BUILDING POLAR NETWORKS

A STRATEGY FOR THE FUTURE

Proceedings of the 21st Polar Libraries Colloquy

May 8-12, 2006 - Rome, Italy

edited by

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INTRODUCTION

The 21st Polar Libraries Colloquy was held in Rome, from May 8 to 12, 2006.

The venue was the Congress Hall situated in the central building of the National Research Council.

There were 74 attendees at the Colloquy, coming from 11 different countries: Australia, Canada, Denmark, Finland, Germany, Italy, Norway, Russia, Sweden, United Kingdom and United States.

The theme of the conference was "Building polar networks: a strategy for the future". We decided to propose this theme to the participants to discuss about networks for sharing resources, international projects, gateways, library consortia, cooperation in document delivery, interlibrary loan, cataloguing, reference services, networks for polar publishing and for sharing special materials and collections.

During the Colloquy week, 28 papers were presented.

The first day we had speeches on history of polar information and special collections.

The second day we had two sessions: in the first one we heard the experience of the Cold Regions Research Engineering Laboratory Library, the report from the Cold Regions Bibliography Project, and the Italian experience of SnowTerm, a thesaurus on snow and ice. The second session was entirely dedicated to the International Polar Year information and data management.

The 4th Session scheduled for Wednesday May 10 collected papers on user services, while in the afternoon, Session 5 was on digital archives, scientific and academic publishing.

During the fourth day of the Colloquy, we heard about local experiences of cooperation between libraries, while the last session was dedicated to presentation of specialized gateways.

During this 21st Polar Libraries Colloquy we also had some relevant novelties: we participated to the University of Arctic Librarians' Open Forum, we attended to the first edition of the William Mills Book Prize for non-fiction polar books, that was assigned to Mark Nuttall for the "Encyclopedia of the Arctic" (New York, Routledge, 2005); Pierre Beaudreau, from the Indian and Northern

Affairs Canada Departmental Library, presented the new Polar Libraries Colloquy website and the PLC weblog; on Friday, at the end of the Colloquy, we had a Film session, in which were projected old and precious movies preserved in the collections of the Danish Polar Center, the British Antarctic Survey and the Australian Antarctic Division libraries.

Participants to the 21st Polar Libraries Colloquy also had the chance to visit the National Library, the Italian Geographical Society and the American Academy, and to conclude this Roman experience at the banquet in Villa Aurelia: a wonderful building of the Seventeenth century situated on the Janiculum, Rome's highest hill, with an amazing view on the Eternal City.

Acknowledgments

Silvia Sarti and Michela Cecconi

The Italian Consortium for the scientific activities in Antarctica

Ladies and gentlemen, esteemed colleagues, dear friends, it's a pleasure indeed to be present at such a gathering here in Rome - a town which does not need a presentation – and in the prestigious premises of the National Council for the Research, of this specialized international community.

It is worth noting that the geographical poles, despite their distance from all Countries and their harsh environment - but perhaps that is the very reason - act as a strong unifying factor among the women and men involved in that matter.

I feel tempted to speak of a polar family.

Fig. 1. *Cape Hallett, Antartica, with M/V Italica temporarily moored at the fast ice.*

Italy is a Mediterranean country and it is not heavily conditioned by the typical problems of the extreme latitudes. Accordingly the involvement of Italy in the different polar items has been mild in the past centuries. However, to cite an instance, the courage and bad luck of the Umberto Nobile's team and their airship, in the thirties of last century, is still fresh in our memory. As to the Antarctica, Italy is active in that continent with governmental expeditions since 1985. Presently, beside a small national commitment in the Arctic, more precisely at the Svalbard Islands, the Italian effort is mainly spent in the Antarctica, both in terms of money and personnel.

. The "Consorzio PNRA" is a consortium of four Institutions: ENEA, the Agency for Energy, New Technologies and the Environment; CNR, the National Council for the Research; INGV, the National Institute for Geophysics and Volcanology; OGS, the Institute for Oceanography and Experimental Geophysics.

The first three Institutions have their headquarters in Rome, the latter in Trieste.

The Consortium provides, first of all, the organization of the Programme at home and its administration. In Antarctica the Consortium provides all the logistics in support of the science. The budget of the Consortium is around 20 million euros. I must stress however that a relevant part of this sum pass through the Consortium and goes to the scientific Projects.

Fig. 2. *Aerial view of Mario Zucchelli Station (MZS) at Terra Nova Bay, Ross Sea.*

Italy built in the mid eighties a coastal Station at Terra Nova Bay, on the Ross Sea. The Station is used only in summer, i.e. from November to February. It remains closed the rest of the year. Today the Station is named after Mario Zucchelli, the tireless leader of the Programme from 1987 to 2003. The latitude of Mario Zucchelli Station (MZS) is about 75°South.

Fig. 3. *The French-Italian Concordia Station.*

In a joint venture with the French - precisely with the colleagues of the Institute Paul Emile Victor (IPEV) – Italy then built a very different, in some respect unique Station: Concordia. The latitude of Concordia is about the same as MZS (75°S), but the Station is located in the middle of Antarctica, on the ice plateau, at an elevation of more than 3000 meters above sea level and a distance from the coast of more than one thousand kilometres. The Station is presently manned by a team of 10 persons which are over-wintering there performing a series of meteorological, glaciological and astronomical measurements. The most rewarding activity until now at that site, called Dome C, has been the drilling and extraction of very old samples of ice, nearly one million years old, with the possibility of inferring from the analysis of it something about the history of the past global climate. As to the future, most of the Concordia's promises are in the field of astronomy, due to the exceptional clearness of the air there.

The Italian expedition uses different means to go to Antarctica and to move inside the continent. Normally a cargo/passenger vessel links the last port in New Zealand, i.e. Christchurch, to Terra Nova Bay.

Fig. 4. *M/V Italica ready for unloading onto the fast ice.*

Fig. 5. *The Hercules of the company Safair on the airstrip of McMurdo in transit from New Zealand to Mario Zucchelli Station.*

Additionally a four engines Hercules covers for a month or so the same way until the seasonal fast-ice allows a safe landing. The aircraft is mainly used to carry personnel plus light and urgent loads.

Fig. 6. *The Squirrels are also used to replenish remote fuel dumps.*

When in Antarctica, continental movements are entrusted to helicopters (such as Squirrels) and light ski-equipped aircrafts (such as Twin Otters) and their crews.

Altogether the Consorzio PNRA moves to and from Antarctica about 250 personnel per year (282 this year). There figures show that Italy probably ranks among the ten largest polar programmes in the world.

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Fig. 7. *Two turboprops ski-equipped Twin Otter parked at MZS.*

I will not list the many activities needed at home, that is to say in Italy, in order to prepare an expedition, collect the results and the specimens, support the Antarctic science in Italy

What is certainly of interest for you is that the Consorzio keeps from the very beginning of the Italian commitment a library on Antarctic themes. The library has two main targets. The first is obviously to collect books and periodical scientific reviews relevant to the Antarctic activities. The second is to collect all papers published with the support of the national programme, in other words to document the work done by PNRA.

As to the first target, the documents available include a collection of maps and charts, some bought, some acquired on exchange basis. Italy, as a Member of SCAR, receives two copies of all new maps and charts of Antarctic regions issued by another Member of SCAR. In his turn Italy sends copies of the maps (e.g.: thematic maps, bathymetric charts) made by Italian scientists.

Our library is specialized and relatively young. Accordingly it is a small library. It keeps about 3500 books and owns 260 magazine subscriptions plus relevant grey literature and audiovisual recordings (DVD, VHS, CD-ROM, films).

As most libraries do nowadays, the library has a digital catalogue and offers the information retrieval service, that is to say that when a document is not locally available it is obtained, usually in few hours, electronically, from another library. That is a tremendous added value to your own work and points to the importance of working together, as you are doing here today.

Silvia Sarti and Michela Cecconi will be glad to answer all questions about our library.

The Antarctic library, being a part of the Consorzio PNRA, is located just as the Consorzio, in the premises of ENEA known as Casaccia, about 25 kilometres north of Rome. You will be welcome there at any time.

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Antonino Cucinotta
General Manager, Consorzio PNRA SCrl

By Sledge, ski and ship; Early information networking in the cold regions

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Abstract. Although the terminology is new ("data networks", "document delivery", and "information transfer"), the practice of sending information to, from, and around the polar regions has a long and engaging history. Beginning with the period of printing in western Europe, much of that history is preserved and available to us. Beyond their entertainment value, the stories of early transmissions of texts and images have importance for suggesting some consistent themes in information transfer on frozen seas and on vast, ice-ridden terrain. Specifically, these tales – especially from the 16th century to just before World War II – provide hints as to the constant issues of <u>why</u> information is valued in the far north; what <u>forms</u> of information are preferred; <u>how</u> information can be transmitted; and what difficulties arise in <u>using</u> such information in the unique situation of extreme cold, long periods of daylong dark and light, scarce populations, and minimal or indirect access to social institutions. To believe that providing high-speed access to the internet provides an adequate answer to all of these questions ignores the subtleties of human information processing which in this context involve peculiar needs, anxieties, preferences, desires, practices, and uses in relation to information sources. This paper will review the pre-electronic history of information networking with an eye to identifying those characteristics – beyond the obvious factor of ice itself - that seem unique to the cold regions.

I appreciate the opportunity to start a forward-looking Colloquy with a backward look at some historical aspects of networking. Had we met 50 years ago to talk about networking in cold regions, we might have concentrated upon ways of overcoming the physical barriers of distance, cold, and ice in order to network information. Thanks to satellite technology and other technological innovations in recent years, the physical problems of sending messages to, from, and within the cold regions seem today to be largely solved, although new technological breakthroughs in coming decades may make us blush at any predictions, if we are still around to reconsider.

A brief list of examples indicates the range of interests represented by currently active information networks in the far north and far south: SameNet; Barents Portal; International Network for Circumpolar Health Research; University of the Arctic; Kiksik Learning Network; U.S. National Park Service's Arctic Circle;

Canada's Northern Information Network; NASA Quest; First Nations on SchoolNet; and the Canadian Directory of First Nations, Métis, and Inuit Library Collections. In most of these networking examples, a degree of interactivity is provided through such features as email features, on-line discussion groups, real-time conferencing, chat and instant messaging, and self-expression (in the form of blogs); many also post announcements of physical meetings and events in their regions. Many of these networks seem intended to create virtual communities with information flowing dynamically among participants. Comparisons of polar-oriented networking ventures with more general networks indicate that the former exhibit an unusually high degree of cooperation that transcends national boundaries.[1]

If, in fact, the physical infrastructure for networks intended to communicate online information within and about the polar regions is fairly well in place, then what aspects of networking compel us to meet at this time for a conference on the subject? Following the examples of other disciplines at similar stages of network development, we might posit that our concerns now are "content, interactivity, accessibility, and effectiveness." Yes, these are the pertinent concerns at this point, but polar network designers know well that they must address also unique issues springing from the unusual physical circumstances of their users in high latitudes.

These circumstances relate to geography, climate, and population distribution in the cold regions. They consist of the seemingly endless night, the profound sense of isolation, the boredom of the winter night, enforced intimacy, domestic and social claustrophobia, illness and disease, and the imminent and mortal dangers of life on the ice that even today characterize life in the polar

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[1] Dian Olson Belanger, "The International Geophysical Year in Antarctica: Uncommon Collaborations, Unprecedented Results," *Journal of Government Information* 30 (4), 2004, p. 482-489; John Creech, Joni Roberts and Carol A. Drost, "The Arctic Theme Page," *College & Research Libraries News* 66 (5) 2005, p. 400-401.; Sandy Duling, "Circum Polar Librarians," *American Libraries*, 37 (2), 2006, 32-34; Timo Kolvurova, "Environmental Protection in the Arctic and Antarctic: Can the Polar Regimes Learn from Each Other?" *International Journal of Legal Information*, 33 (2) 2005, p. 204-218.

extremes[2]. Yes, there is the exhilaration of natural beauty, the relief of unclaimed space, and in the north a rich native cultural tradition and the security of intertwined communities, but the inherent *physical* threats and difficulties of polar existence have always taken a prominent role in the planning of information distribution and exchange in cold climates. In addition to addressing *physical* problems associated with climate, information networks are asked, by some indigenous northern communities, to address issues of economic deprivation as well.

It is true that the exchange of scientific information was one objective from the beginning, but a close look at early examples suggests that most cold-region communication in the earliest days for which we have records was motivated by even more basic life needs (I call them the six "s's"): survival, sanity, safety, security, social interaction, and sustenance. Though information needs are usually described less dramatically today than in the historical literature of early polar exploration, the issues are, in the main, the same.

Among the patterns of distribution that I consider here are the *one-to-many* (such as books written for publication), the *many-to-many* (such as a newspapers collaboratively produced for general circulation), and *the interactive mode* (such as forms to be distributed, filled out, and returned to the sender). My examples are drawn from polar history in the 16th through the early 20th centuries, before radar and the internet entered the networking picture. They involve native peoples, but most examples are drawn from European and American accounts of exploration simply because written documentation exists for such instances.

I begin with the most obvious and most common conveyor of information on polar matters, the published book. This is a *one-to-many* example in my schema of

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[2] Lawrence A. Palinkas has examined the phenomena of wintering-over in Antarctica and winter conditions in other high latitude locations. One example of Palinkas's publications is "The psychology of isolated and confined environments. Understanding human behavior in Antarctica." *American Psychologist* 58 (5) 2003): 353-63.

communication patterns. A catalogue of the classics might begin with Mercator[3] who, though never actually in the Arctic, made widely known a corrected version of Ptolemy's 2nd-century map of the Arctic, seen here from a 1635 atlas. Among the accounts that sprang from first-hand observation were Captain James Cook's *A Voyage towards the South Pole, and Round the World*,[4] an influential account of his second voyage (1772-75) published in 1777; and Constantine Phipps's *Journal of a Voyage Undertaken…for Making Discoveries towards the North Pole*,[5] published in 1774, an account of his test of the open polar sea theory against the realities of navigation off Labrador and Newfoundland. We might include also Frobisher's adventures between 1576 and 78, recounted by George Best[6] in 1578, that included *bad* information about a discovery of gold or what looked like gold at Baffin Island which led to a fruitless colonizing expedition involving 15 ships; Adolphus Greely's tale[7] of his ultimately catastrophic participation in the International Polar Year activities at Fort Conger and Cape Sabine from 1881 to 1884, told in his *Three Years of Arctic* Service (1886); The Duke of Abruzzi's 1899-1900 voyage toward the North Pole, made known in popular Italian and English editions of *On the 'Polar Star' in the*

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[3] Gerhard Mercator, *Historia Mundi: or, Mercator's Atlas: Containing His Cosmographicall Description of the Fabricke and Figure of the World, as also Beautified and Enlarged with New Mappes and Tables by the Studious Industry of Iudocus Hondy: Englished by W.S.* (London: Samuel Cartwright, 1635).

[4] James Cook, *A Voyage towards the South Pole, and Round the World. Performed in His Majesty's Ships the Resolution and Adventure, in the Years, 1772, 1773, 1774, and 1775*, 2 vols (London: Printed for
W. Strahan & T. Cadell, 1777).

[5] Constantine Phipps, *The Journal of a Voyage Undertaken by Order of His Present Majesty for Making Discoveries towards the North Pole…in His Majesty's Sloops* Racehorse *and* Carcase (London: Printed by W. Bowyer and J. Nichols for J. Nourse, 1774).

[6] George Best, *A True Discourse of the Late Voyages of Discouerie, for the Finding of a Passage to Cathaya, by the Northwvest, under the Conduct of Martin Frobisher Generall…* (London: Imprinted by Henry Bynnyman, seruant to the right Honourable Sir Christopher Hatton, 1578).

[7] Adolphus Washington Greely, *Three Years of Arctic Service; An Account of the Lady Franklin Bay Expedition of 1881-84 and the Attainment of the Farthest North*, 2 vols. (New York: Charles Scribner's Sons,, 1886).

Arctic Sea (1903)[8] and in a companion volume of scientific observations published in the same year; and the American journalist and soldier Anthony Fiala's *Fighting the Polar Ice*[9] recounting the disasters of the 2nd Baldwin-Ziegler expedition in Franz Josef Land from 1903 to 1905. We could not overlook the work of scientist and experienced explorer Adolf Nils Nordenskiöld who, in *The Voyage of the Vega*[10] (1881) recounts his Northeast Passage from 1878 to 1880, his adventures near the Bering Strait, and his contact with natives of that region; also Fritjof Nanson's *Farthest North*[11] of 1897 that chronicled an Olympian, 15-month journey by sledge and kayak after leaving his ship, the *Fram*, failing in his objective of the North Pole but miraculously surviving to reach Franz Josef Land; and, too, Roald Amundsen's entry into the ranks of polar heroes with his *The Northwest Passage*[12], published in 1908 but covering four years of travel, long winters, scientific observations, and contact with the Inuit. In a contentious vein, we have Frederick Cook's and Robert Peary's competing claims of priority to the North Pole in 1908 and 1909 respectively[13]; and related to Peary's quest is Matthew Henson's *A Negro Explorer at the North Pole*[14], published in 1911, recounting his rise from ship's cabin boy, to valet, mechanic, dog-handler, sledge-maker, and companion to Robert Peary on his Greenland adventures and attempts on the North Pole. As just one example of the fund-raising genre, we

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[8] Luigi Amadeo di Savoia, Duke of Abruzzi, *On the 'Polar Star' in the Arctic Sea*, 2 vols. (New York, London: Dodd, Mead; Hutchinson, 1903).

[9] Anthony Fiala, *Fighting the Polar Ice* (New York: Doubleday, Page, 1906).

[10] Nils Adolf Erik Nordenskiöld, *The Voyage of the Vega Round Asia and Europe, with a Historical Review of Previous Journeys along the North Coast of the Old World*, 2 vols. (London: Macmillan, 1881).

[11] Fridtjof Nansen, *Farthest North, Being the Record of a Voyage of Exploration of the Ship Fram, 1893-96, and of a Fifteen Months' Sleigh Journey by Dr. Nansen and Lieut. Johanson, with an Appendix by Otto Sverdrup* (Westminster: Archibald Constable, 1897).

[12] Roald Amundsen, *Roald Amundsen's "The North West Passage;" Being the Record of a Voyage of Exploration of the Ship "Gjøa 1903-1907*, 2 vols. (New York: E. P. Dutton, 1908).

[13] Frederick Albert Cook, *My Attainment of the Pole: Being the Record of the Expedition that First Reached the Boreal Center, 1907-1909; With the Final Summary of the Polar Controversy* (New York: The Polar Publishing Company, 1911).

[14] Matthew Henson, *A Negro Explorer at the North Pole, by Matthew Henson, with a Foreword by Robert E. Peary and an Introduction by Booker T. Washington* (New York: Frederick A. Stokes Company, 1912).

should include Richard Byrd's *Alone* of 1938 and *Skyward*[15] of 1928 in a limited Author's Autograph edition, complete with a fabric fragment in each copy of material from the wing of the *Josephine Ford,* Byrd's North Pole plane. I'll end the list here, from sheer exhaustion, with Vilhjalmur Stefansson's *The Friendly Arctic* of 1921 and *My Life with the Eskimo*[16], an account of the U.S. Canadian Scientific Expedition of 1908-1912, where "Stef" records the traditional knowledge that he encountered and absorbed from the Inuit on Victoria Island, Banks Island, and Coronation Gulf.

Even from this incomplete and idiosyncratic list, one sees an enormous range in content, motivation, authority, distribution patterns, and effectiveness in "getting the word out" about the polar regions. Varied as the foregoing examples are, they represent, however, just one mode of communication: the published book. Early accounts of networking include use of a much wider range of formats, however, than the book alone, and for a wider range of functions.

Among less obvious but equally important examples of early information networking involved the developing cartography of the polar lands, with maps as the basis of collective conversation to exchange information about northern geography. One example is Sir John Ross's depiction of conversations with Inuit cartographers in his *Narrative of a Second Voyage in Search of a North-West Passage* (1835)[17]. A colorful and controversial character, Ross spent 30 years in the British navy, the merchant service, and the East India Company, before his first Arctic experience in 1818. It was on his second expedition, 1829-33, that Ross met with Boothian Inuit cartographers to compare and presumably to correct his maps of the area. A networking innovator of high order, Sir John Ross, in 1850-51, also distributed thousands of copies of the Canadian arctic's first imprint by means of

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[15] Richard E. Byrd, *Skyward* [Author's Autograph Edition] (New York, London: Putnam, Knickerbocker Press, 1928).

[16] Vilhjalmur Stefansson, *My Life with the Eskimo* (London, New York: Macmillan, 1913).

[17] John Ross, *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, 1831, 1831, 1833…; Including the Reports of Commander, now Captain, James Clark Ross…and The Discovery of the Northern Magnetic Pole* (London: A. W. Webster, 1835).

balloons from Cornwallis Island to announce that provisions had been left for the Franklin party at Whaler Point and Cape Spencer & Hotham[18]. An existing example consists of printing on silk.[19]

Another innovator in the realm of information publication and exchange was Sir William Parry, 1790-1855, whose adventures are chronicled in four substantial books published between 1821 and 1828[20]. From his voyages to the Arctic, Parry knew well that time in the frozen darkness could weigh heavily on a wintering crew. Both during the winters and during the voyages themselves, Parry provided positive outlets for the crew in the form of reading classes, the encouragement of a variety of reading, performance of theatricals, and – what interests us especially here – the production of a newsletter for the crew and officers. This could be considered an example of the *many-to-many* category. The newspaper produced by Parry and his men, *The North Georgia Gazette, and Winter Chronicle*[21], was circulated in manuscript on Parry's ships *HMS Hecla* and *HMS Griper* as they wintered off Melville Island. Designed to relieve tedium, the newspaper included humorous ads from 1819, such as one calling for "middle-aged Women, not above thirty, of good character, to ASSIST IN DRESSING THE LADIES [that is, the males in ladies' roles] at the theatre." None of this frivolity, however, disturbed Parry's personal piety which insisted upon regular divine services aboard ship. A printed version of the *Gazette* appeared in London shortly after the expedition's return.

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[18] Elaine Hoag, "Caxtons of the North," *Book History* 4 (2001): 64.

[19] Elaine Hoag, "Arctic Shipboard Printing during the Franklin Search, 1850-54," History of the Book in Canada, Vol. 2, 1840-1918, Ed. by Yvon Lamonde, Patricia Lockhart Fleming, and Fiona a. Black (Toronto, Buffalo, London: University of Toronto Press, xxxx).

[20] Of particular interest are these: William Edward Parry, *Journal of a Voyage for the Discovery of a North-west Passage from the Atlantic to the Pacific; Performed in the years 1819-20, in His Majesty's Ships* Hecla *and* Griper, *under the Orders of William Edward Parry, with an Appendix Containing the Scientific and Other Observations* (London: John Murray, 1921); *Narrative of an Attempt to Reach the North Pole, in Boats Fitted for the Purpose, and Attached to His Majesty's* Hecla, *in the year MDCCCXXVII* (London: John Murray, 1828).

[21] The facsimile was first printing as *The North Georgia Gazette, and Winter Chronicle* [Nos.1 – 21, Nov. 1, 1819-Mar. 20, 1821] (London: John Murray, 1821).

Another shipboard newspaper[22], originally circulated also in manuscript, was the *Illustrated Arctic News* of 1850-51 produced aboard the Franklin Search vessel *HMS Resolute*, accompanied by *HMS Assistance*, and two tenders. The *Assistance* produced a rival newspaper also in manuscript, *Aurora Borealis*, reviewed in the *Illustrated Arctic News*, and noteworthy for its catalogues of two shipboard libraries, one for officers and another for seamen. The tone of both papers was largely facetious and the form obviously parodied the *Illustrated London News*, a popular periodical from home. A later and even more famous example of high-latitude newspaper production comes from Antarctica in the typewritten *South Polar Times* from Robert Falcon Scott's voyage to Antarctica aboard *Discovery* in 1901-04, issued "back home" in facsimile in 1907[23]. The first volume of the *South Polar Times* was overseen by that indefatigable cold-weather bookman whose fame unaccountably arises from other exploits, Ernest Shackleton. Quite apart from his adventures with *Endurance*, Shackleton should be acknowledged also for overseeing the printing of Antarctica's first printed book, *Aurora Australis*, in 1908; an outstanding example of this work is Dartmouth College's "Oatmeal copy" originally bound in the Vanesta boards of provision cases and bearing Shackleton's signature[24].

But we are getting ahead of ourselves in our chronological journey. Another format for communicating data in cold regions, this from the 19th century, consisted of printed forms, widely distributed in the field, calling for respondents to fill in data

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[22] On shipboard printing, see Elaine Hoag, "Shipboard Printing on the Franklin Search Expeditions: a Bibliographical Study of the Plover Press," *Papers of the Bibliographical Society of Canada* 38 (2000): 7-71. *Facsimile of the Illustrated Arctic News published on Board H.M.S. Resolute, Capn. Horatio T. Austin…*(London: Ackermann, 15th March 1852). Stam & Stam, pp. 35-36.

[23] [First facsimile of the original typewitten copy] *South Polar Times*, 3 vols (London: Smith, Elder & Co., 1907-14); a centenary facsimile edition was issued in 350 copies by Orskey-Bonham-niner (London, 2002). The tradition continues today with *The South Polar Times*, an online periodical from the Amundsen-Scott South Pole Base. Stam & Stam, p. 100.

[24] *Aurora Australis* [Illustrated with lithographs and etchings by George Marston] ([Antarctica: Lat 77 32' south, Long. 166 12' east]: published at the Winter Quarters of the British Antarctic Expedition, printed at the Sign of 'The Penguins,' 1908). The "Oatmeal copy," signed by Shackleton and artist George Marston, is in the Rauner Special Collections Library of Dartmouth College.

and return to sender. These, like newspapers, could be considered *many-to-many* communications.

On their ill-fated attempt to discover the Northwest Passage starting in 1845, Sir John Franklin and his officers on *HMS Terror* and *HMS Erebus* had with them a standard government form, printed in six languages, used to seek information about missing ships[25]. Filling in the data for their expedition, Franklin's men used the form to record Franklin death in 1848, their belief that they had found the Northwest Passage, and their intent to head toward the Great Fish River to find help. They cached this document on King William Island and left other objects used on their unsuccessful march southward for help. The original document was found by Leopold McClintock on his search mission of 1857-59, sponsored by Lady Jane Franklin. A facsimile was published in the *Illustrated London News*, October 1, 1859, in 100,000 copies and the document was widely reproduced in McClintock's subsequent *Voyage of the Fox*, a best-seller of the period.

A variation of the *many-to-many* format is a job advertisement of the Hudson Bay Company[26] in its early years calling for "young men" to work in the far-flung empire of this trading company. And while we are focused on HBC, we should note the circulation of printed currency issued by that Company which served as scrip in the North during its heyday.

Also speaking for *many-to-many*, or at least *some-to-some*, are broadsides, printed aboard ship, that announced holiday celebrations, performances, and even a "Guy Faux Night! Grand Ball" aboard *HMS Plover* at Point Barrow in 1853[27], an event to which ladies of the local gentry were invited.

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[25] Stam & Stam, p. 43; illus. p. 30.
[26] An example of an HBC job advertisement can be found at www.collectionscanada.ca/explorers/h24-1502-e.html Accessed April 8, 2006. National Archives of Canada/C-125856.
[27] "Guy Faux Night! Grand Ball. The Evening of Saturday next, the 5th of November, 1853, Will be celebrated on board Her Majesty's Ship Plover at Point Barrow, By a Hyperborean

When considering the flow of printed material around and about the cold regions, we must not forget the veritable flood of printed documents – mainly books -- that traveled aboard ship from temperate ports to both extreme north and south. In the 19th century, ship libraries of 1,000 to 3,000 volumes were not uncommon, and significant portions of these libraries were moved to base camps and a few of these volumes were even carried by sledge on exploration treks.

The condition of some of the books that "wintered over" is enough to make a conservator weep. A number of these books, largely dealing with Arctic exploration, were left by the Greely Party at Fort Conger in 1884; the books were claimed, or "rescued," two decades later by Robert Peary and returned to the United States where they eventually made their way to the Explorers Club in New York City[28].

One of the most affecting examples of moving the printed word across ice is a volume of Tennyson's *In Memoriam Maud and other Poems*, associated with Robert Falcon Scott's second expedition to the South Pole. Young Apsley Cherry-Garrard, an "assistant zoologist" on that expedition, lent the first of the four volumes to his friend and mentor Dr. Edward Wilson for the last stage of the trip to the Pole. Scott, Wilson, and three others reached the Pole only to find evidence of Roald Amundsen's prior arrival a month earlier. The dispirited group set off for their base camp but died before reaching their home base. Cherry-Garrard was among those to find the frozen body of Wilson with the others in that forlorn, little tent along with his copy of Volume I of the Tennyson work[29].

The story of this Tennyson volume reminds us that scientific and navigational aids were not the only kinds of published works shipped and dragged

Dance…" [Point Barrow [HMS Plover, 1853]; from the copy at Duke University. Stam & Stam, pp. 44-45.

[28] Stam & Stam, pp. 71-73.

[29] The tattered volume of Alfred Lord Tennyson's *In Memoriam Maude and other* Poems (London and New York: Macmillan and Co., 1906) is in the collection of the University of Rochester. Stam & Stam, pp. 91-92. Explorers Elisha Kent Kane and Isaac Hayes had copies of the same work on the second Grinnell expedition.

across ice and tundra. Consider the decision of Franklin's expedition, upon abandoning their ships in 1847, to haul with them over land and ice a heavily-laden boat filled with "necessities" including fine china and five devotional books – at least one probably included in anticipation of burials -- and also a copy of the *Vicar of Wakefield*, an object of more subtle utility.

With the development of aerial exploration, we see an increase not only in rate of travel but also a ratcheting up of networking attempts. Interestingly these attempts were seldom more successful that the ill-fated – and expensive – ventures themselves. In 1894, the Swedish engineer Salomon Auguste Andrée, during his sixth flight by controlled balloon in the vicinity of Spitsbergen, tossed postcards overboard, requesting the finders to mail them to him. They did, and he was thus able to map his journey.[30] A handy bit of person-to-machine communication by Andrée aboard his dirigible in 1896 allowed the crew to enjoy a hot meal with airborne; to operate the stove sensibly dangling 25 feet below the basket a flame was lit remotely and was extinguished with a puff of air from the ship itself. A small mirror allowed the adventures to check on the progress of the soup.[31] Never lacking imagination, the indefatigable Andrée set forth by balloon again toward the north from Virgo Harbor in 1897 with 32 carrier pigeons that he hoped would take dispatches and photographs back to his Stockholm newspaper. The balloon in question, the *Eagle*, took off in heavy weather and experienced a disastrous combination of down-draft and accidentally cut ropes. Four days later one of the carrier pigeons was shot by the captain of a Norwegian fishing vessel, who thereby learned that the *Eagle* had traveled 150 miles in the direction of the North Pole. Before disappearing, Andrée the great communicator had dropped buoys, bearing Swedish flags to mark his journey; one bore a note indicating all was well as of July 11, 1897, and that four pigeons had been released. Nothing more was heard of Andrée and his men until 1930 when a Norwegian sealer en route to Franz Joseph Land landed on White Island where he found diaries of Andreé and his companion

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[30] P. J. Capelotti, *By Airship to the North Pole; An Archaology of Human* Exploration (New Brunswick, NJ, and London: Rutgers University Press, 1999), p. 24.
[31] Capelotti, p. 28.

Strindberg, a log, and undeveloped film that later revealed ghostly images of the expedition.

Still in the air, we skip to 1906 when the adventurer-newspaperman from Chicago, Walter Wellman, announced his intention to communicate from the North Pole via wireless from his dirigible flight. His plan was to communicate from the pole to Hammerfest, and then to Tromsø, and then via Atlantic cable to the Chicago Record-Herald House. The system worked with some modification except for the fact that Wellman never got to his intended destination and therefore had no "hard" news to report.[32] Undeterred, Wellman sent a wireless message to President Theodore Roosevelt and to his newspaper in 1906, the first from the arctic, and that in itself constituted at least "soft" news. Commenting on his wireless ambitions, even Wellman admitted that "The number of messages we were able to get through in nowise compensated us for the outlay of money, labor and annoyance."[33] Before leaving Wellman, we should recognize the veritable flood of newspaper articles that came from his hand and the significant increase in the element of advertising that found its way into his dispatches. Wellman established the iconic image thereafter of the explorer, in poses of rapt attention, remains in regular communication through the wireless and its successors with the "folks back home."

Our last example of information networking is a kind of nautical bookmobile in the form of a wooden box designed to hold Christian and other literature for distribution to sailors at sea. This one, now at Mystic Seaport, was one of over 16,000 distributed by the American Seamen's Friend Society. This extraordinary example of the genre traveled toward the North Pole with Peary aboard the *SS Roosevelt* in 1905-09 and 1909, when it could have been considered the world's more northernmost library[34].

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[32] Capelotti, p. 68.
[33] Capelotti, p. 116.
[34] Stam & Stam, p.143.

Have these stories anything to tell us about what unique needs might exist for polar information networks in contrast to information networking requirements for populations elsewhere? Let us review the needs that were addressed by early information networking: to survive, to pass the time, to stave off depression, to seek divine comfort, to be amused, to be reminded of society and culture back home, to escape unwanted company, to create community (through newsletters), to teach a skill (reading or printing, for example), to make sense of the experience, to help outsiders understand and appreciate the polar regions, to help subsequent travelers find their way in high latitudes, to direct people to resources necessary to survival, to provide practical advice to travelers, to explain oneself, to announce new discoveries and to claim primacy, to say "I was here," to make money, and to be famous. The *hows* are dated; the *whats* and *whys* seem entirely contemporary.

But are these information needs unique to the cold regions? Clearly not, but four aspects of these needs are highly accentuated in the polar context. They are the urgency of information for survival, the relative paucity of other resources, the physiological and attendant psychological problems arising from the climate, and the need for entertainment when time hangs heavy. On the last point, we should not forget that libraries and their physical collections are an essential ingredient of the networking stew.

Even this brief review of historical information networking reminds us that current networking in high latitudes rests on a long – if somewhat quirky – tradition, and that past experience can help us identify unchanging human needs that modern systems must accommodate. Given its combination of enthusiasm for polar regions and library skills, the Polar Library Colloquy is particularly well positioned to draw effectively from this history. Building on the work of generations of networking geniuses – some of whom, I admit, were probably quite unaware of their contributions or importance to the information networking function-- there is little doubt that PLC members will successfully carry forward the tradition of brave and bold networking "firsts" in the high latitudes.
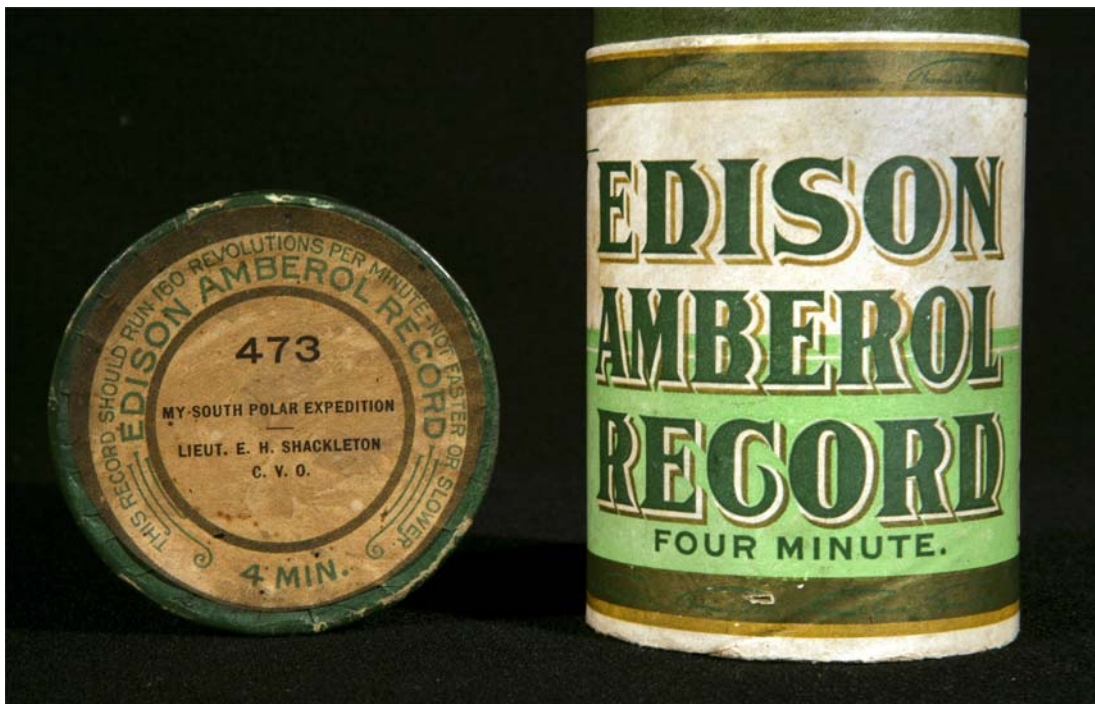
Fig. 1. *Ernest Henry Shackleton, 1874-1922. "My South Polar Expedition." A four-minute sound recording of Shackleton's 1907-09 "Nimrod" expedition. Released as Volume 8 in 1910 of "The Edison Phonograph Monthly" as Edison Amberol cylinder No. 473. Orange, New Jersey: Edison Phonograph Co., 1910. Collection of the Belfer Audio Laboratory, Syracuse University Library.*

International Polar Networks: in the beginning

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Abstract. This paper will examine mutual awareness and forms of co-operation in polar research that were undertaken during the second half of the nineteenth century and the first two decades of the twentieth century.

Swedish scientific expeditions to the Arctic from the 1850s onwards represented a departure from the purely territorial aims of polar exploration. National geographical societies were becoming established throughout Europe and further afield. In polar terms, this resulted in geographical society journals chronicling international innovation for their readers in the form of book reviews, summarized translations of articles that had appeared in other journals, together with lists of literary references to published items and the contents of their own libraries. Other major innovations included the First International Polar Year (1881-1884) and the First International Congress for the Study of Polar Regions in 1905. This paper will attempt to illustrate the balance between a genuine desire to promote international knowledge objectively and the growing influence of nationalism on polar exploration during this period.

A *network* is defined by the Oxford English Dictionary as "an interconnected group of people, an organization", though in the context of polar history this definition does not really become applicable until the late nineteenth century. However, the verb *to network*, although modern in its dictionary definition, seems much more applicable to the overall history of sharing knowledge about the polar regions, and indeed to the theme of the 21st Polar Libraries Colloquy conference: "to link (computers) together to make possible one or more of several functions, as the transfer of data, the sharing of processing capability or workloads, and accessibility from many locations".

The subject-matter of this paper illustrates when the principle of networking was established on an international scale and by what various means, including cartography and early accounts of exploration. The influence of specific organizations and individuals in this field is traced from the late eighteenth century onwards and the cumulative information available from items published during the nineteenth century is summarized, as well as new forms of information presentation that became available at that time. Finally, active forms of networking are

introduced, including the First International Polar Year of 1882-1883 and international forms of collaboration and polar institutions in the twentieth century and beyond.

Cartography

The Hereford Mappa Mundi, drawn by Richard of Haldingham or Lafford circa 1290, depicts Jerusalem at the centre of the world, with the east at the top of the map. Like other maps depicting Christendom at about the same time, information is presented along fairly trammelled lines, with seemingly limited interest in the receipt of new information.

The *Carta Marina* of 1539, produced in Venice by Olaus Magnus (1490-1557), a Catholic archbishop in exile from Sweden, was the first printed map of the Nordic countries. It depicts land up to approximately 70º north (the coasts of present-day Finnmark in Norway and the White Sea region in Russia). One of the purposes of the map was to illuminate the innocent virtues of the Northern people, who had recently been forced – in Olaus Magnus's perception – to abandon Catholicism in favour of Lutheranism. Despite the inclusion of fearsome sea monsters and the like, which were still standard cartographical features in the early sixteenth century, the map represents an earnest attempt to portray the North – but not the Far North that we know today.

In 1570, a publication entitled *Septentrionalium Regionum descrip.*, printed in Amsterdam by Abraham Ortelius (1527-1598), was the first map of Scandinavia that actually resembled what it portrayed, and it was also the first attempt to portray the northern polar region. The map incorporates misconceptions of its time, such as the notion that Greenland extended eastward to the north of Iceland and even Scotland. This was caused by confusing land-mass with the Arctic Ocean ice-pack, and possibly as the result of a vernacular knowledge of Spitsbergen (present-day Svalbard), even though it was not formally discovered until 1596. Once the existence of Spitsbergen had become known, however, it was rapidly incorporated in subsequent maps as a land-mass in its own right. An early, high-profile instance of this was a reprint of the *Septentrionalium Terrarum descriptio* by Gerard Mercator (1512-1594). Although this map was first printed in 1589 (i.e. prior to the discovery of

Spitsbergen), it subsequently appeared in an atlas published in 1606, where it had been amended to incorporate a reference to and outline of "the new land".

Early Accounts of Exploration

Almost the earliest known voyage of exploration to the Arctic regions was undertaken by Pytheas in 325 BC. Second-hand accounts of his journey, dating from the first century BC and the first century AD, mention his discovery of the northern island of Thule (thought to refer to either present-day Norway or Iceland). Unfortunately, these sources were inclined to disbelieve Pytheas's claims; this was an era in which the deliberate spread of misinformation was common (e.g. the claim by the Phoenicians, guarding the present-day Straits of Gibraltar, that the sea boiled to the south and froze to the north). Over a thousand years later, another second-hand account, included in King Alfred the Great's translation of the *Orosius* published in the ninth century, provided much more positive and informative details of a first-hand report by Norse merchant Othere (Ottar) concerning his voyages to the north.

Leaping forward another six hundred years or so, an account of Northwest Passage expeditions undertaken by John Cabot (born Giovanni Caboto) in 1497 and 1498 form part of Thomas Dawson's *Divers voyages touching the discovery of America*. This was published almost a hundred years after the event, in 1582, and incorporated such far-fetched details as references to monopods, a being that was said to hop around on one leg, under which it could also shelter like an umbrella. A few decades prior to this publication, Olaus Magnus had produced his *Historia de gentibus septentrionalibus* (History of the Northern Peoples), which was published in Rome in 1555 to accompany the *Carta Marina*. Although this did at least incorporate Olaus Magnus's own travel experiences in the North (to northern Sweden and Norway in 1518-19), he was clearly the victim of "sailors' tales" that made exotic claims, such as the ability of the Sami (indigenous people) to control nature and sell a fair wind to a traveller, or a storm.

Martin Frobisher's Northwest Passage expeditions during the 1570s were described in a first-hand account by expedition member Dionyse Settle as early as 1577, and in an account attributed to Frobisher himself and Captain George Best

(though this was probably largely the work of Best), which was published in French and Latin in 1578, and subsequently translated into Dutch in the early eighteenth century. Between 1598 and 1605, Gerrit de Veer's first-hand account of the Dutch Northeast Passage expeditions of 1595 and 1596-1597 (the latter incorporated the discovery of Spitsbergen) was initially published in Dutch, but thereafter rapidly published in Latin, French, Italian and English translations. The publications relating to these Northwest and Northeast Passage expeditions set something of a trend at the end of the sixteenth century for imparting information that might be of future use to explorers in the region. At this stage, exploration necessarily involved trading activity and was essentially linked to the acquisition of territory. Exploration also tended to involve competition, rather than – or at least as well as – co-operation.

Organizations and Individuals

Moving forward almost another two hundred years, the Hon. Daines Barrington (1727-1800), a member of the Royal Society in London, embodied the plurality of interests demonstrated by many individuals in their search for a knowledge of many different subjects during the eighteenth century. He successfully lobbied to resuscitate British interest in Arctic expeditions, after a lapse of 150 years or so, and represents an early example of an influential individual who was not directly involved with polar expeditions himself. Barrington's efforts resulted in the commissioning of the British naval North Polar expedition of 1773, via Spitsbergen; though unsuccessful, the expedition produced scientific results, but is best remembered for comprising Horatio Nelson – as a young midshipman – amongst its members.

Arctic exploration was then interrupted by the Napoleonic Wars, but expeditions from Britain were vigorously resumed from 1818 onwards, commissioned by Sir John Barrow (1764-1848), who had been appointed Secretary to the Admiralty in 1804 and held this post for approximately forty years. Taking up the baton of polar exploration (and republishing Barrington's *Probability of reaching the North Pole discussed*, first issued in 1775), Barrow established a strong naval tradition of polar exploration until the mid-1840s. This period coincided with the foundation of the Royal Geographical Society (RGS) in London, in 1830. The first

national geographical society was the Société de géographie, founded in Paris in 1812. Norway, by contrast, came much later to the scene: Det norske geografisk selskapet was founded in Christiania (present-day Oslo) in 1889, in the wake of Fridtjof Nansen's successful expedition across the Greenland ice-cap. What all these societies had in common, however, was the facility of making geographical information available at a national and international level via the (usually monthly) publication of their journals.

The next significant individual on the scene, in British terms, was Clements R. Markham (1830-1916), Secretary of the RGS from 1863 to 1888 and President of the Society from 1893 to 1905. Following the fiasco of Sir John Franklin's British naval Northwest Passage expedition of 1845-1848 and the obligations and expense associated with the numerous Franklin search expeditions that ensued (including an expedition of 1850-1851 in which Markham participated, Nelson-style, as a midshipman), he faced a daunting task in trying to sustain subsequent British interest in Arctic exploration, especially after the failure of the British Arctic Expedition of 1875-1876 to reach the North Pole. Markham was largely responsible for the re-focusing of scientific attention towards the Antarctic, using his influence while he was President of the RGS – and subsequently – to commission and support British expeditions to the south polar regions, including the British Antarctic expedition of 1901-1904 and Scott's Terra Nova Expedition of 1910-1912.

The final individual to be mentioned here is Charles Rabot (1856-1944), who was editor of *La Géographie* (the journal of the Société de géographie) from 1900 to 1919. Rabot was respected as an Arctic explorer and geographer (he participated in expeditions to Greenland and the Greenland Sea during the 1880s and 1890s), and as a polar writer and translator of other people's work. His insistence on the prominence of polar themes during the period of his journal editorship and a subsequent degree of direct political involvement were both of great assistance in helping Norway to obtain sovereignty of Spitsbergen/Svalbard in 1920.

Nineteenth-Century Published Items

The successful manoeuvres of all the individuals mentioned above, perhaps especially those of Markham and Rabot, were dependent on the influence of published items of various kinds. These included books and pamphlets, including first-hand expedition accounts, often used as a means of generating income to fund the next expedition; second-hand accounts of polar history, sometimes written in an "improving" style for young readers; and, particularly in Sweden and Germany, more specialized scientific and academic texts. An approach to a broader public was made via articles published in newspapers and non-specialist journals – the style and content of these articles changing over time to reflect the improved global transmission of news, increasingly sensationalist public attitudes to polar exploration and, by the end of the nineteenth century, direct media involvement in the sponsorship of expeditions. In between these two forms of publication were the articles published in specialist journals, such as those of the various national geographical societies, though also in journals catering for various branches of the natural sciences and historical publications, with a readership encompassing both the experts in these fields and the interested layman. One feature of these specialized articles was the tendency to cite information in a cumulative fashion from one journal to another, often in transition from one country or language to another.

The style in which information was presented to the reader in these specialized journals embraced lengthy monographs, smaller articles and news items. Another form of imparting information was via the minutes of society proceedings, which could provide a second-hand account of a first-hand verbal account of an expedition that had been delivered in the form of a lecture at a society meeting. Other conduits of information provided in these journals included maps and charts, which might reveal a varied and sometimes controversial international application of place-names in an area under discovery; book reviews, which suggested further avenues of information for the interested reader; for those with a specialized interest in a particular subject there were also literary and cartographical references pertaining to items published elsewhere, and some of the national geographical societies catalogued recent additions to their library collections in their journals on a regular basis.

The First International Polar Year (1882-1883)

Although the journals provided quite an extensive and efficient means of harvesting information about polar science and history on an ad hoc basis, an increasing interest developed in setting up more official forms of international collaboration. The First International Polar Year was founded at the instigation of the Austrian explorer Karl Weyprecht, who had been joint leader, with Julius Payer, of an expedition to Franz Josef Land in 1872-1874. In December 1874, a transit of Venus occurred (a rare event, during which, in clear weather conditions, Venus may be observed passing directly between Earth and the sun); the international scientific interest in this event was sustained by the knowledge that a second transit of Venus would take place in December 1882. According to the science of the day, this provided an ideal opportunity to make simultaneous, comparative observations, in different parts of the world, of meteorological, geomagnetic, auroral and other phenomena, many of which could best be viewed in extreme latitudes. An International Polar Commission, with somewhat limited European representation, was founded in Hamburg in 1879 and stations in the Arctic were ultimately established in conjunction with the International Polar Year by scientists from Austria/Hungary, Denmark, Finland, Germany (also in South Georgia), the Netherlands, Norway, Russia, Sweden, the United Kingdom/Canada and the United States of America; in addition, a French station was established in Tierra del Fuego.

Further International Collaboration and Polar Institutions

The details that follow in this section are by no means comprehensive: they are intended to provide an overview of developments in international co-operation in the field of polar research since the first collaboration during the 1880s. An International Congress for the Study of the Polar Regions took place in Brussels in 1906, which appears to have been the initiative of the International Association for the Study of the Polar Regions, founded at the Congrès international d'expansion économique mondiale that had been held in Mons the previous year. This period coincides with the immediate aftermath of a whole series of initial European expeditions to the Antarctic, including by the pioneering Belgian Antarctic

Expedition of 1897-1899. In 1908, the international collaborative body, now known as the International Polar Commission, met in Brussels, and again in Rome in 1913.

Any thought of further international collaboration in this field was brought to a halt with the outbreak of the First World War, but the Scott Polar Research Institute was founded soon after its conclusion, in 1920. The Second International Polar Year took place in 1932-1933, the fiftieth anniversary of the First International Polar Year. This was proposed by AEROARCTIC, the International Society for the Exploration of the Arctic Regions by Means of Aircraft. As well as demonstrating the major technological advances in polar exploration during the intervening half-century, the content of the Second International Polar Year reflected significant meteorological developments that took place in the early twentieth century, and it led to the foundation of the International Meteorological Organization. The problems of a worldwide economic depression at this time meant that international involvement, although extensive, was small-scale, mostly restricted to meteorological studies and with a stronger Antarctic focus than before. The American Polar Society was founded shortly afterwards, in 1934.

The International Geophysical Year, which took place in 1957-1958, was originally planned as the Third International Polar Year (coinciding with the 75th anniversary of the First International Polar Year). It was launched by the International Council of Scientific Unions and was based on previous international polar years, but it included research outside the polar areas. American researcher R. Beard commented at around that time that Antarctica was a continent equal in area to South America, yet the inner regions were less well known than the near side of the moon. The third international collaboration in this field coincided with the foundation of the Scientific Committee on Antarctic Research (SCAR) in 1958; the British Antarctic Survey was established four years later.

As a finishing touch to this overview of polar networking in its various forms over the past two millennia or more, it seems appropriate to end with a quick glance into the future. What will effectively be the fourth international polar year – though this one goes by the snappier title of IPY 2007-08 – will be inaugurated shortly, coinciding with the 125th anniversary of the First International Polar Year (history does not relate why the centenary of that event was overlooked in 1982-1983). A

large programme of scientific events focused on the Arctic and Antarctic takes place between March 2007 and March 2009: a total of 1,061 expressions of intent listed on the IPY 2007-08 web site in May 2006, at the time of Polar Libraries Colloquy meeting in Rome, have now crystallized into 459 final projects.

References

Holland, C., 1994, "A*rctic Exploration and Development c.500 b.c. to 1915: an Encyclopedia*", London-New York, Garland.

Jones, M.K., 2001, "*The Endless Utility of Spitsbergen : Patterns of Usage from 1596 to 1920*", Master's dissertation, University of Edinburgh.

The Northern Lights Route on the web site of the University Library of Tromsø, Norway. http://www.ub.uit.no/northernlights/index.htm

Web site of the International Polar Year 2007-08: http://www.ipy.org/

Sharing the unsharable: classified documents in private archival collections

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Abstract. In the autumn of 2002, a visitor to the Ohio State University Archives using the Papers of Admiral Richard E. Byrd, brought to my attention a file of documents marked "confidential." Upon further investigation, I noted that there were other "classified" marks on documents in this particular box. I began to investigate the procedures for having materials declassified. I discovered that the process to declassify materials in a private collection, such as the Byrd Papers, was, at best, confusing and ambiguous. These documents were nearly 60 years old. Certainly by now, it would be safe to assume that they were declassified, right? WRONG! This paper will attempt to clarify the procedures for archivists when classified documents are discovered in private archival collections, using the experience with the Byrd Papers as a case study.

Introduction: The History of the Information Classification System in the United States

To gain a better understanding of how and why information is classified, a historical perspective is helpful. Secrecy in government and classification of information has been a part of American history since the country's founding[1] (Ericson 2005, 22). However, beginning about 1940 with the onset of World War II, security classification in the United States changed dramatically, and assumed a "presidential character" (Relyea 1994, 350). Not so coincidentally, the classified documents in the Byrd Collection fall into this time frame. Therefore, this paper will focus on the period 1940 to the present.

Generally speaking, classified information in the United States falls into three subject categories. The first is National Security Information (NSI). The second category is that generally relating to nuclear weapons and atomic energy. The third is Sensitive Compartmented Information (SCI), which is information "concerning or

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[1] It should be noted that information classification systems are not unique to the United States, although the American information classification system will be the focus of this paper.

derived from intelligence sources, methods, or analytical processes, which is required to be handled with formal access controls established by the Director of Central Intelligence" (David 2004, 444-445).

Over the past 65 years, a series of presidential Executive Orders has defined and established the information classification system in the United States. Unless specified, Executive Orders remain in effect indefinitely. In addition, they do not require congressional approval (Ericson 2005, 36-37). Executive Order 8381, signed by Franklin Delano Roosevelt on March 22, 1940, established three levels of classification, "Secret," "Confidential," and "Restricted." In addition, it gave civilian government employees the authority to classify information (Ericson 2005, 38). The designation of "Secret" covered information "of such a nature that its disclosure might endanger the national security, or cause serious injury to the interests or prestige of the Nation, an individual or any government activity, or be of advantage to a foreign nation." The use of "confidential" was meant for materials "of such a nature that its disclosure, although not endangering national security, might be prejudicial to the interests of prestige of the Nation, an individual, or any government activity, or be of advantage to a foreign nation." The designation "Restricted" was in instances where information "is for official use only or of such a nature that its disclosure should be limited for reasons of administrative privacy, or should be denied the general public" (Relyea 1994, 350).

In 1950, Executive Order 10104 established a fourth category of classifiable information, "Top Secret." This, in effect, aligned U.S. information security categories with those of America's allies (Relyea 1999, 6). Information classified as "Top Secret," if released, would present "exceptionally grave damage to the country" (Ericson 2005, 41). Only one year later, in 1951, Executive Order 10290 completely overhauled the security classification system, by expanding classification authority to include 72 *civilian* agencies (Ericson 2005, 40, and Relyea 1994, 351).

An important change occurred in 1972 when President Richard Nixon signed Executive Order 11652. This required, for the first time, that all agencies and the National Archives conduct systematic declassification review of their *permanent* classified records thirty years old and older. In 1978, President Jimmy Carter's Executive Order 12065 continued this trend toward a more open public information

system by mandating a "balancing test" that weighed the public's right to know against the government's need to protect national security (Ericson 2005, 41). This same order also established the Information Security Oversight Office (ISOO) at the National Archives (Ericson 2005, 41). The mission of the ISOO is to "oversee the security classification programs in both Government and industry and report annually to the President on their status" (U.S. National Archives and Records Administration, Information Security Oversight Office 2006). A more thorough explanation of the ISOO and their role in classified document management will be covered later in this paper.

In 1982, President Ronald Reagan signed Executive Order 12356. This was a significant step backwards, because this order eliminated the requirement that agencies (except the National Archives) conduct systematic declassification review (David 2004, 445). It reversed the limiting trends of the previous thirty years by expanding the categories of classifiable information, and in fact mandated that information falling within these categories be classified. In addition, it made reclassification authority available, and eliminated automatic declassification arrangements (Relyea 1994, 351).

In 1995, the tide turned once again, when President William Clinton signed Executive Order 12958. This order re-instated the automatic declassification system. All permanent pre-1975 classified agency records and all pre-1975 classified presidential library records would automatically be declassified in April 2000, whether or the not the records had been reviewed, unless they had been exempted (David 2004, 445). However, many agencies and presidential libraries were unable to meet this deadline and extensions were given. President George W. Bush's Executive Order 13292 in turn established the new date of December 31, 2006 for the automatic declassification of permanent pre-1981 classified agency records and presidential library records, "unless they have been exempted after actual review, exempted upon application to the White House, or one of several grounds for extension of this date applies" (David 2004, 446). However, Executive Order 13292 had other provisions that essentially allowed the government to classify more information, for even longer periods of time. It also made it easier for departments and agencies to exempt their records from automatic declassification. Perhaps even more troubling

is the provision that allows the executive branch to again classify records that were previously declassified (Ericson 2005, 49). A notable example of this was in February 2005, when a federal team of 5 people, led by the CIA, removed documents from the archival papers of the late Senator Henry "Scoop" Jackson. The papers had been donated to the University of Washington by the Senator's widow in 1983, and had been open to researchers for more than 10 years (Bunch 2005, 1). One blogger pointed out, "What is the probability that stashed away in some scholars filing cabinet is a photocopy of these newly classified documents?" According to Matthew Aid (2006, 1), visiting fellow at the National Security Archive, "the CIA and other federal agencies have secretly reclassified over 55,000 pages of records taken from the open shelves at the National Archives and Records Administration." The ridiculousness of this is apparent when one realizes that many of these documents have already been published in the State Department's historical series, *Foreign Relations of the United States*, or declassified elsewhere (Aid 2006, 8). "Since NARA has no classification authority, and as such, no control whatsoever over the records it is a custodian of, it had no choice but to comply with the demands of the government agency" (Aid 2006, 5). It should be obvious that this massive reclassification effort comes with a huge price tag—this is money that should be spent on furthering the declassification effort, rather than re-classifying already declassified material.

There are several salient points to take away from this overview of the information classification system in the United States since 1940. First, the system currently in place "designed to protect the nation's genuinely confidential records, is driven by an Executive Order system that is prone to changing the rules of the game every four years or so" (Ericson 2005, 48). Unfortunately, the end result is a system that "neither protects nor releases national security information particularly well" (Relyea 1999, 22). Additionally, it is important to note that Executive Orders have never specified sanctions for government officials who over-classify information (Ericson 2005, 41). In fact, the general feeling is that agencies that withhold records are justified in doing so. A 2001 memorandum by Attorney General John Ashcroft states, "…an agency can be assured that Justice attorneys will defend your decisions [to withhold records] unless they lack a sound legal basis or present an unwarranted

risk of adverse impact on other agencies' abilities to protect their records" (Feinburg 2002, 269).

The Freedom of Information Act and The National Security Archive

The Freedom of Information Act (FOIA) was signed into law in 1966 and was intended by Congress to guarantee citizens the right of access to records of the federal government (Doyle 1999, 37). Although it would appear on the surface that the Freedom of Information Act would be the public's answer for access to government information, it can be very difficult to access documents, in spite of FOIA:

> Government agencies have become very adept at wielding the nine exemptions permitted under the FOIA as weapons against disclosure. Experience has shown that the exemptions – which were designed to protect secrets of national defense and foreign policy and law enforcement – can be, and frequently are, deployed to cover up embarrassing, unpopular or illicit activities as well (Doyle 1999, 37).

It is also important to note that FOIA only applies to Executive Branch departments, agencies and offices, federal regulatory agencies, and federal corporations. Congress, the federal courts, and parts of the Executive Office of the President that function solely to advise and assist the President, are NOT subject to FOIA (George Washington University 2004, National Security Archive FOIA Basics, 1).

It is an understatement to say that government agencies do not favor FOIA. The FOIA offices in government agencies tend to be grossly understaffed and under-funded. This can result in an enormous delay for the FOIA requester. Unfortunately, when documents are received, it is not uncommon for portions to be heavily redacted (blacked out), making them virtually worthless to the researcher (Doyle 1999, 37).

Related to FOIA and the declassification of U.S. government documents is the National Security Archive. Founded in 1985 by a group of journalists and scholars, it is a central repository for documentation obtained from the U.S.

Government under the Freedom of Information Act. Located at George Washington University in Washington, D.C., the Archive's holdings include more than two million pages of accessioned material in over 200 separate collections (George Washington University, National Security Archive Overview 2004, 1). According to their website overview, The National Security Archive has inherited more than 2000 requests from outside requesters and has initiated more than 20,000 other FOIA requests over the past fifteen years. In addition to their expertise in working with U.S. FOIA, delegations from more than a dozen foreign countries have visited the Archive, "… to learn from this innovative model of a non-governmental institutional memory for formerly secret government documents and the Freedom of Information Act" (George Washington University, National Security Archive Overview 2004, 5).

Case Study: Classified Materials in the Papers of Admiral Richard E. Byrd

The classified materials in the Papers of Admiral Richard E. Byrd first came to light when a patron visiting the Archives in the autumn of 2002 brought to my attention a file of documents marked "confidential." Upon further investigation, I noted that there were other "classified" marks on documents in this particular box. Fortunately, the patron was an experienced researcher. She had conducted research in the National Archives and other archival repositories and knew that she should not have access to classified materials. This was the impetus for investigating the procedures for a declassification review of the Byrd material by the appropriate agency. Of course, I had no idea what the appropriate agency was, or how to begin. I assumed that since the materials were old, they were likely already declassified. At this time, I believed that I was simply seeking confirmation. I soon realized that this was a naïve point of view. After conferring with my colleagues in the University Archives, I contacted OSU's Office of Responsible Research Practices (ORRP). The archivist for the John Glenn Papers, Jeff Thomas, had recently worked with this office in successfully declassifying government documents contained within the Glenn collection. They were quickly responsive and visited the Archives to examine the records less than a week after my initial inquiry. In October 2002, the ORRP took three files of original documents from the Byrd collection for declassification review. Since the documents in question had originated from the U.S. Navy, the Department

of the Navy was contacted. In March 2003, the ORRP told me that they could not find anyone in the department of the Navy to confirm whether or not these particular documents had been declassified. This case had now been referred to the Department of Homeland Security. Several months later, in July 2003, I called the ORRP again. Still no progress had been made. In January of 2004, more than a year after my initial contact with the University's Office of Responsible Research Practices, I retrieved the original documents from their office. Clearly, this was not a priority item for the Office of Responsible Research Practices, and certainly not for the Department of Homeland Security. By this time, original documents had been withheld from the collection for more than a year.

I was puzzled. Why was it that the papers of Senator John Glenn were reviewed and declassified so quickly, when 65-year-old records in the papers of Admiral Richard E. Byrd remained classified? One could speculate that the papers of the Senator were taken more seriously because of the perceived risk that there might actually be something of a still-classified nature in this more contemporary collection.

In any case, it was clear to me that the ORRP would not be able to resolve this. At the recommendation of the Associate University Archivist, I made contact with a declassification archivist in one of the presidential libraries. Since most of the still classified documents in the Byrd collection originated from the Navy, she referred me to the Department of the Navy Declassification Office, a division of the Navy Criminal Investigation Service (NCIS). In February 2004, I was asked to send a packet of sample photocopies of the classified documents to the NCIS for their review. I was instructed to double wrap the items. I was also given a secure fax line to use, should I need to fax any documents to them. Clearly, this was to be taken very seriously. Five months later, in July of 2004, I contacted the NCIS to check their progress. I was told that they were working on it. In February 2005, I sent a follow up letter. It had now been a year since I had sent the packet of sample photocopies to the NCIS, and more than two years since I began the process of trying to get the documents reviewed. In March 2005, I got a phone call. The documents were now declassified. When I asked if the declassification extended across the entire Byrd collection, I was told that only the documents that had actually been reviewed were

declassified. This meant that there were still many documents in the collection that needed to be reviewed. I was told that they would have to do some investigation to find out what the next step would be. In May 2005, the declassified photocopies were faxed back to me. I was confused. Did this mean that all of the classified documents in the collection were now declassified? I called the NCIS and was told that this was still a matter under consideration.

In September 2005, a patron from New Zealand contacted me via e-mail and requested copies of documents from the Byrd Papers. Upon pulling the appropriate files, I realized that approximately two-thirds of these were stamped classified or secret. I had been trying for 3 years to get someone to deal with the classified documents in the Byrd Collection, and still it had not been resolved! Perhaps the NCIS was not the appropriate agency. I again requested guidance from my colleagues. At the recommendation of colleague Jeff Thomas once again, I contacted the Information Security Oversight Office (ISOO) for guidance. Prior to this time, I had no knowledge of the ISOO. Jeff had learned of the ISOO and its role in government document declassification through his involvement in the Congressional Records Roundtable, a subgroup of the Society of American Archivists.

The mission of the ISOO is to "oversee the security classification programs in both Government and industry and report annually to the President on their status" (U.S. National Archives and Records Administration, Information Security Oversight Office 2006, 1). Their goals, as specified on their website include:

> 1. Promote and enhance the system that protects the national security information that safeguards the American government and its people.
>
> 2. Provide for an informed American public by ensuring that the minimum information necessary to the interest of national security is classified and that information is declassified as soon as it no longer requires protection.
>
> 3. Promote and enhance concepts that facilitate the sharing of information in the fulfillment of mission critical functions related to national security (U.S. National Archives and Records Administration, Information Security Oversight Office 2006, 1).

Their website lists 25 contact individuals with their specialties. I e-mailed the gentleman at the ISOO responsible for oversight of Navy declassification, Mr. Rashad Shakir. He responded almost immediately, with the following instructions:

> 1. Please do not release the information marked/stamped TOP SECRET, SECRET, CONFIDENTIAL, or RESTRICTED incident to an FOIA request or any other type of request until you receive additional guidance from our office.
>
> 2. If your staffers happen across this type of information in the course of their duties, please separate the documents from the others and secure them as best you can, i.e. locked file cabinet or something comparable (Shakir 2005).

I was impressed by Mr. Shakir's quick response to my inquiry. It seemed that the ISOO would resolve this matter once and for all. The very next day, Mr. Shakir directed me to the proper agency to review and hopefully declassify these documents. It was the Navy Criminal Investigation Service – the same office that I had initiated contact with more than a year earlier, in February 2004! It was then that I realized that the ISOO was the oversight agency for the NCIS Navy Declassification department. When I explained that I had been in contact with the NCIS previously, Mr. Shakir assured me that the matter was to be taken seriously, and he was apologetic for the extreme time delay. The declassification officer that I had worked with previously contacted me almost immediately. She assured me that she had planned a visit to OSU to review the documents, but had been occupied with other matters up to this time. On October 31, 2005, Shelly Lopez-Potter, Department of the Navy Declassification Program, and Michael Byrnes, KEI Pearson[2] project manager for the Navy Declassification Program visited the Ohio State University Archives. They spent one week in the Archives and reviewed more than 30,000 pages of records. According to their trip report[3], "all classified records were declassified after

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[2] According to their website, KEI Pearson is a private company used by the federal government and U.S. Intelligence community for various outsourced projects. Approximately 80% of their staff have security clearances.

[3] A copy of the trip report can be found in Appendix 1.

coordination with the U.S. Army, DOD [Department of Defense], and JS [Joint Chiefs of Staff]." In addition to documents, they also reviewed films and maps. These were also declassified.

Since the Byrd collection spans more than 500 cubic feet, Ms. Lopez-Potter and Mr. Byrnes did not review each and every item. They began by reviewing the documents previously identified as classified. After that, they limited their review by use of the finding aid to the Byrd collection. I received a letter on Department of the Navy letterhead, dated December 22, 2005, and signed by B.A. Marshall, Assistant for Information and Personnel Security[4]. This letter not only summarizes the declassification activities, but also gives me the authority and instructions to mark as declassified similar records in the Byrd Collection.

Implications for the Archivist

Although my motivation for writing this paper was to share my experience in order to inform archivists about the procedures for dealing with classified documents in private archival collections, I am troubled by the apparent over-classification of information in the United States. As archivists, our primary objective is to provide access to information. Overly classified materials in collections hamper our ability to make information accessible to the public. The literature indicates that in many cases, the reasons for classifying information are more about embarrassment, rather than having anything to do with issues of national security.

Klein and Schwalb (2005, 23) state that, "…the balance between national security and public access is a delicate one." They reference a 2003 report released by the ISOO that says, in part:

On the one hand, Americans are concerned that information may be exploited by our country's adversaries to harm us…however the free flow of information is essential if citizens are to be informed and if they are to be successful in holding the Government and its leaders accountable (National Archives and Records Administration, Information Security Oversight Office, 2002 Report to the President).

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[4] A copy of the letter from B.A. Marshall can be found in Appendix 2.

Certainly, there are cases where information is and should be classified. However, the existing presidential Executive Order system fosters the over-classification of government information.

I contend that the archival community in general is uninformed about classified documents and the procedures entailed in having them reviewed and declassified. While some archivists are knowledgeable in this area (for example, those working in a presidential library or with collections of congressional papers), archivists working in private collections have not had training in this area. I conducted an informal poll of my colleagues, the Special Collections Librarians and Staff at the Ohio State University Libraries. Of the 13 responses received, only two respondents had even a vague knowledge of the Information Security Oversight Office. I feel certain that had I contacted the ISOO first, the process of declassifying the Byrd Papers would have been very different. It should not be a three-year project to declassify 65-year-old documents.

The majority of the materials in the Byrd collection that were marked classified were related to Byrd's activities during World War II. I would speculate that other collections of documents created during this time period will continue to come to light, as this generation passes on and family members donate records to universities or other historical repositories. All archivists need to recognize the potential that classified documents can and do end up in the records of private individuals.

Whether or not we agree with the information classification system, we should not take it lightly. Between 6-7 million documents are stamped classified every year (Doyle 1999, 35). This is likely a conservative figure, as the literature indicates that the amount of classified information has increased dramatically since 9/11, while at the same time the President has encouraged more information sharing (Kaiser 2003, 216). It is a confusing and contradictory system, to be sure. However, "…regardless of age, classified records must be protected and undergo official declassification by the appropriate federal agency. Classified records over twenty-five years old and outside of federal custody are **not** subject to automatic declassification under Executive Order 13292. **It is therefore the responsibility of repository archivists who discover classified material to remove it from publicly**

available materials, contact the appropriate agency officials, and arrange for its storage in certified secure space[5] (Paul 2005, 4)". Somebody should tell the archivists.

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[5] Emphasis added by the author.

Appendix 1

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Ohio State University Trip Report

The team of Michael Byrne, KEI Pearson project manager for the Navy Declassification Program, and Lizbeth Lopez-Potter traveled to Ohio State University to survey and declassify if possible documents in the Admiral Richard Byrd collection. The trip was from October 30 through November 4, 2005. The reviewed 12 boxes of paper documents and four boxes of films.

The movies in the film boxes were checked for classification. There were two unclassified Navy films on Operation Highjump, six unclassified films made by news organizations of Operation Highjump, and approximately 40 VCR tapes of converted 16mm film of Admiral Byrd's collection on various subjects all unclassified.

The majority of the work was in the 12 boxes of paper records. These boxes contained at least 30,000 pages of records. All classified records were declassified after coordination with the U.S. Army, DOD and JS. Approximately 1,200 pages of documents were declassified with the majority of the pages belonging to various documents from the post World War II U.S. Strategic Bombing Survey. The highest classified document declassified was Top Secret with majority of documents fairly equally split between Secret and Confidential. A listing of most of the documents declassified is at appendix A.

The collection of boxes surveyed contained information. The information falls into three periods, which are before World War II, World War II, and post World War II Cold War time period. Prior to World War II contained information on Admiral Byrd's early naval aviation career, unclassified information on his 1930's exploration of Antarctica, speaking events and club memberships. Few of the documents were classified in this time period. The World War II period covers his work on personnel requirements for the Navy's aviation expansion, transferring Army anti-submarine operations to the Navy, other naval aviation issues, arctic operations, and the U.S. Strategic Bombing Survey. The majority of classified documents are from this period because of the bombing survey documents. The U.S. Air Force declassified the U.S. Strategic Bombing Survey in total. The Cold War period saw numerous documents from Operations Highjump and Deep Freeze, arctic operations and a tremendous volume of information on Antarctica such as pre-empting the Soviets, possible natural resources, other scientific research, and demilitarization.

Appendix 2

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, DC 20350-2000

IN REPLY REFER TO

5510
Ser N09N2/5U981130
December 22, 2005

Laura J. Kissel, Polar Curator
Byrd Polar Research Center Archival Program
134 University Archives
2700 Kenny Road
Columbus, Ohio 43210

Dear Mrs. Kissel,

This letter is a follow-up to our visit of 31 October
through 4 November 2005.

During our visit we were able to assess approximately
30,000 pages of selected Byrd Polar Research records. The
records reviewed were selected from the Archival Scope and
Content Listing, which provided us an excellent overview of
the content of the records.

It is our determination that the material annotated with
classified markings no longer require continued
classification. In most cases we lined through the
classification, replaced it with the word "DECLASSIFIED"
and added a declassification determination statement.
However, in the interest of utilizing our limited time
effectively, there may be some documents that you may need
to add the following declassification determination
statement prior to public release: "Declassified by S.
Lopez-Potter, CNO (N09N2), 3 November 2005".

If you should have any further Navy equities that require a
declassification review or other questions, please contact
Mrs. Lopez-Potter at (202) 433-3207 or email at
lizbeth.lopez-potter@navy.mil.

B.A. Marshall

B. A. MARSHALL
Assistant for Information
and Personnel Security

References

Aid, M.M., 2006, "Declassification in Reverse: the Pentagon and the U.S. Intelligence Community's Secret Historical Document Reclassification Program", in *The National Security Archive*, 10 March

http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB179

Bunch, W., 2005, "Why are the Feds probing Long-dead "Scoop" Jackson?", in *Campaign Extra*, 25 January

http://www.pnionline.com/dnblog/extra/archives/001462.html

David, J., 2004, "Progress and Problems in declassifying U.S. Government Records", in *Journal of Government Information*, 30 (November), pp. 443-450.

Doyle, K., 1999, "The End of Secrecy: U.S. National Security and the Imperative for Openness", in *World Policy Journal*, 16 (Spring), pp. 34-51.

Ericson, T.L., 2005, "Building our Own «Iron Curtain»: the Emergence of Secrecy in American Government", in *The American Archivist*, 68 (Spring/Summer), pp. 18-52.

Feinberg, L.E., 2002, "Homeland Security: Implications for Information Policy and Practice – first Appraisal", in *Government Information Quarterly*, 19 (3), pp. 265-288.

Kaiser, F.M., 2003, "Access to Classified Information: seeking Security Clearances for State and Local Officials and Personnel", in *Government Information Quarterly*, 20(3), pp. 213-232.

George Washington University, 2004, "National Security Archive FOIA Basics", in *National Security Archive*, 1-11, 3 April 2006

http://www.gwu.edu/~nsarchiv/nsa/foia/guide.html

George Washington University, 2004, "National Security Archive Overview", in *National Security Archive*, 1-5, 3 April 2006 http://www.gwu.edu/~nsarchiv/nsa/the_archive.html

Klein, B. and Schwalb, S., 2005, "A Delicate Balance: National Security vs. Public Access", in *Computers in Libraries*, 25 (March), pp. 16-23.

Paul, K., 2005, "What to do if: You find National Security Classified Documents when processing a Collection of Congressional Papers OR You are Unexpectedly visited by Agency Declassification Officials", in *Congressional Papers Roundtable Newsletter*, July, pp. 1-4.

Relyea, H.C., 1994, "A Statutory Mandate for Security Classification Policy and Procedure: is Now the Hour?", in *Government Information Quarterly*, 11(4), pp. 347-355.

Relyea, H.C., 1999, "Security Classification Reviews and the Search for Reform", in *Government Information Quarterly*, 16(1), pp. 5-27.

Shakir, R., 2005, "E-mail from Shakir to Author", 21 September.

U.S. National Archives and Records Administration, Information Security Oversight Office, 2006, "ISOO Missions, Vision, Goals and Functions", 20 March 2006 http://www.archives.gov/isoo/about/index.html

U.S. National Archives and Records Administration, Information Security Oversight Office, 2002, "Report to the President: a Look to the Future of the Security Classification System in a Post 9/11 Environment", 30 June 2003 http://www.archives.gov/isoo/reports/2002-annual-report.html#post911 [Quoted in Klein, B. and Schwalb, S., 2005, "A Delicate Balance: National Security vs. Public Access", in *Computers in Libraries*, 25 (March), pp. 16-23].

Old maps of the North Calotte in the collection of the Provincial Library of Lapland, Rovaniemi

Irene Piippola, *County Library of Lapland, Rovaniemi, Finland*

Abstract. The old map collection of fifteen maps and one atlas represents Lapland and the Arctic region of the Nordic countries published in the 16th, 17th and 18th centuries. During these centuries Terra incognita was given more accurate and precise outlines to become the exotic Ultima Thule. The geography of the 16th century is represented by Olaus Magnus and the maps of Abraham Orteliu depicting Northern Europe. Olaus Magnus published the extensive history of the northern people Historia de gentibus septentrionalibus 1555 and Carta Marina was the preliminary work of his book. It was completed in Venice in 1539 and it became the main source for maps of the area until 1626 when Anders Bure's map Orbis arctoi nova et accurata delineatio was published. Old maps' www-cartography pages are one part of the larger *Travellers in Lapland* – website in several languages: http://www.rovaniemi.fi/lapinkavijat.

We can study the history of mankind by studing the maps. It sounds like an easy source of history compared with reading books. It demands, however, good background knowledge to observe and to interpret the facts on a map. Mathematical innovations, improvements in technical equipment, as well as conception of the world and power policy of each era can to be read in a map.

As the medieval period finished, commercial activities increased and the conquest of land increased. Religious-symbolic fantasy maps didn't meet the needs of the new era anymore. The first maps based on facts and measurements depicted the needs of sailing. Coastal districts began to get their real size and shape. The world view of the Renaissance developed along scientific measurements and thinking. Tales and fabulous fantasy as the ground of the universe were pushed aside from coastal to inland regions in the same way as with the inner part of us, our psyche: it always develops slower than outward forms of mankind behavior.

The oldest maps weren't based on measurements, but on experiences and reports of travelers. Fantasy had an important role in the world view of the medieval era. Monsters and other fabulous creatures as well as fantastic geographical regions illustrated the maps - and imagination of the travelers. But

the North Calotte surely offered adventures enough for an extreme traveler of hundreds of years ago without these imaginary beings and islands.

The last catholic archbishop of the Kingdom of Sweden, Olaus Magnus (1490-1557), traveled north to the Tornio Valley in the beginning of 16th century, 1517-1518. He reached the town of Tornio but he hardly traveled any further north. The history book of the Northern nations and the map *Carta Marina* offered a vast store of information to the educated Europeans of the time.

Carta Marina, or *Carta Gothica* as Olaus Magnus himself called it because it wasn't a nautical chart, was published in Venice. Italy was the center of cartography then during the 15th century on account of its high level of skill in the art of typography. From the end of 15th century Holland, or Dutchmen, took over the leading role of cartography.

The Italians have had a special role in the history of Northern travels through the times. Olaus Magnus-Gothus had to go into exile from Sweden for his Catholic religion and he finally settled down in Italy for the rest of his life. Francesco Negri (1623-1698), a catholic priest from Ravenna, followed Olaus Magnus most likely in the spirit of the Counter reformation. He traveled as far as the North Cape and wrote a book about his impressions and experiences. He also carried on a correspondence with the Swedish writer Johannes Schefferus who published his own book, *Lapponia*, in 1674. Although it was not until 1700 when Negri's book came out (and note there are no translations at all, only short excerpts in Finnish and Norwegian), the knowledge about the Northern regions circulated around Italy and the thought and wish to travel to the North woke up. The Sámi people, the last exotic savages in Europe were living in the North Calotte. Italian scientists and travelers already knew the Mediterranean countries and area but people in the North were unknown, unexplored, primitive and uncorrupted. As Luigi de Anna, doctor at the University of Turku writes: Lapland now begins its long trip through Italian exoticism.

We librarians from Sweden, Norway, Russia and Finland published a bibliography about Italian travelers in the North Calotte a couple of years ago. The Swedish collaborator Anita Westermarck, librarian at the Luleå Technical University in Sweden is present at this conference. *Verso l'estrema Thule* is a widely annotated bibliography about Italian travelers in the North up to the Second World War The bibliography shows that Francesco Negri and Giuseppe Acerbi are not the only ones who have travelled to the *Terra Incognito*, and as times passed on, to *Ultima Thule*.

And now about the digitalized collection of old maps in the Regional Library of Lapland:

The collection of old maps at our Library represents Lapland, the North Calotte and the Nordic countries. A total of fifteen individual maps and Tresk´s atlas of Kemi and Tornio Lapland published 1928 are digitalized for this collection. The majority of the maps are from the 17th and the 18th centuries. Around half the maps are original editions. The estimated total cost of this collection can be about 10 000 euros.

How have the maps found their way to the Rovaniemi Library, then?

There is one person behind this whole activity, the person who acquired the collection during the 1960's was Jorma Etto, the former, longstanding chief librarian at our library. I recently was in correspondence with him about the history of these maps. He was not the only bibliophilist in Lapland during that time. He tells that sometimes there were even rivalry about who is the luckiest one to get a certain map and who had money enough. Ragnar Lassinantti, governor and Member of Parliament in Sweden, a well-known North Calotte person and a bibliophilist he too was very interested in Etto's efforts.

Etto leafed through the booklets from various second hand bookshops from all over Europe, he visited Stockholm and Frankfurt to buy old Northern maps and book rarities. Because of good allowances during those times and especially because of Etto's excellent competence, the old maps collection gives a

good view of the history of how Lapland has become a matter of European knowledge.

These old maps have hung on the walls of the library very openly. Lennart Meri, the first president of Republic of Estonia, who passed away a short time ago, visited library in the 1960's. He became very upset about the open custody of the maps. Etto tried to calm down his guest's horrification by reassuring him that in Finland it's a very big crime to steal from a public collection.

Today, there are photographed copies on the walls. The originals and facsimiles are now filed in the required and suitable way.

Now some words about the individual maps in the collection in chronological order:

CARTA MARINA 1539 / 1572

Antonio Lafreri's copy of *Carta Marina* is the most renowned copper engraving based on the original nine-leaf wood engraving. The map on the right is a facsimile copy from 1967. Olaus Magnus worked for years with his map as a preliminary work for his *Historia de gentibus septentrional* from 1555. This scaled down version engraved by Lafrery was published in Italy 1572. It replaced the original for hundreds of years because of the small edition of *Carta Marina*. Actually, the first original was not found again until 1886 in Germany.

Carta Marina, or *Carta Gothica* as Olaus Magnus himself called it because it's not intended for sailing, is a good example of a map which has get a value as a work of art and an antiquarian rarity. It's illustrative, imaginative and shows marvelous details about the life during the 16th century. After *Carta Marina* was published, it completely changed the previous picture of the North.

You can find Lapland, Finnmark and Skritfinnia there but also those fabulous and legendary Bjarmia and Oceanus Scithicus, the Ocean of the Skythians. Rivers, lakes, villages or regions are not on their actual geographical

places but it's enough that they are mentioned there. For example, my own home village of Pello is on the map but labeled as Pele and we always tell it with pride. In fact, Pello is situated on the border to Sweden in Tornio river valley but we don't need to discuss its geographical position here.

SEPTENTRIONALIUM REGIONUM DESCRIP 1570

This map depicting Northern Europe was published in the *Ortelius Atlas Theatrum Orbis Terrarum*. This picture is from a facsimile of the map from 1967. The map includes an imaginary polar continent inhabited by pygmies. It also includes two of four islands believed then to be located around the North Pole. Other imaginary islands are Grocland north of Greenland and Frisland in the Atlantic Ocean.

Abraham Ortelius (1528-1597) was a good friend to Gennadi Mercator (1512-1594), the father of the cylindrical projection which is still usable in nautical charts. Ortelius' map has been revered as a comprehensive representation of sixteenth century information and skills in the field of cartography.

SEPTENTRIONALIUM TERRARUM DESCRIPTIO 1613

This map of the northern part of the globe, centring on the North Pole was made by Jodocus Hondius. It's shaded blue and it is written on the map that it's drawn in the projection of Mercator, but as we see, not in the nowadays well-known cycli-projection. This picture is of the facsimile of the map from 1967.

This map is a classic Arctic region map representing notions upheld in the late Middle Ages where the North Pole is depicted as a tall black mountain surrounded by four large islands. Three of the corners of the map have circled miniature maps of the Faeroe Islands, Shetland Islands and the mythical Frisland Island.

SUECIA, DANIA, ET NORVEGIA, REGNA EUROPAE SEPTENTRIONALE 1635

This is the vast revised edition of Anders Bure's Scandinavian map (1626) published by Dutchman Henricus Hondius in 1635. This picture is of the facsimile map from 1964.

Swedish matters of supremacy and frontier disputes with the neighboring countries created the necessity for useful maps. Carl IX issued an order in 1603 for the commissioning of a map covering the whole of Scandinavia with Gustav Adolf supporting the project rather generously.

Bure's expansive *Orbis Arctoi Nova Et Accurata Delineatio Auctore Andrea Bureo Sueco* from 1626 long remained the model and basis for all maps representing the Nordic nations. Bure based his calculations on the doctrines and principles of Gerhard Mercator and the longitudes and the latitudes very well represent reality. Bure was the pioneer of the Swedish cartography. He was nominated as the mathematician at the Swedish National Survey Board in the year 1628. He for his

part appointed Olof Tresk as the chartered surveyor to Lapland.

We don't find mythical creatures or exciting islands on Bure's map anymore.

What a pity, should a romantic soul say, and perhaps so. Drawings are so true. Here we see the Northern Scandinavia almost such as it is in reality, too.

The maps of Finnmark and of Lapponia (1662) both bases on the *Great Scandinavian Atlas* of Anders Bure. They were published in the two volumed *Atlas Major* by the well-known Blaeu family map-publishing house in Amsterdam.

DE CUSTEN VAN LAPLANDT 1676

This two-part nautical map differs from the other maps in this collection because of its pure nautical purposes. It depicts the eastern coastline and fjord of the Kola Peninsula through to the town of Kola.

ACCURATISSIMA REGNORUM SUECIAE, DANIAE ET NORVEGIAE, TABULA 1700

A good example about the political purposes: It represents the 17th century when Sweden was at its most powerful. In this map of Sweden, Denmark and Norway, the notion of a superpower is clearly evident not only in the map's cartouche, but also in the exaggerated borders of the kingdom. The decorative cartouche includes pictorial motifs representing Sweden's ore resources and forestry industry. This picture is taken from a facsimile of the map from 1967.

CARTE DES COURONES DU NORD 1706

This two-piece map of Scandinavia is remarkable in respect to its clarity, elegance and manner of representation. In 1718 the author of the map, L'Isle was appointed "the first geographer of the King of France".

CARTE DES COURONES DU NORD, version 1788 by J. A. Dezauche published 1788

THIS NEW MAP OF DENMARK AND SWEDEN ACCORDING TO THE NEWEST AND MOST EXACT OBSERVATIONS 1715

The map of Dutchman Herman Moll (1654-1732) depicts the Nordic nations. The left top corner of the map has a small inserted map displaying Northern Norway, Lapland and Greenland. To the right of the map are five images with captions depicting the lives of the Sámi (Laplanders). These pictures were originally intended for the English language translation of the *Lapponia* work (1674) of Johannes Schefferus. However, due to space restrictions, they were excluded and ended up being used by Herman Moll. This map can itself be compared to a book because of its vast information.

The three latest maps are drawn and published by Scandinavian cartographers: Christian Pontoppidan from Denmark and Samuel Gustaf Hermelin (1744-1820) who was a cartographer, baron and a mining counselor in Sweden. He financed the surveying of the whole of Sweden, and above all the mapping of ore enriched regions. The map publication (1797-1818) of Hermelin is the first comprehensive atlas of Sweden.

A short journey back to the 17th century to take a look at Olof Tresk's Atlas about Kemi and Tornio Lapland from the years 1642-43

Andre Bure appointed Tresk as a land surveyor and his immediate task was to survey the area around the silver mine of Nasa including the fell ridge in the north. Tresk lived the life of a traveling surveyor right up to his demise in 1645 and indeed complained in his letters that he lacks permanent domicile. This tough way of life took its toll on Tresk's health. His death in 1645 was decades earlier than his elder brother Anders who passed away in 1688. Tresk was several times in Lapland during the years 1636-1644.

Olof Tresk's charted findings had been forgotten for centuries. It is not known whether or not these maps have been used for practical purposes or indeed whether they influenced the development of cartography. In fact, the maps were only first mentioned in literature as late as the early twentieth century. Johannes Schefferus, professor of the University of Uppsala was familiar with the maps of Tresk and used them as his sources for his book *Lapponia* (1673), even though he copied Bure's map in his book. The further information on Lapland provided with the maps remained a secret retained by Sweden's military powers and the National Land Survey. Tresk's map was published in 1928. It was published to honor the scholar and linguist Sami Karl Bernhard Wiklund on the occasion of his 60th birthday.

The atlas is now scanned here for its texts and the two maps of Kemi and Tornio Lapland. As a part of this scanning project we also translated the historical comments of the geographical places on the maps to Finnish and to English.

The old maps of the North Calotte" interface is a part of a larger interface called
   Lapinkävijät/Travallers of Lapland (http://www.rovaniemi.fi/lapinkavijat).
   The other parts are:

- Alvar Aalto in Lapland (also in English)

- Acerbi's travel in Lapland 1799 (also in English, and in Italian by Luigi de Anna's students from Turku university)

- M. A. Castren among Nenets people 1841-44

- The history of gold panning in Lapland

- The degree measurements of de Maupertuis in Torneo river valley 1736-1737 (in English and in Swedish)

- The history of tourism in Lapland

Travellers of Lapland is a developing project in close association with librarians and museum curators in Lapland. During the years several various libraries and museums have co-operated with this interface. The information about these pages is registered also in our Lapponica-database (*http://www.lapponica.net*).

The Old Maps interface has been carried out in two Digital culture heritage projects together with the Regional library, University of Lapland and Rovaniemi Art museum.

Danmark Ekspeditionen 1906-1908: literature – archival material – photographs – links

Vibeke Sloth Jakobsen and **Kirsten Klüver**, *Danish Polar Center, Copenhagen, Denmark*

Abstract. In remembrance of the Danish exploring and scientific expedition "Danmark Ekspeditionen" 1906-08, the Polar Library has gathered material about the expedition found in the collections of the Danish Polar Center, the Arctic Institute and the Department of Eskimology and Arctic Studies.

    The expedition's aim was to explore the almost completely unknown stretch of the coast of northeast Greenland and to carry out an extensive scientific programme. The expedition succeeded in completing the outline mapping of the coast, and the scientific programme achieved considerable results within geophysical and biological sciences. There was however a tragic dimension to the expedition, as the leader L. Mylius-Erichsen and his party perished while trying to return to winter camp after exploring the Independence Fiord. A search party found the body of the Greenlander Jørgen Brønlund, and from his notes learned that the two other members of the party L. Mylius-Erichsen and N.P. Høeg-Hagen had died earlier. The bodies and the notebooks of the latter have never been found, in spite of several search parties over the past 100 years.

    The Polar Library is creating a web page to simplify access to the material. This will include a link to the published material about the expedition, the scientific results, and the reports from a number of search parties, found in the library database. Another link will access the photographic material from the expedition found in the database with Arctic photographs. A digitalized version of the register of archival material from the "Danmark-Ekspedition" found in the Arctic Institute's historic archive, will be made available. These records include letters and diaries from several of the expedition members. Finally the page will include links to other Danish collections holding material from the expedition and the exhibitions and events commemorating the centenary.

Introduction

In remembrance of the Danish exploring and scientific expedition "Danmark Ekspeditionen" 1906-08, the Danish Polar Center has collected material about the expedition found in the Danish Polar Center, the Arctic Institute and the Department of Eskimology and Arctic Studies. The aim being to make the material easily accessible to the user through links on the library's web page.

Fig. 1. *Members of the expedition.*

Historical background

The "Danmark-Ekspeditionen" took place from 1906-1908. The aim of the expedition was to explore and map the unknown parts of Northeast Greenland. From the south the German exploring expedition lead by Karl Koldewey in 1869-1870 had reached as far as 77º N. Twice in the 1890's Robert E. Peary had reached Independence Fiord and what is now known as Peary Land and built a cairn at Kap Bridgman at 83º N. This meant that the coast between 77º and 83º was at this time still unknown land.

Fig. 2. *Ludvig Mylius-Erichsen, leader of the expedition.*

The leader of the expedition was L. Mylius-Erichsen, a Danish journalist and explorer, who

had previous experience from the Danish Literary Greenland Expedition in 1902-1904. There were 28 members of the expedition, amongst these the German meteorologist and physicist Alfred Wegener, the cartographer J.P. Koch, the student and assistant meteorologist Peter Freuchen, two artists, and three Greenlandic sledge drivers.

They left Denmark on 24 June 1906 on board the ship "Danmark", from which the expedition derives its name. In August they reached the winter quarters at Kap Bismarck in a bay later known as Danmark's Havn (harbour).

During the two years the ship was anchored here, several parties went out by boat and sledge on scientific exploration. Results within botanical, zoological, geological, meteorological, and ethnographic science were collected and later published in the scientific series "Meddelelser om Grønland".

Fig. 3. *The ship Danmark and scientific activity in Danmarkshavn.*

The aim of mapping the remaining unknown coastline was also accomplished, although this was to prove the tragic part of the otherwise very successful expedition. Four sledge parties set out in March 1907 to explore each their part of the coast. Two were support parties and turned back to ship when they reached

80º N. The remaining two parties continued northwards on what turned out to be a journey much longer than anticipated. Most unexpectedly the coast continued towards the northeast as far as Nordostrundingen at 81º30'N. Here they split up and the party led by J.P. Koch continued northwest over the sea ice towards the north coast and succeeded in discovering Peary's cairn at Kap Bridgman before turning back.

The party consisting of L. Mylius-Erichsen, N.P. Høeg Hagen, and Jørgen Brønlund went west to explore Independence Fiord and the supposed "Peary Channel" connecting the fiord to Greenland's north coast, but ended up in the Danmark Fiord instead.

By chance the two parties met on May 27 at Kap Rigsdagen at the entrance to Independence Fiord. Both were on their return journey, but in a fatal last-minute decision Mylius-Erichsen decided that his party would set off to map the Independence Fiord and the "Peary Channel" as originally planned. Summer was quickly approaching, and Koch's party barely made it back to ship, as the sea ice was now breaking. Mylius-Erichsen and his party were stuck in the fiords up north and had to spend summer here waiting for a passable journey home when the winter approached. As they did not find much game that summer, both men and dogs were not in good shape when they in August tried to return to Danmarkshavn. An attempt to cross over the ice cap proved hopeless and in November they perished one by one. The last to die was the Greenlander Jørgen Brønlund, who managed to reach the coast by Nioghalvfjerdsfjorden.

Twice search parties went out to look for the missing men, and the second party found Brønlund's body in March 1908 in a small cave, where he had frozen to death. He had managed to write a few last lines in Danish in his diary (the rest of his diary was in Greenlandic) telling about the attempt to return over the ice cap. He states that: "I am not able to proceed further due to frost-bitten feet and the dark. The bodies of Mylius and Hagen are located in the middle of the fiord in front of the glacier – app. 2 ½ mile. Hagen died on 15 November, Mylius 10 days later".

Fig. 4   **Fig. 5**

Figg. 4-6. *The three missing men: Mylius-Erichsen, Hoeg-Hagen and Bronlund.*

After the discovery and with the weather conditions and the food stocks not allowing the search party any further investigations without putting their own lives at stake, they returned to the ship.

The rest of spring and early summer 1908 scientific investigations were carried out, and by the end of July open water allowed the ship to leave harbour. In August the ship

Fig. 6

with the remaining 25 men reached Copenhagen.

Ever since there has been speculations as to exactly where the two missing men – Mylius and Hagen – were located. Several search parties have set out during the last 100 years to find the remains with no luck.

Library holdings

The Danish Polar Library is a consortium library for the Danish Polar Center, the Arctic Institute, and the Department of Eskimology and Arctic Studies. It holds all the published scientific results from the expedition, as well as the more popular descriptions of the expedition. Reports from the many search expeditions are also included in the collection. It proved not that easy to define a search profile to include the relevant material. Different spellings, older cataloguings without subject headings, and a series which title included "Danmark Ekspeditionen" without being about the expedition were obstacles to the normal user. Altogether the library database contains 139 items connected to the expedition. To enable an easy access to these titles they have been included in one search with the subject heading "Danmark Ekspeditionen" assigned to all of them to ensure that the end user finds only the relevant titles. Through the link on the web page the user gets access to the titles in the database in chronological order.

Archival material in the Arctic Institute

The Arctic Institute is a private institution that holds a historical archive of documents and items concerning Danish history in Greenland. The archive was established in the 1950's, and is continuously growing. It consists of several collections from institutions as well as private donations. The oldest documents are from the 1750's

The collection of archival material on the "Danmark Ekspeditionen" was founded in the 1950's. One of the members of the expedition, Christian Bendix Thostrup, initiated the collection and organized a large archive containing both photographs and documents from the expedition. Later this archive was entrusted with the Arctic Institute where it is still located. In the following years the Arctic Institute has received additional material e.g. from descendants of members of the expedition.

Fig. 7. *Camping.*

The large collection is divided into the following groups:

- Expedition plans (Mylius-Erichsen's scientific, logistic and economical plans for the expedition and correspondence with institutions, foundations and patrons.
- Purchase of ship, equipment etc.
- Hiring of crew and selection of scientific expedition members.
- Personal diaries of the members of the expedition.
- Scientific observations, reports and manuscripts.
- Maps
- Artefacts (paintings, flag, clothing etc.)

Photographs in the Arctic Institute

The Arctic Institute holds a collection of app. 70.000 historical photographs from Greenland, negatives and positives from 1860's to around 1980. Since 2002 app. 25.000 photographs have been scanned and described in the database www.arktiskebilleder.dk. Up to 1930 all photographs are more or less available in the database. Latest, in connection with a special project, almost all of

photographer Jette Bang's photos from the 1930's and the 1960's are also included in the database.

Fig. 8. *Sledge party.*

1500 photographs from the "Danmark Ekspeditionen", mainly original glass- and nitrate negatives, are all scanned and described in the database www.arktiskebilleder.dk. The photos show fauna, flora, landscapes, portraits of expedition members, and daily life on the expedition. A link to a smaller selection of significant photos from the collection ha been created to give the user a sample of the variety of the material.

Links

The links made available include the following:

Link to the Royal Library's Manuscript and Rare Book Department, where Jørgen Brønlund's diary is found. There is a short description of the historical background, photographs of the diary, and the entire contents scanned. http://base.kb.dk/pls/hsk_web/hsk_vis.forside?p_hs_loebenr=48

Link to the Royal Library's Department of Maps, Prints and Photographs, where scannings of Høeg-Hagen's handdrawn maps of Danmarksfjorden and Independence Fiord are found http://www.kb.dk/kb/dept/nbo/kob/danmarkskort/dkekspedition.htm

Link to Ringkoebing Museum's webpage, which gives a short introduction to the museum's permanent exhibition on the "Danmark Ekspeditionen" http://www.ringkobingmuseum.dk/permanent-udstilling/udstil-index.htm

Link to the Arctic Institute's webpage on the "Danmark Eskpeditionen", which includes a historical resume, a bibliography, a listing of events commemorating the expedition, and an ongoing debate on the unsolved mysteries of the missing men. The complete diary of Chr. Bendix Thostrup, who was 3rd mate onboard the ship, will be published on this webpage in the course of 2006. http://www.arktiskinstitut.dk/tema/danmarkekspeditionen/index.html

Link to Skolemedia's webpage about the expedition http://slaederejsen.skolemedia.dk/materialer/1oplevelse/FiktivEkspedition/s2h_dk_eksp.htm
This is a webpage intended for use in primary schools and gives a short description of the expedition as a background material to a teaching course on Greenland.

UArctic Librarians Open Forum

Sandy Campbell, *Science and Technology Library, Canadian Circumpolar Collection, University of Alberta, Edmonton, Canada, and **Outi Snellman**, University of the Arctic, University of Lapland, Rovaniemi, Finland*

In 2005, the Polar Libraires Colloquy became a member of the University of the Arctic. The UArctic Librarians Open Forum offered an opportunity for PLC librarians to discuss the relationship between the two organizations and share information about the presence of UArctic students at their institution.

Outi Snellman, Deputy Director of the University of the Arctic, presented an overview of the University of the Arctic's purpose and operations. The text of her presentation follows. Sandy Campbell moderated the ensuing discussion.

The University of the Arctic (UArctic) is a network of institutions and organisations working together to provide Northerners with relevant and accessible higher education. It currently has over 100 members located in the Arctic Eight countries: Canada, Denmark, Finland, Iceland, Norway, Sweden, Russia, USA.

With the input of each of its members - whether they are universities, colleges or other institutions - this "university without walls" aims at creating a strong, sustainable circumpolar region by empowering Northerners through education and shared knowledge.

UArctic's educational, mobility and other programs allow students and faculty to enter in a dialogue between Northerners. This can be done, for example, through online or on-campus courses available as part of a bachelor-level curriculum for circumpolar studies or of the growing graduate level.

Another way of sharing knowledge between UArctic members is through mobility programs such as north2north and GoNorth, which allow students and faculty to visit other member institutions or communities to experience life in various parts of the North.

UArctic also offers many other opportunities for academics and students to share their knowledge, for example Thematic Networks and the Northern Research Forum (NRF), which promote academic cooperation and dialogue on specific northern themes.

UArctic is a borderless organisation, and, consequently, a decentralized one. Its offices are located around the Circumpolar North, while the daily management is done at the International Secretariat in Rovaniemi, Finland.

In general, librarians from post secondary institutions that are involved with UArctic were aware of their institutions' involvement, but had observed little impact on their libraries. At the 2005 UArctic Council Meeting in Oulu, Finland, there had been discussion about how libraries would serve UArctic students who were enrolled in their home institution, but taking distance courses from another UArctic institution and requiring remote access to information products site-licenced by the second institution.

No one reported having encountered this situation.

There was discussion about whether or not UArctic students have any special needs. A number of participants indicated that UArctic students do not identify themselves as such and mused about whether or not it would be possible to get local registrars to identify students so that the libraries could contact them.

There was a final discussion about the reading lists for the Bachelor of Circumpolar Studies core courses. Members agreed that it would be useful to have a list of these resources.

Members agreed that PLC's role in the University of the Arctic will continue to be an extension of its primary mandate, that of "providing a forum through which librarians and others concerned with the collection, preservation, and dissemination of polar information discuss issues of mutual interest and promote initiatives leading to improved collections and services".

In 2008, the Polar Libraries Colloquy will be held in conjunction with the University of the Arctic Council Meeting in Edmonton, Canada.

Cold Regions Research & Engineering Laboratory Library – moving forward to seek collaborative alternatives

Nancy C. Liston, *Cold Regions Research Engineering Laboratory, Hanover (NH), USA*

Abstract. The Cold Regions Research & Engineering Laboratory (CRREL) Library, Hanover NH is the co sponsor with the National Science Foundation of the Bibliography on Cold Regions Science & Technology. The Bibliography on Cold Regions Science & Technology has the most comprehensive both historically and currently collection of scientific references. Most of the material through 1999 is on microfiche that is deteriorating. How do we preserve this collection within the confines of Copyright laws and yet provide the broadest access to the international polar community. Digitization, e-journals, partnerships and good intentions will be discussed. Shared responsibility with the American Geological Institute who currently prepared the Bibliography and the National Science Foundation who co-sponsors the Bibliography with CRREL are stakeholders in what comes next.

The Bibliography on Cold Regions Science & Technology was initiated by the Corps of Engineers, Snow, Ice & Permafrost Institute (SIPRE) in 1951. The first 12 volumes were known as the SIPRE Bibliography. The Corps of Engineers is most recently associated in the international press with the levee repair and design in New Orleans. However, in 1961 with the political cold war causing increased concern in the world, the Corps combined two institutes' library collections, the Snow, Ice, & Permafrost Research Establishment and the Arctic Construction & Frost

Effects Laboratory (ACFEL) also an Army laboratory, to form the Cold Regions Research and Engineering Laboratory (CRREL) in Hanover NH. In 1999, CRREL was merged with other laboratories to form the Engineer Research and Development Center (ERDC). The library and the Bibliography of Cold Regions Science &

Technology have been placed in an ERDC library program supported however, in total, by CRREL. The library staff and I do not work for CRREL. The staff and I are employees of another laboratory in the ERDC, entitled Information Technology Laboratory.

The seasoned technical staff at CRREL is retiring at an alarming rate with few cold regions scientists replacing the staff. The CRREL Bibliography project had transitioned from the Library of Congress to the American Geological Institute four

years ago. However, with the advancement of the internet publishing mandate and the publishing cost savings associated with this digital process, the CRREL library receives very few printed science and engineering publications in the library and rarely receives notification of the availability of technical cold regions documents. It has been a challenge on one hand to stay comprehensive without the publications physically arriving in our library. On the other hand, with the advent of the internet list serves and alert services AGU has done a fine job of adding more titles every year than we had the year before. Obviously, folks are still publishing on these technical topics and in large numbers. The AGI is a fine institute with resources in the many geological related disciplines of the polar cold regions literature. The engineering material frequently produced by academia may be alluding capture. The other possibility is the there are fewer resources available for modern day cold regions engineering research. The later is reflected in the "brain drain" experienced within the CRREL laboratory with few polar subject matter specialists being recruited to the Army laboratory staff. However, the concerns of bibliographic comprehensiveness have been offset by the increased overall accessions in the past few years.

We rely on listervs such as the Polar Library Network to announce documents. We also use databases and goggle searches. CRREL sends announcements of our own laboratory publications via email notification. We no longer have copies of documents to share in paper formant. The lack of a tangible item to share with our partners many of whom are represented at this 21st Colloquy has impacted our collegial sharing opportunities. Government agencies are publishing almost exclusively on the internet. How do we verify we are accessioning the series that have been published for many years but no longer arrive on our physical desktop? Researchers, on the other hand, comment that they like being able

to access electronic documents in the field which previously they would not be able to bring with them on field trips.

My undocumented assessment is many of the traditional polar institutional series no longer exist. We should take this opportunity to recognize the work AGU and the Scott Polar Institute have accomplished to collaborate. In the past colloquies- my first was Paris in 1978- we have discussed collaboration problems but never resolved any issues. The issues have changed in the electronic age but the content and coverage issues still remain. As I contemplate retirement and the continuation of the Bibliography project (every bibliography needs a champion), I would be interested in learning your thoughts on the need for this type of bibliographic endeavor in the internet age. How do I put aside my concern that we are not covering everything simply because the format and location have changed. There are collaborative tools where documents could be posted for full-text check –in and check out from around the world. These tools include a Microsoft product called SharePoint, Groove, and Knowledge Dispatch to name a few. We use alerts on journal and bibliographic databases including the AGU GEOREF sponsored database. However, let's not forget the always mentioned but still illusive grey literature issue. Eternal questions to be answered by the librarian of the next colloquy generation.

Collaborative bibliographic development in the Cold Regions Bibliography Project

Sharon N. Tahirkheli, *American Geological Institute, Alexandria, USA*

Abstract. The Cold Regions Bibliography Project (CRBP) produces two bibliographies, the *Bibliography on Cold Regions Science and Technology* and the *Antarctic Bibliography*. The bibliographies are compiled at a small office near Washington, DC. Compilation of these two bibliographies is only possible through the fostering of networks to capture the publications and produce the bibliographic citations. Formal support (including financial support and access to publications) for the CRBP comes from the U.S. National Science Foundation and the U. S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory library. A major objective of the Project in recent years has been the development of collaborations with organizations involved in polar research to share the bibliographic burden and increase the breadth of coverage of the Bibliographies. The primary collaboration with the Scott Polar Research Institute has been immensely successful and involves the creation of complete bibliographic records. New forms of networks are developing directly with publishers with support for metadata creation and document delivery services.

Introduction

The Cold Regions Bibliography Project seeks to provide bibliographic coverage of the cold regions of the world through the production of two bibliographies. The *Antarctic Bibliography* includes references to the scientific literature that relates to the region south of 50 degrees South latitude since 1950. The *Bibliography on Cold Regions Science and Technology* includes literature on the science and engineering in cold regions both Arctic and Antarctic. Both bibliographies require that many disparate sources be consulted as references to cold regions are scattered throughout the world's scientific literature and cross all types of science journals – biology, chemistry, geology, environmental, engineering, meteorology, etc. Information on the distribution of bibliographic materials were reviewed in several previous studies (Tahirkheli, 2004; Tahirkheli and Eitler, 2004).

The American Geological Institute (AGI) is located in the Washington D.C. area and is well positioned to access some of the major libraries in the United States. Since 1968, AGI has been producing GeoRef, the primary bibliographic source for the geosciences. To produce GeoRef, AGI depends heavily on the largest geoscience

library in the world, the U. S. Geological Survey library in Reston, Virginia. AGI also accesses the National Agricultural Library, the Library of Congress and other regional government agency libraries. In addition, AGI employs staff at major geoscience libraries throughout the United States, including at Stanford and at the University of Texas in Austin. To not be entirely dependent on library collections in the United States, AGI extends its reach through the use of cooperative arrangements with organizations throughout the world. This technique has been used extensively by AGI to build its geoscience bibliography and is now being applied to the Cold Regions Bibliography Project.

What is a Cooperative Arrangement?

The cooperative arrangements are not exchanges of publications. These arrangements take advantage of the fact that bibliographic work is being performed by many groups distributed throughout the world. Through the development of agreements that allow for mutual use of data, these arrangements have allowed AGI to gain access to major science collections in other countries.

When AGI began working on the Cold Regions Bibliography Project, the current arrangements for bibliographic services were extended, where possible, to include cold regions materials. There were 16 active exchange arrangements with foreign organizations in place in 2000. Data in these arrangements are supplied to AGI in a variety of ways including ftp, e-mail, and diskette. Some exchanges involve direct one-for-one exchange of bibliographic references; others involve a trade for access to GeoRef via either CD-ROM or Web; still others include direct purchase. Document Delivery Services are provided by exchange partners.

Three examples

*German Cooperative Agreement -*Agreement initiated in 1985 with Bundesanstalt fur Geowissenschaften und Rohstoffe. Result of joint development work on the *Multilingual Thesaurus of the Geosciences*. Total number of items obtained to date: 115,000

Data supplied by staff of four that produce Geoline, the national geoscience bibliography for Germany. Coverage includes European journals not obtained through other exchanges.

Russian Agreement – Agreement initiated in 1997 with ICSTI. Uses the AGI production system, with data supplied via ftp on a biweekly basis. Includes translation of Russian abstracts and titles into English. Coverage includes books, theses, reports and selected serials. Staff of three work in Moscow and use Moscow-area libraries. Housed at ICSTI until January 2003. Now located at IPIRAN. Total number of items supplied to date: 22,378 records.

Chinese Agreement – Agreement initiated in 1995 with Chinese National Geology Library and extended to include digitization of the Abstracts of Chinese Geological Literature (1985-1995). A second exchange was established with Academia Sinica, Institute of Geochemistry in 1996. Uses AGI data structure with data supplied via e-mail. Includes translation of Chinese abstracts and titles into English. Coverage includes lists of selected Chinese journals unavailable in US. More than 90% of Chinese literature is being covered with over 250 journals regularly included. Total number of items supplied by the two partners to date: 26,438. Total number of items obtained from the Abstracts of Chinese Geological Literature : approximately 10,000.

Ingredients of a successful cooperative arrangement
1.   Mutual Interest

To make a cooperative arrangement work, it is necessary for both parties to have a mutual interest in the data to be developed. In this time of increasing pressure on funding, it is essential that the data to be provided be of primary importance to both parties otherwise the long-term picture is questionable.

2.   Consistent, standardized data

The data produced and provided for a cooperative agreement must be consistent and standardized. While it may sound simple to make bibliographic

information conform to standards, it should be no surprise that controlled vocabularies and special data requirements can limit chances for cooperation.

3.   Continual access to publications

While bibliographic control of the literature is essential, providing access to the literature to the researcher is, in the end, the goal. Cooperative arrangements can only be viable if continued access to the publications is part of the arrangements. Nothing is more frustrating to a user than knowing that something exists, but being unable to get it.

Cooperative Arrangements in the Cold Regions Bibliography Project

Scott Polar Research Institute

In addition to extending the existing cooperative arrangements, AGI began discussions with the Scott Polar Research Institute (SPRI) in 2000. Because of the original arrangements between SPRI and CRBP when it was compiled at the Library of Congress, the cooperative arrangement between AGI and SPRI was easier to implement. Both groups were interested in covering the bibliographic literature and in ensuring a comprehensive bibliography. In addition, support for the Bibliography was forthcoming from the British Antarctic Survey.

While the mutual interests of all three groups were served, problems regarding format/standards and document availability had to be resolved. First, AGI and SPRI agreed that the CRBP controlled vocabulary would be handled by AGI. Second, SPRI agreed to provide abstracts for Antarctic publications. Third, AGI agreed to accept the SPRI data in its current format and to re-format it into the format used by the CRBP. Finally, SPRI examined the availability of publications for users and advised AGI on a method for expediting inter-library loans for the bibliography users.

To initiate the cooperation, SPRI provided 1700 potential references to help cover the gap created when the *Antarctic Bibliography* ceased to be maintained in 1998. After this initial installment, SPRI began quarterly updates.

The cooperative arrangement between AGI and SPRI has been extremely productive. Current updates from SPRI average around 200 references per quarter and the coverage of the biological literature provided by SPRI is invaluable.

A sample record from the cooperative arrangement illustrates some of the data manipulation requirements of a cooperative arrangement. The data from SPRI is provided in a format used by SPRI for other data outputs. AGI must take the data and map the data elements to the appropriate fields for the CRBP bibliographies.

Sample record from Scott Polar Research Institute

*q0   174542
*art
*a   Jones /Anna
*t   Sun and snow : something in the atmosphere
*j
*t   Planet Earth
*d   2005
*pt   Winter :28-29, ill.
*abs   Describes establishment of year-round snow chemistry laboratory
         at Halley VI station, Antarctica, and project CHABLIS (Chemistry
         of the Antarctic Boundary Layer and the Interface with Snow).
         Describes prompting of interest in snow photochemistry and its
         influence on air above it by discovery in polar snowpacks of
         nitrogen oxides (NOx), hydroxyl radicals (OH) and other
         chemicals. These products of action of sunlight on snow and
         impurities in it can accumulate in stable air layer very close to
         ground. Notes potential importance for climate reconstruction
         from ice cores. Describes logistics, experiments and preliminary
         results. Speculates on role in ozone chemistry of iodine oxide
         (IO) observed

*k   (@*7)

*kw   Antarctic regions

*k   (@*729)

*kw   Coats Land

*k   (@*729.5)

*kw   Caird Coast

*k   711.42(2)[Halley]

*kw   Settlements and stations, specific: Halley

*k   551.32

*kw   Glaciology

*k   551.321

*kw   Glaciological methods and instruments

*k   551.578.46

*kw   Snow cover and snow patches

*k   54

*kw   Chemistry

*k   542

*kw   Chemistry, experimental techniques

*k   910.2

*k   65

*kw   Logistics, expeditions and research projects

*k   551.510.41

*kw   Atmosphere, chemical properties

*k   551.521.1

*kw   Solar radiation

*k   551.58

*kw   Climatology

*k   551.321.7

*kw   Snow cover, measurement of properties

*k   551.510.41

*kw   Atmosphere, chemical properties

*k   001.89[CHABLIS]

*kw   Research programmes: CHABLIS

*k   .000(410)

*rpl   E10

*loc   Periodical

*acc

*date   2006/01/23

*recr   RF

#

Antarctica New Zealand

In 2000 AGI also began working with Antarctica New Zealand to explore the possibility of a cooperative agreement. This organization was producing a bibliography that covered publications resulting from research supported by funds from Antarctica New Zealand. Several difficulties were encountered. First, the funding for bibliographic work in Antarctica New Zealand was not continuous. Our primary contacts were assigned to cover the literature on an irregular basis. Second, abstracts (required by the *Antarctic Bibliography*) were not part of the data format used by Antarctica New Zealand. Third, the publications being cited in the bibliography being produced by Antarctica New Zealand were not available in a central location – rather they were scattered in many locations. We agreed to provide informal support to each others bibliographic efforts through exchange of publications lists and information, but a formal cooperative arrangement was not feasible.

Programma Nazionale Ricerche in Antartide

A cooperative arrangement was briefly explored with the Programma Nazionale Ricerche in Antartide (PNRA), but due to some technical and workload issues the arrangement was not completed. We would hope to return to consideration of an arrangement in the future.

How Cooperative Arrangements benefit the bibliographies

Over the course of the past five years, AGI has reviewed 6862 series for inclusion in the bibliographies that it produces. AGI has received 1255 series directly for examination for relevance to its products and has seen 4006 series in the collections of the USGS library. The CRREL library provided items from 629 series and NSF, 71.
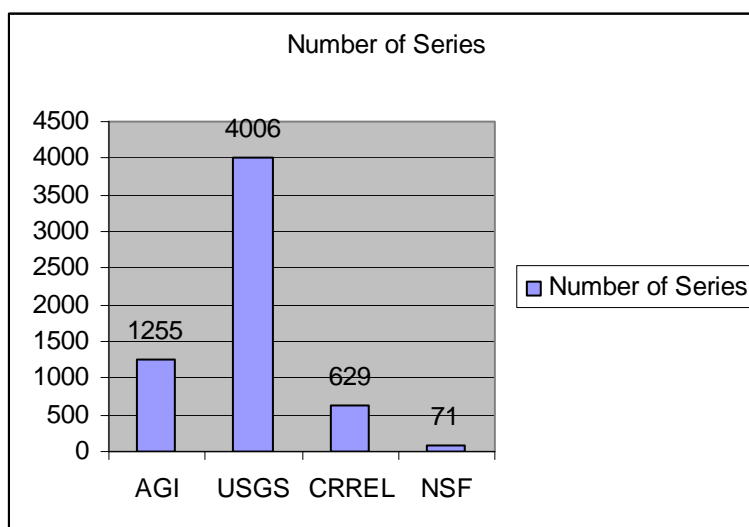
Number of Series

There will be overlap between the series seen from various sources.

Cooperative Agreements have helped to extend the bibliographies by providing access to the following number of series.

Number of Series

	SPR	NZL	DEU	AUS	CHN	RUS
Number of Series	372	405	1044	61	165	57
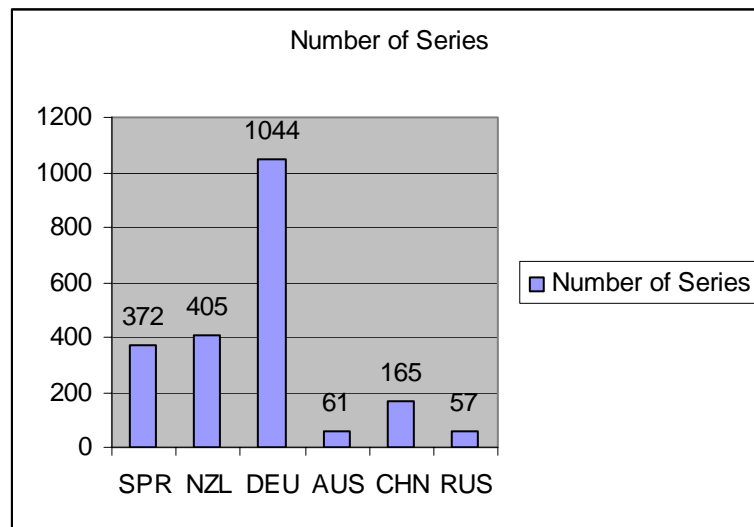
Changing nature of publisher information

A growing number of publishers now provide metadata (basic bibliographic information) directly to secondary publishers (bibliography producers). In 2000 when AGI began maintaining the Cold Regions bibliographies, only a small handful of publishers had developed a consistent standardized means of delivery for metadata. Now almost all major society and commercial Sci/Tech publishers have metadata that can be supplied directly or can be downloaded.

AGI currently has access to over 1000 journals that can supply metadata. The advantages – accuracy of bibliographic data, cost reduction for procurement of data; the disadvantages – requires more data manipulation and higher level of programmer interaction. While the data received is orthographically correct (barring special symbols), the format of the data supplied by publishers varies from publisher to publisher. The net result is a requirement to write programs to accommodate the uploading of each type of data.

Here is an example of a fairly simple item provided in the PubMed DTD.

<!DOCTYPE ArticleSet PUBLIC "-//NLM//DTD PubMed 2.1//EN" "http://www.ncbi.nlm.nih.gov:80/entrez/query/static/PubMed.dtd">
<ArticleSet>
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 <JournalTitle>Journal of the Geological Society</JournalTitle>
 <Issn>0016-7649</Issn>
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 <Issue>3</Issue>
 <PubDate>
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 <Day></Day>
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 </Journal>
 <ArticleTitle>Subglacial bedrock welding associated with glacial earthquakes</ArticleTitle>
 <FirstPage>417</FirstPage>
 <LastPage>420</LastPage>
 <Language>EN</Language>
 <AuthorList>
 <Author>
 <FirstName>M.</FirstName>
 <LastName>Bestmann</LastName>
 <Affiliation> Structural Processes Group, Department of Geodynamics and Sedimentology, University of Vienna, Althanstrasse 14, A-1090 Vienna, Austria (e-mail: alexander.hugh.rice@univie.ac.at) Institut für Geologie und Mineralogie, Friedrich-Alexander Universität Erlangen–Nürnberg, Schlossgarten 5, D-91054 Erlangen, Germany. Present address: Institut für Geowissenschaften, Friedrich-Schiller-Universität Jena, Burgweg 11, D-07749

Jena, Germany Bayerisches Geoinstitut, Universität Bayreuth, Universitätsstrasse 30, D-95440 Bayreuth, Germany</Affiliation>
 </Author>
 <Author>
 <FirstName>A.H.N.</FirstName>
 <LastName>Rice</LastName>
 </Author>
 <Author>
 <FirstName>F.</FirstName>
 <LastName>Langenhorst</LastName>
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 <LastName>Grasemann</LastName>
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 <Author>
 <FirstName>F.</FirstName>
 <LastName>Heidelbach</LastName>
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 </AuthorList>
A <3 mm thick, intensely brecciated layer associated with Marinoan (c. 635 Ma) glacial striations on a Neoproterozoic sandstone pavement is documented. Only instantaneous solidification could have preserved the breccia in situ. Glacier speeds of c. 0.3 m s^{–1} would have induced peak flash temperatures sufficient (>1130 °C) to cause partial frictional welding of the deformed quartzitic bedrock beneath an ice-loaded clast. These results support suggestions that glacial seismicity is due to episodic very rapid shifts of large ice masses over the substrate (stick–slip movement). They also indicate that significant effective normal stresses occur at the base of glaciers.
</Article>

</ArticleSet>

Current Status of the Bibliographies

At the close of the five-year funding period (2000-2005) for the Cold Regions Bibliography Project, approximately 32,000 references had been added to the *Bibliography on Cold Regions Science and Technology* and 19,070 citations had been added to the *Antarctic Bibliography.* Funding was renewed for the bibliographies in September 2005 for a period of six years. We project that we will add a minimum of 31,000 references to the *Bibliography on Cold Regions Science and Technology* and a minimum of 11,000 references to the *Antarctic Bibliography*. We hope to continue to extend our use of Cooperative Agreements and publisher metadata to make the process more efficient and cost-effective.

Acknowledgements

References

Tahirkheli, S.N., 2004, "Distribution of Source Materials for the Antarctic Bibliography and the Bibliography on Cold Regions Science and Technology", in *Polar research: Let us share—Amiqqaaluta. Proceedings of the 20th Polar Libraries Colloquy, Ottawa, June 7-11, 2004,* edited by B.E. Kelcey, Ottawa, Ont., PLC, pp. 160-164.

Tahirkheli, S.N. and Eitler, M.A., 2004, "The Cold Regions Bibliography Project: from Geoscience to Tourism and Everything in Between", in *Proceedings of the Geoscience Information Society*, vol. 35, pp. 21-26.

SnowTerm: a terminology database on snow and ice

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Abstract. SnowTerm is the result of an ongoing work on a structured reference multilingual scientific and technical vocabulary covering the terminology of a specific knowledge domain like the polar and the mountain environment. The terminological system contains around 2.500 terms and it is arranged according to the EARTh thesaurus semantic model. It is foreseen an updated and expanded version of this system.

Introduction

The use, management and diffusion of information is changing very quickly in the environmental domain, due also to the increased use of Internet, which has resulted in people having at their disposition a large sphere of information and has subsequently increased the need for multilingualism.

To exploit the interchange of data, it is necessary to overcome problems of interoperability that exist at both the semantic and technological level and by improving our understanding of the semantics of the data. This can be achieved only by using a controlled and shared language.

After a research on the internet, several glossaries related to polar and mountain environment were found, written mainly in English. Typically these glossaries -with a few exceptions- are not structured and are presented as flat lists containing one or more definitions.

The occurrence of multiple definitions might contribute to increase the semantic ambiguity, leaving up to the user the decision about the preferred meaning of a term. On the contrary, providing a structure to the lexicon so that each term is placed within a semantic network allows to specify its meaning.

The preliminary results of this work of selection and classification of terms on polar and mountain environment are presented here, as a proposal of controlled and structured language with the goal to develop a prototype of a thesaurus on this specific sector.

The thematic areas, covered at present, deal with snow and ice physics, snow and ice morphology, snow and ice radiometry, remote sensing and GIS in

cryosphere environment, sea ice, avalanches, glaciers, disaster management and risk prevention.

Identification of terminological sources and selection of terms

The first sources used to collect the terminology consist of the "Glossario dei termini usati nei bollettini nivometeorologici" by AINEVA and by Friuli-Venezia Giulia Region, the "Sea Ice Glossary" of the Scientific Committee on Antarctic Research-SCAR, the USGS "Glossary of Selected Glacier and Related Terminology", the "Sea Ice Nomenclature" (Merenkulkulaitoksen julkaisuja 5/2002), the trilingual "Glossary on snow and avalanches" by the Working Group on Avalanches Warning Services of the Swiss Federal Institute for Snow and Avalanche Research, the "Večjezični Slovar - Sneg in plazovi" developed by Pavle Šegula.

The terminology of these sources was analysed with respect to the degree of semantic relevance in the field. Terms too generic or considered as non pertinent were excluded. Groups of terms that could be collected in specific appendixes were also excluded.

At present the database contains 3.700 records; the identification of a certain number of non-descriptors have been performed, the final selection of terms is still ongoing.

Management of terms

It occurs quite often to find elements belonging to a parent concept which are expressed with terms like "small", medium", etc. In such cases we decided to modify the original string adding all the information that will make each term meaningful. For example the "wind intensity" is declared as "weak", "tempered", "strong", etc. Such terms if used out of the context are impossible to understand. Having modified these terms in "weak wind", "tempered wind", "strong wind" will allow any user to use the terms in any external application without loosing information.

Classification of terms

The classification and relational structure is based on the EARTh (Environmental Applications Reference Thesaurus) semantic model.

The terms are arranged according to a classification scheme which is founded on categories. At the first level, the system is structured into categories defined as "ENTITIES", "ATTRIBUTES", "DYNAMIC ASPECTS" and "DIMENSIONS". The "ENTITIES" describe material and immaterial objects; the "ATTRIBUTES" define the nature of the objects, at least as far as their static aspects are concerned; "DYNAMIC ASPECTS" define the activities, the processes and the conditions in which they are involved; the "DIMENSIONS" identify the spatio-temporal circumstances in which all this occurs.

The system is then organized in a framework of different levels and classification knots, and it comprises hierarchical relations. It continues into further levels as they obtain a greater specificity in order to allow a rational arrangement of objects.

At present around 1.100 terms have been put into the hierarchical structure.

The vertical structure can be used as a semantic reference system, stable and partially independent from
the context.

The model envisages the possibility of complementing the faceted structure with a system of themes which by crossing with the vertical structure would form a matrix system.

In a thematic approach, the terms linked to a specific sector, are reassembled, while the facet structure tends to scatter them under the more general referral concept.

Moreover, the system of themes, as it was conceived, should be developed by a user according to the specific needs of the applicative context.

One example of thematic setup is provided by the classification into sectors contained in the "Sea Ice Nomenclature" where the terms are clustered according to "ice development", "sky and air indications", "ice arrangement", "terms relating to surface shipping", "terms relating to submarine navigation".
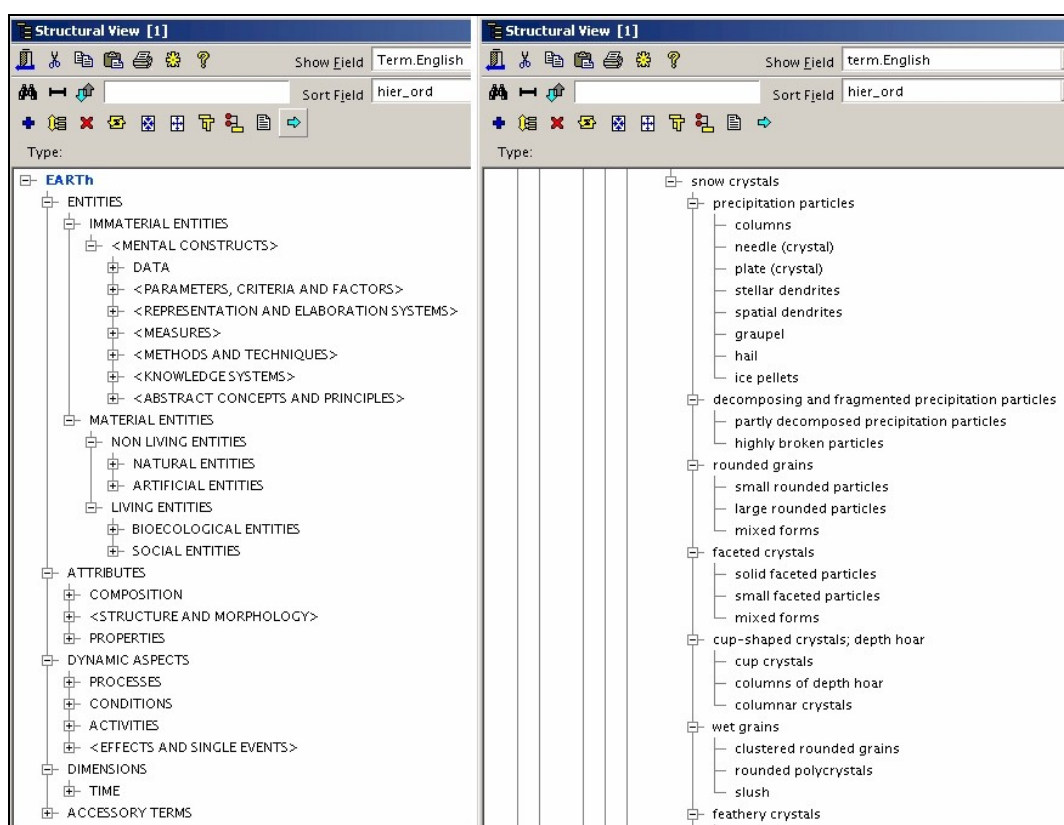
Fig. 1. *The present status of the Classification Scheme and an example of the hierarchical setup.*
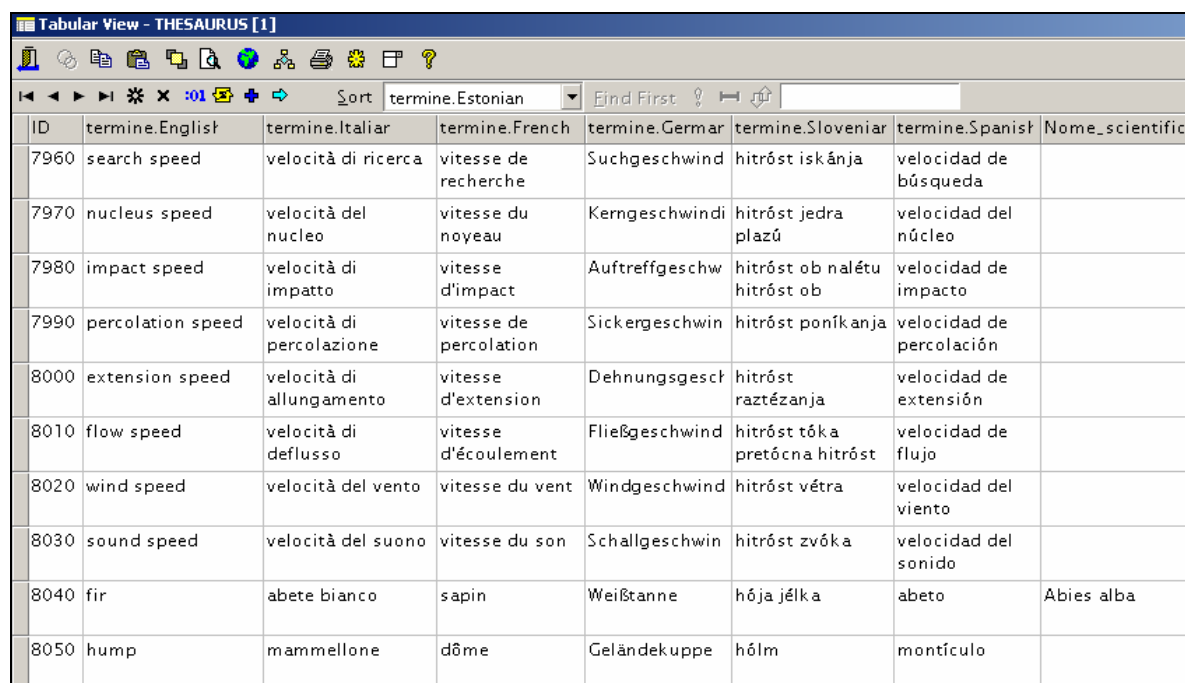
Software details

All the terms are stored into Firebird, an open source, client-server, SQL database. In order to handle properly the terminological database the SuperThes software (Batschi et al., 2002) was adopted. It is a tool for thesaurus management developed with the scientific supervision of EKOLab, in the frame of an international cooperation. The web interface will allow to access the system through the internet.

Multilingualism
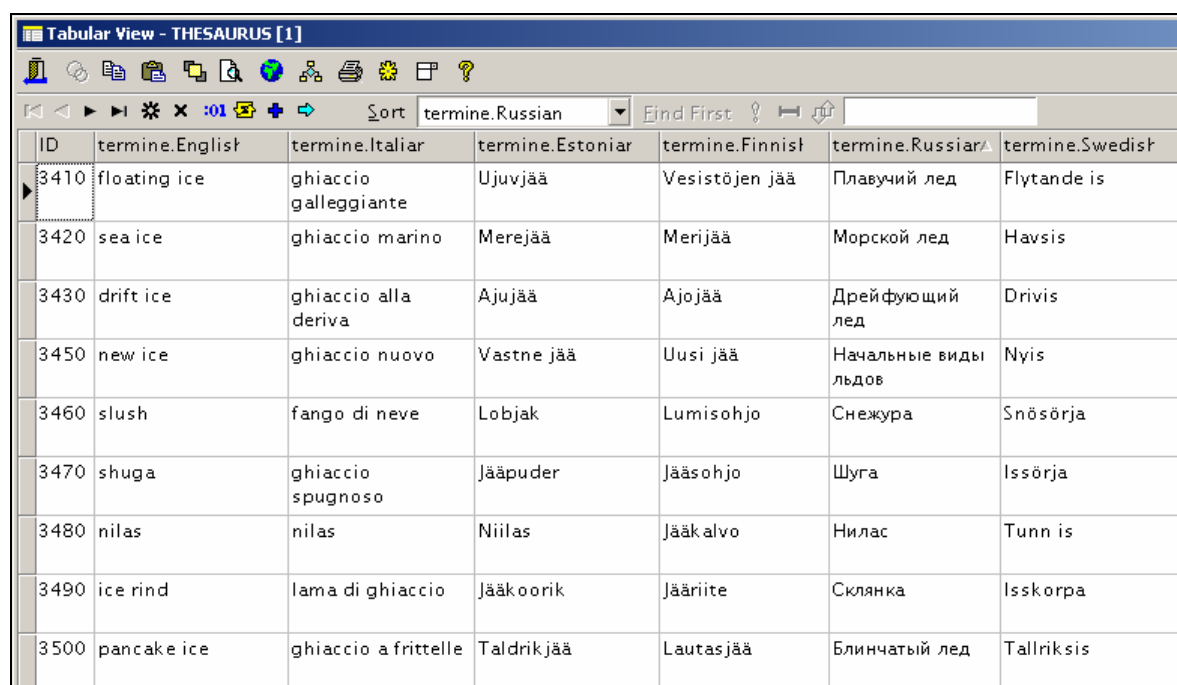
Multilingualism is not the main interest of our working group. Nevertheless, in order not to waste important resources, the already available translations have been collected. The system now contains 2.700 English terms, the other language are Italian (2.400), Estonian, Finnish, Russian and Swedish (94), French and German (1.900), Slovenian (1.300) and Spanish (1.800). The enlargement of the number of linguistic equivalents in French and German is mandatory due to the geographical and political position of the alpine area.

Other languages will be updated following a direct interest and willingness to cooperate by other institutions.

Fig. 2

Figg. 2-3. *Two screenshots of the tabular window.*

Results, their use and future development

The results of this work is the production of a monolingual terminological system organized both in vertical way -according to a classification system based on categories- and horizontally on the basis of the systems of themes.

SnowTerm could be considered as one of the first attempt to develop a thesaurus on Polar and Mountain Environment domain.

In order to ensure a better and updated conceptual and terminological coverage, an extension and revision of the system is foreseen. Any other reliable glossary or term list will be considered as potential additional sources.

The semantic structure of the system will also be strengthened. In order to increase the efficiency of the system in information retrieval operations, a set of associative and equivalence relations will be implemented.

The organization of knowledge -through the support of a thesaurus- could bring a strong contribution to the management of the information in the specific domain: by suggesting a language that different institutions could share; ensuring a higher semantic transparency to terminology; providing tools for indexing and retrieving the information and to interchange of data and suggesting semantic maps usable for the conceptual description of the domain.

References

AINEVA, 2006, "Glossario dei termini usati nei bollettini nivometeorologici" http://www.aineva.it/bolletti/bollet5.html. Last visited: 23.03.2006

Batschi, W.D.; Felluga, B.; Legat, R.; Plini, P.; Stallbaumer, S. and Zirm, K.L, 2002, "*SuperThes*: A New Software for Construction, Maintenance and Visualisation of Multilingual Thesauri", in *Environmental Communication in the Information Society: Proceedings of the 16th Conference of the GI TC 4.6 "Informatics for Environmental Protection"*, edited by W. Pillmann and K. Tochtermann,Vienna (Austria), International Society for Environmental Protection.

Dahlberg, I., 1992 , "Knowledge Organization and Terminology: Philosophical and Linguistic Bases", in *International Classification*, 19(2), Frankfurt/Main, Indeks Verlag, pp. 65-71.

Dahlberg, I., 1994 , "Conceptual Structures and Systematization", in *Atti del Seminario "Categorie, oggetti e strutture della conoscenza"*, Rome (Italy), CNR, pp. 137-155.

Fugmann, R., 1993, "Subject Analysis and Indexing", Frankfurt/Main, Indeks Verlag.

International Organization for Standardization, 1986, "ISO 2788-1986. Documentation. Guidelines for the Establishment and Development of Monolingual Thesauri", Geneva, ISO.

International Organization for Standardization, 1985, "ISO 5964-1985. Documentation. Guidelines for the Establishment and Development of Multilingual Thesauri" Geneva, ISO.

Mazzocchi, F. and Plini, P., 2005, "Thesaurus Classification and Relational Structure: the EARTh Experience", TKE 2005, Copenhagen (Denmark), pp. 265-278.

Plini, P.; Lucke, S.; Baffioni, C. and Felluga, B., 2001, "T-REKS: a Contribution to the Environmental Information Management through a Computer-Supported Modular Knowledge Organisation System for the Environment", in *Sustainability in the Information Society:15th International Symposium Informatics for Environmental Protection*, edited by L.M. Hilty and P.W. Gilgen, Zurich, pp. 691-698.

Pucci, C.R., 1997, "Norma terminologica e linguaggio speciale", in *Atti della tavola rotonda 'La terminologia tecnica e scientifica: attualità e prospettive'*, Roma.

Regione Friuli Venezia Giulia, "Glossario dei termini usati nei bollettini nivometeorologici" http://www.regione.fvg.it/meteo/guida.htm#10. Last visited: 23.03.2006

Scientific Committee on Antarctic Research, "*Aspect, What is Sea Ice?*" http://www.antcrc.utas.edu.au/aspect/seaiceglossary.html. Last visited: 23.03.2006

Šegula, P., 1995, "Večjezični Slovar Sneg in Plazovi", Gorska resevalna sluzba pri Planinski zvezi Slovenije. ISBN: 9616156004.

Swiss Federal Institute for Snow and Avalanche Research, 2004, "Glossary on Snow and Avalanches" http://www.slf.ch. LAst visited: 23.03.2006

USGS, 2003, "Glossary of Selected Glacier and Related Terminology" http://vulcan.wr.usgs.gov/Glossary/Glaciers/glacier_terminology.html. Last visited: 23.03.2006

Vainio, J.; Seinä, A. and Backman, P. (eds.), 2002, "Sea Ice Nomenclature - ENGLISH-FINNISH-SWEDISH-ESTONIAN-RUSSIAN" Helsinki, Merenkulkulaitos (ISBN 951-49-0956-9) http://ice.fmi.fi/SIN.pdf

Veltman, K.H., 2004, "Towards a Semantic Web for Culture" Journal of Digital Information, 4(4), article No. 255. World Meteorological Organization, 2002, "*WMO SEA-ICE NOMENCLATURE*. WMO/OMM/BMO" No.259

The International Polar Year Publications Database

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Abstract. The International Polar Year Publications Database (IPYPD) will attempt to identify and index all publications that result from the International Polar Year 2007-2008 (IPY). The IPYPD network includes 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). The IPYPD will be part of the IPY Data and Information Service (IPYDIS), led by the National Snow and Ice Data Center at the University of Colorado, and will use the IPY Data Policy to require researchers to report their publications. Depending on their subject and geographic scope, IPY publications will be reported to ASTIS, CRBP or the SPRI Library. These three organizations will prepare records in their usual ways for use in their existing databases, but will tag IPY records so that they can be identified. NISC will include all records from the three organizations in the Arctic & Antarctic Regions database as usual, but will then copy the tagged IPY records to create a separate IPY Publications Database. The members of the IPYPD network are currently fundraising for the project.

Introduction

The International Polar Year 2007-2008 (IPY) will be an intensive burst of interdisciplinary internationally-coordinated observations and scientific research focused on the Earth's polar regions. The IPY observational period will extend from March 1, 2007, to March 1, 2009, to allow researchers to conduct two annual observing cycles in each polar region. The data gathered during the 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 amount of new funding that will be available for IPY research is not yet known, nor is the extent to which existing polar research funding will be re-directed to IPY work. 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 would 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 discipline-oriented 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 would be of even greater value if its design ensured that IPY publications were also included in all appropriate ongoing polar bibliographic databases, so that IPY publications remained accessible in the distant future when the IPY database itself was no longer used.

Money for bibliographic work is always in short supply, and that will be the case even for a research program as large as the IPY. The design for an IPY bibliographic database must therefore keep costs low, so that the database can be implemented with small amounts of new money and, if necessary, by using money from existing budgets. There are two areas in which innovative solutions could minimize the cost of building an IPY bibliographic database. The first of these is the method used to identify IPY publications, and the second is the way in which the new bibliographic database is created.

Identifying IPY Publications

The scope of the IPY is defined geographically, but most research literature is published by subject. IPY results may be published as peer-reviewed papers in tens of thousands of different journals, or as monographs by thousands of different commercial and non-commercial publishers. Identifying IPY publications by examining a large fraction of the world's output of research literature for the years 2007 to 2017 would be extremely expensive. Even if it could be done it would be

only partially effective, because some of the publications that result from the IPY will not mention their IPY connection.

Attempting to identify and keep in touch with all IPY researchers, so that they can be periodically reminded to submit lists of their new publications, would also be very expensive. The IPY is not an organization. To be considered part of the IPY a research project needs only to be linked to one of about 200 full proposals that have been endorsed by the IPY Joint Committee. Some of the full proposals have dozens of projects linked to them, each of which may have many researchers. There is nothing to compel full proposals or projects to provide information about their researchers. Asking funding agencies for information about IPY researchers is also not a solution. While some countries are providing some dedicated IPY funding, IPY projects can obtain their funding from any source that they wish, so thousands of potential funding sources would have to be approached. To create and maintain a list of IPY researchers would be very labour-intensive.

The IPY Data Policy should provide a major part of the solution to the problem of identifying IPY publications. All IPY researchers must agree to follow the IPY Data Policy, which requires that metadata for IPY data be reported to the IPY Data and Information Service (IPYDIS), led by the National Snow and Ice Data Center at the University of Colorado. The IPY Data Policy and Management Sub-Committee and the IPYDIS have said that the reporting and dissemination of publications metadata is as important to the IPY as the reporting and dissemination of dataset metadata. The final version of the IPY Data Policy, to be released this year, will include publications in the definition of IPY data and will require the reporting of publications metadata (i.e., citations). If a large fraction of IPY researchers comply with the IPY Data Policy, an IPY bibliographic database that was part of the IPYDIS would be automatically notified of most IPY publications.

Creating a New Bibliographic Database

The second area in which cost-containment is important is in the creation of a new dedicated IPY bibliographic database. There are many polar bibliographic databases and library catalogues that create records describing new polar publications. Covering all of the publications of the IPY does not fall within the

mandate of any one of these databases or libraries, so it would not be possible to assign the task to a single existing organization.

It would be extremely expensive to create from scratch a new bibliographic database that prepares its own records describing IPY publications. The answer must lie in sharing the IPY workload between some of the existing polar databases and libraries. However, the major polar databases and catalogues have different record formats and cannot easily exchange records.

The solution to this problem is obvious to anyone who is familiar with the current flow of polar bibliographic information. National Information Services Corporation (NISC) accepts records from most of the world's major polar bibliographic databases and library catalogues. NISC changes all of the records to a common format to create the Arctic & Antarctic Regions database, and as part of this process combines any duplicate records to create composite records.

The low-cost way to create a dedicated IPY bibliographic database would be to have the organizations that are creating polar bibliographic records add tags to the ones that describe IPY publications. NISC would include all records in the Arctic & Antarctic Regions database as usual, but would then copy the tagged IPY records to create a separate IPY bibliographic database.

The IPY Publications Database

In the spring of 2005, four organizations agreed to work together to create the IPY Publications Database (IPYPD). The Cold Regions Bibliography Project (CRBP) at the American Geological Institute currently 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 database 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 to produce the Arctic & Antarctic Regions (AAR) database describing more than one million polar publications.

The International Polar Year 2007-2008 Joint Committee endorsed the proposal for the IPYPD in August 2005. The proposal is available in the IPY proposal database at: http://www.ipy.org/development/eoi/proposal-details.php?id=51

The IPYPD will make use of the existing system for indexing polar literature and aggregating the resulting bibliographic records. Depending on their subject and geographic scope, IPY publications will be reported to ASTIS, CRBP or the SPRI Library. Simplified somewhat, the rule that researchers will be required to follow is that publications about northern Canada be reported to ASTIS, about the Antarctic and about non-living things to CRBP and about living things to SPRI. The number of organizations was limited to three in order to avoid making this reporting rule more complicated. The three organizations will prepare records in their usual ways for use in their existing databases, but will tag IPY records so that they can be identified. NISC will include all records from the three organizations in the Arctic & Antarctic Regions database as usual, but will then copy the tagged IPY records to create a separate IPY Publications Database.

The IPYPD will be part of the IPY Data and Information Service (IPYDIS), led by the National Snow and Ice Data Center at the University of Colorado. Information about how researchers should report their publications will be provided on the IPYDIS website (not yet created), which will also be the central portal for reporting and accessing IPY datasets. Appendix 1 contains draft text for inclusion on the IPYDIS website. It defines what is meant by IPY publications, describes what information researchers should send when reporting IPY publications, and describes how to determine to which organization a publication should be reported.

Only time will tell how well this self-reporting approach works. CRBP, SPRI and ASTIS will be testing its effectiveness by trying other methods, such as searching journal publisher databases for "ipy".

The records in the IPYPD will include citations, detailed subject and geographic indexing terms, and, in most cases, abstracts. Most IPY publications will be available online, and the records describing IPY publications will contain DOIs or URLs linking to the full-text of the publications.

The IPYPD will consider IPY publications prepared for education, outreach and communication (EOC) purposes to be equal in importance to research

publications, and will provide a method to search for just EOC publications. Because most publications about the IPY will have been created as a result of IPY EOC projects, it has been decided to include in the IPYPD all publications about the IPY, regardless of whether they were produced by IPY projects.

Appendix 2 describes how special subject terms will be used to tag records for inclusion in the IPYPD, and also lists the subject terms that will be used on records that describe publications that are about the IPYs. All organizations that contribute records to AAR are welcome to use these terms. Because of NISC's automatic duplicate detection there is no harm if more than one contributor reports the same IPY publication.

One of the objectives of the IPYPD project is to index a publication once and then to use the resulting bibliographic record in many ways. A new free database, the IPYPD database, will be created that describes all, and only, IPY publications. Records describing all IPY publications will also be added to the Arctic & Antarctic Regions database, which is widely used by polar research organizations. The IPY records prepared by each of the three indexing organizations will appear in those organizations' main databases: the Bibliography on Cold Regions Science and Technology, the Antarctic Bibliography, the SPRILIB database and the ASTIS database. At least two of the indexing organizations will also make their IPY records available in separate databases. For example, ASTIS will create a Canadian IPY Publications Database describing all publications that either result from the Canadian IPY Program or from non-Canadian IPY projects working in northern Canada. In addition, IPY records will be used in subject- or region-specific subset databases, such as the Nunavut, Nunavik and Inuvialuit Settlement Region databases that ASTIS produces about those regions. Users of these databases will learn of IPY publications that are relevant to their needs even if they have never heard of the IPY. The IPYPD will leave a legacy of records in many databases describing publications that resulted from the IPY. This will ensure that the results of the IPY are always available and accessible.

Endorsement by the IPY Joint Committee does not provide any funding. The proponents of the IPYPD are now each fundraising for their part of the project. So far, CRBP has received funding from the U.S. National Science Foundation that will

cover much of their IPYPD work for six years beginning in 2005. Funding for the coverage of IPY publications by the SPRI Library is being sought from the U.K. Economic and Social Research Council, the U.K. Joint Information Systems Committee and/or the University of Cambridge. Funding for the coverage of IPY publications by ASTIS, and for the creation and maintenance of the free IPY Publications Database by NISC, is being sought from the northern Canadian petroleum industry and the Canadian IPY Program.

The IPYPD proposal states that if the proponents are unsuccessful in obtaining the necessary funding they will index as many IPY publications as possible with whatever funds are available to them and will encourage other members of the Polar Libraries Colloquy to help fill the gaps. We will keep the members of the Colloquy informed about our progress, and welcome your comments and suggestions.

References

Beynon, W.J.G., 1970, "Bibliography and Index", in *Annals of the International Geophysical Year*, vol. XLVIII, Oxford, Pergamon Press.

Appendix 1

Reporting IPY Publications to the IPY Publications Database

(Draft Text for the IPYDIS Website)

The International Polar Year Publications Database (IPYPD) is the program of the IPY Data and Information Service that prepares and disseminates metadata (citations, abstracts and indexing terms) describing publications that have resulted from the International Polar Year 2007-2008. The IPYPD is available online at http://... .

Reporting a publication to the IPYPD ensures that it is cited in the IPYPD database, the Arctic & Antarctic Regions database, and, depending on the publication's subject and geographic scope, in the Bibliography on Cold Regions Science and Technology, the Antarctic Bibliography, the SPRILIB databases and the ASTIS databases.

What Publications Does the IPYPD Describe?

IPY publications are publications that result from the research, education, outreach or communication activities of the International Polar Year 2007-2008.

The IPYPD describes the following types of IPY publications: journal papers; books; reports; individually-authored chapters within books and reports; theses; conference presentations if published in full; periodicals dedicated to IPY activities (e.g., IPY newsletters); magazine, newsletter or newspaper articles that occupy one full page or more and that have authors; printed maps; and audio or video programs distributed on magnetic tape, CD, DVD or from a website. To be described in the IPYPD a publication must be permanently available and must be obtainable by anyone.

The IPYPD does not describe: conference presentations published as abstracts or posters; magazine, newsletter or newspaper articles that are smaller than one full page or that do not have authors; audio or video programs distributed only by broadcast; datasets; and websites.

Publications that are distributed in only electronic form (e.g., by being posted on websites) are described by the IPYPD, as long as they fall into one of the

categories listed above, are in final form and will be permanently available. Datasets are not described by the IPYPD, but are described by other programs of the IPY Data and Information Service.

When Reporting IPY Publications What Information Do You Send?

It is necessary for the organizations that are creating the IPYPD to see IPY publications in order to prepare accurate descriptions of them.

If the publication has a Digital Object Identifier (DOI) then you need only send the DOI by e-mail. Copy and paste the DOI if possible. If you have to type the DOI, please check it carefully before sending.

If the publication is available online but does not have a DOI, please send its URL by e-mail. Copy and paste the URL if possible. If you have to type the URL, please check it carefully before sending.

If the publication is not available online, but is of a type that can be easily obtained through purchase or interlibrary loan (journal paper; thesis; commercially published book or conference proceedings; magazine, newsletter or newspaper article), please send a detailed and accurate citation by e-mail. Please also send a PDF file, photocopy or the actual publication if you can easily do so.

If the publication is not available online, and is less easy to obtain (if it is so-called gray literature), please send the actual publication by mail. Please do not e-mail gray literature publications as PDF or word processor files, as the IPYPD must be able to tell people how such publications can be obtained. Please send a bound paper copy and the IPYPD citation will list your organization as the publisher from which the publication may be ordered.

To Whom Do You Report IPY Publications?

IPY publications should be reported to one or more of three organizations, as determined by the following rules:

1. If the work that resulted in the publication was part of the Canadian IPY Program (regardless of the geographic region that was investigated), or if the publication is primarily about northern Canada or the adjacent waters (regardless of

whether the work was part of the Canadian IPY Program), please report the publication to:

astis@ucalgary.ca

ASTIS

Arctic Institute of North America

University of Calgary

Calgary, AB, Canada

T2N 1N4

2. If the publication is primarily about the Antarctic or is primarily about non-living things (i.e. the earth sciences), report the publication to:

coldregions@agiweb.org

Cold Regions Bibliography Project

American Geological Institute

4220 King Street

Alexandria, VA, USA

22303-1502

3. If the publication is primarily about living things (i.e., the biological, medical, social or human sciences), or if it is 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), report it to:

librarian@spri.cam.ac.uk

Librarian

Scott Polar Research Institute

Lensfield Road

Cambridge, United Kingdom

CB2 1ER

Some publications should be reported to more than one of the above organizations. For example, publications about Antarctic biology should be reported to both the Cold Regions Bibliography Project and the Scott Polar Research Institute Library.

It is not a problem if more than one member of a research team reports the same publication, so please report publications if you have any doubt that other members of your team have reported them.

Appendix 2

IPYPD Tagging Terms and Subject Terms

In the following explanation, please keep in mind the difference between publications that "result from" the IPY and the much smaller group of publications that are "about" the IPY. Both of those types of publications need to be tagged for inclusion in the IPYPD, but those that are "about" the IPY also need to have an additional subject term so that users looking for publications that are just "about" the IPY can retrieve them.

Records that describe publications resulting from, or about, the International Polar Year 2007-08 will have one or both of the following two "tagging" terms. The two terms may both be used on the same record if the publication is clearly intended for both audiences or if it is not possible to determine the intended audience. NISC will use these terms to identify AAR records that should be copied to the IPYPD database.

IPY 2007-08 Research publications - Publications that are intended for an audience of established researchers. Includes publications that report research results, but also research planning documents, articles in researcher newsletters, etc.

IPY 2007-08 Education, outreach and communication publications - Publications that are intended for any of the following audiences: students or teachers in primary or secondary schools, young and potential new polar researchers, Arctic residents, the general public, the media and decision-makers. Includes publications that are the results of EOC projects, and also publications about EOC projects.

Other contributors to the AAR database are welcome to use these terms to tag publications for inclusion in IPYPD. If the DAHLI project uses similar terms to tag publications by or about the previous IPYs it will be simpler for users of AAR to remember what terms to use to find IPY publications. It will also be possible to include publications from previous IPYs in the IPYPD database, if we decide to do that.

In addition to the above "tagging" terms, the IPYPD will use the subject term

International Polar Year 2007-08

for publications that are about the upcoming IPY. For consistency, ASTIS is now using the following three terms for publications about the previous IPYs.

International Polar Year 1882-83

International Polar Year 1932-33

International Geophysical Year 1957-58

Other contributors to the AAR database are welcome to use these four terms as well, to make it easier for AAR users to find publications about the respective IPYs.

Discovery and Access of Historic Literature of the IPY's (DAHLI): rescuing records and publications of early IPY ventures

Ruth Duerr and *Allaina Howard*, *National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA*

Abstract. In January 2005 the National Snow and Ice Data Center (NSIDC), in conjunction with a wide variety of libraries, archives, and other institutions scattered around the world, submitted an Expression of Intent (EoI) to provide on-line access to "grey" literature from the first three International Polar Years. Many of the publications and associated data from prior IPY's are relatively inaccessible - few copies exist, materials are scattered at a variety of sites around the world, and most of the materials are not available on-line. The intent of the EoI is to change that situation by creating a searchable portal to materials from prior IPY's. The EoI was approved by the ICSU, WMO Joint Committee for IPY. In the year since submission of the EoI, NSIDC has had a variety of successes and failures in moving this project forward. During this presentation, we will discuss the current status of the project and plans for moving forward, as well as solicit input from and participation by the broader community.

NSIDC Overview

Since its creation in 1982, NSIDC has primarily been concerned with cryospheric research and the archival and dissemination of cryospheric data. These two emphasis areas are cited in our mission statement,

"*To make fundamental contributions to cryospheric science and excel in managing data and disseminating information in order to advance understanding of the Earth system.*"

For the most part, the data in NSIDC's archives are digital - some 500 plus data sets and roughly 100 Terabytes of digital data. As such, NSIDC's infrastructure is primarily based on the needs of a digital data repository. Yet NSIDC has always been more than a repository of digital data.

The World Data Center (WDC) for Glaciology, currently hosted within NSIDC, was established at the American Geographical Society in 1957 under the direction of Dr. William O. Field. The WDC system was set up explicitly to archive and distribute data collected from the observational programs of the 1957-1958 International Geophysical Year (IGY). At that time Dr. Field, who had been collecting available glaciological information for many years, donated his collection to the newly formed WDC. In 1970, the WDC moved from the American Geographical Society in New York to the U. S. Geological Survey in Tacoma,

Washington. Then, in 1976, the University of Colorado received the WDC under the direction of Dr. Roger Barry, currently the director of NSIDC. Over the years, the analog archives and library collections that are associated with the WDC have continued to grow.

Presently, NSIDC is housed within the Cryospheric and Polar Processes Division of the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado in Boulder. Originally chartered by the National Oceanography and Atmospheric Administration's (NOAA's) National Environmental Satellite, Data, and Information Service (NESDIS), NSIDC is funded by NASA, NOAA, NSF, and others on a program basis. NSIDC's current major programs include the NASA Distributed Active Archive Center, the NOAA at NSIDC program, the NSF Arctic System Science Data Coordination Center, the NSF U.S. Antarctic Data Coordination Center and Antarctic Glaciological Data Center, as well as the International Frozen Ground Data Center. Unlike the library and analog archive materials held by the WDC, these programs nearly exclusively deal with born-digital data and their metadata.

It is perhaps fitting that for the upcoming IPY, which marks the 50th anniversary of the IGY, we attend to the infrastructure supporting the analog materials that gave NSIDC its start. Such is the intent of the DAHLI project.

DAHLI Project Overview

The intentions of the DAHLI project are two-fold. First, to enhance the abilities of scientists, researchers in history, the arts and humanities during the upcoming IPY period, and for years to come. Secondly, to engage the awareness, interest, and understanding of students, along with the general public and decision-makers worldwide with regards to the purpose and value of polar research and monitoring

While the goals and vision of the DAHLI project are appropriately broad, the methodology proposed to accomplish these goals is relatively simple - to provide a comprehensive portal to materials from prior IPYs located at facilities around the world, as well as a searchable bibliographic database of records and literature from

the three prior IPYs. In many cases, simply providing information about all of the libraries and archives that hold IPY-related materials would be a step forward, whereas today information about who has what is not always available on-line.

What will it take in order for DAHLI to fulfill its potential? First and foremost, the participation of organizations that have IPY-related materials. That participation can include providing bibliographic information to the DAHLI project for inclusion, digitization of materials, or providing the names of other organizations that have relevant materials. It may also mean allowing the DAHLI project to create bibliographic records about or digitize materials held, as well as offering to host a copy of the DAHLI database or of materials digitized by the DAHLI project. This support in all aspects is vital to the success of the broad vision of the DAHLI project.

DAHLI also needs financial resources in order to fulfill its potential. Like every other soft money organization, NSIDC proposed activities only occur if grant or contract funding can be found. In the year or so since this project was conceived, NSIDC has had some success in obtaining partial funding for DAHLI, though more funding is needed to actualize the entire scope of the project.

Currently Funded Activities

For many years, NSIDC has received grants from NOAA's Climate Database Modernization Program (CDMP): a partnership between NOAA and a number of private vendors. The goal of this alliance is to digitize and make available via the web materials that are relevant to the climate record. Last year NSIDC submitted a proposal to CDMP for digitization of IPY-related materials. The proposal was accepted for the 2006 fiscal year.

With CDMP's fiscal year 2006 starting April 1, NSIDC began discussions on April 11th with Lason, the CDMP vendor, about the DAHLI project. Agreement on specifications for bibliographic entries, imaging, keying, and product output are priorities. Also of great importance are mechanisms for collaborating with other partners outside of NSIDC. CDMP suggested a pilot project utilizing materials held

locally by NSIDC. This pilot allows the participating parties to test and streamline procedures along with working out problems that may arise in such a venture. A mutual understanding of the bibliographic format to be used must be reached. Lason needs to feel comfortable that their interpretations of the materials are correct. NSIDC needs to know that their expectations are understood and to develop a level of trust in Lason's abilities to properly handle what are in many cases irreplaceable and fragile materials. Fortunately, a long- standing working relationship already exists between the two organizations. Further more, Lason has worked with the U. S. National Archives and Records Administration, and has a proven track record with the required standards of care for such data stewardship.

Once an initial set of guidelines has been developed and tested, the DAHLI project will extend to the libraries of NOAA's Boulder Labs and other local collections. As a follow up pilot project this will aid the participants as they attempt to reach out beyond the walls of NSIDC, a task not previously attempted for these types of materials. Assuming the continuation of funding from CDMP, the DAHLI project will reach out nationally and to international participants. With NSIDC as lead, and additional funding from other sources, DAHLI will evolve into a pioneering collaborative effort.

In addition to CDMP funding, NSIDC relies on the support of the NOAA at NSIDC program to support the staff time to conduct the more routine demands of the project. NSIDC's NOAA liaison provides program oversight to the various CDMP projects. Data entry support, such as entering unique bibliographic entries into the NSIDC library catalog for export to the Arctic and Antarctic Regions database, is also funded by NOAA. Additionally, the NOAA at NSIDC program contributes of the technology to store digitized records and make them available through a very simple web interface. Further more, where NOAA has high interest in the data being digitized, the possibility exists for the creation of a new data set under the NOAA at NSIDC program.

Future Plans

The NOAA programs by themselves will not support all of the needs of the DAHLI program. In particular, if DAHLI is to fulfill its goals, it requires the resources to allow staff time to coordinate with other organizations wishing to participate. A procedure must also allow for the assessment and prioritization of materials. The project also requires resources to build and populate the on-line searchable bibliographic database as well as for outreach to potential users.

With these goals in mind, NSIDC has recently submitted a modest proposal to the National Science Foundation (NSF) call for IPY proposals. NSIDC's submission calls for the establishment of a DAHLI advisory boardwhich would assume the responsibility of prioritizing materials for incorporation into the DAHLI system. The board would have representation from each of the major disciplines conducting research during any of the prior IPYs, and would include representatives from other parties/disciplines with an interest in the results of the DAHLI project (e.g., the educational, library, archives, and history fields).

NSIDC's proposal also calls for the establishment and testing of a minimum set of metadata required to populate and search for materials via both library and data center style searches as well as to optimize materials for educational use. The proposal supports the creation of an open-source based, language neutral, web-accessible search engine allowing both library and data center formatted searches and access to materials from prior IPYs. Inclusion of these two elements begins the process of bridging the gap between the digital library and data center worlds, an active area of research at NSF.

With the resources provided by NSF, NSIDC would provide interfaces that allow participants to submit bibliographic entries and materials for inclusion in the DAHLI system. With the aim of providing a highly useable system, a testing and assessment feedback process would be established. NSIDC would also coordinate and implement methods to mirror the DAHLI system at the Scott Polar Research Institute (SPRI) along with at least one other distributed site (e.g., via LOCKSS

software). A limited amount of funding would be earmarked for coordination and outreach.

To facilitate this coordination and outreach effort, the DAHLI program has already begun collaborating with the IGY "Gold" Club program supported by the International Union of Geophysics and Geodesy (IUGG). The IGY "Gold" Club identifies and recognizes the exceptional accomplishments of participants from the first IGY (which was the third IPY). To be inducted into the IGY Gold Club, an individual must meet three requirements:

- You must have been a participant in the first IGY
- You must contribute an item of historical significance to the initiative. It can be a letter, a recollection, an article, a photograph, etc. Unusual items are often the most significant to historians.
- You must be willing to have that item made publicly available to historians, librarians, and other people interested in investigating and preserving the history of geophysics.

"Gold club" participants are rewarded with a special commemorative "IGY Gold" lapel pin. They also receive a special "IGY Gold" certificate of recognition from one of the IGY legacy sponsors (eGY, IHY, IPY or IYPE) and one of the associated geophysical associations (currently IUGG, AGU and IAGA, other organizations are welcome to join). The "IGY Gold" commemorative lapel pin has been specially designed for the 50th anniversary of IGY, and only members of the IGY Gold club will be issued this pin.

In partnership with the DAHLI project, the IGY Gold program will aid in the identification and collection of IPY historical resources and will contribute to DAHLI outreach efforts. For example, the IGY Gold program is sponsoring a number of special sessions and "reunion" gatherings at scientific meetings to encourage original IGY participants to identify and contribute materials of potentially historical value. This provides an excellent opportunity to advertise the resources provided by

DAHLI, as well as to identify new sources of IPY historical information while at the same time increasing utilization of DAHLI's services.

Through NSIDC's collaboration with CDMP and NOAA, crucial first steps have been taken to get DAHLI underway. NSIDC plans to carry this momentum into the NSF proposed project. With your participation, the DAHLI project will be well positioned to achieve the aims outlined above, and the goals of IPY 2007 – 2008. DAHLI will become not only a useful bibliographic reference of materials from prior IPY years but also a tool utilized by researchers all over the world.

Public enquiries and the special library: leveraging library and contact centre resources to enhance the delivery of enquiry services to the public at Indian and Northern Affairs Canada (INAC)

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Abstract. The Departmental Library at Indian and Northern Affairs Canada (INAC) is responsible for providing general enquiries services to the public in addition to traditional library services to staff and researchers. Due to the vast administrative mandate of the department (responsibility for municipal and provincial-like services for First Nations people on-reserve as well as an evolving responsibility for the North), both the research librarian and public enquiries officer at INAC face a wide-variety of questions on a daily basis. Although many of the enquiries are routine, a significant number of enquiries are unique and require some research or follow-up, whether by a research librarian or enquiries officer or by a departmental program expert. This paper will look at the various ways the Departmental Library at INAC is leveraging both contact centre and library resources to enhance and facilitate the delivery of general enquiries services to the public.

The Departmental Library at Indian and Northern Affairs Canada (INAC) is responsible for providing public enquiries services to the public in addition to traditional library services to staff and researchers. Due to the wide-ranging mandate of the department (federal responsibility for Aboriginal peoples–Canada's constitution recognizes three Aboriginal peoples: First Nations, Inuit and Métis) as well as federal responsibility for the North, both the research librarian and the public enquiries officer at INAC receive a wide variety of questions from the public on a daily basis. Although many of the enquiries are routine, a significant number of enquiries are unique and require some research or follow-up, whether by a librarian or enquiries officer or by a departmental program expert. Since 1994, the Departmental Library at INAC has managed the public enquiries function for the department. In 2003, the public enquiries service was upgraded from what was initially a general enquiries and publications distribution service without toll-free telephone access to a contact centre offering toll-free access and using modern call centre technology and approaches to service delivery. This paper will look at how

the Departmental Library at INAC is leveraging both contact centre and library resources to enhance and facilitate the delivery of information services to the public.

Unlike university organizations which have a separate administration office or public affairs office to field enquiries from the public, there is no clear cut home for the public enquiries office in government organizations. In many federal departments and agencies in Canada, public enquiries are the responsibility of a department's internal Communications Branch. However, federal libraries in Canada have always received a significant number of general information requests from the public as well, as there is a common perception that libraries are the place to go to obtain information.

At INAC, public enquiries were handled by the department's Communications Branch until 1994 when this function was transferred to the Departmental Library. The

Library actively pursued the transfer as library management saw an opportunity to improve the existing service by leveraging the library resources already in place. When the public enquiries function was handled by Communications staff, library staff noticed that the communications officers who worked in the enquiries unit were receiving many of the same requests from the public as they were. Communications staff would send many complicated requests to the library and the library in turn would need to ask communications officers to help when clients requested copies of departmental publications.

Many of the requests received by the enquiries officers at that time were what otherwise would be considered standard reference questions, such as requests for statistics, bibliographic sources, etc. In reality, many of the requests received in the general enquiries unit were identical to the requests received by the Library's reference desk. Although the staff in the enquiries unit did their best to assist clients, it was clear to library staff that there was room for improvement, as communications staff did not always have the research skills and background needed to provide clients with the answers they were seeking, especially when clients called with requests that required more in-depth research. Another issue was the location of the

two services which at the time were on different floors of the building (the Library was on the 14th floor and the Communications enquiries service was on the 19th). Departmental staff and members of the public who visited the library would need to visit both locations if they wished to access library services and obtain copies of current departmental publications.

When budget cuts were announced in the mid-1990s as part of a government-wide program review, library management approached the department's Communications Branch and proposed that the enquiries function be brought into the library. Communications agreed with the approach and the general enquiries unit (then known as the "Kiosk") became part of the library. The physical location of the general enquiries unit was moved from the 19th floor to a new location across from the library. Putting two public-access services on the same floor made sense, as patrons no longer had to visit two locations to obtain related services.

The enquiries service was quickly integrated into the library. General enquiries officers continued to answer "quick-type" requests for information such as an employee's telephone number and referrals that involved transferring callers to other government services, such as the number to call for information on tax exemptions or Health Canada's First Nations and Inuit Health Branch. Any in-depth requests were transferred to the library's reference librarians who responded directly to the client. The new arrangement worked well. When enquiries officers in the Kiosk were unsure of where to go with an enquiry, they could check with library staff who would advise them of what to do. Similarly, library staff could send requests for basic information or departmental publications to Kiosk staff. When requested publications were out of print, general enquiries staff could easily refer patrons to the Library for an interlibrary loan.

By having both operations under the same roof, so to speak, it became possible to ensure that general questions regarding the department and its programs and services were handled by the general enquiries staff and more complicated enquiries were in turn handled by reference librarians

Explosion of E-mail

In 1994, the year the general enquiries unit at INAC became part of the Departmental Library, the library launched the first departmental website, giving Canadians and the world a new window to the department. The new site included basic information about the department such as listings of First Nations communities, information on departmental programs and frequently asked questions (FAQs) about the department. In addition, the site listed two e-mail addresses that could be used to contact the department, one for the Kiosk, (the General Enquiries and Public Distribution Service) and the other for the library's reference desk.

At that time, the Internet was still new and the technology untested as a communication method in the library. We were excited about the possibilities of e-mail and the World Wide Web but we were relatively unprepared for the demands it introduced. Although initial information requests by e-mail were few, by 1997, the Library was receiving an average of 25 e-mail requests for information a day from individuals within the department as well as the general public in Canada and from around the world. Two years later, that number had climbed to an average of 75 enquiries a day. Although many of the requests were in-depth research questions that needed to be answered by a librarian, many were general information requests about departmental programs and services that ideally could have been answered by a public enquiries officer. However, at the time, the public enquiries officers were not equipped with the tools that would have allowed them to easily respond to these types of enquiries without consulting with a librarian.

It became apparent that the Library's reference desk was receiving too many general information requests about the department by e-mail to adequately continue providing quality services to its core clients (staff and researchers). A decision was made to discontinue certain services (for example, responding to reference questions from elementary and secondary school students) and an additional reference librarian was hired to help manage the workflow. The title of the reference librarians

was changed to "Research Librarian" as many of the ready-reference questions where now handled by the Kiosk.

The Public Enquiries Contact Centre

In 2000 the Public Enquiries Unit at INAC began using CallBase, a call/contact centre client relationship management (CRM) system which allows users to track calls, develop a database of standard responses to questions (Questions and answers,) as well as program contacts and program information. The CallBase system can also generate various types of statistical reports regarding operations, such as the number of calls received, the number of publications ordered, etc. With the help of the reference librarians, the CallBase system information databases (called "Knowledge bases") were populated with various programs contacts, referral numbers, and other information. The library also began using the same system to track enquiries and it became possible to share information between the enquiries officers and the librarians. CallBase was especially useful as a research tool as it allowed the librarians to track the answers to research questions they had already encountered as well as share information with the enquiries officers.

In 2002, a new departmental initiative allowed the Kiosk to take the next step and become a full-fledged contact centre. The department's Communications Branch oversaw a Government of Canada initiative to publish a service guide specifically aimed at First Nations people in Canada. The idea was to create a publication describing all federal programs and services that were available to First Nations peoples. The publication would be mailed out to all First Nations communities in Canada and also be published on the web. The guide was published in April 2003 and was called *Services for First Nations People: A Government of Canada Guide.*

In Canada approximately 34 distinct federal departments and agencies provide programs for Aboriginal people. The idea behind the services guide was to make it easy for First Nations people to see what federal programs were available to them and to provide toll-free numbers where additional information could be

obtained if necessary (regarding such things application procedures for the various programs listed etc.).

One requirement to list a program in the new *Services* guide was a toll-free telephone number for each program listed in the guide. As the general enquiries line at INAC was not a toll-free line, the department's Communications Branch approached the Departmental Library and asked if they would be willing to upgrade the general enquiries service into a contact centre that would not only provide general information and referrals, but also assist clients with their questions about departmental programs as well as prepare them for the application process.

Changing the business model for the general enquiries function involved extending the opening hours to accommodate the different regions in Canada (Canada has 5 time zones) as well as introducing a toll-free line and modern call/contact centre technology (an Automated Call Distributor or ACD, which sends the caller to the next available operator). In terms of staff, the creation of a call centre involved adding two additional staff working in shifts as well as appointing a Manager to oversee the overall operations. A research librarian was assigned as Manager.

The new "Public Enquiries Contact Centre" replaced the older Kiosk as the primary point of contact for individuals wishing to contact the department whether by phone, e-mail, fax, TTY (teletype for the hearing impaired) or regular mail. The Centre was to provide national toll–free, multi-channel access to detailed program information on INAC programs, services and initiatives. The Centre was to facilitate contact with various program experts within the department and to work closely with departmental programs to ensure that the most up-to-date and accurate information about programs and services was available to the public. The contact centre also continued to maintain a referral list of contact points for other programs and services offered by other organizations. Depending on the program or service, this could mean either referring a client to the appropriate contact point in his/her First Nation band office, to an Aboriginal organization or to one of our federal or

provincial partners (First Nations and Inuit Health Branch, which is part of Health Canada, for instance). In addition to providing multi-channel information services, the Contact Centre was to continue distributing departmental publications.

What is a Call or Contact Centre?

Although the term "call centre" is familiar to many people, it may be useful to provide a definition at this point. Here are two definitions from well-known experts in the field:

Call Centre: "An umbrella term that generally refers to reservation centres, help desks, information lines, regardless of how they are organized or what types of transactions they handle" [1]

"A call centre is the place a caller reaches when phoning an organization to obtain information, to get support, or to make a purchase"[2]

One might ask what is it that makes a call centre a call centre. Again, there are some general aspects of call centres that set them apart from other enquiry lines.

Three of these are:

1) Call Centres deal with large number of enquiries.

2) Call Centres use special technology, such as the Automated Call Distributor (ACD) to route calls to the next available agent, or the IVR,

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[1]Brad Cleveland and Julia Mayben *Call Center Management on Fast Forward: Succeeding in Today's Dynamic Inbound Environment* (Annapolis, Maryland: Call Center Press, 2003), 263.

[2]Jack Green *Call Centers: Technology and Techniques*, ([Mason, Ohio]: Thomson-South-Western, 2003), 2.

Interactive Voice Response, as well as Client Relationship Management Software (CRM).

3) Call Centres are staffed by client service representatives who are trained in providing customer service.

A "contact centre" is generally understood to be a call centre that provides service through several channels, and not only by phone. In many circles the term "contact centre" is replacing "call centre."

There are also some significant differences between contact centres in the private sector and the public sector. In the private sector, contact centres usually exist to support products and services of some kind, whether that product is a computer, an insurance policy or some other service the client has purchased. The types of calls that are received by a private sector contact centre are catalogued in a knowledge base. Agents know that callers will usually only call them for specific issues, so there is a fair degree of predictability (for instance, IT support staff in an IT contact centre may not know what issue their callers will ask them, but they can be confident that the questions will involve a computer issue, software or hardware). That is, most contact centres in the private sector can expect a lot of repeat questions in a narrowly defined field.

In the public sector contact centre, contact centre agents can receive a much broader range of questions and there is less predictability. Government contact centres are to a large extent the public face of each department or agency. The contact centre agent for a department such as INAC needs to be prepared for any type of question, much in the way a reference librarian in a public library needs to be prepared to receive a plethora of possible requests from patrons. [3]

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[3]The possible use of call centre technologies for regular library operations is examined in Steve Coffman, "Reference as others do it," *American Libraries* (May 1999), 54-56.

Advantages of Contact Centre/Library integration

Due to the wide-ranging administrative mandate of Indian and Northern Affairs Canada (responsibility for municipal and provincial-like services for First Nations as well as an evolving administrative responsibility for the North), the Public Enquiries officer at INAC faces a wide variety of questions on a daily basis. Every day officers receive unique questions which they may never have received before, such as: "I am interested in understanding leases issued to a third party by a band" or "I want to remove timber from a reserve but the Indian Act says I need a license from the Minister. How do I get a license?" or "Do the Canadian Wheat Board regulations apply on reserve?" Such questions require consultation with either research librarians or program experts and possibly a referral to the appropriate Aboriginal organization or federal/provincial department or agency. Having easy access to a research librarian for assistance is an invaluable asset for the public enquiries officer who receives a complicated request he or she is uncertain how to address.

The Contact Centre also receives numerous requests from both libraries and individuals who are seeking publications the department has produced. In many cases, the existence of a publication can be determined by consulting three separate sources, Call Base, which indexes all publications that have been entered into the system even if they are currently out of print; Virtua, the departmental Library catalogue; and the new INAC publications catalogue, which aims to be a comprehensive listing of all currently available publications. In some cases, clients wishing to access out-of-print materials or grey literature are told the document they are seeking is only available for on-site consultation or for interlibrary loan.

Contact centre agents at INAC also regularly receive questions related to accessing government information, whether that information is published, available in departmental records or available in government archives. Having a librarian who is familiar with the records and information life cycles in the department is an asset in the contact centre, as officers have someone nearby to turn to when they need assistance with complicated information requests from the public. The manager is

regularly asked for guidance relating to issues such as: copyright permission, access to information and privacy policies, access to departmental records, grey literature, and access to historical information regarding the department.

First Point of Contact

The change to a contact centre model at INAC has led to a significant increase in the number of public enquiries the department is receiving. Much of this increase can be directly attributed to the introduction of a national toll-free number. Since the introduction of toll-free access in 2003, the number of yearly enquiries has almost tripled over the course of three years (from 12,000 in 2002-2003 to 35,000 for the 2005-2006 fiscal year).

The use of a contact centre model has allowed the more general questions about the department to be answered by qualified public enquiries officers and the more complicated research questions to be answered by the research librarians.

The new INAC Public Enquiries Contact Centre is now the first point of contact for the general public when they wish to communicate with the department. Public enquiries officers now provide more detailed information on programs rather than immediately referring clients to a librarian or to a program officer. Officers also continue to provide answers to many quick-type information requests about the department and its services. However, more difficult, in-depth information requests are still forwarded to either a program expert or to a research librarian. Officers can also consult with a librarian at any time if they need guidance on how to respond to a request or solve complex enquiries. From the Library's perspective, the advantage of the contact centre is that they no longer need to respond to routine enquiries, freeing up valuable time to work on more in-depth research requests from library clients. As mentioned previously both the Contact Centre and Library share the same call-tracking system (CallBase) and both enquiries officers and Librarians can add information to the system's knowledge bases and can notify one another by e-mail (or otherwise) of any changes. This assures a consistency of answers and offers a higher degree of quality control.

New Directions and Ongoing Challenges

In an effort to make available departmental publications more easily accessible, the Departmental Library and Contact Centre have recently created a new, online, publications catalogue which makes all currently available publications available on the Internet from a single location. Electronic publications can be viewed and printed or paper copies can be ordered (when available) from the same page. The Contact Centre manages the catalogue and makes sure all new print publications are listed. A metadata librarian is responsible for listing electronic titles and for ensuring subject access.

Another recent change for the Contact Centre involves assuming responsibility for answering regional enquiries. INAC has offices in ten regions across Canada. Until recently, each regional office handled public enquiries for its region. The INAC Public Enquiries Contact Centre has now assumed responsibility for providing bilingual public enquiries services for four of the larger regional offices (Alberta, British Columbia, Ontario and Québec). It is expected that the Centre will become the public enquiries centre for all of the department's regional offices with the exception of the regional office in the Nunavut territory. Most of the population of Nunavut speaks an Aboriginal language (Inuktitut or Inuinnaqtun) and requires access to services in those languages, which the Contact Centre cannot currently provide.

Conclusion

This paper has provided some background as to how the provision of public enquiries services at a large federal government department in Canada came to become the responsibility of the department's library. The paper has looked at how the Departmental Library at INAC is leveraging both contact centre and library resources to enhance and facilitate the delivery of information services to the public. At INAC, the use of the contact centre model for the provision of public enquiries services has been effective in embracing the emerging opportunities and challenges that have come with new service channels such as e-mail and Internet access as well as the traditional channels such as telephone. The INAC Public Enquiries Contact

Centre has helped the library focus its services on its core clientele and the Library, in turn, continues to help the Contact Centre with more in-depth and complicated public enquiries.

References

Canada, 2002, "*Services for First Nations People: A Government of Canada Guide*", Ottawa.

Cleveland, B. and Mayben, J., 2003, "Call Center Management on Fast Forward: Succeeding in Today's Dynamic Inbound Environment", Annapolis, Call Center Press.

Green, J., 2003, "Call Centers: Technology & Techniques", [Mason, Ohio], Thomson-South-Western.

Strengthening the library through user education

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Abstract. The INSTAAR Information Center is a small library with a tiny budget. It is located on a very large campus with one of the strongest research library systems in the United States. To thrive - to survive, in fact - the Information Center needs to provide worthwhile, visible services to those in its institute. User education efforts have become an inexpensive way to make the Information Center more visible and reach out to new groups of library users. What began as a workshop or two on search skills has become an information literacy program. Workshops cover using library catalogs; how to get the most out of databases like GeoRef and Web of Science; how to search effectively using Google and other search engines; and tours through hidden web resources and portals. Our goal is to ensure that all INSTAAR students gain the information skills they need for good lifelong research habits. That is a tall order for a very basic program, and we have a long way to go. But in the meantime, we are attracting new people to the Information Center and cementing firmer relationships with our established users. A few lessons learned the hard way might help librarians in similar situations.

Searching for connections

In the INSTAAR Information Center, user education came first and a plan for it followed much later. A library workshop on effective searching using Google, tossed off as a publicity stunt, has grown into a multi-year information literacy program. In the process the program has gained our library new users, stronger institutional support, and a renewed image as a place to go for answers.

When I became the librarian for the Institute of Arctic and Alpine Research (INSTAAR) in 2003, it was plain that I had to establish strong connections between the Information Center and several groups at INSTAAR. First, I was new and therefore an unknown quantity. Second, the research interests of INSTAAR as a whole were shifting. The group of researchers interested in ecosystems, which did not have a very strong relationship with the Information Center, was gaining more people and funding. Traditionally other groups at INSTAAR had been the library's main user groups as well as the largest groups at the institute. Third, INSTAAR had

reevaluated the role of its library after the retirement of Martha Andrews, their knowledgeable long-time librarian. Although overhead funding was in short supply, the institute made a commitment to keep the library and hire a half-time librarian. The support of INSTAAR's students, as well as Martha's excellent groundwork and use statistics, decided the issue. But justifying this decision by providing worthwhile and visible services to INSTAAR seemed to be a good idea.

As time went on I discovered what made the INSTAAR Information Center unique. One aspect is the collection, which includes many report series and materials that the main university libraries do not have. Another aspect is its location, in the midst of the researchers' offices and labs. INSTAAR is located on a research campus physically separated from the main campus with its extensive library system. I was just down the hall instead of a mile away. Still, the main campus libraries offered hundreds of databases and rich resources, all indexed digitally. How could I compete for my readers' attention with my one database and small (if doughty) collection?

I tried open houses and book sales. People did come: they drank all the lemonade and bought the deaccessioned books. But I didn't see those people in the library again. These events also reinforced the idea that a library is a place that holds books. I wanted that idea to expand, so that the library is seen as a place to come for answers, strategies, knowledge (and books). I started looking for something new.

Forays into the information landscape

These musings intersected with a study of changes in my users' information-seeking behaviour. Students especially, but also researchers, are very comfortable in the digital world. Most would like to peruse the entire information landscape without budging from their computer screens. They love full-text digital materials and tend to go to Google or databases first, and only then to print resources.

On the other hand, their knowledge of the information landscape is somewhat hazy. We as librarians have a clear mental map of the information

landscape. We understand not only what types of information are out there but how they arrive there and how they fit together. Library users do not generally have such clear ideas of the relationships among information sources. To them the information landscape is beset by fog and their road map is sketchy and incomplete. It's sometimes not clear, for instance, that a library catalog does not include references to articles. Researchers tend to stick with tracks that they already know—they often use one database with which they are comfortable in preference to all others, no matter which topic they are investigating. Perhaps, I thought, one of the resources I could offer INSTAARs was simply knowing the territory.

And so I offered a workshop on effective searching using Google. I figured that INSTAARs were already using Google as a pathway into the information landscape every day, and could use some tricks for cutting down on useless search results, finding particular kinds of materials like full-text papers and images, and using Google to search within particular web sites.

The workshop got a good response. All my chairs were full, and people asked lots of questions. Best of all, I attracted some INSTAARs I had never seen before in the library. And they came back to the Information Center later. I tried another workshop on Science Direct. I was asked to repeat it in a research group meeting. I thought perhaps I was on to something, and began to give about two workshops per semester. The workshops pulled in people from across the research groups at the institute who were at different stages in their careers: students, scientists, and emeriti.

The INSTAAR student representatives, grad students who look after the students as a group, asked me to introduce the Information Center at an orientation they were putting together for new students. After talking with them I decided not to give my standard tour-of-the-library talk, and gave instead a presentation outlining the resources available to students using their library system as a whole. This presentation was different than those I had given before, since it did not look at any particular resource. Rather, it described library catalogs as a class and article

databases as a class, showing how particular instances of catalogs or databases all work in the same ways. I compared—in general—the contents, creators, and access points (including the difference between subject headings and keywords) of catalogs and databases. It was a bit of a gamble to go so deeply into the construction of these resources, but it was not information the students had heard before. Some students commented that the presentation made the library seem like a friendlier, more accessible place. Most of the students who came to the orientation have come into the Information Center at one time or other, and seem to feel comfortable running into my office with odd questions. The talk seemed to start some new relationships with students across the INSTAAR research spectrum.

A plan at last

The orientation talk made me realize that I didn't need to provide lush new digital resources to give INSTAARs something valuable. I could teach them how to best use what they already had. I cheated, really, riding the coattails of the excellent databases that the university's library budget had already purchased. In the process, I was able to show several people at INSTAAR how the materials in the INSTAAR library fit in the larger information landscape, and increase the use of my report series and journals.

Then I got ambitious. I wanted everyone who passed through INSTAAR to become fully information literate. They should understand how all library catalogs, and all databases, work in a similar way. They should be thoroughly familiar with a good portion of the various resources available to them, including their strengths, weaknesses, and limitations. They should be able to select the best information tools for their job. And they should have search skills robust enough, and a spirit of exploration strong enough, to allow exploration of new resources. They should have a lifelong habit of thinking critically, not just about papers and sources, but about the database structures that house them, their collection policies and borders, how they fit together. Well, that sounded easy. How far this goal will be met through the Information Center is questionable at best, but a few steps have been taken so far.

At this point I have a three-year program worked out. At the start of each school year I present an introduction to information resources at the orientation for incoming students at a facility in the nearby mountains. The other workshops, three per semester, all take place in the Information Center. The following workshops have been conducted so far:

- Using the library catalogs of INSTAAR and the university library system.
- Diving in to knowledge without drowning: library strategies.
- Arctic & Antarctic Regions.
- GeoRef.
- GeoScienceWorld.
- Ingenta.
- Science Direct.
- Web of Science.
- Searching using Google, Google Scholar, and Scirus.
- Free databases and portals available online outside the library system, including the bibliographies from Scott Polar, Cold Regions Bibliography, Canadian environmental databases, online museum exhibits, and finders guides to archival collections.

There is also a workshop designed for researchers, showing how to use Web of Science to count how often other scientists have cited their papers. This information is necessary for the researchers to complete their annual reporting, and many have trouble prying the information out of the system.

Future workshops will cover:
- Scott Polar bibliographies.
- Finding scientific data.
- Finding grey literature and older materials.
- RefWorks bibliographic software (available through a university license).
- Google Earth.

Most of the workshops have a similar outline:

- What the resource does and does not include: subjects, date ranges, and types of materials included; size of database relative to other resources; whether records connect to full text or not.
- What is exceptional about the resource; when it is a good idea to use it.
- When it might be advisable to use other resources instead.
- Who is the publisher (and what their agenda might be).
- How to perform basic and advanced searches: may include Boolean searching, using a thesaurus, keywords vs. subject headings, and the like.
- What special features, like search alerts or personal profiles, are available.
- How to export references into EndNote or RefWorks bibliographic software, if possible.

I have to admit that, about three days before the workshop, I may have no better grasp of the inner workings of a particular database than anyone else. I just start pushing every button on the interface and looking for tutorials on the web. So the workshops are an unbeatable way for me to get to know the resource backwards and forwards. Another advantage of the workshops is that they cost only some hours of my time and about $2 for printing handouts.

In the meantime, we are attracting new people to the Information Center and cementing firmer relationships with our established users. Attendance has been balanced between research groups. A few of the scientists have begun to send their advisees to the Information Center as a matter of course.

Best of all, at least a few workshop participants are developing advanced information skills. I was going through my email recently and got a message from a student asking how she might find a very tricky resource. Another email arrived ten minutes later. The student had thought about the problem and figured out how to solve it. She described the steps she had used, some of which had been covered in recent workshops. But she had applied those techniques in a very creative way—she went a direction I wouldn't have thought of at first—and it worked. Her information skills have become really sharp and I am sure that they are a lifetime habit with her. She is also one of my most frequent library visitors. There may be no connection

there, but I would certainly be gratified if all INSTAARs gained her level of expertise.

Next steps

At this point the information in the workshops is only available to people who attend them. Fleshing out my notes into real tutorials, and putting them on the web along with the workshop handouts, is a logical next step. I am thinking about using a wiki for a couple of reasons. First, it would allow the researchers to have a real conversation about databases and strategies, rather than just reading what I put down. I would love to see an active exchange of ideas, though how well that would do is unclear at this time. Second, a wiki is about at the level of my programming skills, and I could add one to my Information Center web page without a lot of support from the overtasked INSTAAR web team.

Assessment is also a goal. Assessment is very trendy these days, as someone decided it might be good to know if all our efforts actually amounted to some change in the world. Last semester I asked the 58 students associated with INSTAAR to fill out a short survey using the free web tool Survey Monkey (www.surveymonkey.com), about their experiences with libraries and finding information. About a third responded. The half-dozen questions asked about the students' familiarity with libraries on campus and article databases and about their use of search engines to find scholarly information.

I was unsurprised to find that all students had been to the main library on campus, but I was gratified to discover that about 90 percent of them had also been to the INSTAAR Information Center and at least one of the specialty scientific libraries on the main campus. 75% of the students had used interlibrary loan. Of the article databases, Web of Science (94%) and Science Direct (82%) had by far attracted the most students. GeoRef followed at 59% and Ingenta at 41%. The Cold Regions Bibliography and GEOBASE also rated between 10 and 20%. I was distressed to see that none of the respondents had used Arctic & Antarctic Regions, the one database purchased through the INSTAAR Information Center rather than the main library system. 100% of the respondents had used Google to find scholarly information—no surprise there. Yahoo had come in a distant second with three users. Scirus and AltaVista had no users. One person wrote in Web of Science, which displays some

understandable confusion about the difference between an article database and a search engine.

A last question in the survey asked about students' feelings when approaching a search for information. None chose, "I can find anything, anytime." None chose "I am going to die," either, which shows that the students do not fall into either overconfidence or complete bewilderment. Most (76%) replied, "I can find most of what I want, but it's sometimes difficult to get specific items." A few (18%) replied, "I can find most of what I want, but I spend too much time weeding out references that aren't useful to me." One person checked "It's hard to know where to begin looking."

I hope that the survey will provide a good baseline about students' information skills as they come in to INSTAAR. I hope that, when I repeat the survey in a couple years, I will see the students using more flavors of article databases and search engines and producing more focused searches. I do not have a similar metric for the scientists, but perhaps some analogies can be drawn.

Learning things the hard way
I made a lot of mistakes putting workshops together. Here are some of them:

1. I tried to teach workshops based on what I thought people needed to know, rather than what they were looking for information about. Attendance was low and consisted of a few particular friends of the library. The subject of the workshop must be something students and researchers are already using or considering. Workshops on obscure resources, no matter how useful those resources might be, do not draw the same audiences. Exposing less visible resources to workshop participants or encouraging good searching habits is like slipping vegetables into a teenager's diet—a matter of subtlety and craft.

2. I scheduled a workshop during the same week as the AGU conference. Nobody came. Timing is everything: do not schedule a workshop near a holiday, on a Friday, or during particularly busy times of year. If possible schedule workshops at the time of year when participants are thinking of using your resources— search techniques as students are beginning their major papers, for example.

3. Timing is everything II: I repeated a very successful workshop a year later. Attendance was very low. Everyone who wanted that information apparently had already got it. Now I wait two or three years between particular topics. The situation might be different in a larger organization with more potential learners, but at least for me I needed fresh material.

4. Timing is everything III: No one can absorb too much information at once. My workshops are between 30 minutes and an hour, including time for questions and discussion.

5. I tried to avoid jargon, but once I did use the word "OPAC" and was rewarded with a group of identically baffled expressions. Look at what you want to get across from the user's point of view. It is best to use clear, consistent, general language for the same functions in different databases, rather than vendor-specific terms or terms from library science. This clarity reinforces the idea that most resources use similar approaches and have similar functions.

6. A handout listing shortcuts, search logic, or strategies seems to be useful to workshop participants. It helps avoid too much notetaking, and serves as a reminder both of the resource and of the library's services. A handout that lists everything means some researchers won't bother to engage in the session itself— they just read the paper. No handout means either too many notes taken or too little remembered.

7. I try to use real research questions in demonstrated searches. I have fumbled around putting together my own fake research questions, but they never felt quite real. I usually talk with one of the participants before the workshop to see if they would mind me using their research as an example, and draw out some particular topics and search strings to work with. This shows the resource as it is used in a real situation.

Conclusion

The Information Center workshops will, I hope, encourage INSTAARs to become fully information literate and to carry good skills and habits with them

throughout their careers. It will be a few years before I can tell if that goal is being approached. But in the meantime, the workshops are bringing new users into the Information Center. They make the library seem like a friendly place and show the range of knowledge researchers can find in the library. Those who attend a workshop generally come back to the Information Center with other questions.

My strategy has hinged on taking advantage of outside resources, linking my small world of literature and information to the larger landscape of the whole library system. This approach has perhaps given some workshop participants a better map to the information landscape. In the process, the workshops have encouraged more people to use Information Center materials and to think of the Information Center as a place to get answers and strategies as well as books, journals, and reports.

Podcasts and screencasts for delivery of Polar information literacy

Sandy Campbell and *Weiwei Shi*, *Science and Technology Library, Canadian Circumpolar Collection, University of Alberta, Edmonton, Canada*

Abstract. With the development of inexpensive and easy to use software for the for the creation and Internet broadcast of audio and video files, "podcasts" and "screencasts", it has become practical to create downloadable audio versions of library tours as well as narrated virtual tours and narrated virtual bibliographic instruction sessions. The products are easy to make and update and use common technologies for delivery. Using podcasts and screencasts, the Science and Technology Library at the University of Alberta has created an IPod™ tour of the Canadian Circumpolar Collection, a screencast virtual tour of the Canadian Circumpolar Collection and a screencast introduction to the polar literature.

Background

At the Canadian Circumpolar Library, we have always offered library tours and general orientations as a part of programs designed to assist users in making the most efficient use of the collections. However, there are well-known challenges in delivering general programs. These include, among other things, intensive staff commitments for staff guided tours, the inability of some users to attend at pre-set times, or to attend the on campus at all, the need of some users for review of content at a later time, and the need for some users to receive instruction in other languages. With this project we have met those challenges by using two new technologies, podcasts and screencasts.

A podcast is an audio recording produced as an mp3 file and made available to users to download to their mp3 players, directly or by subscribing to an RSS feed through their podcast management program. Podcasts are named for the ubiquitous iPod ™ mp3 player. A screencast is a video production which allows the producer to create a combination audio and video file, to be delivered through the Internet.

Both of these technologies have characteristics that make them attractive for our project. First, both are inexpensive to acquire and easy to use. As a result, the issues of production costs and updating costs, both in terms of money and staff time,

which limited the wide-spread use of earlier technologies, have been mitigated. Second, the players required for the delivery of the programs, either on the web or in mp3 format are commonplace and well-known to most users. Third, users accept podcasts and to a lesser extent, screencasts as informal forms of communication. There is less expectation of polished products and perfect "radio" voices. The production requirements are less rigid, allowing many more people to apply the technologies.

In addition to the general challenges presented by the delivery of tours and general instruction, the Canadian Circumpolar Collection has three characteristics that caused us to investigate the application of podcast and screencast technologies. First, the collection is housed on a silent study floor, making staff-guided tours impractical, or at least unpopular with other users. Second, the collection is well-known in the circumpolar community and its user population includes researchers who come from around the world to consult it. These users need to be able to orient themselves to the space and collection and may want to do that before they leave home. Third, the literature of circumpolar studies, because of its geographic characteristics, its dispersion across subject-based resources and its relative lack of secondary and tertiary tools, is not as easy to locate and use as other the literature of disciplines, so users require more instruction.

The solutions that we developed to meet these challenges are:
1. A podcast Walking Tour of the Canadian Circumpolar Collection, to allow for guided tours through the silent study space.
2. A screencast Virtual Tour of the Canadian Circumpolar Collection to allow users who are planning a visit to have a preview orientation and to allow on-site visitors to have an orientation without having to walk around.
3. A screencast introduction to "Finding Information on Polar Subjects", to give users a general overview session which they can access at their point of need.

Building the Products

In order to create the podcast and screencasts, we needed to acquire software, write scripts and create visuals both for on-site use and web-use.

For the podcast walking tour of the Canadian Circumpolar Collection, we chose Audacity ™ software, which is an open source multi-track audio editor and recorder available to be downloaded from SourceForge.net http://sourceforge.net/projects/audacity/. This software also requires the insertion of an mp3 encoder, which is available as open source software from several sites including DLL-files.com http://www.dll-files.com/

Once installed, the process of creating a podcast is quite simple, involving reading a script into a microphone, connected to the desktop computer. Once recorded, the file can be edited to remove speech errors or noise. Additional recordings can be made and inserted into the track. The final product can be rendered as an mp3, or a WAV file and mounted on a web-site for users to find and download to their players. An RSS feed can be associated to the audio file to enable users download and manage the podcast through their podcast management program such as iTunes.

For the screencast products we chose to turn existing PowerPoint sessions into narrated video products using a commercial product, Camtasia Studio ™. http://www.techsmith.com/camtasia.asp. Camtasia is also quite easy to use with PowerPoint. It has a PowerPoint plug-in which adds a taskbar to the PowerPoint screen. The audio and PowerPoint can be merged in two ways. It is possible to make a recording of a presentation and then synchronize it to the PowerPoint slides. The easier process is to work from a script and record the narration live, as you advance through the slides. Removing unwanted sounds is a simple "highlight and delete" process. Audio can also be added or replaced.

The Products

Our podcast Walking Tour of the Canadian Circumpolar Library is about 10 minutes long. It uses a map to guide the visitor to 6 stations, lettered A-F. Visitors pick up the map at Station A. At each station the user is directed to observe the salient points visible from that station. At the end of that station's commentary, the user is directed to pause his or her iPod™ and follow the map to the next station.

The stations on the tour take the users through the book collection, special formats, the journal and newspaper collection, a display of artifacts and ends with a review of two posters that give step-by-step instructions for using the catalogue and databases to find books and journal articles. The posters were included in recognition of the fact that some of the users would be visitors who would need introduction to not only the physical space, but also the Library's web-site and the catalogue.

The virtual tour of the Canadian Circumpolar Collection is about 10 minutes long, as well. It contains the same content as the podcast tour, but is presented for use on a computer station. The tour was constructed with the knowledge that the viewer might be sitting at a computer station within viewing range of the collection or might be another country. Therefore, it is organized less as a "tour" following a route, than as an introduction to the collection and services. The initial sequence of photographs gives a sense of the space in which the collection is housed.

"Finding Information on Polar Subjects" is about 15 minutes long. It is designed to be a broad and general introduction. It addresses the unique characteristics of the polar literature, traditional and indigenous knowledge and how to find published polar literature. While this could inform students of polar literature anywhere, it is meant to be a practical aid to students and researchers who wish to conduct research at the University of Alberta. As a result, it contains references to materials which are site-licensed for use by the University of Alberta

academic community. It is not restricted to web-resources, because some of the best Circumpolar resources are still available only in print.

Evaluation and Communication

Evaluation and communication are important parts of any new program. For the podcast tour, an evaluation form is printed on the back of the map. The map is stapled to an envelope. At the end of the tour the user is asked to fill out the questionnaire (Appendix A - Questionnaires), place it in the envelope and return it to the Information Desk on the Main Floor.

To evaluate the web-delivered products, we chose Survey Monkey™ http://www.surveymonkey.com/, which is a web-survey product to which University of Alberta Libraries has an institutional subscription. For each of our products a questionnaire pops up when the user exits the program.

To date we have little formal feedback about the programs. However, from web-logs, we do know that people download and view the information. We expect that because there is no "captive" user group for these products, as there would be for a course based program, user feed back will take more time to collect.

In accordance with the University of Alberta Standards for the Protection of Human Research Participants, our questionnaires were subject to an ethics review and approval.

Conclusions

These projects use new technologies to offer users more flexible delivery of library tours and general orientations. These projects are not meant to replace other forms of library instruction and orientation. Rather they are meant to meet the needs of the library users who are not well served by other forms of library orientation and instruction.

Using podcasts and screencasts not only provides efficiencies for both the Canadian Circumpolar Collection and its users, it has the added public relations benefit of demonstrating that the Library is keeping pace with the users' technology preferences.

Because these products are inexpensive to create and maintain, many more libraries will be able to create them. Because it is simple to re-record an audio track for a screencast, there is potential for polar libraries to share video components and add local information on new audio tracks or re-record programs in other languages.

References

University of Alberta. General Faculties Council, "GFC Policy Manual, 66. Human Research – University of Alberta Standards for the Protection of Human Research Participants" http://www.uofaweb.ualberta.ca/gfcpolicymanual/policymanualsection66-4.cfm, (viewed April 13, 2006)

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Appendix A. Questionnaires

LIBRARIES
UNIVERSITY OF ALBERTA

University of Alberta

Science and Technology Library

IPod Tour Questionnaire

Thank you for taking the Science and Technology Library iPod Tour.

The Science and Technology Library is testing the usability and level of satisfaction with tour and library instruction products delivered through podcasts. You are invited to participate in a satisfaction survey, which will take approximately 15 minutes of your time.

Participation in this survey is completely voluntary and you may choose not to proceed with the survey at any time. If you fill out the survey, you are consenting to participate in this study. By responding to our survey, you will provide essential information for us to use in planning our future use of these technologies in library services. . If you do participate, there are no known benefits or risks to you.

Place your response in the envelope provided and return it to the Science and Technology Library Information Desk. It is important to note that your responses are completely anonymous.

In addition to providing us with valuable information about collection use, data collected via this survey may also be used in research articles or professional presentations. Each stated use of the data collected will be handled in compliance with the University of Alberta Standards for the Protection of Human Research Participants <http://www.ualberta.ca/~unisecr/policy/sec66.html>. In keeping with

required standards, before being destroyed, data collected with the survey will be retained for five (5) years.

If you have questions about this survey, please contact the primary researcher of this project:

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The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension and Augustana Research Ethics Board (EEA REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEA REB at (780) 492-3751.

IPod Tour of the Canadian Circumpolar Collection

Evaluation Questionnaire

How useful was this program to you?

    Very useful   Not at all useful

    1   2   3   4   5

How easy/difficult was this program to use?

    Very easy   Very difficult

    1   2   3   4   5

3. In which language did you listen to the tour?

    ___English

    ___French

    ___Others (Please specify:

Were there any parts of the tour that were hard to follow?

    ____No   _____Yes (Please explain)

    _____

    _____

How could we make this tour better? (Please explain)

    _____

    _____

Will you use this tour again?

    _____Yes   _____No

Would you recommend this tour to friends?

_____Yes   _____No (If not, please explain)

_____

_____

What is your status with the University of Alberta

___Faculty _____Graduate Student _____Undergrad ____Staff ____Visitor

Other comments? _____

_____

_____

Thank you for completing this questionnaire.

Please return this questionnaire to the Science and Technology Library Information Desk.

RETURN OF THIS QUESTIONNAIRE IMPLIES CONSENT.

LIBRARIES

Thank you for using the **Canadian Circumpolar Collection Virtual Tour**

The Science and Technology Library is testing the usability and level of satisfaction with tour and library instruction products delivered through screencasts. You are invited to participate in a satisfaction survey, which will take approximately 15 minutes of your time.

Participation in this survey is completely voluntary and you may choose not to proceed with the survey at any time. If you fill out the survey, you are consenting to participate in this study. By responding to our survey, you will provide essential information for us to use in planning our future use of these technologies in library services. . If you do participate, there are no known benefits or risks to you.

To respond to our survey, please click on the following link:

http://www.surveymk.com/s.asp?u=26853951194

By responding to our survey, you will provide essential information for us to use in planning our library collections. Participation is completely voluntary and you may choose not to proceed with the survey at any time. However, by completing and submitting the survey you are indicating your consent to participate. It is important to note that your responses are completely anonymous. There are no known foreseeable harms and benefits that may arise from participation in this survey.

In addition to providing us with valuable information about collection use, data collected via this survey may also be used in research articles or professional presentations. Each stated use of the data collected will be handled in compliance with the University of Alberta Standards for the Protection of Human Research Participants <http://www.ualberta.ca/~unisecr/policy/sec66.html>. In keeping with required standards, before being destroyed, data collected with the survey will be retained for five (5) years.

If you have questions about this survey, please contact the primary researcher of this project:

Sandy Campbell
Collections Manager
Science and Technology Library
ph (780) 492-7915
email: sandy.campbell@ualberta.ca

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension and Augustana Research Ethics Board (EEA REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEA REB at (780) 492-3751.

Thank you for taking the Canadian Circumpolar Collection Virtual Tour.

Please take a few minutes to answer some questions and help us make the tour better.

1. From what country are you taking the virtual tour? _____

2. If you are at the University of Alberta, what is your status?

_____Undergraduate _____Graduate Student _____Faculty ____Staff ____
Other_____-

3. Why did you take the virtual tour?

_____planning to visit

_____want to know more about the Canadian Circumpolar Collection

_____curiosity

_____entertainment

_____other, please specify

_____

_____

What did you like best about the tour? Please specify

_____

_____

How could we improve the Virtual Tour? Please

specify_____

_____

_____

Why did you choose the Virtual Tour instead of the iPod Tour or a live tour
offered in Cameron Library?

_____

_____

Do you think that you will use this virtual tour again to find information about services available at the Canadian Circumpolar Collection?

_____Yes   _____No

Would you recommend this virtual tour to friends?

_____Yes   _____No

Other comments? _____
_____
_____

Send

Thank you for completing this questionnaire.

RETURN OF THIS QUESTIONNAIRE IMPLIES CONSENT.

Thank you for using "Finding Information on Polar Subjects"

The Science and Technology Library is testing the usability and level of satisfaction with tour and library instruction products delivered through screencasts. You are invited to participate in a satisfaction survey, which will take approximately 15 minutes of your time.

Participation in this survey is completely voluntary and you may choose not to proceed with the survey at any time. If you fill out the survey, you are consenting to participate in this study. By responding to our survey, you will provide essential information for us to use in planning our future use of these technologies in library services. . If you do participate, there are no known benefits or risks to you.

To respond to our survey, please click on the following link:

http://www.surveymk.com/s.asp?u=26853951194

By responding to our survey, you will provide essential information for us to use in planning our library collections. Participation is completely voluntary and you may choose not to proceed with the survey at any time. However, by completing and submitting the survey you are indicating your consent to participate. It is important to note that your responses are completely anonymous. There are no known foreseeable harms and benefits that may arise from participation in this survey.

In addition to providing us with valuable information about collection use, data collected via this survey may also be used in research articles or professional presentations. Each stated use of the data collected will be handled in compliance with the University of Alberta Standards for the Protection of Human Research Participants <http://www.ualberta.ca/~unisecr/policy/sec66.html>. In keeping with required standards, before being destroyed, data collected with the survey will be retained for five (5) years.

If you have questions about this survey, please contact the primary researcher of this project:

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The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension and Augustana Research Ethics Board (EEA REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEA REB at (780) 492-3751.

Thank you for using "Finding Information on Polar Subjects"

1. How useful was this program to you?

    Very useful   Not at all useful

    1   2   3   4   5

2. How easy/difficult was this program to use?

    Very easy   Very difficult

    1   2   3   4   5

3. How did you find out about this program?

    ____instructor told me about it

    ____friend/someone else

    ____found it through the University of Alberta Library Pages

    ____found it by browsing the web

    ____other, please specify_____

    _____

    _____

4   .How will you to use the information in "Finding Information on Polar
Subjects"?

    ____a) general information

    ____b) research for a course I'm taking – please list course names

    _____

    ____c) private research

    ____d) other, please explain_____

    _____

    _____

5. Will you use this instructional program again?

    _____Yes   _____No

6. Are there other topics you would like to see included in this introduction?
Please explain _____

_____

_____

7. Would you recommend this instructional program to friends taking the same course?

_____Yes   _____No

8. What is your status at the University of Alberta?

_____Visitor _____Undergraduate   _____Graduate Student   _____Faculty

____Staff_____

9. If you are a student, but not at University of Alberta, in what institution are you enrolled?_____

10.From what country are you completing this questionnaire?_____

11. Other comments? –

_____

_____

_____

–

Thank you for completing this questionnaire.

SEND

RETURN OF THIS QUESTIONNAIRE IMPLIES CONSENT.

Providing Digital Resources in Polar Libraries

Steve Schafer, *Athabasca University, Canada*

Abstract. Digital resources are increasingly becoming the norm in many libraries. Licensed databases, online resources, and digitization projects are terms commonly used in most academic libraries.

Handheld gaming devices are increasingly being used by our children, most of who do not know anything about the period of time referred to as "pre-Internet". My kids (and I expect yours) are actively engaged in the use of computers, video gaming, and handheld devices. Combine the trend of playing video games and the use of handheld devices with increased growth in distance education, and the result is exciting respecting how library services might look in the not so distant future.

Athabasca University Library has recently developed two initiatives that may be of particularly interest to institutions in the polar region. First, the Digital Reading Room (DRR) for the use of providing electronic course reserves to AU students. The DRR was envisioned and developed primarily for use by Athabasca University. The model could easily be scaled to provide a technological environment for the development of a repository of polar resources (in a variety of formats) of interest to the polar library community. Secondly, AU is experimenting with the development of a digital repository called AUSpace. Using DSpace software, a digital repository of polar materials may be developed called PolarSpace..

The presenter will discuss a number of options that the polar library community may wish to consider:

Developing a digital collection of unique resources of interest to and for use by the polar community – for a repository called PolarSpace

Sharing digital materials about the polar community – demonstrating design and functionality of the DRR to accommodate resources in various formats (i.e., text, audio, and video)

Cooperating in the provision of library services to students in the polar community

Introduction

Athabasca University (AU) (http://www.athabascau.ca) is Canada's Open University, a leader in distance education and online university education. AU specializes in the development and delivery of postsecondary education by means of distance education, and more recently using e-learning methods.

Athabasca University makes it possible to earn a university education regardless of where one lives or works, or regardless of commitments to careers or families. The University strives to remove the barriers of time, space, past educational experience, and, to a great degree, level of income.

Time: Individualized study courses allow students to learn at their own pace. Flexible instruction frees students from the demands of specified class times and rigid institutional schedules. For undergraduate individualized study courses, there are no admissions deadlines; students may enrol year-round.

Space: AU can be wherever the student is through individualized-study packages and the Internet.

Past educational experience: Any person, 16 years of age or older, is eligible for admission to the AU.

Level of income: AU's method of learning allows students to pursue part-time studies and a full-time career. No longer does a university education necessarily mean the loss of employment income.

Since its inception, AU has grown to offer more than 600 courses at the undergraduate and graduate levels to about 32,000 students. The full-time equivalent number is about 5,800. In June 2005, Athabasca University was awarded accreditation in the United States by the Middle States Commission on Higher Education.

Athabasca University students are primarily located in Alberta and across Canada, with an increasing number of students outside of Canada – into the United States and offshore. AU has experienced somewhat of a shift in the demographics of its student body – from a student body of more mature students (in the 30 – 45 age range) to a student body of younger students (age 25+). Also, about one-half of AU course enrolments are visiting students – program students at another institution who take a course or two to fill a timetable, or to take a course not offered by the home institution.

Important to the growth of AU is the commitment to, and the provision of, quality and timely services to students (http://www.athabascau.ca/aboutAU/expectthebest.php). Coupled with AU's commitment to quality and timely services, is the effective application of new

technologies. Advances in technology provide opportunities to students to study anywhere and at anytime.

Athabasca University Library and the Digital Reading Room

AU Library (http://library.athabascau.ca) provides a wide array of resources and services to AU students – offering an equivalent, if not more enhanced, library experience than the library experience provided to students in an on-campus environment. The *Report on Student Usage and Satisfaction with Athabasca University Library Services - 2004* reports an extremely high level of student satisfaction with AU Library services. The report indicates that the use of electronic resources is the most used service provided by AU Library. Overall, the level of satisfaction of AU Library users is high (between 89% - 99%). This report can be retrieved at http://library.athabascau.ca/about/report04.pdf.

In 2003, in response to the challenge to Library Services to provide electronic course reserves to students, AU Library developed the Digital Reading Room (DRR) (http://library.athabascau.ca/drr/). At this point in time the University already was paying large copyright fees and paying large amounts of production costs to reproduce materials for inclusion in AU course packages. In addition, a large number of AU courses referenced SML (supplementary reading) material from the Library. At this same time, the Library was subscribing to a larger number of online databases with fulltext, and persistent-url (purl) technology was being developed. Realizing that a number of factors were converging, the Library developed a strategy to incorporate material already in digital format into online course materials using persistent link technology.

Interestingly enough, also at this same time (2003), AU's Master of Arts, Integrated Studies (MAIS) program was approved and course development was being undertaken. The MAIS program agreed to develop one of its first courses incorporating the DRR. This partnership was, in addition to be a timely one, a strategic one – providing the Library with a new client group looking for a new way to develop and deliver courses, and providing MAIS with an opportunity to test and inform the development of a new application for incorporating already digital resources into the curriculum. In short, the courtship proved to be a successful one.

Since 2003, the number of courses using the DRR has grown to nearly 200. More than 16,500 persistent links have been contributed to the database.

In 2005, a formal research project and evaluation of the DRR was conducted. The report, *An Evaluation of the Impact of the Digital Reading Room (DRR) on Faculty, Library Staff, Educational Media Development Staff, and Students – Final Report* (http://library.athabascau.ca/drr/best/DRR2005.pdf) provides valuable insight into the usage of the DRR and the extent to which the DRR is used by various stakeholder groups (faculty, staff, students).

AU Library has experimented with, and has developed considerable expertise in mobile-learning (m-learning). At the peak of success of the "desktop" version of the DRR, and coupled with the realization that handheld devices such as Sony's PSP, Pocket PC, PDAs, and other mobile devices were entering mainstream usage it was decided to investigate the extent to which the DRR would be compatible with handheld computing devices and with mobile learning applications. For example, it was assumed that the DRR could house audio files in mp3 format and video files in such formats as mpeg and iPod formats. A number of tests and experiments with mp3, iPodcasting, video format, and conversion of text to speech were undertaken. The results were tabulated and reported in the research paper *Implementing Mobile Environments using Learning Objects: The Athabasca University Digital Reading Room* (http://auspace.athabascau.ca/handle/2149/49).

As a result of this research and subsequent report, a number of strategies for the delivering educational resources to mobile devices resulted. The DRR was modified for compatibility with handheld devices, the library system module AirPac was purchased so that the AU Library catalogue would be compatible with handheld devices. Additionally, recommendations respecting the implementation of m-learning as part of the AU e-learning strategy were put forward.

While the DRR and the Library website both proved to be compatible with both desktop computing devices and handheld computing devices, the question arose as to the extent to which online journal databases and various websites were compatible with handheld devices. In the Spring of 2006, a research project was

conducted to evaluate the extent to which the Library and other AU websites were compatible with three handheld computing devices:

Fig. 1 (left to right). *The HP iPAQ hw6500, BlackBerry 8700r, and Audiovox SMT5600.*

The results of this investigation provided findings in two important areas. First the results provide an indepth analysis of the Library's web presence and collection of resources respecting compatibility with both desktop and handheld computing devices. Secondly, the results provide extensive information to inform the development of web sites for compatibility for both environments.

So, What's the Connection?

Readers of this paper may be asking what does all of this said so far have to do with the provision of digital resources and services in polar libraries. As proposed in the abstract submission, there are three primary points.

Point 1 – Creating digital collections

The polar libraries group represents a unique community insofar as its region is concerned, and also respecting the diverse content represented by the polar region.

Every community and institution in the polar libraries group represents a unique aspect to a collection of digital resources – audio, print, and visual. Imagine the prospect of a collection of resources in multiple languages, from all areas of the

polar region, and accessible by any researcher within the community or from outside the community.

Members of the University of the Arctic could potentially benefit by a collection or network of collections of resources about the polar region. Scholars interested in investigating an aspect of the polar region would benefit by a comprehensive collection of digital resources in a variety of formats.

Such collections now have the potential to include multiple formats and to be accessed from a variety of computer devices. From the days of old when most resources were only in print format, present day searchers can avail themselves of graphics, sound clips, video clips, and print formats.

Software such as DSpace, contentDM, Fedora, offer basic architecture and tools to build digital collections that can be networked and for which a federated search can be conducted. Application of common architecture and metadata standards make it possible for such collections to be networked, searched in a federated environment, and accessed from anywhere and at anytime.

Point 2 – Sharing digital resources

More than ever before is there a potential to share digital resources across time-zones, with other institutions, and with other research partners. In addition to scholars building digital collections on an institutional basis, there are significant prospects for individuals to contribute to digital collections.

"Research in the United States by the Pew Internet & American Life Project reported in 2003 that 44% of Americans had reportedly posted content online. This included providing text or pictures to web sites, chat rooms or newsgroups." (Lenhart, Horrigan & Fallows, 2004). Cited in Gunter, Barrie (2005) *Digital Life – Creating Content Online*, http://www.eglobalpanel.com/panel/index.php?&destpage=reports_academic&aid=5 03218536 (viewed 15 April 2006).

Point 3 – Cooperating in the provision of library services

There are a number of ways in which the polar library community can cooperate.

First: by sharing ideas about building digital collections and resources, and by agreeing on basic principles of digital collection development

Second: by contributing digital content unique to the locations represented by participants of this conference to the greater body of digital content about, and of value to the polar community

Third: by promoting awareness and usage of a polar digital collection

Fourth: by considering the idea of a PolarSpace – a repository (or network of repositories) devoted to digital resources about and of interest to the polar region

The tasks for which libraries and librarians are responsible are simply too great in number and in magnitude for us to do them on our own. The resources are too great to gather, organize, and preserve for us to do this on our own. The number of, searchers and researchers are too large for us to train and orientate on our own.

Among librarians and information professionals, the time is right, the tools are available, the resources are around us, and the owners of the resources are scattering. Before it is too late, before the task becomes larger, and before more resources are lost – let's cooperate.

Conclusion

This paper is not necessarily a scholarly one, nor is it technical in nature. Rather it is a simple description of a portion of a journey undertaken by Athabasca University Library. The Athabasca experience may be more or less similar to other journeys on this quest toward digitization, distance learning, and the provision of library services. At this event, the attendees share many of the same experiences: joys and disappointment, successes and learning experiences, and sparks of curiosity and interest that might need only a small fan to burst into flame.

I leave this short quotation as one to think about: "The relative prevalence of different forms of content creation by Internet users reveals a further important and growing functionality of the web. This activity together with the emergence of more advanced utilisation such as image creation and file-sharing online indicates that many online afficionados – and the numbers are growing – do not just seek new sources of information, but want to become content producers in their own right." Gunter, Barrie, 2005, *Digital Life Survey 1 – Creating Content Online.* Online report, eglobalpanel http://www.eglobalpanel.com/panel/index.php?&destpage=reports_academic&aid=503218536 (viewed 15 April 2006).

Web sites that might be of information
Athabasca University Library Digital Reading Room http://library.athabascau.ca/drr

CONTENTdm http://www.dimema.com/index.html

DSpace http://www.dspace.org/

Fedora http://www.fedora.info/

Selected Digital Collections (demonstrating good design and best practice)
Alaska's Digital Archive http://vilda.alaska.edu/site-templates/index.html

Canada's Arctic http://www.arctic.uoguelph.ca/

Black Oral History Collection
        http://www.wsulibs.wsu.edu/holland/masc/xblackoralhistory.html

Our Roots (Canada's local histories online) http://www.ourroots.ca/

Peel's Prairie Provinces http://peel.library.ualberta.ca/

References

Athabasca University, 2004, "*Report on Student Usage and Satisfaction with Athabasca University Library Services – 2004*", online report, OIS Report 014818 http://library.athabascau.ca/about/report04.pdf (viewed 15 April 2006).

Athabasca University, 2006, "*Expect* the Best - Policies & Standards for North American Students", online document, last updated 11 April 2006 http://www.athabascau.ca/aboutAU/expectthebest.php#library (viewed 17 April 2006).

Gunter, B., 2005, "Digital Life 1 – Creating Content Online", online report, eglobalpanel, Digital Life Survey 1 http://www.eglobalpanel.com/panel/index.php?&destpage=reports_academic&aid=503218536 (viewed 15 April 2006).

Johnson, K.; Tin, T.; Gismondi, M. and Ross, L., 2005,. "An Evaluation of the Impact of the Digital Reading Room (DRR) on Faculty, Library Staff, Educational Media Development Staff, and Students – Final Report", online report, Athabasca University Library http://library.athabascau.ca/drr/best/DRR2005.pdf (viewed 15 April 2006).

Lenhart, A.; Horrigan, J. and Fallows, D., 2004, "Content Creation Online", Pew Internet & American Life Project, Washington, DC., online article http://www.pewinternet.org/PPF/r/113/report_display.asp (viewed 15 April 2006).

Lynch, C., 2002, "Digital Collections, Digital Libraries and the Digitization of Cultural Heritage Information", online article, in First Monday, vol. 7, n. 5 (May 2002), http://firstmonday.org/issues/issue7_5/lynch/index.html (viewed 15 April 2006).

McGreal, R.; Tin, T.; Cheung, B. and Schafer, S., 2005, "Implementing Mobile Environments Using Learning Objects: The Athabasca University Digital Reading Room", online report, Athabasca University Library http://auspace.athabascau.ca/handle/2149/49 (viewed 15 April 2006).

Earth-prints: a geoscience open archive for open-minded geoscientists

Anna Grazia Chiodetti and *Earth-prints working group*, *National Institute of Geophysics and Volcanology, Rome, Italy*

Abstract. Earth-prints (www.earth-prints.org) aims at satisfying the increasing demand of fast, up-to-date, easy-accessible, and free-of-charge sources of information in all branches of Geosciences. It allows earth scientists to deposit electronic documents into its collections and to index them by subjects and keywords. Earth-prints provides a time-stamp to all deposited materials to insure precedence rights to original ideas and scientific results. It deals with copyright issues through Creative Common standards that offer a wide variety of licenses. All deposited material is made immediately available to the public. Subscribers will be sent a daily newsletter according to the topics they have signed in.

Introduction

Istituto Nazionale di Geofisica e Vulcanologia is the largest European research institution in Geophysics and Volcanology. Its main mission is the study of geophysical phenomena in both the solid and fluid components of the Earth. This task includes the development and maintenance of monitoring instrumentation and research infrastructures, as well as real time surveillance and early warning. Libraries located in 7 branches, in Milano, Bologna, Pisa, Roma, Napoli, Catania and Palermo, since 2001 are organized in a network. The main goal of INGV libraries is to support research activities through the implementation of quality services and tools dedicated to researchers and to remote users. The libraries promote and develop electronic resources in the fields of geophysics and volcanology.

INGV cooperates with universities and other research institutions. One of the most important links is with PNRA Consortium (of which INGV is a member) in the frame of Italian research programs in Antarctica. The joint research activities are centered on geophysical observations and monitoring at Mario Zucchelli and Concordia Stations. INGV Central Library in Roma has a consolidated collaboration in terms of user-library services (i.e. document delivery and interlibrary loan) with the PNRA consortium central library. One of the activities jointly planned was the creation of a repository on Antarctic Sciences, with a section dedicated to Geophysics. After a year we created together a Geosciences Open Archive to emphasize the attention on Earth Sciences and related disciplines and to have a unique electronic tool to collect and disseminate information and documents on these subjects. This archive laid the foundations for the creation of Earth-prints.

Description of the project

In June 2005 we formed a working group composed by researchers and librarians from INGV and PNRA consortium. We defined the archive classification structure and the metadata following advanced information retrieval strategies. Being OAI-PMH compliant, our database supports the harvesting and guarantees the interoperability among data-bases.

We were convinced that promoting the public access to scientific results in the fields of Earth sciences can facilitate the dialogue between scientists and the public. It was also important to increase the impact of this specialized research.

In September 2005 the Earth-prints repository was opened to the public and to other institutions that developed research in Geophysics giving free access to documents during the search, retrieval and the submission process.

The mission of Earth-prints is to collect, harvest, disseminate, and preserve research results in the field of Atmosphere, Cryosphere, Hydrosphere, Solid Earth and Earth Sciences disciplines in general.

Its objectives are

- Promote an international repository dedicated to the collection of documents related to highly specialized subjects with a great impact for research and the protection from natural hazards
- Consolidate the impact of geophysical research on the general scientific community
- Create an efficient system and fast method to disseminate the original ideas preserving the intellectual property on the contributions
- Facilitate the communication and the dialogue between scientists of different countries (Multicultural open archive: title, abstract and key words in English are mandatory)

Characteristics

- The repository supports open access movement and it is based on a open source software (DSPACE).
- The archive has a three-level hierarchical structure. The top level includes Atmosphere, Cryosphere, Hydrosphere, Solid Earth, and General. It then branches into several disciplines within the other two levels.

- Different collections accept different kinds of material, such as pre-prints, oral presentations, extended abstracts, published papers, conference papers, books and book chapters, posters, and Web products and databases.
- The main language is English, but the archive also accepts documents in other languages, giving visibility to data and studies at local scale that are indeed of general interests.
- The archive is based on latest information technology and does not require specific knowledge to be used because it manages all procedures for access, navigation, upload of documents and information retrieval through a user-friendly interface.
- Backstage organization in communities, representing INGV Sections, facilitates evaluation of the INGV products
- Different policies can be adopted for different communities with different administrators
- Guided submission of the contribution and help are online
- It is possible to activate a workflow for the metadata revision and the paper validation with different groups of experts and editors, according to the type of documents and to the affiliation of the submitter.
- Available online indices by author, title, year, journal title, kind of material etc.
- Free open access to documents, possible restriction for documents protected by publishers copyrights
- Registration for id and password necessary to submit an item

Technical features
- File formats: text, pdf, doc, avi, audio, tiff, jpeg, eps etc.
- Maximum dimension of the document archived: 10 Mb
- Daily alerting system by subject for registered users
- Creative Commons licenses can be added to archived documents
- Link to doi resolver and future connection to Paracite
- Information accessible and indexed by Google and Google Scholar ect.
- Detailed metadata description for different kinds of documents (personalized set of metadata related to the typology of the contribution)
- OAI-PMH compliant – the standard allows service providers to harvest metadata to organize sophisticated and specialized search engines (METALIS

o OAIS Open Archival Information System guarantees interoperability and stability of the archive to facilitate the long term preservation

After configuration of the database INGV librarians held frequent meetings with researchers, to explain the importance of open access to information, data and documents, and the efficiency of the free publishing process on the Web. We supported scientists in the self-archiving process, and demonstrated how the impact on their material was augmented up to 300% . The librarians-scientists meetings elaborated discussions on the copyright publishing constraints imposed by European and American publishers on papers submitted for publication, in print or already published. The debate also centered on the formal evaluation of the material published on the repository in case of competitive examinations and also on how to calculate the impact factor. Librarians guaranteed a helpdesk available to researchers during the publication process. We emphasized that deposited documents remain property of the authors. We monitored copyright politics through the SHERPA project data base and reported information to researchers. We also provided support on how to negotiate the copyright transfer agreement with explaining that was important to preserve the rights leaving to the editorial houses only the first publication permission. Preserve the rights on documents means self-archiving, teaching, disseminating the manuscript and publishing it again in other forms.

Users provided good feedback on the initiative and demonstrated interest by using the archive and promoting it with other colleagues. Another fundamental action of the working group was the promotion of the archive starting from the participation to geophysics and library science conference and meetings.

Librarians worked hard to find sponsors and partnership with other institutions.

At the end of 2006 1604 documents were published on Earth-prints.org: published articles inserted in the international journal Annals of Geophysics, post-doc thesis, pre-prints, data sets.

The archive is monitored by a statistics system showing that daily contacts are increasing every month.

A question remain open: What is the limit of open archive development? We think that the one and only limit of open archives is the eagerness of its users to share information and knowledge

Daily Averages

Legend: Hits, Files, Pages, Visits

Months: Dec 2005, Jan 2006, Feb 2006, Mar 2006, Apr 2006, May 2006, Jun 2006, Jul 2006, Aug 2006, Sep 2006, Oct 2006, *Nov 2006

Top Ten Countries (Nov 06)

#	Hits		Files		KBytes		Country
1	90058	55.74%	87351	57.32%	8477445	55.90%	US Commercial
2	40529	25.08%	37801	24.80%	3077977	20.30%	Italy
3	13288	8.22%	11693	7.67%	1226008	8.08%	Unres./Unkn.
4	5857	3.63%	5006	3.28%	726036	4.79%	Network
5	1866	1.15%	1742	1.14%	445337	2.94%	United Kingdom
6	1311	0.81%	1220	0.80%	108962	0.72%	US Educational
7	1003	0.62%	781	0.51%	147596	0.97%	France
8	743	0.46%	632	0.41%	37905	0.25%	Japan
9	699	0.43%	601	0.39%	49171	0.32%	Netherlands
10	632	0.39%	610	0.40%	94312	0.62%	Germany

Most searched authors (14-26 Nov 06): Lombardo, V. , Tiberti, M. M., Buongiorno, M. F., Merucci, L. , Spinetti, C., Lancellotta, R., ...

Monthly Transfers

GBytes transferred

Months: Dec 2005, Jan 2006, Feb 2006, Mar 2006, Apr 2006, May 2006, Jun 2006, Jul 2006, Aug 2006, Sep 2006, Oct 2006, *Nov 2006

Top downloaded authors (14-26 Nov 06)

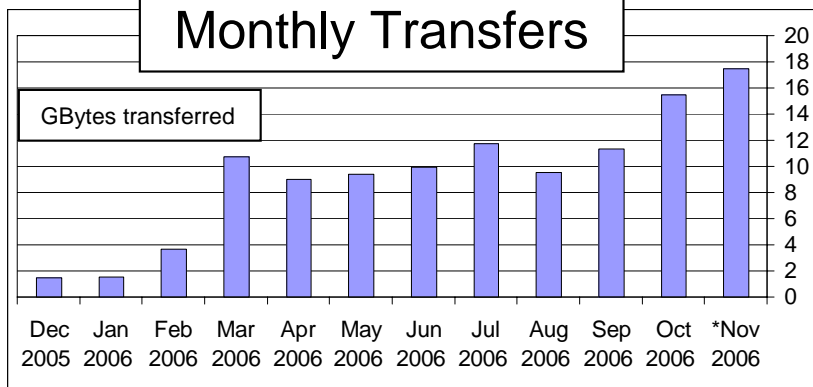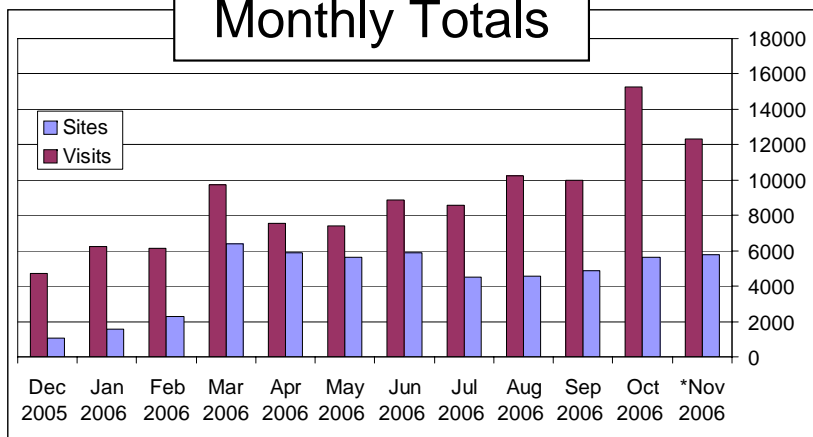| N	Authors	Title	Issue?	Year	Unique Views	Pages	Avg Time (s)	% Exit
1	Basili, R.	La componente verticale...	Ph.D. Thesis	1999	12	13	10	92.3
2	Viti, M. et al.	Quantitative insights into the role ...	Submitted	2006	7	10	20.57	30
3	El Alami, S. O., et al.	The Al Hoceima earthquake of ...	Ann. Geophys.	1998	6	9	24.67	66.7
4	McCue, K.	Australia: historical earthquake studies	Ann. Geophys.	2004	6	6	0	100
5	Scoccimarro, E. ...	MATLAB and Practical Applications ...	CLARIS EU Proj.	2006	5	7	34.6	28.7
6	Bellomo, S.	Environmental impact of magmatic ...	Ph.D. Thesis	2005	5	6	420.67	50
7	Mora, P. Et al.	Global Positioning Systems and...	Engin. Geol.	2003	5	5	0	100
8	Kouskouna, V. and...	Historical earthquake investigations ...	Ann. Geophys.	2004	5	5	69	60
9	D'Auria, L. et al.	10th September 2005: a bolide airblast ...	Unpublished	2006	5	5	163.5	60
10	Cubellis, E. and ...	Analysis of historical and present ...	EGU 06	2006	5	5	45	60
11	Bilham, R.	Earthquakes in India and the Himalaya...	Ann. Geophys.	2004	4	6	157	66.7
12	Aiuppa, A. et al.	H2S fluxes from Mt. Etna, Stromboli...	Geochimica et	2005	4	6	131	50
13	Pisani, A. R. et al.	Sumatra earthquake and Earth rotation	EGU 06	2006	4	4	31	50
14	Burrato, P. et al.	An inventory of river anomalies in ...	Ann. Geophys.	2003	4	4	0	100
15	Serpelloni, E. et al.	Data analysis of Permanent GPS ...	Ann. Geophys.	2006	4	4	0	100
16	Billi, A. et al.	First results from the CROP-11 ...	J.Geol.Soc.Lon.	2006	4	4	0	100
17	Adelfio, G. et al.	Southern-Tyrrhenian seismicity in ...	Unpublished	2006	4	4	22.75	0
18	Liotta, M.	Geochemical Processes Governing ...	Ph.D. Thesis	2003	4	4	143	75
19	Camassi, R.	Catalogues of historical earthquakes ...	Ann. Geophys.	2004	4	6	55.75	33.3
20	Valensise, G. and...	Earthquake effects on the environment...	Ann. Geophys.	2000	4	5	14.33	40
21	Downes, G. L.	Procedures and tools used in the ...	Ann. Geophys.	2004	3	5	42	60

Monthly Totals

Legend: Sites, Visits

Months: Dec 2005, Jan 2006, Feb 2006, Mar 2006, Apr 2006, May 2006, Jun 2006, Jul 2006, Aug 2006, Sep 2006, Oct 2006, *Nov 2006

Statistics updated on 26 Nov 06; (*) extrapolated to 30 Nov 2006.

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Visits / Visited pages (14-26 Nov 06)

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Analyzed periods: 10 Jun-13 Nov 06 (long) and 14-26 Nov 06 (short).

Daily Averages

Legend: Hits, Files, Pages, Visits

X-axis: Dec 2005, Jan 2006, Feb 2006, Mar 2006, Apr 2006, May 2006, Jun 2006, Jul 2006, Aug 2006, Sep 2006, Oct 2006, *Nov 2006

Most searched authors (14-26 Nov 06): Lombardo, V. , Tiberti, M. M., Buongiorno, M. F., Merucci, L. , Spinetti, C., Lancellotta, R., ...

Monthly Transfers

GBytes transferred

X-axis: Dec 2005, Jan 2006, Feb 2006, Mar 2006, Apr 2006, May 2006, Jun 2006, Jul 2006, Aug 2006, Sep 2006, Oct 2006, *Nov 2006

Monthly Totals

Legend: Sites, Visits

X-axis: Dec 2005, Jan 2006, Feb 2006, Mar 2006, Apr 2006, May 2006, Jun 2006, Jul 2006, Aug 2006, Sep 2006, Oct 2006, *Nov 2006

Top Ten Countries (Nov 06)

#	Hits		Files		KBytes		Country
1	90058	55.74%	87351	57.32%	8477445	55.90%	US Commercial
2	40529	25.08%	37801	24.80%	3077977	20.30%	Italy
3	13288	8.22%	11693	7.67%	1226008	8.08%	Unres./Unkn.
4	5857	3.63%	5006	3.28%	726036	4.79%	Network
5	1866	1.15%	1742	1.14%	445337	2.94%	United Kingdom
6	1311	0.81%	1220	0.80%	108962	0.72%	US Educational
7	1003	0.62%	781	0.51%	147596	0.97%	France
8	743	0.46%	632	0.41%	37905	0.25%	Japan
9	699	0.43%	601	0.39%	49171	0.32%	Netherlands
10	632	0.39%	610	0.40%	94312	0.62%	Germany

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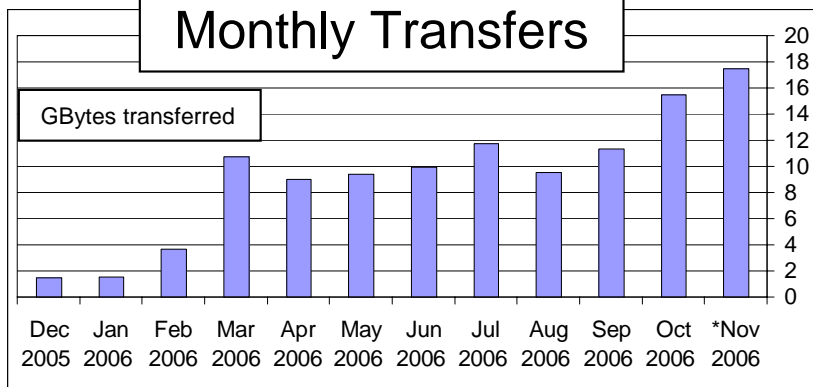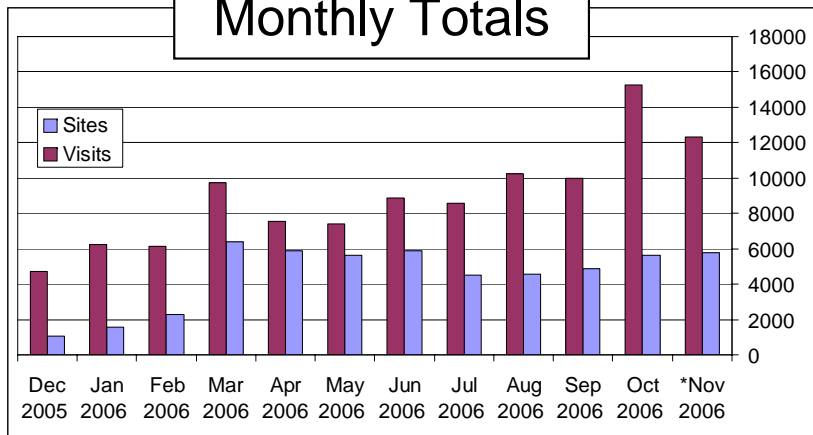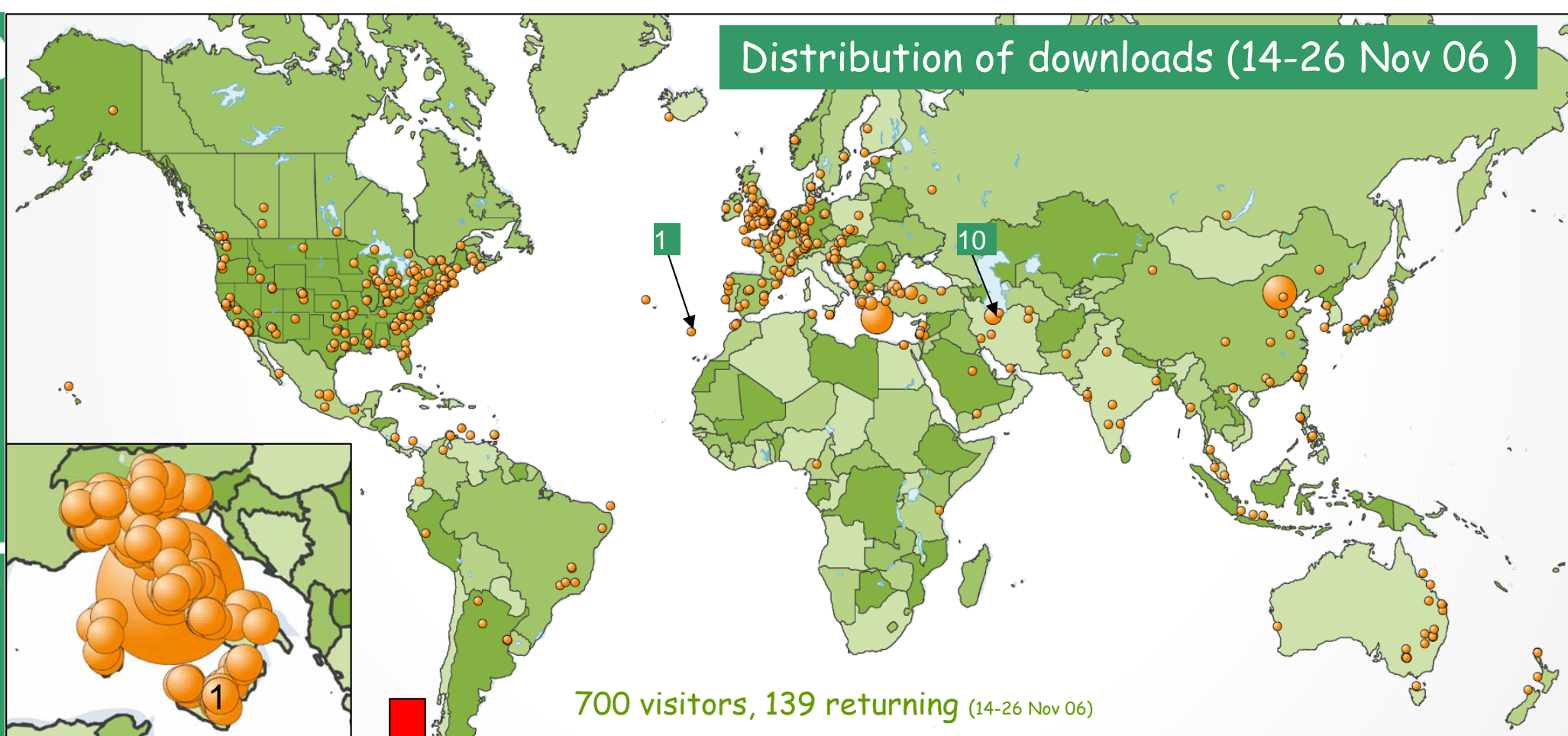**www.earth-prints.org**

Distribution of downloads (14-26 Nov 06)

1

10

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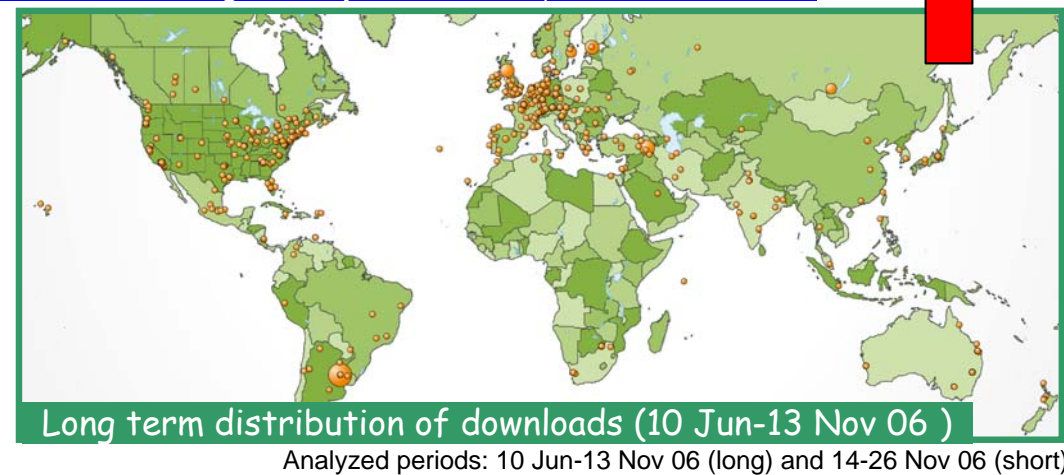
Polar librarians and archivists using a digital depository: the Ohio State University experience

Raimund E. Goerler, *Ohio State University Archivies, Columbus, USA*, **Lynn Lay**, *Goldthwait Polar Library, Byrd Polar Research Center, Ohio State University, Columbus, USA*

Abstract. For many years, digital media has been the most popular vehicle for data collection, scholarly communication, and even memorialization. Librarians and archivists know that digital media challenges them to preserve and to provide access. Recently, in the last five years or so, several institutions and organizations have been developing digital repositories for preservation and access. This paper will discuss the digital repository at the Ohio State University and its impact and potential for OSU's Polar Library and archival program.

Scholars have compared the impact of digital scholarship and the World Wide Web to that of Gutenberg and movable type in the Fifteenth Century. Until now, that comparison has been faulty. Gutenberg transformed books from rare and treasured objects, owned only by the wealthy and powerful, into an inexpensive instrument for sharing information and knowledge. However, Gutenberg's printing press and the books that it produced also served to memorialize information and knowledge as a legacy from one generation to another. Of course, we librarians know all too well that fires, floods, pests (human and otherwise), and acidic paper threaten our libraries. Nevertheless the printed page has been with us for centuries because of its stability and convenience. In contrast, digital objects expire as hardware and software become obsolete. Links to digital publications on the Web vanish as quickly as low prices at gasoline pumps.

In the last five years, digital repositories have appeared that perform for digital objects what libraries have done for books. From MIT in the East to California in the West, from the United Kingdom and the Netherlands to Australia, nations and their universities have developed digital repositories. They capture digital objects, provide access to them, and protect them for future generations.

This paper has two parts. The first will provide a general review of digital repositories at institutions by discussing their common purposes and challenges. The second part will look at the digital repository at The Ohio State University and discuss opportunities and issues for polar librarians and archivists at the Byrd Polar Research Center.

Part One: Review of Digital Repositories

Clifford Lynch of the Coalition for Networked Information described a digital repository at an institution as "a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members." [1] Exactly what is contained in an institutionally based digital repository varies because universities and the communities that use repositories set up the policies that govern acquisition and access. Thus, a repository could include many types of digital objects created by communities of students, faculty and staff. Repositories contain student electronic portfolios, content for academic courses, institutional publications, digital photographs and art, electronic books and monographs, journals and even datasets. [2]

Diversity of content aside, there are some common functions. First, they have protocols for receiving digital objects, typically from the authors themselves. Second, repositories commonly require that all deposits have metadata such as title, author, abstracts, and other descriptive information needed for access and preservation. The metadata also allows content to be discovered by search engines, such as Google, Yahoo, and others. Third, while repositories and their communities can control access by identifying what content can be seen by whom, there is a general commitment to open access in accordance with Open Archives Initiative (OAI) principals. Fourth, they enable others to download copies of the digital files discovered. Finally, digital repositories, like research libraries, offer stewardship of their contents from one generation to the next.

Several reasons explain the increasing number of digital repositories. Agreement about standard platforms and Open Architecture made them technologically possible and financially affordable. The concerns of scholars in preserving and sharing digital creations made them necessary. Advocates also see digital repositories as a new model for scholarly publishing. Instead of commercial presses, scholars could send their works to open access and not-for-profit journals hosted in digital repositories. Thus, technical reports and monographs that have been increasingly costly to publish and distribute could find an economical home in a digital repository. Many, such as the Scholarly Publishing and Academic Resources Coalition (SPARC), see this as a way of slowing the rising cost of academic publications, especially journals and serials. Others expect their digital repository to be a way of identifying and then advertising the intellectual productivity and scholarly contributions of their university. Another argument is

that a digital repository fosters interdisciplinary collaboration because researchers in different departments would have better access to or knowledge of work carried out or in progress elsewhere at their university because of a common repository. Finally, university administrators could benefit from using the repository because it could report efficiently and effectively the productivity and research directions of faculty.

Lofty goals aside, digital repositories face several obstacles. First, they are costly to set up. In establishing Dspace, MIT benefited from Hewlett-Packard and the Carnegie Mellon Foundation. In the Netherlands, the Dutch government invested two million Euros to fix repositories at several universities.[3] In Australia, the government assigned roughly 12 million dollars to develop institutional repositories.[4] While such funding initiatives spark digital repositories at first, their long-term maintenance remains unknown. Innovations in hardware and software remain both necessary and costly. As repositories receive new formats the challenges of strategies for metadata and preservation will strain budgets.

Probably the greatest challenge is the faculty themselves. As the principal contributors, they decide the overall content and therefore the usefulness of the repository. They need to see the value of the repository for their own research and teaching. Not everyone will break away from prestigious publishers. Nor will all scholars understand that they can negotiate new copyright agreements that allow authors to keep rights.

One observer predicted that institutional repositories could only succeed if they require that their faculty use them. In the United States at least, the decentralization within most academic institutions makes such policies unlikely. Traditionally, faculty have protected their intellectual rights as their own. Many feel that they, not their institutional employer, own the content of any courses they teach. They, not the university, benefit from royalties from the books they write. To share revenues from patents has been a recent and controversial policy at some universities. It is certain that many faculty will fight any effort to require that they deposit their creative work in an institutional repository, even though the university provides the computers, scanners, and servers the faculty use in their scholarly pursuits.

Although many digital repositories have appeared in the last five years, the content they house is meager. According to a survey of 45 repositories, each averaged only 1,250 documents and about half had only 290. This is a dangerously small number when compared with the start-up costs of a digital repository.[5]

A recent study of faculty at the University of Rochester, which has a DSpace based digital repository, pointed to several recommendations in persuading professors to embrace digital repositories. First, faculty must recognize that digital repositories benefit them first, their institutions second. Digital repositories need to enable faculty to work easily with co-authors and organize their materials according to their own scheme. Most importantly, the efforts at depositing should not add significantly to their existing workload. In addition, the repositories need to count visits to digital objects as a way of assuring faculty that others are discovering their digital creations.[6]

Too often, digital repositories have assumed that communities of depositors simply mirror the academic colleges and departments of the host university itself. Researchers form their own groups apart from departmental or even college boundaries. Organizations of communities within digital repositories need to be flexible and fluid. In addition, repositories should provide opportunities for faculty to personalize their digital space by including photos and life histories that highlight their background and interests as well as the products of their scholarship. Another scholar concluded "The target is value to the user, and we are only just beginning to understand it adequately."[7]

In the effort to reach and persuade faculty, librarians will play a critical role. Subject specialists who buy books, journals, and bibliographic databases for faculty must know their customers. As information professionals, librarians have expertise and experience in finding and managing information and a culture of service. Thus, the librarian could effectively promote repositories in garnering contributors, content, and users for digital repositories. As we know all too well, fewer people are visiting libraries for the traditional reasons and more are questioning the value of librarians themselves in a web based and self-directed digital environment. The digital repository stands as a service model that should be part of the knowledge-worker environment and librarians, as information organizers and brokers are well positioned to be prominent.

Part Two: The Ohio State University's Digital Repository

In many ways, the experience of The Ohio State University and its digital repository, the Knowledge Bank, mirrors the opportunities and challenges of other universities with digital repositories. The Knowledge Bank began in 2001 when a task force of university deans and vice presidents on distance learning asked the

Director of Libraries to explore ways of managing digital course content. At first, their concern was with the digital learning objects that faculty developed for classes. Some believed that such objects could some day produce revenue.[8] Another concern was for the student works that appeared as student portfolios and websites related to the academic experience. As the academic unit most dedicated to managing information for access and preservation, the libraries seemed most suitable to have a leadership role.[9]

After a year of study, by a committee headed by the director of university libraries with representation from the Office of Academic Affairs and the Office of the Chief Information Officer, along with community participation from such organizations as OCLC and Chemical Abstracts, the Knowledge Bank took shape but with a broader mission. It was to contain all digital assets created by the University regardless of whether they stemmed from courses. In addition, the Knowledge Bank should direct researchers to all digital collections at the University, even if they were not in the Knowledge Bank.[10]

In the first year, the Libraries conducted a survey of all digital projects on campus. Then, OSU accepted an invitation from the Massachusetts Institute of Technology to join a federation to develop and carry out a digital repository based on the open access architecture known as "Dspace." The Ohio Board of Regents provided a grant of $400,000 that enabled the project to hire a project manager and the staff needed to recruit digital content and develop the metadata for protection and access.

To recruit participants and their digital creations, the Knowledge Bank points to several benefits. First, the project assures participants that their objects will always have a permanent and stable URL for a citation. Disappearing URL's have always been a weakness in the citation so necessary for academic advancement. Second, it guarantees the works will be preserved even as software and hardware change. Third, participants know that correctly deposited work will be accessible to search engines such as Google because standard Dublin Core metadata describes the objects. Fourth, members can block access to content and even withdraw items from public view. In the latter case, there will be a marker – called a "tombstone" - that will remain so that anyone who previously cited the withdrawn work will have verification that the digital object/document exists.[11]

In about three years, OSU's Knowledge Bank has grown in membership and in content. To join the Knowledge Bank, one must have an affiliation with OSU, have

created digital objects, and be part of a community. A community is any group or an individual with a common focus, such as a college, school, department, research grant team, or interdisciplinary research center.[12] As of April 2006, there were 28 communities, with 5,276 digital items, with more developing every day.

Each community decides what to accept in its Knowledge Bank "account" and whether to make it available generally. Deposits in the Bank span a wide range of disciplines, ranging from the humanities to the arts and sciences, social and physical. Not surprisingly, the libraries are active participants but so too is the John Glenn Institute for Policy Studies and the Olentangy River Wetlands Research Park.

Content is equally diverse. The Knowledge Bank serves well as a place for digital texts. Examples include student honors theses, technical reports, proceedings, and monographs, on-line journals and streaming video. In addition, the Knowledge Bank contains word-processed transcripts of oral history interviews, digital facsimiles of manuscripts and other special collections, and out-of-print books of the Ohio State University Press.

The Knowledge Bank has also collaborated with the OSU Health Sciences' Center for Knowledge Management in bringing about a web-based directory of expertise on campus. Its goal is to build a digital database of biographical information about the research interests and scholarly activities of faculty and research staff. The database itself will link to publications in the Knowledge Bank and OhioLink. This directory would enable campus scholars to more readily report their accomplishments. It would also alert them to the interests and work of others and help interdisciplinary research and grant proposal preparation. Administrators could then access information about scholarly productivity and research efforts conveniently and efficiently, information that is now only available in analog formats or decentralized databases.

Every new venture faces challenges and OSU's Knowledge Bank is no exception. As a repository with persistent URLs, the Knowledge Bank best serves finished works, not objects that require change or continual updating. Another is that the Knowledge Bank cannot guarantee to preserve digital objects in all known formats. Proprietary formats in which file specifications, descriptions, and code samples are not available cannot be guaranteed of support. As an example, the Microsoft programs such as Excel, Powerpoint, and Word documents are converted to supported formats such as Adobe PDF. [13]

Probably the biggest challenge facing the Knowledge Bank is participation by the faculty. Without their commitment to preserving scholarly activity in a digital form, the lack of a critical mass of scholarly content makes it difficult to justify the continued investment in implementation and upkeep to which the library is committed. OSU has 3012 faculty who teach an estimated 12,000 courses. At present, the Knowledge Bank is in an early stage of development and is not yet the investment house of intellectual assets that it aspires to be. This experience is shared by many institutional repositories.

Critical to the success of the Knowledge Bank are the subject librarians. The Libraries encourage and reward librarians who partner with faculty in teaching and in research. At OSU, librarians are expanding their roles beyond buying books and journals and providing bibliographic access. They are expected to seek out informal publications and learning objects that faculty develop digitally and encourage their owners to take part in the Knowledge Bank. As Director Joseph Branin put it, " … librarians must extend their expertise beyond collection management to knowledge management. At the Ohio State University Libraries our subject specialists are building the inventory of digital resources and services on campus, and they are creating the relationships that allow the librarians and the faculty to work more closely with each other in creating, managing, sharing, and preserving a wider range of digital assets."[14] In doing so, OSU's librarians must embrace a new service model that will emphasize outreach, consultation, and training that will bring about the selection, organization and preservation of less formal and unpublished materials, from presentations to data sets.[15]

The Byrd Polar Research Center and OSU's Knowledge Bank

OSU's Byrd Polar Research Center works closely with the OSU Libraries. The Goldthwait Polar Library of the Center makes available its holdings through the University Libraries' on-line catalog. The Center's archival program is a collaborative effort with the OSU Libraries. Its archival collections stay in a building of the OSU Libraries and appear in the OSU Libraries on-line catalog.

Thus, it was only natural that the Byrd Polar Research Center should take part in the Knowledge Bank project. Like the Knowledge Bank itself, however, that participation is at an early stage. The purpose here is to describe the Center's deposits in the Knowledge Bank, the depositing itself, and the issues and challenges that are likely in the future.

Like other communities, the Byrd Polar Research Center has looked to the Knowledge Bank as both a digital library and as a publisher for textual materials. Since the late 1950's the Center has developed multiple series of reports. As examples, when the Center was the Institute of Polar Studies (IPS), it developed a Report 825 series that contained the early results of research done during the International Geophysical Year, 1957-1958. This series ended in 1961. Another set of reports, Reports 968 series presented the results of research during the follow-up to IGY, the International Geophysical Cooperation in 1959. Like the previous series, it ended in 1961. However, in 1962 the Institute began a new series, known as the Institute of Polar Studies Report series. Its purpose was to publish the results of research that was too lengthy or detailed to appear in journals. In addition, this series enabled researchers to publish preliminary results. This series ended when the Institute became the Byrd Polar Research Center and the Byrd Polar Research Center Report series began in 1987.

The Center's library also has a series of miscellaneous reports, which include abstracts and program material from meetings held at the Center, field trip guides and reports and recommendations to funding agencies, such as NASA or NSF. The older IPS miscellaneous series included individual abstracts from meetings, letters to the editor or work done by research scientists before they arrived at IPS.

The Byrd Polar Research Center will embrace the Knowledge Bank as a means of communicating and preserving these scholarly works, many of which exist only as a single print copy. A program for scanning the material will preserve the content, while depositing in the Knowledge Bank will enable anyone anywhere in the world to download a copy conveniently. High priorities for scanning will be those reports about the original IGY and those for which copies are rare. Eventually the Knowledge Bank will be an opportunity to publish electronically all of the Center's reports.

The Knowledge Bank should also be a place for materials never published, as two examples will show. Recently, the BPRC received a nearly 100-page manuscript about Dr. Louis Potaka, who was the surgeon on Admiral Byrd's second expedition to Antarctica, 1933-35. Little is known about Potaka and the author, Professor Bruce Young, has invested years putting together information before ending the research project. The Knowledge Bank will make his scholarship available permanently and at little cost.[16] In a second example, the widow of Albert P. Crary, one of the leading geophysicists of the IGY, asked the BPRC to find a suitable place to publish his

biography. Discussions about publishing in OSU's Knowledge Bank are in progress. Clearly, the Knowledge Bank offers opportunities for sharing scholarship that may be unlikely in the traditional journals and monographs.

Another addition to the Knowledge Bank will be about one hundred oral history transcripts sponsored by the National Science Foundation. The BPRC and Captain Brian Shoemaker of the American Polar Society interviewed people who were in the polar regions during the 1930's, 1940's and 1950's. All the transcripts are in digital format because the transcriber used word processing software. In the Knowledge Bank, researchers will be able not only to read the interviews but also search topics across the transcripts. Eventually, the audio tapes themselves, or portions, will be digitized so researchers can listen. And a grant from the Kane Lodge Foundation will enable the Center to add recordings of Admiral Byrd's voice to the Knowledge Bank.

Another likely addition to the Knowledge Bank are the thousands of slides and visual materials at the Byrd Polar Research Center. Created by scientists during their field work in polar and tropical regions, they have served well for publications and lectures. Once organized with descriptive metadata in the Knowledge Bank, they would be freely available, shared with the scholarly community world wide in an organized, descriptive manner.

The International Polar Year of 2007-2008 presents another opportunity to test the Knowledge Bank as a digital repository. Most, if not all, IPY documents will be digital in nature. Researchers and staff will create digital photographs, blogs, websites and other means to record their personal experience. Although data centers, such as the National Snow and Ice Data Center, will capture scientific data, the personal documentation of scientists themselves may disappear as digital formats change.

To address this challenge, three universities --the Byrd Polar Research Center at the Ohio State University, the University of Kansas, and the University of Alaska-Fairbanks will gather and protect digital copies of personal documentation and uncommitted data. The oral history interviews have proven the historical value of personal experience in understanding scientific discovery. Also, experience with science teachers and students have pointed to personal stories in explaining and exciting interest in science. Thus, these materials in digital format will be important for both history and education.

Opportunities typically come with unique challenges and there will be several to integrating the scientific work of the Byrd Center with OSU's Knowledge Bank. Cost of scanning analog materials is one, given the number of pages of the reports and technical reports. Another is staffing. There is only one librarian and one polar curator to enter data. Depositing in the Knowledge Bank begins by meeting with an OSU metadata librarian. Together the librarian and the depositor create a template for descriptive metadata and access conditions. The resulting form reflects Dublin Core metadata standards and the search, retrieval, and management needs of the user community. Typically, the template will automatically fill in information that applies identically to more than one object for efficient future deposits. The template also poses questions that attend to copyright issues.

Probably the greatest challenge is persuading scientists to accept the Knowledge Bank as worthy of their attention and participation. Driven by deadlines for grants and proposals, the scientists themselves must see the value of organizing and depositing their research objects, from preprints to datasets. Institutional policy and incentives for taking part in the Knowledge Bank may help. A librarian who is knowledgeable of the value of digital repositories and is willing to work with the scientists is critical.

Conclusion

While predicting the future is a dangerous undertaking, the Ohio State University Libraries is committed to the future funding for the continued development of the Knowledge Bank as an institutional repository. This commitment includes continued exploration into technologies that assure preservation in perpetuity. And while it is likely that in the future the Knowledge Bank will become part of a statewide repository for academic libraries, that collaboration will not compromise its' service model to individual communities.

A recent study entitled "Digital Repositories: All Hype and No Substance?" concluded "…that IRs are well on their way to becoming mainstream technology. In terms of the product life cycle the technology of IRs is gathering critical mass and should move to maturity with the next 5 years."[17]

The challenges and opportunities presented by digitally based scholarship and institutional repositories point to the critical role that librarians can and should play in scholarly communication. Those of us who are in libraries that have a special research identity, such as polar libraries, are especially knowledgeable of our users

and their research directions and needs. Thus, polar librarians who partner with scientists can manage not only traditional library collections but the entire knowledge cycle itself, from organizing data to publishing reports and scholarly works.

References

[i] The Knowledge Bank of The Ohio State University is at

https://kb.osu.edu/dspace/index.jsp

1. "Defining an Institutional Repository", in *Library Technical Reports*, 40(4), Jul/Aug. 2004, pp. 6-10, reference page 6.

2. Johnson, R.K., 2002., "Institutional Repositories: Partnering with Faculty to Enhance Scholarly Communication", in *D-Lib Magazine*, 8(11), 6 pp., reference page 3 http://www.dlib.org/dlib/november02/johnson/11johnson.html.

3. Shearer, M.K., 2002/03, "Institutional Repositories: Towards the Identification of Critical Success Factors", in *The Canadian Journal of Information and Library Science*, 27(3), pp. 89-108, reference page 93.

4. Whitehead, D., 2005, "Repositories: What is the target? An Arrow Perspective", in *New Review of Information Networking*, 11(1), pp. 123-134, reference page 129.

5. Foster, N.F. and Susan Gibbons, J., 2005, "Understanding Faculty to Improve Content Recruitment for Institutional Repositories", in *D-Lib Magazine*, 11(1), 10 pp., reference page 1
http://www.dlib.org/dlib/january05/foster/01foster.html

6. *Ibid*., reference page 3.

7. Whitehead, D., 2005, "Repositories: What is the Target? An Arrow Perspective", in *New Review of Information Networking*, 11(1), pp.123-134, reference page132.

8. Rogers, S.A., 2003, "Developing an Institutional Knowledge Bank at Ohio State University: From Concept to Action Plan", in *Portal: Libraries and the Academy*, 3(10), pp. 125-136, reference page 126. http://hdl.handle.net/1811/188

9. Branin, J.J., 2003, "Knowledge Management in Academic Libraries: Building the Knowledge Bank at the Ohio State University", 17 pp., reference page 11. http://hdl.handle.net/1811/187

10. Rogers, S.A., 2003, "Developing an Institutional Knowledge Bank at Ohio State University: From Concept to Action Plan", in *Portal: Libraries and the Academy*, 3(10), pp. 125-136, reference page 126.   http://hdl.handle.net/1811/188

11. *The Knowledge Bank FAQs: Can I withdraw material I submitted?* http://library.osu.edu/sites/kbinfo/faqs.html

12. *The Knowledge Bank FAQs: What is a Knowledge Bank community?* http://library.osu.edu/sites/kbinfo/faqs.html

13. *The Ohio State University Knowledge Bank Institutional Repository Policies, January 2005. 5. Format support*.   http://library.osu.edu/sites/kbinfo/policies.html

14. Branin, J.J., 2003, "Knowledge Management in Academic Libraries: Building the Knowledge Bank at the Ohio State University", 17 pp., reference page 15. http://hdl.handle.net/1811/187

15. *Ibid*.

16. Young, B., 2005, "Dr. Louis Hauiti Potaka of New Zealand: a Biographical Essay" http://hdl.handle.net/1811/5984

17. Swanepoel, M., 2005, "Digital Repositories: All Hype and No Substance?", in *New Review of Information Networking,* 11(1), pp. 13-25, reference page 24.

Information system for the Italian Polar research

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Abstract. Antarctic research involves interdisciplinary sciences, it is leaded in a multinational context and it is globally relevant for the international community. The involved scientific issues are increasingly large and complex, therefore it is of crucial importance to foster the cooperation among scientists and to guarantee them the access to metadata. The development of an Information System for the Italian Research in Antarctica (SIRIA) has started during 2003, aiming at collection, management and dissemination of the information on the scientific research projects, carried out in both Polar Regions and funded by the National Antarctic Research Program (PNRA) of Italy since its birth in 1985. SIRIA is a database of metadata, allowing anyone interested in polar sciences to get the basic information on the various research projects and results. The metadata currently used follow the structure of the standard introduced for geospatial data and elaborated by the European Committee for Standardization. This information system constitutes the National Antarctic Data Center (NADC) for Italy and belongs to the network established by the Joint Committee on Antarctic Data Management (JCADM) of the Scientific Committee on Antarctic Research/Council of Managers of National Antarctic Programs (SCAR/COMNAP) to promote the data management within the Antarctic scientific community according to the spirit of the Antarctic Treaty: "Scientific observations and results from Antarctica shall be exchanged and made freely available" (section III.1.c). This work describes the present status of the Italian Polar information system.

Introduction

The active participation of the Italian scientific community in the Antarctic research started in 1985 with the first expedition [1]. It is easy to imagine that during more than 20 years a great deal of data have been collected. Besides in the last years the development of new technologies and the improvement in the already well established systems considerably increased the amount of data obtained in every campaign. Many scientific disciplines are involved in Antarctic research, so the data may be of different kind (e.g. sample rocks by geologists, values of solar radiation recorded on files by physicists etc.). Besides the last years have been characterized by a fast development of the recording and storage devices, therefore some data may not be easily accessible, if they are recorded on out of date supports, depending on individual researcher sensitivity for data preservation. The overall picture is quite

complex, being differences in data type, cataloguing and accessibility from one discipline to another. In order to reduce the risk of losing data, especially the oldest one, it is fundamental to carefully catalogue them all. The data's potential is closely related to their access and retrieval possibility at time and space distance: this is the primary aim of SIRIA project and allows the information to be shared among those who are interested in polar sciences, thus promoting multidisciplinary researches. Metadata, defined as a structured set of information about data, are the most suitable tool for these purposes. Metadata gather all the basic information relative to "where", "when", "how" and "who" has collected the data, their precision, format, storage support and accessibility. The importance of metadata is even greater when dealing with a large number of datasets, since the user who examines metadata can find out more easily and effectively what interests him than if he directly handled the original data [2]. The modern information systems proved to be powerful tools for organizing and managing metadata. The SIRIA project has developed a metadata database for documenting and disseminating information on the polar scientific research projects funded by PNRA since 1985.

Siria Project in the international context

In 1997 SCAR [3] created the JACDM (Joint Committee on Antarctic Data Management) to manage and improve the Antarctic Data Directory System (ADDS) [4].

The ADDS consists of the Antarctic Master Directory (AMD) and a network of NADC.

The AMD is the international meta-database hosted by GCMD (Global Change Master Directory) that contains all the data information of all the countries involved in the Antarctic scientific community [5]. The NADCs are the national data centres which can collect the Antarctic information per every country. In this context the JCADM should:

  promote the data management

  provide a guidance to the AMD host

  induce to provide Antarctic data

  manage the data policies

  recruit the National Antarctic Data Centres (NADCs)

Every year the managers of all NADCs take part in a JCADM meeting where they can make a decision to improve the Antarctic Data management in every country.

In fact the Information System for the Italian Polar Research originally was born to be the Italian NADC as JCADM recommended.

Structure of Siria Project

The meta-database involves all the 11 research sectors constituting the PNRA: Biology and Medicine, Geodesy and Observatory, Geophysics, Geology, Glaciology, Physics and Chemistry of the Atmosphere, Sun-Earth relationships and Astrophysics, Oceanography and Marine Ecology, Chemical Contamination, Legal Sciences, Technology. Moreover the polar researchers are distributed on the whole national territory, belonging to different research Institutes or Universities. Therefore it's hard to collect the information. Here are some data to understand the complexity of the work:

- More than 1500 persons involved every year
- More than 240 scientific research projects per year
- Projects conducted in 14 of 21 Italian regions
- Almost all Italian research institutions involved
- About 40 Italian Universities occupied

The collection and management of such a large amount of metadata requires an efficient and complex structure (fig. 1).
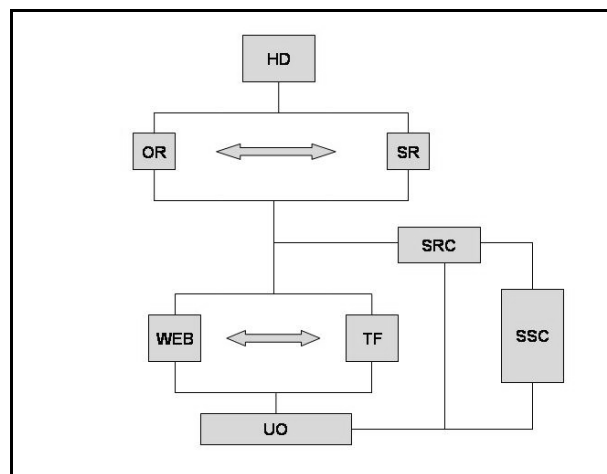
Fig. 1. *Schematic diagram of SIRIA organisation.*

On the top of the structure there is the PNRA Consortium as High Direction (HD). A Scientific Responsible (SR) of National Research Council (CNR) and an Operative Responsible (OR) of Italian National Agency for New Technologies (ENEA) are the leaders of the SIRIA project and together work with Scientific Referees Committee (SRC) representatives of the 11 sectors of PNRA. This validates scientifically the metadata and it authorizes the upload in the AMD server. Moreover each sector with the Scientific Steering Committee (SSC) coordinates the organization and the collection of its own metadata. The WEB has developed the information system and it is responsible for metadata submission and management. A Task Force (TF) is devoted to contact, awaken, and give technical support to the PNRA researchers (UO) about metadata interpretation and filling.

Metadata standard env 12657:1998

Each scientific discipline has its own language and it is often incomprehensible outside that particular environment; therefore in order to make the information associated with the metadata accessible by multidisciplinary users, it is fundamental to define a standard for metadata, a set of defined fields following a common language [6, 7]. Many standards have been developed for geographic datasets, for example the Content Standard for Digital Geospatial Metadata (CSDGM) [8] approved by the Federal Geographic Data Committee, the Directory Interchange Format (DIF) adopted by the AMD [9] and the ISO 19115 created by the International Organization for Standardization in 2003 [10]. The standard adopted by the SIRIA project is the ENV 12657, developed by the European Committee for Standardization, Technical Committee 287 (CEN/TC 287) [11, 12] and shows similarities with the more recent international standard ISO 19115. The ENV 12657 is subdivided into several sections, each of them being constituted by mandatory and conditional fields. The main sections are hereafter briefly described.

-Dataset Identification: this section gives information to clearly identify the dataset (title).
-Dataset Overview: this section gives information to present a comprehensive description of the dataset (abstract, purpose of production, references, related datasets).

-Dataset Quality Elements: this section includes information about the data quality and accuracy; also the data elaboration techniques are described (spatial and temporal accuracy, completeness, data source).

-Spatial Reference System: this section collects information about the spatial distribution of geographical objects (type of reference system).

-Extent: geographic datasets can be described by different extension types planar, vertical and temporal extension. This section gives information about these different extension types (geographic extent, temporal extent).

-Data Definition: in this section the main characteristics of the geographic object are described in order to facilitate the comparison between two different datasets (object type, attribute type).

-Classification: in this section some keywords can be listed (keywords).

-Administrative Metadata: this section gives information about the dataset storage, format and distribution (information on organization, point of contact, data distribution).

-Metadata Reference: this section gathers information about metadata (date of creation, update date).

-Metadata Language: in this section the language used to fill in the metadata fields is indicated.

Some fields do not apply to all the scientific disciplines, therefore the scientific referee for each sector established the set of metadata elements pertaining to his sector.

Metadata management

The Italian Polar data centre is managed by a Steering Committee, a Metadata Validation Group and a Task force and Help Desk.

The collected metadata are subject to two kinds of validation checks.

First the Task Force makes a check on the formalism of metadata standard.

Then the Metadata Validation Group, set up by a researcher for each Antarctic sector, has to validate the metadata of his own group with regard to scientific contents. That is necessary to avoid misleading and errors.

A very hard task is the collection of metadata. It's not very easy to get the meta-information from the researchers, in Italy as well as all over the world. As the

JCADM says, the use of the "sticks and carrots" policy is needed. It is important to show the advantages of metadata (carrots) to researchers. For instance:

Metadata provides international exposure for your research.

Metadata provides opportunities for collaboration

Metadata reduces the risk of duplicating data collection.

Writing metadata does not require "open access" to data

Especially the last point is awfully important: often the researchers mislead the metadata with the real data and they seldom provide information about their researches: it is fundamental to show this difference.

It is also very important to have some topics to use with those who do not collaborate (sticks). For example:

Data policy

Antarctic Treaty

For this goal a strong data policy is essential to respect of the point III.1.c of Antarctic Treaty.

The researchers involved in polar sciences are spread all over the national territory and for simplicity a Metadata Entry web tool has been realized [13]. The researchers, after registration and authentication, can enter a web interface that allows them to fill up and store the metadata directly in the database. Some fields of the metadata standard are not applicable to all the scientific disciplines, therefore for each PNRA sector a customized interface has been realized, taking into account the specific needs of the specific matter. While registering, the researcher specifies his sector and he is promptly directed to that specific interface (fig. 2). By each field, a customized help describes the characteristics of the field (maximum length, compulsoriness etc.) and explains its meaning. In addition a help desk can be contacted for any problem or information via e-mail.
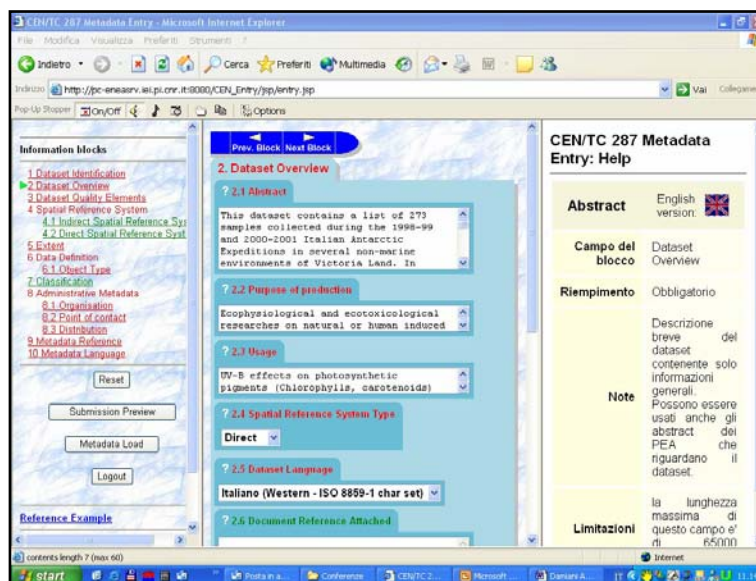
Fig. 2. *Metadata Entry: web interface for metadata collection.*

Metadata forms can be partially filled and then saved in a specific file choosing the "partial filling" modality. These files can be successively reloaded to be completed or corrected and then saved using the "final submit" modality. At this point the scientific referee for each sector validates the metadata for a definitive submission. To use SIRIA tools just a web browser is needed. All additional technical requirements may be downloaded following the links in the homepage of the Metadata Entry.

The Antarctic metadata are then extracted and submitted to the AMD. The AMD has adopted the standard DIF, which is in practice a subset of standard CEN, with the addition of only two fields for standard ISO compliance. An automated procedure has been developed to convert the validated metadata from standard CEN to standard DIF and send them the AMD.

The National Antarctic Data Centre portals gathered in the Antarctic Master Directory can be accessed at:

http://gcmd.nasa.gov/KeywordSearch/amd/nadc_portals.html.

Choosing the Italian portal (fig.3) it is possible to retrieve the metadata selecting more and more specific keywords to go into the topic.

Fig. 3. *The Italian portal on the Antarctic Master Directory.*

Some statistical analysis

The SIRIA project is trying to collect information about all the scientific projects funded by PNRA since its birth in 1985. Almost 1400 annual activities have been taken into account. 138 metadata have been collected at this moment. Figure 4 shows the collected metadata as a percentage of the total metadata expected for each sector.
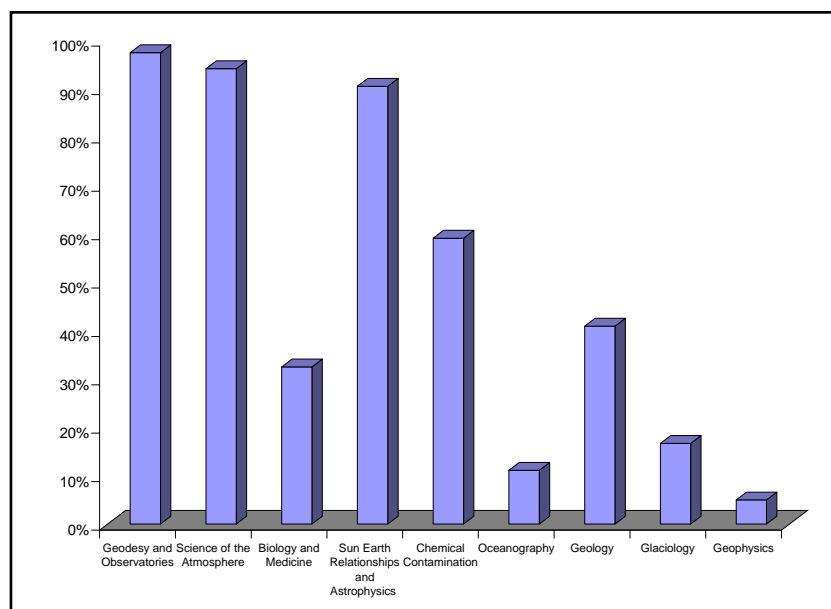

**Fig. 4**. *Percentage of metadata collected for each sector.*

It seems that concern towards metadata issue depends on scientific discipline: some sectors like physics and astrophysics have conferred almost the totality of metadata, whereas other sectors like biology have answered with difficulty to the request. The same situation happens also in the international context, suggesting a discipline based attitude.

The information given by metadata may also be useful to estimate the data state of preservation and accessibility, in fact there are fields in standard CEN asking for the dataset storage media and format. Figure 5 shows the type of data support as a percentage of the total. Almost half of datasets are stored on CD-rom, floppy disk or DVD, thus being easily retrievable. A little percentage of researchers (4%) shares his data on line, through the website of his own group or international databases. Unfortunately a significant percentage of metadata (16%) were not filled in this field, so no consideration can be inferred for the related datasets. It is worth noticing also that 15% data are available only as scientific publications, so the original data are no more retrievable. This happens especially for the sector of Biology and Medicine, due in part to the nature of that matter.
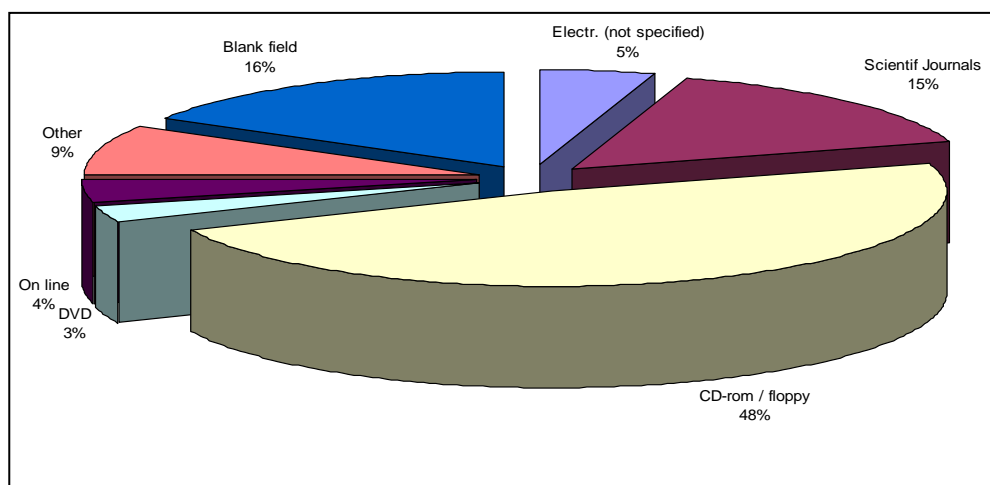
Fig. 5. *Dataset storage media as a percentage of the total.*

Figure 6 shows the data format as a percentage of the total. A quarter of collected metadata present a blank field, so no information can be determined for the related datasets. A significant percentage of datasets (22%) are stored in ASCII format, so are easily accessible, but it is important to encourage scientists to use spread formats, when possible, and keep up to date media to store their data, as basic condition for good data conservation.
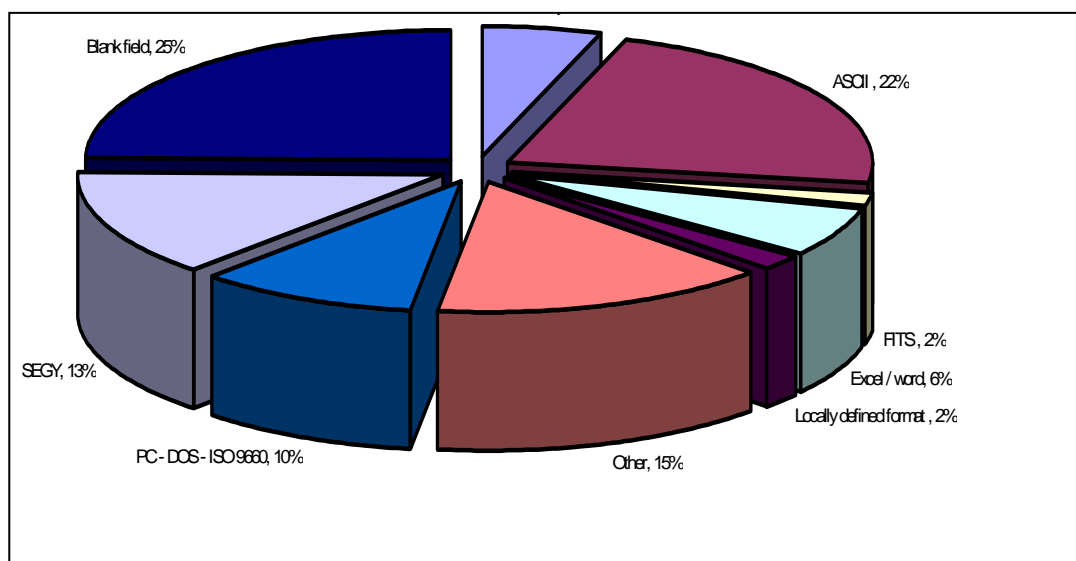
Fig. 6. *Dataset storage format as a percentage of the total.*

Future goals

The future goals of Italian Polar Data Center can be thus summarized:

First of all it is important to finish the collecting metadata and up-to-date the collected metadata.

Besides the SIRIA project has not yet dealt with the sectors Legal Sciences and Technology. These disciplines are different from the others since they do not manage data with a geographic reference, so the standard CEN is not easily applicable to them. In the near future we will examine also the possibility of applying to these sectors standards that were not created to describe geographic datasets.

Other significant future goal is the change of the metadata standard endorsed by the Italian Polar Data Information System from CEN to ISO

To make the Italian Polar Data Centre a large portal where also Arctic data, NODC (National Oceanographic Data Centre), GIS, Antarctic Museum data, and other data bases will be inserted, with the possibility to give some services to researchers so as to encourage data providing.

Acknowledgments

References

1. http://www.pnra.it

2. Cirocchi, G.; Gatta, S.; Panciera, L. and Seta, E., 2000, "Metadati, informazione di qualità e conservazione delle risorse digitali", in *Rivista italiana di biblioteconomia e scienze dell'informazione*, 40, pp. 309-327.

3. http://www.scar.org

4. http://www.jcadm.scar.org/default.htm

5. http://gcmd.gsfc.nasa.gov/KeywordSearch/Home.do?Portal=amd&MetadataType=0

6. De Robbio, A., 2001, "Metadati per la comunicazione scientifica", in *Seminario ICCU "I metadati: seminario nazionale"*, Roma, 3 aprile 2001.

7. Timpf, S.; Raubal, M. and Kuhn, W., 1996, "Experiences with Metadata", in *7th Int. Symposium on Spatial data Handling, SDH'96, Delft, the Netherlands, 12-16 August 1996*, IGU, pp. 12B.31-12B.43

8. http://www.fgdc.gov/metadata/csdgm/

9. http://gcmd.nasa.gov/User/difguide/

10. http://www.iso.org/

11. http://www.provincia.tn.it/urbanistica/siu/metaasp/main.htm

12. http://www.rete.toscana.it/sett/sit

13. http://nadc.isti.cnr.it:8080/CEN_Entry/index.jsp

The Role of the Academic Press: The *Solstice Series*. Community-Based Research Presentation and Dissemination. A Case Study

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Abstract. In this presentation, I provide a brief overview of the mandates and functions of university-based presses, and describe more specifically those of the CCI Press as a small-market academic publishing concern. The presentation outlines particular challenges in scholarly publishing, and describes approaches taken by CCI Press to address these challenges. This first part of the presentation provides a context to profile the thinking behind a new publication initiative, the *Solstice Series*.

The University Press

University Presses serve the interests of scholarship by encouraging the dissemination of the fruits of research and scholarship (Association of Canadian University Presses, ACUP). While commercial publishers focus on making money by publishing for popular audiences, the university's press' mission is to publish work of scholarly intellectual or creative merit, often for a small audience of specialists (Armato et al. 2003).

The question of the role of university presses has been addressed in various for a throughout the years; one of the most recent dialogues arose from the May 2003 meeting of the American Council of Learned Societies and a panel discussion of issues in scholarly publishing. A presentation by C.N. Davison 'Crises and Opportunities: The Future(s) of Scholarly Publishing' reviewed the growing challenges for university publishers (most particularly the funding challenges). The presentations and the dialogue that ensued, led the Association of American University Presses (AAUP) to challenge its membership to answer the question "But what are University presses good at?" Appendix A (p. 12) provides a list of 24 contributions of academic presses developed by Armato et al. 2003.

Of the points made, some are particularly relevant to this presentation: "…6) University Presses give voice to minority cultural and perspectives through pioneering publication programs in ethnic, racial, and sexual studies; 7) University Presses bring the work of overseas scholars and writers to English-language studies

by commissioning and publishing works in translation; 10) University Presses sponsor work in specialized and emerging areas of scholarship that do not have the broad levels of readership needed to attract commercial publishers; and, 11) University presses, through the peer review process, test the validity and soundness of scholarship and thus maintain high standards for academic publication…" (Armato et al. 2003).

Davis (2003) cited various challenges to scholarly publishing -- from competition for increasingly narrower markets, to reduced library acquisitions budgets, large discounting of major booksellers, increased operating and production costs, shrinking subsidies, increased marketing and distributions costs, the increased cost of maintaining infrastructure and advanced technologies, and new publishing formats (e.g., electronic books), etc. The combination of these factors show that while the cost of publishing monographs continue to rise, the potential for recovering the cost through sales has diminished. Declining markets (a result of reduced buying power and more tightly targeted markets) make for shorter print runs (with few exceptions), pushing up the cost of the individual book, and further challenging the cost-recovery potential. Alternative publication options, such as electronic publishing, print-on-demand options, and other dissemination types and formats do not bring a great reduction in the production costs; in fact, they usually incur different types of costs related to infrastructure, training, and personnel. They do, however, improve distribution and access, which is an important objective of a university press. As Davison concluded:

> The bottom line is that scholarly publishing isn't financially feasible as a business model – never was, never was intended to be, and should not be. If scholarship paid, we wouldn't need university presses (2003:2).

And further on 'and should not be',

> At present, university press publishing provides the most careful, impartial and efficient system of brokering, networking, evaluating, publishing, and distributing serious scholarship. It does this exceptionally well when its acquisition programs are not skewed by

economic pressures. The more serious, rigorous, and specialized our scholarship, the more likely that it will lose money" (2003:3)

The costs of publishing will not decrease, in fact, they are likely to continue to rise; any attempt to reduce the costs of scholarly publishing or increase revenue from sale of scholarly books to cover those costs is doomed to failure, or worse, doomed to impact the quality of scholarship. Davison argues,

> If University presses are pressured to bring in more revenue (making cost a major goal in book acquisition), then it is difficulty to maintain quality-based standards in publishing (2003:3).

To maintain a scholarly publishing program, then, one has to find innovative means of raising funds. Suggestions by the AAUP include contributions from stakeholder communities (e.g., dues paid by professionals, page charges, etc); publishing subsidies from granting agencies and national programs; start-up packages for junior scholars; tax write-offs in lieu of honoraria or royalties; assistance with promotion and branding; etc.

> Scholarly publishing needs substantial subsidies and new ideas about where those infusions of capital might come from and how costs might be dispersed more equitably among those who benefit most from scholarly publishing (2003:4).

One way for a specialized publisher to offset production costs and increase revenue potential is by cost-sharing through co-publication or consortia arrangements. The advantages of such collaborations for all parties are several: first, the co-publication adds a new title to everyone's catalogue (university presses are evaluated on the number and quantity of their titles), distribution networks are expanded, and the cost of producing the title is substantially reduced because the print run is increased to accommodate distribution networks (contributing again to lowering the production cost of the individual volume), etc.

The Canadian Circumpolar Institute (CCI)

The Canadian Circumpolar Institute is the focal point for northern research and scholarly activities at the University of Alberta, serving Northerners, students, academics, government, industry, and the general public. **The mandate is:**

- to promote and support research on the Canadian and Circumpolar North, especially that involving interdisciplinary and multidisciplinary programs;

- to promote and support the Canadian Circumpolar Library as a distinctive northern research collection of international importance;

- to foster communication among northern-oriented researchers;

- to encourage the involvement of Northerners from all circumpolar nations in the activities of the Institute; and,

- to disseminate information about the Circumpolar North

While CCI supports investigator-driven research, programs operating under the aegis of the Institute itself are generally community-based and community-driven initiatives. One of the guiding principles that underpin the strategy is the support of programs that benefit communities, where benefit is judged by the stakeholders – that is, the applicability of the research and its results to issues of importance to them. Ongoing and emerging themes in northern research relate to issues in sustainable development, cultural resilience and adaptations, environmental and socio-economic impacts of industrial development, wildlife management, etc. Although a proactive role can be taken in approaching communities, cultivating partnerships, and creating new networks for information and communication, the most successful programs have been borne in answer to the expressed needs of the communities (Freeman 1989).

For these research programs, adaptive management (that provides for the recognition and inclusion of local/traditional and other knowledge systems) is the primary methodological approach. Northern involvement is essential to the process, and working partnerships are established with and within communities, with the aim of building local capacity to address issues of relevance. Programs that respond to these principles have highlighted an awareness of the local knowledge that communities can bring to bear on these issues. But the issue arises regarding how to legitimize this knowledge in the standard literature. As Sandy Campbell mentioned in an earlier presentation, it is difficult to assess the validity of traditional knowledge

and some oral history contributions because the contributions do not figure, necessarily, in the conventional formats or the regularized literature.

The Northern Community Communications Program

Recognizing the need to address this lacunae, Dr. Michael Evans and Dr. Christopher Fletcher developed the 'Northern Communities Communications Program.' In collaboration with research teams and community partners, this program aims to survey key issues in knowledge translation/knowledge transfer for northern, rural, and aboriginal communities. The research uses case studies to analyze frameworks in which learning takes place, and looks at how the experiences can be integrated into a 'best practices' guidebook for both research program development and then the dissemination of that research to new audiences, and especially, also back to the community partners. The research will result in the publication and dissemination of general guidebooks, and specific products of individual case studies. The latter are results in and of themselves for the communities and researchers involved, but they will also serve as resources for other communities and researchers for future community-based programs. Program outputs will therefore include:

1) a best-practices manual outlining protocols and techniques for community input into the communication of research results that will include an outline of community-researcher partnerships to facilitate closer and more productive research relationships and information transfer;

2) An ethics handbook which will include discussions of the ethics of research practice, control of research results and knowledge translation, the disposition and protection of research materials (e.g., archiving of original research data), and control and ownership of community-based publications;

3) Generic templates (placed in the public domain) for: a) relationships between teams of researchers/institutions and community representatives/institutions; b) Research participant's individual informed consent (and the right to withdraw) c) Research

participants' individual informed consent to the disposition, protection, and the conditions of subsequent use of original research data (e.g., photos, interview tapes, survey results etc. – please note that in many cases research participants in some types of research, like Oral History, actively wish to be identified and demand individual recognition, in other cases anonymity is required); d) Institutional relationships between communities, research teams, and the institutions housing original research results (e.g. libraries and archives); and e) Publication relationships including the assignment of copyright, distribution arrangements, the use of new technologies to make results available, and the secondary uses of publications (e.g. as curriculum resources).

4) The legitimization/regularization (e.g. the application of the ISBN system) and protection of currently "grey" material.

5) A critical and applied program of new and innovative forms of research presentation and dissemination through new print and alternative media formats.

The CCI Press

The fourth part of CCI's mandate is the 'dissemination of information about the circumpolar north'. The main ways the CCI fulfills this mandate is through the organization of conferences, workshops, seminars; the publication of newsletters, the website, and the circumpolar café, and a dedicated publications program.

The CCI Press is an extension program of the Institute's scholarly activities. For all intents and purposes, it operates as any university press, emphasizing peer-reviewed manuscript publishing, and striving for quality and uniformity in the series produced. The operation of the press is subsidized with minimal program funding, but most of activity is supported by grants, contracts, and a reinvestment of revenues generated from the program. Fund-raising activities are series- or title-specific.

The Press currently supports four main publications series. The *Circumpolar Research Series* accepts book-length monographs focusing on scholarly research. The

Occasional Publications Series is a forum for conference proceedings, collections of papers, and compilations. The *Northern Reference Series* is a vehicle for bibliographies, literature reviews, annotated bibliographies, or review papers on topical issues (the Canadian Circumpolar Library is a major contributor to the reference series), and the new *Solstice Series* focuses on publishing the results of community-based programs. In each of the major formats are contributions that deal with any of several thematic groups: Circumpolar, Aboriginal, and First Nations Peoples; Community Issues, Northern Environments; Northern History; Traditional Knowledge; Sustainable Development; Wildlife Management; Northern Hunter-Gatherers, and Studies in Whaling.

Most works result from sponsored research; however, unsolicited manuscripts and co-publications are considered. Provision may be made in all cases for the publication of English translation of works in other circumpolar languages, especially where the work is supported by grants from the country of origin.

Admitting that university presses are not a good business model, how does the CCI Press meet its mandate? As mentioned earlier, the Institute provides base funding through its program budget, personnel time, and indirect costs. The academic editorial committee is a volunteer board; editorial assistance, is contracted. All other technical aspects of production, distribution, and marketing, are handled in-house by institute staff on a part-time (often voluntary) basis, or contracted out, when funding allows.

Obviously, funding is an issue. The real costs of publishing are far greater than the budget allocated to the program. Fund raising initiatives for each volume focus on providing for title-specific expenses such as small honoraria for reviewers, translations costs, copyright fees, printing costs, travel and event expenses for author book launches, etc. Some in-kind support is sought for marketing, advertising, and distribution through our networks. The Press does manage to build up a small amount of revenue from the sale of publications, which keeps us in a position to accept a title based on merit, and not always on the availability of funds to publish it.

A most important trend in academic publishing, especially for small-market areas such as that served by CCI Press, is co-publication or collaborative approaches to publishing. The real impact these arrangements have (besides providing a wiser base for peer review and other sources of financial support) is on the print run. For a small publisher, this is a most important variable – a larger print run means that a

volume that might cost $50 per copy at a print run of 250 could be brought down to $28 per copy at a print run of 500.

The positive news for academic publishers is that more and more often, funding agencies and research partners are accepting a certain willingness to provide support for the dissemination of knowledge resulting from research; that is, a portion of a research grant or foundation funding can be used toward the publication of findings – whether for page charges, direct support of printing costs, etc. Some organizations are willing to pre-purchase a certain number of copies for their membership or interest group; others contribute to the project by covering specific cots *e.g., translation of summaries into indigenous languages, etc.). So, we find funding in several ways, and usually manage to bring together several contributions to cover a major part of production costs. In our case, community partners are also prepared, when possible, to provide direct funding to the projects and/or assist in fundraising through their local and regional networks. These developments represent a tremendous boost to the academic endeavour.

The Solstice Series

In 2003, CCI Press was approached by the principal investigators of the Northern Communities Communications Project, with a proposal to establish a series that would fill a need for the transfer of knowledge resulting from community-based research to the communities the research was meant to serve. Furthermore, the series would also solicit contributions from communities – that is, provide a forum for community voice on issues of importance to them, and for which they held a great deal of knowledge.

Under the research guidance of project investigators Mike Evans and Chris Fletcher, the Academic Editorial Committee of the CCI Press established the dedicated *Solstice Series*, providing a vehicle for disseminating information on the experiences of both academics and communities in the research, and the applicability of the results of that research.

Premise for the Series

Community based, community-oriented, and community service research are among the most important areas of work in the contemporary academy. Participatory approaches to research agenda development and practice have become commonplace, and today researchers from all disciplines work actively to include

community stakeholders whenever possible. But while the products of research still include scholarly papers, research reports, and policy recommendations directed towards specialist audiences, increasingly important audiences for research results are community members themselves. The form in which research results are presented to communities has not received the critical attention that research practice has; the consequence is that the development of dissemination tools lags behind. Consequently, knowledge translation has emerged as a growing field of interdisciplinary cooperation, community-university interaction, and academic practice.

Additionally, funding agencies have increasingly called for wider broadcasts of research results, but again professional audiences inside the academy, and indigenous and government expert audiences outside, are the main targets. Those publications intended for consumption by wider audiences tend to be ad hoc documents with limited circulation and sometimes brief availability even within the communities for whom they are developed. This series addresses the need for a systematic evaluation and intervention in research dissemination efforts and the factors that influence knowledge translation in northern, rural, and Aboriginal communities. (Evans and Fletcher 2003)

Publications in the *Solstice Series* are the result of original research, and while scholarly standards and sensibilities remain important, the most important framework for evaluation of the publications is from the communities themselves. The advantage of the series are: a tighter interface between communities, researchers, and the other audiences; the legitimization or regularization of currently "grey" material; a critical and applied program exploring new and innovative forms of research presentation and dissemination.

This series provides a vehicle for the publication of indigenous or vernacular knowledge in a way that is appropriate, relevant, and accessible to primary stakeholders, and that will inform science in other 'ways of knowing.' Producing research results in a format that suits local interests and needs must take into account the specific contexts of the communities in question. Language issues play into these as do local development priorities and engagements with the research process. The *Solstice Series* is more than a simplification of academic research; it involves a dialogue with communities and rigorous effort to shape the publications to maximize local accessibility and pertinence.

Where appropriate and/or relevant, the 'raw data' – transcripts from interviews, field notes, and excerpts of the collected data are included, either in the main part of the text, or referenced therein and reproduced as appendices, or both.

Furthermore, in all cases, copyright arrangements are negotiated with the community partner as part of the publishing contact. As a general rule, the CCI Press, the principal investigator, and the community hold joint copyright and all subsidiary rights to the publication. This assures joint ownership and control over the information and knowledge contained therein, for both protection of the intellectual property rights and acknowledgement of the contribution of each of the stakeholders to the project and publication.

Partnership-based

Current research relationships are incorporated through the research-specific case studies. CCI Press administers, coordinates the series, providing editorial expertise, infrastructure, and an extensive communications network among northern communities in Alberta, Canada, and beyond. Research partners at the University of Alberta to date include: the *Department of Anthropology,* the *School of Native Studies (SNS),* and t*he Alberta ACADRE (Aboriginal Capacity and Development Research Environments) Network.* Community partnerships are established through the research programs and project-specific case studies. All parties are equal partners and involved in every stage of the publication process – from addressing considerations brought to light through from the peer review process, to the design and layout of the publication, through to the of approval of cover design and marketing strategies.

Funding

Funding has been sought and obtained for the research program for which the series was developed. Additionally, each title in the series has its own and unique funding relationship; a universal budget does not exist, but certain principles apply: an investment from the academic lead or team, an investment from the community, an investment from the publisher. The 'investment' can be financial, in-kind, or other cost sharing arrangements (e.g., the community may pre-purchase a certain number of books for use in the schools, or they may contribute transcription or translation services to a project, etc.). The first four volumes in the series provide a

good sampling of the case studies. Principal researchers, community partners, and funding attached to each project are given to illustrate the approach.

Published Case Studies

The Solstice Series uses the case studies method to produce research communication tools that are the result of original research; are presented in a form and format which is widely accessible in terms of language and presentation; have a form and format that reflect local consultation on the final product; contain information of interest and importance to the community involved and other communities in similar circumstances; are designed and laid-out in a manner that is relevant and accessible to community; have production qualities that ensure community pride in the product, long-term preservation, long term accessibility, and wide distribution.

Case Study No. 1: *People of the Robin*
Community Partner, Kitsukallum Education Authority
Researcher, James McDonald PI
Funds available for publication - $8,000

By 1999, the First Nations Centre of the Coast Mountain School District 82 (Terrace) was developing teacher resource materials to support the teaching of First Nations subjects to children in the public schools of Terrace, British Columbia. The Centre had been mandated by the District and its Aboriginal advisory committee to provide culturally appropriate and sensitive curriculum materials about the Aboriginal people in the school district but this was not an easy task because there were very few resources on which to draw. One very significant need was for materials concerning the people of Kitsumkalum, the First Nations community indigenous to the territory serviced covered by the District. Knowing James McDonald had many years of experience conducting anthropological studies with the Kitsumkalum Band and other northern First Nations, the Centre approached him to prepare a resource book on the Kitsumkalum. The result was a community based project and the development of the book.

Solstice Series No. 1 *People of the Robin: The Tsimshian of Kitsumkalum*

James Andrew McDonald (with the Kitsumkalum Education Committee)

This book emphasizes the connection between Kitsumkalum's Tsimshian heritage and the territory which nurtures that heritage. The connection between the culture and the land is the central principle that has sustained the Kitsumkalum people since time immemorial. The book provides an understanding of this important aspect of Tsimshian life, and a heritage that is an integral part of the national cultural fabric.

ISBN 1-896445-28-4 (2003) sc; 6" x 9"; xxii + 162p.' 31 B&W photos, maps& figs $25

Co-published with the Kitsumkalum Education Committee and the Alberta ACADRE Network

Case Study No. 2. The Island Cache Recovery Project
Community Partner, Prince George Metis Elders Society
Researchers, Mike Evans P.I, Lisa Krebs
Funds available for publication - $5,000

The Island Cache was a peri-urban/rural aboriginal community located outside Prince George BC until people were relocated in the early 1970s. Extensive interviews and documentary research was conducted with people from the community, and the publication, emphasizing community input and visual representation. The project incorporated students, elders, and community representatives from a number of different ethnic communities and provided a good case study of community-based research in a heterogeneous social context.

Solstice Series No. 2 *A Brief History, of the Short Life, of the Island Cache*
Mike Evans and Lisa Krebs (with the Prince George Metis Elders' Society)

Located at the confluence of the Fraser and Nechako Rivers is a place called the Island Cache, where a community of settlers took up residence in the1920s. The Cache was a very different place than

the city of Prince George on its border, but in 1970, it was incorporated, and a period of escalating political turmoil began. This is a brief history of the Island Cache. It is about rivers and the lands around them; it is about floods of water and of power; it is about dykes, and the ground they are built on; and it is about the communities that build dykes and why they fail.

ISBN 1-896445-30-6 (2004) sc; 6" x 9"; ii + 152p., 120 B&W photos, maps, figs. $25

Co-published with the Prince George Metis Elders' Society & Alberta ACADRE Network

Case Study No. 3: Inuit Knowledge of Polar Bears
Community Partner, Gjoa Haven Hunters and Trappers Organization
Researchers, Darren Keith, Jerry Arqviq, Louie Kamookak, Jackie Ameralik
CCI Press advisor: Milton Freeman
Funds available for publication $6,000.

The Hunters and Trappers Organization of Gjoa Haven, Taloyoak, Kugaaruk and Cambridge Bay share concerns over the future viability of the polar bear population in the McClintock Channel Polar Bear Management Area and about the future integrity of the related IQ. In 2003, the project leader, Darren Keith, approached the CCI Press with the possibility of publishing the results of a study to record IQ related to polar bears in the region, gathered through extensive field studies and interviews. The objective of this project was to record and communicate, as accurately as possible, the IQ of Gjoa Haven residents related to polar bears in the area. The lessons learned from this study will enable application in future programs in the communities of Taloyoak, Kugaaruk, and Cambridge Bay, and as a model for studies of a similar nature elsewhere.

Solstice Series No.3: *Inuit Knowledge of Polar Bears: A Project of the Gjoa Haven HTO*
Darren Keith, with Jerry Arqviq, Louie Kamookak, Jackie Ameralik & Gjoa Haven HTO

Inuit have been hunting polar bears for centuries and have built up a rich knowledge about their habitat and behaviour. This knowledge is expressed in the oral history, Inuktitut vocabulary and

cultural traditions—in *Inuit Qaujimaningit,* or IQ. Concerned about the future viability of the polar bear population in the McClintock Channel Management Area and about the future integrity of the related IQ, the HTOs of Gjoa Haven, Taloyoak, Kugaaruk and Cambridge Bay set out to record and communicate the IQ of Gjoa Haven residents, as a model for studies of a similar nature elsewhere.

ISBN 1-896445-32-2 (2004) sc; 9" x 6"; viii + 242p.; 22 B&W photos, maps, illus. Inuktitut summary $25

Co-published with the Gjoa Haven HTO and the World Wildlife Fund (Canada)

Community Partner, Ft McKay Metis Local
Researchers, Craig Campbell, Mike Evans
Funds available for publication - $5,500

Present day Fort McKay is located on the lower Athabasca River; in the fur trade era this region was part of the Athabasca District. The region is huge, with a complicated cultural and economic history. Beginning with the fur trade, new economic and social forces caused a radical increase in the movement and mixing of people and ideas. Things in the Athabasca area generally, and in Fort McKay specifically, got even more complicated after the heyday of the fur trade era. New forms of industry and commerce brought rapid changes. Oil, fishing, timbering, and mining, in addition to more traditional hunting and trapping, all form part of the contemporary economy. Older ways of living continue alongside the modern industrial economy. Sometimes industry and living on the land conflict, sometimes people see new wage earning opportunities as the way of the future. The Metis Elders of Fort McKay, concerned about preserving the history of their people in this region, approached CCI to help with research and publication of the oral history of the region. This project used interview techniques involving elders and youth from the community. The researchers and community were interested in emphasizing visual representations to communicate research results, and in developing multi-layered forms of research communication that can provide the kind and quantity of information required by different constituents in the community.

Solstice No. 4 *Stories and Pictures from the Fort McKay Metis Elders*
Craig Campbell, Alice Boucher, Mike Evans, Emma Faichney, Howard LaCorde and Zachary Powder

This book is a collection of words and pictures from some Metis elders in northern Alberta, who grew up on the land and watched as the first school was built, roads were plowed through the forest from McMurray and the Tar Sands industry grew from an experimental factory in the woods to one of the world's largest industrial oil projects. Over the years, the Metis elders have told their own histories to their children and grandchildren; some are now presented in this volume, so that their words can document an important part of the history of the Athabasca basin.

Current contributions to the series are the case-study reports, but the overall objective of the series is also to address factors that influence knowledge access and translation in communities, and provides a model for documenting and publishing accounts of research efforts, to facilitate participation of all stakeholders in the knowledge-based economy. The experiences in publishing the case studies are being used to: 1) identify and characterize the challenges inherent to knowledge translation in cross-cultural, northern and urban-rural contexts; 2) describe current approaches and "best practices" in knowledge translation; 3) identify interdisciplinary efforts that link basic research in social science, health and environment with communications strategies that are relevant and contributory to the people most directly concerned; 4) generate recommendations regarding effective knowledge translation practices, techniques, and protocols (including ethical considerations around the protection of local knowledge) in rural and northern communities; 5) develop a series of case studies generated from ongoing research relationships which will inform the objectives above and result in concrete examples of the effective communication of research' 6) contribute to theoretical development in knowledge translation; and, 7) develop capacity within the university to be a leader in knowledge translation.

With this in mind, we can consider case studies in progress:

The Qu'Appelle Valley Metis Oral History Project
Community Partner, Metis Nation of Saskatchewan Eastern Region III

This project included interviews with a number of Metis elders who lived in the valley in road allowance communities in the 1930s and 1940s. These interviews covered a wide range of topics, including community history and land use. Community members and elders would like to see these valuable narratives included in a book to be read by future generations. This is a good case study for examining the overlap between community and academic goals, and the advantages of having researchers from communities involved in research practice.

Communicating research on environmental change in Nunavut.
Community Partner: Sanikiluaq Environmental Committee

The Canadian Circumpolar Institute has had preliminary discussions with the community, regarding the dissemination of local perceptions and knowledge of environmental changes in Hudson Bay through film and multi-media digital products.

A meta-analysis of the dissemination program in the Ashkui Project
Community Partner: Ashkui Project Stakeholders

Using Innu concepts of landscape, scientists, social scientists and Innu Elders have worked to describe the landscape from their various perspectives. This project used innovative dissemination strategies, including the development of multi-media (CD-ROM) educational materials, for the research results that focused on school-aged youth in Sheshatshiu, Labrador. This case study will examine that process in detail with the objective of identifying and describing best practices for maximizing the benefits of research to youth.

Traditional medicine, Dene Narratives, ethnobotany and land use mapping

Community partner: Deline Uranium Team, Deline Knowledge Centre Working Group, Aurora College). This project focuses on the relationships between Dene oral history, land use, and traditional medicine practices. It investigates senses of power, place and practice to understand the Dene experience of health, sickness and healing. The project design calls for an integration of Dene oral tradition into new media formats. The community objectives are explicitly preservationist and educational focused on social interactions and inter generational knowledge sharing; processes which have been ruptured in the contemporary context. Community workshops have clearly defined knowledge translation from elders to youth as a key research and practice issue. This project addresses those by conducting field research using GIS and digital video with the objective of capturing and preserving traditional medicine practices in new media and interactive digital formats. A project goal is to develop online content about traditional medicine for the entire Dene homeland including Northern Alberta.

Learning About the land and sea (proposal received July 2005)

The *Learning About Land and Sea Workshop* was held in Gjoa Haven, Nunavut March 15-17, 2000, and focused on the land and sea surrounding King William Island. Workshop facilitators included elders, researchers, and interpreters. Workshop information is available in audio visual; an English translation of the video script has been produced with funding from CCI. The community would like the workshop materials used at schools, as a learning experience available in Inuktitut as well as English.

Conclusion

The CCI Press faces the same challenges as all university-based publishing efforts: relevance, productivity, funding, etc. However, recent approaches are demonstrating that scholarly publishing can have a future, if not a relatively bright one. It is unlikely that university presses will ever be touted as exemplary

businesses, but as stated earlier, they were never meant to be (Davison 2003). There is a real potential for academic presses to be relatively self-supporting endeavours, if the effort is made to find innovative ways of attracting additional funding for production of traditional print, coupled with expanding dissemination networks. The key to success is an investment by all stakeholders, including academics and other professionals, institutions, research granting agencies, and for the Solstice Series of CCI Press, by the communities themselves.

The popularity enjoyed by the *Solstice Series*, as evidenced by the growing list of published works, and the number of case studies in preparation, attests to the timeliness of its introduction, and the important place of community-based research and contributions of those communities and other ways to knowing to the formal academic literature. This particular series opens research dissemination to an entirely new, but critical audience, and is thus fulfilling a number of mandated functions of the Canadian Circumpolar Institute and by extension, that of the CCI Press.

References

Armato, D.; Schott, S. and Cohn, S., 2003, "The Value of University Press", Association of American University Presses published at the AAUIP website http://aaupnet.org

Davis, C.N., 2003, "Crises and Opportunities: The Future(s) of Scholarly Publishing", Transcript of a presentation in a panel discussion of issues in scholarly publishing, American Council of Learned Societies meeting, 10 May 2003, Philadelphia, PA - posted at the AAUIP website http://aaupnet.org

Evans, M. and Fletcher, C., 2003, "Proposal to the CCI Press Academic Editorial Committee for the Establishment of a *Northern Community Communications Series*", University of Alberta, Edmonton, AB.

Freeman, M. and the Environmental Committee of Sanikiluaq, 1989, "Adaptive Management and Renewable Resource Development: The Belcher Island Reindeer Project", report of a Community-based research project, unpublished research report.
Display copies of all publications in the Solstice Series circulated at the conference.

Appendix A: THE VALUE OF UNIVERSITY PRESSES

But what are University presses good at? Acting in response to a charge from AAUP President Willis Regis, a team composed of Douglas Armato, Steve Cohn, and Susan Schott has done just that.

University Presses and Society

1) University Presses make available to the broader public the full range and value of research generated by university faculty

2) University Press books and journals present the basic research and analysis that is drawn upon by policymakers, opinion, leaders, and authors of works for the general public

3) University Presses contribute to the variety and diversity of cultural expression at a time of global mergers and consolidation in the media industry

4) University Presses make common cause with Libraries and other cultural institutions to promote engagement with ideas and sustain a literate culture

University Presses help to preserve the distinctiveness of local cultures through publication of works on the states and regions where they are based.

6) University Presses give voice to minority cultural and perspectives through pioneering publication programs in ethnic, racial, and sexual studies

7) University Presses bring the work of overseas scholars and writers to English-language studies by commissioning and publishing works in translation

8) University Presses rediscover and maintain the availability of works important to scholarship and culture through reprint programs

9) University Presses encourage cultural expression by publishing works of fiction, poetry and creating non-fiction and books on contemporary art and photography

University Presses and Scholarship

10) University Presses sponsor work in specialized and emerging areas of scholarship that do not have the broad levels of readership needed to attract commercial publishers,

11) University presses, through the peer review process, test the validity and soundness of scholarship and thus maintain high standards for academic publication

12) University Presses add vale to scholarly work through rigorous editorial development, professional copyediting and design, and worldwide dissemination

13) University Presses are based at a wide array of educational institutions and thus promote a diversity of scholarly perspectives

14) University Presses encourage and refine the work of younger scholars through publication of the first books that establish credentials and develop authorial experience.

15) University Presses make the works of English-language scholars available worldwide by licensing translations to publishers in pother languages

16) University Presses commit resources to long-term scholarly editions and multi-volume research projects, assuring publicat6ion for works with completion dates far in the future.

17) University Presses add to the rightness of undergraduate and graduate education by publishing most of the non-textbook and supplementary material used by instructors

18) University Presses collaborate with learned societies, scholarly associations, and librarians, to explore how new technologies can benefit and advance scholarship.

University Press in the University Community

19) University Presses extend the reach and influence of their parent institutions, making evident their commitment to knowledge and ideas

20) University Presses demonstrate their parent institutions' support of research in areas such as the humanities and social sciences that rarely receive substantial federal or corporate funding

21) University Presses help connect the university to the surrounding community by publishing books of local interest and hosting events for local authors

22) University Presses generate favourable publicity for their parent institutions through news coverage and book reviews, awards won, and exhibits at scholarly conferences

23) University Press staff act as local experts for faculty and administrators, providing guidance on intellectual property, scholarly communication, and the publishing process

24) University Presses provide advice and opportunities for students interested in pursuing careers in publication.

Armato, D., S. Scott, and S. Cohen. 2003. Published at the Association of American University Press (AUPP)'s website at http://aaup

From a collective catalogue (ACNP) to the Network Inter-Library Document Exchange (NILDE): a way to share resources and to improve user services

Michela Cecconi, *Andrea Marchitelli* and *Silvia Sarti*, *Biblionova on behalf of the Consortium for the Italian Antarctic Programme, Rome, Italy*

Abstract. This paper is about two important Italian web-resources for document delivery: ACNP, the collective serials Italian catalogue, and NILDE, a document transmission network based on Internet technologies and standardized operations.

Our library is part of ACNP since 2002, which has allowed us to better exploit our resources and to meet successfully our users' requests. Results have been progressively improving from the end of 2003, when we joined the NILDE project. Participation in this network has supported the working flow of our activities in the entire document delivery process – from the request to the delivery of a document – considerably elevating the Document Delivery Service (DDS) management performance.

To show you how we can obtain such operative results, we will describe both the structure of the collective serials Italian catalogue (ACNP) and the architecture of the e-mail/web gateway server used for NILDE.

ACNP, developed by Italian National Research Council (CNR) and by the University of Bologna, has a Web OPAC where users can retrieve serials from the Italian libraries participating to the project – presently rated to be 2510. Even though ACNP assures by itself an efficient exchange of documents, NILDE permits further costs reduction, time shortening and simplification of the documents transmission procedure.

NILDE is a web-based Document Delivery Service that has been developed by the Research Area of Bologna Central Library, in order to experiment the use and to suggest a model of DDS promoting inter-library mutual exchange and cooperation procedure. The high performance of the Network is possible especially because NILDE is accessible through ACNP, allowing the librarian to check which libraries participate to the Network among those that have the document he needs. Once checked the datum, the librarian can find out which library offers the best conditions and finalize his request accordingly, simply clicking on the link to NILDE.

Document Delivery Service (DDS) plays an important role in research and university libraries. The main Internet resources for Document Delivery (DD) in Italy are ACNP, the national collective catalogue of periodicals, and the OPAC of the Sistema Bibliotecario Nazionale (SBN), the collective monographic material Italian catalogue.

ACNP

ACNP is the biggest Italian specialized collective catalogue. It contains 129.209 journal's records, 709.237 recorded collections located in 2.471 libraries; 1.119 of those libraries are already updating their data on line and 224 of them are going to do it, in the meanwhile the request of courses to prepare librarians to update is continuous.

ACNP catalogue's records come from international register of serials edited by the ISSN center (an UNESCO Agency located in Paris) that assigns an international code of identification.

Cataloguing process is strictly embedded with the registration one, so serials that don't have ISSN yet will be enclosed in the register while are being catalogued.

During the years, ACNP improved its first purpose as catalogue with several services that make participating library an always more cooperative network.

ACNP plays its main role, the location of documents, as a result of two forms of search (simple and advanced).

Data about serials are explained in tables like this one:

Link "Latest issues" (in Italian "Ultimi fascicoli") opens the list of the latest issues received by the library and the indication of their availability.

Stato Ricevimento	Volume	Fascicolo	Data/Descrizione Fascicolo	Anno
Atteso	18	2	01.06.2006	2006
Ricevuto	18	1	March 2006 . *Indici*	2006
Ricevuto	17	4	December 2005 . *Indici*	2005
Ricevuto	17	3	September 2005 . *Indici*	2005
Ricevuto	17	2	June 2005 . *Indici*	2005
Ricevuto	17	1	March 2005 . *Indici*	2005
Ricevuto	16	4	December 2004 . The role of the Southern Ocean in global processes: an earth system science approach .*Indici*	2004
Ricevuto	16	3	September 2004 . *Indici*	2004
Ricevuto	16	2	June 2004 . *Indici*	2004
Ricevuto	16	1	01.03.2004 . *Indici*	2004
Ricevuto	15	4	01.12.2003	2003
Ricevuto	15	3	01.09.2003	2003
Ricevuto	15	2	01.06.2003	2003
Ricevuto	15	1	01.03.2003	2003
Tutti i fascicoli				

In the sample web page reproduced here PNRA library explains some information about single issues: titles of monographic issues, available links to TOC on publisher site, so that users can instantly and transparently enter the index of periodical by the catalogue.

If user is connected to the network of the search center, he can enter directly the full text he is interested in.

The document delivery service is considerably developed too, thanks to the visibility of library possessions coming from the sharing to a national catalogue.

ACNP is strongly linked to NILDE, a document delivery network, and it's also related to the lending form of National Service of libraries SBN.

The links to the web forms can be directly activated through the screening of single periodical's ownership. They allow users to forward their requests in a simple way, after the research of catalogues and identification of a library that owns the searched documents. Heading and library's data, in fact, are automatically drawn in the web form.

ACNP catalogue also affords the libraries to insert the electronical periodicals on the web.

PNRA has promptly chosen to use this possibility, inserting in the same database both data referring to paper ownership and electronic data. Search for users is really simple: starting from periodical title, they can see both information

about libraries owing paper version and libraries owing digital one. Moreover if the user links up by a computer of an organization that takes out a subscription to that periodical, he can directly gain access to the editor website where he can read the full text. Otherwise he can know information for the access, contact of the responsible for that access, or the library which can provide the document delivery with its conditions.

In addition, the electronic periodical record contains the link to editorial website, generally to the homepage of the heading or, in any case, to a free page where the user can search for information or enjoy the articles he is interested in, after an individual subscription. There is, moreover, the link to the equivalent paper version that anyway allows to activate the traditional document delivery procedure.

Actually the catalogue consents catalogation of open electronical periodicals by a free entry: it's interesting for librarians' use.

This allows to access to a lot of resources that are generally not selected or not indicated in the catalogue, and we wish it will support more and more open access editorial policy.

Andrea Marchitelli

NILDE

The wider visibility of the libraries patrimony, realized with the diffusion of the collective catalogues and, in particular for serials, thanks to a continuous increase in the number of the libraries participating in ACNP, has favoured the document exchange between Italian libraries. The increase in the transactions of Document Delivery (DD) has led to a reorganization of the service. The libraries had budget questions (owing to the reproduction and to the forwarding of documents) and had many problems of statistical survey, so that the librarians employed in the DD Service had to resort to a "craftmade" database, created according to the single library's requirements. In such a case the data entry was an additional and manual operation, rich in problems of incoherence and lack of standardization.

The Network Inter-Library Document Exchange – that I'm going to call with its acronym NILDE – has been developed in 1999 within the framework of the CNR Project BiblioMIME.

The project is based on the idea of exploiting the new Internet technologies in order to reduce management costs and to achieve short turnaround times in satisfying Document Delivery requests from final users and libraries. In fact the Network utilization improves on the one hand the operations' workflow, reducing the time required for effecting them, and on the other hand it improves the satisfaction of users' needs in regard to promptness and to quality of the received document.

NILDE is an operational software integrated in a data processing system, the BiblioMIME Server, which works as a gateway between e-mail and the Web. It allows librarians to continue using e-mail service to send large documents, while resolving problems that users may encounter when downloading large size files with e-mail agents[1].

The Network permits the participating libraries to deliver, receive and execute DD requests, with the immediate vantage of transactions' standardization and of gathering statistics. The quality and modality of transactions are automatically surveyed, without any operation of manual data entry in a separate database. This reduces the working time and the need for paper archiving. At the same time the data for measuring DD performance of various libraries, or of a same library during the years, become comparable, because they are provided according to a uniform system of indicators.

The possibility of seeing at every time and without any further operation the transactions balance between various libraries offers new chance of development for inter-library mutual exchange and cooperation. For instance the library operator is required to utilize these balances when he has to send a new request, aiming at a uniform distribution of the orders among the libraries – since he has at his disposal the data of how many requests have been sent and to which libraries. Moreover if there are many library operators employed in the Document Delivery Service, it's necessary to have this kind of statistics up-to-date in real time.

In addition, by NILDE it is possible to record any delivery modality as ordinary mail or fax, but the software also manages a direct and "safe" electronic

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[1] The library operator sends the document as an attachment to the destination address; on fly the server NILDE extracts and saves the attachments in a web-server disk file and creates a new e-mail message that includes an URL pointing to the saved document. The receiver can download these large objects by means of a user-friendly browser.

transmission of documents via Internet (for instance via NILDE, Ariel or Axis), with a great reduction of costs and turnaround times. Forwarding the document with the NILDE delivery modality allows to optimize its transmission process: the document is temporarily saved in a NILDE web-server disk file and it's made accessible, via http, only for the receiving library during a limitated period of 15 days, after which the file is destroyed.

Naturally the receiving library has to respect the law in force about copyright, according to the NILDE regulations.

For example it's forbidden to download a document from an e-journal and to send it directly via web – even if this kind of operation would greatly increase the working speed. The library operator, instead, has to print the online article, then he has to scan it; in the end he can send the scanned file to the requesting library via web.

Moreover the use of NILDE for scanning and sending files without the need for specialized software packages has also proved to be cost-effective, since personnel involved in the DD service need no special training, beyond learning to use a scanner and an Internet browser.

The services offered by NILDE, written in the regulation itself that is in force since 2004, are:

1. delivery and management of requested documents in a standardized way, via Internet, fax or mail;
2. forwarding requests to a specific library in a rapid and simple way;
3. management of the data file about information on the participant libraries;
4. management of the data file about document delivery transactions;
5. automatic and up-to-date gathering of statistical data on:
   - DD performance indicators "rate of success" and "turnaround times";
   - DD performance indicators measurement and comparability per single library and per determinated period;
   - analytical information about the DD service: titles of requested serials; users of the service; quantity of executed transactions per single library, month and year, document delivery modality.

After a testing period from 2001, NILDE have been achieving so much success that nowadays it is a consolidated reality: there are 508 libraries participating to the network. To take advantage of the service, they are just required to pay a contribution in money of about 250 Euro once a year. Then each library is assigned of a username and a password to access to the Network.

The NILDE technical features allow an optimal delivery via Internet of electronic documents, nonetheless the main characteristic of the server is its high usability for libraries. In fact the system releases libraries from the very technical tasks of understanding and dealing with transmission protocols such as SMTP or FTP. It permits the librarians to utilize e-mail service to send very large files, while at the same time resolving any problems that the receiver may encounter when downloading a very large attachment by e-mail (for example when the mail servers impose message size limitations, or mailboxes access protocol time-outs, and so on).

The Nilde system is developed with Open Source technology: Linux operating system, web server Apache, database management system MySQL and PHP language. Such a platform, which software versions are continually updated (and without any cost for buying new licences), guarantees reliability and durability.

Michela Cecconi

The Document Delivery Service at the Library of the Consortium for the Italian Antarctic Programme

The use of an e-mail server totally conforming to MIME (Multipurpose Internet Mail Extensions) allows to implement the functionality of a gateway between e-mail and the Web by writing a simple script. In short, the system allows the following operations:

1. The librarian receives a request (by e-mail), identifies and extracts the document from the library's archives, converts it into electronic format (by scanner), prepares the message for the requester by inserting the document as an attachment, and finally sends it.

2. On-fly the e-mail server extracts the files contained in the MIME parts of the message and, if they belong to one of the types registered for

the service (.gif, .jpg, .pdf, .tiff) it saves them in a part of the disk that is accessible via web. Each extracted part is replaced with a new part of a text/html type containing the URL of the saved document. The parts of the message that do not correspond to one of the registered types remain unaltered within the message. At the end of the body of the message a new part of text/html type is added automatically, containing a brief description of the service, instructions for downloading the software for the visualization of data, and the copyright rules.

3. The resulting multipart message continues on its way on the network until arriving at its final destination.

4. The receiver opens the message, clicks on the URL and downloads the original files from the web-server.

Adopting entirely web-based technologies has changed the traditional organization of document delivery service at the Library of the Consortium for the Italian Antarctic Programme.

Our library has taken part in the experimental project just as receiving library from 2002. It has been joining the Network also as delivering library since December 2003.

The library immediately derived a great benefit from NILDE, in fact the number of exchanged documents started considerably increasing. Moreover the most part of the documents have been sent via web as electronic files, using the NILDE modality: this factor means that we have reduced the costs to send the documents, and on the other hand the user received the article certainly in a shorter time and with a higher quality.

Since our library started making use of these two web technologies (ACNP and NILDE), the Document Delivery service have completely revolutionized our way to work. The first signs of improvement arrived when we started participating to the ACNP catalogue – that is from September 2002.

But the DD service proved to be even more greatly improved when we started participating to NILDE.

Fig 1. *A graphic based on the NILDE statistics of DD transactions executed with the NILDE server from the Library of PNRA.*
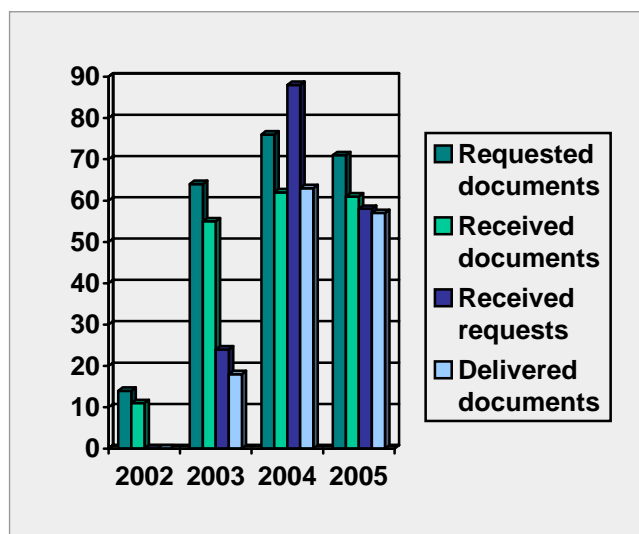
Nowadays this service is one of the main activities of our library – both for external users and for the PNRA researchers.

We have decided to deliver free documents, in the respect of the "principle of reciprocity" promoted by NILDE. This policy has probably made possible to overcome a high obstacle to the inter-library cooperation.

Silvia Sarti

Conclusions

In Italian libraries, this technology has certainly contributed to greatly improve the users services, and at the same time it has simplified the workflow in document delivering operations.

As Internet can incredibly go beyond physical and spacial frontiers, we think that it could be useful to consider NILDE as an example to share Polar knowledge – even if we are aware of the problems concerning with the copyright regulations.

So that users could access more and more to foreign publications.

We hope this could be *a strategy for the future* to improve Polar networks!

References

About ACNP:

Metitieri, F. and Ridi, R., 2005, "Biblioteche in rete, istruzioni per l'uso", Roma-
Bari, Laterza
http://www.laterza.it/bibliotecheinrete/Cap05/Cap05_14.htm

Citti, A., 2004, "Il «sistema» ACNP e i suoi utilizzi nelle biblioteche", in *Bibliotime*,
Anno VII, n. 1
http://www2.spbo.unibo.it/bibliotime/num-vii-1/citti.htm

Citti, A., 2003, "La Gestione Amministrativa Periodici della nuova ACNP: servizi
per gli utenti e funzioni per gli operatori", in *Bibliotime*, Anno VI, n. 1.
http://www.spbo.unibo.it/bibliotime/num-vi-1/citti.htm

Verniti, V., 2000, "Integrare servizi e cataloghi di periodici: la risposta di ACNP e
del progetto CASA"
http://www.cib.unibo.it/acnp/docs/doc/Documento_evoluzione.doc

About Nilde:

Guazzerotti, M. and Zaetta, M., 2005, "Nilde 3.0: funzioni e uso in biblioteca"
http://nilde.bo.cnr.it/manuale/manuale3.pdf

Di Cocco, J. and Verniti, V., 2005, "ACNP: Perspectives and Future Developments
of an Open Catalogue", in *Proceedings Document Delivery via Internet e
cooperazione bibliotecaria. La qualità al servizio della cooperazione*, Pisa
http://biblio-eprints.bo.cnr.it/archive/00000068/

Mangiaracina, S.; Giannuzzi, M.; Pistoia, B. and Guazzerotti M., 2004, "Il sistema
NILDE per il Document Delivery: dalla sperimentazione alla
cooperazione, dal progetto al servizio", in *Biblioteche Oggi*, XXIII(1), pp.
29-39.

Guazzerotti, M., 2003, "Nilde 2.0: un sistema per la gestione elettronica del
    document delivery", in *Bibliotime*, Anno VI, n. 2
    http://didattica.spbo.unibo.it/bibliotime/num-vi-2/guazzero.htm

Mangiaracina, S., 2003, "Il sistema NILDE: obiettivi, stato dell'arte, risultati della
    sperimentazione", in *Bibliotime,* Anno VI, n. 2
    http://didattica.spbo.unibo.it/bibliotime/num-vi-2/mangiara.htm

Mangiaracina, S., 2002, "NILDE: a Document Delivery System supporting
    Document Exchange via the Internet", in *Library Hi Tech News*, 19(8), pp.
    39-41
    http://eprints.rclis.org/archive/00000109/

Mangiaracina, S.; Salamone, P.; Buzzi, M.; Gennai, F. and Abba, L., 2001,
    "Evaluation of an Internet Document Delivery Service", in *Proceedings
    Seventh International IFLA Conference on Interlending and Document Supply:
    Providing Access through Co-operation*, Ljubljana, Connolly, Pauline Eds.,
    pp. 121-132
    http://eprints.rclis.org/archive/00000123/

Polar Research Institute of Marine Fisheries and Oceanography Library today

Irina Merkina, *Polar Research Institute of Marine Fisheries and Oceanography, Murmansk, Russia*

Abstract. In March this year Polar Research Institute of Marine Fisheries and Oceanography (PINRO) celebrated 85 years its foundation and all this time the Institute has had the library.

The PINRO library began to accession actively at the middle of 30-th years of the last century, when region distributing center for libraries was opened in Murmansk. At the same time PINRO library inherited collection of the Biological Station Solovetskaya by the name established in 1881 at the White Sea. The main part of these stocks was well preserved and PINRO library have these rare enough books today.

At present we have 30,000 books and booklets, 20,000 copies of journals, more then 200 titles. The main subjects are marine and freshwater biology, ichthyology, oceanography, Arctic Seas ecology, industrial pollution, toxicology, fish diseases, aquaculture, fisheries management, and main regions - Barents Sea, Norwegian Sea, North Atlantic, Atlantic, White Sea, inland waters of Kola Peninsula. The books and booklets published in SU/Russia during the second half of last century are the most presented, the main fish and fisheries journals are without lacuna too. Since 1936 PINRO Collection of scientific papers has been publishing, now we have 74 issues. Total it was published more than 450 different types of printed matters, including 9 bibliographic indexes.

There are 5 librarians on PINRO library staff now, equipment- 6 PC, 2 printers, 1 scanner.

We've been using IRBIS software since 2003, and started to input current literature and retrospective part in own database. We installed WEBIRBIS for library page of PINRO website (www.pinro.ru).

PINRO library has been a member of European Association of Aquatic Sciences Libraries and Information Centre for 8 years. In 2003 our library was sharing the work on Union List of Serials for EURASLIC ECET. Since the end of 2004 the library has been an ASFA Collaborating Centre, and has been using CD with ASFA database. This year we have got an access to ASFA database on-line, and we try to use free databases in Internet as well.

In March this year Polar Research Institute of Marine Fisheries and Oceanography (PINRO) celebrated 85 years its foundation and all this time the Institute has had the library.

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Biological Station Solovetskaya by the name established in 1881 at the White Sea. The main part of these stocks was well preserved and PINRO library have these rare enough books today, for example "Campagne Acrtique de 1907" edited in Brussels in 1910-1912, "The Norwegian North- Atlantic Expedition 1876-1878", edited in Oslo in 1891-1904.

At present we have 30,000 books and booklets, 20,000 copies of journals, more then 200 titles. The main subjects are marine and freshwater biology, ichthyology, oceanography, Arctic seas ecology, industrial pollution, toxicology, fish diseases, aquaculture, fisheries management, and main regions - Barents Sea, Norwegian Sea, North Atlantic, Atlantic, White Sea, inland waters of Kola Peninsula. The books and booklets published in SU/Russia during the second half of last century are the most presented, fish and fisheries journals in Russian are without lacuna too. Since 1936 PINRO collection of scientific papers has been publishing, now we have 74 issues. More than 450 different types of printed matters were published, including 9 bibliographic indexes have been preparing our library. PINRO meets its engagements on sending legal deposit copies to All-Russian Book Chamber and Murmansk Regional Universal Scientific library. Our library take part in exchange of documents since the forties of last century including international exchange since the early sixtieth, and now we have intensive exchange with some institutes of marine fisheries in Russia.

Our first steps to computerization were in 1996, and we had one PC (386) and ISIS software.

In 2003 we installed software called IRBIS, one of the most popular in Russia, and started to input all current literature and some retrospective parts in own database. We installed WEBIRBIS for library page of PINRO site too. Now our equipment –6 PC, 2 printers, 1 scanner, and staff – 5 librarians.

PINRO library has been a member of European Association of Aquatic Sciences Libraries and Information Centers for 10 years. In 2003 our library realized the work on Union List of Marine and Aquatic Serials for site have been preparing pushing group of this association with goal on creating collective catalogue. The members of this association make copies of articles free for interlibrary loan. Our library fills requirements on Russian languages literature, which are not numerous.

Russian literature is not still enough entered even in large and famous databases, especially short-run region documents, for example, PINRO editions are not enough presented in Aquatic Sciences and Fisheries Abstracts database, our editions since 1936 till 1971 are out of it. I believe that the necessity of entering those editions exists as they give various information about environment of those times when human activity was not so intensive. Some documents of our institute authors were included in "Russian studies of Arctic marine benthic fauna: A bibliography and selected translations". It was published by Shirshov Institute of Oceanology, Moscow and Akvaplan-niva, Tromso, Norway in 1999 and included total 360 articles and reports. Nowadays Barents Sea arouse high interest due to Stockman gas project, and this literature dates can be used as referents point for nature conservation work, environmental monitoring.

Our library aims at making its contribution in inputting Murmansk region literature. Since the end of 2004 the library has been an ASFA Collaborating Center. We have been inputting current editions of PINRO and Murmansk Marine Biology Institute, and are planning entering editions of previous years on Barents Sea. As collaborating center we used CD with ASFA database. This year we have got an access to ASFA database on-line, and we try to use free databases in Internet as well. Since 2003 our library has have access to Norwegian e-catalogue BIBSYS, and orders copies of articles.

What is the situation with building library network in Murmansk? There are three big libraries: the biggest- Murmansk Regional Universal Scientific Library, presented on Polar Web, Library of Murmansk State Technical University, Library of Murmansk State University of Pedagogy. And there is Library of Murmansk Marine Biological Institute, which is close to our library in subjects of collection.

Only Murmansk Regional Universal Scientific Library is a sharer of creating collective catalogues and others projects. Let's look at www-site or library page of sites of these libraries (the same order as I called):

1.http://www.murman.ru/culture/library/

2.http://www.mstu.edu.ru

3.http://www.mspu.edu.ru

4.http://www.mmbi.murman.ru

5.http://www.pinro.ru

These sites have some common traits, and many others Russian libraries sites have the same. To find library is not very easy, our biggest library site hasn't English version, library of Murmansk Marine Biological Institute (MMBI) is not presented even one word. All these libraries excluding library of MMBI have been created their own electronic catalogues since ninetieth that is about ten years, but it's difficult to access to these catalogues or impossible. The library page of site of our institute is far from perfection. Our electronic catalogue is not accessible for our site guests often, and we need make better turning our software. Our catalogue is accessible in local net well, and young researchers have been using it since first days.

Now we can see some steps to necessary direction in creating network in our region, for example, an official representative of EBSCO Publishing in Russia came to Murmansk in April (this year). I understand all benefits of consortia work and hope for the best.

Building a sustainable library network and technology in the spirit of open standards, open source and free software

Satu Hallikainen, *County Library of Lapland, Rovaniemi, Finland*

Abstract. We wouldn't have the Internet, WWW, or e-mail without the open standards on which they are built. Open standards promote interoperability, which is the key to an excellent network, and using open standards is recommended by the EU.

Libraries represent open access to information, knowledge and learning. Why not also build networks and systems which are built on high quality technology following those ideals? Muurola Library has had the role of pilot library in Finland promoting the use of open standards and open source.

Because many commercial systems are not built on or under-utilize open standards, we have joined the Koha project which uses both. Koha is an international open library system, started in New Zealand, and now being developed worldwide. www.Koha.org

The modern library meets many new challenges. We work now in a digital, network-based environment with boundaryless information flow and a demand for global interoperability.

We cannot concentrate on current patrons alone but also must include future patrons and future plans. The cultural and scholarly heritage need to be stored for coming generationseven those in digital formats.

ICT has an essential role in how we can manage. This presentation doesn't deal with library standards per se but instead with **common technological standards** because we are working in an environment with many facets.

It makes a difference what kind of technological solutions we choose. We are very lucky today because it is possible for us to make good choices. It was much more difficult seven years ago when my library started to investigate these questions, already in 1999.

Lets' study the topic from the points which are the key responsibilities of the libraries.

Storing Data

When storing data for posterity we must remember that the key to unlocking that information must be in our own hands, not in one single enterprise's hands. It could also be possible that no one has the key, and that is

not good either. In other words, **the data format used must be well-documented, freely available, and still usable in the future**.

File formats that are open standards assist in long time archiving of information because they allow for **software and hardware independence**. Software and hardware independence are important because we cannot let our digital history depend on proprietary (private and closed) data formats owned or controlled by some private company.

What happens if that company goes down? Or what happens, say, in 15 years when the programs we have today will not run on the computers produced at that time, not to mention 100 or even 1000 years from now ? What will happen then to our data? **Our cultural heritage may not be stored in data formats which are not owned by mankind**. Our task is to ensure this! To use closed, proprietary technology is wrong for an artist, a scientist, a government employee and any others who want to deal with their works in the long term.

Furthermore, barriers that restrict people's access to information are counter-productive. The self-promoting policies of large software makers are the worst threats later, because they are consciously trying to make customers less able to move by trying to force formats which their competitors are not allowed to use. Often they try to force their own undocumented so-called 'standards' with licensing and other restrictions in the place of proper, well-documented, freely usable standards. The harder it is to move, the more they can charge later for the next release.

Do we keep our data in closed formats?

Using open data formats will help most of all simply accessing our own data.

Open Standards are not only for libraries which are one part of the museums, archives and libraries community. **Open standards are for all who use the networked information environment**. These standards are developed by other information communities than libraries. We can use those. The EU and many others recommend open standards and open source for many reasons, including those just mentioned.

Open standards: http://en.wikipedia.org/wiki/Open_standard

Open Source: http://www.opensource.org/docs/definition.php

Communicating

The modern library has a lot of communication with other institutions, patrons, agencies and so on. Technologically there is a need for interoperability as a result. **Open standards are therefore important to libraries because we want to be able to communicate, independent of which computer platform or word processing program we happen to be using**. As part of the public sector, we cannot force our patrons to use or buy specific brands or models of software or hardware.

Think of a situation without open standards: You couldn't read my e-mail without also having the same e-mail software. Yet, today, we can read e-mail with whichever e-mail software we choose to use. We have that thanks to several open standards, one of which is SMTP. Without open standards, it would not be possible to read a web page without the same software. The web is born of open standards and from a time when open standards and open source were simply called 'standards' and 'programs'. Even **the Internet itself is the result of open standards**. These problems with closed software and closed standards have come later on.

Another question is can we open our files nowadays? We don't want only the computers to communicate with each other we also want **document interoperability**. **We need open document formats to be used**. Open standards ease information transfer between systems on the web. Posting data online or transferring it use open formats like HTML, PDF, JPEG, PNG or XML.[1] They are the appropriate formats for transmitting digital content on the web. **Anyone can open them, no matter which web software they use**.

However, it is a daily problem that other programs cannot exchange files without difficulties. It's not just different brands of the same program that have this trouble, but also different versions of the same brand. Some vendors actually use this form of planned obsolescence to force their customers to buy new software.

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[1] Even an open standard like XML can be made closed by encumbering parts of it, such as the schema, with licensing restrictions or (in certain trade zones) patents.

The way to make certain that these diverse systems and any future systems can communicate with each other is by using open standards. Open standards help achieve the free flow of information through interoperability.

Retrieval

To build a sustainable environment means demands on the software, for example the library system.

These demands are platform independence, vendor-neutrality, independence from licensing restrictions like commercial copyright and patents, and the source code must be available to get the freedom to add features and make changes when needed. Our legal obligation is to fulfill privacy and safety requirements. Having the source code makes it possible to guarantee that there are no backdoors and ensures privacy. **Our further obligations include democratic access to information regardless of economic or social status.** One cannot have democratic access if it can only take place using the newest and most expensive software and hardware which quickly become obsolete and must be repurchased frequently. It is not only our patrons who may have limited economic means, but also many libraries as well do not have unlimited funds for technology purchases and maintenance.

Open source represents a way for librarians to keep control over their computing environments instead of being themselves controlled by their computing environment, or by the vendors and ICT Centers that control the computing environment. Proprietary software can in this way lead to a single point of failure: If a vendor goes out of business or is tied up in lawsuits or decides not to support a program anymore, there is often nothing a user can do. The situation is similar for data formats. Proprietary standards often lead to the customer falling under the control of the vendor. Soon thereafter the customer is working to meet the vendor's needs, a situation of the tail wagging the dog, rather than vice versa.

The Case of Muurola Village Library

We have been building a sustainable technological environment in Muurola since 1999. Free Software is built on open standards and open source. That's why we use**OpenOffice.org 2** for word processing, spreadsheets, etc. both in our own work and on public terminals. This presentation is made using

OpenOffice.org's presentation graphics tool, **Impress** not powerpoint. We use **FireFox** to browse the web. Every public station uses an open source operating system (various **Linux** distributions). They are free of charge, stable, and low-maintenance. There are no 'virus' or other problems like those which one common brand is infamous for. We work in the **Koha** project with the hope that one day our library system is also Free.

Koha: http://www.koha.org/

OpenOffice.org (suite): http://www.openoffice.org/

Free Software: http://www.gnu.org/philosophy/free-sw.html

Ubuntu (Linux distro): http://www.ubuntu.com/

Fedora Core (Linux distro): http://fedora.redhat.com/

Debian GNU/Linux (Linux distro): http://www.debian.org/

Can two nodes be a network? Cooperation helps two libraries provide better service

Shelly Sommer, *Institute for Arctic and Alpine Research, Boulder (CO), USA*, *Allaina Howard* and *Gloria Hicks*, *National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA*

Abstract. The Information Centers of the National Snow and Ice Data Center (NSIDC) and the Institute of Arctic and Alpine Research (INSTAAR) at the University of Colorado are located across a parking lot from each other. They share an institutional setting, a focus on cold regions, and even have some holdings in common. Both libraries are local sources for scientists and students searching for information. They offer focused collections, rare materials, and knowledgeable librarians; but they also face issues of small size, isolation, and limited resources that impair their ability to meet users' needs. To overcome these issues, while retaining the organizational focus and unique collections that are their strengths, the two libraries have formed a loose partnership. The librarians are converting their catalogs to the same platform to enable federated searching. They share resources and knowledge and have begun to coordinate purchasing. Ultimately, they hope to enlarge their network to include other libraries in their geographic and subject areas.

History

The Information Centers of the National Snow and Ice Data Center (NSIDC) and the Institute of Arctic and Alpine Research (INSTAAR) are located across a parking lot from each other at the University of Colorado, Boulder. The institutes have a common heritage. NSIDC transferred from INSTAAR to the Cooperative Institute for Research in Environmental Sciences (CIRES), another university research institute, in 1981. Since that time the purpose and activities of the two organizations have diverged, but they both remain deeply involved in cold regions research.

The librarians of these two organizations have a long history of cooperating informally. Martha Andrews retired from INSTAAR at the end of 2002 after building a wonderful collection over the course of 30 years. At NSIDC, Teresa Mullins was the librarian for five years before leaving in 2004. Gloria, Allaina, and Shelly hired on

more or less at the same time, and not only had to find each other across the expanse of asphalt but also had to rediscover ways in which to work together.

Allaina and Gloria's window was visible from Shelly's office, and hers from theirs. Our first idea for sharing information was a telephone made of cans and string, stretched between the two windows. But the NSIDC librarians moved across the hallway, lost their window, and we had to come up with something else. We started visiting back and forth, and found some interesting similarities and differences.

Similarities

Both libraries share a similar context, rooted in University of Colorado science research institutes. Both are special libraries, focusing on the interests and needs of their organizations. And both are **libraries embedded in labs,** information centers located in the midst of the scientists' and students' offices. This situation gives us a singular opportunity to connect with our users, since we see them every day in the hallways and in their labs.

Our audiences are also similar. Most of our users are the research scientists and graduate students of our institutes, though both libraries are open to the wider university and research community as well. INSTAAR includes about 200 people, while NSIDC has approximately 80 potential library patrons.

Both information centers contain small, focused collections. The holdings have a cold regions focus and concentrate on rare and specialty materials, especially report series from other institutes and grey literature. We even hold some report series and journals in common. Both libraries contain (depending upon how one counts) 20,000-40,000 items. Our small size extends to our budgets and staffs as well: the INSTAAR Information Center employs only one person half-time and an assistant for four hours per week; the NSIDC Information Center has two people full-time, one of whom is an archivist as well.

Most of all we have challenges in common: small budgets, limited staff time, isolation, and persistent problems with getting Internet access to our catalogs.

As we learned our jobs and about each other, we learned that we need to work together to thrive. The University of Colorado system as a whole has been stressed for funding for the past three years and more, as the state education budget was repeatedly cut and national science funding resources became more and more competitive. We knew that we were not going to see more money. Because of the rising costs of journals and other materials, our flat budgets are effectively shrinking each year. We needed to be efficient with what we had.

Differences

The Information Centers of INSTAAR and NSIDC also differ in some fundamental ways, some because of the differences between the goals and activities of their parent institutes, and some because of the peculiarities of their librarians. These differences make working together valuable, because we have different strengths and materials to contribute. But they can also create some technical problems.

Despite sharing a focus on cold regions, the two libraries have diverged in their coverage. INSTAAR has expanded its research focus to include earth and environmental science, particularly climate change. Most INSTAARs still depart for Greenland, Antarctica, or Alaska for their research. But a good portion of INSTAAR research now takes place in regions that aren't cold at all: Australia, Africa, Central America. The Information Center collections include materials on climate change, geology, paleoclimatology, paleoecology, and surface processes as well as glaciology, polar regions, frozen ground, and snow.

NSIDC, on the other hand, became the World Data Center for Glaciology. Not only is its focus more firmly fixed on cold regions and cryology, but it has to accommodate data archiving and distribution—something INSTAAR doesn't worry about. We just send our data over to NSIDC to handle. The NSIDC Information

Center, therefore, is responsible for a more tightly focused cold regions collection. They also maintain an analog data archive, holding historic photographs, field notebooks, maps, and the like, that has accumulated over many years. These materials are made available to researchers and require special handling. Our differences mean that the libraries have different collection policies and priorities. This helps strengthen the range of materials available across both Information Centers.

Complicating the picture, however, the different collections call for different classification systems. It is logical for the NSIDC library to use UDC for Polar Libraries, since it is more detailed and in depth than anything LC could provide. INSTAAR's collection is too broad to fit into UDC and is classified using the Library of Congress system. The disparity between the two classification systems will cause us some fits when we integrate our online catalogs.

Sharing

To overcome some of our challenges, we started working together. Our first step was to establish reciprocal borrowing privileges – anyone from either institute can borrow materials from both Information Centers. We also make people at our home institutes aware of the collection across the way. Allaina and Gloria invited all INSTAARs to their open house last spring, and Shelly describes NSIDC collections in her regular emails to the INSTAAR community.

We also established an informal kind of interlibrary loan between us. If one of our researchers asks for an item we don't have, we send a request to the other library. We have begun to use instant messaging for this, which—as long as we're both at our desks—gives us a response while the borrower is still there.

We have begun to coordinate some purchasing, as our budgets continue to get the squeeze. We both try not to order books that are held within the larger CU library system; now we try not to order books that duplicate each others' holdings.

We may have to start coordinating journal purchases as well. This process will help us maintain strong collections despite our fixed incomes.

We are moving toward a joint online catalog. Both information centers had digital catalogs using InMagic software, but the application proved difficult to manipulate and, while not terribly expensive to maintain and support, quite expensive to port to the Internet. We worked together to look at alternatives. Gloria and Allaina evaluated the functionality of several commercial OPACs, while Shelly surveyed open source options like Koha and Avanti. Cost limited our options to open source software and to low-cost, less specialized database software like FileMaker. Koha and Avanti are real OPACs, with a lot of library functions already built in; but as of last year they also required some support by a person fairly handy with working elbow-deep in programming. INSTAAR could not provide that support—their programmers were encouraging and helpful, but so buried in other projects that they could not get to ours. We settled on FileMaker Pro.

NSIDC has already bought FileMaker, which includes an extension that allows those on the NSIDC intranet to see their catalog. At the moment, NSIDC's administration is hesitant to have their catalog go out to the whole world on the Internet, but Gloria and Allaina are working on changing their minds. INSTAAR will buy the FileMaker Pro software in July, when the new budget year begins. The package includes the capability for five people at a time to use the catalog over the Internet. INSTAAR has no problem with porting the catalog to the web; the Information Center's oversight committee has encouraged web access from the beginning.

We would like our catalogs to work in tandem, so that browsers at either institute can browse their own catalog or both catalogs at once. We face some issues in getting that to work. INSTAAR has differently formatted records for several material types: books, journals, reports, theses, and maps. These record types are an artifact of the previous InMagic catalog. NSIDC uses a single, overarching format for

all their records. We will need to do some tweaking to a get a search that can handle these various formats by looking in a subset of common fields.

The two libraries also use different classification systems, which makes it difficult to coordinate subject headings for searching. There are also several hundred records of reports in the INSTAAR catalog that do not have Library of Congress subject headings; these records will need to be brought into line to work consistently with the rest of the collection.

We are slowly working through these issues. When Shelly converts the INSTAAR catalog, she will change the names of some of the fields for the various formats, so that a single search across a particular field will pick up records in all formats. Federated searching will take place across a limited number of common fields.

Traveling the network

It is refreshing for us to have someone with whom to work through these issues. One of the best benefits of our collaboration is just having someone else around who understands us without a great deal of explanation. We can puzzle over cataloging supplemental issues of journals; roll our eyes at the dilatory nature of borrowers; and curse the universal irony that insists that the single issue of the journal you want, is the one that has gone missing. It's great to have a colleague, a counterpart.

We are also looking outward from our two buildings. The Denver/Boulder metro area includes a remarkable number of special libraries in the earth and environmental sciences. In Boulder we find libraries embedded in labs at the National Oceanic and Atmospheric Administration (NOAA) and National Center for Atmospheric Research (NCAR). The three of us visited these libraries together, and we can now borrow materials from both libraries. Boulder private firms with libraries include Sun Microsystems and Ball Aerospace. A short bus ride away in Denver is the rather besieged U.S. Geological Survey Library with its very good

journal collections, the U.S. Bureau of Reclamation Library, and Colorado School of Mines.

We also rely on the excellent range of holdings and services of the CU library system as a whole. While not officially part of the larger university library system, as part of the university community we have access to all their holdings, online databases, and interlibrary loan. There are four science libraries on the main campus, two miles away: the Science Library, which is tucked into the main library on campus; the Earth Sciences Library, which includes an excellent map library; the Math/Physics Library; and the Engineering Library. We often find and retrieve materials for our users from these libraries, and we stay in touch with the on-campus librarians.

Our users tend not to care where information comes from or what format it comes in— only that they get what they need. They come down the hall to us, seeing in our small rooms a gateway to the much broader world of information. And thanks to working with each other and the network of libraries in our area, we can provide that gateway. If our reach stopped at our walls, we would be isolated and somewhat useless: a tiny information garden, not a landscape. Working together, we become two nodes in the larger landscape—an information network.

Fig 1. *The INSTAAR Information Center.*

Fig. 2. *The NSIDC Information Center.*

BASC: A Research Center Grows in Barrow. UAF's Geophysical Institute and Ilisagvik College's Tuzzy Consortium Library collude to provide state of the art library services to the Barrow Arctic Science Consortium

David Ongley, *Tuzzy Consortium Library, Barrow, Alaska, USA*, *Julia H. Triplehorn*, *Keith B. Mather Library, University of Alaska, Alaska, USA*

Abstract. Ground was broken in 2005 for a new research center in Barrow, Alaska. The Barrow Arctic Science Consortium (BASC) has grown from a small two person office to an international, multi-million dollar operation in 10 years. Plans for the new facility include library services to be provided jointly by the Geophysical Institute in Fairbanks and locally by the Tuzzy Consortium Library. Collaborative networks for an online catalog and interlibrary loan, already existent, will be formalized and enhanced. Presenters will display drawings of the new facility and its innovative service plans. They will also discuss plans for the dissemination of data from Barrow research and shared collection development responsibilities. Updates from both the Tuzzy Library and the Geophysical Institute Library will complete this program.

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Alaska and the North Slope

Judie Triplehorn

Historical Aspects of Scientific Research at Barrow

With increasing interest in global change in the Arctic, the early scientific research at Barrow will provide baseline studies for comparison with current datasets. It is important for arctic reference and collection development librarians to be aware of these significant reports and data.

The earliest expedition to Barrow was by British Captain Beechey and party who discovered an unnamed village at Cape Smyth in 1826 (reported in 1831). He named it Barrow in honor of Sir John Barrow, a sponsor of many polar expeditions. The village also had a number of native names which appear in the Orth Dictionary of Alaska Place Names: Ooglaamie, Ooglamie, Ootivakh, Otkeavik, Uglaamie, Utkeavic. One Utkiakvik meant a high place for viewing since it was 30 feet high. All the variations seem to be similar sounding words. It was not until 1901 that a post office was established with the name Barrow.

One half mile from the native village of Barrow, the U. S. Army Signal Corp in 1881under the leadership of Lt. P. H Ray set up the US Polar Station to take

magnetic and meteorological data for the International Polar Year (IPY) This station was maintained for two winters with all expedition members remaining in good health. Ray was impressed with the Eskimo arctic skills and felt that the expedition members should conform to the habits of the natives. The activities of this expedition were documented in the Report of the International Polar Expedition to Point Barrow, Alaska in 1885. This report includes extensive ethnographic information and natural history observations. Scientific data sets for magnetism, the aurora and meteorology (hourly readings) are part of the report and these will be important in the upcoming International Polar Year (2007-2008).

Fifty years after the first polar year, a second one was established in 1932-33. An expedition was organized by the U. S. Weather Bureau in cooperation with the Carnegie Institution of Washington Department of Terrestrial Magnetism to establish a station at Point Barrow, Alaska. The research efforts focused on Meteorology, Aerology, Geomagnetism, Aurora. Many of the reports of this appear as publications of the Carnegie Institute. Some reports and data compilations were delayed by the war, and were not published until the 1950's.

Naval Arctic Research Laboratory (NARL) and Arctic Research Laboratory (ARL) – 1947-1981

Naval Arctic Research Laboratory was operated by the Office of Naval Research 1947 -1981. It was created to provide field and laboratory support for research programs at Barrow under contract with the Office of the Naval Research. An early relationship was formed between Arctic Institute of North America and NARL advisory committee.

During this period, the third International Polar Year occurred 25 years after the second one. It was called the International Geophysical Year (IGY) 1956-57. Topics were similar to earlier ones. NARL was the host for a number of geophysical and oceanographic observational projects. Early research was focused on the biological sciences, but after IGY it was primarily physical sciences. Two research

stations were established on drifting ice platforms in the Arctic Ocean: Alpha and Bravo (known also as Fletcher's Ice Island or T3).

A library was established with a professional librarian at the research facility. In its day, it was a fabulous arctic collection. When the laboratory closed in 1980 it was boxed and sent to Rasmuson Library in Fairbanks. The NARL inventory of materials can be found in the Rasmuson Alaska and Polar Regions.

Library today

The Barrow Arctic Science Consortium (BASC) has a room designated as the library. It is an attractive library with windows across one wall and conveniently located on a main corridor near the dining hall. Books are around the walls, with large map cabinets in the middle of the floor. Under the windows are computers for the visiting scientists. The collection is a real mix of classic arctic material and just old books. There are no tables or chairs for study.

The mission for BASC is similar to NARL to provide field and laboratory support for research programs. Two sources for information on Barrow have been developed: Barrow Bibliography and the Barrow Area Information Database (BAID) (http://baidims.org) The Barrow Bibliography is an ongoing database of bibliographic references on Barrow and environs, originally started by Jerry Brown, but continued by the Geophysical Institute. It can be found on the Institute and BAID websites. BAID is a unique GIS database of Barrow area information of interest to scientists. One interesting feature is the listing of all previous research projects by area.

New library

The new library would be the support library for the new BASC facility. The collection would be focused on Barrow and its environs – both present and historical. Primary research would be done by the research staff at their home institutions before their arrival in Barrow. An informal survey of potential users found that the visiting scientists were primarily interested in a quiet place to

study/think and also locate additional information for their projects (books, reports, maps, grey literature, and journal articles). These would be materials not found at their home institutions. Most journals will be accessed electronically.

Another area of interest was materials to help troubleshoot problems encountered in field work. E-mail would be set up to contact the Keith B. Mather Library at the Geophysical Institute in Fairbanks for scientific and technical reference questions. The Tuzzy Consortium Library in Barrow with its excellent basic arctic collection would be a phone call or e-mail away. Collaborative service between these two institutions would be established to offer optimal library service to the research scientists and staff.

The physical layout for the library will hopefully include lots of windows; light is important in the arctic. Large tables are needed to lay out maps to plan the next day's activities. Currently the maps are laid out on the beds. Also comfy chairs with laptop tables so that people can work and read in the evening. At present, the dining tables and chairs are the only places to sit and read in the evening.

A collection has already been started at the Geophysical Institute for the future facility. As you find Barrow materials – historical or new, please consider giving them to the future new BASC library.

David Ongley
Tuzzy Consortium Library
With the dissolution of the NARL collection in 1981 until the establishment of the Tuzzy Consortium Library in 1989, many of the books passed on to the North Slope Higher Education Center. Presumably, these items were duplicates already held in the University library in Fairbanks. Many of them are now held in the Tuzzy collection. They have formed the core of science material acquired during the past 17 years by the library that is the public library for the North Slope as well as the college library for Ilisagvik College. There are nearly 3,000 science related items in this relatively small collection. With the help of the Keith B. Mather Library at the

Geophysical Institute and the Alaska and Polar Regions Department at UAF as well donation from CRREL and private researchers, the Tuzzy collection is beginning to look respectable. Primarily, however, the Tuzzy Library has developed stronger collections in the social sciences.

Other resources worth mentioning that the university left behind are the day-to-day business records of NARL. These include personnel records, shipping and receiving documents as well as a variety of other material. These records are in the possession of Tuzzy Library and fill ten, four-drawer filing cabinets. Requests for access from lawyers and environmental groups over the years have proven difficult as the material is in deep storage in a warehouse managed by the college. Library planning includes the eventual digitization of this information using a technique developed at the Tuzzy Library for creating full text databases rather inexpensively in-house.

The Library has a 5,000+ photograph database of images from the Tundra Times newspaper (http://tundratimes.ilisagvik.cc). There are another 10,000 images yet to be scanned. The Tundra Times existed from 1962 until 1997 and was the "voice of Native Alaskans". The Alaska State Library scanned it to microfilm which was held by about a dozen or so libraries. The newspaper itself has now been digitized and mounted on the internet as a full text searchable database. Articles or pages can be viewed in PDF format from the search results list. More recently, the Library received a donation of approximately 60,000 pages of research and material from anthropologist, Rosita Worl, a Tlingit researcher who worked for the North Slope Borough's first mayor, Eben Hopson. The same technique used to create the newspaper database will be applied to the NARL material.

While initial funding for these three projects was through grants from IMLS (Institute of Museum and Library Services) work on all three has continued thanks to funding from the North Slope Borough's ECHO Grant (Education through Cultural and Historical Organizations (www.echonsb.org/welcome.asp). Additionally, ECHO has funded two other Library projects, one to digitize the

Borough's collection of 8,000 video tapes and films and the other to convert the IHLC (Inupiat History, Language and Culture Commission) oral history tape collection to CD. Index databases for these collections will be made available on the internet at some point in the next year. Ideally, the records for these recordings will be converted to MARC records and added to the Library's online catalog. Some, most likely the sound files, may one day be made downloadable from the internet, but more likely copies will have to be secured from within the Library.

As unusual as it may be for a small library to engage in the advanced projects the Tuzzy Library has chosen to pursue, the staff could not have accomplished these projects without the assistance and talents of many able partners. The very most helpful of these has been the fine librarians at UAF's Geophysical Institute Mather Library, the Alaska and Polar Regions Department and the Rasmuson Library. They have sent regular care packages to the Tuzzy Library of books and other resources, but most importantly they've shared their knowledge and expertise. When the opportunity arose to work together on the BASC library it seemed like a natural partnership.

BASC

The Barrow Arctic Science Consortium (BASC), with headquarters at NARL was founded in 1995 through the North Slope Borough, Ilisagvik College and Ukpeagvik Inupiat Corporation (UIC), Barrow's local Native corporation. BASC is a nonprofit research support organization "dedicated to the encouragement of research and educational activities pertaining to Alaska's North Slope" (www.arcticscience.org). BASC is governed by a nine member board of directors. Funding is mostly through grants, primarily the National Science Foundation.

BASC manages the Barrow Environmental Observatory (BEO) a 3,000 hectare (7,500 acre) track of tundra near Barrow. This land, owned by UIC, has been set aside for research and education. BASC assists researchers in their studies of terrestrial and marine environments in this area. BASC can provide logistical

support, housing, food, transportation, guides and laboratories. They also assist in extended research projects by monitoring instruments and gathering data.

BASC is also involved in providing a local venue for scientists to interact with the community. Their Saturday Schoolyard talks are popular and well attended. They have several ongoing projects that include students of all ages from the local schools. They have been diligently working toward a new facility to house their operations which currently occupy Quonset huts and other out-buildings at NARL left behind by the US Navy. Their library, as described above occupies a room in their wing of the main building. The President of BASC's board of directors is a geologist who, as an undergraduate student twenty some years ago at UAF, worked in the Keith B. Mather Library under Judie Triplehorn.

Conclusion

In 2003, Judie was hired to serve as a library consultant to BASC. She contacted me and together we worked out a rough plan on how BASC could best proceed with their new library. Construction was yet some years off and the vision provided by BASC was that of non-librarians. They wished for a library that was substantially unstaffed and self-served. In conversations I was informed that they wished for "computer connections" to the Mather Library. They foresaw a dozen or so Apple iMac workstations with access to a high speed internet connection and the university's supercomputer.

Planners at BASC were unaware at the time that connections already existed between UAF and the Tuzzy Library. The two institutions had been sharing a library information system for some years. Built on SIRSI's Workflows with a customizable client access front end, iBistro and renamed Goldmine at UAF, this modern online catalog is one of the major players in the LIS world. The Tuzzy database is actually in Fairbanks and managed on university computer systems. It can be searched independently or more widely with all the university's collections and several others as well including the collection at the Geophysical Institute. To add the BASC collection as a subset of the Tuzzy Library would be no difficult task.

One improvement to this arrangement that might be implemented, NSF willing, is the installation of a server in Barrow for the North Slope collections including BASC's. The current arrangement with UAF is excellent and reliability has been good for well over five years. The support received by the Tuzzy Library from UAF's library computing team has been superb. However, connection speeds are usually regrettably slow by the standards of most of the world. It seems no way has been found to string fiber optic cables over frozen tundra for hundreds of kilometers. All connections must run through satellites. We hope to see a resolution to that problem within a few years. BASC is developing its own satellite link which may well provide as fast a connection as is needed, but it won't be cheap.

Interlibrary Loan at the Tuzzy Library already exists in a fairly well developed form. With access to OCLC and a long-term employee whose substantial searching skills are fairly well honed, it would seem most appropriate if first requests for material come to the local provider. If such requests cannot be handled at Tuzzy Library due to their technical nature or availability, they can easily be transferred to our colleagues at the Mather Library.

Access to periodical databases and scientific data sets is another matter. While the Tuzzy Library does subscribe to Arctic and Antarctic Regions through Biblioline and the Bibliography of Native North Americans, a largely anthropological database that covers the Inupiat and Inuit, we have little or no experience in providing access to or handling research data. This role would be well filled by the Geophysical Institute and their connections. The full details of which are yet to be worked out.

While ground has been broken for the new facility, the plan keeps shifting. The library has slipped into phase three of the construction. When last I spoke to BASC personnel, they felt that the library might be losing ground in importance to more vocal supporters of other aspects of the building. Judie and I may have to assert ourselves so that the library doesn't disappear altogether. Questions yet remain to be answered. How will collection management be achieved? Who will

purchase items and how will they be paid for? How will data sets be stored and accessed? Who will catalog acquisitions and who will shelve them? How will they circulate? Can any of these issues be left in the hands of the non-librarians who are doing the planning? So far, no one has indicated that a formal agreement should be entered into .However, a memorandum of understanding or agreement might well serve to solidify the library's place in the new structure.

A Northern network in the making: cooperation and collaboration in Anchorage, Alaska

Daria O. Carle, *Consortium Library, University of Alaska Anchorage, Alaska, USA*, *Juli Braund-Allen*, *Environment & Natural Resources Institute, Consortium Library University of Alaska Anchorage, Alaska, USA*, *Kathleen Murray*, *Health Sciences Information Service, University of Alaska Anchorage, Alaska, USA*

Abstract. This paper describes and updates major initiatives, developments, and projects of the UAA / APU Consortium Library and its Health Sciences Information Service (HSIS), as well as those of the Alaska Moving Image Preservation Association (AMIPA) and the Alaska Resources Library and Information Services (ARLIS). Since 2003, they have all relocated within one new, state-of-the art building on the University of Alaska Anchorage campus. While some have had formal ties to one another for many years, their newly found proximity has strengthened all of their interactions. In particular, this cooperative arrangement has significantly improved services to users and offers networking opportunities to the broader library community. New collections, shared systems, and arctic health initiatives for the International Polar Year project add depth to this growing northern network, which also includes the Alaska Virtual Library and Digital Archives project.

Things are 'happening' in Anchorage libraries these days. An elegant library building was recently completed on the University of Alaska Anchorage (UAA) campus, providing a modern complex into which new and existing partners have relocated. Even though there have been connections—both formal and informal— amongst these partners and organizations for a number of years, sharing space has proved beneficial for all. Through networking, cooperation, and collaboration, patron services of every kind have significantly improved. What follows is just a sample of some of the activities, projects, major initiatives, new collections, and other exciting connections in this expanding northern network.

Consortium Library Building
www.lib.uaa.alaska.edu

According to legend, the 12th-century Italian architect, Bonanno Pisano, knew that his bell tower in Pisa was going to lean due to ground subsidence but built it anyway, wanting to astonish his architectural rivals in Florence. Former UAA

Chancellor Lee Gorsuch also knew that the 'Library of the 21st Century' was going to lean—having personally overseen its design by RIM Architects of Anchorage—but wanted to build it just the same (Bryson 2003).
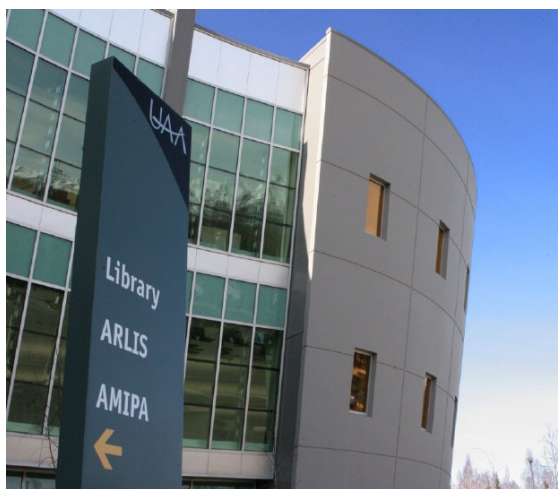
Fig. 1. *Exterior of new Consortium Library building.*

Decades in the planning, and part of a major campus and University of Alaska system-wide initiative, library construction began on the new three-story addition in the spring of 2002 and was completed a year later. The entire library, staff, and all of its collections and services squeezed into the addition for the next 12 months while renovations took place on the 85,000-square-foot existing library. When the renovation was finished in June 2004, staff, collections, and services then spread out to take up occupancy in the new library facility. All of the moving to and fro during the entire two years of construction occurred while keeping the library open and service uninterrupted—a major accomplishment! The result was a $43.5 million completely redesigned building now doubled in size to nearly 200,000 square feet. In October 2004, a grand reopening ceremony and dedication were held, featuring university and federal officials, guest speaker Robert Pinsky (U.S. poet laureate 1997–2000), and musical accompaniment by UAA's Brass Ensemble.

"There is no reason why a library can't be an exciting space," according to lead RIM architect Aaron Joseph. The 30-year-old building that UAA shared with neighboring Alaska Pacific University (APU) was anything but 'exciting'—the dramatic remodeling and expansion of the new library changes all that. Making the most of the diminished sunlight of Alaska winters, the building situates offices and

study spaces around the perimeter to take advantage of natural light and mountain views, while keeping the collections in the center.

The outward-angling east wall tilts about three feet per story, for a full 12 degrees off perpendicular, and snakes along a foundation that curves in and out. As the sun follows the contour of the building throughout the day, the serpentine wave follows a wall of glass windows that takes advantage of the panoramic views of the Chugach Mountains. One of the downsides to walls of windows—especially in libraries—is excess solar illumination that can damage books and add significantly to summer cooling costs. By using high-tech glass and slanting the wall to reduce the sun's angle of exposure, the problem disappeared. This arrangement also adds extra floor space by the windows and makes for an extraordinarily pleasant place for library patrons to study. Innovative lighting is also found in the book stacks, where rows of indirect lights suspended from the ceiling run diagonally—rather than parallel—to the bookshelves, a system that has won praise for eliminating shadows and providing consistent light across the face of the books (Bryson 2003).

Fig. 2. *Serpentine exterior wall of Consortium Library.*

Library Dean Stephen Rollins sees the library's interior and exterior design as an appropriate metaphor for the 'collision of thoughts' that is supposed to occur in a vigorous university. The contrasting architectural elements and dissimilar building materials (e.g., painted sheetrock abutting masonry walls abutting wood paneling abutting metal pillars) are juxtaposed against a bold clash of carpet patterns and color schemes. The contemporary interior style is particularly evident in the Great Room, with its floor-to-ceiling windows, where parallel vertical support structures conjure visions of oil derricks. "We wanted to make sure that no one was going to ignore the library or not know where the library is," Rollins says (Bryson 2003).

The old and new buildings aren't literally attached to each other, but stand side-by-side, separated by a covered skylit walkway or 'main street' that connects to the adjacent parking structure and campus 'spine.' Special reinforcements were required to make the innovative design earthquake-resistant, and seismic requirements for the three-story structure were equal to those for a more conventional 10-story building (Bryson 2003).

Additional features in the new structure include two state-of-the-art library instruction classrooms, a music listening room with sound stations and viewing rooms capable of playing a wide variety of media formats, and expanded space for graduate and group study rooms. An extremely popular multi-purpose room provides a venue for ongoing events, lectures, and other programs, many of which are open to the public. Additional campus-sponsored events held in this space are hosted by the Center for Advancing Faculty Excellence (CAFE), whose offices now reside in the library. The light-filled open study area outside the multi-purpose room is used to host receptions and meetings, and also serves as a gallery to display student art and other rotating exhibits.

Other Building Highlights

Foucault Pendulum

The centerpiece of the new library is the northern-most Foucault pendulum in the world, and the only one in Alaska. Hanging from a cable suspended from three stories above, the pendulum is named for the French physicist Jean Foucault, who first used it in 1851 to demonstrate the earth's rotation. Encircled by the library's grand staircase, the pendulum's brass bob moves around an elegant granite circular base inlaid with pieces of Alaska jade. The pendulum was a gift from the UAA Alumni Association.

Beacon of Knowledge

Originally, a pseudo-bell tower was planned for the top of the library, but the rectangular feature was changed to accommodate the 'swoosh,' UAA's newly incorporated logo. The design also called for a laser light to shine directly upward from the library roof as a 'Beacon of Knowledge.' This concept proved too costly and was replaced with a green LED (light emitting diode) display. UAA's school colors are green and gold, and green was chosen because it is significantly more visible than gold or amber. Unlike incandescent light bulbs, LEDs have a low power requirement and can function for decades without burning out. The library's light is installed on a 60-foot pole, with the top 55 feet lit with the LED display, making the entire structure almost 120 feet high.

UAA History Wall

In 2004, in celebration of UAA's 50th anniversary, a History Wall was permanently installed on the library's third floor. The visual exhibit shows how the campus changed and developed as Anchorage grew around it. With carefully selected archival photos that feature key individuals from the past,

the wall depicts UAA's mission of serving students and highlights programs that continue to make a difference in Alaska. The pictorial display reflects the energy and diversity of an engaged university. The design is dramatic and contemporary, with ample space to continue the wall through the next 50 years and into the future.

Archives and Manuscripts Department

The archives now have twice as much space as before to house a variety of historical materials preserving Alaska's legacy, which is one reason former Governor and U.S. Secretary of the Interior Wally Hickel recently agreed to donate his personal papers there. An environmentally controlled repository capable of holding 10,000 cubic feet of archival documents was designed, along with refrigerated vaults for proper storage of film and video. The latter was an important factor in attracting the Alaska Moving Image Preservation Association to share space in the library.

Fig. 3. *Third-floor gallery and study area where special events can also be hosted.*

HSIS

Health Sciences Information Service

www.lib.uaa.alaska.edu/hsis

In 2002, at the Copenhagen meeting, we (Murray, et al., 2002) presented information on plans for the Circumpolar Health Information Center. Two years later, Murray and Means (2004) reported that those plans had been realized as the 'Arctic Health' website (www.arctichealth.org). To recap, the website is a portal to information about human and environmental health in the Arctic, created through the collaboration of the National Library of Medicine's Specialized Information Services division, UAA's Health Sciences Information Service, and UAA's Institute for Circumpolar Health Studies (ICHS). Organized around themes such as traditional healing, telehealth / telemedicine, and health topics important to Alaska Natives and other residents of the circumpolar north, the website provides information from a distinctly Alaska / arctic perspective. Content is drawn from a wide range of local, state, national, and international agencies as well as from professional societies, universities, Alaska Native health corporations, and numerous well-known and highly regarded experts.

The 'Library' section of the website includes a number of key databases and publications, including online journals, bibliographies, and a variety of reports. One of these key databases, the Arctic Health Publications Database, indexes publications, government reports, gray literature, and non-print media. Expanded from the original Fortuine, et al. (1993) bibliography of several thousand citations, the database now contains more than 75,000 citations. While most of these can be found by searching PubMed (from the National Library of Medicine), there is a growing subset that can only be found here. The Publications Database, while international in scope, is limited to English-language articles.

Whenever possible, the documents included in the 'Library' section link to full text. Working together, HSIS and ICHS have obtained copyright permission to create PDFs of those articles published as part of the Circumpolar Health Proceedings; permission from Canadian publishers is pending. Users will find this

feature especially valuable given the difficulty of locating some of these materials. The next big push will be to populate the Research Database and International Polar Year sections, include digital image collections, and add new streaming videos on traditional healing.

International Polar Year

As members of the Polar Libraries Colloquy are well aware, the International Polar Year (IPY) 2007–2008 will be an intense, internationally coordinated campaign of research initiating a new era in polar science. IPY 2007–2008 will include research in both polar regions and recognize the strong links these regions have with the rest of the globe. It will involve a wide range of research disciplines, including the social sciences, but the emphasis will be interdisciplinary in approach and truly international in participation.

The U.S. will be leading the research aspects of human health, with Dr. Alan Parkinson directing the Arctic Human Health Initiative (AHHI), a project of the Arctic Council. Circumpolar in scope, the initiative will expand human health research in the areas of infectious diseases, anthropogenic pollution, climate change impacts, and telehealth innovations. The Arctic Health website will host this portion of the IPY activities.

Thoughts, suggestions, and feedback regarding the Arctic Health website are encouraged. Please send questions or comments to ayhsis@uaa.alaska.edu

Partners

AMIPA
Alaska Moving Images Preservation Association
http://www.amipa.org/index.html

AMIPA is a private, non-profit archive and conservation center dedicated to the preservation of Alaska film and video materials. It collects, preserves, catalogs, and provides public access to Alaska's sound and moving image material, and

encourages the ongoing documentation of Alaskans and Alaska events of historical importance. With more than 17,000 items dating back to the 1920s, AMIPA is a treasure trove of Alaska imagery.

AMIPA also provides knowledge and assistance to other archives, private collectors, producers, institutions, and the general public, and it educates government officials and civic leaders on the importance of preserving Alaska's sound and moving image heritage. In addition, the Association collects 'endangered' materials and provides technical assistance and knowledge regarding archival needs and techniques.

By 1986, Alaska's moving image heritage was in danger of being lost. Budget cuts had closed many production facilities, and those that continued were forced to make major reductions in staff and budgets. Institutions were no longer able to produce and protect Alaska film, television, and recorded sound materials. Collections ended up in cardboard boxes, closets, and other improper storage areas, sometimes left for years with no attention given to temperature or humidity control, security, safety, or maintenance. Due to the lack of documentation and finding aids, access was limited, with few archivists and librarians left in major institutions to maintain these materials and make them available to the public.

Because of this scenario, AMIPA was created in June 1991 and organized as a private non-profit corporation. Soon afterwards, AMIPA moved into the Grandview Gardens Cultural Center in Anchorage. Fostered by public and private donations, the collection grew quickly, and in 1997 AMIPA transitioned from an all-volunteer organization to one having a paid curatorial, technical, and administrative staff.

In September 2004, AMIPA entered into a preservation partnership with the UAA / APU Consortium Library, and a month later moved into offices on the third floor of the new building. During the spring of 2005, AMIPA installed its collection into modern film and magnetic media vaults adjacent to their office space. The

vaults feature temperature and humidity-controls, air filtration, and a high level of security that incorporates motion-detection alarms and keypad-controlled entries.

A few examples of AMIPA's collections include 1930s historical films from Father Bernard Hubbard, the glacier priest; documentaries from the Alaska Psychiatric Institute; public service announcements from the Alaska Public Interest Research Group; public relations footage from the Alyeska Pipeline Service Company; video from the Alaska State Troopers; and family videos that capture the flavor of the state over the decades.

AMIPA can be researched for free by coming to their facility in the Consortium Library to search their database and view materials. Fees are charged for purchasing screening tapes, associated tape transfer, and shipping costs, as well as for research performed by AMIPA staff.

ARLIS

Alaska Resources Library and Information Services

www.arlis.org

In our last presentation about ARLIS at the 2002 Polar Libraries Colloquy, we (Carle and Braund-Allen, 2002) focused on explaining the library's background and structure. ARLIS continues to mature as the preeminent mother lode of Alaska resources information. In recognition of its exceptional service to the people of Alaska and the nation, it was honored with a Legislative Citation by the Alaska State Legislature in the fall of 2002.

ARLIS is a true model of cooperation and collaboration. Having taken several years to plan by its founding members, the library was formed in 1997 by merging nine Anchorage-based natural and cultural resources collections, some of which had not previously been publicly accessible. The partnership involves UAA and its Environment and Natural Resources Institute, along with the Alaska Department of Fish and Game, the *Exxon Valdez* Oil Spill Trustee Council, and five federal agencies: the U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Geological

Survey, U.S. Minerals Management Service, and U.S. National Park Service. An additional partner is the U.S. Army, Fort Richardson, Environmental Section. A team of six librarians collectively manages ARLIS, each representing the research interests and service needs of its founding partners.

ARLIS' mission is to provide universal access to natural and cultural resources materials relating to Alaska and the Arctic, while simultaneously serving the diverse information needs of its founding organizations. The collections support the management of 235 million acres of federal land and 100 million acres of state land and water resources throughout Alaska. Almost one quarter of ARLIS' titles are thought to be unique.

Statistics show that as of 2005, 48 percent of ARLIS circulation is to the public, 33 percent is to agency personnel, and 19 percent is to university students and faculty. Annually ARLIS serves about 20,000 onsite users and receives approximately 25,000 requests for information, either in person or electronically. Sixty-four percent of the questions are asked by industry and members of the public.

New Collections

When ARLIS first opened its doors in 1997, it came with a huge backlog of uncataloged and inaccessible materials, a result of combining the print collections of the founding partner libraries. Six years later, in 2003, ARLIS received a $497,000 federal appropriation from the U.S. Department of the Interior for a cataloging and digitizing project. The majority of the money went to fund a pilot project to train catalog interns and reduce ARLIS' large backlog. Supported by the best cataloging tools, resources, and local expertise, six interns were hired and trained by a master cataloger in the intricacies of gray literature, maps, videos, and other formats.

As a result of this pilot project, the following three collections were cataloged, providing access to nearly 13,000 documents.

Arctic Gas Collection – engineering and environmental reports and studies prepared in support of the 1974 Arctic Gas proposal. These materials are of great relevance to the current natural gas pipeline initiative in Alaska.

SuHydro Collection – more than 3,000 documents resulting from a feasibility study that evaluated the development requirements of and collected baseline environmental data for the Susitna Hydroelectric Project. The original research cost $132 million and its reports had never been widely distributed.

ARCO / BP Collections – containing materials selected from the disbanded Anchorage-based libraries of these two oil companies. Items focus on the environmental, geological, and business aspects of oil production.

The remaining portion of the appropriation monies was used to digitize the final reports of the Outer Continental Shelf Environmental Assessment Program. Known as OCSEAP and funded through the National Oceanographic and Atmospheric Administration, this research was conducted under the responsibility of the U.S. Bureau of Land Management during 1975–1985 to develop baseline data in anticipation of oil development on Alaska's outer continental shelf. The interdisciplinary study extended from the Beaufort Sea to the Gulf of Alaska and included all aspects of the physical environment: marine mammals, marine birds, fish, plankton and bottom-dwelling organisms, water conditions, sea-ice-water interface, physical oceanography, geology, probable impacts of petroleum development, and effects of contaminants.

The research produced a gold mine of never-before-gathered information that was issued in glue-bound, poorly indexed, and badly cited volumes that were falling apart fewer than 10 years later. The indexing was so poor as to be non-existent, and many of the tables of contents did not even list all of the reports contained in the volumes. Researchers were forced to look page-by-page, or report-by-report, to make certain they had not missed anything. These OCSEAP materials will soon be available and searchable on the Web.

Recently, ARLIS received additional funds to catalog other important but inaccessible materials. This project includes several phases.

In May 2005, an in-house server was purchased to host, archive, and make permanently available electronic documents added to the library catalog. ARLIS converts outside URLs to PURLs (permanent URLs) to safeguard against information and data loss through impermanence or 'rot link.' One of the project's goals is to establish procedures for agency staff to move their documents to this in-house server as they are issued.

Another undertaking will be to enter ARLIS' journal titles and related holdings information into the shared online catalog using the serials module of Sirsi, the current integrated catalog.

A third component will be to catalog the CommFish Collection from the Alaska Department of Fish and Game. ARLIS owns the most complete collection of these series of reports, including primary source data reported nowhere else. Fishing is an industry vital to Alaska, and the addition of information, reports, and history of commercial fishing in Alaska waters will be an invaluable resource.

New Location

In August 2004, ARLIS moved into its new quarters in the pristine library complex on UAA's campus. Occupying 20,000 square feet with two entrances from the interior of the Consortium Library, ARLIS sets itself apart from the academic milieu. Architecturally the libraries feature the same unifying colors, carpeting, and structural elements, but ARLIS was able to add its own enhancements. Oak-end panels on the shelving units and wood enclosures surrounding the map cabinets give a uniform look and work surface, as does the graduated shelving that allows visual appreciation of a large, light-filled atrium extending two stories high. Banners announce the transition from one library to the next, and animal mounts display prominently, with a welcoming black bear showcased in the ARLIS reference area. These touches have helped establish ARLIS as a separate entity, and are intended to

give clear, if sometimes ignored, clues to those students who do still occasionally ask for help locating literary criticism or music scores at the ARLIS reference desk.

Fig. 4. *Entrance to the Alaska Resources Library and Information Services.*

Both ARLIS and UAA have benefited from this move in many ways. Pooling resources has provided efficiencies in subscription costs, book purchases, library management software, library staff, space, and other facility costs. For example, ARLIS pays about 50 percent less for the space it now occupies compared to its previous lease in mid-town Anchorage, while UAA has gained a premiere science collection on its campus. Hours of access for ARLIS patrons have more than doubled. Its reference desk is still open 45 hours a week but, with the exception of its Special Collections, ARLIS is open the entire 92.5 hours the Consortium Library is open during an average week. ARLIS has made arrangements with the Consortium Library's circulation desk staff to check out books and other materials when its own reference desk is closed. The Consortium Library has made the databases it subscribes to available on the ARLIS in-house desktop network, and ARLIS reference librarians share their expertise with the university community. Some staff positions are shared between the two, such as those of the network administrator and the administrator for the integrated online catalog.

Increased proximity to each other's collections has meant quicker service for everyone. For example, ARLIS' Document Delivery Department can pull books and

journals from the Consortium Library by just walking down the hall rather than having to generate an interlibrary loan request. ARLIS can also pull and circulate Consortium Library materials to ARLIS patrons. The same holds true for the Consortium Library and its users.

A number of co-location committees with members from each library had been formed before the move to address issues that might arise in the realms of circulation, reference, technical services, and so on. While these committees have been useful, and in some cases imperative, for the most part, matters have been worked out more informally and on an as-needed basis during the 19 months since ARLIS moved into the new library complex. One contentious pre-move issue involved providing free parking for ARLIS users on a campus that charges everyone to park (excluding late evenings, Fridays, and weekends). After much discussion, a way to validate parking was found so that anyone using ARLIS could park at no cost—in keeping with its federal mandate of free public access—while all other patrons continue to pay a parking fee.

Holidays have also proved somewhat problematic. For example, an email to ARLIS staff one November explained that the coming Friday was Veteran's Day—a state and federal holiday—but not a university holiday. ARLIS' state and federal staff would have the day off, but its university employees would work as usual. Similarly, the Consortium Library finds itself having to keep the building open and staff its circulation desk on days it had previously been closed, such as the Christmas / New Year's holiday and the last day of spring break.

New Connections

One more major effort has been ARLIS' participation in a statewide interlibrary loan pilot project designed to bring OCLC's ILLiad Resource Sharing Management Software to all partner libraries. ARLIS upgraded to ILLiad in late 2003 and it has proved to be an excellent decision. ILLiad is extremely popular with researchers, who can now submit their requests and track them online, while ARLIS is able to use a single Windows-based interface to manage its borrowing, lending,

and document delivery. ILLiad easily captures statistics and generates a variety of reports that include statistical charts and graphs. This latter feature has been especially helpful for budget presentations and collection analyses.

ARLIS used the services of a volunteer library intern to further develop its ARLIS Pathfinders Database (see Pathfinders & Links at www.arlis.org). Over the summer of 2005, the intern evaluated and selected quality websites and compiled links covering a wide range of searchable subjects in areas of ARLIS' expertise. Alaska Natives, the Arctic National Wildlife Refuge Coastal Plain, dredging, hunting and fishing, public lands, the Russian Far East, transportation, water quality, and zoology are just a few examples. A click on the subject, 'Wilderness,' connects to sites such the Alaska Fire Service, the Aldo Leopold Wilderness Research Institute, an Alaska Collection of photographs from the U.S. Fish and Wildlife Service, Federal Research and Development Project Summaries, the National Wilderness Preservation System and all public laws that affect it, and more. Another pathfinder, 'Oil Spill,' provides some of the best Internet-based oil spill information, while 'ANILCA' gives an excellent annotated list of websites examining the Alaska National Interest Lands Conservation Act from a variety of perspectives.

ARLIS continues to participate in the multi-year cooperative effort with the Anchorage Municipal Libraries, the UAA / APU Consortium Library, and the Anchorage Museum of History and Art in developing a shared joint catalog and associated technical services and software functions. A local grant of $360,000 from the Rasmuson Foundation paid for the recent migration of the participating libraries' records to Sirsi, the new integrated online catalog system.

Another ongoing effort has been the Anaconda Project. Through the interagency Minerals at Risk program, the Cook Inlet Region Inc., one of Alaska's 13 Native regional corporations, donated a collection of minerals materials that was previously proprietary and unavailable to the public. ARLIS now houses some 1,800 reports, notes, analyses, drilling results, and geophysical surveys resulting from Anaconda Minerals company exploration in Alaska conducted between 1975 and

1985. Indexing for this and other Minerals at Risk products can be accessed at akgeology.info.

ARLIS continues to accept large donations of Alaska natural resource materials. In 2004, the Alaska Department of Fish and Game library collection from Juneau was consolidated into ARLIS. Dating back to Alaska's statehood in 1959, this collection contains many unique materials, including unpublished agency reports not available elsewhere.

The enterprise of ARLIS has involved and continues to rely upon the combined help, good will, and support of an enormous number of people and entities at all levels.

Alaska's Digital Archives
vilda.alaska.edu

The Alaska Virtual Library and Digital Archives project is a collaborative effort of three institutions: the Consortium Library at UAA, the Rasmuson Library at the University of Alaska Fairbanks, and the Alaska State Library in Juneau. With collections representing thousands of primary Alaska source materials covering a broad range of topics, the project's goal is to support the instructional and research needs of Alaskans and others interested in Alaska history and culture. Funded by a congressional award along with contributions from the participating institutions and additional support from the Rasmuson Foundation, an Alaska philanthropic organization, the initial efforts focused on scanning, indexing, and placing a benchmark of 5,000 historical images into an online, searchable database. Now in its third phase, the Digital Archives project is expanding to add multiple format materials such as oral histories, maps, documents, film clips, and three-dimensional objects into the database. The collection currently numbers more than 15,000 items.

The Archives and Manuscripts Department at the Consortium Library leads the initiative for UAA, and has organized partnerships with the Anchorage Museum of History and Art and with the Seward (Alaska) Community Library. Together,

these three institutions are contributing records to the Digital Archives database that provide a sampling of the photographs in each of their holdings, and soon they will be including other types of media such as diaries, maps, and other documents. Requests for duplicates of photographic images held by UAA, the Museum, and the Seward Library have tripled since the Alaska's Digital Archives database became available in 2003. Inquiries originate from individuals, companies, television studios, and a myriad of other organizations in both local and national locations. International requests have come from as far away as Germany and England.

Recently added collections to Alaska's Digital Archives from UAA include photographs from Christine McClain, a freelance writer who moved to Alaska in 1948 and traveled throughout the state, and Russell Dow, an amateur photographer who came to Alaska on the Bradford Washburn expeditions of the 1930s and worked in various Alaska locales.

One of the Anchorage Museum's more recent contributions is an official set of photos taken by photographers hired by the Alaska Engineering Commission to document construction of the Alaska Railroad. The Commission was the official federal agency that built the railroad from Seward to Fairbanks during 1915–1923, setting the stage for the dramatic development of Alaska along the railbelt from the coast to the interior. Another addition from the Museum is the Ickes Collection, dating from the summer of 1938, when Harold L. Ickes, then U.S. Secretary of the Interior, traveled to various parts of territorial Alaska. Earlier that summer he had sent members of a Reindeer Commission to Alaska to visit a number of the reindeer camps where the raising, herding, and harvesting of reindeer, and selling of the meat was operated by Alaska Natives. The Ickes Collection is important because it documents the reindeer industry, and also depicts daily life in small villages in Alaska at that time.

Conclusion

The goal of the new library is to advance academic and research excellence. This signature building for the UAA campus bridges the past and the future,

combines the virtual and the physical, and inspires individual study and collaborative research. It is a hub for virtual library resources and wireless web connections, and a center for creating digital content. The new facility supports on-campus, community-based, and distributed learning programs. It is a place to plug into Mozart, the Internet, or Alaska history—a place for people, for instruction and discovery, and for preservation of information in all formats. The 'Library of the 21st Century' is a place of collections and connections, and expanding possibilities and partnerships.

References

Beard, L., 2004, "Library Completed", in *Northern Light*, 22 June, pp.1-2.

Bourgeois, D.J., 2004., "Librarians Discuss Electronic Collaboration Issues", in *U.S. Department of the Interior Weekly*, November 5.

Braund-Allen, J. and Carle, D.O., 2002, "Alaska Resources Library and Information Services: Building Community in the 49th State", in *Reference & User Services Quarterly*, 42(2), pp. 119-123.

Bryson, G., 2003, "Leaning Toward Drama: 'Fanciful' New Library Finally gives UAA a Center of Focus", in *Anchorage Daily News*, 26 October, D:1, 4-5.

Carle, D.O. and Braund-Allen, J., 2002, "ARLIS: A Model for Successful Partnerships in the Online Age", in *Poles apart - Poles on-line: Proceedings of the 19th Polar Libraries Colloquy, Copenhagen, 17-21 June 2002,* edited by K. Caning and V.S. Jakobsen, Copenhagen, Danish Polar Center, pp. 16-22.

Carle, D.O. and Braund-Allen, J., 2004, "Alaska Resources Library and Information Services: Pioneering Partnerships on the Last Frontier", in *Innovations in science and technology libraries*, edited by W. Miller and R. Pellen, New York, Haworth Information Press, pp. 107-133 [co-published in *Science and Technology Libraries*, 24(1/2), pp. 107-133].

Dickerson, K., 2004, "Library Helps Anchorage *Shine*", in *Northern Light*, 12 October: 1, 3.

Fortuine, R.; Braund-Allen, J.; Alward, J.; Andress, L. and van den Top, J., 1993, "The Health of the Inuit of North America: A Bibliography from the Earliest Times Through 1990", Anchorage, University of Alaska Anchorage.

Garing, C., 2003, "UAA's 'Library of the 21st Century' to open Soon", in *Fresh Ink*, 5 August, 1.

Hunt, W.R., 1976, "Outer Continental Shelf Study", in *Alaska Science Forum*, May 19, article n. 78
http://www.gi.alaska.edu/ScienceForum/ASF0/078.html   (28 April 2006)

Iliff, J.M.; Vitale, C.S.; Pres Winslow and McDaniels, L.C., 2004, "Hiring from a Distance: Bringing Cataloging Interns to Alaska", in *PNLA Quarterly*, 62 (2, Winter), pp. 11-14.

Keese, J., 2003, "Designed to Delight: New Library fuses Style and Technology", in *Northern Light*, 29 July.

McDaniels, L.C.; Benson, K.P.; Jackelen, N.M.; Macke, S.R.; Miller, C.A.; O'Halloran, C.T.; Iliff, J.M. and Vitale, C.S., 2004, "Cataloguing Alaska", in *PNLA Quarterly*, 62 (2, Winter), pp. 8-10.

Murray, K. and Means, S., 2005, "The Arctic Health Website: Lessons Learned and Future Directions", in *Polar research: Let us share—Amiqqaaluta. Proceedings of the 20th Polar Libraries Colloquy, Ottawa, June 7-11, 2004*, edited by B.E. Kelcey, Ottawa, Ont., PLC, pp. 148-150.

Murray, K.; Dutcher, G.; Iliff, J. and Elliott, S., 2002, "Circumpolar Health Information Center: The First Year and Hopes for the Future", in *Poles apart - Poles on-line: Proceedings of the 19th Polar Libraries Colloquy, Copenhagen, 17-21 June 2002*, edited by K. Caning and V.S. Jakobsen, Copenhagen, Danish Polar Center, pp. 35–44

Robards, R., 2004, "New Collections and Connections: Library of the 21st Century Full of Improvements", in *Northern Light*, 18–24 February: 16.

Thomas, T., 2004, "Foucault's Pendulum Brings Earth and Science Together in Library", in *Fresh Ink*, 3 August: 2.

Barents Information Portal and its further improvement

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Abstract. Barents Information Portal www.barentsinfo.org was launched in 2004 with cooperation of Finnish, Norwegian, Russian and Swedish partners and with project funding from EU-Interreg. The portal is focussed and functioned information source of the Barents region. The goals for the Barents portal were to offer a forum where to publish information and news and increase knowledge of the region. The design of the portal was based on the results of an extensive user survey.

In the beginning of the project it was carried out a questionnaire about information needs concerning the Barents region. The portal contains general information about the region and articles giving an overview of different topics. The information is organized under following themes:

Information about the region-Administration-Cooperation-Culture-Customs information Dictionary-Documents-Economy& Business-Education & Research-Environment & Nature Events-Funding-History-Indigenous people-Maps-Media & News-Natural resources-News-Photos-Projects-Statistics-Society-Travel & Tourism-Transport & Communications-Weather-Youth-Search.

I will speak about contents and development plans of the portal.

What is Barents region

The Barents region Europe's largest region for interregional cooperation includes the northernmost parts of Sweden, Norway, Finland and Northwest Russia **(Figure 1)**. The nature is unique and the environment vulnerable, with wide tundra areas in the north and extensive boreal forests zones in the south. The wealth and diversity of natural resources, e.g., biotopes, forests, fish, minerals, diamonds, oil and gas, poses create opportunities and challenges.

The Barents cooperation was formally established on 11 January 1993. The official cooperation is organized on two levels. The Barents Euro-Arctic Council operates at government level and the Regional Council operates at regional level. Finland acts as chair of the Barents Euro-Arctic Council from November 10, 2005 to autumn 2007.

The purpose of the Barents Cooperation is to strengthen east-west infrastructure, establish people-to-people contacts and thereby contribute to the economic, cultural and social development of the Region. The Barents Cooperation promotes people-to-people contacts and economic development and creates good conditions for interregional exchange in many different fields; e.g., culture, indigenous peoples, youth, education, ICT, trade, environment,

transportation and health. The Barents Cooperation is regarded as an integral part of creating a stable, democratic and prosperous Europe.

Barentsinfo portal and information sharing

Barents Information Portal (www.barentsinfo.org) **(Figure 2)** is one example of the cooperation. It was launched in 2004 with cooperation of Finnish, Norwegian, Russian and Swedish partners and with project funding from EU-Interreg.

The project partners (Arctic Centre in Finland, Norwegian Barents Secretariat , Norut IT and Maximite Alta in Norway, Murmansk State Technical University in Russia and Norrbotten and Västerbotten County Administrative Boards in Sweden) established strong personal networks and made extensive use of weekly online meetings for communication.

The project itself has also been successful model of Barents regional cooperation. Even though the Barents region is very vast with long distances and poor flight, bus and train connections this has been a good example of a cooperation project where all the participants have been actively involved.

Barentsinfo portal is focussed and functioned information source of the Barents region. The goals for the Barents portal were to offer a forum where to publish information and news, to become the official platform for Barents information and to increase knowledge of the region.

The design of the portal was based on the results of an extensive user survey. In the beginning of the project it was carried out a questionnaire about information needs concerning the Barents region. The results of questionnaire can be downloaded as a PDF-file at Barentsinfo.

The portal contains general information about the region and articles giving an overview of different topics. The information is organized under following themes:

Information about the region-Administration-Cooperation-Culture-Customs information Dictionary-Documents-Economy& Business-Education & Research-Environment & Nature Events-Funding-History-Indigenous people-Maps-Media & News-Natural resources-News-Photos-Projects-Statistics-Society-Travel & Tourism-Transport & Communications-Weather-Youth-Search.

Besides over 3500 links, the portal contains articles and facts about the region, as well as news, maps, and extensive photo gallery. A specialized search engine indexes a number of web servers containing Barents related information, which provides more focussed results than major web search engines.

The portal is updated non-stop and is open forum for sharing knowledge and relevant Barents information. As one of the project goals was to provide a platform where people can present relevant Barents related information.

The Barentsinfo-project has also contributed to web development in Russia, with the development of English language pages of the Murmansk regional portal (www.murman.ru) and others.

The latest example for information sharing through Barentsinfo is new EU-Interreg funded project "eLibrary and Culture without borders". Its main objectives are to make the products of the peripheral cultural heritage of Barents region readily available for the academic world as well as the general public. The aim is also to make the culture of Barents available to a broader audience in digital form and to produce digital culture material of Barents region as a part of Barentsinfo.

North-West Russian information of Barentsinfo is also closely linked to RUSSIAinfo (www.russiainfo.org) which aim is to disseminate information on quality online resources on Russia. The resources in RUSSIAinfo may be browsed with the help of subject and geographical indexes or searched directly from the reference database. The resources may also be browsed with the help of the map of Russia. A machine translator is also available for obtaining the Russian web sites in English. Russian texts in other formats may also be obtained in English by copying and pasting the texts in the translation window of the translation program. Creator of RUSSIAinfo is a project group appointed by the Finnish Ministry of Education. The project manager is Aleksanteri Institute of Helsinki University.

Forthcoming improvement

As a step towards improvement and widening of Barents related information is the special assignment made by the Barents Euro-Arctic Council to the Arctic Centre Information Service.

The task of the Arctic Centre Information Service is to create an official cooperative data provision network to ensure that the Barents data and information will be publicly available and take into account new emerging technologies which can be implemented in order to improve information management: the semantic web technology and web map services technology. That means, among others, studying the existing situation of data and information management, making recommendations and drafting guidelines for future activities and specific measures regarding data collection, storing and dissemination in the region.
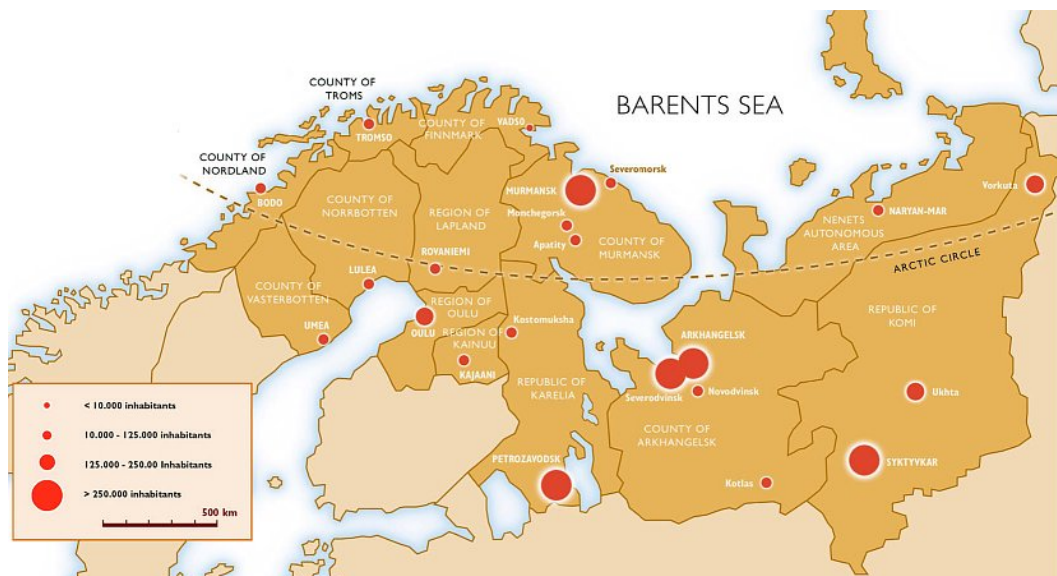
Fig. 1. *Map of the Barents Euro-Arctic Region.*

Fig. 2. *Barentsinfo portal www.barensinfo.org.*

Alaska's Digital Archives: from vision to reality

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Abstract. The curators of the Alaska & Polar Regions Collections, Rasmuson Library, University of Alaska Fairbanks, began exploring digital methods to improve access to Alaska historical and cultural sources in the late 1980s. The pioneering Wenger Eskimo Database and Project Jukebox oral history multimedia databases began on CD-ROM but are now available over the World Wide Web. With web conversion of these resources well underway in the late 1990s, we began imagining a single database that would provide access to all types of Alaska primary sources and be available to all repositories that hold such materials. This vision was presented at Colloquy in 2002. Four years later we are ready to present Alaska's Digital Archives http://vilda.alaska.edu as the realization of this vision. Key features to be discussed: founding partners are Alaska's three largest libraries—UA Fairbanks, UA Anchorage, Alaska State Library — and their affiliated museums; plans are underway to bring in other Alaska repositories such as local historical societies; it currently holds more than 15,000 digital objects and associated metadata, and continues to grow week by week; content has been selected to meet public needs such as the fiftieth anniversary of statehood and the new Alaska high school history; educators and Alaska Native cultural experts have assisted with selection; formats include photographs, manuscripts, government documents, rare printed maps, oral history recordings, archival film footage, and museum objects; the database is searchable in various ways; and there is an associated tool called LearnAlaska to enable pre-college students to draw on the archives for multi-media projects. The presentation will conclude by comparing this project with those in other U.S. states and raising the question of how it could become multi-national.

Note: By bringing up Alaska's Digital Archives at http://vilda.alaska.edu and following the bracketed cues such as [CLICK], the reader will be able to have the same experience as the original audience. The audio clips may require downloading of Windows Media Player, currently available free at http://www.microsoft.com/downloads. The video clips require Quicktime, currently free at http://www.apple.com/quicktime/download/.

Four years ago, this Colloquy heard a progress report on digital delivery of Alaska historical and cultural materials.[1] At that time we announced completion of the Web edition of the Hubert Wenger Eskimo Database

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[1] Grigg, S., 2002, "Digital Archives for Alaska", in *Poles Apart, Poles On-line: Proceedings of the 19th Polar Libraries Colloquy, 17-21 June 2002, Copenhagen*, edited by Kirsten Caning and Vibeke Sloth Jakobsen, Copenhagen, Danish Polar Center, pp. 9-16.

http://www.wengereskimodb.uaf.edu/ and introduced our next areas of development. We did not provide the promised update at Polar Libraries Colloquy in 2004 because we were not as far along as we had hoped to be. This is that delayed report.

Specialized projects such as our own Wenger Database and the Tundra Times Photograph Project http://tundratimes.ilisagvik.cc/ from the Tuzzy Library in Barrow provide thorough coverage of particular bodies of research material. This continues to be a strong model for digital development, as Tuzzy demonstrated by beginning to digitize the newspaper's articles once it finished the photos.

The project I will highlight today is meant to complement these specialized projects, not replace them. Alaska's Digital Archives http://vilda.alaska.edu is built on the model of a union catalog, potentially open to all Alaska repositories and all the kinds of materials they contain. Though it will never be as exhaustive as the Wenger and Tundra Times projects, it is already performing two functions they cannot. It is enabling researchers to find significant materials on any subject in any format by visiting just one website. It is enabling small institutions to introduce their collections digitally with moderate expense and effort.

Alaska's Digital Archives is built on a partnership among Alaska's three research libraries: Rasmuson Library at the University of Alaska Fairbanks, the Consortium Library at the University of Alaska Anchorage, and the Alaska State Library. This broad base was politic for a project that depends on funding from our senior U.S. senator. It also takes advantage of our shared leadership in developing library services for the state and our ability to supplement the special funding with our own resources.

A framework for the contents of the Digital Archives was developed by curators from the partner libraries plus collaborators such as the Alaska State Historian. They proposed to begin with three broad themes: the political process

that led to Alaska statehood, the economic development that made the bid for statehood plausible, and the distinct thread of Alaska Native experience.

The library directors thought this was too much to manage at the start, so the statehood story was broadened to include some economic and social content, and the distinct economic theme was set aside. "Movement to Statehood" and "Alaska Native History & Cultures" are featured on the Digital Archives home page as it remains today.

The Statehood theme was given priority to anticipate the 50th anniversary of statehood. This made the project more competitive for public funds and guaranteed exceptional interest when we were ready to introduce the project to the state. A common problem with anniversaries is that no-one gives them much thought until the date is alarmingly near, but we started just in time. Though we had to begin by building the infrastructure, we were ready for the 50th anniversary of Alaska's Constitutional Convention in November 2005, and we look forward to the Statehood Celebration in January 2009.

The Statehood material [CLICK on blue *Statehood*] is organized around seven sub-themes or categories: Government, Military, Business and Commerce, Society and Daily Life, Natural Resources, People, Transportation. Some— Government, People, Society and Daily Life—would be likely choices for any region's history. Others—Military, Natural Resources—are particularly important for Alaska. The curators also developed a more detailed list of topics, and associated them with different historical periods, to guide them in selecting items, but those details do not display for users. [HOME]

The Alaska Native History & Cultures theme is presented as parallel to the Statehood theme rather than integrated with it because the experience of Alaska Natives has been substantially distinct from the political, economic, and social transformations that were driven by white visitors and settlers from Europe and North America. An advisory board of cultural experts from Native communities was added to test our judgment on selection and organization of materials and acknowledge their stake in their history and culture.

The Alaska Native theme [CLICK on blue *Native*] has twelve categories—too many to recite, but worth some comment. Notice the byplay between traditional and modern topics. There are two categories having to do with religion, one for traditional spiritual practices and one for the outcomes of Christian missionary activity, and two having to do with preparing children for adulthood, one called "Traditional Ways of Learning" and the other "Education." The topic of health is disproportionately developed because the Digital Archives is home to a separately funded project on health services to rural communities. Topics such as Art and Traditional Technology might have been absorbed in one or another category of the Statehood theme, but they are more crucial to Native experience and its interplay with development.

The categories are designed for browsing. For example, Religion & Church Leadership has over 200 items. [CLICK on that phrase] They appear ten items per screen, alphabetical by item description. The first photograph shows the Alaska Mission Team from the 1974 Arctic Winter Games, some members apparently Native and some white. [CLICK on image] It comes from the Alaska State Library Historical Collections. The second shows a missionary from the Episcopal Church, the U.S. province of the Anglican Communion, teaching two girls at Point Hope in northwestern Alaska in the 1950s. [BACK, CLICK on image] It comes from the Archives at UAF.

Fig. 1. <http://vilda.alaska.edu/cdmg11/image/2808.jpg>

Mary Cox Photographs, Accession Number 2001-129-130, Archives, Alaska and Polar Regions Collections, Rasmuson Library, University of Alaska Fairbanks.

The largest Alaska Native category has more than 1000 items, and the largest categories in the Statehood theme have passed 3000. A help in browsing such a mass of material is to switch from the default display called the "grid" to the "thumbnails" display. [BACK, CLICK on bar above results] Even so, browsing is clearly impractical for topical research, and the problem will grow with the Archives. [HOME]

For this reason, there is also a keyword search at the left on the main page:

- For example, one can search for additional items on the Arctic Winter Games by searching that name. [TYPE Arctic Games, GO] This yields at least 130 items, first the same image of the Mission Team and then one of a competitor shaking hand-to-fin with a fish. [CLICK on image]
- A search for Point Hope yields almost 400 items. [HOME, TYPE Point Hope, GO] The first is the same image of a lesson. The second shows a sod house from the same album. [CLICK on image].

All of my examples have been photographs. The project began with photographs, as most digital archives do, but we expanded to other formats as soon as possible. These come up from time to time in browsing by category or searching by keyword. It is also possible to browse by format, using links on the main page. [HOME]

- For example, UAF has added more than 150 items from its rare map collection. [CLICK on blue *maps*] The second is a guide to the Klondike gold fields that was front-page news in Paris in 1898. [CLICK on image]
- Among the documents is a speech by U.S. Secretary of State William H. Seward proclaiming his vision for the North Pacific in response to critics of the Alaska purchase as "Seward's folly." [HOME, CLICK on blue *documents*, CLICK on current image 4] It comes from the Alaska State Library, which pioneered in adding documents to the Archives.
- Among the oral histories is an interview with Captain Erling Brastad, who begins by explaining the push and pull that took him from rural Norway to the Port of Seattle and points north. [HOME, CLICK on blue *oral histories*, CLICK on speaker icon for current item 2, "CLICK here to display item"]. It
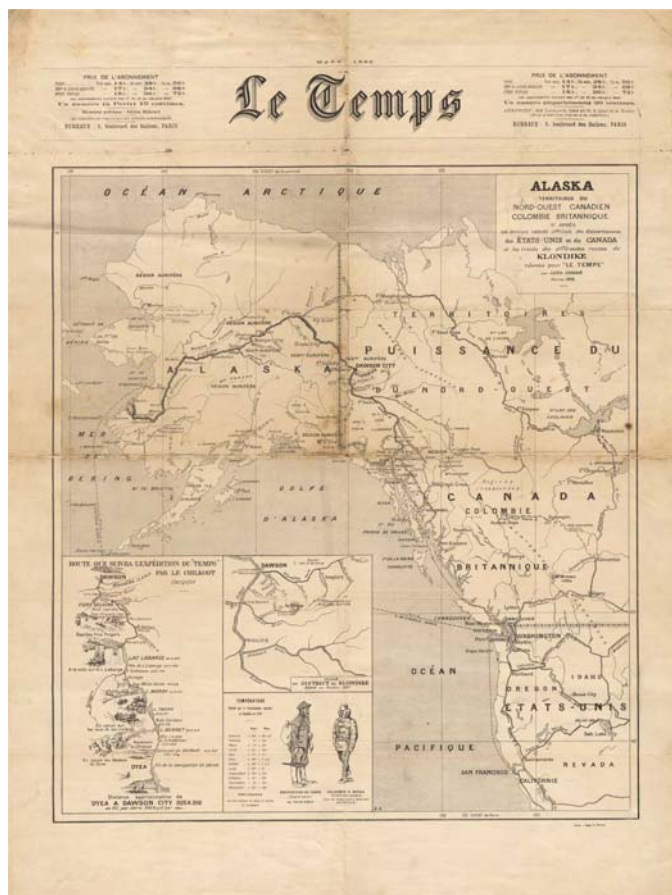
comes from the Oral History Program at UAF. [CLOSE Windows Media Player after first question and answer]

Fig. 2.
<http://vilda.alaska.edu/cgi-bin/getimage.exe?CISOROOT=/cdmg11&CISOPTR=3447&DMDIM=1200&DMDIMW=720&DMDIMH=1000>

Accession Number G3350 1898 S4, Rare Maps Collection, Alaska and Polar Regions Collections, Rasmuson Library, University of Alaska Fairbanks.

- Among the moving images is this edited film of the Good Friday earthquake of 1964. [HOME, CLICK on blue *moving images*, CLICK on current camera icon 2, "CLICK here to display item"] It comes from the Film Archives at UAF. [CLOSE QuickTime]
- Among the physical objects is this montage of Native traditional activities, drawn on hide by George Aden Ahgupuk of Shishmaref in 1936. [HOME, CLICK on blue *physical objects*, CLICK on current image 3] It comes from our campus affiliate, the University of Alaska Museum of the North.

We welcomed the Museum as a junior partner because we wanted to begin adding artifacts, but another of its contributions may turn out to be even more important. It has a strong pre-college education program, and the staff saw

that the Digital Archives would be far more useful to teachers and students if they could take items from it to use in multi-media projects called "tours." [HOME] The invitation to "Build a Classroom Tour" offers two kinds of resources: [CLICK at left]

- Sample tours, initially prepared by museum staff but open to submissions by teachers and students. [CLICK under Prospecting at right, "Click here to begin your tour," CLOSE LearnAlaska]
- The LearnAlaska software for building tours. You could try it yourself when you return home.

Our latest challenge is to maintain the interface between this locally developed tool and the frequently upgraded CONTENTdm digital collection management software that supports the Digital Archives.

Use of the Archives has been 10 to 20 percent higher during the academic year, with more than 24,000 site visits and 612,000 page hits in the busiest month in spring 2006. We expect even more educational use because a course in Alaska history is now required for high school graduation, beginning with the class of 2009. We are working with educators so that we cover this new curriculum thoroughly and teachers learn how to use the Digital Archives in the classroom.

Students and professionals are our most important constituencies, but we also enjoy hearing from our fellow Alaskans who make personal use of the Archives. One shared his joy that we have a photograph of his mother, who died the year before, and asked if it was all right to use it on myspace.com. Yes indeed. Another identified his grandfather as the man shown "assembling a disc harrow" in the Matanuska Valley in the 1930s. He offered us scans of his family album from the same place and time, including that photograph. Yes to that too. No-one has complained about finding such personal material in the Archives.

With our original work plan largely realized, we see several challenges and opportunities:

- The earmarked funding is probably near its end. That makes it necessary to build the project into our base budgets and begin applying for competitive funds.

- The time has come to develop mechanisms to bring in additional partners. This will make the Digital Archives available to small and medium-sized libraries, museums, and historical societies throughout the state. Three institutions from three regions are working with us this year: the Alaska Moving Image Preservation Association, the Eagle Historical Society, and a consortium of the Sitka Historical Society and the Sitka Tribe in Alaska.
- With the two original themes well developed, we are beginning to think about additions. One will be the history of Euro-American exploration, in honor of the International Polar Year. Another will take us back to the postponed economic theme.

We look forward to reporting to a future Colloquy on the success of these ventures, probably in four years rather than two.

Let me conclude with a tribute to our hosts. Italy may be best known for Antarctic exploration, but Alaskans remember that Italians have played starring roles in our development.
- Our Fairbanks favorite is Felix Pedro [from HOME, TYPE Felix, GO, CLICK on current image 3] more properly known as Felice Pedroni, who made the discovery of gold that put us on the map to stay.
- More widely known is Umberto Nobile [HOME, TYPE Nobile, GO, CLICK on image], commander of the Italian-built airship *Norge*. This photograph shows him near Kotzebue, holding the camera-shy mascot Titna while the airship deflates—as it was designed to do—at the end of its 1926 polar crossing led by Roald Amundsen.

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If I must head home eventually, I wish I could do it on the *Norge*.

The National Oceanic Atmospheric Administration's Climate Database Modernization Program at the National Snow and Ice Data Center

Allaina Howard and *Ruth Duerr*, *National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA*

Abstract. In 2002, the National Snow and Ice Data Center (NSIDC) received a grant from NOAA's CDMP program to digitize images in NSIDC's historic glacier photograph collection. These photographs, dating back to 1883, were collected by William O. Field, beginning in the 1930's. The collection was created to provide a single location for modern glaciologists to access a historical record of the world's glaciers. These photographs enable today's researchers to track glacier conditions over a period of time.

The online collection may be utilized by researchers anywhere. Today, photographers utilize this collection to conduct repeat photography of glaciers around the world. Since the database has been online, NSIDC has noted a steady increase in usage of the collection, both analog and digital.

The success of the project has spawned similar digitization projects including an historic ice chart collection, historic field notebooks, and most recently, the DAHLI project.

This paper and presentation will be a status report on NSIDC's CDMP funded projects, including details about specific projects, materials selection, the scanning processes, other institutions that are involved and related problems and solutions.

CDMP

The National Oceanic and Atmospheric Administration (NOAA) of the United States, through the National Climatic Data Center's (NCDC) Climate Database Modernization Program (CDMP), funds the rescue of historic climate and environmental data via digitization and database creation. Their projects range from imaging of bound books to digitization of microfilm to keying of data and more.

As NSIDC is partially funded through grants from NOAA, the Information Center at NSIDC is situated to take advantage of the CDMP funding program. Thanks to our NSIDC NOAA liaison, Florence Fetterer, we are currently involved in three CDMP projects.

CDMP at NSIDC

NSIDC's first collaboration with CDMP was the Online Glacier Photograph Database (http://nsidc.org/data/g00472.html). Discussions began in

2001 to select photographs of historic glaciers that had no copyright restrictions, were of good quality, and showed significant parts of the glacier. The selections were made by one of NSIDC's scientists and Teresa Mullins, my predecessor.

In many cases, the glacier photographs held by NSIDC represent the only available data about a glacier. Prior to the CDMP project, researchers needed to come to NSIDC to utilize the photograph collection. Making the collection available online provided another option to our users and also decreased the wear and tear on the photographs. Roughly 3,000 images are currently available online. Another 2,000 have been scanned and will be added to the online collection later this year. At our current funding level, 2,000 images per year can be digitized. In March 2006, a new special collection of pairs of glacier photos showing their change over time was also added. Future plans include creating more "special collections" to include other geographic areas, a history of single glaciers, Colorado glaciers, and also support materials such as expedition notebooks.

Our second project involved a set of Arctic Sea Ice charts donated by the estate of William H. Dehn. These unique ice charts span a 33 year period from 1953 to 1988 and depict ice conditions in the seas off Alaska and western Canadian coasts. The ice charts are important to climate and environmental studies because they contain unique information that in some cases predates the regular ice charting activities of the NOAA - Navy - Coast Guard National Ice Center, which began in the 1970s. No other record of ice conditions in coastal Alaska is available for this time period. These oversized charts (26"x38") were not easily accessible for users or staff to retrieve when needed. Again, researchers would need to be in our building to use them. Thus, CDMP supported the digitization of approximately 7,000 charts, which were then added to a database for users to browse. To date, almost 4,000 of these charts are available online (http://nsidc.org/data/g01111.html). Ultimately, all of the charts will be made available and the collection will be advertised to the various cryospheric research communities.

DAHLI, NSIDC and CDMP

As the DAHLI project developed, and the call for new CDMP proposals was made, NSIDC decided to take advantage of our long standing relationship with our digitization contractor Lason. As an added incentive, the NOAA Central Library announced its International Polar Year 2007 – 2008 bibliography, another CDMP supported project. Our request for funding of this new project was accepted and began fiscal year 2006.

DAHLI will not be the straightforward project that the previous two were. DAHLI will involve digitization and imaging as well as keying of data into spreadsheets and the creation of bibliographic records for many of the materials. Lason will need our guidance for the creation of the records. We will need to take time conducting the quality control of the keyed entries in addition to verifying the correct orientation of the images.

One of the biggest concerns for us is the complexity and the scope of this project. The DAHLI project will extend not only beyond the walls of NSIDC but will cross international borders as well. While the NSIDC data center has considerable experience managing digital data from a variety of international projects, this is the first project that explicitly deals with archival materials and literature, not digital data. Fortunately, the CDMP has this experience. Our plans are to begin with our local collection of materials as a pilot study. We can verify Lason's understanding of the output for the project, as well as their materials handling procedures, before we expand to include the collections of other institutions. Once the project is underway and we are satisfied with the results, we will expand to include collections held in nearby institutions such as the Boulder NOAA library. This expansion should go smoothly but should problems arise, we will be able to quickly solve issues as they come up.

We hope this plan will allow us to minimize the anxiety for our international participants and us when we reach this stage. By the time we branch out to this phase, a certain comfort level will be achieved between Lason and NSIDC. The proper handling and care of the materials, formats for output, bibliographic and keyed entries, shipping and return of the materials, all of these

pieces of the project need to be running smoothly to minimize the hazards to the materials during the project and the time involved for all parties.

Conclusion

The success of the partnership between NSIDC and CDMP has developed over a few short years. Turnover within NSIDC has not diminished this collaboration. The foundation of communication between the two partners has strengthened their trust and ability to offer solutions to problems as needed. This foundation has allowed NSIDC to expand these important preservation and data rescue projects outside the walls of their own institution. In five years much has been accomplished. Looking ahead to the next five years and to DAHLI, much more is expected. With CDMP and proposed funding from other sources, DAHLI can become a model for other cooperative analog to digital projects.

The Italian Museo Nazionale dell'Antartide *"Felice Ippolito"*: documentation and data management activities

Mauro Alberti, *Luigi Folco* and *Jacqueline Müller*, *Museo Nazionale dell'Antartide, Siena, Italy*

Abstract. The Museo Nazionale dell'Antartide (MNA) was established in 1996. The mission of the Museo is the conservation, study and promotion of samples collected during the Italian scientific expeditions and any other evidence of the Italian presence in Antarctica.

An additional institutional task of the Museo is to promote the knowledge of the scientific results achieved in by the Italian Antarctic scientific community.

The Museo is a centre set up by the three universities of Genoa, Siena and Trieste. Each of the three sections is made up of:

- an exhibition
- a study and sorting centre
- a documentation centre

This presentation will provide an overview of the activities undertaken by the Museo during its first ten years, with particular attention to the collections and related data bases and GIS in the field of earth, physical and life sciences (rocks, meteorites, ice and snow, organisms, marine sediments).

The library of the Museo holds more than 5000 records (books, journals, maps, multimedia) related to various aspects of the polar and cold regions.

Introduction

The *Museo Nazionale dell'Antartide "Felice Ippolito"* (Italy) was established in 1996 (Ricci, 1996). The aim of the Museum is the conservation, study and promotion of Antarctic samples collected during the Italian scientific expeditions and of any other evidence of the Italian presence in Antarctica. An additional institutional task of the Museum is to promote the knowledge of the scientific results achieved by the Italian Antarctic community. The three sections of the museum, sited in Genoa, Siena and Trieste, are specialized in the preservation of different types of samples and carry out research activities in various scientific fields. The specialization of each section is biology and ecology for Genoa, Earth Sciences for Siena and marine sediments and history of exploration for Trieste. Each section is made up of an exhibition, a study and sorting centre, and a documentation and data management centre. This report describes some of the institutional activities of the last centre.

Library and editorial activities

The libraries of the documentation centres hold more than 5,000 documents published from 1840 to present, related to all the various aspects of polar and cold regions. Books are presently more than 2,000, while maps are almost 900. The users may consult books, periodicals and multimedia (VHS, CDs, slides, digital images). The Museum has published some multimedia on Antarctic research, both in Italian and in English. An online catalogue permits unrestricted searches on all the available documents. The editorial activities of the Museum comprise the publication of *Terra Antartica*, that was established in 1994 as a newsletter and became a journal since 1995. *Terra Antartica* publishes peer-reviewed contributions related to Earth sciences of the Antarctic Region and neighbouring areas. Other editorial activities include the publication and distribution of Earth sciences maps produced by Italian researchers and foreign co-workers: at present there are more than 15 published maps related to the geology, geomorphology and geophysics of the Victoria Land. The published maps are prevalently at 1:250,000 scale, and derive from the field works of geologists of Pisa, Siena, Genoa, Turin, Milan universities and research institutions, as well as from other Italian and foreign (e.g. German) institutions.

Data management and diffusion activities

The museum is establishing a central data server of remote sensing and aerial photo images at the disposal of the Italian *Programma Nazionale di Ricerche in Antartide*. A centralized integrated database and GIS of the available Landsat, Argos and QuickBird satellite images, as well as of aerial photos, is being created and its completion is scheduled for late 2007-early 2008. When fully implemented, it will be possible for Italian researchers with approved Antarctic research programs, to visualize, query and retrieve available data through an intranet connection. In addition to the management of remote sensing data and within the institutional activities of these centres, the data related to the scientific collections maintained at the museum are constantly processed, updated and improved, also with the aid of university and CNR researchers from Genoa, Milan and Trieste. The scientific collections consist of rocks and meteorites (e.g. Folco and Rastelli, 2000), marine sediments and ice cores, biological and environmental specimens. The data are generally maintained using databases

such as Access, and for rock and meteorite collections the locational recovery information are also stored in GIS projects, using GIS and remote sensing software (ArcView, ArcGis and Envi). Data can be queried through a public web interface for almost all the collections. Dynamic web distribution maps are available for rock, meteorite and marine sediment collections. These maps are implemented using the Scalable Vector Graphics (SVG) and ASP free technologies and, in the case of meteorites, there is also the possibility to visualize data as layers in GoogleEarth. In the case of the rock collection, locational data can also be downloaded as GIS layers in shapefile format and with different map projections.

A trial GIS project has been realized and a consistent part of the produced data sets are also freely available on the internet. This project collects the Earth sciences data, which were produced by Italian researchers in the Mt. Melbourne quadrangle (where the Italian scientific station Mario Zucchelli is located). Geological, geomorphological and geophysical data have been provided by researchers of the universities of Pisa, Genoa and Milan, and the ENEA-CR-Casaccia of Rome. All the data have been georeferenced in a common map projection, using a Landsat mosaic image as a cartographic base map. Another trial GIS project, which is still in progress, consists in the creation of a GIS layer of the geological units in northern Victoria Land, based on the maps published by the Italian geologists, and with outcrops defined on the base of the available Landsat images. In this case, only the geological higher level subdivisions are maintained, with a possible successive introduction of the lower level subdivisions after feedbacks from geologists.

Conclusions

In this short paper some of the activities of the documentation and data management centres of the Italian Antarctic Museum are described. Given the continuous acquisition and cataloguing of documents and scientific samples that increase the amount of data stored in databases and GIS, the future web implementations regarding the library and the scientific collections will be more focused on efficient data diffusion through internet, using all the available web technologies, in particular dynamic querying and mapping.

References

Folco, L. and Rastelli, N., 2000, "The Meteorite Collection of the Museo Nazionale dell'Antartide in Siena", in *Meteoritics & Planetary Science*, 35 (suppl.), pp. A189-A198.

Ricci, C.A., 1996, "Italian Antarctic National Museum - Earth Science Section at the University of Siena", in *Terra Antartica*, 3(1), p. 59.

21st Polar Libraries Colloquy

Business Meeting, Wednesday, May 10, 2006

Chair: Vibeke Sloth Jakobsen

42 members present

1. <u>Minutes</u> of the last meeting were published in the PLC Bulletin, following the last colloquy in 2004.   There were no changes or comments to the minutes, so they were approved.

2. <u>Treasurer's Report</u>, presented by Treasurer David Walton. The current balance of the account is 13,237.87 £, which is equivalent to just more than $20,000. The balance is high due to a number of reasons including:

    a. Recent receipt of two-years subscriptions

    b. Only two bulletins have been produced, rather than the anticipated 4, so mailing costs have been lower.

    c. We are now keeping dual accounts, one in the US and one in the UK, which eliminates the bank fees for money transfer.

    d. Silvia was able to raise money for the colloquy locally and did not have to ask the PLC for funds.

        Summary: Income items are dues, sales of Proceedings volumes, and the Wenger Auction. Expenditures are the Wenger Awards and the newly established William Mills Book Prize.

3. <u>Change of the PLC's Organizational Status,</u> presented by Treasurer David Walton. The PLC's organizational structure has always been informal, and the intent was never to have the PLC carry over any money. However, over time the balance in the account has grown, and we continue to move money between the UK and the US. Without any formal legal basis, this could be construed as

money laundering and presents us with some real concern. David suggested that it is time for the PLC to become an official legal entity. The possible choices are:

a. The PLC could become part of an existing organization.

b. We could register as a non-profit in a particular country.

c. We could register as an educational charity.

After much discussion on the subject, it was moved that David pursue the possibility of obtaining educational charity status in the UK, seconded and passed by vote. After further discussion the above motion was amended to "explore the possibility of registration in the U.S. also." Moved, seconded, all in favor with none opposed.

Also in the context of this discussion was the recognition that the PLC needs a "Plan".

4. <u>Membership Status</u>, presented by David Walton. The pros and cons of institutional vs. personal membership were discussed. The steering committee at present would like to avoid institutional memberships. However, some institutional memberships have already been collected for the current two-year term. It was decided that this would be an item for discussion at the next meeting in 2008, again in context of the goals of the PLC and the "Plan."

5. <u>New PLC Website</u>. Thanks to all who were involved with this redesign. It was noted that the directory is not current. The following individuals have agreed to collect information for their country:

a. Judy Triplehorn – U.S.

b. Andie Smithies – Australia and New Zealand

c. Marcel Brannemann – Germany

d. Heather Lane – U.K.

Judy will contact other countries for volunteers. It was also suggested that web page editors should be ex-officio members of the steering committee. Currently, our editors are Julia Finn, and Liisa Kurppa.

6. <u>PLC Bulletin</u> is currently edited by Cathy Innes-Taylor and Nancy Lesh. Both are looking to step down from this job. It was decided by the group that now would be a good time to change to a digital format for the bulletin. Julia Braund-Allen and Daria O. Carle have volunteered to take this over.

7. <u>William Mills Book Prize Committee</u>: Liz Dennett will continue as chair; Heather Lane would like to continue, Dennis Stephens would like to join, Betty Galbraith would like to continue and Judy Triplehorn would also like to continue. The group agreed to raise the amount of the prize from $100 to $300.

8. <u>University of the Arctic Membership</u> : Vibeke is at present member of the UArctic Council in her capacity as chair of the PLC, while Sandy Campbell is the PLC representative at the UArctic Council meetings. Sandy will continue as our representative, whereas the alternate should be found amongst the members working in UArctic libraries. The new Steering Committee will select the alternate. It was agreed that the PLC will fund our representatives to attend the U of the Arctic meetings, if the person's own institution is unable to do so.

9. <u>PLC Archives</u> are housed at the U of Alaska, Fairbanks. Susan Grigg will take responsibility for this. Hosts of previous colloquies are encouraged to forward materials to Susan.

10. <u>21st PLC in Rome</u>. Official numbers are 53 attending. Congratulations to Silvia and her staff for a job well done. Vibeke encouraged the group to make others aware of our organization and encourage membership. Dennis read the following resolution:

   a. Where as organizing and hosting a PLC requires enormous energy, resources and dedication by the host organization and staff over at least two full years of preparation;

   b. And, whereas attendees of this 21st PLC take away a wealth of inspiration, innovation and human contacts, all especially critical at this time of increased research into polar matters;

   c. Now therefore be it resolved that we, the attendees of the 21st PLC in Rome, 8-12 May 2006, extend by acclamation our thanks to Silvia Sarti, Michela Cecconi, and Andrea Marchitelli and the PNRA, for wonderfully fulfilling the PLC traditions of warm hospitality and thorough going competence. Well Done!

11. <u>Other Business</u>: Dennis requested that anyone currently present that was also present at PLC in 1986 should see him over the next few days.

12. <u>22nd PLC</u>: Sandy Campbell presented an invitation and video for the 22nd PLC to be hosted by the University of Alberta, Edmonton, June 2-8, 2008.

13. <u>Election of the new PLC Steering Committee</u>:

   a. Judy Triplehorn will take over as chair.
   b. Betty Galbraith and David Walton continue as co-treasurers
   c. Marcel Brannemann will continue

d. New members are Andie Smithies (Australia), Heather Lane (UK), and Laura Kissel (US). Heather Lane is the chair-elect.

e. Sandy Campbell, as organizing host for the 22nd PLC is ex-officio.

Minutes respectfully submitted by Laura Kissel, Byrd Polar Research Center Archival   Program,   Columbus,   Ohio   USA.   May   18,   2006

Programme

Morning

10.00 - 10.45	Registration
10.45 - 11.00	Opening
11.00 - 11.45	Italian activities in Antarctica **Ivo Allegrini**, Vice President PNRA S.c.r.l., Rome, Italy **Luana Testa**, Scientific Program PNRA S.c.r.l., Rome, Italy
Session 1	**Chair: Dennis Stephens** Alaska Center for Horace Kephart Studies, Fairbanks, Alaska, USA
11.45 - 12.15	**David H. Stam**, Syracuse University, New York, USA **Deirdre C. Stam**, Long Island University, New York, USA *By sledge, ski and ship; early information networking in the cold regions*
12.15 - 12.45	**Mary Katherine Jones**, History Institute, University of Tromsø, Norway *International networks for sharing Polar resources: in the beginning…*
12.45 - 13.45	Lunch

Afternoon

13.45 - 14.15	**Laura J. Kissel**, Polar Curator, Byrd Polar Research Center Archival Program, Columbus (OH), USA *Sharing the unsharable: classified documents in private archival collections*
14.15 - 14.45	**Irene Piippola**, County Library of Lapland, Rovaniemi, Finland *Old maps of the North Calotte in the collection of the Provincial Library of Lapland, Rovaniemi*
14.45 - 15.15	**Vibeke Sloth Jakobsen** and **Kirsten Klüver**, Danish Polar Center, Copenhagen, Denmark *Danmark Ekspeditionen 1906-1908: literature – archival material – photographs – links*
15.15 - 15.30	Coffee

15.30 - 17.30   **UArctic librarians' Open Forum**

TUESDAY, MAY 9

Morning

Session 2	**Chair: David Walton** British Antarctic Survey, Cambridge, UK
9.00 - 9.30	**Nancy C. Liston**, Cold Regions Research Engineering Laboratory, Hanover (NH), USA *Cold Regions Research & Engineering Laboratory Library – moving forward to seek collaborative alternatives*
9.30 - 10.00	**Sharon N. Tahirkheli**, American Geological Institute, Alexandria, USA *Collaborative bibliographic development in the Cold Regions Bibliography Project*
10.00 - 10.30	**Paolo Plini**, CNR Institute for Atmospheric Pollution, EKOLab, Rome, Italy **Rosamaria Salvatori**, CNR Institute for Atmospheric Pollution, Remote Sensing Laboratory, Rome, Italy **Mauro Valt**, ARPAV Arabba Avalanche Centre, Belluno, Italy **Valentina De Santis**, CNR Institute for Atmospheric Pollution, EKOLab, Rome, Italy *SnowTerm: a terminology database on snow and ice*
10.30 - 10.45	Coffee
Session 3	**Chair: Berit Jakobsen** University Centre in Svalbard (UNIS), Longyearbyen, Norway
10.45 - 11.15	**Ross Goodwin**, Arctic Institute of North America, University of Calgary, Canada **Sharon N. Tahirkheli**, American Geological Institute, Alexandria, USA **Heather Lane**, Scott Polar Research Institute, Cambridge, UK **Fred Durr**, National Information Service Corporation, Baltimore (Maryland), USA *The International Polar Year Publications Database*
11.15 - 11.45	**Ruth Duerr**, National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA *Discovery and Access of Historic Literature of the IPY's*

> *(DAHLI): rescuing records and publications of early IPY ventures*

11.45 - 12.30	**Panel Discussion:** *International Polar Year data and information management* **Chair: Ross Goodwin,** Arctic Institute of North America, University of Calgary **Ruth Duerr,** National Snow and Ice Data Center **Heather Lane,** Scott Polar Research Institute **Nancy C. Liston,** Cold Regions Research Engineering Laboratory
12.30 – 13.30	Lunch

Afternoon

14.00 - 16.00	Visit to the National Library
18.30 - 20.30	Colloquy Steering Committee supper meeting

WEDNESDAY, MAY 10

Morning

Session 4	**Chair: Marcel Brannemann** Alfred Wegener Institute, Bremerhaven, Germany
9.00 - 9.30	**Pierre Beaudreau**, Departmental Library, Indian and Northern Affairs Canada, Gatineau, Canada *Public enquiries and the special library: leveraging library resources to enhance the delivery of enquiry services to the public at Indian and Northern Affairs Canada*
9.30 - 10.00	**Shelly Sommer**, Institute for Arctic and Alpine Research, Boulder (CO), USA *Strengthening the library through user education*
10.00 - 10.30	**Sandy Campbell** and **Weiwei Shi,** Science and Technology Library, University of Alberta, Edmonton, Canada *Podcasts and Screencasts for delivery of Polar information literacy*
10.30 - 10.45	Coffee
10.45 - 11.00	**William Mills Book Prize**
11.00 - 11.30	**Pierre Beaudreau**, Departmental Library, Indian and Northern Affairs Canada, Gatineau, Canada *Introducing the new Polar Libraries Colloquy website*
11.30 - 12.30	**Colloquy business meeting**

| 12.30 - 13.30 | Lunch |

Afternoon

Session 5	**Chair: Sharon N. Tahirkheli** American Geological Institute, Alexandria, USA
13.45 - 14.15	**Steve Schafer**, Athabasca University, Canada *Providing digital resources in Polar libraries*
14.15 - 14.45	**Anna Grazia Chiodetti**, National Institution of Geophysics and Volcanology, Rome, Italy *Earth-prints: a geoscience open archive for open-minded geoscientists*
14.45 - 15.15	**Raimund E. Goerler**, Ohio State University Archives, Columbus, USA **Lynn Lay**, Goldthwait Polar Library, Byrd Polar Research Center, Ohio State University, Columbus, USA *Polar librarians and archivists using a digital depository: the Ohio State University experience*
15.15 - 15.30	Coffee
15.30 – 16.00	**Elena Benedetti et al**., SIRIA Project, Italy *Information system for the Italian Polar research*
16.00 – 16.30	**Mike Evans**, **Christopher Fletcher** and **Elaine Maloney**, CCI Press, Canadian Circumpolar Institute, University of Alberta, Edmonton, Canada *The Role of the Academic Press: The Solstice Series. Community-Based Research Presentation and Dissemination. A Case Study*

THURSDAY, MAY 11

Morning

Session 6	**Chair: Vibeke S. Jakobsen** Danish Polar Center, Copenhagen, Denmark
9.00 - 9.30	**Michela Cecconi**, **Andrea Marchitelli** and **Silvia Sarti**, Consortium for the Italian Antarctic Program (PNRA), Rome, Italy *From a collective catalogue (ACNP) to the Network Inter-Library Document Exchange (NILDE): a way to share resources and to improve user services*
9.30 - 10.00	**Irina Merkina**, Polar Research Institute of Marine Fisheries and Oceanography, Murmansk, Russia

Polar Research Institute of Marine Fisheries and Oceanography Library today

10.00 - 10.30	**Satu Hallikainen**, County Library of Lapland, Rovaniemi, Finland *Building a sustainable library network and technology (e.g. KOHA) in the spirit of open standards, free software and open source*
10.30 - 10.45	Coffee
10.45 - 11.00	Announcements

Session 7	**Chair: Andie Smithies** Australian Antarctic Division, Kingston, Australia
11.00 - 11.30	**Allaina Howard**, National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA **Shelly Sommer**, Institute for Arctic and Alpine Research, Boulder (CO), USA **Gloria Hicks**, National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA *Can two nodes be a network? Cooperation helps two libraries provide better service*
11.30 - 12.00	**David Ongley**, Tuzzy Consortium Library, Barrow, Alaska, USA **Julia Triplehorn**, Keith B. Mather Library, University of Alaska, Fairbanks, Alaska, USA *BASC: a research center grows in Barrow. UAF's Geophysical Institute and Ilisagvik College's Tuzzy Consortium Library collude to provide state of the art library services to the Barrow Arctic Science Consortium*
12.00 - 12.30	**Daria O. Carle**, Consortium Library, University of Alaska Anchorage, Alaska, USA **Juli Braund-Allen**, Environment and Natural Resources Institute, Consortium Library, University of Alaska Anchorage, Alaska, USA **Kathleen Murray**, Health Sciences Information Service, University of Alaska Anchorage, Alaska, USA *A Northern network in the making: cooperation and collaboration in Anchorage, Alaska*
12.30 – 13.30	Lunch

14.00	Bus departs for the Italian Geographical Society
14.30 - 16.00	Visit to the Italian Geographical Society
16.00	Group picture

FRIDAY, MAY 12

Morning

Session 8	**Chair: Ronald Inouye** Fairbanks, Alaska, USA
9.00 - 9.30	**Liisa Kurppa**, Arctic Centre, University of Lapland, Rovaniemi, Finland *Barents Information Portal and its improvement*
9.30 - 10.00	**Susan Grigg**, Elmer E. Rasmuson Library, University of Alaska Fairbanks, Alaska, USA *Alaska's Digital Archives: From Vision to Reality*
10.00 - 10.30	**Allaina Howard**, National Snow and Ice Data Center, University of Colorado, Boulder (CO), USA *NOAA's Climate Database Modernization Program at the National Snow and Ice Data Center*
10.30 - 10.45	Coffee
10.45 - 11.00	Announcements
11.00 – 11.30	**Mauro Alberti,** Museo Nazionale dell'Antartide (MNA), Siena, Italy *The Italian Museo Nazionale dell'Antartide "Felice Ippolito"*
11.30 - 12.00	**Film session:** "Operation Tabarin in 1944-45"
12.00 - 12.30	**Film session:** "Knud"
12.30 - 13.30	Lunch

Afternoon

13.30 - 14.00	**Film session:** "Antarctica" and "Conserving Mawson's Huts"
14.00 - 14.30	Discussion period
14.30 - 15.00	Closing remarks
17.00	Bus departs for the visit to the American Academy in Rome and the banquet

17.45 – 18.45	Visit to the American Academy
18.45	Drinks in the Mercedes and Sid R. Bass Garden of the American Academy
20.30	Banquet at Villa Aurelia