



How to Handle Water Data Without Getting Drowned

By Richard Inglis

As natural resource managers in the National Park Service, we've all encountered water quality reports or technical information that for some reason is not put to use. Perhaps we don't know enough about the subject to use it properly, or perhaps it doesn't apply to current projects. Yet the report contains valuable information that could be essential to resource management. Too often, that piece of information becomes lost in a file or on a bookshelf, rarely to be used and ultimately to be discovered too late and discarded. The purpose of this article is to help prevent the "lost value" of good information.

Factors that can contribute to this regrettable "lost value," begin with the reader, who may not have sufficient technical knowledge for understanding content meaning. The information may become buried in piles of papers or misplaced in the files, or be stored in a computer where it is inaccessible or incorrectly filed. A user may simply be intimidated, confused, or frustrated by computers. Most of us have experienced these and other situations that interfere with access to information.

Acquiring Information

Try to keep data acquisition to a minimum and manage it diligently. Your objective is to organize information into a hierarchical structure, with you on top of the pyramid of knowledge where the encompassing ideas are found.

Each successive level downward should add information until the bottom level is reached, with its broad base of super-detail and quantity of datum. The intervening levels are blends of theory and facts such as report summaries and research syntheses. Raw data are used when there is a distinct need. Get data from the lower levels of the pyramid only when the project calls for it. If there is an honest gap, then develop a

study or resource monitoring program to acquire the needed data. Keeping the following four points in mind also will help with information management:

1. **Know what you need.** As a natural resource manager, keep a broad knowledge of the hydrologic cycle in mind. Know basic ecological and watershed principles and relationships. Try to generally understand the regulatory framework in your state and how significant federal laws apply. Don't memorize all the constituents of water quality. Don't try to understand the details of groundwater movement. Don't worry about statute numbers affecting discharges into rivers. There are specialists who have this information and who keep the appropriate reference books.

2. **Know where to get it.** In your own park and in your regional office, learn how each outfit is organized so that you know who is responsible for which categories of information. In larger park units, good sources of water supply information are in engineering, maintenance, and public health & sanitation divisions. Learn what the various divisions of the NPS do and how they keep records. The Water Resources Division in Ft. Collins is in an excellent position to assist park areas in remote locations in satisfying their information needs. Besides the NPS structures, university libraries and federal depositories have good collections of technical reports. Most major libraries can tap into water resource, environmental or geological abstracts through computer searches. Other federal agencies are often the primary source of water quality and quantity data, although it may take several attempts to locate the right person in the right place who can really help you.

The EPA and the Water Resources Division of the USGS are good starting places and are often listed in the telephone directories of large cities. The EPA

regional offices all have divisions that collect, store, and assess water quality data, and the USGS Water Resources Division has offices in every state (many states have several offices). However, when pursuing information from such agencies, it is important to be persistent as it may take several calls to find the department that handles water data. Be prepared to communicate exactly the information you seek so that the agency can more effectively direct you to the person(s) who can help you.

3. **Know how to get it.** Be persistent. Learning where to get the right information may be time consuming at first but will save time in the long run. If you seek hard data, find out in what format it comes and whether interpretation and analysis is available. Inquire about the various means of transmittal. With data retrievals done by computers, you will need to know what kind of computer hook-up is needed. Remember to secure the provider's name, complete address, and phone number so you can contact him or her with any questions and follow up with a thank you.

4. **Know who can help you.** One potential source is an experienced person in your own park who may have done a similar project. In addition, the NPS Water Resources Division has specialists that are available to help with water problems. Media vehicles such as *Park Science* and the *George Wright Forum* highlight the work of other NPS scientists, some of whom may be conducting projects of interest to you. Some state governments have an environmental clearinghouse that can guide you through hurdles that may appear at the local level. In time you will have a network of individuals able to help you obtain information quickly and with minimum effort. Stay friendly with your network; you may need help again.

Categorizing Information

Incorporate into your work-life small habits that organize information. Use of index cards in a file box is an old standard that works, but it needs regular attention. Folders can be used sparingly in your desk for bibliographies, research systems, etc. Use the existing record-keeping system to your advantage to organize the bulk of the paperwork that has more to do with governmental procedure than scientific value. Although some things can be filed, most official NPS correspondence is sent to the National Archives through the NPS records management. Spend a minute thinking on each piece of information you deal with: does it get you higher on the knowledge pyramid or down in a mire of details? The following are some tips for making this distinction:

- Much information can be discarded if you see no critical value in it. For example, circulars, catalogs, flyers, announcements, product promotions, news releases, reviews, etc. can be routed to others who need to see them or may be interested in their content. If no one else needs to keep such material, you can feel safe in discarding it.

- Some information should be filed in the record system for a certain period of time (such as one year). For example, memos, correspondence, budget material, project proposals, and so forth should be kept according to the record management handbook. Send them to the central files of your park headquarters or regional office.

- Some information should remain in a permanent or semi-permanent filing system. "As built" drawings, specifications from contracts, original or field data, ground truth evidence, water right documents, permits, land deeds, and other important or legal documents.

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ments should be recorded and filed as appropriate in a library, docket, or permanent files at park headquarters, and/or Regional office. The Water Resources Division has a functional system for storing water resource data that is organized by individual park unit for NPS units across the nation.

It is easy to be overwhelmed by the abundance of data and information in our world today. What is critical is not how much you know but how well you can *use* what you know. Beware of Data Heap, Computer Dump, or Information Overload! Two of the most important things to know are 1) where to get needed information and 2) how to get it efficiently. Thus, in this "Information Age," you will have information only a *file drawer*, a *phone call*, or a *computer key* away – and still be able to use it!

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