

MYTHS IN WILDERNESS DECISION-MAKING

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Aldo Leopold Wilderness Research Institute: Publication # 11

CITATION: Stankey, George H. 1971. Myths in wilderness decision-making. *Journal of Soil and Water Conservation*. 26(5): 183-188.

ARE wilderness users a wealthy elite whose income affords them opportunities to use wilderness areas that less wealthy people are denied? Is wilderness incompatible with the concept of multiple use? Are we heading toward a situation where a preponderant share of our public lands will be "locked up" in wilderness?

These questions occur repeatedly in public hearings on wilderness proposals and reflect a disturbing situation. Such hearings should serve as forums, where the optimum "mix" of wilderness and other forms of resource management is decided. Decisions about how such allocations will be made ideally should reflect an effort to optimize net benefits to society.

In making these decisions, however, it is mandatory to identify those contentions that, although incorrect, have achieved a level of uncontested acceptance among many people. These myths¹ greatly reduce the efficacy of the public hearing process. Consequently, they tend to promote decisions that may not contribute to the optimum public benefit.

Such decisions necessarily must consider both facts (data susceptible to corroboration) and values (how a person or group feels). It is difficult to assess the "wrongness" or "rightness" of values. For example, some argue that wilderness is necessary for the spiritual values it imparts to society. Perhaps, but it is impossible to either substantiate or contradict such a statement with our present level of knowledge. Many other statements, however, treat topics on which information from scientific research or established policy is available to corroborate, contradict, or modify the contention.

In view of the availability of such information, the persistence of such statements as "only the wealthy can visit wilderness" suggests a disturbingly low level of knowledge on the

¹Myth may seem like a harsh and unreasonable term, but its definition is appropriate to the discussion here: "An ill-founded belief held uncritically, especially by an interested group" (*Webster's Seventh New Collegiate Dictionary*).

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part of many people who seek to influence the wilderness decision-making process.

Income, Costs, and Wilderness Uses

How do the income characteristics of wilderness visitors compare with those of the nation as a whole? Are the costs of wilderness recreation such that it is beyond the means of most people?

The Wildland Research Center (24) reported to the Outdoor Recreation Resources Review Commission in 1962 that persons with family incomes exceeding \$10,000 comprised 33 percent of the visitors in three wilderness study areas, while this income group represented only 13 percent of the population of the U. S. Similarly, in 1958, Lucas (10) found that 30 percent of the paddling canoeists and 28 percent of the motor canoeists in Minnesota's Boundary Waters Canoe Area had incomes over \$10,000.

A 1967 study in Oregon revealed that persons with incomes exceeding \$9,000 comprised nearly 40 percent of the wilderness visitor total, while only 19 percent of the Oregon population had a similar income (2). In 1967, 20 percent of the visitors to the Bob Marshall Wilderness and 15 percent of those visiting the Mission Mountains Primitive Area had incomes over \$15,000, while only about 5 percent of the U. S. population was in this income category (11).

Clearly, higher income categories appear to be disproportionately represented among wilderness visitors. The reason for this, some suggest, is that persons in lower income categories cannot afford to visit wilderness areas. If this contention indeed is valid, the daily costs incurred by wilderness visitors ought to be substantially greater than those paid by other recreationists. Available information suggests that such costs are quite low, however.²

The 1962 Wildland Research Center report (24) indicated that 57 percent

²Daily costs cited are for summer visitors only; fall users, primarily hunters, are not included. Virtually no information is available on fall wilderness visitors, and it is likely they differ from summer visitors in many respects. Neither do the costs reflect those incurred by persons traveling with a large organization, such as the Sierra Club or American Forestry Association. These groups represent only a small percentage of total wilderness use, however.

of the visitors contacted spent \$5 or less per person per day. Moreover, about half the wilderness recreationists in the income brackets of \$5,000 to \$9,999 and \$10,000 to \$14,999 reported a cost per person per day of \$3 or less. There was no significant difference in the amounts spent by visitors in these two income groups.

Daily costs of other forms of recreation vary widely. The National Recreation Survey indicated that daily expenditures for vacations, trips, and outings averaged \$5 per person in 1960-61 (15). Estimated daily costs for campers in Oregon averaged \$2.75 (14). A study of water-based recreation in Nevada revealed an average daily expenditure of \$17 for a party of four persons (12). Herrington found that the average daily expenditure per skier was \$20 (6). Campers in a Louisiana state park incurred average daily costs of \$3 (23). LaPage (7) reported \$11 as the average daily expenditure per party for campers in New Hampshire state parks (party size was not reported). Finally, a study of outdoor recreation in Wyoming indicated that daily expenditures per vacationing party averaged nearly \$35, or about \$11 per person (16).

These studies suggest that costs associated with wilderness recreation appear to be comparable or lower than those associated with other outdoor recreation activities.

One additional contention merits consideration here. Will lower income groups find greater opportunities for outdoor recreation if areas previously in a de facto wilderness state are developed with road access and campgrounds? Many contend they will. However, evidence from at least three studies suggests that lower income groups also are under-represented in roadside campgrounds relative to their proportion of the U. S. population. In fact, this evidence indicates that they comprise a smaller percentage of the roadside campground population than of the wilderness camping population.

Merriam and Ammons (11) reported that about 20 percent of the wilderness visitors they contacted had incomes under \$5,000. Only 5 percent of the roadside campground users fell into this income category. In 1964, the year of their study, the under-\$5,000 income group represented close to 40 percent of the U. S. population.

An earlier study by Lucas (10) produced similar findings: Persons with incomes under \$4,000 comprised 24 percent of his wilderness sample but only 10 percent of the roadside campground population. For the country as a whole, persons with incomes under \$4,000 accounted for 37 percent of the population in 1958.

Finally, Burch and Wenger (2) found essentially no difference in income characteristics among easy-access (vehicle) campers and remote (wilderness) campers in Oregon. This held true for the income categories of under \$3,000 and \$3,001 to \$5,999.

Thus the costs incurred by any group of recreationists appear to be influenced more by the particular desires and preferences of the individuals than by their incomes. The Wildland Research Center (24) concluded, ". . . wilderness use is not so much dependent on high income as it is related to taste preferences in recreation." Lucas (10) reached a similar conclusion: "Income seems to be more necessary than sufficient as an explanation of recreation choices. Money does not form tastes, it limits their expression, but few people would be priced out of the market here (Boundary Waters Canoe Area) for any type of recreation, with the possible exception of . . . resorts and private cabins." The causal relationship between wealth and wilderness visitation is valid only insofar as increased income is associated with changes in outdoor recreation preferences.

Preference formation and changes are not clearly understood. However, it has been documented that wilderness use is a function of education. College-educated persons are greatly over-represented among wilderness users. Of course, education is closely related to income. In fact, education probably is a more important consideration than income in determining the underlying causal factor or factors that form or change recreation preferences.

Leisure Time and Length of Stay

The relationship between an individual's leisure time and the length of his wilderness visit represents another area of misunderstanding. Generally, people think of the typical wilderness trip as a lengthy affair and the wilderness user as one who has an above-

average amount of leisure time. Evidence tends to refute both beliefs.

The Wildland Research Center (24) indicated that only 10 percent of the visits to the Mount Marcy area of New York were over one week long; only 35 percent of the visits to the Boundary Waters Canoe Area exceeded one week. Only in the Sierra did visits of more than one week predominate (54 percent). However, this study had no control for length-of-stay bias (a bias stemming from the fact that the longer an individual stays in an area, the greater his chances of being contacted) (9). Consequently, the average lengths of stay are exaggerated.

Merriam and Anmons (11) found that wilderness trips ranged from 2 to 8 days and averaged less than 5 days in the Bob Marshall Wilderness, Mission Mountains, and Glacier Park backcountry. Again, no control for the length-of-stay bias was applied. The researchers noted that length of stay was more a function of an area's size and the type of activity provided by the specific location than of a visitor's available leisure time.

Lucas' findings in the Boundary Waters Canoe Area support this conclusion (10). Although Forest Service officials estimated the average length of stay to be 5 days, Lucas, correcting for length-of-stay bias, found it to be about 1.75 days. Hendee and associates (5) found that wilderness users in the Pacific Northwest averaged about six trips in 1965, with the average trip lasting about two days. Visits to the Mission Mountains Primitive Area average only about 14 hours.³

Burch and Wenger (2) presented additional evidence contradicting the notion that wilderness trips require inordinate amounts of leisure time. They found that persons with less than one week's vacation were over-represented among remote (wilderness) campers, while those with three weeks' vacation were under-represented when compared with the general population groups these recreationists represented. The authors concluded, ". . . it seems that a shorter vacation time is not noticeably inhibitory for those who desire a wilderness trip, and remote campers are less, not more,

³From preliminary results of a study being conducted by the Intermountain Forest and Range Experiment Station.



likely to be persons with more vacation time."

The distribution of leisure time throughout our society is decidedly uneven. "Most of the real gain in leisure in the United States has come to private nonagricultural industries . . . most markedly in manufacturing and mining. . . . Professionals, executives, officials, and other civil servants . . . have benefited little . . ." (25). Yet it is these latter occupational categories that most wilderness visitors represent.

Any attempt to explain wilderness use solely in terms of a single socioeconomic characteristic, such as income or leisure time, can only result in erroneous conclusions. The propensity to visit wilderness seems to be a function of the complex — and admittedly little understood — preferences of the individual. While income and leisure time are components of preference formation, neither appear to be inhibitory to those individuals already visiting wilderness areas. What is needed is a clearer understanding of how preferences are influenced by life style and other socio-psychological parameters, for example, stage of life cycle, membership in conservation organizations, etc. (3).

A Multiple Use Product

Classifying an area as wilderness often is criticized on the grounds that such action contradicts the Congressional mandate of multiple use and sustained yield. Critics view wilderness and multiple use as mutually exclusive concepts. However, the Multiple Use-Sustained Yield Act of 1960 (19) clearly recognizes and defines the position of wilderness in multiple use management. Section 2 of the act notes: "The establishment and maintenance of areas of wilderness are consistent with the purposes of this Act." The act further reads: "That some of the land will be used for less than all of the resources . . . with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output."

The Wilderness Act (20) itself specifically notes that ". . . nothing in this Act shall be deemed to be in interference with the purpose for which national forests are established as set forth in the . . . Multiple Use-Sus-

tained Yield Act of June 12, 1960."

Viewed together, the two acts represent a legislative effort to resolve the legitimate but often conflicting demands of competing interest groups. Multiple use embodies the goal of optimizing net benefits to society. In doing so, it must necessarily accommodate diverse and conflicting demands that often are difficult to measure in the marketplace. Wilderness represents one of these demands. The question remaining is not whether wilderness is a legitimate component of the multiple use scheme, but rather what are its dimensions in that scheme? Ultimately, only public demand and willingness to pay the costs involved, as experienced through the political process, can resolve this question.

Wilderness Management Challenges

Does the designation of an area as wilderness imply a decision to forsake any management efforts? All too often this notion seems apparent among both those favoring and those opposing wilderness. Wilderness is viewed by some as land with a line drawn around it to be left alone. In light of the rapidly growing recreational use of these areas and of the objective of securing an enduring wilderness resource for present and future generations, however, wilderness management today poses one of the great challenges to imaginative planning.

For example, a number of broad management problems facing the Forest Service in the High Sierra have been pinpointed — dispersal of visitors, use limitations, increasing levels of stock use, and deterioration of high alpine meadows (17). Wilderness rangers already patrol some areas to make public contact, maintain trails, measure remaining campsite forage, direct horse use, enforce regulations, clean up litter, and provide emergency assistance.

Management of wilderness users poses a number of complex administrative and research problems. Resolving these problems will provide a more accurate assessment of the effects of any given decision on users as well as a more efficient means of establishing management priorities. This latter point is especially pertinent during times of serious manpower and budgetary constraints.

Initially, an improved system for

measuring recreation use within wilderness is needed. Coupled with this is the need to determine (1) visitor use patterns within wilderness areas; (2) factors affecting use patterns, and (3) user attitudes and preferences with regard to levels of use, types of development, and various methods of user control (use permits, fees, etc.). Administrative and research efforts are badly needed in the development and application of techniques for modifying or controlling visitor behavior.

Challenges to ecological management are similarly great (4, 8, 18). The Wilderness Act requires that natural ecological processes be allowed to operate uncontrolled ("untrammeled") by man. This requirement presupposes an understanding of the ecological processes creating specific environments. For example, fire is recognized as a natural component of most ecosystems. To a large extent, however, it has been effectively eliminated through various fire control measures and programs. As a result, widespread changes in vegetative cover have occurred, and the pattern of ecological succession has been disturbed.

Techniques to safely reintroduce fire or its effects may need to be developed. This may involve prescribed burning or simply the decision to limit fire suppression.

Sanitation also is a problem, and one of special concern to managers in the Boundary Waters Canoe Area (1) and Idaho's Salmon River Breaks Primitive Area.

The Range of Choice

Opinions vary widely about the size of the wilderness system, particularly in terms of its rate of growth and its relationship to the nation's total land resource base. Figure 1 shows the growth between 1930 and 1969 of the total area classified as wilderness, wild, primitive, or canoe. As can be seen, the 1930's represented a period of rapid growth and expansion. Between 1940 and 1969, however, acreage increased only about 5 percent.

As of December 31, 1969, there were 9,929,102 acres in the national wilderness preservation system (21). This represents one-half of one percent of the conterminous U. S.

Projecting the future size of the wilderness system is a highly specu-

lative venture. The magnitude of error could be considerable. On the other hand, it is possible to define the approximate range within which a choice about wilderness can be made. The following tabulation represents an effort to delimit the maximum acreage potentially available for study as possible wilderness, exclusive of Alaska. (Alaska's unique characteristics — remoteness, developing landownership pattern — prompt the portrayal of that state's contribution to the system in a later section.)

Agency	Acreage (millions)
Forest Service	21.3
National Park Service	19.8
Bureau of Sports Fisheries and Wildlife	4.2
Bureau of Land Management	2.2
Total	47.5

The 21.3-million-acre figure for the Forest Service includes 9.9 million acres currently in the national wilderness preservation system, 4.4 million acres now classified as primitive, and 7 million acres in de facto wilderness. The latter figure is difficult to estimate. As part of its nationwide inventory of wilderness in 1960, the Wildland Research Center (24) reported that about 7 million acres of unreserved national forest land existed in the 48 states. Some of this de facto wilderness since has been developed; hence, it no longer would qualify as wilderness. However, assuming there were some under-reporting errors in the 1960 estimate, we may use the 7-million-acre figure as a maximum estimate of the present de facto acreage.

The National Park Service has designated 54 units of the national park system as qualifying for study under the Wilderness Act. Aggregate acreage of these areas is 19.8 million (21).

The Bureau of Sports Fisheries and Wildlife is reviewing 76 areas (exclusive of Alaska). Total acreage of these units is 4.2 million (22).

Although the Wilderness Act does not require the Bureau of Land Management to evaluate and classify areas for wilderness, the agency may designate suitable areas for wilderness preservation under the Classification and Multiple-Use Act of 1964. At present, 2.2 million acres in the conterminous U. S. have been identified as potential wilderness areas under this act (21).

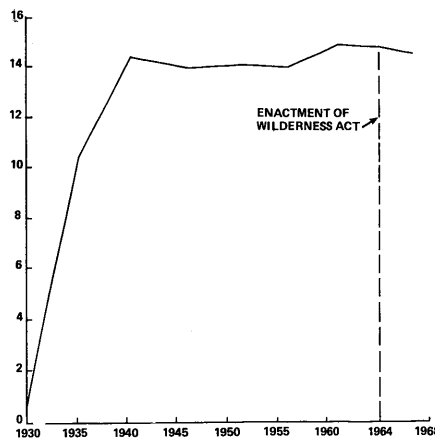


Figure 1. Accumulated wilderness acreage in the 48 conterminous states, 1930-1968.

Thus about 2.5 percent of the nation, exclusive of Alaska, appears to possess the resource characteristics to qualify for study as wilderness.

Alaska, A Special Case

As mentioned earlier, Alaska is unique from the standpoint of wilderness. Despite advances in travel technology, the state is still remote from the bulk of the nation's population. Furthermore, the status of its public lands is not entirely clear. Under the Alaskan Statehood Act, the state has an option on certain public lands. Until the trans-Alaska oil pipeline controversy is resolved, it will remain a question mark for the future management direction of part of the state.

Nevertheless, it is possible to estimate with some accuracy the amount of land now under study for possible wilderness classification in Alaska.

Agency	Acreage (millions)
Forest Service	2.5
National Park Service	7.5
Bureau of Sports Fisheries and Wildlife	22.7
Bureau of Land Management	8.8
Total	41.5

The Forest Service figure represents the acreage of five study areas on the Tongass and Chugach National Forests. There is a possibility that other study areas will be designated, but this is speculative.

The 7.5-million-acre figure for the National Park Service represents the gross acreage under study in Glacier Bay National Monument, Katmai National Monument, and Mount McKinley National Park (13).

At present, about 75,000 acres of Bureau of Sports Fisheries and Wildlife land have been recommended for wilderness classification. Almost 23 million acres must yet be studied (22).

Finally, 8.8 million acres of Bureau of Land Management land are under study as potential wilderness under the terms of the Classification and Multiple-Use Act (21).

The combined acreage under study in the 48 states and Hawaii (47.5 million acres) and in Alaska totals 89 million acres. This represents 3.9 percent of the 50 states. Obviously, not all the acreage under study will be classified as wilderness. Some simply does not meet Wilderness Act requirements. In other cases, wilderness classification would hamper the management objectives for some of these lands.

Speculations on Size

With these latter thoughts in mind, I speculated on what the dimensions of the national wilderness preservation system might be (Table 1). The operational assumptions, where possible, are based on projections of agencies' past records of wilderness classification.

From a national perspective, the potential acreage available for possible inclusion in the national wilderness preservation system is just less than 72 million acres, about 3 percent of the country. The total acreage would be divided almost equally between the conterminous U. S. (and Hawaii), with 35.8 million acres, and Alaska, with 35.7 million acres. These areas represent 1.9 percent of the 48 states and Hawaii and 9.5 percent of Alaska.

Under terms of the Wilderness Act, the national wilderness preservation system will be substantially complete by 1974.⁴ Thus we may expect relatively rapid growth in the size of the system during the next few years. Within the next decade it will reach its maximum extent or close to it, and it will be on this acreage that the "benefits of an enduring resource of wilderness" (20) must be provided.

A Final Comment

While areas suitable for wilderness classification in America are limited,

⁴De facto wilderness in the national forests is the major exception; additions from these areas would largely be made (if they are made) after 1974.

demands for wilderness benefits are almost certain to grow. Good decisions about how much or how little wilderness should be retained will require careful, objective analysis of wilderness and its esthetic, scientific, and recreational values as well as its values for alternative uses. Factual knowledge about wilderness is scarce, and this scarcity emphasizes the need to make use of what knowledge is available.

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Table 1. Potential dimensions of the national wilderness preservation system.

Agency	Acreage Under Study as Wilderness (millions)	Assumptions Regarding Eventual Wilderness Classification (%)	Acreage Assumed as Wilderness (millions)
Forest Service ^a			
Wilderness (currently in NWPS)	9.9	100	9.9
Primitive (awaiting review) ^b	4.4	100	4.4
De facto (48 states)	7.0	67	4.7
De facto (Alaska)	2.5	75	1.9
Total	23.8		20.9
National Park Service ^c			
54 units in 48 states and Hawaii	19.8	67	13.3
3 units in Alaska	7.5	90	6.8
Total	27.3		20.1
Bureau of Sports Fisheries and Wildlife ^d			
Acreage to be reviewed, exclusive of Alaska	3.1	50	1.6
Acreage to be reviewed in Alaska	22.6	90	20.3
Acreage already reviewed, exclusive of Alaska	1.1	50	0.5
Acreage already reviewed in Alaska	0.1	100	0.1
Total	26.9		22.5
Bureau of Land Management ^e			
Study areas in 48 states	2.2	67	1.4
Study areas in Alaska	8.8	75	6.6
Total	11.0		8.0
Grand Total	88.5		71.5

^aAssumptions regarding the percentage of Forest Service de facto acreage to be classified as wilderness are arbitrary ones that attempt to take into account the demands for a growing wilderness-user population, other resource demands, and the availability of lands to meet this demand.

^bAdditions to primitive areas in the reclassification process have averaged about 25 percent. However, these additions are taken from land classed above as de facto wilderness.

^cThe two-thirds assumption for national park units outside Alaska is probably an overestimate. Of the 17 units studied to date, preliminary wilderness proposals have averaged 54 percent. The 90-percent assumption for Alaska was made in light of the present low level of development and light use pressures.

^dThe Bureau of Sports Fisheries and Wildlife has reviewed 30 areas in the U. S., exclusive of Alaska. At present, wilderness recommendations average 45 percent of gross acreage. In Alaska 76,000 acres have been reviewed; virtually all (99.9 percent) have been recommended for wilderness. It has been assumed that prior developments and wildlife management needs would allow for a 90-percent withdrawal of the remaining acreages.

^eThere is virtually nothing available from which assumptions regarding Bureau of Land Management withdrawals for wilderness proposals could be made. The two-thirds figure for the 48 states and 75 percent for Alaska attempt to recognize, as do the assumptions on de facto Forest Service acreage, the competing resource demands and the alternative sources of supply for these resources.