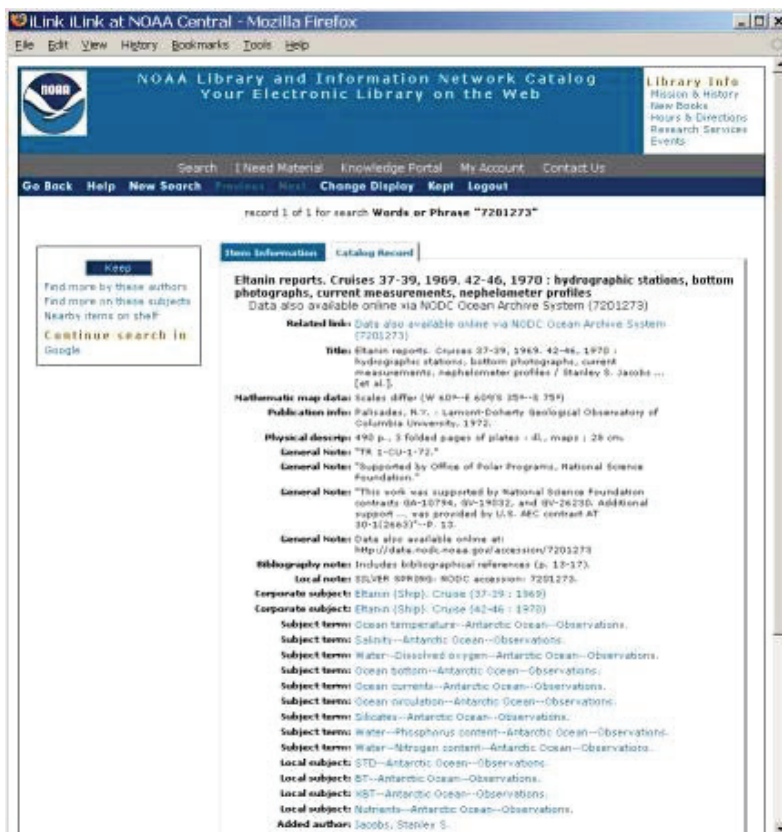
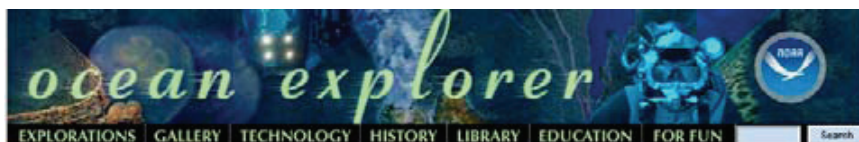
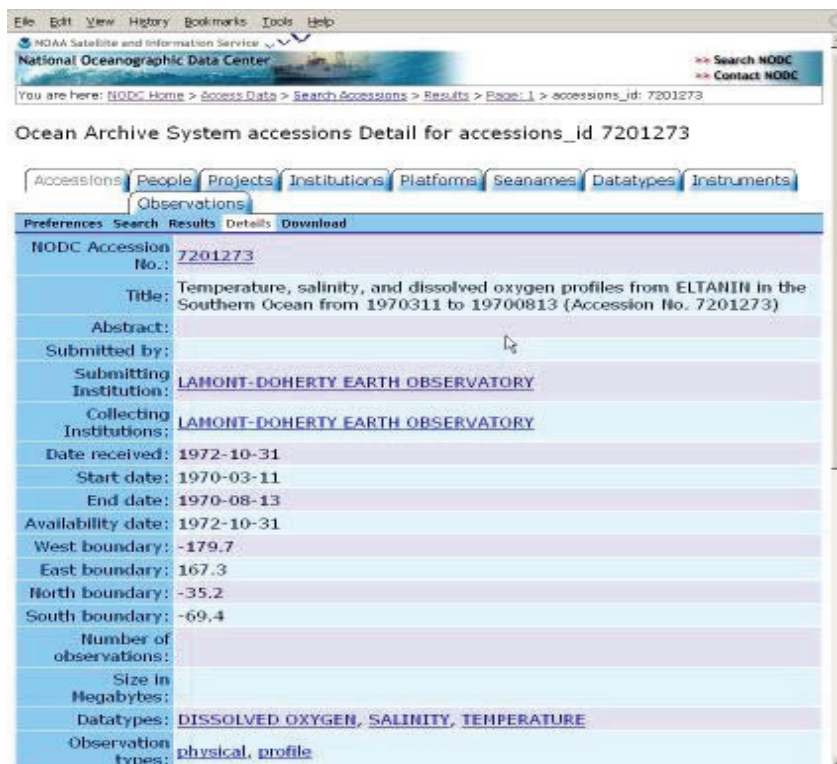


Figure 5. The NOAAINC's metadata provides access to the polar cruise report and to the NODC OAS database,

NODC provides long term archival storage, management and stewardship of digital oceanographic data and metadata. Each new collection of data is assigned an NODC accession number as a tracking number for the collection. A copy of cruise reports and related data files from specific Ocean Exploration polar expeditions are placed in the associated NODC accession(s), with a link to the file established in the NOAAALINC. Another NOAA office, the NOAA Office of Ocean Exploration and Research (OER) provides information on various polar expeditions via the NOAA Ocean Explorer portal at <http://oceanexplorer.noaa.gov>. These resources include cruise summaries, digital images, digital video clips, educational lesson plans, and daily logs of cruise activities.



*NOAA OER Web portal provides detailed information on the NOAA signature oceanographic expeditions and projects.*



**Figure 6.** *NODC OAS's Accession record providing access to raw observations from the polar cruise described in NOAAALINC*

## DIGITAL VIDEOS

To address an increasing interest for archiving, preserving and managing digital videos, the Library embarked on a collaboration with the NOAA Office of Ocean Exploration and Research (OER) to organize and assure the public access to the scientific digital video and image data. As a result of this collaboration the Video Data Management System (VDMS) has been developed featuring thousands of digital videos and images from the oceanographic cruises, including those from expeditions to the Arctic and the Antarctic. They have been preserved, archived, and their highlights offered online. (see Fig. 7.)

The VDMS team works closely with NOAA OE project scientists, oceanographers and IT specialists to develop and implement the data management requirements and strategies. This project also provides an ongoing opportunity to improve the quality and completeness of metadata information used in the NOAALINC catalog and NODC Ocean Archive System and to provide online access to NOAA ocean exploration video and related data to a global customer base.



**Figure 7.** NOAALINC provides access to hundreds of digital video clips Under the Arctic Ice captured during the NOAA OER Hidden Ocean 2005 Expedition.)

## DIGITAL PHOTOGRAPHS

The Library's IPY home page, via the NOAA Photo Library, offers over 2000 digital images pertaining to the polar themes in both low and high resolutions that are available online for viewing and/or downloading. Most of the polar photos are included in two photo albums entitled *NOAA at the ends of the Earth* and *NOAA's Ark* at: <http://www.photolib.noaa.gov/>. The pictures were taken by NOAA scientists during their various field projects, oceanographic cruises, and assignments in the Arctic, Antarctic and other distant Polar Regions. The albums are part of the NOAA Photo Library, an online collection of over 35,000 photographs organized, digitized and annotated by the NOAA Central Library staff. Polar images are also available via the NOAA Central Library's IPY home page at: [www.lib.noaa.gov/collections/polar/ipy.html](http://www.lib.noaa.gov/collections/polar/ipy.html)

## POLAR POSTER

Library staff also developed a *Polar Poster* as a visual display of the library activities for IPY. It is available in PDF, JPEG, and TIFF formats for downloading from the library's IPY home page at:

<http://www.lib.noaa.gov/docs/bibliographies.html> (see Fig. 4)



**Figure 4.** Polar Poster developed in the NOAA Central Library for International Polar Year 2007-2008  
(<http://www.lib.noaa.gov/docs/bibliographies.html>)

## CONCLUSION

The NOAA Central Library's IPY project and products are excellent examples of how NOAA's scientific data in both physical and online formats are archived and preserved to support a specific international initiative. The library and data center staff will continue to collaborate closely with NOAA scientists and educators to improve the quality and completeness of metadata and information used in NOAA LINC and the NODC Ocean Archive System to improve access and use by NOAA's global customer base to support this and other forthcoming international research initiatives. To find more information on NOAA activities during 4<sup>th</sup> International Polar Year, contact the Agency's IPY home page at: <http://www.ipy.noaa.gov/>

## Acknowledgements

The author wishes to thank Dr. Neal Kaske, Acting Director of NOAA Central Library; Doria Grimes, Chief of NOAA Central Library Contract Operations; and Donald W. Collins, Oceanographer of NOAA's National Oceanographic Data Center, for their support, subject expertise, and editorial suggestions. Special thanks go to Diana Abney, Librarian for coordinating the imaging of the selected publications; and to the NOAA Climate Data Modernization Project (CDMP).

## REFERENCES

- [1] *International Polar Year: NOAA Explores the Poles*. 2007. Silver Spring, MD: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, August 2, 2007 < <http://www.ipy.noaa.gov/> >

## **Plenary Session 6**



## ***NAROS: Northern Areas open scholarly documents***

**Bjorn Olav Skancke**

**Universitetsbiblioteket – HS, University of Tromsø**

**Abstract:** The University of Tromsø in Norway is the northernmost university in the world. The University has positioned itself as a pivotal research institution on the northern areas. NAROS is a planned service, providing access to open scholarly documents, where the content is thematically related to the northern areas. The novelty of NAROS will be to define algorithms to extract scholarly material where the criteria is geographically based, and thus become the database that encompasses open scholarly documents related to the northern areas. Other service providers have established databases that harvest (or by other means collect) metadata on open scholarly materials within a subject. One such example is Avano (<http://www.ifremer.fr/avano/>), within the subject of marine and aquatic sciences. The experiences of such service providers will be utilized, while investigating how the geographic dimension of NAROS may be dealt with. A model to be examined for NAROS is: A) Defining repositories and other resources that may be of interest with respect to contributing content to NAROS; B) Divide these resources into two groups: i) Repositories where we may harvest metadata from all content, using AOI-PMH. Examples of repositories in this category may be The Scott Polar Research Institute, Cambridge, UK and Norwegian Polar Institute, Tromsø, Norway; ii) Repositories or resources where we may harvest or by other means collect metadata from part of their content. Examples may be most member institutions of the University of the Arctic (and numerous others). For these repositories we need to define algorithms for filtering and extracting the interesting content.

Several other topics will be investigated in the pilot project, and in some extent elaborated in the Polar Libraries Colloquy poster presentation. Among these are: 1. Is there a need for such a searchable catalogue of geographically oriented scholarly material? Who may be interested?; 2. Limiting the scope: Open scholarly material; Open research data; Open research source materials; Defining what we mean with ‘the northern areas’; 3. Describing criteria for documents to be defined as northern areas-related; 4. Methods for populating NAROS; a. Identifying institutions and projects producing scholarly material within the scope of NAROS; Identifying other sources; b. Identifying methods for collecting metadata on documents qualified for NAROS: Harvesting metadata through OAI-PMH where possible; Other means of collecting metadata from archives and collections not OAI-PMH-compatible; and, 5. How to organize the content of NAROS. A pilot project is run in the winter and spring of 2008, ending July 1, 2008. In the pilot project we investigate the challenges facing the establishing of NAROS.

## **naros** In few words...

- A planned service (pilot project)
  - Providing access to open scholarly documents
  - Thematically related to northern areas
  - A metasearch based on other sources
  - Based on our experience with Munin

**northern areas open scholarly documents**

5.6.2008

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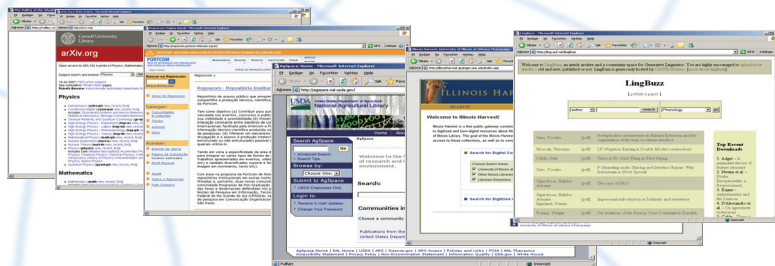
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NAROS is a planned service, providing access to open scholarly documents, where the content is thematically related to the northern areas of the world. Already, the University Library of Tromsø has used MUNIN for some years. MUNIN is the institutional repository for Tromsø University based on open access. The novelty of NAROS will be to define algorithms to extract scholarly materials where the main criteria is geographically based in the first open access repository dealing with cold regions of the north.

Before I go into details about NAROS, I will shortly show you the different types of repositories/archives/databases found on Internet today. Best known are institutional archives, or repositories as we prefer to call them, containing both metadata and full text documents—in most cases from universities. And most of these cover subjects related to the activity of the mother institution. In general terms we call these data providers.

## **naros** Different types of archives

- Subject or thematically based archives



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Then we have subject repositories like LingBuzz containing metadata and full text documents in linguistics. Some subject repositories are a mix of resources (documents, images) stored locally and metadata with links to resources outside such as Illinois Harvest.

# naros Harvester

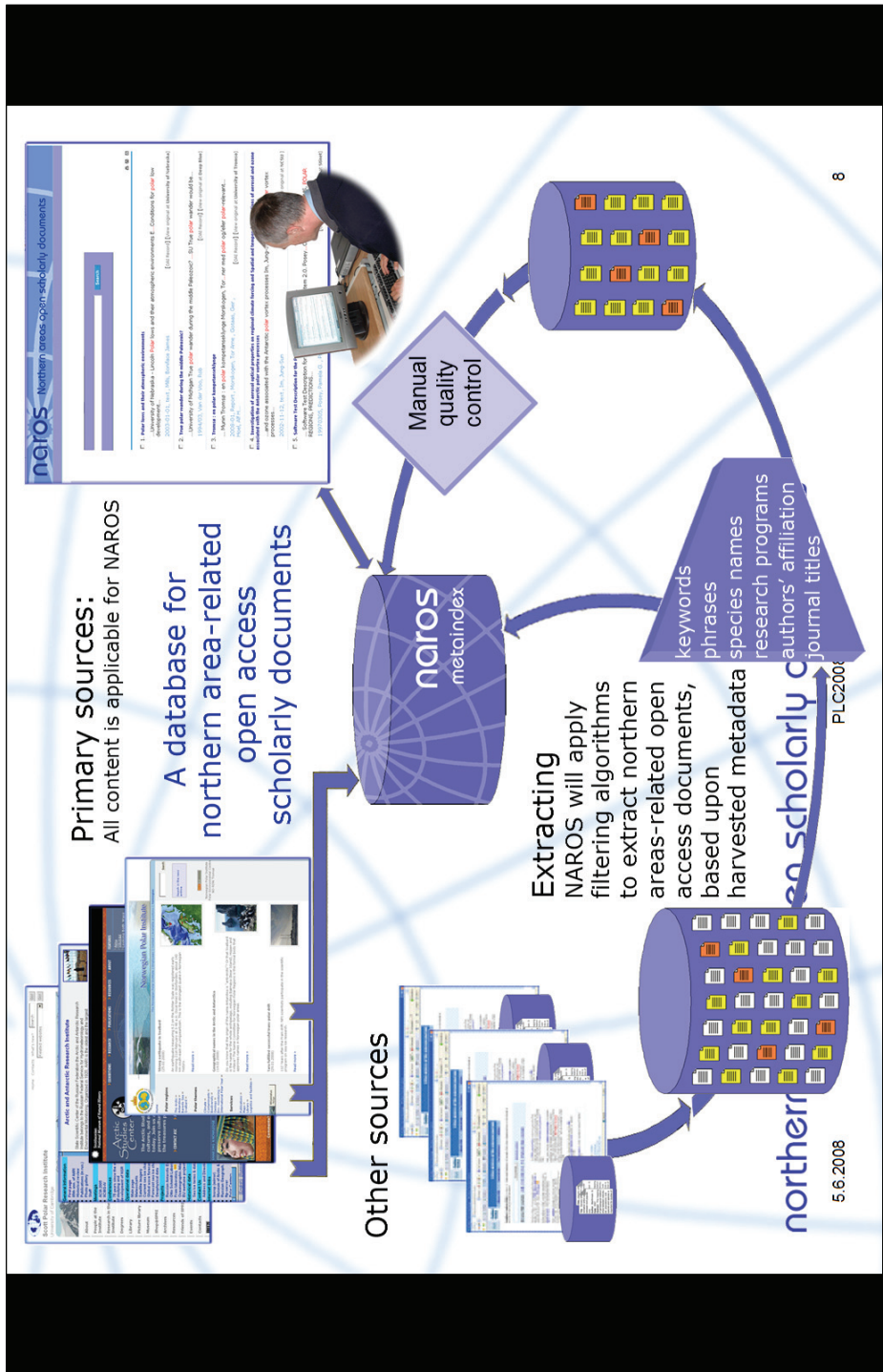
- OAIster

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The last kind of repositories I will say something about is Harvesters. Some years ago we would call them metadata aggregators or metadata-databases. Harvesters are distinguished from ordinary bibliographic databases such as “Arctic and Antarctic Regions” in that all metadata or references are connected to open access documents outside the harvester. In general terms we can call these Harvesters service providers. They harvest metadata from open access repositories with help from the Open Access Initiative—Protocol for Metadata Harvesting. This standard or protocol is based on ordinary web standards like HTTP, XML and Dublin Core. Some service providers such as the French Avano, are subject based (marine and aquatic sciences); others like OAIster is multidisciplinary.

I will now give you an account of the main processes involved in NAROS workflow.



The hardest work here is to find these primary sources. I will say more about this later.

The content of these resources will hopefully go directly into NAROS without manual quality control or use of filters. All other resources must be chosen carefully because all the content must be harvested into a database. Then we have to apply filtering algorithms with help of keywords, phrases, species name, etc. in order to dramatically reduce the number of unwanted and irrelevant records.

In order to stop unwanted records who escaped the filtering process, we have to examine them manually.

## **What we have done so far**

First we did some research to find out if there already is such a thematic harvester out there, with no positive result. Then we examined OpenDOAR—a directory of open access repositories—in order to find repositories of interests for NAROS with mixed results. One we found was [Alaska's Digital Archives from Rasmuson Library, University of Alaska, Fairbanks](#). We also searched a lot in OAIster, the multidisciplinary harvester, in order to find interesting repositories. I would also add that we went through lots of portals and websites of Arctic institutions and organizations. A tough job I must say!

What we learned from this was that the number of repositories we could harvest metadata from all content is limited, but hopefully growing. One example is a sub-collection of DSpace@Cambridge called British Arctic Expedition 1875–1876. Soon The Norwegian Polar Institute will have their own open access repository.

Deciding upon the sources from which we may harvest or collect metadata from only part of their content is a real challenge. For these sources we need to define algorithms which will filter and extract the interesting content, but not retrieve the unwanted records. An example of such a source is our own multidisciplinary institutional repository, Munin.

This part of the pilot project has been time consuming, and with much uncertainty. We knew that even the best constructed filtering mechanisms would let a lot of non-relevant materials pass through. And how to check the extracted subsets without using a lot of human resources?

## **naros** How to

- Defining search algorithms extracting subsets
  - Journal titles: Polish Polar Research
  - Institutions: Scott Polar Research Institute
  - Research programs: AMAP
  - Keywords: arctic ++
  - Species` names: Polar bear
  - People: Inuit
  - Geographical names: Barents Sea

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**The main idea behind the filtering method is that if a record in an open** access repository contain words, phrases, names , etc. related to northern or cold areas, then the chance is quite large that the content also is related. Using the Boolean AND search combining two or more such terms will result in more precise hits, but too many combinations will reduce the number of hits dramatically and we may lose interesting records. When we actually started testing this harvesting method, a lot of adjustments seem to be needed.

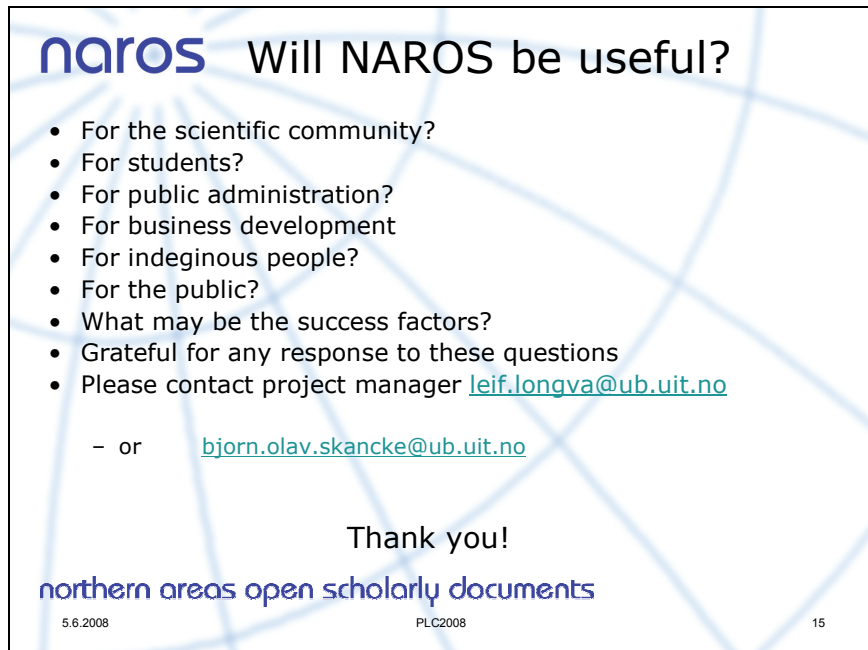
Several other topics are investigated in the pilot project. Among these are:

1. Is there a need for such a database? We think so!
2. Limiting the scope: what kind of data or metadata are we interested in? Scholarly and scientific materials like research papers, research data , dissertations, etc.
3. Defining what we mean with “Northern areas” and describing criteria for documents to be defined as northern areas-related.
4. How to choose programs, keywords and scientific fields, scientific species names, geographical names, names of populations and languages, etc.?

## Organizing content

How to organize the content of NAROS: search possibilities, indexes, layout, browsing facilities, allowing tagging (folksonomy), etc.

This part of the project is regarded as “easier” than the topics mentioned earlier because here we can get ideas from many sources.



**naros** Will NAROS be useful?

- For the scientific community?
- For students?
- For public administration?
- For business development
- For indigenous people?
- For the public?
- What may be the success factors?
- Grateful for any response to these questions
- Please contact project manager [leif.longva@ub.uit.no](mailto:leif.longva@ub.uit.no)

– or [bjorn.olav.skancke@ub.uit.no](mailto:bjorn.olav.skancke@ub.uit.no)

Thank you!

**northern areas open scholarly documents**

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I mentioned earlier the question of *raison d'être* for NAROS. As you will see of my last slide, an interesting question is target groups. If we are realistic, maybe a few of the groups in the list here will be potential users of NAROS. We have stressed the scientific factor, but if we raise the list to high we might lose many users and more work have to be done to tighten the filtering algorithms. Going the other way is a tricky business because increased volume must be followed by more use of human resources for quality control. We really want you to give us your opinion on these subjects! NAROS as pilot project will end this summer – the conclusions in our final project report will tell us about the possibilities of establishing NAROS as more than a pilot project.



## ***Defining 'The North': the Canadian Circumpolar Collection***

**Sandy Campbell,  
Canadian Circumpolar Librarian and Acting Government  
Publications Librarian, University of Alberta**

The Canadian Circumpolar Collection is one of the world's premiere polar libraries. While it is now defined geographically as including both poles, historically it has been 'northern' collection. In selecting materials to be added to the collection, the question of what is 'northern' must be answered on a daily basis.

The Canadian Circumpolar Collection was begun in the 1970s, under the name of the Library of the Boreal Institute for Northern Studies, in response to demand from library users for northern materials. It was originally organized according to the Universal Decimal Classification system (UDC), which strongly supports geographic elements of classification. While now classified according to Library of Congress Classification System, the collection still serves the same function, which is to give the researcher the opportunity to use a classified library collection, wherein all of the content is polar.

The original geographic definition of the collection, collection was described as a northward opening 'V' with its point at Edmonton, reaching approximately to the 60<sup>th</sup> parallel, which conveniently is the southern border of the Northwest Territories above Edmonton, and then a circle encompassing everything above the 60°.

Including the 'V' north of Edmonton reflected both the physical location of the collection and the fact that the people of Edmonton, Alberta consider themselves to be 'northern' people, although many people in the 'far north' would consider Edmonton to be distinctly 'southern.' Edmonton, a city which for many years was styled as 'The Gateway to the North,' sits at 53° 32'. Edmonton is North America's largest city above 53° latitude, though there are more than a dozen large European cities north of this latitude. The phrase 'Gateway to the North' referred to Edmonton's role as the major transportation hub for goods and people reaching the Western Arctic.

Of course northern people, cultural practices, myths and legends, weather, geological formations, wild animals and nature and the concept of 'north' do not obey straight lines, so in practice, the both the 'V' and the line at 60 ° that define the geographical boundaries of the collection are highly elastic.

The Northern indigenous people of Western Canada move back and forth across the 60<sup>th</sup> parallel, so for works about northern people, the line is lower, reaching down to cover much of the forested area. In Ontario, Quebec and Newfoundland and Labrador, the line must come much further south to include forested areas, Inuit populations who live south of 60° and coastal peoples.

Moving west from Canada, the circumpolar line takes in the Ainu people of Japan, whom we consider to be a 'northern' people. As we move west across Asia, the line varies according to the subject matter of the material. We include all reindeer herder cultures and, Lake Baikal, where the University of Alberta has a strong research presence and, of course, anything north of 60°. When we

reach Europe, our definition changes quite radically. We cannot collect everything about the Scandinavian countries, so we look for things which are characterized by their 'northern' quality.

This 'northern' quality is defined as including any characteristics in the work which inform our understanding of the north or are clearly influenced by presence in the north. It is inconsequential to us whether or not the author or subjects of works consider themselves and their work to be somehow northern. So, we look for things which are shaped or defined in some way by their existence in the northern geography.

When we come to apply this concept of 'northernness' in our book selection, there are some things that we can agree are distinctly northern and therefore always have a place in the collection. For example Inuit, polar bears, muskoxen, Arctic foxes, igloos, mukluk, Inuktitut language, tundra, barren land and permafrost are all examples of subjects that are inextricably northern.

So, for example, were we not restricted by space and funds, we would collect every book available about polar bears, no matter where they were. But what about polar bears in the London or Calgary zoos? The environment is not 'north,' but when one looks at a polar bear, one understands that it is a part of the North come south. A work that reports on the study of a zoo bear would inform our understanding of free-roaming polar bears. The same would apply to northern peoples who have moved south or migratory birds and animals that move south. So the geographic boundaries around our collection have tendrils that reach out to capture the 'runaway' parts of the North that have found their way into the south.

Our geographic boundary also does not end in the real world. We would also collect works about imaginary polar bears in imaginary places. [Iorek Byrnison](#), and the armoured bears who inhabit Svalbard from [Philip Pullman's](#) trilogy *His Dark Materials*<sup>1</sup> and The White Bear (Charles) in [Edith Pattou's](#) *East (North Child in the UK)*<sup>2</sup>, are not only modern extensions of polar bear mythology, they also describe environments which are clearly defined in the books as 'north' and are recognizable as being in the north. So for our collection the North does not begin or end in the real world, but has beginnings and endings in the real world and in imaginary worlds.

In selecting, we also have an understanding of things that are not North. So we define our boundaries, in part, by exclusion, as well as by inclusion. So if an Inuit researcher publishes a work that is a collection of photos of Aztec artworks, we would not include it in the collection. It would not inform researchers about the North. If, however, someone in Mexico published a photos of Inuit artworks, that would meet the criteria for inclusion.

In general, the decisions about materials representing the north outside of Alberta are not very difficult. Funding limitations restrict our purchases to those materials that directly fit our content criteria. However, within Alberta, where we collect more intensively, we have had to think carefully and be prepared to justify why the geography of our collection should begin with a point at Edmonton.

To begin to understand why the North might have been defined as beginning in Edmonton, I began with a list ideas about where the north begins, supplied informally by friends, family, colleagues, students and acquaintances.

The answers from about twenty-five people, all of whom live or have lived in Edmonton can be grouped in the following ways:

The North begins:

- at the 60<sup>th</sup> parallel
- at the 49<sup>th</sup> parallel
- at the edge of the boreal forest
- at the northern tree-line
- at the southern snow-line
- at the North Saskatchewan river
- I don't know, but Edmonton is in it.
- At Edmonton
- North of St. Albert (a suburb just north of Edmonton)
- Where the Federal northern allowance starts (Grande Prairie).

Edmonton is included in all of these definitions, with the exception of the 60<sup>th</sup> parallel, the northern tree line, and Federal Northern Allowance<sup>3</sup> line. The latter definitions tended to be expressed by people who had lived much further north.

Only the 49<sup>th</sup> parallel and the southern snowline are significantly south of Edmonton. These answers tended to come from people who had lived in warm climates.

So, given that many people think that Edmonton and Northern Alberta are in the North, what would cause people to have that perception? If we look at Louis-Edmond Hamelin's VAPO map of Canada,<sup>4</sup> in which he charts lines based on his 'nordicity index,' we can see that Edmonton would not be considered northern. On these maps it is located in the 'Base Canada' area, having a very low nordicity index.

However, there are many aspects of Edmonton's geography which support local Edmontonians' sense that they live in the North. 'Routine snow fall in mid-May may be one of them. The City is situated at the northern extent of plant hardiness zone 3,4<sup>5</sup> which allows for the growth of some varieties of apples, but most other tree fruits only in warm microclimates.

The North Saskatchewan River runs to the north and east of Edmonton. The southern edge of the boreal forest also tracks north-eastward from Edmonton.<sup>6</sup> Tied to the forest is the presence of aboriginal peoples. Maps of Athabaskan linguistic groups show a southern edge angling north-east from Edmonton. The southern boundary of Treaty 8, follows the same line.<sup>7</sup>

Edmonton also has a long history of being recognized as 'the Gateway to the North.' In 1930, local publications cited Edmonton as 'the gateway' to the Peace and MacKenzie river areas.<sup>8</sup> During the European settlement period, it was the 'jumping-off point' for anyone moving into the north. From Edmonton, travellers went north and east to Victoria Settlement and Athabasca Landing, and north and west to the Peace Country. During the building of the Alaska Highway, Edmonton was a primary supply point, which solidified its position as 'Gateway to the North.' In 1984, John Gilpin published his book, *Edmonton, gateway to the North* in which he describes Edmonton's position:

Edmonton stands between the boreal forest and the plains, the Cree and the Blackfoot, and the Canadian Northern Railway and the Canadian Pacific Railway. Edmonton, as a result, has been a focus for the clashes of these northern and southern interests. Either by necessity during the fur trade era or by choice after 1881, Edmonton has embraced the north as its hinterland unlike any other community in Canada.”<sup>9</sup>

Even in 2008, Edmonton’s tourism web-site used the phrase ‘Gateway to the North.’

Ultimately, the definition of ‘the North’ that is used to select materials for inclusion in the Canadian Circumpolar Collection is a flexible one that encompasses both the most commonly understood geographic definitions and the things that are iconically ‘northern,’ as well as some unique understandings of the ‘North,’ forged out of Edmonton’s location and the definitions brought to the collection by the researchers who use it.

## References:

1. Pullman, Philip. *The golden compass*. New York: Yearling, 2001
2. Pattou, Edith. *East*. Orlando: Harcourt, 2003
3. Canada Revenue AgencyNorthern Residents Deductions – Places in Prescribed Zones T4039 (08) <http://www.cra-arc.gc.ca/E/pub/tg/t4039/t4039-08b.pdf> viewed March 11, 2008
4. Hamelin, Louis-Edmond. *Canadian Nordicity: It's Your North, Too*. Montreal: Harvest House, 1979.
5. Agriculture and Agri-Food Canada. Plant Hardiness Zones of Canada 2000. <http://nlwis-snite1.agr.gc.ca/plant00/index.phtml> viewed March 11, 2008
6. Map of the Forest Regions of Canada. The Atlas of Canada. [http://atlas.nrcan.gc.ca/sites/english/learningresources/theme\\_modules/bo\\_realforest/forest\\_regions.jpg/image\\_view](http://atlas.nrcan.gc.ca/sites/english/learningresources/theme_modules/bo_realforest/forest_regions.jpg/image_view) viewed March 11, 2008
7. “Treaty 8 Signed at Lesser Slave Lake in 1899. Covers portions of northern Alberta, B.C., Saskatchewan and part of N.W.T. 23 Alberta First Nations” [http://www.abheritage.ca/alberta/fn\\_metis/treaty8\\_map.html](http://www.abheritage.ca/alberta/fn_metis/treaty8_map.html) viewed March 11,2008
8. *An empire in the making. Edmonton, the gateway; the resources and opportunities of the Peace and MacKenzie river areas*. [Edmonton, Town Topics Publishing] 1930.
9. Gilpin, John F. *Edmonton, gateway to the North* Woodland Hills, Calif. : Windsor Publications, 1984.
10. Edmonton.com -Travel Tourism and Leisure. Gateway to the North and the Rocky Mountains. <http://www.edmonton.com/tourism/page.asp?page=1509> viewed March 11, 2008.

Edmonton.com: Travel, Tourism & Leisure - Gateway to the North & Canadian Rockies - Windows Internet Explorer

http://www.edmonton.com/tourism/page.asp?page=1509

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Edmonton.com: Travel, Tourism & Leisure - Gateway to the North & Canadian Rockies

Home > About Edmonton > Visitor Guide > Getaway Guide > Gateway to the North & Canadian Rockies

## Gateway to the North & Canadian Rockies

Edmonton is the Gateway to a land of majestic mountains, pristine lakes, historic rivers and northern adventures. Edmonton is located on the TransCanada Yellowhead Highway, a route that offers the easiest and most scenic drive across western Canada. The region is served by the Edmonton International Airport and VIA Rail's "The Canadian", one of the world's most famous train rides. In the winter, take VIA's Snow Train to Jasper for a weekend of skiing, canyon crawling, or just relaxing in this winter wonderland.

A scenic 3 ½ hour drive (366 km) west of Edmonton via the TransCanada Yellowhead Highway, one of the easiest drives through the mountains, puts you at Jasper's doorstep. Enjoy historic sites, cross country skiing, hiking, skating, wildlife viewing and Marmot Basin for downhill skiing and snowboarding. Jasper National Park is Canada's largest Rocky Mountain Park and is part of the Rocky Mountain World Heritage Site. Jasper has accommodation, dining and shopping for every taste and budget.

Alberta North is easily accessed through Edmonton. Northern Alberta's large lakes, mighty

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**Plenary Session 7**  
***The Future of Polar Libraries***

**Convenor: Deborah Hicks,  
National Snow and Ice Data Centre**



***Building a Regional Library System in  
Northern Manitoba:  
The Case of the University College of the North***

**Peter Geller (Dean of Arts), and Stan Gardner (Dean of  
Library and Instructional Services), University College of the  
North**

**Abstract:** Established in July 2004, the University College of the North (UCN) is mandated to serve the educational needs of Aboriginal and northern Manitobans and to enhance the economic and social well-being of this northern region. Located in the heart of the boreal forest, UCN serves 70% of the provincial land mass of the province of Manitoba, with a population of 80,000 dispersed over 387,146 square kilometers. The demographic and geographic aspects of its northern location clearly pose challenges of logistics and human resources in any effort to collect, manage and provide access to information. Many communities do not have roads to them and are accessible only via train, boat, or plane.

As a University College, the further challenge is to meet the needs of both the University and the College and Trades programs. When we include the fact that UCN has two campuses, twelve regional centers (nine of which are partnerships with First Nations), and an ever changing number of contracted sites, the delivery of informational resources becomes even more difficult. This presentation will begin with an examination of the original vision for UCN and the role of the Library within a new post-secondary institution in the Canadian north. This will also include an overview of the starting point for UCN—the Keewatin Community Library collection and system. Current areas of development will then be considered, in terms of: a) The concept of UCN Libraries, utilizing the distributed nature of this post-secondary institution, can serve both community and institutional needs; b) Electronic databases/technologies and paper journals/books: which is the way of the future for a northern library?; c) Partnerships with schools and communities: creating Study/Reading rooms in small communities, and merged UCN/Public Libraries in other communities, as resources, commitment, needs, and budget allow; d) New infrastructure: envisioning the new research and teaching library required to support vocational, career and degree programming in a multi-site environment.

As UCN evolves to meet these challenges, a mix of both innovative and traditional solutions will be required.



***Panel Discussion:  
The Future of Polar Libraries***

**Chair - David Walton, British Antarctic Survey**

**Panellists:**

**Andie Smithies (Australian Antarctic Division),  
Heather Lane (SPRI, UK),  
Claudette Cloutier (University of Calgary, Canada),  
Vibeke Jakobsen (Danish Polar Centre, Denmark),  
Julia Triplehorn (University of Alaska, USA)**

**Abstract:** The Future Development of Polar Libraries as Research Tools in the 21st Century Libraries serving national needs, research institutions, and universities are all changing to meet the information needs of this century, and polar libraries will be swept along with this change. The Panel will provide some insights into current changes in the USA, Canada, UK, Scandinavia and Australia to illustrate how open access repositories and journals, e-books, data management, new on-line peer social networks etc are impacting on the expectations of what library users are now expecting. Are there strategies developing to deal with this? Are there lessons to be learnt by sharing national experiences?

**The Future of Polar Libraries**

Libraries and their users are changing rapidly and polar libraries will get swept along with national and international trends. The Chair asked the panel members to consider a number of questions from within their own national experience:

Google digitisation project is focussed on material in English. For the less common languages the onus will rest with the country concerned and for many this is presently slowed by poor financial support and copyright problems. In Norway there is now a unified portal (Uniport) for searching the libraries of the four largest universities whilst most universities and research centres now have institutional repositories. New initiatives include the NAROS project to make available more widely scholarly works on the North. Finland has developed a national electronic library (FinELib) to acquire electronic resources on an integrated level for all its research and higher education teaching facilities whilst the What do Polar Libraries need to do to meet the requirements of their users?

What initiatives are underway in each country to provide new resources, tools and networks?

How do Polar Libraries deal with Open Access, OpenURL developments, little used monographs and e-books, text mining and intellectual property rights, databases and social networks etc.?

This summary will extract responses to some of these themes.

In Scandinavia the trend is for amalgamation of libraries to produce larger Learning Resource Centres, and as well as unified catalogue searching there is the development of new integrated search engines—like Primo in Denmark—that return not just hits from periodicals and books but data, cartography, audio and video in a single search. There is an increasing emphasis in universities on meeting student needs but students show little interest in material that they cannot access digitally. As yet in Europe only a very small percentage of the library holdings have been digitised as the Nelli portal, organised through the National Library, now provides a single point of access to over 60 university and public libraries. In this increasingly unified system it is not clear how well small specialist libraries will survive.

Australia has seen active developments at both local and national level. The AAD library is both small and interdisciplinary, providing a good example of the problems of negotiating realistic deals for both journals and e-books with the big publishers. Institutional repositories have become commonplace with most universities developing them but small libraries like AAD can easily be left behind, lacking the manpower and finance of the big institutions. Perhaps the way forward here is to make a hosting arrangement with a larger repository rather than attempt to do it oneself. Another new initiative across Australia is the Digital Thesis Programme, which is also to be extended in due course to New Zealand, allowing full text access to new theses.

In the UK there has been concern for some years about the lack of strategic planning for research libraries to ensure that they contribute fully to supporting the national research potential. The establishment of the Research Information Network (RIN) by a consortium of the national libraries, the research councils and the Higher Education Funding Councils has opened up new opportunities for targeted research and the development of collaborative projects. Most recently these have focused on how researchers from different disciplines use discovery services, what users expect from libraries, coordinated storage of little used monographs, the use and value of e-journals, retro-conversion and improving online catalogues. Other national bodies like the Joint Information Systems Committee (JISC), (CURL) and Society of College, National and University Libraries (SNOCUL) are also involved in complementary research, some of which is allowing closer integration of databases with libraries. The unified library searching system COPAC now allows single point searching of all three national libraries, over 20 of the largest university libraries as well as specialist libraries of museums and research institutes like SPRI. A recent study has looked at the economic implications of alternative scholarly publishing models. Some specialized libraries like SPRI have a narrow regional remit but a very wide collection format which includes data, pictures and objects as well as books, journals, maps and archives. With new funds SPRI has been extending its stock availability in a project called FreezeFrame which will provide access to 20,000 polar images from its collections whilst also re-organizing its archives and museum to improve 'findability' and accessibility.

What has been worrying is that in recent debates in the UK many researchers from the science and technology fields have suggested that the library for them is becoming largely irrelevant except as a provider of access to

journals. This is clearly not true to the same degree for humanities researchers but perhaps this will come in due course. With increasing digitisation and availability on line will it be seen as necessary and economic to continue to maintain specialist collections like those of the polar libraries? How could the PLC help to provide a forum for discussions on how to meet the challenges ahead?



## **Plenary Session 8**

### ***University of the Arctic***

#### **Panel University of the Arctic Instructors Session**

**Chair: Sandy Campbell**

Panellists:

Amanda Graham, University of the Arctic (resident in Whitehorse,  
Canada)

Katie Dana, University of the Arctic (resident in Vermont, USA)

This panel discussion centred around the information needs of the instructors and students of the University of the Arctic. The group heard from the instructors about how resources are currently delivered to University of the Arctic students. A variety of possible developments were discussed.



## ***UArctic Virtual Library: Proposal on behalf of UArctic teachers***

**Kathleen Osgood Dana**  
**University of the Arctic**

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. Members share resources, facilities, and expertise to build post-secondary education programs that are relevant and accessible to northern students. UArctic's overall goal is to create a strong, sustainable circumpolar region by empowering northerners and northern communities through education and shared knowledge.

With its Circumpolar Studies program, the University of the Arctic provides courses and programs about the northern world to undergraduate, graduate, and doctoral students, onsite, online, and in the field. UArctic creates and coordinates programs, but member institutions have the responsibility to deliver the programs. All UArctic programs need library resources to support its circumpolar, comparative, and interdisciplinary programs about the Arctic world, and the University of the Arctic is the logical umbrella to makes such resources visible, accessible and secure to UArctic programs at member institutions.

### **Objective and Proposal**

In order to provide visible, accessible and secure resources for UArctic faculty, students, and staff, we propose to create and coordinate a UArctic Virtual Library, enabling all members to benefit from pooled resources in their UArctic programs. While there are many available resources to various Arctic regions and resources, a circumpolar portal such as the UArctic Virtual Library would build capacity and provide a single point of access. Some resources can and should be publicly available, others should be password protected for UArctic program participants.

The UArctic Virtual Library might take as its model the [Barents Portal](#), [The Arctic Is](#), or [Alaskool](#). A preliminary outline of the scope and content of the proposed UArctic Virtual Library might include:

- I. Online resources
  - a. a list of reviewed and annotated internet resources, public.
  - b. E.G., [Sterling College's Northern Studies resources](#)
- II. Bibliographic resources
  - a. typical of a university, including such general journal resources as EBSCO, JSTOR, etc., password-protected.
  - b. E.G., [University of Alberta Polar Studies Databases](#) , plus similar Scandinavian and Russian databases
- III. Learning resources

- a. support for research and documentation, preparation for online learning, a combination of public and password-protected materials.
  - b. E.G., [Research and Documentation Online](#) or [Moodle Training at Athabasca University](#), UArctic Academic Handbook, etc.
- IV. Virtual library
- a. perhaps using [GoogleScholar](#) to publish and the Virtual Library to make accessible, again a combination of access
- V. Special Projects, a combination of access.
- a. Circumpolar Map Library, e.g., [Arctic Environmental Atlas](#)
  - b. Circumpolar Language Library, e.g., [Alaska Native Languages](#)

#### **WORKING GROUP**

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#### **PROCESS**

2008 Grantwriting and design, I-IV  
2009 Implementation and promotion, I-IV. Grantwriting and design for special projects.  
2010 Implementation and promotion, special projects.  
2011 Development and maintenance

#### **POTENTIAL FUNDERS/PARTNERS**

National Science Foundation, US  
Social Science Research Council, US  
ARCUS, US  
Stefansson Institute, Iceland  
KIS-SSHRS, Canada  
TEMPUS, EU  
Nordic Council, Scandinavia

**Plenary Session 9**  
***Periodicals***

**Convenor:** Sharon Rankin,  
Associate Librarian, Humanities and Social Sciences Librarian,  
McLennan Library, McGill University



## ***Caninuit: A new web resource for Canadian Inuit Periodicals***

**Sharon Rankin,  
McGill University Library,  
Montreal, Quebec, Canada**

**Abstract:** I will present my work conducted over the past year to create *Caninuit*, an annotated web bibliography of the periodicals published by or about Canadian Inuit. This paper will cover the following topics: rationale for the work, survey of the existing printed bibliographies, data collection and decision making for the resource content and design, use of controlled subject category vocabulary and selection of technology (wiki, blog, and website). I will demonstrate the web resource; engage the audience in feedback on its usefulness and present future directions for the resource.



## Introduction

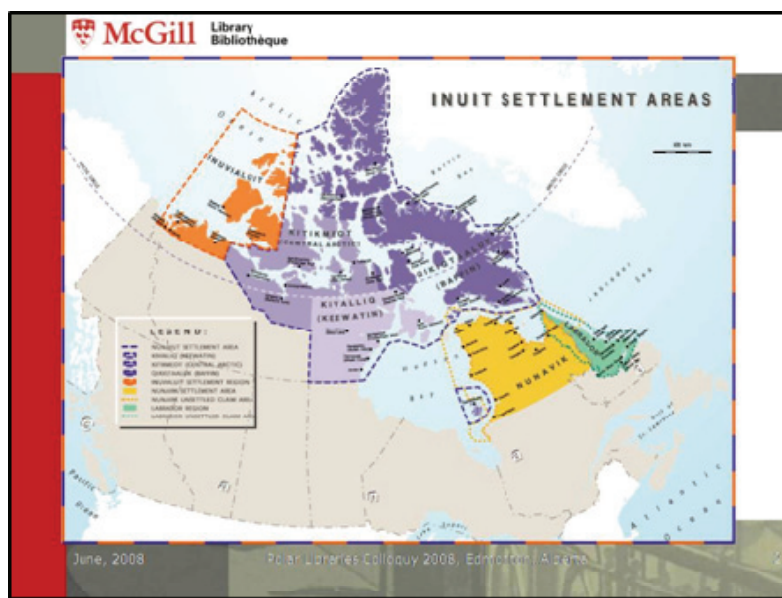
Dear colleagues, before beginning my presentation this afternoon, I would like to acknowledge the support of the Polar Libraries Colloquy. As a recipient of this year's Hubert Wenger Award, my attendance at this conference became possible. I am very grateful to the Polar Libraries Colloquy for this support. Polar information is a new area of expertise that I am developing during this sabbatical leave year. Becoming knowledgeable about polar information to assist the faculty and students in my liaison librarian work in the McGill University Library is one of my professional goals.

During this session, I would like to show you one of the "research outputs" of my sabbatical year. It is still a work in progress, with unfinished text and functionality however, it is ready enough to show to a group of colleagues, and to collect feedback on its usefulness and ideas for improvements.

My interest in Canadian Inuit periodicals (newspapers, magazines, newsletters and journals published in Canada, by or about Canadian Inuit) began two years ago, when I was approached by a faculty member in McGill's English department, Dr. Marianne Stenbaek, to participate in a grant application to digitize publications to support her cultural studies and Inuit literature courses. I soon realized that the publications of Canada's first peoples, the Inuit, were virtually unknown to me and I had little background information for selecting the best and most important titles to support the university's curriculum for the digitization project. I had co-edited for several years the Canada chapter in the Bowker publication: *Magazine for Libraries*<sup>1</sup>. This chapter provides reviews for librarians to assist them in the selection of Canadian magazines for their collections. No current Inuit publications had ever been included in this chapter! My work this year, to survey and collect information about Inuit publications in Canada, has taken me to several libraries physically, many libraries virtually and has begun to fill my intellectual void about this subject area. Unfortunately the grant application, two years ago was unsuccessful. However, just this month, I have very recently received positive IPY news, which I will report on, in the concluding remarks of this paper.

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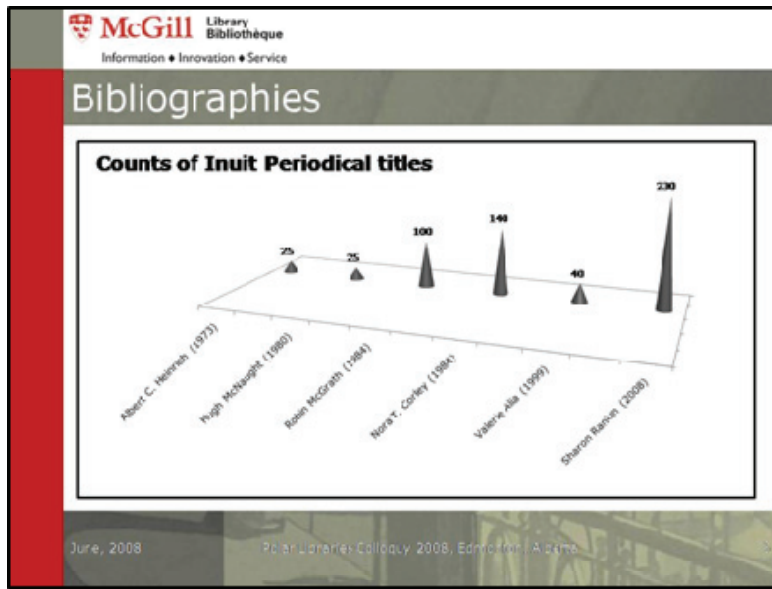
<sup>1</sup> <http://www.bookadvertising.net/catalog/000054.htm>



Today, Canada's Arctic has four Inuit settlement regions. This "*Canadian Inuit Map*"<sup>2</sup> published by Makivik shows four differently coloured areas, representing four distinct Inuit Settlement regions. The orange area in the western arctic is the "**Inuvialuit Settlement region**", located in Canada's Northwest Territories. This region has a population of approximately 3,000 Inuit living in six communities. The purple area in the central arctic is called "**Nunavut**". This region became a self-governing Canadian territory in 1999. Nunavut has the largest Inuit population in Canada, numbering 22,500. Its territory is divided into three regions: Kitikmeot, Kivalliq and Baffin. Nunavut comprises one fifth of Canada's land mass and contains twenty-six communities, the largest number of Inuit communities in Canada. The yellow area in the eastern arctic is called "**Nunavik**", in the province of Quebec. Nunavik is home to 8,700 Inuit who live in fourteen coastal communities. The green area on the eastern arctic shore is called "**Nunatsiavut**". This region comprises a northern region of **Labrador**, the western area of the province of Newfoundland & Labrador. Labrador is home to 2,300 Inuit who live in six coastal communities. I have used these Inuit Settlement regions as geographic categories for the periodical titles in the Caninuit web bibliography. Titles that can be identified as describing communities and events in specific regions are

<sup>2</sup> [http://www.makivik.org/images/map/11\\_inuit\\_settlement\\_areas.gif](http://www.makivik.org/images/map/11_inuit_settlement_areas.gif)

tagged and the web interface has a searchable link to retrieve all publications by region.



## Existing bibliographies

Several printed bibliographies have been prepared by librarians and professors on this subject and I began my work by reviewing each of these publications. The numbers on the slide are a count of the Inuit publications that were contained in these bibliographies and the publications have been arranged in date order.

In 1973, Albert C. Heinrich published a bibliography of Canadian Inuit periodicals in an issue of the academic journal *Canadian Ethnic Studies*. His entries were based upon questionnaire information sent to publishers and this bibliography contains twenty-five titles.

Hugh McNaught studied the publishing history of newspapers in Canada's Northwest Territories for his 1980 thesis. Community newspapers published between 1945 and 1978 were divided into six categories; school, government, special interest, adult education, religious and community. Twenty-five Inuit titles are recorded in this bibliography.

Robin McGrath's 1984 thesis entitled "*Canadian Inuit Literature: The development of a tradition*" is a unique study of how the Inuit oral tradition of literature in Inuktitut shifted to a written tradition of writing in English. McGrath describes in detail the kinds of publications that make up the corpus of Inuit literature. "*The development of Inuit periodical literature, newspapers and magazines by and for Inuit, parallels that of Inuit books, and in some ways is a more important development because*

*these periodicals, although relatively impermanent, encouraged readers, and writers who were or are of only limited proficience*" (McGrath 34). McGrath's appendix attempts to collect together all known information about Canadian Inuit periodicals and includes one hundred titles, with photocopies of the cover pages for a majority of the publications.

The same year, The National Library of Canada published "*Resources for Native Peoples Studies*" edited by Nora T. Corley. This survey of the collections of Canadian research libraries contains a narrative describing library collection strengths and a list of periodicals published in Canada, by or about native peoples. Inuit titles are not specifically identified in this resource. One hundred and forty titles were identified as Inuit and each entry includes library locations and holding information as of 1984.

In "*Un/covering the north: news, media and aboriginal people*", Valerie Alia provides a comprehensive review of aboriginal media in Canada and this book has a very useful appendix listing by region the newspapers and magazines published in the Canadian North. Forty Inuit titles are included in this 1999 publication.

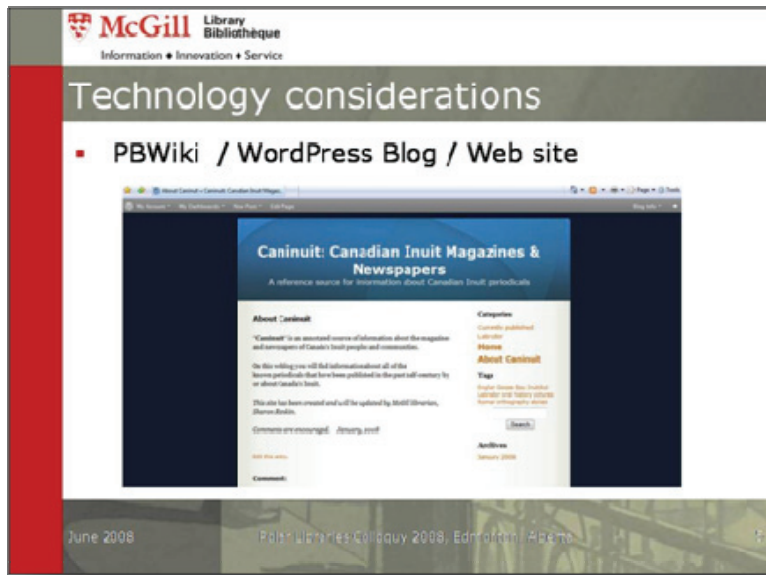
The final bibliography count of two hundred and thirty eight is the number of entries entered this year into the *Caninuit* web bibliography, a new web resource being constructed as part of my sabbatical research project. Each published title name receives an entry in the database. Therefore if a publication had several names during its life, there is an entry in the database for each name. Title changes can be tracked on the website by following the links in the record's history field.



## Data collection

The data collected from these bibliographies has been supplemented with site visits to Canadian libraries, to view and read samples of these publications. To date, I have visited Library and Archives Canada in Ottawa, the University of Calgary, Arctic Institute of North America (AINA) in Calgary, the Library of Indian and Northern Affairs Canada (INAC) in Ottawa and consulted the arctic collection in the McGill University Library. All of these research libraries have very useful online catalogues that have been scoured for bibliographic information.

I have been fortunate to be able to visit two special collections that do not have a public web catalogues but that do have relevant journal collections. In Montreal, the Avataq Cultural Institute, founded in 1980, is a non-profit Inuit organization dedicated to protecting and promoting the language and culture of the Inuit in Nunavik. The Avataq Documentation Centre is publicly accessible by appointment and has a collection of forty-four Inuit periodicals. In Happy Valley-Goose Bay, Labrador, the oral history magazine *Them Days* has an archive of publications, photographs, and sound recordings. The Them Days archive collection includes several samples of Labrador periodical publications.



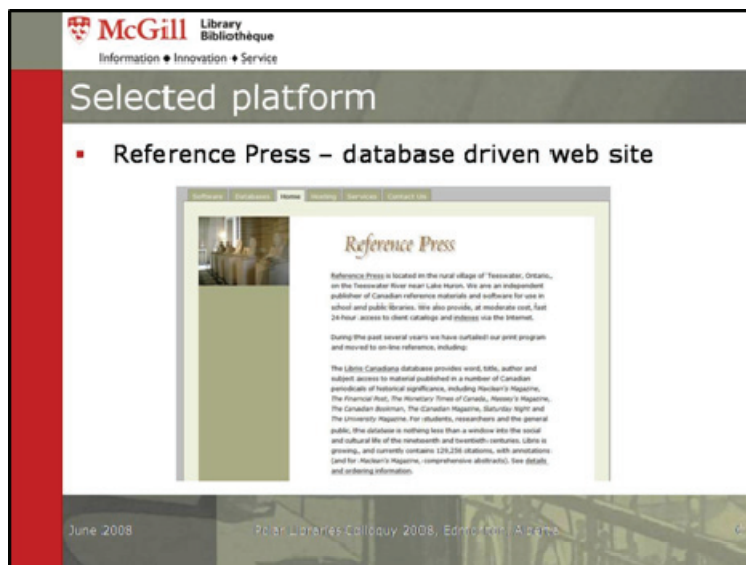
I have not yet finished exploring library collections. The University of Alberta Library is where I am spending my hours outside of the Polar Libraries Colloquy this week and there are several publications here that I have not been able to find in the other Libraries. In Canada, there exists no single its comprehensive physical collection of Canadian Inuit periodicals.

This was the premise of my research question, that titles are scattered across Canadian library collections. Creating the *Caninuit* bibliography will bring information from many library collections together in an easily accessible web space.

## Technology considerations

As a former systems librarian, engaged in a bibliographic research project, I was keen to explore the Web 2.0 tools that are constantly being described by colleagues on discussion listservs. Could a blog or a wiki contain the functionality needed for a bibliography on the web? Could I easily use the set-up interface supplied free with blog or wiki software to create a website without devoting time to html coding? The short answer is no, a website, with a database of records, behind it, won over the use of a wiki or blog for this project.

I explored the wiki option first, opening an educational wiki, on the PBwiki platform. On the PBwiki it was easy to add text, create web pages that multiple authors can edit, and search through the contents of the web pages. Its limitations were lack of page templates to use for a record structure and no controls on the editing of pages. A wiki was not the right fit, its strengths being as an aid to collaborative writing projects, which this project is not yet.



I explored the blog option second, opening a Caninuit blog on the WordPress.com site. The ability to tag pages and organize pages into categories looked very promising, however, I could not organize the pages

alphabetically (each periodical title would have its own web page) so that users would be able to browse the title list. There was a paid option to add customized coding into the blog, which looked like it might make this functionality possible. The blog was a splendid, simple interface to provide unstructured text and to allow comments to be recorded and viewed over time, but from a searching point of view; I became concerned that this was not the best environment.

The solution became a website, the creation and design of Reference Press, a small independent company with experience in publishing Canadian reference materials, software and web databases for use in school and public libraries. The *Caninuit* web site is database driven; it has a record structure, browse indexes by title, by geographic and format categories and keyword searching across the entire periodical information in each record. The interface design and web site were created by Gordon Ripley, owner of Reference Press and Systems Librarian at Trent University in Peterborough, Ontario.



## Caninuit overview

Let's now turn to a brief review of the pages of the website, highlighting its functionality for both users and the editor. I will be displaying screen captures taken last week, to ensure that I am able to show the web pages to you this afternoon. I encourage you to take a look at the website. The *Caninuit* website is located at <http://www.libris.ca/inuit/go.exe>. I will display the following pages and provide remarks on specific features on each of the pages. (See Appendix for slide images.)

MAIN: feedback form  
TITLE BROWSE: see references  
CATEGORY BROWSE: current or ceased, format, geographic  
FIND: help text, combining categories  
RECORD STRUCTURE: help text  
ONLINE AVAILABILITY: online content links  
HISTORY: title change links  
INDEXING: web site links, PDF paper indexes  
TAGS: ASTIS subject terms  
COVER: thumbnail images  
LOG IN: Record editing, CSV file export, statistics



## Future directions for *Caninuit*

This web resource is a work in progress. I will be continuing to update the record descriptions, write annotations, and add subject terms and links over the summer months. Adding periodical cover images and verifying the copyright permissions has begun, but there is significant work to be done in this area. I will be arranging for a small focus group of students and faculty in the fall, to collect user comments.

In January 2008, an International Polar Year application was made to fund a project entitled: “*Entendre et communiquer les voix du Nunavik / Hearing and sharing the voices of Nunavik: Projet de mise en valeur du patrimoine écrit du Nunavik*”. The application was a joint submission by Professor Daniel Chartier (Université du Québec à Montréal), Professor Marianne Stenbaek (McGill), Bob Mesher (Makivik Corporation) and me.

In this application there were several related projects based upon Inuit periodicals published in Nunavik. A proposal to publish several French and English books with excerpts from Inuit magazine article and writings, a proposal to digitize and index for the ASTIS Nunavik bibliography, *Makivik Magazine* and a proposal to publish in book form the *Caninuit* bibliography. We are very pleased to report that the submission was received positively and the application will be resubmitted this month with a revised project plan and a reduced project budget. The expectation is that IPY will fund the revised submission and for the next three years the collaborative team will be busy with these newly funded IPY projects.

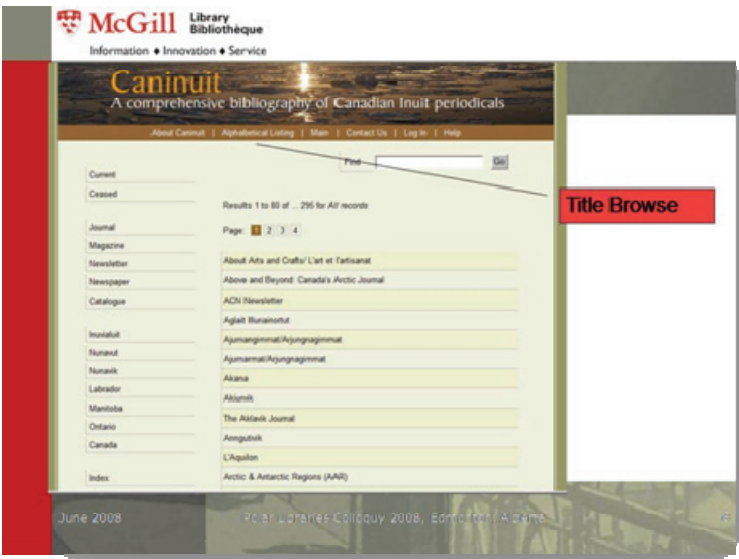
With IPY funding the work already done on the *Caninuit* bibliography will be enhanced and the resource will be a step closer to becoming comprehensive.

Thank you for your time and attention this afternoon. I look forward to receiving your feedback on this project.

## References

- Alia, Valerie. *Un/Covering the North: News, Media and Aboriginal People*. Vancouver: UBC Press, 1999.
- Corley, Nora Teresa and Canada National Library of. "Resources for Native Peoples Studies". *Research Collections in Canadian Libraries*. [Special Studies], 0316-0319; 9.
- Heinrich, Albert C. "Periodical Publications of Canada's Eskimos: A Preliminary Checklist." *Canadian Ethnic Studies* 5.1-2 (1973): 47-9, 51-7.
- McGrath, Robin. *Canadian Inuit Literature: The Development of a Tradition*. Mercury Series / National Museum of Man. [Ottawa]: National Museums of Canada, 1984.
- McNaught, Hugh. "Newspapers of the Modern Northwest Territories: A Bibliographic Study of Their Publishing History (1945-1978) and Publishing Record." University of Alberta, Faculty of Library Science, 1980.

Appendix – Caninuit web pages



Polar Libraries Colloquy 2008  
*Currents of Change: The Future of Polar Information*

The screenshot shows the McGill Library Bibliothèque website. The header includes the McGill logo and the text 'Library Bibliothèque' and 'Information • Innovation • Service'. The main heading is 'Caninuit: A comprehensive bibliography of Canadian Inuit periodicals'. Below this is a navigation bar with links: 'About Caninuit', 'Alphabetical Listing', 'Main', 'Contact Us', 'Log In', and 'Help'. A search bar with the text 'Find' and a 'Go' button is present. On the left, there are two columns of links: 'Current' and 'Ceased' (with a 'Back' link), and a list of regions: 'Inuitatut', 'Nunavut', 'Nunavik', 'Labrador', 'Manitoba', 'Ontario', and 'Canada'. The search results show a record with the number '000070', the title 'The Arctic Howl', and a history link 'See Kamanituk Kiarion'. A red box on the right contains the text 'See Reference'. The footer includes the date 'June 2008' and the text 'Polar Libraries Colloquy 2008, Edmonton, Alberta'.

The screenshot shows the same McGill Library Bibliothèque website. The search results are now for the 'Ceased' category, showing 'Results 1 to 90 of ... 219 for Ceased'. A red box on the right contains the text 'Browse "Ceased" category'. The list of periodicals includes: 'About Arts and Crafts/ L'art et l'artisanat', 'Aqialit Nunavutut', 'Aqumangimut/Aqumangimut', 'Aqumangimut/Aqumangimut', 'Akana', 'The Atlatik Journal', 'Arctic Ambassadors', 'Arctic Bay News', 'Arctic Bay News/Aqumangimut qialayut', 'Arctic Circle', and 'Arctic Coastal Zone Management Newsletter'. The footer includes the date 'June 2008' and the text 'Polar Libraries Colloquy 2008, Edmonton, Alberta'.

Plenary Session 9: Periodicals

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Caninuit

A comprehensive bibliography of Canadian Inuit periodicals

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Current

Ceased

Journal

Magazine

Newsletter

Newspaper

Catalogue

Find

Go

Results 1 to 59 of ... 59 for Newspaper

Aqilat Nunavortut

The Arctic Journal

L'Aquilon

Arsiap Nipinge

Atsavik

Banks Land Letter

Bankstander

Big Dipper News

Central Arctic News

Clyde River

Coastline Canada

The Drum

Browse format  
"Newspaper"  
category

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Current

Ceased

Journal

Magazine

Newsletter

Newspaper

Catalogue

Find

Go

Results 1 to 5 of ... 5 for current

Arsavik

Arctic News: Journal of the Diocese of the Arctic

Makook Magazine/Makookut qimuvangit

Nunavik

Sivutitavut: Revue des étudiants Inuit au CEGEP Marie-Victorin

Find - Combining  
categories

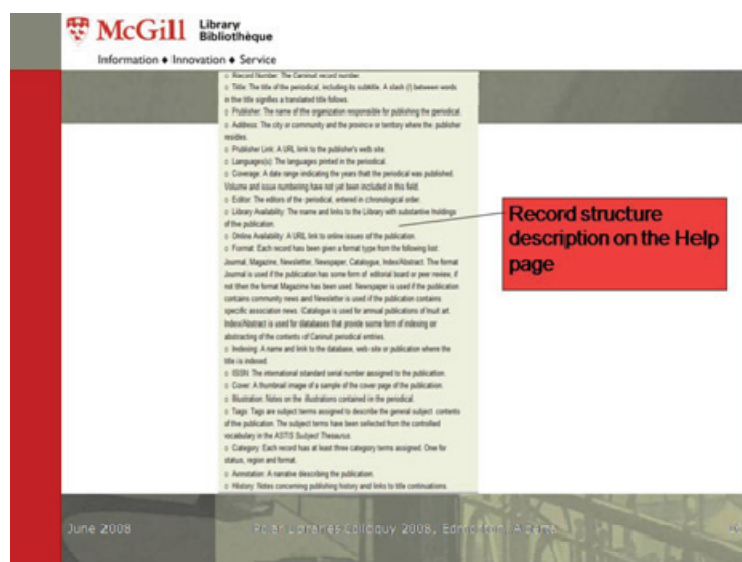
Current! Nunavik!

June 2008

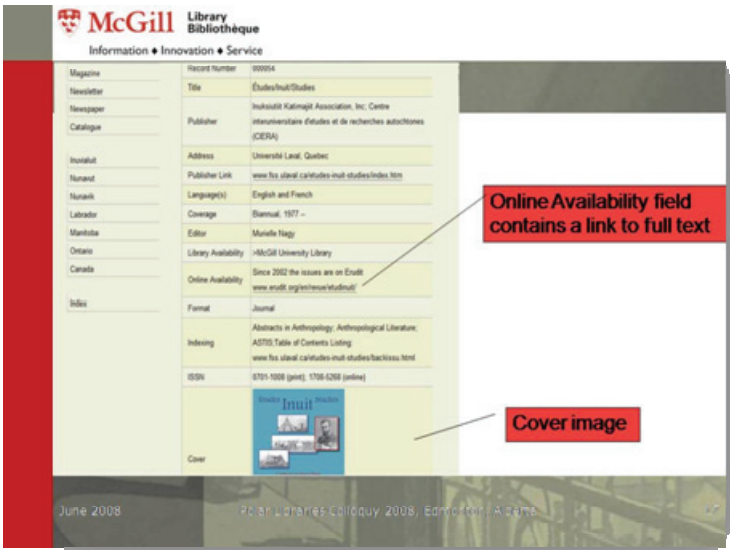
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Polar Libraries Colloquy 2008  
*Currents of Change: The Future of Polar Information*



Plenary Session 9: *Periodicals*



Polar Libraries Colloquy 2008  
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Find

Current:   
 Created:  [+ Back](#)

Journal	Record Number	000303
Magazine	Title	The Local Rag
Newsletter	Address	Baker Lake, Northwest Territories
Newsprint	Language(s)	English and Inuktitut
Catalogue	Coverage	Irregular
Journalist	Library Availability	Library and Archives Canada
Summit	Format	Newspaper
Summit	Tags	>Communities-News
Lebrader	Category	>Summit-Ceased-Newspaper
Manitoba	History	Continues Kamanistik Kleson
Ontario		
Canada		

[+ Back](#)

History field contains link to title changes

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**McGill Library**  
 Bibliothèque  
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Address: Neen, Labrador

Language(s): Inuktitut Roman orthography

Coverage: Three or four times per year, 1962 - 1915

Editor: Albert Martin, Christian Schmitt

Library Availability: >McGill University Library-Memorial University Libraries>Library and Archives Canada

Format: Newspaper

Cover:

Illustration: Black & white photographs

Tags: >Missionaries-Missions>Religion>Christianity>Anglican Church of Canada

Category: >Labrador-Ceased-Newspaper



Annotation: The Moravian Missionaries say it is the first Eskimo newspaper in the history of the world (McGrath, 1984)

History: Became annual in later 1967

Tags are ASTIS subject terms

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Plenary Session 9: *Periodicals*

 <b>McGill</b> Library Bibliothèque	
Information • Innovation • Service	
Record Number	00002
Title	Inuituk
Publisher	Inuit Tapiriit Kanatami
Address	Ottawa, Ontario
Publisher Link	<a href="http://www.tapiriit.ca">www.tapiriit.ca</a>
Language(s)	English, Inuktitut, Inuititut Roman orthography and French
Coverage	Published three times per year since 1959
Editor	Meissa Tufomulak Inim
Library Availability	McGill University Library/Indian and Northern Affairs Canada
Online Availability	(2003-present) CBCAComplete & CBCA Reference. <a href="http://www.its.ca/nuuk-mag/index.html">http://www.its.ca/nuuk-mag/index.html</a>
Format	Magazine
Indexing	~1967-1972-1996 index
ISSN	0020-9672
Cover	

**McGill** Library  
Bibliothèque

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Last Log Entry

05-29-2008 22:40:24 Admin user logged in [jharmon] 216.209.75.52

Database Maintenance

Find [Update]

Create Record [N]

Update Record [N]

Delete Record [N]

Administration

Administrator Email

On-the-fly Indexing Yes ▾

Administrator Password

Categories

Administrative Tasks

View Log

Clear Log

Export in Comma-delimited (CSV) Format

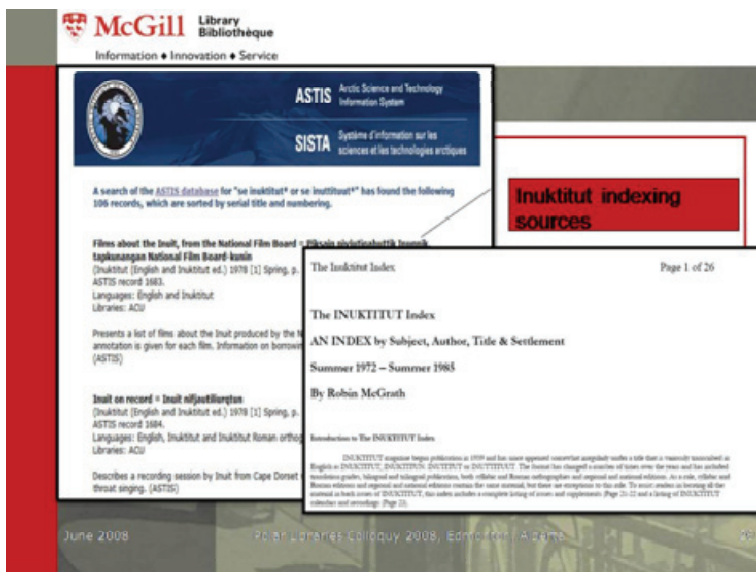
Display Access Statistics

Editing interface  
-CSV export  
-statistics

June 2008

2008 Libraries Colloquy 2008, Edmonton Alberta

## Currents of Change: The Future of Polar Information



***Prices Realized:  
The Spiraling Costs of Historical Polar Materials***

Philip N. Cronenwett  
Enfield, NH

**Abstract:** The last several decades have witnessed a dramatic rise in the prices asked and obtained for historical polar materials. No longer is it easily possible for an individual or an institutional library to acquire eighteenth, nineteenth, and even twentieth-century polar publications at costs that continue to rise rapidly. While there is a distinct trend in rising costs of rare or uncommon publications throughout the book trade, the costs of historic polar materials are increasing at a more dramatic rate. The result is that many libraries cannot afford to obtain the historical polar materials needed for their patrons.

This paper will present the results of a study of the prices of selected Arctic and Antarctic titles over a period of two decades. The titles were selected from Stam and Stam *Books on Ice* (2005), a volume that itself is now commanding more than twice its original cover price, and follows the selected titles through the vagaries of the British and American used and rare book market at auction and in dealer catalogs. In addition to published materials, this study also reviews the increase in values of unique materials such as photographs and manuscripts to ascertain whether or not these materials are following the trend in values in the general market.

A comparison of the trends in prices of polar materials is made with those in the general rare and used book trade. Finally, several possible reasons for the significant rise in values of polar materials are offered.



**Plenary Session 10**  
***Weather Data and Library Outreach***

**Convenor: Andie Smithies,  
Australian Antarctic Division**



## ***JAWS (Joint Arctic Weather Stations)***

**Steve Allen Schafer**

**Director of Library Services, Athabasca University Library**

**John Gilbert, Edward Atkinson**

**Abstract:** The proposal addresses the collection and presentation of historical and archival information about the Joint Arctic Weather Stations (JAWS). An agreement between Canada and the USA was reached in February 1947 to establish five Arctic Weather Stations staffed by Canadian and American personnel. The representative institutions were the Meteorological Service of Canada and the United States Weather Bureau. The basic program was upper air observations supplemented by surface observations and other scientific observations such as solar radiation and ice depth. Raw data was sent to the Canadian Meteorological Centre in Montreal. In 1947, the first two stations were opened at Eureka and Resolute Bay, followed by Isachsen and Mould Bay in 1948 and finally Alert in 1950. Resolute Bay became the central station with the other four stations being satellites. Each of the satellites was staffed by eight people: four Canadians and four Americans. The normal sojourn at the stations was for a period of at least one year with many extending for two years and more. The highly successful joint program continued from 1947 to the early 1970s at which time the program was taken over by the Canadian Government and re-named High Arctic Weather Stations.

In 2001 a group of retirees, Canadians and Americans, who served on the JAWS began to collect photographs and other memorabilia about the stations. Using a public website, local "chapters", and communicating by email, telephone and the postal service the group has put together a rough collection comprising photographs collections, documents, bibliographies and stories capturing the history of the five stations. The collection is primarily based on the personal recollections of those who experienced life at these isolated stations - the furthest north stations in Canada. The collection includes photographs and information about the program, buildings, people, means of transportation, wildlife and local scenery. Over time it became clear that this material might be of interest to a wider audience. The Government of Nunavut became interested in the collection for use by the people of Nunavut, historians and archivists. In 2007 the Archives program of Culture, Language, Elders and Youth, Government of Nunavut acquired the Joint Arctic Weather Stations (JAWS) Collection and efforts are underway to expand and organize the Collection. Much of the collection is in electronic form. Traditional archival collections exist in several institutions in Canada and the United States and there is an interest in linking between the collections. Since much of the information has been gathered through the World Wide Web the idea of using web-based tools to make the collection available to a wider audience (outreach) has been explored.

The paper will focus on a project for making the images from the collection available through a web site using a program called ContentDM: a way to deploy digital images over the web. This project has been researched and is being managed by Library Services at Athabasca University in Alberta. The research has used sample images from the JAWS Collection and work is underway to structure and organize the collection for ready access by researchers, educators and the public.

***Library outreach events:  
Changing users' perceptions***

**Shelly Sommer  
Institute of Arctic and Alpine Research—INSTAAR  
University of Colorado**

**Gloria Hicks  
National Snow and Ice Data Centre—NSIDC  
University of Colorado**

**Allaina Howard  
National Snow and Ice Data Centre—NSIDC  
University of Colorado**

**Abstract:** This paper details two experimental, inexpensive events that helped connect a small special library with new groups of users within the past year. The Information Centers of the Institute of Arctic and Alpine Research (INSTAAR) and National Snow and Ice Data Center (NSIDC) hosted a joint rare book display on polar exploration, featuring books, background and historical information, and an information scavenger hunt. The INSTAAR Information Center hosted a celebration for a newly published book by an INSTAAR author. Both low-budget events formed connections between the Information Centers and new groups of users, allowing us to change their perceptions of the libraries. This paper details the arrangements and investments made in the events, how the events were received at our institutions, and continuing results.



**Plenary Session 11**  
***Antarctic Issues***

**Convenor: Lynne Howard,  
Arctic Institute of North America  
University of Calgary**



## ***Trends and Patterns in Publication of Antarctic Science***

**DWH Walton**

**British Antarctic Survey,**

**High Cross, Madingley Road, Cambridge CB3 0ET, UK**

**Abstract:** The paper will analyze over 50 years of science publications by British Antarctic Survey to establish the pattern of annual publications, changes in disciplinary output and how these might be related to changing fashions in science and management objectives within the UK. To set the British output in a global context an analysis of ISI Web of Science for publications identified by search terms ‘Antarctic\*’, ‘subantarctic\*’ and ‘southern ocean’ was undertaken. Comparisons between countries show major differences in total output, mean citation numbers and the calculated Hirsch-index. Subject rankings and percentage output comparisons demonstrate the differences between British Antarctic science and the general trends for all Antarctic countries. Examination of the papers with over 400 citations shows the predominance of ozone as a subject, the USA as the major research country and, for these papers, a surprising lack of international authorship.

### **Introduction**

Antarctic science is a relatively recent phenomenon. Whilst there were some studies around Antarctica in the 19<sup>th</sup> century the first organized approach to modern science is largely associated with the Heroic Age expeditions mounted principally by European nations in the first two decades of the 20<sup>th</sup> century. These pioneering expeditions provided a variable scientific output, mostly published as special reports over considerable periods after the expedition had returned. Often little regarded by modern scientists they provided the basis for much of our present work on and around the continent by collecting the first annual meteorological data, the fossils and minerals that provided initial insights into the origins of the continent, magnetic measurements to locate the magnetic South Pole, descriptions of the Dry Valleys and the characteristics of the ice sheet, and taxonomic descriptions of many new species on land and in the sea (Fogg 1992).

The hiatus that followed these initial surveys and collections was due in part to World War I and the following Depression, but also to a public feeling that Antarctic exploration had been achieved. Amundsen and Scott had reached the Pole and there was little more to be learnt of importance to society. Apart from the Discovery Investigations associated with managing whaling, and some politically inspired expeditions—the German *Meteor* Expedition, the first US expedition led by Admiral Byrd and the British, Australian and New Zealand Antarctic Expedition lead by Douglas Mawson, there was little scientific activity, simply underscoring the belief that, without a population and with no obvious economic value, the Antarctic could be put to one side.

The fact that the International Geophysical Year (IGY) described the Antarctic and Space as the two frontiers of the unknown simply reflects how little had been achieved in the decades up to 1956. The physical scientists organizing IGY recognized that, at a global level, much more information was needed from the Poles to provide a better understanding of a wide range of atmospheric phenomena, and that, for measuring some elements, the polar platform was unrivalled. This flowering of scientific activity in Antarctica fifty years ago has continued to grow steadily both in diversity, quality and importance.

This paper will examine some of the trends seen in Antarctic scientific publications by the United Kingdom over this period and relate them to developments in infrastructure and changes in science policy. In addition it will compare British activities with those of selected other Antarctic Treaty Parties, discuss the characteristics of the “most cited” Antarctic papers and consider what this tells us about the status of Consultative Party at the Antarctic Treaty Consultative Meetings.

## **Approach**

There are difficulties in attempting a complete analysis of publications as the various databases available do not use the same criteria for selection and classification nor are they all amenable to analytical approaches. Most do not have publicly available analysis tools allowing searching on address, full text search, keyword search, etc. so that although SPRILIB and the current on-line Antarctic Bibliography (as part of the Cold Regions Database) are both attempting to be inclusive of all publications (and are thus the best basis for an analysis) to the outside user they offer almost no analytical tools (as distinct from search tools). Only the Web of Science is sufficiently sophisticated to allow analytical investigations by users. With these limitations in mind this analysis was restricted to two databases—BAS internal publication list and the Science Citation Index/Web of Science.

The British Antarctic Survey (BAS), and its predecessor the Falkland Islands Dependencies Survey (FIDS), have attempted to collect copies of all their publications since 1946. Whilst this cannot be assumed to be absolutely complete, especially for some of the more ephemeral publications in magazines, it appears to constitute over 95% of all the scientific publications produced. For at least the first 40 years BAS publications constituted virtually the whole of the UK Antarctic output but it is recognized that since the mid-1980s there has been a growing proportion of Antarctic publications from UK universities. The BAS data are, however, not all available electronically so that a manual search was required to categorize all the material. For comparative purposes the categories used were those established for the original Library of Congress Antarctic Bibliography. The literature was counted within the first 12 subject classifications used by the LoC Antarctic Bibliography (the 13<sup>th</sup> category of Political Geography was not represented in the papers BAS published) to establish the general British trends since IGY. To check that allocation to category was consistent a selection of papers was checked against the published bibliography. Whilst it is recognized that this includes all papers in peer

reviewed journals it also incorporates a range of other unreviewed publications. It is thus not directly comparable with the numerical counts in ISI in any year as the latter only includes a specific selection of peer reviewed international journals.

In addition a more detailed comparative analysis was undertaken using the data on Web of Science which now contains some records back to 1970, although the coverage is more limited prior to 1985. The search terms used here were Antarctic\*, Subantarctic\* and Southern Ocean. This allowed a comparison of total published output and mean citation rates as well as Hirsch index (*h*-index) calculations for countries and institutions.

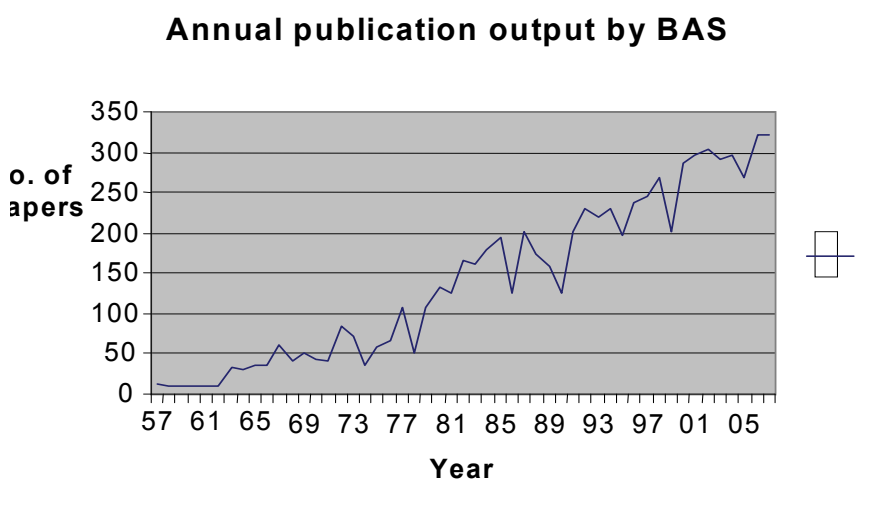
The *h*-index is an index, originally designed to assess the output of physicists, that quantifies both the actual scientific productivity and the apparent scientific impact of any individual or group (Hirsch 2005). The index is based on a specific set of the papers and the number of citations that they have received in other people's publications. The index can also be applied to the productivity and impact of any group of scientists, even at the level of a whole country. It is recognized that the *h*-index varies with the database used and that since only Web of Science was used the results here can only be regarded as indicative.

## Results

### British Antarctic Survey publications

The first decade of activities after the Second World War saw a low annual level of publications until Vivian Fuchs as Director was able to organize the research on a continuing basis. An important step was his decision in the early 1950s to establish an in-house publication series. The *Falkland Islands Dependencies Survey Scientific Reports* began in 1953 and concentrated on monographic material, which suited the exploratory phase of science, especially for geology where the reports normally contained extensive maps and sections. As the science diversified and a wider range of shorter papers needed to be published the *British Antarctic Survey Bulletin* was started in 1963 and continued until 1988, publishing 725 papers. Although they were reviewed the publications were seen as “house publications” and usually excluded from peer review listings. During this period the policy of the Survey was to insist that every scientist published part of his output in the Bulletin or as a Scientific Report which effectively limited the distribution of this material to a section of the Antarctic community.

Fig 1 shows the annual publication output from 1957 to 2006. There is little sign of an upward trend until 1964 after which the annual output moves slowly upward, reaching just over 100 by 1977, 200 by 1987 and 300 by 2002. The apparent lack of IGY in the late 1950s and early 1960s appears to be due to many of the IGY papers on atmospheric physics being published by non-BAS staff and thus not being included in the list. There are a number of significant falls in annual output beginning in 1987 and occurring at roughly five year intervals after this. This pattern seems to be related to a five year funding cycle with a downturn in the year in which the new programme was initiated.

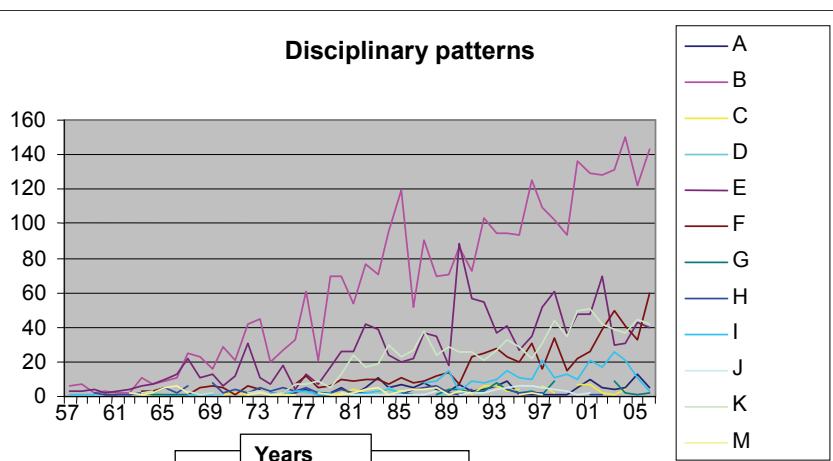


**Figure 1.** Total number of papers published by BAS from 1957 to 2006

Breaking the output down into the 12 Antarctic Bibliography categories (Table 1) provides an indication of changes in disciplinary output.

**TABLE 1 Antarctic Bibliography subject categories**

A	General	G	Logistics
B	Biological sciences	H	Medical science
C	Cartography & mapping	I	Meteorology
D	Expeditions	J	Oceanography
E	Geological sciences	K	Atmospheric physics
F	Ice and snow	L	Terrestrial physics



**Figure 2.** *The patterns of BAS publications in the 12 categories used by the Antarctic Bibliography over the period 1957-2006.*

Figure 2 shows that biology (B) rapidly became the most productive discipline overtaking geology by 1968 and providing around 50% of the total annual output over the last decade. The cyclical pattern appears coordinated in both biology and geology, further confirming its probable link to the funding cycle. The very large peak in 1985 for biology is due mainly to the 35 BAS contributions to two books published in that year (Condy *et al.* 1985, Bonner & Walton 1985) whilst the 1991 peak in geology is linked to the SCAR symposium volume published in that year to which BAS contributed 29 papers (Thomson *et al.* 1990).

## Comparisons between the UK and other countries

One way of considering the patterns of disciplinary outputs is to rank the subjects in order of output for Antarctic science as a whole and compare that to a similar ranking for BAS publications. Within this it is also possible to compare the percentage of the world total attributable to BAS in each science category and to look at the relevant percentage for each category within the BAS total using the Web of Science database (Table 2).

The proportions in each science category give a proxy indication of scientific activity within each field with BAS contributing 12.1% to the total of 33545 publications. Thus there are two ways of looking at the differences data—differences by category between the percentage of the global total and the BAS percentage, or the proportion within the BAS total of papers. The former gives an indication of how BAS matched global trends whilst the latter indicates the proportional activity within BAS.

**TABLE 2 Comparisons of the general publication trends compared to those for British Antarctic Survey in ISI using Antarctic\* OR Subantarctic\* as search terms**

Global ranking	Subject	Total	% of total	BAS total	BAS as % of total	% of BAS	BAS ranking
		33545	100	4061	12.1	100	
1	Geosciences	6425	19.2	859	13.4	21.1	1
2	Oceanography	3931	11.8	414	10.5	10.2	5
3	Ecology	3369	10.1	630	18.7	15.5	2
4	Marine & Freshwater Biol	3065	9.2	541	17.7	13.3	3
5	Meteorology & Atmos Sciences	3006	9.0	449	14.9	11.1	4
6	Geochemistry & Geophysics	2886	8.6	280	9.7	6.9	10
7	Physical Geography	2809	8.4	303	10.8	7.5	9
8	Environmental Sciences	2434	7.3	312	12.8	7.7	8
9	Biodiversity & Conservation	1846	5.5	231	12.5	5.7	12
10	Multidisciplinary Science	1801	5.4	320	17.8	7.9	7
11	Zoology	1397	4.2	250	17.9	6.2	11
12	Biochem & Molecular Biol	1263	3.8	53	4.2	1.3	19
13	Plant Sciences	1046	3.1	83	7.9	2.0	16
14	Palaeontology	1023	3.1	88	8.6	2.2	15
15	Geology	984	2.9	80	8.1	2.0	16
16	Microbiology	869	2.6	43	4.9	1.1	20
17	Astronomy & Astrophysics	807	2.4	339	42.0	8.3	6
18	Biotechnology & Appl Microb	806	2.4	22	2.7	0.5	22
19	Biology	631	1.9	152	24.1	3.7	13
20	Fisheries	527	1.6	94	17.8	2.3	14
21	Limnology	274	0.8	37	13.5	0.9	21
22	Ornithology	225	0.7	83	36.9	2.0	16

Looking first at the rankings. Oceanography comes 5<sup>th</sup> at BAS compared to 2<sup>nd</sup> in the world, whilst Geochemistry & Geophysics is 10<sup>th</sup> compared to 6<sup>th</sup>. Biochemistry & Molecular Biology is 19<sup>th</sup> at BAS compared to 12<sup>th</sup> in the world, probably due to the delay in establishing advanced genomic facilities at BAS. Most strikingly Astronomy and Astrophysics is 6<sup>th</sup> at BAS compared to 17<sup>th</sup> in the world, a clear indication of deliberate investment in this field, especially through ionospheric research.

The percentage that BAS contributes to the world total for each subject also highlights some differences and indicates where Britain might well be considered the world leader. Ecology and Marine & Freshwater Biology have clearly been strong fields with BAS providing 18.7% and 17.7% respectively, but more major areas were Astronomy & Astrophysics (42%), Ornithology (36.9%) and Biology (24.1 %). Much of the dominance in Astronomy & Astrophysics is linked directly to the establishment of an Atmospheric Sciences Division in 1973 which allowed the development of a major programme in ionospheric research and, in due course, the installation of the SuperDARN radar. The high percentage of Ornithology papers is directly linked to the research group established by John Croxall and Peter Prince at Bird Island whilst Biology has a range of major contributors – A Clarke, L Peck, W Block, CS Cockell, P Convey, MR Worland, DKA Barnes – providing many papers on both terrestrial and marine biology. The fact that BAS contributed only 2.7% for Biotechnology suggest that this field was actively avoided. Grossing up the figures in Table 2 shows that all geoscience papers comprise 11318 and all bioscience papers 15318 of the total of 33545 so that the two groups consist of 11.5% and 15.0% of the total. These figures suggest some crude equality of overall effort on a global scale. However summing the same categories for BAS shows that geoscience papers were only 32.1% of its output whilst bioscience accounted for 56.7%, a very marked difference in allocation of effort.

BAS is, of course, not the sole centre in the UK for Antarctic research. There has been substantial work by a number of university groups, especially in the last 15 years, and their inclusion, together with the widening of the search field by including the Southern Ocean, provides an indication of output for the whole of the UK. Some papers are of course likely to have authors from across the UK so that the following numbers are not exclusively authored from a single region. Searching for the three keywords under England, Scotland and Wales provides a working total of 6814 papers of which 2143 have BAS authors (31.4%). The bulk of the non-BAS papers come from research institutions in England (2883) followed by 616 from Scotland and 272 with Welsh authors.

## **Citation Frequency**

Despite all the faults associated with citation analysis it does give an indication of the key fields of research. The Web of Science maximum total for the three keyword search shows that of 35,640 papers only 29 have more than 400 citations and of these only 18 are directly concerned with the Antarctic. Table 3 gives brief details of these.

**TABLE 3 All papers in Web of Science with 400+ citations from Antarctic\*. Subantarctic\* and “Southern Ocean” that are directly part of Antarctic research**

1363	Farman, J. et al (1985) Large losses of total ozone in Antarctica reveal seasonal ClO <sub>x</sub> /NO <sub>x</sub> interaction. <i>Nature</i>
1227	Petit, J. et al (1999) Climate and atmospheric history of the past 420,000 years from the Vostok ice core. <i>Nature</i>
727	Solomon, S. et al (1986) On the depletion of Antarctic ozone. <i>Nature</i>
677	Fuhrman, J.A. & Azam, F. (1980) Bacterioplankton secondary production estimates for coastal waters of British Columbia, Antarctica and California. <i>Applied and Environmental Microbiology</i>
641	Hoffman, P.F. (1991) Did the breakout of Laurentia turn Gondwana inside-out? <i>Science</i>
564	Kerr, J.B. & McElroy, C.T. (1993) Evidence for large upward trends of UV radiation linked to ozone depletion. <i>Science</i>
558	Smith, R.C. et al (1992) Ozone depletion, UV radiation and phytoplankton biology in Antarctic waters <i>Science</i>
525	Kennett, J.P. (1977) Cenozoic evolution of Antarctic glaciation, circum-Antarctic Ocean and their impact on global palaeogeography. <i>JGR</i>
518	Solomon, S. (1990) Progress towards a quantitative understanding of Antarctic ozone depletion. <i>Nature</i>
493	Molina, M.J. et al (1987) Antarctic stratospheric chemistry of chlorine nitrate, hydrogen-chloride and ice – release of active chlorine. <i>Science</i>
481	McElroy, M.B. et al (1986) Reductions of Antarctic ozone due to synergistic interactions of chlorine and bromine. <i>Nature</i>
477	Orsi, A.H. et al (1995) On the meridional extent and fronts of the Antarctic Circumpolar Current. <i>Deep Sea Research Part 1</i>
473	Boyd et al (2000) A mesoscale phytoplankton bloom in the polar Southern Ocean stimulated by iron fertilisation. <i>Nature</i>
462	Russell, J.M. et al (1993) The Halogen Occultation Experiment. <i>JGR</i>
437	Crutzen, P. & Arnold (1986) Nitric acid cloud formation in the cold Antarctic stratosphere – a major cause for the spring-time ozone hole. <i>Nature</i>
435	Martin, J.H. et al (1990) Iron in Antarctic waters. <i>Nature</i>
421	Dalziel, I.W. (1991) Pacific margins of Laurentia and East Antarctica-Australia as a conjugate rift pair – evidence and implications for an Eocambrian continent. <i>Geology</i>
401	Moore, E.M. (1991) South West United States – East Antarctica (SWEAT) connection – a hypothesis. <i>Geology</i>

The top cited paper (Farman et al 1985) established for the first time the extent and trend of ozone depletion in the upper atmosphere above the Antarctic. This is by a long way the most cited Antarctic paper (1363) and certainly one of the most important contributions from British Antarctic research. However, the

UK failed to capitalize on this with only 144 papers (7.5%) in the database out of a total of 1918 linked to ozone, showing that despite the key discovery starting this field of science policy at BAS the UK failed to follow this up, and it was left principally to the US to develop this field. This is clearly indicated by the other highly cited papers in this list by Solomon, McElroy, Smith and Molina from the USA, with the only other ozone paper being by Crutzen in Germany.

Two other key themes appear in this list. The first is climate change - evidenced by the multi-author paper on the Vostok core and the paper on iron fertilization attempting to stimulate carbon drawdown in the Southern Ocean. This remains a very topical research field as atmospheric carbon dioxide levels continue to increase. The second is Gondwana history, a continuing field for geosciences research but much less politically significant than either ozone or climate change field and yet there are two papers on this with over 400 citations.

Equally interesting is the breakdown of the journals for these top 17 papers. *Nature* clearly dominates (8) with *Science*(4) a rather poor second and then four disciplinary journals. This underscores the present emphasis on publishing in either *Nature* or *Science* to establish international recognition in a field. Surprisingly only three of these top papers are internationally authored and the lead authors are from the USA (13) with only one each from New Zealand, Germany, France and the UK.

## **International comparisons**

Table 4 shows the Web of Science analyses for 13 of the present 29 Antarctic Treaty Consultative Parties. Given that the status of Consultative Party is only agreed for a new state applicant on the basis of a presentation of a portfolio of acceptable scientific work it might be expected that only Parties undertaking significant work would be accorded this position. Sadly this is not the case and politics plays a major role in deciding on admission.

The countries chosen for the analysis include claimant parties (Argentina, Australia, Chile, New Zealand, Norway, UK), 10 of the original 12 signatories to the Treaty in 1959 (Argentina, Australia, Chile, France, Japan, New Zealand, Norway, South Africa, UK, USA), examples from both hemispheres and from European as well as Asiatic cultures. And it includes three countries that joined in the last 25 years (Germany, Italy and Netherlands).

The outputs in different categories could be expected to reflect both policy and funding decisions as well as the availability of infrastructure – such as ships and aircraft—and the terrain accessible from wherever the research stations were sited. For example, South Africa has 18.2% total geoscience papers (geoscience + geology + palaeontology) whilst the UK has 29.2% and New Zealand 41.3%. Most of the South African papers are on Marion Island as there were few nunataks accessible from SANAE station, whilst the British were able to access not only the maritime Antarctic islands but almost all of the west side of the Peninsula and the New Zealanders geologised over all of Victoria Land.

Undoubtedly the high percentages for Oceanography for Germany, France, and the USA are linked to high quality research vessels in each country.

The Netherlands scores highly in this category as well but since it does not possess any Antarctic research vessels this must be because of work of the German ship *Polarstern*. The category Physical Geography incorporates glaciology and here New Zealand, Norway, Argentina and the UK have all rated it a significant field whilst Japan has not.

Looking now at the newest members of the Treaty we can see that they decided to focus on particular fields. Italy has made major efforts in Environmental Sciences (17.7%) and Chemistry (15%), Germany spread its efforts more widely but did concentrate on Oceanography (18.5%), Meteorology (12%) and Marine & Freshwater Biology (12.2%) and the Netherlands also targeted the same subject areas as well as Chemistry.

Biodiversity and conservation are significantly higher in Argentina (12.1%) and South Africa (15.2%) than in the other countries whilst South Africa (26.1%), Chile (20.9%), Norway (19.6%), and Argentina (17.6%) all show a strong interest in Ecology.

Not shown in the table are some figures for fisheries (New Zealand 5.2%, Japan 5%, Australia 3.2% and Norway 3%). Given the scale of the Southern Ocean fisheries and the activities of CCAMLR since 1984 it seems surprising that the percentages are so low but this could be explained by the majority of research being published within CCAMLR as papers for the Scientific Committee which would not appear in Web of Science. The new field of biotechnology also appears for some countries (Japan 5%, Germany 2.1%), which is especially interesting in the light of present discussions on bioprospecting in the Antarctic.

Whilst the period covered for all the countries is the same Germany, Italy and Netherlands have only been significantly active in the Antarctic since around 1980. All the other countries have been active since or before IGY and the total paper output shows very major differences. It is to be expected that the USA with the largest number of scientists and a sophisticated infrastructure will be a long way ahead of all the other countries in total papers published with the nearest contender (the UK) with only half as many. More interesting are the rankings for mean citations per paper which show the ranking of USA, France, Netherlands, Germany, UK and Australia with all the other countries far behind. This ranking does not fit closely with the Hirsch index ranking for all these countries—USA, UK, Germany, France, Australia—suggesting that the impact of UK and German papers may be higher than originally assumed. *H*-index was originally designed to deal with comparisons within a discipline as citation practices vary widely across disciplines. I would contend here though that since the same range of disciplines are represented in virtually all countries this is at least an indicative comparison.

**TABLE 4. Comparisons of national outputs using (Antarctic\* AND subantarctic AND 'southern ocean') as search terms with outputs shown as percentages of total national output.**

	Argentina	Australia	Chile	France	Germany	Italy	Japan	Nether	NZ	Norway	SA	UK	USA
Geoscience	17.7	24.3	15.4	20.1	21.2	20.1	19.3	18.3	26.8	21.1	14.5	22.1	21.1
Oceanog	7.1	12.6	11.5	17.2	18.5		11.6	19.8	12.0	17.0	13.9	13.5	15.2
Meteorology	4.6	9.7	6.3	13.5	12.0	7.1	11.4	12.8	7.9	5.6	3.3	10.1	12.8
Geochemistry		7.1	6.3	11.6	8.9	10.7	14.1	6.8	4.3	6.4	4.4	8.3	12.1
Physical geog	10.6	9.1	7.6	5.8	7.3	9.6	2.9	8.1	11.5	10.6	7.9	10.1	8.8
Marine & fw biology	15.0	12.8	15.1	9.0	12.2	6.4	5.4	10.4	10.6	11.8	14.8	10.5	6.8
Ecology	17.6	12.5	20.9	12.3	13.0	9.5	4.8	11.6		19.6	26.1	12.6	6.0
Envir. science	9.6	10.1	11.5	6.2	7.9	17.7	4.4	6.5	8.6	10.4	6.7	8.0	5.8
Multidiscipin	1.9	2.7	2.4	5.1	2.4	1.3	2.1	2.8	4.5	3.9	10.8	6.1	5.6
Paleontology	11.3	3.7	1.8	3.0	4.1	1.9	1.5	3.9	4.8	2.9	2.0	4.0	4.4
Zoology	4.6	4.1	3.4	4.1	2.9	4.6	1.7	1.5	5.8	5.1	10.9	4.3	3.4
Astronomy	1.8	2.7	1.8	2.4	2.0	4.8	3.8	1.8	1.8		2.1	2.7	3.0
Geology	3.6	5.0	1.8	1.7	2.0	2.5	2.0	1.5	9.7	1.5	1.7	3.1	2.9
Plant science	5.9	4.6	7.9	1.3	3.7	1.9	1.0	6.6	4.6	4.9	2.3	2.4	2.5
Chemistry	3.8	1.6	5.4	5.2	6.4	15.0	8.3	11.7	0.3		7.2	1.8	2.2
Biochem & mol biol	4.8	2.0	2.6	3.8	3.0	8.4	5.8	4.0	3.1	5.4	1.2	1.8	2.3
Biodiversity & conserv	12.1	6.5	13.6	6.0	8.2	8.1	2.9	6.9	6.1	9.1	15.2	5.4	2.4
Total papers	884	3638	382	2630	3594	1971	1945	894	1663	594	861	5511	11644
Total Citations	7762	57415	3692	49439	62319	16523	20779	15562	21925	8745	11338	93323	235903
Mean cites per article	8.8	15.8	9.7	18.8	17.3	8.4	10.7	17.4	13.2	14.7	13.1	16.9	23.6
H-index	36	80	30	84	86	43	55	52	55	44	45	99	157

Note: Total percentage is often greater than 100% as some papers fall in more than one category. Note that the citation index was created for USA by removing lowest scoring 1165 papers

## Discussion

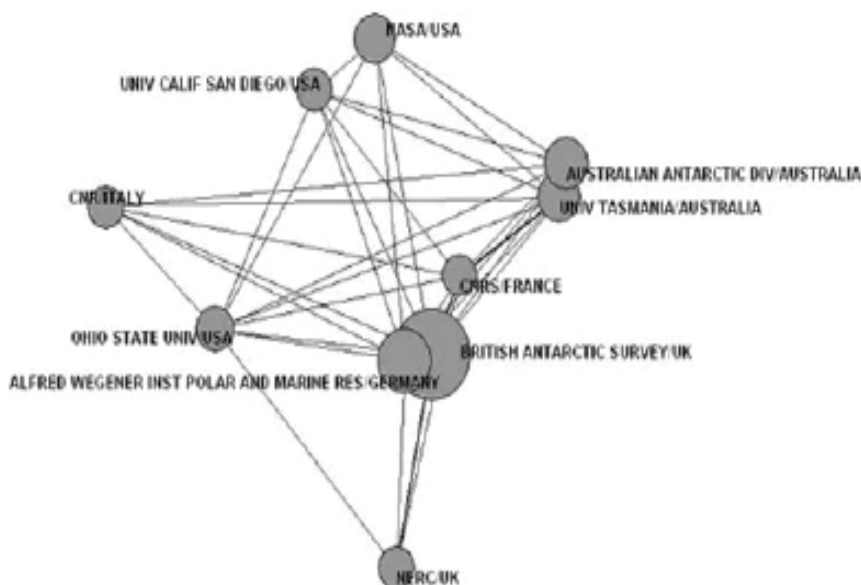
Analysis of research output has a long history but the recognition of the importance of the relative performance of individual researchers, research groups, institutions and countries has grown steadily with increasing published output and competition for resources. Eugene Garfield's original paper on citation indices was published in 1955 and effectively set in motion the Science Citation Index (now the Web of Science). This now provides citation data for approximately 8700 journals of an estimated 25000 peer reviewed journals published (Harnad *et al.* 2004).

The approach here recognizes the many problems associated with indices, most recently examined in a themed issue of Ethics in Science and Environmental Politics (Browman & Stergiou 2008) and has tried to avoid at least some of them by using percentages or cumulative totals. This makes no assumption about the quality of the science but does assume that the productivity either by discipline or by nation is at least a proxy indicator of a combination of resources allocation. This is a complex concept since resource priorities are determined by a wide range of forces including novelty, topicality, appropriateness of fit to policy, assumed likely return on investment, ability to deliver and affordability. Nevertheless it is suggested that the patterns of output shown in Table 6 do indicate some important differences in the national choices made of particular science areas.

The most recent analyses of the patterns of Antarctic publications have been studies by Dastidar & Persson (2005) and Dastidar (2007). In the earlier paper the authors used the SCI (WoS) database from 1980-2003 analyzing 10,287 papers selected only by the search term "Antarc\*", which provided fewer hits than the multiple search terms used here. Their productivity listing shows the same pattern as here but since they chose to list all of the top 35 countries their list includes such non-Treaty countries as Israel, Ireland, Denmark, Hungary and Taiwan whose scientists have taken part in other national expeditions. They developed a multidimensional scaling method for illustrating the collaborations between countries which shows considerable promise as a way of demonstrating the relative internationality of the research of each country. Whilst their citation analysis does not provide exactly the same numbers as here as the range of papers included was different their country-to-country citation matrix demonstrates that in the giving and receiving of citations a completely different pattern of priorities is established with Israel having the highest positive score and Spain the highest negative score. Further work here would be interesting to establish the differences in citation patterns within the different disciplines.

In his most recent paper Dastidar(2007) continues the analysis of the original set of papers and shows that for single institutions the British Antarctic Survey is the most productive worldwide followed by the Alfred Wegener Institute and the Australian Antarctic Division (Fig. 3 ). In examining the national outputs he listed the gross domestic per capita spend on research and development for each country suggesting that in general terms those who spend more should be higher up the output table. However, this is not a direct relationship since the research spend in priority order for the top 10 Treaty

countries is Sweden, USA, Finland, Japan, Germany, Norway, Belgium, France, Canada and Netherlands. The priority order for production of Antarctic papers is USA, UK, Australia, Germany, Italy, France, Japan, New Zealand, Russia and Spain. Thus the gross research spend is very poorly correlated with Antarctic activities. A much more valuable correlation would be to compare national Antarctic costs (both logistics and research) with scientific output and paper citations as a more accurate assessment of value for money. This is likely to prove very difficult however as no two countries published their expenditure details in the same way, many countries provide almost no data on annual expenditure and even for those that do the costs of military support are never included.



**Figure 3.** *Importance of individual Antarctic institutions and the links between them (from Dastidar 2007)*

Web of Science not only underestimates the true citation impact because it omits many journals and other types of publication but it is also biased against papers in languages other than English. This is probably more of a problem in the social sciences and humanities than for natural sciences (Archambault & Gagne 2004) but is certainly a real problem for much of the earlier South American science literature. Thus, the overwhelming domination of the USA, UK and Australia is underpinned by the lack of inclusion of papers in Spanish, French, German, Italian, Japanese, Dutch and Norwegian. Two other elements almost certainly militate against any major impact of their Antarctic science for some countries. The high cost of the major international journals means that researchers in countries such as Argentina and Chile have much more difficult access to current Antarctic literature and are less likely to be up to date whilst the scientific communities in several countries are quite small and relatively

poorly funded. It would thus appear that applying a single scientific standard for qualification as a Consultative Party would not be fair.

The data for Britain demonstrate in more detail how a single institution has changed over many decades and how some features of its scientific output appear to be linked both to major international meetings and to its funding cycle. The way in which the output for the UK as a whole has moved from almost entirely produced by BAS to the present situation where a significant component is now produced directly by the universities is attributable to policy decisions taken in the 1980s. A requirement to collaborate more closely with universities and followed by a further policy decision in 1998 to establish an annual cash allocation of £1.5M, together with infrastructure support, as the Antarctic Funding Initiative for British universities (British Antarctic Survey 1999) opened up much greater opportunities for UK university researchers.

If the Cold Regions Database provided analytical tools a much more detailed and balanced analysis of national outputs, which would include all the non-English publications, would be possible. There is much scope more more analytical studies of this sort to show how Antarctic science has been affected by developments elsewhere in the world and well as looking at how Antarctic discoveries have penetrated into the more general disciplinary literature. Equally interesting would be a study of how science publications are linked to policy developments in the Antarctic Treaty System.

## References

- Archambault, E. & Gagne, E.V. 2004. *The use of bibliometrics in social sciences and humanities*. Social Sciences and Humanities Research Council of Canada, Montreal.
- British Antarctic Survey 1999. *Annual Report 1998-99*. Cambridge: BAS, Pp.128.
- Bonner, W.N. & WALTON, D.W.H. 1985. *Key Environments – Antarctica*. Oxford-Pergamon Press. Pp.381
- Dastidar, P.G. 2007. National and institutional productivity and collaboration in Antarctic science: an analysis of 25 years of journal publications (1980-2004). *Polar Research* **26**(2), 175-180.
- Dastidar, P.G. & Persson, O. 2005. Mapping the global structure of Antarctic research *vis-à-vis* Antarctic Treaty System. *Current Science* **89**, 1552-1554
- Fogg, G.E. 1992. *A history of Antarctic science*. Cambridge, CUP. 483pp.
- Garfield, E. 1955. Citation analysis as a tool in journal evaluation. *Science* **178**, 471-479.
- Harnad, S., Brody, T., Vallieres, F. and others. 2004. The access/impact problem and the green and gold roads to open access. <http://eprints.ecs.soton.ac.uk/10209/>
- Hirsch, J. E. 2005.. An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences*, **102**(46):16569-16572,
- [Roscoe, J.] 1951. *Antarctic Bibliography*. US Naval Photographic Interpretation Center NAVAER 10-35-591. 147pp.

- Siegfrid, W.R., Condry, P.R. & Laws, R.M. 1985. *Antarctic nutrient cycles and food webs*. Berlin: Springer Verlag. Pp. 700.
- Thomson, M.R.A., Crame, J. A. & Thomson, J.W. 1991. *Geological evolution of Antarctica*. Cambridge: Cambridge University Press. Pp. 736.



## ***NORA: An Open Window to British Antarctic Research***

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**Abstract:** As part of the open access publishing movement, Research Councils UK has mandated that the outputs of all Research Council funded research must be deposited in an institutional or subject-based repository. In response, UK's Natural Environment Research Council (NERC) has set up the NERC Open Research Archive (NORA), which aims to become a comprehensive source of NERC funded research outputs. This paper will outline how institutional repositories can help the drive towards open access publishing. It will consider the imperative for NORA and also examine some of the user and organisational benefits, including increased visibility, availability and impact of research outputs. It will outline how stakeholders were engaged in the development and implementation process, both at a British Antarctic Survey (BAS) and at a NERC level. Delivery of the advocacy programme and the self-deposit model for populating NORA will also be discussed.

### **What is NORA?**

NORA is an institutional repository providing access to the research outputs of the Natural Environment Research Council's (NERC) research centres—usually in the form of full text PDFs of research papers. In addition to the British Antarctic Survey (BAS), other research centres that contribute to NORA are the British Geological Survey (BGS), the Centre for Ecology and Hydrology (CEH) and the Proudman Oceanographic Laboratory (POL).

An institutional repository holds an institution's research outputs and makes them freely and openly available. Institutional repositories are one of the easiest ways of promoting the move to open access publishing by providing post- and pre-prints of scientific papers. Open access publishing involves publishing material in a way that ensures that it is available to potential users without financial or other barriers. There are other key ways of promoting this change, in particular open access journals.

Repositories can be seen as part of wider changes to scholarly publishing and allow a single gateway to search. Metadata can be easily harvested by search engines to provide wide access to research outputs. Together, they form a database of global research. Importantly, they are freely, publicly and permanently available.

There are now over 1,000 repositories worldwide, with about 125 in the United Kingdom, mostly in the university sector. All use open source software that allows data to be shared. For publisher permissions, 92% of journals permit

self-archiving in some form. It is worth noting that this high figure of 92% includes archiving on personal websites and may not be as high for institutional repositories. NORA holds both mandatory and optional deposits. Mandatory deposits are primarily peer reviewed journal papers and book chapters. Optional deposits include a range of grey literature, including poster papers, presentations and non-refereed conference papers.

## **Why NORA?**

The major imperative was the Research Councils UK position statement in 2005. To ensure that ideas and knowledge arising from publicly funded research were made widely available and easily accessible, it was mandated that:

From 1 October 2006, subject to copyright and licensing arrangements, a copy of any published journal articles or conference proceedings resulting from Research Council funded research should be deposited in an appropriate e-print repository (either institutional or subject-based) wherever such a repository is available to the award-holder.

This can be seen as part of a wider change in attitude of research funders across the world and has been driven by changing stakeholder expectations and the availability of technologies to deliver the change.

However, the imperative was not the only driver for developing NORA. Firstly, there are benefits to the researchers themselves. For BAS staff, it provides easy access to the research outputs of the other NERC research centres, promoting information sharing and increasing the impact of their research. For BAS, it makes science more visible, thus increasing impact and accessibility. In the demonstration at the end of this presentation, I will prove this point by demonstrating how search engines such as Google readily index NORA entries. With around 88% of users of NORA accessing it through search engines, this offers BAS the potential to increase the visibility of its science.

Institutional repositories, such as NORA, also offer benefits to national economies by providing knowledge transfer opportunities. Internationally repositories provide wider access for all, including the developing nations who may not always have access to publisher databases.

## **How was NORA developed?**

Firstly, I will focus on development across NERC. As previously mentioned, NORA was developed as a shared system between the NERC research centres and provides access to a research outputs across all the environmental sciences, and not just to polar environmental science. NERC librarians took the lead in initiating this project and played a key role throughout its development. NORA was developed as a collaborative project across the NERC research centres, with a project board to oversee development and a clearly defined initial specification of requirements. As the project progressed, there were often conflicting and competing requirements across the research centres. These were resolved by

good project communication and by holding two stakeholder workshops during the project to define detailed requirements and resolve any differences.

Secondly, I will focus on how we developed and introduced NORA at BAS, ensuring that user requirements were captured during development and that there was adequate understanding and buy-in from users. We set up a local user group, comprising representatives from each science division, which took part in the formal user-testing programme of the software. To ensure user engagement, an advocacy programme was developed and delivered. As part of this, a number of user awareness presentations were provided before the official launch. The presentation was first piloted on the user group representatives and, as a result, the presentation was re-focused on selling the benefits to the staff, rather than stressing the imperative, and on demonstrating that NORA increases the visibility and impact of BAS' science. Presentations were initially targeted to key stakeholders, such as project leaders, who have a role in encouraging wider usage across the organization. General sessions for anyone interested were also provided as apart of the awareness programme.

In addition to the awareness presentations, training materials were created, both at NERC and BAS levels. These included a brief quick deposit guide and publicity leaflet. Further guidance has also been developed for the BAS intranet.

## **How is NORA delivered?**

NORA uses Eprints open source software, which has been developed by the University of Southampton. There are two leading players in this area, Eprints being one and Dspace being the other, with Fedora also beginning to make an impact in this sector. Eprints was chosen on the basis that it was already used by other parts of NERC, that it was easy to install and configure, and requires only minimal maintenance.

NORA is populated using a self-deposit model, where the first author of a paper is required to enter metadata into NORA and upload a pdf of the post-print or pre-print of the paper. The type of PDF will depend upon what each publisher permits. NORA provides a link to SHERPA RoMEO, a site that provides a summary of permissions that are given as part of each publishers copyright transfer agreement. Publishers range from green publishers allowing full archiving of post-prints to white publishers that do not permit archiving of pre- or post-prints in any form. The Eprints software is intuitive, allowing rapid deposit of new items with minimal or no user training. The BAS library provides an editorial function, checking metadata and releasing items to the live repository.

Although NORA has, on the whole, been well received by users, there has been some resistance to the shift towards expecting users to enter their own metadata and the concept of self-deposit. There have also been user doubts about open access publishing and the perceived threats to journals. Encouraging greater usage, addressing user concerns and maintaining the profile of NORA will be ongoing activities.

## **Summary**

Institutional repositories, such as NORA, are one of the easiest ways of promoting open access publishing. NORA has provided a key mechanism for increasing access to and the visibility of our Antarctic science research outputs. NORA has been developed collaboratively between the NERC research centres and there have been adequate opportunities for stakeholder engagement through the development process. Although it was primarily developed as a result of an imperative, there are clear user benefits: the ongoing success of the repository depends on continuing to sell its benefits to users and on initiating further developments.

**Plenary Session 12**  
*Media*

**Convenor: Marcel Branneman**  
**Alfred-Wegener Institute for Polar and Marine  
Research**



***Mainstream Media Publications and Northern Issues:  
Examining the Nature of Information Available to the  
Public***

**Lindsay Johnston,  
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and Doug Clark  
with the support of Allison Sivak  
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Our research team undertook a content analysis of newspaper articles from 2004 to 2008 on polar bears and climate change. This examination of news articles was conceived to uncover the way the media reports on polar bears and climate change. For example:

**How are the issues reported to the public?**

The group wanted to record what issues were included in each article, so that issues such as hunting, climate change, and industry could be highlighted. Also, we wanted to record whether the issues were simplified, or explained in-depth. For example, there are 13 polar bear populations in the Canadian north, and they are all managed separately. We wanted to capture whether there was a tendency to acknowledge this type of fact, or whether there was a tendency to simplify and generalize for the purposes of reporting.

**Who's voices are heard?**

What is the role of local people who's lives are interconnected with the bears, and what is the role of others? Is a balance of voices represented?

**What knowledge systems are valued?**

Inuit traditional knowledge is often at odds with western science. What biases or balance of views tend to come across in the mainstream media?

**Who are the key players and how are they represented?**

Inuit, scientists, government agencies, environmental groups, companies, Canadians, Americans, and so on, all have a stake in the livelihood and management of polar bear populations. How is each group portrayed in the popular press?

This study responds to the current reality of polar bear management in North America. On February 16, 2005, the Center for Biological Diversity submitted a petition urging the U.S. Fish & Wildlife Service to list the polar bear

as a threatened species. Then the Natural Resources Defense Council and Greenpeace added themselves as petitioners on July 5th, 2005 (U.S. Department of the Interior, 2006). Between 2005-2008, the U.S. Fish & Wildlife Service took much longer than allotted time to make a decision, so the Environmental groups had to sue for a decision. Under the U.S. *Endangered Species Act*, the Secretary of the Interior has 90 days to reply to such a petition (Center for Biological Diversity 2005; *Nunatsiaq News* 2005). One of the *Nunatsiaq News* articles that we read explains,

The 154-page petition, which contains scientific information, as well a supplemental letter, cites global warming as the primary threat to polar bears, in addition to other threats such as oil and gas development in the Arctic, high levels of contaminants in polar bear tissues, and over-hunting of some populations in Canada, Greenland, and Russia (George 2005).

In December, 2006, the Fish & Wildlife Service announced its proposal to list polar bears as threatened in the *Federal Register*, inviting public comment on the issue. On May 14, 2008, polar bears were listed as a threatened species under the American Endangered Species Act (U.S. Department of the Interior 2008).

The issues underlying our study can be divided into four categories. These four categories emerged repeatedly in our content analysis:

**Science:** Sea ice is primary polar bear habitat. There is compelling evidence of sea ice reduction. Polar bears depend on sea ice for hunting. Of the twenty-two to twenty-five thousand polar bears in the world, two thirds of them live in Canada, mostly in Nunavut:

Warmer temperatures are thinning ice sheets off Arctic coastlines, shrinking the bears' hunting grounds and hampering breeding. Roughly 15,000 of the world's 22,000 to 25,000 polar bears live on Canadian soil, while Alaska is home to about 4,700 (Lackner 2006).

Through the articles we read, predictions on polar bear populations vary. Three statements kept recurring: "May decline 30% over the next 50 years," "Will stop producing cubs within 30 years," and "Will be extinct within 30 years." The IUCN *Red List* report on polar bears states, "Ice-dependent polar bear populations will drop more than 30 per cent over the next 45 years if global warming continues to affect the Arctic region" (Schliebe, Wiig, Derocher, & Lunn 2006).

Polar bears hunt ringed seals from the sea ice, which is melting faster than it used to. During the summer when they cannot hunt seals, they are in a state of 'walking hibernation.' Polar bears can maintain this for months, but they are starting to suffer. Lower bodyweights mean less successful pregnancies, so the birth rate could decline. Some mothers den in the sea ice during pregnancy, birth, and infancy, so these habits are threatened by diminishing sea ice as well.

Less sea ice means bears must swim farther between ice floes. They can swim a long way, but there are reports of them drowning. The effects of climate change are dramatic in arctic regions because dark arctic sea water holds the heat and the average water temperature appears to be going up faster than in more southerly regions. As more dark sea water is exposed due to melting, even more heat gets trapped. “The impact of climate change is increasingly felt in polar regions, where summer sea ice is expected to decrease by 50 to 100 per cent over the next 50 to 100 years” (Schliebe *et al.* 2006).

**Public perception:** Polar bears are often used as an emblem of climate change. Some of the articles that we did not include in our coding project showed up in our initial search because they were articles about global warming, with no written mention of polar bears, except that the *picture* associated with these articles was of a polar bear.

**Politics:** This is the first time that global warming has been given, and accepted, as the reason for a species being threatened:

The United States is proposing listing the polar bear as an endangered species, marking the first time the Bush administration has suggested climate change could be responsible for threatening an animal with extinction (Lackner 2006).

**Social Justice:** What effects will changing the status of polar bears under the U.S. *Endangered Species Act* have on the Nunavut economy and traditional lifestyle? The reported dollar figure contribution of sports hunting to Nunavut's economy varies, but it is uniformly significant. For example:

Polar bear trophies from Nunavut could be banned from the United States, crippling the territory's annual polar bear sports hunt, if information isn't released soon about the traditional knowledge that was used to establish new quotas and management plans for the species. The sports hunt brings about \$1 million into Nunavut every year (George 2005).

## Methods

To start our project, Naomi and Doug drafted a coding sheet, and we all met to agree on the final wording (please see Appendix A). I did a quick search to find some relevant newspaper articles and we all coded the same set of 13 articles to test the reliability of our content analysis instrument. This test allowed us to pinpoint some ambiguities on the coding sheet and verify consistent coding practices between the four members of the team.

Next, we had to decide which newspapers to target. I found circulation rates and target audiences for North American newspapers and news magazines on the Audit Bureau of Circulations and Canadian Newspaper Association websites, and in *Ulrich's*. We decided to concentrate on nine national and

regional English-language publications. The newspapers we chose to target represent: variety in geographic origin and viewpoint, variety in publishers, and high circulation where possible. I investigated to determine where the publications were indexed and available fulltext. The *Anchorage Daily News*, *Edmonton Journal*, *Globe and Mail*, *LA Times*, *National Post*, *New York Times*, *Toronto Star*, and *Washington Post* are all indexed and available fulltext from at least 2004 in the database called *Factiva*. I constructed a search to find all possible newspaper articles on our topic. The *Nunatsiaq News* is not indexed in *Factiva*, so we also had to do a separate search of the publication's online archive using Google. We were looking for articles from 2004 to 2008, covering the lead-up to the submission of the Centre for Biological Diversity's submission, to the present day.

So, based on the information that we were trying to capture in our coding sheet, here is the search I created I *Factiva*:

(polar bear or polar bears or nanuk or nanook or nanuq or nanuuq or wapusk or nannuraluk) and (climate change or global warming or emissions or consumption or greenhouse gas or greenhouse gases or ecology or ecological or conservation or pollution or endangered or threatened or Species at Risk Act or Endangered Species Act or Committee on the Status of Endangered Wildlife in Canada or COSEWIC or International Union for Conservation of Nature or IUCN or Inuit or Eskimo or Inupiat or Inuvait or Cree) not Knut not Kunik not summer camps

**Sources:**

Anchorage Daily News Or Edmonton Journal Or The Globe and Mail (Canada) Or Los Angeles Times Or National Post Or The New York Times Or The Toronto Star Or USA Today Or The Washington Post - Print and Online

**Date range:** 01/01/2004 to 04/20/2008

**Search for free-text terms in:** Full article

**Exclude:**

Republished news  
Recurring pricing and market data  
Obituaries, sports, calendars...

Even though we were focusing on English-language papers, we agreed that it was important to include various words for polar bear, and that that part of the search should stand on its own. Also, I wanted to make sure that that climate change and environmental impact part of the search was well-covered as well, that the stakeholders could be an important part of the articles, and that governance issues were included. I added in the 'nots' to remove references to two popular Zoo polar bears, and frequent references to summer camps which kept popping up. *Factiva* allows you to specify the sources you'd like to search

and a date range, which was really important for our purposes. It also gives the option to exclude certain types of publications.

This search found 901 articles. The hardest part was dividing up the articles because *Factiva* doesn't give a lot of output options. I emailed them to myself 100 at a time, and then went through entire list of 900 and sent every fourth article to one of the team members, 100 articles at a time. We each coded 225 articles from the 8 mainstream papers, and a further twenty each from the *Nunatsiaq News*.

We used the U of A Libraries' subscription to Survey Monkey to code the articles and record all of the data in a shared database. We used a free online whiteboard application called Skrbl to share our concerns and observations about the articles and the coding process <http://www.skrbl.com/73493006/>.

### Data Analysis

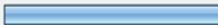
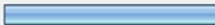




Of the close to 1000 articles that were found by the two searches, we ended up selecting 300 that were relevant enough to code. Articles that got rejected included stories about Inuit art (in which polar bears are often represented), amusing opinion pieces, and articles that did not actually mention polar bears in the text, but that included an image of a polar bear accompanying an article about climate change.

Table 1: **Distribution of Relevant Articles**

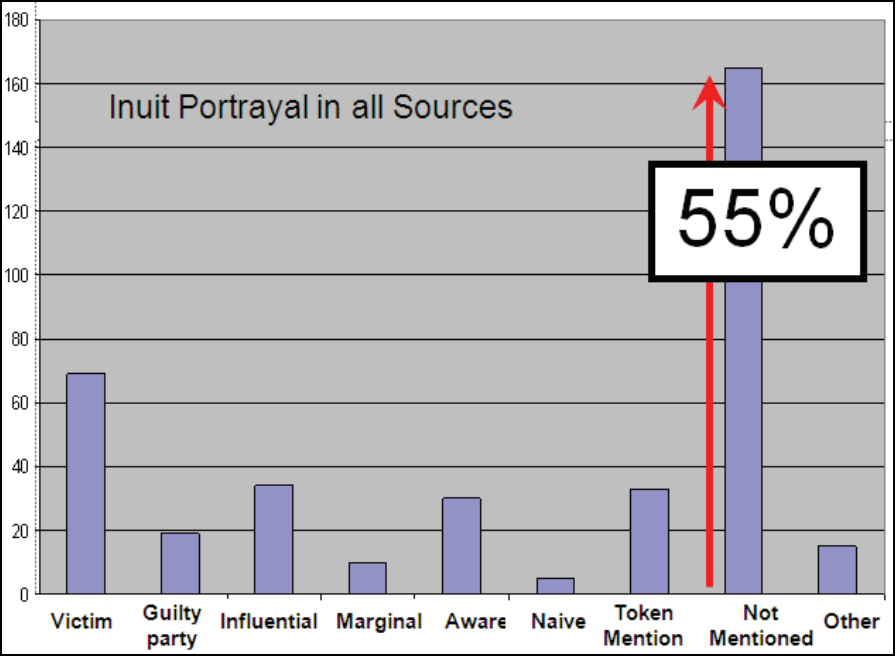
TYPE	Number of Articles	(% total)	% by region
<b>Northern</b>			
<i>Anchorage Daily</i>	67	(22.4)	33% northern
<i>Nunatsiaq News</i>	32	(10.7)	
<b>Canadian News</b>			
<i>Edmonton Journal</i>	36	(12)	42% Canadian
<i>National Post</i>	15	(5)	
<i>Globe &amp; Mail</i>	41	(13.7)	
<i>Toronto Star</i>	35	(11.7)	
<b>US News</b>			
<i>New York Times</i>	42	(14)	24% US
<i>USA Today</i>	14	(4.7)	
<i>Washington Post</i>	17	(5.7)	
<i>Los Angeles Times</i>	0	0	
<b>TOTAL ARTICLES CODED</b>	<b>300</b>		

The number of relevant articles increased with time as the issues heated up: 60% of the articles we coded were from 2007 and 2008, with half of those from the first four months of 2008. One third of the articles were front page stories.

We tried to select the main focus of each article. One third of them had ‘Governance Issues’ as their main focus. The *Endangered Species Act* listing, and proposals for legislation in other jurisdictions were popular topics in the news. Polar bear science and climate science got equal coverage, and the other main issues we had identified were also represented: social justice concerns, hunting, and incidences of human-bear conflict.

9. Article Focus (perspectives & standpoints): please select one.		Response Percent	Response Count
Polar bear science and research		23.4%	70
Climate science and research		23.1%	69
Social justice issues (who might benefit/lose from a ban on polar bear hunting, who is being consulted and how, Inuit culture and health as tied to polar bear hunting)		11.7%	35
Governance issues (who has rights to what, enact policy, enforce policy, inform policy, ESA listing, species of special concern, IUCN listing)		31.8%	95
Polar bear hunting (includes harvest quotas, sport trophy hunters)		4.7%	14
Human-bear conflicts		5.4%	16

One very telling response is the ‘Inuit Portrayal’ category. There were varying interpretations of how Inuit people were portrayed in the articles we read, but *more than half* fell into the category ‘NOT MENTIONED.’ So, in all of these articles that were about polar bears and climate change or pollution or endangered species listings, less than half even *mentioned* Inuit people.



In case you are ever trying to help a researcher with portrayals of Inuit people in the popular press, it is useful to note that, of the sources we chose, Inuit people were mentioned the most often in the *Nunatsiaq News*, *Globe and Mail*, *Toronto Star*, and the *New York Times*. The *Anchorage Daily News* was fifth on this list, and then there is a big drop in the number of mentions in the *Edmonton Journal*, the *National Post*, *USA Today*, and the *Washington Post* (which included no mentions at all). Lee codes the type of portrayal in the chart below. Green denotes Inuit people being portrayed as a *credible* source, yellow indicates *less credible*, and the *victim* category stands on its own:

### Results: Inuit Portrayal by Source

Mention	<i>Nunatsiaq News</i>	<i>Globe and Mail</i>	<i>Toronto Star</i>	<i>New York Times</i>
Total "mention" categories	43	36	32	29
Victim	7	17	7	11
Aware	12	3	3	5
Influential	14	4	3	1
Guilty Party	4	3	5	1
Marginal	1	3	2	0
Naive	1	1	2	0
Token Mention	0	5	8	9
Not Mentioned	5	18	16	23
Other	4	0	2	2

### Further Research

During the coding process, I was struck by the number of government agencies, NGOs, and other organizations that were mentioned in the articles. Appendix B lists my record of all agencies that were mentioned. This list gives an indication of the complexity of the issues we were investigating. The list comprises only a small sample of the agencies that concerned with polar bears and climate change, considering I only read a portion of the coded articles, and these were only from a small selection of North American newspapers. This proliferation of potential author agencies underlines the importance of undertakings like the *Cold Regions Bibliography Project*.

The summary of all results from our coding project can be found at [https://www.surveymonkey.com/sr.aspx?sm=g5I6cXG\\_2fCOfxOr834xNoWWe duBOQIYsjgYeMa0ciNNU\\_3d](https://www.surveymonkey.com/sr.aspx?sm=g5I6cXG_2fCOfxOr834xNoWWe duBOQIYsjgYeMa0ciNNU_3d). In many of the categories, we included an "other" option that allowed us to account for information that we did not predict when writing the coding instrument, and to record detailed notes. Our "other" notes reveal discoveries such as: how often the issue of oil comes up under *Governance Emphasis*; how often we referred to pollution and government inaction under *Perpetrator(s)/Protagonist(s): what is the cause of the deprivation of values?*; and how often the notes read "NONE" under *Prescriptive solutions proposed*.

Lee, Naomi, and Doug intend to apply the methods of this content analysis to a much broader analysis, and to use the results to contribute to their

research on the impact of polar bear legislation and management on indigenous peoples.

## References

- Center for Biological Diversity. (2005). *Before the secretary of the interior: Petition to list the polar bear (ursus martimus) as a threatened species under the endangered species act*. [Tucson]: Retrieved from [http://www.biologicaldiversity.org/species/mammals/polar\\_bear/pdfs/15976\\_7338.pdf](http://www.biologicaldiversity.org/species/mammals/polar_bear/pdfs/15976_7338.pdf)
- George, J. (July 15, 2005). Polar bear sport hunt under threat from U.S. *Nunatsiaq News*
- Lackner, C. (28 December 2006). U.S. may call polar bear endangered: Move seen as sign global warming threat is finally being taken seriously. *Edmonton Journal*, pp. A4
- Nunatsiaq News*. (Dec. 9, 2005). Around nunavut: Conservation groups file for polar bear protection. *Nunatsiaq News*, Retrieved from <http://www.nunatsiaq.com/archives/51209/news/nunavut/briefs.html>
- Schliebe, S., Wiig, Ø., Derocher, A., & Lunn, N. (2006). *Ursus maritimus* (IUCN Red List of Threatened Species IUCN. Retrieved from [www.iucnredlist.org](http://www.iucnredlist.org)
- U.S. Department of the Interior. (2006). *Timeline of polar bear actions*. Retrieved May 15, 2008, from [http://www.doi.gov/issues/polar\\_bears/Final%20Timeline.pdf](http://www.doi.gov/issues/polar_bears/Final%20Timeline.pdf)
- U.S. Department of the Interior. (2008). *Protecting the polar bear*. Retrieved May 15, 2008, from [http://www.doi.gov/issues/polar\\_bears.html](http://www.doi.gov/issues/polar_bears.html)

- 
- Lindsay Johnston: Liaison Librarian for Renewable Resources & Biological Sciences at the University of Alberta Libraries
  - Dr. Lee Foote: Natural Scientist in the Department of Renewable Resources in the Faculty of Agriculture, Life, and Environmental Sciences at the University of Alberta
  - Dr. Naomi Krogman: Environmental Sociologist in the Department of Rural Economy in the Faculty of Agriculture, Life, and Environmental Sciences at the University of Alberta
  - Dr. Doug Clark: Post Doctoral Fellow in the Department of Renewable Resources in the Faculty of Agriculture, Life, and Environmental Sciences at the University of Alberta
    - Allison Sivak: University of Alberta Libraries Assessment Librarian

## Appendix A: The Coding Sheet

### Polar Bear Media Content

#### 1. Article Identifier

Article Identifier

#### 2. Coder

☐

Coder Doug

☐

Lee

☐

Lindsay

☐

Naomi

#### 3. Citation information

Citation  
informat  
ion  
Title

Author

#### 4. Source of Article

☐

Source of Article Anchorage Daily News

☐

Edmonton Journal

☐

Globe and Mail

☐

LA Times

☐

MacLeans

Plenary Session 12: *Media*

- ☐ National Post
- ☐ Newsweek
- ☐ New York Times
- ☐ Nunatsiaq News
- ☐ Time
- ☐ Toronto Star
- ☐ USA Today
- ☐ Washington Post

5. Month article was published

- ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12

6. Year article was published

- ☐ 2004 ☐ 2005 ☐ 2006 ☐ 2007 ☐ 2008

7. Section of paper / magazine: front page?

- ☒ Section of paper / magazine: front page? Yes
- ☐ No

8. Number of words in article

Number of words in article

9. Article Focus (perspectives & standpoints): please select one.

- ☒ Article Focus (perspectives & standpoints): please select one. Polar bear science and research
- ☐ Climate science and research

- ☐ Social justice issues (who might benefit/lose from a ban on polar bear hunting, who is being consulted and how, Inuit culture and health as tied to polar bear hunting)
- ☐ Governance issues (who has rights to what, enact policy, enforce policy, inform policy, ESA listing, species of special concern, IUCN listing)
- ☐ Polar bear hunting (includes harvest quotas, sport trophy hunters)
- ☐ Human-bear conflicts

#### 10. Sense of Urgency

- ☐ Sense of Urgency None
- ☐ Low
- ☐ Medium
- ☐ High

#### 11. Inuit Portrayal – Select overriding theme. Choose up to two categories:

- ☐ Inuit Portrayal – Select overriding theme. Choose up to two categories:  
Victim
- ☐ Guilty party
- ☐ Influential
- ☐ Marginal
- ☐ Aware
- ☐ Naïve
- ☐ Token mention
- ☐ Not mentioned
- ☐ Other (please specify)

#### 12. Governance Emphasis

- ☐ Governance Emphasis Not addressed
- ☐ Indigenous people's involvement
- ☐ Endangered Species US listing
- ☐ Species at Risk Canadian listing
- ☐ IUCN Red listing
- ☐ Other (please specify)

### 13. Role of Climate Change

- ☐ Role of Climate Change Not mentioned
- ☐ Denial that climate change exists
- ☐ Minor importance
- ☐ Intermediate importance (mentioned alongside several other forces changing polar bear health and numbers)
- ☐ Strong influence (emphasized as the leading cause for concern)
- ☐ Climate change itself is denied or minimized as a problem affecting bears
- ☐ Other (please specify)

### 14. Declines in polar bear numbers in the North and Climate Change arguments:

- ☐ Declines in polar bear numbers in the North and Climate Change arguments: Simple (sea ice melting due to warming, no mention of variation across sub-populations)
  - ☐ Complex (mention of sub-populations and different levels of threats to each)
  - ☐ Climate change not addressed in regards to changing polar bear populations
  - ☐ Causal relationship questioned or denied
- Variation across US, Canada and Nunavut in depiction of victim, perpetrator/protagonist, representative anecdote (story that typifies problem).

Code on basis of emphasis, even if there is more than one victim, perpetrator, etc.

15. Victim(s): whose values are being deprived? Choose up to two categories

- ☐ Victim(s): whose values are being deprived? Choose up to two categories  
Polar bears
- ☐ All (generalized, can include local) citizens
- ☐ Inuit and/or other North American Aboriginal peoples (Inupiat, Cree)
- ☐ Canadians
- ☐ Americans
- ☐ Trophy hunters

16. Perpetrator(s) / Protagonist(s): what is the cause of the deprivation of values? Choose up to two categories

- ☐ Perpetrator(s) / Protagonist(s): what is the cause of the deprivation of values? Choose up to two categories Greenhouse gas emissions
- ☐ Government policies and/or actions
- ☐ Not given, just "is", natural variation, solar cycles
- ☐ Inuit hunting
- ☐ Environmental and animal use groups
- ☐ Other (please specify)

17. Prescriptive solutions proposed. Choose up to two

- ☐ Prescriptive solutions proposed. Choose up to two Policy listing (ESA, IUCN, COSEWIC)
- ☐ Further hunting restriction and/or banning
- ☐ US ban on importation of polar bear hides & trophies
- ☐ Increased efforts towards smaller scale or regional collaborative management

- ☐ Stricter regulations on greenhouse gas emissions
- ☐ Other (please specify)

18. Representative anecdote: What is the story line: polar bears starving? Inuit hunter losing his culture? Look for the personal story that is designed to grab the reader and “typify” what is happening.

- ☐ Representative anecdote: What is the story line: polar bears starving? Inuit hunter losing his culture? Look for the personal story that is designed to grab the reader and “typify” what is happening. Polar bears are drowning (an alarmist call for government action on CO2 emissions)
- ☐ Scientific management is necessary (science identified the problem so we need more of the same to solve it – a bit less alarmist than narrative above)
- ☐ Listen to us – we see more bears now (the predominant Inuit perspective)
- ☐ No problem (climate change denial)
- ☐ Other (please specify)

19. Attitudes (based on Kellerton’s framework). Choose up to two:

- ☐ Attitudes (based on Kellerton’s framework). Choose up to two: Utilitarian
- ☐ Naturalistic
- ☐ Dominionistic
- ☐ Aesthetic
- ☐ Moralistic
- ☐ Negativistic
- ☐ Spiritual
- ☐ Humanistic
- ☐ Ecologicistic

20. Three classes of a problem (Clark, in press). Select only one:

☐ Three classes of a problem (Clark, in press). Select only one: Ordinary problems (understanding the problem from a technical, scientific management [more surveys, more sciences, more regulation] as solutions. This is the way most conservation problems are conceptualized and approached.

☐ Governance problems (agency authority and ground rules for allocation, use, harvest)

☐ Constitutive problems (problems affecting the ground rules that govern the first two levels, e.g., current challenges of negotiating and implementing of Aboriginal land claims are constitutive-level problems, since those claims set out the rules by which those other kinds of decisions are or will be made)

#### 21. Truth source: select one

☐ Truth source: select one Western science as most trustworthy information source

☐ Inuit traditional knowledge as trustworthy information source

☐ Attempt at balance recognizing multiple sources

☐ not identifiable from article

#### 22. General Notes



## **Appendix B: List of Agencies**

1. Alaska Climate Impact Assessment Commission
2. Alaska Conservation Foundation
3. Alaska Eskimo Whaling Commission
4. Alaska Inter-Tribal Council
5. Alaska Nanuuq Commission
6. All Russian Institute of Nature Conservation
7. American Meteorological Society
8. Arctic Climate Impact Assessment
9. Arctic Institute of North America
10. Arctic National Wildlife Refuge (Alaska)
11. Aurora Research Institute
12. Canadian Arctic Shelf Exchange Study (Lead scientist: Fortier)
13. Canadian Foundation for Climate and Atmospheric Sciences
14. Canadian Wildlife Federation
15. Canadian Wildlife Service
16. Center for Biological Diversity
17. COSEWIC
18. Environment Canada
19. Greening Earth Society
20. Greenland Home Rule Government
21. Greenpeace
22. Intergovernmental Panel on Climate Change (IPCC)
23. International Council for Local Environmental Initiatives
24. International Polar Year
25. International Union for Conservation Of Nature
26. Inuvialuit Game Council
27. Inuvialuit Wildlife Management Advisory Council
28. Manitoba Conservation Department
29. Meteorological Service of Canada
30. NASA's Goddard Space Flight Center
31. National Center for Atmospheric Research (NCAR) – US (Colorado)
32. National Park Service
33. Natural Resources Defence Council
34. Polar Bear Specialist Group of the World Conservation Union  
- 1973 Agreement on the Conservation of Polar Bears
35. Polar Bears International
36. Polar Environment Atmospheric Research Laboratory (Eureka, Ellesmere Island)
37. Renewable Energy for Alaska Project
38. Trustees for Alaska
39. U.S. Environmental Protection Agency
40. U.S. Fish and Wildlife Service
41. U.S. Fish and Wildlife Service Marine Mammal Management Program
42. U.S. Geological Survey
43. U.S. Interior Department
44. Ursus International

- 45. World Conservation Union
- 46. World Meteorological Organization
- 47. World Wildlife Fund

***"This isn't the 15th Century": the international media response to the Russian North Pole expedition in 2007***

**Mary Katherine Jones**  
**University of Tromsø**

**Abstract:** The Арктика (Arktika) 2007 Russian expedition travelled from Murmansk to the North Pole in the research ship *Akademik Fyodorov*, facilitated by a nuclear-powered icebreaker, *Rossiya*. Upon arrival at the North Pole, six individuals descended over four thousand metres in submersibles *Mir-1* and *Mir-2* to the seabed, where they deposited a titanium Russian flag and collected scientific samples. News of this achievement and the expedition's prior claim that "the Arctic is Russian" was broadcast around the world, prompting Canadian Foreign Affairs Minister Peter MacKay's expostulation, "Look, this isn't the 15<sup>th</sup> century".

This paper assesses newspaper coverage published in English, French, Danish and Norwegian of the event in the countries directly affected by a Russian Arctic territorial claim: Canada (*Toronto Star* and *Le Devoir*); Greenland (*Sermitsiaq*)—also taking into account Denmark's control of Greenlandic foreign affairs; Norway (*Aftenposten*); and the United States of America (*New York Times*). It focuses on the external perspective of this media coverage, so no attempt is made to examine the Russian media response to this event (which is reported to have been extensive), except insofar as this is directly mentioned in non-Russian media reports.

The time period of the media coverage investigated extends from the end of June 2007, coinciding with the first international reference to Russia's intention of making an Arctic claim, to early September 2007, in the aftermath of the expedition's safe return to Russia being announced—although reportage of international developments seemingly precipitated by the expedition has of course continued beyond this date.

Every effort is made to maintain a distinction between events and the *media presentation* of events, between an international response and an international *media response*. Aspects of media coverage discussed include the actors (expedition members, politicians, researchers and other national representatives); news providers, publishers and writers; the style and presentation of the articles, nationally and collectively, reflecting contemporaneous media attitudes to Russia, the Arctic and factors such as global warming and oil and gas reserves. There is also a summary of the passive, active and interactive options available to contemporary consumers of media coverage, and the potential for an individual reader to investigate this topic in greater depth than via standard national and international media sources. In addition, an initial, brief analysis is provided of events that took place in the Arctic a hundred years ago, examining historical parallels between contemporary events and American, British, German, Norwegian, Russian and Swedish exploration and scientific and commercial discoveries in the Arctic, together with the international response that these engendered.



## *Summary of the Meeting*

**David Walton**  
**British Antarctic Survey**

Everyone takes away different memories of a meeting so this summary must by necessity be a rather personal view. However, I am certain that many of the high spots were of equal significance to many others.

Let me say first that this Colloquy was characterized by innovation in its structure. The traditional singing of the *Asani* at the opening (especially of the Canadian National Anthem) was an immediate reminder of the importance in the Canadian North of the aboriginal people and the remarkable performance of the children's author Cree elder Larry Loyie and his partner Constance Brissenden underlined this. Niobe Thompson provided a very different view of the north in his two documentary films. The first, dealing with native people in Chutotka, reminded us that there are still many very remote settlements in the Arctic where local people need to harvest native animals (such as walrus and whale) to survive. Concerns about killing marine mammals are put into a much clearer perspective when the drive is to feed a local community who would otherwise starve. The second film on the tar sands of Alberta and their environmental damage to a large area of the state was extremely disturbing, raising a host of economic, political, environmental and ethical issues, many of which apply to other mineral resource activities in the Arctic. This was clearly going to be a different Colloquy!

Four themes stand out in my mind—the University of the Arctic, IPY, aboriginal knowledge and change. UofA was a very brave attempt to get two groups together who have a common Arctic interest but little previous experience of each other. I believe all enjoyed the opportunity to hear and feel the enthusiasm on each side and the panel interaction with UofA teachers and their specific teaching and students needs could lead to a useful new joint initiative. I did note that the UofA were substantially more addicted to speechmaking than the Colloquy is used to!

The IPY is in full swing and it occurred as a recurrent motif in many of the contributions. With the joint session with UofA on IPY, our own panel presentations organized by Julia Triplehorn of progress in different countries and the detailed account of organizing and building the IPY publication database by Ross Goodwin and his co-authors we all got a very good feel for progress so far. The IPY publications database will be a herculean task for at least the next decade and the authors will need all the help that can get.

The obvious concern with aboriginal information and aboriginal users of library services seemed much better covered than in previous meetings. Lia Ruttan's paper on aboriginal knowledge systems raised interesting questions in my mind of just how oral history might be flavoured in the frequent retelling by the individual's life experiences, making it no more or less reliable than the static but edited version of events that we are used to as printed history. Peter Geller and Stan Gardner described to us an experiment in Northern Manitoba in making the community library an amalgam of the public needs and the

university needs, stressing the importance of introducing reading and knowledge to aboriginal children at an early age to ensure their opportunities for educational advancement were not prejudiced. Sharon Rankin has clearly had an interesting time building her new database of Canadian Inuit publications and the increase in both the number of titles listed and their locations should make research much easier for many people. And finally Rae-Lynne Aramburo told us about the history of publishing in Nunavut and introduced us to the concept of producing books and then not being interested in selling them to libraries that want them, of subsidies to almost all titles and no coherent plan between rival publishing outlets to ensure that they met the educational needs of the population. This emphasis on native people shows how much their needs have come to the fore over the last two decades.

What about change as highlighted in our title? Quite apart from the panel on the Future of Polar Libraries, that provided everyone with fascinating snippets of the diversity of changes in different regions of the world, we had some exciting concrete examples of new projects and initiatives. Finnish is a difficult language for most people but the development of the semantic web as outlined by Arto Vitikka suggested that the future for intelligent translation is much nearer at hand than we supposed. Lynn Lay told us of a pilot project at Ohio State to develop a new web database for current and past research, lining documents and images in a seamless fashion so that it not only provides an historical resource but also can be used by educators to draw down material for teaching. There are a multitude of projects under way at SPRI and Heather Lane described progress with FreezeFrame, again a way of putting images into context by linking them with supporting documents. Meanwhile up at Tromsø Bjørn Skancke is developing NAROS, a potentially wonderful new tool that can identify northern-related material from anywhere on the Web. His algorithms will be invaluable in ensuring that material in open access repositories or on-line journals is not missed when searching for relevant literature.

Of course we had other technical papers and I was especially interested in Sharon Tahirkeli's paper on why we will continue to need the Cold Regions Bibliography and why Google Scholar is not enough. David Hyett gave a detailed account of the open access repository established at British Antarctic Survey endorsing the general view that simply telling scientists to put papers in is not enough – you need to persuade them they will get something (like increased citations) back as a reward.

There are always a few unexpected and oddball papers at each colloquy! Top of these must be the paper on Arctic weather stations by Steve Schafer and others, where the establishment of the database for a complex set of materials was enlivened by stories of polar bears, wolves and other vicissitudes! Shelly Sommer and others from Boulder told us how they had used special events—like book launches and rare book exhibitions – to successfully attract more users into the libraries whilst Phil Cronenwett provided a spirited and even controversial account of increasing rare book prices and the tensions between libraries and collectors in acquiring titles. David Walton took an initial look at the patterns of science publication at BAS and across several Antarctic Treaty countries to see how they were driven by government policy, infrastructure investment and opportunities.

## *Summary of the Meeting*

Finally we had two different papers on the media, both looking at how information is portrayed in different countries. Whilst Lindsay Johnston described a major project to extract data from a wide range of media on the decision of the USA to list polar bears as an endangered species in order to see how presentations confounding fact and opinion, Mary Jones provided a much more personal analysis of the reports of Russia planting an underwater flag at the North Pole.

What was most exciting for me? Well, certainly the opportunities afforded by the semantic web to aid access to documents in languages that you do not speak, but I was also very interested in the arguments for the continuation of the Cold Regions Bibliography and in the many questions raised by the tar sands documentary. Disagreeing with Phil Cronenwett on book pricing was fun as was the dancing on Wednesday evening at the Edmonton Pioneer cabin!

What would I have changed? Certainly fewer speeches! I would also have liked shorter papers to allow for more time for discussions involving the whole Colloquy. I hope that we can move towards a more inclusive programme in future where workshops discussions or panel presentations with enough time for audience discussions become a major feature.

Looking back to previous colloquies this time we seem to have had many fewer historical papers and much more on technical developments and initiatives, an increasing recognition of the importance of images, and more on media and outreach.

The essence of the Colloquy is the personal relationships between the members, the pleasure that we all take in meeting and exchanging news and information, and the informality of our activities. This Colloquy met all of those tests, thanks in great part to the efforts of Sandy Campbell and Elaine Maloney, and allowed us to meet with a new group of Arctic enthusiasts. For some the five days might seem a long meeting but we filled it all with interesting and exciting things and it is only biennial. I would contend that we simply need more members to attend and contribute so that the development of ideas, projects and best practice is truly international. That way we will continue to grow into the future.



## POSTER SESSIONS

### Poster 1.

#### *The History of the Scientific Committee for Antarctic Research*

David Walton, Peter Clarkson

**Abstract:** The poster will examine the origins of SCAR and its development alongside the establishment of the Antarctic Treaty using the limited archives and published reports and symposia. It will highlight the role played by several SCAR initiatives in providing key scientific elements for the development of Antarctic law, important new international resources (such as the Composite Gazetteer and the Seismic Data Library) and look at how the recent evolution of SCAR provides new opportunities for information availability.

### Poster 2.

#### *Canadian IPY Publications Database*

Ross Goodwin

**Abstract:** The Canadian IPY Publications Database (CIPYPD) describes publications from IPY 2007-2008 and the three previous IPYs. The database includes publications from or about Canadian IPY projects, as well as publications from or about foreign IPY projects that studied northern Canada or the adjacent waters. The records in the CIPYPD contain citations, abstracts, detailed subject and geographic indexing terms, interlibrary loan symbols, and DOIs or URLs linking to online publications. The database is available from a bilingual website at [www.aina.ucalgary.ca/ipy](http://www.aina.ucalgary.ca/ipy) , and currently describes 430 publications. All records in the CIPYPD are also included in the Arctic Science and Technology Information System (ASTIS), the international IPY Publications Database and the Arctic & Antarctic Regions database. The CIPYPD was made possible by the generous support of the Government of Canada Program for International Polar Year and EnCana Corporation.

**Poster 3.**

***NAROS: northern areas open scholarly documents—a pilot project***

**Bjørn Olav Skancke**

**Abstract:** NAROS, is currently a pilot project, testing the idea of a thematic OAI-harvester of scholarly documents related to the northern areas. Several institutions are involved in research within this area. One of the goals of the pilot project is to identify these institutions. For those who do not have a OAI-PMH-compatible archive, we hope to stimulate them to establish one. The pilot project will however also test other means of collecting content than harvesting through OAI-PMH. Furthermore, sources other than institutional archives may contain very applicable documents for NAROS, and we need to detect these. For our thematic harvester it will be a challenge to extract the documents we want in NAROS. The pilot project is testing search algorithms in selected archives, to establish default searches that may yield results NAROS, wish to include. The pilot project also aims at describing the amount of manual labour needed in the process of detecting and extracting documents for NAROS,

