THE FISHERIES AND OCEANS CANADA VIRTUAL LIBRARY AND DOCUMENT ARCHIVE

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Abstract: The Fisheries and Oceans Canada Virtual Library (www.dfompo.gc.ca/libraries-bibliotheques/home-accueil_e.htm) is a recent addition to the Department's national website. This resource, also known as the DFO Virtual Library, is available in English and French and provides access to WAVES, the catalogue of the Fisheries and Oceans Canada libraries, and to over 1000 technical reports published by the Department. COFOL, the Council of Fisheries and Oceans Libraries, is the impetus behind the DFO Virtual Library. COFOL has developed guidelines for digitizing of departmental documents and is investigating the acquisition of scanned historical departmental reports. WAVES provides access to the departmental document archive. COFOL continues to develop WAVES and the Virtual Library to improve library services and access to Fisheries and Oceans Canada publications for both departmental and external clients.

Keywords: libraries; information; research; fisheries; oceanography; marine sciences; Canada; Dept. of Fisheries and Oceans

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Background

WAVES, the catalogue of the Fisheries and Oceans Canada Libraries serves as a bibliography of the Department's publications and provides links to electronic departmental documents. Freely available online since 1999, the WAVES database contains well over 325,000 records, representing the holdings of the Department's eleven libraries. While the majority of the records describe print materials, an increasing number of records also contain links to electronic publications. The development of the WAVES database from an in-house bibliography at one of the Department's libraries to an online web catalogue has been described previously in IAMSLIC proceedings. (Olson, et al., 2001)

The Council of Fisheries and Oceans Librarians (COFOL) is a network of the heads of the Fisheries and Oceans Canada libraries. (Cameron and Croy VanWely, 2000) The group has been described previously in IAMSLIC proceedings. (Sutherland, 1988 and Miller et al., 2007) Over the past few years, COFOL has developed cataloguing standards to describe electronic materials and compiled publication guidelines to encourage Departmental scientists to make their reports available in electronic format.

Since 2003, the *Guide for the production of Fisheries and Oceans Canada reports* has been available online in English and French. The current *Guide* provides information concerning the required format for publishing Fisheries and Oceans Canada reports and outlines the procedures for the preparation and distribution of these reports. The guidelines, which first appeared in print in 1977, have evolved to keep pace with changes in publishing technology.

When revising the *Guide* in 2000, the COFOL Electronic Publications Committee included a section on guidelines for posting electronic publications to the WAVES database. Noting that "electronic publication is an efficient, cost-saving method of disseminating departmental information", the guide elaborates that "if a report is available to the public electronically, there is no need to print multiple copies for possible future distribution" (Canada. Dept. of Fisheries and Oceans, 2006). The author of a report must provide an electronic copy of the final version of the report to the librarian at his or her region who then forwards it to the WAVES database manager.

In order to preserve reports in the Departmental series and to facilitate easier access to these reports, some guidelines were necessary. With this objective, COFOL, in 2005, formed a Digitizing and Archiving Committee (DARC) to establish standards for digitization of Departmental reports. The Committee came up with a set of guidelines for scanning individual items, storing of files on the library server and making links to the full-text from the WAVES database and the COFOL intranet and Internet sites.

The guidelines included criteria for selection of materials for digitization. Individual libraries determine their own priorities. Some items considered are heavily circulated

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material, material by regional researchers, items that are fragile or in need of preservation.

The Committee put forward some recommendations for preparation of the materials to be scanned. Use of a clean copy is preferred and removal of the pages from the binding allows for easier feeding through a scanner. Additional recommendations for old or fragile materials included very careful handling and checking the quality of the scan, adjusting the resolution or density if necessary. The entire document, including the cover, is to be scanned at a resolution no lower than 300 dpi.

Additional thought was given to the handling of lengthy or heavily illustrated reports. The recommendation was to create multiple files by splitting the report at logical breaks, e.g., separating appendices and graphic material from the main report.

Selection of file format and other website details involve compliance with the Common Look and Feel Standards for the Internet (CLF2.0) established by the Treasury Board of Canada for federal government internet sites. CLF guidelines were developed to ensure that Canadian federal government websites are consistent and predictable in their presentation of services and content and to facilitate effective online interaction for uses. The guidelines cover website characteristics such as layout and design, scripts, dynamic pages, and use of government branding. Fortunately, the CFL now allows portable document format (PDF) as an alternate document format. “HTML or other W3C recommended languages must be the primary format for all documents on Government of Canada (GoC) Web sites. In cases where the document cannot be represented in HTML, users should be given information on how to obtain alternate versions, e.g., print, Braille, audio, etc. Portable Document Format -PDF minimum Version 2.1 should only be used as an alternate format." (Canada. Treasury Board of Canada. Secretariat, 2007)

Individual projects, to date

Beginning in 2005, individual libraries began systematically digitizing reports from their institutions. The procedure in each library has been almost as individual as the library itself. The one common feature is that all libraries are retaining at least one print copy of each report in their collections.

Pacific Region Headquarters (RHQ) Library at Vancouver, B.C. began scanning reports in two of the primary fisheries and aquatic science series produced by RHQ and two regional facilities, the West Vancouver Laboratory (WVL) and the Pacific Biological Station (PBS). Library staff used duplicate reports and did the scanning in-house. The Library has an inexpensive flat bed scanner with both black and white and colour settings and a document feeder. RHQ Library staff follow the DARC’s guidelines and ensure all colour photographs, plates and report covers are scanned the same colours as the original. They use Adobe Acrobat 8 Professional to save the files for each report in a single PDF document.

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At Bedford Institute of Oceanography (BIO) at Dartmouth, N.S. in Maritimes Region, the Library has a scanning photocopier with both black and white and colour settings. BIO Library staff scan the text of the reports in black and white and the covers in colour. Then they use Adobe Acrobat 8 Professional to stitch pages together into a single PDF file. BIO Library began scanning reports in 2005, starting with historical DFO reports. They also received retrospective material from the Biological Station at St. Andrews, NB, one of Canada's oldest marine research facilities. As another project, BIO Library contracted out a sample annual report to be digitized and found the project to be costly and labour intensive. BIO also did a cost analysis to outsource scanning of some of their older reports that were printed on onionskin.

The Institut Maurice Lamontagne (IML) at Mont-Joli in Quebec Region, established in 1987, is one of the youngest DFO research institutions and does not have the large volume of reports produced by some of the older institutions, which have been established for almost a century. The IML Library has a scanning photocopier which the Library staff use to scan the text of the reports in black and white and the covers in colour. Then they use Adobe Acrobat 8 Professional to stitch pages together into a single PDF file. IML Library completed a major digitizing project during 2005 and 2006 by hiring a part-time contractor for five weeks to digitize 153 reports. This included all reports issued in all series in Quebec region. After the digitization, they used Adobe's OCR (optical character recognition) application to make each document searchable. The digitized reports were made available through IML's website. All digitizing was done inhouse using duplicate reports and library copies when duplicates were unavailable.

In the early 2000s, the Freshwater Institute Library (FWI) at Winnipeg in Central and Arctic Region began a digitization project to make a collection of older and frequently requested reports and documents concerning the MacKenzie Valley Pipeline accessible online. Since then, they have made use of summer students to continue with other projects. Selection of materials for digitization has not been done by report series, but by theme or topic. In 2006 they digitized a number of reports and documents on Great Slave Lake, older reports that had previously only been in microfiche format.

The Institute of Ocean Sciences (IOS) at Sidney, B.C. in Pacific Region, began its digitizing projects in 2007 by contracted out the digitization of two lengthy and frequently requested reports. During the summer of 2007, the IOS Librarian hired a part-time contractor who began digitizing the Institute's DFO report series using duplicate copies. Similar to BIO and IML, they used the Library's black and white scanning photocopier for the text. Then they used their colour flatbed scanner for the covers and colour plates. They used Adobe Acrobat 8 Professional to merge the files into a single PDF document.

Regardless of which library was responsible for digitization, whenever possible, links to all online electronic formats have been added to WAVES. The number of scanned reports available continues to increase and the most active digitization projects are at BIO and Pacific Region HQ.

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As a group, the COFOL libraries have committed to pay for the scanning of two departmental annual reports each to complete the time period not covered by current national digitization projects such as “Early Canadiana Online”. (Canadiana.org, 2007)

The DFO Virtual Library

The DFO Virtual Library on the internet

The DFO Virtual Library was launched in 2006. Available in English and French, the internet version contains links to the libraries’ catalogue, WAVES, as well as links to all the departmental reports available online (Figure 1).

Figure 1 The DFO Virtual Library INTERNET site has links to WAVES and to DFO reports available online

Fisheries and Oceans Canada’s eight report series include data, technical and manuscript reports concerning fisheries and aquatic sciences or hydrography and oceanography. “*Technical and manuscript reports* contain scientific and technical information that contributes to existing knowledge but which is not appropriate for the primary literature. *Technical reports* are directed to national or international audiences while *Manuscript reports* deal primarily with national or regional issues.” “*Data reports* provide a medium for filing and archiving data compilations where little or no analysis is included. Such

compilations commonly will have been prepared in support of primary publications or other reports." (Canada. Dept. of Fisheries and Oceans, 2006).

The report series are listed alphabetically by series title on the website and the reports for each series are listed sequentially by report number with the most recent at the bottom of the list (Figure 2). The lists of online reports, produced from the WAVES database, are updated irregularly. WAVES contains the most current information about the availability of e-reports.

Figure 2 DFO report series online website includes active and inactive series

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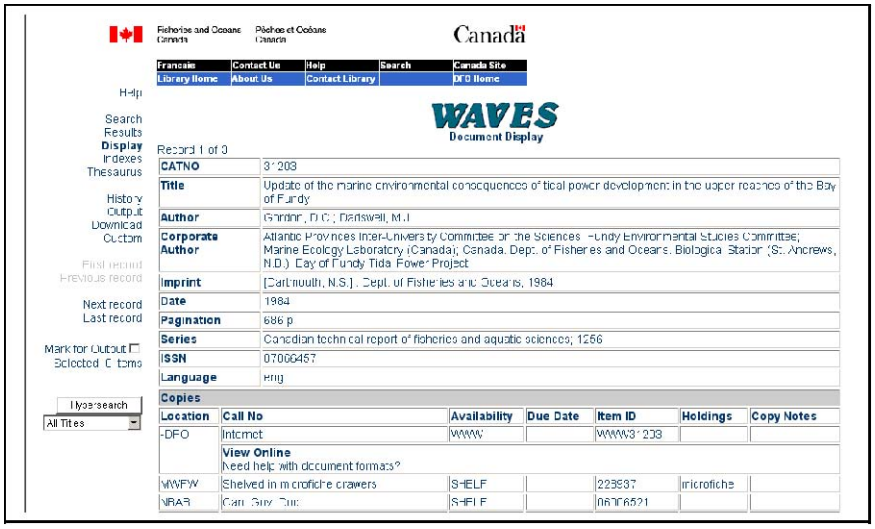

Figure 3 A WAVES record with a link to the online version as well as library location information

All reports available through the Virtual Library are also available through WAVES. The WAVES record contains a link to the electronic version of the report (Figure 3). The "view online" link in the copies area of a WAVES record connects to the electronic version for viewing or downloading (Figure 4). In the case of some very long reports, the "view online" link connects to a title page at the Virtual Library site. Users are presented with options for viewing and downloading the document. When files are particularly large, the file size for the complete document is indicated.

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Figure 4 A DFO Virtual Library document download site

The DFO Virtual Library on the DFO intranet

Launched at the same time as the Virtual Library internet site, the intranet site contains links to resources available to DFO employees. As well as links to WAVES and to DFO online reports, the intranet site contains links to additional resources available only to DFO employees, including databases and online journals. Other links point users to useful information concerning publishing and copyright. Employees are also offered a selection of other useful websites and resources that are available freely or are licensed by the Department (Figure 5).

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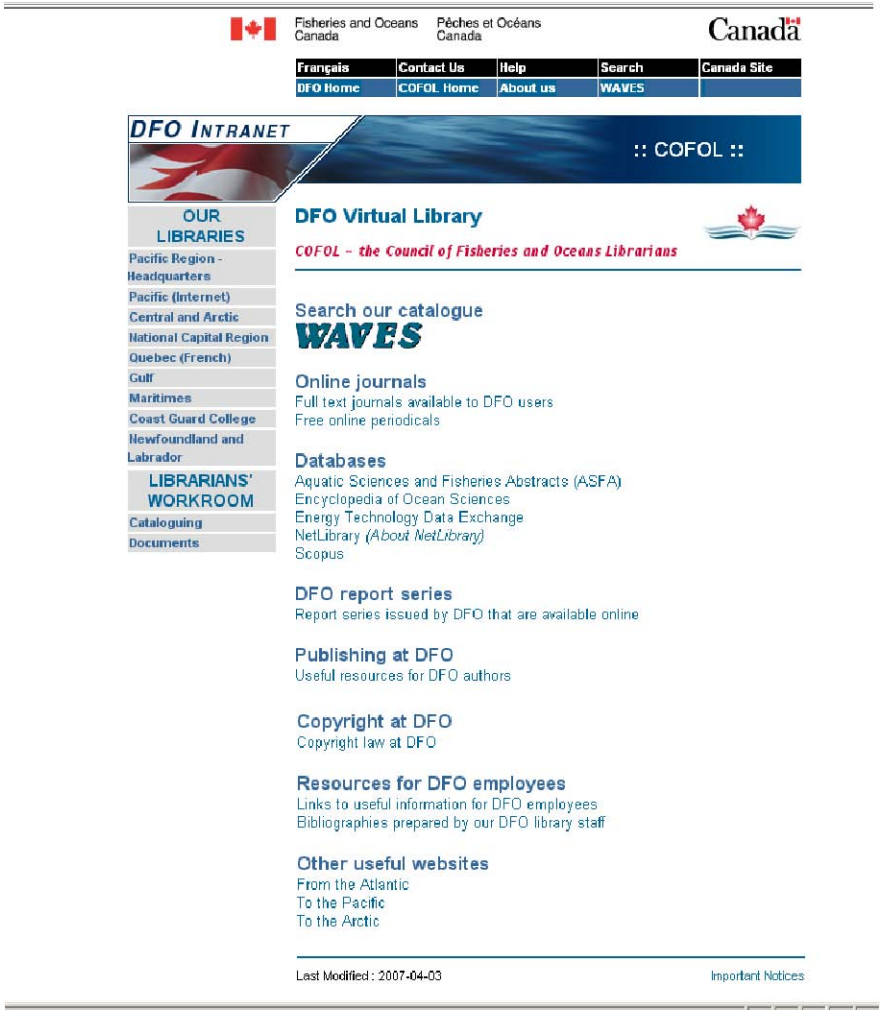

Figure 5 DFO Virtual Library INTRANET site listing resources available to employees

A single alphabetic list of full text online journals includes the titles available to departmental employees. Coverage notes are included for each title. When access to a title is restricted by site licenses to an individual library, an explanatory note accompanies the title (Figures 6 and 7). The journals list is produced from information in the WAVES database.

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Figure 6 DFO Virtual Library INTRANET site list of online journals available only to employees

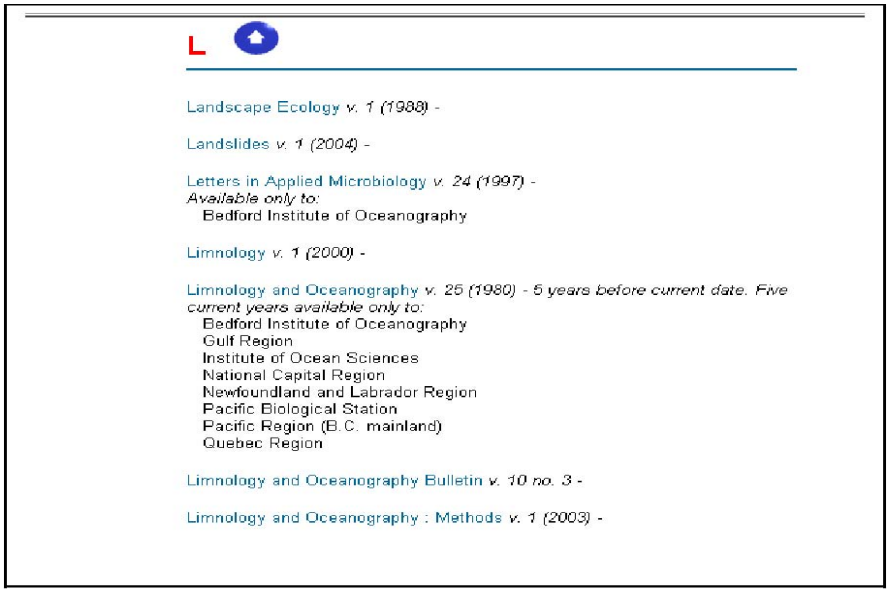

Figure 7 The online journal list contains availability information when access is limited to some libraries

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The intranet site includes links to databases for which COFOL has purchased or negotiated access for all DFO employees. ASFA and Scopus are two of the more frequently used databases. Where logon and password information is required, these are included in the link so that the employee can go directly with the database.

A link to the DFO report series connects employees to the Virtual Library internet site where reports can be viewed or downloaded.

A number of resources describing procedures for publishing reports in the DFO series are available as well. These resources include the most recent *Guide for the production of Fisheries and Oceans Canada reports*, templates for report covers, links to approved resources for keywords and indexing terms, departmental publishing policy and information about the application of Common Look and Feel (CLF) in the Department.

Resources concerning copyright information relevant for departmental employees are available also at the intranet site. As well, the site provides links to numerous useful resources licensed to or purchased by the Department, such as material safety data sheets (MSDS), and to freely available resources such as dictionaries, atlases, and other quick reference tools. Links to the Department's Atlantic, Pacific and Arctic regional sites connect users with a variety of resources of interest identified by the regions.

Technical details

All libraries participating in the project send their scanned documents to the Ottawa Library, either on CD-ROM, as email attachments for single shorter reports, or by using an FTP client to place the files on the FTP server in Ottawa. Some libraries, notably BIO and IOS, place the documents in a folder in the public FTP servers they use for distributing interlibrary loans.

At the Ottawa Library, the reports are renamed according to the established naming convention (*WAVEScatalogue number.pdf*), and placed on the dedicated WAVES server. Ottawa Library staff add a copy record to the bibliographic record for the original print document, incorporating the URL in the WAVES equivalent of the MARC 856 field. WAVES cataloguing policy is to treat facsimile reproductions of documents as copies of the same document; thus a new record is not created for the PDF version of a print original.

The WAVES manager periodically runs a customized report on the database to produce a list of newly added Internet copy records in the various departmental science series. This is sent to the Virtual Library webmaster at BIO, who massages the text data using Macromedia's Homesite HTML editor, and adds the new records to the list on the Virtual Library page of DFO reports available online.

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Future

As a group, COFOL is seeking designated funding for maintenance and development of the Virtual Library. Other future plans include dynamic updating of intranet lists from the WAVES database and improved functionality of the Virtual Library, such as searching and sorting. COFOL is also exploring compliance with recognized standards such as OAI-PMH (Open Archives Initiative – Protocol for Metadata Harvesting). Meanwhile, the individual libraries continue to digitize older and historical Departmental documents.

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