

# MANAGING AMERICA'S ENDURING WILDERNESS RESOURCE

Monitoring Social Conditions in Wilderness: Why, What, How?

Why Is It Important To Monitor Social Conditions in Wilderness?  
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## WHY IS IT IMPORTANT TO MONITOR SOCIAL CONDITIONS IN WILDERNESS?

Alan E. Watson<sup>1</sup>

**ABSTRACT.** “Social conditions in wilderness” refers to all aspects of human use of the wilderness that pose the possibility of impact to the resource and visitor experiences. The reasons for monitoring (1) use levels and use trends (including characteristics of use and users) and (2) the quality of the recreation experiences provided (ability to provide naturalness, privacy, and solitude, with a lack of conflict) are discussed.

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Forest Service managers often ask me: “What aspects of the wilderness, or use of the wilderness, should we be monitoring?” Among the conditions that need monitoring are social conditions. Although we often only think of the number of social contacts a visitor makes on a wilderness trip, social monitoring needs to go further. I take the position that “social conditions in wilderness” refers to all aspects of human use of the wilderness that pose the possibility of impact to the resource and visitor experiences. I, therefore, perceive the need for monitoring (1) use levels and use trends (including characteristics of use and users) and (2) the quality of the recreation experiences provided (ability to provide naturalness, privacy, and solitude, with a lack of conflict).

### USE LEVELS AND USE TRENDS

Knowing visitor use levels and basic user and group characteristics is essential in professional wilderness management. Most managers of Forest Service wilderness, however, apparently do not have access to such information (Watson et al. 1987). Only rough estimates of use prevail, and most managers base perceptions on casual observation. The lack of monitoring systems may, in part, be due to the relative youth of many of our wilderness areas, the perceived costs of monitoring systems, or the lack of knowledge about appropriate monitoring systems. First, we need to know the reasons for monitoring use.

Increase the accuracy of RPA demand projections and meet NFMA regulations

The Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 (as amended by the National Forest Management Act of 1976) mandates that every 10 years the Forest Service submit to Congress a comprehensive assessment of public and privately owned renewable resources. Part of the RPA report, the Outdoor Recreation and Wilderness Assessment, is an important step in determining current and future demand and supply of outdoor recreation opportunities.

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Commonly used descriptive-statistical models relate recreation participation in the past and present to some set of causal factors for trend analysis and projecting future participation. The accuracy of wilderness recreational use estimates, however, is generally considered to be low (USDA 1981, Watson et al. 1987). For example, the Eagle Cap Wilderness in Oregon reports use shifts that remind one of a yo-yo; from 1979 through 1986, use dropped by half or more one year and doubled, or tripled the following year (Lucas and Stankey 1989). Any improvement of the accuracy of such estimates could enhance demand projection capabilities for RPA purposes, and therefore help all wilderness management agencies to meet the needs of future recreation visitors.

It is common to see widespread reference to increasing recreational use of our National Forests. Betz and Cordell (1989) summarized the various national data sources available and concluded that the number of visitors to Forest Service lands increased about 4 percent per year from 1977 to 1986. In a survey of wilderness managers, Reed et al. (1989) reported that about half of the managers perceive use to be increasing and nearly half expect use to remain at or near current levels for the next 3 years.

On the other hand, Lucas and Stankey (1989) offer a different perspective. At first they found just over 4 percent annual growth in recreational use, over a longer period, from 1964 through 1986. The figures they used were visitor days (1 person for 12 hours onsite), not visitors. But when they looked at more recent figures they concluded that from 1981 through 1986 total use grew less than 1 percent per year. They found that during the 1980's, year-to-year changes have more often been negative than positive. When Lucas and Stankey controlled for the yearly addition of newly designated areas, use actually decreased for the "core system" of original 88 units by nearly 2.5 percent per year from 1980 through 1986.

Possibly the only way to draw conclusions about trends in use levels will be to consistently collect data that will allow more accurate estimates of wilderness recreational use. Currently the Forest Service reports only "recreation visitor days" use figures. To examine trends in numbers of visitors, efforts such as those by Betz and Cordell (1989) require some estimation of "time per visit" or a direct measurement of visits. This introduces an error factor that may be reduced if reliable use figures were available.

The National Forest Management Act does not specifically mandate wilderness use monitoring. Regulations (36 CFR 219.18 (a)) referring to wilderness management, however, require "periodic estimates of the maximum levels of use that allow natural processes to operate freely and that do not impair the values for which wilderness areas were created." These estimates imply upper limits of wilderness supply and in fact are intended to be used for input to decisions about limiting and distributing visitor use of specific areas. These estimates of permissible use levels would be related directly to actual use levels experienced and subsequent impacts. Thus, accurate measurement of use is a necessity.

Facilitate specification of feasible objectives and selection of management mechanisms to achieve them

Wild swings in reported wilderness use from year to year are common. Estimation errors must be large. For example, the Galiuro Wilderness in Arizona reported 28 times as much use in 1976 as in 1975. Such inconsistencies hamper research and devastate professional management (Lucas and Stankey 1989).

The number of Forest Service wilderness areas without management plans that set specific objectives for management of the resource and users is surprisingly high (Watson et al., 1987). Selecting feasible objectives and specifying management mechanisms to achieve them is considered dependent in part on knowing something about those who receive benefits from use of the area. Roggenbuck and Lucas (1987) have stated that the amount of use, methods of travel, timing of use, travel patterns, length of stay, and group size are variables that need to be considered when developing management plans.

Roggenbuck and Lucas also emphasize that wilderness management is, in a large part, visitor management. The Forest Service particularly emphasizes the role of information and education of visitors to achieve desired recreational experiences and to control impacts to the natural environment. Emphasis is often placed on modification of the behavior of visitors. Effective incorporation of these objectives into management planning requires prior knowledge of use and user characteristics.

Currently, emphasis in wilderness management planning is focused on the use of LAC (Limits of Acceptable Change Framework for Management and Planning) (Stankey et al. 1985). LAC advocates deemphasize numbers of visitors as a sole determinant of management actions to reduce impacts or the likelihood of impacts. Instead, physical environment and social condition indicators are monitored to show (or indicate) when standards are exceeded. Exceeding standards calls for a decision about which technique, from a prioritized list, should be applied in a particular instance. At such time, use and user data can be extremely beneficial in determining the probable reasons for standards being exceeded and to determine the proper technique to bring impacts back within acceptable limits.

Knowledge of visitor use levels and user characteristics will also lead to a better understanding of market segments. Wilderness managers, planners, and policymakers have a need to know who, how many, when, where, and by what means people receive benefits from the wilderness. "When such visitor information is lacking for certain wildernesses or for large regions of the country, for certain seasons of the year, for certain user groups, or for key visitor characteristics, decisions must be based largely on intuition. Better knowledge of visitor characteristics increases the professionalism of wilderness management and can improve the quality of visitor experiences" (Roggenbuck and Lucas 1987).

Give more credibility to requests for funding of management programs

Budget allocations should be determined by benefits derived from investment. Historically, however, recreation benefits have been difficult to quantify, so allocations have been more likely associated with estimates of use levels (Knopf and Lime 1984). Reported increases in recreation use apparently justified requests for increased budgets for facility and trail maintenance and visitor services. More widespread application of systematic use measurement systems should provide greater credibility to requests for funding.

### QUALITY RECREATION EXPERIENCES

The Wilderness Act of 1964 (P.L. 85-577) includes a lofty statement of intent for Congress "... to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." Congress called for a lack of human 'influence on the physical character of wilderness and for outstanding opportunities for solitude or a primitive and unconfined type of recreation. We have interpreted "outstanding" as providing "quality recreation experiences."

The term 'quality recreation experience' is certainly compatible with the Recreation Opportunity Spectrum (ROS) philosophy and strategy. Largely developed, applied, and nurtured in the Forest Service, use of ROS states that we are more interested in what happens to the visitor while in the wilderness and the benefits derived from that visit than merely the number of users entering or exiting an area (also an important monitoring need, previously covered). We seem to have committed ourselves to providing quality recreation experiences in wilderness.

### The Wilderness Act

The Wilderness Act does not include any statement that specifically mandates that wilderness conditions, biological or social, must be monitored. But by stating, even in general terms, the definition of wilderness, Congress has provided the standard, the ideal for all areas included in the National Wilderness Preservation System. The act implies that managers must establish some attainable objectives that would ensure progress toward Congress' intended conditions. To know whether progress is made, managers would have to periodically and "... systematically collect data for the purpose of evaluating the attainment of area management objectives" (Stankey et al. 1983) such as solitude or primitive and unconfined recreation. We would hope that the recreation visitor would experience a visit relatively free from social contact and void of interruption from the behavior of others. Only a systematic monitoring program will inform us of progress toward that goal.

### National Forest Management Act, Resource Planning Act, and National Environmental Policy Act

Quite frequently in the literature researchers have referred to legal mandates that "suggest" (Merigliano and Krumpe n.d.) or "require" (Stankey et al. 1983) monitoring systems in wilderness. While it may be more obvious from analysis of the various acts that there is legal direction to monitor biological changes in wilderness, one must make some suppositions to conclude that Congress insisted on social monitoring systems.

NFMA (amending RPA). In this law Congress told us to "...insure research on and (based on continuous monitoring and measurement in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land." If the definition of wilderness in the Wilderness Act had not specifically stated that one of the things to be produced from management of wilderness was to be "outstanding opportunities for solitude," one would assume that this statement from NFMA, which is applicable to all National Forest lands, is intended to assure the continued production of biologically oriented amenities. Given the multiple resource management orientation of the Forest Service, however, one must consider the recreational productivity (quality experiences) of all areas in striving to meet this NFMA mandate.

NFMA also calls for "periodic estimates of the maximum levels of use that . . . do not impair the values for which wilderness areas were created." These would include recreational, scenic, scientific, educational, conservation, and historical values. This supports the thesis that we must monitor the quality (and possibly the quantity) of the benefits being derived.

NEPA. To justify social monitoring in NEPA, we must remember that wilderness was established for many values. It should follow that the onsite amenities that together provide this package of 'potential values could be described as the "environment" that the visitor is exposed to. For instance, use of the term environment when talking about the ability of an

area to provide a solitude experience would necessarily include social aspects. The chances of achieving feelings of solitude would be related in some way to the presence of other people or evidence of their past or current behavior. Given this definition of environment, consider the following from the Amendments on Protection and Enhancement of Environmental Quality: "...promote the development and use of indices and monitoring systems to (1) assess environmental conditions and trends, (2) predict the environmental impact of proposed public and private actions and (3) determine the effectiveness of programs for protecting and enhancing environmental quality."

#### Planning and management systems

Today there is a positive trend toward the use of planning systems that include statements of desirable social conditions in wilderness. A quality recreation experience is often considered to exist if certain conditions exist. In most cases the terminology of indicators and standards is being used to represent the "thing" that is monitored and the condition of that "thing" or attribute that is believed to be the appropriate or desirable condition.

In such a system, like LAC, monitoring will provide systematic feedback on how well management actions are working and will help identify trends in conditions that require new actions. If monitoring shows that conditions remain better than established standards, current management practices can be continued until monitoring shows that standards have been exceeded. If monitoring shows that previously acceptable conditions have deteriorated and standards are now exceeded, different management actions are called for. If conditions had previously exceeded standards and monitoring shows they still do so, the management prescription can be judged ineffective, at least within the time since initiated (Stankey et al. 1985).

While the concept of applying "limits of acceptable change" is diffusing among wilderness managers, monitoring is what assures that LAC is actually carried out and has effects on the conditions of the resource. Without monitoring of conditions, planning is only a paper-and-pencil activity.

#### National recreation strategy

The Forest Service is currently implementing a National Recreation Strategy. The ultimate goal of this strategy is customer satisfaction with more, high-quality recreation services. This strategy has placed new emphasis on understanding the recreation visitor, the significance of particular settings and places, and how they affect people's experiences. The seriousness with which the Chief of the Forest Service and management personnel have committed resources toward this goal suggests that this Agency will continue to place high priority on providing quality experiences for all recreation opportunities. Current efforts are primarily aimed at increasing services and assessing customer desires. A major documented need to support this strategy is for a method to monitor customer satisfaction. It is not obvious how we should monitor customer satisfaction. It is clear, however, that we should monitor it.

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