

POLAR INFORMATION: AN INTERNATIONAL APPROACH

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Introduction

Organized research on the polar regions has taken place since Vitus Bering discovered Alaska in 1741. Attempts to collate and disseminate the results of historical, scientific, ethnographic, and other research on northern regions have been underway almost as long. The same can be said of the Antarctic regions, whose recorded research is said to have begun in 1773 when James Cook crossed the Antarctic Circle. While most scientific literature is organized along disciplinary lines, information on the polar regions has always been an exception to this customary treatment. The interdisciplinary and multidisciplinary literature of the polar/cold regions is traditionally organized on a geographic basis (Thuronyi 1975).

In the 1970s there grew a heightened awareness that the Arctic and Antarctic Regions played a major role in world climate and that change to these environments might have wider implications for more populated areas (Gourdeau, Britten & Reed 1971). When individuals think of the North, many think of the Klondike Gold Rush, but the exploitation of the natural resources of the Arctic began in earnest with the oil discovery at Prudhoe Bay, Alaska, and the subsequent building of the Trans-Alaska Pipeline in 1974. What is often forgotten is that a coalition of environmental and native American rights groups temporarily halted exploitation of the Prudhoe Bay oil while native land claims and environmental safeguards were put in place (Coates 1991). Concerns about global warming in the Arctic (Walsh 1991), the discovery of the ozone hole in the Antarctic (Farman, Gardiner & Shanklin 1985), and the understanding that polar environments must be protected for the good of world climate (Griffiths & Young 1990) have all contributed to an increasing awareness of the regions both in the scientific community and among the general public. This increased interest by conservationists, environmentalists, oil companies, and other interest groups has led to an explosion of polar information.

Problem Definition

The development of polar bibliography has been traced from the early twentieth century until the present by Andrews (1988). Perhaps the premier example of this historical commitment to informing scholars of northern research results was the Arctic Bibliography, prepared by the Arctic Institute of North America beginning in 1953. The Arctic Bibliography sought to be all-encompassing, but in 1975 it ceased publication, just as Arctic information and research began to proliferate.

After the demise of the Arctic Bibliography, it was necessary for numerous groups to provide control of their own parts of the literature to meet their arctic research requirements. This piecemeal approach led to uneven coverage. Primarily due to the military importance of the North, the scientific disciplines had better control of their literature while such areas as the social sciences and humanities were, and are, underrepresented in bibliographic control of northern information.

Polar researchers of all disciplines have long believed that they need more comprehensive access to information. The resolution of this problem has been made all the more difficult due to the interdisciplinary and international nature of Arctic and Antarctic research. By geographic definition, "Arctic" encompasses activities of the United States, Canada, Greenland, Norway, Sweden, Finland, Russia, and other countries which historically have been involved in northern exploration efforts (Holden 1989).

Since the early 1970s there has been a high level of cooperation among polar librarians and, more lately, database producers, mainly through the biennial meetings of the international Polar Libraries Colloquy (subsequently known as the Northern Libraries Colloquy). This polar library community has long expressed the desire for a common polar information database. The Twelfth Colloquy in 1988 endorsed a vision statement and plan of action for developing such a database. Funded by the United States' National Science Foundation, this vision became a reality when the Western Library Network (WLN) was established as the on-line host for the information and the subsequent publication of the CD-ROM database, PolarPac, in 1990. (WLN is a bibliographic utility located in Lacey, Washington, and is used by all Alaskan libraries.)

PolarPac

Using the holdings of Alaskan libraries in the WLN database as a foundation, PolarPac was developed by adding the holdings of additional important polar libraries. Monographic records were added from the Stefansson Collection, Dartmouth College, and the Institute of Arctic and Alpine Research, University of Colorado, Boulder. A solicitation for serial records by the Rasmuson Library of the University of Alaska, Fairbanks, resulted in 13,399 new serial records being added from libraries worldwide. The PolarPac database consisted of 85,293 records with 156,599 locations being reported (West, 1990). Included were holdings from libraries in Australia, Canada, Denmark, England, Germany, Finland, France, Greenland, Iceland, Italy, Japan, New Zealand, Norway, Sweden, and the United States. Reaction to the issuance of the first CD-ROM was uniformly enthusiastic, and WLN and the Rasmuson Library published PolarPac2 in 1991 and PolarPac3 in June 1993.

The monographic and serial files in PolarPac are available on-line through WLN either directly or through Internet. The on-line environment provides up-to-date access to the holdings of several Alaskan libraries, while the CD-ROM provides an economical tool for libraries, small research groups, or individuals, especially those in isolated environments, typical of researchers in the polar regions.

PolarPac3

While containing literature of all disciplines, PolarPac3, supported by a grant from the National Endowment for the Humanities (NEH), was a deliberate attempt to increase the social science and humanities holdings of the database. Much of the literature of the northern social sciences is "gray" in nature and therefore relatively difficult to access. Insufficient attention had been given to those areas such as aboriginal rights and the power that knowledge and information can give to the native peoples of the North. Perhaps the best documented field is historical exploration, but even here much of the work is dependent upon original sources whose locations are unknown or known only to a few scholars.

PolarPac3 sought to augment these areas. The authors focused on libraries whose holdings would expand literature in the humanities and social sciences internationally. For this reason, the two libraries targeted were the main library of the Department of Indian and Northern Affairs Canada in Ottawa and the Scott Polar Research Institute at Cambridge University in England. In the end, over fifty libraries contributed holdings to PolarPac3.

The PolarPac3 database contains 194,325 monographs and serial records with 333,698 locations being reported. This represents a 44 percent increase in the number of bibliographic records and a 47 percent increase in location information over PolarPac1. In PolarPac3, 125,455 records have only one location making 65 percent of the titles unique in the database. Seventy-seven languages are represented. English remains predominant, followed by Russian, French, and German. Just as interest in the polar regions increased with exploration and development of natural resources, the rate of publication has increased in the last twenty years with the greatest number of publications in the database being published between 1970 and 1989. Figure 1 shows the distribution of materials by date of publication.

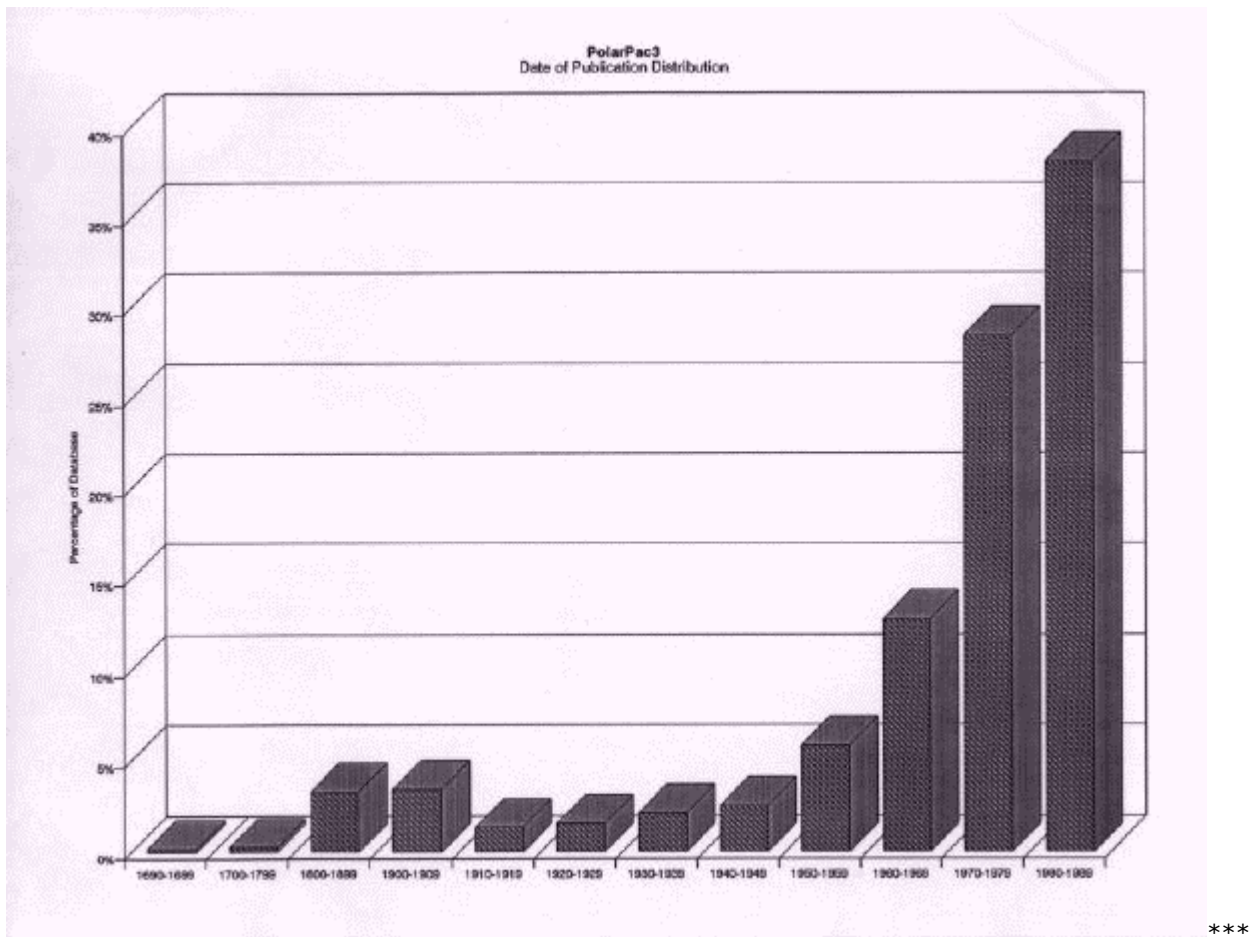


Figure 1: Date of Publication Distribution ***

The addition of holdings from non-book databases was an early request from PolarPac users following the publication of the first edition. In response to demand, the following five files were added:

The Bibliography of Alaska and Polar Regions, containing over 89,000 citations compiled at the Rasmuson Library, University of Alaska Fairbanks. This file contains citations from newspapers, journals, theses, and books related to Alaska and polar studies.

The National Snow and Ice Data Center database, compiled by the University of Colorado, Boulder, World Data Center A for Glaciology. It contains over 3,000 citations from journals, books, and scientific papers concerning arctic research.

The Oil Spill Public Information Center newspaper database containing nearly 30,000 citations to newspaper articles dealing with oil spills, particularly the Prince William Sound oil spill of 1989.

The Ancestors database, a source of information on early settlers and pioneers in the state of Alaska, comprising an index of 49,712 citations.

Lapponica, a database of 17,346 records and citations to materials about the Nordkalotten, the northern parts of Finland, Scandinavia and the Kola Peninsula. Lapponica is especially strong in all subjects relating to the Sami or Lapp people.

Subject Content of PolarPac3

One of the advantages to having the PolarPac database resident on WLN is that it was easy and convenient to use the WLN Collection Assessment Service to analyze the subject content and strengths of PolarPac. The WLN Conspectus provides a framework to inventory library collections in twenty-four subject areas. These subject areas are further subdivided by approximately 500 subject categories.

The authors used the Collection Analysis feature to take an in-depth look at the database. The service provides a subject-oriented view of the collection by calculating totals and percentages within subject categories and descriptors. A combination of subject strength, publication date ranges, and languages can be analyzed for the database as a whole, while a detailed analysis can be done on groups of libraries within PolarPac as well. A similar study had been completed for PolarPac1 making a direct analysis of subject strengthening between the two editions possible.

One of the challenges in using the analysis program in an international database is that the program is based upon the Library of Congress (LC) classification numbers carried in records using MARC formats. The records from the Scott Polar Research Institute (SPRI) did not carry LC classification numbers. To solve this problem, and make analysis of SPRI records possible, WLN programs extracted LC call numbers from the WLN bibliographic and holdings database for the SPRI records that could be matched. For those records not meeting this criteria, staff from WLN and the Rasmuson Library developed conversion tables for use in the collection analysis reports.

Not surprisingly, the area with the most titles was the subject grouping of geography and geology, with 32,565 titles. Other areas of great strength were history (including works on native Americans) at 25,284 titles; engineering and technology at 19,231 titles; the biological sciences at 17,077 titles; and business and economics at 16,053 titles. Figure 2 shows the overall subject coverage distribution of PolarPac3.

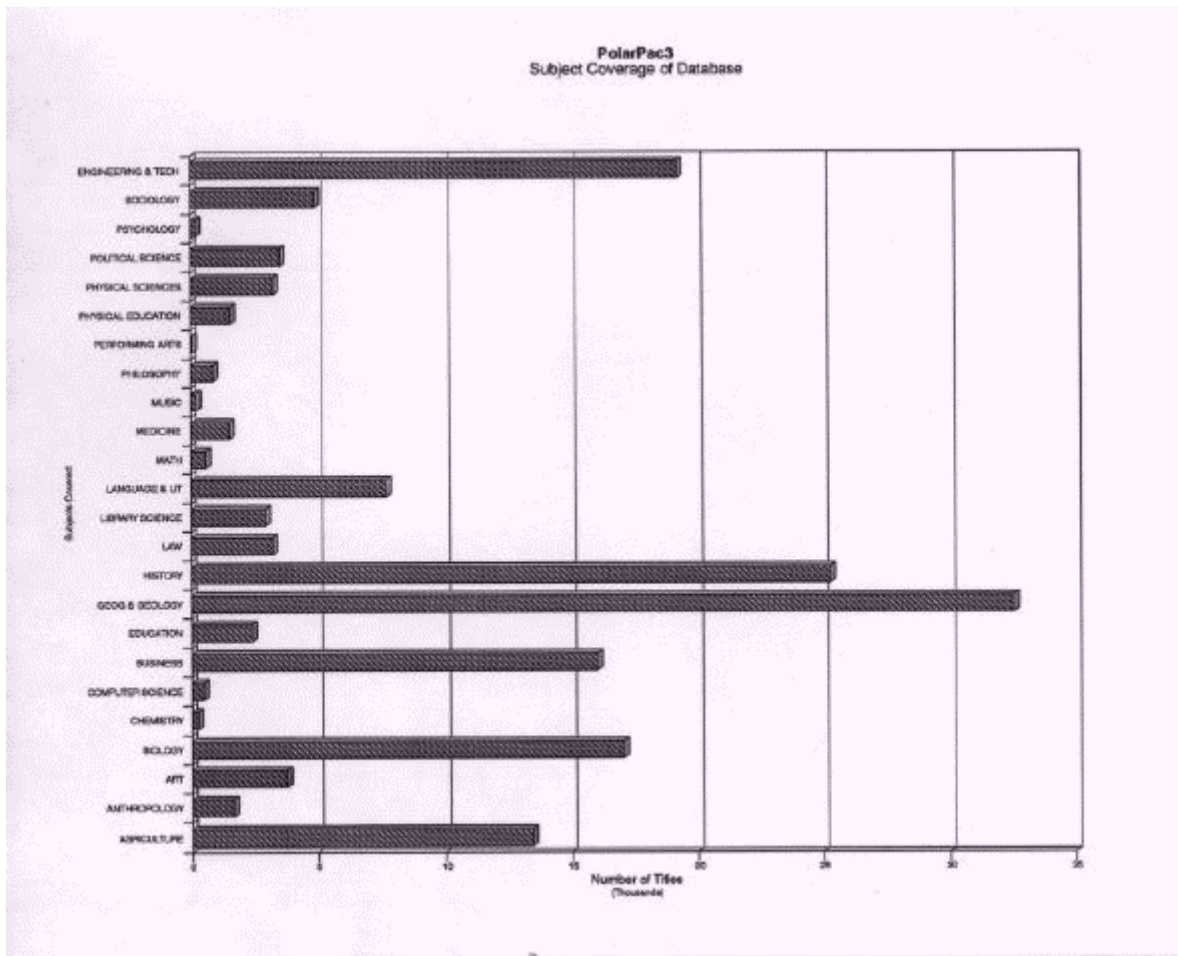


Figure 2: Subject Coverage of Database ***

Future analysis of this data should permit researchers to profile the ebb and flow of interest in specific research areas over time and to allow a comparison of the effectiveness of collection development efforts in polar libraries as a whole in relation to specific library efforts.

Future Directions

The authors are pursuing a strategy of increasing the breadth of database coverage by targeting specific geographically distributed libraries with discipline-based collections, rather than increasing the depth of the database by adding similar titles.

Figure 2, demonstrates that the literature of the polar regions is driven by the activities carried out in these regions: discovery, exploration, exploitation of natural resources, economic development of natural resources, and concerns of the aboriginal peoples. Currently there are bibliographic records and citations on the activities of Russia in the Arctic, but it is still a small percentage of the overall database. With the opening up of contacts between the West and Russia, interest has skyrocketed in Russian activities in the North. The same factors that drive the literature of the polar regions in the West have driven Russian polar

literature as well. This is especially true of the environmental impacts of northern development in the Russia Far East (Stanglin & Pope, 1992). The addition of titles that reflect a broader coverage of environmental information and Russian literature in general is seen as critical to the future development of the database.

Contacts have been established between the Elmer E. Rasmuson Library, University of Alaska, Fairbanks, and the Kola Science Centre of the Russian Academy of Sciences, in Apatity, Murmansk Region; the National Library of Republic Sacha (Yakutia) in Yakutsk, Siberia; the Ministry of Education, Republic Sakha, Yakutsk; the library of Yakutsk State University; and the Khabarovsk Territorial Universal Scientific Library. Communications are continuing in an effort to establish a mechanism for the inclusion of bibliographic records and citations from these sites, thus massively increasing the amount of Russian polar information, especially in the area of environmental information.

For further information on the PolarPac database, the authors should be contacted. To purchase PolarPac3 on CD-ROM (\$300 U.S.), contact WLN, P.O. Box 3888, Lacey WA 98503, USA, 1-800-DIALWLN.

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