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A Strategy for the Definition and Management of Wilderness Quality

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Wilderness management is in many ways a paradoxical term, for wilderness connotes an image of a landscape untouched and an opportunity for free and unconfined use, while management suggests control and planned direction. It is perhaps because of the inherently contradictory nature of the term that wilderness management is one of the more challenging and difficult tasks facing resource managers today.

This paper focuses on two topics. First, when formulating a relevant management strategy, how can the administrator most effectively utilize feedback from the wilderness visitor population? Second, what aspects of wilderness recreation use appeal to visitors whose perception of wilderness is most consistent with the concept given statutory recognition by the Wilderness Act of 1964—specifically, lands without permanent improvements, structures, or human habitation that offer man an opportunity for solitude and a challenging, primitive kind of experience, and where the forces of nature predominate?

WILDERNESS MANAGEMENT PROBLEMS

The manager must contend with three major factors in attempting to meet the objectives of the Wilderness Act: (1) institutional constraints; (2) limited availability of the resource; (3) and the rapid growth in wilderness recreation use.

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Institutional constraints. The manager must make his decisions in light of the constraints and obligations that the Wilderness Act imposes. The definition of wilderness is specified by the Act, as are permissible management activities, the type of opportunity the area should provide, and other considerations. Not only must the manager subject his decisions to the test of the law, but he must also contend with the all too common burdens of poor financing and inadequate manpower. Managerial actions that might be the most economical or the most efficient can prove to be illegal. Others that are more difficult or expensive might become the only feasible alternatives open to him.

Limited availability of the resource. At present, about 10 million acres (almost all National Forest land) are included in the National Wilderness Preservation System. An additional 4 million acres, presently classified as National Forest Primitive Areas, are managed as though they were in the System, pending their possible reclassification in accord with the Wilderness Act. Together, these acreages constitute only 0.7 of one percent of the land in the 48 states. Estimates as to the eventual size of the Wilderness Preservation System vary widely, but probably a realistic figure is on the order of 35 million acres (about 2 percent of the conterminous United States). This would include additions from National Forest lands, National Park System holdings, and lands of the Bureau of Sport Fisheries and Wildlife.

Within the 48 conterminous states, about 50 million acres (2.6 percent) appear to possess the characteristics necessary for wilderness designation.¹ Demands for timber, minerals, and other resources also will be made on some of this acreage and will undoubtedly preclude all of it from being classified as wilderness. Therefore, the wilderness resource base is finite in scope and irreproducible, given practical considerations of time.

Classifying additional lands as wilderness (i.e., transforming them from a *de facto* to a *de jure* status) does little to add new opportunities because *de facto* wildernesses are already being used for wilderness recreation. The question remaining is how much of the present *de facto* wilderness land will be retained under statutory protection.

Rapid growth in wilderness recreation use. Growth in wilderness recreation use has been climbing steadily since the end of World War II, averaging approximately 10 percent per year while population has grown

¹ For details of my attempt to estimate the dimensions of the resource base from which additional wilderness proposals could be made, see George H. Stankey, "Myths in Wilderness Decisionmaking," *Journal of Soil and Water Conservation*, vol. 25, no. 5, p. 187.

only about 2 percent per annum. In 1959 the Wildland Research Center projected a nearly ten-fold increase in visits to wilderness by the turn of the century, equivalent to about a 6 percent annual growth rate.² In the decade since that report, however, use has continued to increase at the 10 percent per year level.

Simple projections do not tell the whole story. Wilderness users tend to be disproportionately drawn from higher-income groups, professional and technical occupational categories, urban areas, and the college and postgraduate ranks.³ Moreover, these characteristics apply to a steadily increasing proportion of the population. If indeed some causal relationship exists between any or all of these variables and wilderness use, then the possibility of future increases in wilderness use is further enhanced.

Burch and Wenger have suggested that a disproportionately high number of persons who participated in automobile camping as children move into a more primitive style of recreation later in their life cycle.⁴ Although we can only speculate as to the exact nature and scope of this "learning-by-doing" process, it could represent a potentially significant source of future increases in wilderness use.⁵

Finally, *de facto* wilderness opportunities are declining—primarily because of continuing road construction in hitherto undeveloped areas. This will probably cause those who have been using these areas to seek out *de jure* wilderness areas.

In summary then, we have an increasing number of people seeking a primitive kind of recreational experience in a type of area that is limited in supply and whose reproduction is largely beyond our technical-economic capabilities. The issue is further complicated by the institutional constraints of the Wilderness Act: these preclude the options of either letting use continue unabated or totally restricting use. The objectives of this Act necessitate managerial action; the question confronting us concerns the specific nature of that action.

² Wildland Research Center, *Wilderness and Recreation: A Report on Resources, Values, and Problems*, Outdoor Recreation Resources Review Commission Study Report No. 3 (Washington, D.C.: Government Printing Office, 1962), p. 236.

³ Most outdoor recreationists tend to be atypical in their socioeconomic characteristics when compared with the U.S. population. The above statement does not in any way suggest that a high income, a professional occupation, etc., are sufficient factors to explain recreational behavior.

⁴ William R. Burch, Jr., and Wiley D. Wenger, Jr., *The Social Characteristics of Participants in Three Styles of Family Camping*, U.S. Forest Service Research Paper PNW-48, 1967, p. 18.

⁵ The "learn-by-doing" hypothesis was put forward by Paul Davidson, F. Gerard Adams, and Joseph Seneca, "The Social Value of Water Recreational Facilities Resulting from an Improvement in Water Quality; The Delaware Estuary," in Allen V. Kneese and Stephen C. Smith (eds.), *Water Research* (Baltimore: The Johns Hopkins Press for Resources for the Future, 1966), p. 186.

WILDERNESS MANAGEMENT OBJECTIVES

Although the wilderness experience is typified as free and spontaneous and the physical environment in which it takes place as wild and natural, there is considerable evidence that opportunities for such experiences might gradually disappear without some managerial controls. The issue is not whether management action is needed, but what the specific nature of the management goal should be. Traditionally, the basic question to which we have addressed our attention is "What is the acceptable level of physical-biological change that we can allow in our wildernesses?"

The Wilderness Act commits us to the dual objective of use and preservation. This objective also unalterably commits us to accept a wilderness environment that is less than totally unmodified because *any* use occurring in an ecosystem results in change. The relationship between use and change is not a simple linear function; in some areas, fairly low levels of use might cause substantial changes in the ecosystem. Frissell and Duncan found that over 80 percent of the groundcover at campsites in the Quetico-Superior area was lost despite only light recreational use (defined as up to 30 days of use per season).⁶ Similarly, Wagar concluded "In wilderness situations even a little direct contact by recreationists might cause marked changes in plant composition and appearance."⁷

This should not be taken to mean that continuing increases in use will not cause further resource change. Rather, we need to recognize that even low levels of use can produce fairly substantial amounts of change and thus compromise the objective of maintaining a "natural" ecosystem (above and beyond the extent to which it is compromised by global-wide pollution).

Davis suggests that "The question of carrying capacities too often sounds like a physical problem when its heart is really a matter of interpersonal quality effects."⁸ Thus, the question of "the acceptable level of physical-biological change" becomes a problem of defining the critical thresholds of sensitivity of wilderness users to various congestion costs: crowding, environmental change, and so forth. Answers will be arbitrary unless we know how people perceive and respond to the environment or how they define their goals and objectives.

Despite an array of administrative and legislative edicts, wilderness remains largely a function of human perception. Consequently, the wil-

⁶ Sidney S. Frissell, Jr., and Donald P. Duncan, "Campsite Preference and Deterioration," *Journal of Forestry*, vol. 63 (1965), p. 258.

⁷ J. Alan Wagar, *The Carrying Capacity of Wildlands for Recreation*, Forest Science Monograph 7, 1964, p. 18.

⁸ Robert K. Davis, "Recreation Planning as an Economic Problem," *Natural Resources Journal*, vol. 3, no. 2, p. 248.

derness user is an important source of information for managers faced with decisions regarding the appropriate utilization of the wilderness. However, there is little face-to-face communication between user and manager in wilderness and little opportunity for managers to observe users in a systematic, unbiased fashion. Nevertheless, a growing body of information has been developed over the past decade from survey research efforts. We now have a description of characteristics and attitudes of a considerable number of wilderness visitors, although the results are disparate in space, time, and definitions of variables.

Incorporating visitor attitudes and opinions into the wilderness decision-making process is not a simple or straightforward exercise. Wilderness visitors are not in any sense a uniform or homogeneous population; on the contrary, we have substantial evidence suggesting considerable diversity among these people in terms of prior wilderness experience, socioeconomic background, and motivation.⁹ Represented among wilderness visitors are value systems that cover a wide and often conflicting range. As a consequence, visitor attitudes about some potential management action can be expected to vary considerably; views on trail standards, for example, might range from those favoring no trails at all to those favoring a rather elaborate system of well-maintained paths. How does the wilderness manager judge which value system is most relevant to his decision needs?

The premise that certain wilderness visitors' attitudes should weigh higher in the social welfare function for wilderness areas seems to be consistent with the direction and objectives embodied within the Wilderness Act and the decisions of the Congress and the President to foster the development of the National Wilderness Preservation System.¹⁰

The wilderness manager is charged with providing a specific type of recreational opportunity. His concern is with the quality of that particular activity, which may be said to represent a point along a continuum of recreational activities, not a continuum of recreational quality. Too

⁹ John C. Hendee et al., *Wilderness Users in the Pacific Northwest: Their Characteristics, Values, and Management Preferences*. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon, 1968; Robert C. Lucas, "Wilderness Perception and Use: The Example of the Boundary Waters Canoe Area," *Natural Resources Journal*, vol. 3, no. 3 (1964), pp. 394-411; George H. Stankey, "The Perception of Wilderness Recreation Carrying Capacity: A Geographic Study in Natural Resources Management," Ph.D. dissertation, Department of Geography, Michigan State University, 1971.

¹⁰ Refer to the next paper in this book, "Determination of Optimal Capacity of Resource-Based Recreation Facilities," by Anthony C. Fisher and John V. Krutilla, for further discussion of measurement problems involving the intensity of users' preferences.

often the term "high quality recreation" is equated with "wilderness recreation." Wilderness recreation does not represent a polar position on a *quality continuum* having some intensive or commercial activity such as a "Coney Island" at the other end. The quality of wilderness recreation can be judged only by examining the extent to which the motivations and objectives of the visitor who seeks the type of opportunity provided by wilderness are fulfilled. For example, interaction with the pristine environment appears to be an important component of the wilderness experience. To the extent this opportunity is impeded (e.g., by the presence of litter, the loss of vegetation due to excessive use, etc.), the quality of the wilderness trip is lost. Conversely, the wilderness trip in a pristine setting where visitors enjoy complete or near solitude would legitimately be described as "high quality." Consequently, it is possible to define, perhaps rather specifically, the nature of wilderness quality and to make the provision of a "high quality wilderness experience" a realistic, pragmatic management objective.

However, the practical significance of such a definition of quality is contingent upon identifying the portion of the wilderness user population that specifically seeks the opportunities that wilderness is defined as providing. As suggested earlier, wilderness visitors are not a homogeneous group that subscribes to any easily identifiable image of wilderness. Thus, if visitor attitudes are to be a useful guide for the wilderness manager, we need to define those people in the wilderness user population whose needs and motivations are most nearly fulfilled by the wilderness opportunity.¹¹

The alternative to giving more weight to the attitudes of certain wilderness users would be to assume that all people have similar tastes and preferences, which is simply not true, whether one is talking about food, clothing, or recreation.

If we try to manage wilderness for all, we will find ourselves bound on a course having equally unpalatable possible outcomes. "The cost of taking everyone's preferences into account may be paralysis," Wildavsky writes, "Worse, it may result in grand opportunities foregone or in irreversible damage to the environment."¹² Treating wilderness visitor responses in an indiscriminating fashion could lead to both inequitable and inefficient allocations. Only those visitors whose needs and tastes lie

¹¹ This assumes an equitable distribution of other types of recreational opportunities to meet the needs and desires of the nonwilderness recreationist.

¹² Aaron Wildavsky, "Aesthetic Power or the Triumph of the Sensitive Minority Over the Vulgar Mass: A Political Analysis of the New Economics," *Daedalus*, vol. 96, no. 4 (1967), p. 1127.

“on the average” would be satisfied, and it is precisely this type of visitor who can most easily be accommodated elsewhere. Furthermore, there is probably a high degree of substitutability among alternatives associated with this type of visitor’s preferences. At the same time, we would fail altogether to allocate opportunities for those who seek an experience associated only with environments of a near natural state—locations that are of limited availability and beyond our capability at present to reproduce.

Moreover, the preservation values that wilderness possesses (e.g., a reservoir of germ plasm, a source of yet undiscovered medicinal values in flora and fauna, an ecological bench mark, etc.) could be easily lost if a management strategy were adopted that permitted essentially unlimited use.

The fundamental thesis of this paper is tied to the notion that wilderness represents one type of opportunity within a broad spectrum. We should not try to manage wilderness for all. By ensuring the provision of this entire spectrum of opportunities, we might achieve a more equitable distribution of social benefits. The proportions that other recreation opportunities would represent in the full spectrum would reflect both the demand for them and the extent of substitutability between the different types of experiences they provide. Our attention here, however, is focused on the wilderness component of the recreation spectrum and how benefits of this particular opportunity can be optimized.

The question remains, however, of how one defines those wilderness visitors whose attitudes are most relevant for the wilderness manager. Given the wide disparity of views as to what constitutes wilderness, how can a strategy be formulated that will provide managers with guidelines to weigh visitor input in the most appropriate manner?

A PROPOSED STRATEGY FOR DEFINING THE RELEVANT WILDERNESS VISITOR POPULATION

Other investigators have recognized the multimodal nature of tastes found among wilderness visitors and have attempted to control for this variation in their analyses. Lucas¹³ approached the problem by differentiating users in the Boundary Waters Canoe Area (BWCA) by method of travel, noting that paddling canoeists held more rigid and demanding concepts of wilderness than motorboaters. The Wildland Research Center¹⁴ utilized prior wilderness experience “as a rough and admittedly

¹³ “Wilderness Perception and Use,” p. 408.

¹⁴ *Wilderness and Recreation*, p. 135.

partial measure of commitment." More recently, Hendee et al.¹⁵ developed a scale to differentiate users on the basis of the underlying values that governed their attitudes and motivations regarding wilderness use.

During the summer of 1969 a survey was undertaken to investigate the question of wilderness recreation carrying capacity.¹⁶ Four wildernesses were included in the study: The Bob Marshall Wilderness in Montana, the Bridger Wilderness in Wyoming, the High Uintas Primitive Area in Utah, and the Boundary Waters Canoe Area in Minnesota. Building upon previous work by Hendee et al., an attitude scale was designed to measure the extent to which a respondent's perception of wilderness coincided with the institutional objectives embodied in the Wilderness Act.

Each respondent was asked to consider the 14 items listed below. The first ten concern three basic characteristics of wilderness defined within the Wilderness Act: a natural ecosystem, minimal human development, and primitiveness of recreational activity. The remaining four items relate to other qualities of the wilderness environment—solitude, little evidence of other visitors, remoteness from urban areas, and size of the area.

- A. Absence of man-made features, except trails,
- B. Lakes behind small man-made dams,
- C. Gravel roads,
- D. Private cabins,
- E. Stocking the area with kinds of game animals that are not native to the area,
- F. Developed campsites with plank tables, cement fireplaces with metal grates, and outhouses,
- G. Lots of camping equipment to make camping easy and comfortable,
- H. Stocking the area with kinds of fish that are not native to the area,
- I. No motorized travel by visitors,
- J. Forests, flowers, and wildlife much the same as before the pioneers,
- K. Solitude (not seeing many other people except those in your own party),
- L. Covers a large area (at least 25 square miles),

¹⁵ *Wilderness Users in the Pacific Northwest*, p. 23.

¹⁶ For a discussion on the sampling scheme, questionnaire administration, and other methodological aspects of this study, see Stankey, "The Perception of Wilderness Recreation Carrying Capacity," Chapter 3.

- M. Remote from towns or cities,
- N. Little evidence of other visitors before you.

Respondents were asked to consider each item *in the context of wilderness*, and rate it on a five-point scale, ranging from "very undesirable" to "very desirable." Responses were accorded values from one to five, and scoring was arranged so that a person who held strong "purist" ideas about wilderness would score high while the person with less intense notions would score low. For example, a "very undesirable" response to "gravel roads" was accorded five points as was a "very desirable" response to "no motorized travel by visitors." The possible range for total scores was between 70 and 14. From the individual scores it was possible to rank respondents along a continuum ranging from a strong purist concept of wilderness to a less rigid one. This, in turn, made it possible to evaluate user attitudes toward levels and types of use and potential management alternatives in light of the degree of correspondence between the respondent's definition of wilderness and that of the Wilderness Act.

The respondents were classified into groups on the basis of their overall "purism" score. Four groups were established: strong purists (scores between 60 and 70 on the scale); moderate purists (scores from 50 to 59); neutralists (scores from 40 to 49); and nonpurists (scores of less than 40). Table 3.1 shows the percentage distribution of these groups among the four study areas.

The boundaries of the groupings were somewhat arbitrary. To be classified as a "strong purist," for example, a respondent had to rate each item in a manner reflecting close agreement with the institutional definition of wilderness. The major difference between the "strong purist" and "moderate purist" groupings is one of strength of agreement. For the purposes of this paper the "strong purist" (hereafter referred to

Table 3.1. Distribution of Purist Groups

Study area	Total no.	Strong purists (70-60)	Moderate purists (59-60)	Neutralists (49-40)	Non-purists (39-14)
<i>Percent of all respondents in each area</i>					
Boundary Waters Canoe Area	206	20	49	25	6
Bob Marshall	120	53	39	7	1
Bridger	144	67	23	10	*
High Uintas	154	31	49	18	2
Total	624	40	41	16	3

* Less than 0.5%.

simply as the "purist") will be treated as the most relevant user for the wilderness manager's decisions.¹⁷

The "Purist" Concept

Theorists commonly recognize three components of attitude: how a person *feels* about some object (affective component); what he *knows* about the object (cognitive component); and how he might actually *behave* in regard to an object (behavioral component).

The attitude scale utilized here measures how the respondent feels about "wilderness" as defined by the Wilderness Act. This approach is both purposive and pragmatic because it is the Wilderness Act that will in the end judge the legitimacy of any management decision. Of course the Act could be changed; if it were, the attitudes of respondents toward the new definition would need to be measured.

By summing the individual scores of each item in the scale and utilizing this sum as a measure of purism we assume that "purism" is unidimensional, whereas it is almost certainly multidimensional.¹⁸ The significance of the undisturbed ecosystem, the challenge of the recreational activity, and freedom from congestion are all separate dimensions about which people could hold a purist disposition. And, a purist disposition on one dimension would *not necessarily* presuppose a similar stance on another dimension.

The scale has an intuitive rather than an empirical foundation. It taps a multidimensional domain because it seeks to measure the extent to which the respondent's definition of wilderness coincides with that presented by the Wilderness Act, *a definition which is also multidimensional*. To have factor-analyzed the scale to derive a unidimensional scale would have destroyed this intuitive foundation. Purism, as used in this paper, is a purposively created unit of analysis, which, it is argued, holds particular relevance for the wilderness manager operating within the con-

¹⁷ At the risk of being charged with setting up a "straw man" type of argument, I should point out that focusing on the "strong purist" who represents only 40 percent of the total sample does not in any way imply that the remainder of the sample should be ignored. On the contrary, the remaining 60 percent is vitally important, especially in terms of efforts to develop new recreational opportunities and the relative mix of these opportunities. Moreover, eventual decisions regarding wilderness management might reflect the attitudes of this segment of the sample more than the strong purists; this remains the decision of the wilderness administrator. A complete discussion of the remaining three purist groups can be found in Stankey, "The Perception of Wilderness Recreation Carrying Capacity."

¹⁸ Hendee et al., "Wilderness Users in the Pacific Northwest," and Thomas A. Heberlein, "Some Relationships Between Theoretical and Applied Issues in Attitude Research: The Case of Wilderness," paper presented to the Annual Meeting of the Rural Sociological Society, August 1971, Denver, Colorado.

straints of the Wilderness Act. It does not represent either some intrinsic environmental quality or a homogeneous attitude domain.

A CONCEPTUAL FRAMEWORK FOR THE STUDY OF CARRYING CAPACITY

The "preserve" and "use" dichotomy of the Wilderness Act has created a situation that leaves virtually no alternatives for the wilderness manager to consider other than establishing some "carrying capacity" for wilderness. As Figure 3.1 shows, simply restricting all use is an untenable course of action, at least according to the objectives set forth by the Act. Similarly, allowing use to continue to increase unabated violates the preservation directive promulgated by the Wilderness Act.

As the previous discussion indicated, we can identify two relatively distinct domains where carrying capacity is a legitimate concept: the first focusing on the ecological parameters of wilderness; and the second, on the sociological aspects. Determining the ecological carrying capacity of wilderness involves primarily an investigation of the change in the physical-biological regime brought about by both natural processes, such as erosion, siltation, etc., and human impacts, such as fire suppression or recreational impacts. Determining the sociological carrying capacity of wilderness requires focusing our attention on the manner in which use, in all its parameters, affects satisfaction. As Figure 3.1 indicates, impacts stem from each of the use parameters (e.g., type of use encountered) as well as from the many complex interactions of these parameters.

Together, these two interdependent considerations comprise what is typically and simplistically referred to as wilderness carrying capacity. Melding input from the ecological and sociological domains is a complex task. The objective of this present paper is not to delve into this process, but rather to examine something of the nature of the sociological dimension of the capacity problem.

Much of our knowledge of the effects of the interaction between wilderness users is conjectural and intuitive. By and large we have operated with a generalized and universalistic model of carrying capacity that drew a simple linear relationship between use and recreational quality. The conceptual work of Wagar and the empirical studies of Lucas have cast doubt as to the validity of that model. Thus, we need to turn our attention to the development of a more particularistic model that weighs a variety of use parameters and the interactions between these parameters.

The development of such an analytic framework permits us to investigate some of the more significant conceptual issues. For example, regard-

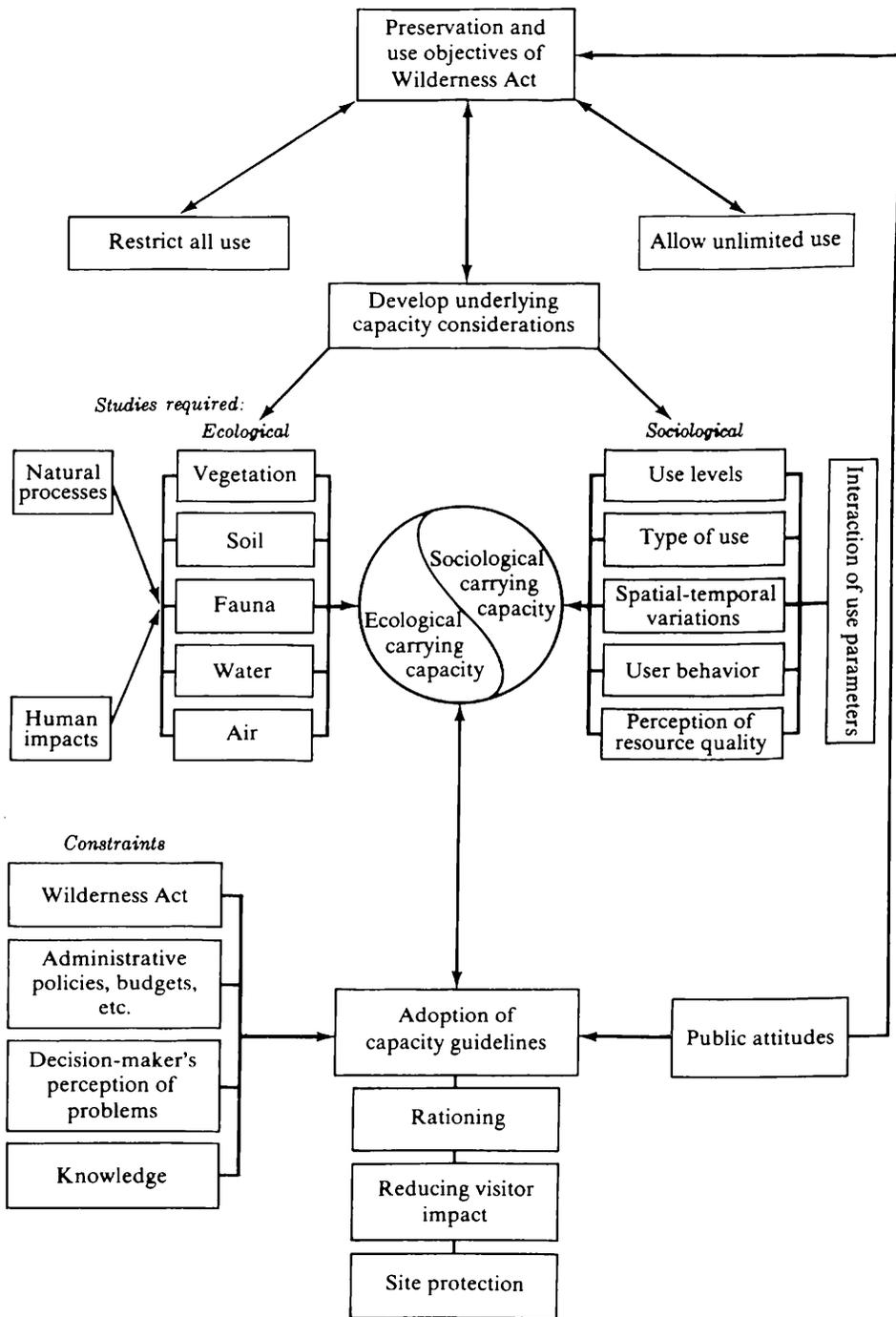


Figure 3.1.

ing the level of use one might encounter, do thresholds of sensitivity exist, levels of use beyond which visitor satisfaction rapidly diminishes? Is socializing an important aspect of the wilderness experience and how does it vary in significance between inter- and intra-group contacts?

We need to address ourselves to the interactions between travel methods. What role does exposure and expectation play and do these factors moderate or accentuate potential conflict?

Spatial-temporal variations in use might very well have an important influence on the visitors' reactions. Does the location of an encounter affect user satisfaction? Do visitors develop "mental maps" of wilderness that describe certain patterns of use as appropriate in some locations (e.g., on trails) and not in others (e.g., campsites)?

Finally, the whole range of individual human behavior plays an important role in the social carrying-capacity system—a role that is perhaps the most difficult for us to grasp. Are there accepted social norms that govern wilderness behavior and to what extent do violations of these norms affect other users?

The interaction between man and the physical environment offers an intriguing area of investigation as well (Figure 3.1). However, it has not been included in the present study.

Eventual decisions regarding the capacity standards for wilderness will need to accommodate the different aspects of use as well as the ecological aspects. Moreover, eventual decisions will be under various constraints—legal, administrative, and behavioral.

VISITOR SATISFACTION AND WILDERNESS USE

In this study we examined four broad parameters of wilderness use: (a) intensity of use; (b) character of encounters; (c) spatial-temporal aspects of use; and (d) destructive visitor behavior. The basic question asked about each of these was how it affected satisfaction for the wilderness user, especially the purist.

Intensity of Use: Number of Encounters

This first parameter involves a number of items designed to probe visitor response to varying intensities of use ranging from the abstract concept of solitude to questions involving specific levels of use.

Solitude, the "quality or state of being alone" is commonly used to describe the wilderness experience. However, it is an abstract and amorphous term, subject to widely varying interpretation.

When wilderness visitors were asked if "solitude—not seeing many other people except those in your own party" was desirable, 82 percent

of the overall sample responded in a positive fashion. Among the purists, 96 percent felt solitude was desirable; none thought it undesirable. Thus, as a conceptual characteristic of wilderness, it appears to be an extremely important quality to most users, regardless of their position on the purism scale.

This finding does little more, however, than lend substance to what most people have intuitively felt all along. The intent of this particular item was to delineate an image of the wilderness environment in terms of the visitor's perception of use levels in a normative sense. Although solitude was an important quality visitors ascribed to wilderness, did they *expect* to find conditions consistent with this quality? How much of an effect did encounters with others have upon satisfaction?

The whole aspect of "expectation" is intriguing. If a person expects to find a beach quiet and uncrowded he might experience considerable disappointment if it is not. If, on the other hand, he expects it to be crowded, bustling with people, and it is in fact, he might not be happy with the situation, but his expectations have probably tempered his reaction even though he would have preferred to find it uncrowded.

Visitors were asked whether they agreed or disagreed with the proposition "It is reasonable to expect that one should be able to visit a wilderness area and see few, if any, people." Nine out of 10 purists agreed with this statement, as did nearly 80 percent of the visitors to the three western wildernesses. But in the BWCA, where use intensity was the highest of all the areas studied, only 67 percent agreed. It appears that where the chance of seeing others was greater, visitors found it less reasonable to expect not seeing some others.

The response obtained in the BWCA could also be interpreted as evidence of the congestion costs associated with increasing use. As use has increased in the BWCA, those persons seeking solitude might have been turning to other areas or have stopped visiting wilderness altogether. That is, in response to conditions that prohibit their achieving certain personal objectives (in this example, solitude), they "drop out." In turn, they are replaced by persons whose interest in solitude might not be so great. Thus, surveys such as this may be tapping an altogether different clientele than that of some years ago. One can only speculate at present on this possibility, but well-designed longitudinal studies should be initiated to document whether or not such a process is occurring.

Do some people view the wilderness environment as an arena for enhanced opportunities for social interaction? If a person truly desires solitude, we might expect to find him traveling alone. Few do travel alone, however. Only 2 percent of the respondents in this study were

traveling by themselves. However, one need not think this leads directly to the conclusion that people who say they want solitude adopt a strategy that precludes it. Rather, contacts between the members of one's own group are probably much different from those with other groups. The strengthening of feelings of camaraderie and the sharing of a special kind of experience with members of one's own party probably do not infringe greatly upon an individual's search for solitude. Members of one's own group "belong," members of other groups are "strangers" who invade the experience.¹⁹

The data obtained in this study substantiate the reasoning that, for the purist, the primary interaction is with the environment and his close companions. To probe the role of wilderness as an opportunity for social interaction, visitors were asked to comment on the following three items: (a) "Meeting other people around the campfire at night should be part of any wilderness trip"; (b) "It's most enjoyable when you don't meet anyone in the wilderness"; and (c) "You should see at least one group a day in the wilderness to get the most enjoyment out of your trip."

An interesting pattern of responses was discovered. To all three items, only one out of 10 purists responded in a fashion that would support the premise that intergroup social interaction is an integral part of the wilderness experience. Moreover, the statistical association between purist score and response was relatively strong; gamma²⁰ equaled -0.39 , 0.41 , and -0.42 , respectively, for the three items.

The responses of the overall sample to these items departed markedly from those of the purists. Nearly half (45 percent) responded positively to the idea that meeting other people around the campfire was an important part of the wilderness experience. One out of four persons disagreed with the proposition that it is most enjoyable when you don't meet anyone in the wilderness, and a similar percentage agreed with the item that you should see at least one other group each day.

Two other items were investigated to test the reactions of visitors to various use intensities: (a) meeting many people on the trail, and (b) meet-

¹⁹ Hende et al. (1968), p. 31, concur with this; they note "(we do not) . . . suggest that wilderness users are actively antisocial. The fact that most wilderness use is by family or friendship groups suggests . . . an aversion only to the kind of depersonalized human encounters so common to modern life."

²⁰ Gamma indicates the proportional reduction in error (PRE) in predicting category response to the dependent variable possible from knowledge of the independent variable category over that which would occur under random conditions. It ranges in value from $+1.0$ to -1.0 . Because only a few respondents were at the nonpurist end of the scale there were few low scores to balance the analysis, and the possibility of obtaining high gamma values (e.g., ± 0.75) was reduced. We must therefore focus our attention on the *relative* strength of associations rather than the absolute strength.

ing no one all day. Visitors were asked to indicate the degree to which these situations would bother them or add to their enjoyment.

About one out of four persons, excluding the purists, enjoyed encountering others on the trail; substantial variations occurred among the four areas. In the BWCA, almost 33 percent responded positively to this situation; in the western areas, only 14 percent expressed enjoyment. Because trails are by their very nature arteries for the movement of people, contacts with others are expected; apparently for many people if such contacts do not involve excessive numbers, they can be tolerated. However, purists reacted differently: 60 percent indicated they would be bothered to some degree, 30 percent were neutral, and only 10 percent said they would enjoy meeting others.

Evidence (from the item on solitude) would lead us to hypothesize that the experience of meeting *no one* all day should be considered highly desirable. However, the strength of support was less for this item than for solitude. Forty percent of the "nonpurists"²¹ responded that they would enjoy it; 21 percent said it would bother them. Of the purists, nearly three out of four indicated they would enjoy meeting no one all day; and only 3 percent indicated such a situation would bother them. Considerable consistency was found among the responses of purists in each of the study areas. The only marked deviation occurred in the BWCA where only 60 percent of the purists indicated they would enjoy no encounters; 36 percent said they did not care.

Why did purists not express wholehearted agreement with some of these items? Why, for example, did less than 100 percent of the purists indicate they would enjoy a situation involving no encounters? We hypothesize that the answer lies in the fact that capacity, or the purists' definition of a satisfactory experience, is not a simple function of numbers encountered. Other factors come into play. As one woman noted, "it's not how many people you meet, it's how they behave."

Character of Encounter: Mode of Travel and Party Size

Wilderness visitors viewed low intensities of use, involving few or no encounters, as an important dimension of the wilderness experience, but it is impossible to generalize beyond this and say that purists are simply and unequivocally opposed to encounters. Thus, it is necessary that we shift our focus from a model of capacity dependent on a universal rejection of all people to a more particularistic model that considers how variations in behavior affect a wilderness user's perception of capacity.

²¹ As used here, "nonpurists" includes those classified as moderate purists, neutralists, and nonpurists in Table 3.1.

Method of travel. In the BWCA, Lucas found that canoeists were more disturbed by a single motorboat than by the presence of three other canoes.²² His results suggested that factors other than numbers of encounters should be considered in determining carrying capacity.

Initially, an effort was made in this study to provide some measure of purists' attitudes toward different methods of travel. In the three western areas, visitors were generally in accord with the proposition "both backpacking and horseback travel are entirely appropriate ways to travel in wilderness areas"; 97 percent agreed in the Bob Marshall, 71 percent in the Bridger, and 83 percent in the High Uintas. The percentages appear linked to the predominant method of travel in each area: highest in the Bob Marshall where 65 percent of visitors travel on horseback and lowest in the Bridger where 85 percent of the use is on foot.

In the BWCA, where "paddling" was substituted for backpacking and "using an outboard motor" for horseback travel, only about one in three purists (36 percent) agreed that both methods of travel were appropriate. The primary cause of rejection was an aversion to outboard motors; 83 percent of the purists were paddling canoeists.

Visitors were also asked to indicate which method of travel they preferred to meet (or not meet) in the area they were visiting. In the BWCA, purists (a) demonstrated a marked preference for seeing canoes (76 percent), (b) displayed a surprising ambivalence toward motor canoes (52 percent did not care if they met them), and (c) emphatically rejected seeing motorboats (85 percent preferred not to meet them). Less than 10 percent of the purists expressed a preference for seeing either motor canoes or motorboats.

This clear rejection of a travel method had no equivalent in the western areas except in the Bridger where two-thirds of the purists indicated a preference for not meeting groups accompanied by horses. In the other two areas, however, purists demonstrated tolerance toward the various travel methods; they either expressed a preference for seeing them or were neutral.

The favorable attitude of purists in the BWCA toward canoeists is an entirely predictable and understandable situation. Evidence has already been presented that motors are considered inappropriate in the purist's concept of wilderness. Moreover, the purists are, by and large, canoeists. In the West, purists display a basically positive attitude toward horses, regarding them as legitimate and appropriate in wilderness. The purists were a more mixed group in the West—54 percent were backpackers and the remainder were either on horseback or hiking and leading stock.

²² Robert C. Lucas, *The Recreational Capacity of the Quetico-Superior Area*. U.S. Forest Service Research Paper LS-8, 1964, p. 23.

Party size. Another obvious variable in seeking to pin down sources of use conflict is party size. Commonly, the wilderness trip is undertaken by a small group composed of family or friends. (Two-thirds of this study's sample were traveling in parties of four people or less.) But large outfitted horse parties are also common. Typically, these parties include from 15 to 30 guests, a work crew of perhaps a half dozen, and, on the average, one pack animal per guest.

Such parties might have serious impacts on user satisfaction in any or all of three ways: (a) other users might regard such groups as simply an inappropriate use of wilderness; (b) such groups might inflict severe ecological damage upon the resource; (c) such groups contribute to feelings of crowding.

To determine how users reacted to large parties, visitors were asked to respond to the statement "Seeing a large party reduces the feeling that you're out in the wilderness."

Substantial uniformity in response to this item occurred, unlike several of the past statements where considerable geographic variation was found. About 80 percent of the purists overall expressed agreement with the statement. Only in the BWCA and the Bob Marshall was any substantial disagreement found; 20 percent of the purists in each of these areas disagreed. Nevertheless, there was still substantial agreement to this item by purists in the BWCA (74 percent) and the Bob Marshall (72 percent).

The distribution of use encounters over time is typically uneven. One might go for some time without seeing anyone else; then, several parties might pass by in short succession. To discover whether the spacing of these encounters has an influence on visitor satisfaction, visitors were asked to express a preference for one of the options in each of the following situations:

- A. "Seeing one large party of 30 people during the day and no one else *or* one small party of three people during the day and no one else?"
- B. "Seeing one large party of 30 people during the day and no one else *or* five small parties of three people each spaced through the day and no one else?"
- C. "Seeing one large party of 30 people during the day and no one else *or* 10 parties of three people each spaced through the day and no one else?"

The responses on these items were noteworthy in two regards. First, the majority of users (purists and nonpurists) in the four areas expressed a preference for the small parties in all three situations, except in the

Bob Marshall, where nearly half favored the single large party over 10 small parties. The reaction to situations A and B were not surprising. The choice between one large party and one small party seemed obvious: only 2 percent favored the former. Choosing between the alternatives posed in situation B also seemed predictable: only 17 percent favored the large party, ranging from 16 percent in the Bridger to 28 percent in the Bob Marshall.

When the responses to item C were examined, however, the hypothesis that users, especially purists, would trade off their dislike of large parties for the increased opportunity for solitude they would have by expressing a preference for the large party was found to be incorrect. Even though meeting 10 small parties a day would mean about one encounter per hour, visitors in all areas except the Bob Marshall displayed a decided preference for the 10 small parties. This leads us to speculate that large parties have a particularly deleterious impact upon visitor satisfaction although they compose only a small percentage of total use in most areas (in this study, only 2 percent were in parties larger than 15).

The second feature regarding response to these items concerns the relatively high degree of consistency among visitors to the BWCA, Bridger, and High Uintas and between purists and nonpurists in each area. The following tabulation shows responses to the three items for each area broken down for purists and nonpurists; specifically, it shows percentages favoring a varying number of small parties over one large party.

	BWCA	Bridger	High Uintas
Party/parties	Purist/ nonpurist	Purist/ nonpurist	Purist/ nonpurist
One small party	88/70	94/88	82/73
Five small parties	65/59	66/66	65/57
Ten small parties	54/48	55/55	32/43

The small party represents conventional wilderness behavior, and apparently visitors, whether in the BWCA or Bridger, or whether purist or nonpurist, support this understood norm.

Use and Satisfaction

In attempting to determine how use affects visitor satisfaction, we must look at both the amount and the character of use encountered. Visitors were therefore asked to indicate how they felt about encountering an increasingly larger number of specific kinds of other parties. Responses were recorded along a five-point scale ranging from "Very

pleasant" to "Very unpleasant." The period during which the encounters occurred was held constant at one day. Visitors were first asked their feelings about meeting no other parties of any kind during the day, then one party of backpackers, two, and so forth, up to a total of nine. The same process was repeated for parties on horseback. In the BWCA, references were to paddling canoeists, motor canoeists, and motor boaters. All the parties were described as small groups, having a maximum of five people in each.

From this data it was possible to construct a series of "satisfaction curves" regarding the various methods of travel a visitor might encounter (see Figure 3.2). These curves were computed by determining the percentage of all respondents who indicated "Very pleasant" or "Pleasant" reactions to the various encounter situations. Thus, the slopes of the curves represent the changes in the percentage of persons responding in a favorable manner to increased levels of use. They do not represent *aggregate* measures of satisfaction. There are three aspects of Figure 3.2 that bear comment.

(a) Compared to the overall sample, a greater proportion of the purists consistently demonstrate a preference for the zero encounter situation. Just over 80 percent of the purists in each of the four areas reacted positively to a situation involving no other encounters.

(b) The number of persons responding positively declines as use increases. This concurs with most of the past hypotheses regarding use and visitor satisfaction in wilderness.²³ In all cases, the curves derived for the purists show a steady decline from no encounters; curves for the overall sample in three of the cases show an increase in response for up to two or three parties of backpackers. In the Bob Marshall and the High Uintas, a majority of persons appear to find encounters with others (both backpackers and horseback riders) enjoyable. In the Bridger, however, purists demonstrate a strong antipathy toward horseback parties. The Bridger supports only limited horse use while horse parties comprise over half the use in the other areas. In the Bob Marshall and the High Uintas, the traditional character of recreation use and the characteristics of the landscape have fostered a norm supporting horse travel; in the Bridger, the relative harshness of the physical-biological regime and the consequent scarcity of horse parties have resulted in a norm of travel method that does not include the horse.

In the BWCA, less than half the sample responded positively to a situation of no encounters. Purists did not differ appreciably from others in their reaction to one or two encounters with canoeists. The most

²³ For example, see "The Carrying Capacity of Wildlands for Recreation," p. 7.

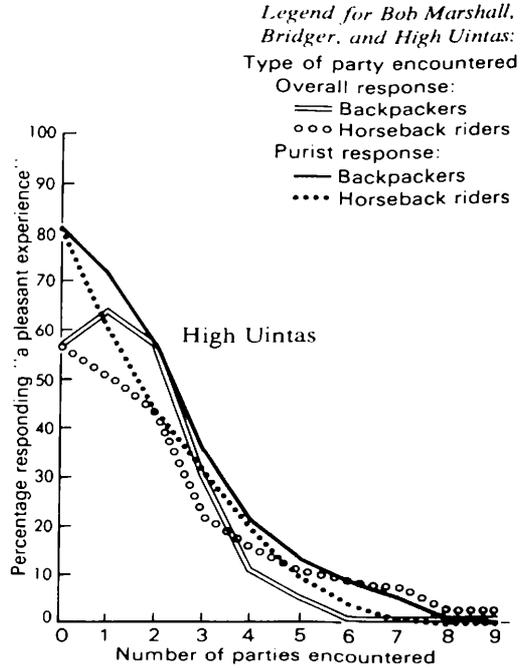
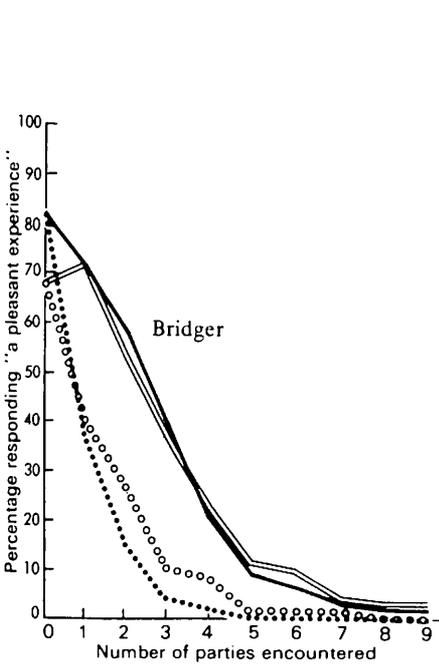
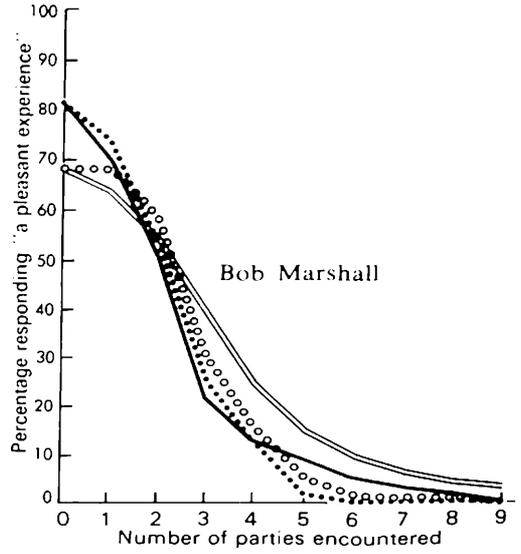
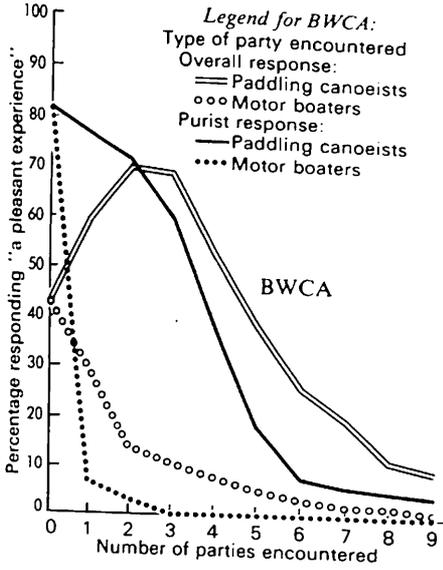


Figure 3.2. Satisfaction curves for BWCA, Bob Marshall, Bridger, and High Uintas.

dramatic impact on purist satisfaction comes when motorboats are considered. The percentage of purists indicating a pleasant reaction drops from 82 percent (with no encounters) to 7 percent with one encounter with a motorboat; this clearly delineates the degree to which such craft are perceived as being inappropriate in wilderness. The negative evaluation of these boats is less widely held by the overall sample.

(c) Except for the reaction to motor craft in the BWCA—and despite widely varying resource characteristics and different patterns, types, and intensities of recreational use in the four areas—there is a high degree of consistency among purists in their perception of what constitutes inappropriate levels and types of use.

Location of Encounters

Encounters in a wilderness occur not only on the trail, where meeting others might be expected, but also at campsites, where solitude and privacy might be especially important. To test whether visitors differentiate between encounters on the trail and those at campsites, they were asked to state their preference on the following: "Seeing a lot of people within the first few miles or so from the road and no one else the rest of the trip *or* several other parties in the area where I expect to camp and no one else."

Over 80 percent of the purists favored the situation that involved trail encounters. In all four areas, less than one in 20 expressed a preference for seeing others in the vicinity of their camp.

To test the notion that the campsite represents a place where new acquaintances and friendships are developed, respondents were asked the extent to which they agreed with the proposition "When staying out overnight in the wilderness it is most enjoyable not to be near anyone else."

About 90 percent of the purists and about two-thirds of the nonpurists agreed that the wilderness campsite should provide complete solitude. The idea that the campsite is an area where intergroup contacts should be developed was rejected (γ equaled 0.43). The more purist that users were, the more they were inclined to agree with the statement.

If attitudes toward other parties are influenced by the campsite location, we might expect to find modifications in expected behavior.²⁴

²⁴ The relationship between an individual's attitude about some object and his subsequent behavior toward that object is a poorly understood process. Several studies have reported low or even negative correlations between attitude and behavior (e.g., see Irwin Deutscher, "Words and Deeds: Social Science and Social Policy," *Social Problems*, vol. 13 [1966], pp. 235-54). However, in their review of the literature on the attitude-behavior relationship, Tittle and Hill concluded that the predictive quality of attitudes relative to behavior was a function of (a) the measurement tech-

Respondents were asked to consider a situation where, after they set up camp in an isolated location, two or three other parties arrive on the scene. Several behavioral reactions were included as possible responses.

Among the purists in the four areas, between 70 percent and 83 percent indicated that their enjoyment would be adversely affected by others camping near them. Many indicated they would cut short their visit. Nearly half of the purists in the Bob Marshall and Bridger indicated they would attempt to find another campsite.

We felt that the strongly expressed displeasure about having others near one's campsite ought to be reflected in the purist's preference for a campsite location in terms of its spatial relationship to other camps. To determine what factor spatial relationships play in a user's selection of a campsite location, respondents were asked to indicate their preference for one of the following: (a) "a spot out of sight and hearing of all other campers"; (b) "a place some distance away from others; seeing or hearing them, however, would not bother me"; and (c) "a place near other campers."

Purists in the Bob Marshall and Bridger were heavily in favor of a location offering complete solitude (85 percent in both areas). The intensity of expressed preference for such locations was somewhat less in the BWCA (70 percent) and the High Uintas (75 percent). In none of the areas did *any* purist opt for a location where he would be more likely to meet others. The association between purist score and preference for a location out of sight and hearing of others was high ($\gamma = 0.52$). For the four areas together, less than two out of 10 purists desired a location where others could be seen or heard even if they were some distance away.

Apparently, the opportunity to escape from others is an important characteristic of the camping site. Within the camping zone the primary interaction involves man and the physical environment; interaction with other parties is unwanted.

Destructive Behavior Aspects of Capacity

What effect does evidence of man's presence—not actual encounters—have upon purists' satisfaction levels? What does the evidence of previous use have on the purist's perception of carrying capacity?

nique used; (b) the degree to which the criterion behavior constituted action within the individual's common range of experience; and (c) the degree to which the criterion behavior represented a repetitive behavioral configuration (Charles R. Tittle and Richard J. Hill, "Attitude Measurement and Prediction of Behavior: An Evaluation of Conditions and Measurement Techniques," *Sociometry*, vol. 30, no. 2 [1967], pp. 199-213). The extent to which wilderness behavior fits (b) and (c) above is conjectural, but the findings of Tittle and Hill suggest that the measurement of attitudes can, under certain conditions, reduce the range of uncertainty regarding predictions of user behavior.

In a wilderness environment (where the works and evidence of man are generally minimal), the evidence of destructive behavior is particularly noticeable. Destructive behavior, as used in this paper, describes behavior that might violate institutional restrictions, accepted social norms, or both. Our attention was focused on two consequences of destructive behavior: littering and campsite deterioration. In many ways, campsite deterioration is an ecological dimension of the carrying capacity problem. However, it was included because it is often aggravated and accelerated by human behavior and because it can greatly impair the quality of a wilderness trip.

Campsite overuse. Any use of an ecosystem results in some physical change, and this is particularly true at a campsite where use is concentrated within a relatively small space. We hypothesized that visual evidence of campsite "wear and tear" would have a strong effect on visitor satisfaction because our findings had suggested the campsite environment was an especially important part of the wilderness experience.

This hypothesis was substantiated to a much greater degree than expected. There is a wide range in the inherent capabilities of sites to withstand change and a wide variation in both the type and intensity of use at different sites. Nevertheless, there was uniform and emphatic purist concern with sites that evidenced wear and tear. Virtually all those responding (98 percent) to a question concerning reactions to such sites indicated they would be dissatisfied.²⁵

Even though people say they don't like beat-up campsites, it is apparent they still use them. One might argue this is further evidence that behavior and attitude are poorly related. However, we must recognize that very often a party has little choice and has to take what is available. Also, the fact that a party is occupying a particular site does not in itself justify the conclusion that its members derive a satisfactory experience from that location.

Littering. A central contention in this study is that carrying capacity is a function of several different dimensions. Virtually all respondents, regardless of their attitudes toward wilderness, expressed strong negative reactions to finding litter in the wilderness. But evidence also has been presented that an excessive number of encounters is important in visitor definitions of capacity. To test how these two elements of the capacity problem were related, visitors were asked the extent to which they

²⁵ One could legitimately argue here that there was no other socially acceptable response to such a question. It is apparent that questionnaire-type surveys do not lend themselves to certain types of investigations.

agreed with the statement "Seeing too many people in the wilderness is more disturbing than finding a littered campsite."

Overall, two-thirds of the purists disagreed with the statement; there was a remarkable consistency in response among the four areas, ranging from 64 percent in the Bridger to 73 percent in the High Uintas. The "moderate purists" group (see Table 3.1) actually showed a slightly higher level of disagreement than the purists. Responding to this particular statement was probably a difficult task for the purists. It was essentially a question of which was "the lesser of two evils." The uniform pattern of response, however, suggests that certain values are widely held. Also noteworthy is the uniformity of response stimulated by "too many people."

IMPLICATIONS OF PURIST ATTITUDES FOR WILDERNESS MANAGEMENT

Inasmuch as a wilderness management philosophy consistent with the objectives of the Wilderness Act is impossible under a "manage for all" approach, we need some technique to differentiate users in a manner that most nearly meshes visitor needs and motives with opportunity. The purist, as defined in this paper, serves this function.

In a capsule version, what do the attitudes of the purist imply for the wilderness manager?

First, we are talking about a wilderness environment involving a low intensity of use. Design, variations in the timing of travel, and other modifications in the actions of managers and visitors might make it possible to increase total use in some areas, perhaps substantially over what it is now. However, use limitations will almost certainly need to be instituted eventually in order to protect both the environmental qualities of wilderness and the recreational opportunities these areas provide.

Second, conflicts between the traditional small party and the large group are serious and should be dealt with. Conflicts between the different travel methods in the three western wildernesses do not appear especially serious, and there is probably not a large payoff in increased aggregate satisfaction associated with a decision to zone backpackers away from small horse parties. Nevertheless, there might be good and sufficient biological reasons to close off some or all of certain wildernesses to horse travel.

Conditions in the BWCA are entirely different. There is a serious conflict between canoeists and those using motorboats. The latter craft are perceived as inappropriate and destructive to the wilderness setting. Elimination of motors within the BWCA rather than their exclusion from certain areas probably is needed.

Third, being able to locate an isolated campsite is important to most visitors. Management efforts to provide more information about opportunities to locate such sites could carry rather substantial positive benefits.

Fourth, there is a clear and unequivocally negative reaction on the part of purists to the more obvious effects of ill use. I would speculate that purists espouse a wilderness philosophy where man is subordinate to nature, and that evidence of man's disregard for nature—litter, campsite destruction, and so forth—is especially annoying for them. Again, efforts to control or eliminate these problems probably will yield substantial gains in relation to costs.

Finally, on many aspects of wilderness use, there is little to distinguish the purists' responses from those of the undifferentiated overall sample except the purists' more intense reaction. However, there are certain dimensions of the wilderness experience to which purists ascribe a significantly different set of values than others do; it is in these situations that the preferences of the purists should be followed in an effort to ensure both the preservation of the natural character of wilderness lands and the maintenance of a recreational experience that is largely nonsubstitutable.

One of the aspects of this study that was especially interesting was the pattern of purists' responses. Purists, who were defined to possess similar conceptual attitudes about wilderness, responded in a fairly uniform way to questions about what the wilderness should be like. Solitude, for example, was rated highly whether the respondent was from the BWCA or the Bridger.

Attitudes toward actual conditions of use, however, tended to reflect local customs and varied from area to area. Attitudes toward horses for example, were most favorable in the Bob Marshall, where horses are more common. Similarly, large parties were regarded more tolerantly in areas where such groups are common. As both the study by Hendee et al. and the ORRRC Report 3 concluded, the appeal of wilderness is probably a generic one, but individual area differences result in certain modifications of this appeal.

Purists and Wilderness Management

A standard argument for not using visitor attitudes as a means of formulating wilderness management strategies is that public attitudes as to what constitutes solitude, the pristine, or the natural will become less discriminating as population rises, urban densities increase, and so forth.

The idea that attitudes about what is "pure wilderness" will weaken in the future might be a classic example of a self-fulfilling prophecy. If

we orient wilderness management along a line designed to accommodate gradually less-demanding tastes, we will almost certainly attract a clientele that, in time, will hold a less demanding concept of wilderness. Burch writes "The trajectory of the future is not determined by the future, but by our present conception of it."²⁶

The external stimuli with which the citizen of tomorrow will have to contend are largely beyond the control of the wilderness management agencies—traffic, population, design of cities, and so forth. However, the internal stimuli (the conditions the visitor encounters within the wilderness) are elements of the environment that the managing agencies can manipulate and control. Developing a management orientation with which purists acquiesce will probably foster the continued existence of purist attitudes.

The data herein suggest that local or unique sets of conditions can modify attitudes; exposures breed tolerance to some degree. Unfortunately, we lack the rigorous kinds of longitudinal studies needed to fully support this contention, but there is a strong probability that it is correct. A wilderness management strategy that is uncompromising in its effort to fulfill the intent of the Wilderness Act will probably enjoy sound purist support in the future. Gradually reducing the rigorosity of guidelines for wilderness management will not only result in the eventual deterioration of the unique environmental qualities these areas possess, but will also result in the loss of a special kind of experience for which there is little substitute. Although the Canadian Northland and the Amazon Basin might represent opportunities for certain special kinds of experiences, they cannot logically be considered either realistic or sufficient alternatives for tomorrow's wilderness enthusiast. The remoteness of these areas and the expense of reaching them would largely preclude the present pattern and style of wilderness use and would therefore narrow the spectrum of opportunities discussed earlier in this paper. Most wilderness trips are of short duration, averaging only two or three days. Also, many wilderness visitors take several trips each season. If we seriously believe in the necessity for a "Conservation Ethic," then we need to consider the value of preserving the richness and diversity of the resources and experiences still available in our American wildernesses.

²⁶ William R. Burch, "Fishes and Loaves: Some Sociological Observations on the Environmental Crises," in Francois Mergen (ed.), *Man and His Environment: The Ecological Limits of Optimism* (New Haven: Yale University Press, 1970), p. 41.