



United States
Department
of Agriculture

Forest Service

**Pacific Southwest
Research Station**

Research Paper
PSW-RP-247



Social Trust and the Management of Threatened and Endangered Species

A Study of Communities of Interest and Communities of Place

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Publisher

Albany, California
Mailing address:
PO Box 245, Berkeley CA
94701-0245

(510) 559-6300

Pacific Southwest Research Station

Forest Service
U.S. Department of Agriculture

Abstract

Cvetkovich, George T.; Winter, Patricia L. 2002. Social trust and the management of threatened and endangered species: A study of communities of interest and communities of place. Res. Paper PSW-RP-247. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 65 p.

Social trust, the willingness to rely on those with formal responsibility to develop policies and make decisions, facilitates effective management of environmental issues, including wildlife management. National polls suggest that the public trusts government agencies to solve environmental problems, yet such trust is low (or non-existent) in areas of controversy, such as the protection of threatened and endangered species. This study explored the role of social trust in understanding views of threatened and endangered species management in the National Forests of southern California. The 127 participants surveyed lived in or near a National Forest or were recreational and/or other users of the National Forest. The results suggest that trust in Forest Service management of wildlife relates to perceived similarity between individual values regarding species protection and Forest Service values. Participants who believe the Forest Service shares their values have a high trust; those who believe the Forest Service does not share their values have a low trust. The most trusting tend to believe that species protection should be the primary principle guiding forest management and that the Forest Service consistently operates according to these principles. Those low in trust believe forest management should be based on the fulfillment of human needs; they perceive that the Forest Service operates inconsistently according to their values. The study suggests that social trust is a significant predictor of approval of species management practices.

Retrieval Terms: social trust, threatened and endangered species management, communities of interest, communities of place

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Acknowledgments

We thank the following individuals for support of the present study: Enoch Bell, Hal Salwasser, Garland Mason, Anne Fege, and Doug Pumphrey; for assistance with the focus groups, Fran Cvetkovich, Rachel Struglia, and Woo Jeong; for transcription, Fran Cvetkovich; for report preparation assistance, Rachel Struglia and Deanne McCollum; for assistance with group contacts and arrangements, Dana Bell, Bernice Bigelow, Pat Boss, Fran Colwell, John Flippin, Kathy Goode, Manuel Hamilton, Gerald Koellisch, Angie Lavell, Kevin Royle, Pastor Wayne Sanderson, Carolyn Therrio, Don Trammel, Mike Troeger, Ruth Wenstrom, and Tony Wetmore. And to all of the participants and respondents:

Social research is not possible without your honesty and willingness to share your thoughts. Thank you for your time and valuable contribution! The ultimate responsibility for data gathering, interpretation, and reporting is ours.

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In Brief...

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Social trust, the willingness to rely on those with formal responsibility to develop policies and make decisions, is a form of social capital. It reduces transaction costs and facilitates effective management of environmental issues, including wildlife management. National polls suggest that the public has a high trust of national and local environmental groups to solve environmental problems, with governmental agencies ranked close behind. In spite of a high general trust, however, there are indications of a lack of trust, or even distrust in agencies surrounding specific environmental issues such as the protection of threatened and endangered species. Only a few investigations have directly examined social trust and aspects of forest management.

The present study explored the role of social trust in understanding communities' opinions about threatened and endangered species management in the National Forests of southern California. Participants, members of selected communities of interest and communities of place, completed a survey and participated in group discussions. One hundred usable surveys were collected.

Based on the study results the following conclusions were reached:

Among the participants, social trust was related to perceived similarity with the Forest Service, that is, people who saw themselves as similar to the agency also expressed more trust in the agency than did people who did not see themselves as similar to the agency.

Among the participants, level of trust also was related to views regarding forest management priorities. Participants most trusting of the USDA Forest Service tended to believe that species protection should be the primary principle guiding forest management.

Among the participants, social trust was helpful in predicting approval and perceived effectiveness of selected management interventions.

Other measures, such as degree of concern about species, were less helpful than social trust in predicting reactions to management interventions among participants' responses.

Patterns of trust and distrust were identified on the basis of group discussions. The two patterns of trust were: a) individuals who concluded that the Forest Service shared their wildlife management goals/values and that these were salient to the Forest Service's decisions and actions; and b) individuals who concluded that the Forest Service shared their wildlife management goals/values although for legitimate reasons these were not always salient to the Forest Service's decisions and actions. The two patterns of low trust/distrust were found in a) individuals who concluded that the Forest Service shared their wildlife management goals/values but for non-legitimate reasons these were not always salient to the Forest Service's decisions and actions; and b) individuals who believed that Forest Service decisions and actions reflected priorities of forest management goals/values that they did not share.

Overall, these findings strongly suggest that social trust is an important component in public opinions regarding management of pressing environmental problems and judgments about the Forest Service's management of the southern California National Forests.

Introduction

Social trust is the willingness to rely on those who have the formal responsibility to develop policies and make decisions. The term “social trust” emphasizes that the individual or group of individuals being trusted has institutional responsibilities affecting the individual making the trust attribution, but may not be personally known to that person. The importance of social trust to the operation of governmental and other organizations in democratic societies has been recognized recently by a number of writers (Kasperson and others 1999, Luhmann 1979, Slovic 1999). It can be argued that social trust is a form of social capital that reduces transaction costs and facilitates effective management (Fukuyama 1995, Putnam 1993, Putnam 1995a, Putnam 1995b). When social trust exists, the costs of explicitly ensuring that participants in an exchange will act acceptably can be avoided. Organizations that are trusted can work effectively because they do not have to continuously explain and defend their policies and actions. They also enjoy the political support that often is needed for obtaining adequate funding. Furthermore, suggestions and recommendations of trusted organizations are more likely to be followed by citizens without the need for expensive and perhaps coercive inducements such as legal penalties for failure to comply. There is considerable evidence for the importance of social trust in the effective management of environmental issues such as waste management (Hallman and Wandersman 1995, Petts 1998, Wiedemann 1993), genetically modified organisms (Siegrist 1999), and various environmental hazards (Slovic 1999).

Social trust has advantages to the individual citizen as well as to the organization. One of the most important benefits is that trusting simplifies our lives. Trust reduces complexity. When one trusts that the representatives of government and other organizations can be relied upon to act in an acceptable way, one is relieved of the costs of gathering information, evaluating alternative courses of action, making decisions, and taking actions. Having decided that someone is trustworthy allows you to rely on a person to make decisions and take actions for you. You are relieved of the burden of doing this for yourself. Furthermore, deciding that someone is trustworthy provides you with a stable set of expectations about that person. You are relieved of the complexity of having to figure out how the person is going to act in every particular encounter in the future. That person can be expected to act in a trustworthy way. But the advantages of social trust as detailed above, of course, depend upon appropriately selecting when to trust. There is always the risk that the trusted one may prove untrustworthy.

This paper reports a study of the influences on and the processes of making this important judgment with regard to one particular aspect of managing the National Forests: the protection of threatened and endangered species.

Forest Management and Trust

Some political observers have concluded that there has been a decline in the trust of government agencies within recent years (Lipset and Schneider 1983, 1987). There is very little evidence to support this conclusion (Kasperson and others 1999). Some recent national polls actually indicate fairly high levels of trust. “People and the Press” surveys sponsored by the Pew Charitable Trust Fund, for example, show a decline of trust of elected officials (Pew Research Center for the People and the Press 1998). But, in general, the American public seems to have a high level of trust of government employees. National polls further indicate that the public has high trust of national and local environmental groups to solve environmental problems (Dunlap 2000). Of 10 American institutions, environmental groups received the highest trust ratings. Seventy-four to 78 percent of Americans said they trust such groups. Governmental agencies such as the USDA Forest Service were ranked close behind environmental groups in

the public's trust to solve environmental problems. An estimated 72 percent of the American public indicated a high trust of both Federal and State agencies to solve environmental problems.

While general trust in government agencies may be high, there are numerous indications of distrust or at least lack of trust of the Forest Service (and of other specific agencies) regarding the management of particular forest-related issues. Recent demonstrations, sabotage, threatened and actual bombings, and lawsuits indicate a lack of willingness on the part of some to rely on the Forest Service to develop and carry out management practices.

Only a few investigations have directly and systematically studied social trust and forest management. Cvetkovich and colleagues (1995) investigated the responses of local communities to Forest Service plans for Adaptive Management research in the National Forests of northern California. They found that the social trust the communities held for the scientists proposing the research was a better predictor of acceptance of the research than were self-assessed understanding of the research or judged technical ability of the researchers. Level of trust in the Forest Service was predicted by how the respondents regarded their own forest management views as similar to those of the Forest Service.

Winter and colleagues (1999) reported on research regarding attitudes toward a proposed recreation fee program within selected communities of interest (for example, recreationist groups) and communities of place (for example, residents living within forest boundaries). On the basis of discussion comments and questionnaire responses, the researchers concluded that "Social trust was revealed as the most significant predictor of anticipated impacts of new fees, general attitudes toward recreational fees, and amounts respondents were willing to pay for daily and annual passes" (p. 207).

Cvetkovich and Winter (1998) investigated people's acceptance of management practices to reduce the negative effects of recreational use on water quality in the Colville National Forest in Washington. Recreationists age 16 or older visiting a watershed in either developed or dispersed campsites participated in face-to-face interviews. In addition, high-schoolers in science classes near the watershed participated in focus group discussions and completed a brief questionnaire. Responses indicated that acceptance of intrusive management practices (e.g., banning activities) was predicted by social trust and how effective people thought the interventions would be. Acceptance of less intrusive practices (e.g., providing information during campsite visits) was predicted by personal concern for water quality and how effective people thought the interventions would be.

These few studies document that individuals who trust the Forest Service also conclude that it can effectively address controversial forest management problems. The research described in this report extends these past investigations of social trust to the controversial problem of managing the National Forests for the protection of threatened and endangered species.

How Social Trust Operates—Social Psychological Processes

The social science literature is marked by a diversity of views on the nature of social trust (Cvetkovich and Lofstedt 1999). Beyond fundamental agreements about trust's basic characteristics (it reduces complexity, it always involves a risk of betrayal) there exists an impressive diversity of conceptualizations about what trust is. The investigation reported here is grounded in recent efforts to understand the underlying psychological processes of trust (Earle and Cvetkovich 1995, 1997; Siegrist and others 2000).

This effort begins with the recognition that trust is a social emotion that results in a judgment about another person. It is true that sometimes relying on others is a matter of making a simple inference. We can call this a "proximal"

inference. Proximal inferences are conclusions based on our observations about something that we can directly observe, something that is proximal to us. It has been suggested that to keep this distinction clear we call reliance based on proximal inference “confidence” (Luhmann 1988). But, trust is more than confidence, more than simply concluding that a person will act in the future in a way that we are familiar with, in the same way that he or she has acted in the past. Trust involves a “distal” inference, an inference about something that is at a distance and not directly observable. Trust is an attribution about the mind of another person. When we trust, we are making a conclusion based on how a person acts about something that we cannot observe: the other person’s beliefs, values, motives, and desires—the other person’s character.

The *Salient Values Similarity* (SVS) model describes the process involved in this attribution of trust. There are two key components of the model: salient values and value similarity.

Salient values consist of the individual’s sense of what the important goals (ends) and/or processes (means) are that should be followed in a particular situation. Salient values are an aspect of the individual’s understanding of the meaning of a specific situation. The inferred meaning of a situation could include an understanding of what problem is being faced, what options are available, and how effective each option might be. The modifier “salient” was chosen to emphasize that the individual concludes that specific values are important in one situation given its meaning, but that other values may be important in another situation with a different meaning. For example, a person might conclude that equal sharing is an important value in relationships with family members but that entrepreneurial values and competitiveness are important in business relationships.

The saliency of values is characterized as changing with the meaning of the situation. Situations with similar inferred meanings will make similar values salient. As inferred meaning changes so will the saliency of values. Meaning could change, for example, as the individual learns more about a particular hazard. Personal experiences, discussions with family and friends, actions by an agency, and media reports all could change, for example, the inferred meaning of a forest management practice and therefore will affect the saliency of values (Kasperson and Kasperson 1996, Renn and others 1992).

Arriving at a judgment about the meaning of a situation and salient values is most often accomplished through rapid, implicit, unarticulated, and automatic information processing. Systematic logical thought is likely to be elicited when one has to explicitly articulate one’s position and explain it to other people (Cvetkovich and Lofstedt 1999). Judgments of *value similarity* involve a comparison of one’s own salient values and those that are salient for the person whose trustworthiness is being judged. This attribution is made on the basis of that person’s verbal statements, actions, and/or identity (e.g., Federal regulator, nuclear plant operator). Understandings that the person has of how the human mind works are also used (Cvetkovich and Lofstedt 1999).

Several studies have shown that judged salient value similarity is strongly related to attributions of social trust (Cvetkovich and Lofstedt 1999, Earle and Cvetkovich 1995, 1997). As noted, the meaning of the situation determines which values are salient. Research has shown that it is possible to trust the government in one domain where there is salient value similarity and to distrust it in another domain where there is salient value dissimilarity. It is hardly surprising, therefore, that general trust in politicians, for example, was not significantly related to risks perceived (Sjöberg 1998). In spite of the distrust of government by Californians in many domains, reflected by a series of steps to limit power of government agencies (e.g., through term limits), government intervention to avert environmental problems is still supported (Baldassare 2000). A general, non-domain specific measure of trust fails to identify salient value similarity.

Attitudes toward Wildlife Management

The exploration of attitudes toward management of threatened and endangered species serves as a specific domain for the exploration of social trust. Identifying and understanding diverse stakeholder values specific to management and applying those findings to management have been cited as critical to the survival of management agencies (Decker and Enck 1996). Studies have shown support for protection of threatened and endangered species (Cook and Cable 1996, Czech and others 1998, Ekstrand and Loomis 1998), though degree of support for protection varies depending on species type (Czech and others 1998, Glass and others 1990, Kellert 1985, 1993). For example, birds and animals find more support for protection than do plants or reptiles (Czech and others 1998). Bald eagles are valued more highly than wild turkeys (Glass and others 1990). Knowledge of specific threatened and endangered species among publics also varies, with greater knowledge of the "higher visibility species," such as the northern spotted owl (Loomis and Giraud 1997).

Support for management of various species by government agencies has also been reported (Kellert 1980). Examples of specific actions that have found support in the literature include increased energy costs due to water diversion for protection of habitat for bald eagles and mountain lions (Kellert 1985) and restricting use of areas, including prohibiting entry of dogs, in bighorn sheep habitat (Krausman and others 1995). Support of management options varies, however, by degree of direct personal impact of that action. For example, one study found that the reintroduction of Mexican gray wolves in Arizona was most opposed by those closest to the release site (Schoenecker and Shaw 1997).

Exploration of public attitudes toward protection of threatened and endangered species, leading to a better understanding of those attitudes and mediating factors, is integral to the formation of successful management approaches (Decker and Enck 1996). It is also a critical step toward success in engaging the public in collaborative endeavors to manage public lands.

Purpose and Limits of the Study

This research extends the inquiry into the role of social trust in natural resource management. The importance of trust relative to other possible predictors of approval and judged effectiveness of practices to protect threatened and endangered species are examined. The research also examines possible contributors to level of trust in the Forest Service. Included among these are organizational membership, views on the protection of species, and similarity of salient values. The investigation examines what information is desired about the Forest Service and participants' views on the best means of providing them with this information.

The representativeness of the results to other communities is unknown due to limits of the sampling strategy (see below). The intent of the research was to provide a snapshot of the styles and ranges of thinking among various communities of interest and communities of place potentially affected by a regional conservation strategy. The research was not designed to obtain findings that could be generalized to all residents within the region. The study provides information useful for the examination of processes affecting the causes and consequences of trust, as well as providing a view of the possible range of attitudes regarding management of threatened and endangered species. Information provided should be of use in forging a regional conservation strategy and in identifying issues for consideration in updating forest plans.

Methods and Procedures

Study Participants

Respondents (n=100) were recruited to participate in one of 13 groups based on their membership in selected communities of interest and communities of place. Communities of interest included miners (n=8), forest volunteers (n=33), and community organizations (n=21). Communities of place (n=38) consisted of individuals residing in areas potentially affected by a regional conservation strategy. Potential participants were identified through two procedures: (1) Key contacts known for their interest in forest management issues were asked to identify individuals who might be interested in participating in a discussion on the protection of species. (2) When these additional individuals were contacted by phone the group of potential participants was further expanded by asking for the names of others who might be interested in participating in the discussions. Meeting places were either within one of the four southern California National Forests or in nearby communities (*appendix A*). Fifty-five percent of participants were male. Most respondents (86 percent) had attended at least some college. Participants reported their ethnic identification as white (75 percent), Native American (13 percent), Asian-Pacific Islander (13 percent), Mexican American (4 percent), and Hispanic (2 percent). (Total percent of ethnic identity categories is greater than 100 since multiple categories were sometimes selected.) Annual household income varied, although a majority (55 percent) reported between \$25,000 and \$74,999. Participants engaged in a wide variety of forest recreational activities. Detailed frequencies and summary statistics not included in the main body of this report appear in *appendix B*.

Procedure and Response Rate

After the facilitator's statement of purpose and introduction, participants completed a brief questionnaire and then participated in a group discussion focused on the topic of protection of threatened and endangered species and management of the southern California National Forests. Nearly 80 percent (78.7 percent) of the individuals attending the meetings completed the questionnaire. The large majority of non-respondents occurred in one group (81.5 percent of non-respondents were from this group, characterized by a history of distrust of the agency).

Questionnaire

The questionnaire included items measuring social trust of the Forest Service (based on Earle and Cvetkovich 1995), degree of concern about the protection of threatened and endangered species, judged impact of recreational activity on threatened and endangered species, reactions to specific forest management interventions, sociodemographic items (age, gender, level of education, annual household income, ethnicity, annual forest visitation), and other items of interest (*appendix C*).

Focus Group Discussions

After completing the questionnaire, each group was led through a series of discussion items related to forest uses, protection of threatened and endangered species, trust of the Forest Service, conservation and management approaches, and perceived needs for information about threatened and endangered species (*appendix D*). Discussions lasted approximately 1 to 1-1/2 hours. Each session was tape-recorded and a focus-group recorder simultaneously entered notes directly into a computer. Abridged transcripts—single statements of meaning, incorporating quotes from participants—were constructed on the basis of the notes entered by the recorder with cross-verification and elaboration from the audiotapes.

An iterative process was used to create scoring categories for this database. Each statement was first categorized by the question asked. Topic categories were then identified on the basis of the content of the statements. The categories were reviewed several times to ensure that they reflected variations in the content of the statements. The categories are fairly obvious (see Results section). Categorizations of the statements by two independent raters were nearly perfectly matched and the few differences were easily reconciled through brief discussion. Categorized statements in this report supplement information from the questionnaire, allowing participants to “speak in their own words.” This report contains a near-complete record of all statements recorded using the above methods. Some statements were coded into more than one category. In the interest of producing a concise report, most statements are reported under only one category. It is possible to do this while still conveying the sense of the range of expressed opinions for any single category.

Measures Used in Analyses

Single Item Measures

The following were measured as single questionnaire items: Sociodemographic measures of *age, gender, ethnicity, level of education, annual household income*, and the attitudinal measure, *concern about the protection of threatened and endangered species*.

In addition to analyses based on demographics, analyses were conducted on three indicators of community membership. These indicators were:

- *Community of place*: distance of residence from nearest National Forest.
- *Community of interest*: membership in groups interested in protecting species. Participants were categorized as either not having an organizational affiliation or as affiliated with the first mentioned group they belonged to. This was done on the basis of responses to two questions: “Do you belong to an organized group(s), either environmental or non-environmental, with a special interest in issues related to the management of threatened and endangered species?” and “If yes, what is (are) the name(s) of the group(s)?” First-mentioned organizations were categorized as having either: (1) an interest in particular forest uses as well as an interest in threatened and endangered species (e.g., Gold Prospectors Association of America; California Off-Road Vehicle Association; California Association of 4 Wheel Drive Clubs; American Motorcyclist Association; Property Owners Association) or (2) a sole or primary interest in threatened and endangered species (e.g., Sierra Club, National Audubon Society, Nature Conservancy, National Wildlife Federation, Volunteers of the Angeles National Forest, Wilderness Society, Boy Scouts of America). Three individuals did not respond to the group membership questions. Fifty-six individuals provided the name of a forest use organization as the reported membership. Thirty individuals provided the name of a species-protection organization as the first reported membership.

Categorizing all reported memberships resulted in almost identical categories to first reported membership. Of the 41 individuals reporting a relevant group membership, 15 reported more than one group. Of these, 12 reported all memberships as either in forest-use or in species-protection groups, but not in both. Coding the three individuals reporting memberships in both kinds of groups as having membership in species-preservation groups results in 10 individuals with membership in one or more forest-use organizations and 31 individuals with membership in one or more species-preservation organizations.

- *Non-recreational interest* was measured by responses to, “Do you have any non-recreational interests related to the National Forests that might be

affected by the management of threatened and endangered species? For example, might your occupational activities or your community's water supply be affected by management decisions?"

Composite Index Measures

To determine the feasibility of constructing composite scales, each set of items used to compute the following variables was subjected to Principal Component factor analysis with varimax rotation. Results indicated that each set of items loaded on a single factor and could be treated as being one-dimensional.

Social trust— An index of trust of the Forest Service was computed using the mean of seven items (for individual frequencies on these items, refer to *appendix B*):

- To what extent do you trust the US Forest Service in its efforts to address threatened and endangered species problems? 1 = I do not trust the FS at all; 8 = I trust the FS completely (Mean = 4.64, S.D. = 2.09)
- How much confidence do you have in the Forest Service to protect threatened and endangered species? 1 = I am not confident in the FS at all; 8 = I am completely confident in the FS (Mean = 4.71, S.D. = 1.96)
- How confident are you in having the Forest Service decide if (each of five practices to protect threatened and endangered species) is necessary to do? 1 = Not confident at all; 8 = Very confident. The five practices were:
 - (1) ban certain uses in the forest, or areas of the forest, such as off-road vehicle use or fishing (Mean = 4.01, S.D. = 2.01);
 - (2) have signs at recreation sites informing forest users of their negative impacts on threatened and endangered species (Mean = 4.36, S.D. = 3.09);
 - (3) visit recreation sites and informally discuss activities that don't adversely affect threatened and endangered species (Mean = 4.46, S.D. = 2.31);
 - (4) close some campsites or picnic sites to protect threatened and endangered species, but keeps the majority of the areas open to use (Mean = 4.18, S.D. = 2.15);
 - (5) close whole campgrounds or picnic areas for a year or longer to allow species to recover (Mean = 4.00, S.D. = 2.18).

The resulting trust scale was highly reliable ($\alpha = .94$), with a mean of 4.34 and a standard deviation of 1.92.

Perception of the Forest Service - Attributes of Salient Similarity— An index of perception of the Forest Service was computed using the mean of three items:

- To what extent do you believe the Forest Service (FS) *shares your values* about how the National Forests should be managed to protect threatened and endangered species? 1=does not share values; 8 = shares values (Mean = 4.62, S.D. = 4.10)
- To the extent that you understand them, do you share the Forest Service's goals for threatened and endangered species? 1= different goals; 8=same goals (Mean = 4.95, S.D. = 2.10)
- To what extent does the Forest Service support your views about the management of threatened and endangered species? 1=opposes views; 8 = supports views (Mean = 4.78, S.D. = 1.87)

The resulting scale was highly reliable ($\alpha = .93$), with a mean of 4.73 and a standard deviation of 1.94.

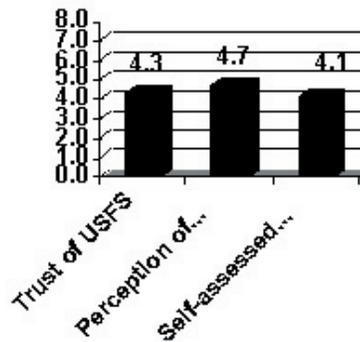
Self-assessed knowledge— An index of self-assessed knowledge about the management of threatened and endangered species was computed using the mean of six items:

- How knowledgeable are you about what is going on in southern California concerning the protection of threatened and endangered species? 1=Not very knowledgeable, 8=Very knowledgeable (Mean=4.63, S.D.=1.88).
- How informed and knowledgeable are you about (each of the five practices to protect threatened and endangered species)? 1=Not very knowledgeable; 8 = Sufficiently knowledgeable. The five practices were:
 - (1) ban certain uses in the forest, or areas of the forest, such as off-road vehicle use or fishing (Mean = 4.04, S.D. = 2.26);
 - (2) have signs at recreation sites informing forest users of their negative impacts on threatened and endangered species (Mean = 3.94, S.D. = 2.27);
 - (3) visit recreation sites and informally discuss activities that don't adversely affect threatened and endangered species (Mean = 3.96, S.D. = 2.11);
 - (4) close some campsites or picnic sites to protect threatened and endangered species, but keeps the majority of the areas open to use (Mean = 4.06, S.D. = 2.21);
 - (5) close whole campgrounds or picnic areas for a year or longer to allow species to recover (Mean = 3.95, S.D. = 2.16).

The resulting scale was highly reliable ($\alpha = .93$), with a mean of 4.10 and a standard deviation of 1.84.

The three composite measures (trust, perceptions of similarity to the Forest Service, and self-assessed knowledge) varied. Perceptions of similarity were highest of the three composite ratings, followed by trust and then self-assessed knowledge (fig. 1).

Figure 1—Mean composite ratings of trust, perceptions of similarity to the Forest Service, and self-assessed knowledge.



Restrictions of use— The following four indices (effectiveness, bother, personal impact, and approval) were each computed using the mean responses to three questions about management practices restricting forest use. The three questions had to do with ways to change forest user practices that have an impact on threatened and endangered species:

- ban certain uses in the forest, or areas of the forest, such as off-road vehicle use or fishing;
- close some campsites or picnic sites to protect threatened and endangered species, but keeps the majority of the areas open to use;
- close whole campgrounds or picnic areas for a year or longer to allow species to recover.

Effectiveness of restrictions — An index of the judged effectiveness of threatened and endangered species management practices (see above items) that restrict forest use was computed using the mean responses on the scale: 1=would not be

effective; 8=highly effective. The resulting scale was highly reliable ($\alpha = .93$) with a mean of 5.30 and a standard deviation of 2.16.

Bother of restrictions— An index of the bother caused by threatened and endangered species management practices (see above items) that restrict forest use was computed using the mean responses on the scale: 1=not bothersome, 8 = excessively bothersome. The resulting scale was reliable ($\alpha = .71$) with a mean of 4.82 and a standard deviation of 1.98.

Personal impact of restrictions— An index of the personal impact of threatened and endangered species management practices that restrict forest use was computed using the mean responses on the scale: 1 = no personal impact, 8 = excessive personal impact. The resulting scale was highly reliable ($\alpha = .81$) with a mean of 4.77 and a standard deviation of 1.98.

Approval of restrictions— An index of approval of threatened and endangered species management practices (see above items) that restrict forest use was computed using the mean responses on the scale: 1= strongly disapprove; 8= strongly approve. The resulting scale was highly reliable ($\alpha = .86$) with a mean of 5.36 and a standard deviation of 2.37.

Providing information— The following four indices were each computed using the mean responses to two questions about the use of practices providing information about the impact of forest uses on species. The two questions had to do with ways to change forest user practices that have an impact on threatened and endangered species.

- have signs at recreation sites informing forest users of their negative impacts on threatened and endangered species
- visit recreation sites and informally discuss activities that don't adversely affect threatened and endangered species

Effectiveness— An index of the judged effectiveness of threatened and endangered species management practices based on providing information to forest users was computed using the scale: 1 = would not be effective; 8 = highly effective. The resulting scale was moderately reliable ($\alpha = .49$) with a mean of 5.05 and a standard deviation of 1.71. We decided to use the composite index for effectiveness of the Forest Service providing information, bother of the Forest Service providing information, and approval of the Forest Service providing information, despite their low inter-item reliability because factor analyses had shown them each to be a single factor and using the single items making up each composite score would have reduced the power of subsequent analyses.

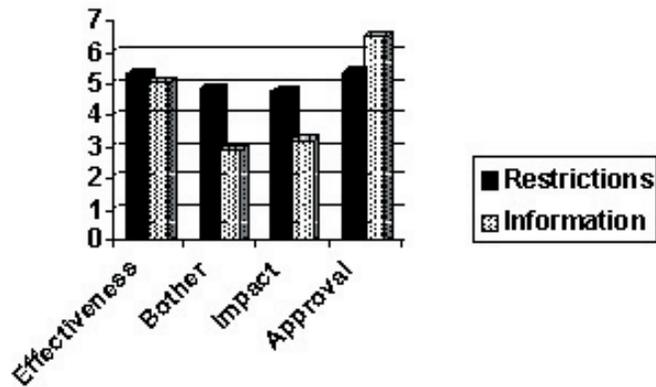
Bother— An index of the judged bother caused by threatened and endangered species management practices based on providing information to forest users was computed using the scale: 1=not bothersome; 8 = excessively bothersome. The resulting scale was moderately reliable ($\alpha = .45$) with a mean of 2.89 and a standard deviation of 1.74.

Personal impact— An index of the judged personal impact of threatened and endangered species management practices based on providing information to forest users was computed using the scale: 1=no personal impact; 8 = excessive personal impact. The resulting scale was moderately reliable ($\alpha = .61$) with a mean of 3.20 and a standard deviation of 1.83.

Approval— An index of approval of threatened and endangered species management practices based on providing information to forest users was computed using the scale: 1 = strongly disapprove; 8= strongly approve. The resulting scale was moderately reliable ($\alpha = .54$) with a mean of 6.51 and a standard deviation of 1.73.

Interventions focused on information received higher approval, were viewed as having less personal impact and less bothersome, and were viewed as almost equally effective as restrictions (fig. 2).

Figure 2— Mean composite ratings of judgments of management practices.



Results

Findings from the questionnaires and focus group discussions are organized around five major themes including (1) protection of threatened and endangered species, (2) trust in the Forest Service, (3) ratings of management practices, (4) desired information, and (5) involving the public in threatened and endangered species management. Within each thematic area, applicable items from the questionnaire are discussed. In addition, individual comments from group discussions are presented. While the comments may be applicable to more than one theme, in the majority of cases each is presented only once.

Protection of Threatened and Endangered Species

Overall, participants indicated a moderate personal concern about threatened and endangered species in the National Forests of southern California (Mean = 6.0, S.D. = 1.9; scale = 1 to 8, 1 = not at all concerned; 8 = very concerned). Three attitudinal statements were presented regarding threatened and endangered species. The majority of participants (68.5 percent) indicated that their view about the protection of threatened and endangered species was best described by “We probably have to let some species go, we can not save them all.” About a quarter of participants (24.7 percent) indicated that their view was best described by “We must preserve all species regardless of cost.” A small minority (6.7 percent) believed that “Economic growth and human concerns must come first” best described their view. As already indicated, the composite index of knowledge about threatened and endangered species was self-assessed at about the mid-point on the 8-point scale. The negative impact of recreationists’ behaviors on threatened and endangered species in the southern California National Forests compared to other forest uses such as grazing and mining was also rated at about mid-point on the 8-point scale (Mean = 5.2, S.D. = 2.0; 1 = no significant impact; 8 = very significant impact).

The ratings of self-assessed knowledge, effect of recreation, level of concern, and view on the protection of species were not significantly related to age, gender, education, annual income, distance of residence from a National Forest, self-reported non-recreational interests in the National Forests or self-reported ethnic identification. None of the multiple correlations resulting from regression predictions of these judgments on the basis of the background characteristics reached acceptable levels of statistical significance (*appendix E*).

Organizational Membership

Reported organizational membership was significantly related to concern about species, self-assessed knowledge, judged impact of recreation and view on the protection of species. Each statistical test compared those who reported no memberships, those who are members of forest-use organizations, and those who are members of species-protection organizations. Organizational membership was significantly related to concern for threatened and endangered species (*table 1*; $F_{(2,92)} = 30.76, p < 0.0001$). Scheffé tests indicated that members of species-protection organizations were significantly more concerned about species than those who did not report organizational memberships ($p < 0.0001$). The levels of concern expressed by members of the two kinds of organizations, species-protection and forest-use, were not significantly different.

Organizational membership was also significantly related to self-assessed knowledge about the protection of threatened and endangered species (*table 1*; $F_{(2,94)} = 5.00, p < 0.01$). Scheffé tests indicated that those reporting no organizational membership rated themselves as less knowledgeable than did those in forest-use organizations ($p < 0.01$). However, contrasts on self-assessed knowledge between members of the two types of organizational groups, and between those who were members of species-protection organizations and those without memberships, were not significant.

Organizational membership was significantly related to assessments of how much of a negative impact recreationists' behaviors have on threatened and endangered species in the National Forests of southern California (*table 1*; $F_{(2,92)} = 10.75, p < 0.0001$). Scheffé tests indicated that those in forest-use organizations believed that recreation has less of an impact than did both those not reporting an organizational membership ($p < 0.004$) and those in species-protection organizations ($p < 0.0001$). The assessed impact of recreation of those not reporting an organizational membership differed marginally from those in species-protection organizations ($p < 0.09$).

Views on the Protection of Species

View on the protection of threatened and endangered species was significantly related to concern about species, self-assessed knowledge, and judged effect of recreation. View on protection of species was significantly related to concern for

Table 1— Summary statistics for concern about threatened and endangered species, self-assessed knowledge, and judged negative impact of recreationists' behavior by organizational membership.

| Organizational membership | Concern about species | | Self-assessed knowledge | | Impact of recreationists' behavior | |
|---------------------------------|-----------------------|------|-------------------------|------|------------------------------------|------|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| No membership | 5.33 (n=55) | 1.77 | 3.76 (n=56) | 1.85 | 5.13 (n=53) | 1.91 |
| Forest-use organization | 6.50 (n=10) | 1.35 | 5.55 (n=11) | 1.96 | 3.00 (n=10) | 1.94 |
| Species-protection organization | 7.07 (n=30) | 1.82 | 4.37 (n=30) | 1.52 | 6.07 (n=29) | 1.56 |
| Total | 6.00 (n=95) | 1.91 | 4.15 (n=97) | 1.84 | 5.20 (n=92) | 2.00 |

threatened and endangered species (*table 2*; $F_{(2,86)} = 14.29, p < 0.02$). Scheffé tests indicated that those who believed that all species must be preserved were significantly more concerned about species' preservation than those who believed that not all species could be preserved ($p < 0.02$). The mean concern expressed by those who believed that preservation should be guided by human concerns was almost exactly the same as the mean concern expressed by those who believed that not all species could be preserved. Nevertheless, level of concern of those who believed that preservation should be guided by human priorities was not significantly different than those holding the "regardless-of-cost" view. The failure to find a relationship was probably due to the small number of individuals in the "humans-first" view group and the relatively large standard error of measurement.

View on the protection of threatened and endangered species was significantly related to self-assessed knowledge about the protection of species (*table 2*; $F_{(2,86)} = 11.10, p < 0.0001$). Scheffé tests indicated that those who believed that preservation should be guided by human concerns rated themselves as more knowledgeable than did both those who believed that not all species can be preserved ($p < 0.0001$) and those who believed that all species must be preserved ($p < 0.001$). There was no statistically significant difference in the level of self-assessed knowledge of these latter two groups.

View on the protection of threatened and endangered species was significantly related to assessments of how much of a negative impact recreationists' behaviors have on threatened and endangered species in the National Forests of southern California (*table 2*; $F_{(2,82)} = 7.90, p < 0.001$). Scheffé tests indicated that those who believed that all species must be preserved felt that recreationists' behavior had a larger negative impact on threatened and endangered species than did both those who believed that preservation should be guided by human concerns ($p < 0.003$) and those who believed that not all species can be preserved ($p < 0.01$). There was no statistically significant difference in the level of judged impact of recreationists' behavior of these latter two groups.

Focus Group Discussions

Limits to protection— Differences in views on the protection of threatened and endangered species were reflected in comments during the focus group discussions as well as by responses to the questionnaire. As would be expected from

Table 2— Summary statistics for concern about threatened and endangered species, self-assessed knowledge, and negative impact of recreationists' behavior by view on protection of species.

| View on protection of species | Concern about species | | Self-assessed knowledge | | Impact of recreationists' behavior | |
|---|-----------------------|------|-------------------------|------|------------------------------------|------|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| Economic growth and human concerns must come first. | 5.67 (n=6) | 0.75 | 6.54 (n=6) | 1.76 | 4.00 (n=6) | 3.10 |
| We have to let some species go, we can not save them all. | 5.69 (n=61) | 0.24 | 3.58 (n=61) | 1.33 | 4.98 (n=58) | 1.91 |
| We must preserve all species regardless of cost. | 7.00 (n=22) | 0.39 | 3.85 (n=22) | 1.74 | 6.59 (n=22) | 1.01 |
| Total | 5.67 (n=89) | 0.75 | 3.85 (n=89) | 1.63 | 5.33 (n=86) | 1.97 |

the questionnaire responses, a number of individuals indicated that they believed that there should be limits to the protection of species. One reason given for this view was a belief that the Threatened and Endangered Species Act is often misapplied to species that were not in danger or to species that were not originally intended to be covered by the Act.

- “I think they go overboard in some cases if there is not much evidence of threatened and endangered species.”
- “We are spending billions and billions of dollars protecting animals like the kangaroo rat and they are not endangered. They are all over the place.”
- “Several years ago there was a bacteria or a virus growing in excrement found in the river in Tijuana and there was talk about putting this on the threatened and endangered species list. There are things like this and the AIDS virus that we do not want to preserve. Perhaps we get too carried away by not allowing natural evolution to take place.”
- “We are talking about much more than plants and fish. We are talking about everything. Whether the original law meant to include all species should be questioned. I don’t know that we could or should protect all species.”
- “The Threatened and Endangered Species Act was started to protect our national symbol like the eagle but now it involves protecting sub, sub-species. I don’t think it warrants spending millions of dollars to protect everything. It is a waste of money.”

A few indicated that the misapplication of the Act was the result of a failure to adequately establish the threatened and endangered status of protected species.

- “The Forest Service put together a listing package of the five so-called endangered plants with little or no science. The Forest Service has nothing that we have seen in a published record that supports this in a peer review journal. These are all in-house reports with the letterhead of either the U.S. Fish and Wildlife or the Forest Service or one of their subcontractors. Privately, several botanists that are familiar with these plants told me they don’t believe they are endangered because they find so many of them. You can go out on any day and find four when the Forest Service says there aren’t any more anywhere in the world. So that is why I don’t believe what they are telling us.”
- “Two years ago they had two Forest Service employees make a spot inspection based on a 1980’s report of an endangered species in the various canyons upstream in the Mojave River. They claim they thought they heard the cry of a Southwestern Arroyo Toad. We were then slapped with a cease-and-desist order based on the Forest Service report that the mining would injure the breeding habitat of the toad. The study was based on a scientific study by a biologist who has done four other studies that they have used which we have challenged in court and were thrown out as bad science.”

The idea that protection should be limited on the basis of the particular species involved was also expressed.

- “...there are millions of flies out there. What’s one more fly?”
- “The extinction of small species like the kangaroo rat and the fly, which affects small areas of the environment, are not worth saving. Large species like the buffalo should be protected because they impact the environment so much more.”
- “Saving the salmon is important because it feeds a lot of people and other animals and is important to the environment.”
- “I think it would [make a difference to protection] if it was a mouse; but a condor is a different story.”

- “I think it depends on whether it is cute or not. I tried to save a spider in our parks and we have a great amount of interest in animals, a moderate amount of interest in plants, but none in insects.”
- “It [the species involved] shouldn’t make a difference but it does. It is an emotional factor.”
- “Yes, I’m putting it into human terms. What is important to humankind? The toad is questionable but the bighorn sheep isn’t.”

Only a small percentage of participants indicated on the questionnaire that the statement “Economic growth and human concerns must come first” best described their view about the protection of threatened and endangered species. A larger number expressed the sentiment that effects on humans should be one consideration in limiting protection.

- “In our area they are closing the campgrounds and areas because of the toad. I think we need balance.”
- “That same toad came very close to closing the Pacific Crest Trail. Just because it was there, someone found it. One work party was canceled on Horse Thief Canyon because of that toad.”
- “You have to look at what is the objective that you are trying to achieve by protecting a certain species. For example, why are we preventing thousands of recreational users from having wonderful experiences to preserve a toad? We have to look at the value of the toad to affect that many people. I can see preserving habitat for the bighorn sheep because it’s important for people to be able to see them. I think they need to look at what gains are to be achieved by the preservation of these species.”
- “A hospital was moved three feet from where it was originally supposed to be built because of that fly and it cost \$4 million.”
- “This is the kind of crap we have to deal with. We must look at it from the perspective of income and property rights.”
- “There is a proposal to reduce the speed limit between the area from Ontario to Colton, Riverside on the freeway from 10 to 20 miles an hour during the fly’s breeding season. This is just for a fly!”
- “Everyday there is something going extinct. All these people are put out of work because of the kangaroo rat. Most rats are eradicated. Why is the kangaroo rat so much more important?”
- “In the county of Riverside, environmentalists are trying to stop a commercial project because of some yellow wing fly that just inhabits that area some 40 to 60 acres. In my opinion this is going too far. This is putting people out of work and has put a little dent in the economy. I don’t agree with that.”
- “If they close the National Forest to camping and fishing, that’s going to do away with a lot of jobs. If they keep closing areas for whatever reasons, eventually we will end up with all of our forests closed to camping and fishing.”
- “Saving old-growth forests for the spotted owl is not worth it. We need to be able to cut down trees to stop the disease that has killed them.”
- “If you cut down a tree that an owl is living in, he will fly to another tree to make his home. There are a lot of trees up there. We have to keep planting the trees.”
- “I would think more economic. I’m thinking of money. I don’t think man should be prohibited from the use of all areas—some areas, but not all—for the protection of threatened and endangered species.”

The above comments indicate that thinking about protection of species is influenced by incidents that have occurred outside as well as within the National Forests.

Contrary to the view of limiting protection because of economic and other human concerns, a few participants indicated that there should be protection because of effects of species' loss on humans.

- "Yes it would! Anything that affects our lives that is in danger should be protected."

Some participants expressed the view that economic considerations are too important.

- "We now have corporations dictating the needs of our forests. For example, Honda pushing jet skis at Lake Tahoe. It will be hard to keep them out of there."
- "About five years ago Honda came into this area with \$50,000, and ever since then it opened up the entire forest."
- "The Forest Service is influenced by money. It is the reason they do and don't do things. They do small projects to appease the public into thinking that they are doing something."
- "The Forest Service is developing like society. They are raping the land by mining and logging it."

Some participants expressed the view that it is unrealistic to protect all species because extinction is inevitable.

- "Why is it so important that we stop everything because a fly happens to be going extinct? Things are going extinct all of the time."
- "Certain species will be eliminated, there are no two ways about it."
- "I think, on the other hand, there is an evolutionary process going on where things will naturally die out over time and the hybridization that goes on amongst species that were not intended in the original [Threatened and Endangered Species Act]."
- "Even if we did do everything that we could, we would still lose some species."
- "As the population grows, more and more species will be lost. It is inevitable."
- "We should go middle of the road in protecting threatened and endangered species. It is impossible to protect everything in a habitat. If you preserve it as a wilderness, you can let things naturally die out, but we humans will not have caused it."
- "There is no reason to intervene with a species that is naturally dying out. This is a natural process for species to die out. It has been happening forever. If a species is at the end of its time, and it's dying, it is not a result of man, there is no reason to intervene. We should intervene only if we have a good reason for saving the species. [For example, for medical reasons.]"
- "I don't think we know if the species needs protection, whether they must be saved or should be saved. Species come and go all the time, and thousands of new species are coming in every day. We need to look at this in large time slices. Man could be the endangered species. We don't want to change things from how they are today. Is that really part of what we should be doing? I don't think we know enough to know which species should stay and which should go."

The view that efforts to protect species should be guided by considerations of ecological relationships was also expressed.

- "I don't think we know if the species needs protection, whether they must be saved or should be saved. Species come and go all the time, and thousands of new species are coming in every day. We need to look at this in large time slices. Man could be the endangered species."
- "We don't want to change things from how they are today. Is that really part of what we should be doing? I don't think we know enough to know which species should stay and which should go."

- “Efforts to protect species should be informed by scientific understandings of the importance of species to each other and the environment. When you look at an impact statement, you have to look at the total picture in order to make a decision on that fly.”
- “If you kill the rats or mice, then the condor won’t have anything to eat.”
- “Concerning the reintroduction of wolves and coyotes into areas, I think, from the biological point, we need to think ‘systems approach’ to these problems not individual species.”
- “Without the whole system and the habitat that supports that species, in some cases it is without hope and reintroducing a species into an area that can’t support it can be a waste of time.”
- “We don’t even know how large of an area we need to support these animals.”
- “Because of this we need to concentrate on the system, the birds that eat the insects, the animals that eat the birds, etc.”
- “We need to study the systems so we can make informed management decisions on that good data. Decisions can’t be made according to how cute something is.”
- “The county board of supervisors is getting smart because they are setting aside a big area to protect all species, not just a single species but a whole ecosystem.”
- “The Forest Service needs to make better decisions on how protecting one species is going to endanger other species. For example, the Wild Horses and Burro Act. By protecting these species they have actually endangered the bighorn sheep. The same thing is happening with the mountain lion. In California the lion is protected, but they are killing off the bighorn sheep left and right. The numbers of sheep left are very few now.”
- “I would like to say it should be unconditional, but from a standpoint of practicality it cannot be. In terms of the interrelationships of the bio-system and the ecosystem, we need to be concerned with all of the species, not just the ones at the top of the food chain. I think all life is interconnected and that we need to make informed decisions.”
- “The raven population has been increasing in California and it is an opportunistic bird and we know that they have had a major impact on the tortoise. Do we want to control the number of ravens to protect the tortoise?”

No limits on protection of species— A number of ideas in support of unlimited protection in the National Forests of threatened and endangered species were expressed:

- “No, it doesn’t matter to me [what species is being protected] because it all affects the total environment. All threatened and endangered species matter.”
- “I think the cause of endangerment to that species is important. If humans cause it, then we should intervene.”
- “We are the stewards of the land and I think that wildlife should be protected without limits.”
- “All species are important to the ecosystems of the forests.”
- “I would like to address the question of how important it is to preserve all threatened and endangered species. Recently I went to UCSC, a really great grad school in environmental studies. Their approach is to not only educating people in environmental studies but educating people in the law that pertains to it and business, because we really aren’t going to solve our problems until we triangulate in this way. All things need to be considered. We need to believe that there are ways to try to preserve all life forms on earth without having to compromise the quality of our own lives. I think the key to

this is education. People are not informed enough about wilderness etiquette. We need to inform the public and make preservation of life the first priority. I think people must have access to the wilderness, but they must know it will cost them. I think the main reason why the Forest Service is having problems with the Adventure Pass is because people want to be involved with the forests, and are being excluded by the Forest Service. We need to get the people more engaged with the Forest Service and get more information out and educate them and we might actually make it all work.”

- “Recreational activities are key to this discussion. Recognizing that forests on the coastal regions in southern California are critical habitat for an incredible number of species, there is an old saying about Yellowstone ‘we love it to death,’ everybody wants to live there and utilize it, and without proper management and control of recreation in those areas, the habitat becomes degraded for both the animals and the recreationists. I think that because we are in such a highly developed economic area, and highly populated area, that these areas have to be protected, even from recreation.”
- “We should go for it all and settle for what we get. Based on reality, I think we should protect anything at any cost. We aren’t going to get that, but we need to set the goals high.”
- “It is very important at any cost that species on the threatened and endangered species list be protected. Forestry has a unique opportunity because they can control what is happening in their own area. I don’t like to see the Forest Service getting into the business of selling lumber and expanding recreational activities in areas that we need to protect the resources as well as the threatened and endangered species.”

Summary: Protection of Species

As a group, participants rated concern about the protection of species at a moderate level. They also rated their level of knowledge about threatened and endangered species and the effects of recreation on species at about the mid-point on the measurement scales. Variations in responses to the three questions posed were not strongly related to demographic characteristics, possibly due to small sample sizes. Responses were strongly related to organizational membership and to views on the protection of species. Members of species-protection organizations and those who believed that all species must be preserved expressed more concern about the protection of species than did others. Those who did not report belonging to an organization rated themselves as less knowledgeable than did those reporting an organizational membership. Those who believed that preservation should be guided by human concerns rated themselves as more knowledgeable than did others. Members of forest-use organizations believed that recreational use has a small impact relative to other uses. In contrast, those who believed that all species must be preserved judged that recreationists’ behavior has a large negative impact on threatened and endangered species.

A considerable range of views about the protection of species was expressed during the focus group discussions. Many participants indicated that there should be limits to the protection of species. Ideas in support of this conclusion included the view that the Threatened and Endangered Species Act is not currently being appropriately used, that extinction is part of nature and beyond total control by humans, and that human concerns are important too. The view was also expressed that protection should take into consideration ecological relationships rather than focusing on single species. In contrast, other participants expressed the view that efforts to protect species should not be limited. Human concerns, especially concerning economic effects, were already playing too large a part in hampering protection efforts.

Table 3— Beta weights for perception of Forest Service component items as predictors of trust of the Forest Service.

| Item | Beta - standardized coefficients | t | p |
|---|----------------------------------|--------|--------|
| To what extent do you believe the US Forest Service (FS) shares your values about how the national forests should be managed to protect threatened and endangered species? (1=does not share values; 8 = shares values) | .403 | 10.927 | 0.0001 |
| To the extent that you understand them, do you share the US Forest Service’s goals for threatened and endangered species? (1= different goals; 8=same goals) | .310 | 8.061 | 0.0001 |
| To what extent does the US Forest Service support your views about the management of threatened and endangered species? (1=opposes views; 8 = supports views) | .333 | 9.275 | 0.0001 |

Trust and Distrust of the Forest Service

Predictors of Social Trust

Sociodemographics— Level of trust of the Forest Service as indicated by the composite index score was not significantly related to age, gender, education, annual income, distance of residence from a National Forest, self-reported non-recreational interests in the National Forests, or self-reported ethnic identification (*appendix F*).

Values and goals— A multiple regression analysis predicting level of trust of the Forest Service on the basis of responses to each of the three items making up the composite index “Perceptions of Forest Service - Attributes of Salient Similarity” (see page 7) was completed. Responses to each of the three items were significant predictors of expressed level of trust of the Forest Service (*table 3*). The items each made an approximately equal contribution to the overall high percentage of variability in trust accounted for ($R^2_{adj.} = .98$, $p < 0.0001$). Those participants who most trusted the Forest Service also believed that the Forest Service shared their own values about how the forests should be managed to protect threatened and endangered species, believed that the Forest Service shared their goals for threatened and endangered species, and that the Forest Service supported their views about the management of threatened and endangered species.

Other indicators— Group membership was not significantly related to level of salient similarity to the Forest Service (Mean = 4.67, S.D. = 1.92; $F_{(2,94)} = 1.33$, $p = 0.27$). View on protection of threatened and endangered species was significantly related to salient similarity with the Forest Service ($F_{(2,86)} = 36.22$, $p < 0.001$). Scheffé tests indicated that those who believed that preservation should be guided by human concerns rated the Forest Service as less similar to themselves on salient goals and values than did both those who believed that not all species can be preserved ($p < 0.0001$) and those who believed that all species must be preserved ($p < 0.0001$). There was no significant difference in the level of similarity of Forest Service to self of these latter two groups (*table 4*).

Table 4— Means and standard deviations for attributions of salient similarity by view on the protection of species.

| Statement that best describes view on protection of species | Mean | S.D. | N |
|---|------|------|----|
| Economic growth and human concerns must come first. | 1.67 | 1.33 | 6 |
| We have to let some species go, we can not save them all. | 4.92 | 1.68 | 61 |
| We must preserve all species regardless of cost. | 5.53 | 1.57 | 22 |
| Total | 4.86 | 1.85 | 89 |

The above analyses of questionnaire responses indicate that trust is on average about mid-point on the measurement scale and based on perceptions of salient value/goal similarity of the Forest Service to self, particularly regarding

views about basic orientation toward the protection of species. Results of the focus group discussions provide further detail about the nature of trust and salient values and goals.

Focus Group Discussions

Focus group discussions of a number of issues (funding, for example, and others explained on the following pages) provide further detail about the nature of trust—or distrust—and salient values and goals. In addition, while this research was not intended to investigate reactions to the Adventure Pass, many participants used the Adventure Pass as an example of a program that reflects problems of Forest Service management.

Judged similarity of goals and values— Although their comments were often qualified, a number of participants indicated that they believed that their personal views on forest management and the protection of species were similar in a variety of ways to those of the Forest Service.

- “I trust the Forest Service will give me accurate information. It might be slanted information, but they will not lie to me.”
- “I conceptually agree [with the Forest Service]. We have multiple use of our forests, so how do you work out the problem of usage and still protect the forests? The Forest Service needs to take actions even though it may be tough to swallow.”
- “I think the Forest Service wants to see the forests endure, but sometimes I think our ideas of their goals are at crossroads.”
- “The goals [mine and Forest Service’s] are the same, but how they achieve it sometimes are miles apart.”
- “I think the Forest Service has a general desire to protect the forests, and I feel we could do a good job for them if we were better informed. I get no teaching support other than my own research. The Forest Service is not there to help me become a better-informed volunteer.”
- “The red-legged frog deal brought forth a suit by a legal group from Phoenix. The Forest Service here did not follow certain guidelines that were supposed to have been followed and that is why the area got closed. There is not a shortage of red-legged frogs in our area and the Forest Service knew that.”
- “I think that the mere presence and current existence of the Forest Service and the forest lands under their administration indicates that I concur with the [Forest Service’s] goals. Internal conflicts [exist] between high- and low-impact activities. I would like to see more active involvement by the community. These are the lands of the American people. The public will not accept decisions if they have no participation in the process.”

Funding and resources— Some participants also indicated that lack of funding and other resources often handicapped the Forest Service’s efforts to manage the National Forests for species protection. These comments often implied that the Forest Service sometimes took actions that could be construed as a sign of untrustworthiness. But, the actions were attributed to a lack of appropriate resources, not untrustworthiness.

- “I’m fairly confident. They have quality people working for them, but they are understaffed. It is tempting for the Forest Service to close areas because it is convenient to do so.”
- “I think they are doing what they can with the funds that they have available to them. The political agenda of Congress works against them.”
- “Without the allocation of funds from Congress there is not the money to patrol areas closed for rehabilitation. There is only so much we volunteers can do. It all comes down to money and staff.”

- “Where are you going to get the personnel? There is not enough personnel to monitor these things.”
- “In reference to the question of protection of threatened and endangered species, it is not just personnel but the experienced biologists and scientists that have to go up and do this.”
- “Due to the lack of funding, lack of personnel and other reasons, it is almost impossible for the Forest Service to do a good job. The wilderness is just too huge to handle with the funding they are given.”
- “Money doesn’t stay in our group. The Forest Service doesn’t keep us informed and the Forest Service is spread thinner and thinner by the reduction in funds.”
- “Our nation is currently having an economic boom. I don’t understand why the Forest Service hasn’t benefited from this.”
- “We really do find it very difficult to do anything because of the lack of funding.”
- “I don’t think they have the staff.”
- “The Forest Service is understaffed and under-budgeted. We need to train the volunteers, but there is not enough money for that.”
- “Congress isn’t currently supporting us with ample funds to do the job of protecting our forests now, much less increasing our funds for the future. Our volunteer group is trying to do the best we can, but we cannot get enough volunteer manpower. I could have 50 people say they will work a weekend picking up trash in the forests and only one person will show up. Protecting our forests cannot be done on volunteer work alone. I have confidence in the Forest Service but only if it has the manpower to do it.”
- “I think it has to do with money, attitude, and being burnt out. It is very difficult to get things done.”
- “My perception is that they are so under-funded that they would not have the capability to implement some sort of protection act and implement it the way it should be done. They don’t have the money, the resources, or the manpower to do the job.”
- “It’s because the Forest Service doesn’t have the funds that they have adopted the attitude that it is them against the outside world. They don’t want help. They don’t trust anyone else and if volunteers want to help them in any way, their first thought is, there goes my job.”
- “The Forest Service is supposed to make money so they are logging, cutting down old trees, and ruining the environment for spotted owls, flammulated owls, woodpeckers, etc. for a couple of bucks. But that is their assignment from Congress—to make a couple of bucks.”

Distrust of the Forest Service— Focus group comments indicate a number of sources of distrust of the Forest Service related to management goals and actions (or inaction), the Adventure Pass, and political influences.

Management goals and actions—

- “Concerning another claim, there were a number of old campsites, campgrounds that were no longer in use except for maybe permanent sites on that claim. Six years ago they planted trees and put boulders in the middle of all the side roads so we could not use those areas. Now they are claiming that the trees in that area are being endangered by trees of the varieties that they planted.”
- “The river tortoise is protected. The Fish and Wildlife Department cut a deal with Nevada to develop land in Vegas. They took tortoises from the land and put them up for adoption. If they were not adopted within six months,

the Fish and Wildlife Department killed them. Now they are taking them out because I embarrassed them too many times and are dumping them on a poor rancher in Nevada who is probably put out of business because of millions of tortoises running around on his property. These are the actions that make us distrust the government.”

- “The Forest Service does not enforce the rules that they have now.”
- “What is good for one forest is not good for others. We should have regional concern only.”
- “I think it was a bad decision to allow pruning trees in the San Bernardino forests.”
- “We need to leave the downed timber for the wildlife and the general health of the forests.”
- “Restrictions in our district are too harsh for us to do an adequate job of protecting the forests.”
- “When you see the mismanagement of sensitive areas like the Olympic Peninsula and the Tongass in Alaska, it degrades your confidence in the organization.”
- “If you do a good job at the Forest Service, you get promoted to a job you can’t do very well but you get paid more for doing it. That incentive is very evident in the Forest Service.”
- “I don’t trust the Forest Service. We suffer from their mistakes. For example, at Yosemite the Forest Service took all their trash and put it out there and everybody came to watch the bears. The Forest Service then said they made a mistake and planted apple trees for everybody who lived there and then said that the bears were stealing the apples and getting drunk, and again they admitted to making a mistake. Now what do we do? We suffer from their mistakes!”
- “I do not have much confidence. The Forest Service closed fishing because of the Arroyo Toad. The Forest Service gave the explanation for the closure that a fisherman might step on a toad while fishing. This is not very realistic since I must watch where I am walking for a multitude of reasons like not wanting to trip or step on a snake. Another example is the closure of a well-regulated campground in the area and yet the Forest Service left the back country backpacking open. I see a big impact from the use of these areas by the backpackers. I feel the Forest Service is being discriminatory toward the designated camping areas since the back country has a very high impact from very heavy use. I don’t understand the decision, and it shook my confidence in the Forest Service.”
- “I have a lot of confidence in the Forest Service, but sometimes I see a simple lack of common sense. For example, last winter the Forest Service put up one of those mechanical signs and they put it all the way up at the top of the Y saying that the area was closed unless you have an Adventure Pass. You had to go quite a distance away to a store to buy the Adventure Pass so people would park their cars and ignore it.”

The Adventure Pass— The research was not intended to investigate reaction to the Adventure Pass. However, many participants used the Adventure Pass as an example of a program indicative of problems of Forest Service management. As noted above, species protection issues occurring outside the National Forests affect perceptions of species protection within the forests. Perception of Forest Service's management of issues not directly related to species protection also spill over into reactions about the management of species protection.

A few indicated positive reactions to the Adventure Pass:

- “Despite the negative reports, I think the Adventure Pass was a good way to help our local forests.”

- “The best thing that has happened to this forest is the Adventure Pass. It’s made a more dedicated and intelligent user. It is keeping the partygoers out.”

Some also indicated that they understood the economic reasons for the Pass:

- “I think the Forest Service is not given the money to do its job. I think the Adventure Pass was needed because of the lack of money.”
- “The Forest Service budget has been cut going back to the 1980s. In the last 4 years the budget has been cut by 40 percent. That is why we have the Adventure Pass.”
- “It could be a money problem too. It has crossed my mind that the Adventure Pass was decided on because they needed the money.”

Many more expressed negative reactions:

- “At first I supported the Adventure Pass, and the Forest Service probably needs the money, and I am willing to give \$30 a year, but they keep closing areas and people are getting less and paying more.”
- “I think it is wrong that people can enter the forests with a Nature Pass or Adventure Pass but don’t need to get a wildlife permit.”
- “The Forest Service has the Adventure Pass to get the toe in the door for commercialism.”
- “The Adventure Pass is a tax, and people are just ignoring it.”
- “It made the papers when a group of 30 to 40 people were turned away from an area because of closure after paying for the Adventure Pass. They each paid \$30 apiece for a season Adventure Pass.”
- “If the Forest Service spent more time and energy on volunteers instead of the Adventure Pass, they would be able to accomplish more.”
- “\$230,000 gross was taken in for the Adventure Pass, and they hired four people and spent about \$65,000.”
- “I think with the proper presentation that the Adventure Pass could have been a marketing success. The Forest Service should be our source of information.”
- “I didn’t know until recently that the ordinary citizen had to pay for Adventure Passes.”
- “I would like to see the balance sheet that the Forest Service has from the monies taken in from the Adventure Pass. I would like to know how that money is spent. I think we need fiscal accounting from the Forest Service.”
- “People don’t like to hear that they are not paying enough taxes and that is the reason why we are charging for the Adventure Pass. The Adventure Pass is separating people.”
- “The Forest Service needs to educate the public instead of citing them for not having an Adventure Pass.”
- “We as a volunteer group are not getting support from the Forest Service. They say they have no personnel but suggest we volunteers could create the program, advertise them, and the Forest Service will take the \$5 from the Adventure Pass when the public parks their cars at the events.”
- “That [the Adventure Pass] was the biggest decision they made without asking the public.”

Political influences— One theme expressed was that the Forest Service must operate in a political environment. Participants who recognized the possible influence of political considerations often implied that the Forest Service was not operating according to knowledge based on environmental science and the best interests of the forests.

- “I think it’s politics.”

- “I am confident with the Forest Service employees, but my confidence lapses with the pressures on the Forest Service to provide for high-impact uses such as mining. There are pressures on the Forest Service to allow these uses to continue as usual. These political pressures decrease public confidence. For example, low-impact recreational users like hikers seeing the inability of the Forest Service to minimize the effect of high-impact users like mining contributes to the public’s lack of confidence in the Forest Service.”
- “Yes. What we have here are managers of the Forest Service not living up to the public trust. Their philosophy is coming from environmental groups who want to preserve everything, and they are misusing the public trust to use their authority to abuse the public trust. I, as a former government employee, can see quite clearly what is going on. We used to get rid of those people because you’re supposed to support the laws of the country. We are very upset that they are taking our tax money and violating the public trust.”
- “I have low confidence in the Forest Service because they have so much political pressure to manage the forests in a particular way. Politics strongly influences the Forest Service. I think the Forest Service does try to do a good job, but are we really doing the best thing by closing campgrounds and losing public support?”
- “The Forest Service is dependent on Congress, and politics are the most important. This does not leave me with a lot of confidence.”
- “Part of the reason that I don’t have much confidence is that it is part of the national government. It’s a bureaucracy, and things get caught up in how things should be done as opposed to what needs to be done.”
- “The Forest Service is a government organization and it should answer to the public, but I think it is all political and I don’t have much confidence that the Forest Service can fairly balance interests.”

Another theme related to politics was that the Forest Service used protection of species as a rationale to accomplish political ends that are unrelated to protection.

- “The endangered species are managed solely to affect the management goals of the Forest Service. They have nothing to do with protecting or preserving the species. Their agenda is to use this to close areas they want closed, force mining out, stop recreation activity that they do not approve of. They use it as a management tool, and that is how the Forest Service and many other Federal entities look at the Endangered Species Act. It is merely a vehicle for extortion and a vehicle for management.”
- “It’s my opinion that the longer they keep the studies going, the longer they can hold off what it is they want done. That’s basically what they’ve been doing for years.”

Latitude to Manage for the Protection of Species— Just as some had concluded that the Forest Service was constrained by the lack of resources, some participants also recognized that the political and legal systems have a constraining effect on what the Forest Service is able to do.

- “I think they’re at the mercy of the politicians there in Congress.”
- “Not much [latitude to manage for protection of species]. It involves politics inasmuch as the Forest Service has to answer to certain contingencies.”
- “I don’t think they have a lot of clout.”
- “I think it [management for species protection] is imposed and that they have very little say in matters.”

- “When I phoned about getting a road fixed because the trailhead was not open due to this, the Forest Service said that they had not closed the trailhead, but that the Department of Transportation was not going to fix the road, and because of this the trailhead will remain closed. I don’t think that they have much power in these matters.”
- “We’re more at the mercy of the politicians.”
- “U.S. Fish and Wildlife has more to do with what gets listed than the Forest Service. They are the listing agency, and once a species is listed, there is not much the Forest Service can do.”
- “In the paper today the Forest Service was overruled trying to set aside a piece of land; with this in mind I don’t feel they have a lot of power to make these decisions.”
- “They have no power.”
- “I really don’t know. They have a lot of hoops to jump through so it’s hard to know how much power they really have.”
- “I think they have a wish list but they have the reality of budget constraints.”
- “I think, concerning threatened and endangered species, the Forest Service has backup through the Fish and Wildlife Department. Regarding the setting of rules and regulations, the Forest Service has a lot of power; however, they don’t have the power to enforce the protection of threatened and endangered species.”
- “None with this administration. Politics play the major role in it. The power of environmental groups and their ability to sue the Forest Service puts a tremendous pressure on their decisions. Extreme groups are affecting the ability of the Forest Service to deal with many issues.”

Other participants, however, believed that the Forest Service has considerable latitude and discretion in deciding on species protection issues.

- “I think they do have somebody to answer to, but they have the power to do just about anything they want to. They could close every campground around here if they wanted to.”
- “[The Forest Service has] Too much power.”
- “My understanding is that the species themselves are dictated. In terms of their management, I think they have quite a bit of power.”
- “On their land I think they have all the power.”
- “As far as I’m concerned, they have all the power.”
- “I think the Forest Service has a lot of power.”
- “Yes, from what I see, I think the Forest Service has a lot of power to shut things down on the word of the biologists.”
- “On a one-to-ten scale [of management latitude], I’d give them a good eight!”
- “They have the power to say yes or no.”
- “Yes! [The Forest Service has power.]”
- “[How much power does the Forest Service have in management decisions?] Ask what they do with the Adventure Pass money.”
- “They have all of it.”
- “I’m sure they have political and money restrictions, but basically they have all the power.”

Relationships with the public— Perceptions of failures to contact the public or inappropriate interactions with the public were given by a number of participants as a source of their distrust of the Forest Service.

- “The Forest Service needs better public relations. The average citizen doesn’t know about the lawsuits that are going on now.”
- “I didn’t know until recently that the ordinary citizen had to pay for Adventure Passes.”
- “There needs to be more public awareness and public relations on the part of the Forest Service.”
- “We need a cooperative effort instead of just fighting over little things. Let’s work together.”
- “The Forest Service is ‘We are the government!’”
- “I think the public should have some input.”
- “There is a lack of dissemination of information. I had to find out from the *Los Angeles Times* about the Arroyo Toad closures. I think with the proper presentation that the Adventure Pass could have been a marketing success. The Forest Service should be our source of information.”
- “No input outside of his [the Forest Service Regional Forester] own personal agenda or decision making. At public meetings the decisions are already made, and he sends an underling to smile and nod at the meetings. This has happened multiple times.”
- “We, as a group [of volunteers], know more than the general public, but we are given very little information.”
- “We have no contact with the Forest Service personnel.”
- “The Forest Service seems inadequate, and we as volunteers give a lot of time to the protection of our forests. We want a personal relationship with the Forest Service, but we are not getting it. There is a lack of connection and involvement between us and them because of miscommunication and things that go helter-skelter.”
- “We have had a lot of experience with the Forest Service that has left us with very little confidence in them. They don’t communicate with each other, much less to the public.”
- “Bureaucracy and, it seems, the Forest Service thinks the forests belong to the Forest Service, not the people. We fight that all the time.”
- “Budget cuts have made individuals concerned about their own jobs, and the first thing they do is cover their own butts and not to even help each other in their own offices. It’s really sad!”
- “They won’t answer phone calls. They will not call you back. They are never in the office.”
- “They are worried about their own little job and that’s it.”
- “I am a reputable journalist and have offered my services to put out a paper and they [Forest Service] have refused.”
- “If we had trust and they had the information and they had a lot of people working for them that had the best interests for the general public in mind, then I think we would support them. I don’t know that that trust is always there.”

The Local Forest Service vs. Forest Service Bureaucracy— A number of participants distinguished between individuals at different levels of the Forest Service on the basis of their particular experiences. The distinction was often drawn between individuals who staff local offices (with whom participants have had direct, face-to-face contact) and Forest Service staff employed at regional and national

levels (with whom participants have rarely, if ever, been in direct contact). In many cases participants expressed much more positive feelings toward and trust of local Forest Service staff.

- “Locally I have a lot of confidence; federally, I have no confidence.”
- “We have watched our money disappear, our resources disappear, our roads get closed, and there is nothing we can do locally.”
- “I have contact with the local office and they seem knowledgeable and entrusted, but when you direct a question to them they seem like their hands are tied.”
- “At a one-on-one level there seems to be good intentions and desires, and they leave you with a feeling they want to do the right thing but can only do what they are told to do.”
- “I think higher administration people have more political pressure than the local people have, and subsequently decisions made higher up and brought down to the local level are not based on good science but are based on politics.”
- “I think they are trying to do a good job at the local level but political pressures make it very difficult for them.”
- “I’ve been working on a local level with the Forest Service [off-highway vehicle rangers only], and I think they do a pretty good job. When you move beyond the local level you start having problems with political pressures.”

A few participants, however, believed that the local Forest Service staff was less trustworthy than staff at other levels.

- “No [not confident], not with the local people. The national level maybe, but not with the local people.”

Summary: Trust—and Distrust—of the Forest Service

As a group, participants expressed a moderate level of trust in the Forest Service, selecting, on average, ratings at the mid-point of the measurement scale. Variations in expressed trust were strongly related to perceptions of salient similarities between one’s self and the Forest Service. Those who indicated high trust perceived the Forest Service to share their values, goals, and views. Individuals who believed that preservation should be primarily guided by human concerns perceived the Forest Service as being dissimilar to themselves.

Focus group comments justifying trust in the Forest Service were not highly specific and were often qualified. They did convey, however, the idea that those who trusted the Forest Service had an impression of salient similarities. Participants also indicated that they believe the Forest Service is handicapped in operating according to its best values and goals because of inadequate funding and the lack of other resources. A number of reasons held by participants for distrusting the Forest Service were articulated during the focus group discussions. Examples of disagreements with the Forest Service over management goals and actions were one source of distrust. Included among these examples was the Adventure Pass, a Forest Service program unrelated to the protection of species, but which gave many a general sense of distrust. Other reasons for distrust included the view that the Forest Service is strongly influenced by political considerations, that it has considerable discretionary power over species protection that it often misuses, and that it has poor relationships with the public. These reasons may not be representative of the general population’s reasons for trust or distrust in the agency, however.

Judged Effectiveness and Approval of Management Practices

Access and Information: Two Practices Tested

Sociodemographics— Participants’ views about two categories of management practices were evaluated: Providing information to users and restricting use of forest lands. As described in “Methods,” participants were asked to assess the effectiveness and approval of two approaches for providing information to forest users about threatened and endangered species. These were visits to campgrounds and the providing of information via signs at recreation sites. They were also asked to assess the effectiveness and approval of three approaches to restricting forest use. The three restrictions to protect threatened and endangered species were banning a particular activity such as off-road vehicle use or fishing; closing part of a larger area such as a camping or picnic site, while keeping the majority of the area open to use; and closing a whole campground or picnic area for a year or longer to allow species to recover.

Judged effectiveness and approval of both providing information and restricting forest use were not significantly related to age, gender, education, annual income, distance of residence from a National Forest, self-reported non-recreational interests in the National Forests, or self-reported ethnic identification (*appendix G*). None of the multiple correlations resulting from regression predictions of these judgments on the basis of the background characteristics reached acceptable levels of statistical significance.

Predicting effectiveness and approval— Multiple regression analyses predicting the judged effectiveness and approval of both providing information and restricting forest use were conducted. In each case, the set of predictors accounted for a significant percentage of variance in judgments, as shown by the square of the adjusted multiple regression coefficients in *table 5*. The standardized beta coefficients indicating the relative importance of each predictor are also shown in *table 5*.

Those who rated the effectiveness of restrictions of forest use as “high” tended to trust the Forest Service, be concerned about the protection of threatened and endangered species, and assess their knowledge of species protection issues

Table 5— Beta weights and square of adjusted multiple correlations for predictions of effectiveness and approval of restrictions and providing information.

| Item | Effectiveness of restrictions | | Approval of restrictions | | Effectiveness of providing information | | Approval of providing information | |
|-----------------|-------------------------------|-------------------|--------------------------|--------|--|--------|-----------------------------------|-------------------|
| | Beta | Sig. ¹ | Beta | Sig. | Beta | Sig. | Beta | Sig. |
| Trust | 0.266 | 0.0001 | 1.167 | 0.050 | 0.409 | 0.0001 | 0.390 | 0.0001 |
| Concern | 0.351 | 0.0001 | 0.272 | 0.002 | -0.103 | 0.054 | 0.160 | n.s. ² |
| Knowledge | -0.164 | 0.060 | -0.091 | n.s. | 0.047 | n.s. | 0.118 | n.s. |
| Bother | -0.204 | n.s. | -0.394 | 0.002 | -0.296 | 0.001 | -0.542 | 0.028 |
| Personal Impact | -0.188 | n.s. | -0.168 | n.s. | 0.076 | n.s. | 0.055 | n.s. |
| | R ² adj. | Sig. | R ² adj. | Sig. | R ² adj. | Sig. | R ² adj. | Sig. |
| | 0.477 | 0.0001 | 0.498 | 0.0001 | 0.195 | 0.001 | 0.540 | 0.0001 |

¹Sig. = probability level

²n.s. = not significant

as high. Those who approved of the restriction of forest uses tended to trust the Forest Service, be concerned about the protection of threatened and endangered species, and believe that they would not be bothered by the restrictions.

Those who rated the effectiveness of providing information about threatened and endangered species as “high” tended to trust the Forest Service, be concerned about the protection of threatened and endangered species, and believe that they would not be bothered by efforts to provide information. Those who approved of providing information tended to trust the Forest Service and to believe that providing information would not bother them. Assessment of the extent of personal impact was not a significant predictor of approval or judged effectiveness of either management practice.

Focus Group Discussions

The group discussion elicited a number of thoughts about the acceptance of restrictions on forest use and providing information.

Reasons for not accepting restrictions—

- “Nothing lasts forever. I can’t see restricting the use of these lands just to prolong the life of these animals.”
- “No!” [Regarding accepting restrictions from the Forest Service]
- “I think if Forest Service restrictions affect you directly, then you would be more likely not to accept it.”
- “The forests belong to the citizens of the United States, and we have the right to have access to that forest. My feeling is that if someone is doing something illegal in that forest, they should be fined or go to jail or whatever it takes to stop that activity; however, to kill a yellow spotted fly because he happens to be in your campground doesn’t constitute an illegal activity in my books. Shooting a wolf that is attacking your flock of sheep does not constitute an illegal activity. The Forest Service has to understand that the forest does not belong to the Forest Service. It does not belong to the government. It belongs to the people. When they come in and start closing down areas, they’re taking away my rights and the people’s rights to go into that area.”
- “The Forest Service, in my opinion, manages the forests to their own interests.”
- “If, because of the salmon, for example, the Forest Service prevented us here in Corona from using the water, I would be very much upset. I think a human life is more important than a salmon.”
- “The same thing happened with the beaver down here. Hundreds of thousands of dollars were spent to kill the beaver because of the dams that they build. Beavers build dams naturally. Everything is overkill.”
- “I feel that the Forest Service gives the trees from our forests away and the mining is free.”
- “I do not think the public is willing to pay the price for the protection of threatened and endangered species.”
- “Big corporations are more the problem than we are.”
- “The laws protect developers. Surveys show that people are willing to pay to protect threatened and endangered species.”
- “I don’t think the Forest Service is interested in saving threatened and endangered species.”

Reasons for accepting restrictions—

- “I think we have been through that in our area, and I do accept it unconditionally. We are the primary users of the forests, but we have seen the number of users increase that have an impact on the forests. I make it a rule to follow all the rules that are laid down. I had been used to unlimited

access to these lands in my lifetime, and it has been difficult to have these restrictions.”

- “When the toad closed our area, it did impact us tremendously. We took a huge financial hit, but I was not opposed because that area was wildly overused and should have been closed before that lawsuit set that in motion.”

Alternatives— Some participants indicated that they would be willing to accept forest use restrictions if the Forest Service provided alternative opportunities for recreation.

- “Alternative open areas should be made for closures made by the Forest Service.”
- “We need alternative openings of closed areas because, if you don’t, then the other open areas are taking the impact that that closure has caused and causing those areas to be overused.”
- “Don’t close areas of activities without providing alternatives. For example, if we are closing down 2000 acres of boating in one area, then let’s open 2000 acres of boating in another area so the activity can continue. The Forest Service has enough land; they can do this. In some cases we are not just banning an activity in an area, but by banning an activity, they are making that activity an illegal activity by mandate.”
- “Yes [I would accept restrictions], but only for the temporary closure of places.”
- “Giving us alternatives to the closed areas would help with public support.”

Providing information— Some participants indicated that they might be more accepting of restrictions on forest use if more information about the restrictions were provided.

- “I think more information needs to get out to the public. Inform the public with commercials on television, or meetings.”
- “Yes, but [before accepting restrictions] I would want to carefully look into it. I would need information.”
- “I think the public would be accepting of the Forest Service closure decisions if they simply informed the public about these decisions. They should let the public know that their decisions are based on sound evidence, good science, that the closure would repair or take care of the problem, and give us a time frame. Communication is key. Putting up a sign—‘Closed to future use’—results in a very negative reaction.”
- “I think communication is important. If you look at Lower Lion, very few people know why it is closed and nobody knows when it is going to open again.”
- “[I want the decision on restrictions] from the scientists— not from the politicians! The Forest Service is riddled with politicians as you well know.”
- “I have been an elected official for almost 14 years, and we are small and have a great deal of respect and trust in our local officials. Communication with the public is most important. Our government needs to be honest with the people; tell them why, and you won’t have any problems.”
- “Public community, the Forest Service needs to get more out into the public. They are not reaching the majority of the people.”
- “The public feels like they have no control or say in what happens to our public lands. Communication is most important. The public needs to be informed and needs to have a need for expression. Public meetings are needed and will act to defuse the negativity. The only way we are going to solve problems is to collaborate. People need to contribute. Closures are needed to protect overused lands. Native Americans moved a lot and when one area was impacted they moved on to another area. You can tell the public what not to do but you need to involve them and give them options.”

- “We need to educate the public about why certain actions are taken.”
- “I think that the Forest Service has a responsibility to publish facts before making a decision.”
- “I would want an explanation of why. We get no explanations now.”
- “I would not support their decisions unconditionally. Threatened and endangered species are endangered by overpopulation, pollution, mining, and timber cutting. I would like to see the reports on these areas before action was taken.”
- “As a volunteer, I work the front desk at the ranger station, dispensing a multitude of information to the general public. Information about threatened and endangered species should be made available. I think the ranger stations should not be closed on Sundays.”
- “If I have clear facts that I can trust about the impact that an activity is having on a threatened and endangered species, then I have no problem with the restriction.”
- “I would need proof the impact is having an effect. I don’t always trust reports. For example, the environmental group report on the tortoise where the group changed the numbers to suit their needs. I don’t trust these reports anymore because of this.”
- “I would accept it if it were proven that the impact of off-highway vehicle use is having an effect on the environment.”
- “I’d like to know if they had tried other ways of dealing with the problem besides closure; for example, a permit entry system or a use reservation system, etc. to reduce the amount of traffic coming into the forests.”
- “We would [accept Forest Service restrictions of forest use] if we had trust that it would work, but the trust isn’t there.”
- “If they would sit down in the community and let the community give input to that decision and use that input.”
- “I would like to see the Forest Service evaluate the sensitivity of the areas and allow graduated use accordingly.”
- “I would not blindly accept that decision. I would want to know how that activity impacts that area.”

Summary: Judged Effectiveness and Approval of Management Practices

Of the five variables examined, trust of the Forest Service was the only one that predicted all four judgments of the effectiveness and approval of management practices. Participants who indicated high trust concluded that forest restrictions and providing information were effective means of protecting species. They also approved of these management practices. Concern about the protection of species was a significant predictor of three of the four judgments. Those expressing high concern judged information and restrictions as effective and approved of restrictions. Those who judged their knowledge about threatened and endangered species as high also judged the effectiveness of restrictions as low. The judged bother of the management practices was related to some of the judgments. Those who concluded that a practice was bothersome judged the providing of information to be ineffective and did not approve of either management practice.

A sizable number of participants seem to have concluded that restrictions of forest use would be more acceptable if more information about the restrictions were provided. Some also suggested that restrictions should be limited to geographical areas and not involve overall use of the forest. This could be accomplished by providing acceptable alternatives to use restrictions.

Desired Information on Threatened and Endangered Species

Three Areas of Interest

When asked what information about threatened and endangered species they would like to receive from the Forest Service, some participants simply affirmed that they would like information without specifying the kind they desired.

- “Keep us informed. Don’t assume we are ignorant. I will get involved and make my viewpoint known by writing to my elected officials.”
- “I don’t have much information [concerning threatened and endangered species].”
- “The public needs to be better informed. I would look to groups that I sympathize with.”
- “I think this area [the local Forest Service] is good about keeping us informed about what is happening in the back country, but I think we need a full range of information about what is happening in our forests.”
- “I would like full disclosure.”

Others indicated more precisely what they wanted to know. These requests fell into three categories: information about threatened and endangered species, information justifying Forest Service decisions about species, and information about the Forest Service itself.

Species—

- “I would like to know how critical each plant and animal is to the ecology.”
- “The Forest Service needs to give us information about the spotted owl.”
- “I would like to see the Forest Service put out a flyer saying what threatened and endangered species are and how the public could help.”
- “The Forest Service should give locals information about threatened and endangered species.”
- “We need to be educated as to why; the species doesn’t matter. It is like the science fiction story. You understand that one little insect is not just that one little insect but it affects a whole lot of other things.”
- “How are we to know whether the species is worth saving if nobody is giving us the information?”
- “The Ray Bradbury science fiction story comes to mind where if you go back in time and alter anything, it could change the future. I think we need to educate the public about the interrelationship of all things, then I think the public would have an easier time understanding the importance of saving all species.”
- “Relevancy is important. We need to inform the public about the relevance of threatened and endangered species to the lives of the public.”
- “So many people are ignorant about wildlife. The Forest Service needs to educate the public.”
- “We are all interested in protecting animals, but nobody will inform us as to why.”

Forest Service decisions—

- “The Forest Service needs to go into depth in giving information to the public when closing an area for threatened and endangered species. We need to know how the loss of this species is going to affect our lives.”
- “I think more information should be made available to the public on how many species have been destroyed and the importance of these species to the environment. Information would make people more understanding of the restrictions being put on them.”

- “We need the Forest Service to inform us not only about their decisions but give us a work-around plan of alternatives to their decisions.”
- “We need environmental impacts contracted and from impartial groups.”
- “Part of the problem is communication. Was there ever an article in our newspaper about the Arroyo Toad explaining closures?”
- “I would like a phone number that I could call to get information about why an area is closed, when it is going to open and where alternative recreation facilities are.”
- “There should be a closed sign and people might not oppose it if it explained why and how it is going to be closed. Most people would respect that, and I think volunteers could do a lot.”
- “Two men on horseback came down the trail and talked to us about the area. They looked official, were friendly, and gave us a lot of information. It turns out that they were volunteers. I think volunteers are a great resource.”
- “I think information should be readily available before a decision by the Forest Service is made, not after the fact.”
- “I would not blindly accept that decision. I would want to know how that activity impacts that area.”
- “I would like to see an environmental impact report that they used to make this decision.”
- “I would like to know why and how long it’s going to be closed, when we could expect the area to be open, and alternative areas of use.”
- “People need specific reasons why there are restrictions. They must have it spelled out for them.”
- “I think the Forest Service owes the public information about why a certain area is being closed. They need to educate the public.”
- “I’d like to know why they are taking that action.”
- “What the alternatives are? Does the public have anything to say about it? We need communication.”
- “I’d like scientific information and to be able to question their sources and see the studies replicated.”
- “In regard to management of closures of areas we need to get impact studies on an area before closing it. For example, development and population growth has had a much more negative impact on the environment at Camp Pendleton than the tanks have had on that area, but the general feeling was quite the reverse.”
- “I’m interested in fishing, and if areas were to be closed in the Sierras to fishing for the preservation of a frog, then I think we need information about the need for this action. If the study shows that this indeed will help, and shows how much of the damage already done was caused by humans using the area as opposed to animals naturally dying out, and if it warrants closing, then I would support it. I do not always trust the information given and we cannot always get the information going to the Forest Service offices anyway.”

Forest Service organization—

- “You read all this stuff, but you read nothing about the Forest Service.”
- “The only time I see the Forest Service is when they are fighting fires and I see their trucks.”
- “I really don’t know much about the Forest Service.”

- “I didn’t know that they [Forest Service] should be protecting threatened and endangered species.”
- “I don’t know what the values or goals that the Forest Service has are.”
- “[I need information about] All of their [Forest Service’s] short- and long-term goals.”

Methods of Receiving Information

Earlier in this report we considered questionnaire responses concerning the effectiveness and approval of providing information about species through campsite visits and signs at recreation sites. The focus group discussion explored these as well as methods that could be used outside the forest for providing information.

Community meetings—

- “Absolutely!” [I would attend community meetings.]
- “I think it’s much more effective to have a meeting than a questionnaire.”
- “Even rallies.”
- “Meetings.”
- “[Forest related] Programs would be received well in a small community like ours.”
- “We need town meetings. The Forest Service needs to keep the public informed.”
- “Smaller communities have meeting places, and I would like the Forest Service to come to our local communities and tell us at that meeting what they are going to do.”
- “Some groups meet now. We have town meetings now but only when issues come up. I think the schools should be used. There should be guest speakers with our service groups.”
- “I think it would be great if we could just have a meeting now and then.”
- “[Community] Committee meetings.”

Not all participants were positive about holding local meetings, indicating that interest in issues varies over time and that it is sometimes difficult to attend.

- “Local problems in the past promoted discussions locally, but we have had no information since those problems were resolved.”
- “Not as a general rule. [I would not attend community meetings.]”
- “It’s too hard for me to go to meetings about the Forest Service.”
- “Sometimes it’s hard to get around here because of the weather.”

In the forests—

- “Signs, posters.”
- “More advertising in our parks.”
- “Permanent signs.”
- “I think one of the best things the Forest Service does is give talks to groups in the campgrounds. Communication is very important.”
- “People in the [Forest Service] front office will print things off for you from the Internet. They are a good source of information.”
- “As [Forest Service] volunteers, we make a major impact by dispensing information in the field. We are not always welcomed at first but after a bit of personal interaction they become comfortable with us and actually learn a lot about why we are putting certain restriction on them.”
- “The Forest Service does not have the money or the staff to give workshops now. Volunteers would like to do this, but support from the Forest Service is not there.”

- “A little public relations through personal contact is the best way of dealing with the public.”
- “Personal contact [with Forest Service personnel] is very important. Personal contact has changed my own attitudes over the years. A presence is very important in the forests.”
- “I would also like to see a Forest Service person listen.”

Newsletters and other publications— Some participants were very supportive of newsletters prepared by the Forest Service and other publications as the means of getting information to the public.

- “A Forest Service newsletter [is] now sent to us on what the ranger is doing in each area. We get it in the mail, and ranger districts and their projects are listed.”
- “Direct mail is the only way for us.”
- “Newsletters in the mail addressing threatened and endangered species problems would be great. It could tell you the volunteer people you could contact.”
- “There is a volunteer process to monitor sites, and now and then they are listed in my three-page newsletter from the Forest Service.”
- “I concur [with the use of inserts and handouts].”
- “Direct mail to our homes and to organizations that would dispense the information.”
- “Newsletters keep people getting unedited news unlike newspapers.”
- “Quarterly newsletters would be the most effective for me. I think the main thing is the responsibility of the citizen to seek out the information. The local Forest Service office has a lot of information available, but the office is underutilized.”
- “I learned about the Arroyo Toad from the [Fish and] Wildlife Service through a publication of theirs, and so I called them.”

Mass media— Views on use of mass media to inform the public were generally favorable.

- “Town meetings help the local community living here but not the general public who use the forests recreationally on the weekends. Newspapers are better.”
- “An insert in the newspaper would be great from the Forest Service. Handouts. Cost free.”
- “Newspapers.”
- [In support of a media campaign:] “Think about it! Everybody knows who Smokey the Bear is.”
- “Documentaries.”
- “Television! Everybody seems to watch television. You could have a public announcement or a commercial. The Forest Service could have an outside agency do it for them. Television is better.”
- “Television shows.”
- “I think talk programs [like Larry King] would be good.”

However, concerns about the mass media were also expressed.

- “No! Not local radio programs.” [Group spontaneously agreed.]
- “What I find so upsetting is what we read in the newspaper is so biased. Reporters write only what they want you to hear and the real story is not even told.”

- “I don’t trust biased reporters.”
- “We are dependent on information from the media. We don’t know who makes the final decisions—whether it is the Forest Service, BLM, or our city council! It’s hard to answer our question if we do not know who is really making the final decisions that are going to affect us.”
- “That [the news media] would help local areas, but not us.”

Educational programs— Some participants would like the Forest Service to become involved in more broad-based, long-term educational activities.

- “Education programs are always important. The Forest Service should go into the schools and use posters to educate.”
- “For some years now every kid learns about saving the rain forests. Now that is changing. Wildlife Federation in cooperation with K-Mart stores have developed a program for wildlife habitats on school grounds along with a classroom program, and children are beginning to learn about local problems.”
- “It would be very helpful if the Forest Service could just give us some book lists. Putting them on the Internet would be great.”
- “Much more education in the schools. We need to teach how personal behavior affects the forests.”
- “We need education for the future. We need to deal with adult ignorance. Projects like the arboretum are needed. We have suggested a need for programs, workshops, lectures, and community interest events.”
- “I would like to expand that question. I don’t think that the Forest Service is reaching the public effectively now. For example, the actions of young people, and how young people recreate today. The inappropriate behaviors like the disposal of trash learned in urban areas are transferred to the public lands. The Forest Service needs to educate the new generation on the use of the areas.”

Internet— Although some focus group participants indicated that they would use or have used the Internet to get information, some expressed reservations about the method.

- “Yes [I would use the Internet for information], but until I get the Internet, the mail is the answer. Where we live we just can’t get the Internet.”
- “Not on the Web [provide information via] committee meetings.”

Questionnaire Results—Methods of Providing Information

Summary statistics for ratings of usefulness of four methods of providing information about threatened and endangered species were calculated (*table 6*). Three methods (local newspapers, community meetings and programs, and posters at visitors’ centers) were judged to be, on average, at least somewhat useful. The

Table 6— Means and standard deviations for ratings of usefulness of four methods of providing information about threatened and endangered species.

| Method of providing information | Mean ¹ | S.D. | N |
|-----------------------------------|-------------------|-------|----|
| Announcements in local newspapers | 2.602 | 0.678 | 93 |
| Community meetings and programs | 2.239 | 0.999 | 92 |
| Posters at visitors centers | 2.202 | 1.036 | 89 |
| Radio programs | 1.659 | 1.137 | 91 |
| Mean rating of all methods | 2.182 | 0.710 | 94 |

¹0 = not useful at all; 1 = a little useful; 2 = somewhat useful; 3 = very useful

fourth method (radio programs) was judged to be of less use. Ratings of usefulness of methods of providing information were not significantly correlated to trust in the Forest Service.

Summary: Methods of Providing Information

A number of different methods by which the Forest Service could possibly provide information about threatened and endangered species were suggested during the group discussions. All of these methods received some support at one or more of the meetings. Questionnaire responses also indicated some support for each of the identified media. Endorsement of any particular method was not unanimous across groups or in the questionnaire responses. Participants were often quick to point out when a particular method would not be expected to be effective given local conditions. Given the variety of conditions and the need to address both local and regional concerns about protection of species, a multimedia-adaptable strategy is needed.

Involving the Public in Threatened and Endangered Species Management

When asked about public involvement in threatened and endangered species management, some participants affirmed the need for this.

Statements of Agreement

- "Our tribe has to work hand-in-hand with the Forest Service. It helps to have a working relationship with them."
- "Of course! [regarding public involvement] Especially when it is going to affect the whole community."
- "I think the Forest Service would have the support of the public if they would involve them more."
- "Absolutely!" [The Forest Service should involve citizens in decision-making.]
- "Yes!"
- "Yes, but I feel I'm never asked."
- "I think the public should have some input."
- "I would like to see more active involvement by the community. These are the lands of the American people. The public will not accept decisions if they have no participation in the process."

Comments specifying in more detail the desired form of public involvement fell into three categories: public involvement through providing information, communication, and education; efforts by the Forest Service to seek out the public's views; and the use of the political and legal system by members of the public.

Information, Communication, and Education

- "Keep us informed. Don't assume we are ignorant. I will get involved and make my viewpoint known by writing to my elected officials."
- "At first I supported the Adventure Pass and the Forest Service probably needs the money and I am willing to give \$30 a year, but they keep closing areas and people are getting less and paying more. The public feels like they have no control or say in what happens to our public lands. Communication is most important. The public needs to be informed and needs to have a means of expressing its views. Public meetings are needed and will act to defuse the negativity. The only way we are going to solve problems is to collaborate. People need to contribute. Closures are needed to protect overused lands. Native Americans moved a lot and when one area was impacted they moved on to another area. You can tell the public what not to do, but you need to involve them and give them options."

- “I think education is the most important way to spark interest.”
- “Education of young people is the best investment the Forest Service could do, but keep the information current and keep it flowing.”
- “I think the Forest Service should join the Boy Scouts on a national level to dispense information. I also think that information about current bills in Congress on the threatened and endangered species should be brought before the public before they are passed so the public can be more involved from the beginning, not after the restrictions are made.”
- “Communication!”
- “I would lean to outreach, going into the schools. Public hearings involve usually a specific technical issue. I believe in education over regulation.”
- “Communication is most important between offices. We keep logs of goals and activities and needs and use e-mail to log projects. Whether the Forest Service ever gets this information is not known.”
- “The biggest issue with me is the budget cutbacks. We need to inform the public and let Congress know what is needed.”
- “The Forest Service needs to get the information out to the public about what is happening with budget cuts and their needs so the public can get back to Congress about what they would like to see happen.”
- “I think we need, twice a year, a media blitz. Whether it is a Forest Service magazine or a Forest Service throwaway, commercials, newspaper articles, or whatever, to inform the public.”
- “Politicians inform us all of the time about what they are doing, but the Forest Service seems to have this cloud of silence. They need to keep the public informed and get something proactive instead of reactive going.”
- “Partnerships. Grant funds for interest groups to get together with local Forest Service groups to work on problems.”
- “The public should be involved in all processes or will not be supportive. I have concerns that the Forest Service is effectively getting out and working with all of our various publics.”
- “Having meetings and open communication.”

Seek Out the Public’s Views

- “Short opinion polls in the newspaper would be good to involve the public.”
- “E-mail opinions would be good but they would have to advertise it to get people involved.”
- “They could ask us. It is that simple.”
- “By opening windows. The Forest Service needs to make the community feel free and comfortable putting forth its opinions.”
- “Talk to the people from the areas being affected, not the people sitting in an office, but those in the field who know what is happening in that area.”

Use the Political and Legal Systems

- “We don’t have the opportunity to vote on issues. The government agencies don’t let us vote on issues.”
- “That is why we have elected officials. We can pressure our elected officials to our point of view by writing them about issues.”
- “We need to get Congress to act.”
- “Our elected officials have a voice and if something is happening that you

don't like, you need to write letters to them and it will work. We need to be active and it will make a difference."

- "If I have a complaint, I write letters to the top and work down from there. We have to make some noise."
- "During election years the Forest Service budget goes up a little bit and it goes down after that until the next election. It's all political. We need to involve the public so the pressure can be put on the Congress to support our Forest Service."
- "If you don't get satisfaction, then you go to Washington."
- "Sue them!"
- "There is an appeal process, but the Forest Service won't tell you about it."
- "We are having difficulty getting their attention. Coming [sic] to the mountain to meet with us. Proposals don't get any action, and we are left using threats."

Summary: Involving the Public

Broad support for continuing and increasing involvement of the public in decisions and actions taken by the Forest Service for the protection of species was expressed. Three means for accomplishing this end were identified by participants:

- (1) The Forest Service should make increasing efforts to inform and educate with regard to issues of protecting species.
- (2) The Forest Service should use multiple means for seeking out the public's view on issues of protecting species. In essence, these two suggestions constitute the basics of two-way communication.
- (3) Additionally, a number of participants suggested that members of the public should use existing political and legal systems for effecting species' management.

Discussion and Conclusion

This study provides information useful for the examination of processes affecting the causes and consequences of trust, as well as providing a view of the range of attitudes among participants regarding management of threatened and endangered species. Information provided should be of use in forging the regional conservation strategy, as well as in identifying issues for consideration in forest plan updates. Specifically, the research yields information regarding three important issues: the importance of social trust to the acceptance of management practices; the psychosocial foundations of social trust; and the salient values that underlie perceptions of management practices and, therefore, are central to the development of trust or distrust.

The Importance of Social Trust to Acceptance of Management Practices

The present study provides further evidence for the importance of social trust. The study found that trust was a significant predictor of the assessed effectiveness and judged approval of both the management practices of restricting forest use and of providing information. Trust of the Forest Service was as good or better a predictor of rated effectiveness and judged approval of the examples of restricting forest use or providing information as was personal concern about the protection of threatened and endangered species. Trust was generally a much better predictor of assessed effectiveness and judged approval of restricting use than were assessed personal knowledge, either of the management practice, and the personal impact of the management practice.

As already noted, there is considerable evidence for the importance of social trust in the effective management of environmental issues. Issues investigated included waste management (Hallman and Wandersman 1995, Petts 1998, Wiedemann 1993), genetically modified organisms (Siegrist 1999), and various environmental hazards, including hazardous technologies (Slovic 1999). The limited relevant previous research on forest management also indicates the importance of trust. Trust has been found to be related to the acceptance of proposals for forest research (Cvetkovich and others 1995, Cvetkovich and Winter 1998); anticipated impacts of new fees, general attitudes toward recreational fees, and amounts participants were willing to pay for daily and annual passes (Winter and others 1999); and the acceptance of highly intrusive management practices (for example, banning forest use activities, Cvetkovich and Winter 1998). The present study adds to this accumulating body of evidence.

Sociodemographic Characteristics

Communities are defined by similarities of values and goals among their members. Past research has often looked to sociodemographic distinctions as indicators of these similarities. The present research does not find these characteristics to be strongly remanded for social trust. Traditional indicators of sociodemographic characteristics such as gender and racial/ethnic identification were not strongly related to levels of social trust. Except for a few persistent differences related to Hispanic and Native-American identification, no differences in social trust and related variables were found. While some studies on attitudes toward wildlife and concerns for the environment especially have identified some gender and ethnic/racial identity differences, others have not (e.g., Sanborn and Schmidt 1995, Solomon 1998). In the present study, sociodemographic differences apparently are not strongly related to social trust because they do not parallel perceived similarities and differences with the Forest Service in salient values.

The Psychosocial Foundations of Trust and Distrust

The Salient Values Similarity (SVS) model, described in the introduction to this report, contends that the processes involved in the attribution of trustworthiness can be understood in terms of two key components, value/goal saliency and value/goal similarity. The present results demonstrate that, as expected on the basis of the SVS model, those who most trust the Forest Service believe that the Forest Service (a) shares their values about how the National Forests should be managed to protect threatened and endangered species, (b) has similar goals for threatened and endangered species and, (c) has similar views about threatened and endangered species.

Views on Protecting Threatened and Endangered Species

Research indicates an abiding concern for species' protection among the American public (Dunlap 2000, Galli and Penkala 1981, Kellert 1985, Leuschner and others 1989, Peyton and Langenau 1985, Phillips and others 1998). Summarizing one of these studies, Nabhan (1997) states: "Kempton and others [environmental values researchers (1995, p. 22)] maintain that most Americans share deep-seated values about the environment that can be called on to support biodiversity. Despite Americans being globally criticized for placing everything in which they believe on their T-shirts—and changing their values as often as they change their shirts—they do ascribe to a lasting value with regard to spiritual, esthetic, and practical worth of the natural world, a value they share with their forefathers and their foremothers."

Nabhan's conclusion and the results of the other cited studies suggest that participants in this kind of study are not atypical in their level of concern for

species' protection. In addition, however, the present results clearly indicate that it is a mistake to conclude that there is a single value incorporating "spiritual, esthetic, and practical worth of the natural world" shared by most. It seems to us that almost all the participants in this study think of themselves as environmentalists, concerned with the continued good health of the forest. Almost all of the participants engage in one or more activities dependent on the survival of the southern California National Forests. Beyond this, wide differences in views exist about the saliency of values/goals on which wildlife management should be based. This difference is particularly apparent with regard to values/goals related to the practical worth of the forests.

Our examination of the relative importance and saliency of protecting species and human concerns in wildlife management, as indicated by the questionnaire data and the personal statements made during the focus group discussions, reflects two different patterns of trust and two different patterns of low trust/distrust of the Forest Service. (Since the individual identity of the person making a discussion comment is not known, it is not possible to directly link comments to questionnaire responses. The links made in the following section are an effort to make sense of the results from both sources of data. These conclusions should be considered provisional in the absence of direct correlational evidence at the individual level.) The essence of the difference in the two patterns of low trust/distrust lies in the relative saliency of protecting species reflected in stated attitudes toward species' protection (economics and growth come first; we will have to let some species go; we must preserve all species) and to a lesser extent group membership (forest use; preservation of species).

The Relative Saliency of Protecting Species versus Human Concerns

The majority of participants in the study conclude that they share value/goal similarities about the management of wildlife with the Forest Service, at least to some degree. They perceive that they and the Forest Service place species protection before concerns about human use of the forests. Those who believe that shared values/goals are salient for the agency as it makes decisions and takes actions regarding species protection tend to trust the Forest Service. Some of those who believe that shared values about protecting species are not always salient for the Forest Service may, nevertheless, still trust the agency. These individuals indicate that they understand that there may be extenuating circumstances preventing the Forest Service from operating according to shared values. That the Forest Service must operate in a political context and that it is under-funded were two such circumstances identified by participants. Thus, there are two identified patterns of trust: (1) Shared Salient Values and (2) Shared, Sometimes Salient Values with Extenuating Circumstances.

A third group of participants who believe that the Forest Service shares their values about wildlife management also believes that the values are not consistently salient for the agency. This group tends to have low trust of the agency. They do not see the inconsistency in the importance of species' protection values as justified. Their view includes various conclusions about Forest Service decisions and actions, including that the Forest Service does things for its own convenience, it is overly political, it is manipulative, and it has its own (non-scientific) biases about what should and should not be done in the forests.

The fourth group of participants believes that the Forest Service does not share its values/goals of forest management. These individuals believe that protection of species should be secondary to human economic and other concerns related to forest use. These individuals tend to be extremely distrustful of the Forest Service. Comments made during the focus group discussions by these individuals were characterized by a style of information processing characterized by Kramer (Kramer and Messick 1998, Kramer and Wei 1999) as hypervigilant and consisting of increasingly

negative, obsessive thoughts. That is, they consistently made sinister attributions to the Forest Service's actions and intentions, their memories of interactions with the Forest Service tended to be self-serving, and there was an exaggerated perception of conspiracy. This tends to produce an extreme sense of injustice and a tendency toward defensive non-cooperation.

Thus, there are two identified patterns of low trust / distrust: (1) Shared, Sometimes Salient Value Similarities without Extenuating Circumstances and (2) Salient Values Dissimilarity.

It can be expected that it would be much more difficult to promote positive attributions to the Forest Service among those in the Salient Values Dissimilarity group than those in the Shared, Sometimes Salient Value Similarities without Extenuating Circumstances group. This expectation is based on differences in openness to new information about the Forest Service. It is often easier to change trust to distrust than it is to do the opposite (Slovic 1999). The trusting individual is not naïve and is open to indications that reliance on other individuals may not be well founded. Eliciting less restrictive information processing, trust leaves open the possibility of learning that its alternative hypothesis, untrustworthiness, might be true. If sufficient evidence for its alternative accumulates, trust changes to distrust. Extreme distrust inoculates itself from change. Distrust promotes the idea that not only do other people have different values/goals than I, but also they are trying to hide from me their true nature. Therefore, when there seems to be evidence that others might be trustworthy, this is really just another example of duplicity. While low in trust, those in the Shared, Sometimes Salient Value Similarities without Extenuating Circumstances seem to be more open to positive interpretations of information about the Forest Service than are those in the Salient Values Dissimilarity group.

Information suggests that communications need to be addressed with trust issues in mind, and some recommendations for communication and participation strategies are contained in this report. Openness of decisions and the rationale behind them will assist with efforts to maintain and foster an environment of trust.

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Appendix A— Schedule of Focus Group Sessions

| Date | Type of group | Location | Participants | Respondents |
|----------|--|-----------------|--------------|-------------|
| 08/08/99 | Elks | Corona, CA | 16 | 14 |
| 08/10/99 | SGVA ¹ | Riverside, CA | 22 | 19 |
| 08/10/99 | Community of Place | Idyllwild, CA | 2 | 2 |
| 08/12/99 | Tribal | Anza, CA | 4 | 4 |
| 08/13/99 | Boy Scouts/Girl Scouts | Redlands, CA | 7 | 7 |
| 08/14/99 | Mountain Top Volunteers | Sky Forest, CA | 5 | 5 |
| 08/14/99 | ROWIA ² and FRVC ³ | Sky Forest, CA | 7 | 7 |
| 08/14/99 | OHV ⁴ | Sky Forest, CA | 2 | 2 |
| 08/15/99 | Mining | Sky Forest, CA | 31 | 8 |
| 08/17/99 | Community of Place | Wrightwood, CA | 12 | 11 |
| 08/20/99 | Community of Place | Ojai, CA | 11 | 11 |
| 08/21/99 | Community of Place | Mt. Pinos, CA | 8 | 8 |
| 08/22/99 | Community of Place | Santa Maria, CA | 2 | 2 |

Total Usable Surveys = 100

Total Attendees = 129

¹San Geronio Volunteer Association

²Rim of the World Interpretive Association

³Fisheries Resource Volunteer Corps.

⁴Off-Highway Vehicle Users

Appendix B— Frequencies and Summary Statistics for Selected Questions

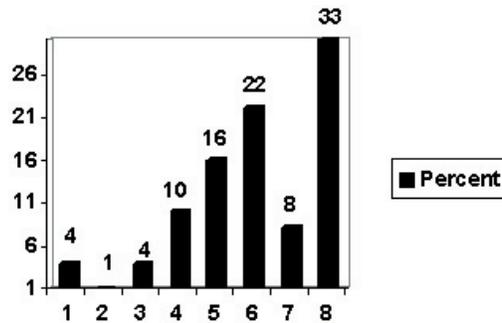
This Appendix provides the reader with a full set of descriptive and summary statistics based on each item in the questionnaire. Because several scales were developed for core analyses in the main report, individual items are reported.

Number of Respondents: 100

Threatened and Endangered Species Items

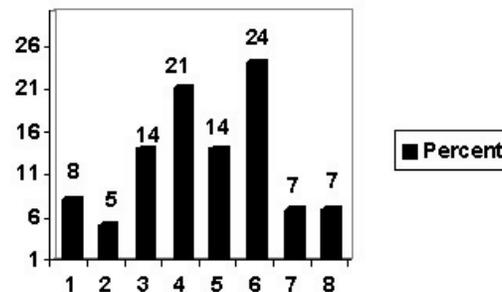
How concerned are you about threatened and endangered species in the national forests of southern California?

Mean = 6.0
 Standard Deviation = 1.9
 Median = 6.0
 Range = 1 (Not at all concerned) to 8 (Very concerned)
 N = 98 (Missing = 2)



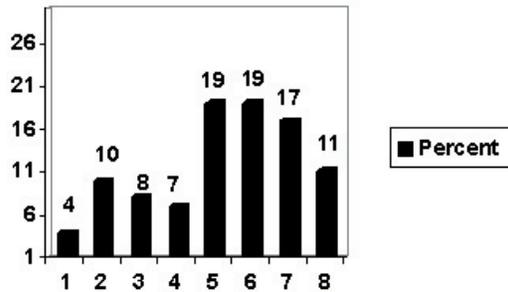
How knowledgeable are you about what is going on in southern California concerning the protection of threatened and endangered species?

Mean = 4.6
 Standard Deviation = 1.9
 Median = 5.0
 Range = 1 (Not very knowledgeable) to 8 (Very knowledgeable)
 N = 100 (Missing = 0)



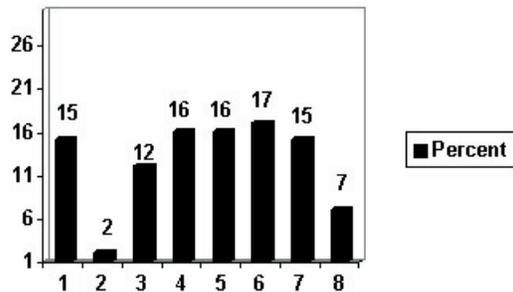
Compared to other things like grazing and mining, how much of a negative impact do you think recreationists' behaviors have on threatened and endangered species in the national forests of southern California?

Mean = 5.2
 Standard Deviation = 2.0
 Median = 5.0
 Range = 1 (No significant impact) to 8 (Very significant impact)
 N = 95 (Missing = 5)



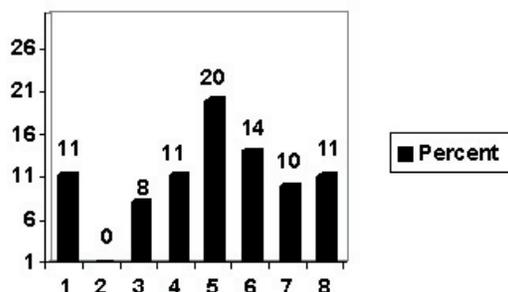
To what extent do you believe the US Forest Service (FS) shares your values about how the national forests should be managed to protect threatened and endangered species?

Mean = 4.6
 Standard Deviation = 2.1
 Median = 5.0
 Range = 1 (The FS does not share my values) to 8 (The FS shares my values)
 N = 100 (Missing = 0)



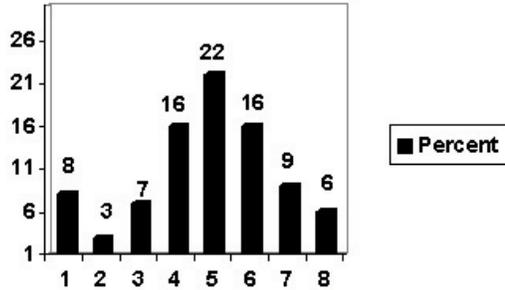
To the extent that you understand them, do you share the US Forest Service's goals for threatened and endangered species?

Mean = 4.9
 Standard Deviation = 2.1
 Median = 5.0
 Range = 1 (The FS has different goals) to 8 (The FS has the same goals)
 N = 85 (Missing = 15)



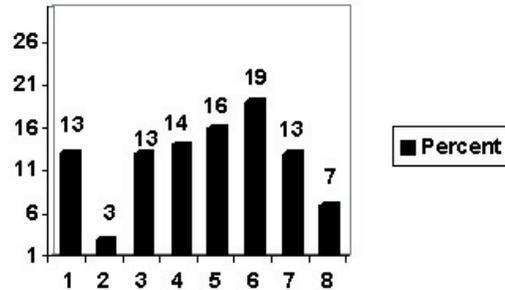
To what extent does the US Forest Service support your views about the management of threatened and endangered species?

Mean = 4.8
 Standard Deviation = 1.9
 Median = 5.0
 Range = 1 (The FS opposes my views) to 8 (The FS supports my views)
 N = 87 (Missing = 13)



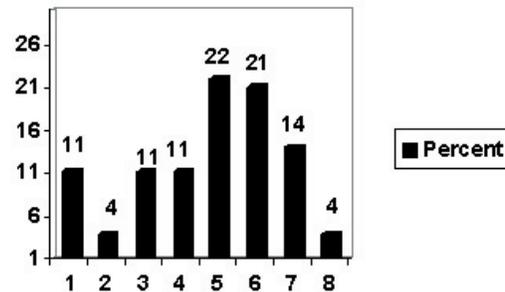
To what extent do you trust the US Forest Service in their efforts to address threatened and endangered species problems?

Mean = 4.6
 Standard Deviation = 2.1
 Median = 5.0
 Range = 1 (I do not trust the FS at all) to 8 (I trust the FS completely)
 N = 98 (Missing = 2)



How much confidence do you have in the US Forest Service to protect threatened and endangered species?

Mean = 4.7
 Standard Deviation = 2.0
 Median = 5.0
 Range = 1 (I am not confident in the FS at all) to 8 (I am completely confident in the FS)
 N = 98 (Missing = 2)



Statement That Best Describes Your View About the Protection of Threatened and Endangered Species:

| | <u>Percent</u> |
|--|----------------|
| Economic growth and human concerns must come first | 6 |
| We probably have to let some species go, we cannot save them all | 61 |
| We must preserve all species regardless of cost | 22 |
| Missing | 11 |

Forest Management and Threatened and Endangered Species

If the Forest Service were to ban certain uses in the forest, or areas of the forest, such as off-road vehicle use or fishing.

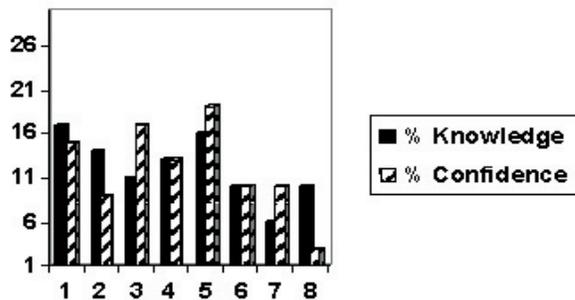
| Item | Mean | Standard Deviation | N |
|---|------|--------------------|----|
| Disapprove/ Approve | 5.2 | 2.6 | 87 |
| Not Bothersome/Bothersome | 4.8 | 2.1 | 77 |
| Not Effective/Highly Effective | 5.4 | 2.4 | 77 |
| No Personal Impact/Excess Personal Impact | 4.8 | 2.2 | 77 |

How informed and knowledgeable are you about this possible action?

Mean = 4.0
 Standard Deviation = 2.3
 Median = 4.0
 Range = 1 (Not very knowledgeable) to 8 (Sufficiently knowledgeable)
 N = 97 (Missing = 3)

How confident are you in having the Forest Service decide if this is the necessary thing to do?

Mean = 4.0
 Standard Deviation = 2.0
 Median = 4.0
 Range = 1 (Not confident at all) to 8 (Very confident)
 N = 96 (Missing = 4)



If the Forest Service were to have signs at recreation sites informing forest users of their negative impacts on threatened and endangered species.

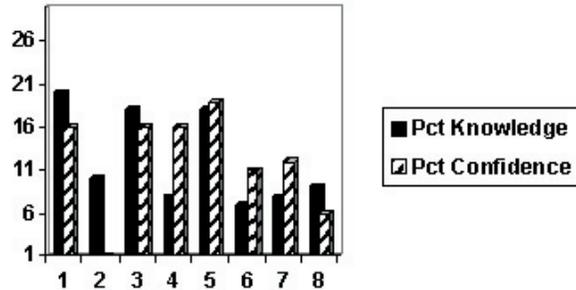
| Item | Mean | Standard Deviation | N |
|---|------|--------------------|----|
| Disapprove/Approve | 6.7 | 1.8 | 94 |
| Not Bothersome/Bothersome | 2.9 | 2.0 | 79 |
| Not Effective/Highly Effective | 4.9 | 1.9 | 83 |
| No Personal Impact/Excess Personal Impact | 3.0 | 2.0 | 75 |

How informed and knowledgeable are you about this possible action?

Mean = 3.9
 Standard Deviation = 2.3
 Median = 4.0
 Range = 1 (Not very knowledgeable) to 8 (Sufficiently knowledgeable)
 N = 98 (Missing = 2)

How confident are you in having the Forest Service decide if this is the necessary thing to do?

Mean = 4.4
 Standard Deviation = 2.1
 Median = 4.0
 Range = 1 (Not confident at all) to 8 (Very confident)
 N = 97 (Missing = 3)



If Forest Service staff were to visit recreation sites and informally discuss activities that don't adversely affect threatened and endangered species.

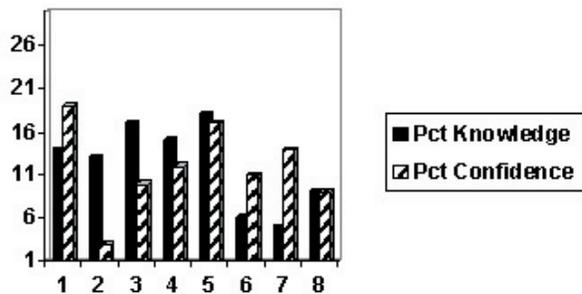
| Item | Mean | Standard Deviation | N |
|--|------|--------------------|----|
| Disapprove/ Approve | 6.3 | 2.0 | 89 |
| Not Bothersome/ Bothersome | 2.8 | 2.9 | 79 |
| Not Effective/ Highly Effective | 5.3 | 1.9 | 77 |
| No Personal Impact/ Excess Personal Impact | 3.3 | 2.0 | 73 |

How informed and knowledgeable are you about this possible action?

Mean = 4.0
 Standard Deviation = 2.1
 Median = 4.0
 Range = 1 (Not very knowledgeable) to 8 (Sufficiently knowledgeable)
 N = 97 (Missing = 3)

How confident are you in having the Forest Service decide if this is the necessary thing to do?

Mean = 4.5
 Standard Deviation = 2.3
 Median = 5.0
 Range = 1 (Not confident at all) to 8 (Very confident)
 N = 95 (Missing = 5)



If the Forest Service were to close some campsites or picnic sites to protect threatened and endangered species, but keep the majority of the areas open to use.

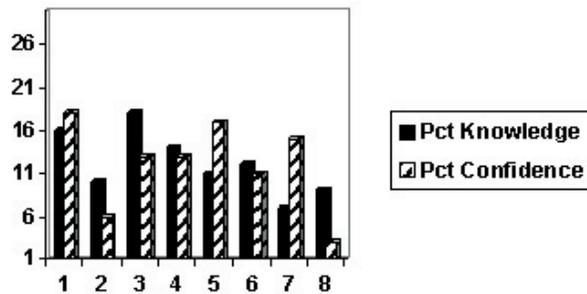
| Item | Mean | Standard Deviation | N |
|--|------|--------------------|----|
| Disapprove/ Approve | 5.4 | 2.6 | 90 |
| Not Bothersome/Bothersome | 4.9 | 2.3 | 75 |
| Not Effective/Highly Effective | 5.1 | 2.2 | 76 |
| No Personal Impact/ Excess Personal Impact | 4.7 | 2.3 | 76 |

How informed and knowledgeable are you about this possible action?

Mean = 4.1
 Standard Deviation = 2.2
 Median = 4.0
 Range = 1 (Not very knowledgeable) to 8 (Sufficiently knowledgeable)
 N = 97 (Missing = 3)

How confident are you in having the Forest Service decide if this is the necessary thing to do?

Mean = 4.2
 Standard Deviation = 2.2
 Median = 4.0
 Range = 1 (Not confident at all) to 8 (Very confident)
 N = 96 (Missing = 4)



If the Forest Service were to close whole campgrounds or picnic areas for a year or longer to allow species to recover.

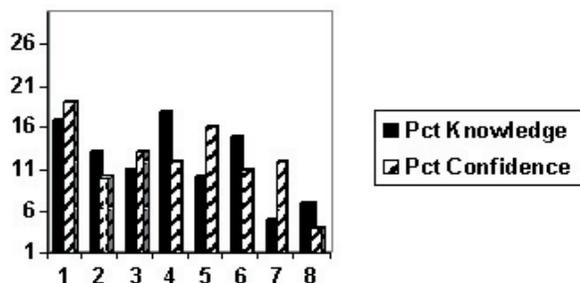
| Item | Mean | Standard Deviation | N |
|---|------|--------------------|----|
| Disapprove/ Approve | 5.3 | 2.7 | 91 |
| Not Bothersome/Bothersome | 4.9 | 2.3 | 79 |
| Not Effective/Highly Effective | 5.2 | 2.4 | 75 |
| No Personal Impact/Excess Personal Impact | 4.7 | 2.2 | 77 |

How informed and knowledgeable are you about this possible action?

Mean = 4.0
 Standard Deviation = 2.2
 Median = 4.0
 Range = 1 (Not very knowledgeable) to 8 (Sufficiently knowledgeable)
 N = 96 (Missing = 4)

How confident are you in having the Forest Service decide if this is the necessary thing to do?

Mean = 4.0
 Standard Deviation = 2.2
 Median = 4.0
 Range = 1 (Not confident at all) to 8 (Very confident)
 N = 97 (Missing = 3)



Interests Linked to Forest

Recreational Activities Participated in on the National Forests:

| Activity | N |
|-------------------------------|----|
| Hiking | 70 |
| Watching Wildlife | 62 |
| Camping With Vehicle | 61 |
| Picnicking | 54 |
| Backpacking | 54 |
| Photography | 49 |
| Fishing | 45 |
| Boating | 22 |
| Skiing | 21 |
| Gathering (e.g., berries) | 20 |
| Rock Climbing | 19 |
| Mountain Biking | 18 |
| Hunting | 16 |
| Wading or Tubing | 13 |
| Horseback Riding | 11 |
| Camping With Pack Animal | 9 |
| Panning for Gold | 9 |
| OHV / ATV Riding ¹ | 8 |
| Partying | 6 |

¹Off-Highway/All-Terrain Vehicle Riding

Degree of Concern about Possible Restrictions of Activities:

| Activity | No Concern | Some Concern | Much Concern | Missing |
|-----------------------------|---------------------|--------------|--------------|---------|
| | ----- Percent ----- | | | |
| Hiking | 15 | 23 | 39 | 13 |
| Watching Wildlife | 22 | 18 | 30 | 12 |
| Camping With Vehicle | 18 | 29 | 28 | 8 |
| Picnicking | 12 | 24 | 23 | 15 |
| Backpacking | 11 | 23 | 27 | 13 |
| Photography | 15 | 22 | 20 | 13 |
| Fishing | 15 | 13 | 28 | 10 |
| Boating | 9 | 7 | 14 | 13 |
| Skiing | 7 | 11 | 12 | 13 |
| Gathering (e.g., berries) | 8 | 11 | 11 | 13 |
| Rock Climbing | 9 | 11 | 7 | 14 |
| Mountain Biking | 9 | 11 | 8 | 12 |
| Hunting | 6 | 6 | 18 | 9 |
| Wading or Tubing | 5 | 11 | 9 | 12 |
| Horseback Riding | 7 | 7 | 8 | 12 |
| Camping With Pack Animal | 8 | 8 | 9 | 11 |
| Panning for Gold | 7 | 2 | 12 | 11 |
| OHV/ATV Riding ¹ | 7 | 2 | 10 | 12 |
| Partying | 8 | 1 | 6 | 14 |

¹Off-Highway/All-Terrain Vehicle Riding

Any Non-Recreational Interests Related to the National Forests:

| | Percent |
|---------|---------|
| Yes | 34 |
| No | 53 |
| Missing | 13 |

Belong to Any Organized Groups With an Interest in the Management of Threatened and Endangered Species:

| | Percent |
|---------|---------|
| Yes | 48 |
| No | 47 |
| Missing | 5 |

Respondent Sociodemographics

Gender:

| | Male | Female | Missing |
|---------|------|--------|---------|
| N | 55 | 40 | 5 |
| Percent | 55.0 | 40.0 | 5.0 |

Age:

Mean = 53.2
 Standard Deviation = 11.9
 Median = 54.0
 Range = 20 to 82
 N = 94 (Missing = 6)

Highest Educational Level:

| Level | N | Percent |
|-------------------|----|---------|
| Elementary School | 1 | 1.0 |
| Middle School | 0 | 0.0 |
| High School | 12 | 12.0 |
| College | 51 | 51.0 |
| Post-Graduate | 32 | 32.0 |
| Missing | 4 | 4.0 |

Ethnic/Racial Identification:

| Category | N | Percent |
|------------------|----|---------|
| White | 75 | 75.0 |
| Native American | 13 | 13.0 |
| Mexican American | 4 | 4.0 |
| Hispanic | 2 | 2.0 |
| African American | 1 | 1.0 |
| Missing | 13 | 13.0 |

¹Sum is greater than 100 because of the selection of multiple ethnicities by some respondents.

Annual Household Income Before Taxes:

| Income Range | N | Percent |
|---------------------|----|---------|
| Less than \$5,000 | 1 | 1.0 |
| \$5,000 - \$9,999 | 2 | 2.0 |
| \$10,000 - \$14,999 | 2 | 2.0 |
| \$15,000 - \$24,999 | 4 | 4.0 |
| \$25,000 - \$34,999 | 10 | 10.0 |
| \$35,000 - \$49,999 | 18 | 18.0 |
| \$50,000 - \$74,999 | 27 | 27.0 |
| \$75,000 - \$99,999 | 10 | 10.0 |
| \$100,000 or more | 12 | 12.0 |
| Missing | 14 | 14.0 |

Residential Information for Respondents

List of Respondent Zip Codes:

| ZIP | Percent | ZIP | Percent | ZIP | Percent | ZIP | Percent |
|-------|---------|-------|---------|-------|---------|---------|---------|
| 90803 | 1 | 92359 | 1 | 92551 | 1 | 93243 | 1 |
| 91702 | 1 | 92373 | 2 | 92555 | 1 | 93252 | 2 |
| 91719 | 2 | 92374 | 2 | 92557 | 1 | 93304 | 2 |
| 91720 | 3 | 92377 | 1 | 92586 | 2 | 93455 | 2 |
| 91773 | 1 | 92382 | 2 | 92649 | 1 | missing | 4 |
| 92220 | 1 | 92391 | 2 | 92780 | 1 | | |
| 92223 | 1 | 92392 | 1 | 92805 | 1 | | |
| 92305 | 1 | 92397 | 10 | 92840 | 1 | | |
| 92315 | 1 | 92399 | 2 | 92879 | 1 | | |
| 92317 | 1 | 92405 | 1 | 92880 | 2 | | |
| 92320 | 2 | 92407 | 2 | 92881 | 3 | | |
| 92321 | 1 | 92501 | 1 | 92882 | 3 | | |
| 92324 | 1 | 92504 | 1 | 93001 | 1 | | |
| 92325 | 2 | 92505 | 1 | 93015 | 1 | | |
| 92333 | 1 | 92507 | 1 | 93023 | 4 | | |
| 92345 | 3 | 92509 | 1 | 93024 | 2 | | |
| 92349 | 1 | 92539 | 1 | 93222 | 4 | | |
| 92356 | 1 | 92549 | 1 | 93225 | 2 | | |

Number of Years in Current Home:

Mean = 20.6
 Standard Deviation = 15.1
 Median = 15.0
 Range = 1 to 60
 N = 95 (Missing = 5)

Nearest National Forest to Home:

| | <u>Percent</u> |
|------------------|----------------|
| Angeles | 12 |
| Cleveland | 15 |
| Los Padres | 20 |
| San Bernardino | 35 |
| Multiple Forests | 6 |
| Missing | 12 |

Approximately How Close Live to National Forest:

| | <u>Percent</u> |
|------------------|----------------|
| 5 miles or less | 52 |
| 6 to 15 miles | 16 |
| 16 or more miles | 28 |
| Missing | 4 |

Appendix C—Threatened and Endangered Species Questionnaire

Discussion group: _____
 Number: _____

Management of Threatened and Endangered Species

Threatened and Endangered Species

The following questions are concerned with your views about animal and plants species in the national forests of southern California that are either threatened by extinction or in danger of becoming threatened. Please circle one number from 1 to 8 indicating your response to each question.

1. How concerned are you about threatened and endangered species in the national forests of southern California?

| | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|----------------|
| Not at all concerned | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very concerned |
|----------------------|---|---|---|---|---|---|---|---|----------------|

2. How knowledgeable are you about what is going on in southern California concerning the protection of threatened and endangered species?

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|--------------------|
| Not very knowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very knowledgeable |
|------------------------|---|---|---|---|---|---|---|---|--------------------|

3. Compared to other things like grazing and mining, how much of a negative impact do you think recreationists' behaviors have on threatened and endangered species in the national forests of southern California?

| | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|-------------------------|
| No significant impact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very significant impact |
|-----------------------|---|---|---|---|---|---|---|---|-------------------------|

4. To what extent do you believe the US Forest Service (FS) shares your values about how the national forests should be managed to protect threatened and endangered species?

| | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|-------------------------|
| The FS does <u>not</u> share my values | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | The FS shares my values |
|--|---|---|---|---|---|---|---|---|-------------------------|

5. To the extent that you understand them, do you share the US Forest Service's goals for threatened and endangered species?

| | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|----------------------------------|
| The FS has <u>different</u> goals | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | The FS has the <u>same</u> goals |
|-----------------------------------|---|---|---|---|---|---|---|---|----------------------------------|

6. To what extent does the US Forest Service support your views about the management of threatened and endangered species?

| | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---------------------------------|
| The FS <u>opposes</u> my views | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | The FS <u>supports</u> my views |
|--------------------------------|---|---|---|---|---|---|---|---|---------------------------------|

7. To what extent do you trust the US Forest Service in their efforts to address threatened and endangered species problems?

| | | | | | | | | | |
|-------------------------------------|---|---|---|---|---|---|---|---|----------------------------------|
| I do <u>not trust</u> the FS at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | I <u>trust</u> the FS completely |
|-------------------------------------|---|---|---|---|---|---|---|---|----------------------------------|

8. How much confidence do you have in the US Forest Service to protect threatened and endangered species?

| | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|--|
| I am <u>not confident</u> in the FS at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | I am <u>completely confident</u> in the FS |
|--|---|---|---|---|---|---|---|---|--|

9. Check the statement that best describes your view about the protection of threatened and endangered species?

- ___ Economic growth and human concerns must come first
- ___ We probably have to let some species go, we can not save them all
- ___ We must preserve all species regardless of cost

Forest Management and Threatened and Endangered Species

Each of the following has been suggested as a way to change forest user practices that have an impact on threatened and endangered species. Please indicate how much you agree with doing each, how intrusive each is, how effective each would be, and how much of an impact each would have on you by circling a number from 1 to 8.

1. If the Forest Service were to ban certain uses in the forest, or areas of the forest, such as off-road vehicle use or fishing.

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|------------------------|
| Strongly disapprove | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Strongly approve |
| Not bothersome at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excessively bothersome |
| Would not be effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Highly effective |
| No personal impact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excess personal impact |

How informed and knowledgeable are you about this possible action?

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|
| Not very knowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sufficiently knowledgeable |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|

How confident are you in having the Forest Service decide if this is necessary to do?

| | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|----------------|
| Not confident at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very confident |
|----------------------|---|---|---|---|---|---|---|---|----------------|

2. If the Forest Service were to have signs at recreation sites informing forest users of their negative impacts on threatened and endangered species.

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|------------------------|
| Strongly disapprove | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Strongly approve |
| Not bothersome at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excessively bothersome |
| Would not be effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Highly effective |
| No personal impact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excess personal impact |

How informed and knowledgeable are you about this possible action?

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|
| Not very knowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sufficiently knowledgeable |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|

How confident are you in having the Forest Service decide if this is necessary to do?

| | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|----------------|
| Not confident at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very confident |
|----------------------|---|---|---|---|---|---|---|---|----------------|

3. If Forest Service staff were to visit recreation sites and informally discuss activities that don't adversely affect threatened and endangered species.

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|------------------------|
| Strongly disapprove | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Strongly approve |
| Not bothersome at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excessively bothersome |
| Would not be effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Highly effective |
| No personal impact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excess personal impact |

How informed and knowledgeable are you about this possible action?

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|
| Not very knowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sufficiently knowledgeable |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|

How confident are you in having the Forest Service decide if this is necessary to do?

| | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|----------------|
| Not confident at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very confident |
|----------------------|---|---|---|---|---|---|---|---|----------------|

4. If the Forest Service were to close some campsites or picnic sites to protect threatened and endangered species, but keeps the majority of the areas open to use.

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|------------------------|
| Strongly disapprove | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Strongly approve |
| Not bothersome at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excessively bothersome |
| Would not be effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Highly effective |
| No personal impact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excess personal impact |

How informed and knowledgeable are you about this possible action?

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|
| Not very knowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sufficiently knowledgeable |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|

How confident are you in having the Forest Service decide if this is necessary to do?

| | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|----------------|
| Not confident at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very confident |
|----------------------|---|---|---|---|---|---|---|---|----------------|

5. If the Forest Service were to close whole campgrounds or picnic areas for a year or longer to allow species to recover.

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|------------------------|
| Strongly disapprove | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Strongly approve |
| Not bothersome at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excessively bothersome |
| Would not be effective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Highly effective |
| No personal impact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Excess personal impact |

How informed and knowledgeable are you about this possible action?

| | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|
| Not very knowledgeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sufficiently knowledgeable |
|------------------------|---|---|---|---|---|---|---|---|----------------------------|

How confident are you in having the Forest Service decide if this is necessary to do?

| | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|----------------|
| Not confident at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Very confident |
|----------------------|---|---|---|---|---|---|---|---|----------------|

About You

Finally, we need to know a few general things about you so we know who answered our survey.

- Age?: ___ ___ years
- Gender: (1) Female ___ (2) Male ___
- How many years of education have you successfully completed? (circle one year)

| | | | | |
|-------------------|---------------|-------------|-------------|-------------------|
| 1 2 3 4 5 | 6 7 8 | 9 10 11 12 | 13 14 15 16 | 17 18 19 20 21 22 |
| ELEMENTARY SCHOOL | MIDDLE SCHOOL | HIGH SCHOOL | COLLEGE | POST-GRAD |

- Please write in Ethnicity / Racial identification and check all categories that apply:

African American ___; Asian or Pacific Islander ___; Hispanic ___; Mexican ___;
 Mexican American ___; Native American ___; Other Latinos or Chicanos ___;
 White ___

- Indicate below how you use the national forests by checking the box in the column marked **(A)** next to those recreational activities that you participate in. For those **activities that you participate in** indicate in the column marked **(B)** the degree of concern you have that participation in the activity might be restricted by efforts to protect threatened and endangered species. Use the rating scale: 1 = no concern; 2 = some concern; 3 = much concern.

| Activity | (A) (check all that apply) | (B) Concerned about restrictions | | |
|---|-------------------------------|-------------------------------------|---|---|
| 1. Camping with a vehicle (RV, trailer, car & tent) | | 1 | 2 | 3 |
| 2. Camping with a horse or other pack animal | | 1 | 2 | 3 |
| 3. Backpacking | | 1 | 2 | 3 |
| 4. Boating | | 1 | 2 | 3 |
| 5. Fishing | | 1 | 2 | 3 |
| 6. Gathering (berries, mushrooms, etc) | | 1 | 2 | 3 |
| 7. Hiking | | 1 | 2 | 3 |
| 8. Horse back riding | | 1 | 2 | 3 |
| 9. Hunting | | 1 | 2 | 3 |
| 10. Mountain biking | | 1 | 2 | 3 |
| 11. OHV/ATV riding | | 1 | 2 | 3 |
| 12. Panning for gold | | 1 | 2 | 3 |
| 13. Partying | | 1 | 2 | 3 |
| 14. Photography | | 1 | 2 | 3 |
| 15. Picnicking | | 1 | 2 | 3 |
| 16. Rock climbing | | 1 | 2 | 3 |
| 17. Skiing | | 1 | 2 | 3 |
| 18. Wading or tubing | | 1 | 2 | 3 |
| 19. Watching wildlife | | 1 | 2 | 3 |
| 20. Other (please specify) _____ | | 1 | 2 | 3 |

- What is your annual household income (before taxes)? (circle one)
 - a. Less than \$5,000
 - b. \$5,000-9,999
 - c. \$10,000-14,999
 - d. \$15,000-24,999
 - e. \$25,000-34,999
 - f. \$35,000-49,999
 - g. \$50,000-74,999
 - h. \$75,000-99,999
 - i. \$100,000 Or More

- Current zip code: __ __ __ __ __
- Number of years that you have lived in the area of your current home:
__ __ years
- What is the nearest national forest to your home? _____
- Approximately how close do you live to the nearest national forest?
5 miles or less __ 6 to 15 miles __ 16 or more miles __
- Do you have any non-recreational interests related to the national forests that might be affected by the management of threatened and endangered species? For example, might your occupational activities or your community's water supply be affected by management decisions?
No __ Yes __ If yes, how might the management of threatened and endangered species affect you ?

- Do you belong to an organized group(s), either environmental or non-environmental, with a special interest in issues related to the management of threatened and endangered species?
No __ Yes __ If yes, what is (are) the name(s) of the group(s)?

- In what ways could the USDA Forest Service most usefully inform you about what it is doing concerning threatened and endangered species? 0 = not useful at all; 1 = a little useful; 2 = somewhat useful; 3 = very useful
 - announcements in local newspapers 0 1 2 3
 - radio programs 0 1 2 3
 - community meetings and programs 0 1 2 3
 - posters at visitors centers 0 1 2 3
 - Other useful ways of communicating :

Appendix D—Focus Group Protocol

Focus Group Protocol Management of Threatened and Endangered Species

Introduction

(collect pre-discussion questionnaires)

Hello and welcome. I want to thank you for coming here today. My name is and I am with ... (Also here today are ...) We are talking today about the FS and the protection of threatened and endangered species in the national forests of southern California. We will be talking as a group about natural resource management, threatened and endangered species, and conservation in the national forests of southern California. We want your views on these topics, as a member of the _____ community (fill in specific community type here). I have a few questions for you, and mostly want to hear from you about what your thoughts are. This is an open discussion and we want to encourage each of you to share your ideas, whether you feel others in the room have already expressed the same, or a contradictory opinion to yours. Since we want to hear from each of you, we are asking that you give each other a chance to speak, and that you treat each other with respect. We will not be moving you to consensus or asking for any votes.

We will be meeting for about an hour and a half. We will not be taking any breaks but if you want to, get up and move around. We are tape recording and making voice summaries of our discussion. This is just for our use, so that we don't have to take as many notes, and so that we don't miss your ideas. No one else will hear the tapes, and we'll be using the transcript for analysis without your names on them. Please speak one at a time so that the tape doesn't get garbled.

Most people find the discussion to be an enjoyable and informative experience. I want to acknowledge that you are, of course, under no obligation to answer anything that you do not wish to and that your participation is completely voluntary so you are free to leave at any time.

To begin things, let's go around the table and introduce yourselves. Just give your first name, and tell what uses, if any, you make of the national forests (e.g., hunting, fishing, camp-ground camping, ORV, backpacking, etc.).

A. Views on the protection of threatened and endangered species - 10 minutes

1. As I said we are here today to talk about how recreation and other uses might impact threatened and endangered plant and animal species in the national forests, and what might be done about this.

To what extent do you think threatened and endangered species should be protected? That is, do you agree with the effort to protect species?

What, if anything, would be an excessive effort?

B. Confidence in FS & values - 15 minutes

The national Forest Service has the task of managing the forest for the American citizens. I want to talk a little about your view of how well the FS is doing this job.

1. You were asked to rate how confident you are in the FS's management of the forests for protection of threatened and endangered species. What are the main reasons that you are confident or not confident? Why or why not?
2. With regard to protection of threatened and endangered species, what are the most important values and goals that the FS shares with you?
3. What are the most important ones that the FS doesn't share with you?

C. Reactions to possible interventions - 15 minutes

I'd like to talk a little bit about some of the things that the FS could do to protect threatened and endangered species. Most of these things have the effect of restricting what people can do in the forests. As such they involve trading off the value of free use of the forest by humans for the good of other animal species. I'll be asking questions to find out under what circumstances, if any, you would be willing to make this tradeoff.

1. Some might say that efforts to change how people use the national forests should not be made—the forests belong to the people and they should be allowed to use it in any way that they want. What's your reaction to this point of view?
2. You may be aware that to protect threatened and endangered species the FS could close sections of the forests or ban certain activities (such as off-road vehicle use, fishing, biking, etc.) or take actions that might have a major impact on a local community - say, preventing a community from using a watershed as a source of water.
3. Suppose that the FS took actions that prevented you from using the forest in the way you wanted or that had an effect on your community. Would you accept unconditionally the need to do this on the word of the FS?

Under what circumstances, if any, would you be willing to accept this? That is, what would justify to you a closure, banning of activity or effect on your community that prevented you from using the forest in the way that you wanted to?

4. Would your reaction to actions by the FS be affected by what species was being protected?

D. Information about T & E species and forest management - 15 minutes

1. What type of information do you need, or want from the Forest Service about its efforts to protect threatened and endangered species?
2. How would you like to receive that information? (e.g., newspapers, radio, local community meetings, posters at visitors centers)
3. What do you think is the most effective way that people from your group, represented here today, could be involved by the FS in forest management decisions regarding threatened and endangered species?
4. In what ways would you personally like to participate in forest management decisions regarding threatened and endangered species?
5. In what ways have you participated in these decisions before?
6. How much latitude do you believe the Forest Service has in making management decisions related to threatened and endangered species?

Appendix E—Multiple Regression Analyses Predicting Self-Knowledge, Judgments of Negative Impact of Recreation, Concern about Threatened and Endangered Species, and View on the Protection of Species on the Basis of Personal Characteristics

Beta weights indicating contribution of different personal characteristics to prediction of responses on selected items.

| Personal Characteristic | Self-knowledge | Negative impact of recreation | Concern about species | Protection of species |
|--|----------------|-------------------------------|-----------------------|-----------------------|
| Age | 0.027 | 0.207 | 0.001 | 0.170 |
| Gender | 0.027 | -0.090 | -0.027 | -0.090 |
| Education | 0.011 | -0.081 | -0.177 | -0.039 |
| Annual household income | 0.303* | -0.033 | 0.109 | -0.092 |
| Non-recreational interests in National Forests | 0.032 | 0.038 | -0.117 | -0.051 |
| African American | 0.122 | 0.058 | -0.039 | 0.314 |
| Hispanic | 0.181 | -0.191 | -0.176 | -0.331* |
| Mexican American | -0.106 | -0.013 | 0.141 | -0.109 |
| Native American | 0.052 | 0.299 | 0.397 | -0.280 |
| White | 0.036 | 0.108 | 0.028 | -0.326 |
| Distance to the National Forest | 0.115 | -0.100 | -0.035 | 0.158 |
| R | 0.406 | 0.443 | 0.433 | 0.460 |
| R ² adj. | 0.009 | 0.046 | 0.036 | 0.044 |

*significant at p<0.05

Appendix F—Multiple Regression Analysis Predicting Trust in the USDA Forest Service on the Basis of Personal Characteristics

Beta weights indicating contribution of different personal characteristics to prediction of trust in the Forest Service.

| Personal Characteristic | Trust |
|--|--------|
| Age | -0.117 |
| Gender | -0.050 |
| Education | -0.172 |
| Annual household income | 0.141 |
| Non-recreational interests in National Forests | -0.206 |
| African American | -0.183 |
| Hispanic | 0.025 |
| Mexican American | -0.003 |
| Native American | -0.059 |
| White | 0.086 |
| Distance to the National Forest | 0.039 |
| R | 0.369 |
| R ² adj. | 0.061 |

*significant at $p < 0.05$

Appendix G—Multiple Regression Analyses Predicting Judged Effectiveness and Acceptance of Providing Information and Restricting Forest Use on the Basis of Personal Characteristics

Beta weights indicating contribution of different personal characteristics to prediction of responses on selected items.

| Personal Characteristic | Effectiveness of information | Effectiveness of restrictions | Acceptance of information | Acceptance of restrictions |
|--|------------------------------|-------------------------------|---------------------------|----------------------------|
| Age | -0.199 | 0.199 | -0.011 | 0.272* |
| Gender | 0.166 | -0.098 | -0.089 | -0.060 |
| Education | 0.226 | 0.136 | 0.001 | 0.042 |
| Annual household income | -0.186 | -0.027 | -0.027 | -0.026 |
| Non-recreational interests in National Forests | -0.064 | -0.052 | -0.115 | 0.014 |
| African American | 0.225 | 0.182 | 0.232 | 0.110 |
| Hispanic | 0.196 | 0.051 | 0.074 | -0.269 |
| Mexican American | -0.230 | -0.446 | -0.136 | 0.068 |
| Native American | -0.461 | -0.153 | -0.372 | 0.159 |
| White | -0.135 | -0.370 | -0.207 | 0.081 |
| Distance to the National Forest | 0.223 | 0.145 | 0.114 | 0.028 |
| R | 0.481 | 0.375 | 0.306 | 0.418 |
| R ² adj. | 0.062 | -0.049 | -0.034 | 0.015 |

*significant at p<0.05

The Forest Service, U.S. Department of Agriculture, is responsible for Federal leadership in forestry. It carries out this role through four main activities:

- Protection and management of resources on 191 million acres of National Forest System lands;
- Cooperation with State and local governments, forest industries, and private landowners to help protect and manage non-Federal forest and associated range and watershed lands;
- Participation with other agencies in human resource and community assistance programs to improve living conditions in rural areas; and
- Research on all aspects of forestry, rangeland management, and forest resources utilization.

The Pacific Southwest Research Station

- Represents the research branch of the Forest Service in California, Hawaii, American Samoa, and the western Pacific.



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of Agriculture

Forest Service

**Pacific Southwest
Research Station**

Research Paper
PSW-RP-247



Social Trust and the Management of Threatened and Endangered Species:

A Study of Communities of Interest and Communities of Place