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AN INTRODUCTION TO SOCIAL ASSESSMENT TECHNIQUES FOR NATURAL RESOURCE MANAGERS

by

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I. INTRODUCTION

This is a guide to approaches and techniques used to assess citizen preferences concerning natural resources. It proceeds step by step through the social assessment process and includes a variety of perspectives concerning the measurement and interpretation of social values. We begin with a brief introduction to the philosophy behind citizen participation and then proceed to actual approaches and techniques which can be utilized. Since each approach and technique has costs and benefits associated with its use, we make every effort not only to provide information on how each should be used, but also to provide some data-based observations on its limitations and strengths.

II. PUBLIC PARTICIPATION IN NATURAL RESOURCE MANAGEMENT

One consequence of citizen activism in the 1960s and 1970s was the passage of legislation requiring federal agencies to open their decision-making processes to public scrutiny and participation. Relevant statutes for natural resource agencies include the National Forest Management Act (NFMA), the Federal Land Policy and Management Act (FLPMA), and above all the National Environmental Policy Act (NEPA). These laws were intended not only to let the public *see* the inner workings of the agencies but to have a greater *say* in what those agencies do. While resource agencies sometimes struggle to find the proper balance between professional judgements and public preferences, it is clear that Congress intended the NEPA process as a means of

injecting democracy into agency decision making.

Democracy, however, means different things to different people. Political scientists have identified two relatively distinct definitions of democracy that have been articulated in the American context. These definitions have been well characterized by Dolbeare and Medcalf in their book *American Ideologies Today* (Random House, 1988) and include:

> *Procedural Democracy*: "...focuses on the rights and mechanisms for participation that citizens have, in theory and in practice. If these opportunities are in place and working properly, then all the requisites of democracy have been fulfilled... When opportunities for participation are open and a fair set of rules for goal seeking is enforced, the results--whatever they are--can be taken as the expression of popular will. This is true whether or not most people actually do participate in voting or other political activity" (p. 25).

According to this view of democracy, if natural resource agencies follow the law and assess the public's views and preferences through "scoping" meetings or similar opinion gathering mechanisms, then the process can be considered democratic. Note that under this definition it doesn't matter how many people participate in the process or who the participants represent, only that the *procedural requirements* of the law are followed.

The other major definition of democracy begins with procedural democracy as a starting point and expands the concept.

> *Substantive Democracy*: "... acknowledges the great social achievement of procedural democracy. Fair and open processes can enable people to gain many important goals...But substantive democracy insists that democracy also should include concern both for the social and economic conditions of people's lives and for the results of the policy-making process (Dolbeare & Medcalf, p. 24).

According to this definition, natural resource managers should go beyond procedural compliance with the law, insuring that all interested parties are involved in the planning/policy process ***and*** that their participation counts. Practice of substantive democracy has three benefits for agencies. First, it keeps the agency in better touch with the public it serves. Second, the value of democracy is to allow for the consideration of diverse ideas. Substantive democracy is more open to participation of people from a wide variety of backgrounds. Third, it is a two way process that allows education of the public about the issues. Substantive democracy usually requires more time to come to a decision, but produces greater public support for the decision. Costs will be higher, and polarized issues will require some mediation or adjudication.

This second definition of democracy is implicit in the Forest Service's "ecosystem management" policies which emphasize that forest practices and conditions are socially acceptable as well as ecologically defensible and economically justifiable. The concept of social acceptability implies not only that the public is asked what should be done, but also that sufficient numbers of constituents give their approval of management

activity. This requires substantive democracy, not merely attention to procedural details. We will present various social science perspectives concerning the identification and measurement of social values, then provide some examples of the benefits and limitations for each approach using data from a recent study of the Gifford Pinchot National Forest in Washington State.

III. APPROACHES

Social scientists use various approaches to the study of social values. While we cannot present all approaches here, most can be categorized as "quantitative" or "qualitative." These approaches have similarities and differences. In general, both assume that: (1) we can discover and understand what people want and how they think about natural resource issues; and (2) observation is the best way to discover social values.

Most *quantitative approaches* to the study of social values were originally based on what social scientists call logical-positivism. Under this approach, social values can be observed, measured and analyzed using techniques such as opinion and attitudinal measurement. An example of this would be the use of a survey questionnaire to measure hiker satisfaction with a new forest trail. This approach most often involves the use of numerical data and statistics.

Qualitative research, on the other hand, provides a description of social values based on close personal observation by the researcher. This type of research has been advocated by

phenomenologists. Phenomenology emphasizes direct observation of people and seeks to describe reality in words, rather than numbers as positivism does. While certain qualitative techniques could involve the use of numerical data, it most often involves the collection of more descriptive types of data without using predetermined categories of behavior as a questionnaire would. Qualitative research is often useful for better designing the surveys that produce quantitative data.

Three of the most used approaches to the study social values--opinion and attitudinal measurement, cognitive approaches, and ethnography--are presented below. This is followed by a discussion of various data gathering techniques used by these approaches.

A. Opinion and Attitudinal Measurement: One of the basic assumptions about human behavior is that people's attitudes and preferences affect their behavior. For example, if someone prefers primitive forms of recreation such as hiking they may be more likely to use designated wilderness areas and less likely to use developed campgrounds. The purpose of this approach is usually to determine if a particular natural resource management action or policy will be successful and/or to determine citizen priorities concerning natural resource use. Opinion and attitudinal measurement can focus on general natural resource questions or on specific resource issues.

B. Cognitive Approach: Opinion and attitudinal measurement assume that people's opinions and values (at least the categories

of them) are known. A cognitive approach determines citizen's attitudes from their own point of view. This approach assumes a need to find out how a population thinks and to predict how it reacts to change. This involves three steps: First, start with an open-ended interview with key informants (see "Data Gathering Strategies" below) to determine their perceptions and obtain as many value statements as possible about natural resources. The second step is to choose the most important value statements (usually using a set of cards) by having informants sort them by their importance. The third step is to select those statements chosen as the most important and present them in a formal survey to a representative sample of group members. Thus a mixture of quantitative and qualitative techniques are utilized.

C. Ethnography: Ethnography is a description of a cultural system--such as a town or group--by an outside observer. Ethnographic data are not gathered using predetermined categories--the setting dictates what is being observed. These qualitative data provide useful information with respect to how citizens interact with resources. Ethnography uses a holistic focus and tries to describe an entire community or group. Several rapid appraisal techniques are available to reduce the costs of more labor intensive ethnographic approaches.

While there are many other approaches used to study and understand social values--such as historical research, comparative studies, and network analysis--the most commonly used approaches to the study of social values of natural resources are

those mentioned above. For more information concerning approaches to the study of social values see the following books or ask for a catalogue from *Sage Publications* who have short publications on the full range of social science methods.

Babbie, Earl, *The Practice of Social Research* (Belmont, CA: Wadsworth Publishing Co.).

Bernard, H. Russell, *Research Methods in Cultural Anthropology* (Sage publications).

True, June Audrey, *Finding Out: Conducting and Evaluating Social Research* (Belmont, CA: Wadsworth Publishing Co.).

V. DATA GATHERING TECHNIQUES

A. Populations and Samples: The first and most critical step in gathering social data is to choose the proper technique given the type and accuracy of information needed. The most commonly used techniques include surveys, direct observation, and content analysis. Before presenting the various techniques used to gather social data, however, a natural resource manager must decide who is to be included in the social assessment study. This may be the most important and difficult decision to make, since it may involve empowering some groups at the expense of others. For example, many natural resource agencies utilize "scoping meetings" to identify the preferences of local publics concerning management decisions. Often only a few interested individuals attend these meetings. For a variety of reasons including poor announcement procedures and concern by non-participants that a public forum may be too intimidating, scoping

meetings lead to a biased picture of citizen preferences. While this approach complies with the *procedural requirements* of the law, it does not always lead to a representative or accurate picture of all stakeholders. The resource manager who embraces a *substantive* view of democracy tries to contrast all relevant constituents and stakeholders--both rural and urban representing local, regional and in some cases, even national concerns.

An important criterion used by social scientists to judge the value of social information is *representativeness*. By representativeness we mean the degree to which interviews, survey data, or forest plan comments match the population at large. The best way to assure representativeness is to collect data from an entire population (e.g., all residents of a community) or to conduct a random sample. Conducting a random sample is usually better than studying an entire population due to cost, time, and the logistics involved in studying an entire population. Often random samples have to be stratified so as to get adequate representation of small, but significant groups of people.

If a random sample is not possible, then *nonprobability* sampling techniques can be incorporated in a study of social values. While these sampling strategies are not necessarily representative of the population, they can provide useful information in the appropriate circumstances. These include--but are not limited to--**quota, purposive, snowball** and **haphazard** samples. In **quota** sampling, you decide what the group of interest looks like demographically, economically, etc., (e.g.,

sex, race, income, timber dependency, etc.) and collect data which approximates the entire group in a nonrandom manner. So if you want to study a rural community where half of the population are women, then your sample should be 50 percent women, etc.

In **purposive** sampling, the researcher decides who or what to study (individual, community, etc.) and goes out to find one. This is somewhat like quota sampling except that there is no plan that tells how many individuals or communities need to be studied. In **snowball** sampling you identify several key individuals and ask them to identify others who would be likely candidates for your social value research. Snowball sampling is very useful to natural resource managers because it allows for the identification of various stakeholder groups and their networks. However, as with all nonprobability samples, the researcher must be very careful not to generalize to the whole population. All of these sampling strategies are highly unlikely to produce a representative cross section of individuals or groups. A commonly used method that is highly discouraged is **haphazard** sampling. Haphazard sampling is typically used in exploratory research to get an impression of what's happening--for example, in a community. It involves nothing more than grabbing anyone willing to be to interviewed (these are also called "convenience" or "supermarket" samples and are discouraged given their high probability of bias). A haphazard sample is also what the public meeting process associates with procedural democracy procedures.

Once a sampling strategy is identified, it is important to identify the appropriate size of the sample to assure that the data gathered are representative. In general, fewer than 30 observations typically are unacceptable because they will have a large chance of error (or bias). More than 300 observations are not useful because they will not appreciably reduce the chance of error. National public opinion polls only need about 1,000 to 1,200 respondents to be representative of the entire population! The following table provides information for determining a representative sample size from a given population.

TABLE 1

Table for determining sample size (s) from a given population (N) to achieve a 95% level of confidence.

N	s	N	s	N	s
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	228	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	106	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	133	1000	278	75000	382
210	136	1100	285	100000	384

SOURCE: Krijcie, R. V. & Morgan, D. W. (1970). This table was based on a formula published by the research division of the National Education Association.
NOTE: N is population size; s is sample size.

B. Surveys: The data gathering tool most frequently used by social scientists is the survey. Surveys provide easily quantifiable information and reduce the cost of contacting large numbers of users. If used with proper random sampling techniques, surveys can provide highly accurate and representative information about social values. However, the information provided by surveys can be limited and superficial due to the nature of question wording and the problem of omitting important topics from investigation. Surveys constrain the range of responses solicited from respondents because they usually do not permit elaboration and incorporation of context with responses. We **strongly** suggest conducting cognitive or ethnographic research, also scoping meetings, to identify the areas of citizen preferences before designing a questionnaire.

Three kinds of surveys are used--mail, telephone and personal interview surveys. Mail surveys permit contacting large numbers of people at low cost and allow for complex and in depth questions. Telephone surveys can also provide a quick and inexpensive method to gather social value data. However, they are more limited in their complexity due to the difficulties of communicating complicated questions over the telephone. Personal interviews are considered an excellent method to gather social value information but are expensive and time consuming.

Personal interviews have the highest rate of public response followed by telephone and then mail surveys. Recent research has suggested that mail survey response rates are starting to rival

those for telephone surveys due to the increasing number of answering machines in use and the advent of telemarketing strategies by businesses (thus inundating potential respondents with requests for their time). The failure of some people to return or answer surveys can be a serious problem. Effort should always be made to determine if there is a non-response bias. Compare the demographic characteristics of respondents with known population characteristics--such as those provided by the U.S. Census of other government agencies. Consulting experts who are knowledgeable about survey design, use, and interpretation can help alleviate some of the problems with surveys.

The federal Office of Management and Budget (OMB) has adopted rules on the use of surveys by federal agencies. While these rules may tend to lengthen the time before a survey can be administered, the OMB's survey experts can offer valuable assistance to enhance the scientific defensibility of a survey.

C. Direct Observation: In some situations direct observations may be more appropriate than surveys. Advocates of qualitative approaches suggest that field research allows for flexibility in research focus and the ability to develop an in depth understanding of social values. There are two major approaches to field work (*inductive* and *deductive*), as well as different strategies for interviewing people in the field. Inductive social value research is often called the "eyeballing" method because you enter the field without a specific view of what is expected. The goal is not to validate an existing theory

but to develop ideas from your observations. Deductive field research involves looking for specific kinds of data and testing hunches that the researcher may have.

While an in-depth understanding of individuals and communities can be ascertained with direct observation, there are some serious drawbacks. First, given the relatively small size and nonrandom nature of field research "samples," one must be very careful not to generalize to the entire population. There also are problems with researcher bias; that is, the observer may focus on certain behaviors or interactions because of personal interest or value bias and ignore other important interactions. When conducting field research one must keep in mind these seven questions: (1) Who do I watch or interview? (2) Where do I go to watch or interview? (3) When do I go to the location? (4) How often should I go to the research location? (5) How long should I watch or interview people? (6) What kinds of questions should I ask, if any? (7) How many people should I watch or interview? As these questions illustrate, there are many decisions which the researcher makes which could bias the research results.

When conducting interviews in the field, researchers should decide how much control they should exercise over the responses of informants. The amount of control ranges from very little in **informal** interviewing to a lot of control in **structured** interviews. Informal interviewing is characterized by a total lack of structure or control. The researcher goes into the field, watches and talks to people very loosely, and then

develops field notes as soon after the interview as possible. Next comes **unstructured** interviewing where the researcher sits down with an informant and holds an interview. Both the informant and researcher know that its an interview and not merely pleasant discussion. The purpose here is to get people to "open up" while not using an interview guide. Often notes will be taken as the interview proceeds.

When researchers have only one chance to interview someone, **semistructured** interviewing is considered best. This is probably the best technique for natural resource managers given their time constraints and inability to reestablish contact with informants in the field. Semistructured interviews have the informal quality of unstructured interviews in addition to the use of an interview guide. An interview guide is a written list of questions and topics that need to be covered in a particular order. The researcher is allowed discretion to follow leads, but the interview guide has clear instructions about relevant areas to probe. Formal interview guides are necessary to ensure consistency of results if more than one researcher is collecting data. Even if one person is conducting all of the interviews, a guide should be used in order to have reliable and comparable qualitative data.

Structured interviews have the most controlled interview formats. All informants are asked to respond an identical set of questions. Structured interviews typically involve the use of an interview schedule which is an explicit set of instructions for

the interviewers. Questions often involve the use of "close-ended" questions such as those used in survey research. This produces data which can be numerical and ensures the comparability of data. Interviews should be pretested.

With all interviews, informants should informed that their responses will be kept anonymous and used only for research or planning purposes. In addition, researchers should be aware of things that may lead to response effects and thus bias in the research results. Response bias could result from the appearance of the interviewer, the environment of the interview, the date of the interview (see the forthcoming study results), the affiliation of the researcher, etc. For example, if the respondent doesn't trust a government agency--such as the USDA Forest service or BLM--then data gathered by agency personnel may not be as reliable as data gathered by an outside contractor.

D. Content Analysis: Content analysis is a useful technique to ascertain social values. When the ability to observe, interview or survey people is limited, their written or spoken communications --such as forest plan comments and scoping comments--can be examined and quantified. One of the easiest forms of content analysis is simply to count the number of comments in favor or opposed to a specific management option. For example, a researcher could count the number of forest plan comments which support the designation of a river as "wild" or "scenic" and those letters which are opposed to such a designation. Simple counting should not be used by itself,

however, because of the likelihood of sampling bias. Often one constituency group has greater success than opposing groups in marshalling its supporters to make public comments. Managers must be careful to guard against assuming that written commentaries represent the larger group from which they come. Numbers of comments may be more useful if they come from several different constituency groups, or if they are supported by other evidence (survey results, election results, etc.).

When human coders have to be used, it is important to carefully train coders in terms of the use of coding criteria. The coding process should be done by requiring two or more coders to evaluate each of the planning comments. Discrepancies between codes assigned can then be determined and resolved. The degree to which coders can assign the same code to the same unit is called **intercoder reliability**.

Besides being labor intensive, content analysis has many methodological problems. The most obvious and dangerous is the decisions involved in making up the codes and the actual coding process. Researcher bias is very important to check--have all relevant issues been coded properly? An additional concern is the representativeness of the letters or scoping comments being coded.

The method for coding letters or comments is important to consider. Some natural resource managers code each individual comment as a separate unit of analysis. This means that someone making 10 comments "counts" more than someone making just one

comment. It also is very important to make sure that only one letter is coded for each individual participating in the process so that their participation is not weighted. The coding of comment cards from interest groups is another concern--can you be sure each respondent submitted only one card and does sending a card weigh equally with a letter? Does a form letter weigh equally with an individual letter? All of these are problems stemming from procedural democratic approaches.

VI. A COMPARISON OF APPROACHES AND TECHNIQUES: RESULTS FROM A STUDY OF THE SIOUXON VALLEY IN THE GIFFORD PINCHOT NATIONAL FOREST.

In this section of the manual we will present and compare some quantitative and qualitative data from a study conducted in the Gifford Pinchot National Forest in southwestern Washington. The first topic of discussion here concerns the selection of groups and individuals to be included in a social assessment study. As discussed previously, many natural resource agencies utilize "scoping meetings" to identify the preferences of the public concerning management decisions. In many instances, few people attend these meetings which leads to a biased picture of citizen preferences. While this approach complies with the procedural requirements of the law, it probably does not give an accurate picture of all stakeholders.

Table 2 contains data from several opinion surveys conducted in 1992 concerning the Gifford Pinchot National Forest. These data were gathered using randomly selected samples for mail surveys of relevant national, urban, and rural populations plus

purposive sampling of visitors. Planning participants were identified through their participation in the planning process. The survey data have been sorted into six different categories of "stakeholder groups" to illustrate preferences and orientations of various groups and thus bias in social assessments that neglect to include such groups. An additional national public stakeholder group is added using data from a recent national public opinion survey of forest issues conducted by Oregon State University. Analysis of the survey data reveal the following groups:

Group 1: Rural residents who are not dependent on the timber industry for their economic livelihood.

Group 2: Rural residents who are dependent on the timber industry for their economic livelihood.

Group 3: Urban residents who are not dependent on the timber industry.

Group 4: Urban residents who are dependent on the timber industry.

Group 5: Visitors to the Gifford Pinchot as identified through trail registration cards and responses to the public opinion surveys.

Group 6: Forest Plan Participants identified through letters sent or public scoping meetings attended.

Group 7: National public opinion identified through a recent survey of public forestry issues.

The data in the following table reveal striking differences in forest management preferences between various stakeholder groups. As the data illustrate, forest plan participants (group #6) are not very representative of the public at large. This means that the current public participation process (scoping

meetings, comment periods, etc.) is a biased method of measuring social values. A substantive public participation process would involve most if not all of the groups identified in the table.

TABLE 2

GENERAL ORIENTATIONS TOWARD FEDERAL FORESTS & FOREST MANAGEMENT

	GROUPS:						
	#1	#2	#3	#4	#5	#6	#7
	Percentage agreement						
a. The economic vitality of local communities should be given the highest priority when making federal forest decisions.	53	68	42	58	14	**16**	37
b. Clear-cutting should be banned on federal forest lands.	57	31	63	41	66	**64**	63
c. More wilderness areas should be established on federal forest lands.	52	18	54	33	70	**75**	73
d. Some existing wilderness areas should be opened to logging.	24	55	27	36	9	**10**	29
e. Greater protection should be given to fish such as salmon on federal forest lands.	65	54	72	71	84	**89**	88
f. Greater efforts should be made to protect the remaining "Old Growth" forests.	55	33	64	49	80	**82**	76
g. Endangered species laws should be set aside to preserve timber jobs.	39	69	31	53	13	**13**	17
h. Federal forest management should emphasize timber and lumber products.	36	65	32	46	7	**13**	24
i. Greater efforts should be given to wildlife on federal forest lands.	69	27	62	55	76	**78**	78

Another consideration in social assessment strategies is the timing of the investigation. The data in Table 3 are from over 90 semistructured interviews conducted in a roadless area in the Gifford Pinchot National Forest--the Siouxon Creek Valley. A random sampling technique based on the day of the week was used. The Siouxon Valley is currently managed for primitive forms of recreation. Results indicate that site visitors differ from weekdays to weekend. Weekday visitors (Monday through Friday) are more likely to come from a rural residence, work for the timber industry, and engage in fishing activities than weekend visitors. Weekend visitors are more likely to be urban, not dependent on the timber industry, and engage in hiking activities. Notice that weekend visitors are more likely to fill-out trail registration cards than weekday visitors. When ethnographic research is used in social assessments, natural resource managers should consider seasonal and timing variations in the study design. Weekday and weekend visitors differed in their attitudes toward trail construction--the management action of interest in this study. Their differences on what to do, however, were less divergent than their background characteristics. Open-ended interviews and observation explain this, in that the trail plan benefits both fishing and hiking activities.

TABLE 3

VISITORS TO THE SIOUXON CREEK VALLEY IN THE GIFFORD PINCHOT NATIONAL FOREST CONTROLLING FOR TIME OF VISITS

	WEEKEND VISITORS	WEEKDAY VISITORS
Place of Residence?		
URBAN	70%	36%
RURAL	30%	64%
Family Dependent on Timber Industry?		
TIMBER DEPENDENT	16%	68%
NOT DEPENDENT	84%	32%
Member of Environmental Group?		
MEMBER	34%	10%
NOT MEMBER	66%	90%
Complete Trail Registration Card?		
YES	68%	12%
NO	32%	88%
Site Activities? (observed by researcher)		
HIKING	60%	24%
FISHING	20%	64%
MOUNTAIN BIKING	4%	0%
CAMPING	4%	0%
PHOTOGRAPHY	2%	0%
HORSE RIDING	8%	12%
BIRD WATCHING	2%	0%
Construct Additional Hiking Trails?		
YES	56%	48%
NO	44%	52%

Probably one of the most important uses of social assessment techniques is for public forest or rangeland management plans. While the costs and benefits of various approaches and techniques have been presented above, multi-methodological studies are

preferred because they provide cross-checks. The findings in Table 4 are from qualitative and quantitative studies undertaken to discover the management preferences of visitors and rural citizens concerning the Siouxon Creek Valley. The quantitative study utilized a mail questionnaire and provided several different management alternatives. The qualitative research, conducted by Andrea Brandenburg and Matt Carroll of Washington State University, utilized an inductive (grounded) field research method and snowball sampling.[1] While the survey based results indicate two distinct rural groups (timber industry dependent and non-dependent), the qualitative research identified four distinct rural stakeholder groups who perceive an interest in the Siouxon Valley.

The major differences evident in research findings have to do with the ability of qualitative techniques to give an in-depth view of relevant rural stakeholders while the survey results are more superficial. The survey results, while limited, can be used to generalize to the entire rural population and provides the degree to which various management options are supported (just not the reasoning behind citizen support or opposition). As is evident from the results, both studies have their drawbacks and strengths. We highly encourage the use of both techniques whenever possible because the findings can <u>complement</u> each other.

[1]Andrea Brandenburg and Matt Carroll, "The Stakeholder Groups of the Siouxon Creek Drainage: Constituencies in Rural Community Clusters Surrounding the Gifford Pinchot National Forest," Department of Natural Resources, Washington State University.

TABLE 4

A COMPARISON OF QUANTITATIVE AND QUALITATIVE TECHNIQUES: SIOUXON VALLEY MANAGEMENT PREFERENCES OF RURAL STAKEHOLDERS

Preferred Management Option	Quantitative/Survey Results: Rural Dependent	Rural Non-dependent
Siouxon should be managed for multiple uses including timber harvest, and roads may be built if necessary to meet management goals.	50%	38%
Siouxon should be managed for multiple uses including timber harvest, but logging should occur only if it can be done without roads.	16%	10%
Siouxon should be managed primarily for outdoor recreation, including development of facilities and roads where needed.	21%	10%
Siouxon should be kept unroaded and managed primarily for primitive forms of outdoor recreation/ or maintained in its current condition.	13%	42%

Qualitative/Inductive Field Study Results:

Preferred Management Orientation	Rural Groups with Emotional Attachment to Site
The Siouxon is a place where intrinsic value of landscape is acknowledged. Leave alone; restrict use; primitive experiences; support wild river or wilderness designation; no logging no horses or bikes; catch & release fishing.	Stakeholder Group A1 [Site has intrinsic value]

Table 4 continued;

The Siouxon is a place where the uses of its resources are valued in its present state. Value place for personal experience; maintain access to minimize impact; no logging preferred; separate trails for horses and bikes; strictly manage fishing; support wild and scenic designation.	Stakeholder Group A2 [Site is pristine/natural]
Preferred Management Orientation	**Rural Groups with Economic Attachment to Site**
Associate timber extraction with community stability. Utilize timber resources; multiple use; enhance access (roads, etc.); no "set aside" plans.	Stakeholder Group B1 [Site for timber]
Associate recreational development with community stability. Utilize recreation resources; multiple use; enhance access for ease of recreation; some "set asides" for diversity of recreation.	Stakeholder Group B2 [Site for recreation]

VII. ETHICAL CONSIDERATIONS

When gathering social value data, researchers have ethical responsibilities to many different people. The people who respond to surveys or who allow researchers to observe their activities must be treated with dignity and their responses must be kept confidential. Social assessment information represents a trust that researchers must carefully manage. The data gathered must accurately depict what respondents have contributed. In

addition, when natural resource managers ask people what they think and then appear to ignore or "shelve" their input they may be seen as having betrayed the public. This creates an environment of mistrust. This will certainly make the job of managers much more difficult when the public takes issue with forest or range plans and challenges them in the courts, through their legislators, or through the ballot box (e.g., initiatives).

Some data from a recent national survey on natural resource issues conducted by Washington State University and Utah State University (Table 5) indicates that a "confidence gap" exists between the public and federal natural resource agencies.

TABLE 5

PUBLIC CONFIDENCE IN THE BLM AND U.S.D.A. FOREST SERVICE TO MANAGE PUBLIC LANDS: RESULTS FROM A 1993 NATIONAL SURVEY

	HARDLY ANY CONFIDENCE	SOME CONFIDENCE	GREAT DEAL OF CONFIDENCE
Bureau of Land Management	43.9%	37.3%	18.8%
U.S.D.A. Forest Service	48.6%	42.9%	8.5%

Source: Mark Brunson and Brent Steel, "Public Attitudes Toward Federal Rangeland Management: Results of National and Oregon Surveys," Department of Forest Resources, Utah State University, 1993.

Ultimately, public land managers will be responsible for the implementation of plans. However, making a serious effort toward substantive public participation helps foster a management environment where trust and confidence prevails. Without an atmosphere of trust, citizens will continue to challenge agency stewardship of public lands.