Plenary Session 5
International Polar Year and Information

Convenor:

Julia H. Triplehorn
Keith B. Mather Library, Geophysical Institute

The International Polar Year Publications Database: A Progress Report

Ross Goodwin
Arctic Science and Technology Information System
Arctic Institute of North America

Sharon Tahirkheli
Cold Regions Bibliography Project
American Geological Institute

Heather Lane
Library
Scott Polar Research Institute

Ruth Duerr
National Snow and Ice Data Center
University of Colorado

Allaina Wallace
National Snow and Ice Data Center
University of Colorado

Fred Dürr
National Information Services Corporation

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

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

Introduction

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

It is difficult to estimate how many publications will result from the IPY. The most recent similar research program was the 1957-58 International Geophysical Year (IGY). The final IGY bibliography (Beynon 1970) contained almost 6,000 references and was completed twelve years after the end of the IGY. It is probably reasonable to assume that the IPY will result in at least 20,000 publications.

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

Building the IPY Publications Database

In the spring of 2005, four organizations agreed to work together to create an IPY Publications Database (IPYPD). This database would attempt to identify and describe all publications resulting from, or about, IPY 2007-2008 and the three previous IPYs. The Cold Regions Bibliography Project (CRBP) at the American Geological Institute produces the Bibliography on Cold Regions Science and Technology and the Antarctic Bibliography. The Scott Polar Research Institute (SPRI) Library at the University of Cambridge produces the SPRILIB databases and assists the CRBP with the Antarctic Bibliography. The Arctic Science and Technology Information System (ASTIS) at the Arctic Institute of North America, University of Calgary, produces the ASTIS database. National Information Services Corporation (NISC) combines these databases and others to produce the Arctic & Antarctic Regions (AAR) database describing more than one million polar publications.

These four organizations formed an informal consortium and prepared a proposal to create an IPYPD as part of the IPY Data and Information Service, which is led by the National Snow and Ice Data Center at the University of Colorado. The IPY 2007-2008 Joint Committee endorsed the proposal in August 2005. During 2006 the members of the consortium began creating new records for IPY publications, as well as identifying existing IPY publication records in their databases. Beginning in September 2006, programmers at NISC used ideas and feedback from the other members of the consortium to create the IPYPD database and website. In early 2007, the Discovery and Access of Historic Literature of the IPYs (DAHLI) project at the National Snow and Ice Data Center, University of Colorado, joined the IPYPD consortium to provide coverage of publications from the three previous IPYs (IPY 1882-1883, IPY 1932-1933 and IGY 1957-1958).

The IPYPD was made available online at http://www.nisc.com/ipy on March 1, 2007, the first day of IPY 2007-2008. Publications containing the research results of IPY 2007-2008 will not be available in large numbers until 2009. Coverage of the publications of the three previous IPYs is being developed during 2007 and 2008. As of April 2008, the database described 677 publications.

Aspects of the Database Design

As described at the previous Polar Libraries Colloquy (Goodwin *et al.* 2007), the IPYPD makes use of the existing system for indexing polar literature and aggregating the resulting bibliographic records. Depending on their subject and geographic scope, IPY 2007-2008 publications are reported to ASTIS, CRBP or the SPRI Library. Simplified somewhat, the rule that researchers are requested to follow is that publications about northern Canada are reported to ASTIS, about the Antarctic and about non-living things to CRBP, and about living things to SPRI. The number of indexing organizations was limited to three in order to avoid making this reporting rule more complicated. The three organizations prepare records in their usual ways for use in their existing databases, but tag IPY records so that they can be identified. NISC includes all records from the three organizations in the Arctic & Antarctic Regions database as usual, but then copies the tagged IPY records to create the separate IPY Publications Database.

Publications from the three previous IPYs are identified, indexed and digitized by the DAHLI project, supplemented by some retrospective indexing work by the other three indexing organizations. Records from the three previous IPYs are tagged for inclusion in the IPYPD in the same manner as records for IPY 2007-2008 publications. The IPYPD Basic Search page allows users to restrict their searches to any of the four IPYs by using the 'IPY' menu.

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

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

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

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

The Contributing Records page of the IPYPD website describes how other polar libraries and databases can contribute to the IPYPD by using special subject terms to tag records, and by contributing those records to NISC's Arctic & Antarctic Regions database. Because of NISC's automatic duplicate detection there is no problem if more than one contributor reports the same IPY publication. Libraries and databases that don't contribute directly to NISC can report publications from IPY 2007-2008 to ASTIS, CRBP or SPRI as described on the Reporting Your Publications page, and can report publications from the three previous IPYs to DAHLI.

One of the objectives of the IPYPD project was to index a publication once and then to use the resulting bibliographic record in many ways. The IPYPD database will describe all, and only, IPY publications. All IPYPD records will also be available in the Arctic & Antarctic Regions database, which is widely used by polar research organizations. The IPY records prepared by each of the indexing organizations also appear in those organizations' main databases: the Bibliography on Cold Regions Science and Technology, the Antarctic Bibliography, the SPRILIB database and the ASTIS database. Some of the indexing organizations also make their IPY records available in other databases, as described below. Users of all of these databases will learn of IPY publications that are relevant to their needs, even if they are unaware of the IPYs. The IPYPD will leave a legacy of records in many databases describing IPY publications, thus ensuring that the results of the IPYs are always available and accessible.

Potential Problems

Funding

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

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

Identifying Publications

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

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

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

IPY Bibliographic Activities by Individual IPYPD Participants

Arctic Science and Technology Information System (ASTIS)

ASTIS has created the bilingual Canadian IPY Publications Database at http://www.aina.ucalgary.ca/ipy, which will describe all publications from Canadian IPY projects, as well as publications from foreign IPY projects that have studied northern Canada. As of early May 2008, this database describes 430 publications, of which 172 are from IPY 2007-2008 and the remainder are from the previous IPYs. A unique feature of this database is that in addition to tagging records by IPY, we are also tagging them by individual research project. A giant menu currently lists approximately 100 projects, subprojects and expeditions, with many more remaining to be added.

ASTIS also uses Canadian IPY records in its many subset databases, all of them accessible from http://arctic.ucalgary.ca/index.php?page=astis_database. These databases include the Yukon Biodiversity Database, the Inuvialuit Settlement Region Database, the Nunavut Environmental Database, the Nunavik Bibliography, the Circumpolar Health Bibliographic Database, the Kluane Lake Research Station Bibliography, etc.

Cold Regions Bibliography Project (CRBP)

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

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

Scott Polar Research Institute (SPRI) Library

SPRI attempts to record publications primarily from IPY projects concerned with the biological, medical, social and human sciences, and about the IPY in general (e.g., publications about the organization and operation of the entire IPY; education, outreach and communication publications that discuss the entire IPY rather than focusing on a particular subject or geographic region). However, due to its broad remit, SPRI's collecting policy overlaps to a considerable extent with those of the other project participants.

It is aided in collecting IPY records by the regular deposit of material from the International Programme Office of the IPY, also based in Cambridge. The IPO has been instrumental in ensuring the collection of much ephemeral material which might otherwise go unrecorded. SPRI's IPY records appear in the SPRILIB databases at http://www.spri.cam.ac.uk/resources/sprilib and monographic records in the University of Cambridge Newton catalogue at http://www.lib.cam.ac.uk/newton. They are also included in the Institute's serial publication, *Polar and Glaciological Abstracts*, issued three times per year.

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

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

Conclusion

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

To make the IPYPD easily available to potential users, and to remind IPY researchers that they should report their publications, the members of the IPYPD consortium would appreciate it very much if Colloquy members could put links to the IPYPD on their libraries' websites. Colloquy members that provide records to NISC for AAR could also consider tagging their current and historic IPY/IGY publication records when submitting future updates.

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

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

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

References

Beynon, W.J.G. 1970. Bibliography and index. *Annals of the International Geophysical Year*, volume XLVIII. Oxford : Pergamon Press.

Goodwin, R., S.N. Tahirkheli, H. Lane and F. Durr. 2007. 'The International Polar Year Publications Database,' pp. 90-102 in *Building Polar Networks: A Strategy for the Future*. Proceedings of the 21st Polar Libraries Colloquy, May 8-12, 2006 - Rome, Italy, Edited by S. Sarti and M. Cecconi. - Rome: PNRA S.C.r.l.

The Coolest Panel Session—IPY

Chair: Julia H. Triplehorn

Panellists:
Susan Olmsted - IPY at NSF
Anna Fiolek- IPY at NOAA
Berit Jakobsen - IPY in Norway
Marianne Douglas - IPY in Antarctica

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

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

A. Fiolek
NOAA Central Library, National Oceanographic Data Center, National Environmental Satellite, Data, and Information Service
SSMC3, 2ND Floor, 1315 East-West Highway
Silver Spring, MD 20910 USA

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

Introduction

The International Polar Year is a cooperative effort "to fully investigate every possible aspect of the Polar Regions—the seas, the land and the ice; the life and peoples who are at home at the Poles, and even the view of the universe from the 'ends of the Earth.'"(IPY 2007) The 4th International Polar Year is an

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

Historical Polar Documents

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

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

Figures 1 and 2 are examples of the one hundred fifty polar-related documents that have been imaged and are available in full-text online via NOAALINC at http://www.lib.noaa.gov/uhtbin/webcat and the library's IPY web site. The *International Polar Year (IPY) 2007-2008: Polar Resources in the NOAA Library Network* Web site (*see* Fig. 3) supports the Agency's and NOAA Central Library (NCL)activities during International Polar Year 2007-2008. It displays a selection of exclusive online resources on exploration and research in Polar Regions. The collection includes library holdings from the 1st (1881-1883) through the 3rd (1957-1958) International Polar Year. Full texts of the documents are available online at: http://www.lib.noaa.gov/collections/ipy.html

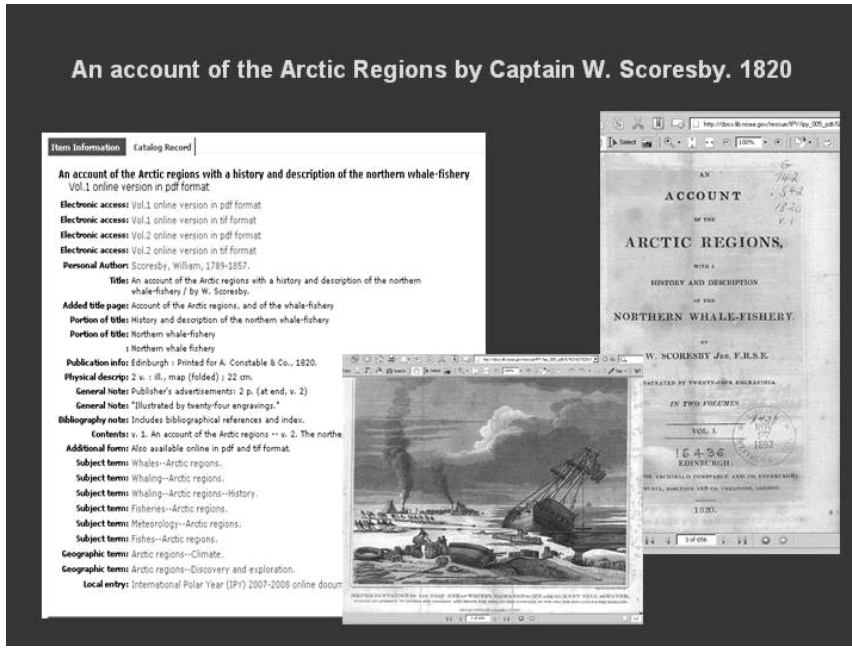

Figure 1. *An Account of the Arctic Regions with a History and Description of the Northern Whale-Fishery, W. Scoresby. 1820. Book in full-text available via NOAALINC.*

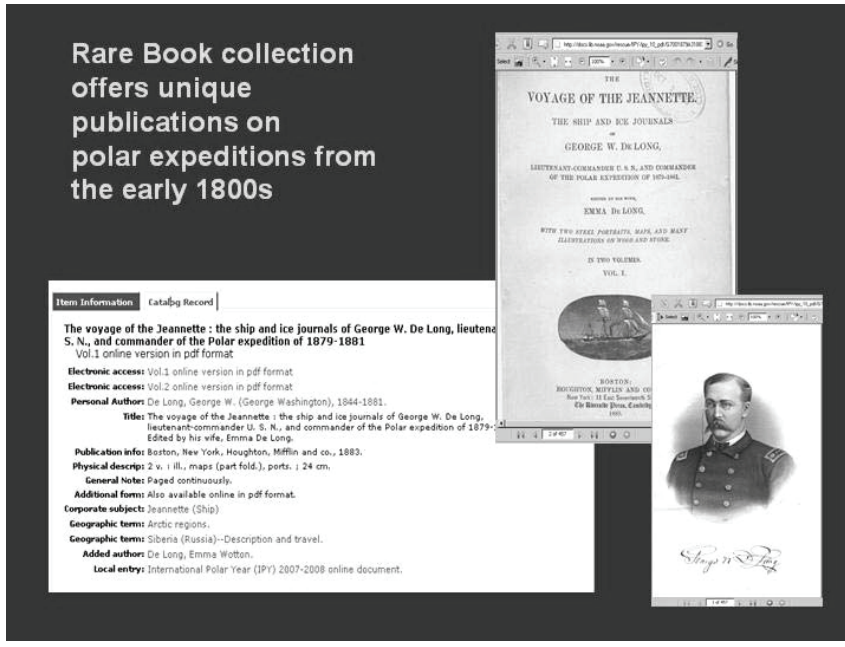

Figure 2. *The Voyage of the Jeannette: the Ship and Ice Journals of George W. De Long, Polar Expedition of 1879-188. Book in full-text available via NOAALINC.*

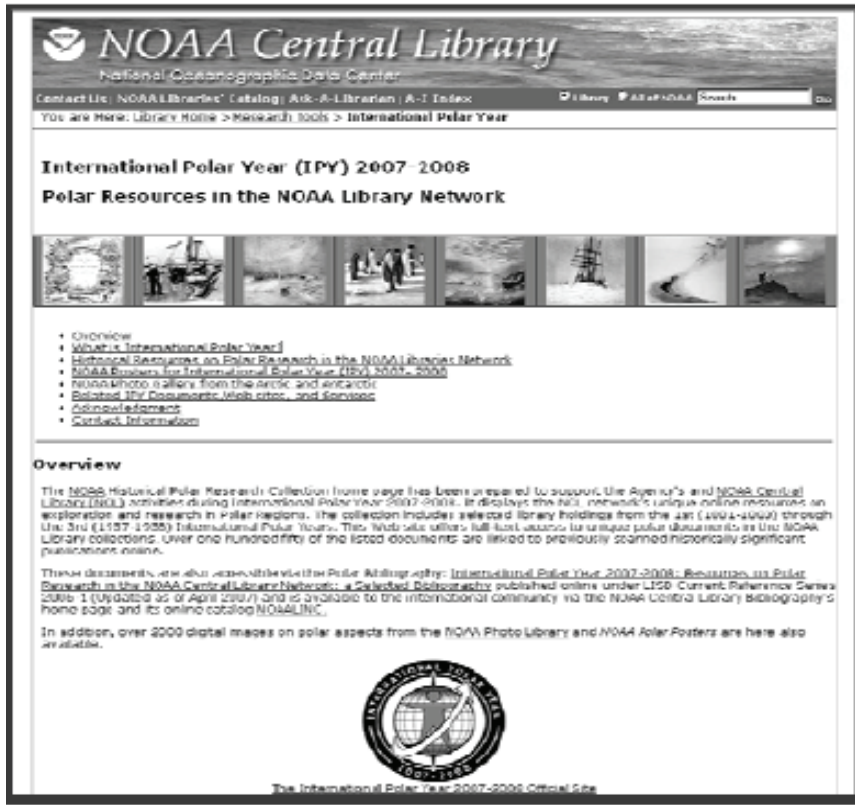

Figure 3. *Polar Resources home page developed in the NOAA Central Library for IPY 2007-2008* (http://www.lib.noaa.gov/collections/ipy.html)

Printed and Polar Online Publications

To provide additional access to NOAA's polar resources beyond NOAALINC and WorldCat, a bibliography *was* compiled, entitled*: International Polar Year (IPY) 2007-2008: Historical Documents on Polar Research in the NOAA Library Information Network*. It reflects the NCL network's unique print and online resources on this subject. This bibliography includes over 2,000 citations and is organized by title. The data and listings are comprehensive from the 18th century to the present. The formats represented include print, CD-ROM, online full-text documents, digital videos, digital images, online cruise data and Web resources.

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

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

Resources for Current Polar Observations and Cruise Reports

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

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

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

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

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

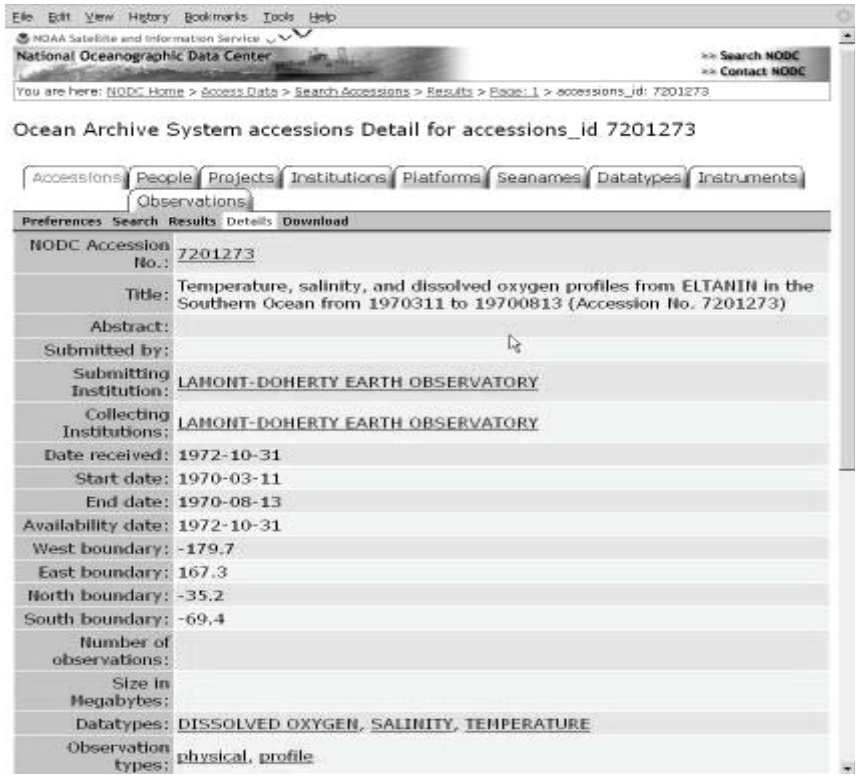

Figure 6. *NODC OAS's Accession record providing access to raw observations from the polar cruise described in NOAALINC.*

Digital Videos

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

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

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

Digital Photographs

The Library's IPY home page, via the NOAA Photo Library, offers over 2,000 digital images pertaining to the polar themes in both low and high resolutions that are available online for viewing and/or downloading. Most of the polar photos are included in two photo albums entitled *NOAA at the ends of the Earth* and *NOAA's Ark* at: http://www.photolib.noaa.gov/. The pictures were taken by NOAA scientists during their various field projects, oceanographic cruises, and assignments in the Arctic, Antarctic and other distant Polar Regions. The albums are part of the NOAA Photo Library, an online collection of over 35,000 photographs organized, digitized and annotated by the NOAA Central Library staff. Polar images are also available via the NOAA Central Library's IPY home page at: www.lib.noaa.gov/collections/polar/ipy.html

Polar Poster

Library staff also developed a *Polar Poster* as a visual display of library activities for IPY. It is available in PDF, JPEG, and TIFF formats for downloading from the library's IPY home page at:
http://www.lib.noaa.gov/docs/bibliographies.html (*see* Fig. 4)

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

Conclusion

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

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

References

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