

THE HISTORY AND USES OF *WILDLIFE REVIEW* AND *FISHERIES REVIEW*

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ABSTRACT

The Biological Survey (now the U.S. Fish and Wildlife Service) began compiling two indexed bibliographies, *Wildlife Review* in 1935 and *Fisheries Review* in 1955, to provide its staff with a record of research and to preclude duplication of research. Electronic data bases and a CD-ROM with 20 years of data, personalized current awareness packages, and quality control devices were generated from the reviews. Development of various products, use of the reviews by the U.S. Fish and Wildlife Service and the public, current challenges, and perspectives and misconceptions by users of bibliographic data bases are discussed.

HISTORY

In 1935, the Biological Survey first published *Wildlife Review* for the benefit of employees and cooperators of the Survey (Kirby 1989). Titles, citations, and abstracts of current literature in the biology and management of vertebrate wildlife and their habitats were compiled and organized by subject. Each issue also included an author index. Geographical and subject indexes were first included in *Wildlife Review* in 1976. The first taxonomic index was included in the 1981 annual index and has been included in each issue since 1985. Today *Wildlife Review* is produced bimonthly.

In 1955, *Sport Fishery Abstracts* began tracking literature in sport fishery management. Titles, citations, and abstracts were compiled and author and subject indexes were manually generated. In mid-1975, the subject index was replaced by geographical and systematic indexes. Since then, subject indexes have been generated and printed in the annual cumulative index of the final issue each year. In 1986, the name of *Sport Fishery Abstracts* was changed to *Fisheries Review* to reflect the gradual change in coverage of literature in fishery science from management of game fishes to vertebrate fishery sciences. Today, *Fisheries Review* is published quarterly.

Because of the rapid increase in natural resources literature and a limited

staff for compiling, the inclusion of abstracts was curtailed in *Wildlife Review* by 1979 and in *Fisheries Review* by 1987.

To assist users of the reviews, three-, five-, or ten-year cumulative indexes were produced, funds permitting. The last publication covers 1971-1980. No plans have been made to publish the 1981-1990 citations index.

Compilation and indexing of the reviews on an IBM 3400 with a customized software package began in 1979 (Mention of trade names does not imply endorsement by the United States government). File conversion for the preceding eight years, producing a retrievable data base for batch searches. In 1986, the system was upgraded to an IBM 3600.

Because of frequent taxonomic variations in the literature, several nomenclature standards were selected to improve the reliability of retrieving indexing data (Table 1). Political and geographical name changes were challenges to researchers, authors, information specialists, and data base compilers (Snelling 1987) and the reviews staff responded with a single standard for geographical reference. A system of geographical codes was also developed to avoid constant global changes of the data bases in response to changes in country names and politics and to allow searching of the literature in broad geographical areas without a search of references for individual countries. A dynamic thesaurus of subject index terms and a glossary of term definitions and related terms was developed and both are updated continually. Global changes to taxonomic, geographical, and index terms in the data bases are made routinely as changes appear in new editions of standard sources.

TERM	PRIMARY STANDARD	SECONDARY STANDARD
Mammals	Walker 1983	
Birds	Sibley and Monroe 1990	Clements 1981
Reptiles	Regional lists	Gainesville 1978
Amphibians	Frost 1985	Gainesville 1978
Fishes	Am. Fish. Soc. 1991	Gainesville 1978
Geographical	Natl. Geogr. Soc. 1990	

Table 1. Sources for standardization of index terms in *Wildlife Review* and *Fisheries Review*.

In 1990, electronic dictionaries of subject, geographical, taxonomic, and index terms were created to improve control of and standardize the data bases. The dictionaries are updated frequently and newly indexed citations are compared with these dictionaries daily prior to inclusion in the final data bases.

A manual system for tracking missing serial issues and avoiding duplicate entry of publications was used from 1976 to 1987. In 1988, this system was converted to an

electronic data base and a systematic method for retrieving missing issues was developed. Similar data bases and methodologies were developed for tracking and acquiring symposia proceedings, books, master theses, and doctoral dissertations.

AUDIENCES

Today's users of *Fisheries* and *Wildlife* reviews are far more diverse than the users in the Biological Survey. *Wildlife Review* is sent to 1577 addresses: 142 state and provincial agencies, 167 universities, 341 foreign agencies, and 927 federal or private subscribers. *Fisheries Review* is sent to a total of 1021 addresses: 127 state or provincial agencies, 113 universities, 175 foreign addresses, and 606 federal or private subscribers.

USES AND PRODUCTS

The initial intent of the reviews was to apprise in-house personnel of current research in natural resources and to avoid duplication of research. Most citations include the address of the senior author so that users may make inquiries or request reprints.

For many researchers and managers in remote locations and in underdeveloped countries, the reviews are the primary tools for current awareness and of retrospective searching. Therefore, the printed format is retained and is organized in a format that facilitates easy manual searching.

Since 1981, the reviews staff has formatted and run batch literature searches for federal scientists and natural resource managers. As the size of the data bases increased and word-of-mouth exposure of this service spread, requests increased from 575 in 1987 to over 2250 in 1990. Because of the strain of this heavy usage on a staff of three, and the demand for additional access to the data bases by federal, state, and private users, the staff began to explore and develop other products for users.

In 1987, the reviews staff began a Selective Dissemination of Information (SDI) program for Service personnel. Weekly, monthly, bimonthly, or quarterly, the most recently indexed material is searched by subject, taxonomic, or geographical terms and the resulting list of citations is sent to the requestor. An increasing number of personnel rely on a SDI to keep abreast of current information. Retroactive batch searches can be supplemented monthly or quarterly with SDIs to serve as up-to-date bibliographies of specialized subject areas. Each citation in a SDI includes the current address of the senior author or a statement of publication availability as do citations appearing in the printed reviews so that users can request copies or make inquiries. Monthly SDIs usually contain citations within 5-45 days of their publication.

Since 1990, the data bases of *Fisheries Review* and *Wildlife Review* have been produced by a private vendor as a CD-ROM called *Wildlife and Fish Worldwide*. The vendor is currently updating the CD-ROM every six months and handles distribution and all leasing contracts. This product enables resource managers, librarians, and researchers to electronically search the extensive bibliographic data bases. *Wildlife and Fish Worldwide* allows precise and rapid searches of over 258,700 records by using a personal computer, MS-DOS-EXTEND and a CD-ROM reader.

Information specialists and librarians of facilities where staff conducts long-term or narrowly defined research or management focus expressed interest in generating SDIs from *Wildlife and Fish Worldwide*. At present, such SDIs can be produced only twice per year and references are two to eight months old. As subscribership to the CD-ROM increases, the vendor hopes to double the frequency of the update to improve its currency. This would allow SDIs to be generated to provide users with quarterly listings of citations of one to four month old publications.

CURRENT CHALLENGES TO THE REVIEWS

The profound increase in the number of publications is reflected in the annual additions of citations to the *Fisheries Review* data base. From 1985 to 1990, indexed citations increased 79% from 3815 to 6787. In addition to the increasing number of publications, the growing diversity and number of specialized journals with information about natural resources is overwhelming (Hairston 1991). Animal scientists once published in a few core journals. Today, animal scientists publish in specialized journals of veterinary sciences, toxicology, hematology, hydrology, satellite imagery, aquaculture, and modeling and in an increasing number of foreign journals, workshop and symposia proceedings, monographs, and reference books.

The swelling wildlife and fisheries literature requires novel techniques for producing current bibliographies. Until recently, requests for additional indexers were denied and a reduction in citations by subject, geography, or source seemed imminent. Because of the increased interest in whole ecosystem and global research and management the prioritizing and reduction of publication coverage by subject or geography seemed inappropriate. The time-consuming indexing of the burgeoning serial literature caused an unintentional decrease in the location and retrieval of non-serial publications (e.g., symposia, monographs, books, etc.). A recent increase in personnel will permit more comprehensive retrieval of documents and prospects for getting more in-house or contract indexers indicate yet more thorough future retrieval and listings.

During demonstrations of *Wildlife and Fish Worldwide*, we were encouraged by the ease with which scientists and managers conducted their own searches. However, some information specialists have difficulty with some of the indexing vocabulary. For example, in *Fisheries Review* the term "electrofishing" is used to

reference a technique and "electroshock" to reference the effects electrofishing has on fishes. Such difficulties are noted and the vernacular in question is reconsidered and frequently changed in the data bases and the resulting update of the CD-ROM. Changes in taxonomy and nomenclature in our standard references are incorporated into the data bases as well. We are currently completing separate glossaries describing specifically how terminology is applied in each of the reviews and the vendor of the CD-ROM will be encouraged to include these in *Wildlife and Fish Worldwide*.

NOTES TO USERS OF ELECTRONIC BIBLIOGRAPHIES AND REVIEWS

Scientists and managers of natural resources specialized in response to increasing pressures on natural resources, growing workloads, and technological advances and complexities. Their specialization has been facilitated by the specialization of journals and the precision of electronic bibliographies, data bases, and reviews (Hairston 1991; Herbert 1991). With less time to peruse the decreasing number of quality, generalized science journals, resource personnel are becoming increasingly myopic, incapable of viewing the whole grand picture and far from having an eye for the obvious. People originally drawn to the sciences by their awe of grandeur and complexity are destined to the plight of industrial era workers, so focused on one cog that they cannot appreciate the final product. Random reading and happenstance learning have ceased.

The results of electronic searches are not to be taken as an end-all gospel (Pierce 1986). Frequently, researchers and managers assume that major bibliographic data bases contain all relevant information, when in fact the sought information may have never been published or was not included in a bibliographic data base because it appeared in a publication with an irregular publishing history or spotty circulation (Knopf 1987). Gaps and overlaps within and between bibliographic data bases preclude confidence the completeness of searches, particularly those of only one data base (Haas 1991). Few electronic bibliographic data bases contain references predating 1968 (*Fisheries Review* and *Wildlife Review*, pre-1971). Much basic research and many brilliant management schemes were published decades ago. Increasing emphasis on holistic management of natural resources without reinvention of the wheel, precludes sole reliance on electronic bibliographies. Scientists and managers must be encouraged to investigate the trails of cited literature and hone their library skills.

CONCLUSION

Fisheries Review and *Wildlife Review* and the products derived from them are standard tools for many researchers and managers of natural resources and remain popular because of their rapid reporting of publications, the development of citation retrieval products and quality control devices, and the retention of an easy to use hard

copy. The reviews staff constantly evaluates the information needs of U.S. Fish and Wildlife Service personnel and tailors information packages and retrieval tools to suit their needs. Our goal is to continue to provide scientists and managers with information tools that they can use effectively and to educate them in the capabilities and limitations of these tools.

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