EURASLIC *European Association of Aquatic Sciences Libraries and Information Centres*

Proceedings of the Fifth Meeting of the European Association of Aquatic Sciences Libraries and Information Centres (EURASLIC)

held at the Sea Fisheries Institute, Gdynia, Poland, 28-29th April 1994

edited by

David S. Moulder and Allen Varley

Plymouth
Plymouth Marine Laboratory

1995

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INTRODUCTION

The Fifth EURASLIC Meeting was held in Gdynia, Poland, the first time that a meeting had been held in Eastern Europe. EURASLIC had been keen from the beginning to develop its links with Eastern Europe, and to assist the development of aquatic sciences libraries and information centres in that part of the world. The Gdynia meeting was the first major opportunity for many participants to take part in a meeting with their Western European colleagues, although it had been possible to arrange for a few individuals to attend previous EURASLIC meetings in Paris and Lelystad.

In the event we were able to obtain sponsorship from a number of sources to enable Eastern European participants to attend, most notably from the Intergovernmental Oceanographic Commission in Paris, and in addition a number of participants managed to find funding for themselves. As a result over half of those who were present at the meeting came from Eastern Europe.

We are grateful to the Director and staff of the Sea Fisheries Institute, for agreeing to act as hosts, and for all their efforts to ensure the success of the meeting.

A wide variety of papers were presented, and there were also opportunities for workshop sessions and working groups. But the most important parts of the meeting were the informal conversations that took place and the links that were made, links that have been bearing fruit in the last year.

EURASLIC will be counted a success when all those who participate in its activities realize their interdependence and their responsibilities to each other, and work to improve their common goals. Gdynia was an important step in bringing Eastern Europe into the EURASLIC family.

EURASLIC *European Association of Aquatic Sciences Libraries and Information Centres*

EURASLIC V Meeting, Gdynia, Poland
Programme

Thursday 28th April 1994

08.00 - 09.00	*Registration*
09.00 - 09.10	*Opening Ceremony:* Professor Zygmunt Polanski, Director, Sea Fisheries Institute, Gdynia, Poland
09.10 - 09.20	*Administrative Arrangements:* Henryk Ganowiak, Head, Library and Scientific Information Centre, Sea Fisheries Institute, Gdynia, Poland
09.20 - 10.15	**Session 1: Papers Chair: Henryk Ganowiak**
09.20 - 09.50	*Electronic Networking - Internet Access for Linking Libraries by Electronic Mail and Finding Information and Data:* David Moulder, Head of Library and Information Services, Marine Laboratory and Marine Biological Association, Plymouth, United Kingdom
Plymouth	
09.50 - 10.15	*Aquatic Sciences Libraries and Information Centres in Poland: the Present Situation:* Henryk Ganowiak, Head, Library and Scientific Information Centre, Sea Fisheries Institute, Gdynia, Poland
10.15 - 10.45	*Tour of Library and Scientific Information Centre*
10.45 - 11.15	***Coffee Break***
11.15 - 13.00	**Session 2: Papers Chair: Brit Skotheim**
11.15 - 11.35	*Training Workshop on Aspects of Marine Documentation in the Mediterranean:* Damian Iwueke, Librarian, Foundation for International Studies, Malta
11.35 - 11.55	*Providing Information for Fundamental Scientific Investigations of the World Ocean:* Dr Igor Ivashchenko, Chief, Scientific-Technical Information Department, Marine Hydrophysical Institute, Sevastopol, Ukraine
11.55 - 12.15	*Freshwater Information Flow in Europe:* Ian Pettman, Head of Library and Information Services, Institute of Freshwater Ecology and Freshwater Biological Association, Ambleside, United Kingdom
12.15 - 12.30	*Cooperation among EURASLIC Libraries:* Maria Filippi, Istituto Sperimentale Talassografico, Taranto, Italy [paper to be read on her behalf by Jean Collins, FAO]
12.30 - 13.00	*Mechanisms for the Dissemination of Information from EU-Funded Research Programmes:* Dr Peter Tomaszewski, Commission of the European Communities, DG-XIII/D-2, Telecommunications, Information and Innovation, Luxembourg
13.00 - 14.00	***Lunch***
14.00 - 14.30	*Country Reports on Library and Information Activities*
14.30 - 15.00	*Intergovernmental Oceanographic Commission Group of Experts on Marine Information Management - GEMIM-IV:* David Moulder, Head of Library and Information Services, Plymouth Marine Laboratory and Marine Biological Association, Plymouth, United Kingdom
15.00 - 15.45	***EURASLIC Business Meeting:* David Moulder, EURASLIC President** *Activities Since the Last Meeting; Membership Report; Financial Report; Election of Officers*
15.45 - 16.15	***Coffee Break***
16.15 - 17.00	***EURASLIC Business Meeting: (continued):* EURASLIC President** *Future Activities; Newsletter; Training; Sponsorship/Funding; Next Meeting*
17.00 - 17.30	*Aquatic Databases from SilverPlatter - Talk/Demonstration* by Stratus, SilverPlatter Representatives in Poland
19.30	***Welcome Reception, with Performance of Cassubian Dance and Song Folk Ensemble***

Friday 29th April 1994

09.00 - 10.45 **Session 3: Papers** **Chair: Barbara Schmidt**

09.00 - 09.30 *The WAVES Database - European Connection:* Audrey Conroy, Regional Librarian, Department of Fisheries and Oceans, St John's, Canada

09.30 - 10.00 *Brief Presentations on Developments in Participants' Libraries and Information Centres*

10.00 - 10.20 *Formation of the Network for Scientific and Technical Information Exchange in the field of Aquatic Sciences between Russia, the Commonwealth of Independent States and Western Europe:* Dr Ivan Bukhanevich, Director, Informcentre, VNIRO, Moscow, Russia

10.20 - 10.40 *The Library of the Estonian Marine Institute - the Main Directions of Activity:* Maria Kalenchits, Librarian, Estonian Marine Institute, Tallinn, Estonia

10.40 - 11.15 ***Coffee Break***

11.15 - 13.00 ***Workshop 1: Preservation/Conservation Issues:*** **Convenor - Allen Varley**

Archives
Documents
Data

13.00 - 14.00 ***Lunch***

14.00 - 16.00 ***Workshop 2: Interlibrary Cooperation:*** **Convenor - Damian Iwueke**

Duplicate/Surplus Documents Exchange
Resource Sharing
Loans/Document Delivery
Library Exchanges/Training

16.00 - 16.30 ***Summing up and Closure of Meeting:*** **EURASLIC President**

17.00 - 19.00 ***Walk round Gdynia, with a visit to the Sea Fisheries Institute's Aquarium***

Sponsorship

We acknowledge with gratitude the sponsorship for the meeting received from the following organizations, and in particular the contribution from the Intergovernmental Oceanographic Commission in Paris, who enabled the participation of a number of participants from Eastern Europe:

Cambridge Scientific Abstracts, Washington, D.C., USA (publishers of ASFA) - the Cassubian folk/dance group
R Domstein & Co, Måløy, Norway (fish processor and exporter)
EBSCO Subscription Services, Aalsmeer, Netherlands (subscription agents) - general expenses
Eksportutvalget for Fisk, Tromsø, Norway (Norwegian Seafood Export Council)
Fiskeridirektoratet, Bergen, Norway (Directorate of Fisheries)
Fiskaren, Bergen, Norway (fishing newspaper)
John Grieg Forlag A/S, Bergen, Norway (publisher)
Intergovernmental Oceanographic Commission, Paris, France - participants
A/S Mowi, Bergen, Norway (salmon production and export)
Tore Nilsson, Bergen, Norway (lawyer)
Norges Sildesalslag, Bergen, Norway (Norwegian Fisherman's Sales Organization for Pelagic Fish)
NORMARINE A/S, Alesund, Norway (firm buying and selling of frozen fish and fillets)
G C Rieber & Co, Bergen, Norway (firm involved in fish freezing, shipping etc.)
Stratus, Poznan, Poland (SilverPlatter agents) - contribution to welcome reception
Utenriksdepartementet, Oslo, Norway (Norwegian Foreign Ministry) - participant

Electronic Networking - Internet Access for Linking Libraries by Electronic Mail and for Finding Information and Data

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Abstract

The use of computers to link libraries with other computers around the world is described. Through electronic networks it is possible to access data and information, to send and receive messages, to obtain software, to join discussion groups, etc. Examples are given of relevance to aquatic libraries and information centres, together with instructions on how and where to access the various sources.

Introduction

Computers are of growing importance in most aspects of our lives today, and their use is spreading into all areas. It is important that we are aware of their potential to aid and help us transform our work situations. Many libraries and information centres now make regular use of computers for routine tasks such as the preparation of library catalogues and databases, serials records, mailing lists, directories and loan records. Some of these activities, using the Unesco CDS/ISIS software which is freely available, have been described in a previous paper (Moulder, 1993).

Linking Computers Together - Networking

A more recent development is the ability to link computers together through networks of computers in different parts of the world. There are many reasons for wanting to do so, including:

- sending and receiving messages, data, graphic information and text
- mailing lists that link together those interested in a particular subject to exchange news and information
- online catalogues, enabling you to search other library's catalogues
- online bibliographies and databases, allowing you to search subject lists
- directories of information, allowing you to search for information on a subject
- newsletters and journals in electronic form
- accessing software (often free) to copy onto your own computer and use
- full-text copies of books and reports which you can copy to your own computer
- research data files that can be browsed, displayed, and copied to your own computer

Internet

Internet is a worldwide network of computer networks, linked together by telephone lines, data lines, satellite links, radio links etc. Examples include APPLELINK (a network for Apple computers), JANET (the UK Joint Academic Network), NSFNET (the US National Science Foundation's communications network), OMNET (a commercial network), and RELCOM (an East European network). Linking of the

networks together means that data and information can be passed from computer to computer across and within each network. There are now thousands of networks, and over 30 million users linked together through them, and it is suggested that the number of users is growing by some 10% a month!

Data and Information Flow

To enable the smooth flow of data and information between computers on the different networks, and in fact to allow any communication at all, the computers need to know how to talk to each other, and what procedures to follow. These procedures are defined in a number of protocols, of which some of the most important are:

Internet Protocol (IP)

The Internet Protocol defines the basic segments (or packets) of information and data that are to be sent across the networks, and the format for the packets.

In order to transfer information and data across a network, the messages are sent by what is called "Packet-switching". The message is broken into segments (packets). Attached to each packet is information about the packet, its origin and destination. The packets are sent separately across the networks, interspersed with packets from other messages and other network communications. If there are equipment failures along the route, the packets are re-routed. The packets are checked at the destination and re-assembled into a copy of the original message. This all happens at high speed.

Transmission Control Protocol (TCP)

Transmission Control Protocol controls the flow of packets of information across the networks, checking that each packet gets to its destination, and is linked up with other packets from the same source.

These two basic protocols are usually referred to as TCP/IP.

File Transfer Protocol (FTP)

File Transfer Protocol defines the protocol for transferring complete files between computers, and enables you to get files of information and data, putting them on your own computer for use later.

Simple Mail Transfer Protocol (SMTP)

Simple Mail Transfer Protocol defines a protocol for sending electronic mail (usually known as E-Mail) between computers.

Internet Access

To use Internet you need access to a computer or computer terminal which has access to Internet. This access may be available in a number of different ways:

- through your organization's main computer, on which you have, or can get, an account
- through a network of computers in your organization (you may have your own computer on the network, or can use someone else's computer)
- by dialling into your organization's main computer or network, or another organization's main computer or network

You need to ask your organization's computer staff, or whoever is most knowledgeable about computers, whether there is a connection to Internet, and if this is available, what is the best means of access.

Anonymous FTP

We have already talked of File Transfer Protocol (FTP) which allows you to transfer files from a remote computer to your own and vice-versa. The files may include software, documents and data. Use of FTP can be illustrated by describing how to get copies of documents from another computer.

a) log onto your own computer system, and start FTP to the remote computer as follows:

type ftp cair.kaist.ac.kr
or
ftp 143.248.11.170

you will see some "welcome" text, and be prompted for a login.

type anonymous

you will be now be prompted to give your E-mail address [mine is d.moulder@pml.ac.uk]

b) at the prompt ftp, change directory

type cd doc

c) to see a list of the files, at the ftp prompt

type ls

you will be given a list of the files.

to get any of the files use the command GET, followed by the name of the file, e.g.:

type get filename

Once the transfer is complete (and you will be told when the file has been transferred), at the ftp prompt

type quit

You will be returned to your local computer.

Anonymous FTP is a routine method for getting files. You normally login as "anonymous", and either you will not need a password, or if you are prompted for one, you should give your E-mail address.

Telnet

Telnet is another very common procedure. Telnet is a protocol which allows you to log onto a remote computer and behave as though you were at a computer terminal logging onto a large mainframe computer in your own organization. To log on you will of course need a user identification (id) and password for the remote computer. But you can then continue as you would with a terminal directly attached to the remote computer.

For example you can Telnet to infoslug.ucsc.edu (or 128.114.143.25) and login as infoslug. You will be connected to a Gopher (see later), and given the main menu of options. One option allows you to search the menus using keywords. Another option on the menu (The Library), will allow you to connect to the Cyamus Union List of Serials, which contains details of the holdings of mostly US marine science libraries. To get to the Serials List, choose the option Other Libraries on the next menu, and then Marine and Aquatic Sciences Serials Lists from the next menu. It is advisable to read the overview before trying to search the list.

Free Software on Internet

Once you have obtained access to Internet, and have an address on the network, you will want to start looking for information and data, and to send and receive messages. To enable you to do this, there is a great deal of software available, some commercially, but much of it free of charge. You will need to talk to your computer staff about the best way to do this, but for example there is a DOS Internet Kit, for new users who use DOS/Windows. Installation instructions and the disk images are available by anonymous FTP to the following address:

type ftp tbone.biol.scarolina.edu

You will see some "welcome" text, and be prompted for a name.

type anonymous

At the password prompt

type your E-mail address

[for example mine is d.moulder@pml.ac.uk]

Now type cd /pub/kit, to change directory to the location of the files, and then type ls, to get a list of the files in the directory. Get the file 00README.DOC (make sure you type the name in upper case!), and read it. It gives information about the Kit, and how to install it. As the files you need are in binary format, you will need to type type binary, and then get each file that you need in turn (this can take a long time, if the networks are busy). You will be informed when each file has been copied to your own computer.

The Kit is a self-installing package to enable PC's to connect to Internet resources (including Gopher, Mosaic, Telnet etc, which are explained later).

Using Internet

Internet can be used in many different ways, and some of the more important uses for library and information centres will now be described:

Electronic Mail (E-Mail)

One of the most common uses of Internet is to send messages to other users of the networks, and to receive messages from them. Any person can send E-Mail to any other user if the E-Mail address is known. The E-Mail messages are sent to the remote computer for reading by the recipient when they next look at their E-Mail. It is possible to send a message to one person or to a whole group. Usually messages pass across the Internet very quickly. The recipient can reply when it is convenient to do so, and this eliminates time zone differences. For example a message sent at the beginning of the morning from Europe will be waiting on the computer for a North American user when they log onto their computer a few hours later at the start of their day.

Mailing Lists

These link together groups of people with a common interest. Examples include closed lists such as the *Aquatic Sciences and Fisheries Abstracts (ASFA)* Board (which is restricted to Board members) and subject lists such as the following examples:

FISH-ECOLOGY

This is a discussion list for academic and other personnel involved in empirical and theoretical

research and advising issues related to the ecology of fish and fisheries: evolutionary aspects, population dynamics, modelling, management, conservation and bioeconomics. To join, send a message to listserv@searn.sunet.se, with the following in the body of the message:

subscribe fish-ecology your name

There are currently over 600 members in 33 countries.

IAMSLIC

This is the electronic discussion group for members (and those interested) in the aquatic science information field. It includes news items, information on IAMSLIC activities, useful sources of information on Internet, etc. To subscribe, send the following message (nothing in the subject field) to listserv@ucsd.edu:

subscribe <your Internet E-Mail address> iamslic

MARMAM

This is a marine mammal research and conservation discussion list, which includes discussions, conference/meeting announcements, volunteer opportunities, new techniques and equipment, new books, etc. There is no charge to subscribe. Messages sent to the list are forwarded to all subscribers. To subscribe, send a message to the listserver (listserv@uvvm.uvic.ca) or (listserv@uvic.bitnet) with a message in the text:

subscribe MARMAM your name

Leave the subject line blank.

Water-L

This is a discussion list for problems of water quality. To subscribe, send the following message to listserv@cunyvm.cuny.edu (nothing in the subject line):

subscribe Water-L yourname

Online Catalogues

Many libraries and information centres across the world have made their library catalogues available for access. Examples include the US Library of Congress, many US and UK university libraries etc. For further details see the appropriate entries in the BUBL menus, and the Swedish Gopher example under Gopher (see later).

Online Bibliographies/Databases

A number of special bibliographies, databases and databanks are accessible. Examples include:

Current Antarctic Literature

This is a monthly Antarctic bibliography. For further information send an E-Mail message to jcooper@zoo.uct.ac.za, asking for further details.

NABS Bibliographic Database

This is the database version of the annual bibliography prepared since 1965 by the North American Benthological Society. It can be searched using boolean algebra, and accessed by Gopher to gopher.nd.edu. It is divided into sections, covering 5264 references from 1959 to 1981, and 22,000 references from 1985 to 1991. It covers both marine and freshwater environments.

Online Directories/Guides

There are many directories available online, enabling you to find information and data on a particular subject, and there are now directories of directories, listing directories on a particular subject. For example:

Biologist's Guide to Internet Resources

This is a useful guide to software, data archives, electronic mailing lists etc. You can get it by anonymous FTP to sunsite.unc.edu or 152.2.22.81. Change directory to pub/academic/biology/ecology+evolution. The files are called bioguide-faq and bioguide.

Global Change Master Directory

The Directory offers a comprehensive source of information about worldwide earth science data holdings available to the science community. It includes datasets, information on field experiments, and details of projects. The central aspect of the GCMD database is the over 2300 high-level dataset descriptions that give the user basic information on the data and the point of contact. Each description is in an ASCII format called Directory Interchange Format (DIF). Primary access is by Telnet to gcmd.gsfc.nasa.gov.

At the username prompt type

esapid

Guide to Environmental Resources on the Internet

This is a guide to resources of an environmental nature, arranged alphabetically by subject and then by the Internet tools used to locate those resources. It can be obtained by anonymous FTP to una.hh.lib.umich.edu or 141.211.190.102. Change directory to inetdirsstacks, and then get the file environment:murphybriggs

Clearinghouse for Subject-Oriented Internet Resource Guides

The Clearinghouse is a joint effort of the University of Michigan's University Library and the School of Information and Library Studies. The goal is to collect and make widely available guides to Internet resources which are subject oriented. Access to the Clearinghouse is through the World Wide Web (described later) (http://www.lib.umich.edu/chhome.html), or by anonymous FTP to una.hh.lib.umich.edu or 141.211.190.102. Change directory to inetdirs.

Newsletters and Journals

There are many newsletters and journals available in electronic form, and these can often be accessed through Internet. For example, through Infoslug (described under Telnet), it is possible to see the following Newsletters and Journals:

Antarctic Journal

This is a scientific journal produced by the US National Science Foundation that gives news and scientific articles and data relating to US government activities in the Antarctic.

Chaetozone - Polychaete Research News

This newsletter gives information, news, conference information etc. relating to scientific research on polychaetes.

Newsletter on Serials Pricing Issues

This newsletter discusses the pricing of scientific journals, publishers' practices, etc.

The Scientist (ISI)

This contains the text of the scientific newspaper produced by ISI, the producers of *Current Contents*, *Science Citation Index* etc.

Books and Texts

There are an increasing number of books and other documents available in electronic form through Internet. Examples include Webster's dictionary, Roget's Thesaurus and the Bible, as well as texts of many guides, reports and other documents. Some of these have already been mentioned. They can be accessed by anonymous FTP, by Cello and Gopher, and can be read online, or transferred to your computer for reading later.

Internet Tools

With the increasing growth of Internet, and resources on it, users have needed better ways of finding what information, data, software and other resources are available. To enable users to search for and access resources quickly a number of tools have been developed. For some tools it is just necessary to connect to a specific computer, on which the tool is loaded. For other tools, you can copy the necessary software to your own machine for your own direct use. A few of the more common tools will be described briefly here:

Archie

Archie is an electronic directory service, consisting of a series of resource discovery tools that together provide a mechanism for locating information on Internet. It was originally created to track the contents of anonymous FTP archive sites. Users can access Archie either through an interactive session using Telnet or through questions sent by E-Mail. From the answers you can identify useful sources (and their locations), for direct access. The Archie computer automatically updates its list monthly. Archie also features a "whatis" database, which includes descriptions (names and brief synopses) of over 3,500 public domain (free) software packages, datasets and information documents.

There are two ways to access Archie:

a) Telnet access
Telnet to archie.mcgill.ca
or
132.206.2.3
and login as the user archie (no password is needed)
First-time users should try the help command.

b) E-Mail access
Send a message to archie@archie.mcgill.ca with the single word help in either the subject line or body of the message. You will be sent an E-Mail message, hopefully when you access E-Mail later the same day, or the next day, explaining how to use the E-Mail Archie service.

BUBL Information Service

The BUBL Information Service is provided with the assistance of a number of organizations in the UK and elsewhere, and is based at the University of Bath. It operates through a Gopher, and presents its information in three main ways:

- through files (journal articles, papers, texts, books in electronic form etc.)
- through links to other services and resources (where BUBL acts as the gateway)
- through the BUBL Subject Tree, which presents material (primarily links to other resources) using the UDC (Universal Decimal Classification)

It is arranged in a set of hierarchical menus, with additional keyword searching features. As the input to it is mainly by library/information people, it is a major source of information of relevance to libraries and information centres, for example for details and methods of access to library catalogues. It is also important through the links it provides directly to some of the Internet Tools, as it is possible to access them through BUBL.

Access to BUBL can be obtained in several ways:

Telnet: Telnet to bubl.bath.ac.uk (or 138.38.32.45) and login as bubl

Gopher: Gopher to bubl.bath.ac.uk (or 138.38.32.45) Port 7070

WorldwideWeb: http://www.bubl.bath.ac.uk/BUBL/home.html

Cello

Cello is a multipurpose Internet browser which enables access to data and information resources. It supports WorldWideWeb, FTP, Gopher etc., and by links to other computers it also supports Hytelnet, Telnet, WAIS etc. It can be used to view hypermedia documents, including images, text, and digitized sounds and movies. It was developed by the Legal Information Institute at Cornell Law School in the USA. It operates through a Windows interface.

It is available by anonymous FTP to fatty.law.cornell.edu or 132.236.108.5. Change directory to pub/LII/Cello.

Gopher

Gopher is a very useful piece of software which uses a simple protocol to tunnel its way through a TCP/IP Internet. It was developed by the University of Minnesota Computer and Information Services. The gopher is a short-tailed burrowing mammal of the family *Geomyidae*, and Minnesota is known as the Gopher state.

Gopher is a client-server system. This means that the work to be done is divided between two computers, a "client", which deals with the user, and translates the user's requests into questions for the remote computer, the "server", and then translates the replies for the user. The "server" is usually in charge of the data or information, which it stores to answer questions passed to it in a very rigid query format. The protocol by which client and server talk to each other in Gopher is very simple, which is one reason for its popularity.

You can logon to a remote computer and use that machine's client to connect to specific servers. For example, Telnet to gopher.sunet.se (or 192.36.125.10), and login as Gopher. However, if you want to use Gopher frequently it is best to get your own copy of the client software, and the DOS Internet Kit contains a Gopher. You can also get the Gopher software by anonymous FTP to boombox.micro.umn.edu or 134.84.132.2: change directory to pub/gopher. Gopher enables you to connect to many servers. A simple server may just hold text files. By linking to another Gopher server you can access information and services on both. Many servers contain text files, links to other servers, software to browse and download data from FTP computers, gateways to Archie and WAIS (described later), the ability to do full-text searches in documents, Telnet to library catalogues etc.

For example you can use Gopher to connect to the following Gophers:

Smithsonian Institution's Natural History Gopher

Gopher to nmnhgoph.si.edu or 160.111.64.84. You will be given the following menu:

1. About the Smithsonian Institution's Natural History Gopher (& What's New)
2. Botany at the Smithsonian Institution
3. Entomology at the Smithsonian Institution
4. Invertebrate Zoology at the Smithsonian Institution
5. Paleobiology at the Smithsonian Institution
6. Vertebrate Zoology at the Smithsonian Institution
7. Smithsonian Biodiversity Programs and Data
8. Smithsonian Biological Conservation Programs and Data
9. Smithsonian Global Volcanism Program
10. Smithsonian Laboratory of Molecular Systematics
11. Smithsonian Natural History Information and Announcements

12. Museum Computerization and Technology
13. Related Gopher and Information Servers

By choosing an item from the menu you will be connected to further menus, text files or other Gophers.

LC MARVEL

The US Library of Congress Machine-Assisted Realization of the Virtual Electronic Library (MARVEL) provices a gateway to many services, both at the Library of Congress and elsewhere. Gopher to marvel.loc.gov. You will be given the following menu:

1. About LC MARVEL
2. Events, Facilities, Publications and Services
3. Research and Reference (Public Services)
4. Libraries and Publishers (Technical Services)
5. Copyright
6. Library of Congress Online Systems
7. Employee Information
8. US Congress
9. Government Information
10. Global Electronic Library (by Subject)
11. Internet Resources
12. What's New on LC MARVEL
13. Search LC MARVEL Menus

You can choose any item on the menu, which will take you to other menus, or to other Gophers.

Envirogopher

You can connect to an environmental gopher by Gopher to envirolink.org. You will again be given a menu of options, one of which is a List of Environmental Organizations Online, and another is a Library of Environmental Information.

Gopher.sunet.se

This particular Gopher in Sweden has many useful items on its main menu, including links to Gophers in many European countries, links to Nordic Library and Information Services etc. The Infoservers in European Countries Option gives the following menu:

1. An assembly of European Gophers
2. Austria
3. Belgium
4. Croatia
5. Czech Republic
6. DANTE - EuropaNET
7. DISCUS (former CONCISE) European Information Server
8. Denmark
9. Descriptions of European Networks
10. EARN Information Service
11. ECHO
12. EUROKOM (authorized access only)
13. EUnet entry point
14. Erasmus (European Action Scheme for the Mobility of University Students)
15. European National Entrypoints
16. Finland
17. France
18. French Speaking Gophers around the World
19. Germany
20. Greece
21. Hungary
22. Iceland
23. Ireland
24. Italy
25. Latvia
26. Lithuania
27. Luxembourg
28. Netherlands
29. Norway
30. Poland
31. Portugal
32. RARE-Secretariat
33. RIPE NCC (Information Server for the European IP-Network
34. Romania
35. Slovakia
36. Slovenia
37. Spain
38. Sweden
39. Switzerland
40. Turkey
41. United Kingdom

Mosaic

NCSA's Mosaic is a software program that provides a graphical interface for those wishing to access WorldWideWeb (WWW)(see later). A number of versions of the software are available, for use with Unix, Apple Mac and IBM-compatible computers. The program assumes the presence of "external viewers" (programs to display images, Postscript files etc.). By pointing at phrases in the text with a "mouse", or by using the keyboard, you will be told the Gopher or WWW access route, and by clicking with the mouse, or by use of the keyboard, a connection will be made to that computer. This is called hypertext access, in which by pointing and clicking on a word, phrase or picture you can jump to another point in the same document, to another document, or to another computer.

Veronica

Veronica (Very Easy Rodent Oriented Net-wide Index to Computer Archives), is a software program which offers a keyword search of most Gopher-server menu titles. Veronica works by collecting together information from Gopher servers, which can then be searched. A Veronica search produces a menu of Gopher items, each of which is a direct pointer to a Gopher data source.

Veronica can be accessed using Gopher at gopher.micro.umn.edu. It is in the menu Other Gopher and Information Servers. If you do not have a Gopher, Telnet to gopher.sunet.se (or 192.36.125.10) and login as gopher, or use BUBL.

WAIS

Wide-Area Information Servers (WAIS) is a collection of distributed databases. You can search them by keyword for subjects, through a Gopher.

WorldWideWeb (WWW)

WWW is a software program from the European Centre of Particle Physics (CERN) in Switzerland which allows the user to search for information on Internet. It is similar to Gopher, but while Gopher provides a list or menu of items, WWW appears to the user as a text document. WWW documents are written in hypertext. Selecting certain words in a WWW document using a mouse or keyboard enables you to access other documents on the same computer or a different computer elsewhere on Internet.

Reference

1. Moulder, D.S., 1993. Mini-micro CDS/ISIS workshop. In: Fuseler, E. and Wiist, S., editors. *Aquatic information resources: tools of our trade.* Proceedings of the 18th annual IAMSLIC conference, October 5-9 1992, Bremerhaven, Germany. p.149-158. International Association of Aquatic and Marine Science Libraries and Information Centers.

Aquatic Sciences Libraries and Information Centres in Poland: the present situation

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Abstract

The existing situation in Poland is described, with particular reference to present and future links to international systems, such as ASFIS, and to EURASLIC. Suggestions are made for the future role of EURASLIC. An annex contains a list of major aquatic sciences libraries and information centres in Poland.

Introduction

The network of specialized Polish libraries is somewhat complex, for it is part of the organizational structure of institutions specifically engaged in marine and freshwater research and reflects the number and variety of these institutions spread throughout the country. Although each has its own library, only a few of them perform the functions of information centres, with all the subsidiary services. Most of them exchange publications, particularly those written in or translated into English, with other libraries at home and abroad. For example, the library of the Sea Fisheries Institute in Gdynia, which I have the pleasure of representing, cooperates and exchanges publications with about two hundred similar libraries, information centres and international organizations all over the world. These Polish libraries can be divided into three different groups:

a) libraries of research institutions and scientific bodies belonging to the Polish Academy of Sciences, mainly concerned with fundamental sciences;

b) libraries of research institutions and agencies belonging to different ministries or government departments, mainly concerned with applied sciences;

c) libraries of universities, academies and other higher educational institutions belonging to the Ministry of National Education, concerned with training specialists in the aquatic sciences.

In the annex a list is given of the main marine and freshwater sciences libraries and information centres in Poland, together with some details of the documents available by exchange. The name of each institution is given in Polish and English, with an indication of the official body to which it belongs. There are altogether 12 such libraries in Poland.

The Present Situation

Polish librarians and information specialists are working in a difficult environment. They are still feeling the effects of the communist policies of the past, when the funds allotted for research and development in aquatic sciences were quite insufficient. Financial limitations of Polish science also have their consequences for libraries. As a result, the collections of the Polish libraries are incomplete, with missing volumes of many serial publications, but first of all with a total negligence in the use of computer technology for collection, storage, manipulation and retrieval of information. Unfortunately, due to the high costs of computer technology, some of our small aquatic sciences libraries are still

working in the traditional manner, having no access to online information retrieval systems etc. However, the growth in available information and the increasing demand for information makes the task of the librarian increasingly difficult without computers.

The situation looks much better in relation to the larger aquatic sciences libraries and information centres, mainly at the universities and academies. In these institutions computer technology has been used for the past few years. The most advanced in this respect are the following:

- the library of the Gdansk University
- the library of the Agricultural Academy in Szczecin
- the library of the Agricultural-Technical Academy in Olsztyn

In these libraries and information centres the users can at present exploit 11 different databases on CD-ROM. Among them there are such well known databases as: *ASFA, Aqualine, AGRIS, FSTA, Econlit, Science Citation Index, International Statistics Yearbook* and others.

The *ASFA* CD-ROM is used in three libraries:

- Institute of Oceanology in Sopot
- Sea Fisheries Institute in Gdynia
- Agricultural Academy in Szczecin

The databases on the discs we have at the moment in these libraries cover the period 1988-1994. Apart from the above mentioned databases, some libraries use other international databases on disc, mainly with current contents of chosen serial publications. Most libraries have their own databases with different kinds of information, for example: a list of periodicals in the library; a list of new library acquisitions; bibliographic guides; a list of selected articles on particular subjects; a list of their own publications etc. Some of our higher educational institutions use the Polish computerized internal lending system called Novell. Most of them use the Unesco Micro CDS/ISIS software, but some use their own software or computer program which records and lists the collections in alphabetic and systematic catalogues. As concerns computers which are used in particular information centres, there is a great variety of them, but the IBM PC 286 type predominates. At present only two libraries have E-mail, but in the near future the number of libraries having it will increase considerably. For example, our Institute expects to have it at the end of this year.

Integration with International Systems

There is one important problem which must be solved in the near future: it is the problem of integration of Polish aquatic libraries with international systems. In order to achieve this goal the library of Gdansk university has recently made great progress in introducing automation into its library, by providing catalogue/bibliographic records in machine-readable form as a basic resource for international exchanges. In cooperation with six leading Polish universities they adopted the VTLS software with USMARC standard format for cataloguing purposes. After completing this project they will have online access to library networks which link libraries by E-mail throughout the world. I should like to mention here that most of the bigger libraries in our country are now in the process of opening the door of the Polish library systems towards the world, keeping in mind integration with the library systems of highly developed countries. In this context I should like to refer to Allen Varley's opinion on integration, expressed in his paper published in the Proceedings of the 15th IAMSLIC conference, when he said:

> "...the keyword for the future European network must be integration. This means integration not only of telecommunications, systems and procedures, but integration of human efforts, resources and planning....any European marine information network will concentrate on interaction and collaboration between humans, using technology to facilitate, but not to dominate the group structure. Integration and harmonization must be the aims with due regard being given to related national, regional and international scientific information initiatives."

We would be very happy if all the Polish aquatic libraries could also work with integrated library

software in the not too distant future.

Links with EURASLIC

Due to numerous factors, Polish librarians have been in a difficult situation for the past few years. One of them is the fact that the number of serial publications in the fields of marine and freshwater biology, limnology and oceanography is constantly increasing. This refers mainly to those which can be obtained by subscription only (not by exchange). Subscription rates of many journals and periodicals, as well as of CD-ROM databases tend to rise much faster than the budgets allotted to these libraries. In some cases, the budgets allotted to these libraries are minimal, or sometimes they are entirely blocked. Furthermore, in most of the Polish aquatic libraries we notice a decrease in the number of titles available by exchange. Shrinking budgets of Polish libraries have brought about polarization of collections, thus emphasizing the importance of resource sharing. Therefore, I think that it would be desirable to establish closer cooperation among the institutions - members of EURASLIC, in order to utilize the information resources available in their libraries more fully. We can considerably improve the level of our services by moving towards a more positive cooperation in sharing and exchanging information and through more active collaboration efforts. Cooperation also refers to the matter of the distribution of duplicates and surpluses which should be sent to libraries which are interested in receiving them (free of charge). In this context, I think that we inadequately use the EURASLIC Interlibrary Lending System. Nevertheless, I should like to take this opportunity to express my sincere thanks to all friends in the EURASLIC libraries who in the past few years have supplied Polish libraries with much valuable information material, photocopies of articles, many sources of "grey" literature, as well as material dealing with the methods and technology of information work, professional issues, etc.

Cooperation with ASFIS/*ASFA*

I would now like to say a few words about cooperation with the ASFIS/*ASFA* system. We consider *ASFA* to be the most important information system on the literature of the aquatic sciences and related fields. It is a system which responds to our requirements. Having gained some experience in the use of the *ASFA* CD-ROM in our library, we find the need to strengthen this system by improving the Polish input. So far, because of the language barrier, many valuable Polish publications have not been included into this database. Recently, the Food and Agriculture Organization has proposed that the Sea Fisheries Institute become the Polish Partner in *ASFA*. The Institute has agreed to this proposal, choosing a competent specialist who will soon undergo the necessary training in Rome. If everything goes well, Poland will shortly become one of the national partners in the *ASFA* system, which will allow for a more complete presentation of Polish literary achievements in the aquatic sciences.

The Role of EURASLIC

Now I should like to say a few words about the hopes connected with our EURASLIC membership. Broadly speaking, we see the role of the EURASLIC organization as a forum for exchanging views with people facing similar problems and in some cases providing us with some ideas and solutions. In the light of recent developments and changes we need a considerable amount of help in looking for ways of making our working lives easier by cooperating on various projects. Most Polish aquatic libraries need support and advice in the use of computers for documentation and networking purposes. There is an urgent need for the library staff to be trained in new methods of information handling and library management. Before this meeting I discussed with my Polish colleagues as well as with some East European representatives, an idea to organize, with the help of EURASLIC, a special training workshop for library and information workers, with the aim of instructing them on current trends and developments in our work. It could be done with a demonstration of selected databases, software, etc. I think that the best lecturers for such a workshop could be our more experienced EURASLIC colleagues from the leading West European libraries and information centres.

Summary of the Present Polish Situation

To recapitulate the present situation of Polish aquatic libraries and information centres, the following points must be mentioned:

1. Despite the limited funds and numerous organizational problems, large aquatic libraries and information centres have managed to initiate in recent years the process of introducing computerization and new technologies in the field of information activities.

2. Further progress in this field depends on new funds and on the training of highly-qualified personnel.

3. Smaller aquatic libraries are still using traditional methods of information storage and processing, and urgently need assistance, including help from more advanced library centres.

4. Direct cooperation with foreign specialists is necessary to integrate Polish aquatic libraries with international systems and electronic networking, linking libraries by electronic mail.

5. In order to achieve this goal, Polish library standards must conform with the existing international standards.

6. A more active attitude towards cooperation of Polish aquatic libraries and information centres with the ASFIS/*ASFA* system is needed.

7. It is necessary to constantly improve the qualifications of library and information centre staff, with an emphasis on the introduction of new technologies into their work.

8. Polish aquatic libraries place high hopes on collaboration with similar libraries in Europe within the framework of EURASLIC, especially as regards sharing of resources in their libraries.

List of Major Aquatic Sciences Libraries and Information Centres in Poland

1. **Morski Instytut Rybacki/Sea Fisheries Institute**
Biblioteka i Osrodek Informacji/Library and Information Centre
1 Kollataja Str.
81-332 Gdynia

Phone: +48 58 20 17 28 ext.278, 279
Fax: +48 58 20 28 31
Telex: 054 348

Affiliation: Ministry of Transport and Maritime Economy

Publications:
Bulletin of the Sea Fisheries Institute (in English)
Studies and Materials (in Polish with English summaries)

Main Subjects of Book Collection:
chemical, physical and biological oceanography
ichthyology and marine biology
fishing gear and techniques
fish processing and mechanization technology
economics of fishery industry
documentation relating to Baltic Monitoring Programme
reports on Polish Antarctic expeditions

2. **Instytut Oceanologii/Institute of Oceanology**
Biblioteka/Library
55 Powstancow Warszawy Str.
81-712 Sopot

Phone: +48 58 51 72 83
Fax: +48 58 51 21 30
Telex: 051 2785

Affiliation: Polish Academy of Sciences

Publications:
Oceanology (in English)
Studies and Materials (in Polish with English summaries)

Main Subjects of Book Collection:
marine research
processes in the marine environment
functioning of marine ecosystems
biochemistry of the marine environment
hydrodynamics, hydrooptics, and hydroacoustics
aviation and satellite oceanography

3. **Instytut Meteorologii i Gospodarki Wodnej Oddzial Morski/Institute of Meteorology and Water Management Marine Branch**
Biblioteka/Library
42 Waszyngtona Str.
81-342 Gdynia

Phone: +48 58 20 31 94
Fax: +48 58 20 16 41
Telex: 054 488

Affiliation: Ministry of Protection of the Environment, Natural Resources and Forestry

Publications:
News of IWMM (quarterly, in Polish)
Observer's Gazette (bi-monthly, in Polish)

Main Subjects of Book Collection:
marine meteorology
hydrography
selected problems of chemical and physical oceanography
water management and engineering
water physics, chemistry and biology
management of water resources
marine pollution
documentation relating to Baltic Monitoring Programme

4. **Instytut Ekologii, Zaklad Badan Polarnych/Institute of Ecology, Department of Polar Research**
Biblioteka/Library
1 M Konopnickiej Str.
Dziekanow Lesny
05-092 Lomianki

Phone: +48 22 35 30 46
Fax: +48 22 34 47 35
Telex: 081 7378

Affiliation: Polish Academy of Sciences

Publications:
Polish Ecological Studies (quarterly, in English)
Studies in Human Ecology (serial publication, in English)
Polish Archives of Hydrobiology (quarterly, in English)
Polish Polar Research (in English)

Main Subjects of Book Collection:
functioning of marine ecosystems
theoretical and applied ecology
reports on investigations carried out in Polar regions
documentation of Polish Antarctic expeditions

5. **Instytut Rybactwa Srodladowego/Inland Fisheries Institute**
Biblioteka i Osrodek Informacji/Library and Information Centre
10 M Oczapowskiego Str.
10-957 Olsztyn-Kortowo

Phone: +48 89 27 31 71
Fax: +48 89 27 25 05
Telex: 052 2316

Affiliation: Ministry of Agriculture and Food Economy

Publications:
Scientific Notebooks (in Polish with English summaries)

Main Subjects of Book Collection:
freshwater aquaculture
fish farming
limnology, hydrobiology, and ichthyology
aquatic animal diseases
utilization of inland waters for fishery

6. **Instytut Ochrony Srodowiska Oddzial Gdanski/Institute of Protection of the Environment**
Gdansk Branch
Biblioteka/Library
1 Kollataja Str.
81-332 Gdynia

Phone: +48 58 20 49 50
Fax: +48 58 20 49 50

Affiliation: Ministry of Protection of the Environment, Natural Resources and Forestry

Publications:
Protection of Environment and Natural Resources (in Polish with English summary)

Main Subjects of Book Collection:
protection of land and aquatic environment
pollution of marine environment
protection of waters, land and atmosphere against pollution
water-sewage management and sewage treatment
environmental monitoring
documentation relating to Baltic Monitoring Programme

7. **Zaklad Biologii Wod/Institute of Water Biology**
Biblioteka/Library
17 Slawkowska Str.
31-016 Krakow

Phone: +48 12 22 21 15
Fax: +48 12 22 21 15

Affiliation: Polish Academy of Sciences

Publications:
Acta Hydrobiologica (quarterly, in English)

Main Subjects of Book Collection:
problems of theoretical and applied hydrobiology
functioning of aquatic ecosystems
circulation of nutrients and pollutants in aquatic systems
biology of aquatic plants and animals
fishery industry

8. **Instytut Medycyny Morskiej i Tropikalnej/Institute of Maritime and Tropical Medicine**
Biblioteka/Library
9b Powstania Styczniowego Str.
81-519 Gdynia

Phone: +48 58 22 30 11
Fax: +48 58 22 33 54
Telex: 054 325
Affiliation: Ministry of Health and Social Welfare

Publications:
Bulletin of the IMTM (in English)

Main Subjects of Book Collection:
maritime and tropical medicine
toxicology and hyperbarism
entomology and ergonomics

9. **Uniwersytet Gdanski/Gdansk University**
Biblioteka i Osrodek Informacji/Library and Information Centre
110 Armii Krajowek Str.
81-824 Sopot

Phone: +48 58 51 52 21

Affiliation: Ministry of National Education

Publications:
Scientific Notebooks (in Polish with English summary)

Main Subjects of Book Collection:
biology and oceanography
hydrology of the Baltic Sea
chemical and physical oceanography
functioning of marine ecosystems
marine pollution

10. **Akademia Rolnicza w Szczecnie/Academy of Agriculture in Szczecin**
Biblioteka i Osrodek Informacji/Library and Information Centre
8 Janosika Str.
71-424 Szczecin

Phone: +48 91 22 08 51 ext. 29, 33, 35

Affiliation: Ministry of National Education

Publications:
Scientific Notebooks (in Polish with English summaries)
Acta Ichtyologica et Piscatoria (in English)

Main Subjects of Book Collection:
marine biology and ichthyology
marine living resources
utilization of raw materials of marine origin
protection of the marine environment
food technology
sea fishery and fishery industry economics

11. **Akademia Rolniczo-Techniczna w Olsztynie/Agricultural and Technical Academy in Olsztyn**
Biblioteka/Library
blok 41
10-725 Olsztyn-Kortowo

Phone: +48 89 23 33 09
Telex: 052 61 19

Affiliation: Ministry of National Education

Publications:
Acta Academiae Agriculturae de Technicae Olstenensis (in Polish with English summaries)
Information Bulletin of ATA (in Polish)

Main Subjects of Book Collection:
inland fishery
water protection
land-surveying
food and dairy technology
fish farming
functioning of freshwater ecosystems

12. **Wyzsza Szkola Morska w Szczecinie/Marine Academy in Szczecin**
Biblioteka i Osrodek Informacji/Library and Information Centre
1 Waly Chrobrego Str.
70-500 Szczecin

Phone: +48 91 326 31 ext. 385

Affiliation: Ministry of Transport and Maritime Economy

Publications:
Scientific Notebooks (in Polish with English summaries)
Studies and Materials (serial publication, in Polish)

Main Subjects of Book Collection:
ichthyology and marine biology
oceanography
sea fishery
maritime law
sea fishery economics
marine corrosion
marine transport

Training Workshop on Aspects of Marine Documentation in the Mediterranean
November 23-26 1992

Damian Iwueke

Foundation for International Studies
Valletta
Malta

Abstract

Details are given of the training workshop held in Malta on aspects of marine documentation, including the reasons for arranging it, the subjects covered, and the follow-up meeting that was arranged.

Introduction

A Training Workshop on Aspects of Marine Documentation in the Mediterranean was held at the Foundation for International Studies, University of Malta, Valletta, from 23-26 November 1992.

Pollution, industrialization, tourism and other pressures on the environment mean that more than ever before, the Mediterranean community must commit itself to concerted efforts in the management and conservation of the environment. As a result there is an ever increasing need for access to information and the exchange of documents regarding the Mediterranean marine environment.

The aims of the Training Workshop were to focus on the various information and documentation aspects of marine environmental pollution, protection and conservation in the Mediterranean region, including the Black Sea, and to evaluate experiences with regard to systems of collecting, collating, documenting, disseminating and sharing information. The Training Workshop was aimed at librarians, documentation officers, information workers, marine scientists and policy makers. No specialist knowledge was assumed, and an interdisciplinary approach was adopted. The organizers were:

- The Documentation Centre of the Foundation for International Studies, Malta;
- The Euro-Mediterranean Centre on Marine Contamination Hazards, Malta (now called European Centre on Insular Coastal Dynamics);
- Russian Scientific Research Institute of Fisheries and Oceanography (VNIRO), Moscow.

Support was provided by the International Ocean Institute, Malta, and the Coordinating Unit for the Mediterranean Action Plan, United Nations Environment Programme, Athens. Twenty five participants, representing both information professionals and the users of marine and environmental information, attended the workshop from Bulgaria, Croatia, Egypt, France, Greece, Israel, Italy, Libya, Malta, Romania, Russia and the United Kingdom. The four day programme consisted of nine lectures, working group sessions, demonstrations and plenary discussions.

Subjects Discussed at the Workshop

General topics discussed during the training workshop included:

1. *Computation of Directory of Mediterranean Marine Environmental Centres* by Mrs Athena Davaki.

2. *Marine information centres: establishment and development* by Mr Allen Varley.

3. *Marine information documentation systems: data banks, dissemination, application and upgrading of databanks* by Dr Ivan Bukhanevich.

4. *Malta, case study: national database on biodiversity* by Mr Adrian Mallia.

5. *Disseminating Information to 18 Focal Points - the experience of REMPEC* by Mrs Marie Benoit.

6. *Management structures for marine information centres: Mediterranean and Black Sea regional experience* by Dr Ivan Bukhanevich.

7. *Computerization of marine science libraries* by Dr David Farrugia.

8. *Creating a database and establishing a computer communication network for marine science Information centres* by Mr Jovan Kurbalija.

9. *Practical demonstration of library computerization and networking* by Dr David Farrugia and Mr Jovan Kurbalija.

10. *Marine environment legislation - Mediterranean region* by Dr Simone Borg.

Conclusions

The participants recognized that countries in the region are at varying levels of development, and use many different languages. However they share a common environment and heritage, and are increasingly cooperating economically, socially, and scientifically. Therefore the time was appropriate and the workshop was an opportunity to move towards a more positive cooperation in sharing and exchanging marine environmental information, and through collaborative efforts, to improve the level of information and documentation services in the region. During the closing sessions, therefore, the participants did not hesitate to propose the establishment of a Mediterranean and Black Sea regional network of cooperating marine libraries and documentation centres.

The Report of the Training Workshop has already been published (1) and the options and possibilities of developing a marine cooperative information network are being explored through that report.

After the Training Workshop in November 1992, and as a follow-up to that conference, a specialized meeting of Marine Information Experts was held at the Foundation for International Studies between 11-14 May 1993. During this meeting, participants discussed the purpose, objectives and modalities of establishing a Mediterranean Marine Information Network. A report of that meeting is also available (2).

References

1. *Report of the Training Workshop on Aspects of Marine Documentation in the Mediterranean Region which was held between 23-26 November 1992.* 38p. Athens, United Nations Environment Programme, 1993. (*MAP Technical Reports Series* No. 74)

2. *Report of the Meeting of Marine Information Experts on the Establishment of a Mediterranean Marine Information Network, 11-14 May 1993.* 6p. Valletta, Malta, Foundation for International Studies, 1993. (Price: US $5, available from the Foundation Library)

Information Provision for Fundamental Scientific Research in the World's Ocean

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Abstract

Fundamental marine research in the Ukraine is briefly described, and methods for the provision of information for scientific research at the Marine Hydrophysical Institute are given. A number of databases and databanks have been prepared.

Introduction

The development of fundamental research is the crucial prerequisite in studying the world's oceans. Providing no direct economic effect in several cases, these studies develop a basis for the extended reproduction in science. At present the development of oceanographic research is impossible without regular, objective and reliable information about the state of the vast areas of the world's oceans. The derivation of these data requires the development and profound implementation of sophisticated, high-value, modern facilities for data collection and processing, principally novel methods and means of observation. From them, the most promising is remote sensing from space vehicles. This has resulted in the fact that the realization of large multidisciplinary oceanological programmes is becoming difficult not only for separate oceanographic institutions, but also for the whole country.

Analysis of the existing programmes on research on the world's oceans indicates that their typical features include complexity, a variety of subjects and facets, the wide use of modern technical facilities; scientific research vessels, their equipment and instruments; and interaction between numerous institutions.

During the last decade, expenditures for oceanographic research have increased, and the main proportion falls on fundamental research (to 30-40%). The area of the problems in the sphere of oceanological research has expanded considerably owing to development and implementation of promising technical facilities to aid the research. In the Commonwealth of Independent States (CIS) countries, the majority of institutions somehow involved in research on the world's oceans (approximately 70%) specialize in solving the small sphere of big scientific problems (up to four). At the same time, the problems solved in the main oceanographic institutions are rather numerous and versatile, which requires a specialized approach for solving the problems of information provision for these studies.

Research at the Marine Hydrophysical Institute (MHI)

In the territory of the independent Ukraine, more than 30 institutions are involved in research on the world's oceans, and the Marine Hydrophysical Institute (MHI) is the largest. Founded in Moscow in 1948, the Institute was transferred into the system of the Ukrainian Academy of Sciences in 1961 and in 1963 it moved to Sevastopol. At present MHI has a complex organizational structure which encompasses a large number of scientific departments, a special design and technological bureau with experimental manufacturing workshops, a scientific fleet, and special supporting departments including the Department of Scientific-Technical Information with a scientific library, and a series of testing

grounds. Scientific problems solved by the Institute are numerous. This is illustrated by the participation of the Institute in many international, regional and national projects and programmes. Conventionally, scientific research carried out at the MHI can be classified in the following way:

- theoretical research aimed at solving the fundamental problems of the world's oceans;
- theoretical prospecting;
- applied prospecting;
- applied problems.

In our opinion, the research carried out at the MHI has the following features:

- numerous media using its results;
- the lack of a direct relation with the sphere of material production;
- numerous forms of the results;
- a considerable lag between the time of research and the time of its practical realization;
- the impossibility of prediction of the exact results of research;
- the potential role of fundamental studies and their probability character.

These features give rise to the respective specificity of the information provision of fundamental research.

The Scientific-Technical Information Department

As was illustrated previously, the main branch involved in scientific information provision in MHI is the Department of Scientific-Technical Information which encompasses:

- a scientific-technical library with more than 100,000 books and journals;
- the editorial staff of the scientific-theoretical *Marine Hydrophysical Journal* and scientific proceedings of MHI (the journal is translated in MHI and republished by the Dutch publishing house VSP. It is disseminated to over 300 subscribers in various countries);
- a group of translators;
- a group involved in processing and storage of expedition data;
- a group preparing exhibitions in the Ukraine and in foreign countries. It also organizes and prepares symposia and conferences on behalf of the MHI.

A short report cannot reflect all aspects of the Department's information activities. Besides, these are not absolutely new since the Department uses the technical forms of these activities. Therefore I would like to concentrate our attention on the problems which are common for all marine institutions. Two main problems should be solved to achieve the principal goal of information provision for fundamental research:

1. The collection, analysis and generalization of information pertaining to the object under study;
2. The collection, systematization and analysis of data concerning the methods, procedures, models etc. used presently for processing experimental data.

To implement successfully these problems the organization of the information provision should keep to the following principles:

- the principle of a system which requires the use of not separate information processes and analytical methods, but of a totality of these methods and processes, mutually supplementing each other;

- the principle of continuity which requires the continuous information tracing of the scientific trends and adjacent scientific spheres;

- the principle of complexity with the registration of all sources of scientific information;

- the principle of differential analysis of the documentary data fluxes for the selection of their maximal value;

- the principle of objective elucidation of the scientific situation necessary to reflect all existing points of view to the perspectives of development of this scientific trend;

- the principle of correspondence necessary for processing and representation of the data in the form corresponding to the research method.

In carrying out information provision, the most intricate problem is the creation of the information database, since such a database is the core of the information support. Different methods of forms of data collection and selection are used in the organization of such databases at MHI. Owing to the huge volume of data, the information base at MHI is developed in the form of a databank using an IBM PC. Up to the present time, MHI has prepared a databank on the problem of the world's oceans which includes:

- Black Sea;
- Mediterranean Sea;
- regions of the Atlantic Ocean;
- regions of the Indian Ocean;
- regions of the Pacific Ocean.

Work has commenced on the development of a databank "Marine Technologies and Shipbuilding", which also covers the results of scientific cruises of the Ukrainian research vessels. The general volume of the databanks amounts to about 10Tbits.

Additionally, the Institute has a considerable amount of data on satellite measurements in various regions of the world's oceans. At the same time, the flow of information data is presently so strong that to create the full database it is necessary to combine the efforts of the group of countries involved in such development. At present, the research on the problem of the Black Sea within the framework of the Cooperative Marine Science Program (ComSBlack) required the development of a generalized database in which Bulgaria, Georgia, Romania, Russia, Turkey, Ukraine and USA took part. MHI is the coordinator of these operations and the Department of Scientific-Technical Information is their executor.

It is useful that systematization of information, its analysis and prospecting should be done based on the preliminary model of the oceanological problem under study. This model has to consider the main elements and functions of the problem, its relations with other problems as well as the problems which appear in the way of improvement of all elements of the model and the extension of the functional possibilities of the object at its development.

When carrying out information provision of fundamental oceanological research, our scientific library, being part of the Department, implements the following functions:

- acquisition of documents according to the information requirements of the scientists;
- organization of the library fund according to the principal problems of the Institute;
- a priority processing of the most interesting documents for the scientists;
- investigation of documents, which envisages special sections corresponding to the problems of scientific research;
- analysis of document flows and provision of funds to provide their complete acquisition, and study of the documents used;
- development and implementation of local automated information-prospecting systems using personal computers of the IBM type.

The analysis of the significance of the information sources for fundamental oceanological research indicated that the first place belongs to scientific journals, the second to monographs and collected papers, the third place is occupied by preprints, descriptions of inventions, and reports on scientific research. At the same time the secondary sources of information are becoming increasingly popular. They permit a reduction of time for seeking the necessary information. According to analysis, the

emphasis is placed on the preparation of bibliographic short descriptions, catalogues and indexes according to the principal problems of research carried out in the MHI.

Bibliographic indexes of information provision of fundamental research were developed during recent years on the basis of the automated information system ASPID. The following trends were covered:

1. Synoptic variability of eddies.
2. Equatorial countercurrents and their water masses.
3. Interaction between waves and currents.
4. Fine structure.
5. Theory of thermocline.
6. Acoustic topography etc.

The total volume of relevant information sources according to different sources amounted to about 1000.

Thus the main trends of information activities for provision of fundamental research on the world's oceans represented in the report were not intended to be fully covered. However, these can provide some assistance to those specialized in solving analogous problems and help our scientists to be involved in the international integrated system established by the European Association of Aquatic Sciences Libraries and Information Centres.

Freshwater Information in the new Europe and the new Millenium: a Role for EURASLIC

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Abstract

The present situation of freshwater supply, demand, waste water disposal, conservation, fisheries, recreation and tourism in Europe is described, with particular reference to political developments. The lack of organization of freshwater libraries and information centres is noted, a reflection, it is suggested, of the similar situation so far as freshwater research is concerned. Suggestions are made for the future development of EURASLIC.

Introduction

As we approach the third millennium AD, the face of Europe is changing rapidly, creating many challenges. My object in this paper is to give you a view of the present freshwater scene and future prospects (as seen from the UK outpost) and to suggest some possible roles for EURASLIC in building and maintaining a network to assist the flow of freshwater information for the new Europe in the new millennium. My hope is that this paper will stimulate discussion, particularly among the EURASLIC freshwater librarians, and will lead to further progress in information provision in this sector.

I have based the paper on the following framework:

An overview of the present scene
- freshwater in general
- freshwater in Europe

Indications of the growing activities relating to freshwater in Europe

Some personal views on the freshwater library and information services in Europe

Finishing with suggestions of some possible roles and actions for EURASLIC that delegates and members may wish to discuss.

The Freshwater Scene in General:

This can be quickly summed up as follows:

The following are totally dependent on an assured supply of a certain quality of freshwater:

- most non-marine living things
- agriculture
- industry.

Supply - both in quantity and quality is become less certain mainly due to human activity.

Demand for this resource is constantly growing.

Regulation of both supply and quality are essential and urgent action is required.

Accurate and timely information are pre-requisites for sensible and forward looking regulation and planning.

Let us look a little more closely at supply and demand.

SUPPLY

I always find it instructive to remind myself of the world's water resources and present scarcities. If we consider the first circle of Fig. 1, we see that freshwater is only 2.59% of the total water resource. Of this 2.59%, 1.984% is locked up in icecaps and glaciers, 0.005% in soil moisture, 0.001% in water vapour and 0.0001% in biota.

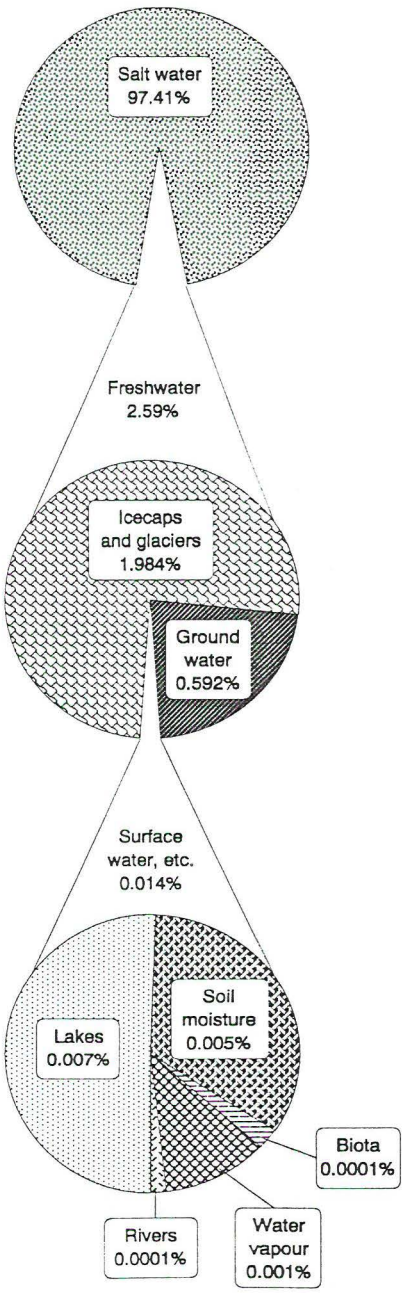
This leaves 0.6% of the world's water resources available for the many activities/uses/amenities that we humans normally associate with freshwater.

As a percentage, this is definitely small. Hopefully we can keep it beautiful. Certainly it is of growing importance.

Taking a closer look at the freshwater situation in Europe, we have, as you would expect, a wide range of variation. However, some idea of the overall picture can be given.

As we have seen, nearly four fifths of the freshwater in the world is locked into icecaps and glaciers. Since the EURASLIC area encompasses Greenland, Iceland, the Scandinavian block and Russia, one could say that up to 45% of this four fifths lies within our area of geographical interest. This is not my area of expertise, but I understand that the dynamics of fast flowing outlet glaciers, ice streams and surge type glaciers are a major unsolved problem. Crucial questions concern the nature of the subglacial hydrological systems. There is certainly a continued growth and development of major international research initiatives in the Arctic regions in which Europe plays an active part, e.g. the European Glaciological Programme (EGP) and the European Polar North Atlantic Margin Programme (PONAM).

Figure 1: The world's water resources



This illustration of the distribution of the world's water resources has been adapted from World Resources 1988-89, published by the World Resources Institute.

The next largest proportion of freshwater is ground water, mainly in the permeable layers of rock as aquifers. Groundwater provides about three-quarters of Europe's population with their water supplies - industrial, agricultural and domestic. There are no dependable estimates of the total amount of groundwater stored in Europe's aquifers but it is vast. It is not unlimited however. The nitrate 'timebomb' of agricultural chemicals leaching through the soil, threats from organics and toxic chemicals derived from municipal and industrial waste disposal practices, and the intrusion of seawater caused by over abstraction are presently depleting and degrading aquifers at a rate which is not sustainable.

Without urgent remedial action, it is estimated that between 20,000 and 60,000 km^2 of Europe's groundwater systems will be rendered unusable over the next 50 years.

Surface waters in the forms of lakes, reservoirs, wetlands, rivers, etc., although only 0.0071% of the world's total water resources, are the most familiar freshwaters to the majority of people in Europe. They are also amongst the most threatened habitats on the Earth's surface. Most of these threats are anthropogenic (human causes) e.g.:-

Faecal discharge (human and animal)
Organic pollution (from refuse tips etc.)
Salinization
Nitrate pollution
Eutrophication (particularly phosphates)
Mining (coal and heavy metals)
Pesticides
Release of solvents
Acidification (particularly from acid rain)
Sedimentation and suspended matter
Dams
Irrigation
Radioactive contamination
Global warming

Unlike renewable natural resources, the total amount of water in the world is constant and can neither be increased nor decreased.

DEMAND

On a global scale, there is more than enough water to meet demand, both now and in the foreseeable future. Unfortunately, it is often available in the wrong place, at the wrong time, or with the wrong quality.

Human biological need for water is modest, as only a few litres a day are needed to support life. This is, however, only a small proportion of the demand. Agriculture is by far the greatest user of freshwater, mainly for irrigation of crops. Industry uses large quantities mainly for cooling and cleaning. Although industry uses less water than agriculture, it causes more pollution. It is, therefore, important to look at the dependency of each state's economy on particular aspects of water. Belgium for example is industrially highly dependant on water whereas Greece, Spain, Portugal and Italy tend to be highly dependant on water for agriculture. Denmark, UK and Ireland use the majority of their water for domestic supply but Netherlands, France, UK, Ireland and Germany have an important use for water in power generation (Williams and Musco, 1992).

On average a European consumes about 800 m^2 of water per year, approximately 70 times more than a Ghanaian, but less than each inhabitant of the United States, whose consumption exceeds 3,000 m^2 annually (Kiss and Shelton 1993).

Another definition of regions of freshwater scarcity (Falkenmark, 1993) is 'those with more than 600 people for every million cubic metres of available water per year.' At present 300 million people in 26 countries are living in such regions. By 2025, 3 billion people in 65 countries will be affected. Although Africa and the Middle East are usually considered to be the major areas of water shortage, to help us

put the 2025 situation in perspective, one of those 65 countries will be Poland!

With this combination of supply and demand urgent ACTION is necessary.

Examples of Action Relating to Freshwaters in Europe

This is a huge topic which I can only skim here. If you find that the bias of the examples tends to be towards EU countries please accept my apologies. This is more likely to be a reflection of the material available in the English language than of a lack of information in the literature as a whole. Language is an issue that I will return to later.

POLITICAL ASPECTS

Europe is considered by many to be economically and politically dominated by the European Community which comprises 12 countries from the western half of the continent and the Mediterranean: Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and the United Kingdom. In October 1990 the Community moved eastwards as the former territory of East Germany formally became part of the unified German state. Applications for membership are under consideration from Austria, Finland, Sweden and Norway. Applications from Cyprus, Malta and Turkey are pending. Hungary has submitted a request and Poland and the Czech Republic are likely to follow.

The quality of drinking water, river water, urban waste water and bathing waters in the 12 member states are governed by EU Directives which are among the tightest standards in the world. In Austria and the Nordic countries membership of the EU would not cause them immediately to be in breach of the EU Water Directive standards. They already base most of their standards on Community regulations. This is not the case for countries of Central Europe however (e.g. Hungary and Poland), for whom the cost of complying with EU standards will be enormous.

The World Health Organization issues guidelines for drinking-water quality which are intended to be used as a basis for the development of national standards. They have just revised these (WHO,1993) and the new guidelines include more chemical contaminants than the previous (1984) edition.

Applying such standards within states is difficult and costly but feasible. Trans-state effects, however, create policy and standards problems which will challenge the political systems of Europe well into the next millennium.

Already the EU participates in certain international conventions relating to some of the most sensitive and polluted areas of freshwater e.g. the Elbe, the Oder (Odra) and the Rhine.

The politics of interstate management of freshwater resources in Europe extend well beyond the EU however and are further complicated by inter-ethnic problems as many delegates here will be aware. In East Central Europe, the Danube presents a complex example of both cooperation and conflict. In the arid areas of the Aral Sea drainage basin outright war over water resources is a distinct possibility, if not a reality, even though a solution to water management that would be a source of regional integration and contribute to the stability of Central Asia has been put forward (Thomas and Howlett, 1993).

Freshwater resources have a high profile in European politics and this is reflected in the other aspects considered below.

WATER SUPPLY

1. Groundwaters:

The most up-to-date reference documents on groundwater supplies and trends in European countries were produced by the United Nations Department of Technical Cooperation for Development (UNDTCD, 1991). Brief summaries of the national groundwater scene in each EC country drawn from

the UNDTCD publications and other technical publications are given in McCann and Appleton, 1993. These support the diagnosis given to European environment ministers at the 1991 Hague seminar "In all the EC countries current practices lead to a non-sustainable use of groundwater systems". The Hague declaration set out a 22 point action programme. The actions are now being translated into national legislation in each member state. Alongside the measures to restore polluted aquifers and to establish adequate monitoring and reporting systems, come demands for further changes in agricultural practices, permit systems imposing new controls on the quality of groundwater abstracted and on the storage and transport of hazardous substances, and research programmes to support improvements in water management and resource protection.

Before the end of 1995, countries are expected to have mapped and characterised all their groundwater systems and to have in place reporting systems able to identify trends in aquifer contamination and over exploitation. These then have to be converted into strategies and action plans to achieve sustainable management and protection of groundwater resources. This will be a formidable challenge.

2. Surface waters:

Surface waters (rivers, lakes and reservoirs) were the main case studies in a Seminar on Ecosystem Approach to Water Management held in Oslo, Norway also in 1991. The Seminar was sponsored by the United Nations Economic Commission For Europe (UN/ECE). A report, "Practical application of the ecosystem approach to water management", was prepared for discussion at the Seminar. Although this was for restricted circulation, it has since appeared in *Journal of Aquatic Ecosystem Health*, Vol.2, pp.125-149, 1993. Comprehensive "Guidelines on the Ecosystem Approach in Water Management" were adopted in 1993 and will be published in the first volume of the UN/ECE Water Series on "Protection of Water Resources and Aquatic Ecosystems" (ECE/ENVWA/31).

At the heart of the European strategy is the so-called "integrated approach". Groundwater and surface water should be managed together and management policies should be integrated into the wider environmental framework as well as with other policies dealing with human activities, such as agriculture, industry, energy, transport and tourism.

Dr Dariusz Stanislawski (1993) has given a useful summary of the Polish approach to the national water resources management problem, Nikolai Mikheev to the Russian approach (Mikheev, 1993) and de Villeneuve (1993) to the priority theme of action for management of water resources under the EU's Fifth Action Programme on the Environment.

WASTE WATERS

The effective treatment and disposal of sewage is one of the biggest environmental challenges facing Europe. Whilst the popular idea of sewage may be a thick lumpy sludge, in fact 99 per cent of sewage is mainly dirty water by the time it reaches the treatment works. Sewage includes all domestic waste water from the kitchen, bathroom, and often the roof and driveway plus industrial waste water - some partially treated by industry before discharge to avoid the most noxious waste affecting the system.

Sewage treatment processes produce an effluent clean enough to be passed back into the natural water systems plus sludge (water with 4-6% solids which are not easily separated) which must be disposed of in a controlled and regulated way. A city of one million people will produce about 2,000 tonnes of liquid sludge every day. At the moment some waste is only partially treated and then dumped at sea. This must cease by 1998. This will mean an increase in the quantity of sludge produced.

Development of new technologies to enable water undertakers to increase the proportion of sludge recycled beneficially to the environment will be essential if costs are not to rise steeply.

Both water supply and waste water treatment and disposal are encompassed by the water industry in Europe. The 1990s will be the decade of huge spending in the European water industry. In the EU countries alone the annual investment is currently running at over US$ 14,800 million and it is expected that by the end of the decade this will have at least doubled.

Historically this sector has seen slow investment levels - about 6% per annum during the 1980s. Now all that has changed and there is no doubt that the EU's particular interest in the environment and the subsequent range of environmental directives are important factors. This legislative framework is not static. In the last two years two new Directives have been adopted - the Nitrates Directive and the Urban Waste Water Directive. Other Directives such as the Ecological Quality of Surface Water Directive and a Landfill Directive (which will affect sludge disposal) are planned.

CONSERVATION

Unesco's World Heritage Convention evaluates and designates important areas as World Heritage Sites. So far there are four such sites in western Europe and six in central and eastern Europe. Of these, two are centred on freshwater - the Danube Delta (Romania) and the Plitvice Lakes (Croatia).

Unfortunately both of these are influenced by the oldest calamity of humankind: war. The Danube in particular has suffered heavy contamination from damaged factories and sewage facilities in both Croatia and Bosnia, creating potential threats to the Danube Delta and the Black Sea fisheries. A survey mission sent to Croatia by the United Nations Industrial Development Organization in January 1993 visited only a small part of the war-damaged Balkans - 18 towns and 50 installations - but its report (UNIDO, 1993) tells part of a wider story of environmental damage that could affect the area's soil and water environment for decades to come.

There has been a positive side to this. The IUCN Commission on Environmental Law, the International Committee of the Red Cross and the United Nations are working on ways to strengthen legal measures protecting cultural and natural heritage in wartime. We may yet see an international legal framework defining crimes against the environment.

Continuing on a positive note, the first "Environment for Europe" Conference of Environment Ministers was held in Dobris (at that time Czechoslovakia) in June 1991. The Conference asked that a report be prepared on the State of the Environment in Europe, to be ready by the end of 1993. This report will provide the basis of an environmental programme for Europe and is being prepared by a Task Force of the new European Environment Agency of the EU. It was not available at the time of preparation of this paper (late March 1994) but should be published very soon.

The European Ministers of Environment will hold their third meeting in 1995 in Bulgaria - a country which is giving high priority to restoring its badly damaged environment. In 1991/92 Bulgaria adopted a new Environment Protection Act under which specific laws include a Marine Environment Protection Act and a Water Protection Act. A Black Sea Coast Management Institution has been created and River Basin Departments will be established under the new Water Protection Act. Bulgaria has been named as a pilot study country in compliance with regional programmes for water pollution prevention in the Danube and the Black Sea. Environmental quality regulations will be based on the Directives of the EU.

All European countries have wetlands of international importance (of the 633 Ramsar sites worldwide, 401 are in Europe), some under acute threat. The IUCN have a very extensive Wetlands Programme and, in conjunction with their European Programme, support work in these areas through a Pan-European Wetlands Expert Group.

The year 1995 has been designated European Conservation Year by the Council of Europe, and will provide an opportunity to promote aquatic conservation across the whole of Europe.

FISHERIES

A total review of the inland fisheries of Europe has just been completed in response to the European Inland Fisheries Advisory Commission's (EIFAC) recommendations (Dill, 1990 & 1993). It covers 31 countries and enables trends to be detected.

Overall, inland commercial capture fisheries are declining but aquacultural fisheries are growing. At the same time as the capture commercial fisheries have declined, sport or recreational fisheries have expanded. There is, today, a realization that sport fishing is important both emotionally and

economically. In some European countries the inland capture fishery has become exclusively recreational.

Aquaculture is rapidly increasing in importance in most European countries. The emphasis is still on the cultivation of salmonid fishes. However, changes in the species cultivated can now be detected. Eel propagation is expanding, exotic fishes such as African catfish and the cichlids are now being cultivated and the yields of cultivated cyprinids are increasing.

Aquaculture is becoming a more technological process with the use of manufactured feeds (rather than natural foods), induced breeding using hormones, disease prevention techniques, etc. This has led to the need for improvements in the training of staff for the industry. In 1992 an organization, AquaTT UETP Ltd, was established to facilitate university-industry co-operation in the aquaculture sector in Europe. It now represents over 230 co-operating universities, companies, development agencies, and research centres spanning 20 countries. The objective of the network is to target the European aquaculture industry to promote and support education and training in new technologies, technology transfer and the dissemination of the results of research and development to the aquaculture industry.

RECREATION AND TOURISM

As indicated in the previous section, recreational fishing is a very popular activity. Surface freshwaters are important environments for many other forms of recreation and for tourism.

The issue of recreational water quality is presently high on the environmental and political agenda. This interest stems from the suspicion that polluted recreational waters may transmit diseases to those engaged in, what should be, a health promoting leisure time activity. In the main, the debate has concentrated on marine waters and the only health related standards for recreational use of water at present in force are those laid down in the Bathing Water Directive (CEC, 1975) and the WHO and UNEP guidelines for coastal recreational sites. Although the use of inland waters for recreation has grown tremendously over the last 30 years, there are as yet no specific standards or guidelines for freshwaters. The need has been recognised by many different bodies, but the firm scientific basis for setting such standards has not been available. Recent work (Grantham, 1993) and (Fewtrell, et al, 1993) should enable suitable standards to be defined in the near future.

Tourism is big business and in western Europe active marketing of protected/conservation areas (ecotourism) is a recognised source of foreign currency. However, in eastern and central Europe, domestic tourism in the protected areas has declined in recent years and, although the number of international visitors has grown, they have not so far chosen to visit protected areas in large numbers. Some countries have, or are developing, ecotourism strategies for particular sectors. As far as I am aware, Poland is the only one specifically developing ecotourism strategies for its wetlands.

POINTERS FROM THE EUROPE WIDE ACTIVITIES

What sort of a picture does this superficial overview begin to give us?

- freshwater of acceptable quality is becoming a scarce resource in Europe
- water quality standards need to be based on a firm scientific base
- a range of scientific disciplines is required to define the scientific base
- supply and demand need to be balanced for sustainability
- long-term water resource management programmes are required and are being developed
- a large financial investment is needed and in some areas is being provided
- freshwater has a high political profile in Europe at the moment
- inter-state cooperation is important

- legislative framework needs to be constantly extended and updated in all freshwater areas

- the need for comparable and preferably long-term data

- habitat management needs to be based on the hierarchy of catchment units and undertaken as part of an overall environment strategy

- education and training moving towards wider European co-operation and attainment standards

Underlying all these factors yet rarely specifically stated and possibly not even recognized, is:

The need for information

Freshwater Library and Information Services for Europe

Are the freshwater libraries and information services in Europe ready for these challenges? Are we at the forefront of service provision in this area?

I suspect that we are not!

Although the EURASLIC Directory lists 288 freshwater libraries - i.e. 55% of the entries, - with representation in all but two of the 38 countries, my intuitive feeling is that, as a group, we are not as internationally aware or active as we need to be. This, of course, may just reflect my ignorance - I look forward to being taken to task and to being corrected!

Despite the surge of interest over the last few years in the state of freshwaters in Europe, I still believe that freshwater research is not yet achieving the profile it deserves in national and international committees and discussions. I believe that we have to accept that our marine and terrestrial colleagues have been much better organised in preparing their case. This is hardly surprising in the case of marine scientists, as the enormous costs of research cruises has ensured that collaboration at national and international level is the norm. By comparison, the freshwater community seems to be fragmented and certainly poorly represented on international bodies.

We certainly have not been very prominent at EURASLIC meetings. According to my calculations, the best freshwater representation at any of the four previous meetings has been 16%.

My message to my freshwater colleagues is that the decade of the 1990's is the time for us to overcome this fragmentation and to build for the new millennium.

Fragmentation means that all 288 of us (or however many we really are) are struggling individually to cope with the present problems of:

- rapid inflation in the costs of printed materials (particularly journals)

- rapid growth in the quantity of relevant literature

- growth in the range of subject areas to be covered and the ensuing growth in the number of databases to be consulted

- the constant need for continuing professional education

- the added opportunities - and costs - to which information technology (IT) has given rise

- the growing range and numbers of users

- the raised expectations of response time with the availability of IT

- all this and more with diminishing budgets

Many, if not all of us, will have national organizations and networks which will be of immediate help to us. Some may even have wider regional networks, although I cannot recall any in the freshwater information field. It is my belief, however, that we can do more to help each other not only to maintain services in these difficult times, but also to work towards the improvements that will be necessary to cope with the challenges to come. I also believe that EURASLIC will provide the best forum for the discussion and development of a clear strategy for the future provision of freshwater information services in Europe.

What steps can we take? There are many possible options, some specifically freshwater, but many in collaboration with our marine colleagues.

POSSIBLE ROLES FOR EURASLIC

EURASLIC is now an established association. It has its constitution and byelaws, a core membership, a newsletter, the published proceedings of its meetings and a very useful Directory. It is now in a position to vigorously pursue its aim of:

- contributing to the exchange of knowledge and experiences of its members

which I interpret to also include:

- to promote the professional improvement of its members by publishing technical and informational documents

- to foster the further development of libraries and information centres in the fields of the aquatic sciences in Europe

At this time we have to decide what our future projects and directions are to be and how we wish to proceed. The Business Meeting should be an interesting session. In order to stimulate discussion, I offer the following thoughts:

- should EURASLIC decide on the minimum language requirement in terms of both substantive text and summaries for the production of EURASLIC documents/publications?

- should EURASLIC produce a "Strategic Plan for Aquatic Information Service Provision for Europe in the 21st Century"?

- should EURASLIC produce materials for the 1995 "European Conservation Year" e.g.

  - the production of a map of Freshwater Research Facilities of Europe (cf the Marine Research Facilities of the European Communities)?

  or

  - a map of major freshwater conservation areas?

  or

  - a map of pollution black spots (marine and freshwater)?

EXISTING PUBLICATIONS

- are we all really so short of time that we cannot contribute to the *EURASLIC Newsletter*? Would having an overall editor plus a marine sub-editor and a freshwater sub-editor help to encourage further contributions?

- should we now decide on a standard format for the *Proceedings* of our meetings?

- do we all find the *Directory of European Aquatic Sciences Libraries and Information Centres* useful and, if so, can we find ways to ensure regular updating and publication?

NEW PUBLICATIONS

- should we produce a EURASLIC brochure which would complete the suite of essential publications for the organization?

- can a funding source (or sources, since marine and freshwater may need to be funded by separate organizations) be found to produce a *European Directory of Aquatic Scientists*?

- should EURASLIC now enter into negotiations with a commercial publisher in order to produce other publications e.g. an *Annual Review of Aquatic Information*, an atlas/data handbook of major European rivers (cf ILEC's international lakes data handbook), or a multi-media encyclopedia of the aquatic environment?

MEETINGS

- should there be a specific session at the next EURASLIC meeting of say three freshwater papers on a defined topic (e.g. freshwater conservation)?

TRAINING

- should EURASLIC run/organize training courses in the use of marine and freshwater information sources?

ASFIS

- should EURASLIC be doing more to maintain and improve the role of the Aquatic Sciences and Fisheries Information System of the UN?

- are there other information tools that EURASLIC should be considering?

The future of EURASLIC depends on an active and committed membership and the flow of freshwater information in the new Europe and the new millennium will be greatly assisted by a strong and supportive network of EURASLIC members.

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Cooperation among EURASLIC Libraries

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Abstract

The author proposes various ways of cooperation and documents exchange among the EURASLIC libraries and documentation centres in order to share their resources.

Proposals

A library's collection of scientific literature must be up-to-date and cooperation and networking among libraries in the same subject area is essential in order to achieve this. The problem of the availability and the distribution of duplicate or surplus monographs and serials is related to the policy of selection and retention of documents, particularly in specialized libraries and information centres. Official exchange programmes for the distribution of duplicates and other surplus documents among aquatic sciences libraries is one means of cooperation. In some cases duplicate copies must be discarded due to lack of space or lack of funds to process them.

The Istituto Sperimentale Talassografico "A. Cerruti" publishes grey literature in the form of research reports, as well as an international journal of marine biology and oceanography, *Oebalia*. The Library receives many periodicals and articles in exchange for these, often in duplicate copies. These duplicates could be exchanged with other EURASLIC libraries if a formal exchange agreement was established. I believe that an exchange policy among EURASLIC libraries with the same interests would be an advantageous way of cutting expenses and being more up-to-date. Grey literature provides a good source of material to be exchanged between EURASLIC centres as their institutions are probably publishers of this type of document. In Italy, CNR is the national referral centre for collecting all grey literature.

At the moment we are acquiring many publications on CD-ROM, partly to save space but also to enable us to access databases locally without the expense of on-line connections. The main bibliographic indexes are now produced on CD-ROM at the same cost as the printed version, the only additional cost to be supported at the beginning is the purchase of the CD-ROM reader.

Setting up inter-library computer networks would, in my opinion, be much more difficult due to the technical differences in the hardware and software used, the fact that the systems used are not compatible and the high costs involved. Our Institute belongs to the Italian National Research Council (CNR) which has libraries all over Italy. Soon we should all be connected to the main library in Rome via the scientific network which already connects the major universities in Italy. The main CNR Library in Rome covers all biomedical and environmental subjects at a national and international level. Most EURASLIC centres are probably already electronically connected to the scientific networks in their countries.

Another problem in cooperation is the different classification systems used by the EURASLIC libraries. For example, we use keyword indexing similar to the criteria used by the *ASFA* Thesaurus whereas the main CNR Library in Rome uses the Dewey Decimal Classification. If a network of aquatic libraries were to be established we should maybe work towards a controlled and common classification and/or

indexing system in order to be able to exchange data. A network would eliminate the problem of buying the same documents and by means of E-mail, fax and parcel post a document delivery service could operate. An online connection would allow the user to request either abstracts or the original document.

The Importance of Promoting an Exchange Policy

An exchange policy between EURASLIC libraries would provide a quick means of getting to know each other's subject interests and helping one another. It would enable all EURASLIC centres to disseminate information on a regular basis and give free advice and competence according to the specific subject areas covered by each centre.

At present there is no official cooperation and information exchange between the three Istituto Talassografico libraries in Italy, only the informal links between the colleagues in Taranto, Messina and Trieste. All of these are attached to CNR and cover the fields of oceanography, marine biology, fisheries, aquaculture and marine pollution.

A Questionnaire for Setting up Exchange Arrangements

Maybe the first step would be to produce a questionnaire stating the expectations and requirements of each centre and also which resources each centre could make available to the others. If all centres agree to adhere fully to the exchange and cooperation programme, a bibliographic list of material available could be produced as well as details of photocopying services, E-mail addresses etc. Such a questionnaire would then help to define the common aim to be pursued and open us to a European and international outlook on cooperation, overcoming national boundaries. On the other hand, formal exchange agreements have been realised in the USA and there information is sold in the same way as any commercial or industrial product.

References

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2. CNR. *Linguaggi documentari e basi dati.* Atti del Convegno. Roma, 3-4 dicembre 1990. A cura di G. Negrini e T. Farnesi. Note di studio sulla ricerca, n. 24. 536p. (Progetto: Linguaggi per la catalogazione e il reperimento dei progetti finalizzati).

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EC-Funded Research: Rationales, Implementation, and Dissemination of Results

Peter Tomaszewski

European Commission
General Directorate XIII
Luxembourg

Abstract

Dr Tomaszewski gave an overview of the research sponsored by the Commission, with a particular emphasis on the mechanisms for disseminating the results of the research throughout the Community.

Note

Dr Tomaszewski was unable to prepare a paper for the proceedings, but agreed that the overhead transparencies, which he used during his talk, could be included.

Rationale

* Competitors are getting stronger:
Asia-Pacific
USA

* Jobs in Europe depend on innovative industry

* Co-operative, trans-border research
amplifies synergy

* Helps to integrate Europe

Judicial situation:
Maastricht Treaty gives the Community mandate to strengthen the scientific bases of the Community industry and encourages it to become more competitive at international level, while promoting all the research activities deemed necessary.

All Community activities under Treaty in the area of research and technological development, including demonstration projects, shall be decided and implemented .....

Art. 130f - 130p of the Treaty

Implementation

* Framework Programmes

now 3rd FP comes to end

involved 6600 MECU

= `5 % of public spending for research in EU !

* *Main Activities*

broken down into:

Specific Programmes

and then into a myriad of:

Projects

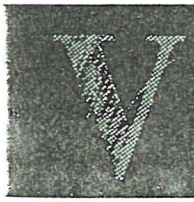
Projects are conducted in multinational Consortia of Academia, Industry, SME's,..

EC - Co-ordination mostly by DG:

III, XII and XIII
all in Brussels

THIRD FRAMEWORK PROGRAMME FOR RESEARCH AND TECHNOLOGICAL DEVELOPMENT (RTD) 1990-94

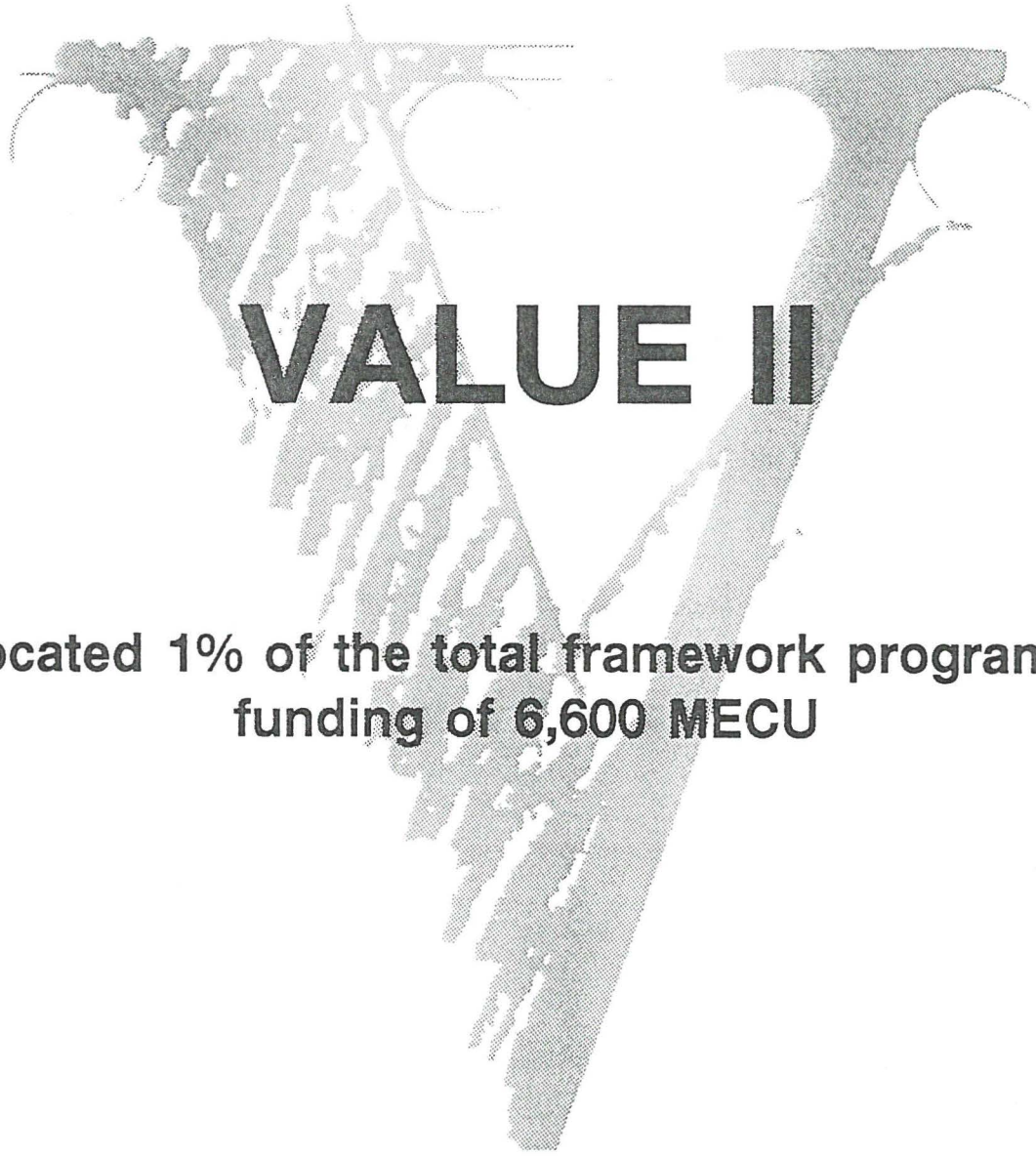
	MECU
I Enabling technologies	
1. Information and communications technologies	2,516
2. Industrial and materials technologies	1,007
II Management of natural resources	
3. Environment	587
4. Life sciences and technologies	840
5. Energy	1,063
III Management of intellectual resources	
6. Human capital and mobility	587
Total	**6,600**



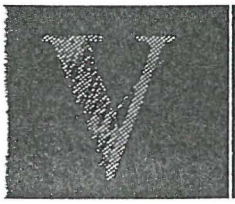
VALUE programme

DG XIII
Dissemination of Scientific and Technical Knowledge Unit

CENTRALIZED ACTION FOR THE DISSEMINATION AND EXPLOITATION OF KNOWLEDGE RESULTING FROM COMMUNITY RTD PROGRAMMES



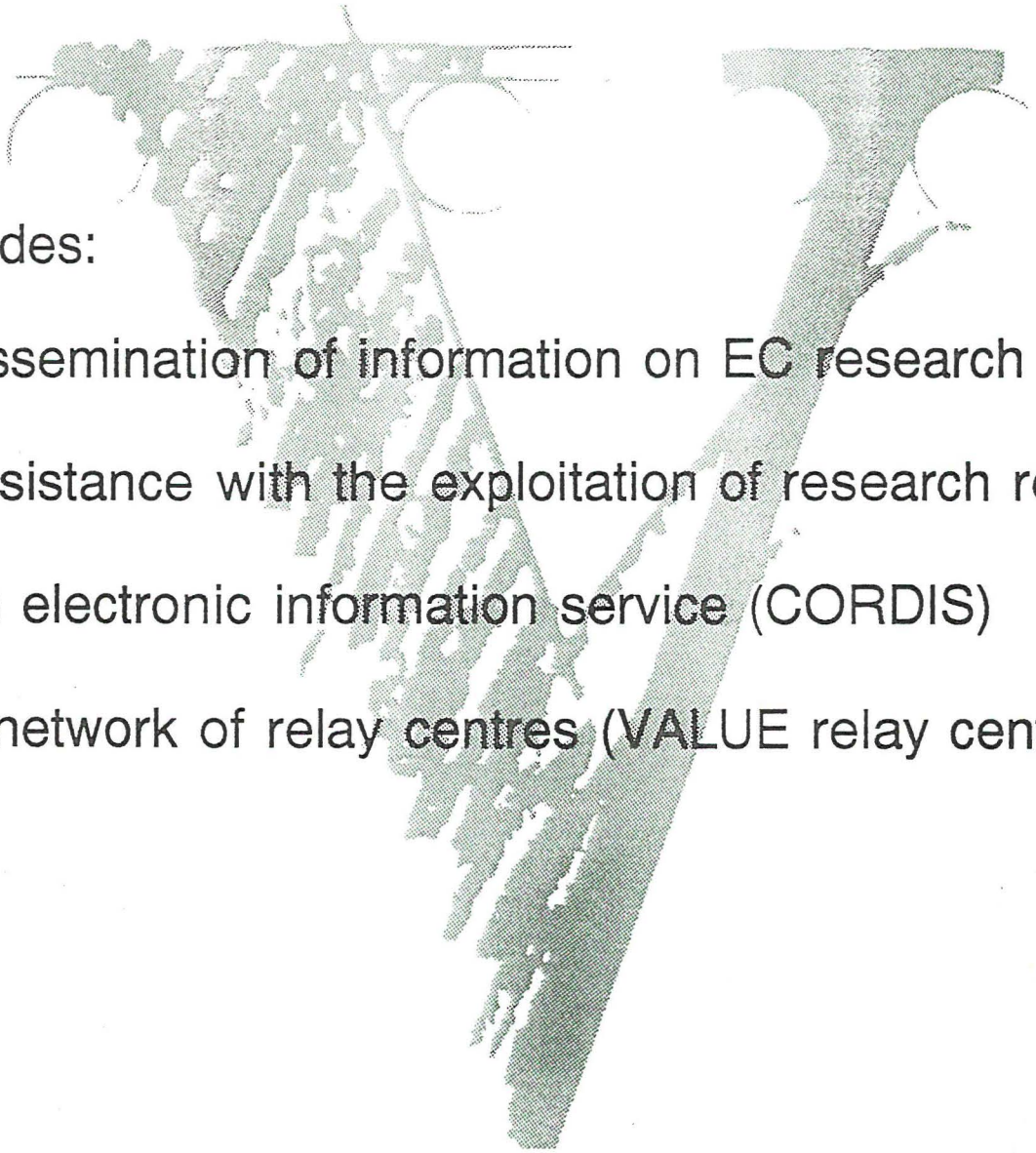
allocated 1% of the total framework programme funding of 6,600 MECU



VALUE
programme

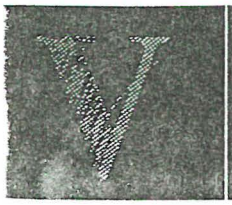
DG XII
Dissemination of Scientific and
Technical Knowledge Uni

VALUE II



includes:

- dissemination of information on EC research
- assistance with the exploitation of research results
- an electronic information service (CORDIS)
- a network of relay centres (VALUE relay centres)



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programme

DG XIII
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Information flow

Information providers

- RTD programmes
- Research-related programmes

Public information

RTD user community

- National administrations
- Universities
- Research centres
- Industry, business
- SMEs
- Information brokers
- VALUE Relay Centres
- "Informed" public

VALUE programme

DG XII
Dissemination of Scientific and Technical Knowledge Unit

Communication channels

"ELECTRONIC"

- Community Research and Development Information Service (CORDIS) - on-line
- CORDIS on CD-ROM

"TRADITIONAL"

- Provision of a publication service for the research programmes
- CORDIS "spin-off" publications
- Helping the user to locate information
  - catalogues
  - abstracting journal *(Euroabstracts)*
  - guides to sources of information
- Information for specific user groups
  - documentalists
  - technology transfer community
  - scientific and technical press
- RTD Help Desk

VALUE programme

DG XIII
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Community Research and Development Information Service - CORDIS

Eight on-line databases:

Database name	Update	Record count*
RTD-NEWS	Daily	1,366
RTD-ACRONYMS	Monthly	3,186
RTD-COMDOCUMENTS	Daily	457
RTD-PROGRAMMES	Monthly	326
RTD-PROJECTS	Monthly	19,311
RTD-PUBLICATIONS	Fortnightly	60,309
RTD-RESULTS	Monthly	7,755
RTD-PARTNERS	Fortnightly	8,170

* early 1994

C O R D I S

VALUE programme

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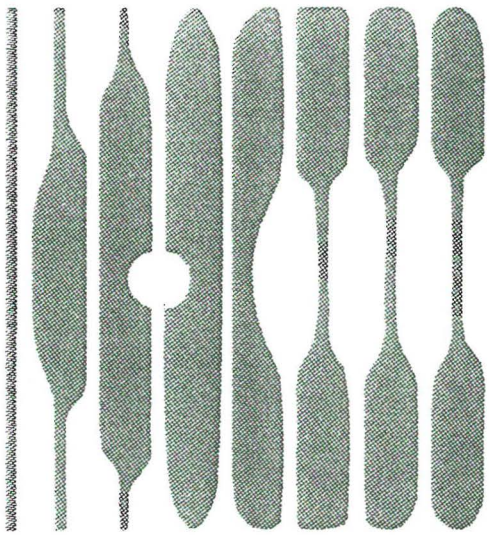
Dissemination of Scientific and Technical Knowledge Unit

Community Research and Development Information Service - CORDIS

Some CORDIS statistics

- 5,500 registered users
- 56% of registered users are from industry, research and educational fields
- Most popular databases: RTD-News, RTD-Projects



C O R D I S

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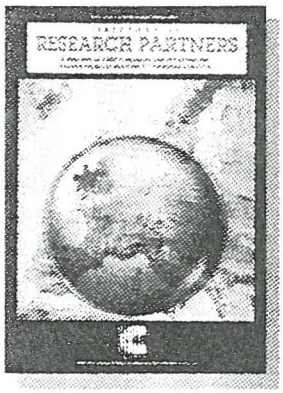
Community Research and Development Information Service - CORDIS

"Spin-off" publications generated from the CORDIS databases

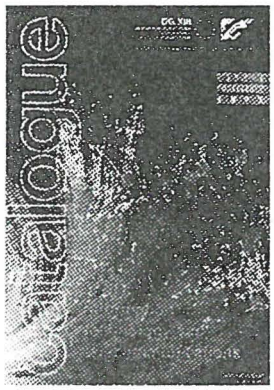
- *Catalogue of Research Projects in the Third Framework Programme*
- *Directory of Research Partners*
- *RTD-News Update*
- Catalogues of publications

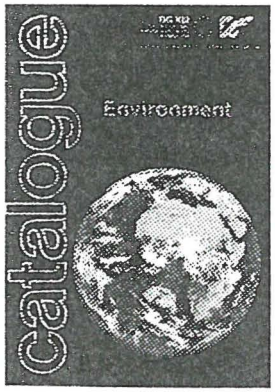
Catalogue of Research Projects in the Third Framework Programme

Directory of Research Partners



Catalogues





VALUE programme

DG XIII
Dissemination of Scientific and Technical Knowledge Unit

Publishing service

Assistance to the managers of research and research-related programmes in the publication of information and results

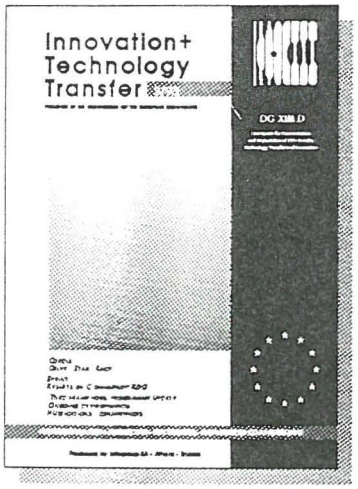
- more than 700 research reports, conference proceedings, research directories etc. published annually
- two publication routes:
  - Office for Official Publications of the European Communities
  - Scientific, technical and medical publishing houses in the Member States

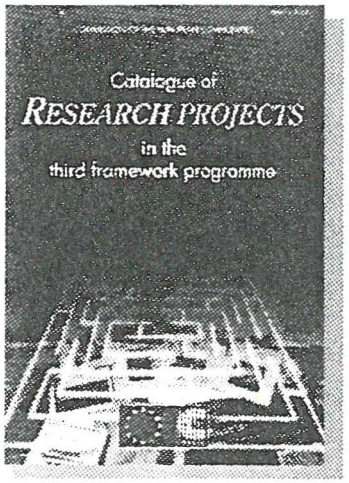
■ ■ ■

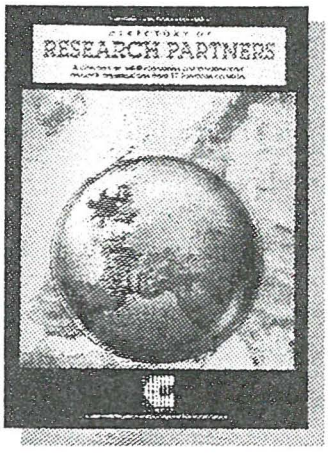
- Annual catalogues
- Sectoral catalogues
- Monthly abstracting journal - *Euroabstracts*

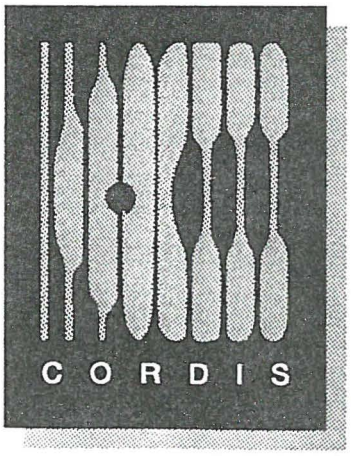
Technology transfer community

- *Innovation and Technology Transfer* newsletter - six issues per year
- *Catalogue of Research Projects in the Third Framework Programme*
- *Directory of Research Partners*
- CORDIS







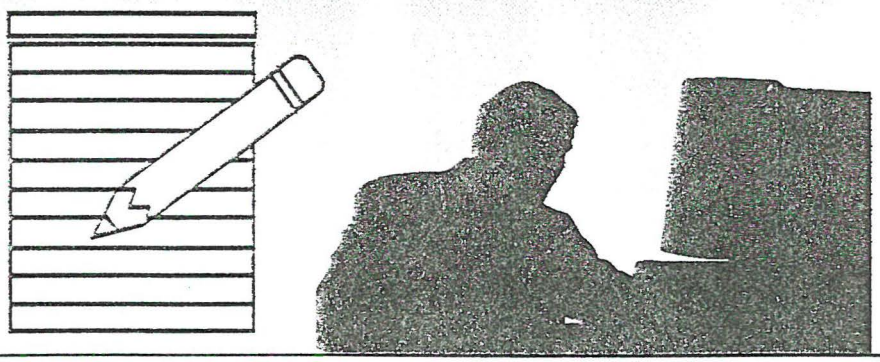


VALUE
programme

DG XIII
Dissemination of Scientific and Technical Knowledge Unit

Scientific and technical press

- RTD-News database of CORDIS
- *RTD-Focus*, issued fortnightly
- VALUE press service
  - Covers results from RTD programmes
  - Ten "information fiches" per month
  - Distribution to 350 journalists



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programme

DG XIII
Dissemination of Scientific and Technical Knowledge Unit

RTD Help-Desk

- Offers assistance in locating sources of detailed information (such as publication and contact persons) on EC research activities

- May be consulted by letter, phone or fax

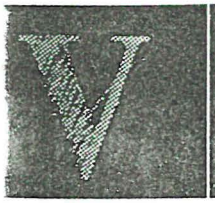
RTD HELP-DESK
Commission of the European Communities
DG XIII/D-2
Jean Monnet Building
L-2920 Luxembourg

Tel. (+352) 4301 33161

Fax (+352) 4301 32084

FOURTH FRAMEWORK PROGRAMME FOR RESEARCH AND TECHNOLOGICAL DEVELOPMENT (RTD)
1994-98

	MECU
First activity	**9,432**
Implementation of research, technological development and demonstration programmes, by promoting cooperation with and between undertakings, research centres and universities	
Second activity	**540**
Promotion of cooperation in the field of Community research, technological development and demonstration with third countries and international organizations	
Third activity	**330**
Dissemination and optimization of the results of activities in Community research, technological development and demonstration	
Fourth activity	**744**
Stimulation of training and mobility of researchers in the Community	
Total	**11,046**



VALUE programme

DG XIII
Dissemination of Scientific and Technical Knowledge Unit

FOURTH FRAMEWORK PROGRAMME FOR RESEARCH AND TECHNOLOGICAL DEVELOPMENT (RTD) 1994-98

First activity

Implementation of research, technological development and demonstration programmes, by promoting cooperation with and between undertakings, research centres and universities

Information and communications technologies

Industrial technologies

Environment

Life sciences and technologies

Energy

Research for a European transport policy

Targeted socio-economic research

VALUE programme

DG XIII
Dissemination of Scientific and Technical Knowledge Unit

Recent Developments Relevant to the Aquatic Sciences in the United Kingdom

Ian Pettman

Institute of Freshwater Ecology
Ambleside
United Kingdom

Abstract

A brief summary is given of the present situation and recent developments in the aquatic sciences in the United Kingdom, with particular reference to aquatic sciences libraries and information centres.

Introduction

This report covers the period January 1993 to 20th April 1994. It is not meant to be a comprehensive review but will indicate some of the developments and the major trends in Britain and Ireland.

The economy has been in a deep recession during the whole of this period and, despite some hopeful signs of a slow recovery in the latest figures available (April 1994), the economic effects are still being felt by all sectors of the aquatic sciences. Science budgets and hence scientific library budgets have not kept pace with the level of inflation in these areas creating problems that I am sure we all here are too aware of.

During the time period under consideration Government policy decisions have affected all sectors. The UK government had not given detailed attention to science policy since the 1970s. After the General Election of 1992, however, the Prime Minister instigated new arrangements for handling science and technology policy in the UK. For the first time in 30 years, a Cabinet Minister was given the responsibility and the Office of Science and Technology was established. Consultation began in 1992 and culminated in the publication in May 1993 of a new government strategy in the White Paper "Realising our potential: a strategy for science, engineering and technology".

The main direction of that strategy is to "harness the science and technology base to the creation of wealth in Britain by bringing scientists and technologists into closer contact with those taking industrial and commercial decisions". The Government has and will continue to introduce policies and mechanisms to achieve that strategic goal.

This White Paper also made recommendations that affect post-graduate education in the UK. Quickly summed up these will mean that research students will have to take a one year Masters course before undertaking a three year PhD and that such research training will be "more closely related to the needs of potential employers".

Other Government initiatives during this time have also radically changed other aspects of education, e.g. during the 1992/1993 academic year all the polytechnics in the UK became universities, National Vocational Qualifications were introduced into England and Wales, whilst Scottish Vocational Qualifications were introduced separately (these will affect the training of librarians).

Another Government strategy which continued to gain momentum during this time is the privatisation, contracting out and introduction of competitive tendering where ever possible in order to "ensure greater efficiency and better use of resources".

To this end, the Cabinet Office organized a scrutiny of the efficiency of 53 Government research laboratories in February/March 1994 with the aim of identifying those where early privatisation is feasible and desirable. Where early privatisation is not feasible or desirable, to identify the potential for rationalisation of facilities and recommend ways of implementing such rationalisation and to recommend changes of ownership and funding arrangements in order ultimately to lead to more effective operation on the open market. The report of this scrutiny will be published in May 1994.

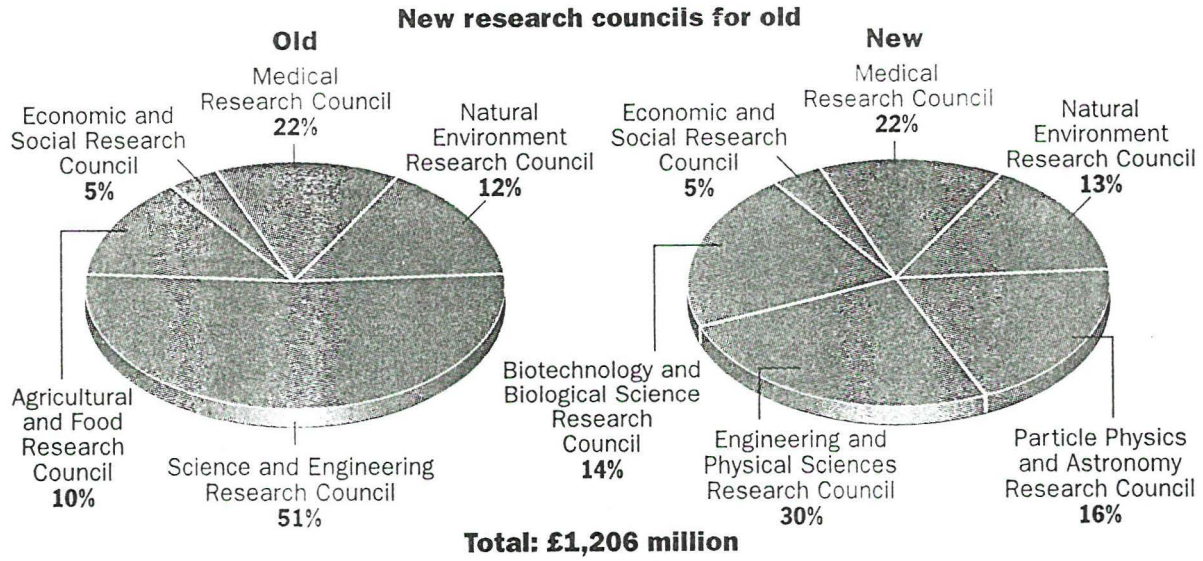
Although the above are the main policy implementations to affect the science communities and their library and information services in Britain and Ireland, there have been many other forces of change. We are all living through turbulent times.

Government Research Organizations

There have been so many changes and there are still more about to be announced that I can only sketch an outline:

THE RESEARCH COUNCILS

Britain's five research councils have been reorganized into six following the 1993 White Paper:



This took effect from 1st April 1994. Although three of the Councils have the same name as previously, all six will have new charters and aims.

In order to achieve its strategic goals, the Government has appointed top industrial people as the new Chairmen of each of the research councils. The Office of Science and Technology has also introduced a "technology foresight programme" to orientate the research communities' efforts on the projects that the industrialists view as the key technologies of the future.

At the moment, the laboratories of the aquatic sciences institutes belong to the Natural Environment Research Council (NERC). If they remain there, they will shortly be reorganised into two new "super" Centres as below:

Centre for Coastal and Marine Sciences (CCMS)
comprising
- Plymouth Marine Laboratory
- Proudman Oceanographic Laboratory
- Dunstaffnage Marine Laboratory

Centre for Ecology and Hydrology (CEH)
comprising
Institute of Freshwater Ecology
Institute of Hydrology
Institute of Terrestrial Ecology
Institute of Virology and Environmental Microbiology

The Institute of Oceanographic Sciences Deacon Laboratory, presently at Wormley, will amalgamate in 1995 with the Research Vessel Services currently at Barry, South Wales, and the University of Southampton's Department of Geology and Oceanography to form the Southampton Oceanography Centre, mainly under the control of Southampton University.

These schemes, however, may be altered after the Cabinet Office scrutiny report is published. There has been some indication that the three marine institutes destined for the new Centre for Coastal and Marine Sciences may be removed from NERC completely and join several Government fisheries laboratories as a Marine Ecology Section under the ownership of the Scottish Office.

The library services of each Institute have so far survived relatively well. Major changes, however, seem inevitable in the near future.

FISHERIES RESEARCH

The Government fisheries research laboratories at Lowestoft, Aberdeen, Pitlochry and Coleraine have all faced funding problems and staff reductions. Derek Bate, well known to EURASLIC members, has recently retired after more than 20 years as librarian of the Ministry of Agriculture, Fisheries and Food Lowestoft Fisheries Laboratory.

Private Sector Organizations

On the 1st September 1989 the Water Authorities in England and Wales were re-structured to produce 10 Water Services Companies in the private sector and a new Government regulatory body, the National Rivers Authority (NRA). The water industry in Scotland was not changed at this time and remained in the public sector. Government pressure to privatise the water industry in Scotland has grown in 1993/94 but has so far been resisted.

The library and information services which had been established before 1989 for the Water Authorities in England and Wales formed a useful network. After privatisation, most of the libraries stayed with the Water Companies. A few were transferred or new ones established within the NRA regions, but most of the NRA regions still do not have their own library services. Some library and information services are bought in under "Technical Services Agreements". The librarians from these water supply and regulation bodies still cooperate where possible and meet on an annual basis.

Also in 1989 the Water Research Centre, which had been the research organization for the Water Authorities, became a private company, WRc plc. In order to give a stabilizing period for the new company to become viable, the Water Companies had to provide a guaranteed income to WRc plc for five years. This period expires in 1994 and the Water Companies will be greatly reducing their support to WRc plc. On the 1st April 1994 a high percentage of the staff were declared redundant. They do, however, still have a library and their AQUALINE range of products.

International Organizations

The International Maritime Organization in London has been very active and their librarian Marianne Harvey regrets that she cannot attend EURASLIC V. She informs me that the IMO now has two databases using the database software CDS/ISIS. IMOLIB is the computerized catalogue of books, reports and conference proceedings (2,500 records from September 1991). IMOCAB is a separate database for journal and newspaper articles (10,500 titles since July 1991). Retrieval is by means of keywords originating from the IMO Thesaurus which is being developed by the library.

Plymouth Marine Laboratory continues to act as the National Coordinating Input Centre to ASFA with assistance from three other aquatic institutes in the UK.

Plymouth Marine Laboratory and the Institute of Freshwater Ecology have continued their collaboration with the Joint Research Centre, Ispra, Italy and supplied data to the aquatic toxicity files of the Environmental Chemicals Data and Information Network of the EU.

University/Academic Sector

There has been a rapid increase in student numbers creating extra demands at the undergraduate teaching level combined with greater pressure to improve the research rating, creating further demands on library and information provision. In most academic institutes, there has been little or no increase in library resources to cope with these extra demands.

Two separate studies were undertaken in 1993 relating to the present state of the library and information systems in the UK. One was carried out on behalf of The Royal Society, the British Library and The Association of Learned and Professional Society Publishers and produced a report "The Scientific, Technical and Medical Information System in the UK". The other was carried out for the four Education Funding Councils of England, Wales, Scotland and Northern Ireland and produced a report "Joint Funding Councils' Libraries Review Group: Report" which is often referred to as the Follett report after the Chairman of the group. Both reports recognize that increased government help is unlikely but that positive action is required. Both make very useful recommendations. The Royal Society report looks mainly to the scientific community to recognise the problems and find solutions, whilst the Follett report looks to actions from the four Funding Councils to alleviate the problems in the academic sector. Let us hope that these reports receive serious consideration and produce positive responses from both the scientific and the academic communities.

Recent Developments in Aquatic Libraries in Greece

Sofia Goulala

National Centre for Marine Research
Athens
Greece

Abstract

A brief description is given of aquatic libraries in Greece, with particular reference to that of the National Centre for Marine Research.

Introduction

The libraries in Greece that deal with the aquatic sciences have generally rather small collections on the subject. Very recently, some of them have attempted to establish appropriate user services, but as the scientific background of the country is really very short, time wise, the new attempts are focused mainly on the collection of journals that are more specific and fitted to the needs of the newly developed centres and bodies. The university libraries act generally as modern libraries and most of them are connected with the ARIADNE network, which is a computer communication national network between Greek academic and research centres. ARIADNET is linked to other networks in Greece and throughout the world, and includes electronic mail facilities.

National Centre for Marine Research

One of the libraries however that is unique in Greece in terms of the quantity and quality of the available information in the aquatic subject area is the library of the National Centre for Marine Research (NCMR), which in the subject operates as a modern information centre. The NCMR library has managed to develop an inhouse computerised bibliographic retrieval service, and at present has in its possession:

1. The compact disc (CD-ROM) *Aquatic Sciences and Fisheries Abstracts* (*ASFA*) database, allowing quick access to international aquatic literature;

2. The bibliographic database GREEK BIBLIOGRAPHY which contains the retrospective bibliography of oceanography and fisheries in Greek seas, rivers and lakes. The bibliography was followed by the creation of a unique collection of the actual papers. In this way the reader can have access to the primary documents. The bibliography is also available in printed form;

3. The bibliographic database and catalogue of monographs, books, symposia and theses which form the library collection;

4. Marine geological and geophysical data from the DEEP SEA DRILLING PROJECT, on CD-ROM.

For (2) and (3) above, the ABEKT bibliographic program is used, which is supported by the Greek National Documentation Centre. The NCMR library is also connected, through the academic computer network ARIADNE, with the HERMES information system host, which was created by the National Documentation Centre.

Through the HERMES network, the NCMR library has access to the following databases:

(a) Union catalogue of scientific periodicals in Greek libraries

Containing details of the collections of journals that exist in more than 100 scientific libraries, this database can be used online to locate the journals in Greek libraries. The online copy ordering facility is another aspect that the system offers to readers, provided that the identified library cooperates in the system. This database is enriched and updated annually from the connected libraries and is the cornerstone for the development of the National Network of Libraries. It is also available in printed form.

(b) Greek Ph.D theses

This database contains details of more than 3,000 Ph.D theses produced by scientists in Greek universities since 1986. Greek and/or English language can be used for searching.

(c) Current research programmes

A database which contains scientific, economic and other relevant information concerning 2,800 research programmes which are in progress in Greece from state and private bodies, constantly updated.

In addition to the above mentioned facilities which the NCMR library offers to readers, the scientific staff of the NCMR have the capability of free online access to databases which are available from other organisations and institutions (e.g. DIMDI, with 85 databases; ECHO, with 38 databases, etc.) thus achieving the greatest possible coverage of their needs.

Mediterranean Action Plan

The library of the United Nations Environment Programme (UNEP) Programme Activity Centre of the Mediterranean Action Plan is in Athens, and the librarian Athena Davaki is known to many EURASLIC members. The library provides information services on environmental protection, pollution, and the Mediterranean marine environment. Athena Davaki invites any library requiring Mediterranean Action Plan documents to apply to her.

Aquatic and Fisheries Sciences Libraries in Latvia: a Short Review

Danute Uzars

Latvian Fisheries Research Institute
Riga
Latvia

Abstract

A short historical review is given of the development of marine science in Latvia. The Latvian Fisheries Research Institute library is described, with some brief details of other aquatic sciences libraries.

Aquatic Libraries in Latvia

Four Latvian institutions, specifically engaged in marine and freshwater research, have their own small libraries or information units:

1. Library
   Latvian Fisheries Research Institute
   Daugavgrivas str. 6
   LV-1007 Riga

Affiliation: Fisheries Department, Ministry of Transport

2. Library
   Latvian Hydrometeorological Agency
   Kr. Valdemera str. 19
   LV-1010 Riga

Affiliation: Ministry of Transport

3. Library
   Institute of Biology
   Academy of Sciences
   Miera str. 3
   LV-2169 Salaspils

Affiliation: Ministry of Transport
Publication: *Proceedings of the Latvian Academy of Sciences* [In Latvian with English summaries]

4. Library
   Latvian University
   Biological Faculty
   Kronvalda bulv. 4
   Riga

Affiliation: Ministry of Education, Culture and Science

Library Development in Latvia

The biggest Latvian libraries, the National Library as well as Academic Library, belong to the Latvian government. The funds allotted for library development were insufficient for many decades, and as a result library collections, the exchange of documents, and access to information sources were rather restricted. The situation is better in relation to the largest libraries. The National Library of Latvia, with the cooperation of Finnish and Swedish libraries, has made progress in the introduction of automatization. The JUNIMAT software was adopted.

However the libraries belonging to the Ministries, including aquatic sciences libraries, still work in the traditional manner, without computers. Subscriptions for marine science publications have been blocked for two or three years due to budget restrictions, and as a result library collections are incomplete, and the number of serial titles has decreased.

The Latvian Fisheries Research Institute

The first fisheries laboratory in Riga was founded in the early 1920s, and worked during the years up to the war. The laboratory carried out research on fish biology, mainly in inner and coastal waters, and was attached to the Department of Agriculture. The meteorological and hydrographic observations were done by the Department of the Maritime. The aquatic life was explored by zoologists, the fisheries biology science developed later. Scientific articles related to fish biology were published in the current regular series of the Latvian University, *Folia Zoologica et Hydrobiologica*, but the articles related to the fishery industry, landings as well as fish rearing, were printed in special fisheries bulletins. The hydrographic and meteorological observations were presented in special issues. The publications were in Latvian, with the exception of *Folia Zoologica et Hydrobiologica* in German. Unfortunately, the scientific publications of these years are not found in the library. Almost all books and journals published in Latvian and German languages in the 1920s and 1930s had been removed from the library during the Soviet period. The literature from that period was not included in catalogues or other lists formed in the post war period.

In 1945 on the basis of the fisheries laboratory was established the Baltic Fisheries Research Institute. During the Soviet period the area of the research extended, covering the Eastern and the Central Baltic. The Institute developed as the Baltic branch of the USSR Fisheries Research Institute in Moscow. Fisheries researches and fisheries management were organized and financially supported by the USSR Ministry of Fisheries. From 1950 to 1990 the library of the Institute had a standing subscription to fishery biology and oceanography serials published in the USSR. It was also possible to order certain series related to aquatic sciences from other countries and from ICES. The current bibliographic bulletin of the USSR Institute of Scientific Information as well as *ASFA* and the FAO *Marine Science Contents Tables* were the bibliographic databases used.

Papers prepared in the Baltic Fisheries Research Institute had been published in the current series *Reports of the Sea Fisheries Research Institute*, printed in Riga during 1959-1970. In 1966 the title of the series was changed to *Fisheries Research in the Baltic Sea.* A total of 13 volumes were printed in 1959-1970 and 18 volumes from 1966-1983. The publications were in Russian. In the mid-1970s fisheries management and research became more internationally oriented. The scientists from different countries executed joint projects, and formed working groups for cooperative surveys. The scientific papers of the Latvian, Estonian and East German scientists were published in joint DDR (Rostock) and USSR (Riga) annual issues during 1975-1991.

Since proclamation of independence in 1991 there have been changes in the economy as well as in fisheries research. The Latvian Fisheries Research Institute (formerly Baltic Fisheries Research Institute) performs investigations mainly in the economic zone of Latvia. Surveys of the environment and fish stock offshore and fish fauna monitoring in the coastal zone has developed. Latvia, more actively than in the former years, participates in joint international survey projects of the coastal waters, as well as in a number of ICES working groups, formed to assess the state of the fish stock using new methods and techniques in surveys and database compilation.

As concerns computers used in the Institute the IBM AT 386 and 486 predominate. A Selex GR-7080

photocopier, fax machine, and telephones are reliably available.

The Latvian Fisheries Research Institute Library

The library is comprised of two large suitable accommodations for the information collection and for storage. The library has a collection of historical and current regular series of marine and fisheries science publications of the ICES. The ICES library has done a great job in providing ICES publications for the Institute's library. The library has continually received the current series of the Finnish Institute of Marine Research, Institute of Freshwater Biology in Krakow, Unesco Reports in Marine Science, and Proceedings of HELCOM. Besides that, the library has received a shipment of books selected and sponsored by the Baltic Sea Research Institute in Warnemunde and Rostock University. Thanks to the activities of the American Society for Limnology and Oceanography, the library was provided with back issues of the journal *Limnology and Oceanography*. A collection of core publications on oceanography and fisheries sciences of the Marine Institutions of the former Soviet Union is also present. The only scientific literature received by the library in the last couple of years were endowments from international organizations or institutions. The library would like to restore the missing issues as well as being in great need of new aquatic sciences and fishery literature, but cannot afford these without the support of the industrialized countries.

The total size of the collection is about 10,000 books and 550 periodicals.

The appropriate languages for the library are Latvian, English, German and Russian. Translation or interpretation of the scientific information is not practised, and the users prefer information in the original languages. In connection with this, the proposition of Russia at the fifth EURASLIC meeting in Gdynia (Report of Dr Bukhanevich) to include Latvia in the All-Russia Marine Information area is not acceptable for Latvia. Due to the great distance between Riga and Moscow, the poor postal and telecommunication services, the bad service traditions and foreign language knowledge in Russia, the quality of the information flow would be reduced. We would prefer to have a link to the original sources.

At the present time one person has a professional qualification (library knowledge). Due to recent developments in library/information knowledge, the library needs support for the process of introducing computerization as well as in special training in the use of modern methods of information handling and library management. The Latvian National Library has recently introduced automation and now makes use of computers for preparation of library catalogues and databases in a form adopted for international information exchanges. Having gained some experience the National Library in autumn 1994 organized a special training course for librarians.

A national information policy for the country has not yet been developed. Only exchange of scientific literature between libraries is available. Access to International sources of marine information as well as cooperation with the institutions who are members of EURASLIC are not yet developed, but Latvian libraries hope for cooperation with similar libraries in Europe within the framework of EURASLIC.

Intergovernmental Oceanographic Commisssion Group of Experts on Marine Information Management: Recent Developments

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Abstract

The Action Lists arising from the third and fourth meetings of the Group, in Wormley and Washington, D.C., are briefly discussed. Many have now been completed, and a new publication series includes relevant documents from the Group's activities.

Introduction

The Intergovernmental Oceanographic Commission (IOC) established the Group of Experts on Marine Information Management (GEMIM) to take an overview of developments in Marine Information and to advise IOC on steps it should take to enhance and improve the information infrastructure, particularly for developing countries. It works by holding occasional meetings, and between meetings by agreeing a list of Action Lines which particular individuals or groups agree to pursue.

Action Lines from GEMIM-III, Wormley, 1992

Sixteen Action Lines were agreed at the Wormley meeting, and I give below brief descriptions of the results achieved with some of the more important:

Diagnostic Procedures and Minimum Requirements for Information Services

This was in response to a need that had been expressed to provide some diagnostic procedures and to define minimum requirements for providing information services on a national and/or regional level. As a result of discussion, a document was drawn up to provide guidance for those assessing potential centres to support, and this document was subsequently published as the first in a new series of GEMIM publications (Moulder and Moritz, 1993). A modified version of the Diagnostic Procedures is now in use within FAO for the assessment of potential new *ASFA* Input Centres.

Define a Standard Directory Record Structure

It was agreed that there was a need to define a Standard Directory Record Structure, which could be used by national and regional groups to prepare component parts of an international directory of marine organizations, scientists and their research interests. It was noted that a number of national and regional directories already existed, and that two directories, for the RECOSCIX group and for the Britain and Ireland librarians group, used the Unesco mini-micro CDS/ISIS software. A working group prepared such a Structure, which was published in the GEMIM series (Moulder et al, 1994).

Training Activities

A number of training activities were organized:

a) in Mombasa, Kenya (Regional Training Course on Microcomputer-based Library Information Management, 10-21 August 1992);
b) in Tianjin, China (Training Course on Marine Information Management and *ASFA*, 19-30

October 1992).

Individual training has also been provided in established information centres, such as the International Centre for Living Aquatic Resources Management (ICLARM), Philippines, and at Plymouth Marine Laboratory, Plymouth, United Kingdom.

Rescuing Historical Marine Information

World Data Center-A has been involved in a substantial effort, as a pilot project to assess the resource implications, to rescue historical data sets which exist either in manuscript form only, or in magnetic formats that are now becoming, or have become obsolete. In 1992 some 1,000,000 oceanographic profiles were rescued.

Assessing the Current Situation with Regard to ASFIS and *ASFA*

The decision of FAO to review its involvement in, and commitments towards, *ASFA*, led to a period of uncertainty regarding the future of ASFIS and *ASFA*. After discussion FAO decided to continue to provide the *ASFA* Secretariat, and IOC also reiterated its commitment to *ASFA*. A new set of agreements governing the operation of *ASFA* and the relations with the publisher were drawn up, and as a result of these and other discussions a number of new countries and new international organizations have agreed to become involved.

Feasibility of International Global Centre on Marine Information Analysis

The need for value-added state-of-the-art reviews by the scientific community led to a proposal for a Global Centre on Marine Information Analysis. A feasibility study was prepared, and this suggested that in view of the substantial financial implications of such a Centre, such an approach was not recommended, but rather that the work should be undertaken at the national and regional level. It was felt that this would better meet the need for geographic and subject priorities.

Action Lines from GEMIM-IV, Washington, 1993

Twenty Action Lines were agreed at the Wormley meeting, and I give below brief descriptions of the results achieved with some of the more important:

Directory of Training Opportunities

Noting the continuing need for training, particularly by professionals from developing countries, it was agreed that a Directory of Training Opportunities would be prepared. This would include both courses provided at a number of venues around the world, but also the possibility of internships at a number of established information centres.

Electronic Communication Systems

It was agreed that a paper describing the means of access to, and use of, electronic networks for E-mail, searching, file transfer, etc., should be prepared. The paper would have particular importance for those in developing countries and in Eastern Europe, who needed to take the first steps.

IOC CD-ROM

It was agreed that it would be very helpful to have a CD-ROM which would include the texts of all IOC publications. As a first step a catalogue of IOC publications has been prepared, and now that the necessary software has been obtained, a CD-ROM is in course of preparation.

MEDI Catalogue

There were a number of actions concerning this Catalogue, which it was hoped could be converted into a CDS/ISIS database, and also be made available over Internet.

Standard Structure for International Directory of Marine Science Libraries and Information Centres

It was agreed that a Standard Structure should be prepared for directories such as those for EURASLIC and IAMSLIC, and work is in hand to carry this out. It is anticipated that the first part of the Structure will be the same as that used for the Standard Directory Record Structure.

Standard Structure for Serials Holdings List

It was also agreed that a Structure be prepared for Serials Holdings Lists, so that libraries could exchange lists, and so that regional Union Lists could be prepared. This is now in hand.

MIM Publication Series

It was agreed that a new Publication Series should be created, in which appropriate documents could be published. The series would not be restricted to documents arising from Action Items, but could include background working papers, manuals, etc. Those already published are included in the list of references below.

Global Directory of Marine Scientists

A number of actions were identified to further develop this idea, including the preparation of an inventory of relevant directories, conversion of these into the Standard Structure, and loading of these onto an Internet server. Progress has been slow, although the 1983 Unesco Directory has been made available over Internet as a text file, and EURASLIC has made some progress with the idea of preparing a European component of such a Directory.

References

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2. Intergovernmental Oceanographic Commission, 1993. *IODE Group of Experts on Marine Information Management. Fourth session, Washington DC, USA, 6-9 October 1993.* 34p. Paris, Intergovernmental Oceanographic Commission. (*Reports of Meetings of Experts and Equivalent Bodies,* No. 84)

3. Moulder, D.S., McFadden, C., Pissiersens, P., and Reyniers, P., 1994. *MIM Publication Series Volume 3. Standard Directory Record Structure for Organizations, Individuals and their Research Interests.* 35p. Paris, Intergovernmental Oceanographic Commission. (*IOC Manuals and Guides* No. 30, Vol. 3)

4. Moulder, D.S., and Moritz, T., 1994. *MIM Publication Series Volume 1. Report on Diagnostic Procedures and a Definition of Minimum Requirements for Providing Information Services on a National and/or Regional Level.* 5p. Paris, Intergovernmental Oceanographic Commission. (*IOC Manuals and Guides* No. 30, Vol. 1)

5. Pissiersens, P., 1994. *MIM Publication Series Volume 2. Information Networking: The Development of National or Regional Scientific Information Exchange.* 22p. Paris, Intergovernmental Oceanographic Commission. (*IOC Manuals and Guides* No. 30, Vol. 2)

WAVES - The European Connection

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Abstract

The history and background to the establishment of the *WAVES* database is given, with examples of sample records, the indexing provided, and the coverage both by subject area and by type of document.

Introduction

The Department of Fisheries and Oceans (DFO) is a Canadian federal government agency. There are centres in twelve locations across Canada, namely; Nanaimo, Victoria, Vancouver, Winnipeg, Burlington, Ottawa, Mont Joli, Moncton, St. Andrews, Halifax, Dartmouth, and St. John's.

The headquarters for the Newfoundland Region of the Department is situated in the Northwest Atlantic Fisheries Centre. This is not the headquarters for the Northwest Atlantic Fisheries Organization (NAFO) although our scientists are very involved with NAFO. Canada is also a country member of the International Council for the Exploration of the Sea (ICES). In fact the 82nd ICES Statutory meeting will be in St. John's between September 22-27, 1994.

Primary Resource Centres

Since DFO (Newfoundland Region) staff are participants at NAFO and ICES meetings the library has an almost complete collection of meeting papers for these two agencies. The interest is primarily in the fisheries of the northwest Atlantic but also in the seas and oceans covered by ICES.

The DFO librarian group recognized that each library did not have the space to collect fisheries and aquatic sciences literature worldwide. In 1980 the concept of primary resource centres was developed. DFO librarians chose countries or ocean areas that were of interest to their staff. The librarians also specified whether they would collect fisheries, oceanography or limnology publications from these geographic areas. Each DFO library became a primary resource centre for all significant scientific, technical, or socioeconomic publications relating to their chosen geographic and subject coverage.

As a result the library for DFO (Newfoundland Region) covers fisheries science publications from Denmark, Finland, Germany, Great Britain, Iceland, Ireland, Netherlands, Norway, Poland, and Sweden.

WAVES Database

One of the responsibilities of each primary resource centre was to provide access to the publications that they were collecting. Initially it was intended to provide access for DFO libraries but since the database is now available for purchase this access has widened to all subscribers.

The database is called *WAVES*. This is not an acronym. It was chosen because it reflects our aquatic interest and has a short French translation *VAGUES*. *WAVES* is available on CD and is issued quarterly. The annual subscription cost for EURASLIC-V participants is $695 Canadian.

WAVES is a bibliographic database produced by the Canadian Department of Fisheries and Oceans. It began in 1981 as a database of report literature of one library and has expanded to include some of the collections of all twelve Departmental libraries.

As of April 15, 1994 there are 118,900 records in the database. Each *WAVES* record contains bibliographic and subject descriptions and lists the DFO holding libraries. Even though the WAVES database started in 1981 it contains many records that precede this publication date, approximately 52,000 records.

The types of literature covered include technical reports, reports done on contract for DFO, monographs, theses, background papers from provincial and federal government studies, ICES and NAFO papers, and, most important to cover the European literature, translations into English or French.

Some of you may be familiar with the *Canadian Translation of Fisheries and Aquatic Sciences (CTFAS)*. There are over 5,600 translations that have been issued in this series to date. Indexers have been working this year to complete the *WAVES* coverage for *CTFAS*; and there are 615 left to input.

(for a *WAVES* printout for *Canadian Translation of Fisheries and Aquatic Sciences* 5585 see Appendix)

WAVES contains very few journal articles and conference papers. We do not deliberately duplicate other databases such as *ASFA* for primary literature. The *ASFA* coverage of technical report literature and fisheries meeting documents such as ICES is duplicated. The reason for this is the time delay in the *ASFA* coverage. The St. John's library indexes the *ICES CM* meeting documents for *WAVES*. There were 503 *ICES CM* documents issued at the 81st 1993 statutory meeting. From October to March the Newfoundland *WAVES* indexer entered them all in the *WAVES* database. All of these documents include an abstract and a sea area code or trilingual species name if appropriate. In total there are 8,297 ICES documents in the database.

(for a *WAVES* printout for *ICES CM* 1993/H:15 see Appendix)

Trilingual Species Name

On the ICES printout please note the trilingual species names. A *WAVES* indexer at the DFO library in Nanaimo has developed a trilingual species name thesaurus for *WAVES*. It has 2,100 entries. This provides the much needed French access to species in our bilingual country. Species can also be accessed under their Latin (scientific) or English (common) names, as shown in these examples from the thesaurus:

common carp
Cyprinus carpio
carpe ordinaire

houting
Coregonus lavaretus
coregone lavaret
x powan
x Baltic whitefish
x pollan

Species names are added liberally when warranted as shown in the *WAVES* printout for *NAFO SCS* document 93/5 in the Appendix.

English/French Access

In addition to the species names the *WAVES* CD has both French and English query language. If an item is bilingual (French/English) the bibliographic description and hence access is in both languages. Also a French resumé is provided when available.

Authority Control - Corporate Names and Series

Since *WAVES* indexers are scattered across the country another quality control measure is a mammoth (5,500 entries) corporate name and series authority list. Indexers are required to use names or series from this list or send slips for new entries to a validation centre. Our corporate name and series thesaurus lists foreign names under the official name of the body while at the same time providing English cross references.

Corporate Name Authority Entry
From *WAVES* Thesaurus

Merentutkimuslaitos (LCNH)
x Havsforskningsinstitutet (Finland)
x Institute of Marine Research (Finland)
x Finland. Kauppa- ja teollisuusministerio. Merentutkimuslaitos
x Helsinki (Finland). Merentutkimuslaitos
x Helsinki (Finland). Havsforskningsinstitutet
x Helsinki (Finland). Institute of Marine Research
x Finland. Merentutkimuslaitos
x Finland. Havsforskningsinstitutet
x Finland. Institute of Marine Research
Verified December 1990

Non-Roman Script

The *WAVES* database uses only the roman alphabet so items written in a non-roman script are romanized as noted in the romanized Russian title in the translation (see Appendix). If an indexer is unable to romanize the bibliographic information they can use roman language information found on the document or elsewhere. Since DFO collects literature from around the world we often receive publications that contain no English. In these cases if we don't have anyone in the region who can translate the title we have it done by the same agency who produces *CTFAS*. This is quite expensive. I can recommend that if you want your documents well indexed by databases such as ours it would be to our mutual benefit for you to provide an English translation of the title and abstract.

ASFIS sea area code

A universal access to aquatic sciences and fisheries literature that *WAVES* uses is the ASFIS sea area name codes. For example to see how much coverage there was on the Northeast Atlantic and the Arctic the following searches were performed:

ANE=5461
PN*=2752

The name of the particular ocean or sea can also be searched, for example:

Baltic=1099
North Sea=1271
Barents=410

Other Geographic Coverage

Land and inland aquatic areas such as lakes and rivers are also indexed. *WAVES*, unlike *ASFA* uses a geographic hierarchial string of indexing up to the country level. Some sample searches on countries as subjects are:

Iceland=581
Poland=196
France=789
England=870
Norway=1311
Germany=447

It is possible to get an idea of some European coverage by searching the language code field on *WAVES*, for example:

language code GER=332
language code NOR=275

Subject Coverage

The major subject areas covered by *WAVES* include:

Aquaculture
Environmental Impact Assessment
Environmental Studies
Extended Jurisdiction
Fish Processing and Products
Fisheries Biology
Fisheries Economics
Fisheries Management
Fisheries Technology
Habitat Management
Law of the Sea
Limnology
Marine Biology
Marine Chemistry
Marine Ecology
Marine Geology
Marine Mammals
Marine Pollution
Oceanography

To give an idea of keyword searching the following subjects were searched on the *WAVES* CD-ROM:

market*=2888
otolith*=440
eec=116
aquaculture=2376
eutrophication=175
cohort analysis=71

WAVES on INTERNET

The DFO libraries are investigating putting *WAVES* on INTERNET. The contract for our CD-ROM expires in September 1995. Before this date we hope to have the database in-house. It is currently maintained by a service bureau.

Conclusion

This paper has shown our interest in European aquatic sciences and fisheries literature and its coverage in the *WAVES* database.

APPENDIX

WAVES record for:

1. *Canadian Translation of Fisheries and Aquatic Sciences* #5585

KEYNUMBER: 147264
TITLE: Invertebrates of the littoral zone of Bering Island - intermediate and supplementary hosts of birds and mammal helminths
OTHER TI: Bespozvonochnyye litorali ostrova Beringa - promezhutochnyye i dopolnitel'nyye khozyayeva gel'mintov ptits i mlekopitayuschikh
AUTHOR: Tsimbaliuk, A.K.
PUBLISHER: [Ottawa : Dept. of Fisheries and Oceans] : available from the Canada Institute for Scientific and Technical Information, 1993
DATE: 1993
SERIES: Canadian translation of fisheries and aquatic sciences. 5585
PAGINATION: 33 p.
NOTES: Translation from Russian; Original appeared in: Gel'minty Zhivotnukh Tikhogo Okeana. 129-152, 1968

DESCRIPTORS: M; INW; Russia; Bering I.; marine mammals; aquatic birds; nematodes; Nematoda; trematodes; Trematoda; cestodes; Cestoda; parasitism; larvae; hosts; littoral zone; translations
COLLECTION: DFO

ABSTRACT: Invertebrates, which inhabit the littoral zone, are extensively consumed by various vertebrate animals which are in one way or another ecologically associated with the sea. The material for this study was collected by us on Bering Island in 1962-1964. During this period, 1529 specimens of vertebrates belonging to 56 species, 16 helminthological dissection. Another 3465 specimens of littoral invertebrates were also dissected. This particular paper deals with the material concerning only 9 species of helminths, the larval stages of which were found in invertebrates, and the adult forms in birds and mammals. The larvae of the parasites were found in 10 species of invertebrates belonging to 3 classes and 6 orders.

ISSN: 07043716
LANGUAGE: eng

INDEX. LEVEL: wfc
BIB. TYPE: m
RECORD TYPE: p
SEC. CODE: 1
CREATION DATE: 930916
UPDATE DATE: 940219
COUNTRY CODE: cn

LIBRARY	CALL NUMBER	LOCAL NOTES / HOLDINGS	DT
NBMF	SH 19 C32 No.5585		tr
NSHF			tr

WAVES record for:

2. *ICES CM* 1993/H:15

KEYNUMBER: 148201
TITLE: Distribution of larval and 0-group capelin (Mallotus villosus) in the Barents Sea in relation to environmental factors 1981-1991
AUTHOR: Gundersen, A.C.
PUBLISHER: Copenhagen : The Committee, 1993
DATE: 1993
SERIES: ICES CM (International Council for the Exploration of the Sea. Pelagic Fish Committee). 1993/H:15
PAGINATION: 20 p.
NOTES: Not to be cited without prior reference to the author

DESCRIPTORS: m; PNE; Barents Sea; Mallotus villosus; capelin; capelan; age groups; geographical distribution; fish larvae; environmental factors; abundance

ABSTRACT: This study describes the distribution and abundance of larval and 0-group capelin (Mallotus villosus) in the Barents Sea during the period from 1981 to 1991, based on observations in June and August/September. The distribution and abundance of larval and 0-group capelin fluctuated. Parameters describing the position of the distribution on a west-east scale, and abundance indices of the two stages, were correlated with environmental factors. These analyses were conducted to improve the understanding of the fluctuations in distribution and year-class strength of capelin.

INDEX. LEVEL: wfc
BIB. TYPE: m
RECORD TYPE: p
SEC. CODE: 1
CREATION DATE: 931104
UPDATE DATE: 931104

MNEMONIC: IIC-7

LANGUAGE: eng

LIBRARY	CALL NUMBER	LOCAL NOTES / HOLDINGS	DT
NBAB			he
NFSF		2 copies	tr; he
NSDB		2 copies	tr; he
NSHF			he
QQPSM			he

WAVES record for:

3. *NAFO SCS* document 93/5

KEYNUMBER: 147390
TITLE: Historical catches of selected species by stock area and country for the period 1981-91
CORP. AU: Northwest Atlantic Fisheries Organization. Secretariat
PUBLISHER: [Dartmouth, N.S.] : Northwest Atlantic Fisheries Organization , 1993
DATE: 1993
SERIES: NAFO SCS document. 93/5
PAGINATION: 26 p.
NOTES: Not to be cited without prior reference to the Secretariat
DESCRIPTORS: m; ANW; Bulgaria; Canada; Cuba; Germany; Denmark; France; UK; Ireland; Italy; Spain; Portugal; St. Pierre and Miquelon; Faeroe I; Greenland; Iceland; Japan; Norway; Poland; Romania; USA; Latvia; Lithuania; Estonia; Russia; Atlantic cod; Gadus morhua; morue de l'Atlantique; haddock; Melanogrammus aeglefinus; aiglefin; redfish; Sebastes; sebaste; silver hake; Merluccius bilinearis; merlu argente; red hake; Urophycis chuss; pollock; Pollachius virens; goberge; Canadian plaice; Hippoglossoides platessoides; plie canadienne; witch flounder; Glyptocephalus cynoglossus;plie grise; yellowtail flounder; Limanda ferruginea; limande a queue jaune; Greenland halibut; Reinhardtius hippoglossoides; fletan du Groenland; winter flounder; Plseudopleuronectes americanus; plie rouge; summer flounder;Paralichthys dentatus; cardeau d'ete; window pane; Scophthalmus aguosus; turbot de sable; flatfishes; Pleuronectiformes; pleuronectiformes; rock grenadier; Coryphaenoides ruperstris; grenadier de roche; roughhead grenadier; Macrourus berglax; grenadier berglax; wolffishes;Anarchichadidae; poissons loups; Atlantic wolffish; Anarhichas lupus; loup atlantique; Atlantic herring; Clupea harengus harengus; hareng de l 'Atlantique; Atlantic mackerel; Scomber scombrus; maquereau bleu ; Atlantic butterfish; Peprilus triacanthus; stromate; fossette; alewife; Alosa pseudoharengus; gaspareau; Atlantic argentine; Argentina silus; grand argentine; capelin; Mallotus villosus; capelan; Loligo pealei; longfin inshore squid; calmar totam; northern shortfinned squid; Illex illecebrosus; encornet rouge nordique; true squids; Teuthoidea; penaeid shrimps; Penaeidae; peneides; Pandalus borealis; pink shrimp; crevette rose; echinoids; Echinoidea;echinoides; fish catch statistics; historical account; shellfish catch statistics; merluche rouge

INDEX. LEVEL: wfc
BIB. TYPE: m
RECORD TYPE: p
SEC. CODE: 1
CREATION DATE: 931101
UPDATE DATE: 940304
COUNTRY CODE: cn

MNEMONIC: NSCSD
LANGUAGE: eng

LIBRARY	CALL NUMBER	LOCAL NOTES / HOLDINGS	DT
NBAB			tr
NFSF			tr
NSDB			tr
NSHF			tr

Current Developments at cemare, with Specific Regard to the Library

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Abstract

The history and development of cemare and its Library and Technical Services is given, with particular reference to its coverage, and the databases that have been developed.

Introduction

Cemare is a specialized research group within the Department of Economics at the University of Portsmouth in the United Kingdom. It was established in the early 1960's to promote multi-disciplinary research into marine resources, with an emphasis on the analysis of fisheries. Since then it has developed into a substantial Centre for training, advanced studies, research and consultancy, particularly in fisheries economics.

The Library collections are housed in the Centre's Reading Room, and the subject coverage of the collections is closely related to the type of research that has been carried out by Centre staff since its conception. Some of you may be more familiar with previous names that the Centre has gone under, i.e. 'Marine Resources Research Unit' (MRRU), or 'Centre for Marine Resource Economics' (cemare). The Centre's last name change two years ago was brought about by the increasing amount of research being carried out by Centre staff involving freshwater fisheries, indeed we currently have staff working on a major Overseas Development Administration (ODA) sponsored research contract in Nigeria, 'Traditional Management of Artisanal Fisheries in Northern Nigeria'. This was one of the main reasons that it was felt to be important that we dropped the word 'marine' from our title, and adopt a name for our Centre that better reflected the work of Centre staff in the 1990's.

To expand further on the subject coverage of the cemare collections, as you may imagine, being a Centre within the Department of Economics, our main emphasis is towards the social science aspects of fisheries (management, development, regulation and especially economics) and related subjects such as aquaculture, mariculture, recreational fisheries and so on. More recently our Centre has become involved in coastal zone management, with two members of cemare staff also being members of the University's Centre for Coastal Zone Management, indeed David Whitmarsh, a former head of cemare, is now the the Director of the Centre for Coastal Zone Management (CCZM), which is a cross-departmental initiative.

Over the past five years cemare library staff have been compiling computerized bibliographic databases, using a specialized bibliographic software called Pro-Cite. These databases currently comprise some 30,000 records, 20,000 of which refer to material held in the cemare collections. This is an ongoing task, as the 20,000 records still only relate to a small part of the whole collection, and as always there is the need to strike the balance between maintaining the currency of the information whilst slowly carrying out retrospective input.

Current Developments

Two current developments which directly involve cemare library are:

1. cemare has recently become an additional UK input centre for *Aquatic Sciences and Fisheries Abstracts (ASFA).* One of our reasons for embarking upon this is to help improve the coverage of social science material related to our subject interests.

2. cemare is currently involved in the 'EC Concerted Action in Fisheries Economics', an EC initiative involving several research centres and centres of learning throughout Europe, including:

LEI (Holland)
IREPA (Italy)
IFREMER (France)
SFIA (United Kingdom)
University of South Jutland (Denmark)

cemare is a truly international organization with staff originating from various parts of the world, including Australia, Canada, France, Ireland and Norway, and the students on our postgraduate courses (MSc and PgD) expand our international flavour even more, with a great uptake from African nations, as well as from the Far East and South America.

cemare has recently produced a centre profile which provides detailed information on the Centre, its staff and activities, as well as details of some of the Centre's most recent publications. Copies of the cemare profile can be obtained by writing to the Librarian.

The Development of the Marine Science Information Centre of the All-Russia Scientific Research Institute of Fisheries and Oceanography (VNIRO) under new Conditions

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Abstract

The development and function of the Marine Science Information Centre under the changed circumstances since the creation of independent states by former Soviet Union countries is described.

Introduction

The purpose of this report is to present a brief description of the aspects characterising the development of the Marine Science Information Centre of the All-Russia Scientific Research Institute of Fisheries and Oceanography under the new conditions which prevail in Russia.

It is known that the former Soviet Union does not exist any longer; new sovereign states emerged on its territory: Ukraine, Belarus, Estonia, Latvia, Lithuania and others. These states have their own scientific research institutes of fisheries and oceanography, which they inherited from the USSR: JugNIRO in Ukraine, and also the Institute of the Biology of Southern Seas of the Ukrainian Academy of Sciences, BaltNIRKH in Latvia, KazNIRKH in Kazakhstan, etc.

Naturally, these institutes and many other organisations dealing with fisheries and oceanography preserved their information depositories, scientific libraries and information centres.

1. Information Centres and Libraries

Information institutions of the former Soviet Union are engaged in storage of documents and information, and their activities embrace different spheres, starting from implementation of primary library functions in the form of preparing descriptions and references of documents, distribution and utilisation of information, and ending with the analysis of data and information.

The scientific research institutes with their information centres and scientific libraries may be classified in the following ways:

1.1 The scientific library deals with the accumulation, classification and storage of publications and delivery of them to the users for scientific work. In many cases it has the functions of an information centre discussed in item 1.2 below;

1.2 The information centre provides indexes for the subject matter of documents within the framework of a defined subject scope, replies to enquiries and draws the attention of the users to the information being available, also to the information which may be obtained from other sources;

1.3 The information analysis centre deals with interpretation, re-classification and utilisation of the information. As a rule it constitutes a department within the information centre.

2. Subject Matter Coverage of Informcentre VNIRO

The range of subjects embraced by Informcentre VNIRO has been clearly defined, and depends on:

- specialisation of the leading institution;

- function of the centre as a national institution using the Russian language as an instrument of communication between the Republics of former USSR;

- orientation to the service of actual groups of users in the Republics of former USSR;

- cooperation with other centres and institutes of the former Soviet Union (JugNIRKH, BaltNIRKH etc.);

- implementation of national, regional or international obligations pertinent to rendering actual services, or implementation of actual assignments within the framework of international agreements.

So, some of the centres of the former USSR specialise in the whole sphere of marine science, including oceanography, fisheries, ecology, environmental pollution, construction engineering in the open sea, etc., while others restrict their activities and range of services, for example, to aquaculture, processing of fish products, pollution of the sea, or maritime legislation.

3. Scientific and Information Products of Informcentre VNIRO

The primary instruments of distributing information are periodicals and books which constitute the major portion of the collection. Publications stored in the centre are subdivided into several categories, and in accordance with these categories their processing and allocation are made. These categories are mainly as follows:

- reference materials: encyclopaedias, atlases, reference books, dictionaries and manuals;
- books, monographs, textbooks and theses;
- proceedings and transactions of conferences and symposia;
- periodicals and series;
- reports, advance copies, and unbound, unpublished or unofficial literature;
- reprints;
- prospectuses, brochures, information bulletins;
- magazine abstracts, indexes, bibliographies, catalogues.

4. The Russian Language as the Instrument of International Communication of former Republics of the Soviet Union. Creation of Database

Bibliographic databases of Informcentre VNIRO comprise computerised catalogues and indexes of published literature. Databases permit access to the digital information, results of chemical investigations and research data, as well as to the statistical data; differentiate factographic databases, wherein along with the facts other information is represented, and documents databases containing full texts of documents, for instance legislation and technical specifications, are included. Storage and retrieval of the full texts of scientific documents, reference books, encyclopaedias and other material represents a fast-growing and promising trend. It is especially important that these databases are compiled in the Russian language which is understandable to all scientific research organisations dealing with aquatic sciences and fisheries in the former USSR.

5. Participation of Informcentre VNIRO in International Information Systems

International cooperation for Informcentre VNIRO has the following purposes:

- Procurement of better services for the information users;
- More efficient utilisation of the available knowledge, procurement of universal, fast, practical and reasonable access to the worldwide information within a defined sphere;
- Improvement of the existing systems;
- Distribution of work, avoiding duplication of effort, and the most efficient utilisation of the resources.

6. Aquatic Sciences and Fisheries Information System (ASFIS)

ASFIS is an international cooperative information system, providing certain products and services covering science, technology and management within the marine and freshwater medium. It is designed for special users, including scientists, technologists, professors, students, administration and legislation workers, as well as those responsible for political measures and scientific researches in the field of aquatic resources. It is a complex system, engaged in accumulation and distribution of information and incorporates a bibliographic database and reference journal (*Aquatic Sciences and Fisheries Abstracts - ASFA*), manuals, guides and publications devoted to current events.

Informcentre VNIRO is a national centre of the former USSR, and now of Russia, within the *ASFA/ASFIS* system since 1973, i.e. for more than 20 years.

By 1973 *ASFA/ASFIS* covered about 13,000 documents per year, and it was proposed to establish computerisation, development, and the introduction of other information products. During the subsequent 10 years the coverage more than doubled, and the computerised base of bibliographic data became accessible through international telecommunication systems for computers in several countries, and a network of national centre participants was well established and was quite efficient, based on large-scale scientific research institutes dealing with aquatic problems and freshwater resources.

It is to be regretted that Russia and republics of the former Soviet Union are making only the first steps in the field of utilising telecommunication systems.

In 1993 Informcentre VNIRO organised a workshop for our colleagues and rendered assistance in incorporating Lithuania into the *ASFA/ASFIS* system. Similar efforts are being made now in respect of Ukraine, Estonia, Kazakhstan and Georgia.

7. Conclusion

VNIRO, its Informcentre and scientific library will continue to be a leader in the scientific information field using the Russian language as the language of scientific communication in the field of aquatic sciences and fisheries of Republics, and also countries of Eastern Europe. We are prepared to cooperate with all national centres of EURASLIC and to promote international information and library exchange. In preparing this report we used the IOC Unesco publication *IOC Manuals and Guides* No. 23, 1991.

I would like to express deep gratitude to the administration of the Sea Fisheries Institute of Poland, and personally to EURASLIC Vice-President Henryk Ganowiak for hospitality and efficient arrangement of the Fifth Session of EURASLIC, which takes place in a country of Eastern Europe for the first time.

The Library of the Estonian Marine Institute - The Main Directions of Activity

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Abstract

The history and coverage of the Estonian Marine Institute Library are briefly described, with a discussion of policy for the future development of services, particularly to assist Estonian scientists.

1. Library Description

The Library of the Estonian Marine Institute (EMI) was created in 1944, based upon the former Estonian Board of Fisheries, which existed between 1922 and 1940. During the time that it belonged to the Estonian Fisheries Institute, or its predecessors, the library funds were mainly used for fisheries and biological sciences literature. At the present time our library consists of two parts, which were joined together into the EMI library by consolidating the former Estonian Fisheries Institute and the Institute of Ecology and Marine Researches of the Academy of Sciences of Estonia in 1992. Thanks to this the number of topics in our library scope has been considerably increased. The basic subjects of library acquisition are now ichthyology, fisheries, aquaculture, fish stock assessment, marine hydrobiology, marine environment, marine systems modelling, oceanography, etc. The library collection now includes about 10,000 books and a considerable number of periodicals, reprints, reports, manuscripts, and microfiches.

The oldest part of our library collection consists of rare books, serial publications and expedition reports from the end of the 18th to the beginning of the 20th century in Estonian, Russian, German and Finnish. These items cover fisheries, fish trade and marine research of the Baltic Sea region. For example:

Die Fische der Ostseeprovinzen Russlands, by G. Zeidlitz. Dorpat, 1877.
Materialen zur Erforschung der Seen Livlands. Dorpat, 1906-1937.
Archiv für die Naturkunde Liv-, Ehst- und Kurlands. Dorpat, 1854.
Nordisches Plankton. Kiel and Leipzig, 1901-1941.

According to the language proportion, the literature in Russian represents about 50% in our library collection, thus dominating it. Books in Estonian are represented in the collection quite fully and cover about 20% of the whole, with the literature in other languages being about 30%.

The library collection is mainly used by our Institute staff. Library users can work with our alphabetical catalogue of books, systematic catalogue of books, based on UDC, alphabetical list of serials titles, and catalogue of reports.

The future of the library will depend on the actions which are being undertaken at the present time. Our priority task is to set up in our Institute an up-to-date information service on the basis of our library. Unfortunately we are now experiencing some financial difficulties which do not allow staff to be increased. This makes the task more difficult.

2. Policy of Development

The importance of information and library services in planning and conducting scientific investigations is obvious. For the success of our work it is necessary to have a clear idea of our library and information service tasks, and the ways to approach them. In other words the *policy* and *methods* should be worked out before any undertaking, in order to guarantee that the financial investments will be recovered. As far as the EMI is recognised as the main scientific organisation in oceanographic and fisheries monitoring and research in Estonia, our library and information services have to become the main information centre on marine sciences in our country. The range of the information service will extend in the course of time, and besides our Institute scientists, many specialists in closely related sciences in Estonia, and also ones from abroad, will be able to use our information facilities.

The policy of EMI library can be briefly presented in the following scheme, reflecting library tasks on three different levels:

(a) On the Institute level: the library and information service created on the basis that it will become the important infrastructure which will be able to satisfy all our scientists' needs in information.

(b) On the country level: the library and information service has to become the main information centre for the specialists in our country, linked to the National Information Network.

(c) On the European level: the library and information service has to become a full partner in the European Information Network.

One of the main preconditions to successfully fulfilling this plan is the introduction of new library and information technologies based on using computer systems and electronic databases. Let me tell you more about the realisation of this plan.

3. Methods

3.1 Document collection development

In this age of electronic information when the policy "access rather than acquisition" becomes dominating, the priorities in our library acquisition change.

Being the leading institution in marine investigations in our country we see our mission on a world scale with our library maintaining a comprehensive collection of typescripts and literature on marine investigations published in Estonia, and works by Estonian scientists published in other countries. The creation of such a deposit is also the main precondition for our participating in world information exchange as a full partner.

The other main function of our library is to provide with the highest efficiency our institute scientists with information that they need about world achievements in marine investigations. As far as our Institute field of activity is scientific investigations on the Baltic Sea, we are interested in completing our library with literature published in all countries of the Baltic Sea region, and in the countries leading in marine investigations. However, the unfavourable economic situation we are experiencing now is the main burden hindering library collection development. We are unable to purchase expensive books and serials, and even *ASFA* (*Aquatic Sciences and Fisheries Abstracts*) is still a dream for us. The scientific publication exchange is the main way of acquiring foreign scientific literature now. We intend in the near future to publish our *Annual list of EMI scientists' publications* which can be used by those interested in having reprints from us. We hope that after publication, we will be able to participate in exchange systems more actively. Also our *Baltic Sea monitoring reports in Estonian waters* is being published now.

3.2 Access to world data banks

At present we are anxious for information more than ever before. So, naturally, we are urgently looking for possibilities to get access to the world data banks on marine investigations. The computerisation of

EMI library becomes one of the nearest tasks for the future. Joining the European Information Network, we will receive the opportunity to use off- and online international databanks and at the same time we will also make our library collections available to our partners. Looking towards equipping our library with hardware and software we are making everything possible to prepare for the transfer of the manual catalogues into machine readable formats with the least waste of time. We are putting together now the two parts of our library collection. At the same time the catalogues have to be edited, so that the creation of the library electronic catalogue can become possible. We are very interested in obtaining information about library electronic equipment and software, and also information on the ways of proceeding in other libraries which are similar to ours.

3.3 Bibliography on marine sciences

Introducing automatic technologies into our information service would give us access to a very important new level of bibliographic activity.

As far as the considerable number of publications in marine sciences are the works of researchers of other scientific organisations, these publications will not be listed in our *Annual list of publications*. Taking into consideration the status of the Institute and its tasks at all levels, we are planning to compile the *Annual bibliography of fishery and oceanographic investigations conducted in Estonia*. This annual would be made available to specialists and all interested in marine scientific investigations in our country. This is a huge, time-consuming task which unfortunately cannot be fulfilled now on a full scale. At the first stage there would be the selection of materials by hand to avoid the loss of any single significant publication produced abroad, and unpublished manuscripts still unrevealed in the databases of the main libraries of Estonia. At the second stage the computer will be used for bibliographic processing.

In conclusion I would like to thanks all libraries who have provided us with literature, with special thanks to the library of the Baltic Sea Research Institute in Rostock, Germany. We will also be very grateful for any advice and proposals of EURASLIC members.

The Bibliographic Databases of the Food and Agriculture Organization of the United Nations : Tools in the Dissemination of Fisheries Information Resources

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Abstract

The David Lubin Memorial Library of FAO contains some one million items, over 80,000 FAO documents and receives 7,000 current periodical titles. In order to disseminate information to the FAO user community at headquarters and in the field and to provide access to the published information of FAO to users in Member Countries, the Library and Documentation Systems Division has developed secondary search tools and specialized products derived from library databases. These products are described particularly in relation to the various categories of users of fisheries information. In response to a growing demand for local databases, the increasing availability of micro-computers and the availability free of charge to economically developing countries of the Micro CDS/ISIS software, FAO has developed the REPDOC package in order to facilitate the distribution of subsets of library databases. In strengthening national and regional documentation services in developing countries, emphasis is placed on the free exchange of information between participating centres and the provision of a mechanism to facilitate this exchange.

The David Lubin Memorial Library

The David Lubin Memorial Library of FAO is named after the founding father of the International Institute of Agriculture. The latter existed from 1905 until 1946 and one of its most important assets was a library of over 500,000 volumes which was transferred to FAO at that time. The Library of FAO now contains some one million items and receives 7,000 current periodical titles. The Fisheries Branch Library was created in 1967 in response to an increasing demand for subject specialized services within the Organization and at present houses more than 10,000 monographs, 12,000 FAO documents and 1,070 current periodical titles.

FAO Fisheries Publications

A short article in the *EC Fisheries Cooperation Bulletin* vol. 5, no.1, 1992, provided an outline of the publication and availability of FAO fisheries documents. This article was aimed at the audience of the Bulletin, many of whom are individuals working in fisheries projects in developing countries. Their need for information is usually of a more specific nature than that of the user community which FAO aims to reach by the creation of library databases and the dissemination of secondary search tools and specialized products derived from them.

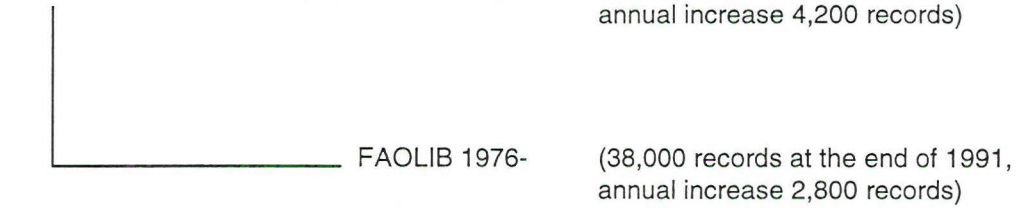
This paper will outline these products, the user groups and their particular requirements and the mechanisms used by FAO Library and Documentation Systems Division (GIL) to distribute bibliographic data and thereby improve access to the published information resources of FAO.

FAO Library Databases

One of the functions of the Library and Documentation Systems Division is to safeguard and maintain the collection of documents resulting from FAO programmes at Headquarters and in the Field as part of the institutional memory and to disseminate bibliographic data on them with back up document delivery services.

In order to fulfil its mission GIL collects and microfiches FAO publications and documents and maintains computerised databases to manage this collection and support access to them.

FAO Documentation (FAODOC), is the segment of the internal database of the David Lubin Memorial Library which includes bibliographic records to all FAO documents. Together with FAOLIB, which covers the non-FAO holdings of the Library received after 1976, the composite database provides access to the documents held in FAO Library.

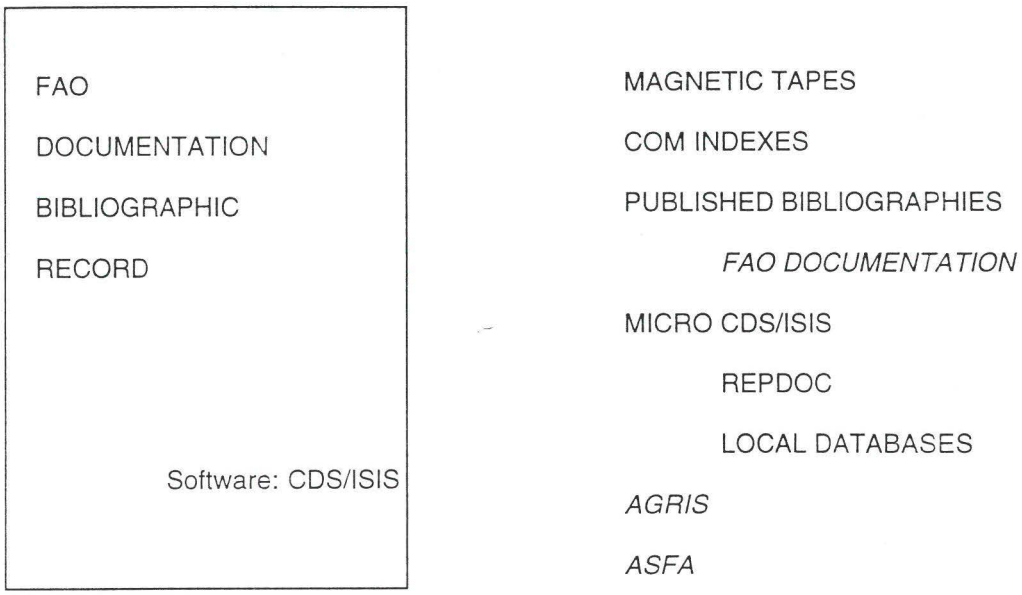


The proportion of the databases relating to fisheries, and where most of the material is held in the Fisheries Branch Library, is approximately as follows:

FAODOC total 18,800	annual increase 700
FAOLIB total 6,200	annual increase 400

Secondary Search Tools and Specialized Products

Library databases are searched by library staff and users having access to the FAO mainframe computer. In order to reach a much wider audience in very different circumstances and with different information needs, various products are derived from the databases as listed below.



(i) *FAO Documentation : Current Bibliography* lists the latest FAO documents added to the database with indexes in English, French and Spanish. Published every second month the Current Bibliography is distributed to 3,500 recipients, among which over 400 Field Projects, 300 Depository Libraries, FAO Sales Agents, University Libraries, Intergovernmental and non-Governmental Organizations.

(ii) Bibliographic searches on specific subjects.

(iii) *FAO Documentation* on magnetic tape. A bi-monthly service supplied on a cost recovery basis to a number of institutions with the necessary hardware/software to load and search FAO Documentation on their facilities. Data is provided in the ISO 2709 standard format for bibliographic data exchange.

(iv) Special bibliographies on broad subjects covering all FAO activities in, for example, Fisheries 1986-1990, are produced periodically. The distribution of these bibliographies runs from 2,000-5,000 according to the target population.

(v) *FAO Documentation* on COM (Computer Output Microfiche). An annual cumulation of the current bibliography and trilingual index is produced and at present the 1980-1991 COM is being distributed at cost to 150 recipients. Regional Offices, FAO Representatives, AGLINET (AGricultural LIbraries NETwork) Libraries, Depository Libraries and University Libraries are among the users of this product. Twenty eight institutions subscribing to the microfiche collection of FAO documents also receive the COM bibliography.

(vi) *Library Catalogue of Monographs* on COM is also cumulated annually and 150 copies distributed at cost to other libraries. *Library List of Serials Received* is produced from the FAO Library Serials (FAOLIS) database, which consists of 14,500 records of which 7,000 are current and 1,060 of these held in the Fisheries Branch Library. The latter product will be discontinued in this form after the implementation of the new serials management system.

(vii) Country bibliographies on COM. This service provides FAO Representatives with a set of documents on microfiche related to their countries of responsibility with the corresponding COM indexes (77 FAOR libraries for 91 countries). These indexes are gradually being replaced by REPDOC.

(viii) List of new books. A listing of the latest additions of books in the library collection is distributed to FAO staff at headquarters and in the field as part of the current awareness bulletin *List of Selected Articles, New Books in the Library.*

(ix) FAO input to *AGRIS*. 3,000 bibliographic records of non-restricted FAO documents are submitted annually to *AGRIS* for inclusion in the global database. Of these, approximately 500 are records to fisheries and fisheries related documents. Interface procedures are implemented to allow for automatic extraction, conversion and validation of appropriately flagged records.

(x) FAODOC subsets on diskette are produced for FAOR libraries, projects and national documentation/information centres. These subsets are specific to country, geographic area, subject or a combination of them and can be loaded on a local micro-computer for searching and updating as required. REPDOC, a Micro CDS/ISIS based package has been developed to facilitate handling of these subsets. Up to now over 50 users have received REPDOC and FAODOC extracts on diskette for creating local databases.

This latter product is increasingly in demand as a result of the greater availability of microcomputers in economically developing countries and the advantages of locally available databases. It is gradually replacing the COM indexes as a means of access to and dissemination of FAO documents. The FAO Representative Offices provide access to the documents related to their country. FAO Regional Offices and Regional Projects provide a regional information resource, covering not only geographically relevant information but also subject areas of importance to the region.

These distributed systems are based on an import of records from the FAO Library database using the ISO 2709 data exchange format, which may then be adapted for local needs by the addition of, for example, location data and abstracts or the creation of records for non-FAO material held locally. Those centres with existing databases and record structures may import records from the FAO library databases or from the AGRIS database using the ISO 2709 format.

Aquatic Sciences and Fisheries Abstracts (ASFA)

FAO Fisheries documents are indexed and abstracted for input to the *ASFA* database.

FAO Fisheries Field Projects

There are currently 105 national fisheries field projects in Africa, Asia and the Pacific, Latin America and the Caribbean, the Near East, Eastern Europe and the Mediterranean. In addition there are eight regional fisheries projects in Africa, four in Latin America and the Caribbean, eight in Asia and the Pacific, one in the Mediterranean and two in the Near East. Finally, there are 11 fisheries projects defined as interregional and global. The regional and interregional projects build up libraries during the lifetime of the project and in many cases act as a regional information resource. It is this group, along with FAO Regional Offices, which are expressing a need for local databases and those who are initially being supplied with the Micro CDS/ISIS software and subsets of the FAO library database.

As examples, the Regional Office for Asia and the Pacific is utilizing a database on the environmental impact of aquaculture, the Aquaculture for Local Community Development interregional project in Southern Africa has a Micro CDS/ISIS database on aquaculture in Africa. An FAO project located with INFOFISH in Kuala Lumpur has a database of records relating to fishing technology in Asia. A recently established project on Research for the Management of the Fisheries on Lake Tanganyika is building a comprehensive collection of documents on the subject, together with the available records on Micro CDS/ISIS.

Strengthening national and regional documentation services.

Part of the mission of GIL is to assist economically developing countries, upon request, to strengthen their national and regional agricultural documentation services and networks through direct advice, the formulation and execution of documentation projects.

Assistance is being provided in the establishment of an Information Centre for Inland Water Resources at the National Institute for Freshwater Fisheries Research at New Bussa, Nigeria. In addition to equipment, the Institute will be provided with Micro CDS/ISIS and training in the construction of databases.

AGRIS Input Centres

There are 171 centres participating in the international cooperative *AGRIS* system, the scope of which includes fisheries. Mainly depending upon organizational structure, some of the input centres cover

the fisheries literature of their country or region and in these cases cooperation with fisheries organizations and Ministries is promoted. As the total input of fisheries related material is increasing, and in response to user demand, an *AGRIS* Fisheries subset on CD-ROM was planned for production in 1993. At the Second Technical Consultation of *AGRIS* and CARIS Participating Centres, held in Rome in June 1992 there was a proposal "... that a fisheries information network within an expanded *AGRIS* framework be established...". The cooperation of IAMSLIC members with *AGRIS* input centres would also be welcomed to ensure more complete coverage of fisheries literature.

Micro CDS/ISIS is distributed to those *AGRIS* participating centres requesting it and 36% of them submit input using this software to capture the data. User-friendly applications have been developed to support bibliographic and referral record management and training is provided. Multilingual versions (En, Fr, Es) of the application software and the documentation have been prepared to facilitate system utilization in the participating countries.

Participating centres submit their input in English, French or Spanish using the multilingual thesaurus AGROVOC. The equivalent descriptors in the other two languages are added by the system. The inclusion of abstracts is optional and at present 20% of records are being supplied with abstracts.

Besides the facility to maintain a local database these applications provide the means for automatic data exchange. Emphasis is placed on the free exchange of information between participating centres and on the provision of a mechanism and training to facilitate this exchange. The system is hospitable to input from developing countries and hospitable to the inclusion of non-conventional literature.

AGricultural LIbraries NETwork (AGLINET)

GIL also coordinates AGLINET, a voluntary association of large agricultural libraries collaborating in the exchange of publications and information in the wide field of agriculture and related subjects. Some of these libraries also include fisheries but the participation of libraries with an emphasis on fisheries and related subjects would be a welcome addition to the network.

Current Agricultural Research Information System (CARIS)

CARIS is an international cooperative network composed of national, regional and international centres with the coordinating centre located at FAO headquarters. It deals with information on agricultural research projects currently carried out in or related to developing countries. There are currently 134 CARIS input centres and 24,000 projects in the database, of which approximately 900 are fisheries related or have a fisheries component.

Future Plans

An application based on Micro CDS/ISIS has been developed to enable input preparation for FAODOC on microcomputer and is in the testing phase. Hand scanning of documents has been tested and will be applied for the input of bibliographic data and the transfer of abstracts in the bibliographic records. The development of an end user interface for searching library databases is a priority. A prototype CD-ROM of the FAODOC database has been produced using mini-micro CDS/ISIS software and the HEURISKO interface, and this was demonstrated at the EURASLIC meeting in Poland. This is being tested by FAO libraries at Headquarters and in the field before a final version is released. More relevant for fisheries libraries is probably the planned Fisheries component of the complete *AGRIS* 1975-1993 database on CD-ROM using the same software.

Membership of AGLINET, the network of large agricultural libraries and specialized subject resource collections (including fisheries) around the world, has increased to thirty five. The use of E-mail to facilitate speedier document delivery is being promoted and the coordinating centre can be contacted via the Internet at aglinet@fao.org.

The interest from fisheries institutions in subscribing to the collection of FAO documents in full-text microfiche, or the subset of Fisheries Department documents, is also increasing and further details can be obtained at the above E-mail address.

WORKSHOP 1: Preservation/Conservation Issues - Archives, Documents, Data

Convenor - Allen Varley

Marine Biological Association
Plymouth
United Kingdom

The main part of the session was devoted to a paper presented by the convenor concerning his work with the archives of the Marine Biological Association, Plymouth.

A general discussion confirmed that historical and scientific archives were held by many of the older institutions represented, though few were able to devote adequate funds or human resources to maintaining the collections. The need to preserve material for future scientists and historians was acknowledged, and participants confirmed that there is a continuing interest in institutional history, and in the research activities of individual scientists.

The valuable work of Jacqueline Carpine of the Institut océanographique in Monaco in connection with the history of oceanography was cited, and members felt that the distribution of copies of any catalogues of archival collections would be beneficial.

Shortage of funds meant that collections of old and rare books and manuscripts were deteriorating through lack of adequate conservation and preservation measures, though members pointed out that their primary duty was to endeavour to meet the needs of today's scientists.

A number of the libraries were used as depositories for old or historical scientific data, and it was stated that some data managers are attempting to "rescue" and digitise this data. Participants stressed the need for data inventories, summaries, and the products of analysed data, and for adequate guides to data availability.

Institutional Archives as an Information Resource

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Abstract

An outline is given of the procedures for handling the records and archives of scientific institutions, with a description of the archives collection of the Plymouth Laboratory of the Marine Biological Association. Archival cataloguing is discussed, and a database structure for machine-readable catalogues is described.

Introduction

Every organisation collects, generates and manages information. We all in our personal and professional lives collect and produce information. It is an aspect of life from which there is no escape.

Some of the information, and the part with which we as librarians and information professionals are most familiar, becomes published and therefore available to a wide audience. But a great mass of material accumulates for internal use and there is no question of it being published or disseminated. How much of this other material recording organisational or personal information should be retained? Clearly some must be kept for a short period, some for longer, and some might be considered worthy of retention for the future. Pressure on space means that much must be destroyed.

Why keep any? The growing complexity of organisations and their management produces masses of documents and records - administrative, financial, personnel, about buildings, and in our own field about research projects, equipment, expeditions, ships and libraries. The result is an overwhelming mass of records, some of which must be kept for legal and administrative reasons, and others because they are in regular use, and some sort of records management system should be operated. I say "should be". Some government agencies have formal and strict records management procedures, listing and preserving all documents and incoming materials, others operate informally, haphazardly, or by default, keeping records which they need to refer to and which they consider might be of use.

Archives are a subset of the records, which have been selected for their retention because of their possible long term value and interest. They include manuscripts, letters, notebooks, files, meeting documents and reports, and can be on paper or computer discs, microform, photographs, drawings or charts. The records of today are the archives of tomorrow. But, not all records become archives.

In science as in other areas, institutional identity and history, the contributions of individuals, of institutions and departments, their interactions with government and funding agencies, their contributions to the spread and development of ideas, comprise the unpublished (and perhaps suppressed) history, and are of interest at present and will be in the future. Much of the true history is contained in the day-to-day records and the personal papers.

It must be stressed that not all records can become archives, and appraisal and selection, and some form of records management system is required. There are archives services at national and local level, and private archives of families, individuals, societies, companies and institutions. My main concern and direct experience is with the scientific, administrative and personal archives related to the

Plymouth Laboratory of the Marine Biological Association, and it is in this context that I speak. Conservation and preservation aspects are vital, but are not the subject of this paper, which discusses information aspects. Some general remarks:

(a) The training of archivists is usually completely separate from that of library and information workers;

(b) Information science and automation have made rapid progress in library work and bibliographic control. The spread into archives however has been much slower;

(c) Archives are not handled, arranged or indexed like books, journal articles or bibliographic materials.

Records and Archives

Archives are derived from institutional records, and in the absence of an established records policy, a records survey is used to determine what records are being produced, and how they are organised and stored.

A records survey establishes the type, bulk and distribution of records, and creates a register of classes of documents and potential archival materials. The resulting register is used as a finding aid, and it also contains information necessary for controlling the retirement of non-current material, and guidance regarding disposal. Departments of an institution may be responsible for their own records, or where a Records Centre is operated, departments will transfer non-current records to the Centre.

A retention policy should be defined and operated, so that classes of documents are routinely retained for specified periods before being appraised for disposal or transfer. At this stage material is reviewed for:

(a) Transfer to archives and permanent retention;

(b) Retention for a further specified number of years;

(c) Destruction.

An archives collection must have a clearly defined scope and subject coverage, with an acquisitions policy, appraisal procedures, suitable storage and accommodation, and agreed methodologies for arrangement, description and retrieval.

What proportion of records become archives? Some estimates say that perhaps ten percent of administrative papers should become archives, indicating that ninety percent is destroyed eventually. Clearly the appraisal stage is critical, and although some documents automatically become archives because of their obvious interest and value, others are selected by sampling procedures. In this way typical examples of administrative, financial, and other routine documentation are retained. Samples can be taken systematically, at random, or in a purposive manner.

Central to any archival management system is a knowledge of the structure of the organisation, its management, departments, functions and history. Archives must be kept in context, and their arrangement and description must reflect their provenance and meaning, demonstrating the sequence and method followed in their creation.

Archival Arrangement

For conservation and in order to manage the information contained in the archives, they must be organised into hierarchically related levels. Because of the relationship between items originating, say, from one department, they cannot be separated and classified using universal classifications, but must be in groups which demonstrate their origin and meaning. In practice it has been shown that archives

break down into a structured series of five or six levels. The most commonly used are:

Groups
Subgroups
Classes
Items
Pieces

Not all levels of arrangement need to be present in any specific set of archives. A practical example is given below, and it is important to accept that the physical form of materials, as well as intellectual content, is an important factor.

Physical Control

There are no general classification schemes for archives, but reference codes are needed for arrangement and retrieval, and various conventions are available to indicate relationships and hierarchies.

Intellectual Control

There are rules and standards for archival description, which generally proceeds from the general to the specific, from the larger group to subgroups, classes, items and individual pieces (Cook, 1993). There is an international standard, adopted by the International Council on Archives, and for machine-readable records there are MARC formats for Archives Management and Control (AMC).

The principal fields and tags of MARC AMC are:

100	Personal name of principal creator of the archive
	or
110	Corporate name of creating body or organisation
245	Title statement, with subfields, including dates
300	Physical description
351	Description of the arrangement
520	Abstract
541	Source of acquisition
545	Administrative history or biographical information
773	Links to other levels
600 *and* 700	Indexing terms

How do archives become archives?

In Plymouth some material has been preserved because it was known to be of value; other because no-one had thought to throw it away; other was rescued from destruction. How much of potential value has been destroyed over the years can only be guessed at. Hopefully we are now moving towards a records and archives policy.

The Marine Biological Association of the United Kingdom (MBA) was founded in 1884 with the support of leading scientists and establishment figures of the day. The aims of the Association are to promote scientific research into all aspects of life in the sea, including the environment on which it depends, and to disseminate to the public the knowledge gained. The Plymouth Laboratory opened in 1888, and during its long history the MBA has earned an international reputation for excellence in research, both by its resident scientific staff, and by the many British and overseas visiting workers, including no less than seven Nobel laureates (Southward and Roberts, 1987).

During the first half of this century in particular, many of the country's leading biologists had close links with the MBA, through attending the renowned Easter Vacation courses (instigated in 1896), or the Summer Physiology courses; by working as Student Probationers, members of staff, or as visiting

researchers; or by serving on the Council of the Association.

The Archives

For many years the library has held a collection of archives relating to the history of the Association, the Laboratory and its scientists. The collection includes personal and scientific papers, letters, notebooks and documents, illustrations and photographs. Enquiries regarding archival material are regularly received from scientists, historians and biographers.

Additional archival materials, some donated by retired members of staff, and further documents and records relating to the early history and the development of the Laboratory, the research programmes, staff, visiting workers, the buildings, ships, aquarium, finance and administration have been broadly sorted and listed. The material reflects the history not only of the MBA, but also the origin and early history of British marine science, and the use of marine organisms and the sea to further our understanding of fundamental biological and environmental processes.

Sorting and Cataloguing

With the support of a grant from the Baring Foundation, awarded by the British Library through its scheme of grants for cataloguing and preservation, the archives of the MBA and the Plymouth Laboratory are being sorted and catalogued.

We do not anticipate any great problems in processing the collections of personal papers. The identities and relevance of most of the individuals concerned have been determined, and the majority of the sets of documents have been examined, dated, broadly listed, and are ready for cataloguing in more detail.

Processing the institutional papers is a major undertaking. Some present few problems, but most of those dealing with the foundation and early years of the Association and the Laboratory, and the boxes of files relating to negotiations with government departments and committees, cooperation with institutions in countries of the former British Empire, scientific research projects, advice on fisheries policy, adaptation and survival during and following the two world wars and through periods of financial stringency, are complex. The pre-1960 material has not survived as part of a cohesive filing or records system, but consists of bundles of often tenuously related documents rescued from earlier files, and from the periodic paper clearing efforts of former directors, administrators and secretaries, or from bomb damage in March 1941. It is being worked through chronologically.

Archives Database

Preliminary listing of the archival material has been completed, using a database structure compatible with AMC formats, with Unesco CDS/ISIS software. CDS/ISIS permits the linking of records in hierarchical levels, and for retrieval creates an inverted file of words and indexing terms in the records (Hopkinson, 1992). The software is powerful and flexible both for searching and retrieval, and for reformatting, sorting and printing. Among the MBA archives are several hundred photographs of people, ships, equipment, and events related to the Laboratory. These are handled and indexed separately, but are in recorded and indexed in the same database.

Workers at the Laboratory - 1895-96.

Name	Table occupied	Subject of Research	Arrival	Departure	Amount of Table Rent	When Paid
Riches. T.H.	Founder.	Development of Nemertines	April 13th.	December 10th	—	—
Hodgson. T.V.	Museum Table	Amphipoda	May 27th	June 9th	—	—
Barthels. Dr. P.	Rented.	Echinodermata.	" 28	" 8th	£3 . 0 . 0	June 8th.
Garstang. W. [& Mrs. G.]	Museum Table	Ascidians.	June 26th	July 31st.	—	—
Bedford. S.P.	Students Table	General Zoology	June 29th	Aug 1st	£4 . 4 . 0 paid by W. Garstang Esq	July 30th.
Gray. J.E.	Students Table	" "	July 2nd	Aug 1st.		
Willon. Prof. W.H.R.	Founder.	Variation of Crabs.	June 29th.	Aug. 21	—	—
Bethe. Dr. A.	Invitation	Nervous System of Crustacea	July 5th	October 17.	—	—
Barcroft. J.	Students Table	General Zoology	July 8th	~~July 30th~~ ~~Aug 1st~~	£1 . 10 . 0 paid by W. Garstang Esq	November. 12th.
Bidder. G.P.	Rented	Sponges.	July 11th	December 24th.	£18 . 15 . 0	May 30th 1896
Beaumont. W.I.	Museum Table	Faunistic Work.	July 17th.	Aug. 23rd.	—	—
Gilchrist. J.D.	Prof Lankester's table	Nervous System of Mollusca	July. 20th.	Aug. 17th.	—	—
Browne. E.T.	Rented	Medusae	Aug. 19th.	Sep. 30th	£7 . 10 . 0	Sep. 27. 1895.
Brebner. G.	for British Assoc. Museum Table.	Algae	Sep. 5th.	Brit Mus. Jan 1 - March 31st & May.	£15 . 0 . 0	May 11 1896.
Garstang. W.	" "	Ascidians	Sep. 16th	October 4th.	—	—
Scott. S.D	Students Table	General Zoology.	Sep. 16th.	October 5th	£1 . 10 . 0 paid by W. Garstang Esq.	Nov. 12th.
Gilchrist. J.D.	—	Library only.	Sep. 20th.	October 3rd	—	—
Church. A.H.	Oxford Table.	~~Oxford Tables~~. Algae	Dec. 17th.	Jan. 17th	—	—
Chapman. E.H.	Students Table.	General Zoology.	Dec. 28th	1896 Jan 20th	£2 . 2 . 0	1896 Jan 20th
Taylor. T.H.	Museum Table.	Polyzoa	Jan 6	Jan 10th	—	—
Riches. T.H.	Founder.	Nemertines.	Jan. 13th		—	—
Garstang. W. [& Mrs. G.]	Museum Table	Ascidians	March 23rd	May 15th.	—	—

Letter from Henry Bigelow to Edward T. Browne, 1914

Museum of Comparative Zoölogy,

CAMBRIDGE, MASS.

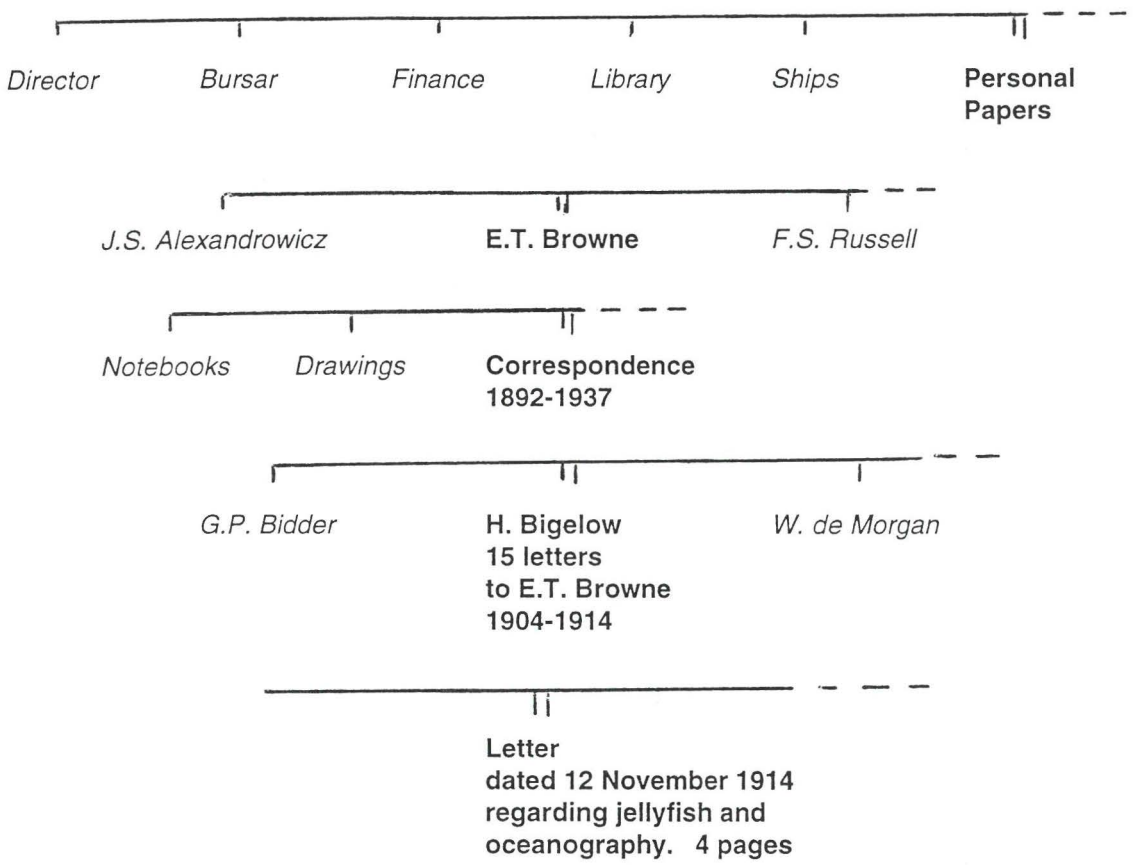
Nov. 12 - 1914.

Dear Mr. Browne -

Jelly fishes are still my pets; & always will be - Oceanography is absorbing, but can not crowd them out. We just sent a small paper & press on a new Olindiid from the pacific; & by this time you have no doubt received a copy of a list of New England jelly fishes. But our waters have yield very few species, & fewer individuals.

Our oceanographic cruise this summer was interrupted by the war - we got as far as Halifax, & then had to return to U.S. waters. However we covered some ground, & caught some things, notably a lot of Lineges in the edge of the gulf stream South East of Cape Cod & of course all manner

MARINE BIOLOGICAL ASSOCIATION ARCHIVES



Note: ***HENRY BIGELOW*** *was the first Director of the Woods Hole Oceanographic Institution, and is known as the father of modern oceanography. The Bigelow Laboratory for Ocean Sciences, Boothbay Harbor, Maine, USA, founded in 1974, is named after him.*

The MBA archives have been listed to *Subgroup*, and some to *Class* level, but the work of cataloguing and indexing will take several years, during which time of course additional material will be added to the collection. Cataloguing will not normally proceed below *Item* level, except in the case of specific letters of particular interest. The *Henry Bigelow* letter is selected because of its human interest rather than for any major scientific reason.

JERZY STANISLAW ALEXANDROWICZ 1886-1970

In discussing MBA archives at EURASLIC's first meeting in Poland, it is appropriate to recall an eminent Polish scientist who spent the last twenty years of his life in Plymouth. Born in Stoczki in 1886, Jerzy Alexandrowicz studied medicine and natural science in Warsaw, Zurich, Munich, Heidelberg, Paris and Jena. He served as Chief Medical Officer with a cavalry regiment in 1920, and was a visiting researcher in Plymouth, Naples, Villefranche and Roscoff in the 1930s. In 1937 he was Under-Secretary of State for Education, but relinquished the post to continue his research and academic career.

In 1939 Professor Alexandrowicz rejoined his regiment, but by the end of the year he was in a Russian prison camp. Released in 1941 he served in the Middle East and Italy, and in 1946 he came to England, finding employment in 1948 as a farm labourer.

PROFESSOR J. S. ALEXANDROWICZ

Friends at Cambridge University found him and he worked for a short time in the Zoology Department (being paid as a gardener). In 1949 he moved to the Plymouth Laboratory, working as a "technician" until special arrangements were made for him to have a research post. He was one of the most distinguished histologists of the nervous system. His work was almost entirely on the nervous system of Crustaceans and Molluscs, and was fundamental in the development of neurophysiology (Bone, 1971). He worked in the Plymouth Laboratory until the day of his death in 1970 at the age of 84. His letters and personal and scientific papers are held in the MBA archives collection.

Conclusion

How important are archives, and does it really matter whether these relics are retained or destroyed? Everything is relative, and we aim to provide modern scientific and technical information services, having left behind the images of librarians as merely custodians and caretakers. Archives must be of lower priority but they are not irrelevant; we are civilised people, or aim to be, and however much we utilise modern electronic technology, we should not forget our heritage, and should preserve for future generations evidence of the endeavours and contributions of human beings.

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WORKSHOP 2: Interlibrary Cooperation

Convenor - Damian Iwueke

Foundation for International Studies
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The Convenor introduced the session by describing his experiences of interlibrary cooperation and resource sharing in Malta. He stressed the importance of good working relationships between librarians, and with the users of libraries and information services. Contributions were invited from the participants, and a wide-ranging discussion ensued.

The possibilities of setting up a EURASLIC duplicate and surplus books and journals distribution programme were examined. Typical schemes involve the preparation and circulation of lists of available publications, and mechanisms for delivering material and recovering postal or transport costs. Members were encouraged to offer unwanted publications, and it was suggested that *EURASLIC Newsletter* could include appropriate lists. The possibilities were discussed of obtaining funding to cover the costs of carriage of donated collections of publications to Eastern European members.

Some of the existing national networks of aquatic scientific libraries already operate informal or formal resource sharing programmes, and it was considered that some elements, for example electronic access to library catalogues and indexes, could usefully be extended to EURASLIC libraries in other countries.

Interlibrary loans and document delivery are subjects of continuing concern at national as well as at local level. Participants reported that membership of EURASLIC, and the personal contacts made, had undoubtedly strengthened links across national boundaries. The EURASLIC Interlibrary Loan Forms and electronic mail were increasingly being used to locate and obtain copies of documents, to enquire for information, and to exchange news.

Members were urged to ensure that EURASLIC libraries were included on distribution lists for reports and institute publications, and wherever possible to endeavour to maintain exchange agreements with EURASLIC colleagues.

In discussing professional training, the potential involvement of EURASLIC in training courses and workshops was mentioned, and members suggested that exchanges of staff between EURASLIC libraries for work experience would be beneficial. A EURASLIC initiative endorsing or setting up a staff exchange programme would assist members when negotiating with their institutes and seeking funding. It was noted that several of the libraries provide informal training to visiting library and information staff, and that grants to support study visits are available from international, regional and national organisations.

A working group consisting of Jean Collins (FAO), Ian Pettman (UK), and Allen Varley (UK), with participants from some of the Eastern European institutes considered current problems experienced by Eastern European aquatic scientific libraries, and possible practical measures which might be taken, and assistance which could be provided by EURASLIC members.

Document availability, access to databases, advice and training with regard to the introduction and use of computer technology, improved communications, and the need to keep up to date with developments in information and library management were highlighted as some of the current areas of concern.

1. Shortage of Funds

Lack of funds means that library collections of journals, monographs, textbooks, reports and abstracting journals are inadequate. In consequence, researchers are unable to consult the relevant literature and cannot keep up to date with advances in their subject areas. The situation has not been helped in recent years by many librarians in western countries being coerced into cancelling exchange agreements, cutting mailing lists, and ceasing distribution of reprints of institute papers. A more liberal and understanding policy with regard to exchanges, and action to ensure that the Eastern European libraries were included on distribution lists for annual reports and other institute publications would assist, as would a EURASLIC initiative on the distribution of surplus and duplicate publications. The use of EURASLIC Interlibrary Loan Forms, together with improved links through fax and electronic mail would assist. Greater use could perhaps be made of national delegates to United Nations and other bodies, and of scientists travelling to meetings and conferences, to acquire documents and ensure that libraries were on mailing lists to receive publications.

2. Access to Computer Technology

Computer technology is now widespread in Eastern European institutes but has not yet reached many of the libraries. One of the participants, commenting that the librarians were ready to install microcomputers, to convert their library catalogues and to develop local databases, stated that specifications were required of suitable microcomputers, peripheral equipment, software, and database structures. Without this guidance there were real dangers that the libraries would be provided with unwanted or obsolete machines from other departments. Alternatively they might be persuaded by computer departments or salesmen to purchase unsuitable computers and software, or accept in-house written, or general database, software. Clear specifications and standards, with background information, would enable the librarians to ensure that these dangers were avoided. Advice and training in the use of computer technology, and in bibliographic and directory database development were needed, and it was important that recognised standards for bibliographic databases, catalogues and indexing procedures should be adopted from the start. In this respect it was noted that most of the participants are aware of Unesco CDS/ISIS bibliographic software, and it was possible that they might approach national distributors, or, where they existed, national AGRIS centres. Some of the participants however were not confident that approaches of this nature would be practicable, and hoped that EURASLIC members would assist them.

3. Expense of Online Access

The expense of online access to bibliographic databases is a major barrier, and although *Aquatic Sciences and Fisheries Abstracts* (*ASFA*) in printed form is available in some countries, there are gaps in holdings. For some, *ASFA* on compact disc is a realistic option for the near future, while for others it remains "just a dream". It would be appropriate for *ASFA's* international sponsors to seek ways of

making available in each country at least one copy of the *ASFA* CD-ROM database, or failing this to arrange the distribution of remaining stocks of back issues of the printed abstract journal.

4. Training

Training in aquatic information management and exploitation, through courses, workshops, study visits and attachments, with "hands-on" practical experience in database construction and the use of compact disc and multi-media services would be welcomed. Participants noted that travel restrictions and bureaucratic procedures related to visas and currency were no longer formidable barriers. Assistance in obtaining access to modern textbooks and reviews on library and information management was requested.

5. Personal Contacts

The value of maintaining contact, of feeling part of a European group, and of being professionally involved was stressed. The importance was emphasised of EURASLIC and its individual members encouraging mutual support and ongoing working links between institute libraries, and initiating and facilitating collaborative projects to improve access to aquatic information.

WORKING GROUP 2: CDS/ISIS Databases Demonstration

David Moulder described the use of the Unesco CDS/ISIS software in bibliographic, directory and library management databases, demonstrating and giving hands-on experience to the participants. Database structures, the steps to be taken in database creation, retrieval and formatting procedures, the needs for international standards, and hardware requirements were considered.

EURASLIC V, 28-29 April 1994
Sea Fisheries Institute, Gdynia, Poland

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