

1996

StreamNet: an integrated information system serving fisheries scientists and managers in the Columbia River Basin - or - is innovation possible when differing traditions collide?

Gretta E. Siegel
Portland State University, bvsg@pdx.edu

Let us know how access to this document benefits you.

Follow this and additional works at: https://pdxscholar.library.pdx.edu/ulib_fac

 Part of the [Biology Commons](#), and the [Library and Information Science Commons](#)

Citation Details

Siegel, Gretta E., "StreamNet: an integrated information system serving fisheries scientists and managers in the Columbia River Basin - or - is innovation possible when differing traditions collide?" (1996). *Library Faculty Publications and Presentations*. 72.
https://pdxscholar.library.pdx.edu/ulib_fac/72

This Conference Proceeding is brought to you for free and open access. It has been accepted for inclusion in Library Faculty Publications and Presentations by an authorized administrator of PDXScholar. For more information, please contact pdxscholar@pdx.edu.

StreamNet: an integrated information system serving fisheries scientists and managers in the
Columbia River Basin - or - is innovation possible when differing traditions collide?

Gretta Siegel
Portland State University Library
Portland, Oregon

Presented at the International Association of Aquatic and Marine Science Libraries and
Information Centers. Conference (22nd : 1996 : Monterey, California, U.S.A.)

This Article is brought to you for free and open access by the Portland State University Library at
PDXScholar

**STREAMNET - AN INTEGRATED INFORMATION SYSTEM SERVING FISHERIES
SCIENTISTS AND MANAGERS IN THE COLUMBIA RIVER BASIN - OR - IS
INNOVATION POSSIBLE WHEN DIFFERING TRADITIONS COLLIDE?**

Gretta E. Siegel
StreamNet Library
Columbia River Inter-Tribal Fish Commission
729 NE Oregon, Suite 200
Portland, OR 97232
USA

ABSTRACT: StreamNet is a project which brings together fisheries information collected by state agencies, federal agencies, and Indian tribes in a system of interconnected sets of data about anadromous fish in the Columbia River Basin. The data are used to observe trends in stock abundance, escapement, hatchery production, etc. Each data point is linked to corresponding literature which can be searched separately in a references database. Plans are in progress to make this system available via the Internet. Data entry for the references module is done via Microsoft Access. The application has been designed to include features of both a catalog and an index, and, through creative programming, has been successful in serving the project as both. Documents are housed in the library at the Columbia River Inter-Tribal Fish Commission. StreamNet is a cooperative project of the tribes, the state fisheries agencies of Idaho, Oregon, Washington, and Montana, federal fisheries agencies, and the Pacific States Marine Fisheries Commission. The project is funded by the Bonneville Power Administration.

INTRODUCTION

The Columbia River basin in general, and Columbia River salmon and steelhead in particular, present us with a huge ecological, economic, and spiritual crisis which has generated vast amounts of data, documentation, and grey literature which, until presently, has been woefully under-managed. An excellent overview of the scope of this problem is described by Webster (1994). Roseberry (1992) discusses the planning process for the Columbia River Coordinated Information System. This paper is intended as an update on data management efforts in the Basin, as well as a description of the process of building a library reference system in a non-library team environment.

In 1995, two projects - the Columbia River Coordinated Information System and the Northwest Environmental Database project, merged to become StreamNet. The mission of StreamNet is to create, maintain, and enhance a high quality, regionally consistent set of fish and wildlife data that is directly applicable to regional policy, planning, management, and research; and to provide these data to users in an efficient, timely, and cost effective manner.

The primary participants of StreamNet are: The Columbia River Inter-Tribal Fish Commission, the Shoshone-Bannock Tribe, the Oregon Department of Fish and Wildlife, the Washington

Department of Fish and Wildlife, the Idaho Department of Fish and Game, the US Fish and Wildlife Service and, since merging with NED, the Montana Dept. of Fish, Wildlife, and Parks. Secondary participants are the National Marine Fisheries Service, the US Forest Service, EPA, and others. The project is funded by the Bonneville Power Administration and is administered through the Pacific States Marine Fisheries Commission.

DATA COLLECTION, SCOPE, AND DISSEMINATION

Briefly, this effort involves an attempt to collect all existing information on anadromous fish in the Columbia River Basin, building large data sets, linking all data points to their bibliographic source, and 'cataloging' all of the source documents. Data are then used to study trends and to produce charts and maps of these trends.

The data sets (or modules) include information on the following: adult abundance (described as spawner returns, dam counts and total escapement estimates), juvenile abundance, hatchery releases, hatchery returns, freshwater harvest, marine harvest, habitat data, and references.

When the project became StreamNet - and the scope was enlarged to include the state of Montana, information on resident fish began to be included as well. The scope is also enlarging to include some information from beyond the Columbia Basin, including coastal areas of Oregon and Washington, as well as areas of California and Alaska.

This information is currently being disseminated in two ways - one is by diskette (the entire system is about 68 megabytes and comes on 7 diskettes) and the other is by FTP from the StreamNet homepage: <http://www.streamnet.org>. A 'live' Internet interface is currently under development. The main concern of this endeavor is that the functionality of the existing system, the product of much hard work, should not be sacrificed. As Internet-based search tools become more versatile, progress is being made on this front.

The primary users of this system are hatchery staff, field biologists, fisheries managers, policy analysts, agency scientists, university students and researchers, etc. Due to the variety of users and their differing capabilities for access, it is currently felt that more than one means for dissemination is needed.

The documents, which are linked to the data, are housed in the library at the Columbia River Inter-Tribal Fish Commission, where they are available for on-site use, interlibrary lending, or distribution via a document delivery service.

DEVELOPMENT OF THE REFERENCE MODULE

In my view of a perfect world, orderly development would have proceeded by having the key players sit down together, discuss what the end result would look like, create a plan of how to achieve it, and then do the work needed. However, due to staff changes, a moving target of what we wanted in the end, continually changing roles and responsibilities, and some conflicting beliefs about data management and users needs - development was highly iterative and convoluted. The end result (as of today, though it is still changing) is a system which is not terribly elegant, but which gets us close to where we want to be.

The reference module, like the other modules, is constructed in several steps. Data are entered into one application (document cataloging), and is then loaded into an end-user system (the program that comes on the diskettes or via download from the web site). Development and coordination of these steps involved several people and some significant challenges.

In terms of workflow, what we had were data sets compiled by the agencies and sent to the regional data manager for coordination, the source documents sent to the library, and a computer programmer working on the end-user (search and retrieval) system. The technical challenges (for handling the references) more or less, were as follows:

1. materials needed to be “cataloged”;
2. data entry was to be done with a relational database management program (we started using Paradox and later switched to Microsoft Access);
3. programming had to be done which would convert the data from this format into a usable search and retrieval system (which did not yet exist);
4. Output options of the search and retrieval system needed to include bibliographies.

Some factors which affected smooth development were:

1. Distance - The programmer was several hundred miles away from library staff and data manager; the data manager was 25 miles away from library staff;
2. all of us worked for different agencies;
3. during the early stages of development, we did not all have adequate e-mail capabilities;
4. ‘management’ did not actively promote or facilitate teamwork, thereby perpetuating a tradition of.....
5. computer professionals and information professionals being somewhat prone to distrust and disrespect of each others expertise.

Due to all of the above, product development was always reactive rather than proactive. The biggest hurdle to overcome was probably factor 5. It took a good part of 2 years for us to develop some mutual trust. As the project evolved, the role of the librarian changed substantially from simply carrying out the task of data entry, to being allowed some input on the data entry application and giving critiques of the end-product (which were tolerated but largely ignored), to having the programming/data management staff actually seek input and collaboration on both the cataloging application and the search product. I believe that this hurdle had a lot to do with the cultural differences and traditions between librarians and computer professionals.

One of the personal/professional challenges for each of us was figuring out which battles were worth fighting, and assessing the value of a loss if a solution went against one’s traditions.

These are some of the traditional values and beliefs which the librarians brought to the process:

- (-) The (end-user) system design should be user-friendly.**
- (-) The system should be as intuitive as possible.**
- (+) Bibliographic records should be unambiguous.**
- (+) Title page transcription is important.**
- (+) The final product should allow some user control of output.**
- (+/-) A catalog and an index are not the same thing**
- (+) Indexing of non-controlled vocabulary is essential for adequate retrieval speed.**

Here are some of the traditional beliefs which the programmer and/or data manager brought to the process (as interpreted by a librarian):

- (-) Bibliographic databases are not very different from other databases.**
- (+) Off-the-shelf software should never be used unless the source code can be accessed and re-written.**
- (-) Always minimize the amount of disk space used.**
- (+/-) Indexing uncontrolled fields takes up too much disk space.**
- (+/-) End-users can figure out how to use almost any system**

The pluses and minuses indicate which battles were won or lost, respectively. So - for example, I won the argument about catalogs and indexes being different, but the point became moot, because what evolved was a hybrid. Likewise, they convinced me that all that extra indexing took up tons of disk space, but they ended up doing it anyway, because the first version of the product was so unbearably slow.

WHAT EVOLVED?

In meeting the above challenges, an interesting product did emerge. Some of what came out of the process follows:

- The data entry screen appears cluttered and inelegant, but it does what we need it to do and we have documented how to use it to achieve consistent results;**
- the end-user product searches very quickly;**
- a lot more disk space was used than originally desired;**

- we have a lot more respect for each other's areas of expertise.

Some of the more interesting features of this bibliographic database are:

- the product is a hybrid of a catalog (e.g. full title page transcriptions, full author names, collation statements, locations, etc.) and an index/abstract database (extensive and detailed indexing, abstracts, etc.), and functions reasonably well as both;
- materials indexed/cataloged include books, chapters of books, journal articles, technical reports, memos, remotely accessed electronic datasets, and personal communications;
- materials can be searched by species, run and subrun;
- materials are geographically indexed and may be searched either by sub-basin (text) or by hydrologic unit codes;
- search output can be generated in multiple formats, ranging from a complete catalog record to abbreviated bibliographic entries in multiple formats (e.g. CBE, AFS, etc.).

CONCLUSION

Is innovation possible when differing traditions collide?

YES - it is possible, but the quality of the results and the relationships will be enhanced when the following exist:

- Recognition of and open-mindedness towards the culture, language, values, and traditions of each others professions/training;
- Having a common goal, knowing what it is, and being invested in it;
- Strong leadership (to facilitate communication, team building, etc.)

REFERENCES

Roseberry, A.C. 1993. Coordinated Information System (CIS) for the Columbia River salmon. In: *Aquatic Information Resources Tools of Our Trade: Proceedings of the 18th Annual IAMSLIC Conference* (ed. by E. Fuseler and S. Wiist), pp.121-123. IAMSLIC, Fort Collins, CO.

Webster, J. 1994. Endangered information: grey literature, the Columbia River salmon, and the Endangered Species Act. In: *Preserving the Past, Looking to the Future: Proceedings of the 19th Annual Conference of the International Association of Aquatic and Marine Science Libraries and Information Centers* (ed. by J.W. Markham & A.L. Duda), pp. 119-134. IAMSLIC, Fort Pierce, FL.