

Survey Responses From Region 8: Are We Achieving the Public's Objectives for Forests and Rangelands?

DEBORAH J. SHIELDS, MICHELLE HAEFELE, AND DONNA L. LYBECKER



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Abstract

The survey on values, objectives, beliefs, and attitudes, implemented as a module of the National Survey on Recreation and the Environment, asked over 7,000 respondents nationwide about their values with respect to public lands, objectives for the management of these lands, beliefs about the role the USDA Forest Service should play in fulfilling those objectives, and attitudes about the job the agency has been doing. This report—one of a series of similar regional reports—shows respondents from the South (USDA Forest Service Region 8: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, Virginia) are somewhat more strongly in favor of increasing law enforcement efforts on public lands and restricting mineral development on forests and grasslands than respondents from the rest of the United States. Respondents from the South are also slightly less inclined toward preserving the ability to have a “wilderness” experience on forests and grasslands. Nationwide, as in the South, the most important objective was conserving and protecting forests and grassland watersheds.

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- *Survey Responses From Region 3* (Arizona and New Mexico) RMRS-GTR-156
- *Survey Responses From Region 5* (California and Hawaii) RMRS-GTR-157
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Deborah J. Shields, Michelle Haefele, and Donna L. Lybecker

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Introduction

The mission of the USDA Forest Service is twofold: caring for the land, and serving people. Because personal satisfaction is an individual concept with multiple facets, providing high-quality customer service and achieving high levels of customer satisfaction can be as complex and challenging as managing for healthy ecosystems.

A person's attitudes about the Forest Service are often influenced by the nature and outcomes of his or her interactions with Forest Service employees. Were they polite, knowledgeable, helpful, professional? Was the process straightforward, efficient, prompt, and fair? Was the desired outcome achieved, such as acquiring a fuelwood permit or getting information on day hikes? Although traditional customer satisfaction surveys do a good job of collecting this type of information, they tend to focus on delivery of services to specific classes of "users" (permittees, applicants for timber sales or grazing allotments, etc.), and are not designed to capture the preferences and attitudes of the broader public.

In addition to personal interactions with the Forest Service, people's perceptions of the agency are also influenced by their attitudes about how and toward what end the agency manage the land. The agency and various segments of the public have both general, and in some cases quite detailed, objectives related to the health of forests and rangelands, the means by which we should manage those lands, and the activities that should be allowed to take place on them. If stakeholders observe that an objective they deem important is not being fulfilled, their satisfaction with the Forest Service may be lower, regardless of the quality of their interactions with individual Forest Service employees or their experience with agency protocols. Gaining an understanding of the public's objectives and their consistency with agency objectives, or lack thereof, can provide useful input to the strategic planning process.

The agency's goals and objectives are embodied in the 2000 Strategic Plan. Information on the public's goals and objectives has been collected through an ongoing survey entitled "The American Public's Values, Objectives, Beliefs, and Attitudes Regarding Forests and Rangelands" (hereafter VOBA). The VOBA survey asked respondents about their environmental values as they relate to public lands, their objectives for the management of forests and rangelands in general, as well as those managed by the Forest Service, their beliefs about whether it is the role of the Forest Service to fulfill those

objectives, and their attitudes about the performance of the agency in fulfilling these objectives.¹ This report presents data from the USDA Forest Service's Region 8, the Southern Region.²

Methodology

Objectives Hierarchy

The VOBA survey's objectives, and related belief and attitude statements, do not ask respondents about their opinions of the goals in the Forest Service Strategic Plan. Nor do they ask for an individual's reaction to the Chief's Agenda or Leadership Team priorities. Rather, the VOBA survey's objectives statements were developed during a series of 80 focus group meetings conducted with members of various stakeholder groups as well as individuals throughout the country. As such, they represent the main objectives for land management as they were presented to us by the public.

Based upon the results of the focus group interviews, an objectives hierarchy was constructed for each group. These hierarchies indicated goals each group or individual had for the management of forests and rangelands, and how they would like to see each goal or objective achieved. These objectives ranged from the abstract strategic level to the more focused or applied means level (figure 1 and the Appendix).

Within the objectives hierarchy the strategic-level is an abstract objective. Fundamental level objectives represent a context-specific application of strategic objectives. End-state fundamental objectives represent the desired state of the world. Fundamental means objectives capture the methods by which the desired end-state should be achieved.

VOBA Statements

The objectives elicited from all the focus groups were pooled, duplications eliminated, and overlaps reorganized. The 30 remaining items formed the fundamental

¹ For more detailed information on the survey, see Shields, D., M. Martin, W. Martin, and M. Haeefe. 2002. *Survey Results of the American Public's Values, Objectives, Beliefs, and Attitudes Regarding Forests and Grasslands*. Gen. Tech. Rep. RMRS-GTR-95. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

² Region 8 consists of: AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, and VA.

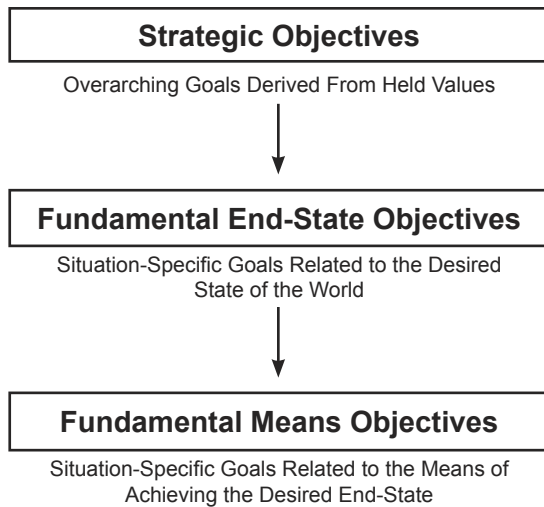


Figure 1—Objectives Hierarchy.

objectives that indicate both end-state preferences and the means by which they should be achieved. Each correlates to one of the strategic objectives. Five strategic-level objectives were consistently revealed: Access, Preservation/Conservation, Economic Development, Education, and Natural Resource Management.

The belief and attitude statements tier down directly from these objectives. For example an objective might be “more hiking trails.” The corresponding belief question asks whether the respondent believes that providing more hiking trails is an appropriate role for the USDA Forest Service. The attitude question would then elicit input on the respondent’s perception of how well the agency is doing at providing hiking trails.

The Public Lands Values were developed using approximately 200 items that, through a series of iterations using both student and adult samples around the United States, was reduced down to 25 items. These items were designed to focus on values that people hold for the environment in general and public lands in particular. They have been tested on four National Forests in Colorado (Arapaho, Roosevelt, Pike, and San Isabel) using various traditional and nontraditional stakeholder groups. Past research and testing have shown that responses to the Public Lands Values can be arranged into two categories: Socially Responsible Individual Values (SRIV) and Socially Responsible Management Values (SRMV).

The survey utilizes the objectives, beliefs, attitudes, and values statement by asking respondents to indicate their level of agreement or approval for each. Level of agreement or approval is indicated on a scale from one to five. The objectives scale items are anchored by 1=not at all important and 5=very important. The Value and Belief

scale items are anchored by 1=strongly disagree and 5=strongly agree. The Attitude scale items are anchored by 1=very unfavorable and 5=very favorable.

The value scale in the VOBA survey differs from other value survey instruments in that it focuses on values associated with public lands. It is applicable at multiple spatial scales, and in addition to being used in the national VOBA survey, has been applied at the National Forest scale. Conversely, objectives may be applicable only at the regional or national scale, be location specific, or be meaningful at multiple scales. The VOBA survey objectives are applicable to the management of forests and rangelands at a broad geographic scale. Many of the objectives are also meaningful at the regional level. However, the public may have additional objectives that are specific to their home region and are not captured in the existing national survey instrument.

Data Collection

The survey was implemented as a module of the National Survey on Recreation and the Environment (NSRE) with a sample size of 7,069 nationwide and 2,567 in Forest Service Region 8. (The number of responses in any Forest Service Region is a function of the overall VOBA sampling design.) For each State the size of the sample was proportional to its population. The data were collected between late 1999 and early 2000. The NSRE is a random telephone survey administered for the Forest Service by the University of Tennessee.³ In addition to the VOBA questions, respondents were asked about their recreational behaviors; basic demographic information was also collected. Due to a limited amount of time available for each phone interview, each individual was asked to respond to only a portion of the full set of VOBA questions. Each respondent was asked about one fundamental objective from each of the five strategic level objective categories. Due to this split sampling design, each item in the objectives, beliefs, and attitude scales has fewer than the full 2,567 respondents.

The overall goal of this split sampling design was to control interview time with respondents, yet collect analytically valuable information. This not only lowers costs, but also reduces respondent burden, which should lead to fewer non-responses and therefore to a better

³ One drawback of a telephone survey such as the NSRE is that it will not adequately represent the views of segments of the population who do not have access to or who choose not to have telephones.

sample quality.⁴ To ensure high confidence levels, the full national survey was designed so that there was a minimum of 700 responses for each question. This design generates response numbers for each question that are adequate to support multivariate statistical analysis and provide a high level of confidence in the results. In Region 8 the response numbers for each question ranged from 249 to 828. As a result of this smaller sample size for Region 8 there is a greater chance the results do not fully reflect the precise demographics of the Region. The sample size is still large enough, however, to give a relatively high level of confidence in the results.

Finally, it is important to note that the wording of the statements within the VOBA was designed with public lands in mind. Thus some statements may raise questions concerning the appropriateness of the language for private lands. In other words, the language used may not be applicable to some types of private land use concerns, making it less appropriate to draw overarching conclusions about general land management. For example, the objective, “Developing and maintaining continuous trail systems that cross both public and private land for motorized vehicles such as snowmobiles or ATVs,” is written with public land managers in mind. A similar objective, written from the perspective of private landowners, might say something like, “Coordinating with public and private actors in order to support and maintain continuous trail systems that cross both public and private land for motorized vehicles.” Although the wording for many of the objectives do not present this concern, it is necessary to remain aware that respondents may be thinking solely of public lands instead of both public and private lands when responding to some of the objectives.

Results for Region 8: Objectives, Beliefs, and Attitudes

Results from the Region 8 respondents to the VOBA National survey will be broken down into those the public feels are the most important, not important,

⁴ For more information on split sampling designs, see for example, Raghu-nathan, T.E. and Grizzle, J.E. 1995. “A Split Questionnaire Survey Design,” *Journal of the American Statistical Association*, 90: 54-63.

moderately important. We highlight the public’s level of consensus for rating each objective within these groups. We also discuss the extent to which the public feels that it is the job of the Forest Service to fulfill the objective, and examine the perception of agency performance in fulfilling these objectives. A subsequent section presents the Region 8 responses to the Public Lands Values Scale. Finally, responses from Region 8 are compared with those from the rest of the United States.

Objectives Identified as Important

We are designating a mean response of 4.00 or greater (out of a possible 5) as indicating an objective is important. Fifteen of the original 30 objectives have been identified as being important to the people of Region 8. Five have been further singled out as “core” important objectives for the public in Region 8. These core objectives not only have means of 4.00 or higher, but also have low standard deviations (s.d.) (less than 1.00), indicating that the public is generally in agreement that these objectives are important.⁵

Core Important Objectives

The core objectives are presented in detail in table 1. For each of these five objectives we have included a histogram that compares the distribution of responses for the importance of the objective, the agency role, and customer satisfaction. In each case there is agreement that the objective is important, and that it is an appropriate role for the USDA Forest Service. However, for only one objective—the protection of ecosystems—does the public does view the performance of the USDA Forest Service favorably.

Watershed protection—The VOBA objective deemed the most important by respondents in Region 8 is the conservation and protection of lands that are the source of our water resources. This objective has a mean of 4.70 and further a standard deviation of 0.77, indicating that most respondents thought this objective was important. The mean of 4.63 for the corresponding belief statement also indicates that the public considers the protection

⁵ General agreement about the importance of these objectives is revealed with the standard deviation. The standard deviation is defined as the average amount by which scores in a distribution differ from the mean; it offers an indication of the spread of the data. For example, when looking at the importance of a given objective, the standard deviation reveals how tightly all the responses are clustered around the mean score for the stated objective. This helps to reveal if there are extreme responses or if most respondents agreed on their rating.

Table 1--Core important objectives for Region 8.

| OBJECTIVE: | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | Do you believe that fulfilling this objective is an appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> |
|---|--|---|---|
| Conserving and protecting forests and grasslands that are the source of our water resources, such as streams, lakes, and watershed areas. | 4.70 0.77 ^a 479 ^b | 4.63 0.81 448 | 3.91 1.20 408 |
| Developing volunteer programs to improve forests and grasslands (for example, planting trees, or improving water quality). | 4.61 0.76 405 | 4.43 1.07 433 | 3.90 1.23 309 |
| Protecting ecosystems and wildlife habitats. | 4.58 0.91 488 | 4.43 1.02 441 | 4.07 1.03 391 |
| Informing the public about recreation concerns on forests and grasslands such as safety, trail etiquette, and respect for wildlife. | 4.55 0.88 378 | 4.49 0.95 375 | 3.82 1.30 393 |
| Informing the public on the potential environmental impacts of all uses associated with forests and grasslands. | 4.53 0.84 412 | 4.44 0.98 410 | 3.49 1.26 336 |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

of watersheds to be an appropriate role for the USDA Forest Service. This belief has wide consensus as well, as indicated by the standard deviation of 0.81. Agency performance is viewed by Region 8 respondents as somewhat favorable, with a mean of 3.91. This rating, however, does not exhibit as much consensus as the objective and belief ratings (s.d.=1.20), as illustrated in figure 2, which shows the distribution of responses.

Volunteer programs—Developing volunteer programs to improve the health of forests and grasslands had a mean rating of 4.61 with a standard deviation of 0.76, which again indicates wide agreement that these programs are important. Region 8 respondents see the development of this type of volunteer programs as an appropriate role for the agency (mean=4.43), but with somewhat less agreement (s.d.=1.07). These results may indicate that some respondents would prefer to see the agency cooperate with non-government organizations or perhaps even have these organizations take the lead on this objective. The agency is viewed as doing a somewhat adequate job in providing volunteer programs, but

again with somewhat less agreement than we see for the importance of the objective (mean=3.90, s.d.=1.23). Figure 3 shows that while the majority view the agency favorably, over half feel that the agency could be doing a better job.

Ecosystem protection—Region 8 residents widely agree that the protection of wildlife habitat and ecosystems is important (mean=4.58, s.d.= 0.91). They also believe it is an important role for the USDA Forest Service, although with a standard deviation of 1.02, the level of agreement is not quite as high as it is regarding importance. Customer satisfaction with the protection of ecosystems and habitat is the highest for any of VOBA objectives (mean=4.07). As shown in the histogram (figure 4), less than 10% of respondents were dissatisfied with the agency performance.

Recreation concerns—The public in Region 8 also sees two objectives relating to the distribution of information to be very important. Information about recreation concerns has a mean of 4.55 and a standard

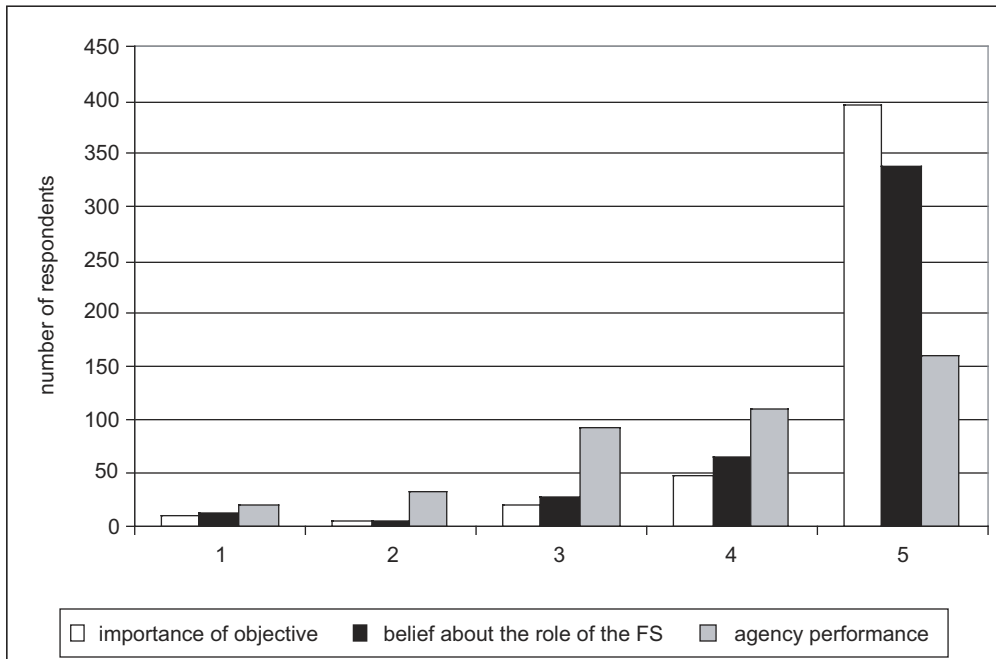


Figure 2—Distribution of Objective, Belief, and Attitude scores for: Conserving and protecting forests and grasslands that are the source of our water resources, such as streams, lakes, and watershed areas.

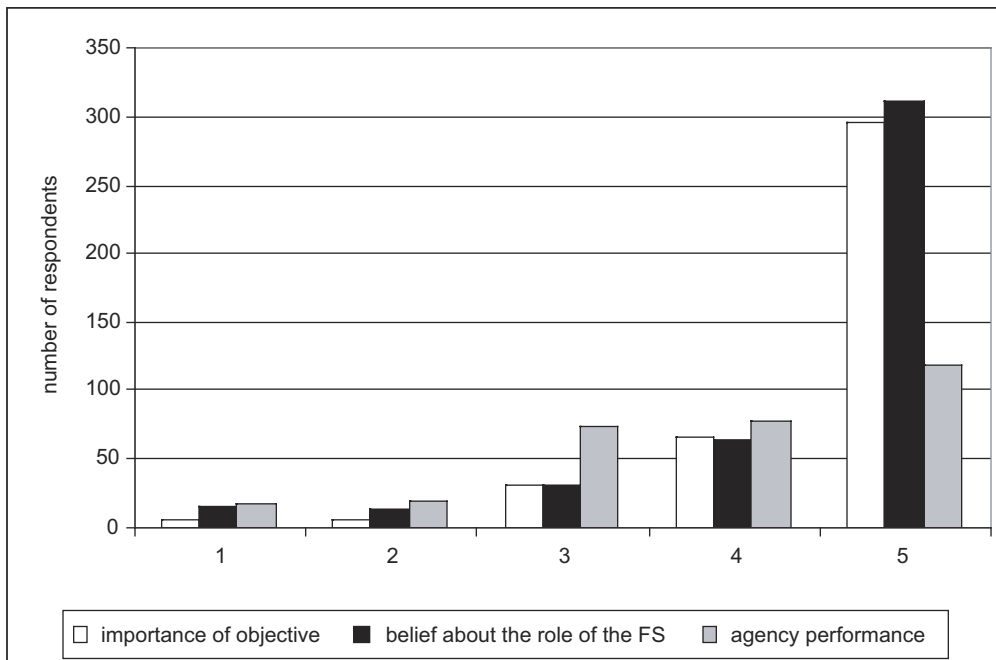


Figure 3—Distribution of Objective, Belief, and Attitude scores for: Developing volunteer programs to improve forests and grasslands (for example, planting trees, or improving water quality).

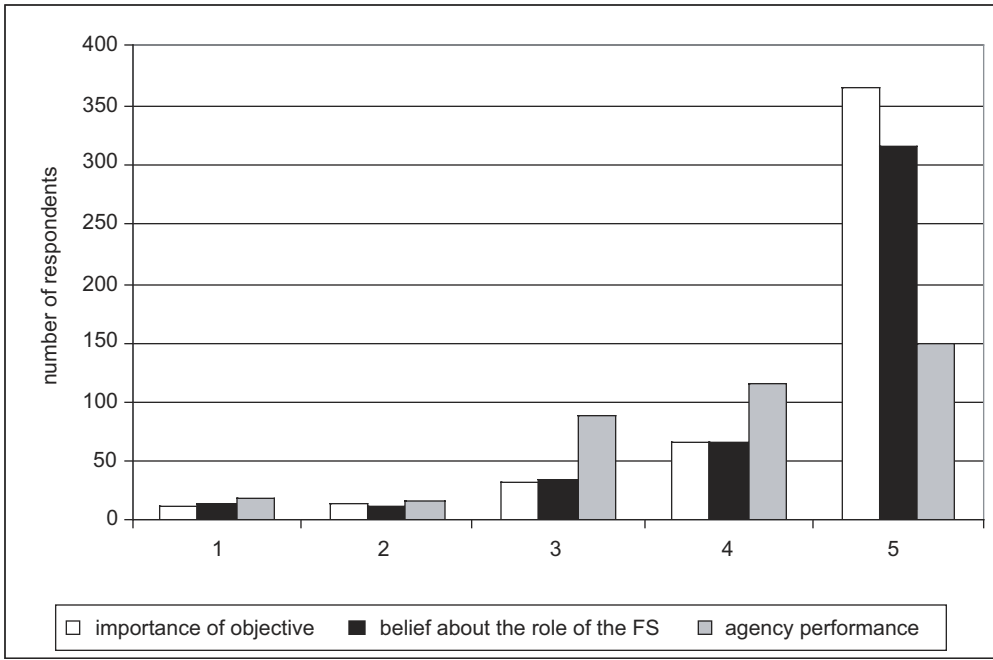


Figure 4—Distribution of Objective, Belief, and Attitude scores for: Protecting ecosystems and wildlife habitat.

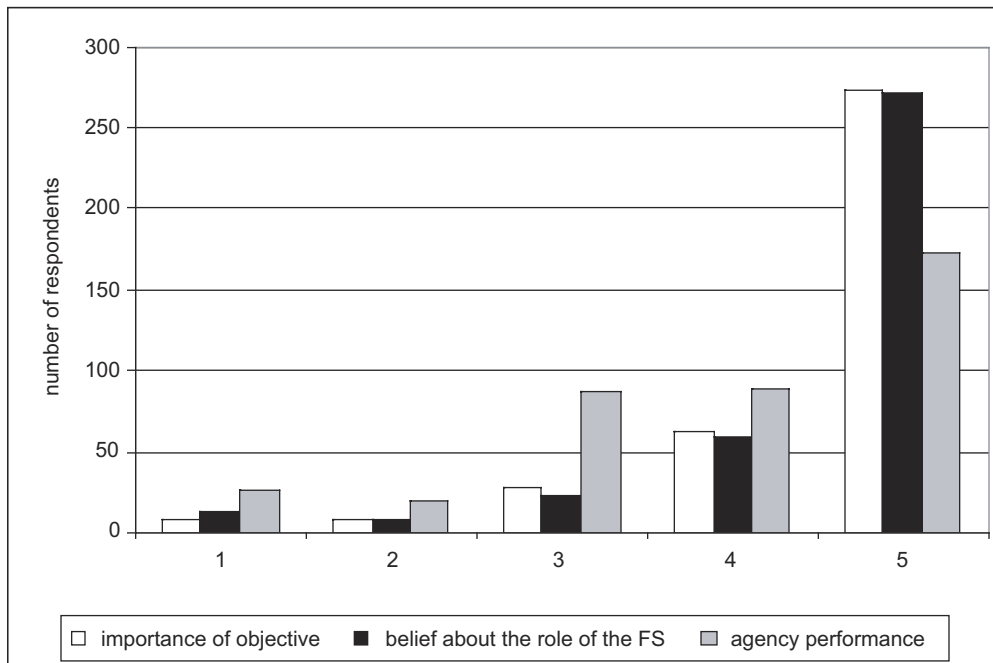


Figure 5—Distribution of Objective, Belief, and Attitude scores for: Informing the public about recreation concerns on forests and grasslands such as safety, trail etiquette, and respect for wildlife.

deviation of 0.88, indicating general consensus about its importance. The distribution of this type of information is also viewed as an appropriate role for the agency, and this is widely agreed to be the case (mean=4.49, s.d.=0.95). Agency performance is determined to be somewhat favorable (with a mean of 3.82), but here we see wide disagreement (s.d. = 1.30). The histogram in figure 5 shows that only a small number of respondents

rate the performance of the USDA Forest Service as unfavorable, while most see the objective as important and the role as highly appropriate for the agency.

Environmental impact information—The distribution of information about environmental impacts is seen as an important objective by most Region 8 respondents (mean=4.53, s.d.=0.84). As with the distribution of recreation information, the public agrees that this is an

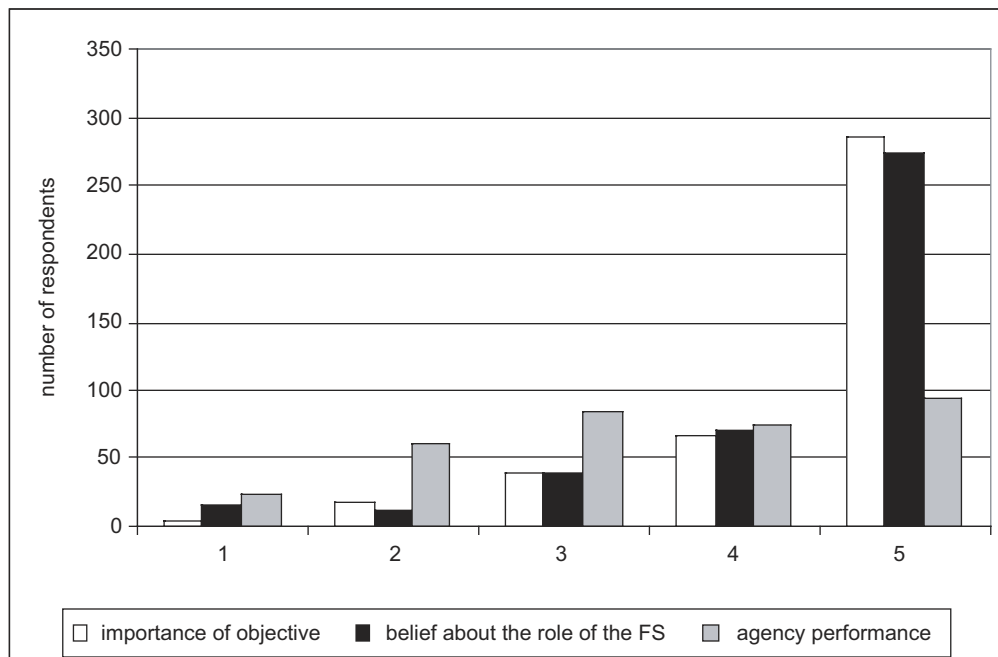


Figure 6—Distribution of Objective, Belief, and Attitude scores for: Informing the public on the potential environmental impacts of all uses associated with forests and grasslands.

important role for the USDA Forest Service (mean=4.44, s.d.=0.98). This objective has the lowest performance evaluation of the five core objectives, although the evaluation is still somewhat favorable (mean=3.49). As with recreation information, this evaluation has a high standard deviation (1.26) indicating that the respondents' attitudes vary widely. Figure 6 shows that while the majority of respondents view the objective as important, and its fulfillment as an appropriate role for the agency, opinions about agency performance are spread nearly evenly across the range of attitudes.

Other Important Objectives

Table 2 shows the results for the other objectives that respondents in Region 8 identified as important. Although these objectives also had means over 4.00, these means had higher standard deviations, indicating more diverse responses from the public. The objectives in table 2 are ordered from those with the lowest standard deviation (higher consensus) to those with higher standard deviations (less consensus). As a result, some objectives identified as relatively more important fall lower in the table than objectives identified as relatively less important. Each of these objectives will be discussed briefly, with histograms only for those issues with striking disparities in the responses to the importance, the beliefs about the role of the USDA Forest Service, and customer satisfaction.

Region 8 residents feel that encouragement of collaboration among groups to share information concerning uses of forests and grasslands is an important objective (mean=4.21). The standard deviation is 0.99, indicating some consensus, but not as much as the core objectives. The public in Region 8 sees this as an appropriate role for the USDA Forest Service (mean=4.25), with some dissenting voices as indicated by the standard deviation (1.08). Overall, the public believes the agency is doing a good job encouraging collaboration (mean=3.80), but again, there is less consensus for this evaluation (s.d.=1.19).

Increasing law enforcement on public lands is also important to the people of Region 8 (mean 4.11), although there is a somewhat low level of agreement (s.d.=1.04). The enforcement of laws on public lands is seen as an appropriate role for the agency (mean=4.09), but with low consensus (s.d.=1.13). Agency performance is good, with still lower agreement (mean=3.90, s.d.=1.18).

The issue of local control is important to the people of Region 8 (mean=4.15).⁶ These respondents are not all in agreement, as indicated by the standard deviation of 1.12. Making management decisions locally is seen as a somewhat important role for the USDA Forest Service (mean 3.93), but again, the standard deviation (1.33) indicates little agreement for this role. The histogram (figure 7) reveals that while most respondents do agree

⁶ Commodity production is discussed at the end of this section.

Table 2--Other important objectives for Region 8.

| OBJECTIVE: | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | Do you believe that fulfilling this objective is an appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> |
|---|--|---|---|
| Encouraging collaboration between groups in order to share information concerning uses of forests and grasslands. | 4.21 <i>0.99^a</i> 364 ^b | 4.25 <i>1.08</i> 346 | 3.80 <i>1.19</i> 306 |
| Increasing law enforcement efforts by public land management agencies on public lands. | 4.11 <i>1.04</i> 334 | 4.09 <i>1.13</i> 322 | 3.90 <i>1.18</i> 268 |
| Restricting timber harvesting and grazing on forests and grasslands. | 4.11 <i>1.11</i> 360 | 4.03 <i>1.25</i> 337 | 3.37 <i>1.34</i> 337 |
| Making management decisions concerning the use of forests and grasslands at the local level rather than at the national level. | 4.15 <i>1.12</i> 303 | 3.93 <i>1.33</i> 389 | 3.59 <i>1.27</i> 253 |
| Developing volunteer programs to maintain trails and facilities on forests and grasslands (for example, trail maintenance, or campground maintenance). | 4.20 <i>1.15</i> 373 | 4.25 <i>1.00</i> 381 | 3.87 <i>1.07</i> 346 |
| Preserving the ability to have a 'wilderness' experience on forests and grasslands. | 4.08 <i>1.17</i> 457 | 4.30 <i>1.11</i> 467 | 3.87 <i>1.05</i> 475 |
| Preserving the natural resources of forests and grasslands through such policies as no timber harvesting or no mining. | 4.25 <i>1.20</i> 441 | 4.22 <i>1.21</i> 443 | 3.82 <i>1.22</i> 400 |
| Develop a national policy that guides natural resource development of all kinds (for example, specifies levels of extraction, and regulates environmental impacts). | 4.20 <i>1.20</i> 414 | 4.11 <i>1.23</i> 378 | 3.77 <i>1.05</i> 339 |
| Allowing for diverse uses of forests and grasslands such as grazing, recreation, and wildlife habitat. | 4.01 <i>1.21</i> 385 | 3.99 <i>1.14</i> 318 | 3.82 <i>1.17</i> 295 |
| Restricting mineral development on forests and grasslands. | 4.12 <i>1.31</i> 371 | 3.89 <i>1.52</i> 346 | 3.61 <i>1.45</i> 324 |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

that the role is appropriate, many are neutral, and a few disagree. Agency performance is seen as somewhat favorable (mean=3.59), but with some disagreement (s.d.=1.27). Figure 7 shows the familiar correspondence between the importance of the objective and the appropriateness of the agency's role, but once again, the level of customer satisfaction is more diverse with about 42% giving a neutral or unfavorable response.

The development of volunteer programs for trail maintenance and other facility improvements is important to Region 8 public (mean=4.20, s.d.=1.15). Most respondents feel that the development of these programs is an appropriate role for the agency (mean=4.25, s.d.=1.00). The respondents from Region 8 are also somewhat satisfied with the level of agency performance, although, as has been the case with many

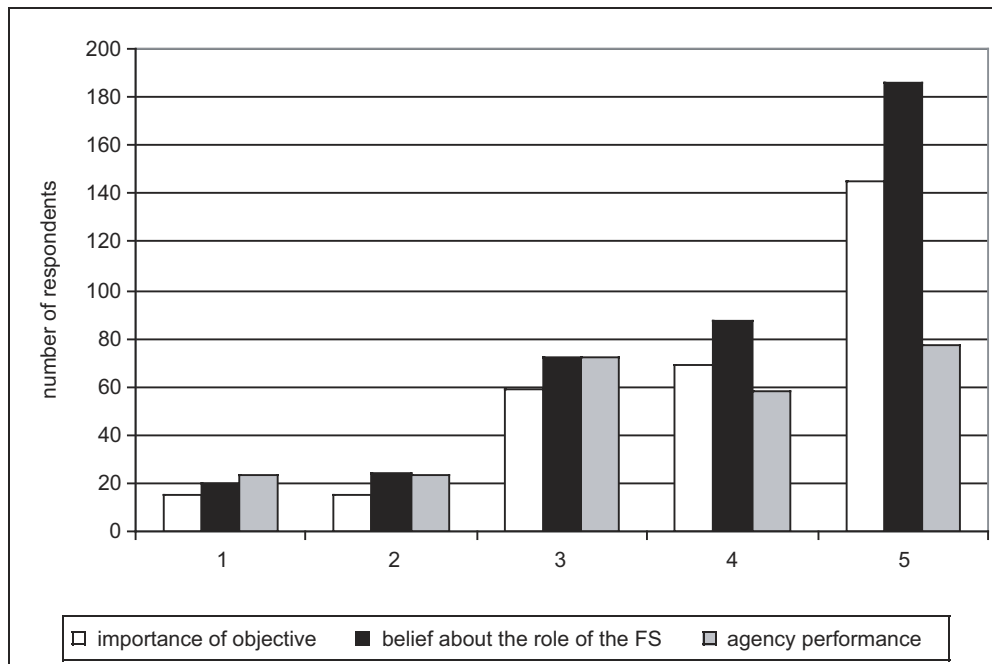


Figure 7—Distribution of Objective, Belief, and Attitude scores for: Making management decisions concerning the use of forests and grasslands at the local level rather than at the national level.

other objectives, there is little consensus (mean=3.87, s.d.=1.07).

Overall, the people of Region 8 believe the ability to have a wilderness experience on forests and grasslands is an important objective (mean=4.08). However, the standard deviation (1.17) reveals that numerous respondents disagree. Region 8 respondents do see the provision of such opportunities as an appropriate role for the agency (mean=4.30), although again, there is not universal agreement (s.d.=1.11). The USDA Forest Service is seen as doing a somewhat adequate job at providing the ability to have a wilderness experience (mean=3.87, s.d.=1.07).

While local decisions are important, the people of Region 8 also see the need for national level guidance for the development of natural resources (mean 4.20). The high standard deviation (1.20) may indicate that there are also those in Region 8 who favor a more “hands off” approach from the Washington Office. The development of such national policies is seen as an appropriate role for the agency, but again a high level of disagreement exists (mean=4.11, s.d.=1.23). Agency performance is somewhat favorable, with considerably more agreement on the evaluation than on the importance of the objective or the belief that the Forest Service ought to fulfill it (mean=3.77, s.d.=1.05).

Diverse uses of forests and grasslands are important to the people of Region 8, although there is a low level of consensus for this objective (mean=4.01, s.d.=1.21).

Fulfilling this objective is viewed as a somewhat important role for the USDA Forest Service (mean=3.99). There is limited agreement about the appropriateness of this role for the agency (s.d.=1.14). Agency performance is reported to be somewhat favorable, with minimal consensus (mean=3.82, s.d.=1.17).

Three of the objectives that Region 8 respondents feel are important deal with limiting the use of forests and grasslands for commodity production. To facilitate a discussion of the implications of these objectives, these three are grouped (rather than in the order in which they appear in table 3). The Region 8 respondents to the VOBA see the restriction of timber harvesting and grazing on public lands as an important objective with a mean of 4.11. This objective has a lower level of agreement, however, (s.d.=1.11) indicating that there are some members of the public who do not hold this view.⁷ The implementation of such restrictions is seen as an appropriate role for the USDA Forest Service (mean 4.03), although, again, the high standard deviation (1.25) indicates that there are many among the public who disagree. The USDA Forest Service is considered to be doing a somewhat adequate job restricting timber harvesting and grazing, but there is again little consensus

⁷ It should be noted that this objective statement is presented here as it was worded in the survey, and that this wording originated with the focus groups.

Table 3--Objectives identified as not important by Region 8.

| OBJECTIVE: | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | Do you believe that fulfilling this objective is an appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> |
|--|--|---|---|
| Expanding access for motorized off-highway vehicles on forests and grasslands (for example, snowmobiling or 4-wheel driving). | 2.30 1.37 ^a 368 ^b | 2.64 1.49 421 | 2.95 1.40 258 |
| Developing new paved roads on forests and grasslands for access for cars and recreational vehicles. | 2.66 1.49 371 | 2.65 1.50 360 | 2.94 1.36 325 |
| Allowing public land managers to trade public land for private lands (for example, to eliminate private property within public land boundaries, or to acquire unique areas of land). | 2.88 1.47 293 | 3.13 1.36 275 | 3.31 1.25 253 |

^a Standard deviation

^b Sample size for each item (n) The sample sizes for each item are less than the full 2,567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

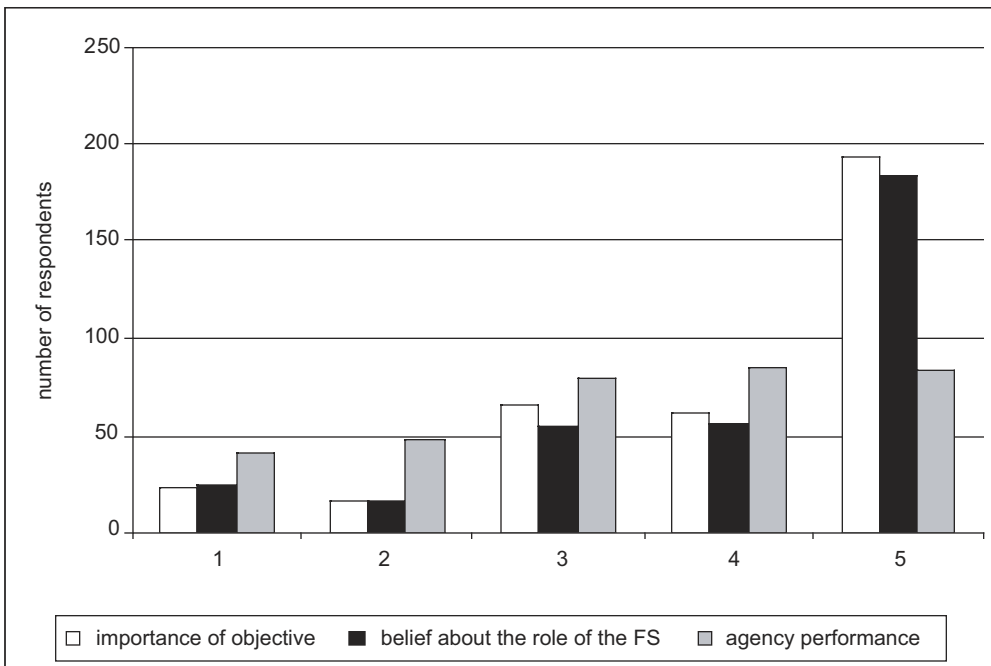


Figure 8—Distribution of Objective, Belief, and Attitude scores for: Restricting timber harvest and grazing on forests and grasslands.

(mean=3.37, s.d.=1.34). Figure 8 illustrates the lack of consensus in the evaluation of agency performance, and shows that while most respondents agree that this objective is important, and that it is an appropriate role for the USDA Forest Service, there are also a good many who do not.

Another objective considered important by the people of Region 8 is the restriction of mineral development on forests and grasslands.⁸ While the public sees this objective as important (mean=4.12), there is a wide disagreement (s.d.=1.31), even more than we see with the restriction of timber harvesting and grazing. The disagreement expands when looking at whether such restriction of mineral extraction is an appropriate role for the agency (s.d.=1.52), even though based on the mean it is considered to be appropriate (mean=3.89). Agency performance is somewhat favorable (mean=3.61), but again we see disparity among responses (s.d.=1.45). While most agree that the objective is important (figure 9) and an appropriate role for the agency, the evaluation of agency performance is more evenly divided among the levels of responses.

Policies that eliminate the extraction of timber and minerals in order to preserve natural resources are im-

portant to the people of Region 8, although there is low consensus for this objective (mean=4.25, s.d.=1.20). While this objective is similar to the previous two, it is interesting to note that the public's responses indicate this objective is viewed as more important. This may be due to the wording of these objectives. While the previous two simply state that extraction of resources is to be restricted, this objective prefaces similar restrictions with a justification (the preservation of natural resources). In fact, however, the wording of this objective is more restrictive (calling for policies such as *no* timber harvest or *no* mining). The greater acceptance of this objective may be attributed to the fact that the restrictions are for a purpose. The previous two objectives, while seen as important, are not as widely accepted by some, possibly due to a perceived arbitrariness. Policies that end timber harvest and mining are seen by many as an appropriate role for the USDA Forest Service, but again with less agreement (mean=4.22, s.d.=1.21). Finally, agreement is somewhat low (s.d.=1.22), but the agency is viewed as performing adequately (mean=3.82). Figure 10 shows a high correspondence between the public's view of the importance of these policies and of the agency's role in

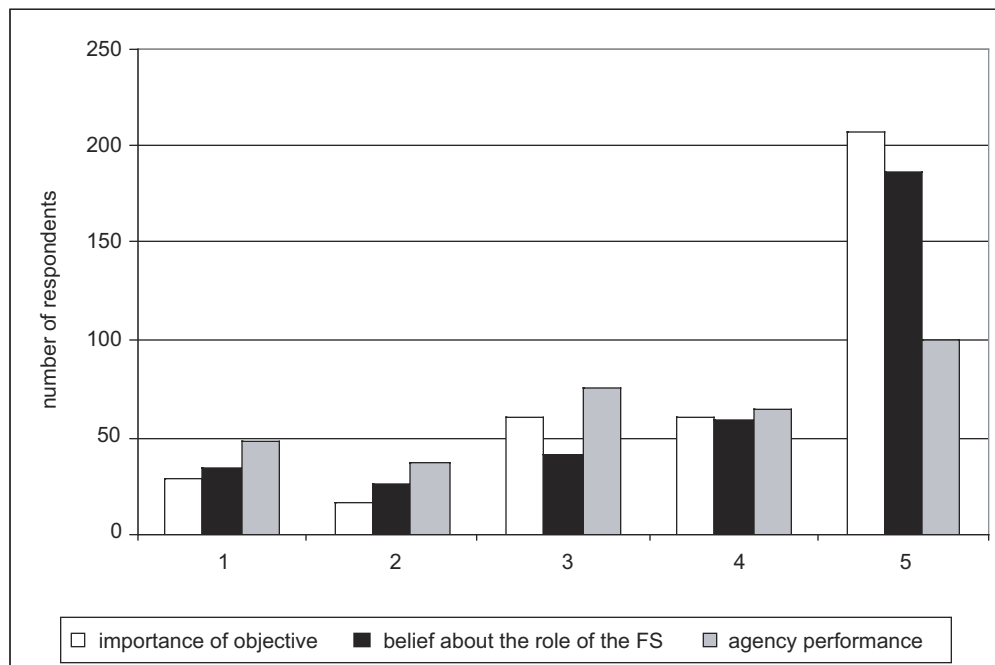


Figure 9—Distribution of Objective, Belief, and Attitude scores for: Restricting mineral development on forests and grasslands.

⁸ The wording of this objective is also the direct result of focus group input.

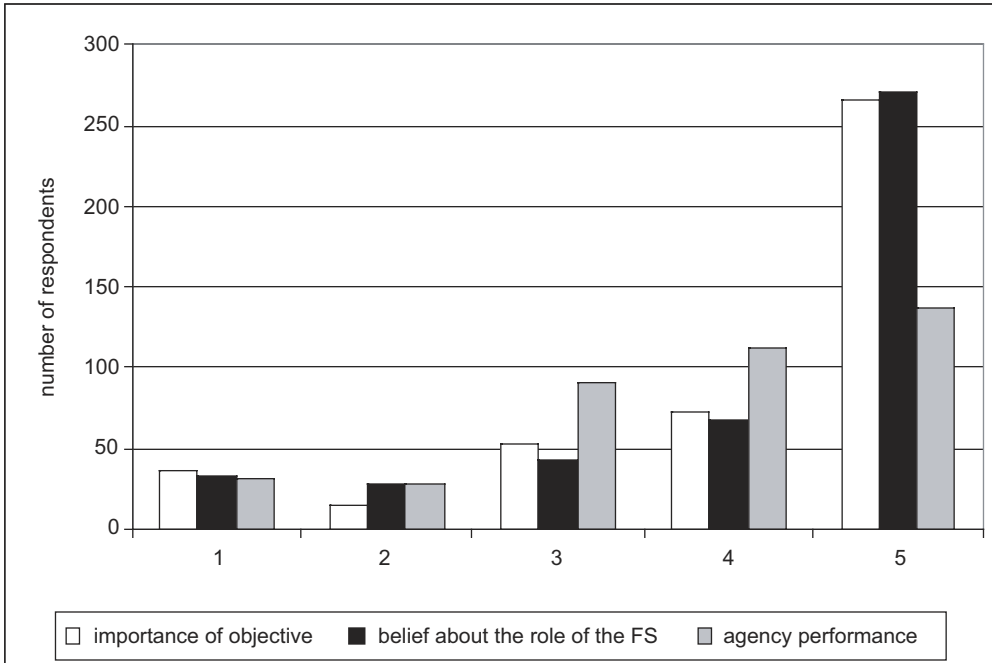


Figure 10—Distribution of Objective, Belief, and Attitude scores for: Preserving the natural resources of forests and grasslands through such policies as no timber harvesting or no mining.

fulfilling them, but the level of customer satisfaction is lower.

Objectives Identified as Not Important

Three objectives in the VOBA were not important to the people of Region 8. These objectives have a mean importance of less than 3.00 (3.00 is the midpoint of the scale, indicating a neutral position). While the means for these objectives indicate that most respondents did

not feel they were important, all of these objectives also exhibit high standard deviations, indicating there are supporters as well. This is not surprising since these objectives were included in the VOBA survey based upon the input of the focus groups. Some focus groups, which are representative of elements within society, revealed strong preferences for these objectives. In other words, while the general public does not feel that these objectives are important, there is a vocal minority that does. These less important objectives are presented in table 3.

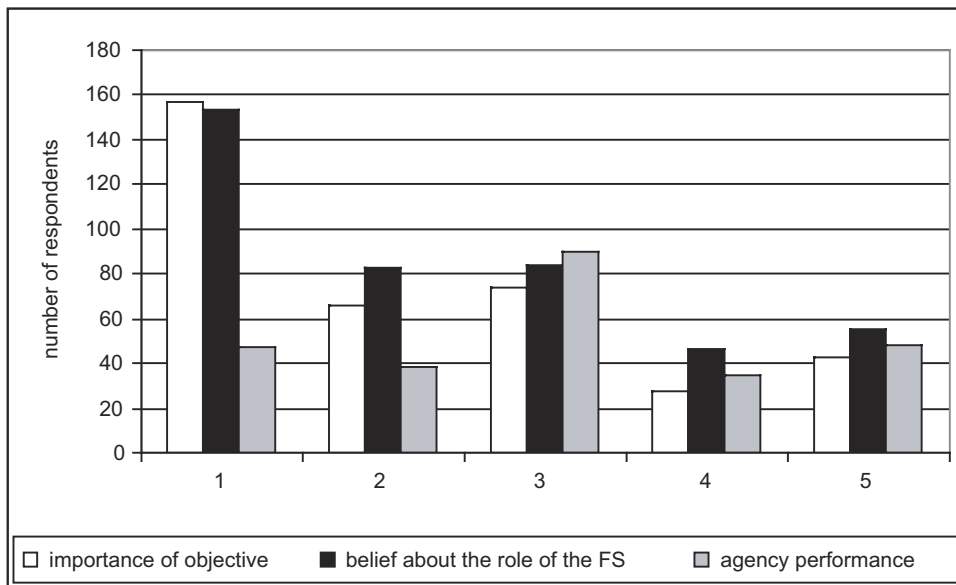


Figure 11—Distribution of Objective, Belief, and Attitude scores for: Expanding access for motorized off-highway vehicles on forests and grasslands (for example, snowmobiling or 4-wheel driving).

Expanding off-highway motorized access (figure 11) is not important for many of the people of Region 8 (mean=2.30), although the standard deviation (1.37) indicates there is a constituency for whom such access is more important. Overall, the public does not see the provision of such access as an appropriate role for the Forest Service (mean=2.64), but again, there are many who do (s.d.=1.49). Agency performance on the provision of off-highway motorized access is seen as slightly unfavorable (mean=2.95), but this evaluation is not universal (s.d.=1.40).

Developing new paved roads is also unimportant to most of the people of Region 8 (mean=2.66). There are also some, however, for whom it is important (s.d.=1.49). The development of paved roads is not seen by most to be an appropriate role for the USDA Forest Service (mean=2.65), but with a great deal of disagreement (s.d.=1.50). The USDA Forest Service is generally not seen as doing a favorable job in developing new paved roads (mean=2.94). Yet, again, there is little consensus for this evaluation (s.d.=1.36). This histogram for this objective (figure 12) resembles figure 11.

Land swapping (trading public lands for private lands) is not viewed by most of the Region 8 public as an important objective (mean=2.88). Yet, the high standard deviation (1.47) indicates some groups do view this as important. That trading public land for private land is seen by Region 8 respondents as a somewhat appropriate role for the agency (mean=3.13), is not surprising since

the agency would presumably have to take the lead in such trades. This role's appropriateness is not universally agreed upon, however, (s.d.=1.36). The public in Region 8 views the performance of the Forest Service in providing such land trades as somewhat favorable (mean=3.31), but with a diversity of opinions (s.d.=1.25). Figure 13 shows that the majority of respondents are neutral about this objective: its importance, the agency's role in fulfilling it, and in agency performance. This may indicate that while there is a minority for whom this objective strikes a chord, either as important or unimportant, the general public is not as interested in, or is perhaps unaware of, the issue of land trading.

Objectives Identified as Moderately Important

Table 4 presents the final set of objectives—those which respondents from Region 8 feel are somewhat important, or those for which they are more neutral. This set of objectives has means between 3.00 and 4.00. As with the less important objectives, all also have higher standard deviations, indicating that while most people do not feel strongly about them, a few do. These objectives are presented in decreasing order of importance, since all exhibit high standard deviations.

While informing the public about recreation concerns and potential environmental impacts are important objectives to the people of Region 8 (see table 1),

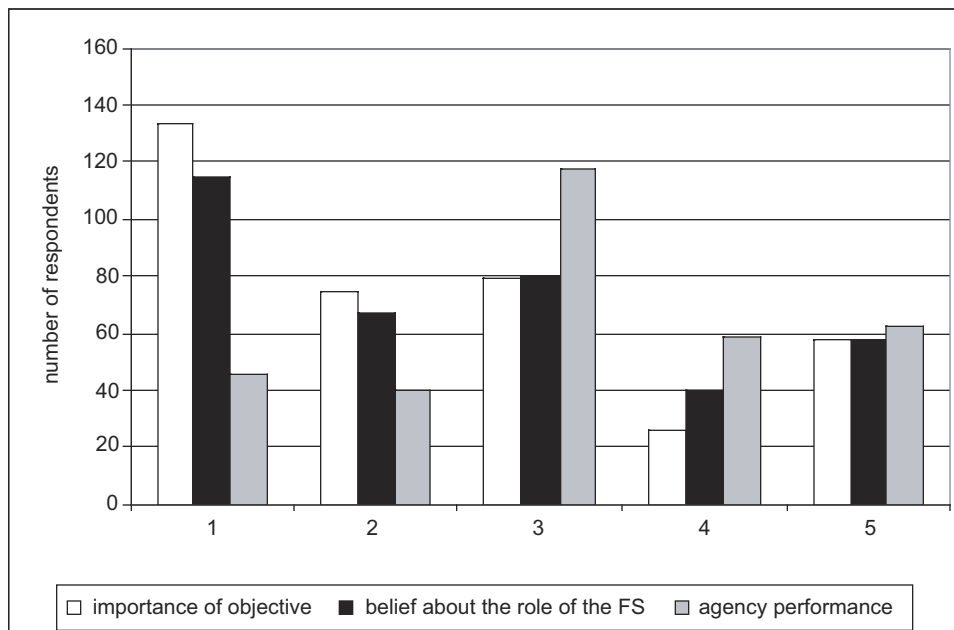


Figure 12—Distribution of Objective, Belief, and Attitude scores for: Developing new paved roads on forests and grasslands for access for cars and recreational vehicles.

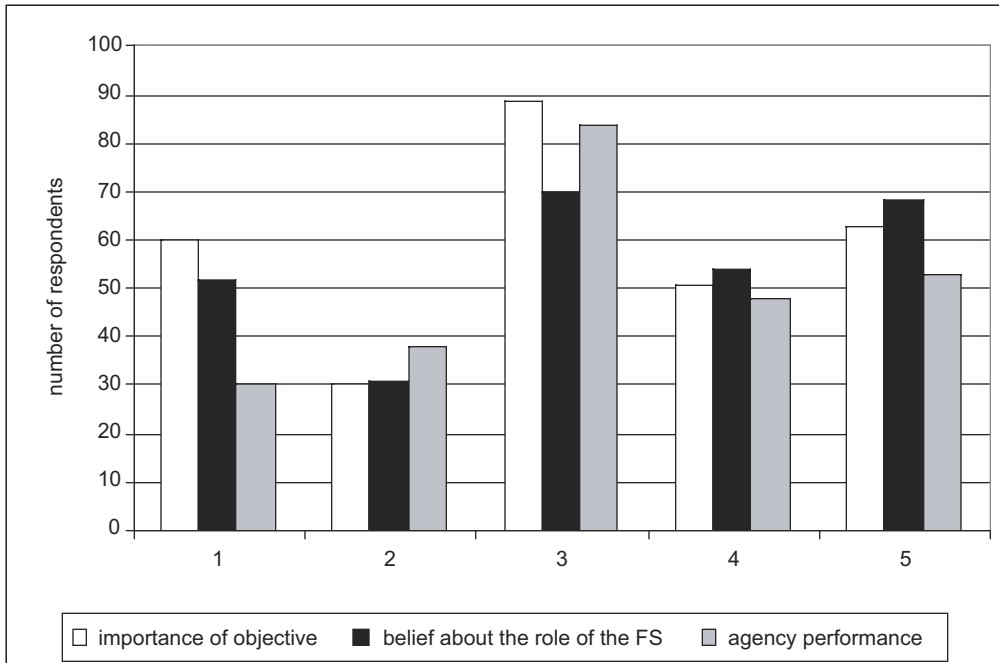


Figure 13—Distribution of Objective, Belief, and Attitude scores for: Allowing public land managers to trade public land for private lands (for example, to eliminate private property within public land boundaries, or to acquire unique areas of land).

informing the public about the economic benefits of resource development is seen as only somewhat important. The mean for this objective is 3.95, and the standard deviation is 1.33, indicating a lack of consensus about the importance of this type of information. Region 8 respondents do feel that providing this type of information is an appropriate role for the USDA Forest Service (mean=4.13), and there is more agreement about this role for the agency (s.d.=1.07). In fact, this objective has one of the lowest standard deviations in all of Region 8's responses. Agency performance is somewhat favorable (mean=3.38), but again lacks consensus for this evaluation (s.d.=1.34).

The people of Region 8 see the use of public advisory committees for public land management as somewhat important as well (mean=3.94) although, this assessment too is not universally held (s.d.=1.16). Respondents view the use of such committees as a somewhat appropriate role for the Forest Service, but again the standard deviation suggests a high level of disagreement (mean=3.76, s.d.=1.32). Agency performance in using public advisory committees is rated as somewhat favorable, (mean=3.33) but this evaluation is not shared by all respondents, as indicated by the standard deviation (1.20).

Wilderness designation can usually be expected to meet with some controversy, and the Region 8 responses indicate this potential. While the mean indicates that most people feel it is somewhat important (3.86), the high standard deviation (1.27) also

shows a high level of disagreement. The designation of wilderness is seen as an appropriate role for the agency (mean=3.74), and again we see that this is not a universal opinion (s.d.=1.41). In this case the high standard deviation may actually reflect the knowledge that Congress is the body responsible for officially designating wilderness. The USDA Forest Service is generally seen as performing at a somewhat favorable level, but not all respondents agreed with this evaluation (mean=3.38, s.d.=1.26).

Most respondents in Region 8 feel that it is somewhat important to pay an entry fee to support public lands (mean=3.84), yet numerous respondents do not hold this opinion (s.d.=1.28). The people of Region 8 do feel that this would be an appropriate role for the agency, but again there is disagreement (mean=3.76, s.d.=1.31). Agency performance is seen as adequate, although not by everyone (mean=3.74, s.d.=1.22).

Forests and grasslands have many cultural uses by Native Americans and Hispanics, and the preservation of these uses is seen as somewhat important by Region 8 respondents (mean=3.82). However, there is substantial disagreement with the evaluation of this objective, as indicated by the high standard deviation (1.29). Preserving such cultural uses is seen as a somewhat important role for the USDA Forest Service (mean 3.76), but there is a lack of agreement on this issue (s.d.=1.30). Agency performance is only somewhat favorable (mean 3.48), and consensus is low (s.d.=1.25).

Table 4--Objectives of moderate importance for Region 8.

| OBJECTIVE: | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | Do you believe that fulfilling this objective is an appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> |
|--|--|---|---|
| Informing the public on the economic value received by developing our natural resources. | 3.95 1.33 ^a 370 ^b | 4.13 1.07 365 | 3.38 1.34 339 |
| Using public advisory committees to advise on public land management issues. | 3.94 1.16 304 | 3.76 1.32 291 | 3.33 1.20 249 |
| Designating more wilderness areas on public land that stops access for development and motorized use. | 3.86 1.27 358 | 3.74 1.41 383 | 3.38 1.26 311 |
| Paying an entry fee that goes to support public land. | 3.84 1.28 307 | 3.76 1.31 328 | 3.74 1.22 279 |
| Preserving the cultural uses of forests and grasslands by Native Americans and Native Hispanics [#] such as fire wood gathering, herb/berry/plant gathering, and ceremonial access. | 3.82 1.29 442 | 3.76 1.30 500 | 3.48 1.25 352 |
| Increasing the total number of acres in the public land system. | 3.73 1.35 314 | 3.97 1.42 330 | 3.41 1.32 278 |
| Providing natural resources from forests and grasslands to support communities dependent on grazing, mining or timber harvesting. | 3.68 1.35 390 | 3.29 1.33 376 | 3.50 1.29 323 |
| Developing and maintaining continuous trail systems that cross both public and private land for non-motorized recreation such as hiking and cross-country skiing. | 3.59 1.31 384 | 3.69 1.34 387 | 3.68 1.30 305 |
| Developing and maintaining continuous trail systems that cross both public and private land for motorized vehicles such as snowmobiles or ATVs. | 3.02 1.37 426 | 3.04 1.47 379 | 3.34 1.44 303 |
| Designating some existing recreation trails for specific use (for example, creating separate trails for snowmobiling and cross-country skiing, or for mountain biking and horseback riding). | 3.49 1.46 370 | 3.89 1.21 340 | 3.52 1.21 314 |
| Making the permitting process easier for some established uses of forests and grasslands such as grazing, logging, mining, and commercial recreation. | 3.13 1.51 354 | 2.84 1.42 396 | 2.86 1.40 264 |
| Expanding commercial recreation on forests and grasslands (for example, ski areas, guide services, or outfitters). | 3.04 1.38 369 | 3.27 1.57 432 | 3.58 1.22 294 |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

[#] The term Native Hispanic was used in the survey to differentiate Hispanics born in the US from those who moved to the US. This term was changed to traditional groups in the 2003 survey.

Increasing the total number of acres in the public land system is seen by the Region 8 public as somewhat important (mean=3.73). However, this potentially contentious issue did draw a variety of responses (s.d.=1.35). The people of Region 8 see adding to the public domain as an appropriate role for the agency (mean=3.97), but there is also a lack of agreement as to this role (s.d.=1.42). Again this could indicate differences in knowledge about who would actually have the authority to acquire additional public lands. There is also some lack of agreement as to the performance of the agency in increasing public land acreage (s.d.=1.32), but the people of Region 8 give the Forest Service a somewhat adequate rating (mean=3.41).

Many communities are dependent on public forests and grasslands for their economic bases. Providing natural resources to these communities is a relatively important objective for the people of Region 8 (mean=3.68). However the importance of this objective is not universally agreed upon (s.d.=1.35). The people of Region 8 see the agency role in providing natural resources to dependent communities as somewhat important (mean=3.29), but again there is little consensus (s.d.=1.33). Agency performance in providing these natural resources is rated as somewhat favorable (mean=3.50, s.d.=1.29).

Three objectives dealing with recreation access fall into the category of moderately important. The first two deal with developing and maintaining systems of trails that combine access on private and public lands. The development of such systems for non-motorized access is seen as somewhat important (mean=3.59), but there is a lack of agreement about this evaluation (s.d.=1.31). This may indicate that while many people would wish to use such a system, there are also many (perhaps potentially affected landowners) who would see such a system of access as an infringement of property rights. The development of a system of private/public non-motorized access is seen as a somewhat important role for the agency (mean=3.69). However, the standard deviation also shows that there is a level of disagreement concerning this assessment (s.d.=1.34). Agency performance is somewhat favorable, but the whole sample does not concur (mean=3.68, s.d.=1.30)

A similar objective for the development of a trail system for motorized access that encompasses both private and public lands is seen as a much less important objective by the Region 8 public (mean=3.02). The high standard deviation (1.37) indicates that this opinion is not universal. Providing such motorized access is seen

by some as a somewhat appropriate role for the USDA Forest Service, although there is disagreement about this (mean=3.04, s.d.=1.47). Agency performance is rated as somewhat adequate (mean=3.34), but the standard deviation is 1.44.

A third somewhat important objective related to recreation access is the designation of specific trails by use (for example separating motorized and non-motorized activities or other incompatible uses), but the level of consensus is low (mean=3.49, s.d.=1.46). Such separation of uses is viewed as a somewhat important role for the Agency, and there is a somewhat higher level of agreement (mean=3.89, s.d.=1.21). When assessing the performance of the agency, the Region 8 respondents show a similar level of agreement (s.d.=1.21), and give the agency a somewhat favorable evaluation (mean=3.52).

Many uses of public lands, such as livestock grazing, mining, logging, and commercial recreation, require a permit. The people of Region 8 see making the permitting process easier for these established uses as a slightly important role (mean=3.13), but there is a great deal of variability in the responses (s.d.=1.51). Making the permit process easier is not seen as an appropriate role for the agency (mean=2.84), but some respondents do not share this belief (s.d.=1.42). This objective has the lowest mean for agency performance, indicating there may be a need for further investigation using more traditional customer service survey methods (mean=2.86, s.d.=1.40).

Expanding commercial recreation (such as guides, outfitters, and ski areas) on forests and grasslands is slightly important to the Region 8 public, although there is a high level of variation (mean=3.04, s.d.=1.38). The expansion of such businesses is seen as a somewhat appropriate role for the USDA Forest Service, but with a low degree of consensus (mean=3.27, s.d.=1.57). Agency performance is somewhat favorable and again, consensus is low (mean=3.58, s.d.=1.22).

Results for Region 8: Public Lands Values

This section presents the Region 8 responses to the Public Lands Values Scale. Previous research using the Public Lands Values Scale has shown that these items consistently fall into two categories. The first category contains items that deal with individual actions or

Table 5--Socially responsible individual public lands values with a high level of agreement in Region 8.

| Values (1=strongly disagree. 5=strongly agree) | Mean |
|--|---|
| I am glad there are National Forests even if I never get to see them. | 4.78 0.67 ^a 623 ^b |
| People can think public lands are valuable even if they do not actually go there themselves. | 4.69 0.76 592 |
| People should be more concerned about how our public lands are used. | 4.68 0.81 564 |
| Manufacturers should be encouraged to use recycled materials in their manufacturing and processing operations. | 4.62 0.82 649 |
| Consumers should be interested in the environmental consequences of the products they purchase. | 4.52 0.85 576 |
| Future generations should be as important as the current one in the decisions about public lands. | 4.55 0.86 648 |
| Donating time or money to worthy causes is important to me. | 4.18 0.96 547 |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

values. We have labeled these the Socially Responsible Individual Values (tables 5 and 6). For the Socially Responsible Individual Values, a higher mean indicates a higher level of environmental orientation. The second category contains items that deal with how public lands should be managed. These are the Socially Responsible Management Values (table 7). The Socially Responsible Management Values statements are worded so that a higher value indicates that relatively more importance is placed upon human uses of, or commodity production from, forests and grasslands.

Socially Responsible Individual Values

The responses to the Socially Responsible Individual Values will be further broken into two groups: those for which there is a high degree of consensus (standard deviation less than 1.00), and those for which the level of agreement is lower. Most of the means for the values indicate an environmental orientation in the people of Region 8, but for many of the values statements, the standard deviation indicates that the level of agreement is low.

Socially Responsible Individual Values With a High Degree of Consensus

When the Socially Responsible Individual Values are placed in order of increasing standard deviation, the order of agreement is almost analogously decreasing. In other words, the values statements with higher means (indicating a more environmental value orientation) are also those with higher levels of consensus.

Socially Responsible Individual Values With a Low Degree of Consensus

Table 6 shows the values statements that have lower consensus among the respondents. Again, higher levels of agreement with the values statements (higher means) tend to correspond with higher consensus among the respondents.

Figure 14 shows the responses to the statement “I would be willing to pay \$5 more each time I use public land for recreational purposes.” While most respondents agree with this statement (mean=3.62), the standard deviation is high, showing a great deal of disagreement (1.44). The histogram shows there is an identifiable minority that clearly disagrees. Since fees are often a

Table 6--Socially responsible individual public lands values with a low level of agreement in Region 8.

| Values <i>(1=strongly disagree. 5=strongly agree)</i> | Mean |
|---|---|
| I am willing to make personal sacrifices for the sake of slowing down pollution. | 4.33 1.03 ^a 576 ^b |
| People should urge their friends to limit their use of products made from scarce resources. | 4.23 1.05 637 |
| Wildlife, plants and humans have equal rights to live and grow. | 4.35 1.12 542 |
| Forests have a right to exist for their own sake, regardless of human concerns and uses. | 4.17 1.14 627 |
| I am willing to stop buying products from companies that pollute the environment even though it might be inconvenient. | 3.95 1.18 580 |
| I have often thought that if we could just get by with a little less there would be more left for future generations. | 4.08 1.21 546 |
| Natural resource must be preserved even if people must do without some products. | 4.04 1.27 632 |
| I would be willing to sign a petition for an environmental cause. | 4.04 1.28 565 |
| I would be willing to pay five dollars more each time I use public lands for recreational purposes (for example, hiking, camping, hunting). | 3.62 1.44 712 |
| The whole pollution issue has never upset me too much since I feel it's somewhat overrated. ^c | 3.56 1.46 560 |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

^c This value statement has been reverse scored to make the responses consistent with the other statements. For a more complete discussion of reverse scoring, please refer to the appendix.

reality in order to provide such recreation opportunities, it is important to be aware that while most support them, such policies will also most likely meet with considerable resistance.

Socially Responsible Management Values

The results for the Socially Responsible Management Values are presented in table 7 in order from higher agreement to lower agreement. As the previous section demonstrates, everyone believes in protecting the environment. Disagreement arises about the appropriate methods to achieve such protection. The differences in responses to this set of values are the basis for the disagreement we see in some objectives. Histograms are

presented for each of the Socially Responsible Management Values (figures 15 through 22), but only the first is discussed because of its direct relevance to customer satisfaction.

The first of the Socially Responsible Management Values examines the performance of public land managers. This value statement may in part explain the overall low means for attitudes about agency performance on specific issues. Here we see that the overall assessment of public land managers is neutral (figure 15). Generally people neither agree nor disagree with the statement. However, when asked about the performance of a specific agency (the USDA Forest Service) in fulfilling a specific objective, most people have stronger opinions and these have been revealed in the attitude statements discussed in the preceding sections.

Table 7--Socially responsible management public lands values for Region 8.

| Values <i>(1=strongly disagree. 5=strongly agree)</i> | Mean |
|---|---|
| I think that the public land managers are doing an adequate job of protecting natural resources from being over used. | 3.20 1.16 ^a 704 ^b |
| The main reason for maintaining resources today is so we can develop them in the future if we need to. | 4.07 1.28 733 |
| The most important role for the public lands is providing jobs and income for local people. | 3.17 1.37 828 |
| The decision to develop resources should be based mostly on economic grounds. | 2.96 1.39 722 |
| The government has better places to spend money than devoting resources to a strong conservation program. | 2.48 1.39 759 |
| The Federal government should subsidize the development and leasing of public lands to companies. | 2.47 1.53 725 |
| The primary use of forests should be for products that are useful to humans. | 3.04 1.54 791 |
| We should actively harvest more trees to meet the needs of a much larger human population. | 2.93 1.57 730 |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

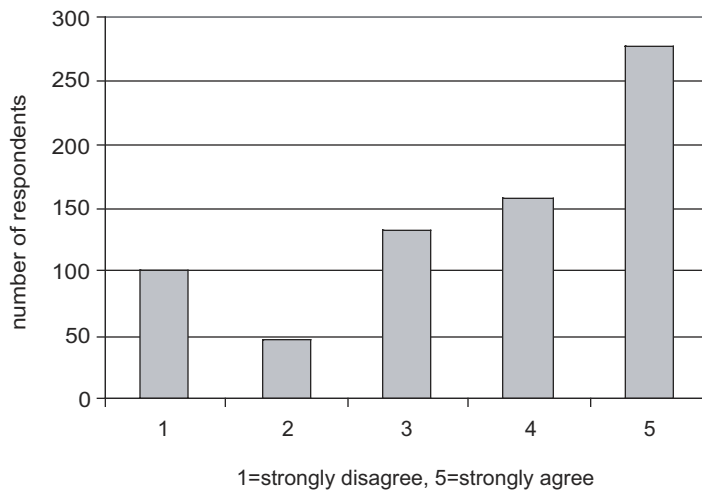


Figure 14—Distribution of responses to: “I would be willing to pay five dollars more each time I use public lands for recreational purposes (for example, hiking, camping, hunting).”

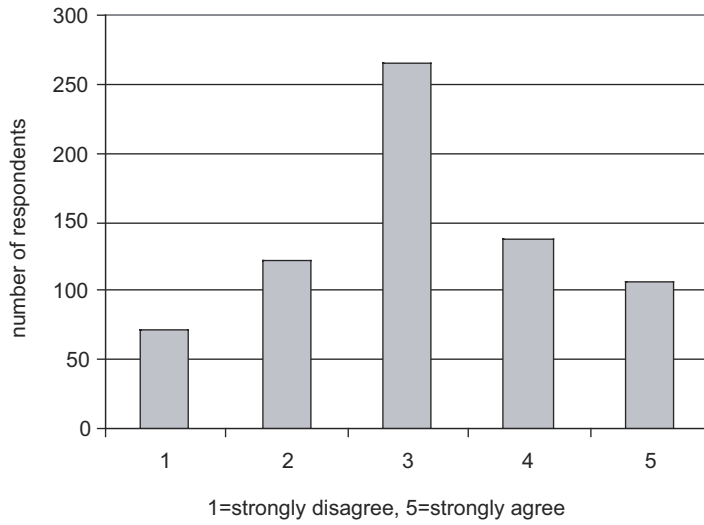


Figure 15—Distribution of responses to: “I think that the public land managers are doing an adequate job of protecting natural resources from being over used.”

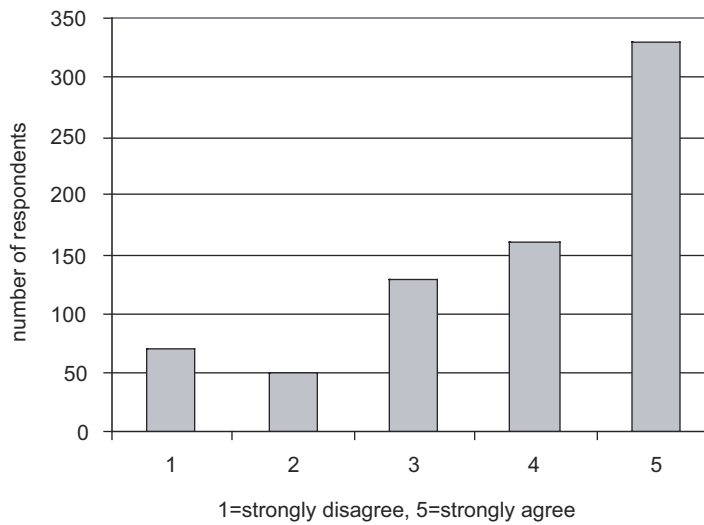


Figure 16—Distribution of responses to: “The main reason for maintaining resources today is so we can develop them in the future if we need to.”

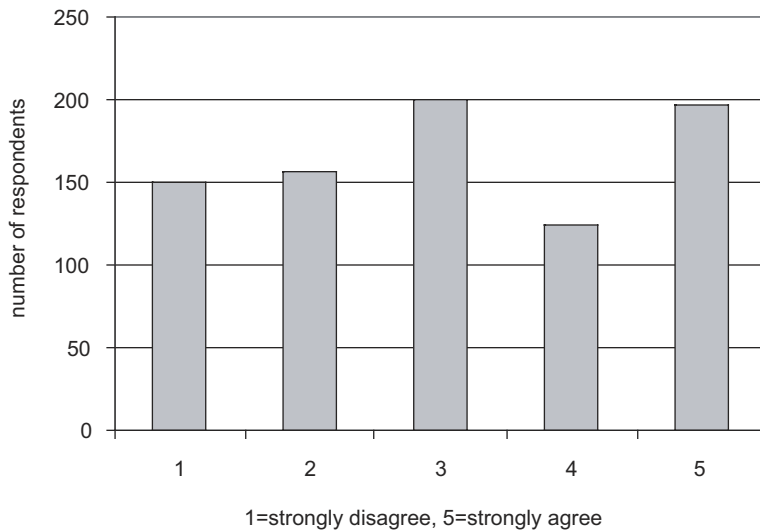


Figure 17—Distribution of responses to: “The most important role for the public lands is providing jobs and income for local people.”

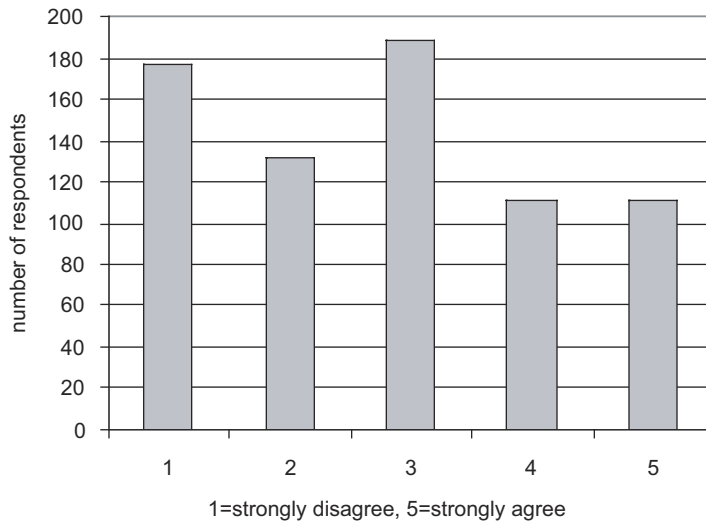


Figure 18—Distribution of responses to: “The decision to develop resources should be based mostly on economic grounds.”

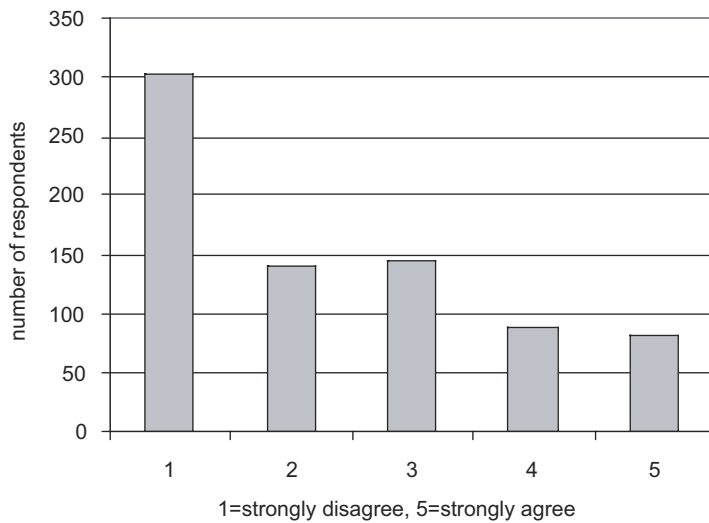


Figure 19—Distribution of responses to: “The government has better places to spend money than devoting resources to a strong conservation program.”

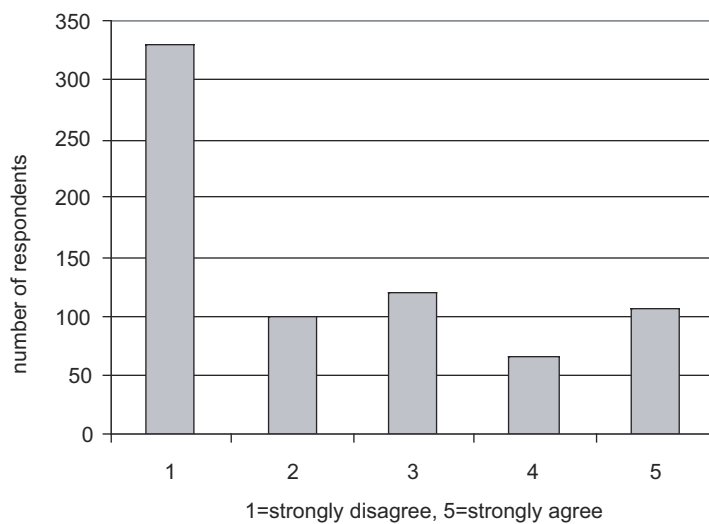


Figure 20—Distribution of responses to: “The Federal government should subsidize the development and leasing of public lands to companies.”

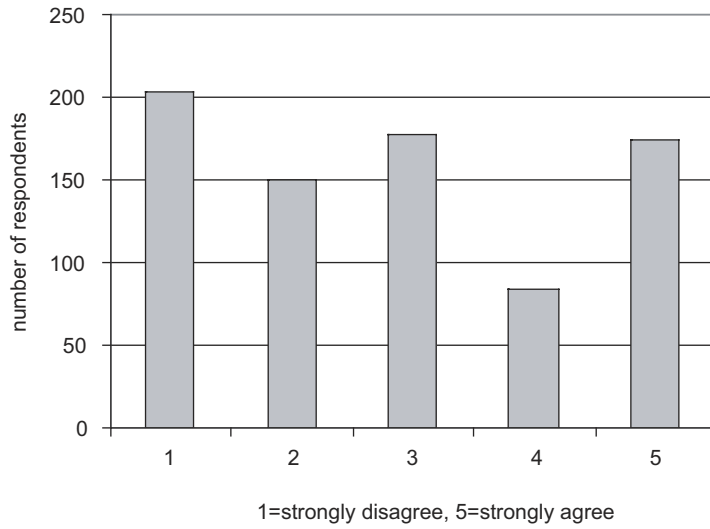


Figure 21—Distribution of responses to: “The primary use of forests should be for products that are useful to humans.”

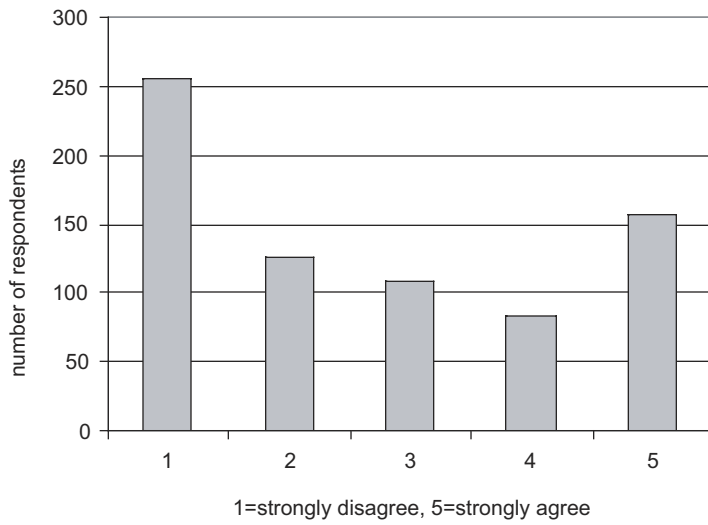


Figure 22—Distribution of responses to: “We should actively harvest more trees to meet the needs of a much larger human population”

Comparison of Region 8 With the Rest of the United States

This final section compares the VOBA results for Region 8 with the results for the rest of the United States. Tables 8 through 11 present the objectives, beliefs about the role of the agency, and customer satisfaction. These are arranged in a manner similar to the previous sections (Core Important Objectives, Other Important Objectives, Unimportant Objectives, and Objectives of Moderate Importance). Table 12 contains comparisons of the Public Lands Values between Region 8 and the rest of the United States. This table is divided into Socially Responsible Individual Values and Socially Responsible Management Values. Discussion will focus on those objectives and values with statistically significant differences.

Objectives, Beliefs, and Attitudes

The respondents of Region 8 differ from the rest of the United States on only one core objective: informing the public on the potential impacts of uses of forests and grasslands. This objective is more important for the residents of Region 8 than it is for the rest of the United States. It also shows a lower standard deviation for the residents of Region 8 than for the rest of the United States, indicating greater agreement about the evaluation within Region 8.

As seen in table 9, Region 8 differs from the rest of the United States in five of the ten important objectives. Not only are increasing law enforcement on public lands, making local management decisions, the restriction of timber harvest and grazing, and the restriction of mining, more important to the residents of Region 8 than to residents of the rest of the United States, the level of consensus for these objectives is also higher in Region 8. The public in Region 8 also differs from the rest of

Table 8--Comparison of core important objectives, beliefs, and attitudes between Region 8 and the rest of the United States.

| OBJECTIVE: | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | | | Do you believe that fulfilling this objective is and appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | | | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> | | |
|---|--|-----------------------------|-----------------------|--|----------------------------|-----------------------|---|----------------------------|-----------------------|
| | Region 8 | Rest of US | Sig. diff -R8/rest US | Region 8 | Rest of US | Sig. diff -R8/rest US | Region 8 | Rest of US | Sig. diff -R8/rest US |
| Conserving and protecting forests and grasslands that are the source of our water resources, such as streams, lakes, and watershed areas. | 4.70 <i>0.77^a</i> 479 ^b | 4.74 <i>0.74</i> 848 | | 4.63 <i>0.81</i> 448 | 4.62 <i>0.80</i> 958 | | 3.91 <i>1.20</i> 408 | 3.88 <i>1.07</i> 786 | |
| Developing volunteer programs to improve forests and grasslands (for example, planting trees, or improving water quality). | 4.61 <i>0.76</i> 405 | 4.59 <i>0.88</i> 890 | | 4.43 <i>1.07</i> 433 | 4.52 <i>0.90</i> 891 | | 3.90 <i>1.23</i> 309 | 3.74 <i>1.19</i> 646 | * |
| Protecting ecosystems and wildlife habitats. | 4.58 <i>0.91</i> 488 | 4.56 <i>0.92</i> 1034 | | 4.43 <i>1.02</i> 441 | 4.56 <i>0.99</i> 881 | * | 4.07 <i>1.03</i> 391 | 3.87 <i>1.20</i> 867 | ** |
| Informing the public about recreation concerns on forests and grasslands such as safety, trail etiquette, and respect for wildlife. | 4.55 <i>0.88</i> 378 | 4.59 <i>0.87</i> 789 | | 4.49 <i>0.95</i> 375 | 4.54 <i>0.90</i> 779 | | 3.82 <i>1.30</i> 393 | 3.90 <i>1.25</i> 857 | |
| Informing the public on the potential environmental impacts of all uses associated with forests and grasslands. | 4.53 <i>0.84</i> 412 | 4.39 <i>1.00</i> 760 | * | 4.44 <i>0.98</i> 410 | 4.49 <i>0.94</i> 725 | | 3.49 <i>1.26</i> 336 | 3.48 <i>1.30</i> 677 | |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

*, **, *** mean differences are statistically significant at $\alpha = 0.05, 0.01, \text{ and } 0.001$ respectively, based on a t-test.

Table 9--Comparison of other important objectives, beliefs, and attitudes between Region 8 and the rest of the United States.

| OBJECTIVE | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | | | Do you believe that fulfilling this objective is and appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | | | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> | | |
|---|--|----------------------------|-----------------------|--|----------------------------|-----------------------|---|----------------------------|-----------------------|
| | Region 8 | Rest of US | Sig. diff -R8/rest US | Region 8 | Rest of US | Sig. diff -R8/rest US | Region 8 | Rest of US | Sig. diff -R8/rest US |
| Encouraging collaboration between groups in order to share information concerning uses of forests and grasslands. | 4.21 <i>0.99^a</i> 364 ^b | 4.13 <i>1.26</i> 702 | | 4.25 <i>1.08</i> 346 | 4.10 <i>1.19</i> 721 | * | 3.80 <i>1.19</i> 306 | 3.65 <i>1.20</i> 595 | |
| Increasing law enforcement efforts by public land management agencies on public lands. | 4.11 <i>1.04</i> 334 | 3.88 <i>1.26</i> 628 | ** | 4.09 <i>1.13</i> 322 | 3.98 <i>1.29</i> 652 | | 3.90 <i>1.18</i> 268 | 3.79 <i>1.26</i> 524 | |
| Restricting timber harvesting and grazing on forests and grasslands. | 4.11 <i>1.11</i> 360 | 3.94 <i>1.32</i> 782 | * | 4.03 <i>1.25</i> 337 | 3.97 <i>1.33</i> 734 | | 3.37 <i>1.34</i> 337 | 3.42 <i>1.29</i> 609 | |
| Making management decisions concerning the use of forests and grasslands at the local level rather than at the national level. | 4.15 <i>1.12</i> 303 | 3.88 <i>1.21</i> 614 | ** | 3.93 <i>1.33</i> 389 | 3.83 <i>1.28</i> 714 | | 3.59 <i>1.27</i> 253 | 3.44 <i>1.30</i> 552 | |
| Developing volunteer programs to maintain trails and facilities on forests and grasslands (for example, trail maintenance, or campground maintenance). | 4.20 <i>1.15</i> 373 | 4.16 <i>1.06</i> 734 | | 4.25 <i>1.00</i> 381 | 4.25 <i>1.02</i> 784 | | 3.87 <i>1.07</i> 346 | 3.74 <i>1.22</i> 611 | |
| Preserving the ability to have a 'wilderness' experience on forests and grasslands. | 4.08 <i>1.17</i> 457 | 4.27 <i>1.18</i> 884 | ** | 4.30 <i>1.11</i> 467 | 4.21 <i>1.11</i> 892 | | 3.87 <i>1.05</i> 475 | 3.84 <i>1.09</i> 926 | |
| Preserving the natural resources of forests and grasslands through such policies as no timber harvesting or no mining. | 4.25 <i>1.20</i> 441 | 4.22 <i>1.21</i> 918 | | 4.22 <i>1.21</i> 443 | 4.19 <i>1.23</i> 900 | | 3.82 <i>1.22</i> 400 | 3.59 <i>1.31</i> 769 | ** |
| Allowing for diverse uses of forests and grasslands such as grazing, recreation, and wildlife habitat. | 4.01 <i>1.21</i> 385 | 4.14 <i>1.11</i> 745 | | 3.99 <i>1.14</i> 318 | 4.04 <i>1.14</i> 641 | | 3.82 <i>1.17</i> 295 | 3.72 <i>1.09</i> 554 | |
| Develop a national policy that guides natural resource development of all kinds (for example, specifies levels of extraction, and regulates environmental impacts). | 4.20 <i>1.20</i> 414 | 4.26 <i>1.19</i> 881 | | 4.11 <i>1.23</i> 378 | 4.20 <i>1.16</i> 730 | | 3.77 <i>1.05</i> 339 | 3.40 <i>1.32</i> 654 | *** |
| Restricting mineral development on forests and grasslands. | 4.12 <i>1.31</i> 371 | 3.76 <i>1.44</i> 721 | *** | 3.89 <i>1.52</i> 346 | 3.92 <i>1.40</i> 777 | | 3.61 <i>1.45</i> 324 | 3.12 <i>1.47</i> 604 | *** |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

*, **, *** mean differences are statistically significant at $\alpha = 0.05, 0.01, \text{ and } 0.001$ respectively, based on a t-test.

Table 10--Comparison of unimportant objectives, beliefs, and attitudes between Region 8 and the rest of the United States.

| OBJECTIVE | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | | | Do you believe that fulfilling this objective is and appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | | | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> | | |
|--|--|----------------------------|------------------------|--|----------------------------|------------------------|---|----------------------------|------------------------|
| | Region 8 | Rest of US | Sig. diff -R8/ rest US | Region 8 | Rest of US | Sig. diff -R8/ rest US | Region 8 | Rest of US | Sig. diff -R8/ rest US |
| Expanding access for motorized off-highway vehicles on forests and grasslands (for example, snowmobiling or 4-wheel driving). | 2.30 <i>1.37^a</i> 368 ^b | 2.38 <i>1.49</i> 761 | | 2.64 <i>1.49</i> 421 | 2.51 <i>1.39</i> 851 | | 2.95 <i>1.40</i> 258 | 2.89 <i>1.42</i> 568 | |
| Developing new paved roads on forests and grasslands for access for cars and recreational vehicles. | 2.66 <i>1.49</i> 371 | 2.56 <i>1.49</i> 739 | | 2.65 <i>1.50</i> 360 | 2.59 <i>1.49</i> 773 | | 2.94 <i>1.36</i> 325 | 3.29 <i>1.40</i> 599 | *** |
| Allowing public land managers to trade public land for private lands (for example, to eliminate private property within public land boundaries, or to acquire unique areas of land). | 2.88 <i>1.47</i> 293 | 3.11 <i>1.40</i> 545 | * | 3.13 <i>1.36</i> 275 | 3.30 <i>1.45</i> 591 | | 3.31 <i>1.25</i> 253 | 3.15 <i>1.22</i> 542 | |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

*, **, *** mean differences are statistically significant at $\alpha = 0.05, 0.01, \text{ and } 0.001$ respectively, based on a t-test.

Table 11--Comparison of moderately important objectives, beliefs, and attitudes between Region 8 and the rest of the United States.

| OBJECTIVE | Is this an important objective for you? <i>(1=not at all important, 5=very important)</i> | | | Do you believe that fulfilling this objective is and appropriate role for the USDA Forest Service? <i>(1=strongly disagree, 5=strongly agree)</i> | | | How favorably do you view the performance of the USDA Forest Service in fulfilling this objective? <i>(1=very unfavorably, 5=very favorably)</i> | | |
|--|--|----------------------------|------------------------|--|----------------------------|------------------------|---|----------------------------|------------------------|
| | Region 8 | Rest of US | Sig. diff -R8/ rest US | Region 8 | Rest of US | Sig. diff -R8/ rest US | Region 8 | Rest of US | Sig. diff -R8/ rest US |
| Informing the public on the economic value received by developing our natural resources. | 3.95 <i>1.33^a</i> 370 ^b | 4.06 <i>1.27</i> 742 | | 4.13 <i>1.07</i> 365 | 3.98 <i>1.22</i> 706 | | 3.38 <i>1.34</i> 339 | 3.32 <i>1.34</i> 647 | |
| Using public advisory committees to advise on public land management issues. | 3.94 <i>1.16</i> 304 | 3.84 <i>1.17</i> 666 | | 3.76 <i>1.32</i> 291 | 3.88 <i>1.14</i> 636 | | 3.33 <i>1.20</i> 249 | 3.31 <i>1.24</i> 471 | |
| Designating more wilderness areas on public land that stops access for development and motorized use. | 3.86 <i>1.27</i> 358 | 3.88 <i>1.39</i> 717 | | 3.74 <i>1.41</i> 383 | 3.64 <i>1.44</i> 708 | | 3.38 <i>1.26</i> 311 | 3.32 <i>1.28</i> 590 | |
| Paying an entry fee that goes to support public land. | 3.84 <i>1.28</i> 307 | 3.61 <i>1.34</i> 628 | * | 3.76 <i>1.31</i> 328 | 3.72 <i>1.37</i> 648 | | 3.74 <i>1.22</i> 279 | 3.62 <i>1.36</i> 536 | |
| Preserving the cultural uses of forests and grasslands by Native Americans and Native Hispanics such as fire wood gathering, herb/berry/plant gathering, and ceremonial access. | 3.82 <i>1.29</i> 442 | 3.75 <i>1.37</i> 912 | | 3.76 <i>1.30</i> 500 | 3.77 <i>1.34</i> 963 | | 3.48 <i>1.25</i> 352 | 3.32 <i>1.35</i> 668 | |
| Increasing the total number of acres in the public land system. | 3.73 <i>1.35</i> 314 | 3.85 <i>1.36</i> 651 | | 3.97 <i>1.42</i> 330 | 3.93 <i>1.39</i> 623 | | 3.41 <i>1.32</i> 278 | 3.57 <i>1.38</i> 531 | |
| Providing natural resources from forests and grasslands to support communities dependent on grazing, mining or timber harvesting. | 3.68 <i>1.35</i> 390 | 3.52 <i>1.37</i> 716 | | 3.29 <i>1.33</i> 376 | 3.16 <i>1.41</i> 700 | | 3.50 <i>1.29</i> 323 | 3.36 <i>1.19</i> 721 | |
| Developing and maintaining continuous trail systems that cross both public and private land for non-motorized recreation such as hiking and cross-country skiing. | 3.59 <i>1.31</i> 384 | 3.81 <i>1.22</i> 749 | ** | 3.69 <i>1.34</i> 387 | 3.80 <i>1.36</i> 738 | | 3.68 <i>1.30</i> 305 | 3.62 <i>1.21</i> 615 | |
| Developing and maintaining continuous trail systems that cross both public and private land for motorized vehicles such as snowmobiles or ATVs. | 3.02 <i>1.37</i> 426 | 2.77 <i>1.47</i> 856 | ** | 3.04 <i>1.47</i> 379 | 2.95 <i>1.48</i> 744 | | 3.34 <i>1.44</i> 303 | 3.27 <i>1.22</i> 634 | |
| Designating some existing recreation trails for specific use (for example, creating separate trails for snowmobiling and cross-country skiing, or for mountain biking and horseback riding). | 3.49 <i>1.46</i> 370 | 3.72 <i>1.31</i> 750 | ** | 3.89 <i>1.21</i> 340 | 4.02 <i>1.23</i> 741 | | 3.52 <i>1.21</i> 314 | 3.60 <i>1.29</i> 650 | |
| Making the permitting process easier for some established uses of forests and grasslands such as grazing, logging, mining, and commercial recreation. | 3.13 <i>1.51</i> 354 | 2.77 <i>1.48</i> 710 | *** | 2.84 <i>1.42</i> 396 | 2.75 <i>1.55</i> 738 | | 2.86 <i>1.40</i> 264 | 3.12 <i>1.39</i> 503 | * |
| Expanding commercial recreation on forests and grasslands (for example, ski areas, guide services, or outfitters). | 3.04 <i>1.38</i> 369 | 3.01 <i>1.36</i> 708 | | 3.27 <i>1.57</i> 432 | 3.20 <i>1.44</i> 866 | | 3.58 <i>1.22</i> 294 | 3.40 <i>1.20</i> 594 | * |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

*, **, *** mean differences are statistically significant at $\alpha = 0.05, 0.01, \text{ and } 0.001$ respectively, based on a t-test.

Table 12--Comparison of values between Region 8 and the rest of the United States.

| SOCIALY RESPONSIBLE INDIVIDUAL VALUES | | | |
|---|---|-----------------------------|--|
| VALUES (<i>1=strongly agree, 5=strongly disagree</i>) | Region 8 | Rest of US | Significant difference between Region 8 and the rest of the US |
| I am glad there are National Forests even if I never get to see them. | 4.78 <i>0.67^a</i> 623 ^b | 4.72 <i>0.77</i> 1426 | |
| People can think public lands are valuable even if they do not actually go there themselves. | 4.69 <i>0.76</i> 592 | 4.55 <i>0.90</i> 1231 | *** |
| People should be more concerned about how our public lands are used. | 4.68 <i>0.81</i> 564 | 4.67 <i>0.80</i> 1252 | |
| Manufacturers should be encouraged to use recycled materials in their manufacturing and processing operations. | 4.62 <i>0.82</i> 649 | 4.68 <i>0.79</i> 1349 | |
| Consumers should be interested in the environmental consequences of the products they purchase. | 4.52 <i>0.85</i> 576 | 4.43 <i>0.96</i> 1276 | * |
| Future generations should be as important as the current one in the decisions about public lands. | 4.55 <i>0.86</i> 648 | 4.54 <i>0.97</i> 1458 | |
| Donating time or money to worthy causes is important to me. | 4.18 <i>0.96^a</i> 547 ^b | 4.23 <i>1.00</i> 1284 | |
| I am willing to make personal sacrifices for the sake of slowing down pollution. | 4.33 <i>1.03</i> 576 | 4.38 <i>0.97</i> 1258 | |
| People should urge their friends to limit their use of products made from scarce resources. | 4.23 <i>1.05</i> 637 | 4.06 <i>1.19</i> 1395 | ** |
| Wildlife, plants and humans have equal rights to live and grow. | 4.35 <i>1.12</i> 542 | 4.20 <i>1.26</i> 1259 | * |
| Forests have a right to exist for their own sake, regardless of human concerns and uses. | 4.17 <i>1.14</i> 627 | 4.16 <i>1.21</i> 1325 | |
| I am willing to stop buying products from companies that pollute the environment even though it might be inconvenient. | 3.95 <i>1.18</i> 580 | 3.93 <i>1.27</i> 1286 | |
| I have often thought that if we could just get by with a little less there would be more left for future generations. | 4.08 <i>1.21</i> 546 | 4.05 <i>1.23</i> 1206 | |
| Natural resource must be preserved even if people must do without some products. | 4.04 <i>1.27</i> 632 | 4.16 <i>1.12</i> 1383 | * |
| I would be willing to sign a petition for an environmental cause. | 4.04 <i>1.28</i> 565 | 3.94 <i>1.38</i> 1217 | |
| I would be willing to pay five dollars more each time I use public lands for recreational purposes (for example, hiking, camping, hunting). | 3.62 <i>1.44</i> 712 | 3.50 <i>1.54</i> 1499 | |
| The whole pollution issue has never upset me too much since I feel it's somewhat overrated. | 2.44 <i>1.46</i> 560 | 2.29 <i>1.42</i> 1291 | * |

SOCIALLY RESPONSIBLE MANAGEMENT VALUES

| VALUES (<i>1=strongly agree, 5=strongly disagree</i>) | Region 8 | Rest of US | Significant difference between Region 8 and the rest of the US |
|---|---|-----------------------------|---|
| I think that the public land managers are doing an adequate job of protecting natural resources from being over used. | 3.20 <i>1.16</i> 704 | 3.15 <i>1.29</i> 1460 | |
| The main reason for maintaining resources today is so we can develop them in the future if we need to. | 4.07 <i>1.28</i> 733 | 3.74 <i>1.38</i> 1579 | *** |
| The most important role for the public lands is providing jobs and income for local people. | 3.17 <i>1.37</i> 828 | 3.08 <i>1.47</i> 1752 | |
| The decision to develop resources should be based mostly on economic grounds. | 2.96 <i>1.39^a</i> 722 ^b | 2.80 <i>1.43</i> 1563 | * |
| The government has better places to spend money than devoting resources to a strong conservation program. | 2.48 <i>1.39</i> 759 | 2.31 <i>1.35</i> 1591 | ** |
| The Federal government should subsidize the development and leasing of public lands to companies. | 2.47 <i>1.53</i> 725 | 2.24 <i>1.44</i> 1606 | *** |
| The primary use of forests should be for products that are useful to humans. | 3.04 <i>1.54</i> 791 | 2.80 <i>1.52</i> 1756 | *** |
| We should actively harvest more trees to meet the needs of a much larger human population. | 2.93 <i>1.57</i> 730 | 2.80 <i>1.68</i> 1613 | |

^a Standard deviation

^b Sample size for each item (n). The sample sizes for each item are less than the full 2567 sample since each respondent was asked only a portion of the 115 VOBA questions due to time limitations.

*, **, *** mean differences are statistically significant at $\alpha = 0.05, 0.01, \text{ and } 0.001$ respectively, based on a t-test.

the United States on preserving the ability to have a wilderness experience. The respondents from Region 8 determined this objective to be less important, but again with somewhat higher consensus, than did the rest of the United States.

Table 10 shows that only one of the unimportant objectives has a significantly different mean for Region 8 than for the rest of the United States. This objective concerns allowing public land managers to trade public lands for private. The respondents in Region 8 find this objective to be less important than those in the rest of the United States, although Region 8 has a higher standard deviation.

Table 11 shows statistically significant differences between Region 8 and the rest of the United States for 5 of the 12 objectives of moderate importance. Developing and maintaining continuous trails for motorized access, making the permitting process easier, and paying an entry fee are all more important to Region 8 residents

than to residents in the rest of the United States. The development of continuous trail systems for non-motorized access and the designation of separate trails by use are less important for the people of Region 8 than for respondents in the rest of the United States.

Public Lands Values

Table 12 compares Region 8 respondents' values to those from the rest of the United States. For Socially Responsible Individual Values with statistically significant differences, the means for Region 8 are higher than for the rest of the United States in all but one case. The exception is the statement that natural resources must be preserved even if people must do without some things. This suggests that there is a higher level of environmental orientation within Region 8 than for the rest of the United States. For the Socially Responsible Management Values, the mean responses from Region 8 are higher in

all cases. These values statements are worded so that a higher response indicates that a respondent values the extraction and use of natural resources more highly. Thus, while Region 8 respondents exhibit a higher level of environmental orientation on the Individual Values, they also exhibit a higher preference for human-centered uses of forests and grasslands when responding to the Management Values.

Appendix

Survey Design and Implementation

The design of the VOBA survey began with focus groups and interviews. Between September 1999 and June 2000 over 80 focus groups and individual interviews were conducted across the lower 48 States. These interviews concentrated on 3 topics; 1) issues related to the use of public lands in general and forests and rangelands in particular, 2) the objectives (or goals) of the group (or individual) regarding the use, management, and conservation of the forests and rangelands, and 3) the role of the Forest Service in the use, management, and conservation of the forests and rangelands.

Based upon the results of the focus groups and interviews, an objectives hierarchy was constructed for each group of stakeholders. These hierarchies indicate what each group or individual was attempting to achieve and how they would achieve each goal or objective. These objectives ranged from the abstract strategic level to the more focused or concrete means level. The means level objectives are at the bottom of the hierarchy, while the strategic objective is at the top. Fundamental objectives between the means level and the strategic-level completed the hierarchies. Therefore, the strategic-level objective is an abstract objective that can be achieved by more specific fundamental-level objectives, which are in turn achieved by means level objectives. (See figure 1.)

Each of the objectives hierarchies was confirmed with its respective group so as to ensure that it accurately reflected their goals and objectives. A combined objectives hierarchy was then constructed that included all the objectives stated by each group or individual interviewed. The result was a hierarchy that covered 5 strategic level objectives related to access, preservation/conservation, commodity development, education and natural resource management. These 5 strategic level objectives were supported by 30 fundamental objectives.

The 30 fundamental level objectives were used to develop 30 objectives statements that were used in the National Survey of Recreation and the Environment (NSRE). The NSRE is a national survey administered

via telephone interviews. The 30 objectives statements were divided into 5 groups based upon the strategic level objectives that the focus groups had identified. During the telephone interviews each respondent was asked one statement from each of the 5 strategic level groups in order to obtain a statistically valid sample for each statement and for each strategic level group.

As noted above, the survey of the American public's values, objectives, beliefs and attitudes was conducted as a module within the NSRE. Questions about respondents' recreation behavior comprise the bulk of the interview. However, the results presented here are based solely on the questions in the VOBA Module of the survey and the demographic questions. Participants were asked to respond to the VOBA questions using a five-point. The objectives questions are anchored with 1=not at all important to 5=very important. Beliefs are anchored with 1=strongly disagree to 5=strongly agree and attitudes are anchored with 1=very unfavorable to 5=very favorable. Each of these three scales consists of 30 items. The twenty-five items in the 'values' scale are anchored with 1=strongly disagree and 5=strongly agree.

Reverse Scoring

When the VOBA survey was designed, care was taken to avoid the appearance of an instrument that was biased toward or against a specific position. To do this the "direction" of the scale varied. For example, for one item a "strongly agree" response might indicate a conservation/preservation orientation, while for another item the same response might indicate a development orientation. While this is useful to increase the acceptance of the instrument and subsequent response rates, it creates problems when items with the opposite direction are grouped.

In order to compare two or more items that have the opposite direction, it is necessary to make the items move in the same direction. To illustrate this we will use an example. Suppose we want to examine the overall preference for sweets as indicated by the preference for ice cream and pie. We have two scale items. For each, 1

indicates “strongly disagree” and 5 indicates “strongly agree” as in the Public Lands Values scale. In order to avoid the appearance of bias toward or against sweets, the two items move in opposite directions: “I like ice cream” and “I don’t like pie.” Clearly a person who likes all sweets will answer 5 to the first item and 1 to the second. Conversely, someone who does not like sweets will answer 1 to the first and 5 to the second. If these items were grouped, it would be more useful to a research if the two items were scored to indicate preference for sweets either with a higher response for both items (or lower, either way would work). So, to re-score, we choose one of the items, in this example we’ll choose the second, and reverse the scoring. So, an answer of 5 to “I don’t like pie” becomes a 1 (and we can reword the item as “I like pie”). An answer of 4 becomes 2, 3 remains the same (neutral), 2 becomes 4 and 1 becomes 5. This in effect creates a new item that corresponds in direction to “I like ice cream.” Now we have an indication of each respondent’s preference for sweets. Higher numbers for each item indicate a higher preference for sweets, while lower numbers indicate lower preference. A similar re-scoring was done for certain items in the VOBA in order to more accurately characterize overall preferences for item groups.

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