How the Public Views Wilderness

More Results from the USA Survey on Recreation and the Environment

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Abstract: More than 1,900 people in the United States over age 15 were asked about their awareness of the National Wilderness Preservation System, adequacy of the amount of wilderness protected, and the importance of various benefits or values from wilderness protection. Findings indicate broad support for the concept of wilderness, based mostly on the ecological, environmental quality, and off-site values respondents believe wildland protection provides. Of lesser importance are various forms of on-site use values, including the secondary effect of stimulating income for the tourism industry.

IN *IJW*, VOLUME 4, NUMBER 1, national estimates of the annual number of trips U.S. residents take to wilderness were presented based on analysis of the National Survey on Recreation and the Environment (NSRE) (Cordell and Teasley 1998). The focus of that article was on recreational trips and the people who reported they took trips to areas of the U.S. National Wilderness Preservation System (NWPS). In addition to recreation use, which was the focus of this earlier paper, there are many other values people may attribute to wilderness, including experiential, mental/moral restoration, and scientific (Watson and Landres [in press]). For the most part, however, this expanded list of values remains focused on on-site uses and values requiring one's physical presence in a wilderness for realization of such values.

To be more comprehensive, off-site, nonuse values should also be considered as part of the full value of wilderness (Walsh and Loomis 1989). Off-site values include a range of potential benefits that can accrue to people whether or not they ever enter wilderness. The 1995 NSRE included a 13-item wilderness value scale (WVS) that covers a range of on-site and off-site wilderness values (Haas et al., 1986). This paper examines the U.S. public's ratings of the relative importance of these 13 wilderness values. People's knowledge of the NWPS and their opinions about the current size of the system are also studied.

Study Design

The NSRE was a telephone survey of a random sample of more than 17,000 noninstitutionalized persons over the age of 15 throughout the United States. Of this overall sample, a subsample of approximately 1,900 was asked a series of questions specifically about wilderness. Among the wilderness topics addressed were questions about awareness and adequacy of the size of the NWPS. Analysis of the NSRE wilderness subsample provided overall estimates for the national population, as well as estimates of awareness and perceptions of adequacy of the system by east-west region of residence, three age groups, metropolitan vs. rural place of residence, and white vs. nonwhite races. In addition to comparisons of wilderness values, item by item, a Varimax rotated principal components analysis was run on the data to explore whether the 13 items in the WVS could be described as a smaller number of wilderness value factors. The multiple-item factors that resulted were subsequently used in multiple regression analysis to see how they were related to differences among survey respondents in age, race, gender, education, employment, and other individual and household characteristics.

Results

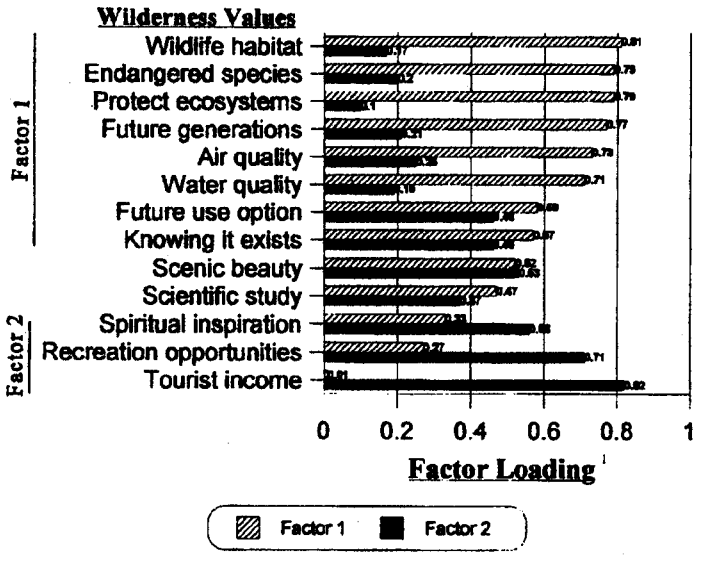
Analysis of the NSRE showed that 44.4% of the U.S. population over age 15 reported that they knew of the existence of the NWPS. For all respondents the purpose and real extent of the NWPS was clarified when they were asked the following question: From what you know about areas set aside under the Wilderness Act of 1964, do you think that the amount of designated wilderness is not enough, about the right amount, or too much?

Response Item	*Percentages*
Not enough	55.7%
About the right amount	29.3%
Too much	2.5%
Not sure/Don't know	12.5%

Percentages aware of the NWPS and percentages indicating their feelings about adequacy of the existing amount of protected wilderness were compared between respondents across selected demographic characteristics. The results of these

comparisons are shown in Table 1. From these comparisons there appears to be a slight tendency for more western residents and whites to be aware of the NWPS, although the percentages shown in Table 1 were not significantly different. Significantly higher proportions of persons over 30 years old (especially those over 55) did report being aware of the NWPS (p=0.05 using chi square as the statistical significance criterion). In feelings about adequacy of the amount of wilderness currently under protection, slightly greater (although not statistically significant) percentages of metro and eastern residents and of whites indicated there is not enough acreage in the current system. As with system awareness, age was significant, (p=0.05); however, the majority of persons 55 or under indicated there is not enough wildland protected in the NWPS and a much higher percentage of persons over 55 (relative to those 55 or under) felt that the amount of acreage currently in the system is about right.

Figure 1—Loadings on Two Orthogonal Factors from the 13 WVs Items Using Principal Components Analysis with Varimax Rotation



Wilderness Values

To introduce the WVS to respondents, the following wording was used: "Wilderness areas have many different values for different people. For each value I will list, please tell me whether it is extremely important (=1), very important (=2), important (=3), slightly important (=4), or not important (=5) to you as a value of preserving wilderness and primitive areas." Table 2 presents the percentage of respondents who indicated they considered it either a very important or extremely important value of wilderness and percentages of respondents who considered each not important. Also shown in Table 2 are means and standard errors for the 5-point importance scores for each of the 13 items in the WVS. (The test for internal consistency—reliability coefficient—indicated the WVS, as used in the NSRE wilderness sample, was highly reliable in performance, Cronbach's alpha=0.90.)

Exploratory factor analysis was run to see if the 13-item value scale could be reduced to a fewer number of dimensions (factors) based on similarity of response on WVS items. Factor analysis was conducted with SPSS/PC (Norusis 1994) and the principal components analysis method (with Varimax rotation to generate uncorrelated factors). Missing cases were excluded using pairwise deletion, leaving a sample size for each item ranging from n=1902 to n=1939. Factors with eigenvalues greater than 1.0 were retained (see Figure 1).

By retaining items with factor loadings of .50 or larger, two factors, "Wildland protection" and "Wildland utilization," were defined. Two items, "use of wilderness for scientific study" and "providing scenic beauty," could not be assigned definitively to either of these factors. In the case of scientific study, loadings were below .50 on both factors, the criteria selected for retention. In the case of scenic beauty, item loadings on the two factors were about equal, thus

Table 1—Percentage of Americans Aware of the National Wilderness Preservation System

Demographic Characteristics	Percentages of Respondents: Aware of the NWPS	Feeling about amount: Not enough	About right
Metro resident	44.2	56.9	27.9
Rural resident	45.2	52.0	34.0
Eastern resident	42.7	56.3	28.0
Western resident	49.9	53.7	33.3
Age 16-30	31.8	63.6	25.7
Age 31-55	48.3	57.2	27.6
Age over 55	57.1	38.3	39.4
Race is white	45.5	56.4	28.7
Race is nonwhite	37.6	51.3	32.9
All Americans over 15	44.4	55.7	29.3

Table 2—Percentage of Americans Indicating "Very or Extremely Important" and of Respondents Indicating "Not Important" and Mean Score with Standard Error of Each of 13 WVs.

Wilderness Value [1]	Percentages of Respondents: Very or Extremely Important	Not Important	Mean (and Standard Error, E-02) [2]
Protecting water quality	78.9	1.7	1.77 (1.94)
Protection of wildlife habitat	78.6	2.6	1.81 (1.98)
Protecting air quality	78.0	2.6	1.79 (2.03)
For future generations	76.9	2.0	1.84 (1.96)
Protection for endangered species	73.7	4.9	1.92 (2.23)
Preserving ecosystems	66.5	7.0	2.14 (2.34)
Scenic beauty	59.7	5.4	2.18 (2.19)
Future option to visit	59.4	7.7	2.24 (2.37)
Just knowing it exists	56.1	6.4	2.23 (2.26)
For scientific study	46.3	14.1	2.55 (2.40)
Recreation opportunities	48.9	10.1	2.46 (2.22)
Providing spiritual inspiration	43.2	18.3	2.62 (2.65)
Income for tourism industry	22.8	41.1	3.33 (2.77)

[1] The reliability coefficient (Cronbach's alpha) for the WVS was 0.90
[2] Value scores ranged from "extremely important" = 1 to "not important" = 5.

scenic beauty could not be assigned to either (Hatcher 1994). The wildland protection factor explained 47.4% of the total variance; the wildland utilization factor explained 9.7% of the variance.

Value Differences Among Social Strata

To look for associations between the resulting factors and demographic characteristics of the respondents who scored the 13 WVS items, a stepwise multiple regression was conducted in SPSS/PC (Norusis 1994), with pairwise deletion of missing cases. A number of demographic variables were added to the age, gender, and residence variables described earlier. These included: (1) number of vehicles owned by the household (ranging in the data set from zero to 25); (2) highest grade of education completed (on a scale running from 1 equaling 8th grade or less to 7 indicating some graduate school); (3) hours of leisure time per week (ranging from zero to 167 hours); (4) age (16 to 99 years); and (5) total family income (1=less than $5,000 to 11=more than $150,000). In addition, the following dichotomous variables were included: gender (0=female, 1=male), race (0=nonwhite, 1=white), employment (0=no, 1=yes), retired (0=no, 1=yes), student (0=no, 1=yes), full-time homemaker (0=no, 1=yes), and awareness of the NWPS established by Congress (0=no, 1=yes). A significance level of p=.01 was used to determine importance, due to the large sample size involved.

Overall, this regression analysis revealed very little relationship between demographic characteristics and weighted scoring across items that loaded on each of the two WVS factors. None of the 12 demographic variables or NWPS awareness were significantly related to the factors at the 0.01 significance level. The total amount of variance explained for each of the two factors ("wildland protection" and "wildland utilization") was 0.02.

Discussion

The topic of "protecting wildlands" in the United States inevitably includes discussion or debate about the degree to which the public may or may not support such protection, particularly the addition of acreage to the NWPS. Those opposed will usually assert that the public does not support such wildland protection, especially wilderness preservation, and that the system is set up to benefit an elite few. Those favoring wildland protection, including protection through wilderness preservation, often argue that broad public interests are being served by setting up the NWPS and that the majority of the public supports it. In this paper we have looked first at the degree to which the public reports knowing that the NWPS exists, and second, we have examined the values the public ascribes to wilderness.

Results from the recent NSRE indicated that a surprisingly high 44.4% of Americans over the age of 15 were aware of the NWPS. We speculate that some number among those indicating they were aware of the system might not, in fact, actually understand the NWPS as it was defined in the Wilderness Act of 1964. However, there is obviously some form of "brand" recognition among many in our society with reference to the designated U.S. NWPS.

In addition, when wildland preservation and wilderness are discussed, there are often speculations about how the U.S. taxpayer feels about the amount of area this country has designated for protection as wilderness. The debate between jobs and "locking up" natural areas is almost assuredly one that most people have encountered in the media and thus should have some knowledge about the basic arguments. If not exposed through coverage pertaining to wilderness per se, certainly most have been exposed to the debate over protection of wild areas for a variety of reasons (e.g., to provide habitat for the spotted owl). Thus, we believe that most people have some background for evaluating the status of protected wilderness. While being surprised that 44.4% of the public report they are aware of the NWPS, even more surprising is that almost 56% feel we don't yet have enough protected wilderness, while an additional 29% feel the amount protected is about right as it stands. Only 2.5% feel we have designated too much wilderness for protection.

The public seems, in general, to support the concept of wilderness. The benefits from wilderness they (we) particularly seem to value include protection of water quality, protection of wildlife habitat, protection of air quality, protection to pass natural lands along to future generations, protection of endangered species and their habitats, preserving plant and ani-

mal ecosystems and genetic strains, protecting scenic beauty, having the option to visit an area in the future, and just knowing it is there. These were the aspects of wilderness protection that over half of the respondents indicated were either very important or extremely important. Particularly important to respondents were the first five values listed above which three-fourths of respondents rated as very or extremely important. Providing a source of income for tourism, personal/spiritual inspiration, and having natural areas for scientific study were the value items with the highest percentages of respondents indicating slight to no importance.

Based on the principal components analysis, it is evident that our sample of the U.S. public saw in the 13-item WVS two basic dimensions of value of the NWPS. The first dimension is wildland protection. This dimension (factor) includes eight of the nine value items listed above as being most important to the majority of respondents (the exception being scenic beauty). The resulting wildland protection factor includes protection of air and water quality, habitats, ecosystem functioning, as well as existence, option, and bequest values (Walsh and Loomis 1989). The second value dimension is wildland utilization. This factor focuses on direct benefits associated with on-site use through recreation or scientific study or through the secondary economic effects of recreation use as tourism income to businesses. Many fewer respondents cited wildland utilization as a value of wilderness than cited wildland protection as a value.

Conclusions

Better understanding of the public awareness of the NWPS, feelings about the adequacy of total area currently protected as wilderness, and the values they hold with regard to wilderness should help public land managers and groups with interests in wilderness preservation to better understand where the U.S. public stands on wildland protection. While some may argue that the respondents did not really understand what they were being asked and that they were uneducated about the issues, we cannot ignore the importance of what this study seems to show. It indicates broad, more-than-majority, support for wildland protection based on ecological and environmental protection and on intergenerational altruism values or benefits. It seems not to show that the U.S. public supports wilderness for self-serving and economic reasons. This broad support holds across rural/urban, eastern/western, and some different racial segments of society, and if the observed differences among age groups are in any way predictive of the future, this support may be even more pronounced among future generations.

Is the public uninformed of the details of the issues on both (or all) sides of the wilderness preservation question? Yes, for most respondents, more than likely. Does being uninformed of the details mean that one's opinions or preferences don't count? Not in the United States! Indeed, not in most of the rest of the world. For ages we have heard some within the natural resources professional community argue that the public is uninformed, and important decisions should, therefore, be left to the professional who does understand. Fortunately, that form of management is fading and being replaced by one that starts and operates on the principle that "stakeholders" must be integrated into natural resources decision making, including legislation that considers wildland protection measures and designations.

The findings in this paper indicate that the stakeholders in the wilderness debate are spread broadly throughout the public, indeed, not limited to an elite few. Across income, education, lifestyle, gender, race, employment status, and age groups, there were no statistical differences in the values people ascribe to wilderness. Protection of wilderness seems to be widely supported across people with very different livelihoods and lifestyles. There are possibly, however, other social factors that would help explain why people hold differing views on the values of wilderness. A useful line of research would be to broaden studies to include social-psychological variables, such as preferences for wilderness designation, past wilderness behaviors (experience-use history), and related environmental conservation perceptions and behaviors. In addition, looking at political orientation variables (such as voting patterns), might add to our understanding of peoples' different value orientations toward wilderness. **IJW**

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