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Human Values and Codes of Behavior: Changes in Oregon's Eagle Cap Wilderness Visitors and Their Attitudes

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ABSTRACT: A study of visitors to Oregon's Eagle Cap Wilderness in 1965 offered a baseline against which to evaluate how those who recreate in wilderness have changed their views of wilderness. A study of visitors to that same wilderness area in 1993 provided comparative data. Some characteristics of the visitors changed in ways that would suggest that the values visitors placed on wilderness and on the behaviors they would consider appropriate had changed as well. Specifically, visitors were better educated and were more likely to be members of conservation or outdoor recreation organizations. In addition, they were more supportive of actions to maintain the wilderness character of Eagle Cap, and they were more restrictive in the behaviors they considered appropriate in wilderness. Both manager-initiated education efforts and changes in society are believed to contribute to these changes in attitudes.

INTRODUCTION

In 1964, after many years of discussing and debating the values and uses of a National Wilderness Preservation System, the 88th U.S. Congress passed the Wilderness Act. This action secured "for the American people of present and future generations the benefits of an enduring resource of wilderness" (P.L. 88-577, Section 1[a]). As a result of the Wilderness Act, the states of Oregon and Washington had a combined total of just over 809,000 ha of wilderness newly protected by federal legislation. Just one year after passage of the Wilderness Act, in 1965, at a time of presumed high consciousness of wilderness issues, one of the earliest studies to determine how people feel about the values and appropriate uses of this "enduring resource of wilderness" was conducted. The study, by Hendee et al. (1968), so soon after passage of the Wilderness Act, provides a valuable baseline against which to evaluate changes among the people of this part of the United States in their relationships with wilderness.

Hendee et al. (1968) concluded, from studying the views of visitors to three wilderness areas in Oregon and Washington, that when strong wilderness values existed among the visitors, these values were the product of what these scientists referred to as "high sophistication" (worldliness, characterized by higher than normal educational attainment, association with friends who visit wilderness, and membership in one or more conservation or outdoor orga-

nizations). They also concluded that these values were typically developed early in life and were spread largely through social processes like club membership and association with close friends. At the time, Hendee and coworkers encouraged the stewards of our new National Wilderness Preservation System to become more aware of the social processes underlying trends in wilderness use and how these trends may influence the values which visitors ascribe to wilderness.

Now, just over 30 years after the original Wilderness Act was enacted, there are well over 2,400,000 ha of legislatively protected wilderness in these two northwestern states. Many people assume that wilderness is an established, stable presence in the lives of the residents of the Pacific Northwest. Clearly, though, the region is undergoing substantial social change due to in-migration, a national focus on the region's natural resource issues (e.g., depletion of old growth, endangered species, and economic dependence on timber), and a growing urban population. In 1993, we had the opportunity to examine some of the changes that have occurred in visitors, who mostly come from the state of Oregon, to one of the three areas studied in 1965: Eagle Cap Wilderness in Oregon. We asked a sample of visitors some of the same questions Hendee and coworkers had asked visitors in 1965. Our objectives were (1) to study how visitors typical to this one wilderness had changed in some of the "worldliness" factors found by Hendee et al. (1968) to influence strength of wilder-

ness values (e.g., education and organization membership); (2) to determine how visitors' involvement with wilderness had changed, demonstrated through changes in length of visits to wilderness and number of annual wilderness visits; and (3) to determine how visitors' attitudes about what wilderness should be had changed. This was not a panel study of a specific set of people over time but, rather, a replication of a study at one place 28 years later to gain insight into how users of a specific wilderness differ today from users who visited the wilderness shortly after passage of the Wilderness Act.

METHODS

Eagle Cap Wilderness is in northeastern Oregon, about 6 hours from Portland, 3 hours from Boise, Idaho, and within 4 hours of Spokane, Washington. This wilderness area is in the Wallowa-Whitman National Forest, in an area of high alpine lakes and meadows, bare granite peaks and ridges, and glaciated valleys with thick stands of timber. Elevation within the wilderness varies from 1500 to almost 3000 m. With passage of the Wilderness Act in 1964, Eagle Cap Wilderness was congressionally designated with 87,500 ha. Later additions increased the size to almost 145,100 ha. Forty-eight trailheads provide access to Eagle Cap, and 36 of those have trailhead registration stations. Most of the remaining entrance points are merely wide spots on logging roads and receive very little wilderness visitor traffic. An estimated 85% of the total wilderness use occurs through 24 of the 36 trailheads with registration stations. Hendee et al. (1968) noted that at the time of the 1965 survey, more visitors used horses in this wilderness than at any other wilderness in the Pacific Northwest Region of the U.S. Forest Service. They still estimated, however, that hikers outnumbered horseback riders just over 2:1.

In 1965, trailhead self-registrations at Eagle Cap Wilderness were sampled for a mailback survey. A mailing of the questionnaire, with one postcard reminder to nonrespondents, provided a response rate of about 70% and 343 usable surveys. In 1993, trailhead registration records were again sampled at lower-

use entrance points. At moderate to heavy-use accesses, however, U.S. Forest Service volunteers or employees worked randomly selected sets of days throughout the use season to obtain a visitor sample. A follow-up postcard and as many as two follow-up mailings of a letter and a new survey produced an 80% response rate and 428 usable surveys. Thus, comparable methods with some slight variations were used to sample and survey Eagle Cap visitors in 1965 and 1993. In both years all users—hikers and horse riders, day users and campers, hunters and others—were combined as one population of users.

Hendee et al. (1968) examined the way the sample of visitors viewed wilderness by recording the level of agreement they reported with several statements about proposed management actions and use of wilderness, and about the appropriateness of several types of visitor behaviors. The response scale for these questionnaire items included the possibility for a visitor to strongly agree, agree, disagree, strongly disagree, or give a neutral response to statements about the appropriateness of various events or policies in wilderness. Visitor support of proposed management actions and uses are thought to represent a reflection of the meanings and related values visitors hold regarding wilderness. Among the management actions and uses studied were encouraging livestock grazing in wilderness, prohibiting hunting, allowing moderate improvements to campsites, considering visitor safety over wilderness experiences of others, building outhouses in the wilderness, limiting the number of people

using the wilderness at one time, allowing natural fires to burn, allowing natural insect infestations to run their course in wilderness, and prohibiting packstock use. Attitudes toward some wilderness behaviors were examined, also, by asking visitors how strongly they agreed or disagreed that each behavior was consistent with their views of wilderness. These included camping wherever you please in wilderness, cutting brush or boughs for a bed or firewood for a campfire, burying noncombustible trash, considering a campfire a necessity to make an evening in wilderness complete, bringing radios into the wilderness, taking shorter routes than designated trails follow, paying user fees, and building temporary corrals to contain packstock.

These questions were again asked in the same manner in 1993. Also, age, education, number of previous wilderness trips, length of typical wilderness trips, and whether the visitor was a member of a conservation or outdoor recreation organization were recorded.

RESULTS

As in the earlier study by Hendee et al. (1968), the majority of visitors in the 1993 sample were between the ages of 25 and 54 (Table 1). The percentage in the category 35–54 years increased noticeably (from 48% to 62%). This change was a significant one, and it is contrary to the shifts apparent in regional and national trends, where this age group decreased slightly. These data suggest that Eagle Cap visitors

Table 1. Age distribution for Eagle Cap visitors in 1965 and 1993, compared to general census data for 1960 and 1993.^a

	Age Groups (years)					
	16–18 (%)	19–24 (%)	25–34 (%)	35–54 (%)	55–64 (%)	65+ (%)
1965 Eagle Cap (n=343)	6.9	12.5	25.2	47.7	5.9	1.8
1993 Eagle Cap (n=428)	1.7	8.2	19.2	62.3	5.1	3.1
U.S. Population (1960)	5.7	11.9	19.6	36.7	13.3	14.1
U.S. Population (1993)	5.4	12.0	22.5	32.7	11.0	16.3
Oregon Population (1960)	6.9	10.0	17.5	38.3	13.7	13.6
Oregon Population (1993)	8.0	11.4	19.8	33.6	10.2	17.0

^aCensus data are for only the range comparable to wilderness visitors surveyed (≥ 16 years).

today represent an older segment of our society than they did at the time of passage of the Wilderness Act. This finding is one of the few trends in wilderness visitor characteristics found consistently in previous studies (Cole et al. 1995).

Using the educational categories reported for the 1965 visitor survey for comparison, the 1993 sample differed from the earlier sample in educational attainment (Table 2). The proportion with a high school education, or less, decreased from 38% to about 11%. Accordingly, the proportion studying beyond high school increased substantially. In fact, in 1993, 69% had completed a 4-year degree and 39% had 2 or more years of graduate study. While these figures are not directly comparable to regional and national census figures owing to exclusion of those under 16 years of age in the visitor study and exclusion of those under 25 years of age in census data, it appears that this change corresponds to societal shifts in educational attainment. The level of educational accomplishment for Eagle Cap visitors remains much higher than that for the regional or national population, however.

The number of visitors who belong to conservation or outdoor recreation organizations also increased (25% in 1965, 44% in 1993). This change reflects the increases in membership reported consistently by membership organizations, though exact membership rates of the regional or U.S. population in national as well as local organizations are not known. These data describe important characteristics of Eagle Cap users, and changes are obvious. Both the magnitude and direction of change on these items suggest that these users are more "worldly" than the earlier group of visitors, to use the Hendee et al. (1968) term. Contrary to expectations (Roggenbuck and Watson 1989, Watson 1989), however, an approximation of the average length of stay in wilderness (3 days in 1965, 3.7 days in 1993) and the typical number of wilderness visits per year (5.5 trips in 1965, 5.6 trips in 1993) did not change over this time period.

Response to the wilderness values and codes of behavior questions showed con-

sistent increases in evidence of a deep commitment to "an enduring resource of wilderness" and a purist attitude toward appropriate behaviors by the visitors of 1993. For example, when appropriate be-

haviors were explored, visitors were asked if they should be able to camp wherever they please in the wilderness. Nearly two-thirds of the 1965 visitors agreed with that statement; less than one-fourth of the 1993

Table 2. Distribution of education levels for Eagle Cap visitors, compared to general census data for 1960 and 1993.^a

	Percent Finished High School or Less		Percent Finished Above High School	
	1965	1993	1965	1993
Eagle Cap visitors	37.9	11.3	62.1	88.7
	1960	1993	1960	1993
U.S. Population	92.3	57.8	7.7	42.2
Oregon Population	80.3	47.4	19.7	52.6

^a Eagle Cap figures represent those visitors over 16 years of age; census data represent persons 25 and older, and therefore are not directly comparable to visitor data.

Table 3. Comparison of wilderness codes of behavior, 1965 and 1993, Eagle Cap Wilderness.^{a,b}

Code of Behavior	% Agree		% Neutral		% Disagree	
	1965	1993	1965	1993	1965	1993
<i>Visitors should be able to camp wherever they please in the wilderness.</i>	64	22	8	7	28	71
<i>In the wilderness, a person should be free to cut brush or limbs for his or her bed, and for wood for a campfire.</i>	53	17	13	10	34	73
<i>Noncombustible trash (e.g., tin cans, aluminum foil, unburned garbage) should be buried.</i>	87	9	1	2	12	89
<i>Camping isn't complete without an evening campfire.</i>	76	37	16	16	8	47
<i>Radios should not be brought into the wilderness.</i>	23	67	41	17	36	16
<i>If a person sees a shorter route than the trail maker used, he or she should have the right to decide whether to stay on the trail or not.</i>	35	10	15	7	50	83

^a All codes of behavior responses changed significantly from 1965 to 1993 (chi-square $p < 0.01$).
^b Measured on a five-point scale from Strongly Agree to Strongly Disagree. Agreement and disagreement categories are collapsed for comparison.

sample agreed (Table 3). A similar level of change was exhibited in response to the question about appropriateness of cutting wood for a campfire or tree boughs for a bed. Only about one-third thought it was inappropriate in 1965; three-fourths thought it was inappropriate in 1993. Attitudes toward the necessity of a campfire, burying noncombustible trash, bringing radios into the wilderness, and taking shortcuts all showed similar shifts in perceptions of appropriateness. Clearly, Eagle Cap visitors in 1993 were much more concerned about their impacts on wilderness.

Views also changed on some controversial wilderness values between 1965 and 1993 (Table 4). Support for allowing lightning-caused fires to run their course increased from about 3% to 44%. Similarly, over one-third (43%) of the 1993 sample supported allowing heavy infestations of native insects to run their course in wilderness areas, compared to only 5% support in 1965. The apparent value placed on risk and being self-sufficient is reflected in the decrease in support of placing highest priority on rescue of injured or lost visitors. Some items with less dramatic changes but still demonstrating significant shifts in a purist direction, include reduced support for allowing pack animals, livestock grazing, hunting, building outhouses, charging fees, and building corrals for livestock in wilderness areas and increased support for restricting the number of people in wilderness areas at a given time.

Also deserving of attention are the items that exhibited substantial changes in the percentages of neutral responses (Table 4). While support for allowing lightning-caused fires to run their course in wilderness increased from 3% to 44%, the proportion of people not sure about this item also increased dramatically, from 3% to 28%. Similarly, the percentage of neutral responses about allowing heavy insect infestations to run their course in wilderness also increased substantially, from about 8% to 26%. Just the opposite happened for bringing radios in the wilderness, where the proportion of neutral responses decreased from 41% to 17% (Table 3).

Table 4. Comparison of wilderness values, 1965 and 1993, Eagle Cap Wilderness, Oregon.

Wilderness Value	% Agree		% Neutral		% Disagree	
	1965	1993	1965	1993	1965	1993
<i>Lightning-caused fires should be allowed to run their course in wilderness.^a</i>	3	44	3	28	94	28
<i>Heavy infestations of native insects should be allowed to run their course in wilderness.^a</i>	5	43	8	26	87	31
<i>The use of pack animals should be prohibited in wilderness, since they do considerable damage to natural features.^a</i>	9	34	14	25	77	41
<i>Livestock grazing as a revenue-producing use should be encouraged in wilderness.^a</i>	17	9	17	10	66	81
<i>Hunting should be forbidden in wilderness.^a</i>	37	47	12	14	51	39
<i>Moderate improvement of a campsite is desirable (e.g., removing brush and limbs, putting nails in trees for utensils, simple box cupboards).^a</i>	36	13	13	10	51	77
<i>In an emergency, the person or party in trouble in the wilderness has first claim on the time and energy of everyone near, even if some cherished plans have to be abandoned.^a</i>	93	69	4	13	3	18
<i>Outhouses are consistent with proper use of wilderness.^a</i>	50	32	16	23	34	45
<i>Use of wilderness should be restricted to limited numbers of people in a given area at a given time.^a</i>	29	54	23	23	48	23
<i>Costs of wilderness administration should be defrayed by some form of moderate charge to users.^a</i>	44	42	23	21	33	37
<i>Corrals for livestock are consistent with proper use of wilderness.^a</i>	28	24	23	22	49	54

^a Significant difference, 1965-1993, $p < 0.001$

CONCLUSIONS

From their 1965 study of wilderness users and their values, Hendee et al. (1968) found that people with the greatest educational levels who were also members of organized groups involved in conservation or wilderness, or were friends with such members, exhibited the most wilderness-minded values. The 1993 replication of this study found that educational attainment levels and membership in conservation groups had increased substantially among visitors to Eagle Cap Wilderness. As Hendee and coworkers may have predicted, along with these increases in educational attainment and conservation group membership, came dramatic increases in the strength of wilderness values and standards for behavior in wilderness for this group.

Although visitors to Eagle Cap Wilderness are even more highly educated and more active through organization memberships today than those of 28 years ago, there are other factors that influence their wilderness-related values. Managers have had the opportunity to inform visitors about the negative effects of their behaviors in wilderness for over 30 years, something that was not a common practice before 1964. In fact, Eagle Cap was the focus for early visitor education programs. Such behaviors as selecting a campsite in a responsible manner, reducing campfire building, carrying out trash, and avoiding trail shortcuts were strongly and early emphasized in "Leave No Trace" educational messages at Eagle Cap, as they are today throughout the National Wilderness Preservation System.

Not only have managers emphasized these potentially impact-reducing behaviors in

wilderness, but regional and national media have brought to the public's attention such issues as the role of natural fire and natural insect infestations in wilderness. The most dramatic effect is the proportion of people now demonstrating a neutral attitude toward these issues, versus the strong negative attitude observed in 1965. The amount of protected wilderness has grown threefold in the extreme Pacific Northwest. The documentation and visibility of loss and threat to nonwilderness, nonroaded lands are of regional and national importance and have the potential to influence attitudes about the value of protecting areas as wilderness. The apparent increase in value for Eagle Cap Wilderness as a place where natural forces dominate is supported by this stronger support of natural fires and insect infestations and concern about impact-causing human behaviors. This support probably reflects greater understanding of the role of fire and insects as natural forces. These shifts in values show growth in acknowledgment of the many nonrecreational values of wilderness specified in the Wilderness Act.

In the future, as old-growth forest and nonroaded places become more scarce outside of designated wilderness, we may see increased concentration of those who value these natural amenities among visitors to wilderness areas. While the increasing educational level of our general population may lead to increased awareness of the value of wilderness to society, visible impacts on nonwilderness lands, such as have occurred in the Pacific Northwest, may also encourage understanding and appreciation for the range of opportunities provided by creation of the National Wilderness Preservation System.

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