

ISSN 2380-0399

Traditional Knowledge and Modern Information Practice

Proceedings of the 42nd IAMS LIC Conference

October 16-20, 2016

Mérida, Mexico



Editor: Dorothy Barr

Conference Convener: Kris Anderson

Published by:
IAMS LIC
Cambridge, MA, USA
2016

IAMSLIC CONFERENCE SERIES

(ISSN:2380-0399)

Order information: Contact Dorothy Barr, *Proceedings* editor, at dbarr@oeb.harvard.edu.

The *Proceedings* will be available online to members in spring 2017, and freely available to all in October 2017.

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Library of Congress Cataloging-in-Publication Data

IAMSLIC Annual Conference (42nd : 2016 : Mérida, Mexico)

Traditional Knowledge and Modern Information Practice: proceedings of the 42nd IAMSLIC Conference, Mérida, Mexico / editor: Dorothy Barr ; conference convener: Kristen Anderson.

pages cm. -- (IAMSLIC conference series, ISSN 2380-0399)

Proceedings of the 42nd IAMSLIC Annual Conference held 16-20 October 2015 in Mérida, Mexico.

Includes bibliographical references.

1. Marine science libraries--Congresses. 2. Aquatic science libraries--Congresses. 3. Aquatic sciences--Information resources--Congresses. 4. Marine sciences--Information resources--Congresses. 5. Aquatic sciences--Information services--Congresses. 6. Marine sciences--Information services--Congresses. I. Barr, Dorothy, editor of compilation. II. International Association of Aquatic and Marine Science Libraries and Information Centers. III. Title.

Z675.M35I2 2016

026.55146--dc23

2016009290



IAMS LIC Group Photo 2016

Traditional Knowledge and Modern Information Practice

Proceedings of the 42nd IAMSILIC Conference, October 16-20, 2016, Mérida, Mexico

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INTRODUCTION

Steven Watkins

Conference Chair & Convener 2016

IAMSLIC President 2016-17

Welcome to the Proceedings of the 42nd Annual IAMSLIC Conference and the 3rd Latin American Regional Group Meeting which was held in Mérida, Mexico, 16-20 October, 2016. The theme was: **Traditional Knowledge and Modern Information Practice**.

The conference setting in the heart of ancient and contemporary Mayan culture provided opportunities for attendees to learn about the rich history and anthropology of the region as a context for local information needs and the services provided by our IAMSLIC colleagues from the area. The welcome reception in the historic downtown plaza, the cultural events at the conference banquet and a mid-conference field trip all served to reinforce those connections to the local people, their land and culture.

This year's conference presentations featured a keynote entitled *Traditional knowledge and the modern world* by Dra. Maria Dolores Cervera of CINVESTAV. Three additional local speakers from CINVESTAV presented on coastal anthropology in the Yucatan, small-scale fisheries governance, and coastal hydrology of the local cenote systems. With nearly half of the attendees from the Latin American region, we heard about a wide range of creative and successful projects in libraries throughout the region, through papers, posters and discussion sessions. Other sessions covered topics such as data management, open access, library use via mobile devices, evaluative techniques for identifying core journals, and factors affecting IAMSLIC conference attendance. A very successful panel discussion session was *The evolution of library space: a conversation about how library design supports our scholarly communities*. There were also updates on Aquatic Commons, LibraryBox, ASFA, IAMSLIC/IODE collaboration, and the IAMSLIC website redesign.

Based on suggestions received at the 2015 conference in Rome, a new format was debuted at this year's meeting: facilitated discussions in small break-out groups. Lively discussions were held in each of the three groups on research data management, user terms vs. controlled vocabulary, and the future of marine librarianship. Having real-time language translation service at the conference enabled this type of discussion to succeed without being hampered by language barriers among the participants.

The presenters' papers and poster abstracts are included in the proceedings and reveal the breadth and depth of expertise and knowledge of modern information practice among the IAMSLIC membership.

My sincere appreciation goes to the presenters, moderators, sponsors and members of the planning committees. The success of the conference was due to the hard work of many people, first and foremost Irene Beltran, who handled local arrangements with the support of her colleague Juana Medina.

Our next conference is the 43rd Annual IAMSLIC Conference that will be held in Honolulu, Hawaii, USA, 22-26 October 2017, in conjunction with the annual Cyamus Meeting. The conference theme is: **Blurring the Edges: The Osmosis of Ideas** and I sincerely hope you will join us there for another stimulating conference.

PRESIDENT'S WELCOME

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Aloha IAMSLIC members! You missed a great conference in Merida if you were unable to join us ... hope to see you next year in Hawaii! Steve and Irene put together some excellent talks and discussions - interspersed with great food and fun activities. It is always so much fun to meet with friends new and old and hear what they are doing in their own library worlds and how that makes our collective library world greater! It was fantastic that we were able to have translation services on hand; many thanks to our generous sponsors. Thanks also to the host institution, CINVESTAV, for supporting Irene, allowing her to host this year, and also for sharing the talent of a number of their researchers who gave talks during the conference. We look forward to the continued collaboration with IODE as we work together on some new and existing initiatives. IAMSLIC is such a fun and smart organization, I hope you all share your enthusiasm and knowledge with your friends and colleagues and invite them to join IAMSLIC too.

OREGON ESTUARINE INVERTEBRATES: AN OPEN EDUCATIONAL RESOURCE?

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Abstract

Through a partnership of the University Libraries and the Oregon Institute of Marine Biology, we created an in-house open educational resource from a former government publication. The step-wise process to achieve and brand this resource is described with the hope that it will encourage others to self-publish and create additional open education resources.

Keywords: Open access, Open Educational Resource

Introduction

We all know that textbooks are expensive. Kirk (2014) suggests that students can spend upwards of \$1000 per term on required readings. Students cope with the financial burden of textbooks in a number of ways as Christie et al. (2009) report: they buy used texts, share a single copy of text with other students, or rely on library resources. University of Oregon Institute of Marine Biology (OIMB) students do not face the degree of expense Kirk mentions, because courses rarely require a textbook. The reasons for this are two-fold; there are few adequate texts for upper-division marine science courses, and many students simply do not buy texts, even those required by the professor. We have come to rely on library resources, in addition to readings from the peer-reviewed literature, to meet course needs. We place copies of key monographs and important taxonomic keys in the teaching laboratories for the duration of the term.

A UNESCO forum investigating the possibility of non-commercial textbooks (UNESCO, 2002) coined the term “Open Educational Resources” (OER) which typically refers to course textbooks. Hilton (2016) suggests that freely available OER are not detrimental to student learning outcomes when used in lieu of a commercial text. The move away from required textbooks at OIMB suggests similar results—student success has not declined. The question remains, how do we meet the needs of the entire student body and provide multiple access points to these key documents?

Oregon Estuarine Invertebrates (OEI) (Rudy and Rudy 1983) is not a textbook; it is an invertebrate identification guide used by nearly every class taught at OIMB and for that reason alone is an open educational resource. I will describe how, in a stepwise fashion, we turned this publication into an OER of sorts. I hope this provides an example other marine science authors might follow.

History

Former OIMB director Paul Rudy and his wife Lynn Hay Rudy collaborated with U.S. Fish and Wildlife Service to create the first edition of *Oregon Estuarine Invertebrates*. It contained 110 one-page species descriptions and a line drawing of each dissected animal. OEI was not intended to be a key, but rather a

guide to local species to supplement other keys such as *Light's Manual: Intertidal Invertebrates of the Central California Coast* (Smith and Carlton 1975), *Keys to the Marine Invertebrates of Puget Sound, the San Juan Archipelago, and Adjacent Regions* (Kozloff 1974) and *Intertidal Invertebrates of California* (Morris et al. 1980).

The Rudys printed the final product on waterproof paper so the volumes would hold up well in the field and OIMB teaching laboratories. Each species profile contained a description of the species, a detailed section on possible misidentifications, as well as ecological, quantitative and life history information. The Rudys distributed OEI as a loose-leaf document in 3-ring binders so it could be perpetually updated. The authors wanted this to be readily available to students, faculty and others outside of OIMB, so sold copies of OEI for a nominal fee to cover the cost of production.

The Library's Role

The Rudys retired before 1990 and by 2005, there were few print copies of OEI remaining. The authors gave us permission to digitize and archive OEI in Scholars' Bank, University of Oregon's Institutional Repository (<http://hdl.handle.net/1794/1070>). This one-off approach is what many of us do when it comes time to archive a document. However, this did nothing to update the resource, the bibliographies included in the first edition were not complete, and the optical character recognition (OCR) software did not accurately render the Leroy Lettering Sets used to label the drawings. It was great to have the resource digitized and available to all, but we needed to make improvements.

Working on OEI was somewhat outside the scope of my job as a science librarian, but as champions of open resources, it made sense for the library to be involved in this project. As time and funds permitted, I hired student employees to scan and re-label the OEI illustrations using Photoshop. We entered all of the bibliographic citations into EndNote. To eliminate typing errors we uploaded citations from databases when possible, but still needed to change many citations that imported with all caps and without italicized scientific names. We also shifted from numbered footnotes to author-date citations and referred to the actual chapters cited rather than whole monographs. This was a monumental amount of work.

The original authors had adjusted print size as needed to force the more lengthy species descriptions to fit on a single page. For our edits, we used a standard 11-point font throughout. Between a larger font size and fuller bibliographies, the species descriptions no longer fit on a single page. We tried moving all the bibliographies to the end of the book, but this did not free up enough space to keep the species descriptions to a single page. We reluctantly moved to a multiple-page format, and ultimately decided it would be far easier to update species descriptions if we published each one as an individual chapter. At that point, we also re-acquired a 30-species unpublished supplement that had languished with the Rudy's USFWS publishing partner. We combined the two documents, added new taxonomic names when needed, and in 2013, published the 140 individual species chapters and full 461-page second edition of OEI: <http://hdl.handle.net/1794/12938>. In an effort to crowd-source future updates, each species description was marked with the date last updated and the date scanned, and users were encouraged to email us with corrections.

Bringing the Scientist Back to the Project

While we made OEI available to OIMB students and beyond, we never had time or resources to update

the scientific content aside from adding current scientific names. Dr. Alan Shanks enlisted the help of the OIMB graduate students for part of a term and they were able to update a few of the species descriptions. It was a valuable experience for them and introduced them to the concept of open access publishing. Two students actually created new species descriptions to add to OEI—we were up to 142 species! This gave us the momentum and visibility to lobby for support for our open-access project. I applied for funding from the University of Oregon Libraries and was able to hire a highly competent Ph.D. student to work half time for five academic quarters. She was able to update 126 of the species accounts, with some assistance from an undergraduate, during that time. When necessary she added a section on taxonomy to unravel the confusion in scientific nomenclature through the years. The content of OEI was current, and we updated each of the 142 individual species chapters and published the combined files as the 861-page third edition: <http://hdl.handle.net/1794/18839>.

The third edition of OEI is a true open educational resource. We added several features to make the volume more useful to students: An a-z list of species for students who might not be familiar with the phyla; a list of common name and previous scientific names used in OEI, as many taxonomic names had changed over time; and a map of the local Coos Bay area showing geographic locations referred to in the text. We also used LibGuides to create an online index to the individual species chapters (<http://researchguides.uoregon.edu/oei>). We printed the 861-page full volume on waterproof paper for all of the OIMB teaching labs, but its size makes it a little unwieldy. The LibGuide index will serve as the primary link to the content.

Terra C. Hiebert, and Alan Shanks helped edit the third edition. We changed the subtitle, calling the work Oregon Estuarine Invertebrates: Rudys' Illustrated Guide to Common Species. Another improvement over the second edition was a suggested citation for each species chapter as well as a link to the full third edition. We did this in alternating footnotes; for example:

Hiebert, T.C. 2015. *Pista pacifica*. In: Oregon Estuarine Invertebrates: Rudys' Illustrated Guide to Common Species, 3rd ed. T.C. Hiebert, B.A. Butler and A.L. Shanks (eds.). University of Oregon Libraries and Oregon Institute of Marine Biology, Charleston, OR.

and

A publication of the University of Oregon Libraries and the Oregon Institute of Marine Biology
Individual species: <http://hdl.handle.net/1794/12678> and
full 3rd edition: <http://hdl.handle.net/1794/18839>
Email corrections to: oimbref@uoregon.edu

In the future, OIMB Invertebrate Zoology students will help to update species descriptions. We continue to solicit corrections or additions and OIMB graduate students have already expressed interest in adding additional species to OEI.

Conclusion

I have digitized a number of items that were in the public domain and even books with the author's permission (e.g. *Identification Guide to the Larval Marine Invertebrates of the Pacific Northwest*: <http://hdl.handle.net/1794/6123>). There are a number of much used and out-of-print books by west

coast faculty that I would love to see available online. However, there is more to creating an open educational resource than simply making the text available online. It may be a lot of work to create and maintain an open resource, but from my perspective as a librarian, it provides the access we need for the entire student body. Open access does not come without costs. I did not tally the total student wages invested in this project over time, but they were substantial. It took a great deal of my time as well over the eleven years and three editions. Knowing that students cannot or will not purchase texts for classes may help faculty authors understand that open access monographs, or open educational resources, benefit their students enough to make it worth the effort.

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DATA MANAGEMENT IN THE RESEARCH ENVIRONMENT, OF COURSE

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Abstract:

After years of building the infrastructure for data literacy and data management through various library information sessions, faculty consultations, patron surveys, and workshops, the University of Miami Libraries (UML) proposed a formal, credited, graduate level course to be taught in spring 2016 at the Rosenstiel School of Marine & Atmospheric Science (RSMAS). The course was entitled *Data Management in the Research Environment*, to be taught by Tim Norris (CLIR Postdoctoral Fellow at UML) and Angela Clark-Hughes (RSMAS Librarian Associate Professor). The course was unanimously approved by the RSMAS curriculum committee as a 500/600 level two-credit course, open to all graduate students. As a new elective course, enrollment was small with two Ph.D. students, three Masters of Professional Science (MPS) students, and one Research Staff member auditing. This paper will focus on the review and assessment of that course; from the curriculum structure and design (including the implementation of two Data Carpentry Workshops), the learning curves and objectives, the teaching strategies employed, to the final student evaluations of the course. In addition, a summary of lessons learned and next steps for this course, as well as a comprehensive literature review, are also covered.

Keywords: Data management, data literacy, data services, data course

The field of Library Information Science has changed considerably in the wake of technological advancements. From a limited access card catalog to an openly accessible online catalog; from a carefully crafted “quick search” guided by a DIALOG blue sheet to a broad search on Web of Science then casually filtered to near perfection; from a physical reference collection to a digital collection of links on a webpage. Any librarian with ten or more years of service could easily pinpoint the day when they realized the profession had changed in a dramatic way.

As the learning and research environments in which we worked changed, so did librarians. Librarians, specifically academic librarians, modified the structure of patron services to extend beyond building hours and developed collection philosophies to include varying material formats. Librarians adapted to the social phenomenon of push/pull information and reference services as we embarked on new challenges to meet the needs of our users. In this evolutionary process to stay in step with the world around us we enlarged our territory. In part our territorial expansion was internal, purposefully crafted, and guided by the How-to-do-it manual for Librarians. However, some parts of our expansion were external and inadvertent as we rose to a new level in response to the changes in the research climate

Data management is just one of those new level concepts that logically landed on the library's doorstep because libraries and librarians have historically and successfully managed many other things. As information scientists, we've been the searchers, the collectors, the catalogers, the curators, the examiners, the evaluators, the advisors, and the advocators of many things for centuries, therefore the manager's role is befitting. Although the term "data management" is relatively new, managing data is not a new concept or recent practice. It has been and is a necessary component of any research endeavor regardless of its scale. However, managing data, like any applied process, can be done well or poorly. It can be done differently across the various disciplines of study, and can be improved upon as the technology, tools, and skill sets to manage data improve. It is for these reasons that the process of managing data and/or the concept of data management has not been static or inflexible, but has seemingly metastasized.

So, for many academic libraries data management has simply come into our purview within the last ten years. In marine and atmospheric science libraries and centers, we've had to address the data deluge on at least some level. Even if our approach was to batten down the hatches and await its passing, there was no denying that the data gauntlet had been thrown down.

The challenge early on for the RSMAS Library was in defining "data" and assessing a feasible service of management. There were and still are a variety of definitions for data, some inclusive of everything, some exclusive of one thing or another. RSMAS chose to adopt a broad working definition of research data – essentially anything that our researchers considered their data. This definition allowed us to include any type of observational, experimental, model or simulation data, as well as compiled data, in our service assessment, whether it was physical or digital in format. We consulted the profusion of literature written on and about data management, data curation and preservation, data literacy, data science, and e-science. We also took note of the variations in who is creating data, who is or is not managing data, who is taking on the responsibility for storing and curating data, and who has created access points to data.

The RSMAS Library journey into research data management began unpretentiously with contributions to NASA's *Global Change Master Directory (GCMD)*, with initial funding secured for hiring a few graduate students to take the lead on this project. Although the Library's role was relegated to the entering of datasets compiled by a select group of RSMAS faculty, we were in fact dealing with data management on some level, albeit in the middle.

However, beginning as the middleman not only gave us insight into metadata and discipline specific standards and protocols, it gave us a clearer view of the data lifecycle. We also clearly understood that not all of the research data being produced at RSMAS was being processed through the Library for ingestion into the GCMD, nor could it have been, given our limitations. However, if the Library was managing only a small percentage of the datasets, then where was the larger percentage of the datasets being deposited? Our conclusion was that they could be anywhere. The library, although it was the information center, was not the center of that information and researchers had already taken the lead as prompted by various funding agencies to deposit their data in various repositories.

By 2008 we'd recognized a disconnection in the level of access to our research output. As forecast, there was a flood of scientific data. Technological advances increased computing power, decreased data

storage costs, and broadened sharing capabilities among researchers. Repositories like the GCMD were taking root inside and outside of academic institutions and government agencies. With the myriad of data repositories offering open and immediate access, RSMAS librarians and information professionals looked to improve our chances of identifying and accessing a dataset created in the future as well those created in the past.

The University of Miami Libraries formulated an E-Science Task Force in 2009 to investigate relational models and look at the emerging needs for data training, services and staffing at UM. This group was comprised of the science and social science librarians, the Head of Systems, the Head of Digital Projects, the Metadata Librarian, the Associate Dean of Libraries, and the RSMAS Librarians. With varying perceptions of data, data production, and data usage among the library professional, we first needed to know what perceptions our researchers had; whether they were all creating data; whether they were all depositing their data into repositories; whether they were sharing their data; how the library could assist; and what data services could we provide.

The Internal Environmental Scan Summary

To address some of the lingering questions that the libraries had concerning the data being produced at the University of Miami, the E-Science Task Force constructed a thirty-question survey and selected full-time RSMAS faculty as our initial pilot population. We chose to use *SurveyMonkey*® to administer this survey online and to guarantee anonymity to all faculty participants. Thirty-five RSMAS faculty members responded to the online survey; however, not all respondents answered all the questions.

Given the range of disciplines of our survey respondents, it was not surprising that they reported an array of commercial software used as their main sources for data collection or analysis (Microsoft Word, Excel and Access, Matlab, SAS, Fortran, GrADs, Sigmaplot, Sigmastat, and others). Of the respondents, 84.4% reported that the main storage platform for their data was locally (in their labs or offices); 12.5% reported using an external data center, and 6.3% reported using another University platform (non-RSMAS).

Although we had prior knowledge that our researchers were depositing their data in various repositories like Woods Hole, PANGAEA, NOAA, GCMD, and others, 62% of the respondents indicated that they weren't depositing their data in any repository. In addition, 57.6% reported that their data could not be re-created if lost or destroyed. However, when asked if their current funding agencies required data archiving, preserving or depositing, 46.9% answered "Yes."

The survey results certainly answered some of our questions. However, it also raised some questions and prompted us to delve deeper into the methods of data production and the quantity of data produced at RSMAS verses the formatted and usable data.

Data Curation Profile Interviews

The next steps for the *E-Science Task Force* was to conduct our own version of the Data Curation Profile interviews like the ones being conducted at Purdue University Libraries and the Distributed Data Curation Center (DDCC).

Continuing to use the RSMAS Faculty for our pilot, we conducted a handful of interviews using the tools provided by the DDCC. The questions in the profile were designed to open the discussion on the data

being produced by each faculty member interviewed. Through these detailed discussions, the E-Science Task Force hoped to assess potential service needs and ascertain the likelihood of there being a final data product or dataset that could be deposited in an established repository or perhaps in our own institutional repository.

Question 10 of the Curation Profile asked, “How should the data be made accessible?” The responses to this type of open-ended question occasionally prompted the suggestion that unprocessed data be stored within the library, with librarians providing the access when requested. Although this model has worked for many libraries as well as the RSMAS Library as a temporary model of access for data notebooks, slides, floppy disk, and hard drives, it fails as a long-term solution to data management due to limitations on space availability, environmental control, and the necessity to update and maintain software for future retrieval.

The curation profile interviews and the environmental survey convinced us that a large amount of data lived on spreadsheets and local databases, on personal servers and hard drives, in offices and labs throughout the RSMAS campus. In our attempt to define our role in this era of data service we realized that RSMAS Library did not have the infrastructure for data storage, nor the staffing levels and expertise to process data for access. However, we could stay abreast of the current trends and issues to make recommendations for appropriate storage facilities or storage options. We could offer best practices, suggest appropriate repositories and data centers for the varying types of data, and support the planning of future research and data management planning with offerings of the DMPTool, ArcGIS, SAS, and SPSS.

Data Literacy Symposium

With a rough outline of the data services that we could immediately and feasibly offer at the RSMAS Library, I was given the opportunity to attend the Data Information Literacy Symposium (DIL) held at Purdue University in 2013 to hear firsthand what other libraries were doing to formally implement data services at their institutions. The DIL Symposium was designed to assist librarians in cultivating strategies and approaches for developing their own data programs. It was the culmination of a two year funded collaboration between Cornell, Purdue, University of Minnesota, and University of Oregon Libraries with each institution tasked with assessing the needs of their graduate students to manage, use, and curate their research data; interviewing faculty and graduate students in various disciplines to identify specific data needs; and responding to the needs with educational programming of varying types (mini courses, online courses, embedded librarianship, workshops, readings).

Twelve core competencies were developed as a result of this project to establish a baseline for a data literacy program, which have been outlined and elaborated on in their publication (Carlson et al. 2011; Carlson & Johnston 2015):

- Introduction to database and data formats
- Discovery and Acquisition of Data
- Data Management and Organization
- Data Conversion and Interoperability
- Quality Assurance
- Metadata

- Data Curation and Re-use
- Cultures of Practice
- Data Preservation
- Data Analysis
- Data Visualization
- Ethics, including citation of data

Implementing the core competencies and the lessons learned from the DIL Symposium, we began using every opportunity to raise awareness and advance the cause of data literacy, data management, and data services in our library workshops, one-on-one consultations, and classroom instruction sessions. Thanks to several of our colleagues who published their curriculum through Creative Commons and made their work available online we were able to assemble a portfolio of information to pass on our faculty, but specifically to our graduate students, lab managers, teaching assistants, and staff researcher.

The Future and the Past

Spreading the word that properly preparing your data promotes compliance for funders and repositories and facilitates better access was just the beginning of our new data service model. Since we had long since moved away from the data input model due to the loss of student funding, this was our opportunity to extend ourselves as liaisons to data resources and professionals in data management. However, our responsibility was two-pronged: to move forward and proclaim the best practices and guidelines for managing data in the research environment, while reaching back to reclaim access to the data dispersed in various repositories and provide access to relevant data published in technical reports.

To accomplish our two-pronged service model, we expanded our team, our skills, and our approach to providing instruction. In the spring of 2016, I teamed up with Dr. Timothy Norris, a CLIR Postdoctoral Fellow hired as UML's Data Curation Specialist, to co-teach a 2-credit graduate level course entitled, *Data Management in the Research Environment*. The foundational material and curriculum for this course was compiled from various sources and gleaned from colleagues who openly shared their outlines, guides, presentations, and even their time as guest lecturers. However, the most significant influences and contributors have been included in the references.

Feedback/Lessons Learned and Next Steps

The first data course at RSMAS was considered a success with five students enrolled in the course, three Masters students and two Ph.D.s. As with any course curriculum, we realized that changes to the lessons and reading assignments would have to be made constantly to incorporate the real-time data policies and procedures, related news and events in data management, relevant readings, and any technology shifts. However, the overall feedback and course reviews were very positive, and the suggestions ranged from additional lab time needed for the software and programming lessons, to creating course levels of data management, an intermediate level and an advanced level. The advanced data management course would likely encompass more of the data carpentry instruction for R, Python, and other software like GitHub, OpenRefine, MATLAB, or LaTeX.

A course designed to teach best practices for managing data in a research environment was a clear beginning for UM Libraries to offer our services, but would not and could not appeal to all who need or

desire to know more about data management. So in the summer of 2016 the UM Libraries launched our Data Services webpage to provide students, research staff, lab technicians, lab managers, and faculty with resource links and contacts to manage their data and stay informed.

The data course at UM/RSMAS will have its second semester in spring 2017. The content will be retooled and updated to reflect the changes in our US administration, and the lessons learned will be incorporated as much as possible. But is our desire to continue teaching the 2-credit graduate level course to promote and foster a culture of good data management at UM/RSMAS for as long as we can. However, we also realize the need to begin parts of the data and data management discussions much earlier, perhaps on a junior or senior undergraduate level.

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Resources

Data One Education Modules

<https://www.dataone.org/education-modules>

Purdue Libraries, DIL Instruction Program Planning

<http://guides.lib.purdue.edu/dil>

<http://www.datainfolit.org/>

OSU Libraries, Research Data Management

<http://guides.library.oregonstate.edu/research-data-services>

University of Minnesota, Data Management Course

<https://sites.google.com/a/umn.edu/data-management-workshop-series/>

MANTRA, Research Data Manage Training

<http://datalib.edina.ac.uk/mantra/>

RDMRose Learning Materials

<http://www.sheffield.ac.uk/is/research/projects/rdmrose>

Lamar Soutter Library, New England Collaborative Data Management Curriculum

<http://library.umassmed.edu/necdmc/index>

**MANAGING SCIENTIFIC DATA AND SUCCESSFUL LIBRARY PARTNERSHIPS:
SHARING OF MARINE DATA FROM OCEANOGRAPHIC SURVEYS
THROUGH A PROPOSED LIBRARY NETWORK WITHIN THE WESTPAC REGION
(Part: Southeast Asia)**

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Abstract

The Western Pacific region is of vast social and economic importance with over 70% of the population living in and relying economically on coastal areas, and with approximately 54% of the world's GDP generated from this region. This region also has the greatest global concentration of coastal marine biodiversity, with more than 75% of all known coral species, 53% of the world's coral reefs, more than 3,000 fish species, and the greatest extent of mangrove forests of any region in the world. Collaborative research and programs have been conducted by scientists, institutes, and countries in the Western Pacific on oceanography, environment, marine biodiversity, conservation and health of ocean ecosystems. Data collected and analyzed in these initiatives have contributed to further understanding of the oceanographic, biological and geological characteristics of an ocean or sea. These works provide a valuable tool, figures, historical data and foundations for sustainable fisheries programs in the future. This paper aims to present various international marine research programs and initiatives between Westpac countries and the availability of scientific reports and publications. The inventory of publications will include cooperative studies, oceanographic and marine scientific research expeditions and joint surveys of Southeast Asia and its ecosystems (biodiversity, species composition etc.) and conservation. Availability of these publications and scientific reports will be checked in different libraries, websites and institutional repositories. These documents and publications require the support and cooperation of libraries and institutions. Identification of significant works and publications for possible inclusion in the Aquatic Commons and Database of IOC/IODE will be explored.

Keywords: Data, collaborative research, Western Pacific, Westpac countries, oceanography, marine biodiversity.

Historic Oceanography in Pacific Ocean [1, 2, 3]

Oceanography may be one of the newest fields of science, but its roots extend back tens of thousands of years to when people began to venture from their coastal villages in rafts. About 30,000 years ago, human cultures along the western coastlines of the Pacific Ocean - in the area between what is now

Australia and China - started to migrate eastward across the great expanse of the Pacific Ocean. Over 25,000 years, these people, called Polynesians, eventually colonized the islands of the south and western Pacific, from New Guinea in the west to Fiji and Samoa to the east. Then they moved onward to Tahiti and finally Easter Island in the eastern South Pacific. How did the Polynesians manage to travel across thousands of miles of ocean without compasses, sextants, clocks, or other tools of modern navigation? Their migration was truly one of the great achievements of early seafaring cultures, and it marks the start of oceanographic observations by people who lived in harmony with the ocean. And today we admire and call them "Polynesian Seafarers - Masters of the Ocean Currents."

Ferdinand Magellan (1480-1521) became the first European to cross the Pacific Ocean from Spain in 1519. The Pacific attracted Captain James Cook (1728-1779), who commanded one of the most famous voyages of discovery of this time that began in 1768 when HMS Endeavour left Portsmouth, England. For over 10 years Cook led three world-encircling expeditions and mapped many countries, including Australia, New Zealand and the Hawaiian Islands.

Modern oceanography in this region began with the HMS Challenger Expedition that took place between 1872 and 1876. It was the first expedition organized specifically to gather data on a wide range of oceanic features, including ocean temperatures, seawater chemistry, currents, marine life, and the geology of the seafloor. Among the Challenger Expedition's discoveries was one of the deepest parts of the ocean - the Marianas Trench (off the coast of Guam) in the Western Pacific, where the seafloor is 26,850 feet, or more than 4 miles deep (8,200 meters). The deepest section of the Marianas Trench was later measured at more than 10,000 meters and is known as the Challenger Deep.

The Dutch Siboga Expedition (1899-1900) viewed as a whole was perhaps the most significant and productive scientific cruise to the Western Pacific Ocean prior to the mid 20th century. It served as an example for all modern marine scientists and hydrographers of how the combined skills of scientists and hydrographers can come together in a great endeavor.

Today the Western Pacific Region is home to approximately 1.8 billion people, more than 1/4 of the world's population. It stretches over a vast area, from China in the north and west, to New Zealand in the south, and French Polynesia in the east (37 countries and areas).

The Western Pacific region is of vast social and economic importance with over 70% of the population living in and relying economically on coastal areas, and with approximately 54% of the world's GDP generated from this region. It also has the greatest global concentration of coastal marine biodiversity with 75% of the world's coral species, 40% of the world's coral reef fish, six of the world's seven marine turtle species, and the greatest area of mangrove forests in the world.

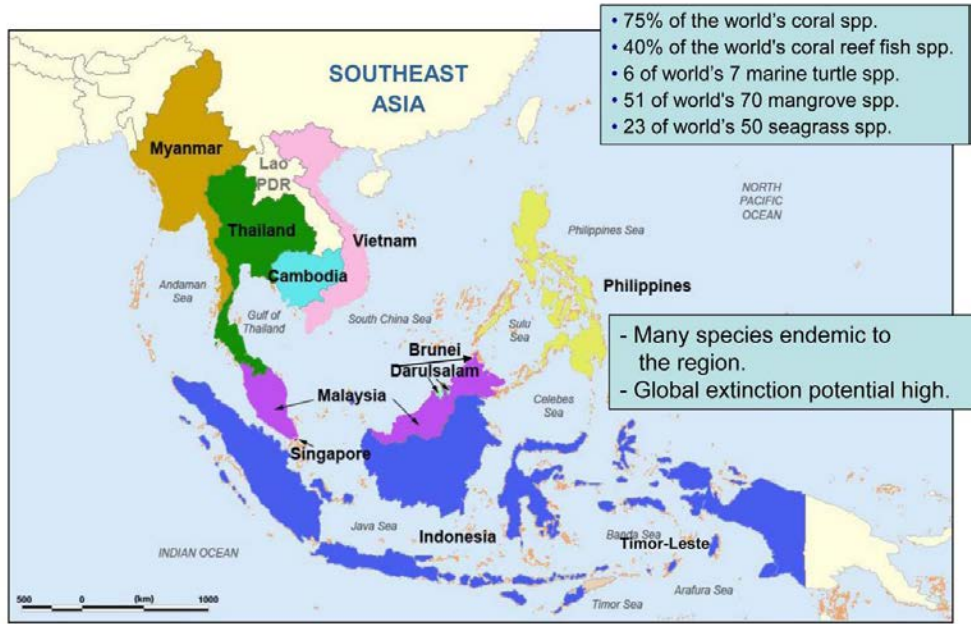


Figure 1. Map generated from ReefBase (<http://www.reefbase.org>)

It is a global hotspot for marine biodiversity with a wide variety of physical - chemical - biological conditions. In addition, this region is today quickly changing because of issues of society and the environment, such as population growth, over fishing, climate change, etc. Within the Western Pacific, there are more than 70 agencies, organizations and universities active in marine research and 36 marine libraries. Marine scientists have evaluated the importance of the marine ecosystems in this region. Cooperation in marine science for the purpose of marine environmental protection, marine biodiversity, seafood security and health of ocean ecosystems has been achieved through various international organizations in the region (UNESCO/IOC/WESTPAC; SEAFDEC; IUCN; UNEF; FAO/RAF; SPC; etc.), as well as bilateral or multilateral research initiatives such as the USS Albatross Philippines expedition 1907-1910; the Naga expedition: scientific results of marine investigations of the South China Sea and the Gulf of Thailand, 1959-1961; Cooperative Study of Kuroshio and adjacent regions (CSK) 1965 –1977; Marine fishery resources surveys in the South China Sea by SEAFDEC; The Philippines – Vietnam joint oceanographic and marine scientific research expeditions in the South China Sea from 1996 - 2007; UNEP/GEF/SCS Project “Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand, etc.

Collaborative research and programs in the Westpac region have been conducted in oceanography, environment, marine biodiversity, conservation and health of ocean ecosystems. Data collected and analyzed under these initiatives have contributed to further understanding of the oceanographic, biological and geological characteristics of the Westpac region. Results of the international cooperation programs on marine research in Westpac (area: Southeast Asian) are contained in scientific reports and scientific publications. These works also provide a valuable resource, figures, historical data and foundation for sustainable fisheries programs in the future. This paper aims to present various international marine research programs and initiatives related to Westpac countries and the availability of scientific reports and publications. The inventory of publications will include cooperative studies,

oceanographic and marine scientific research expeditions and joint surveys of Southeast Asia and its ecosystems (biodiversity, species composition, etc.) and conservation. The availability of these publications and scientific reports has been checked in libraries, websites and institutional repositories. It is essential to share these documents and publications, which require the support and cooperation of libraries and their institutions. Identification of significant works and publications for possible inclusion to the Aquatic Commons and Database of UNESCO/IOC/IODE will be explored.

The initiative to establish a network of marine libraries in Westpac is necessary. Today, various countries participating in the initiatives for “Blue Growth” need to share information through networks of marine libraries, thus improving the search for ecosystem knowledge, marine protection and making decisions on fisheries management and utilization of resources. The overall result is that the value of existing ecosystem information for planning and especially the possibilities for international collaboration in marine research is greatly increased.

The establishment of the network of marine libraries and dissemination of information in Westpac will face challenges: multiple languages/diversity of languages in publications, operational funds and manpower development. So the development of the marine library network in Westpac will need the support from the IOC/IODE, IOC/WESTPAC, IAMSLIC, ASFA/FAO, especially during its initial stages of establishment.

Acknowledgments

The authors would like to thank Ms. Linda Pikula (IOC/IODE) and Mr. Steve Watkins (IAMSLIC) for supporting us in the Conference. We thank Associate Professor Lawrence M. Liao - Graduate School of Biosphere Science - Hiroshima University for guide in writing a short communication and suggestions on oceanographic history in Westpac.

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<http://iocwestpac.org/marine-renewable-energy-technology-development/60.html>
<http://www.seafdec.org/>
http://www.unepscs.org/Newsflashes/Newsflash/Welcome_to_UNEPSCS.org.html
<https://library.ucsd.edu/apps/ceo/expeditions/naga/index.html>

IDENTIFYING CORE MARINE SCIENCE JOURNALS: FACTORS OF EVALUATION

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Abstract

Journal articles are the most important sources for scientific information. More than 20 years after the “Berlin Declaration,” more and more journals are published with open access. Due to this, the journals market is subject to a lot of change. Our main aim is to gather information to establish whether our subscriptions still meet the needs of our scientists. Key factors used to identify the core journals for marine sciences are displayed, at least for the scientists of our institution, which is an interdisciplinary research facility. It specializes in the study of coastal oceans and marginal seas and is divided into four sections that focus on different research activities. Because of this, it is important to find a combined set of core journals that reflect the needs of all scientists involved. Recent budget cuts have made it even more necessary to cut down on journal costs. Certain questions had to be answered during the evaluation process. Topics included in those questions were the definition of what core journals are, where our scientists publish their research, which journals they cite, available open access and institutional access to journals specialized in marine sciences and the cost of journals.

Keywords: Journal evaluation, citation analysis, core journals, bibliometric analysis, journal usage, collection management.

Background

“Because students can’t afford scholarly journals on a Ramen noodle budget” (American Library Association, 2016). This sentence from a bookmark of the American Library Association represents quite well the situation we were facing in our library. As with many research libraries, we face recent budget cuts, and on the other hand, skyrocketing journal subscription costs. Furthermore, the amount of scientific information increases. The current number of scientific peer-reviewed periodicals is estimated to be approximately 24,000 titles. We can consider an almost constant annual increase of more than 3% in the number of titles. That means that the number of active journals doubles every 20 years (Haustein, 2012).

How can we, as librarians, find the best way to satisfy the information needs of our readers? As a matter of fact, we have to cut the costs. This necessity forces us to focus on importance. Importance can be defined as follows: First, most frequently used journals; second, which journals our scientists choose for publication; and furthermore, aspects such as quality, content, soft factors and license conditions.

Evaluation process

We approached the requested importance by a journal evaluation. The journal evaluation was based on indicators for core marine science journals.

I. Citation analysis

We started our study with a citation analysis and set 3 criteria for our data source:

1. Publications within the date range 2013 to 2015.
2. Articles in journals with peer-review system.
3. The first author is IOW affiliated.



Overall, 171 articles met our criteria and were included in our citation analysis. Presently, data sources are available from Google Scholar, SCOPUS, and Thomson Reuters. Of these, we have elected to use citation data from Thomson Reuters.

We performed a cited reference search in Web of Science for all 171 articles and obtained 5704 references. We extracted 604 journal titles by some rudimentary data cleaning and examining titles

| | Cited journals | | Cited journal references | | |
|-------|----------------|---------|--------------------------|---------|------------------|
| Zone | No. | % | No. | % | Cumulative Total |
| 1 | 11 | 1.81% | 1882 | 32.99% | 1882 |
| 2 | 39 | 6.43% | 1911 | 33.50% | 3793 |
| 3 | 557 | 91.76% | 1911 | 33.50% | 5704 |
| Total | 607 | 100.00% | 5704 | 100.00% | |

Table 1. Distribution by zone of cited journals and references.

changes. We ranked the journal title list according to the number of citations received (Delwiche, 2003). Bradford’s Law of Scattering was applied. Bradford’s Law means that a small group of journals in Zone 1 produces the largest number of citations, followed by a second, larger group of journals in Zone 2 that are cited somewhat less

frequently. Finally, a much larger group of journals in Zone 3, all of which are cited relatively infrequently (Belter & Kaske, 2016).

The distributions are consistent with those predicted by Bradford’s law of scattering. A collection of just 23 journals can provide 50 percent of the cited references. This suggests that the IOW Library can provide for the majority of the references made by IOW authors with a relatively small collection of core journals.

Following is a list of journals in Zone 1 that we would identify as core journals. All of them are subscription based. We cannot identify any Gold open access journal within Zone 1. Some publishers offer delayed open access.

| Journal | Publisher | open access |
|--|---|--------------------|
| Applied and Environmental Microbiology | American Society for Microbiology | delayed |
| Journal of Geophysical Research Oceans | Wiley; American Geographical Union | delayed |
| Journal of Marine Systems | Elsevier | no |
| Limnology and Oceanography | Wiley-Blackwell; American Society of Limnology and Oceanography | delayed |
| Marine Ecology Progress Series | Inter-Research | delayed |
| Science | American Association for the Advancement of Science (AAAS) | no |
| Journal of Physical Oceanography | American Meteorological Society; Allen Press | delayed |
| Continental Shelf Research | Elsevier | no |
| Nature | Nature Publishing Group | no |
| Marine Pollution Bulletin | Elsevier | no |
| Geochimica et Cosmochimica Acta | Elsevier | no |

Table II. Journals in Zone 1 (most cited, according to Bradford's Law).

What does it mean for our collection management? Because not many of the journals are published with open access, we need to pay for access. There is little chance of saving costs.

II. Usage

Another aspect of identifying the most frequently used journals is the usage. We were interested in the usage of our subscribed journals. Based on the COUNTER Standard, we performed the Journal Report 1. We collected the number of successful full-text article requests by our institution members. The numbers were obtained from each publisher. Due to the changing publishers, it is sometimes difficult to collect the correct number of full text downloads. Anyway, the quality of underlying database is crucial, when it comes to usage-based journal evaluation (Haustein, 2012). The retrieving of high quality usage data can become time consuming. The electronic usage data reflects usage by the whole readership but has advantages in citation analysis, which disregards non-publishing readers (Haustein, 2012). We use the Cost per Use Factor (CPU) to identify cancellation candidates. Cost per use means: The subscription price is divided by the number of absolute downloads as listed in COUNTER Journal Report 1. However, we would like to mention the following: The Journal Report 1 reports the number of download events, but not the number of unique articles accessed. Therefore, calculations based on Cost per Use (CPU) may cause poor decisions. The reported download events are related to an undefinable large set of articles (Haustein, 2012). Nevertheless, we consider the Cost Per Use (CPU) factor as a decider for renewal or cancellation. However, caution must be exercised when drawing comparisons (Bucknall & Bernhardt, 2014).

| Journal Usage, Top 10 |
|---|
| Journal of Marine Systems |
| ISME Journal |
| Marine Pollution Bulletin |
| Geochimica et Cosmochimica Acta |
| Applied and Environmental Microbiology |
| Marine Ecology Progress Series |
| Estuarine, Coastal and Shelf Science |
| Continental Shelf Research |
| Marine Chemistry |
| Journal of Geophysical Research: Oceans |

III. Publications by IOW affiliated authors

The third factor is publications. We examined the journals, which our scientists choose for their publications.

| Journals most published in |
|-----------------------------------|
| Journal of Marine Systems |
| Biogeosciences |
| Marine Pollution Bulletin |
| PLoS One |
| Ocean Modelling |
| Continental Shelf Research |
| Deep Sea Research Part 1 |
| Environmental Microbiology |
| FEMS Microbiology Ecology |
| Journal of Coastal Research |

Table III. Most published journals.

Other Factors Evaluated

We have described the use of journals by a citation analysis and by usage reports. Even though those were quantitative characterizations, this does not necessarily mean that indicators should be based on measurements; they can also result from qualitative assessments (Kosten, 2016).

- **Altmetrics:** Scholarly communication is changing and new technologies, like blog posts, blog citations, and social bookmarking are entering the academic world (Tattersall, 2016). Therefore, alternative metric source data can be applied to a journal evaluation. We did not examine altmetric sources in our journal evaluation.
- **Soft factors:** We would describe these as factors to be considered, which can be obtained by a user survey, providing useful information. Although it is an important factor within journal evaluation, we did not conduct a survey for several reasons. It is time consuming, and some discussions about journal evaluation are based on personal preferences.
- **Quality:** For librarians, it is not easy to assess the quality of scientific journals. The impact factor became a synonym for journal quality and academic prestige. There are many pros and cons. Nevertheless, this indicator became powerful enough to influence researchers' publication patterns in so far as it became one of the most important criteria to select a publication venue (Haustein and Larivière, 2015).
- **Content:** Furthermore, the journal content is an important factor in analyzing scientific journals. An appropriate way to assess the journal's content is to analyze (1) the author keywords; (2) the noun phrases that appear in titles; and (3) the themes of Special Issues (Haustein and Larivière, 2014).
- **Access:** Access is another fundamental aspect of how we are reformulating the utility and effect of a collection (Horava, 2010). 20 years after the "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities" more and more journals are published with open access. Notwithstanding, we note that most scholarly information in marine science is published in subscription based journals by Elsevier, Wiley and Springer.

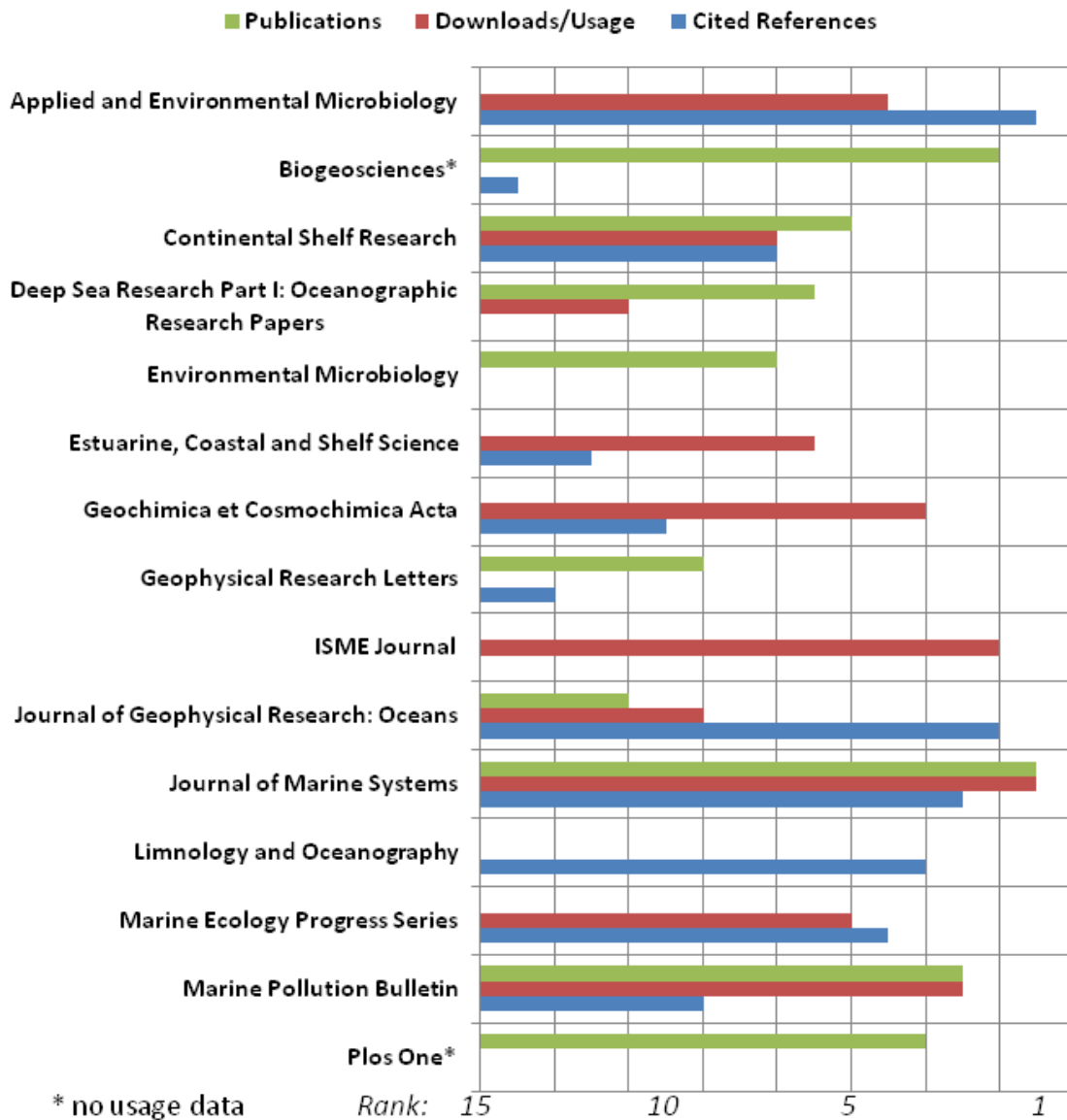


Table IV. Publications with downloads, citations.

We omit the journals *Science* and *Nature*, because these are multidisciplinary journals and we hold these as printed journals. Users can access the archives only, so our usage data are incomplete. Additionally, many researchers cite *Science* and *Nature*, although they may never publish a research article in either of those journals.

The differences between the journals are easy to see. Let's have a look at some striking examples. The *ISME Journal* is frequently used. The *ISME Journal* is ranked in position 2 in the number of successful

full-text downloads, but it isn't among the top 15 cited journals, whereas *Limnology and Oceanography* ranks high among the cited journals but not within the downloads. This shows that considering only one category could be misleading. Therefore, we recommend considering more than one category in an evaluation process.

Summary and Conclusion

In our journal evaluation, we examined the cited references, the downloads, and the publications of our scientists. We obtained journal lists and performed a ranking for every list.

The concept of journal evaluation is so multifaceted and therefore complex that it cannot be captured in one single metric (Cheang, Chu, Li, & Lim, 2014). It is important to consider multiple factors and to apply a multidimensional approach (Haustein, 2012). We applied various factors in a journal evaluation. It is essential to preserve the different factors and not to blend them into one composite indicator (Haustein and Larivière, 2014).

The necessity of cutting down on journal costs make journal evaluations more essential (Jasco, 2013). Core marine science journals can be indicated by their relevance and importance. Our journal evaluation was a pilot study. The analysis will be continued in the future to improve local library collection management.

Acknowledgements

Olivia Diehr would sincerely like to thank IAMS LIC and Bibliothek & Information International (BII) for partially funding her presentation in Mérida, Mexico. Also, the authors would like to thank Marina Wigger for reviewing the report.

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**GAIA ANTARCTIC DIGITAL REPOSITORY:
MANAGEMENT AND DISSEMINATION OF ANTARCTIC KNOWLEDGE**

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Abstract

The experience of creating the Gaia Antarctic Digital Repository a specialized subject repository, is described. It was born during the Convenio de Desempeño MINEDUC-MAG 1203 “Gaia Antártica: Conocimiento y Cultura Antártica” and the collaborative partnership of the Universidad de Magallanes (Umag) with higher education and research institutions that contribute to the knowledge of the Antarctic Continent. The purpose of the repository is to develop a single digital platform to collect, preserve and disseminate scientific, academic and disclosure information about the Antarctic and Antarctic polar areas. It emphasizes partnerships with national universities and institutions of research. The paper also describes the process of selecting documents; specifying the terms for scanning; the technical aspects of the selection and implementation of the management platform of digital objects; selection of open access software and the use of standard bibliographic description; and the implementation of hardware and networking technologies. Finally, it describes uses, policies and copyrights, settlement and dissemination.

Keywords: Digital repositories, Antarctica, Gaia Antarctica, open access, knowledge dissemination.

Introduction

The growing generation of knowledge at the global level has raised important challenges for researchers and preservers of scientific information. Publishers took charge of publishing and disseminating this knowledge, and higher education and research institutions invest resources that directly affect budgets for publication, dissemination and new research. There is a global tendency to publish on open or free access sites: " ... when referring to open access, we are referring to its free availability on the public Internet, allowing any user to read, download, copy, distribute, print" (Suber, 2002). It means that it is becoming more common to find information generated by scientific research without having to be subscribed to a particular title or to a specialized or multidisciplinary commercial database. Now the author or holder of the rights of the information generated has a quick and effective way of explicitly allowing publication to be shared through open access, using Creative Commons licenses. This innovative international licensing project strikes a balance between the traditional "all rights reserved" and the freedom of the author to define and establish the terms in which their works can be used in the public domain. Librarians have traditionally played important roles in gathering and connecting users with the information they require. This has been facilitated by the incorporation of new information and communication technologies (ICTs), allowing access to content not only in an agile and efficient way, but also in different formats.

The Chilean National Antarctic Policy prioritizes among others the following areas:

1. Effective participation in the Antarctic Treaty System.
2. Preservation of peace, scientific activities and ecological reserves.
3. International cooperation.
4. Promotion of facilities in continental Chile as a bridge country, especially strengthening the participation of the Region of Magellan and Chilean Antarctica.
5. Orientation of Antarctic national science in a way that is linked to major trends.
6. Conservation of marine living resources.
7. Promotion of controlled tourism.

Likewise, each of the institutions invited to be part of the project has among its objectives to study, protect and/or develop a territory that offers a lot to discover, and has a large number of documents that needed to be collected, stored, preserved and make available to public domain.

Genesis of the Project

Digital repositories occupy an important place in the information world, both in research institutions and in higher education. "Repositories have two fundamental purposes: to distribute research articles via the Internet and to ensure their conservation in an electronic and dynamic environment" (Barton, 2004-2005). Repositories are based on open access, facilitating communication between researchers, sharing and finding results online, thus increasing the impact of research. Now it is easier to recover data quickly and efficiently in specific subject areas thanks to different free access initiatives such as software and data exchange protocols, and also thanks to information retrieval library techniques, archiving techniques, optical character recognition technology and mass storage.

Along with the institutions that measure scientific productivity through the control and registration of bibliographic citations and that produce a series of rankings and indicators at national and international levels, some measure and qualify repositories and generate directories with impact measurements (visibility or number of links received), number of pages, number of rich files, and entries in search engines like Google, raising the research profiles of the institutions. On the other hand, our country as an Antarctic country conducts active scientific work on that continent, supporting national and international research initiatives. In its Strategic Plan for Institutional Development (2012-2016), the University of Magallanes (UMAG) has prioritized three research areas: human settlement in high latitudes, Antarctic and sub-Antarctic biodiversity, and energy.

The Antarctic concern of UMAG also operates within the guidelines of the Regional Agenda for Productive Development of the Regional Government, and the creation of the Antarctic Programs Directorate further enhances the role that naturally belongs to it as an entity of higher education that is geographically and strategically positioned in the region closest to the icy continent.

In this context there is a Performance Agreement (CD) in the Regional Higher Education Area "GAIA-Antarctica: Antarctic Knowledge and Culture," which was signed in 2013 between UMAG and the Chilean Ministry of Education. Its general objective is "to substantially improve knowledge and Antarctic knowledge in the Region of Magallanes and Chilean Antarctica, leading the UMAG to be recognized at regional, national and international level for its competence in Antarctic matters."

All of the aforementioned was enough reason for the Libraries System of the University of Magallanes (SIBUMAG) to be involved in the Performance Agreement, proposing a specialized Digital Repository, allowing the availability of quality and updated information on the Antarctic agenda and the local, national and international production of Antarctic data, based on a public domain Web platform. It also gathered information dispersed in the collections of national and international institutions dedicated to the subject. The core of the repository would be documents previously collected, selected and digitized from the collections of the institutions with which agreements are established and the documents generated by the University of Magallanes in the context of the different actions that emanate from the Plan of Institutional Improvement (PMI).

Methods

Several stages were established to optimize the work:

1. Identification and selection of institutions with which to establish cooperation agreements.
2. Selection of the relevant resources in each of the involved organizations.
3. Digitalization of documents.
4. Design and implementation of the database.
5. Population of the repository.

1. Agreements

One of the specific objectives of the Performance Agreement is linkage with the environment "to generate permanent strategic alliances between the academic sector and the public and private actors that allow to spread the culture and to foment the Antarctic knowledge." The Chilean Antarctic Institute (INACH), under the Ministry of Foreign Affairs, is responsible for coordinating, planning and carrying out scientific and technological activities in Antarctica. Its Communications and Education Department is in charge of collaborating, participating and sharing the results of the countless campaigns, trips and scientific explorations carried out on the Antarctic continent, and since 2003 the national headquarters has been located in Punta Arenas, facilitating information exchange.

The next institution was the University of Chile, specifically the Information System and Libraries (SISIB). This agreement is meant to preserve titles, theses, books and articles produced by students and academics from different faculties and institutes. In order to involve the Directorate of Archives and Museums Libraries (DIBAM), the framework agreement established in the context of the Institutional Improvement Plan "Identity of the End of the World: Patagonia, Tierra del Fuego y Antartica" was used, which would allow access to relevant resources.

During 2014, the Board of the Center for Hemispheric and Polar Studies and the President of the Valle Hermoso Foundation also agreed to participate as collaborating institutions. At the end of 2015, a Collaboration Agreement was signed between the University of Magallanes and the Universidad Austral de Chile (UACH). As mentioned in the document, the planning, coordination and execution of the programmed activities will be channeled through the UACH Libraries Division (SIBUACH) and the Umag Libraries Division (SIBUMAG). As the Director of the Antarctic Department of the Army of Chile is part of the External Executive Advisory Commission of the CD, they have contributed documents dating from 1948, the year of the creation of the Antarctic Base Bernardo O'Higgins.

Participating institutions benefit not only from the visibility and dissemination of the information they generate, but also from the availability of digital versions of those resources for preservation. According to the commitment in the Performance Agreement, it is expected that in this first stage a total of seven national and international entities will participate in this initiative. The signing of an agreement with the University of Santiago De Chile (USACH) is currently pending.

2. Selection of Material

Once the cadastre was carried out in the bibliographic catalogs of the institutions in agreement considering the thematic pertinence, the resources that had released intellectual property were selected. This allowed the discovery of those already in digital format and also quantified the need to process in the first stage about 37,000 images, belonging to documents, slides, maps, books and photographs. Each of the articles, papers or references were reviewed in the authorized sources of verification of intellectual property like Sherpa/RoMeo, a database that facilitates the online consultation on editorial policies of the publishers and auto archiving. Each of the participants, in turn, retrieved the documents to be digitized and put them at the disposal of the University of Magallanes. As a policy of the repository, it was decided that if there was a restriction to access, the document will be registered and linked to the main source.

3. Digitization

For the selection of the company that would execute the service, the bidding terms of reference were described, including administrative and technical specifications, such as formatting, quality of image resolution for publication and preservation, and optical recognition technology (OCR) that facilitates retrieval because it allows identification of the required term throughout the text. As there were no companies dedicated to digitization in this Region, a move to Punta Arenas of the equipment needed to carry out the process was incorporated as a requisite, since many documents could not be exported from the region. Four national companies answered the call. Work was done digitizing resources such as photographs, maps and slides.

4. Implementation of Databases

The review of the literature on repositories allowed the establishment of the best parameters on standards and criteria available worldwide in the design and implementation of databases. The open source software DSpace was chosen because of its ability to manage and preserve digital files for a long time and in constant evolution. This software was developed in a strategic alliance by the Massachusetts Institute of Technology (MIT) and Hewlett Packard (HP).

For recovery it was decided to use the Dublin Core Metadata Model (DCMI) for its interoperability feature that would facilitate the description, visibility and retrieval of digital objects. There were four bidders to implement the repository. In the end it was awarded to Prodigio Consultores.

The information inside the repositories is organized in communities. In this case, they were associated with each of the participating institutions. Collections were established for the types and formats of documents detected in the review and selection. According to the types of resources, the following collections were established:

- Human activity
- Science
- Institutional Information
- Treaties and protocols
- Tourism
- Travelers and explorers
- Antarctica life in pictures
- Education and outreach

One of the tasks that required considerable time was the selection of metadata. In addition to incorporating traditional ones, others were established that allow access to resources in the most efficient way possible. It was also decided to acquire a dedicated server to host the digital objects with dedicated Internet access, to ensure both storage and access in an optimal way. Each of these activities required the relevant professional advice.

5. Repository Population

Once the company that was in charge of the digitization gave us the digital objects, we proceeded to make the descriptions and enter them into the database. This activity was carried out by the staff of the Library System of the University of Magallanes (SIBUMAG), which has been trained in these new techniques and technologies.

Conclusions

1. Gaia Antarctic Digital Repository consolidates the position of the University of Magallanes and collaborating institutions as a national and international reference for the development of studies in natural, social and normative sciences regarding Antarctica.
2. Institutional alliances with a common goal enhance results, especially on issues of national and international interest.
3. A large number of the information resources that were stored without any criteria to facilitate recovery will now be available via open access and with proper descriptions.
4. Incorporated technologies promote other similar initiatives that the University could develop.
5. Good practices and policies of documentary preservation are promoted.
6. Information professionals of the Library System have benefited by responding to the challenge of incorporating new knowledge in tools, techniques and technologies used worldwide, which enables them to continue with the service of being the disseminators of knowledge.
7. The dynamic of the information technologies allows to project a continuous development of both the contents and the participants and collaborators of this initiative, that promotes, diffuses and develops more knowledge about the Antarctic Continent every day.

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BIBLIOMETRICS AS A TOOL FOR ENVIRONMENTAL MANAGEMENT AT THE UNIVERSITY OF HAVANA

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Abstract

Within the framework of the University of Havana Environment Network (Red MA-UH), much environmental research is carried out, but most of it is never implemented or applied due to poor visibility and a lack of efficient strategic alliances. Today, the results of much of this research become either grey literature or Cuban publications with poor visibility, and therefore they can't be used for solving environmental problems affecting society. Nevertheless, this research could be used to help solve socio-environmental problems if decision-makers and international organizations were made aware of the results and provided funding to put them into practice. Research results are increasingly being disseminated on an international scale, so their visibility can be enhanced and funding and scientific collaboration can be gotten more easily, allowing the University of Havana Environment Network's research to have the desired social effects. The present work is aimed at examining high-impact publications included in the Scimago Journal & Country Rank (SJCR) portal, specifically in the field of environmental sciences. Metrical indicators were used to show the University of Havana Environment Network how to make its research results more visible by identifying international high-impact publications in the environmental sciences, to enhance the visibility of research carried out at the University of Havana, which contributes, in turn, to implementation in environmental management, rational use and equitable distribution of resources, and the promotion of local development by means of environmental management strategies, guaranteeing a harmonious relationship between society and nature.

Keywords: Bibliometrics, environmental networks, University of Havana, environmental sciences.

Introduction

Within the framework of the University of Havana Environmental Network (Red MA-UH), many pieces of research into the environment are carried out, but most of them are never implemented or applied to the environmental management due to poor exposure and a lack of efficient strategic alliances. Today, the results of many of these pieces of research just become either grey literatures or Cuban poorly visible publications, and therefore they can't be used for solving environmental problems affecting society.

On an international scale, research results have increasingly been disseminated widely. Visibility and funding could be enhanced and scientific collaboration could be established more easily to allow the University of Havana Environmental Network's research to have the desired social effects.

Research Question

What subject categories and international serials in the environmental sciences are the most effective to allow the University of Havana Environmental Network's research to be spread and given high impact and greater visibility? Our main objective was to identify international high-impact publications in the environmental sciences in order to enhance the visibility of the research carried out at the University of Havana, which contributes in turn to implementation of environmental management. Specifically, we wanted to identify subject categories in the University of Havana Environmental Network and their correspondence with similar international subject categories related to the environment. We examined the classification of international subject categories included in the Scopus database for the environmental sciences to determine if there is a correspondence between them and the University of Havana Environmental Network's lines of work in the year 2013.

Methods and Techniques of Research

Literature review: in order to identify theoretical foundations for the research.

Descriptive method: Data on the total number of publications according to subject categories indexed in Scopus in the environmental sciences were collected in order to identify journals with high impact as measured by the SCImago Journal Rank (SJR indicator) in the year 2013. Interviews were conducted with the University of Havana Environment Network's managers in order to obtain information on the Network's functioning. Journals included in the Scimago Journal & Country Rank (SJCR) portal, specifically the ones included in the first quartile in the environmental sciences domain in the year 2013, were compiled and their impact was measured by the SCImago Journal Rank (SJR indicator) according to subject categories. The year 2013 was the major year presented in the Portal.

Microsoft Excel was used to import data about journals included in the SJRC containing the entire bibliometric information from the Scopus Database. Excel was also used for data tabulation. SJR data were analyzed using the Statistica software package in order to calculate the average Scimago Journal Rank according to observed categories (\pm 95% confidence intervals).

A research tool allows determination through the application of quantitative indicators and mathematical models of the state of knowledge production, description, evaluation, and interpretation phenomena of informational scientific activity and their interrelation with society. It is used for adding value to information and improving decision-making in the organization. SCImago Journal Rank (SJR indicator) is a measure of the scientific prestige of scholarly journals. It was developed by Dr. Felix Moya de Aneon from SCImago Research Group. The prestige of every journal depends on a minimum value

achieved by a journal after being selected for processing by the Scopus database. Included are how many articles in a journal are included in the Scopus database, the number of citations received by a journal, and the importance of the journals from which such citations come. Citations are not equal because some citations have more value than others. For instance, a journal is considered more prestigious if it is cited by highly important journals.

University of Havana Environmental Network

- Mission: Coordinate and facilitate research into environmental issues by potentiating synergy between projects and university departments.
- Vision: A University of Havana research project network sharing information, human resources and materials in order to potentiate research results and their impact on the environment.
- Structure: A coordinating core and several nodes. The core comprises two persons and every university department dealing with environmental issues has a representative in the Network. At the same time people undertaking research projects both as managers and members share and manage resources and information.
- Functioning: Projects undertaken in every university department are the source of identifying common and possible synergies. These projects are divided into four subject categories: (1) biodiversity and conservation; (2) natural resources – water and soils; (3) climate change; and (4) management and territorial organization. The Network core manages working meetings and activities between departments and with actors external to the University of Havana.

Results

As shown in Table I, there is a correspondence between some subject categories, by which journals are grouped in the SCImago Journal & Country Rank (SJCR) portal, and the University of Havana Environment Network’s lines of work. According to data supplied by the Network’s coordinating core, the Network was found to have four lines of work connected with six out of twelve international subject categories in the field of environmental sciences. Nine hundred thirteen records from the identified categories were downloaded. The number of records per subject category was not homogenous.

| University of Havana Environment Network’s Lines of Work | International Subject Categories |
|---|--|
| Biodiversity and Conservation | Ecology |
| Climate Change | Global Planetary Change |
| Management and Territorial Organization | Management, Monitoring Policy and Law Waste Management and Disposal |
| Natural Resources: Water and Soils | Nature and Landscape Conservation |
| Pollution | Pollution |

Table I. Correspondence between the University of Havana Environment Network’s lines of work and subject categories in the field of environmental sciences included in Scopus.

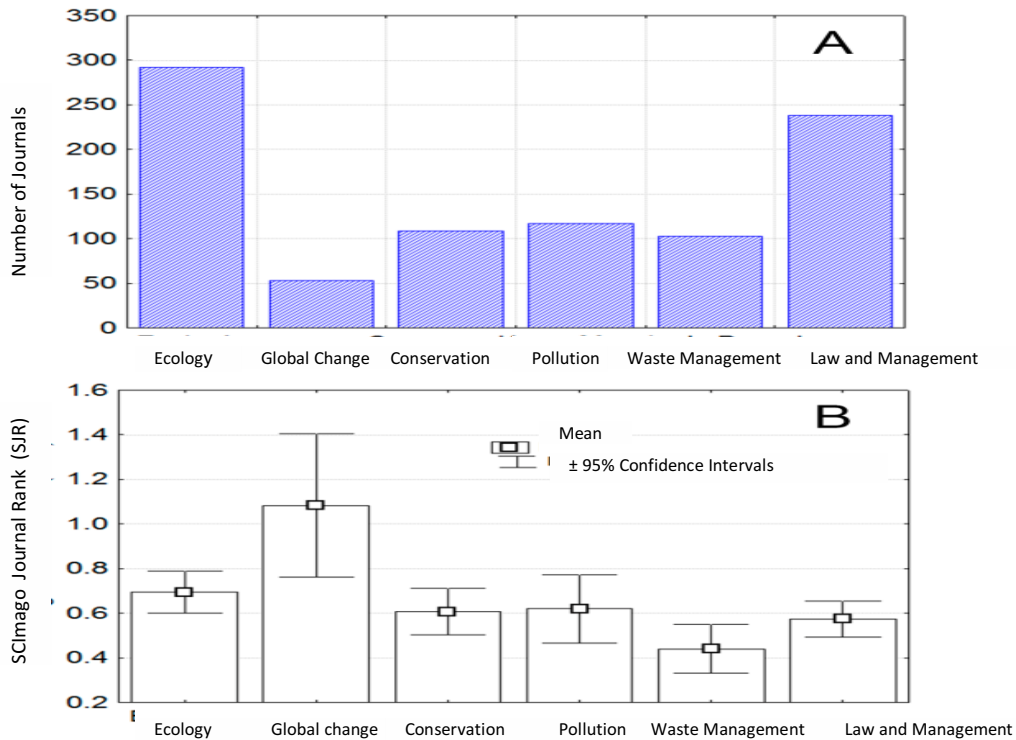


Figure 1. Number of journals per subject category in the environmental sciences domain on which they are focused (A), and the SCImago Journal Rank (SJR indicator) measuring scientific influence and prestige of [scholarly journals](#) included in the SCImago Journal & Country Rank (SJCR) portal in the year 2013, and subject categories in the environmental sciences domain, on which such journals are focused (B).

As it can be seen in Figure 1 (A), journals focused on ecology as a subject category in the environmental sciences are the most numerous, with 292 of them. Journals dealing with law and management issues come next (238), followed by the ones focused on pollution (117) and conservation (109). There are 103 journals focusing on Waste Management, and while there are only 53 journals dealing with the Global Change category, these are the most influential and prestigious ones (highest SJR indicator) (see Figure 1 B).

Table 2 shows the six most visible journals per subject category, and also their scientific influence and prestige measured by the SCImago Journal Rank (SJR indicator). The journals are arranged according to their SJR indicators, starting with the ones with the highest. The countries where they are published are shown as well. All the journals are published in English and peer-reviewed to ensure their scientific quality. The journals most visible in the year 2013 are *Annual Review of Ecology, Evolution, and Systematics*, focused on ecology; *Global change biology*, on global change; *Conservation Letters*, conservation; *Energy and environmental sciences*, pollution; *Water research*, waste management; and *Economic policy, law and management*. Articles published in the journals deal with issues that have a connection with the University of Havana Environment Network's lines of work.

| A-Category: Ecology | Country | SJR |
|--|----------------|------------|
| Annual Review of Ecology, Evolution, and Systematics | USA | 6,226 |
| Global Change Biology | United Kingdom | 4,596 |
| Frontiers in Ecology and the Environment | USA | 4,156 |
| Global Ecology and Biogeography | United Kingdom | 4,118 |
| Journal of Ecology | United Kingdom | 3,481 |
| Global Environmental Change | United Kingdom | 3,461 |
| | | |
| B-Category: Global Change | Country | SJR |
| Global Change Biology | United Kingdom | 4,596 |
| Global Ecology and Biogeography | United Kingdom | 4,118 |
| Global Environmental Change | United Kingdom | 3,461 |
| Global Biogeochemical Cycles | USA | 3,239 |
| Quaternary Science Reviews | United Kingdom | 3,124 |
| Issues in Ecology | USA | 2,901 |
| | | |
| C-Category: Conservation | Country | SJR |
| Conservation Letters | USA | 2,862 |
| Conservation Biology | United Kingdom | 2,705 |
| Biological Conservation | Holland | 2,552 |
| Wildlife Monographs | USA | 1,968 |
| Forest Ecology and Management | Holland | 1,742 |
| Landscape Ecology | Holland | 1,644 |
| | | |
| D-Category: Pollution | Country | SJR |
| Energy and Environmental Sciences | United Kingdom | 6,451 |
| Water Research | United Kingdom | 3,026 |
| | | |
| Issues in Ecology | USA | 2,901 |
| | | |
| | | |
| Energy | United Kingdom | 2,692 |
| Green Chemistry | United Kingdom | 2,368 |
| Environmental Pollution | United Kingdom | 1,974 |

| E-Category: Waste Management | Country | SJR |
|--|----------------|------------|
| Water Research | United Kingdom | 3,026 |
| Bioresource Technology | United Kingdom | 2,476 |
| | | |
| Waste Management | United Kingdom | 1,88 |
| Journal of Hazardous Materials | Holland | 1,868 |
| Critical Reviews in Environmental Science and Technology | United Kingdom | 1,716 |
| Biomass and Bioenergy | United Kingdom | 1,703 |
| | | |
| F-Category: Law and Management | Country | SJR |
| Economic Policy | United Kingdom | 5,212 |
| Global Environmental Change | United Kingdom | 3,461 |
| Fish and Fisheries | United Kingdom | 3,42 |
| Review of Environmental Economics and Policy | USA | 3,175 |
| Journal of Environmental Economics and Management | USA | 2,802 |
| Biotechnology for Biofuels | United Kingdom | 2,177 |

Table 2. The six most visible journals per subject category, included in the first quartile, and their scientific influence and prestige measured by the SCImago Journal Rank (SJR indicator); countries where they are published.

Discussion

Scientific and strategic policies adopted by the University of Havana and, more recently, the University of Havana Environment Network, have been directed at searching for more universal communication channels, safer and more reliable sources of funding for projects, and international research teams, all of which allow knowledge to be shared fairly and the scientific rigor of research to be enhanced.

The University of Havana has already designed an environmental strategy that awaits adoption across university departments. The University of Havana Environment Network's lines of work are grouped similarly to the way subject categories are in Scopus, so that they are up to international standards. The present work is *multidisciplinary*, *transdisciplinary*, and *interdisciplinary* in accordance with approaches adopted in scientific research since the second half of the 20th century (Arencibia-Jorge, 2007).

The SCImago Journal & Country Rank portal includes 1344 journals in the environmental sciences. This work identifies the 36 most influential and prestigious journals in English that focus on the environment, because they are the ones best able to contribute to an internationally enhanced visibility of the research into the environment carried out in Cuba. Additionally, results of scientific research are validated by publication in mainstream journals that are regarded as publishing the most relevant articles on the subjects involved. The increased number of publications in English shows the tendency,

described in great detail in the specialized literature, for scientists and scholars to use this language for global information sharing and dissemination. However, we know that most visible and prestigious journals are very competitive, and publishing research results therein is very difficult. Researchers have been always concerned about result visibility because it is not only the way of making the national and international scientific community aware of their contributions, but also ensures that they are acknowledged. At the same time, it is necessary to assess results to establish research dynamics and apply criteria on which political and public research management may be based in order to get financial support.

Scientific production is, however, decreasing at the University of Havana, despite the fact that there are a great many researchers who could potentially conduct research into the environment. Some reasons for this decrease include the fact that many researchers either do not know how to get their scientific articles published, or to write them properly, or to master the foreign language - mostly English - in which they need to write; sometimes they have too many teaching hours at the University as well. Hostile policies on Cuba adopted by third countries, such as the then U. S. President George W. Bush administration's attempt to prevent articles written by Cuban researchers being published in U. S. journals, are another reason, to mention just one example. Additionally, the age composition of the teaching staff has also changed, with most of them younger nowadays. This fact is of importance because the more experienced the staff is, the more scientific articles they produce.

This work presents 36 journals included in the first quartile (the most visible and influential and prestigious ones), which focus on environmental sciences, even though we acknowledge that they are very competitive publications because articles are rigorously peer-reviewed by at least two reviewers before publication. Even so, Cuban researchers must succeed in publishing their research results in these journals, because this gives them more opportunities to find sources of funding which make possible international collaborations on important issues such as the environment. The journals focusing on the subject categories global change, ecology, and pollution are the most influential and prestigious because these are environmental topics of major importance worldwide. Global climate change is of the utmost importance due to its disastrous effect on life on earth. Ecology is a highly topical scientific field dealing with studying interactions of organisms with each other and their environments; its results contribute to a better insight into biodiversity. Ecology is mostly aimed at establishing a harmonious relationship between development and the environment, and therein lies the social and historical importance of this field to mankind. Pollution is another environmental problem affecting the human race on a global, regional, and local level.

Nowadays, scientists are facing the challenge of finding sources of funding for meeting the increasing demands for research into the environment, which contribute to sustainable social development. But these contributions must be made visible to the international scientific community, by being published in very influential and prestigious scholarly journals whose articles are peer-reviewed by other scientists and experts. The present work has highlighted some of these journals, with the aim of helping scientists succeed in making their research efforts attain their desired goals.

Conclusions

Bibliometrics has contributed to enhanced environmental management at the University of Havana

because it has increased the understanding of environmental issues and given effective information for decision-making as the result of scientific activity in this field of science. There is a correspondence between the University of Havana Environmental Network's working policies and international standards that is favorable to scientific collaboration and application of results on different scales and in different contexts, and places an emphasis on sustainable social development.

Ecology, global change and pollution are high impact subject categories because they are the most important for the scientific community to be able to guarantee a sustainable development. The journals *Annual Review of Ecology Evolution and Systematics*, *Global Change Biology*, *Conservation Letters*, *Energy and Environmental Sciences*, *Water Research*, and *Economic Policy* have the greatest visibility (high impact) in the six analyzed subject categories internationally.

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FISHY BUSINESS: FISH IN THE *UNITED STATES SERIAL SET*

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Abstract

The *United States Congressional Serial Set* contains a wide variety of historical documents relating to natural resources and their history in the United States. It is an excellent resource for those researching historical data concerning fisheries, from extant species and ecology to economic issues. Information on resources outside the United States is also available due to the U.S. history of explorations and expansions. Charts, maps and tables are found within many of the papers and reports. There are also numerous scientific illustrations.

Keywords: Fisheries, Fisheries data, Historical account, United States government data, *United States Serial Set*

As a new marine science librarian, I'm learning and re-learning about information resources all the time. While exploring the contents of my file cabinets, I found some random fish lithographs labelled U.S. Japan Expedition and Natural History Collections in Alaska – Nelson. When my government documents expert friend, Andrea Sevetson, visited, she immediately identified them as being from the *United States Serial Set*, a resource that I had not used or even thought of in many years. The *U.S. Serial Set* is a bound series of over 15,000 volumes and contains within it nearly all of the hundreds of thousands of numbered documents and congressional reports published since 1817. While most people use it as a primary source for American history and Congressional reports, its contents range from agricultural yearbooks (aquaculture!), foreign relations (treaties!), geological surveys, and a treasure trove of historical data about the United States' fisheries. You can also find historical reports from explorations in the United States and around the world. From the Annual Reports of the Fish Commission to Commodore Perry's Expedition to the China Sea and Japan, there are lists of species, temperatures, hatcheries, maps and beautiful artwork capturing the animals, people and landscapes of the region. There is a companion set called the *American State Papers* that contains documents published prior to 1817. Both of these sets are available commercially as searchable online texts with indexes. Many individually scanned volumes are found in Google Books, the Hathi Trust and other locations (Sevetson, 2013, p. 3). The print version of the *Serial Set* is found in almost every state in the United States thanks to the Federal Depository Library Program.

The variety of documents contained in the *Serial Set* is immense. It contains Executive Branch publications such as the *Agricultural Yearbook* (1894-1975), geological surveys (1832-1945), *Reports on Rivers and Harbors* (1817-1982), and annual reports from a variety of federal agencies (1817-1976) including the Fish Commission. Historical reports from explorations in the United States and around the world are also included along with their accompanying illustrations and maps. Maps are included from other publications as well and total more than 70,000. Besides government reports and documents, the *Serial Set* contains reports from a variety of non-governmental organizations such as the annual reports from the Boy and Girl Scouts, the Smithsonian Institution and the Daughters of the American Revolution.

Searching for information about fish and fisheries should not be limited to obvious agencies such as the Fish Commission or NOAA. Over the years, a number of agencies have published information and data that can be of interest. The fact that federal agencies have merged and split apart along with the accompanying name changes can complicate your searching. You need to consider agencies as diverse as the Departments of Treasury or State along with the more obvious ones like the U.S. Fish and Wildlife Service.

Some of the richest resources are the reports from the agencies that eventually became the U.S. Fish and Wildlife Service in the Department of the Interior and NOAA in the Department of Commerce. The Fish Commission, established in 1871, eventually morphed some of itself into the National Marine Fisheries Service, established in 1970, as part of NOAA. When using one of the online indexes look for terms like Fish and Fishing Industry, Aquaculture, or the individual names of fish and fisheries in combination with a location such as Atlantic Coast or Alaska Territory.

Many of the older reports from the Fish Commission and the exploration teams are invaluable data sources showing the extant species and their locations. Population counts and climate records are found along with reports of the fisheries showing catch by date and season. An excellent example is the report from the United State Commission of Fish and Fisheries, *The Fisheries and Fishery Industries of the United State* from 1882 (U.S. Senate, 1882, S.Misc.Doc 124 pt. 1 & 2). It discusses where they were finding halibut on the Pacific coast (p. 190) and the mean date of arrival and departure of cod in Newfoundland and Labrador (p. 208). Some reports are less scientific in nature but still of importance. Theodore Gill authored *On the Fishes of New York* where he reported on his twice-a-week walks through the New York City markets in 1856 (U.S. Senate, 1857, p. 253-269). To see changes over time, you could refer to the 1945 publication, *Fishery Resources of the United States*, which reports on the fishery resources along both coasts of the United States along with its territories and possessions (U.S. Senate, 1945). In the 1888 annual report from the United States Commission on Fish and Fisheries, the explorations of the ship *Albatross* along the West Coast are detailed. You can learn about the character and value of resources found on Heceta Bank in Oregon or the trials and tribulations of oyster aquaculture in California (U.S. House, 1892). Discussions also include the importation of new species for potential commercial use and distribution. Fortunately, establishing lobsters from the East Coast was a failure in the Pacific Northwest (U.S. Senate, 1887, pt. 6, p. 741-743). Some of the original coastal maps are included in these reports. The 1888 Annual Report contains a chart of the Columbia River from the ocean to Portland showing the conditions of the salmon fishing season, and the locations of pound-nets, gill-nets, seine-hauls and canneries (U.S. House, 1892, Plate 198). It also has a map of the Fisheries of

Yaquina River Entrance in Oregon. This shows the locations of oyster beds and canneries along with geographical names (Hoxie's Cove) and settlements such as Newport and Oysterville (U.S. House, 1892, Plate 192). This map has proven very useful to the researchers at the Hatfield Marine Science Center in Newport, Oregon, as they study oyster aquaculture in the Yaquina River today.

The Survey of the Coasts began in 1816 using the best scientific methods of the time. By 1850, they were working on the West Coast. In 1878, the U.S. Fish Commissioner on Fish and Fisheries, Spencer Baird, asked the Coast Survey to collaborate with the Fish Commission on fisheries research (Cumberpatch, p. 170). The *Annual Reports* of the Coast Survey are located in the *Serial Set* along with the House and Senate reports involving the surveys. Eventually this coastal survey work became part of NOAA and continues today. The NOAA Central Library web site has a bibliography of *The Coast and Geodetic Survey Annual Reports 1844-1910* including a separate bibliography just for the appendices ("NOAA Central Library: The Coast and Geodetic Survey Annual Reports 1844 - 1910 Bibliography of Appendices: Contents of Appendices Indexed by Chronological Entries," n.d.). NOAA's Office of the Coast Survey maintains an online collection of the historical maps and charts at <https://www.nauticalcharts.noaa.gov/csdl/ctp/abstract.htm>.

Other unexpected agencies should not be forgotten during the research process. The Secretary of War has a series of letters reporting on the coastline from the point of view of engineers, including one on the *Preliminary Examination of Yaquina Bay, Oregon* with a bathymetric map of the entrance (U.S. House, 1896). The Secretary of War also reported on the *Pollution Affecting Navigation or Commerce on Navigable Waters* in 1926 (U.S. House, 1926). Aquaculture reports are found in documents from the Department of Commerce and Labor such as the 1908 *Bulletin of the Bureau of Fisheries* (U.S. House, 1908). The output of Pacific salmon by state, species, eggs, fry and fingerlings is documented (p. 725). The 1934 House of Representatives heard a report on the *Relief of Shipwrecked Seamen from Fishing and Whaling Vessels* given by the Committee on Merchant Marine, Radio and Fisheries (U.S. House, 1934). This details how the United States worked with other countries to bring home citizens stranded in other countries after their vessels were disabled. In the days before regular travel via airplanes, it was not an insignificant task to return to the United States. More modern history can be seen in reports such as the *North Pacific Fisheries Convention Implementation Act of 2014* (U.S. Senate, 2014) and the 1970 National Estuarine Pollution study (U.S. Senate, 1970).

While most documents issued prior to 1817 are found in the *American State Papers*, if they were ordered to be printed after 1817, you can find them in the *Serial Set*. An example is a report from Thomas Jefferson as Secretary of State on the cod and whale fisheries (U.S. House, 1872). One item of note is the state of the whale fishery on Nantucket where he gives the population of Nantucket, the number of vessels in the harbor and the number of men and boys employed in the whale fishery (p. 8). He also provides economic data for the annual income from the sale of whale byproducts (p. 1).

Expeditions of discovery provide another frame of reference for discovering unique information about the flora and fauna of the United States and around the world. Beginning with Thomas Jefferson's Lewis and Clark expedition, the U.S. government sponsored many expeditions to explore the new territories in the Western United States along with expeditions to areas of commercial importance. Originally the reports were published privately but after 1817, many can be found in the *Serial Set* (Tyler, 2013, p. 144). These expeditions collected natural history information regardless of whether or not naturalists were

included on the team. This information was returned to the Smithsonian Institution and formed the nucleus of their collection (Tyler, 2013, p145). In the Notes of a Military Reconnaissance from Fort Leavenworth in Missouri, to San Diego in California, plants and animals are discussed with some illustrations (U.S. Senate, 1848). A military expedition to Alaska described the Native Alaskan fishing practices and gear including illustrations (U.S. Senate, 1885). The source of the beautiful fish lithographs found in my office was Commodore Perry's expedition to the China Seas and Japan in 1852-1854 (U.S. House, Brevoort, 1856). An introductory note to the report states that "in the equipment of the Japan Expedition, scientific researches were to be considered of secondary importance, and consequently no special appropriations were made or any steps taken at the outset to employ civilians, as in other expeditions, for purposes purely scientific" (U.S. Senate, 1855, follows p. 210). Nevertheless, his report and others contain beautifully detailed illustrations of native animals and plants. After Commodore Perry's return, naturalist John Cassin of Philadelphia described the birds (U.S. House, 1856, p. 219-250), and the fish and shells were classified and described by J. Cason Brevoort (U.S. House, 1856, p. 255-290) and J.C. Jay, friends of Perry (U.S. House, 1856, p. 291-298).

Spencer Baird, the Smithsonian's first curator, also became head of the newly formed U.S. Commission of Fish and Fisheries in 1871. In this dual role, and as head of the Smithsonian from 1878 to 1887, he provided expedition teams with scientific equipment and supplies along with instructions for collecting specimens. He also recruited naturalists to join the expeditions. Some of the leading ichthyologists of the time worked at the Smithsonian ("Spencer Baird and Ichthyology at the Smithsonian: Ichthyologists," n.d., "Spencer Fullerton Baird," n.d.). Frederic Girard, noted ichthyologist, wrote several of the expedition reports including the United States and Mexico Boundary Survey which included an ichthyology section with 77 pages and 40 plates (U.S. Senate, 1856). He also wrote a 24-page report on ichthyology with 11 plates for the Explorations of a Railway Route from the Sacramento Valley to the Columbia River (U.S. House, 1865). There is a much more detailed history of the Smithsonian's ichthyology collection and the expeditions of the discovery on their website ("Expeditions, Ichthyology at the Smithsonian, 1850-1900," n.d.).

This is just a brief overview of the materials available in the *Serial Set*. Hopefully, now that you are aware of, or reminded of, the resource, you will be able to use it when searching for those historical bits of information that you are sure must be somewhere but are unsure where to start. The *Serial Set* is always a good place to start – or finish – your search.

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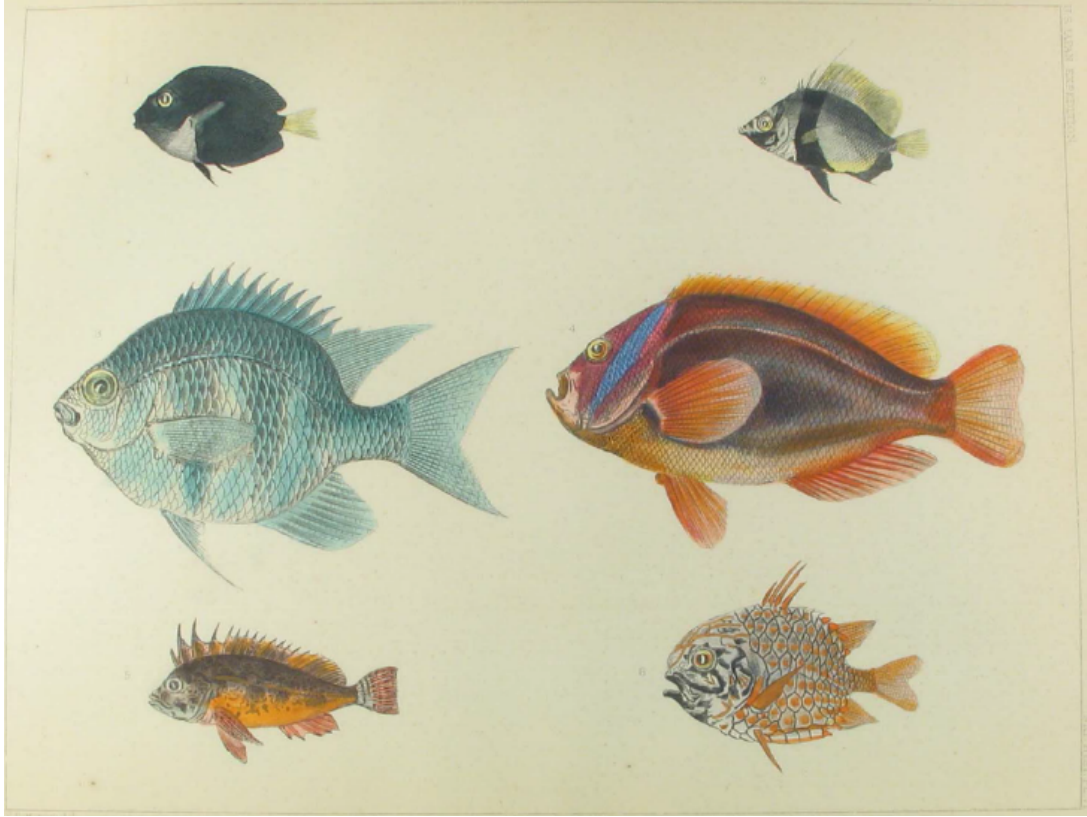


Figure 1. U.S. House, 33rd Congress, 2nd Session. Brevort, James Carson. Notes on some figures of Japanese fish in Narrative of the expedition of an American Squadron to the China Seas and Japan, performed in the years 1852, 1853, and 1854, under the command of Commodore M.C. Perry, United States Navy, by order of the government of the United States. Volume II – with illustrations. (H.Exec.Doc97 pt. 2) Plate VI.



Figure 2. U.S. House, 33rd Congress, 2nd Session. Brevort, James Carson. Notes on some figures of Japanese fish in Narrative of the expedition of an American squadron to the China seas and Japan, performed in the years 1852, 1853, and 1854, under the command of commodore M.C. Perry, United States Navy, by order of the Government of the United States. Volume II – with illustrations. (H.Exec.Doc97 pt. 2.) Plate 3.

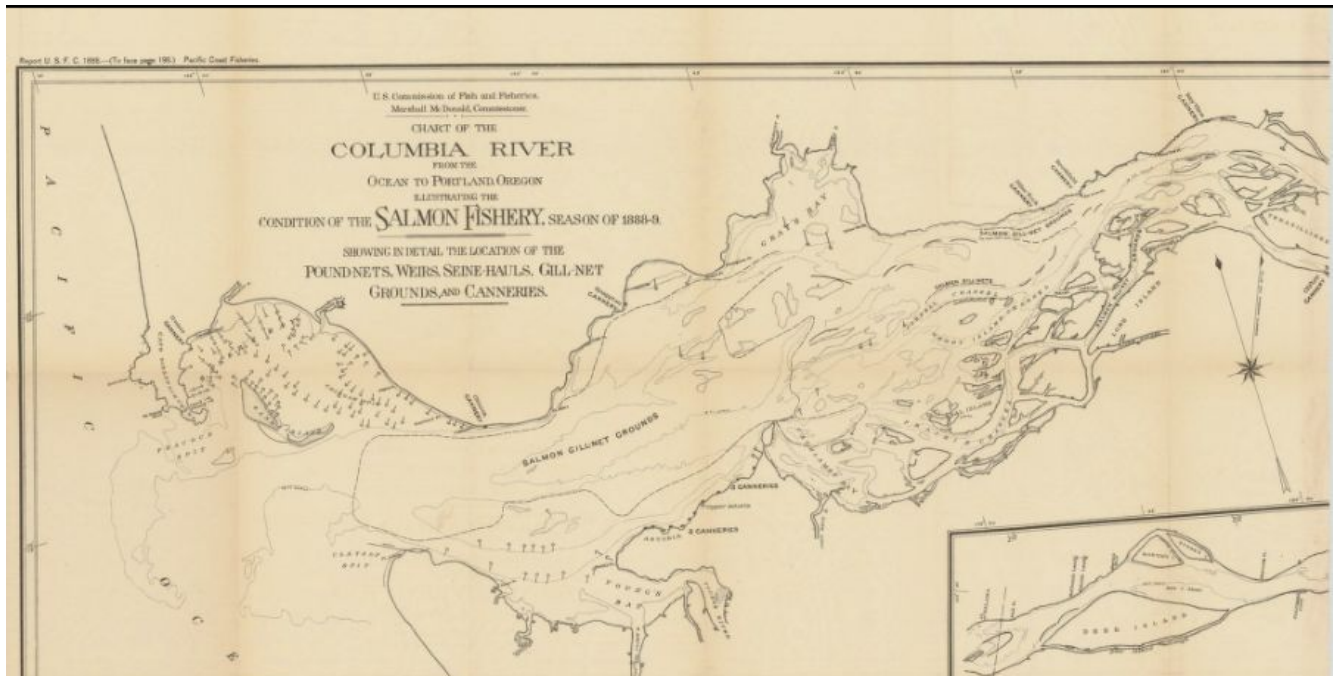


Figure 3. Chart of the Columbia River from the ocean to Portland, Oregon. Showing the condition of the salmon fishing, season of 1888-9. Showing in detail the location of the pound-nets, seine hauls, gill-net grounds, and canneries. U.S. House, 51st Congress, 1st Session. United States Commission of Fish and Fisheries. Part XVI. Report of the Commissioner for 1888 (July 1, 1886 to June 30, 1889) (H.Misc.Doc. 274)

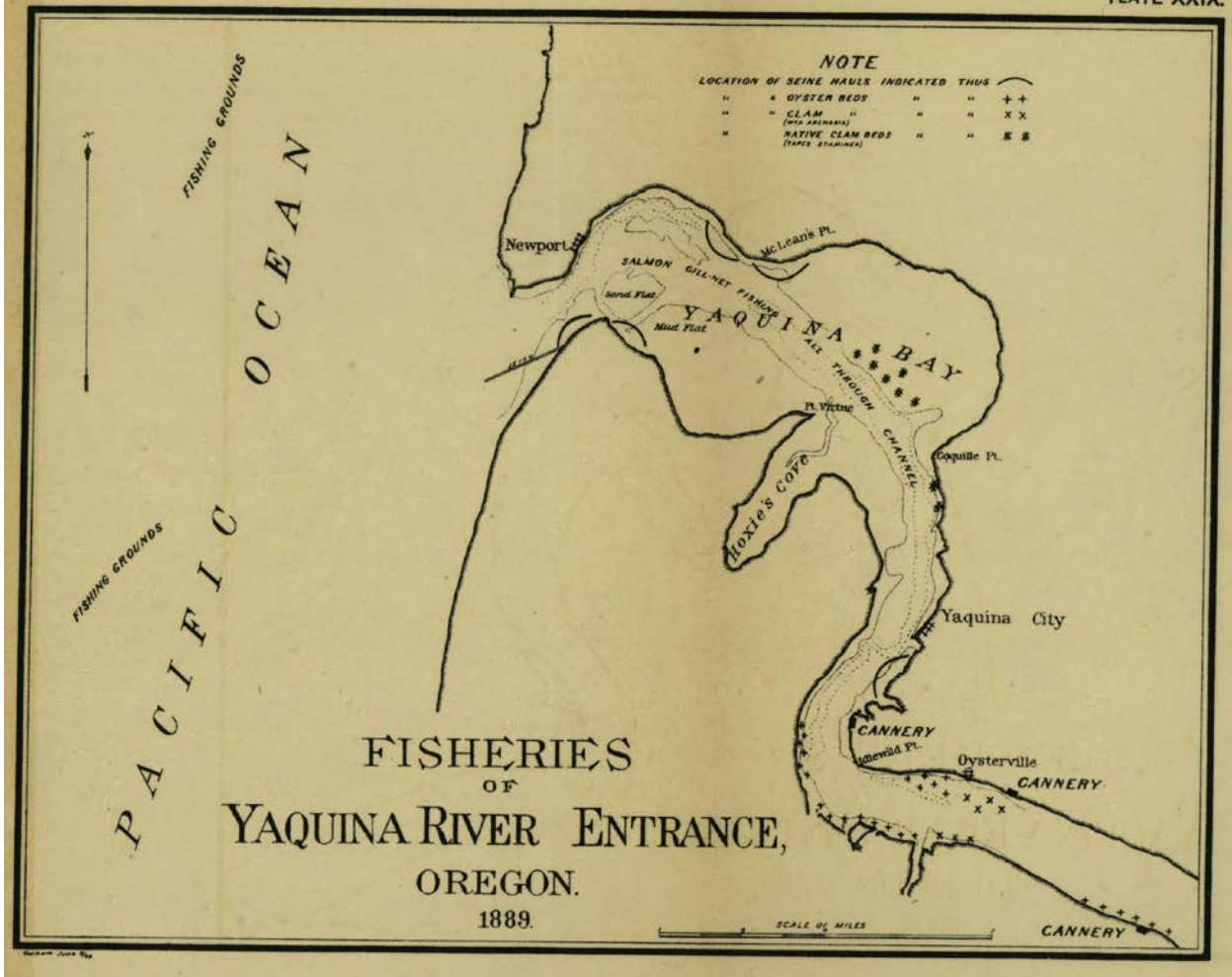


Figure 4. Chart of Fisheries of Yaquina River Entrance, Oregon, 1889. U.S. House, 51st Congress, 1st Session. United States Commission of Fish and Fisheries. Part SVI. Report of the Commissioner for 1888 (July 1, 1886, to June 30, 1889) (H.Misc.Doc. 274).

**LIBRARY ON THE GO:
FACULTY AND GRADUATE STUDENTS' USE OF MOBILE DEVICES TO ACCESS LIBRARY CONTENT**

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Abstract

Librarians can easily determine which of their web pages are the most visited on mobile devices (including smartphones and tablets) by using web analytics software. However, we cannot use the same software to determine what users are actually attempting to accomplish when they visit the site. In addition, web analytics can't help us distinguish between users with little searching experience and those who are advanced researchers. Different tools and features may be more applicable to different user groups, and mobile websites that overemphasize simplicity may inadvertently leave out tools highly desired by advanced researchers. The objectives of this study were to:

- 1) Gather a list of tasks advanced users attempt to accomplish when they visit the OSU library website on a mobile device.
- 2) Gather information about advanced users' satisfaction on the website when using a mobile device.

Results will be compared to previous survey results that included primarily undergraduates.

USING SCHOLARLY OUTPUT DATA TO CREATE NETWORKS

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Abstract

Libraries have traditionally worked with their institutions to provide bibliometric data to demonstrate the research output of the organization. Tools are being created that streamline the process and allow libraries to expand the information collected and how it can be re-used. The MBLWHOI Library implemented the Symplectic Elements and Vivo as a research information management system for the institutions in Woods Hole. There are some big advantages for small institutions to invest in these systems; however, they work best as collaboration between the Library and other people on campus: Office of Research, Education, Grants, Human Resources, and scientific departments. We will relate our experiences, successes and lessons learned. We will also show how we are working with other organizations to expand Vivo for scientific applications to support use cases and using Vivo in support of multi-organizational and multi-disciplinary projects.

A “NEW” COASTAL-MARINE ENVIRONMENTAL THESAURUS FOR COLOMBIA AND SOUTH AMERICA

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Abstract

A thesaurus is a controlled vocabulary, a tool for terminological control, structured from concepts (represented by terms) of a particular field of knowledge, whose role is to facilitate indexing and retrieval of information of scientific papers, from a semantic organization with relationships between different concepts. A thesaurus can remove synonymy and polysemy of concepts (terms) characteristic of each language, providing the user with accuracy in the search, retrieval and indexing of information. In Colombia, until 2012, indexing of scientific documents of the marine-coastal environmental area was supported by the use of national or international thesauri. From 2012, the INVEMAR’s Documentation Centre began the development of a bespoke thesaurus to serve both as a support tool for indexing and search documents and to support other peer institutions. The presentation will explore the rationale of building a new thesaurus when such a well-known thesaurus as ASFIS Thesaurus exists, and outline the process of structuring concepts to accommodate the specificity in terminology and relationships and the use of native terms of our own marine-coastal science research. It will explain INVEMAR’s process of constructing a tailored marine thesaurus, from application software to vocabulary structure to a published schema, that has improved the quality of indexing, classification, and searching documents in the last three years.

TOWARDS QUALITY OF ACADEMIC PUBLICATIONS IN URUGUAY

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Abstract:

Librarians and publishers of scientific journals from multiple disciplines in Uruguay created a network after the First Training Workshop for Publishers: Scientific Journals and Quality Criteria, organized by Latindex and SciELO Uruguay. Among its objectives, among other topics of common interest, are the following: to identify both problems and needs of national publishers of academic journals, and to seek advice and information on copyright in the (Creative Commons) digital environment. As a result, meetings take place, working groups are formed. Electronic courses and workshops on Journal Publishing in the OJS (Open Journal System) platform are given. During 2015 the Uruguayan Association of Academic Journals (AURA) was created, bringing together publishers from the most diverse academic disciplines who seek to improve the quality of their journals.

Keywords: Serial publication, editorial quality, Uruguay, scientific journals, publishers, academic journals, Latindex, SciELO, journal publishing, copyright, Association of Academic Journals, information

Introduction

In December 2012, Latindex and SciELO Uruguay offered the “First training workshop for Editions: Scientific Journals and Quality Criteria” (Valenzuela & Machado, 2016). As reported by Morelli, T. (2016), 25 editors from public and private institutions and multiple disciplines attended, including representatives from such fields as engineering, education, medicine, philosophy, nursing, malacology, cardiology, psychology, imaging, law, pharmacy, social work, economics, technology, economic history, anthropology, zoology, humanities, chemistry, social sciences, etc.

At that meeting, the attendees decided to form a network of editors. An email group was formed, creating the Publishers’ Network of Scientific Journals and Academic of Uruguay. Colleagues are responsible for inviting other publishers and librarians to collaborate on the issue. The idea of creating a blog also arose.

In February of the subsequent year, we conducted the first Meeting of the Publishers' Network. In it we talked and identified common problems and needs. We saw the need for greater visibility of the group of editors. Working groups were formed. Advice and information about Creative Commons was searched because, as it is said by Stieben (2014) "Copyright law can be confusing, so Creative Commons wants make it easier for the average user to understand".

A group of colleagues identified the need for a glossary of scientific editorial terms, and one specifically adapted to our needs was created. Training and counselling on Open Journal Systems (OJS) was completed. The advantages of OJS have been explained by Willinsky (2005) "OJS management systems are structured around the traditional journal workflow required to move a submission through reviewing, and if accepted, editing and publishing, with records maintained of who is doing what and when."

Training sessions were organized and study and research within a legal framework for the Network was promoted.

Network Meetings

Meetings are held alternately at premises generously offered by the members: the Faculty of Humanities and Educational Sciences - UDELAR, Catholic University, Hotel Ambassador, Young Men's Christian Association.

In April 2013 a new milestone for publishers was set. Professor Dr. Miguel Angel Márdero Arellano, IBICYT member of SEER (Brazilian Institute of Information Science and Technology) taught a course on "Electronic Publishing of newspapers on the platform OJS (Open Journal System)." At the Faculty of Economics and Administration, the Uruguayan National Library Director Esther Pailos, among others, attended. Networking has been consolidated and continues to grow. The email group now exceeds 150 addresses.

Training Network

Workshops offered were:

- Training Workshop for novice editors: scientific journals and quality criteria, Latindex and SciELO (2 editions).
- Training Workshop for editors: scientific journals and quality criteria, Latindex and SciELO (4 editions).
- Digital preservation - IBICT - Brazilian Institute of Information Science and Technology (Online course).
- OJS Course- Open Journal System (3 editions).

During 2015, development actions increased. Sixty-four national open access scientific publications were incorporated into the Timbo Portal (ANII, 2014). A meeting was held with the Evaluation Committee of the National Research System, to meet the validation criteria of the publications. After the hard work of the Statutes Committee, and two General Meetings held in July 2015, Articles of the Statutes that created the Association were discussed and approved.

Blog Network

The blog is updated weekly. It features sections for documents intended for:

- *Ethics and conflicts of interest.* Working towards a national code of ethics that follows the guidelines of Committee on Publication Ethics (COPE) (2011), which aims to define best practice in the ethics of scholarly publishing and to assist editors, editorial board members, owners of journals and publishers to achieve this.
- *Open access.* The main characteristic of Open Access consists in making use of knowledge coming from the area of Education and Science: knowledge that has been made public and has been produced through public funding should be free (also in the sense of being free-of-charge) to everyone.
- *ORCID (Open Research and Contributor ID)* "provides an identifier for individuals to use with their name as they engage in research, scholarship, and innovation activities, open tools that enable transparent and trustworthy connections between researchers, their contributions, and affiliations" (ORCID, 2016). They provide this service to help people find information and to simplify reporting and analysis.
- ISSN (International Standard Serial Number).
- INSI (International Standard Name Identifier).
- *DOI (Digital Object Identifier)* (We will expand information later)
- *Indexing sources, funding sources, management systems, electronic publishing and validators of web accessibility and quality,* mainly those detailed in W3C. The World Wide Web Consortium (W3C, 2016) is an international community where [member organizations](#), a full-time [staff](#), and the public work together to develop [Web standards](#). Led by Web inventor [Tim Berners-Lee](#), W3C's mission is to lead the Web to its full potential.
- Uruguayan Association of Academic Journals – AURA. October 22, 2015, Mtro. Julio Castro Hall of the National Library of Uruguay. Public reading of Bylaws. Attended by more than 60 publishers. The Network starts a new stage, now as Uruguayan Association of Academic Journals.

The information contained in the first blog was migrated to a new temporary site until the acquisition of an own web domain. The current domain is <http://aura.edu.uy/>

Objectives

- To promote the universalization of scientific and academic production in all areas of knowledge
- To contribute to the dissemination of peer reviewed national journals
- To promote the professionalization of the publishing activity of its members
- To ensure the observance of ethical principles and rules related to the publishing activity of its members
- To encourage critical analysis and the adoption of international standards of editorial quality
- To promote coordination and cooperation between national magazines
- To strengthen the dynamic community of publishers and managers of peer reviewed publications in the country
- To promote dialogue between authors and the public
- To establish and maintain bonds, collaboration and agreements with magazines, agencies and national and foreign entities

- December 9, 2015, National Library Venue Loan for use – AURA Board of Directors signs agreement with the National Library Training
- First Day of Ongoing Training for Publishers: Copyright and DOI in Uruguay (Nov. 2015)
- SEER Course - Electronic Journal Publishing System. IBICT (Online course, Nov. – Dec. 2015)
- Digital Object Identification (DOI).

The DOI system provides a technical and social infrastructure for the registration and use of persistent interoperable identifiers, called DOIs, for use on digital networks. AURA is the National Agency for the DOI in Uruguay. In August 2016, two institutions requested their DOI through AURA. This service is provided to its members.

DINARA accompanies this process with continuous improvement of the quality of its serial publications. These are:

- FISHING STATISTICAL BULLETIN. Publication with annual frequency. Sometimes this periodicity cannot be achieved.
- DINARA NEWSLETTER. A bi-monthly publication, containing current news related to the fishing and marine sector.
- TECHNICAL REPORT. It does not have continuity. We are working to be sure that all quality standards and criteria are met.

Conclusions

The path we have been traveling with Uruguay academic journals was not free from obstacles but we have overcome them and have learned together. Today there is clearly a promising future. The meeting and the joint work of academics from varied disciplines in pursuit of quality motivates us editors. And it is these improvements that encourage us to dream of a new website for specialized academic publications in marine and aquatic resources.

A great Uruguayan portal has been installed in the new Open Journal Systems (OJS -3), incorporating relevant news about the administration and publication of magazines and documents. We plan to publish and disseminate knowledge in the subject areas that bring us together as members of IAMSLIC.

Our academics and scientists need to share their research, and we intend to use the right tools to integrate large worldwide databases. We wish to finally fulfill our mission to spread knowledge.

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FACTORS AFFECTING THE ATTENDANCE OF IAMSLIC MEMBERS AT IAMSLIC ANNUAL CONFERENCES

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Abstract

A research survey was conducted to determine the factors that affect the attendance of International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) members at annual conferences. Findings of related studies revealed that participants (librarians and other professionals) attend conferences for career development. Moreover, participation in a conference was affected by several factors including location, affordability, safety, and the demography of the participants. Among IAMSLIC members, networking, affordability and educational opportunities were the dominant factors in attending a conference and location was of least significance. Members of IAMSLIC attended annual conferences for the opportunity for networking with other professionals, updates on current trends and developments in the profession.

Keywords: Career development; congresses and conventions - attendance; IAMSLIC; international organization; librarians; meetings.

Introduction

The International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) is an “association of individuals and organizations interested in library and information science, especially as these are applied to the recording, retrieval and dissemination of knowledge and information in all aspects of aquatic and marine sciences and their allied disciplines” (IAMSLIC, 2016). As of 2016, IAMSLIC has 279 member librarians from different countries, divided among six Regional Groups (IAMSLIC Membership Committee, 2016) and some members unaffiliated with any Regional Group. The groups are: AFRIAMSLIC - comprised of members from African countries; Cyamus - members from West coast of North America and Hawai’i; EURASLIC (European Association of Aquatic Sciences Libraries and Information Centers) - members from Europe; Latin America - members from Mexico, Central America and South America; PIRG (Pacific Islands Regional Group) - members from Pacific Islands countries, Australia, New Zealand and Asian countries; and SAIL - members from the Atlantic and Gulf coasts of North America, central Canada, Bermuda, Bahamas, Caribbean, eastern Mexico, and Panama (IAMSLIC, 2016). Since its foundation in 1975 (Uhlinger, 1999; Metzger, 2007) until 2015, IAMSLIC has held 41 annual conferences, which enabled aquatic and marine science librarians around the world to meet, discuss things of communal interest and build networks for the advancement of aquatic and marine science librarianship. On average, there were at least 60 attendees at IAMSLIC annual conferences. According to the study conducted by Butler (2006), members identified attendance at the

conference as one of the top three benefits of joining the association, with communication and resource sharing as the first and second benefits respectively. As a matter of fact, a little more than one-half attend IAMSLIC conferences regularly (Butler, 2006).

Librarians as well as other professionals attend conferences for their professional development or advancement, especially those who are working in academic institutions. Conferences are great avenues for librarians to keep up with current trends and developments in the profession and gain new skills which they can apply in their jobs. On the other hand, a librarian's attendance at a conference is always affected by factors internal or external to him. The study was conducted In order to understand why aquatic and marine librarians participate in IAMSLIC annual conferences,.

Using a three-part survey instrument, the study gathered information on the factors that affected the attendance of aquatic and marine librarians from past IAMSLIC annual conferences, such as: 1) Destination stimuli - members were motivated to attend the conference because of the opportunity for combining business and holiday; 2) Professional and social networking opportunities - members were motivated to attend the conference because it gave them an opportunity to develop social and professional contacts thru face-to-face discussions; 3) Educational opportunities - members were motivated to attend the conference because it gave them the opportunity to increase knowledge by listening to speakers and to gather useful information; 4) Safety and health situation - members' decisions to attend the conference depends on their safety and health situation and of the conference location; and 5) Travel-ability - members' decision to attend the conference depends on the time factor and the affordability of the conference. Table 1 shows the factors affecting the attendance of IAMSLIC members to its annual conferences that were being studied and the indicators in each factor. Moreover, the study determines if the above-mentioned factors were affected by the respondents' demographics.

Table 1. Factors Affecting Attendance to IAMSLIC Conference

| Factors and Indicators Affecting Members' Attendance |
|---|
| Factor 1: Destination stimuli |
| <i>Indicators</i> |
| a. Opportunity to visit the conference destination |
| b. Extra opportunities available at the destination |
| c. Attractive image of the conference destination |
| Factor 2: Professional and social networking opportunities |
| <i>Indicators</i> |
| a. Seeing people I know in my field |
| b. Personal interactions with colleagues and friends |
| c. Developing a professional network |
| d. Involvement with the association |

Factor 3: Factor 3: Educational opportunities

Indicators

- a. Keeping up with changes in my profession
- b. Listening to respected speakers
- c. Topic of the conference
- d. Fulfilling my desire to learn

Factor 4: Safety and health situation

Indicators

- a. Safety and security situation at the conference destination
- b. Hygiene standards at the conference destination
- c. My health conditions for travel

Factor 5: Travelability

Indicators

- a. Time required to travel to the conference destination
- b. Total cost of attending the conference
- c. My personal financial situation

Literature Review

There is huge amount of research proving that attendance of conventions or conferences does contribute to attendees' continuing professional development. Examples are the studies of Corcoran and McGuinness (2014), Harrison (2010) and Tomaszewski and MacDonald (2009) about librarians; Borg (2014) about teachers; Aziz, Jet & Rahman (2013) about pharmacists; and of Jenerette, et al. (2016) about clinicians. However, attendance at conventions or conferences is affected by some factors which may either be internal or external to the participants. Severt et al. (2007) found out that there are five dimensions of conference motivation among the conference attendees in the southeast United States: activities and opportunities, networking, convenience of conference, educational benefits, and products and deals. Moreover, Rittichainuwat et al. (2008) revealed that restaurant industry educators' conference attendance was motivated by sightseeing, self-enhancement, and business and association activities; were inhibited by conference and personal constraints, and distance, time, and money; and were facilitated by affordability and availability of time, family/spouse, and distance and ease of access. Furthermore, the conference program, networking opportunities, external activities, location, and cost were the five factors which influence both attendance and satisfaction according to Tanford, et al. (2012).

In order to help "future researchers and practitioners in understanding potential attendees' convention participation decision-making," Yoo and Chon (2008) developed a measurement scale to identify the factors and the indicators (see Table 1) affecting convention participation decision-making that was adapted in this study.

Methodology: Data Collection and Analysis

A three-part survey instrument was used in data gathering to all IAMSLIC members who have attended any IAMSLIC annual conferences. The first part of the instrument gathered the demographic data; the second part gathered the data about the factors which affected members' attendance at its annual conferences; while the third part was an open-ended question which gathered members' comments or suggestions for the development or improvement of future IAMSLIC conferences. The measurement scale used to examine the factors affecting conference participation decision-making was adapted from Yo & Chon (2008). The respondents were asked to rank the degree of importance of each indicator in every factor in a Likert Scale (1 = Not Important, 2 = Somewhat Unimportant, 3 = Neutral, 4 = Somewhat Important, 5 = Very Important). The factors were ranked according to the highest mean score. The mean score of every factor was calculated by adding the mean score of each indicator under every factor and was divided according to the total number of indicators.

Two versions of the survey instrument were made, an online survey form in GoogleDocs and a PDF version. Three invitations to participate to the online survey were sent to the IAMSLIC Discussion List and the Aquatic Sciences and Fisheries Abstracts (ASFA) Board Listserv. These contained a link to the online survey form and the PDF version as an attachment. Moreover, an invitation to participate was also posted at the IAMSLIC Blog. The responses were gathered from April to July 30, 2016.

Results and Discussions

Demographic Profile and Membership Information of the Respondents

Ninety six responses were gathered throughout the 4-month survey period, of which 87 (91%) were considered valid. Almost three-fourths (73.6%) of the respondents were females, while a little more than one-fourth (26.4%) were males. The gender of the respondents reflects the current status of the IAMSLIC members wherein the majority are females. The majority of the respondents were from United States (52%) and the remaining 48% were from 29 different countries (see Figure 1). The greater proportion of the respondents were approaching retirement age (Baby boomers- 54 years old or older) (56.3%), with at least a master's degree (80.5%) and were working in special libraries (54%). At least 4 in every 10 were holding a supervisory position. Table 2 shows the demographic profile and membership information of the respondents.

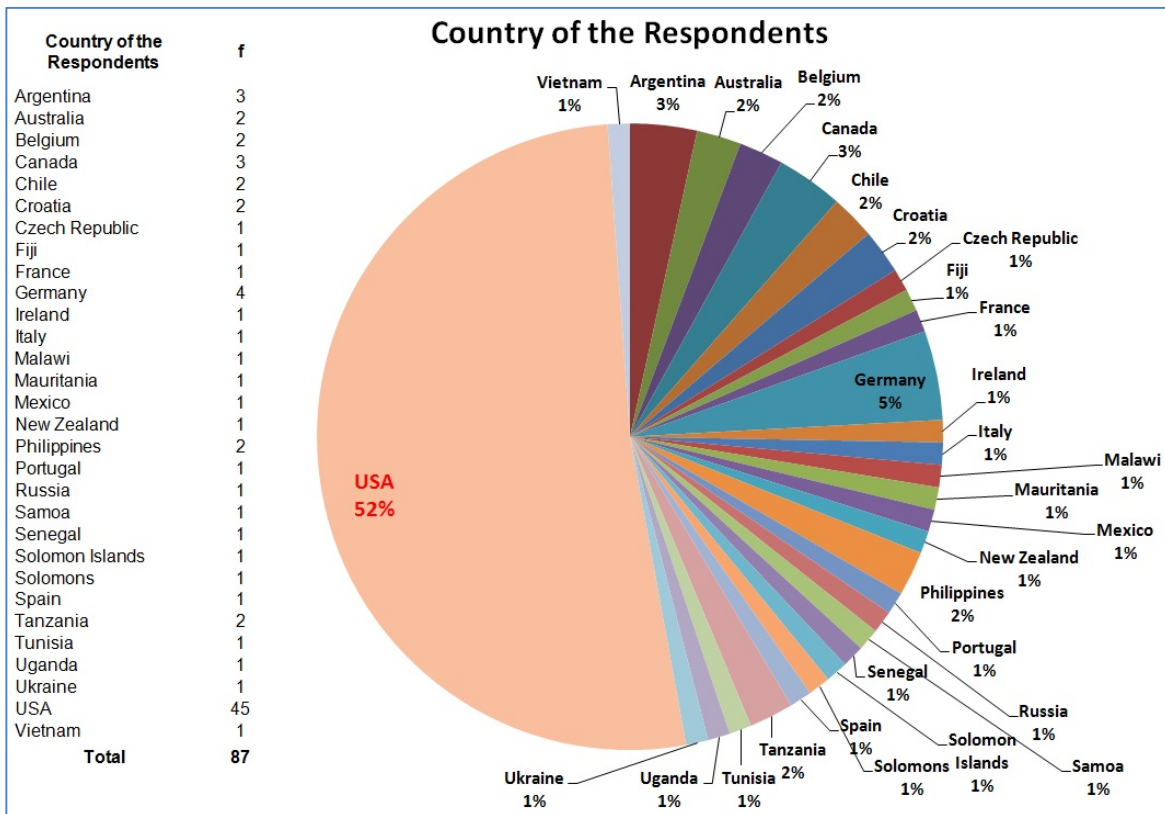


Figure 1. Distribution of the Respondents per Country

As shown in Table 2, at least 6 in every 10 (61%) respondents were members of IAMSLIC for more than 10 years, of which a little less than three-tenths (28.7%) had been members for two decades or more. However, at most one-fifth (19.5%) were quite new to the Association who had been members for at most 5 years. When grouped according to Regional Group affiliation one-third (33.3%) of the respondents were from SAIL and almost one-fifth (18.4%) were from Cyamus, supporting the data in Figure 1 showing that more than one-half of the respondents were from United States. A small proportion of less than one-tenth were from AFRIAMSLIC and Latin America. It is worth noting that a small proportion (4.6%) of the respondents were affiliated with multiple Regional Groups. Six in every 10 (62.1%) of the respondents had attended the annual conferences at least once but not more than five times, while at least two in every 10 (20.7%) had attended more than 10 times. Almost nine-tenths (86.2%) expressed willingness to attend future IAMSLIC annual conferences, a very good indicator of members' satisfaction on how the annual conferences were being organized and with the Association as well.

| Table 2. Demographic Profile and Membership Information of the Respondents | | | |
|---|----------|---|----------|
| Demographics | % | Membership Details | % |
| | | | |
| Gender | | Length of Membership (Years) | |
| Male | 26.4 | 21 and Above | 28.7 |
| Female | 73.6 | 16-20 | 20.7 |
| | | 11-15 | 11.5 |
| Age | | 6-10 | 19.5 |
| Baby Boomers & above (54 years old and above) | 56.3 | 1-5 | 19.5 |
| Generation X (38-53 years old) | 32.2 | | |
| Generation Y (37 years and below) | 11.5 | Regional Group Affiliation | |
| | | AFRIAMSLIC | 8 |
| | | Cyamus | 18.4 |
| Education | | EURASLIC | 16.1 |
| Doctoral Degree | 4.6 | Latin America | 6.9 |
| Master's Degree | 75.9 | PIRG | 11.5 |
| Bachelor's Degree | 19.5 | SAIL | 33.3 |
| | | Multiple Regional Groups (MRG) | 4.6 |
| Type of Library | | None | 1.1 |
| Academic | 46.8 | | |
| Special | 53 | Frequency of Attendance at Annual Conference | |
| | | 16 or more times – 10 | 11.5 |
| Position or Designation | | 11-15 times – 8 | 9.2 |
| Supervisory | 44.8 | 6-10 times – 15 | 17.2 |
| Non-Supervisory | 46 | 1-5 times – 54 | 62.1 |
| Retired | 9.2 | | |
| | | Willingness to Attend Future Conferences | |
| | | Yes | 86.2 |
| | | No | 13.8 |

Table 2. Demographic Profile and Membership Information of the Respondents

Factors Affecting Members' Attendance at the Annual Conferences

As shown in Table 3, similarly with the findings of Vega and Connell (2007) among librarians in United States, of Mair and Thompson (2009) among delegates of UK association conferences, and of Mair (2014) among delegates of an Australian conference, among IAMSLIC members professional and social networking opportunities was the top factor affecting their attendance at its annual conferences.

Another highly ranked factor was the educational opportunities offered by the conference. On the other hand, the destination stimuli or the opportunity for combining business and holiday by visiting the conference location was of least importance. The result suggests that among IAMSLIC members the location of the conference was the least motivator of their attendance of the Association’s annual conferences, contradicting the findings of Rittichainuwat, et al. (2001); Severt, et al. (2007); and of Tretyakevich and Maggi (2011). Therefore, networking opportunities and conference-related factors were the most important reasons why IAMSLIC members attended Annual Conference for their personal and professional development.

Table 3. Ranking of the Factors Affecting Attendance to Annual Conferences

| Rank | Factor | Mean Score |
|------|--|------------|
| 1 | Factor 2. Professional and social networking opportunities | 4.45 |
| 2 | Factor 3. Educational opportunities | 4.22 |
| 3 | Factor 5. Travelability | 3.92 |
| 4 | Factor 4. Safety and health situation | 3.61 |
| 5 | Factor 1. Destination stimuli | 3.38 |

Indicators of Members’ Attendance at the IAMSLIC Annual Conferences

Consistent with the ranking of factors, three of the top five indicators of members’ attendance at IAMSLIC annual conferences were from Factor 2. Professional and social networking opportunities - developing a professional network, personal interactions with colleagues and friends, and the opportunity to see people they know in the field - ranked first, third and fourth respectively. Moreover, two of the top five indicators were from Factor 3. Educational opportunities - the opportunity to keep up with changes in the profession and listening to respected speakers - ranked second and fifth respectively. Additionally, the financial aspects of attending the conference were also considered as important indicators for member’s attendance. These were the total cost of attending the conference and the member’s personal financial situation, and ranked sixth and ninth respectively. On the other hand, two of the lowest ranked indicators were from Factor 1. Destination stimuli - the availability of extra opportunities at the destination and the destination image of the conference location ranked 16th and 17th respectively. The result contradicts with the findings of Malekmohammadi et al. (2011) stating that pleasure-seeking motives were the top motivational factor among international conference attendees in Singapore. Table 4 shows the ranking of indicators affecting attendance of IAMSLIC members at its annual conferences.

Table 4. Ranking of Indicators Affecting Attendance to Annual Conferences

| Rank | Indicator | Factor | Mean Score |
|------|---|--------|------------|
| 1 | Developing a professional network | 2 | 4.59 |
| 2 | Keeping up with changes in my profession | 3 | 4.53 |
| 3 | Personal interactions with colleagues and friends | 2 | 4.52 |
| 4 | Seeing people I know in my field | 2 | 4.50 |
| 5 | Listening to respected speakers | 3 | 4.34 |
| 6 | Total cost of attending the conference | 5 | 4.22 |
| 7 | Involvement with the association | 2 | 4.20 |
| 8 | Fulfilling my desire to learn | 3 | 4.20 |
| 9 | My personal financial situation | 5 | 4.08 |
| 10 | Topic of the conference | 3 | 3.83 |
| 11 | Opportunity to visit the conference destination | 1 | 3.75 |
| 12 | Safety and security situation at the conference destination | 4 | 3.72 |
| 13 | My health conditions for travel | 4 | 3.57 |
| 14 | Hygiene standards at the conference destination | 4 | 3.52 |
| 15 | Time required to travel to the conference destination | 5 | 3.44 |
| 16 | Extra opportunities available at the destination | 1 | 3.41 |
| 17 | Destination image of the conference location | 1 | 2.94 |

Factors Affecting Attendance to Annual Conferences Grouped according to Regional Group Affiliation

As presented in Table 5, Factor 2, the availability of professional and social networking opportunities was the top factor affecting the attendance of members to IAMSLIC annual conferences among all Regional Groups except AFRIAMSLIC members, who rated Factor 3, Educational opportunities, and members with Multiple Regional Group affiliation, who rated Factor 5, Travelability, as the top rated factor. On the other hand, Factor 1, Destination stimuli, was the least rated factor among all Regional Groups except Latin America who rated Factor 4, Safety and health situation, as the least rated factor.

Therefore, to encourage greater attendance among members of different Regional Groups, the organizers of the Conference should consider providing avenues for participants to socialize and to get acquainted with each other. Moreover, timely and relevant topics should be selected as many members see the conference as an avenue to learn the current trends and developments in the profession, specifically for encouraging members of AFRIAMSLIC. Similarly, the affordability of the conference must also be considered as it was the top factor affecting the attendance of members with Multiple Regional Group Affiliation. However, when deciding the venue for future conferences, the Site Selection Committee should never consider the destination image of place as the top criterion when selecting one site over the other.

Table 5. Factors Affecting Attendance to Annual Conferences Grouped according to Regional Group Affiliation

| Regional Group Affiliation | Mean Score | | | | |
|----------------------------|----------------------------------|---|--|--|----------------------------|
| | Factor 1. Destination Stimuli | Factor 2. Professional and Social Networking Opportunities | Factor 3. Educational Opportunities | Factor 4. Safety and Health Situation | Factor 5. Travelability |
| AFRIAMSLIC | 3.43 | 4.39 | 4.54 | 3.62 | 4.1 |
| Cyamus | 3.48 | 4.58 | 4.08 | 3.38 | 3.79 |
| EURASLIC | 3.33 | 4.38 | 4.16 | 3.4 | 3.83 |
| Latin America | 3.83 | 4.92 | 4.71 | 3.78 | 3.61 |
| PIRG | 3.27 | 4.68 | 4.48 | 4.37 | 4.07 |
| SAIL | 3.36 | 4.28 | 4.09 | 3.48 | 3.94 |
| Multiple Regional Groups | 2.92 | 4.44 | 4.25 | 3.83 | 4.5 |
| Total | 3.38 | 4.45 | 4.22 | 3.61 | 3.92 |

Comments or Suggestions for the Development/Improvement of Future IAMSLIC Conferences

Table 6 is a summary of comments and suggestions given by the respondents of the study for the improvement or development of future IAMSLIC Conferences. The responses were grouped into several categories, mainly on the improvement of conference program, and the conference online presence for the benefit of non-attending members. Options for the date, location, frequency and venue of the future conferences were also given. Other than the fact that the travel cost was very high, for some the

conference cost was too high as well, thus cheaper and more accessible venues must be selected. Equal opportunity to participate must be given to members of each Regional Group, additionally more grants must be provided to improve the attendance of members from Developing Countries. In support of the findings of the study that the opportunity to expand professional and social networks was the top factor affecting the attendance of members to IAMSLIC annual conferences, it was suggested that the participants must be given opportunities to interact with each other, especially between seasoned and newly recruited members. Thus, the creation of a smaller working group to encourage exchange of ideas during the conference was suggested. In order to increase membership and to ensure continuity of the programs of the Association the recruitment of younger members was suggested, since a great proportion of the members were over 50 years old. Appreciation for the efficient management of the conference was also given.

Table 6. Comments or Suggestions for the Improvement of Future IAMSLIC Conferences

| Category | Comments or suggestions |
|---|---|
| | |
| Conference Program | Program should be distributed earlier so that members can prepare at the earliest possible time to secure funding support |
| | Broaden the conference theme to encourage more speakers |
| | Provide special sessions for new members |
| | Include a training session as it may assist members in securing funding support from their parent organizations |
| | Improve scientific sessions and quality of presentations |
| | Topics like digitization and document preservation are no longer relevant |
| | |
| Virtual Conference and Online Presence | Virtual conference participation should be considered |
| | Live remote access to the conference sessions |
| | Continue the blogging and social media activities to update non-participating members |
| | Sessions should be recorded and made accessible to all members |
| | |
| Date, Location, Frequency and Venue | Can be done every two years to encourage more participants |
| | Consider changing the sequence so that the two North American conferences are not in adjacent years |
| | It is easier to get institutional funding support if IAMSLIC is hosted by well-known international organizations such as FAO/UN |
| | A late August or early September conference is suggested (due to teaching responsibilities) |
| | Selecting a major city as the location could encourage more participants than the remote ones |
| | Hold more frequently in mainland US |
| Cost | Choose a cheaper venue |
| | Consider lowering the conference cost |
| | Very high travel cost |
| | |

| | |
|--|---|
| In-Conference Networking (Member to Member interaction) | New members could be paired up with a seasoned IAMSLIC member so they can be introduced to new people |
| | Create smaller working groups to encourage exchange of ideas |
| Membership | Attract more young members |
| Appreciation | Gave opportunities for librarians from developing countries to participate |
| | Very well organized |
| | One of the best conferences |

Conclusions and Recommendations

The results suggest that the indicators affecting the attendance of IAMSLIC members at its annual conference were common to a majority of the members regardless of their Regional Group affiliation. These were their desire to develop a professional network, keep up with the current trends and development in the profession, communicate with colleagues and friends, and listen to respected speakers. Moreover, attendance at a conference was also affected by members' financial situations and travel time. On the other hand, the destination image of the venue was not an important factor. Thus it is suggested that when organizing future conferences, the IAMSLIC Executive Board should ensure that opportunities for the participants to socialize and to get acquainted with each other are provided, timely and relevant topics are selected, expert speakers are invited (keynote speaker/s), and inexpensive venues (affordable accommodations should be selected, and major cities should be selected over remote ones.

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Mexican marine libraries: Two decades of transformations: the case of the "Reuben Lasker" CICIMAR-IPN Library.

This poster outlined the transformation of library services at the CICIMAR-IPN Library, through the development of Internet and information and communication technologies. Libraries in Mexican institutions of higher education, and especially the Library "Reuben Lasker" CICIMAR-IPN, have developed activities and made decisions based on their own experiences. The changes have arisen from advances in the exchange of information support as well as the organization and access to that information. These libraries recognize that more active users demand knowledgeable librarians who promote access to virtual services and collections through various electronic devices. The poster also described digitization projects and changes in information management, including services such as BIDITESIS, SIPRES, and AmonPro. These projects have advanced through partnerships, commitments and agreements between librarians and other information professionals and scientists from the institution itself as well as groups, associations and related external institutions, especially IAMSLIC and IODE, that have addressed training and supported the challenges of virtual information. Finally, due to the economic crisis libraries are facing in academic institutions, librarians must adapt to changes in their classic role as information brokers. They should give advice to teachers and researchers, promote open access, encourage the use of repositories and data mining, and be ready to take on other new tasks. It is vital for librarians to keep up with technological advances and support their colleagues. This will allow marine libraries to dock in the port of success.

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Readership popularization in Poland: tradition and modernity

Since 1992 the Polish National Library has published reports dealing with the state of reading in Poland. The last report describes reading in 2015. The research was done on a representative group of over 3,000 persons over the age of 15 using a questionnaire. The research describes book reading in various formats: printed, audio and digital ones. To put it mildly, it is not optimistic - **63% of Poles did not read any books last year - the lowest** number since 1989.

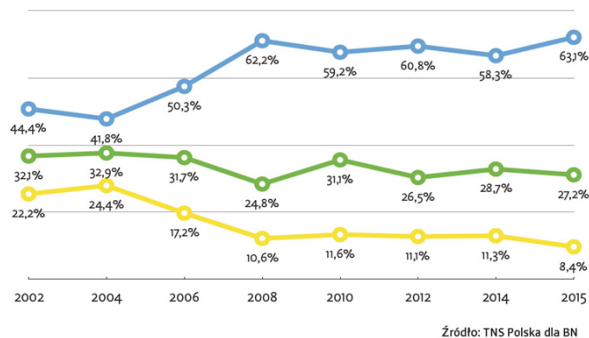


Fig.1. Reading books in Poland in 2002-2015

- Persons who did not read any book in the preceding year
- Persons who read 1-6 books in the preceding year
- Persons who read 7 and more books in the preceding year

The strongest variable that determined reading was education - the higher the education level, the more books are read. Another variable was sex - women read more than men, girls more than boys. The most popular books were novels - detective stories, love stories, thrillers, fantasy and of course, obligatory school readings.

According to the report, 2/3 of Poles use the Internet when searching for practical advice, current information, maps, encyclopedic notes, tourist guides and short press articles. The same persons who read printed books also read a lot on the Internet. People who do not read printed books read neither e-books nor on the Internet. Family plays the most important role in creating a reading habit, followed by school teachers and librarians. It is also worth mentioning that the percentage of persons who read more than three pages of text (1300-1500 words) is decreasing. Some think that it is because the Internet has taught them rather to scan rather than to read with understanding.

The Polish National Library introduced two terms in its report: the **Omni Reader**, who reads at least one book and one periodical a year, three pages of text a month, and news on the Internet; and a **Person Out of Writing Culture**, who does none of these things. In 2015 there were 22% Omni Readers and 14 % Persons Out of Writing Culture in Poland.

The reasons for reading decline in Poland include:

- **School:** A former division into eight years primary and four years secondary school allowed time for school pleasure. In 1990 the education system was changed, and secondary school now lasts three years, so pupils do not have enough time for reading. They read “cribs” instead of books and teachers order pupils to read only fragments of novels instead of the whole texts, resulting in lack of comprehension. The form of exams was also changed. Instead of writing long essays based on books, now pupils take tests that can be passed even without reading.
- **The technology revolution:** Access to television, video cassettes, DVD records, and computer and video games have changed the way people spend their spare time. People also use tablets and laptops when traveling instead of taking books.
- **Book prices:** The price of books has risen sharply and demand has dropped.

- **The Internet:** In my opinion the spread of the Internet does not have a bad influence on reading but it has changed the way of reading to short snippets.
- **Libraries** are under-financed. Their stocks are very often outdated, which discourages reading traditional printed texts and does not attract persons who prefer electronic books, which are often lacking outside cities.
- **Lack of time:** Poland is a country where people nowadays work long hours. Poles do not have time for reading; in the evening people watch television and go to bed.

How Reading Was/Is Promoted in Poland

After World War II Poland had a high level of illiteracy (about 20%). Because of the change in the political system, the state became a patron of national culture and campaigned against illiteracy, but of course it was filled with the new ideology. Still, a lot of books and newspapers were published, also classics of Polish and foreign literature. Books and papers were very cheap, and in the 1960s and 1970s many book series, comics and illustrated magazines were available. A new word - *bestseller* - appeared. The authorities did not have to encourage reading. There were only two or three television programs, and the cinemas mostly showed boring Russian films, though others were based on famous Polish novels that encouraged viewers to read the originals later.

The situation changed for worse in the 1980s with the martial state, strong censorship, social and economic crisis. There were no products in the shops, and the bookshops were also empty. Books from illegal sources were the only windows to a free world for the Polish people.

The events of 1989/90 resulted in political system change and privatization. The state was a patron of culture no longer. Books were expensive and many libraries were closed. Only in the last few years has reading begun to be promoted. These initiatives include:

- Since 2012 the Presidents of Poland have organized an action called **National Reading**. Once a year the President and the First Lady read in public a novel that has been chosen by Poles in Internet voting. Usually actors, ministers, teachers, researchers, and librarians join the action. National Reading is transmitted by television and radio. This year the action started on September 3 and a very famous novel - *Quo vadis* by Polish Nobel Prize winner Henryk Sienkiewicz - was read. The action is advertised on television, radio and the Internet, and this year the most popular video clips were prepared by paratroopers!
- The **Book Institute (BI)**, created by the Minister of Culture and National Heritage for promoting Polish literature in the world and reading in Poland, acts as a patron of *Discussion Book Clubs* that are established by the groups of book fans. They act in the libraries and organize meetings with writers and translators with whom readers can discuss books and many various problems; they even can get to know writers' opinions on current events. BI cooperates with organizers of big music events like concerts and festivals and also has renewed the tradition of novels in episodes on non-commercial radio transmissions and reviews with interesting young authors.
- The **National Program of Reading Development** for 2016-2020 was created by the Ministry of Culture and National Heritage, providing funds for buying books, multimedia, maps and periodicals for public and school libraries and for modernization of library infrastructure.

- Of great importance in reading promotion is the **Foundation ABCXXI - All of Poland Reads to Kids**. The motto is: *“Read to your child 20 minutes a day, every day.”* This is promoted at schools, on the Internet, on TV and radio; even the army (pilots) promotes the action. The foundation organizes meetings for children with writers, actors, and town mayors, who read books aloud, usually fairy-tales and adventure books, which children like the most. **On the 10th Anniversary of the campaign**, the Foundation launched the **“All of Europe Reads to Kids” program** to promote daily reading to children, facilitate an exchange of experience and good practice between different organizations in Europe as well as provide a working platform for those who are willing to launch campaigns promoting reading to children in their countries. Its other programs include *“Reading in prisons”* and *“Bookstart” for children*. *In many towns, these books are given to the parents for free when they register a child. The foundation also created a Golden List of books that teach, provoke reflection or laughter, perfect language, develop imagination, or present good behavior models.*
 - The **Polish Librarians’ Association** organizes *“A week of libraries.”* During these weeks libraries organize many events, especially for children. Besides meetings with authors, there are contests, days of various cultures (Japanese, British etc.), bookcrossing in parks and busses or reading books in sign language.
 - Libraries also found library clubs and part-time kindergartens, promote events such as the *Long Night of Libraries*, exhibitions and more.
 - **Flash Mob** –loud reading in different places, for example at railway platforms, in parks, and even at the Zoo!
 - Libraries offer audio books and special service for the blind.
 - Along with local authorities, librarians and publishers organize **outdoor events** such as *Seaside Reading Plein-air* in Gdynia, held every July. This joins a book fair with meetings with writers.
 - There are many book fairs in Poland where visitors can not only buy printed books, audio books and e-books, but also take part in panel discussions, meet the authors or play with board games.
 - **Bookcrossing** is defined as “the practice of leaving a [book](#) in a [public place](#) to be picked up and read by others, who then do likewise.” This idea appeared in Poland in 2003 and since then has become very popular, with bookcrossing shelves in many places.
 - **The Internet** offers new ways of reaching the readers. *BiblioNETka*, a consultative portal, offers opinions on books, addresses of bookshops, and a lot of discussion fora. At *Parkliteracki.pl*, *Lubimyczytac.pl*, *NaKanapie.pl* and *Webook.pl*, participants create book catalogs, add citations from favorite books, describe the heroes and give their own reviews. The foundation Modern Poland (Nowoczesna Polska) provides an Internet library called *Wolnelektury.pl* where readers have access to many interesting books (of course observing copyright). The texts can be saved on computers and followed by other readers.
 - **Bookshops and cafes** often have separate corners with armchairs and tables where visitors can read without purchasing while enjoying refreshments.
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Crises are opportunities: INIDEP turns to KOHA

Since 2009, the INIDEP Library (Mar del Plata, Argentina) had used ABCD (Automatización de Bibliotecas y Centros de Información) for its OPAC in the Intranet. This system was created by BIREME/PAHO/WHO and is open source (free software) and is a member of the ISIS family of technologies. At that time, several factors led us to choose this system, given that the Library manages its bibliographic databases with WinISIS. Starting in the year 2016, the INIDEP Informatic Department (ID) warned the Library about the critical state of the Server where the ABCD system is hosted and runs (it was vulnerable, unreliable, and outdated). Based on analysis and diagnosis, the decision was made to migrate the OPAC to KOHA, an Integrated Management Library System from New Zealand. The ABCD is a useful and versatile tool, but at the moment it does not have either sustainable or intensive and continuous development and updating. These are the factors we kept in mind when moving to KOHA: the development and supporting community is very active, with plenty of documentation; (1) the user community is world-wide and numerous (including small and large libraries); (2) it is free software, just like ABCD; (3) it works under GNU/LINUX; (4) the current available infrastructure at INIDEP is suitable for KOHA (LINUX virtual servers, high processing and storing capacity); (5) the INIDEP ID staff has previous experience on KOHA technical implementation; (6) other Argentine libraries related to marine sciences have OPACs developed with KOHA, so this will allow a major fluency and exchange of information, and know-how. At the moment, the INIDEP Library is in the process of trials of databases configuration and migrations from ABCD to KOHA.

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The impact of collaboration activities in ILL Services: 5 years of IAMSLIC membership benefits from libraries worldwide (2010-2015)

The IBMP/UNCOMA Library (Universidad Nacional del Comahue) in Argentina has been a member of IAMSLIC since 2010. Before joining, marine information management was traditionally carried out by researchers who were used to requesting information from the document's authors or institutions. Since the IBMP became an IAMSLIC member, the traditional requesting activities have been replaced by an Interlibrary Loan (ILL) service performed by the Library that has improved the flow of requested articles through resource sharing among member libraries worldwide. This poster showed how requesting documents has changed; lending libraries' ranks; and the global distribution of items and institutions throughout five years of membership (2010-2015) as a result of cooperative activities between libraries.

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Design and implementation of an academic hybrid repository for the Sinaloa region

This poster describes the process of building and operating the institutional repository hybrid Interdisciplinary Research Center for Regional Integral Development (CIIDIR), unit Sinaloa, through a robust computing platform for the expansion of library services and scientific information. The CIIDIR promotes the incorporation of universities and regional institutes independently to address the growing needs of the scientific regional community and users in general, as well as to contribute in the integration of infrastructure national information.

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Caribbean Marine Atlas Phase 2

Countries in the Caribbean region share the same priorities with respect to marine resource management, and many of the same challenges with data access and data management. Critical goods and services provided by the marine environment in the Caribbean are at risk from threats, including weak governance, mismanagement, climate change and the inadequate incorporation of data into decision-making. Faced with this, the Caribbean Marine Atlas Phase 2 (CMA2) has worked since 2013 in the sustainable operationalization of an online digital “Caribbean Marine Atlas” technology platform in support of Integrated Coastal Zone Management - ICZM (with special attention to coastal hazards, climate change, biodiversity & habitats, fisheries, land based sources of pollution) and Ecosystem-based Management for the Caribbean Large Marine Ecosystem Project (CLME). The platform will be piloted in nine countries at the regional and national levels. Training, awareness building and dissemination activities are being conducted. The CMA2 project builds upon the experience and lessons learnt in the CMA1 and SPINCAM Projects. The development of an atlas framework is an effective way to leverage scarce resources to improve access to regional and national scale coastal area management-related data. INVEMAR in Colombia is a regional coordinator of CMA2. CMA2 is working also on design and implementation of regional indicators and on geospatial information, databases and documents collection with the country’s partners (Venezuela, Belize, Panama, Guatemala, Mexico, Dominican Republic, Jamaica, Dominica, Barbados), based on a strategy and collaborative tools to facilitate self-management of information in countries (GeoNode). Each National Focal Point works to promote CMA2 at the national level to involve key institutional stakeholders. Digital platforms are available.

PANEL DISCUSSION

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The evolution of library space: a conversation about how library design supports our scholarly communities

The shift toward digital scholarly content has liberated space in the library that can now be dedicated to users rather than collections. On university campuses, this shift has largely resulted in the creation of “learning commons” areas that are focused on supporting the needs of undergraduate students. In the realm of specialist libraries and information centers however, our user base is skewed toward faculty and graduate students whose needs may be different than those of the general undergraduate population. How have we redesigned our spaces to accommodate their evolving needs? This panel discussion will address our observations on changing user needs, and how we have responded with changes to our spaces. We will focus on the unique needs of our communities, the realistic lifecycle of a remodel process, and will include a discussion of both helpful suggestions and pitfalls to avoid. We expect to engage with the audience on this topic to include them in the discussion.

SMALL GROUP DISCUSSIONS

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User terms vs. controlled terms

The discussion dealt with user representation in the searching and retrieving systems. The studied user belongs to the academic and research fields and is interested in agricultural and ichthyology information. This user mainly interacts with documents, data, information and new knowledge as potential modifiers of language and communication. Thus, the discussion centered on the way the user searches and the terms she/he uses. User terms have been identified and compared with those included in the ASFA and AGROVOC Thesauri and user’s terms were identified and matched with the terms included in the controlled vocabularies. Most used terms showed no association with those of the thesauri.

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Discourse on data: Research data management

This round table discussion aimed to explore challenges and opportunities related to building and maintaining research data management (RDM) services in scientific institutions. Possible discussion prompts included: outreach and engagement, building expertise and training, data management plans, RDM tools, keeping up with funding agency requirements, and storage solutions. People attending who have RDM services in their institutions discussed their experiences and lessons learned. Attendees who were interested in starting RDM services at their institutions considered possible starting points and potential issues with service implementation and the group discussed possible solutions.