



## Caught in the fishing net of information

A.L. Achard, M.P. Baligand, Y. Confesson, E. Jannès Ober, A. Tilghman  
Sibille

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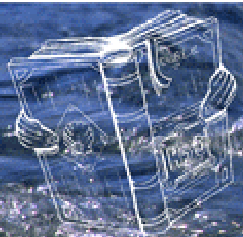
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**14th Biennial Meeting of the European Association of  
Aquatic Science Libraries and Information Centres**

**28ème conférence annuelle OMER**

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***CAUGHT IN THE "FISHING NET" OF INFORMATION***

***17-20 May 2011***

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25 Boulevard de Saint Exupery  
Lyon, France**



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# SHARING A BIBLIOGRAPHIC DATABASE IN RESEARCH TEAMS ON WEB INTERFACE : A STUDY OF COLLABORATIVE REFERENCE MANAGEMENT TOOLS

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## Context and Objectives

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In our research organization most researchers use reference management software to retrieve their selection of documents from databases or reading, and to edit bibliographic lists with citations. Here EndNote is the most popular ( national acquisition) , JabRef/Bibtex and most recent tools like Zotero or Mendeley are also used.

Generally these software are devoted to personal use, some researchers' teams share a EndNote library in spite of its inconveniences : no web access, no group management, need for a coordinator. Other collaborative tools like Wikindx or Php developments have been used but have been abandoned. In 2010 some researchers have expressed to librarians their needs for sharing bibliography :

The main criteria which are common to all groups or applications :

- Secure storage space ( internal if possible)
- Open source/ free solution
- Exports/imports : RIS, BibTeX, RDF etc to enable different software uses
- Web access
- Ergonomics
- PDF loading (for papers respecting copyright )
- Customizing the access to data : list of common tags, email alerts or RSS, origin of data

## Test of tools

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Literature and Internet forums have shown different tools , but it is difficult to find the ideal solution.

We have examined different kinds of tools:

- Reference management tools with web access sharing :

- EndNote web : collective use limited, you cannot add a Word text or PDF to your reference.
- Zotero : no possibility to share one subcollection but the entire library of a user. The limit of 500 Mo free of charge on a zotero server is an inconvenient, but the test on a WebDav internal server was disappointing. Further tests could be done according further developments within the Zotero community.
- Mendeley : the new “Outsider”, which becomes more and more popular among researchers because of its ergonomics and social network philosophy ( like Zotero), but you have to pay to store more than 500 Mo, and the number of persons to share one library is limited to 10 persons, which is usually more important.
- CiteUlike : this application existing since 2004 has been improved with PDF management, and not only URL sharing. But all is stored on a external server , without customization possibilities.
- Wizfolio : its ergonomics is attractive, but the free version is limited.
- We have tested other tools which could match our criteria, but all of these could be retained
  - Pybliographer, Qiqqa, Refbase, l’Librarian, Aigaion, Jumper
  - Libray open source software like PMB or Koha( no import)
  - CMS ( Content management systems) : some of them like Drupal have a bibliography module, which could be improved to reach our requirements.

## Conclusion about the use of tools

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According to our criteria and the tests carried out, two products can be proposed if the possibility of external storage is compatible with the level of privacy in the research project : Mendeley and CiteUlike. But we regret they don’t manage our ideal solution : to use a free open source ergonomic collaborative tool.

## Questions and perspectives :

---

Cloud computing » = centrally-hosted website tools seem to be more frequent : is it the only alternative ? : who will pay if required, how long will it be free ?

New products are coming with new opportunities : to be tested :

- Colwiz, <http://www.colwiz.com>  
(end of 2010) : not limited to papers : « research management, collaboration and productivity in one place for free »)



- Evolution of current tools : Zotero, better synchronization , subcollection to export
- Will collaborative tools used in research organizations (as Alfresco) include sharing and reference management ?
- The role of social networks : the “social network” feature of Zotero and Mendeley follow the uptodate trend.

We hope to develop a cooperation between librarians/computing engineers to test and share our test results and experience in professional associations or networks : a wiki or social network could be used to go on sharing our tests.

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<http://www.slideshare.net/amarois/mendeley-gestion-de-rfrances-bibliographique-20>

Promouvoir les Logiciels Utiles Maîtrisés et Economiques dans l'Enseignement Supérieur et la Recherche <http://www.projet-plume.org>



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# **BIBLIOMETRICS: A NEW FEATURE FOR INSTITUTIONAL REPOSITORIES**

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## **Abstract**

---

In addition to its promotion and conservation objectives, Archimer, Ifremer's institutional repository, offers a wide range of bibliometric tools described in this document.

As early as the recording stage, numerous automatic operations homogenize the information (author's name, research body, department...), thus proving the quality of the bibliometric analyses.

Now, Archimer enables, among others, the automatic calculation of several indicators defined by Ifremer and the different ministries in charge in the framework of its four-year contract. It also offers various criteria aimed at analysing its document production (eg. distribution of the value of the journals' impact factors, evolution of the number of quotations in other publications, presentation of international collaborations...).

As a consequence, the centralisation of Ifremer's document production in Archimer will replace a number of different systems currently used by its research units to carry out such tasks. This should therefore result in an increase in Ifremer's productivity as well as in a greater reliability of the archived documents.

## **Introduction**

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Despite its reputed tendency to skew results, bibliometrics has taken on considerable importance over recent years, in the world of research.

Bibliometrics is, for example, used by the French government as a support system for steering public research. In this perspective, all the French public research bodies must define a set of indicators that enable their performances in their different assignments to be assessed.

Within the scope of its four-year contract from 2009-2013, Ifremer has therefore defined 58 indicators with its supervising ministries. Several of these 58 indicators pay witness to the level of production of documents by Ifremer:

- Number of international publications.
- Joint publications with European partners.
- Joint publications with French universities.
- Joint publications with French research bodies on the 187 programme.

- Joint publications with partners in the developing world
- Number of export reports / opinions published in response to an official public order
- ...

Since 2002, the Ifremer documentation department has developed a Bibliometrics database in order to index the articles published by Ifremer personnel in international reviews. Furthermore, the references of these publications have been used, since 2004, to consolidate the results obtained by the OST (Observatoire des Sciences et des Techniques - observatory of science and technology), whose mission is to design and produce quantitative indicators on French research.

In 2010, this Bibliometrics database was moulded into a new version of Archimer, the Ifremer institutional archive, which now meets a three-fold objective of conservation, promotion and bibliometric analysis of the Ifremer's scientific and technological output.

In this document, we will present how this institutional archive works, with specific detail about the bibliometric tools.

## Overview of how it works

---

Archimer is built around a central filing system (Figure 1) which allows interconnection between all the players in the project (authors, structures, management, library personnel). The filing system feeds the Internet and Intranet versions of Archimer.

The main objective of the Internet<sup>1</sup> version is to promote the scientific and technological output of Ifremer on the national and international stage, including, in particular, its articles published in refereed journals, by publishing them for full access on the World Wide Web.

The Intranet version of Archimer allows all the documents that Ifremer produces to be conserved, especially grey literature<sup>2</sup>, by centralising it. This Intranet version is also a response to the need for internal promotion of this documentation: Archimer facilitates its visibility, its sharing and its reuse amongst all the Ifremer teams, whilst providing control of access rights. Lastly, centralisation of documentation enables this Intranet version to automatically supply elements of bibliometric analysis for all the types of document (publications, reports, appraisals / opinions, etc.).

The authors themselves save their grey literature in Archimer. On filing a document, they specify a level of visibility (Internet, Intranet, confidential, etc.) consistent with its degree of confidentiality and its copyright. The different levels of visibility available in Archimer make it

---

<sup>1</sup> <http://archimer.fremer.fr>

<sup>2</sup> Reports, proceedings of conferences, posters, appraisals / opinions, theses, HDR, works, chapters of works

possible to file the text in its entirety: all the references in Archimer are accompanied as a matter of course by the full text of the document in the form of one or more PDF files.

International publications are saved in Archimer by the library personnel (unlike grey literature).

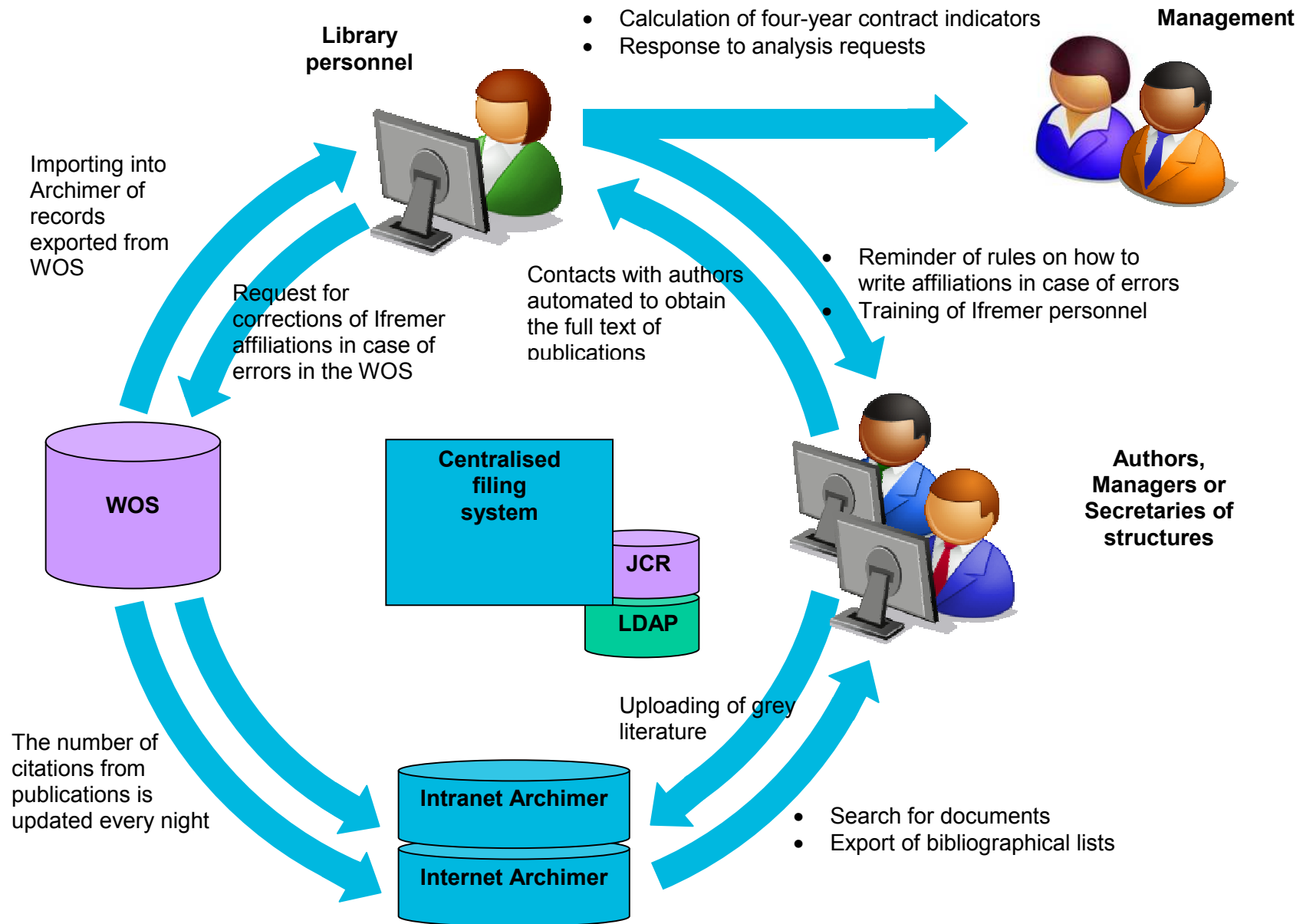
Some authors inform us themselves of their publications, but they are especially identified by weekly monitoring of articles in the Web Of Science (WOS) database in order to achieve collection of all the publications written by Ifremer.

The records of Ifremer publications are exported from WOS then saved in Archimer. These records are processed, standardised, enhanced and associated automatically to a set of bibliometric indicators.

The final version of the publication is systematically filed with a level of visibility limited to the Ifremer Intranet. A system of pre-drafted automatic messages enables the library personnel to contact the authors to obtain the latest draft of the publication which is then published, if the authorised by the publisher, in open access on the Internet<sup>3</sup>.

---

<sup>3</sup> This method is, of course, far from being perfect, mainly because it is time consuming, **but it has allowed 80% of Ifremer's international publications to be published in open access on the internet** since 2005 (<http://archimer.ifremer.fr/open-access2010.htm> ).



**Figure 1: Overview of how Archimer works**



## International publications

### IDENTIFYING PUBLICATIONS

Following a series of analyses, the Web Of Science database was chosen as the information source for identifying Ifremer publications that have appeared in international refereed journals. The choice of WOS as the sole identification source was made possible due to the fact that there are very few social science publications amongst the documents produced by Ifremer. Regular comparisons with other databases and checks made by various teams have since reinforced the relevance of this choice.

This method helps to avoid having to rely on the willingness of the authors and their availability in order to draw up all the bibliometric analysis linked to international publications. Identifying Ifremer publications in the WOS also provides more reliable figures than a compilation of laboratory activity reports: doublets caused by joint publications by two or more departments are eliminated, multiple indications of a same publication several years running in different statuses (in press, published) are removed.

The references of Ifremer publications located in WOS are consequently recorded in Archimer. Using an automatic search function on the Institute's LDAP directory, backed up a search of the directory's logs to identify authors who have recently left Ifremer, Ifremer authors are automatically identified in these references (Figure 2-1). Each of the Ifremer authors, and therefore each of the publications, is not only associated to a laboratory but also to all the pyramid and cross-organisational structures of Ifremer: site, department, research unit, etc.

The possibility of connecting to the Institute's LDAP directory is one of the advantages of an institutional repository in relation to a central archive. The association of author and structures is automatic and reliable: since the declaration of the laboratory is not the responsibility of the person filing the record, this allows for gains in reliability and productivity. In fact, the simplicity and speed of the filing system are amongst the main qualities of Archimer that the Ifremer personnel appreciate. Furthermore, changes linked to regular reorganisation are automatically carried over into Archimer.

1

Nom	Prénom	Email		Organisme	Site	Sigle LDAP équipe	
LUCAS	Ronan	Ronan.Lucas@ifremer.	<input type="checkbox"/>	IFREMER	NANTES	PDG-RBE-AGSAE-LGP	↓ ×
COURTIES	Claude		<input type="checkbox"/>				↑ ↓ ×
MARTEAU	Anne-Laure		<input type="checkbox"/>				↑ ↓ ×
LEMONNIER	Hugues	Hugues.Lemonnier@ifri	<input type="checkbox"/>	IFREMER	SAINT VINCI	PDG-RBE-LEADNC-LAC	↑ ↓ ×

**Figure 2: Automatic identification of Ifremer authors in the files imported from the WOS**

The e-mail addresses of all the Ifremer authors are also collected from the LDAP directory. It is thus possible to automatically send them messages throughout the publication processing process (reminder of rules on writing affiliations in case of mistakes, requests for latest

drafts, proposal of quotes including the URL of the version filed in Archimer, supply of viewing statistics, etc.).

Identification of Ifremer authors also helps to pinpoint any ambiguity that may arise. For example, if no Ifremer employees are identified in a publication whilst Ifremer is mentioned in the affiliation field, it is possible that the publication has been produced by an UMR with which Ifremer is associated. If no employee of this UMR has taken part in writing the publication, the article is rejected and is not taken into account in the Ifremer indicators<sup>1</sup>.

These references are also compiled each year and put forward for verification to the heads of the research units (always by means of the LDAP author/structure combination). The research units also inform us of any publications which may have been overlooked when, for example, Ifremer is absent or incorrectly spelled in the affiliation field.

Each of these publications is finally automatically enhanced by the review's impact factor value (see Figure 3-1) as well as the number of citations (see Figure 3-2). This information is updated every night via an automatic connection to the WOS.

---

<sup>1</sup> In other words, in Archimer, we only retain what the IRD refers to as its "strict production scope" as opposed to its "UMR production scope" (Cavet et al 2010).

## Geological overview of the Angola-Congo margin, the Congo deep-sea fan and its submarine valleys

Type de document:	Publication
Date de publication:	2009-11
Langue(s):	Anglais
Doc(s) complet(s):	<a href="http://w3.ifremer.fr/bp/pintra/doc/00000/11128/6718.pdf">http://w3.ifremer.fr/bp/pintra/doc/00000/11128/6718.pdf</a> (Version officielle éditeur, 1.25 Mo) <a href="http://archimer.ifremer.fr/doc/00000/11128/7848.pdf">http://archimer.ifremer.fr/doc/00000/11128/7848.pdf</a> (Version "auteur", 1.73 Mo)
Copyright:	2010 Elsevier B.V. All rights reserved.
Auteur(s):	Savoye Bruno <sup>2</sup> , Babonneau Nathalie <sup>1, 3</sup> , Dennielou Bernard <sup>2</sup> , Bez Martine <sup>4</sup>
Affiliation(s):	1 : Univ Brest, CNRS, UMR Domaines Ocean 6538, IUEM, F-29280 Plouzane, France. 2 : IFREMER, Environm Sedimentaires Lab, F-29280 Plouzane, France. 3 : Univ Européenne Bretagne, F-29280 Plouzane, France. 4 : TOTAL, F-64018 Pau, France.
Source:	Deep Sea Research Part II Topical Studies In Oceanography (0967-0645) (Pergamon-elsevier Science Ltd), 2009-11 , Vol. 56 , N. 23 , P. 2169-2182
Facteur d'impact:	1.965 (valeur de l'année 2009, voir son <a href="#">évolution</a> )
WOS® Times Cited:	5
DOI:	<a href="https://doi.org/10.1016/j.dsr2.2009.04.001">10.1016/j.dsr2.2009.04.001</a>
Indicateurs:	2009/2-copubli-univ-france : Co-publications avec des universités françaises ( <a href="#">Plus d'info.</a> ) WOS : Publications Ifremer référencées dans le WOS ( <a href="#">Plus d'info.</a> ) 2009/2-copubli-france : Co-publications associant des partenaires français ( <a href="#">Plus d'info.</a> )
Thème(s):	Géologie
Mot-Clé(s):	Congo Angola margin, Congo channel, Sedimentary deposits, Turbidite
Résumé:	<p>The Congo deep-sea fan is one of the largest fans in the world still affected by presently active turbidity currents. The present activity of deep-sea sedimentary processes is linked to the existence of a direct connection between the Congo River estuary and the Congo canyon head that allows relatively continuous sediment feeding of the deep-sea environment, in spite of a wide continental shelf (150 km). Because of this important activity in terms of sedimentary processes, the deep-sea environment of the Congo-Angola margin presents major interests concerning physical, chemical and biological studies near the seafloor. The main aim of this paper is to present the initial geological context of the BioZaire Program, showing a synthesis of the major results of the ZaiAngo Project including (1) the brief geological setting of the Congo-Angola margin, (2) the structure of the modern Congo deep-sea fan, (3) the sedimentary architecture of the recent Congo turbidite system (from the canyon to the distal lobes) and (4) the recent and present turbidite sedimentation. In order to provide useful information and advice relevant to biological and geochemical studies across the Congo sedimentary system, this article is particularly focused on the present sedimentary processes and the present activity of turbidity current along the Congo canyon and channel. Crown Copyright (C) 2009 Published by Elsevier Ltd. All rights reserved.</p>
Numéro système:	11128

### Comment citer ce document:

Savoye Bruno, Babonneau Nathalie, Dennielou Bernard, Bez Martine (2009). **Geological overview of the Angola-Congo margin, the Congo deep-sea fan and its submarine valleys**. *Deep Sea Research Part II Topical Studies In Oceanography*, 56(23), 2169-2182. Publisher's official version : <http://dx.doi.org/10.1016/j.dsr2.2009.04.001> , Open Access version : <http://archimer.ifremer.fr/doc/00000/11128/>

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 BABONNEAU Nathalie : IFREMER ,BREST ,PDG-DOP-DCB-GM-LES  
 DENNIELOU Bernard : IFREMER ,BREST ,PDG-DOP-DCB-GM-LES

**Figure 3: Example of a record in the Intranet version of Archimer**

## STANDARDISATION OF ADDRESSES

Processing publication author affiliations is one of the major problems in bibliometrics. Our analysis is based on the hypothesis that the authors of a publication respect the following rule for specifying an affiliation:

Main organisation, laboratory name, address, Country

Examples:

IFREMER, UMR AMURE, Dept Econ Maritime, F-29280 Plouzane, France.

INRA, Ecodev Unit, F-84914 Avignon 9, France.



These affiliation writing issues not only raise problems with regard to visibility for an organisation, but also complicate the study of collaborations between institutes. To calculate the four-year contract indicators which measure Ifremer collaborations with external organisations (e.g., with French universities, 187 group organisations or organisations in other European countries, etc.), all the affiliations for all Ifremer publications need to be standardised. When a publication is loaded, Archimer opens an affiliation standardisation module (see Figure 5). This module offers automatic standardisation (see Figure 5-2) based on an equivalence file enhanced every week. In the example presented in Figure 5, “Inst Rech Dev” is automatically transformed into “IRD” and “New Caledonia” to “France”. The system also proposes manual standardisation with assistance, in the case where automatic standardisation is not satisfactory (see Figure 5-3).

**Figure 5: Affiliation standardisation module**

## ASSOCIATION OF PUBLICATIONS WITH FOUR-YEAR CONTRACT INDICATORS

### Manual association

Once the affiliations have been standardised, the library personnel associate the publication with the relevant indicators in the four-year contract. This weekly processing of Ifremer publications provides, at the year's end, the value of these indicators in several clicks, using the analysis module presented in paragraph 0.

**Adresses complètes**

	Adresse normalisée	Pays
1. Univ Brest, CNRS, UMR Domaines Ocean 6538, IUEM, F-29280 Plouzané, France.	UEB	FRANCE
2. IFREMER, Environm Sedimentaires Lab, F-29280 Plouzané, France.	IFREMER	FRANCE
3. Univ Européenne Bretagne, F-29280 Plouzané, France.	UEB	FRANCE
4. TOTAL, F-64018 Pau, France.	TOTAL	FRANCE

Ajouter de nouvelles lignes

Normaliser l'adresse

**Indicateurs :**

- ☒ WOS : Co-publi. Ifremer référencées dans le WOS
- ☒ 2009/2-copubli-france : Co-publi. avec des partenaires français
- ☐ 2009/2-copubli-187 : Co-publi. avec les organismes de recherche du programme 187
- ☐ 2009/2-copubli-europe : Co-publi. avec les partenaires européens
- ☐ 2009/2-copubli-univ-france : Co-publi. avec les universités françaises
- ☐ 2009/2-copubli-int-hors-europe : Co-publi. internationales hors Europe
- ☐ 2009/7 : Co-publi. avec des partenaires des pays du sud

**Figure 6: Manual association with four-year contract indicators**

### Batch association

Archimer also enables batches of documents to be associated to bibliometric indicators. This function is especially useful for initialising a new indicator. It also allows us to swiftly check, at the year's end, the accuracy of each of our indicators.

Figure 7 shows verification of the “Publications with French universities” indicator. The screen is therefore configured to manage this indicator (Figure 7-1). The search function (Figure 7-2) makes it possible to list all the publications in 2010 that are supposed to correspond with this indicator (articles referenced in the WOS, published in 2010 containing the words “univ” and “France” in the same affiliation line). The system makes it possible to hide the references already associated to or dissociated from the selected indicator (Figure 7-4). As a result, this makes it easier to identify publications missed out during manual assignment of the indicators (Figure 7-3). In the case where the references presented correspond to these missed publications, it is possible to assign the references one by one (Figure 7-3) or by batch (Figure 7-5). In this example, the first reference is effectively a missed publication. However, the second is an error in the WOS.



Vos **1** Indicateurs Recherche Indicateurs Ensembles

Gestion de l'indicateur : 2009/2-copubli-univ-france Masquer les fiches déjà : ☒ Associées ☐ Dissociées

**2** Publications Ifremer référencées dans le WOS  
 (2) Co-publi. avec des partenaires français  
 (2) Co-publi. avec les organismes du P187

2010 dans Indicateur -

univ\* AND france dans Année de publication -

Adresse ligne + Rechercher

**4**

Réf. n°1 jusqu'à 2 sur 2

**Efficacy and environmental acceptability of two ballast water treatment chemicals and an alkylamine based-biocide**

...FRANCE Univ Caen Basse Normandie, Equipe Rech Phys Chim & Biotechnol EA 3914, F-14032 Caen, France. Ctr Marine...

12945. Publication, La Carbona Stephanie et al (Contact auteurs) [Associé] **3** ~~Dissocié~~

**Deep-Sea Biodiversity in the Mediterranean Sea: The Known, the Unknown, and the Unknowable**

...Oceanog, Paris, France. Univ Piraeus, Dept Maritime Studies, Piraeus, France. Biologie, Ecologie...

12206. Publication, Danovaro Roberto, Batista Company Joan et al (Contact auteurs) [Associé] ~~Dissocié~~

Réf. n°1 jusqu'à 2 sur 2

**5**

Associer / Dissocier l'ensemble des documents (max. 100) : Associer Dissocier

**Figure 7: Assignment and verification of indicators by batch**

## Reports and expert reports / opinions

To gauge activity that does not result in writing of international publications, Ifremer has defined, along with its supervising ministries, a set of indicators within the scope of its four-year contract in order to evaluate its production of reports<sup>2</sup> and expert reports / opinions. Up to 2009, these indicators were calculated by compiling the figures provided by the research units.

To enable automatic calculation of these indicators, we obtained acceptance from the Directorate General to make filing in Archimer compulsory<sup>3</sup> in July 2010. **The bibliometric functions of Archimer led to the implementation of this obligation**, which also have had positive effects on the objectives of conservation and promotion. Indeed, as a result, we have been able to collect a large amount of documents which Archimer missed out on previously. Even if the majority of these

<sup>2</sup> Contract, trial, campaign, mission reports; briefing notes, strategic or prospective monitoring; quality documents and technical documents...

<sup>3</sup> <http://archimer.ifremer.fr/depot.htm>

documents are recorded with reduced visibility (e.g. on the Intranet), some documents are visible on the Internet and consequently they contribute, in the same way as international publications, to the visibility of Ifremer on the web. Furthermore, via a ripple effect, the filing of conference proceedings, posters and chapters of works has markedly increased even though these documents are not concerned by compulsory filing.

This mandate is applicable to expert reports / opinions published in 2009, requiring retroactive filing work. However, for reports, this obligation is only fully applicable from January 2011 onwards. For documents published in 2010, the departments still had the choice to account for their document production by means of a list of references (8 of the 24 Ifremer departments already chose to file all their reports in Archimer in 2010).

Centralisation of 2009 and 2010 expert reports / opinions in Archimer has already enabled more reliable calculation of indicators linked to this type of document: documents written in collaboration with several departments have only been counted once. Compulsory filing of the full text has also helped eliminate a set of references that did not correspond with the specifications for the type of document expected (e.g., filing of slides).

Eventually, Archimer will allow the abandonment of a multitude of different systems currently used by the different research units to perform these functions (e.g., Endnote, Access, specific developments, etc.). Therefore, gains in both productivity and quality are expected.

Centralisation of expert reports / opinions in Archimer also enables automatic calculation of the new indicator “Number of expert reports published in response to an official public order” defined by the French Budget Ministry with the scope of the French Finance law of 2010 for the 187 programme. The P187 research organisations<sup>4</sup> must each year supply to the Observatory of Science and Technology (OST) tasked by the government to compile this indicator, the list of all their expert reports / opinions that correspond with this definition. These organisations must also guarantee access to these documents. Filing of expert reports / opinions in Archimer therefore simultaneously satisfies these obligations of accessibility and referencing.

## Using bibliometric data

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### *THE TOOLS AVAILABLE TO IFREMER PERSONNEL*

#### Several data export formats

- RTF

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<sup>4</sup> BRGM, Cemagref, Cirad, Ifremer, Inra, IRD

Archimer allows its users to export data in several formats. RTF, for example, is a format compatible with MS Word and Open Office. This format is useful for writing the bibliography section of activity reports. It displays the documents in standardised quote form classified by type of document (see Figure 8). Using identification of Ifremer authors performed automatically via an interconnection with the Ifremer LDAP directory, each instance of filing is accounted for in all the pyramid and cross-organisational structures of Ifremer: site, department, research unit, laboratory, etc... Each of these structures can thus reliably isolate the documents it produces in Archimer and export its bibliography at any time during the year.

**Publications**

Alvarez Marta, Gourcuff Claire (2010). **Uncoupled transport of chlorofluorocarbons and anthropogenic carbon in the subpolar North Atlantic**. *Deep-sea Research Part 1 - oceanographic Research Papers*, 57(7), 860-868.  
Publisher's official version : <http://dx.doi.org/10.1016/j.dsr.2010.03.009>  
Open Access version : <http://archimer.ifremer.fr/doc/00009/11994/>

Arnaud Haond Sophie, Marba Nuria, Diaz-Almela Elena, Serrao Ester A., Duarte Carlos M. (2010). **Comparative Analysis of Stability-Genetic Diversity in Seagrass (Posidonia oceanica) Meadows Yields Unexpected Results**. *Estuaries And Coasts*, 33(4), 878-889. Publisher's official version : <http://dx.doi.org/10.1007/s7-9-9238-9> , Open Access version : <http://archimer.ifremer.fr/doc/00006/11693/>

...

**Expertises/avis**

Larnaud Pascal (2010). **Amélioration de la sélectivité des chaluts pélagiques capturant du thon rouge**. CNPMEM (Comité National des Pêche Maritimes et des Elevages marins), Ref. PDG/AB/10-062, p.4

Lespagnol Patrick, Sacchi Jacques (2010). **Détermination d'un maillage maximal autorisé pour les filets maillants dérivants de moins de 2,5 km**. DPMA (Direction des Pêches Maritimes et de l'Aquaculture), Ref. 09-2693, p.4, p.4, p.20

...

**Figure 8: Example of exported references in RTF format**

- Excel

The MS Excel format allows references of documents to be exported into a spreadsheet. As a result, sorting and further analysis of documents filed in Archimer can be conducted. Spreadsheet 1 for example, shows a part of this information, exported in MS Excel format, for articles published in 2008. Sorting of the "WOS citations" column allows speedy identification of the most quoted Ifremer publications from 2008.

**Spreadsheet 1: Example of references exported in Excel format**

Title (s)	Source	Ifremer Author(s)	Impact factor	WOS citations
-----------	--------	-------------------	---------------	---------------

The Phaeodactylum genome reveals the evolutionary history of diatom genomes	Nature (0028-0836) (Nature), 2008-11 , Vol. 456 , N. 7219 , P. 239-244	Cadoret Jean-Paul	31.434	83
Age, spreading rates, and spreading asymmetry of the world's ocean crust	Geochemistry Geophysics Geosystems - G3 (1525-2027) (American Geophysical Union), 2008-04 , Vol. 9 , P. NIL_18-NIL_36	Roest Walter R.	2.979	56
Increasing genomic information in bivalves through new EST collections in four species: development of new genetic markers for environmental studies and genome evolution	Gene (0378-1119) (Elsevier), 2008 , Vol. 408 , N. 1-2 , P. 27-36	Bierne Nicolas Bachere Evelyne Bonhomme Francois Boudry Pierre Boulo Viviane Huvet Arnaud Lapegue Sylvie Moal Jeanne Samain Jean-Francois	2.578	37
Use of biotic indices in semi-enclosed coastal ecosystems and transitional waters habitats - Implications for the implementation of the European Water Framework Directive	Ecological Indicators (1470-160X) (Elsevier), 2008-07 , Vol. 8 , N. 4 , P. 360-372	Lavesque Nicolas Sauriau Pierre-Guy Desroy Nicolas	1.984	29

This type of export is useful within the scope of evaluations of Ifremer laboratories by AERES. In just a few clicks, it is possible to answer requests such as: the list of the laboratory's most quoted publications, the list of articles published in reviews with an impact factor higher than a given value, etc.

#### EXCEL / OST

Archimer also offers several specialised export formats including an Excel multi-spreadsheet format of expert report / opinion references. This format makes it possible to provide the OST with the information required for formulating the P187 indicator "Number of expert reports published in response to an official public order" (see paragraph 0):

	B	C
1	Titre du rapport	Date de transmission
2	Avis sur un projet d'arrêté réglementant la pêche de la palourde dans la baie de Bonne Anse en 2010 pour ouverture du gisement coquillier au 1er trimestre 2011	21/12/2010
3	Rejets de cabillaud en Manche- Est / Mer du Nord	09/12/2010
4	Recommandations sur le gisement de coquilles Saint-Jacques de la baie de Saint Brieuc	17/09/2010
5	Extension et aménagement du port de la pointe Saint-Gildas sur la commune de Préfaillès, avis 2010	11/01/2010

**Figure 9: Example of an exported list of export report / opinion references in multi-spreadsheet Excel format.**

## The analysis module

The analysis module available in Archimer is similar in terms of functions to the one proposed by the WOS. It offers the possibility of extracting a piece of information from a group of documents pre-selected by the user by means of a search. With this module, it is possible to visualise the change in four-year contract indicators year after year (see Figure 10.). Many other analysis criteria are available: types of documents produced by the Ifremer, list of reviews in which the Ifremer scientists publish their work, countries and organisations with which Ifremer co-writes its publications, etc.

<div> <div>Accueil</div> <div>Rechercher</div> <div>Historique</div> <div>Thématiques</div> <div>Panier</div> </div> <div> <div>2009-2010</div> <div>?</div> <div>dans</div> <div>Année de publication</div> <div>+</div> <div>Rechercher</div> </div> <div> <div>Ajouter une ligne</div> <div>Effacer tout</div> </div> <div> <div>Ref. 1-10 / 2111</div> <div> <input type="radio"/> Date           <input checked="" type="radio"/> Occ.         </div> <div> <input type="checkbox"/> Masquer les doc. inaccessibles         </div> <div> <div>Export</div> <div>Analyse</div> </div> </div> <div> <div>Analyse</div> <div> <div>Critères d'analyses :</div> <div>Indicateurs</div> <div>Année de publication</div> <div>Go</div> </div> </div>		
2111 ref.		
	2009	2010
WOS	437	418
2009/2-copubli-france	270	274
2009/2-copubli-p187	50	45
2009/2-copubli-europe	131	137
2009/2-copubli-int-hors-europe	110	116
2009/7-copubli-pays-sud	40	36
avis	303	273
2009/2-copubli-univ-france	178	188

**Figure analysis display in**

**10: Data module: of change indicators**

In addition to supplying the value of the four-year contract indicators, publishing of a yearly analysis report on Ifremer's production of documents was set up in 2010, in a similar way to the report produced by the IRD for the last several years (Cavet and al, 2010). The first version of this report (Salaün and al, 2010) focuses on articles and Ifremer expert reports / opinions published in 2009. The information presented in this document is mainly taken from Archimer. It is supplemented by data from the WOS and the Essential Science Indicators database to provide elements for comparison between French research organisations and international organisations specialised in marine science.

The first version of this report (an extract of which is included in the Appendices) met with particular appreciation from the management of Ifremer. It allows the advantage of centralising information within an institutional archive and further data standardisation and enhancement to be highlighted.

This type of report incites the various departments to optimally populate Archimer. A comparative table, such as Table 8 in the report for example, encourages departments to ensure that the figures concerning them are complete and that the documents are correctly filed in the archive. Display of production is deliberately limited to department level and does not go down to author level so that the scientists continue to see Archimer as an opportunity to promote and/or conserve their documents and not to perceive it as another tool for checking their work.

Finally, this type of report helps to reinforce the importance of the documentation department in the Institute's bibliometric activity.

## Conclusion

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Archimer today proves to be essential for measuring the scientific and technical production of Ifremer.

Thanks to Archimer, a very significant proportion of the documents produced by Ifremer is in the process of being centralised. This represents success and recognition for the documentation department, which is gaining new activities whilst some of its traditional missions are declining markedly (e.g., management of hard copy archives and reception of the public in reading rooms). The success of Archimer is particularly linked to the fact that each party, at Ifremer, benefits from its advantages:

For Ifremer scientists, today, with more than 10,000 documents in their full-text versions, Archimer represents a considerable source of information, and especially with regard to in-house grey literature. Furthermore, the detailed viewing statistics that we supply demonstrate the advantages of them continuing to file the documents that they produce.

The heads of various structures (laboratories, research units, etc.) possess high-performance export functions enabling them to speedily and simply obtain the bibliography of



their team to incorporate it into an activity report, display it on the web or supply information within the scope of an assessment.

For the management of Ifremer, Archimer is a reliable and constantly readily accessible source of bibliometric data on the documents produced by the institute.

The success of the Archimer project is also partially due to its integration: using the same tool, we manage objectives related to conservation, promotion and bibliometric analysis of scientific and technical documents produced by Ifremer. Each of these three aspects participates in the success of the two others.

## References

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Salaün Annick, Merceur Frederic, Le Gall Morgane (2010). Production scientifique et technique 2009 de l'Ifremer - Articles de revues et avis/expertises.

Cavet Dominique, Lemeltier Doriane (2010). Suivi des publications IRD : rapport annuel portant sur l'année 2008 et les évolutions entre 1999 et 2008.

<https://www.mpl.ird.fr/documentation/download/rapport-2008-final.pdf>

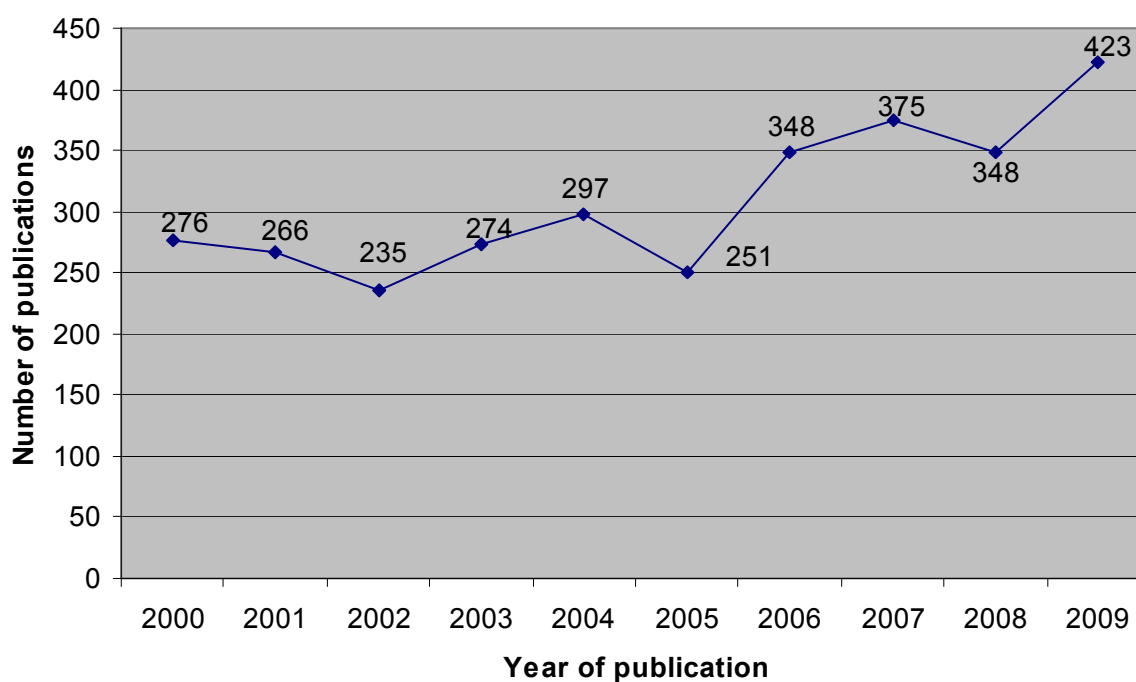
Odile Hologne, Laure Martineau, Suzy Ramanana (2007). Analyse des recommandations pour les affiliations dans les publications scientifiques

## Appendices

Examples of bibliometric data automatically exported from Archimer  
(Extract from the report by Salaün et al, 2010)

### 1) Publications

#### a. Change in the number of publications



**Figure 11: Yearly change in the number of Ifremer publications referenced in the WOS with at least one author employed by Ifremer**

#### b. Collaboration

##### COLLABORATION BETWEEN ORGANISATIONS

**Table 2: List of structures with whom Ifremer has jointly published at least 10 articles in 2009**

	Country	Publications
Université de Bretagne Occidentale	France	56
CNRS	France	41
Université Paris 6	France	34
INRA	France	25
Université de la Rochelle	France	21
Université de Montpellier	France	19

Université de Bordeaux	France	18
IRD	France	17
Université de Nantes	France	14
MNHM	France	12
Collecte Localisation Satellites (CLS)	France	11
Woods Hole Oceanographic Institution	USA	10
...		

### COLLABORATIONS WITH COUNTRIES

In 2009, Ifremer jointly published articles with partners located in 48 different countries.

**Table 3: List of countries of co-signatories of Ifremer publications in 2009**

Country	Publications
United Kingdom	43
Usa	39
Germany	24
Spain	22
Norway	17
Italy	15
Portugal	15
Canada	14
Australia	12
Netherlands	12
...	

### c. The reviews

#### THE MAIN REVIEWS

In 2009, the 423 Ifremer publications referenced in the WOS were found in 179 different reviews. The main reviews of these 179 are displayed in the following table:

**Table 4: List of the leading 10 reviews in which Ifremer published in 2009**

Journal	Publisher	Publications	Pourcentage
Aquatic Living Resources	EDP Sciences	33	7,80%
Deep Sea Research Part II: Topical Studies in Oceanography	Elsevier	17	4,02%

Aquaculture	Elsevier	16	3,78%
ICES Journal of Marine Science	Oxford Journals	16	3,78%
Marine Geology	Elsevier	10	2,36%
Cahiers Agricultures	John Libbey Eurotext	8	1,89%
Journal of Geophysical Research	American Geophysical Union	7	1,65%
Geophysical Research Letters	American Geophysical Union	7	1,65%
Continental Shelf Research	Elsevier	7	1,65%
Deep-Sea Research Part I: Oceanographic Research Papers	Elsevier	7	1,65%
...			

#### THE MAIN PUBLISHERS

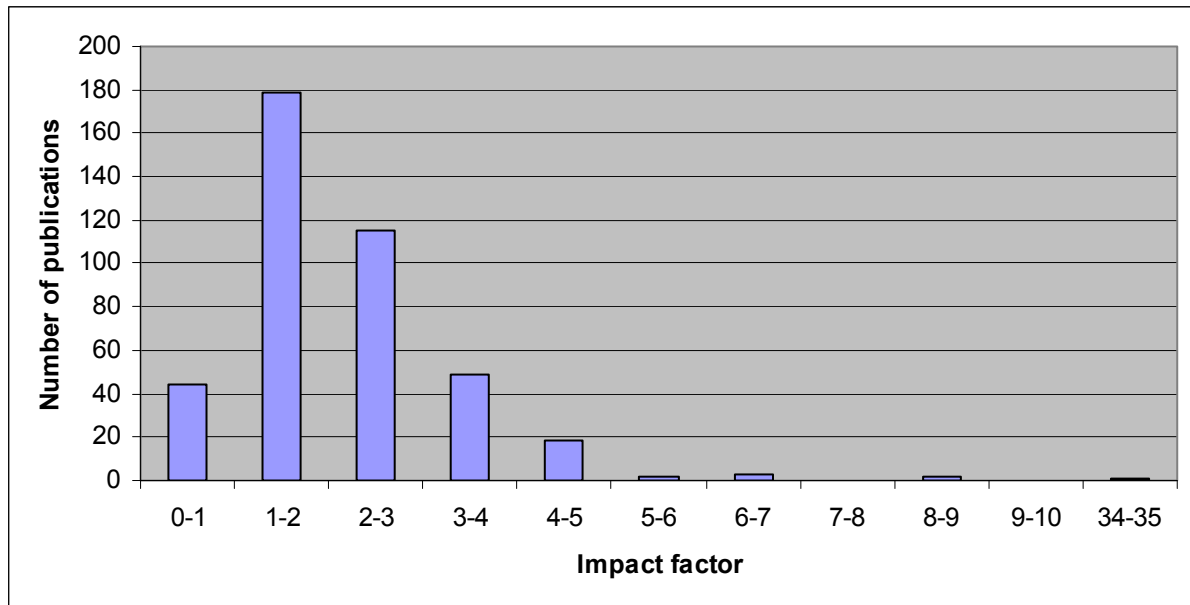
The table below shows a list of the main publishers of reviews in which Ifremer published in 2009. It illustrates the domination of the publisher Elsevier in the field of scientific publishing.

**Table 5: List of the leading publishers of Ifremer articles**

Publisher	Publications	Pourcentage
Elsevier	176	41,61%
Wiley / Blackwell	35	8,27%
Edp Sciences	33	7,80%
Springer	26	6,15%
Agu	20	4,73%
Oxford University Press	17	4,02%
American Meteorological Society	11	2,60%
John Libbey Eurotext	8	1,89%
The Oceanography Society	7	1,65%
Inter-Research	6	1,42%
...		

## IMPACT FACTORS

Figure 12 shows the distribution of impact factor values of the reviews for Ifremer publications in 2009.



**Figure 12: Distribution of IF for reviews in which Ifremer published in 2009**

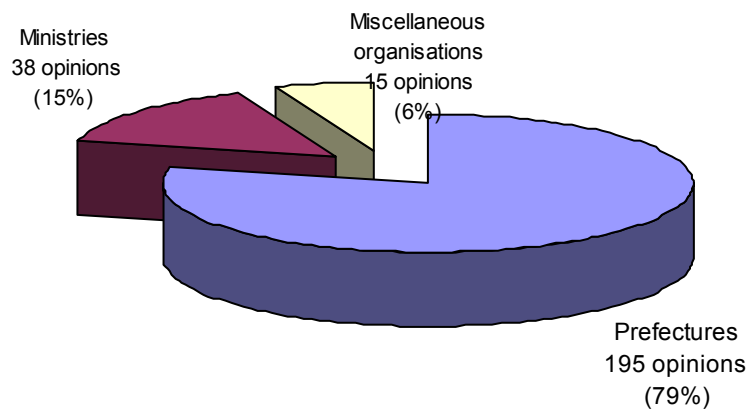
## 2) Expert reports / opinions

### a. Status of sponsors

*Table 6: Status of sponsors of expert reports / opinion in 2009*

	Expert reports / opinions	National sponsors	European sponsors	International sponsors	Sponsors from developing countries
Public	268	241	17	5	4
Privé	25	20	2	2	1
Total	293	261	19	7	6

### b. Profiles of French public sector sponsors



*Figure 13: Distribution of French public sector sponsors*



c. Location of prefectures that have requested the opinion of Ifremer

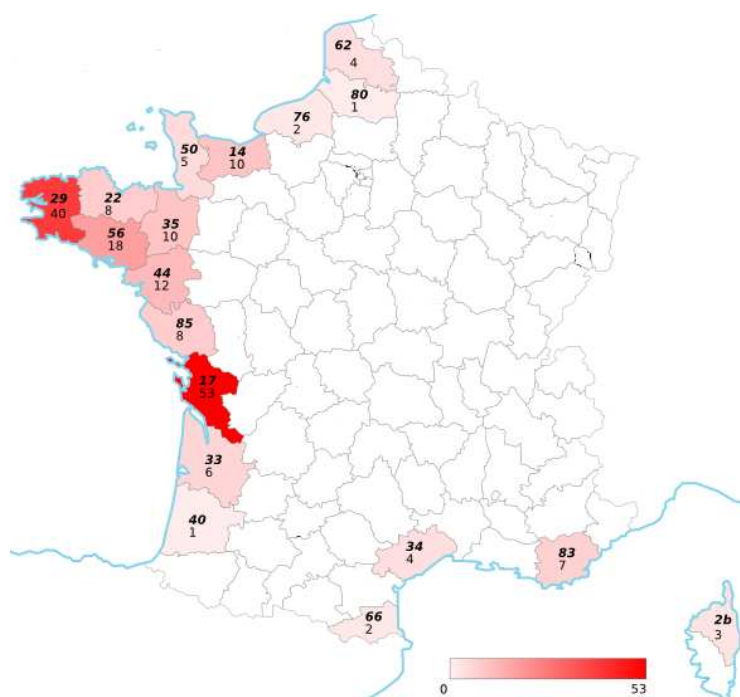


Figure 14: Location of prefectures that have requested the opinion of Ifremer.

d. Contribution of Ifremer entities and authors

Table 7: Document production on different Ifremer sites

	Publications	Opinions
Brest	262	59
La Tremblade	20	123
Nantes	70	32
...		

Table 8: Document production of Ifremer departments

Units	Sigle	Publi.	Opinions
Amélioration Génétique, Santé Animale et Environnement	AGSAE	37	93
Dynamiques de l'Environnement Côtier	DYNECO	26	21
Géosciences Marines	GM	70	16
...			

**Table 9: Number of Ifremer employed authors of publications and expert reports / opinions in 2009**

		Publications	Opinions
Nombre Ifremer	d'auteurs	460	112

# AN INTER-AGENCY DOCUMENTARY POLICY ON WATER AND AQUATIC ENVIRONMENT

**Françoise Bunch**

National agency for water and aquatic environments (Onema)

**Florence Louis**

Rhône Méditerranée & Corse water agency

**Monique Cordonnier**

Artois Picardie water agency

## Abstract

---

The Onema and its French partners have pooled their research and development efforts to work together to preserve water quality and promote ecological well-being. Between 1993 and 2008 technical and scientific documents generated by six River Basin Agencies and the Water and Biodiversity Directorate were collected by the documentation centers in the database Fontaine. The water Agencies, the Onema and research establishments worked together to create a documentary portal in 2009 (les documents techniques sur l'eau) which today includes 40,000 notices and 18,000 technical and scientific pdf documents. Our documentary policy makes provision for the selective promotion of inter-agency publications by theme and area starting in 2011.

**Key words** (thematic and geographical area): Documentation and information network, aquatic management institutions, national portal, grey literature, scientific and technical publications, France

## National framework of water management in France

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The organizational overview shows that the main public institutional bodies for public water policy in France are: the Ministry in charge of Ecology (MEDDTL), the Onema and the 6 Water Agencies in France.

### *WATER MANAGEMENT IN FRANCE*

- The 1964 Water Law set out 6 large basins for water resources management. 6 water agencies are responsible for the implementation of water policies in their basin.
- The 1992 Water Law strengthened this approach with the elaboration of water planning tools for each large basin.
- The 2006 Water Law set out objectives and means to achieve good ecological and quality status: Onema was thus created.

## GENERAL INFORMATION ON THE ONEMA

- The Onema is a governmental agency overseen by the Ministry in charge of Ecology (MEDDTL).
- It was created by the French Water and Aquatic Environments Law, adopted on the 30<sup>th</sup> of December 2006 and the related Decree of the 25<sup>th</sup> of March 2007.
- It deals with all types of water systems (fresh/marine; ground/surface).
- It operates throughout France and its overseas territories.
- 900 people work for the Onema, including 600 field technicians.
- The Onema is the reference technical agency for knowledge and management of aquatic ecosystems.

## THE TWO MISSIONS OF THE ONEMA

- to stimulate research and development:
  - The Water framework Directive requires that the Onema produce results-oriented and evidence-based policies. The ultimate objective is to ensure good ecological status and high quality of water bodies by 2015.
  - The Onema and its French partners have pooled their research and development efforts to work together to preserve water quality and promote ecological well-being.
  - This effort generates a great number of reports which have to be made accessible (i.e. available to the public).
- to manage the French water information system and produce data:
  - The Onema is tasked with finding ways of sharing and pooling the information from each aquatic management institution.
  - A documentation & information center network has been organized as well as a National portal.

## The documentation & information center network

---

### THE NETWORK CALLED "FONTAINE"

- The current documentation and information center network was formerly called « Fontaine »
- This network had a common bibliographic database:
  - In 1993, a database called "Fontaine" was created - contributors were the Water Agencies and the Ministry of Environment.
  - In 1994, 5000 bibliographic records of the reports produced by the Agences de l'Eau (Water Agencies) and the Water Department of the Ministry of Environment were recorded on "Fontaine".

- In 1996 and 1997, the database appeared on a different website (OIEau website, Eaufrance website and water agency website).
- Standardization and common rules:
  - In 1995, all contributors had to use the “water” thesaurus to index documents. This thesaurus, created by the water agencies and the OIEAU contained 3200 keywords and was published in its final form in 1998.
  - In 1995, an indexing guide to fill in the fields in a standardized way was created.
  - In 1996, a catalogue of magazines was published listing the reviews, issue numbers, and dates available from each contributor.
  - In 2003, a Water Framework guide was created and published in 2004. Copyright contract was signed.
  - In 2005, a working group examined the rules concerning the public access to information. A guide was realized from legal texts.

#### *THE NEW AND EXPANDED NETWORK “RFCD”*

The current documentation and information center network is called « RFCD » (Réseau Fédérateur de compétences documentaires).

The new, expanded information center network is a direct continuation of the “Fontaine” network. It works towards the same goals and includes a larger number of contributors.

The contributors are the 6 water agencies, the Ministry of Ecology, the Office International de l’Eau, the Onema and the research establishments.

Documentary agencies work in conjunction with each other to share useful services such as the distribution of laws and legislation gathered by the Water Legislation Watch (realised by the water agency in Douai since 2004) or the sharing of selected press articles.

All water agency documentation and information centers have decided to pool their resources and work together in order to better promote their technical and scientific publications through their inclusion in the national portal and also through their documentary policy which makes provision for the selective promotion of inter-agency publications by theme starting in 2011.

## **The national portal**

---

### *ORIGINS OF THE PORTAL AND EVOLUTION OF THE PROJECT*

- In 2003, Directive 2003/4 guaranteed easy access to environmental information.
- In 2006, the Ministry of ecology observed that public technical reports about water were unknown and inaccessible to the public. It was decided to implement Directive 2003/4.

- In 2008, the Onema combined its own documents and those of Fontaine into one single database.

The project increases: The working group now includes information officers working in research establishments who contribute to the collaborative aquatic ecosystems database.

Main goals of this portal:

- Look for other contributors.
- Reference not only reports but different kinds of documents (articles, books...). The majority of references are still reports.
- Improve document management (identification and referencing of technical reports).
- Afford efficient access to pdf files, including geographical research.

#### *THE PORTAL: CREATION, EVOLUTION, DOCUMENTS, CONTRIBUTORS*

The portal has been online since June 19th, 2009. At the beginning it comprised 20,300 references. Today it includes almost 48,000 references and more than 18,000 technical and scientific pdf documents.

This portal, “Les documents techniques sur l’eau”, now comprises a selected version of all the aforementioned public-institution databases and is managed by the Onema with technical help from the Office International de l’Eau.

The portal contains different kinds of documents:

Reports, studies, articles, books, published in French or English (the title and the abstract has to be in French) technical or scientific documents about knowledge management and aquatic ecosystems.

Efforts are being made to increase the variety of sources, but only in the case where such books, articles, etc... might not be readily accessible to the public.

This portal is primarily a grey literature repository accessible to the public.

The current contributors are: 6 Water Agencies, Ministry of Ecology (SIDE), Office International de l’Eau, Office de l’Eau de la Martinique, Office de l’Eau de la Réunion, Onema, Ifremer, Cemagref, BRGM, INRA, Ineris...

This URL: [www.documentation.eaufrance.fr](http://www.documentation.eaufrance.fr) welcomes you to the portal



**Fig 1: Homepage of the portal**

## THE TECHNICAL STRUCTURE OF THE PORTAL AND ADAPTATION OF THE CONTRIBUTORS

### The technical structure

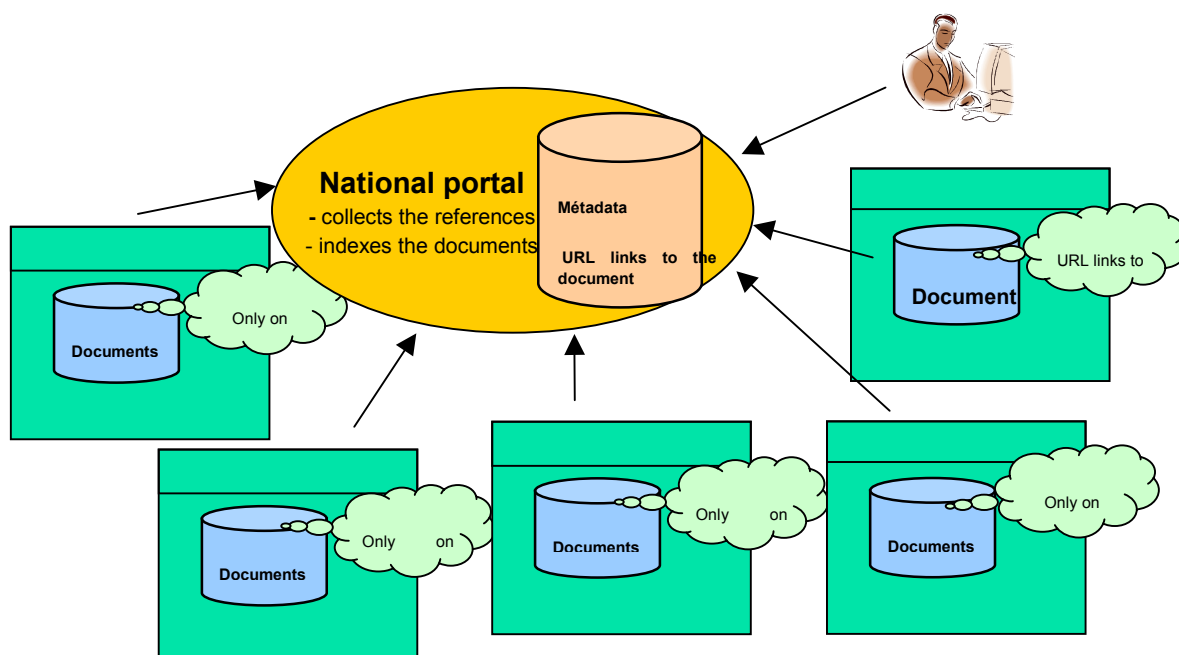
Each contributor:

- is a data provider
- collects its own documents (pdf or paper version)
- makes its studies available on internet
- provides metadata

The National portal (OIEau):

- is a service provider
- collects the metadata from the data providers
- indexes the metadata
- indexes full text in distant sites
- provides a unique research interface

PDF files remain on the contributing institutions' website; the role of the portal is not to contain the pdf files, but rather to direct researches to individual contributors' sites which contain the desired information.



**Fig 2: Technical structure of the portal**

Dublin Core metadata is used to describe resources in this portal.

The Dublin Core standard includes two levels: Simple and Qualified. Both are used in the portal.

#### The progressive adaptation of the contributors:

Each contributor must:

- Create and organize its own OAI (Open Archive Initiative) repository.
- Be able to manage and export metadata documents using Dublin Core format.
- Create an http web server which is able to respond to simple requests by generating XML data streams.
- Make PDF files documents available on a contributor's own web site.

Each contributor must:

- Register references,
- Obey the rules in describing documents (all of these fields must be correctly entered: metadata provider, document provider, URL, geographical description).

#### *THE GEOGRAPHICAL APPROACH*

##### Geographic tools

Tools online help the librarians to fill in the geographic fields:

[1] They fill in all the required fields,



[2] click on this box and a code is generated

[3] which they can enter into their own database

## Tools to help the librarians fill the geographic fields

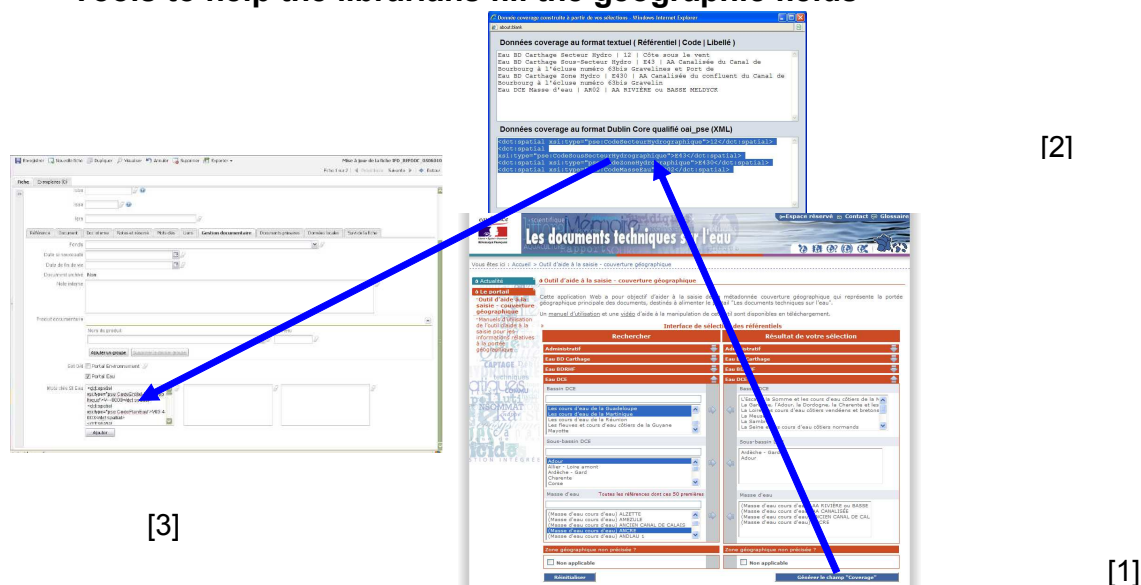


Fig3: Tools online to fill in the geographic fields

There are 4 kinds of geographical fields:

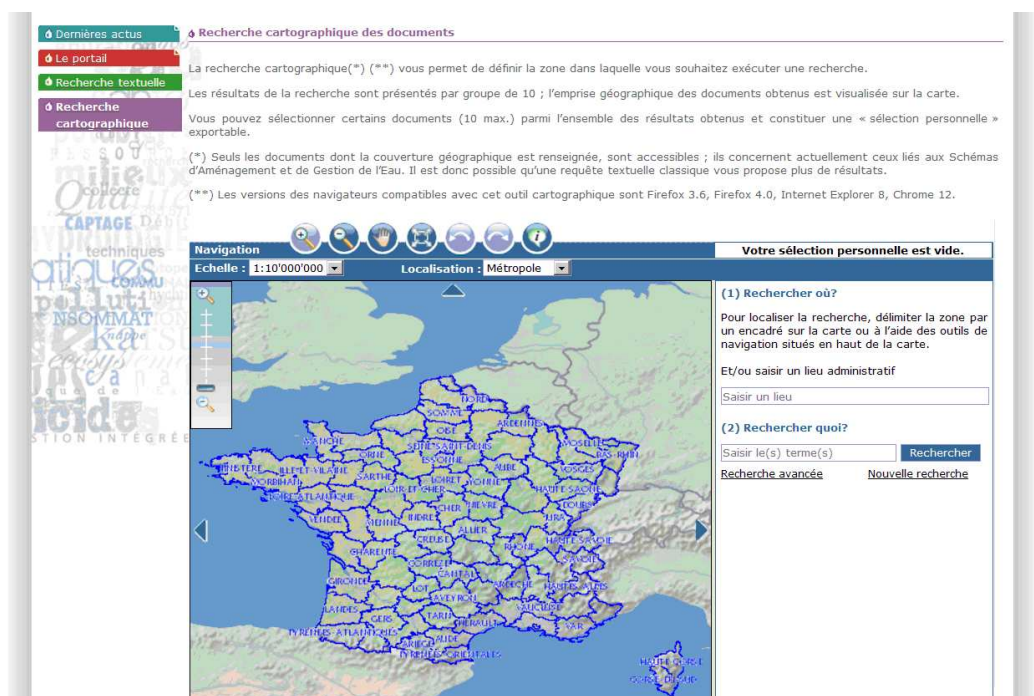
- Codes to describe the area:
  - Town, county, region (administrative codes INSEE).
- 3 different codes to describe water:
  - River (codes BD Carthage),
  - Underground water (codes BDRHF),
  - Lake, ponds (codes SANDRE).

### Geographic search:

To find a document, we use:

- The traditional method (words) the “Polyspot” search engine (quick or advanced search).

- The geographical method (by selecting a rectangle on the map or by entering a region code).
- Or a Combination of both methods.



**Fig4: Homepage of geographical search**

The researcher can use codes to search for the relevant document.

If the researcher is not an information specialist who knows the correct code, he or she can enter a keyword instead. Using the keyword, the researcher selects a region and all of the relevant documents are listed as well as the exact geographical position where the studies were carried out.

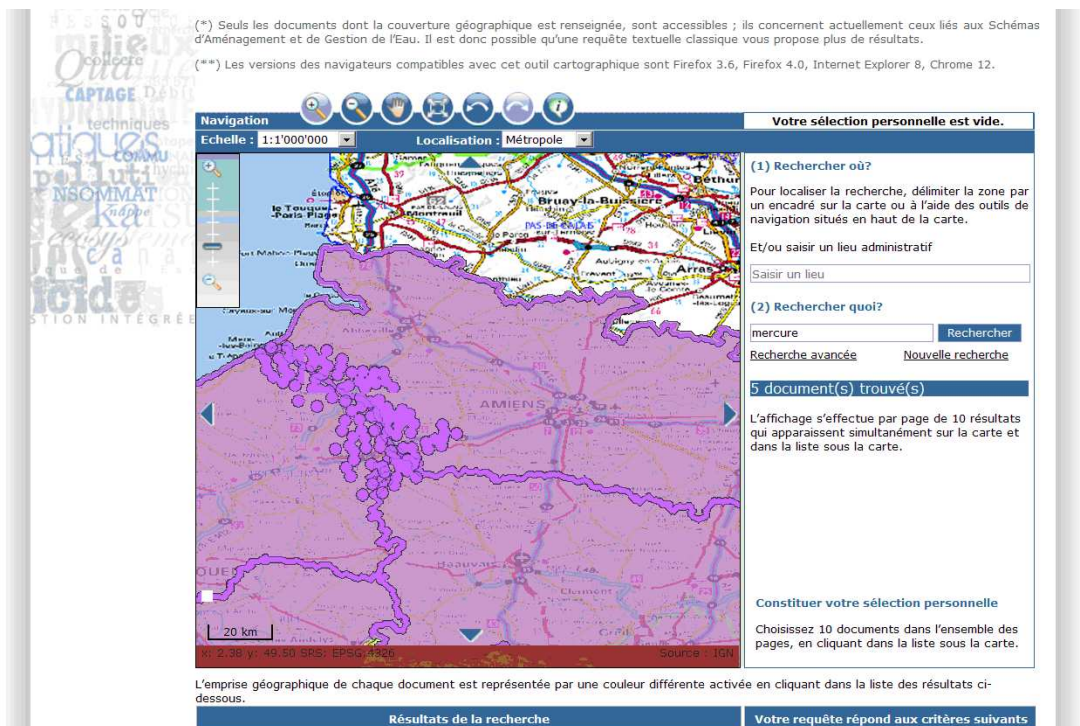


Fig 5: Example of geographical search

On the map:

- Solid colored areas indicate region,
- Solid lines outline the counties,
- Dots represent cities and towns.

## Improvements

A review of the improvements that have been made:

- July 2010: "Polyspot": a new search engine was configured, more efficient than the first one online.
- December 2010: geographical research method was developed.

Coming in 2011:

- The geographical research method will be on line,
- Saved searches will be available with e-mail alert. The portal will offer both professionals and members of the general public the opportunity to open a personal account which will allow researchers to record a search, refresh the search whenever desired or receive alert messages when new publications relevant to the saved search become available.
- New contributors will participate.

For further information regarding the portal: Contact: [francoise.bunch@onema.fr](mailto:francoise.bunch@onema.fr)

Onema, Hall C – Le Nadar, 5 square Félix Nadar, 94300 Vincennes, France, 01 45 14 36 00, [www.onema.fr](http://www.onema.fr)

# SHARING FRESHWATER DATA IN THE UK - OPPORTUNITIES AND CHALLENGES

**Hardy Schwamm**

Freshwater Biological Association, UK

## Data – who is taking care of it?

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There is evidence that data is not well preserved and curated. The magazine “Science” highlighted recently in a special edition on data management that data collection, curation, and access are central to scientific innovation<sup>1</sup>. However, a study found out that 80 per cent of scientists believe that there is not sufficient funding for data curation.

Most scientific data is created with public money, and there is growing pressure from funding bodies to make data accessible to the scientific community. Attitudes of researchers towards data sharing are not well-studied. There is also the question of who should look after and curate data. Librarians with their information management skills are well-equipped to take over this task.

## Role of the FBA

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The Freshwater Biological Association (FBA) itself is a data creator and data curator. The FBA looks after more than 60 historical datasets, from many parts of the UK and across the world, in which data collection continued over at least three years<sup>2</sup>.

In 2009, the FBA hosted a workshop on data curation and sharing. The participating organisations, academics, regulators and NGO's, acknowledged the importance of data management. As a result of this workshop, the FBA made data management one of its strategic objectives of the coming years and aims to become a leading institution in freshwater data sharing.

## Overview of the FBA data management projects

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In collaboration with academic partners, among them King's College London and the University of Manchester, the FBA secured funding for three data management projects:

1. FISHNet<sup>3</sup>

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<sup>1</sup> Science, 11 February 2011, vol. 331 no. 6018, pp. 692-693

<sup>2</sup> <http://www.fba.org.uk/datasets>

2. Fish.Link<sup>4</sup>

3. Defra Test catchments data archive<sup>5</sup>

The first project FISHNet was finished in April 2011 while the other two projects are ongoing.

## **FISHNet**

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FISHNet stands for Freshwater Information SHaring Network. It is a collaboration between King's College London's Centre for e-Research (CeRch) and the FBA. FISHNet allows researchers in multiple academic, governmental and voluntary-sector institutions to share their data in a sustainable subject repository.

At the beginning of the project, individual researchers were interviewed in order to understand the data management needs and attitudes of a dispersed research community. Some of the attitudes shown by researchers can be summarised as follows:

"I am not interested in sharing data, it's mine."

"My data is in notebooks and not digital."

"My data is digital but held on floppy disks somewhere in a drawer."

"My data can be shared, but you'll have to make sense of it without my help."

"We don't want to share our data as we already have a data management system."

"We're interested in adding our data but only if we have complete control of how it is used by others."

The outcome of the requirements gathering was that data creators (scientists and researchers) need an incentive that makes the effort of sharing data valuable. As an incentive a dataset can get a Digital Object Identifier (DOI), so it can be cited by others. Citations will increase the publications list of researchers and make their work more visible in the academic community.

Taking the requirements gathering on board, a pilot repository at the FBA was designed (using Fedora) which is able to ingest content deposited by users in multiple locations. Various metadata standards (MODS, PREMIS, CopyrightMD) are used to make repository compliant with other systems.

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<sup>3</sup> <http://www.jisc.ac.uk/whatwedo/programmes/mrd/rdmi/fishnet.aspx>

<sup>4</sup> <http://www.jisc.ac.uk/whatwedo/programmes/mrd/clip/fishlink.aspx>

<sup>5</sup> <http://new.freshwaterlife.org/web/dtc-archive/project>

In order to deal with copyright and licensing issues the dataset owner can decide if he or she wants to retain control over who can access the data or make it freely available to the public (using a Creative Commons license).

## **Fish.Link**

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Motivated by the large quantity of diverse data in the freshwater biology community, Fish.Link will provide a demonstrator of the benefits of publishing data by illustrating how data can be combined, repurposed and reused with attribution and provenance information to promote data sharing. The project intends to support the sharing and integration of research data through the application of lightweight vocabularies and vocabulary mapping, facilitating integration of data sets.

Fish.Link will use datasets that are stored in the FISHNet repository so and trying to ask scientific questions *across* various datasets and formats. Typical questions will refer to species names, water chemistry or locations of water bodies. The project will use W3C Metadata standards<sup>6</sup> such as OWL/OWL2, RDF, SPARQL, SKOS.

## **Demonstration Test Catchment (DTC) Archive.**

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The UK Department for Environment, Food and Rural Affairs (Defra) has authorised the Demonstration Test Catchment (DTC) project which examines aspects of three English river catchments: the Eden, Hampshire Avon and Wensum.

Together with King's College London, the FBA has the crucial task of receiving data gathered by three larger consortia (one for each of the three test catchments) and storing it in a dedicated archive in such a way that it is secure for the long term and easily accessible by consortia members, the people living in the three catchments, decision and policy makers. Tools, using leading edge technologies, will be developed to enable interrogation of the data to be achieved in an enjoyable, clear and efficient way and will be as accessible as possible.

In order to achieve this aim, it will be necessary to carry out much innovative work in order to develop the data archive into a format in which users can add or access information easily. The types of data are varied, including water chemistry, hydrological information, weather records, ecological data and 'soft data' (photographic and video images, subjective assessments, etc.). An effective archive will link interrelated components of this diverse data archive together so that users will be able to find relevant information in response to search queries. The archive project will run until 2014.

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<sup>6</sup> <http://www.w3.org/Metadata/>

## Conclusions (so far)

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There is a growing momentum for research into and support of data management. Most funding bodies now have policies in place which encourage or mandate the creation of a research data management plan and the deposit of research data in a recognised data centre. Information specialists in libraries and research centres have the skill set to drive this development forward.

It is crucial, however, to win the support of the data creators such ( academics, water use regulators, volunteer recorders etc). To do this, repositories need to be user-friendly and well-designed. As an additional benefit Fishnet will offer a DOI for datasets so that data can be referenced in the same way as scientific publications.

The semantic web offers new and exciting possibilities to link data and make data searching more efficient.

There are (of course) questions that are yet difficult to answer yet, for example how can repositories like FISHNet be sustainable long-term? Once data is stored in a repository, how can it be linked to scientific publications that used the data? The FBA intends to take data management to a European level and is looking for like-minded partners<sup>7</sup>!

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<sup>7</sup> If interested please contact [dis@fba.org.uk](mailto:dis@fba.org.uk)



# THE IODE ANNIVERSARY BIBLIOGRAPHY: 50 YEARS OF ACTIVITIES

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## Abstract

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The IODE Anniversary Bibliography was initiated by the Steering Committee of the IODE Anniversary International Conference which requested the Group of Experts on Marine Information Management (GE-MIM) to produce a bibliography of the output from IODE projects both closed and current. The bibliography documents and demonstrates the dynamic and substantial progress achieved by the IODE. This paper describes the work involved in presenting the bibliography and gives an overview of the technical side of work undertaken in September 2010 – March 2011.

**Keywords:** bibliographies, research programmes, oceanographic data, oceanographic information, IODE

## Introduction

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The 50th Anniversary of the IOC/IOE Programme is being celebrated during 2011. To mark this important milestone, IOE organized an Anniversary International Conference to demonstrate its' vision of new challenges faced by the data and information management communities and its' contribution to capacity building and society's needs for data and information products.

To document and demonstrate the dynamic and substantial progress achieved by the IOE, the Anniversary Steering Committee requested the Group of Experts on Marine Information Management (GE-MIM) to produce a bibliography of the output from IOE projects both closed and current.

Whilst this sounds a simple request which can be supported by bibliographic databases – one of the calls that GE-MIM has made over the years to the IOE Community, is to communicate, document and cite the work resulting from IOE Projects. But, it is only in the last few years in the burgeoning digital environment that the IOE Community is understanding the need for constant recording and depositing in repositories of their IOE project outcomes, to provide one measure of IOE success.



## Work organization

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The Bibliography Working Group included five members (Ms. Maria Kalenchits, Estonian Marine Institute, Estonia (3 month secondment to the IODE Project Office), Ms. Pauline Simpson, Central Caribbean Marine Institute, Cayman Islands, Mr. Marc Goovaerts, Hasselt University Belgium, Ms. Linda Pikula, NOAA, USA and Mr. Peter Pissirssens, Project Office for IODE, Belgium).

Technically, the work consisted of several phases.

During the first phase (September – November 2010), the relevant documents were identified through a series of search sessions applied to each digital resource and the metadata was imported (in some cases entered manually) into RefWorks reference database (<http://www.refworks.com>). References were associated with project names via linking to appropriate keywords (one reference can be linked to several projects). Duplicate references were identified and eliminated.

During the second phase (December-January 2010), IODE Community members were invited to check the collection, (which was exported into CiteULike software, a free on-line service for managing references, for this purpose), and report to the Bibliography Group any missing records.

During the third phase (January-February 2011), APA 6<sup>th</sup> (no casing applied) output format was modified and used to generate the bibliography. Enriching of metadata and considerable editing was done throughout the process.

Finally, the bibliography was transferred into a DSpace environment (March 2011). An IODE USB with the PDF version of the IODE Anniversary Bibliography was given to the participants at the IODE Anniversary Conference and the IODEXXI Session held in Liege, Belgium in March 2011.

The IODE Anniversary Bibliography is searchable on the website <http://biblio.iode.org>.

## General selection criteria

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Of necessity we have had to rely on available digital resources such as ASFA (Aquatic Sciences and Fisheries Abstracts), Web of Science (a citation database of Thomson Reuters), OceanDocs Repository, AVANO (a marine and aquatic sciences OAI harvester), UNESDOC Database as well as project websites. It was found to be inefficient to search Scirus web tool - the identification of relevant records (often from multi-thousand result retrieval) required considerable time and effort, and most of the relevant documents in Scirus appeared to duplicate those retrieved from other digital resources.

Resources were searched for project names (full names and acronyms); in the case of full-text databases, the document was considered relevant if the keyword (project name) appeared in the full text more than once. A decision was made not to include the projects initiated by other organizations and implemented in partnership with IODE (like GEWEX, CLIVAR, SPARC, CLiC, SOLAS, etc). In the case of the OBIS project, it was decided not to

include any documents published prior to 2011, the date the project was officially moved under the IODE umbrella. In addition to project reports and official websites, the bibliography includes conference presentations, scientific articles, monographs and dissertations.

## **The IODE Anniversary Bibliography - pdf version**

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The Bibliography records were formatted using RefWorks by application of the APA6 (no casing applied) output format which was slightly modified to meet the agreed bibliography reference style.

References are grouped by project names (records with multiple affiliation appear in the pdf bibliography more than once). Each group of references is preceded by the project description. Within the group, references are presented in author alphabetical order (the same author's papers are presented in chronological order by publishing date). Many references have active links directly to the full-text documents or are accessible through a repository link. The printed version of the Bibliography can easily be produced from the pdf file which is available through the IODE 50th anniversary webpage.

## **The IODE Anniversary Bibliography - online version**

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The IODE Anniversary Bibliography was migrated from RefWorks into a DSpace environment. The logistics was rather straightforward:

1. The Refworks database was downloaded as a csv-file. The original idea was to download it as single file. But the collections defined in Refworks were not exported as metadata. Therefore we needed to export it collection by collection, which further on created some extra work, as will be explained.
2. The csv files have to be cleaned up and adapted to DSpace import standards. We replaced the header with the appropriate Dublin Core definition and the specific interpunction – e.g. a ‘|’ to split up values in one field.
3. Most of the work went into the definition of the collection affiliation as defined in DSpace. This was partly manual work. If we have to do the exercise again, we would not rely on the collection structure of Refworks, but simply create an extra downloadable field.
4. Finally, the different csv-files were imported in a standard DSpace 1.7.0 repository, with an extended metadata set.

The database was set up at Hasselt University and will be hosted by IODE. The IODE Anniversary Bibliography is searchable on the website <http://biblio.iode.org>. References are browseable by projects, authors, titles, subjects and the issue date. The number of unique records in the initial bibliography is 2144.

## The Future of the Bibliography

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### User's feedback

Initial feedback from the community indicated that members wanted to contribute their retrospective records to ensure the outputs were correctly recorded.

### Updating

The amassing of the original bibliography was not a trivial task. We would hope that the IODE Community will contribute retrospective output metadata and full text to complete the record of IODE successes. If the community, in their work for IODE, are required to deposit their outcomes (papers, workshop reports, presentations etc) in their own institutional repository of OceanDocs, they can be harvested and any future reporting of IODE activities should become easier. Outputs from IODE Programmes are an essential metric to maintain as evidence of successful projects and funding. GE-MIM will consider at its' next meeting whether regular updates are required to be published and how this will be achieved.

Some possible actions:

IODC Community Members asked to contribute retrospective records of their programme outputs.

IOC/IODC to require all members to submit their metadata and full text output to an available repository from 2011 onwards.

GE-MIM will discuss how to monitor this requirement.

## Conclusions

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The IODE Anniversary Bibliography was created to celebrate 50 years of IODE Activities. The PDF version was a one- off information product, but it highlighted that IODE outputs are not being regularly recorded. If this can be achieved, the open access repository network, could provide to IOC/IODC useful evidential metrics and expose IODE project outcomes to a wide audience of policy makers, educators and scientists.

### *LIST OF THE IODE PROJECTS COVERED BY THE BIBLIOGRAPHY*

<b>Project Acronym</b>	<b>Project Full Name</b>	<b>No. of bib. records associated with the project (01.05.2011)</b>
GENERAL	IODC Documents	89

ASCABOS	Supporting Program for Capacity Building in the Black Sea Region	4
ASFA	Aquatic Sciences and Fisheries Abstracts	4
Data Publishing		4
DBCP	Data Buoy Cooperation Panel	45
ETDMP	JCOMM/IODE Expert Team on Data Management Practices	30
GEBCO	General Bathymetric Chart of the Oceans	109
GE-BICH	Group of Experts on Biological and Chemical Data Management and Exchange Practices	12
GE-MIM	IODE Group of Experts on <a href="#">Marine Information Management</a>	40
GE-TADE	Group of Experts on Technical Aspects of Data Exchange	15
GFD	Group of Experts on Format Development	2
GLOSS	Global Level of the Sea Surface; The Global Sea Level Observing System	165
GODAR	Global Oceanographic Data Archaeology and Rescue	35
GOOS	Global Ocean Observing System	457
GOSUD	Global Ocean Surface Underway Data	22
GTSP	Global Temperature-Salinity Profile Programme	39
IPY	The International Polar Year	3
JCOMM	Joint Technical Commission for Oceanography and Marine Meteorology	92

Marine XML		18
MEDAR/MEDATLAS	Mediterranean Data Archaeology and Rescue / MEDATLAS-Mediterranean Atlas	66
MEDI	Marine Environmental Data and Information Referral System	33
MOTIIVE	Marine Overlays on Topography for Annex II Valuation and Exploitation Project	3
NODC/RNODC/WDC	National Oceanographic Data Centres/Responsible National Oceanographic Data Centres/ World Data Centres	457
OBIS	Ocean Biogeochemical Information System	2
OCEAN DATA PORTAL		18
OCEAN DATA STANDARDS		5
OCEANDOCs		13
OCEANEXPERT		9
OCEANPC		7
OCEANPORTAL		13
OCEANTEACHER (ACADEMY)		24
ODIN		158
OPEN SCIENCE DIRECTORY		2
SEADATANET		23
SIMORC	System of Industry Metocean data for the Offshore	4

	and Research Communities	
VIRTUAL LABORATORY		1
WOD & WOA	World Ocean Database; WOA - World Ocean Atlas	291

***Bibliography references by date issued***

<b>Period of time</b>	<b>No. of records</b>
2010-2011	124
2000-2009	1412
1990-1999	436
1980-1989	103
1970-1979	53
1960-1969	3
1950-1959	2

# OPENING ACCESS TO EUROPEAN FUNDED PUBLICATIONS (FP7 AND ERC): THE OPENAIRE PROJECTALEXANDRA.DENIOT@SCD.UHP-NANCY.FR

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## Abstract

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European Commission and the European Research Council (ERC) have decided that scientific researches output has to be available for everyone in an open way. Researchers concerned, have to deposit their publication results in a compliant repository. OpenAIRE is the answer to these policies and offers a showcase and a helpdesk for researchers and publications.

Key words: open access, European Commission, ERC, scientific research, Openaire, FP7, researcher

## Context

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Open Access is the immediate, online, free availability of research outputs without the restrictions on use commonly imposed by publisher copyright agreements. It concerns the outputs that scholars normally give away free to be published – peer reviewed journal articles, conference papers and datasets of various kinds. Open Access provides the means to maximize the visibility and availability, and thus the uptake and use, of research outputs.

Here are some of the advantages of Open Access:

- **Access can be greatly improved:** Access to knowledge, information, and data is essential in higher education and research; and more generally, for sustained progress in society. Improved access is the basis for the transfer of knowledge (teaching), knowledge generation (research), and knowledge valorisation (civil society).
- **Increased visibility and higher citation rates:** Open Access articles are much more widely read than those which are not freely available on the Internet. Webwide availability leads to increased use which, in turn, raises citation rates, a fact that has been empirically supported by several studies. Depending on the field in question, Open Access articles achieve up to three times higher citation rates and they are cited much sooner (cf. for example Lawrence: Free online availability substantially increases a paper's impact, or Harnad & Brody: Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals).
- **Free Access to information:** Open Access content is freely available worldwide, thus enabling people from poorer countries to access and use scientific knowledge and information which they would not otherwise be able to afford.

## Open Access in FP7

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Currently the European Commission has two policies on Open Access in practice. Both aim to ensure that research results funded by the EU citizen are made available to the population at large for free. In this way, Open Access is considered as a way to improve the EU's return on research and development (R&D) investment.

In December 2007, the ERC Scientific Council published his Guidelines for Open Access , as a follow up of the 2006 Statement on Open Access. In August 2008, the European Commission launched the Open Access Pilot in FP7 that will run until the end of the Framework Programme.

These initiatives require that the researcher provides open access to articles resulting from EC funded research, within a specified time period. They apply if you are a grant recipient from ERC or from FP7 in one of the following Research Areas:

- Energy
- Environment (including Climate Change)
- Health
- Information and Communication Technologies (Cognitive Systems, Interaction, Robotics)
- Research Infrastructures (e-infrastructures)
- Science in society
- Socio-economic sciences and the humanities

## What to deposit

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- **Published version:** publisher's final version of the paper, including all modifications from the peer review process, copyediting and stylistic edits, and formatting changes (usually a PDF document) OR
- **Final manuscript accepted for publication:** final manuscript of a peer-reviewed paper accepted for journal publication, including all modifications from the peer review process, but not yet formatted by the publisher (also referred to as "post-print" version).

## Where to deposit

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Researchers should deposit final articles or manuscripts into the institutional repository of the research institution with which they are affiliated. If this is not possible, they should identify an appropriate subject based/thematic repository. The Commission provides a special repository for articles that can be stored neither in institutional nor in subject-based/thematic repositories.

Researchers should deposit final articles or manuscripts into:

- institutional repository of the research institution with which they are affiliated. OR
- appropriate subject based/thematic repository. OR



- the Orphan Repository for articles that can be stored neither in institutional nor in subject-based/thematic repositories

## When to deposit

	Six months	Twelve months
ERC	All grant recipients after 2007	
FP7	<p>In the thematic areas:  “Health”, “Energy”, “Environment” (including Climate Change), and  “Information &amp; communication technologies” (Cognitive systems”, “Interaction” and “Robotics”)</p> <p>In the activity:  “Research infrastructures” (e-infrastructures)</p>	<p>In the thematic area:  “Socio-economic Sciences and the Humanities”</p> <p>In the activity:  “Science in society”</p>

## OpenAIRE ([www.openaire.eu](http://www.openaire.eu))

To support the implementation of the ERC OA policy and the OA pilot in FP7, the European Commission decided to establish a project developing and establishing “an electronic infrastructure and supporting mechanisms for the identification, deposition, access, and monitoring of FP7 and ERC funded articles”. OpenAIRE (Open Access Infrastructure for Research in Europe), a three-year project funded under the Seventh Framework Programme (FP7) of the European Commission, is the project described above.

The main goals of OpenAIRE are to: support researchers in complying with the FP7 Open Access Pilot through a European Helpdesk System; support researchers in depositing their research publications in an institutional or disciplinary repository; build up an OpenAIRE portal and e-infrastructure for repository networks; explore scientific data management services together with 5 disciplinary communities.

OpenAIRE’s three main objectives are to:

- build support structures for researchers in depositing FP7 research publications through the establishment of the European Helpdesk and the outreach to all European member states through the operation and collaboration of 27 National Open Access Desks;
- establish and operate an electronic infrastructure for handling peer reviewed articles as well as other important forms of publications (pre-prints or conference publications). This is achieved through a portal that is the gateway to all user-level services offered

by the e-Infrastructure established, including access (search and browse) to scientific publications and other value-added functionality (post authoring tools, monitoring tools through analysis of document and usage statistics);

- work with several subject communities to explore the requirements, practices, incentives, workflows, data models, and technologies to deposit, access, and otherwise manipulate research datasets of various forms in combination with research publications.

## **VIRTUAL OPEN ACCESS AGRICULTURE & AQUACULTURE REPOSITORY: SHARING SCIENTIFIC AND SCHOLARLY RESEARCH RELATED TO AGRICULTURE, FOOD, AND ENVIRONMENT ([HTTP://VOA3R.EU](http://VOA3R.EU))**

**Marc Goovaerts**

VOA3R Partner, Hasselt University, Belgium

VOA3R is a European Research Consortium Project for digital libraries and stands for: "Virtual Open Access Agriculture & Aquaculture Repository: Sharing Scientific and Scholarly Research related to Agriculture, Food, and Environment". The general objective of the VOA3R project is to improve the spread of European agriculture and aquaculture research results by using an innovative approach to sharing open access research products.

Under a strict open access policy, the VOA3R service will connect libraries, archives and other publication systems by providing advanced search interfaces that include specifics aspects of research work (methods, variables, measures, instruments, techniques, etc.) of the particular domain. The users of the VOA3R service are researchers but also students and practitioners who either want to search for or to publish scientific research results. The project is targeted to the domain of Agriculture & Aquaculture, as it re-uses previous models for these domains, but the technology and models integrated are to a large extent transferable to other academic disciplines.

The VOA3R platform aims at reusing existing and mature metadata and semantics technology to deploy an advanced community-focused integrated service for the retrieval of relevant open content. The service will enable researchers to formulate their information needs in terms of elements of the scientific methods established in their field (variables, techniques, assessment methods, kinds of objects of interest, etc.) combined with topical descriptions as expressed in metadata. The community approach will enable the enhancement of information seeking with extended evaluation elements (as for example, ratings, public reviews, social tagging and links to supporting or conflicting reports) that complement and go beyond the traditional, anonymous peer review process which results are not made available openly.

The technology used will itself become open source, so that the model of the service can be adopted by enterprises (including SMEs) or other kinds of institutions as a value-added, community-oriented model for open access content.

The project partners are UDE, Germany; University of Alcalá, Spain; Agricultural University of Athens, Greece; Greek Research & Technology Network, Greece; Swedish University of Agriculture Sciences, Sweden; Hasselt University, Belgium; International Centre for Research in Organic Food Systems, Denmark; French National Institute for Agricultural Research, France; Czech University of Life Sciences, Czech Republic; ACTA Informatique, France; Agricultural Research Institute, Cyprus; Consorzio Interuniversitario, Italy; Technological Educational Institute of Athens, Greece; Food and Agriculture Organization of the United Nations (FAO).

# CITATION ANALYSIS AS TOOL FOR COLLECTION USE AND MANAGEMENT AT THE LIBRARY OF A RESEARCH INSTITUTE

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## Abstract

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In April 2006, the Flemish Institutes for Forestry and Game Management and for Nature Conservation merged into the Research Institute for Nature and Forest (INBO). Ever since, a new policy and research program has been implemented and 10 new research and 3 support groups were established. And although the electronic collections of the libraries of both institutes were incorporated into a central repository, the physical did not yet. A new collection development policy is currently worked out and will be implemented in 2011. In this process, bibliographical citation analysis seems to be promising as tool for collection management decisions.

In a first attempt to validate its usefulness, a data set of thirty scientific papers published by researchers from five different INBO research units during 2007-2010 was analyzed. About 23% of the cited journal issues were available in the INBO library's collections, with more than 50% of zone 1 and 2 journals, and 17% of zone 3 journals *sensu* Bradford. This pattern in zone 1 journals applied to all but one of the investigated research units. Possible measures to enhance accessibility to full text scientific papers in the near future are discussed.

## Introduction

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In April 2006, the Research Institute for Nature and Forest (INBO) was established from the merge of two Flemish governmental organisations, the Institute for Forestry and Game Management (IBW) and the Institute for Nature Conservation (IN). Whereas research at IBW and IN was mainly driven by fundamental research, INBO focuses more strongly on the support of the nature and forest policy and decision makers in Flanders. In this respect, priorities shifted towards applied, concurrent and question-driven research, and more fundamental research projects are carried out by partner scientific institutions including universities, unless they are situated in one of the long-term research objectives of INBO.

Together with the merge, an internal reorganisation was implemented. Two research departments (Biodiversity & Natural Environment; Nature management & Sustainable Use) were erected each comprising five research units, as well as a third department (Advice & Information - A&I) to provide general support to all INBO personnel. The A&I department encompasses three different service units providing assistance with e.g. lab and statistical analyses, ICT and library matters, but is also responsible for the production of reports and scientific advices. The new organisational structure and research scope created new challenges to the library's operations. It was decided to cope with this in an innovative and efficient way including periodical review and validations. Improving the library services and offering a sustainable investment in information technology and education of the library staff were put forward as primary goals.

One way to evaluate a collection development policy is by citation analysis which has been studied for over eighty years (Gross and Gross, 1927). It's based on the method of counting and ranking the frequency documents are referred to in bibliographies, footnotes, and/or indexing tools (Baker and Lancaster, 1991). Citation analysis can be applied to select and deselect materials as it provides insight into the materials that are selected by various user groups (Dickinson et al., 2009). Citation analysis is not without problems. Self- and in-house citing is mentioned as one of the most basic problems of citation analyses, as it appears to be substantial, with approximately 10 to 30% of all citations falling into this category (MacRoberts and MacRoberts, 1988; Tagliacozzo, 1977). For the present study, however, we expected these problems to be rather small. We come to this assumption based on the normative theory, which states that bibliographies are lists of influences and that authors cite in order to give credit where credit is due; that is, when an author uses information from another's work, he will cite that work (Smith, 1981).

For the first time, a citation analysis was performed at INBO. Our goals were (i) to investigate what proportion of references cited by INBO researchers is available in the INBO library, (ii) to investigate if the observed pattern is comparable in the different research units and what are the factors that affect it, (iii) and to explore if and in what way the current service can be optimized.

## Material and methods

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All peer-reviewed papers of INBO researchers published between 2007 and 2010 and available in ISI SCI were collected using information obtained from the ISI Science Citation Index (Thomson ISI, 2011). Only papers with an INBO researcher as senior or first author were included in the analysis. The complete reference, journal title, number of citations, and relevant information on the first author of each publication were recorded.

In order to compare patterns between research units based on a sufficiently large data set, papers were selected from 5 different research groups that published at least 6 papers in the above 4 years period. For each research unit we further selected 6 publications with the highest number of citations. If possible, 6 different authors per research unit were included.

For the citation analysis, the first author, journal title abbreviation and year of publication were recorded. We added the publication type (journal vs other) and citation type (in-house

vs. external) to the records. Cited journals were matched with the physical collections of our institute. Digital issues of journals were thus not included in this study due to the fact that digitization projects at INBO have only started quite recently. To pool the journal frequency data, we applied Bradford's Law (Bradford, 1948). According to this Law, on any subject, a small group of core journals (zone 1 journals) will provide 1/3 of the articles on that subject, a moderate number of less-core journals (zone 2 journals) will provide a second 1/3 of the articles on that subject, and a large number of peripheral journals will provide the final 1/3 of the articles on that subject. We finally estimated the availability (in our library) of the core journals of the citations in the 6 papers for each research unit.

## Results

The total number of peer-reviewed scientific papers published by INBO researchers (as first author) between 2007 and 2010 was 68, with a total number of 4,180 citations. Five of the 10 research units published at least 6 papers between 2007 and 2010 (see Table 1). These top-5 research units represent 79,4% of all publications that were recorded in 2007-2010, with the research unit Species Diversity as the most productive with 27,9% of all publications.

**Table 1. No of publications and citations of the most productive 5 research units**

INBO research unit	No. publications	No. citations
Species Diversity	19	1,336
Ecosystem Management	13	815
Environment and Climate	9	444
Ecosystem Diversity	7	533
Monitoring Biodiversity Policy	6	319
Total no. publications	54	3,447

The 30 selected publications (6 for each research unit, see Material and methods) resulted in a total number of 2,348 references. The research unit Species Diversity represents 30% of all citations, while the research group Monitoring Biodiversity Policy accounts for only 13,5% of the citations.

In-house (incl. self-) citation ratios prove to be very low (see Table 2), on average 1.6% of all citations used, and with only a very low variation between the different research units (1.0% - 2.1%). Our previous assumption that this type of citing would not strongly affect the results of the present study appears to be correct.

**Table 2. Comparison between in-house and total citations**

INBO research unit	In-house citations	Total citations
Species Diversity	15	707
Ecosystem Diversity	5	503
Ecosystem Management	7	471
Monitoring Biodiversity Policy	6	319
Environment and Climate	5	348
Total	38	2,348

A total of 1,811 out of 2,348 citations or early 77% of all citations referred to papers published in journals (Table 3), which is comparable with the commonly used number of 80 percent for the sciences in general (Bowman, 1990).

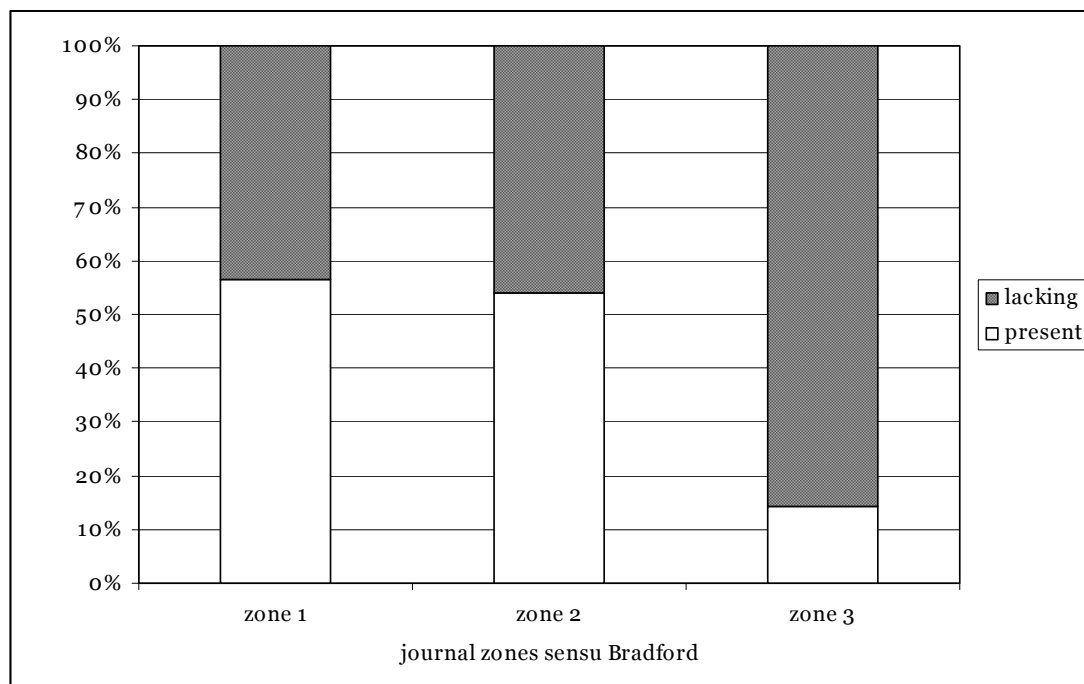
**Table 3. Comparison of the publication type of citations in 5 research units**

INBO Research unit	% books <sup>‡</sup>	% journals	Total (%)
Ecosystem Management	4,7	15,4	20,1
Ecosystem Diversity	5,7	15,7	21,4
Environment and Climate	2,3	12,6	14,8
Monitoring Biodiversity Policy	2,3	11,3	13,6
Species Diversity	8,1	22,0	30,1
Total	23,0	77,0	100

<sup>‡</sup> *also including proceedings, reports, annuals, etc ...*

The journal citations (1,811 from 574 journals) were further analyzed. According to our application of Bradford's Law, 30 journals are considered as core journals, 17 of which are present in INBO's library (Fig. 1). Journals of zones 1 and 2 encompass together 119 of the 574 journals. The remaining almost 80% of the journals were cited less than 3 times, and 57% of the journals were cited only once.

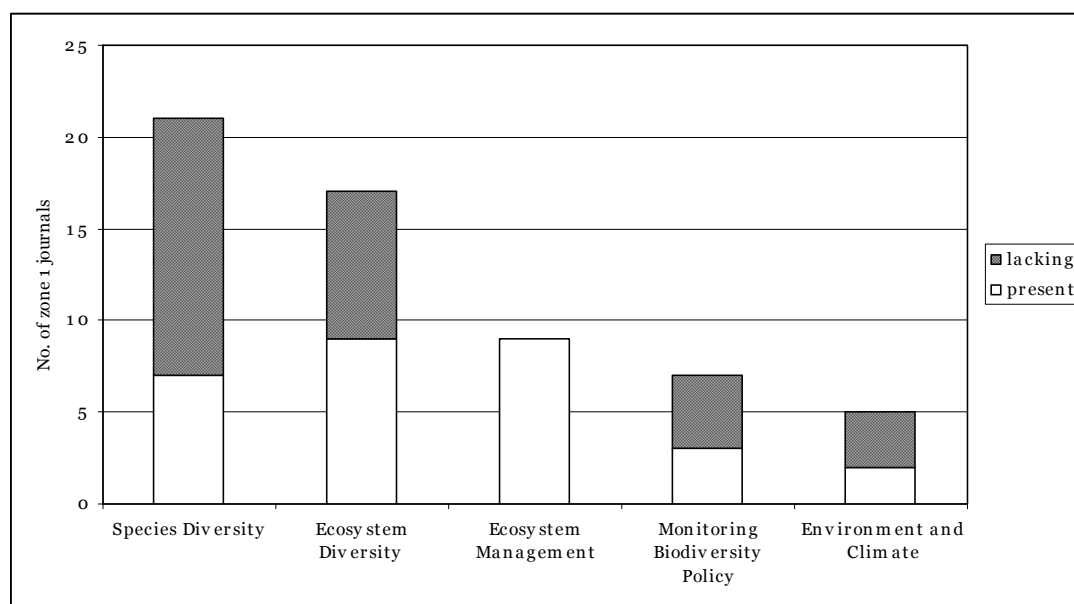
Figure 1 shows the results of the match between the cited journals and the library collections, divided in zones 1 to 3 according to Bradford's Law. The Figure reveals that over 83% of the zone 3 journals is not available in the library's collections, whereas this percentage is much higher for zone 1 and 2 journals, 56.7% and 53.9% resp.



*Figure 1. Comparison of presence or absence of journals in INBO's library collections, according to Bradford's zones.*

Figure 2 shows the distribution of the zone 1 journals over the 5 selected research units. Strikingly, the research unit Ecosystem Management can rely on a full availability of core journals in the organisation's library despite the fact that overall no less than 134 different journals were cited (as compared to e.g. 103 and 99 journals in research units Monitoring Biodiversity Policy and Environment and Climate resp.). In the remaining research units, the percentage of available journals ranges from 33.3% and 52.9%.





*Figure 2. Comparison of the number of zone 1 journals of citations over 5 research units, present or lacking in INBO's library collections*

## Discussion

Our study revealed that the INBO library holds only 22.6% of the journals that our researchers referred to in their papers published between 2007 and 2010. More than 50% of the journals assigned to zone 1 and 2 *sensu* Bradford (1948) proved available, which was the case in only 16,7% for zone 3 journals. In reality, papers from 444 different journals were not readily accessible in the physical collections of INBO's library.

This implies that researchers themselves had no other option than to do an extra effort to achieve these publications. In some cases, researchers got in touch with authors of recently published contributions directly or relied on partner institute and university facilities. In other cases they contacted the INBO library to purchase the requested papers, which required subsequent interlibrary loans (ILL) or purchases by commercial providers.

Undoubtedly, this process is very time-consuming for the researchers and possibly not very efficient. Indeed, it has happened that researchers looked for the same paper without being aware of each other's action. To improve the efficiency, the library as core information center has an important role to play in the near future.

Three major factors should be taken into account: time, budget and space. To tackle the time factor, a business analysis will be carried out among a representative group of researchers to visualise the different ways of publication search along the process of generating a scientific publication.

Available financial means tend to be constant or even decreasing, which have an obvious effect on the possible measures taken to extend the library collections. One option might focus on consortium agreements, an other on the purchase of (generally less expensive) zone 3 journals in particular.

At this moment, the library space is occupied to such an extent that additional physical collections might cause a storage problem. For this reason, a decision was made to develop a library policy focused on digital documents.

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# **SEARCH ENGINE OPTIMIZATION OF A FOREST FRAGMENTATION CONTENT MANAGEMENT SYSTEM: EXAMPLE OF THE FRAGFORNET WEBSITE**

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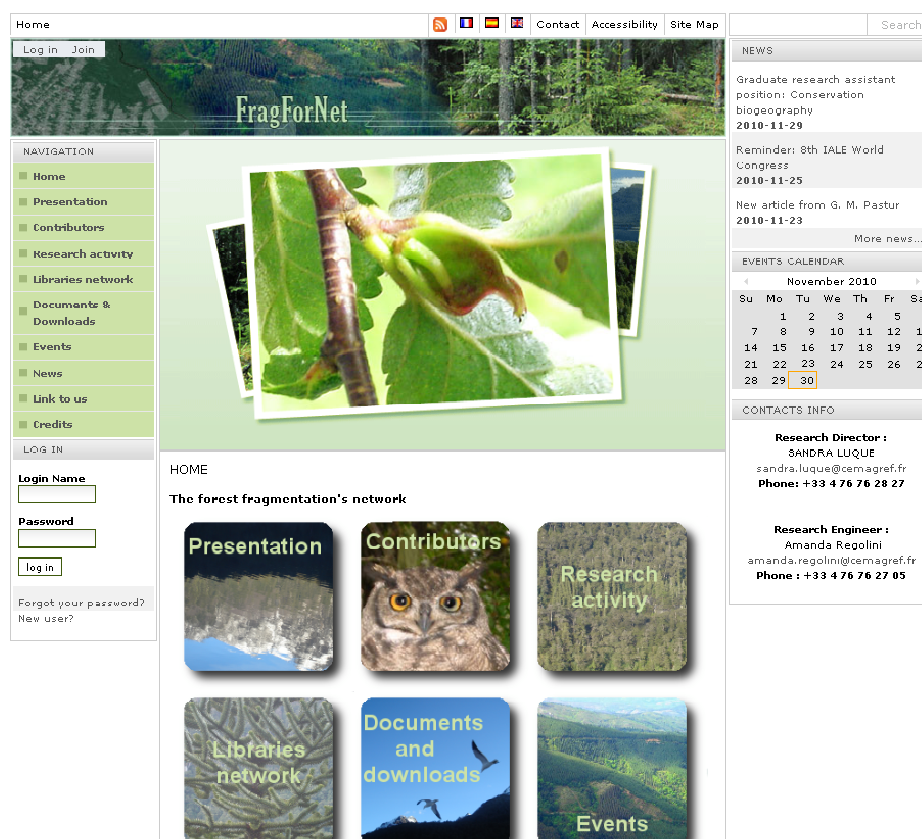
In order to explain how to follow through a search engine optimization campaign, this paper will show you how it was done for a particular website: Fragfornet. After a presentation of Fragfornet, you will be walked through the different steps of search engine optimization. Lastly the obtained results will be analyzed.

## **Fragfornet, a forest fragmentation network**

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Fragfornet is a network bringing together researchers and information professionals in order to better investigate and communicate about the issues of forest fragmentation in South America and around the world. It was created after an original workshop in Bariloche, Argentina: "Understanding Biodiversity Loss: A Workshop on Forest Fragmentation in South America" (26 – 30 June 2006). Its members are both researchers and information professionals. Fragfornet now gathers 160 members from 24 countries.

In order to help its members to communicate between themselves and towards stakeholders and socio-economical actors, a website has been launched at the end of 2007 (<http://fragfornet.grenoble.cemagref.fr>).



**Figure 15: Screen capture of FragforNet's website**

This website has two goals. Firstly, it allows members to communicate with each other: all members can deposit files of interest within their personal folder and their content is later published by moderator. Many pages are available for all visitors but some content is accessible to members only. Secondly, it is a communication tool towards FragforNet's targeted publics. It contains simple and scientific content to understand forests fragmentation and provides a news feed to help people follow the latest news in this field. This feed is syndicated on the GFIS website (Global Forest Information Service).

The website was generated through a "website factory", allowing the creation of dynamic websites on demand, using the content management system Zope Plone, for the employees of a French public institute, Cemagref. Therefore, the advices provided further along can be extrapolated to other websites coming from this "factory", to any website using the Zope Plone system and, even wider, to any dynamic website wanting to begin a search engine optimization.

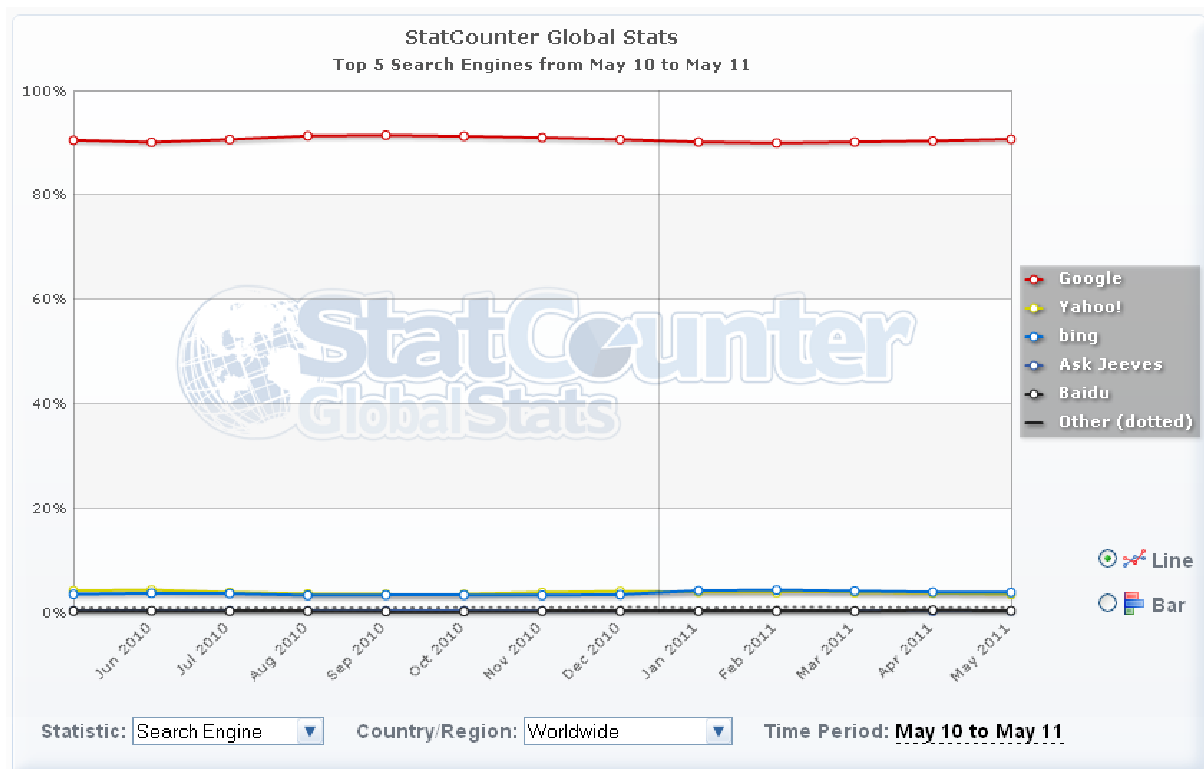
Lately, one of FragforNet's goals has been to touch a larger audience. It was observed that most of the site's visitors came from direct links or bookmarks. The network wanted to improve the number of visitors coming from search engines, to attract more people searching for information on forest fragmentation and neighbouring subjects as biodiversity loss, fragmented landscapes, etc. Thus, it was decided to use Search Engine Optimization.

Search Engine Optimization (SEO) is a set of techniques used by websites in order to be better indexed by search engines. The final goal is for the site to be better ranked by one or

several targeted search engines and therefore appearing higher in their results lists for specified requests. The following section will explain how to improve any website's attractiveness for search engines using simple tools.

## Search Engine Optimization: how to do it?

The first thing to define is what search engine to target. Though hundreds of search engines crawl over the Web, only five of them attract 99% of the worldwide traffic: Google, Yahoo!, Bing, Ask Jeeves and Baidu.



**Figure 16: Search engines market share worldwide from May 2010 to May 2011 (through: <http://gs.statcounter.com/>)**

In order to determine which one to target, here are the questions that must be answered: where do your current visitors come from and what search engines do the targeted audiences use? Considering the first question, 96% of Fragfornet visitors who reached the site from a search engine used Google (75% through Google's main page and 21% through Google Image). To answer the second question, it is important to know that Fragfornet targets English, French and Spanish speaking countries, all its pages being translated into those three languages. Worldwide, Google is the most popular search engine, though its market share varies from 83% in Northern America to 95% in Europe or even 97% in South America. With all those numbers, it was decided to focus on optimizing the website for

Googlebots: an optimization directed to them shall cover most of the targeted audience and shall also entail an improvement of the site's indexing by other search engines.

In order to optimize a website, it is important to focus on relevant keywords best describing its activity. But it's also important take into account the feasibility of such an optimization (i.e.: it would be very hard to get good results on a very competitive keyword as « ecology » which returns millions of results). In order to take those two criteria into account, it was chosen to use the following method. First, a wide list of potential keywords and expressions was established. Then the words' potential was analyzed according to their interest (by looking at their average monthly requests using Google Adwords keyword tool) and their feasibility (by looking at the number of found results when searching the word with Google).

A grade was awarded to each word following the table beneath and those with the highest grades were kept. Some very relevant keywords or expressions with lesser grades were kept nonetheless if they reflected precisely the content of the Website (like "forest fragmentation").

Interest		Feasibility	
Average number of monthly requests	Mark	Number of found results	Mark
0 - 1 000	0	0 - 1 000 000	20
1 000 - 10 000	5	1 000 000 - 10 000 000	15
10 000 - 50 000	10	10 000 000 - 50 000 000	10
50 000 - 100 000	15	50 000 000 - 100 000 000	5
100 000 and above	20	100 000 000 and above	0

**Figure 17: Grades attributed to potential keywords based on interest and feasibility**

## In Page Optimization

There are two sides to SEO: in page optimization and off page optimization. Off page optimization searches to raise the quantity and the quality of links pointing towards the website. It's very effective, but it inquires acting upon external websites (with partnerships, linkbaiting, etc.). As a first step of FragforNet's optimization, it was decided to focus upon what could be improved within the site's own pages: this approach is called in page optimization.

The goal of in page optimization is to improve one's site content, hereby making it more attractive to human visitors as well as search engines, by making changes within the site's pages while focusing on chosen themes and keywords. The main challenge is to place relevant keywords on strategic spots of the pages. The following paragraphs will detail what those spots are.

But first, caution: you need to understand at least a little how your website works in order to do this. A webpage is coded with HTML tags. If you're using a CMS (content management system), the code is automatically generated so you have to look by yourself how the information you enter is translated into code. For FragforNet, we spotted that, when we wrote the title of an article, this title was put in a <title> tag, but also in an editorial title tag <h1> and in the URL of the page.

For a maximum impact, important keywords about the page's content should go inside its <title> tag. This tag should be placed as high as possible within the HTML code, containing 5 to 10 descriptive words. And the page's title shall match its editorial title.

About visible text, it is widely considered that "Content is King". Content makes the value of your website, for search engines as well as for human readers. Essentially, the robots sent by search engines to index your website mimic the behaviour of a human reader: they first read the titles, they read attentively the beginning of the page, but their attention might waver when the text continues for too long, their eyes are attracted to underlined or bold text, and if you repeat yourself too much, they will get bored. That's why each page should contain at least 100 words, with the most important keywords at the beginning, and you should underline keywords for more weight using title tags <h1>, <strong> tags or links <a>.

An important criterion will be for your keywords to be in the URL of your pages. You might not be able to modify your domain name but you should know that it's best if you possess your own domain and that the older it is, the more seriously it will be taken by search engines. The norm also wants for you not to use accentuated characters and lower cases only.

Lastly, the ALT attributes of images tags are a good place to put some non-accentuated or misspelled words in order to attract visitors who used flawed spelling when using search engines.

## Unwinding of FragforNet's SEO

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FragforNet's SEO took place during the year 2010. During January and February, a preliminary study was conducted and the keywords' pool was created. In May and June occurred the in page optimization of the website. The first effects of this SEO campaign were visible barely a week after the end of the site's optimization, and those immediate consequences were intensely followed during June. Since then, in order to maintain the observed improvements, a monthly follow-up has been conducted. At the beginning of each month, data is collected in order to produce a short report. And, in order to maintain a good positioning, the updates of the website have increased from one each month to two or three each week. Optimization really is a long term project: you must monitor it closely and update the website regularly in order to maintain good results.

## Obtained results

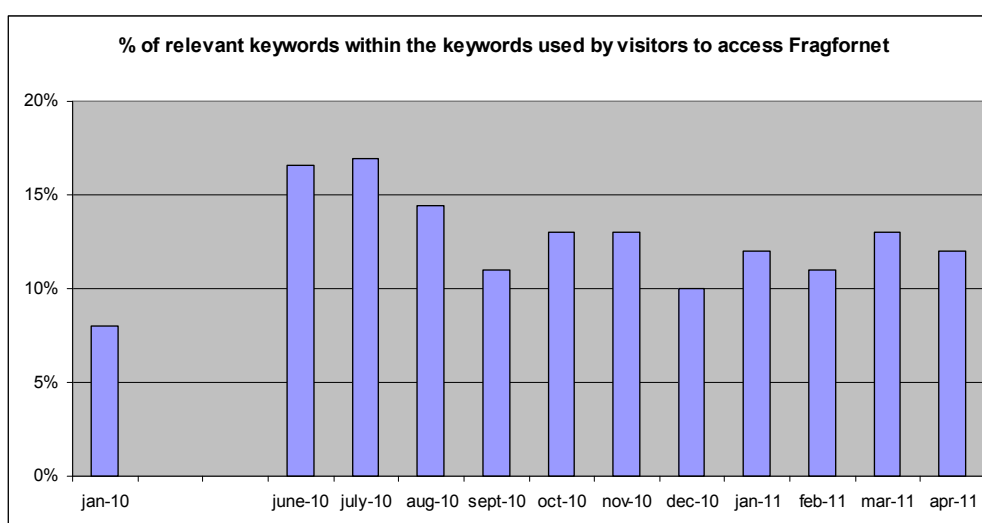
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Progress was evaluated through three ways.

Firstly, we looked at FragforNet's position within Google's results pages for simple searches based on the keywords' pool. Actually, FragforNet stayed invisible for many keywords (it did not appear in the first 100 results), but it was observed that FragforNet's position varies greatly under the impulse of news updates. Thus, it is essential to update the site very regularly to maintain its Google ranking. However, our efforts paid and FragforNet now constantly appears on the first results' page of Google France for the words « fragmentation forestière ».

Secondly, we observed the keywords used by FragforNet's visitors to access our website. The top keywords were mainly generic words for which FragforNet stayed invisible on Google (as "biodiversity", "fragmentation", "ecology", etc.) but they were used in more complex request (like "Brazil biodiversity loss" or "koala landscape fragmentation"). The pool's keywords use in such requests doubled after the site's optimization and is now stable around 6% of the keywords used to reach our website. This means that FragforNet has less visitors stumbling accidentally on its site and more who have arrived there through a search relevant to the site's content.

Thirdly, we measured the number of different visitors by month on the site. The website's traffic has always varied a lot, according to the period of the year or the events to which FragforNet's members participate. Nevertheless, the comparison of the traffic for a same month over the years allows observing that the optimization of the website benefited the network with an increase in its traffic.



**Figure 18: Relevant keywords used by visitors to access FragforNet**

## Conclusion

In conclusion, Search Engine Optimization is indeed an effective way to improve the quantity and above all the quality of a website's traffic. But it is easier to input if SEO has been incorporated since the very beginning of the site's project planning. It really is meant to be an uninterrupted, long-term work, lasting the whole life of the website.



In order to improve those results, it is recommended to continue gathering data like presented above to better evaluate and anticipate the site's needs in optimization. It is very important to update the site very regularly to maintain its attractiveness to search engines' robots as well as to its human readers. Lastly, it will be possible to consider an optimization on off-page criterions in order to improve the quantity and quality of the external links leading to the site, which can be a very effective way to improve a website's ranking in search engines.

## **HOW NON-MAINSTREAM PUBLISHED BOOKS FIND THEIR WAY INTO LIBRARIES**

**Anneli Meeder**  
NHBS, Devon, UK

Most books found on the shelves in special libraries are either published by large scientific publishing houses, or by specialists who publish only on one subject, or the books can be classified as grey literature. This talk is about the books that fall in between – the titles that are published with ISBN and RRP, are not available in e-books collections, and the publishers and their books are likely to be unknown to acquisitions librarians. With examples of recently published books in Marine Science, I will attempt to show the different types of publications that are likely to be missed, and how librarians can stay ahead of the curve.

**AS TIME GOES BY... A READER CAUGHT IN THE INFORMATION NET.  
THE LIBRARY OF THE SEA FISHERIES INSTITUTE IN GDYNIA, POLAND  
AS SEEN BY ITS USERS ON THE 90TH ANNIVERSARY OF ITS FOUNDING**

**Magorzata Grabowska Popow**

Head of the Scientific Information Center of SFI  
Sea Fisheries Institute, Gdynia, Poland

The “information societies” in all the countries of the so-called old EU are at a European level. They achieved this as early as 2006 when the implementation of the fundamental elements of these information societies was concluded. Work in the EU is currently focused on the continued construction of digital libraries and repositories.

Thus, it is possible to imagine that the residents of the countries of the “old EU” are caught up in an information network comprising different sources from the Internet to digital libraries and repositories, to AV media and information obtained traditionally from reading the printed word.

In Poland, there is not yet an information society to speak of because both decision making and financing have been neglected. However, the average resident of Poland is not spared this information onslaught, and he or she is bombarded from all sides daily with various types of information that requires classification and long reflection.

Unfortunately, the results of readership studies conducted by the Polish National Library in 2010 are not optimistic. The most disturbing study result was that in the year studied 56% of Poles questioned did not read any books – either printed or electronic, and 25% of this number were respondents with higher educations.

Responses to another survey question indicated that 46% of the Poles questioned (including 20% of respondents with higher educations) in the preceding month had not read any books nor articles or short stories, including those from the Internet, of more than three pages in length. If a real reader is defined as an individuals who reads at least six books annually (in any form – printed or digital), then readership in Poland has remained at a stable, low level for the last several years.

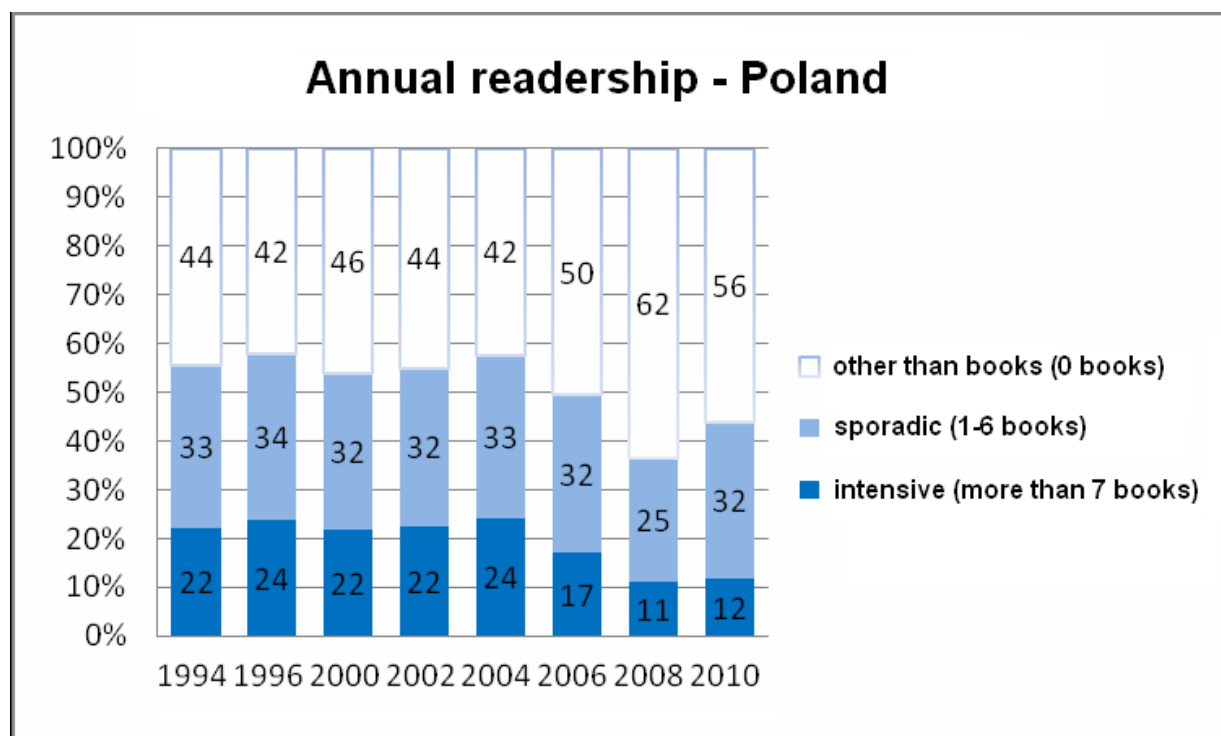


Fig. 1. Book readership in the preceding 12 months in percentages – Poland in 1994 – 2010.

Based on materials by Olga Dawidowicz-Chymkowska and Izabela Koryś available at <http://www.bn.org.pl/download/document/1297852803.pdf>

To build a new type of society, and information society, people have to be persuaded to read, and who can do this better than librarians?. If our aim is to present reading as a attractive way of garnering information, then first we have to listen carefully to our potential readers and remain open to new ways of communicating.

Examples of this include making library catalogues available on the Internet, building digital libraries, and organizing access to a wide range of information including that available in data bases. Through these measures, librarians uphold tradition while simultaneously helping to create a new type of social knowledge.

Information media are usually divided into the monologue (radio, TV, press) and dialogue (Internet) media. The latter has created a new audience, referred to as a prosumer who is simultaneously a producer and a consumer of information. This has been possible thanks to the emergence of Web 2.0 networking services.

Under these circumstances, the monologue media has had to adjust their rules of engagement with the consumer; one example is audience participation in television programs. We are also witnessing the synergy and convergence of media, or borrowing forms of communication from the consumer (making references to websites during radio and television programs).

Libraries do not function in isolation. They evolve just like their surroundings, as does the understanding of their function and role in the community. They are no longer just lending libraries; they have become true centers for culture, knowledge, and information where, alongside traditional services, readers, or perhaps today – clients, have access to a variety of information. Thus, libraries are beginning to offer two sources of information – printed (which will not disappear) and electronic, including free access to data bases and resources of cultural heritage. All modern libraries, but especially scientific libraries, must continually update their collections of printed materials, expand their on-line services, and educate readers continually using the Internet. These unique libraries offer the widest and most diverse range of information available. At the same time, librarians are becoming experts at searching for, filtering, and analyzing information, and specialists in digital and electronic information resources. Today's librarian acts as a guide for the reader, who, frequently inundated, has difficulty finding correct, reliable information. Somehow, readers still seem to appreciate personal assistance from librarians, which is something no computer is capable of replacing. Simultaneously, some library readers, especially younger ones, prefer instant, easy access to information that has not been evaluated by anyone.

In addition to traditional libraries, digital libraries are emerging. These allow readers everywhere to access information simultaneously for free. Most libraries are, however, hybrids with collections of printed matter and electronic information available on various devices. Today's readers, or audience, is faced with the serious problem of determining which information is reliable. While traditional media, especially books, are reviewed by specialists prior to printing, the information on the Internet is virtually unfettered. On the other hand, censorship, which can stem the free flow of information, is nonexistent on the Internet with Internauts themselves acting as critics.

There is much discussion at the moment about Library 2.0, in which the reader becomes a prosumer, and his or her opinions and knowledge posted on library forums inspire librarians to develop and innovate continually. Reviews of books, evaluations of collections, and rankings on library Internet sites are all invaluable.

The Scientific Library of the Sea Fisheries Institute in Gdynia, like the Institute itself, celebrates its 90<sup>th</sup> anniversary in 2011. And like the Institute, it continues to grow and develop.



Photograph 1. Marine Station in Hel. (SFI Archive)



Photograph 2. Main entrance to the Sea Fisheries Institute in Gdynia. (Author's archive)

The modest collection of 1921 comprised about fifty volumes donated by the Department of Maritime Affairs of the Ministry of Military Affairs, the Ministry of Religious Affairs and Public Education and publications from Prussian institutions such as Westpreussischer Fischerei-Verein in Gdańsk. By 1939 the collection numbered over three thousand volumes. During WWII, the lion's share of the collection was removed through Szczecin to Germany. Only about a hundred books were saved; however, after the war in 1946 approximately 70% of the collection, or 2,000 volumes, was recovered.

Following many organizational changes, the library was assigned its current status in 2006 as a fundamental part of the Center for Scientific Information.



**Photograph 3. Reading room – Scientific Library of the SFI in Gdynia. (Archive of M. Czoska)**

Currently, the collection of the SFI Scientific Library comprises approximately 11,000 books and 12,000 periodicals. After the library's collection was inventoried and sorted in 2008, the number of books and periodicals in the collection from 2005 to 2010 decreased. Some of the collection was donated to schools and public libraries.

The library's collection comprises both loaned and purchased volumes. In recent years, most volumes have been purchased from foreign publishers, while most periodical subscriptions are from Polish publishers and most foreign periodicals are acquired through exchange. Thanks to access to full-text services such as Elsevier, Springer, and EBSCO, the library has been able to save on subscriptions while providing its readers with full access to literature both in the library and away from it with individual passwords.

• Table 1. Library resources – books and periodicals

Years	1921-1932	1939	1946	1975	1980	1985	1990	1995	2000	2005	2010
Volumes	1000	3000	2000	21919	23191	23546	23583	24265	25154	25858	22833

As times changed, so did the Institute, and the collection of the library acquired new dimensions. In addition to resources printed on paper, there were others. Vinyl records and magnetic tapes, usually to aid Institute employees in learning foreign languages, were added to the collections and then later replaced by CDs, the latter of which have dominated the library's electronic resources for years. The library has stored a variety of information on CD such as data bases like ASFA, conference materials, scientific papers from other institutions, etc. In recent years, the CD has been replaced by the DVD, and on-line access to ASFA has been available since 2003.

**Table 2. Number of times SFI employees accessed the on-line ASFA data base**

Year	2003	2005	2007	2010
Number of times accessed	4341	3700	5955	5871

On-line access to various full text periodical services caused a decline in ASFA data base use. However, this was short-lived because the ASFA data base was recognized as irreplaceable with regard to marine and fresh water issues. Additionally, since 2009 links contained in the abstracts allow accessing full texts.

The SFI Library's traditional card catalogues were supplemented in the 1990s, but not replaced by, computerized catalogues. These went on-line in 2008 using a program written by one of the Institute's IT staff.

International cooperation undertaken by the SFI Center for Scientific Information within the frameworks of EURASLIC and IAMSLIC and participation in the IOC/IODE project led to the Center's admission to CEEMAR, where articles, and shortly books, published by the Sea Fisheries Institute will be deposited systematically.

In January 2011, the Sea Fisheries Institute became an official partner of the Pomeranian Digital Library <http://pbc.gda.pl/dlibra>, and as such, the SFI will receive assistance in scanning the most valuable volumes in its collection. This is just the beginning, but there is hope that digital resources will be available on the Internet, on the Institute's website, at the Pomeranian Digital Library, and at CEEMAR.

The Scientific Library of the SFI at the Pomeranian Digital Library: [http://pbc.gda.pl/dlibra/docmetadata?id=7581&from=&dirids=1&ver\\_id=427176&lp=1&QI=!28E7517721C2228DE1723C7EACF5C22B-12](http://pbc.gda.pl/dlibra/docmetadata?id=7581&from=&dirids=1&ver_id=427176&lp=1&QI=!28E7517721C2228DE1723C7EACF5C22B-12)

The Scientific Library of the SFI at CEEMAR: <http://www.ceemar.org/dspace/handle/11099/5>

An important responsibility of the Center for Scientific Information has always been facilitating requests by Institute staff for inter-library loans and other services with Polish and foreign libraries. These functions have also undergone change. Currently, in addition to the traditional lending of books and periodicals, electronic publications, which are preferred by staff, are now on offer. And the traditional post has been replaced by electronic post. Similarly, most articles received at the SFI Library are in electronic format.

While the library has changed, including its outward appearance after the renovation in 2008, over the last ninety years, its readership has changed little. Since its inception, the library has welcomed institute staff, doctoral candidates, university and secondary students, and employees of various firms involved with fisheries. Naturally, as mentioned in the introduction, reader expectations have changes as have the sources from which information is drawn.

While there are always some readers who want quick access to information and complete answers to their queries, obviously in Polish and not in too much detail, there are also serious researchers who find the library's opening hours too short. Change has also been noted in the ways readers record the information they acquire in the library. The reigning method for many years was the photocopier, but this has been replaced by the digital photograph – readers bring their digital cameras to the library and no longer require photocopies.

- Table 3. Readers using SFI Library resources either in the reading room or through borrowing

Year	1975	1980	1985	1990	1995	2000	2005	2010
Number of readers	1600	1200	900	420	1232	1576	855	1020

The number of readers visiting the library remains at a stable level. However, in the early 1990s there was a marked decrease in this number, which was likely linked to the newly available technologies and the initial feeling that the Internet was a superior source of information to traditional printed texts. Over time, it appeared that the two sources of knowledge are complementary, and readers returned to the library.

Between February and March 2011, readers visiting the Scientific Library at the SFI in Gdynia were asked to complete questionnaires to allow the librarians to view the library through the readers' eyes.

The questionnaire comprised fourteen questions and the library's readers were willing participants in the survey, and a total of 56 questionnaires were collected and analyzed.

Here are the results:

### **Question 1. Status of questionnaire respondents (employed, university students, secondary students, other)**

University students	Employed	Secondary students	Other
21%	46%	13%	20%

The majority of readers visiting the library are employed, and the majority of them are Institute employees. The group 'other' included doctoral candidates and retirees of the SFI and other institutions.

### Question 2. Where did you hear about the Scientific Library at the SFI?

From the Internet	SFI employee	From a friend	Don't recall
51%	46 %	2%	1%

The SFI website is fulfilling its role as a source of information about the library. Over half of respondents learned about the library from the Internet.

### Question 3. When did you begin using the library at the SFI?

1 year ago	2 years ago	3 years ago	Over 3 years ago
1%	3%	2%	94%

The decided majority of the readers have been using the library for more than three years. Within this group, there are readers who have been visiting the library for ten or even twenty years.

### Question 4. Which forms of information do you use at the library of the SFI?

Books	Periodicals	Data bases	Other
100%	100%	55%	22%

The questionnaire indicated that written sources of information have not become redundant. All of the readers visiting the library used books and periodicals. More than half of respondents utilized on-line data bases, especially ASFA. Readers also used the collection of CDs, and mentioned the librarians as a source of information.

### Question 5. What changes have you noted in the functioning of the library over the past five years?

New books and	Computerization	New look of the	Other
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periodicals		reading room	
43%	100%	34%	18%

All respondents mentioned the computerization of the library as the most important change to have occurred in recent years. The respondents also underscored the new forms of library lending including PDFs instead of photocopies, on-line catalogues with reservation capabilities, and electronic reminders of return dates. Nearly half of respondents noted that the collection of books had grown, many respondents commented on the changes in equipment in the library, and some noted the more helpful attitudes of the librarians.

#### **Question 6. For what purpose do you use the information obtained in the library of the SFI?**

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Research	Personal information	University study	School
56%	10%	21%	13%

The decided majority of the respondents planned to use the materials from the library at the SFI for research including in publications, grants, and projects. University students needed materials for seminar, engineering or diploma theses, while secondary school students needed information for contest and projects.

#### **Question 7. How would you rate the service in the library?**

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Excellent	Very good	Good	Poor
18%	77%	5%	-

These responses made the librarians very happy.

#### **Question 8. Does the on-line library system and its various functions make searching for materials easier?**

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Decidedly yes	Yes	No	Don't know
35%	52%	2%	8%

Respondents answering “don't know” had no understanding of the computerized lending system, the on-line catalogue, etc. The readers who thought the on-line system did not help them use the library declared preferences for assistance from librarians and searching card catalogues.

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**Question 9. What difficulties do you encounter when using the resources of the Scientific Library at the SFI?**

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Opening hours	Opening days	Other	None
10%	13%	41%	36%

Nearly half of respondents reported no problems with the functioning of the library. Students from universities and secondary schools noted that the library should be open all week, as did some employed respondents. This last group also argued for longer opening hours. Other disadvantages of the library included access to too few data bases, e-books, and too few publications from the fields of economics and sociology. Respondents also recommended expanding on-line cataloguing services to include waiting lists for publications, or the possibility of checking one's own borrowing history. Readers from outside the Institute complained about private individuals not being able to borrow materials.

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**Question 10. Should the card catalogue be liquidated leaving just the on-line catalogue?**

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Yes	No	Don't know
6%	82%	12%

As is apparent, the decided majority responded no, which was in favour of maintaining the traditional card catalogue, and all respondents cited the unreliable nature of computerized systems. Respondents who were in favour of liquidating the card catalogue also mentioned the problem of how to best secure the computerized catalogue.

Evidently, most respondents see the reason behind of maintaining paper subscriptions. Those respondents in favour of eliminating them suggested that the money saved could be put towards purchasing on-line subscriptions to more periodicals that are not in the current base of full-text articles.

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**Question 11. Should access to full-text bases mean that tradition (paper) subscriptions are discontinued?**

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Yes	No	Don't know
14%	80%	6%

**Question 12. With the prevalence of Internet access, do you find that access to the library at the SFI is of secondary importance?**

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Yes	No	Don't knowAs
3%	96%	1%

As indicated by the respondents, the overwhelming majority feel it is very important to have access to the library at the SFI. Most of the respondents mentioned that the library provides them with access to oral information, librarian assistance in finding information, and they also mentioned the lack of full-text availability on the Internet and a lack of confidence in the information available on the Internet.

**Question 13. Do you consider books to be worse, better, or equally as good sources of information in comparison to the Internet, and why?**

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Worse	Better	Equally as good
1%	73%	26%

As indicated, readers are most loyal to books and periodicals. They underscored that such works were most frequently reviewed and thus they were more reliable than materials found on the Internet.

**Question 14. What would you change in the functioning of the library?**

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Opening days	Opening hours	Other	Nothing
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13%	10%	41%	36%
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As already discussed in question 9, some respondents want the library to be open all week. Since it is an integral part of the Institute, which is open from Monday to Friday, this is impossible. Wednesday is reserved for the librarians to work on cataloguing and tend to other matters, and because of the modest number of staff, it would be difficult to extend the opening hours of the library. More than a third of respondents are satisfied with the functioning of the library, and they see no reason “to fix something that isn't broken”.

However, more than 40% of respondents specified things that they would like to have at the library. These included wider access to full-text bases and e-books and the purchase of better computers, which is dependent on library financing and the financial situation of the Institute. However, other suggestions were made that can be implemented quickly. Requests were made for more frequent library training sessions, adding new functions to the computer system, redesigning the website to make all essential information easily accessible, and more precise descriptions of newly acquired books. As far as loaning books to private persons is concerned, the position is maintained that this can only be done through that person's library, which will take responsibility for the books loaned to them by the library at the SFI. Library policy permits photocopying and photographing material, and this compensates for not lending to private persons. In order to borrow a book, the outside reader has to make a concerted effort to do so. This issue will be partially solved in the near future when our digital library with publications by the Institute goes on-line.

In their answers to the questionnaire, readers have indicated that they like the Institute library, and they are satisfied with the changes that have taken place there over the past few years. To the contented surprise of the librarians, the respondents declared their desire to maintain both the traditional card catalogue and paper subscriptions.

Hopefully, the development of the library will accompany, as it always has, the development of the Institute, and that both will survive longer than the coming ninety years.

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# THE LIBRARY AT THE FISH RESOURCES RESEARCH DEPARTMENT OF THE INSTITUTE „BIOR” IN LATVIA – HISTORY, COLLECTION, AND NOWADAYS OPPORTUNITIES IN „CATCHING” OF INFORMATION

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## Abstract

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The Scientific Library at the Fish Resources Research Department of newly established Institute of Food Safety, Animal Health and Environment „BIOR” nowadays is one of 38 specialist libraries in Latvia. The Library was founded in 1945, when the Latvian Department of the All-Union Research Institute of Marine Fisheries and Oceanography (VNIRO) was established in Riga. The Library inherited a rich collection of scientific volumes from the Fishery Laboratory (established in 1929). In 1959 the Latvian Department became the Fisheries Research Institute, further named as the Baltic Fisheries Research Institute (1962 – 1991). Along the development of the fisheries research at the Baltic Sea region the Library's holdings and its importance also grew. After the restoration of independence of Latvia, since 1991, when the Latvian Fisheries Research Institute was established, the Library was a part of it, but later formed a structural unit of the Latvian Fish Resources Agency (2004 – 2009). Since 2010 the Scientific Library is a structural unit of the Fish Resources Research Department of the Institute „BIOR”. Now the Library houses about 9000 books and more than 20000 units of periodicals, many documents of ICES, FAO, IBSFC, NAFO; scientific reports and manuscripts. The topics of the collection are: ichthyology and marine biology, hydrobiology, fisheries and aquaculture, as well as hydrology and oceanography. The main Library's activities in 2000-s included the acquisition of valuable foreign monographs (thanks to the financial support of the Fish Fund of Latvia), creation of digital collections of valuable publications, participation in trainings in Marine Information Management (MIM) organized by IODE and EURASLIC. The WebPages devoted the Scientific Library and open access resources on marine and aquatic sciences have been added to the new website of the Institute [www.bior.gov.lv](http://www.bior.gov.lv) and since 2010 are available in Latvian, English and Russian. In spite of difficulties and the main problem of insufficiency of staff, the Library has been developed an information support to researchers, students and fishermen using its own holdings, national and international interlibrary collaboration and searching in the Internet resources, including open access repositories. Many requests of our scientists have been fulfilled with a great and kindly assistance of EURASLIC.

The history of the Scientific Library at the Fish Resources Research Department of the Institute of Food Safety, Animal Health and Environment „BIOR” (established in 2010) is closely linked with the history of institutions conducted fisheries research as well as marine and inland water investigations in Latvia.

The Scientific Library was founded after the end of World War II, in May of 1945, when the Latvian Department of the All-Union Research Institute of Marine Fisheries and Oceanography (VNIRO) was established in Riga, and since this time all Latvian fisheries research and the related environmental investigations were concentrated into one institution.

The Library inherited a rich collection of scientific volumes from the Fishery Laboratory, founded in 1929 at the Department of Fishery and Fish Culture of the Ministry of Agriculture of Latvia.

In 1959 the Latvian Department became the Fisheries Research Institute, in 1961 named as the Baltic Fisheries Research Institute (BaltNIIRH). During the following years the Institute's capacity progressively grew.

In the 1980s the Baltic Fisheries Research Institute developed into a large regional institute of the Baltic Basin with 15 laboratories and more than 200 employees. The laboratories conducted comprehensive research on oceanography, hydrochemistry and hydrobiology; fish stocks in marine, coastal and inland waters; aquaculture and artificial restocking of fish; mathematical modeling; fish processing technology and fisheries economics.

Research results were published in the following regular Russian language publications of the Institute: *Proceedings of Latvian Department of VNIRO*, vol. 1 and 2 (1953-1957), *Proceedings of Baltic Fisheries Research Institute*, vol. 3 and 4 (1961-1970), *Fisheries Research in the Basin of the Baltic Sea*, No. 1-18 (1966-1983), as well as in special editions.

Along the development of the fisheries research at the Baltic Sea region the Library's holdings and its importance also grew. During this period the Library's collection grew with the addition of many Russian language serial publications produced by other fisheries research institutes of the former USSR, as well as books and scientific journals.

Since the 1970s the international cooperation of Latvian fisheries scientists also developed. BaltNIIRH closely collaborated with the Institute of Marine Fishery and Fish Processing (IfH) of the GDR in Rostock and the Polish Sea Fisheries Institute (MIR) in Gdynia in coordination of research methods and surveys, fish stock assessments and preparation of the forecasts. The scientific results were published in joint editions by BaltNIIRH and IfH of the journal *Fischerei-Forschung* (1975-1989), published in Rostock. In 1984 in the *Proceedings on Biological Productivity of the Baltic Sea* (vol. 1 - 3) joint scientific results of scientists of the USSR, Poland, and GDR, were published.

After the restoration of independence of Latvia, since 1991, when the Latvian Fisheries Research Institute (LATFRI) was established, the Library formed a structural unit of it. In 1990s due to financial restrictions the subscription of scientific periodicals had been fallen down nearly to zero. The main income of journals and books was performed through free exchange among the libraries of institutes and organizations. The Library was receiving journals and special issues from ICES, HELCOM, IBSFC, and NAFO as well as from research institutes in Poland, Germany, USA, etc. The library was receiving contributions also from private libraries of the Institute's senior biologists as well as from foreign colleagues.

In 1997 the Library has got access to the Internet and connection to the local Institute's network. Since this time the Library has progressively developed communication facilities and information services on the basis of Internet resources.

In 1990s the Library received CDS/ISIS software from UNESCO and started the creation the database of periodicals. Unfortunately throughout a testing procedure the problems were recognized, and later the work has not been continued due to different complications

including the lack of IT specialist in the Library's staff. In 2004 on the basis of the Institute the Latvian Fish Resources Agency (LATFRA) was established, and the Library was incorporated into Information and Data Division. In this year the Library also received a new space and the main funds were moved to smaller but comfortable room with movable shelves.

In 2000-s a very good news for the Library was the acquisition of valuable foreign monographs (on ichthyology, fisheries and aquaculture) thanks to the financial support of the Fish Fund of Latvia. The Library's collection grew also with the addition of modern dictionaries, encyclopedias and manuals. Ritma Gaumiga, Dr.Biol., the only librarian from 1999 to 2008 did all her best for the Library's development. The Library has been participating in compiling the union bibliographic catalogue of the Bibliography Institute of the National Library of Latvia "Foreign periodicals in Latvian Library's".

In 2002 the Library became an institutional member of EURASLIC. In January 2008 the Scientific Library was registered in the Register of the Ministry of Culture of Latvia. The reorganization of the Agency that took place in 2009 resulted in incorporation of the main structural units including the Scientific Library into newly established Institute „BIOR” as the Fish Resources Research Department. The reorganization resulted also in serious diminishment of the scientific staff and other personnel. The Fish Resources Research Department now consists of two Laboratories (Marine Laboratory and Inland Water Laboratory) and Information and Data Division.

The scientific staff includes about 30 researchers. Nowadays the Library houses about 9000 books and more than 20000 units of periodicals, many documents of ICES, FAO, IBSFC, NAFO; scientific reports and manuscripts. The topics of the collection are: ichthyology and marine biology, hydrobiology, fisheries and aquaculture, as well as hydrology and oceanography. Like other specialist libraries of the institutions that are not associated with Universities and Academy of Science of Latvia the Library until now have no an opportunity to join the information system and electronic catalogue available online.

The Library maintains mainly a card catalogue for books, and e-lists of new books, periodicals and serial editions (available also through the local network). In information searches we often make use of joint electronic catalogue "The Electronic Union Catalogue of 8 Libraries of National Importance" (National Library of Latvia, Library of the University of Latvia, Scientific Library of Riga Technical University, Fundamental Library of the Latvian University of Agriculture, Patent and Technology Library, etc.) The Catalogue was launched in 2000 and is available online from the website of the National Library of Latvia [www.lnb.lv](http://www.lnb.lv). In 2008 we started a creation of digital collections: Ph.D. Theses devoted Baltic Sea fauna and environment, and scientific publications of our researchers in journal *Fischerei-Forschung*.

The Library's webpage was opened in 2007 on LATFRI website in Latvian. The WebPages devoted the Scientific Library and open access resources on marine and aquatic sciences have been added to the new website of the Institute "BIOR" [www.bior.gov.lv](http://www.bior.gov.lv). Since 2010 the WebPages are being translated into English and Russian. The good news for the Library is also getting a subscription to some valuable scientific journals in 2011. Over recent years the Library's activities included also participation in trainings in Marine Information Management (MIM) organized by IODE and EURASLIC. These trainings have a great value for getting a



new actual knowledge and for advancing professional skills of librarian. The Library also develops an active collaboration with National Library of Latvia and some other specialist libraries, and continues a useful communication with foreign colleagues in research institutes in the Baltic region. In spite of difficulties and the main problem of insufficiency of staff, the Library has been developed an information support to researchers, students and fishermen using its own holdings, national and international interlibrary collaboration and searching in the Internet resources, including open access repositories. Many requests of our scientists have been fulfilled with a great and kindly assistance of EURASLIC.

As at the beginning of 2011 the Library performed the inspection of the oldest editions, mainly inherited from the former Fisheries Laboratory, I would like to present some national and foreign publications in this collection. The collection consists of many foreign books, serials and periodicals from the first half of XX-th century and the late XIX-th century. The topics of the collection are zoology, ichthyology, marine biology, fishery and fishing. The collection contains also some dictionaries and encyclopedias from the late XIX-th century.

Among oldest editions the most numerous and precious are German periodicals, such as *Deutsche Fischerei Zeitung* from 1896-1909, *Allgemeine Deutsche Fischerei Zeitung* from 1896-1933, *Die Fischwirtschaft* from 1930-1931 and serial publications, such as *Handbuch der Seefischerei Nordeuropas* from 1925-1937, *Mitteilungen der Sektion für Küsten und Hochseefischerei* from 1885-1912, *Mitteilungen des Deutschen Seefischerei Vereins* from 1928-1930, and others.

The collection also consists of the materials of expeditions, which are a rich source of detailed scientific information and include not only descriptions of marine organisms, but also unique maps. Among the oldest issues, for example, are the reports of *Danish INGOLF Expedition* of 1895 – 1896 and *Труды Балтийской экспедиции/Arbeiten der Russischen Ostsee-Expedition* of 1908 – 1910 - the reports of the expedition organized by Russia in the Baltic Sea, led by Oskar Grimm and Evgenij Suworov. The oldest books in the collection are *Fische der Ostsee von K. Möbius und Fr. Heincke* of 1883 and *Der Krebs von T. H. Huxley* of 1881.

The most precious in the collection, as classics of ichthyology, are keys for identifying fish, and fish larvae. For example, *Eier und Larven von Fischen der deutschen Bucht Von Dr. Ernst Ehrenbaum* of 1896 with unique illustrations is real rarity. Among the foreign volumes the collection includes Latvian publications from 1920-s – 1940-s. These serial editions and periodicals are a rich source of information for the study of the history of Latvian fisheries and fisheries investigations. The collection includes such editions as *Zvejnieku vēstnesis (Fishermen's Bulletin)* from 1925 - 1933, *Zvejniecības Mēnešraksts (Monthly Fisheries Magazine)* from 1938 – 1939, *Zvejnieka darbs (Fisherman's work)* from 1940. Unfortunately the Library does not hold a complete set of these issues.

Since 1926 in the serial issue *Latvijas jūras zvejniecība/ Bulletin Statistique des Pêches Maritimes de Lettonie*, edited by V. Miežis, standardized fishery statistics was published. These issues include the monthly data on catches by species, regions, and gear, data on the number of fishermen and fishing boats, fish market prices, as well as on the number of killed seals. The Library holds the *Bulletin* from 1925 to 1936.

The results of research in ichthyology and hydrobiology were published in the proceedings of the University of Latvia *Folia Zoologica et Hydrobiologica*. The Library's collection includes these volumes from 1929 to 1943. The results of fisheries investigations in Latvia in the pre-war period also were published in the ICES editions *Journal du Conseil International pour l'Exploration de la Mer* and *Bulletin Hydrographique*. In 1923 Latvia was accepted as an associated member of ICES and since 1937 got rights of full member of ICES. Since then Latvian scientists have regularly presented contributions to ICES proceedings and reports.

The Library also holds valuable periodicals and publication series from the first half of XX-th century in Russian, English and other languages. It would be impossible to mention them all in this paper. Finally, I would like to express my gratitude to EURASLIC for the receiving of sponsorship to attend the Conference.

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Fish Resources Research Department of the Institute "BIOR": <http://www.bior.gov.lv/en/left-menu/research-on-fish-resources>

National Library of Latvia: [www.lnb.lv](http://www.lnb.lv)

## **EURASLIC ECET GROUP ACTIVITIES**

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The paper is devoted to the ECET group activities during two years of the EURASLIC intersession period. The information will be given about the projects in which the group is involved. More detailed describes the establishing of the repositories of the group and its perspectives.

## **GLOBAL SEARCH SYSTEMS AS THE TOOL FOR THE MARINE INFORMATION MANAGEMENT**

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### **Abstract**

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There is a huge quantity of search systems of the Internet. Most known of world search systems are Altavista.com, Google.com, Gigablast.com, ASK.com, Yahoo.com, Search.com, SearchAOL.com. From the Russian search systems are as most known GOOGLE.ru, Yandex.ru, RAMBLER.ru, NIGMA.ru, APORT.ru, LiveINTERNET.ru, etc. The greatest interest for us is represented by specialized scientific search systems. There are Scirus, Google Scholar, Science Research Portal, Infotrieve-article finder, Medline, etc.

These search systems enable to carry out search of scientific articles and documents in the open databases, on sites of universities, scientific societies and other scientific organizations.

Existing sites have the different importance, from our point of view from especially advertising it is the least significant, up to the most valuable are full-text materials.

From a thematic orientation of sites we have interest to the sites placing the information on the sea environment. For the last some years have been created a plenty of repositories of sea libraries. They are developed on platform OceanDoc, Dspace, EPrints, Greenstone and etc., which as a matter of fact constructions of a body of the program are similar, and differences are observed perhaps only in interface.

## Introduction

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Whether it was necessary to you to be asked by a question that is the main thing in work of the librarian. At realization of many functions by him, such as formation of library fund, service for readers, cataloguing and many other things, but it's the same the main substantial action of its work is SEARCH.

Information search is necessary for realization of scientific research. Search does not become isolated only one frameworks of library fund as it is in traditional understanding. Presently information search is conducted in a network of the Internet.

In 1961 Leonard Kleinrock has published the work was dedicated the batch switching. Then this technology becomes practically as a key part of all networks. In 1965 Thomas Meril together with Lawrence Roberts have proved that the technology of batch switching allows to create the distributed networks. In August, 1968 Lawrence Roberts and DARPA based network ARPANET. The world has recognized this event, and birthday of a Network began to be called 2nd January, 1969.

Later network ARPANET began to refer to as the Internet. Prompt development of a network to 2000, as company NUA inform us, has already united 407,1 million users.

To the middle of 1990th years the network began rapidly grow. This period is characterized by that Russian-speaking libraries entered in the Worldnet. Now to estimate the Internet it is quantitatively possible only approximately, to be exact, it is almost impossible. It is the dynamical system practically changing the parameters every minute. The huge quantity of sites and references die in bowels of the Internet, and the huge quantity of new sites are born.

## PART 1

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Search on the Internet is carried out as follows. We shall tell, it is necessary to find some information, but addresses of sites on which it is laid out are unknown. Here so-called search systems or search servers come to the aid.

Search servers divide into 2 groups: 1) search machines or indexing robots, and 2) portals, catalogues or directories.

To the first group concern world famous search systems: Google.com, AltaVista.com, GIGABLAST.com, ASK.com, MSN.com, Clusty.com, SearchAOL.com, EntireWEB.com, AMFIBI.com.

The Russian most powerful search servers also concern to this group: Rambler.ru, Yandex.ru, NIGMA.ru, Google.ru, Gogo.ru, Metabot.ru, Webalta.ru, TURTLE.ru.

The most known representatives of the second group are such international catalogues as Yahoo.com, DMOZ.org, Galaxy.einet.net, Aeiwi.com, goseekit.com, Jumpcity.com.

The Russian search catalogues - APORT.ru, Au.ru, Data.ru, Weblist.ru, Dir.ru, [www.ru](http://www.ru), Search.sites.ru, [www.stars.ru](http://www.stars.ru), [www.ulitka.ru](http://www.ulitka.ru), [www.pointer.ru](http://www.pointer.ru), search.centre.ru.

Search machines have much greater volume of data in comparison with portals (catalogues) and replenish more quickly by automatic work. However they do not solve a problem of full indexation of all resources of the Internet. Portals use an alternative way of indexation. It is possible to consider as their feature that they have construction by the thematic principle and they contain one or several themes.

From the point of view of specialized libraries to which libraries of fishery branches concern, we have the interest about search systems that are possible to find the necessary literature in magazines, publishing houses, scientific archives.

Universal scientific search system Scirus carries out search clauses from magazines of the large foreign publishing houses. There are about 17 million clauses. In resources of the Internet are more than 250 million index pages.

The search system for scientific literature Google Scholar includes clauses of large publishing houses, archives of pre-prints, publications from sites of universities and other organizations.

Scientific search system Science Research Portal carries out search of clauses in such magazines of publishing houses as Elsevier, Highwire, IEEE, Nature, Taylor & Francis. In it clauses from such scientific databases as Directory of Open Access Journals, Library of Congress Online Catalogue, Scienc.gov have the index.

Portal Inforttrieve-artical finder provides access to more than 35000 magazines on the physicist, techniques, medicine, biology.

Incorporated portal High Wire Press + Medline is the storehouse of scientific magazines giving free-of-charge access to clauses from 968 magazines, it makes the order of 1,39 million clauses.

## **PART 2**

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From the beginning of 2000th years information technologies in the field of a science and formations start to develop roughly. Tendencies to association of information resources for maintenance of work of various directions of activity are precisely looked through.

To the middle 2000x years the tendency to creation of sites, and then and portals in the form of electronic libraries is traced. They are created and supported on the basis of specialized program-tool means and environments. There is a lot of development in this area.

Program search product Fedora was originally developed for creation of collections from resources of Cornell Information University Library and Library of University of Virginia in 1997 (Flexible Extensible Digital Object Repository Architecture). Later Fedora has undergone a lot of updating in architecture, so in 2005 version Fedora 2.1 has been let out. Now third version Fedora 3.4 is started.

Since 2000 software product EPrints began to extend. Perhaps it became one of most widely used in an easy approach the software for creation of electronic collections - repositories. EPrints is developed at School of electronics and informatics of University from Southampton (Great Britain). Network EPrints is based on architecture LAMP though it have differs in language of a writing so Perl is used in it ,but is not PHP. It is successfully used under platforms Linux, Solaris and Mac OS X (Mackintosh). In last version EPrints began to work in Windows Microsoft. The configuration of EPrints repository involves the modified files written in Perl or XML. Use of language XML has enabled to create electronic repositories in various languages: Bulgarian, Russian, Ukrainian, Hungarian, Italian, French, German, Spanish, Japanese.

Since November, 2000 system Greenstone began to extend. In was developed at University Vajkato in New Zealand The main developers of system were Rodger McNab and Stefan Boddie, Ian H. Witten supervised over project. Development was conducted at support of UNESCO. To 2004 third version Greenstone has been let out, in it the design and toolkit have essentially been advanced. This system became multilingual and multiplatform. Interfaces have been made in such languages as: Arabian, Chinese, Czech, Dutch, French, German, Hebrew, Indonesian, Italian, Japanese, Kazakh, Maori, Portuguese, Russian, Spanish, Thai, Turkish and English. Greenstone supports set of formats: Microsoft Word, Excel, Rich Text Format, HTML, PDF, ZIP, MP3.

In November, 2002 program DSpace has been let out. Its developers were MIT and laboratory HP from Cambridge, Massachusetts. Completion of this version before serial use was lead by developers of laboratory HP, MIT, OCLC, University of Cambridge, University of Edinburgh, the Australian national University and Texas A&M University. Thus to 2005 version DSpace 1.3 was finally generated for wide use. Now DSpace 1.7.0 is active. From 2002 to 2010 the program works in more than 800 organizations from all countries of World.

**Table 1. characteristics of the listed program-tool means are resulted**

<b>ON characteristics</b>	<b>EPrints</b>	<b>Greenstone</b>	<b>Fedora</b>	<b>DSpace</b>
Developers	University of Southampton	New Zeland Digital Library Project	Cornell Uni-Versity's Digital Library	MIT&HP Labs Cam-Bridge, Massa-chusets
Year of creation	2000	2000	1997	2002
Steady release, the status of development	3.1.3/2009 Active	Greens.3.0/2010 Active	3.4.2/2011 Active	1.7.0/2010 Active

Operational system	Apache	Apache	Fedora Core, KDE	Apache
Type	Institutional Repository Software	Institutional Repository Software	Repository-Fedora	Institutional Repository software
Platform, language	Unix, Linux Perl	Windows, Unix Perl, Java	Linux Java	Windows, Unix Java
The license	GPL Free-of-charge	GPL, GNU Free-of-charge	GNU Free-of-charge	BSD Licence free-of-charge

### PART 3

In Russia from the beginning 2000th years development for creation of electronic libraries began to be made intensively, and, first of all, in High Schools. Alongside with use already developed program-tool systems for these purposes as EPrints, Greenstone, DSpace, also original Russian program complexes IRBIS, LibOnline 1.0, ISHI-M were created.

IRBIS was developed by State Public Scientific Technical Library of Russia (GPNTB) and it is delivered as a set of the automated places. IRBIS Systems work by Windows platform with use of Web-server Apache Web Site or Microsoft IIS platform. It supports formats as Marc21, UNIMARC, USMARC and Russian communicative RUSMARC format. The system allows to create and support any quantity of databases.

System LibOnline 1.0 is developed in the Belorussian State University. It uses operational system Microsoft Windows NT4.0, 2000, XP and Web-server Microsoft IIS 5.0 and above.

The network program environment ISHI-M was developed in the Moscow State Institute of electronic techniques (Technical University) and intended for creation and support electronic multi-format information resources. Access to information resources is carried out through the Internet. ISHI-M works on platforms as Windows, Unix or Linux under control of Web-server Apache.

**Table 2. characteristics of the Russian-language program-tool means.**

ON Characteristics	LibOnline 1.0	IRBIS	ISHI-M
Developers	Belarus State University	The state Public scientific and technical library/GPNTB	Moscow State Institute of electronic technics/MSIET
Year of creation	2003	1995	January 2003
The status of	Active	Active	Active

development			
Operational system	Microsoft IIS 5.0	Apache Web-site, Microsoft IIS	Apache
Type	Institutional Repository Software	Institutional Repository Software	Institutional Repository Software
Platform	Windows	Windows, Unix, Mac OS	Unix, Linux, Windows
The license	Paid	Paid	Paid

All considered program complexes allow to create and support information resources and collections and also support an opportunity of the removed administration.

All tool means are similar by the structure and functions. Unconditional advantage of the international complex program environments (table 1) is their free distribution. However, their direct use in territory of Russia has appeared inconvenient because IT experts were not directly in libraries. The largest Universities and Libraries began to make adaptation of these software products for Russian libraries. These were GPNTB, MSIET (Technical University) and Belarusian University.

The electronic collections created on the basis of systems Greenstone, EPrints, DSpace and ISHI-M allow to accumulate documents in various formats. These are HTML, MS Word, PDF, JPEG and others.

System IRBIS supports only formats PDF, DOC, HTML and TXT. It narrows area of its application though these formats are the most widespread.

System LibOnline 1.0 uses still more limited quantity of formats - PDF and DJVU.

All program complexes apply the uniform policy of safety, it is authorization of the user.

Main principles of the organization of the described systems of integration distributed multi-format information resources are the same and are formulated as follows:

The Basic functionalities: the publication, storage, search of the information resources, the authorized access of the user.

The Organization of an opportunity of adjustment of the Web-interface for the user in a concrete subject domain.

Use of metadata for the organization of effective search of information resources.

Maintenance of storage in electronic base for multi-format resources.

The Possibility of the removed administration and network access to information resources.



## PART 4

The question about formation of a uniform information field for knowledge of the sea environment began to develop systematically since 2007 and it is connected with start action of project ODINECET. The project has been developed in Project Office for IODE/IOC/UNESCO. It was the beginning of creation of specialized electronic libraries and repositories.

By the general arrangement the programming environment DSpace has been accepted as the program-tool means. It is possess a some successful development that corresponds high level of IT for that period. In this project have been created international repository Ceemar in which participants were 5 countries: Bulgaria, Latvia, Poland, Russia, Ukraine.

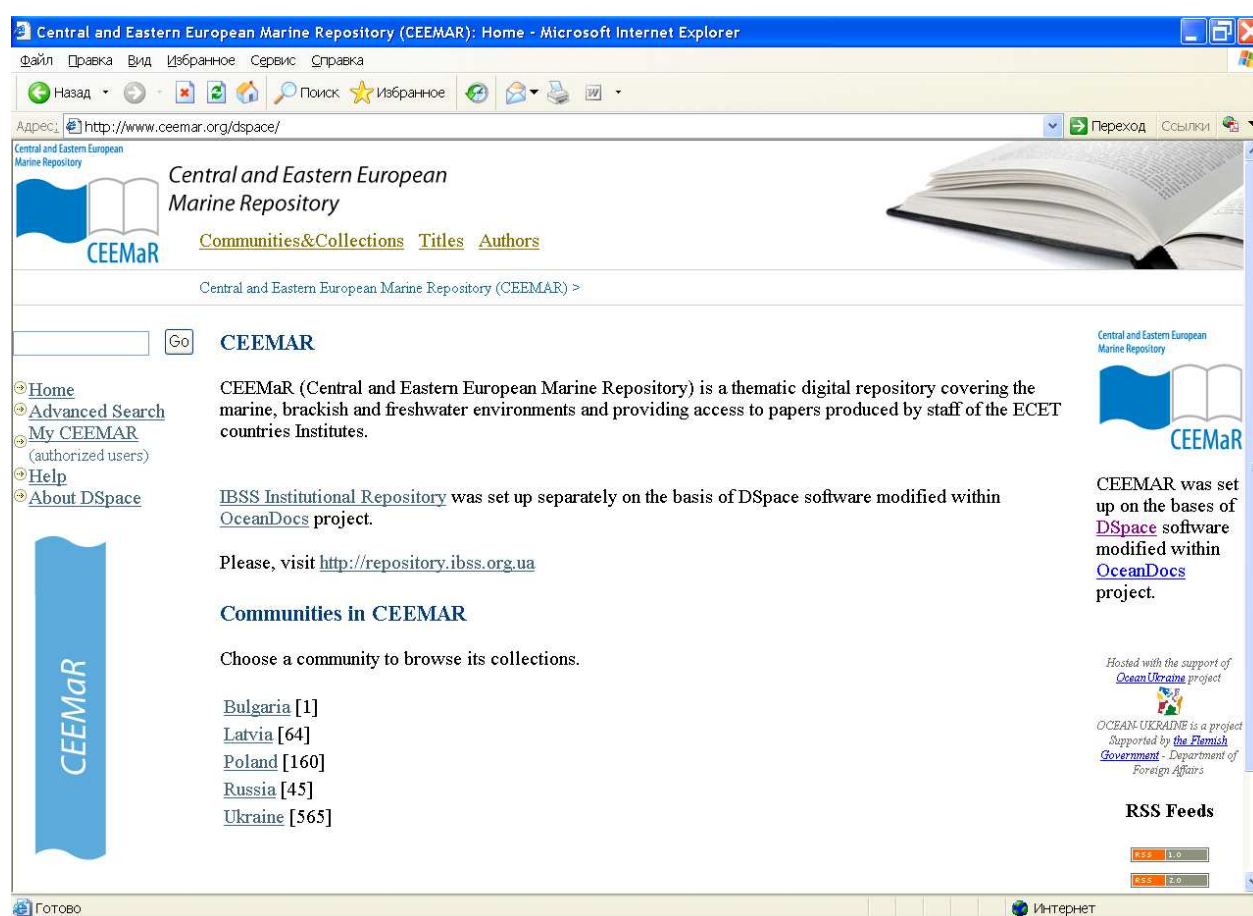


Figure 1- The title of a site [www.ceemar.org](http://www.ceemar.org).

In parallel with it at support of Project Office for IODE/IOC/UNESCO the repository of the Ukrainian Institute of Biology of the Southern Seas (IBSS) -<[http:// repository.idss.org.ua](http://repository.idss.org.ua)> was created.

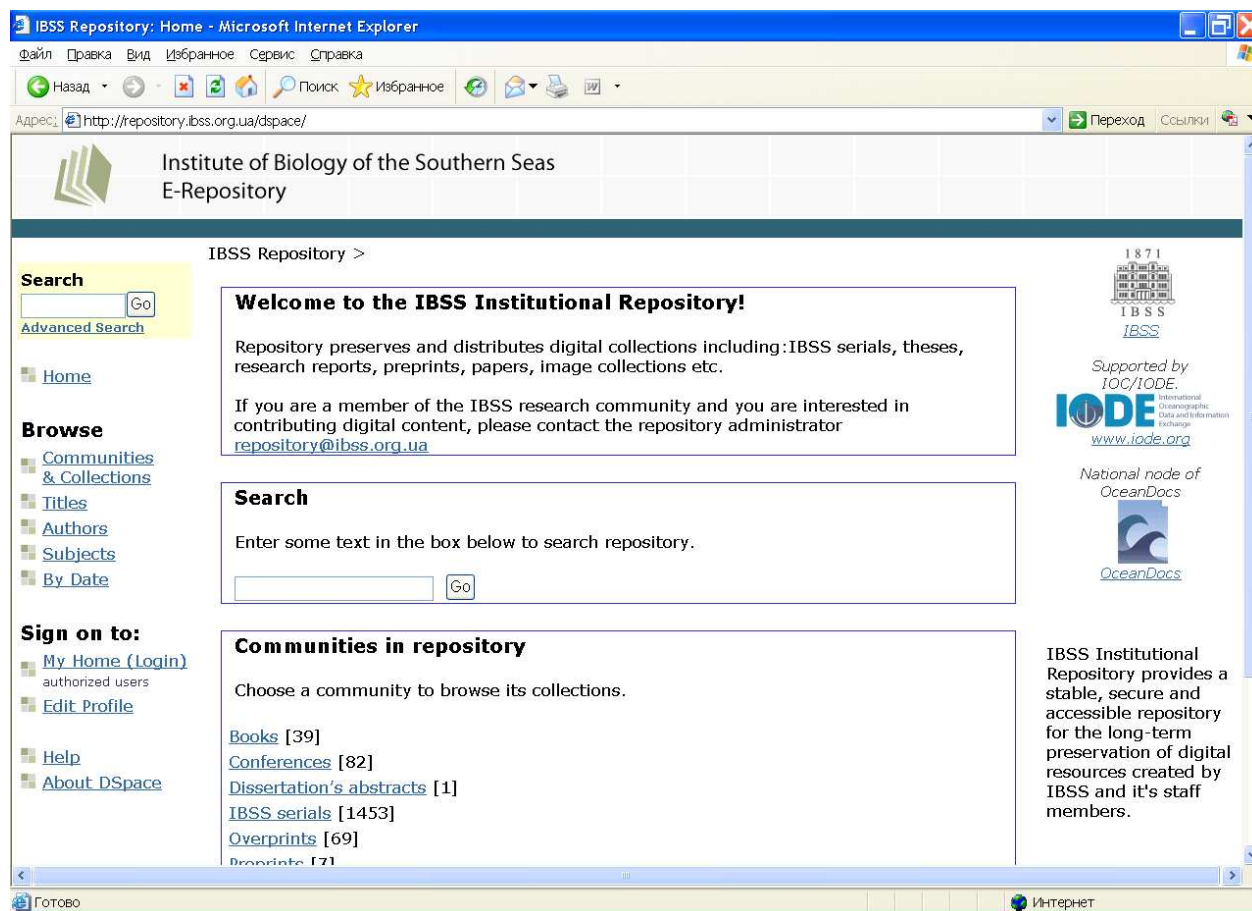
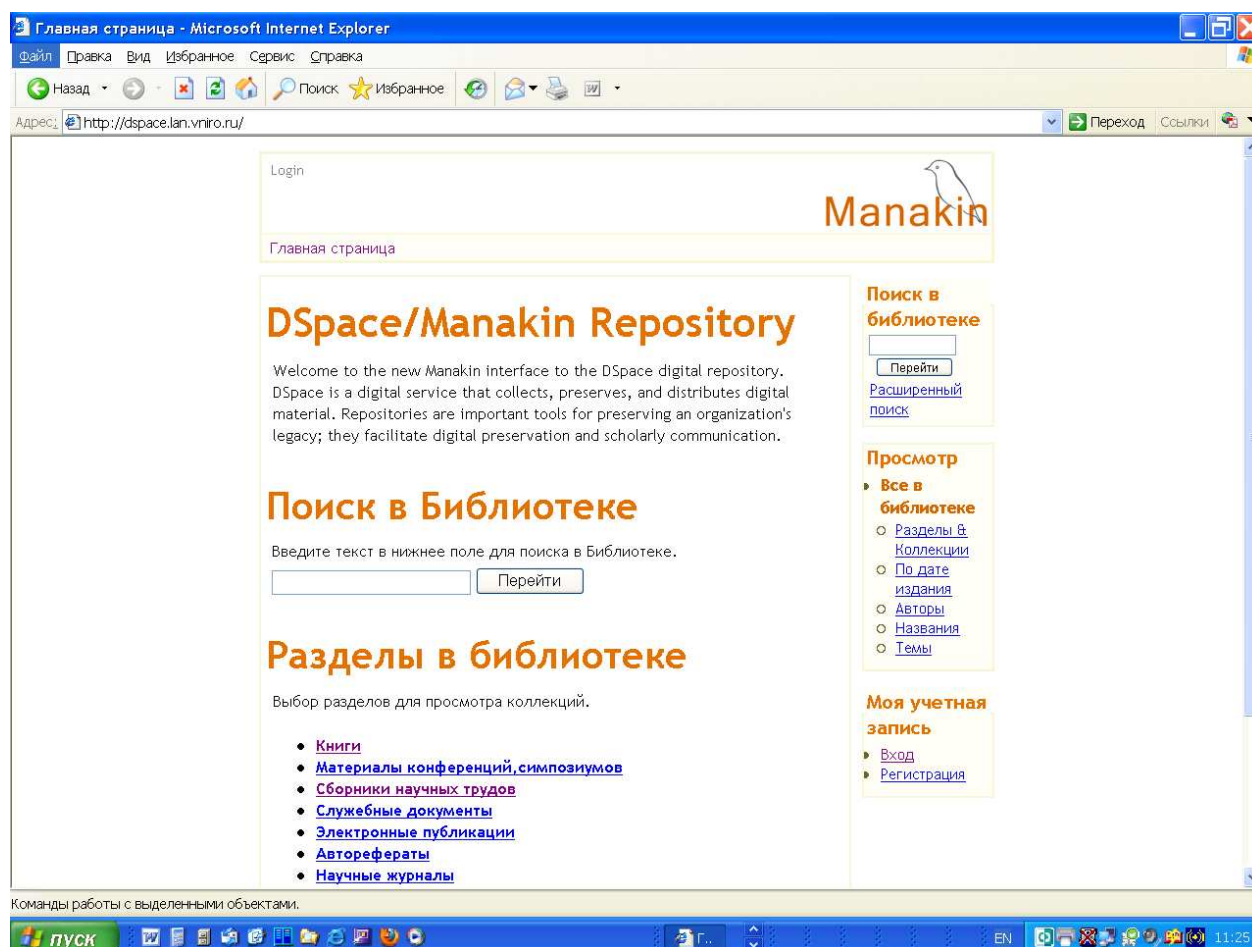


Figure.2 mumyn-<http://repository.idss.org.ua>

Development of the Russian branch repository "Manakin" has begun with 2008 in a leading research institute of fishery branch (VNIRO). Owing to support of Agency on fishery of Russian Federation VNIRO has received the necessary server equipment. The group of experts VNIRO which including employees of Scientific&Technical Library was engaged in adaptation of programming environment DSpace. In repository are presented books, collections of proceedings from 7 leading institutes of Russia author's abstracts of dissertations for last 20 years which are being fund of library VNIRO, and the basic branch magazines .



**Figure. 3- The title of the Russian repository «Manakin» -<http://dspace.vniro.ru/>**

At comparison of repositories as Ceemar and Manakin on volume of a database of information resources, it is visible, that at participation in Ceemar the project of 5 countries it is brought records - 835, and in Manakin at participation of 7 institutes - 1738. In IBSS-repository the database of information resources is created by 1 institute, and general number IR - 1649. It is necessary to notice, that projects Ceemar and IBSS-repository have been started in action for 1 year earlier Manakin the project.

The set of sections in all electronic repositories is approximately identical. In this table two positions have much differences. These are author's abstracts of dissertations and scientific magazines. For IBSS-repository the publication of author's abstracts of dissertations is less significant than the publication of scientific articles. Though from the scientific point of view, they are the same. The author's abstract are resulted scientific achievements of the dissertator which can be useful to a scientific organization. Distinctions in volume of data on scientific magazines consist in the following. IBSS publishes 2 scientific magazines and consequently, it has copyrights. On other sites of repositories restrictions of publications of scientific magazines are imposed.

**Table 3. Characteristics наполняемости repositories are resulted.**

Repository Resources	Ceemar (ODINECET)	IBSS (Ukraine)	Manakin (Russia)
Books	71	37	51
Collections of proceedings (clause)	440	76	518
Author's abstracts	75	1	1085
Scientific magazines	161	1453	38
Materials of conferences	0	82	0
Reports of institutes	70	0	71 (access is temporarily closed)

The set of sections in all electronic repositories is approximately identical. In this table two positions have much differences. These are author's abstracts of dissertations and scientific magazines. For IBSS-repository the publication of author's abstracts of dissertations is less significant than the publication of scientific articles. Though from the scientific point of view, they are the same. The author's abstract are resulted scientific achievements of the dissertator which can be useful to a scientific organization. Distinctions in volume of data on scientific magazines consist in the following. IBSS publishes 2 scientific magazines and consequently, it has copyrights. On other sites of repositories restrictions of publications of scientific magazines are imposed.

The volume of filling of a database of Ceemar repository can be increased by means of 2 facts. This is - to raise intensity of input data by those participants of the project who has not own site. Also it is possible to transfer a part of resources from IBSS and Manakin repositories in Ceemar repository.

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Central and Eastern European Marine Repository. <<http://www.ceemar.org/dspace>>

Institute of Biology of the Southern Seas E-Repository. <<http://repository.ibss.org.ua>>

Manakin Repository. Hosted and supported by VNIRO. <<http://dspace.vniro.ru>>.

## POSTERS

### INSTITUTE OF OCEANOGRAPHY AND FISHERIES LIBRARY REPORT : MARKETING THE VALUE OF THE LIBRARY

**Ingrid Catic**

Institute of Oceanography and fisheries, Split, Croatia

This paper is the library report. It sums up the life and recent activities of our Library within the oldest Croatian scientific institution for the marine research: Institute of Oceanography and Fisheries (IOF).

Last year was a special one for the IOF celebrating the 80th Anniversary. We experienced it as a great opportunity for marketing the Library of the Institute and for introducing its value to the wider community. We marked this occasion by releasing the brochure of the IOF, thereby promoting the work and achievements of the institution and the IOF Library itself. In addition, the work of the Library is presented within the Biennial Report of the IOF (2009-2010) and by the constant updating of the content of our Web site. Of course, scientific work is a continuum and the research work of the scientists follows also the trail of their predecessors. At this point comes to the fore the important role of our rich Library preserving the scientific works and related literature on its shelves. In the Library you can find the treasures of national and international knowledge offered selflessly to everyone interested.

Being a new marine science librarian of the IOF Library I have to point out the importance of our Library being an institutional member of EURASLIC/IAMSLIC, and I am really thankful for the enormous help of all the EURASLIC members, most of all in the ILL activities. The users of the Library are extremely thankful for all the scientific papers received over EURASLIC when scientific journals are not easily available, our Library like many others being affected by the recessionary problems. We cannot afford subscriptions to as many scientific journals as necessary, the purchase of books being also reduced, then there are large delays in the delivery of periodicals and even some exchange partners have decided to terminate exchanges due to financial crisis...so, we also find the way out by sharing resources with all the libraries in Croatia. Most of all we co-operate in the ILL system with the Library of the Rudjer Boskovic Institute and the Split University Library (e.g. their service for sending requests to the SUBITO international document delivery system), exchanging the information and trying to overcome all kinds of troubles caused by the world crisis.

## **CO-AUTHORED PAPERS: AN ANALYSIS**

**Emilie Gentilini, Amanda Regolini**

Cemagref, Grenoble, France

The increasing level of collaboration in scientific research now lies above 50% of all research activities in many research organisations (Wuchty et al., 2007). Cemagref's multi-field research themes force a strong collaboration with French and foreign partners. Cemagref collaborates with other research organisations, universities, companies and local authorities on environmental topics. New indicators concerning co-publication data are needed in order to assess the new strategic objectives as concerns the number of research partners. New methods and tools to automate the counting of co-publications have had to be developed. This poster aims to present the bibliometric methods followed and some results obtained.

## **LIBRARIAN IN THE INFORMATION STREAM**

**Irina Inyaeva**

Polar Research Institute of Marine Fisheries and Oceanography (PINRO)

ICT and library in the first decade of the XXI century. Technologies which are going away and modern technologies which will change our lives. Stages of development of the Internet. Novelties in communication sector. Web 2.0 platform.

There are some facts that a person is unable to predict the development of ICT progress.

The following predictions repeatedly were published in the press and cited:

In 1943 Thomas Watson, the head of IBM Corporation, when there were finishing work on the creation of the first computers, he predicted: "I think there is a world market for maybe five computers".

Later, in 1977, when the first personal computers appeared, Ken Olsen, the founder of the world-famous Digital Equipment Corporation (DEC) said: "There is no reason for any individual to have a computer in his home."

But now it is generally agreed by the majority of scientists and analysts that at the turn of the century the most fundamental revolution occurred not in nuclear physics, microelectronics or chemistry, but in the field of information and communication. This influenced the development of the entire information infrastructure of society and it certainly affected library-information sphere.

## **INTERLIBRARY LOAN AT RUĐER BOŠKOVIĆ INSTITUTE LIBRARY, CROATIA, 2009-2010**

**Sofija Konjević**

Rudjer Boskovic Institute, Zagreb, Croatia

This poster presents an analysis of the ILL service at the RBI Library in the period 2009-2010.

## **RBI LIBRARY NEW WEB**

**Marina Mayer**

Rudjer Bošković Institute, Zagreb, Croatia

In December 2010, RBI Library gave a special Christmas present to its users: new web pages. In 1994, the Library was the first library in Croatia to have web pages. They have changed many times over the years. The last version was in use for over 10 years and we desperately needed the complete update. Work on the new web pages, from first ideas to launching in December 2011, lasted several years. New web uses Joomla! CMS, has a completely different structure and a lot of new features.



## ATTENDEES LIST

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