

Tropical Fisheries Literature: What It Is and How To Find It

KAY K. HALE

*Rosenstiel School of Marine and Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, Florida 33149*

ABSTRACT

Los científicos pesqueros en el Golfo y el Caribe, como sus contrapartes alrededor del mundo, necesitan tener acceso a la literatura publicada sobre pesquería. Debido a la naturaleza interdisciplinaria de esta literatura y a la razón tan rápida con la que se esta multiplicando, es tiempo de revisar que se ha publicado actualmente y como las bibliotecas están tratando de resolver los problemas de acceso a dicha literatura. En países donde hay una escases de esta literatura y donde existen muy pocas probabilidades de aliviar el problema de escases, La Escuela de Ciencias Atmosféricas y Marinas de Rosenstiel, está presta a ofrecer ayuda. La biblioteca de la Escuela ya es un centro clave de información para los científicos marinos de la región y tradicionalmente sirve a estudiantes e investigadores en programas de oceanografía tropical. Siempre a provisto información a personas que lo ha pedido por correo o a científicos que han visitado las facilidades en Miami. Ahora bién, La Escuela planea expandir su interés y responsabilidad en la región mediante el establecimiento de una nueva red de información, la cual mejorara a la comunicación y el flujo de información entre bibliotecas e investigadores. Los planes de esta red para centralizar la colección de literatura en la biblioteca de La Escuela y poder diseminar la información a través del área, por medio de un sistema electrónico, proveerá para investigaciones de biblioteca, información bibliográfica, préstamos inter-bibliotecarios y entrega de documentos. Debido a que la comunicación informal en muchos casos es más importante que la información publicada, los científicos podran además "hablar" uno con el otro por medio de la pizarra electrónica de boletines. Se han recibido fondos para comenzar dicha red. Parte de estos fondos estarán dedicados a fortalecer la colección sobre los recursos del Caribe y América Latina en la biblioteca. El resto, serán destinados para establecer una base de datos sobre ciencias marinas tropicales proveyendo equipo que estará en la región y desarrollando proyectos pilotos para iniciar este servicio.

INTRODUCTION

When I originally planned this paper, my impressions were that the literature of tropical fisheries was relatively limited and that I could cover the ground in a few simple sweeps. I was wrong. Even restricting myself to tropical MARINE fisheries, I find that the literature is very diverse, very scattered and, in many ways, very difficult to access.

TROPICAL MARINE FISHERIES LITERATURE

Fishery Science is a multidisciplinary subject area whose literature spreads across the boundaries of the pure and natural sciences, technology, industry,

anthropology, sociology, law, political science, economics, education, statistics, business, and even librarianship. Its literature is published in a variety of media: primary journals, monographs, theses and dissertations, technical reports, patents, maps, newsletters, conference proceedings, films, drawings, legal documents, bibliographies, computer and video tapes, and now compact disks. The quantity of the published information continues to increase very rapidly, as does its cost.

Where is most of the tropical marine fisheries literature found? The leading international book publishers and fisheries journals cover the tropical area along with the rest of the globe. Some tropical institutions publish their own marine science serials, like Kuwait, Sierra Leone, and Mexico; others include the subject in general science/technology journals. Publications from government agencies in developed countries, such as the National Marine Fisheries Service in the U.S. and its counterparts in Australia, Sweden, Canada, France, and India include research on tropical oceanography as do government publications from the countries in the region itself. An "alphabet soup" of international organizations also publishes widely on this subject, such as FAO and its regional offices, UNESCO, NTIS in the United States, ICMRD at the University of Rhode Island, IDRC in Canada, ICLARM and SEAFDEC in the Philippines, ICES in Denmark, ICCAT in Spain, ORSTOM in France, the South Pacific Commission in New Caledonia, and so forth.

The organization and access to these materials has not yet kept pace with its proliferation, but information specialists, publishers, and librarians have been using new technologies to try and cope with its management. The early printed bibliographies such as Zoological Record and Biological Abstracts have been supplemented, for fisheries, with Aquatic Sciences and Fisheries Abstracts (ASFA). This indexing and abstracting journal began in 1971 with the merger of the 3-year old Aquatic Biology Abstracts, published by Information Retrieval Ltd. in London, and the Current Bibliography for Aquatic Sciences and Fisheries which was published by FAO in Rome from 1958. ASFA is now published monthly as "an international information journal for the science, technology, and management of marine and freshwater environments." From 1984, the journal has been split into two parts: ASFA I covers the biological sciences and living resources, and ASFA II covers ocean technology, policy, and non-living resources. Today, each issue contains about 2,000 abstracts followed by author, subject, taxonomic, and geographic indexes and it is published in Bethesda, MD by Cambridge Scientific Abstracts. The journal is compiled by the United Nations Department of International Economic and Social Affairs, the Food and Agriculture Organization of the United Nations, and the Intergovernmental Oceanographic Commission. Collaborating with these compilers is a network of input centers in Canada, People's Republic of China, Federal Republic of Germany, France, Japan, Mexico, Norway, Portugal, Thailand, United Kingdom, USSR, and the U.S.A. These centers monitor approximately 5,000 primary journals plus a variety of other source documents, including the literature of related disciplines. Its coverage is about 75% marine/brackish and 25% freshwater. Over 40 languages are represented and the database consists of approximately 71% journal articles, 21% conference papers, 5% technical reports, and 3% books and monographs. All titles are translated into English, though the original language title is also included, and the abstract is written in English with full bibliographical information as to title, author,

author's address, source, volume number, date, pages, and language. In 1984, a quarterly journal, ASFA Aquaculture Abstracts, began publication. This journal extracts the aquaculture-related references from ASFA, about 600 abstracts per issue, and is printed in the same format as its parent publication. The subscription cost for all three sections in 1986 is \$1,036 (Sections may be purchased separately: \$522 for ASFA I, \$377 for ASFA II, \$137 for Aquaculture).

The input center for Latin America is the Centro de Informacion Cientifica y Humanistica (CICH) at the Universidad Nacional Autonoma de Mexico in Mexico City. It monitors 230 Latin American journals from 16 countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Uruguay, U.S.A., and Venezuela) and inputs about 1,000 records per year to ASFA. The input center for the United States is the Assessment and Information Services Center, NOAA, together with Cambridge Scientific Abstracts.

NEW TECHNOLOGIES

The coordinators of ASFA (the UN, FAO, and IOC) have formed the Aquatic Sciences and Fisheries Information System (ASFIS), of which ASFA is one module. From 1978, the entire ASFA database, containing more than 201,000 records, has been available in computer tape format and through major online vendors. Public access is available in many countries through commercial information retrieval companies. In the U.S., DIALOG Information Service in Palo Alto, California, provides direct online access through a computer terminal, using a telecommunications network. Similarly, vendors in Canada, France, Germany, and Italy offer this service. Fees are based on royalties to the publisher, the amount of time connected to the host computer, a charge for each citation displayed online or ordered offline, and transmission costs. In Miami, by dialing a local telephone number, the host system in California is accessed and a search is made by entering keyword subject descriptors, author's names, journal names, geographic terms, taxonomic names, language codes, etc. The computer searches these thousands of records and responds within seconds as to how many "hits" were made in the database corresponding to the combination of search terms. At this point, the references can be either typed online to paper, downloaded to a microcomputer disk (giving the searcher an immediate custom bibliography), or printed offline, at the host computer site, and sent by mail. Thus, in minutes, searchers can retrieve information once painstakingly extracted by manual means.

Recently, ASFA was also made available on a compact disk. Using optical disk technology, the ASFA database from 1981 is accessible at a microcomputer, using a disk reader and appropriate software. The presence of the librarian, or search intermediary, is no longer necessary since a "user-friendly" menu allows the student or scientist to search easily and at his/her own pace, without the constraints or costs of connect time, transmission charges, and citation displays. At the Rosenstiel School Library, a 30-day demonstration of the CD-ROM (compact disk, read only memory) was received so positively that we have ordered a subscription. The disk is updated quarterly and costs about twice as much as the printed version, but it provides a very powerful tool for satisfying some of our information needs, quickly and easily.

Thus, the primary journal and monographic material on tropical marine fisheries is fairly well controlled in the bibliographic sense. However, many governmental and fisheries institutions in the tropics, which include many developing countries, publish much of their information in what librarians call the "gray literature." This includes reports, conferences, meeting papers, theses, research results, extension handbooks, and other such ephemeral materials which are issued in small quantities and never indexed in either national bibliographies or in the fisheries abstracts. ASFA, for example, includes only 5 percent of this "gray literature." These publications, then, often rest on some office shelf, on hand if its owner needs to consult it, but otherwise lost to the broad fisheries community.

NETWORKS

With these new technologies, information specialists and librarians are expanding their use of networks in order to share resources and retrieve information rapidly. The basic person-to-person, one-on-one contact is still a very important means of information transfer. Often, when I must quickly answer a reference question, contacting an available faculty member who specializes in the subject will furnish either an immediate answer to the query or an identification of the exact source for finding that answer. A scientist knows who is researching or publishing on his own subject. Therefore, personal contact or following a colleague's publications can be the quickest path to gaining information. Attending conferences and meetings and corresponding with colleagues is, in a sense, an informal network in practice. More formally, libraries are linking together into local, regional, national, and international networks in order to cooperatively collect and disseminate information. For instance, in my Library, a computerized online catalog will search all titles cataloged since 1975 in the Main Campus Library and my Marine Science Library. Plans are in progress to add the holdings of the Law School, Medical School, and Music School libraries, thus creating a local University of Miami library network. In our immediate region of Southeast Florida, all the main public library branches and academic libraries have been incorporated into a telefacsimile network with the capability of receiving or sending, over the telephone lines, instant copies of documents to any other library with compatible receiving equipment. Nationally, the Rosenstiel School Library belongs to the Online Computer Library Center (OCLC) in Ohio which we access, through a computer terminal with a modem, in order to request interlibrary loans from any one of the thousands of library members on the system. Internationally, I belong to the International Association of Marine Science Libraries and Information Centers (IAMSLIC) and I can call upon colleagues all over the world for information assistance. Besides, these specifically library-oriented networks, the Rosenstiel School shares a variety of information and data networks with other oceanographic and meteorological research institutions in the United States and abroad.

REGIONAL MARINE SCIENCE INFORMATION NETWORK

Since its inception, the Rosenstiel School Library has been a key information center for marine scientists in the region, where it has traditionally served students and researchers in tropical oceanography programs. It has always provided information in response to requests by mail and many scientists

visiting the Miami area include a personal visit to the Library. At this time, the Rosenstiel School plans to expand its interests and responsibilities in the region by establishing a new regional information network which will improve communications and the flow of data between libraries and researchers. In November 1984, the Library was awarded a \$200,000 grant from the Andrew W. Mellon Foundation, providing the Rosenstiel School can raise \$400,000 in matching funds. The Mellon grant must be used for strengthening the Library's Caribbean and Latin American collections. The matching \$400,000 has been designated for a Marine Science Information Network. So far, we have received \$50,000 of Mellon money and \$100,000 of matching funds, enough to initiate the first phase of the project.

Our idea is to establish an electronic mail network using a telecommunications system already available in many countries in the Caribbean and Latin America. With a personal computer and a modem, a local telephone number connects to a packet switching system which will be able to send messages to our Library, or any other Library with a mailbox number. Thus, our library resources become available to anyone in the region. Literature searches and bibliographical information can be requested, interlibrary loans can be processed, and documents can be delivered either by regular mail or electronically, depending on the state of the technology. Our networking facilities, the oceanographic and meteorological networks as well as the library-related networks, also become available. And, since nonformal communications, in many instances, is even more vital than published information, scientists will be able to "talk" to one another directly through this electronic mail service. This particular service is already in operation around the world though most of the Caribbean and all of Latin America have yet to become a part of it.

Another part of our plan is to provide ASFA subscriptions on compact disk to various marine science institutions. With the same personal computer, plus a disk reader, ASFA can be searched in-house by the scientist or librarian, without the problems or variable costs of telephone transmission. At least this would provide institutions with references to the primary core literature. If articles or documents are needed, then requests can be sent via electronic mail and copies provided by the fastest and easiest method.

At the same time, the Rosenstiel School Library will make a special, aggressive attempt to collect the region's "gray literature." By incorporating this literature into our own database, we can disseminate it, through our various network affiliations, to interested scientists in our country, in the region, and throughout the world.

The Rosenstiel School is in the process of organizing a planning workshop for 10 marine science institutions in the Caribbean and Latin America which we have chosen for network pilot sites. Hopefully, once the information needs and wants of these institutions are identified and assessed, and the equipment, mailbox subscriptions, and transmission costs identified, we can actively continue our search for the rest of the Mellon matching funds. There are other information networks under investigation and planning in this same part of the world. Since the goals are the same, and the technology hopefully compatible, this hemisphere could, in the near future, link its marine science information resource with those of the global marine science community resulting in the

rapid exchange of information needed for mutual scientific and economic progress.

SUGGESTED READING

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