

# Trends in Wilderness Recreational Use: Causes and Implications

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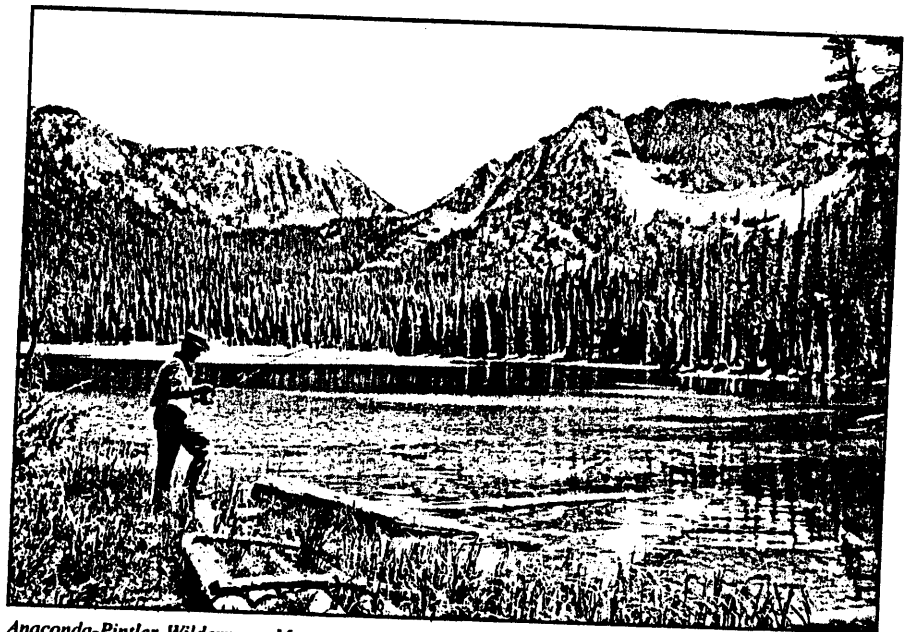
**W**ilderness has many uses and values. These include perpetuation of natural processes, scientific study, and wildlife, cultural and historical preservation. Some commodity uses like grazing, water storage and mining are also allowed by the Wilderness Act and can be found in some wilderness areas. But it is recreation that is often the source of many wilderness management problems.

Any changes in wilderness recreational use have significant implications for both management and the allocation of land for additional wilderness. Long-term trends in wilderness recreational use appear to be shifting from rapid growth to relative stability; they may even point to a decline. If such change continues, management may have time to "catch up" with recreation impact problems. But what does the change in the pattern mean? How did it come about?

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The most serious problem associated with describing trends in wilderness recreation use is the variable and frequently low accuracy of available data. The best data are usually from wilderness areas that require visitor permits; most do not require such permits, and estimates often involve a lot of plain and fancy guesswork.

Different land management agencies report recreational use of wilderness in different ways. The national forests report use of each wilderness, but national parks report "backcountry" use of individual parks without regard to wilderness boundaries. National park backcountry and designated wilderness are similar but not identical: Many national park backcountry areas with wilderness characteristics, including those



Anaconda-Pintler Wilderness, Montana

Photo/U.S. Forest Service

in Glacier and Yellowstone National Parks, are not formally designated wilderness.

The way recreational use is recorded also often differs among agencies. The national forests report all recreational use of wilderness, including day use, but the national parks count only overnight use. Units of measure also vary. The national forests present use estimates in recreation visitor-days (RVDs). (An RVD is one person for 12 hours or an equivalent combination, such as four people visiting three hours each). The national parks simply report the number of overnight visits.

How long wilderness use has been recorded also varies from agency to agency. The national forest use figures cover 1946

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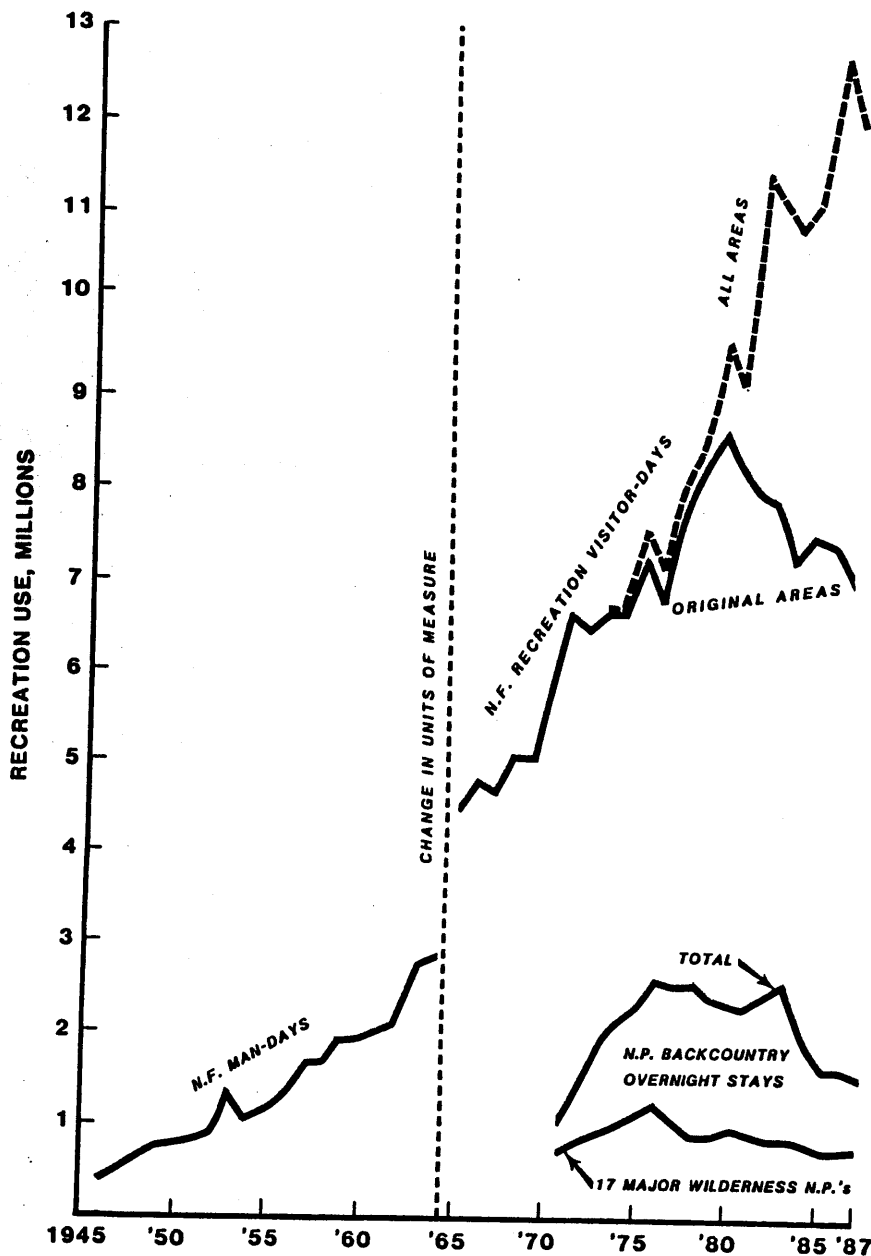
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Table 1  
Changes in Total Overnight Stays in National Park Backcountry:  
1971-87

Year	Overnight Stays (Thousands)	Average Annual Change (Percent)
1971	1,096	—
1976	2,609	18.9
1981	2,330	-2.3
1987	1,575	-6.8

Figure 1

Wilderness and Backcountry Recreational Use Trends  
In National Parks and National Forests, Nationwide



to 1986, but the national summary report was dropped in 1987 (we understand it will be restored in the future). National park use reports began in 1971 and are still issued. The Bureau of Land Management and the U.S. Fish and Wildlife Service do not currently report wilderness use on a regular basis (Washburne and Cole 1983).

Despite shortcomings in the data, this information is probably adequate for a look at overall trends. Use figures aggregated for large regions or for the nation probably diminish errors. We believe that wilderness use data are worth analyzing, particularly at the national level, but some caution is necessary. Evidence of trends is most reliable if considered over several years rather than from one year to the next. In any case, the patchy information is, unfortunately, the only game in town.

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Use of national park backcountry has been declining for a decade (Table 1). During the first part of the 1970s, use increased rapidly, more than doubling from 1.1 million overnight stays in 1971 to a peak of 2.6 million in 1976. This was followed by a long decline (Figure 1). Reported use in 1987 was less than that found in 1973, despite a 20 percent growth in the number of units reporting backcountry use. From 1976 through 1987, national park backcountry use declined about 40 percent, dropping every year from 1983 through 1987.

This decrease is further confirmed by comparing the year of peak use with 1987. In 17 national parks with significant amounts of backcountry or designated wilderness, the peak year of use was before 1980 in 12 cases; in only one case was it as recent as 1982. In Shenandoah National Park in Virginia, for example, 1987 was only 34 percent of the 1973 peak.

Both Glacier and Yellowstone also showed declines in backcountry use (Figure 2). Glacier reported a 1977 peak of more than 30,000 overnight stays, followed by a 43 percent decline to a little more than 17,000 in 1987. In Yellowstone, backcountry use dropped from just over 55,000 overnight stays in 1981 to about 33,000 in 1987, a 40 percent decrease. However, both parks showed increases from 1986 to 1987.

The decline in national park use is not limited to the backcountry. All recreational overnight stays in the national park system declined three percent between a 1978 peak and 1986. The decline in all stays would have been greater without a seven percent increase from 1986 to 1987.

In Glacier, all overnight stays dropped 33

percent between 1977, the peak year, to 1987, slightly less than the 43 percent drop in backcountry use. In Yellowstone, overall overnight recreational use dropped 17 percent from 1976, the peak year, to 1987, much less than the 40 percent drop in backcountry use.

Recreational use of the national forest wilderness system has leveled off in recent years without experiencing the significant declines reported by the national parks. Use in 1986 was a little more than 11 million RVDs, just two percent less than 1981 use. The growth rate of use in these areas has been slowing for 40 years, although changes in the definitions of measurements units between 1964 and 1965 make direct comparisons throughout the period impossible (Table 2). From 1946 through 1964, use increased sevenfold; from 1965 through 1986, use increased only about two and a half times. In the 1980s, year-to-year changes have been negative more often than positive.

In recent years, much of the reported increased use of national forest wilderness is attributable to the addition of new wilderness. When the Wilderness Act was passed in 1964, the national forests contained 88 units reporting wilderness use; this included 54 areas designated as wilderness by the act and 34 primitive areas managed as wilderness pending review for possible wilderness classification. Many new areas have since been added to the wilderness system. There are now about 340 national forest units in the system and more than twice the original acreage.

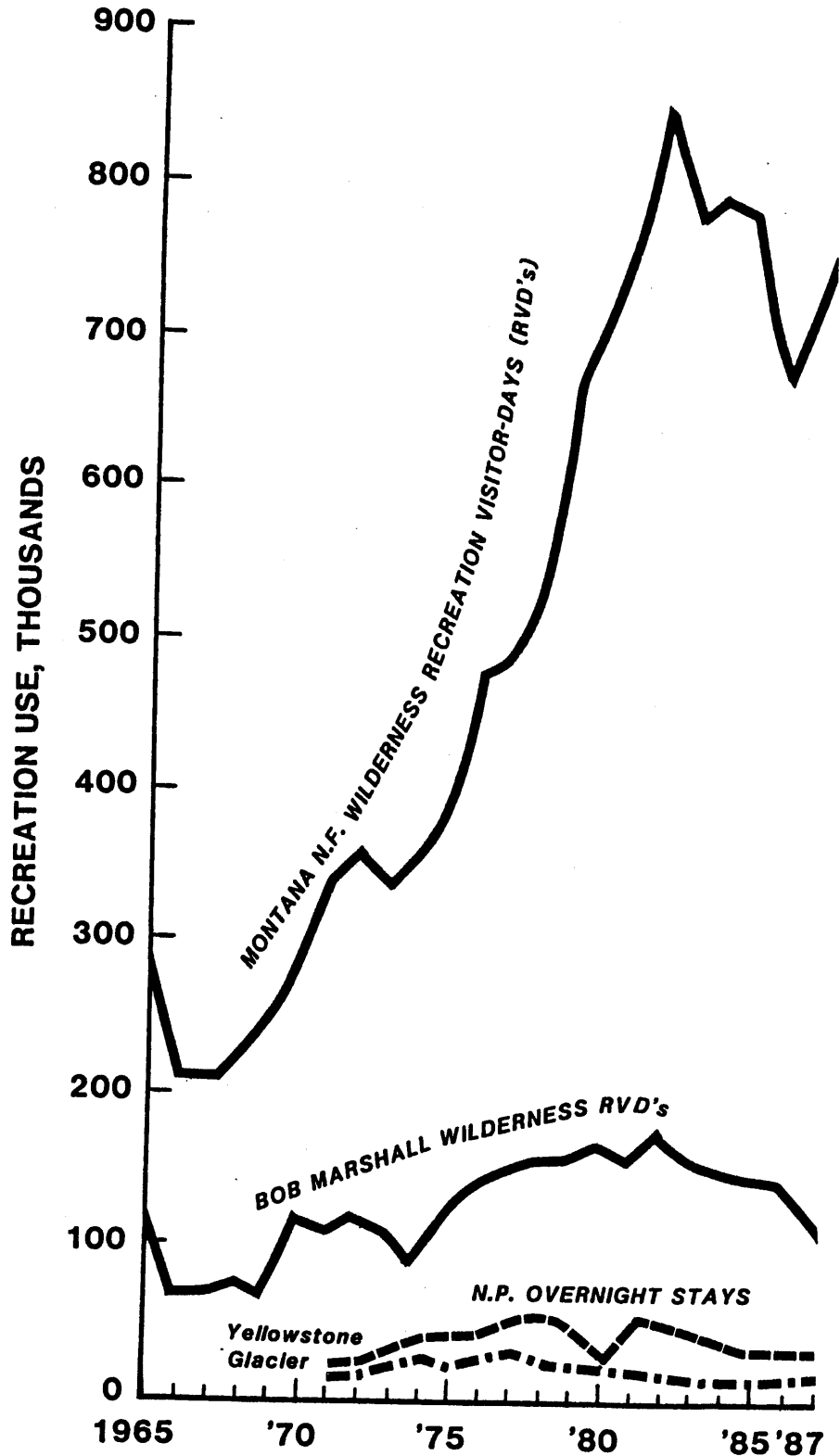
To trace the underlying trends in use of national forest wilderness, it is necessary to consider this major expansion in the number of units reporting use (Petersen 1981). To do this, we can separate the growth of recreational use of the original 88 national forest units, the "core system," from that of new areas (Figure 1). The size of the core system has been relatively stable, although some areas have expanded. The rate of annual growth in use of the core system has declined steadily since 1965:

Years	Average Annual Change (%)
1965-70	5.3
1970-75	4.5
1975-80	2.3
1980-86	-2.4

From 1965 through 1986, use of the core system increased at an average annual rate of two percent, about half that reported for the total national forest wilderness system. Use has declined since 1980. The peak year

Figure 2

Montana Wilderness  
And Backcountry Recreational Use Trends



of use in the core system was 1979; in 1986, use was 13 percent less than 1979 use. Most core system wilderness areas reported peak use in the late 1970s or early 1980s, and use has declined or essentially leveled off since then.

National forest wilderness areas in Montana reported a peak of total use in 1982 of almost 850,000 RVDs (Figure 2). Use in 1987 was 23 percent less. The Bob Marshall Wilderness, sometimes described as the "flagship of the wilderness system," reported a 31 percent decline in RVDs from the peak year of 1982 to 1987. Every national forest wilderness in Montana reported less use in 1987 than in its peak use year earlier in the 1980s.

Wilderness is not unique in receiving less use. Total use of the national forests, including all types of recreation, has also declined, with 1986 use about four percent less than 1981 use. Total use of the national forests in Montana dropped five percent by 1987 from a 1985 peak, and 1987 use was about the same as it was in 1981. Both in Montana and nationally, official use estimates show small declines for recreation in general and somewhat larger drops for wilderness use. (We remind readers to view both data sets with some skepticism because of the use estimate problems mentioned earlier.)

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Trends in related activities may shed some light on wilderness recreation trends. McCool and Frost (1987) studied participation in 22 outdoor recreation activities among Montana adults during 1985. Using Bureau of Census projections, the authors attempted to estimate recreation participation in the year 2000. They first related age to participation and then used census estimates of the age distribution among Montana adults in the year 2000. Montana's adult population is expected to increase by 20 percent in 2000, relative to 1985, but it will also be older. Because age is generally negatively related to physically active participation, we would expect overall recreation participation to decline, given a constant population.

And indeed, McCool and Frost found that only 4 of the 22 activities would increase at about the same rates as the adult population: nature study, picnicking, day hiking and fishing — all less physically demanding activities. Increases in participation for backpacking (14 percent) and camping (17 percent) would be moderate. More physically strenuous activities such as motorcycling and alpine skiing are estimated to increase

only slightly (9 percent) by the year 2000.

In total, if we combine the data on backcountry and recreational use with the relative stability in participation between 1979 and 1985, it appears that Montanans and other Americans may be recreating less in the out-of-doors.

Other diverse but related trends provide a mixed picture (Lucas and Stankey, in press). Membership in most but not all environmental organizations was still growing in the early 1980s. On the other hand, managers of many wilderness areas say they have fewer volunteers and even some difficulty in hiring and retaining wilderness rangers.

However, despite some difficulties with the data, we must conclude that a change has occurred, that decades of increasing recreational use of wilderness have been replaced by some other trends. The obvious question is "Why?"

It could be that the market for wilderness recreation has matured. Maturation is common for consumer goods: A new technology or style results in initial rapid growth in sales, which later levels off to the rate of population growth because of the passage of time, market saturation and perhaps competition; this market is then described as mature.

What are the forces underlying the apparent "market maturity" of wilderness recreation? The most obvious seem to be an aging population, less free time, slower growth in the numbers of college students, and changing interests and preferences.

The "baby boomers," who were the enthusiastic hikers of the 1960s and '70s, are approaching middle age. Wilderness recreation participation rates are highest for young adults (Roggenbuck and Lucas 1987), and this age class is no longer growing rapidly. Age is a powerful predictor of recreation participation (Marcin and Lime 1977, McCool and Frost 1987), but there is also an "age-cohort" effect, which reflects when people were born and the influence of that era on lifestyles. For example, the ability to swim is obvious only in the most recent two or three generations; before that, most people did not have the leisure, access or motivation to learn to swim.

English and Cordell (1985) found that the participation rates for many activities have risen since 1960; they suggested that this should reduce the negative effects of aging on recreation participation over time. If there has been a significant cohort effect for wilderness recreation, the impact of an aging population should as yet be only

moderate. Many of the baby boomers, however, are now forming households and having children—generally a stage in the life cycle when wilderness recreation decreases.

Americans are also reporting that they have less leisure time. Work weeks are longer (President's Commission on Americans Outdoors 1986), and leisure hours per week dropped dramatically, from 26 to 17, between 1973 and 1987, according to a Lou Harris poll (Blumrich 1988). A growing number of two-income households increases the difficulty of coordinating vacations. Wilderness recreation use is also influenced by other time factors, including shorter, more frequent recreation trips (Mason 1987) and a trend toward more use in the early and late "shoulders" of the typical summer season — when weather makes many wilderness areas inaccessible for traditional hiking and backpacking.

The most distinguishing socioeconomic characteristic of wilderness users is their high educational level (Roggenbuck and Lucas 1987). The changing numbers of Americans enrolled in colleges and universities suggest that wilderness recreation may also be decreasing. Enrollment grew rapidly in the 1960s, increasing 126 percent from 1960 through 1970. From 1980 through 1985, enrollment grew only 10 percent; older students, those over 24, accounted for most of the increase, another reflection of the aging, post-war baby boomers (Bureau of the Census 1986).

Changing interests also seem to be an important influence on the declining numbers of wilderness visitors. This conclusion is based largely on a process of elimination — no other factors appear to account for much of the change in wilderness use. Several themes may be involved. There is more competition from other activities, ranging from river running and health-and-fitness activities to, at the other extreme, the "couch potato" syndrome. Video cassette recorders may be linked to sedentary lifestyles; VCR ownership skyrocketed 234 percent from 1984 to 1987 (Blumrich 1988). The trend toward staying at home, or "cocooning," has been much noted in the media.

Perhaps the idealized image of wilderness shifted somewhat during the era of rapidly growing use. More people are aware of crowding and environmental impacts, of more visitor regulation and problems such as giardia from contaminated water. In Montana, grizzly bears raise more concern now, especially in Glacier and Yellowstone National Parks, where injuries and fatalities have received widespread publicity.

Visits for many types of outdoor recrea-

Table 2

Growth in Total National Forest Wilderness<sup>a</sup> Use, 1946-86

Year	Use (Thousands)	Average Annual Change (Percent)
	Man-days <sup>b</sup>	
1946	406	—
1955	1,175	12.5
1964	2,872	10.4
	Visitor-days <sup>c</sup>	
1965	4,522	—
1975	7,802	5.6
1986	11,233	3.4

<sup>a</sup>Includes use of primitive areas.

<sup>b</sup>A man-day was defined as one person present for 1 day, but quarter days varied: one-quarter was 15 minutes to 3 hours, one-half was 3 to 5 hours, three-quarters was 5 to 7 hours, and a full man-day was 7 to 24 hours. Thus, man-days cannot be converted to visitor-hours or visitor-days.

<sup>c</sup>A visitor-day is defined as one person present for 12 hours.

tion have become shorter over the past decade, resulting in stable or declining visitor-days, despite more visits (Betz and Cordell, in press). The few studies of such trends in wilderness show somewhat shorter trips and smaller parties (Roggenbuck and Lucas 1987). Therefore, the number of wilderness visitors, especially in groups, may have declined less than RVDs. The lack of reliable data on recreational use of wilderness and on numbers of visitors and groups makes it difficult, if not impossible, to resolve this aspect of use trends.

Wilderness use limits may dampen growth rates, but they do not explain declines in visitors to individual areas (van Wagendonk 1981). Many popular areas, such as the Boundary Waters Canoe Area in Minnesota, instituted controls long before the recent national decrease in wilderness use, and use of that area has not declined. Limits might indirectly reduce use by contributing to a less favorable image of wilderness: Some visitors may view the permit procedures as bureaucratic hassles and avoid wilderness areas in general.

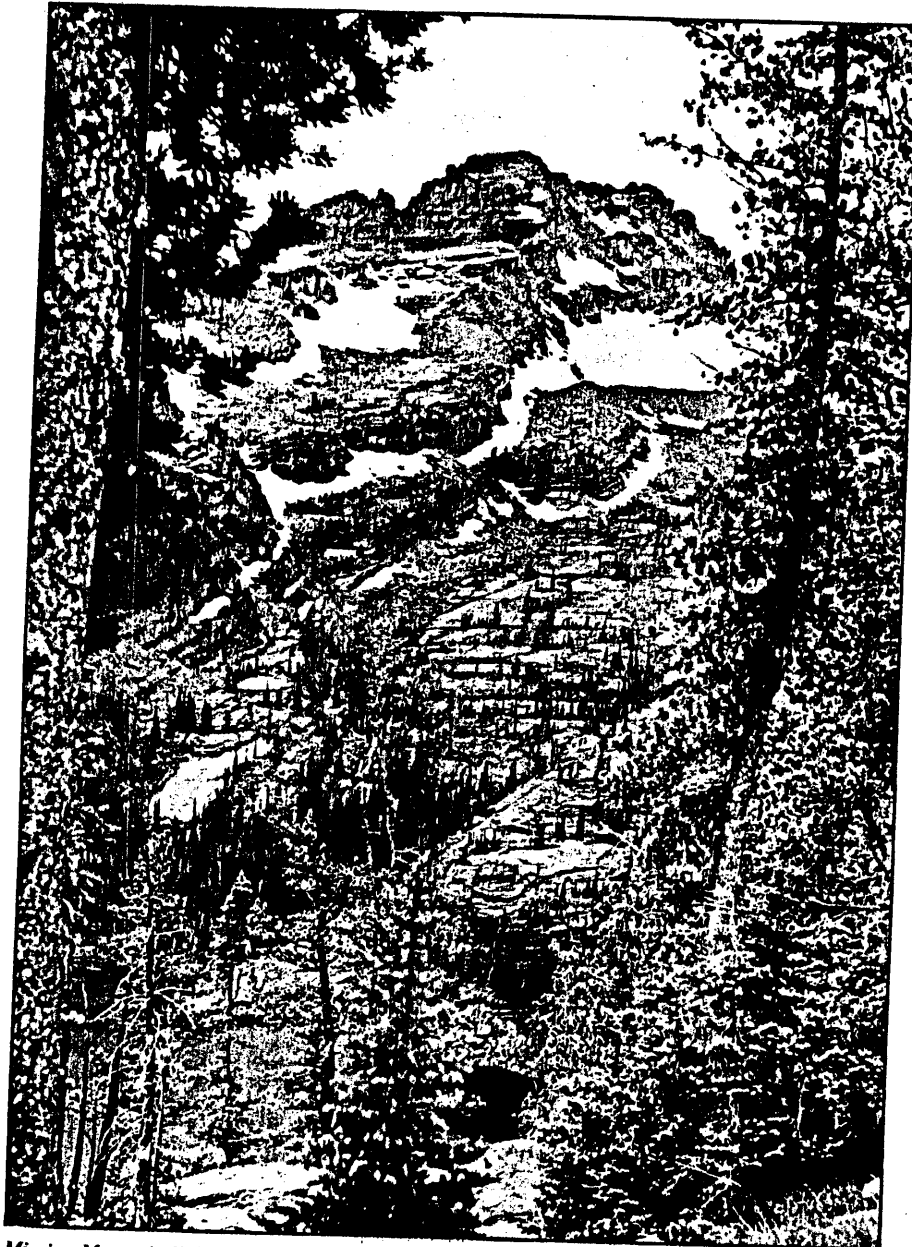
Population distribution changes across the nation also explain little. A fair number of the areas attracting population, especially in the West, have many nearby wilderness areas that still report declining use. California is a striking example of more people, more wilderness and less use.

Finally, although the substantial expansion of the wilderness system since 1964 may have diluted demand and contributed to slowing use in the original 88 units, it is hard to understand how such expansion could negatively affect total wilderness use (Lucas and Stankey, in press).

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What are the management and policy implications of the apparent end to widespread, rapid growth in wilderness recreation? Although overall rates of increase are decreasing or leveling off, managers are still facing heavy use pressures in many areas. Thus, old problem have not gone away, although new ones may not appear as quickly. There is more use of most national forest and national park wilderness areas now than at any time up to the mid-1970s, when concern about wilderness conditions became widespread.

However, continued loss of wilderness solitude and natural conditions no longer seems inevitable. It now appears that use rationing may be avoidable in most areas if use continues to decline, a trend that would also make it easier to preserve truly pristine places inside wilderness. Managers have a



Mission Mountain Wilderness, Montana

Photo/U.S. Forest Service

chance to catch up with use-related problems, and there are now opportunities to avoid the management-by-crisis so common in the past.

This situation could weaken justifications for more wilderness acres, more management and research staff and bigger budgets based on steadily growing recreational use. This could be beneficial, forcing managers to take more developed lines of reasoning about significant issues, values and concerns. A wilderness is more than a primitive recreation area. Because wilderness has important uses and values besides recreation, stable or declining use does not mean that it is less valuable or significant.

An end to booming use may require reconsideration of some management policies. The *quality* of visitor experiences deserves special attention because a mature market for wilderness recreation is probably more discriminating and demanding, implying the need for stricter standards of solitude and ecological integrity. Quality might be enhanced by reducing the regulation that seemed necessary to cope with rapidly increasing use but that might not be essential in a more stable situation. Education may be much more appropriate in current situations.

Even the general taboo on encouraging wilderness use might be worth questioning in areas with large declines in use. Is it really unthinkable to encourage appropriate wilderness use if we truly believe that wilderness provides rewarding, fulfilling experiences?

Any supplier whose markets appear to be in a major transition would want sound data to plan a response. Similarly, professional wilderness management is seriously hampered if use trends cannot be tracked with confidence. If use really is increasing, despite data suggesting a decline, management implications are far different from those suggested in this article. Thus, improving use estimation systems should be a priority.

Closely related is the need for reliable methods to monitor wilderness conditions. Use data only indirectly indicate the quality and condition of the resource. Conceivably, conditions could worsen even if use is relatively stable.

Management responses could also improve if we better understood the probable causes of use trends. Have many people given up wilderness visits? Why? Are fewer younger people visiting wilderness? Why? If some management practices are discouraging visitors, which ones and how? Answers could help managers meet the challenge of a changing wilderness system.



*Lee Metcalf Wilderness, Montana*

*Photo/U.S. Forest Service*

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