

Research Needs for a Better Understanding of Wilderness Visitor Experiences

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Abstract—What information is needed to facilitate enhanced management of visitor experiences in wilderness? The final session of the workshop comprised a facilitated process with the 20 participants to identify research and information needs to support wilderness visitor experience management. The Wilderness Act and the previous presentations and discussions not only provided a context for this process but also a foundation of knowledge and managerial experience. Forty-four topics were identified in an initial roundtable listing. Participants then clarified topics and ranked them using a simple voting process. Six topics were identified as holding highest priority for research to support management of high quality visitor experiences within wilderness.

Introduction

The National Wilderness Preservation System (NWPS) was created by the 1964 Wilderness Act (U.S. Public Law 88-577) and 172 Congressional legislative acts following it. The NWPS now includes 109 million acres and 790 areas managed by four federal agencies—Forest Service, National Park Service, Bureau of Land Management, and Fish and Wildlife Service. This legislation provides the general framework for federal agency stewardship of wilderness, and development of agency implementation policies (Dawson and others 2010).

However, public values and attitudes have changed as the NWPS has grown (Cordell and others 2003; 2005) and societal preferences have evolved. Similarly, demand trends for wilderness opportunities and visitation to wilderness areas have shifted over time (Cordell 1999; 2004). Demands on wilderness and public expectations for wilderness stewardship and protection have not only been intensifying, but also diversifying into multiple values (Cordell and others 2005). Thus, wilderness exists within a context of change occurring at a variety of spatial, social-organizational, and temporal scales.

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Such changes often bring unexpected contention and debate over what functions wilderness serves.

As research and management experience have accumulated over the past 50 years, we have learned that all knowledge is tentative; theories are proposed, tested, assessed and revised, if not replaced. A continuous program of research, application and demonstration is needed to continue to develop the best explanations concerning visitor experiences, how they are produced, and how they can be sustained. The papers in this proceedings demonstrate that the current state of knowledge about visitor experiences remains tentative and in flux. Thus, workshop participants asked questions and discussed the research needed to support management that embraces a better understanding of wilderness visitor experiences within the context of the Wilderness Act.

Method

Identification of research needs occurred during a two-hour session based on a modified Nominal Group Technique (Delbecq and VandeVen 1971). The Nominal Group Technique (NGT) places emphasis on initial individual creativity followed by discussion focused initially on clarification and then on evaluation.

Workshop participants were asked to respond to the following question: “What research is needed to support management that embraces a better understanding of wilderness visitor experiences within the context of the Wilderness Act and the previous two days of the workshop outlining the current state-of-knowledge on this topic?” Each participant silently listed as many responses to the question as possible within a ten-minute period. Then, each participant was asked to verbally share one response at a time in a round-robin process. This process continued through the group several times until no new responses were identified. The research needs identified were listed on flip charts as participants suggested them. Following a break and time for consideration, each participant voted on the three “most important” research needs according to their own assessment. The overall results were tabulated by simply counting the number of votes for each response. Because time was limited, consolidation and grouping of items could not be conducted nor could a consistent level of specificity be ensured. This may have influenced results.

Results and Discussion

Workshop participants identified over 40 potential research needs. After the voting and discussion process was completed, these needs were placed into one of three categories as shown in Table 1. In this section, we briefly describe what may be

involved in each of the six research needs identified as highest priority, based on the overall workshop discussion and notes taken during this session. We do this as a basis for further discussion; our observations are designed to be suggestive rather than conclusive. There is no particular order to these six higher priority topics.

Table 1—Wilderness visitor research topics by priority as identified and ranked by workshop participants.

Highest priority (most workshop participant votes)

- How do commercial uses and special provisions affect wilderness experiences? How do we develop a better understanding of commercial services as a facilitator or constraint on experiences?
- What is the cumulative effect of management structures and regulations on wilderness experiences?
- Develop a system for archiving practice-knowledge and share that knowledge in a community of practice.
- Gather information and acquire knowledge about the impact of identity, consumption, and technology on wilderness experiences.
- Test the efficacy of actual management practices.
- Literature reviews, case studies, and synthesis of knowledge from existing and published information about visitor experiences.

Moderate priority (some workshop participant votes)

- Wilderness scenarios—what relationship will people have with wilderness in the future in the US given changing demographics and population trends?
- Identify indicators and standards for wilderness experiences—indicators of the experience as well as elements of the setting that affect the experience.
- Changing demands for traditional wilderness experiences.
- How is the research information transferred to managers and how is it being used?
- Longitudinal research—people's longer term identity narratives related to wilderness.
- Sociodemographic differences—participation rates and constraints for different ethnic segments.
- Information that helps staff manage to the spirit of the Wilderness Act. How do we operationalize or interpret the legal language; conduct law review or policy science type approach?
- New strategies and techniques for representation of the publics beyond public involvement—includes emotion and values, oral histories and shared heritage.
- Identify elements of a wilderness experience that are unique to wilderness and unlikely to be had outside wilderness.
- Effects of setting attributes on what people experience in wilderness.
- How can we improve citizen stewardship? What do we need to know to work with them; role of citizen stewardship within wilderness management?
- Maintain place-based focus in understanding dimensions and influences on experiences including diversity within the NWPS.

(continued)

Table 1—(Continued)**Moderate priority (some workshop participant votes)**

- What processes are best suited for scientist-manager-constituency interactions in a post-normal world that promote understanding and wisdom and trust?
- Research on capacity issues that get away from simplistic number approaches.
- Map the different discourses of wilderness about wilderness across society.
- What is “appropriate” in wilderness in terms of behavior and crowding when at visitor thresholds?
- Day use and how to manage it. What management tools might be effective for lowering crowding among day users?
- Better understanding of root metaphors that managers bring to wilderness management.

Lower priority (some workshop participants nominated, but received no votes)

- Archive the history of management practices, by wilderness areas and in a broader context.
- Shared heritage of wilderness—different groups in society and how the values and benefits of wilderness reflect within their cultures.
- Public involvement in cooperative stewardship planning and decision making; develop models of engagement and analysis of public input.
- Purism—who are the people highly consistent with the Act; what proportion of users are purist? How prevalent are the values expressed in the Act among contemporary users?
- Effect of commercial use on non-commercial users.
- Test pro and con assertions of commercial users and those opposed to commercial use (such as, safety, behavior, economic incentives to behave badly).
- What does “post-modern thought” mean to managers or influence managers?
- What setting attributes are needed to achieve unique wilderness experiences?
- Understanding of the commodification and marketing of experience, especially regarding allocation questions and trends toward privatization.
- Impact of technology on risk taking behavior and visitor decision-making.
- What effect or goal conflicts do the fun-seekers have on contemplative visitors; especially new uses (such as, base jumping)?
- Research on the impact/necessity of the duration of the experience—how long does it take to “get” the wilderness experience?
- How does conflict duration affect visitor experiences?
- Different roles and effect of different types of information (and timing of information use) on the wilderness experience.
- How to extend the benefits of wilderness experience (not direct visitor experience) across society—experiences of people who do not consider themselves visitors.
- Understanding non-visiting wilderness experience (indirect use; symbolic use; vicarious use)—nonuse values compared to an experiential context.
- Map the sources of uncertainty in wilderness research and management.
- Develop an understanding the experience outcomes and benefits of simulated or virtual vs. real (on site) wilderness visits.
- Effects of adjoining land management on experiences, such as visibility and ability to hear civilization.
- New strategies and representation for setting standards and making tradeoffs.

The six research needs identified and described were:

1. *How do commercial uses and special provisions affect wilderness experiences? How do we develop a better understanding of commercial services as a facilitator or constraint on experiences?*

According to section 4(d)(6) of the Wilderness Act commercial services are permitted “to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.” Agency policy indicates that outfitting and guiding concessions provide important contributions to visitor experiences by facilitating visitation. Facilitated visitation includes hunting, fishing, photography, education, observing wildlife and scenery, and river floating. Visitors may be transported by horse, raft, kayak or canoe. In many situations, visitors hike, either carrying their gear and food or having it transported by horse, mule, or donkey. A number of policy and management issues arise: Are the experience opportunities offered consistent with the Wilderness Act? Do the practices of outfitters, guides and concessionaires facilitate primitive recreation? In areas where use limits exist, are commercial services favored over those who want to visit on their own? Larger groups are needed to make commercial services financially feasible, but when non-outfitted groups encounter outfitted ones, what is the response and impact to experiences?

How such policy issues are addressed in any given wilderness impact the character and quality of experiences visitors receive. For example, for some visitors, encountering commercially outfitted groups may impact the level of satisfaction received. Allocation and rationing decisions may impact access to any given Wilderness.

2. *What is the cumulative effect of management structures and regulations on wilderness experiences?*

Rules and regulations comprise an important component of wilderness settings. Regulations are designed to protect both the biophysical setting and visitor experiences. This includes, for example, regulations on group size, length of stay, campsite locations, and use of campfires. Regulations can both facilitate and hinder experiences. Some researchers question the impact of regulations on visitor behavior and experiences because of the Wilderness Act’s mandate for “primitive and unconfined experiences” and “outstanding opportunities for solitude”. The relationship between these setting attributes and experiences is not deterministic, but rather probabilistic and indicates a need for research to better understand what linkages exist.

While wilderness is a nature-dominated environment where man is just a visitor, many wildernesses contain structures such as patrol cabins, corrals, horse barns, bridges, signs, trail corduroy, and in a few, graveled airstrips. The impact of these structures, along with as-

sociated human activity, on visitor experiences is largely unknown, but probably negative for individuals seeking solitude and a sense of primitiveness and challenge.

The cumulative effects of increasing regulations (e.g., requiring camping in designated sites, hanging food in bear country, restrictions on group size, prohibitions on campfires) are unclear. It is possible that each regulation by itself has limited impact, but a growing number and diversity of regulations and/or encounters with structures can incrementally diminish the character of the visitor experience.

3. *Develop a system for archiving practice-knowledge and share that knowledge in a community of practice.*

Fifty years of research and management have resulted in the accumulation of an enormous quantity of knowledge about management of visitor experiences. For research, that knowledge is archived in journals and other publications, but for management, practice is not necessarily archived in a way that can be easily retrieved, processed, and applied. Developing a community of practice (Wenger 1998) might be a useful and effective method of conveying managerial experience from one manager to another and between research and management. A community of practice “involves groups of people informally bound together by shared expertise and passion for a joint enterprise. Knowledge is shared in free flowing, creative ways that foster new approaches to problems” (Wenger and Snyder, 2000, p.139). For example, the recently formed Wilderness Stewardship Society may be one venue for enhancing this community of practice. More specifically, a community of practice around visitor experience management needs to be explicitly developed.

4. *Gather information and acquire knowledge about the impact of identity, consumption, and technology on wilderness experiences.*

Recent research on the self identity of individual visitors to wilderness has begun to show that identity (of self) is a filter through which visitors perceive their experience and, in turn, develop a relationship with wilderness. How visitors “consume” a wilderness experience is dependent on their mode of travel (for example, facilitated or not), their traveling companions and equipment, and a variety of other factors. Technology, seemingly contradictory, has always been a part of a visitor’s experience—whether it includes saddles, neoprene rafts, vibram soled boots, gas stoves, or nylon tents. These forms of technology have facilitated access to wilderness settings for people who would never have attempted to visit otherwise.

Recent advances in other forms of technology, primarily those dealing with communication and information, have triggered debates over their role,

appropriateness, and influence on visitor experiences and behavior. Communication technologies such as cell and satellite phones keep people connected to areas outside of wilderness. Information technologies such as the internet and portable Global Positioning Satellite receivers allow visitors to travel within wilderness without relying on traditional map reading and navigational skills.

The presence and use of communication and information technologies raises many questions: Does the presence of these technologies change visitor behavior in ways that increase risk? Do they change the experience in ways consistent or inconsistent with the notion of wilderness, particularly the ideas of “primitiveness”, “unconfined” and “solitude”? Or do these technologies simply facilitate access to a greater range of people?

5. *Test the efficacy of actual management practices.*

Wilderness management involves several objectives, one of which is stewardship of the kinds of wilderness experience mandated by legislation. Managers need an enhanced understanding of the efficacy of alternative management actions, especially given the uncertainties and complexities of the real world, the lack of knowledge about cause-effect relationships, and the relative scarcity of wilderness experience opportunities. Managers manipulate three components of the setting: biophysical, social, and managerial. While there is a growing literature on visitor experiences, there is less on the consequences of management on visitor experiences. For example, the extent to which “use limit” policies have been effective in protecting visitor experiences has rarely been assessed despite the frequency with which this type of regulation is used. Additional research on management efficacy would be helpful in developing a more systematic archive of experience.

6. *Literature reviews, case studies, and synthesis of knowledge from existing and published information about visitor experiences.*

This research topic demonstrates the need for communicating knowledge and understanding resulting from scientific studies in addition to the data and information individual studies produce. Ackoff (1996) notes that knowledge and understanding are more highly valued than data and information in decision-making settings, but are actually fairly scarce. Case studies can be effective learning tools, especially when designed appropriately and used as part of a professional development program. Some synthesis exists, such as in several texts

(such as Dawson and Hendee, 2009) and proceedings from the two Wilderness Science symposia (Cole and others 2000; Lucas 1987) that have been held. These syntheses could be expanded and updated periodically and oriented around questions driven by managerial needs.

Conclusion

Workshop participants identified a wide variety of potential research topics. These were identified without reference to the needs of specific wilderness areas and, thus, represent an assessment of the state of practice and knowledge in the NWPS. Their applicability to specific areas will vary. Developing and implementing a systematic program of research that explores these topics would most likely advance the state-of-knowledge, although such advances may not resolve individual area management problems. Implementation of a program of research faces a severe barrier in that most research on wilderness visitor experiences is now funded by individual wildernesses without the objective of advancing the state-of-knowledge for management of the entire NWPS.

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