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Abstract

Water Resources Research Institutes (WWRIs) have traditionally targeted technical audiences with information transfer efforts, but non-technical audiences also play a role in decision-making.

Information Transfer Materials For Interested Publics: A Survey Of Water Resources Research Institutes

Nick Houtman

Water Resource Research Institutes (WRRIs) have traditionally targeted technical audiences with information transfer efforts, but non-technical audiences also play a role in decision-making. A survey was conducted of WRRIs to determine the general extent of water quality materials developed for non-technical audiences. Of the 54 WRRIs, 15 reported having water quality information materials for such audiences. The WRRIs have produced at least 258 publications, 45 A/V programs, 25 computer software programs, and one physical display model. A catalog of these materials could make them accessible to communicators, but issues related to need, style, format, and appropriate listings need to be explored.

Introduction

The Water Resources Research Act of 1984 requires each of the 54 Water Resources Research Institutes (WRI) to "promote the dissemination and application of the results" of water research projects. Information transfer (IT) has been described as a process which begins with the publication of a research report and continues with publication lists,

newsletters, brochures, annual reports, conferences, personal visits with elected officials, and work with the popular media (Born, 1989).

Many institute IT programs focus on the information needs of scientists, engineers and other water professionals through conferences, seminars, and technical reports (NAWID, 1989). Broader audiences may be served by newsletters. Larsen

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found that 39 institutes publish newsletters about water issues and research activities, and 36 of those publications were aimed at a mix of scientific and lay audiences (Larsen, 1989).

Water resources information is needed by many groups other than researchers and water professionals, and targeting appropriate audiences is a critical part of any IT program (Nipp, 1989). Publications, videos and other IT materials may be useful for teachers, students, farmers, reporters, municipal planners, legislators, business owners, and other groups. Many members of such groups fall into what Miller calls "attentive" and "interested" publics (Miller, 1986). These groups often play important roles in controversial issues such as landfill siting, drinking water fluoridation, and wetlands protection. Miller points out that the "attentive" public has a modest knowledge of science but lacks the technical literacy to use standard scientific reports. Thus, effective communications for these groups often interpret reports and other scientific information in the context of popular culture.

IT materials targeted at these groups must be appropriately tailored for style, vocabulary, and format. In addition, while research reports may form the basis for IT materials, some audiences have specific information needs which go well beyond the boundaries of research studies.

Among water issues that could be addressed by IT materials, water quality has been the focus of frequently expressed concerns in the State of Maine as well as the nation. In Maine, citizens rank protection of water quality among the most important criteria used to site new landfills. As a result of bacterial contamination of surface waters,

between 15 and 35 percent of the Maine coast is closed at any one time to the harvesting of shellfish. Fish consumption advisories have been issued in rivers and estuaries because of higher than acceptable levels of mercury, dioxins, and PCBs. At least 45 Maine landfills are known to be contaminating groundwater.

Water quality is also a problem of regional and national significance. Multi-state water quality issues include proper treatment of drinking water supplies, nutrient, heavy metal and bacterial contamination of stormwater, and groundwater threats from waste disposal, agriculture and petroleum product storage.

We conducted a brief survey to determine the extent of IT materials developed by WRRIs for non-technical audiences. Because of its importance and broad relevance, water quality was selected as the focus. The survey was intended to provide a quick look at IT materials rather than a thorough and precise picture of IT programs.

Methods

Letters were sent in January, 1991 to 53 water institutes. The letters requested *listings* of water quality communication materials distributed as public information reports, audio-visual materials, interactive computer programs, and 3-dimensional display models. The letter noted that the survey had two purposes: to assess the availability of materials for a potential catalog, and to gather information for a series of fact sheets on water quality in Maine.

The information received from respondents was broken down by format. If it could be determined that the target audience was the general public or a specialized audience other than scientists and water profes-

sionals, a listing was entered as IT material into a Filemaker II™ database on a Macintosh™ computer.

Newsletters were not included, and no range of production dates was specified. Materials listed by the institutes but developed solely by Cooperative Extension, foundations, USEPA, or other agencies were not listed. We did not seek information about strategies used by each institute to distribute these materials, and we did not evaluate any of the listed information. Technical reports and conference proceedings were not included. Follow-up phone calls were not made to non-responders.

Results

Thirty-five institutes (66 percent) responded. Of the respondents, only 15 listed any non-technical information materials in their publication lists or correspondence. The numbers of institutes and the numbers of materials in each category are listed in Table 1.

Among the topics covered were groundwater protection, water in the environment, waste management, flooding, pesticides, water allocations, water conservation, water resources curricula, water law, acid rain, lakes, economics, and wastewater treatment.

Nine of the institutes accounted for 197 of the publications listed, and the Texas institute accounted for about half of those. Individually cataloged newsletter articles are the basis for many of its listings, but

most institutes did not list such articles as separate documents.

Some listings were difficult to categorize by intended audience. For example, the Virgin Islands' "Capsule Reports" address topics of apparent public interest in a shorter format than technical reports. Thus, they may be appropriate for non-specialist audiences even though their titles suggest that they contain little interpretation of scientific information.

Seven of the respondents enclosed Cooperative Extension materials in their replies, and one responder indicated that a catalog of WRRRI water quality materials would duplicate a similar catalog of Extension publications.

Discussion

As a group, water research institutes have clearly developed an array of information transfer materials. The extent, format, and content of such materials varies dramatically from state to state. Only 15 of the institutes in this survey reported having any IT materials, excluding newsletters, for non-specialist audiences. Although this survey gives only a partial view of IT programs, it suggests that many, if not most institutes appear to regard scientists, engineers, and water professionals as their primary audiences.

In contrast, some institutes have developed collections of videos, publications, slide shows, and computer software for non-technical audiences. Nine institutes (Michigan,

Table 1:
Number of Institutes and Number of Materials

<u>Category</u>	<u>Institutes</u>	<u>Number of listings</u>
Publications	14	258
A/V materials	9	45
Computer software	5	25
Display models	1	1

Cornell, Virginia, Vermont, Maine, Texas, Oregon, Utah, and New Mexico) have developed materials in more than one format. These materials range from Cornell's series of computer programs and Maine's information digests to the 12-minute video produced by Texas to commemorate the 25th anniversary of the 1964 Water Resources Research Act.

Much of this work focuses on schools. For example, Utah's Water Research Laboratory sponsors a grade-school poster contest each year, and the winning entries are displayed in a calendar containing information about water issues. The Virginia Water Resources Research Center publishes a pamphlet listing 26 activity books, films and slides concerning the basics of water quality for people of all ages. "How Much Water Do You Weigh?" "Be Water Wise," and "Water Trivia" are a few of the tools available to the public through the center. Oklahoma and Michigan list water quality games among available information.

The institutes which included Cooperative Extension materials in their survey replies appear to depend on that agency to meet the information needs of non-technical audiences. Such a strategy seems appropriate where institutes must target limited dollars at other decision-makers. Indeed, cooperative arrangements with other government agencies are increasingly important in efforts to reach as many audiences as possible. In such arrangements, institutes may contribute valuable information not readily available in other agencies.

A catalog of the institutes' IT materials would be relatively small compared to the Extension water quality catalog. Nevertheless, it could help communicators meet the needs

of non-technical audiences within their states. A catalog could be developed possibly with the cooperation of appropriate professional associations. For example, the USGS program to compile water resource education materials (Vandas, 1991) is a joint project of USGS, the American Water Resources Association, and the National Science Teachers Association.

From this survey, the following points can be suggested:

1. Development of a national catalog would require a far more detailed survey than this one. In addition to the titles of appropriate materials, information would be needed on target audiences, publication dates, content, availability, costs, and purposes of each item. Since only a few water institutes conduct extensive outreach programs, potential users need to be aware of problems with availability. For example, materials that require institute staff assistance may be available on a limited basis.
2. The focus of such a catalog should be wider than water quality. Institutes have developed materials on many other topics. The information might be categorized by other issues such as waste management, fisheries, water supply, irrigation, and water law.
3. Specific criteria need to be developed for materials to be included. Some conference proceedings or summaries may be appropriate if they are concise and well targeted. Some special reports may also be appropriate. Criteria might include intended audience, purpose, format, style, and length. A/V and computer software materials need to be evaluated for equipment requirements, and operator skills.

4. It has been assumed in this survey that a potential need for a catalog exists. That need may reflect the desire of the institutes to become more visible and promote the products and expertise they have developed over the past 25 or more years. It may also reflect the desire of non-technical audiences for additional information. However, an assumed need is a poor basis for a project such as the development of a national catalog. Discussions should be held between the national WRRRI communicators group and water institute directors, professional associations, government agency staff (USGS, EPA, USDA), and special interest groups to determine: the need for this information; the most effective style and content; the best format and means of distribution; potential problems with use and maintenance; and potential impacts on existing IT programs.

Conclusion

A survey was conducted of WRRIs to determine the extent of water quality materials developed for non-technical audiences. Of the 54 WRRIs, 35 responded, and 15 reported having water quality information materials for non-technical audiences. Publications are the most commonly used format, followed by A/V materials, computer software, and physical display models. These materials cover a wide range of water resources topics and often target teachers and students. Other targeted audiences include farmers and municipal planners. Issues relevant to the potential development of a national catalog of water resources materials were discussed.

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