

IDENTIFYING CRITICAL ISSUES IN RECREATION PLANNING AND MANAGEMENT: IMPROVING THE MANAGEMENT-RESEARCH PARTNERSHIP¹

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ABSTRACT: The "nominal group" process is a proven technique to systematically arrive at a consensus about critical information needs in recreation planning and management. Using this process, 41 managers who attended a 1983 conference on river management identified 114 specific information needs grouped under 11 general questions. Clearly, some concerns of administrators are researchable; many are not.

(KEY TERMS: public involvement; meetings; technology transfer; river recreation; outdoor recreation management.)

INTRODUCTION

Numerous research projects, although conducted with the best intentions, are unsuccessful in solving applied problems. The research may not be applied because the information collected may not get into the hands of the managers or decision-makers, the information may not be packaged and delivered in a form managers can use, the research may not have addressed the appropriate problem, or decision-makers may evaluate the information and choose an alternative action or no action at all.

In this paper we focus on how to select the appropriate research problem. First, past efforts to identify appropriate problems are discussed. Then an approach we used to identify problems is discussed, followed by our findings and their implications.

Certainly, a key to getting research applied is correct formulation of the problems, which requires cooperation between researchers and decision-makers (for example, Browning and Colling, 1979; Schweitzer and Randall, 1974; Lundgren, 1981; Field, *et al.*, 1983; Jolly, *et al.*, 1978; Moeller and Heytze, 1981; Driver and Koch, 1981; Collins, 1982). In river recreation research, however, many managers feel that they are left out of this step (Morck, 1984; Anderson and Morck, 1986). Researchers must recognize that they cannot function in isolation; they must include managers when identifying needed research. Unfortunately, research often is not organized to meet managers' needs, so a real contribution

can be made by beginning to systematically define and evaluate the information needs of planners and managers.

There have been several important efforts to identify needed research in recreation (for example, U.S. Department of the Interior, 1981; Dana, 1957; Shafer and Lucas, 1978; U.S. Department of Agriculture, 1978; Brown, 1977; Lime, 1977). In addition, four regional conferences and a national conference were held to identify research problems, concerns, and issues in forestry, including recreation. These efforts have been broad and comprehensive. While breadth is an overall strength for looking at the field in general, it is a disadvantage when attempting to formulate research that will help a field manager with a particular problem. Because recreation research is often situation specific and not generalized, the ideal situation from a manager's perspective is for a researcher to work directly with the manager to identify and then solve a particular problem.

In pursuit of that goal, this paper describes a highly structured exercise, the nominal group process, as a means for resource administrators to quickly identify and rank critical information needs in river recreation planning and management. To illustrate this process, we report the information needs elicited from a broad representation of river recreation planners and manager who attended a major conference on river management. This illustration should be useful so 1) other researchers investigating river management problems can evaluate the appropriateness of their research activities, 2) managers can see what their peers are thinking and can further evaluate their own information needs, and 3) those contemplating a review of research needs can better understand and evaluate the nominal group process as an information gathering technique.

PARTICIPANTS

Managers who participated in the nominal group process attended a March 1983 conference on river management

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sponsored by the Interagency Whitewater Committee. The Interagency Whitewater Committee is an informal group of western field level river managers representing the Forest Service, Bureau of Land Management, and National Park Service and meets bi-annually to share ideas and seek cooperation (Seamans, 1982). From a list of preregistrants, we invited 25 managers to participate in the nominal group process and sent them preliminary instructions and goals for the exercise. We invited specific individuals so we would assure representation from several agencies and broad geographic coverage. In addition, at the general session of the Conference we invited any manager who was interested to participate in the process. The addition of 16 volunteers did not change the general makeup and distribution of managers from those initially invited.

In all, 41 managers participated in four groups. Representation included the Forest Service (21 participants), Bureau of Land Management (14), National Park Service (3), Parks Canada (1), the State of Oregon (1), and one privately employed environmental consultant. Positions represented ranged from Regional River Specialist to River Ranger and Technician.

NOMINAL GROUP TECHNIQUE

The nominal group technique (Delbecq, *et al.*, 1975) is a systematic way to arrive at a consensus among members of a group. The method normally is used with small groups to develop and rank a list of items in a short time. A facilitator moderates each phase of the process and keeps the group on schedule. The session takes about two hours. It is best to restrict the group to less than 15 people. Facilitators for our study were university recreation professors with experience in river recreation research and the nominal group process.

The process begins with each individual silently generating his or her own list of items about the topic in question. A composite list is then made from each person's items. After a brief discussion to clarify the meaning of each item, individuals independently choose what they consider the seven most important items from the composite list and then rank them. The ranking consists of distributing 100 points among the top seven items based on the amount of importance each item deserves, with the more important items given more points. Finally, a group rating for the items is developed by combining individual ratings.

The nominal group technique is an attractive method to generate information needs because it helps produce many high quality ideas in a short time. In addition, because the process is highly structured, each person in the group tends to feel that his or her concerns were adequately voiced and pressures of conformity are minimized; new and nonconforming ideas are more likely to be presented.

To encourage managers to think about their information needs and be well prepared for the session, background information was sent to the 25 managers expected to participate before the meeting. Managers were asked to complete a

form with three columns headed by: 1) "information needed now or in the near future for better river recreation management. *Please be specific.*" 2) "How this information might alter future actions. Again, please be specific." 3) "Was same information needed in 1975? What information was needed in 1975, but is no longer needed?" Our intent in the first two items was to encourage managers to think about specific needs; the third item was aimed at gathering information on how information needs might have changed during the last few years. Managers were asked to bring their completed forms to the meeting and to use them as reference notes as they began the nominal group process.

FINDINGS

During four group meetings, managers listed 144 separate and specific information needs. To facilitate discussion of the findings, we grouped these specific needs under 11 questions (Table 1). Column 1 contains the number of specific needs grouped under the general question. These numbers can be interpreted as indicators of the breadth and complexity of the question content. Column 2 contains the total number of times specific needs under the question were listed as one of the seven most important needs by managers. These numbers serve as indicators not only of question breadth, but also as the extent of concern among managers. Because these numbers are influenced by the number of specific needs included in a question, we divided them by the number of needs and report the results in Column 3. Thus, the numbers in Column 3 indicate the general interest of managers in a question independent of the number of the specific needs included in that question.

Columns 4 and 5 contain results from the ratings completed by managers in which they assigned 100 points among their top seven needs. The columns are analogous to Columns 2 and 3. Column 4 contains the total rating assigned to all specific needs for a question; and Column 5 contains the total ratings adjusted for the number of needs included in each question. Column 6 reports the number of times the various information needs were indicated as being present in 1975, and Column 7 adjusts Column 6 for the number of needs (Column 1).

Both the times mentioned (Column 3) and rating (Column 5) indicate the same four top priority questions:

1. What is the economic value of a river trip and what is its economic impact on the community?
2. How much use can I expect in the future?
3. What is the policy for this river and what should my management objectives be?
4. What are users' opinions about management?

There also is close agreement on the two questions of lowest priority: (Question 10) What resources are on my river and what effect does use have on them? and (Question 11) How do I learn about existing management information and research? The middle five rankings do not present

TABLE 1. Information Needs in River Recreation Management – Generated, Rated, and Ranked by 41 River Managers.

Question	No. of Specific Items in Question	Times Specific Items Were Listed	Column 2 Divided by Column 1	Total Rating	Column 4 Divided by Column 1	Times Listed for 1975	Column 6 Divided by Column 1
1. What is the economic value of a river trip and what is its economic impact on the community?	5	20	4.00	364	72.80	9	1.80
2. How much use can I expect in the future?	17	50	2.94	729	42.88	15	0.88
3. What is the policy for the river and what should my objectives be?	17	35	2.06	588	34.59	10	0.59
4. What are users' opinions about management?	18	38	2.11	549	30.50	12	0.67
5. What management techniques are available and how well do they work?	28	48	1.71	744	26.57	13	0.46
6. What are users seeking in a river recreation experience?	22	42	1.91	555	25.23	12	0.55
7. How much use is occurring on the river?	8	13	1.63	174	21.75	5	0.63
8. Is there conflict among users on the river, and does it cause displacement of users?	7	14	2.00	147	21.00	4	0.57
9. How does my river fit into a regional system of users?	4	8	2.00	82	20.50	3	0.75
10. What resources are on my river and what are the environmental impacts of recreational use?	6	5	0.83	113	18.83	4	0.67
11. How do I learn about existing management information and research?	10	17	1.70	185	18.50	4	0.40

as clear a picture. Because of the procedure and analysis used, fine distinctions are not possible. However, there is a significant quantitative break between the question on what users are seeking (Question 6) and the question on how much use is occurring on the river (Question 7). Above this break the questions are broader and more complex. The question on economics, however, is more like those below the break because it incorporates relatively few specific items. This question achieves its high ranking because many managers noted these items and rated them as very important relative to other items.

The two top priority questions on economics and future demand apparently were topmost in 1975, as well. The lowest rated question on existing information also was relatively low for 1975. The other rankings vary inconsistently from 1975 to present. Because of the fairly rough measurement procedure used, we hesitate to overinterpret any fine distinctions.

DISCUSSION

The nominal group process is a proven method to obtain more and higher quality opinions about information needs for effective planning and management than brainstorming sessions or group discussions. Using this process we undertook to identify information needs with the close cooperation of managers so that research might become increasingly more relevant to existing problems and, therefore, more likely to be applied. The list of needs has led us to consider the current relationship between river recreation research and the information needs of managers.

It is clear that research can help with some, but not all, of the questions managers have. Some questions asked by managers are not research questions, but ones of policy and politics. For example, Question 3 dealing with policy and management objectives is a prime example, as is Question 9 about how a river fits into a regional system (Table 1). For these types of questions, managers must recognize they have roles as decision maker and originator, which is beyond their roles as a processor of information. As an alternative to

research, the needs expressed in Questions 3 and 9 might best be answered by higher level administrators clarifying goals and objectives.

For some questions research may not have the capability to provide answers in the form or detail managers would like. Forecasting demand (Question 2), for instance, can only be done crudely and with uncertainty (Hecock and Lime, 1984). Researchers have yet to identify the causal relations in a complex social system that would permit more precise predictions of future demand. On the other hand, researchers probably have the ability to address the question of whether or not users are being displaced (Question 8).

Research certainly can help provide answers to some of the questions and has done so. For example, how well management techniques work (Question 5) is a problem that is well within the capability of researchers to answer (Roggenbuck and Schomaker, 1982). Conflict in recreation (Question 5) is not well understood, but it is capable of attack using present theories from psychology and sociology (Jacob and Schreyer, 1980; Shelby and Heberlein, 1986).

Questions on economics (Question 1), user's opinions and desired experiences (Question 6), amount of use (Question 7), and resource inventory and impacts (Question 10) generally are answerable by theories and methods already provided by research. For instance, several techniques including photography, visitor registration, and mandatory permits are available for measuring use on rivers (Marnell, 1977). In addition, researchers and resource administrators experienced in using existing methods have provided summaries of information useful to managers, such as the cataloguing of management techniques (Peterson and Lime, 1979), ways to value wildland resource benefits (Peterson and Randall, 1984), and strategies to monitor and manage recreational impacts on the environment (Ittner, *et al.*, 1979; Hammitt and Cole, 1987). Needed is the application (and subsequent evaluation) of these techniques to the problems on a specific river.

If substantial information exists that will answer managers' questions, why do managers continue to report these information needs? There are at least three possibilities.

First, managers may not know that information about the question exists and techniques are available to help solve them. In some cases the information may not be packaged in a readily understandable form.

Second, even if a manager knows that a technique is available to answer a question, he or she may be prevented from using the procedure because of a lack of funds, time, or qualified personnel. User surveys, for instance, require specialized knowledge for sampling, data analysis, and interpretation of results. Usually a management unit has several competing responsibilities such as timber and range in addition to river management. Administrative resources are increasingly stretched and even though a manager would like information about river recreation, management priorities may prevent devoting the necessary resources to the river recreation need.

Third, managers may not be using existing techniques because their formulation of the problem is different from researchers. Therefore, they may see the researchers' solution as inadequate.

This brings us full circle to the importance of early involvement by managers in the research process if results are to be successfully applied. Researchers typically strive to develop theories and methods that are applicable across a variety of circumstances. In developing a theory or method, however, a researcher may work with only one manager. Together, and after much interaction, they may come to an understanding of the problem, the relevance of information generated by research, and the application of the research in solving the problem. Another manager, without the benefit of an extended interchange, may not come to the same understanding of the problem and may not see the relevance of the research and its application.

In summary, there seem to be three conditions in which information is needed. First, information may be needed, but research cannot provide the answers. Here the primary burden remains with the manager to solve the problem. Second, research probably is capable of providing the needed information but hasn't. The primary burden is on the researcher, but the manager and researcher must work cooperatively to formulate the problem and develop a strategy to solve it. Third, the research community feels it has provided the necessary information, but managers have not used it. In this case the burden of finding answers must be shared both by managers and researchers.

How can managers and researchers develop cooperation relationships to solve problems? For managers, an important early step is to find out about available techniques and information. It is unlikely that a manager will have a question adequately answered while passively allowing the normal flow of information to cross his or her desk. We recognize that a manager's time and resources are limited so a search for information must be efficient. Our experience tells us the best first step in seeking information is *personal* contact with researchers and other managers. A telephone call or visit to a knowledgeable person often will produce a quick, concise summary of a particular field and identify references for more detailed study.

In addition to seeking background information, a manager should solicit help in formulating problems from knowledgeable individuals. Researchers can bring specialized help to the early stages of problem definition, help that ordinarily would not be available on a manager's staff and help that may determine the success of the entire problem-solving process. A researcher may not need to be involved in the entire process, but involvement in the early stages will be beneficial, if not critical. Manager-researcher cooperation can lead to a problem formulated in such a way as to take maximum advantage of past research.

Because a manager's information needs may require a special effort that lasts only a brief time, perhaps only one recreation season, a manager may find it difficult to budget

for the information-gathering effort. Thus, it behooves the manager to be creative and aggressive in soliciting funds or other administrative support. Strategies for obtaining these resources might include pooling data-gathering activities with neighboring administrative units that might have the same needs, obtaining funds from higher levels in the organization with the idea that any obtained information will be applicable to other units, and pooling resources with a researcher who may be able to obtain a grant from outside sources.

CONCLUSIONS

The researcher's role in finding answers to managers' questions requires that he or she be current and well-versed in theory and methods. The researcher also must be able to work with the manager in formulating problems. Based upon our experience, we recommend the nominal group process as a technique that will begin good interchange between a researcher and a management team. The technique has been used successfully to identify information needs for effective management of the Flathead River Valley in northwestern Montana (Krumpe, *et al.*, 1982; McLaughlin, *et al.*, 1982), and we and others have used it to evaluate information needs at several National Park Service units (Shasta and Delaware Water Gap National Recreation Areas, St. Croix National Scenic Riverway, New River Gorge National River, and Upper Delaware Scenic and Recreational River).

After identifying the information needs, the researcher must work closely with the manager to apply the appropriate methods to address the particular problem. By successfully applying methods case by case, the generalizability of techniques and generated information will be established in addition to solving the problems of particular management units. There may be a reluctance by some researchers to tackle case studies because the effort may not yield new theories and methods. However, we feel the payoff of successfully solving a manager's problem often should be benefit enough to justify the researcher's involvement. In addition, until managers place people with the necessary skills on their staffs, the research community is a primary source of specialized help for the managers.

We conclude, then, by reaffirming a point made by others: for the successful application of research to solving problems, researchers and managers must cooperate from the earliest stages of problem formulation to the final stages of data acquisition and interpretation.

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