

ECOSYSTEMS MANAGEMENT: A SOCIAL SCIENCE PERSPECTIVE



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Social Acceptability of Ecosystem Management in the Pacific Northwest

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INTRODUCTION

Recent policy changes for management of federal forest lands in the Pacific Northwest have called for ecosystem-based practices with greater cooperation between federal and local agencies, private forest landowners, and the general public. Impetus for these changes came out of President Clinton's 1993 Northwest Forest Conference which addressed human and environmental needs served by federal forests. The resulting Northwest Forest Plan places an emphasis on community-oriented and ecosystem based forestry; that is, management that takes into account the economic and social interests of forest proximate communities as well as the health of forest ecosystems. The plan embraces Lee's¹ ideas about adaptive management which applies experimentation to the design and implementation of natural-resource and environmental policies.

Given these objectives, it seems important to understand regional public perceptions and acceptability of ecosystem management concepts intended for federal forests. This paper describes opinion research on ecosystem management conducted among citizens living west of the Cascade Mountains in Washington, Oregon, and Northern California during the fall and winter of 1996-97. More specifically, it examines: 1) the level of citizen informedness concerning ecosystem management; 2) public perceptions of the logic and motivation of ecosystem management; 3) factors associated with public perceptions of ecosystem management; and, 4) public confidence in the agencies charged with implementing ecosystem management practices.

ECOSYSTEM MANAGEMENT AND SOCIAL ACCEPTABILITY

Ecosystem management (EM) has become the management philosophy of the U.S. Forest Service as the agency attempts to deal with the range of resources and public values associated with national forest lands. While EM has many definitions, it has been described by the former head of the Forest Service, Dale Robertson, as "a multiple use philosophy built around ecological principles, sustainability, and a strong land stewardship ethic, with a better recognition of the spiritual values and natural beauty of forests."² According to Brunson,³ Robertson's description implies certain requirements and practices on federal forest lands including the following:

1. they must be ecologically sustainable, directing managed forests toward a desired future condition which embodies the complexity of ecosystem interrelationships at a variety of spatial and temporal scales.
2. they must be economically feasible, meeting societal demands for the myriad products of forests at a cost that does not exceed the priced and unpriced benefits gained.
3. they must be socially acceptable, reflecting a sensitivity toward recreational, aesthetic, spiritual, and other noncommodity values of forests.

Given the somewhat nebulous nature of ecosystem management and the importance of citizen and community participation in implementation, a key element for research will be to gain an understanding of how well informed the public is about EM and which components they are likely to support or oppose. This chapter examines these public orientations and identifies correlates of positive and negative public perceptions of EM.

SOURCES OF ORIENTATIONS TOWARD ECOSYSTEM MANAGEMENT

A number of authors have addressed various aspects of the relationship between social values and attitudes toward natural resources.⁴ These discussions imply that the current debate about the disposition of ecosystems in the U.S. is, at heart, not only a professional and technological debate, but a debate about how forest ecosystems should be defined philosophically. The differences between the more traditional, anthropocentric view of forests and the emerging biocentric view thus cannot be settled by an appeal to facts alone.⁵ Factual information does not speak for itself; it exists in a cultural context, within a set of assumptions about its relevance, and these assumptions include important value orientations.⁶ It is a society's underlying values, to a large degree, that determine which facts will count as important. For these reasons, it is important to understand what those values are and determine their connections with other relevant social, political and cultural factors.

Based on a number of recent social assessments, it is our judgement that public orientations concerning EM are influenced by a variety of factors. Primary influences include sociodemographic characteristics, self or group interest, and value orientations.

Sociodemographic Factors. Group-based social attributes have been found to be important determinants of environmental values and behavior.⁷ Among the most commonly employed measures are gender, age, and education. Age is a widely used variable in evaluating environmental orientation. Citizens in Western democracies born after World War II are considered to be more likely than older persons to focus on environmental concerns;⁸ consequently, age (as an indicator of cohort) is an important background factor in any environmental study.

In addition, there may be a link between orientations toward ecosystem management and gender. There is some evidence to suggest that women are socialized to perceive moral dilemmas in terms of interpersonal relationships, and to seek to resolve them by an ethic of care. Men, in contrast, may tend to perceive moral dilemmas in terms of more impersonal features of situations and to resolve them by appeal to rules of justice and rights.⁹ This differential socialization experience might lead women to take a more (personally) protective and biocentered view toward nature¹⁰ and therefore more supportive of EM while men would tend to be more negative in their orientations.

Level of formal educational attainment is included in this analysis because it is broadly associated with having a strong impact on environmental orientations.¹¹ Those individuals with higher levels of educational attainment are significantly more likely to have value orientations sympathetic to environmental concerns when compared to individuals with less formal education. According to Howell and Laska,¹² this relationship is not surprising because "...the evidence on both sides of an environmental issue frequently addresses a very complex etiology of causes comprehended more easily by the better educated." We hypothesize this relationship to hold true for orientations toward EM, with higher levels of formal education associated with acceptance of EM.

The last sociodemographic variable included in this study is place of residence — rural versus urban. Some studies have suggested that urban populations are much more likely to have proenvironmental values as a result of better access to information and educational opportunities, and because they "are more likely to experience environmental problems firsthand due to industrial activities and high concentrations of people."¹³ If this relationship holds true for orientations toward EM, then we hypothesize more positive orientations in the relatively tree-less urban areas than in the countryside. This is consistent with the idea of wilderness as a desirable place and interest in wilderness preservation has grown out of our urban culture.¹⁴

Interest Factors. Two important factors which would obviously affect value orientations toward forests are attachment to the timber industry and membership in an environmental organization. An individual's orientation toward the EM may very well be influenced by where they stand in relation to the productive arrangements of society.¹⁵ Persons who rely upon the timber industry for their economic well-being, for example, are more likely to look at commodity interests as most beneficial. Environmentalists, on the other hand, may tend to view forests in terms of broader public goals and to promote the preservation of natural resources.¹⁶ Therefore we may expect to see timber dependent families and communities more cynical about the goals of EM while environmental groups may be more supportive. A third interest factor included in this study is the degree to which people use public forests for recreation. We would

expect frequent visitors to public forests to be more understanding of the multiple benefits provided by forests and therefore have a more positive orientation toward EM.

Value Orientations. Orientations toward EM also are likely to be influenced by (or are a component of) general political and social values. For example, the liberal-left perspective has been identified with support for natural resource preservation¹⁷ and higher levels of environmental risk perceptions.¹⁸ Other research suggests that citizens on the left-liberal end of the political spectrum support "policy proposals emanating from the environmental movement," while those on the right-conservative side of the spectrum have been found to be "less supportive or even hostile to environmental concerns."¹⁹ We hypothesize that those on the left would be more likely to have positive orientations toward EM while those on the right would be more negative. In part, this is due to conservative attachment to the status quo and use of the market place to allocate values. Liberals are more likely to critique the existing economic and political system and to support a wider range of noneconomic uses of forest lands.

Although the value of the unidimensional left-right spectrum remains substantial, it has become evident that a number of new sociopolitical issues cut across traditional ideological cleavages. Inglehart's²⁰ and Dalton's²¹ research into value orientations identifies "postmaterialism" as a new, central feature of postwar generations. Postmaterialism, in contrast to a materialist value priority, is less concerned with economic growth and security issues than it is with Maslowian "higher order" values such as love for the aesthetic qualities of the environment. We expect that citizens with postmaterialist value orientations will have more positive orientations toward EM while those with materialist values will be more negative.

METHODOLOGY AND MEASUREMENTS

Samples. In order to investigate regional views of ecosystem management among citizens, two waves of mail surveys were sent and two follow-up telephone calls were made to a random sample of the public residing in western Washington, Oregon, and Northern California (i.e., counties west of the Cascade Mountains between San Francisco and the Canadian border). Names, addresses and telephone numbers were provided by a national survey research company which has comprehensive lists of public telephone directories. Survey design and implementation followed Dillman's²² "Total Design Method." Surveys were sent to 1600 households (valid addresses and telephone numbers) and 828 were returned for a response rate of 51.7 percent. For those respondents choosing not to return the survey through the mail a telephone response format was provided.

Dependent Variables. The indicators used to assess public beliefs about EM asked respondents to identify their level of disagreement or agreement with six statements listed in Table 2. The statements were developed by Brunson et al.²³ to cover various dimensions of views toward EM. The five response categories for the EM index ranged from "strongly disagree" to "strongly agree." After recoding items so that higher numbers reflected a positive orientation toward EM and lower numbers reflected a negative position, the responses were summed to form an indicator of support for EM ranging from 6 to 30. The reliability coefficient (Cronbach's Alpha)

for the index was .82 suggesting that respondents were consistent in their response patterns for the additive scale and that scale components were highly intercorrelated.

Independent Variables. The independent variables used to assess the impact of demographics, interest factors, and value orientations are presented in Table 2. The demographic factors examined as predictors of value orientations concerning forests include age in years, gender, level of formal educational attainment,²⁴ and an indicator that assesses the city size where each respondent resides (URBAN).²⁵ To assess an individual's perspective or interest concerning forests and EM, three indicators were used. Respondents whose families depend on the timber industry for their economic livelihood were categorized as TIMBER²⁶ while those belonging to an environmental organization were classified as GREEN.²⁷ An additional interest indicator assessing the frequency of visits to public forests for recreation is also examined for its impact on orientations toward EM (RECREATE).²⁸ The indicators used to assess the political and social value orientations of respondents include Inglehart's postmaterialist value indicator (POST-MATERIAL)²⁹ and a self-assessment measure of general political orientation (IDEOLOGY).³⁰

Based upon the previous discussion, the following relationships are hypothesized between the additive EM index and the various independent variables:

Sociodemographic Factors

Education	Higher levels of educational attainment will be associated with positive views toward EM (<i>positive</i> relationship).
Age	Younger respondents will be more likely to have positive orientations toward EM than will older respondents (<i>negative</i> relationship).
Gender	Women will be more likely to have positive orientations toward EM than will men (<i>positive</i> relationship).
Urban	Urban respondents are more likely to have positive views toward EM than rural respondents (<i>positive</i> relationship).

Interest Factors:

Timber	Those respondents who are economically dependent on the timber industry are more likely to have negative orientations toward EM than other respondents (<i>negative</i> relationship).
Green	Members of environmentalist organizations are more likely to have positive views toward EM than nonmembers (<i>positive</i> relationship).
Recreate	Those respondents who frequently recreate in public forests are more likely to have positive orientations toward EM than those who do not (<i>positive</i> relations).

Value Indicators

Ideology	Liberals will be more positive in their orientations toward EM than will conservatives (<i>negative</i> relationship).
Postmat	Those respondents with 'postmaterialist' value orientations will be more positive of EM than those with 'mixed' or 'materialist' value orientations (<i>positive</i> relationship).

FINDINGS

Univariate Findings. One of the first things asked of respondents was to indicate their level of informedness concerning EM. It was assumed that a lack of familiarity with the issue would lead to ambiguous responses to EM issues. Therefore, a brief statement describing EM from Brunson et al.³¹ was provided and then respondents were asked how well informed they were concerning EM as a management philosophy. The data displayed in Table 1 provide some insight into general levels of informedness among our random sample of Pacific Northwest residents west of the Cascade Mountains. Slightly over one-fourth of the respondents (25.6 percent) said they were "not informed" concerning EM. Only 1.7 percent said they were "very informed" while 10.8 percent said they were "informed." Perhaps since EM is a new approach to forest management in the Pacific Northwest, it has yet to register on the public's agenda.

TABLE 1. Self-Assessed Public Informedness Concerning Ecosystem Management

In recent years the Clinton Administration has emphasized ECOSYSTEM MANAGEMENT on forest lands in the Pacific Northwest. Ecosystem Management is a shift in the philosophy of managing America's forests and undeveloped lands. It has been described as blending social, economic, and scientific principles to achieve healthy ecosystems and maintain biological diversity over long periods of time, while at the same time allowing production of the many valued resources our society seeks from its forests.

How well informed would you say you are concerning Ecosystem management?

1. Not Informed	25.6%
2. Somewhat Informed	23.6%
3. Moderately Informed	38.3%
4. Informed	10.8%
5. Very Informed	1.7%

N = 822

Table 2 reports the distribution of responses for six indicators of public beliefs concerning EM. Respondents who indicated that they were "not informed" about EM are not included in these results (see Table 1). The mean scores for four of the six items (the last four items) suggest that the average respondent is "neutral" concerning the statements. In fact, the distribution of responses for these items are fairly normally distributed. For the first two statements respondents were more likely to agree than disagree (mean scores of 4.20 and 3.75 respectively).

At the bottom of Table 2 an additive scale mean and reliability coefficient are reported. For the additive index assessing public orientations toward EM, the last three items were recoded so that higher numbers reflect a positive perspective toward Ecosystem Management and lower numbers reflect a negative perspective. This indicator will be used in the forthcoming multivariate analyses.

TABLE 2. Public Beliefs about Ecosystem Management and Forests

<i>Statements</i> [1 = strongly disagree to 5 = strongly agree]	Mean	s.d.	N
Ecosystem management helps us think about forests as a whole instead of focusing on single resources.	4.20	1.06	819
Ecosystem management lets us protect endangered species while continuing to harvest forest resources.	3.75	1.15	794
Ecosystem management will enhance the long-term health of forest lands.	3.35	1.19	793
Ecosystem management is being used as an excuse to log areas previously unopened to timber harvest.	3.26	1.19	775
Ecosystem management is a misguided attempt to reduce public complaints without any scientific basis.	3.15	1.37	806
Ecosystem management is an attempt by environmentalists to take away landowners property rights.	2.92	1.13	795
Additive index mean =	19.89		
Additive index s.d. =	3.12		
Cronbach's Alpha =	.82		
N = 612			

Note: Only respondents who indicated they were at least "somewhat informed" about ecosystem management (Table 1) are included in the results. For the additive index assessing public orientations toward Ecosystem Management, the last three items were recoded so that higher numbers reflect a positive perspective toward Ecosystem Management and lower numbers reflect a negative perspective. The Ecosystem Management statements are from Brunson et al., 1996.

Summary measures for the various independent variables used in the forthcoming multivariate analyses are presented in Table 3. In regard to the four sociodemographic variables, the average age is 54.4 years, women constitute 53 percent of the sample, the average level of formal educational attainment is "some college" (mean score of 5.11), and the average respondent is likely to live in an urban area (mean = 4.15) such as Seattle, Portland, Tacoma, Vancouver, etc.

With regard to the interest variables, 17 percent of respondents indicated that they are dependent upon the timber industry for their economic livelihood and 14 percent identified themselves as members of an environmentalist organization. For the variable assessing frequency of visits to public forests for recreation, the average respondent said they visited forests "occasionally" (mean = 3.27). Concerning the two value indicators included in the study, the subjective political orientation indicator indicates that the average respondent considers them self "moderate" (mean = 4.17). For the postmaterialist value indicator, we find that 19 percent of the sample demonstrate postmaterialist values.

Multivariate Analyses. Ordinary least squares estimates for the EM additive index are presented in Table 4. *F*-test results indicate that the model is statistically significant, however the adjusted R^2 suggests that only 20 percent of the variation in public beliefs about EM is explained by our model. For the demographic variables in our model, we find that all four have a statistically significant impact on orientations toward EM. Younger respondents and women are significantly more likely to have positive orientations toward EM than their older and male counterparts. Education also has a significant impact with the more highly educated having more positive beliefs about EM than their less formally educated counterparts. For the variable URBAN, respondents living in large urban areas are significantly more likely to have positive orientations toward EM than those from smaller cities or rural areas.

In regard to the interest variables, as expected those respondents who depend on the timber industry for their economic livelihood are significantly less likely to have positive orientations toward EM than their non-timber dependent counterparts. However, environmental organization members are not more positive or negative concerning EM than those respondents who are not members of such organizations. In fact, when additional analyses were conducted of this group we found much skepticism concerning EM as a way to increase logging on public forest lands.

For the variable assessing the level of individual recreational activity on public forest lands, we find that those respondents who visit forests frequently for recreation were significantly more likely to have positive orientations toward EM than their counterparts who visit infrequently or never. This supports the notion that those individuals who visit public forests are potentially more familiar with the need for sustainable use and development — a notion promoted by EM.

TABLE 3. Distributional Characteristics for Hypothesized Determinants of Ecosystem Management Support

Variable Name:	Variable Description:	Mean	(s.d.)	N
Demographic Indicators				
Age	Respondent age in years	54.4	16.14	812
Gender	Dummy variable for gender 1 = Female 0 = Male	.53	—	795
Education	Level of formal education 1 = Some grade school to 8 = An advanced degree	5.11	1.31	812
Urban	Respondent residence 1 = Rural area to 7 = City of 250,001 plus	4.15	1.54	810
Interest Indicators				
Timber	Economic livelihood dependent upon timber industry 1 = Timber dependent 0 = Else	.17	—	792
Green	Member of environmentalist organization 1 = Member 0 Else	.14	—	793
Recreate	Frequency of participation in forest recreation 1 = Never to 5 = Very frequently	3.27	0.93	795
Value Indicators				
Idelolgy	Subjective political orientation 1 = Very liberal/left to 7 = Very conservative/right	4.17	1.38	815
Postmaterial	Postmaterial values dummy variable 1 = postmaterialist values 0 = mixed and materialist values	.19	—	782

TABLE 4. Ordinary Least Squares Estimates for Support of Ecosystem Management

	b	B
Age	-.04***	-.15
Gender	.35*	.07
Education	.41***	.18
Urban	.10**	.09
Timber	-1.29***	-.20
Green	-.09	-.06
Recreate	.59*	.08
Ideology	-.47***	-.21
Postmaterial	1.23**	.10

$R^2 = .21$
 Adjusted $R^2 = .20$
 $F = 30.69^{***}$

* Significant at $p < .05$; ** Significant at $p < .01$; *** Significant at $p < .001$.

The final two variables concern dimensions of political orientation and are statistically significant in explaining orientations toward EM. When controlling for the independent effects of other variables, those respondents who identified themselves as liberal are more likely to have positive beliefs about EM than self-identified conservatives. In fact, ideology had the largest standardized regression coefficient in the model, suggesting that political orientation is one of the most important predictors of orientations toward EM. The second political value indicator shows post-materialists are more positive in their orientations toward EM than those with mixed and materialist values. This relationship was expected since it was hypothesized that higher order values (self-actualization) are consistent with a holistic view of the world and the environment.

BELIEFS ABOUT EM AND CONFIDENCE IN IMPLEMENTING AGENCIES

The data presented in Table 5 illustrate the relationship between orientations toward EM and confidence in government organizations/agencies that directly or indirectly are involved in implementing EM. The EM index was divided into three categories of orientation for presentation purposes — negative, intermediate, and positive orientations. Each figure in the table represents the percentage of respondents who have a “moderate” to “a great deal”

of confidence in the ability of the listed agency to "contribute to good forest management decisions."

TABLE 5. Confidence in Government Organizations/Agencies and Support for Ecosystem Management

	Orientation Toward Ecosystem Management*		
	Negative [% moderate and great deal of confidence]	Intermediate	Positive
U.S. Bureau of Land Management	48.4%	59.1%	21.2%
U.S. Forest Service	61.8%	69.2%	38.0%
U.S. Fish and Wildlife Service	37.7%	50.2%	61.2%
U.S. Congress	3.8%	6.5%	8.7%
University Research Scientists	28.1%	38.2%	55.8%
Clinton Administration	9.8%	8.6%	23.1%
Federal Courts	9.2%	15.0%	30.3%

*The Ecosystem Management index developed in Table 2 was collapsed to produce three categories of orientations: negative, intermediate, and positive perspectives concerning Ecosystem Management.

Respondents with negative orientations toward EM have a substantial degree of confidence in the U.S. Forest Service (61.8 percent) followed by the Bureau of Land Management (48.4 percent). No other agency or organization received a high confidence rating by this group. This indicates that primary natural resource agencies (USFS and BLM) will have to play a lead role in government efforts to promote EM among this negative constituency — which happens to be rural in nature and more dependent on the timber industry for their economic livelihood (see discussion above). For those respondents with "intermediate" orientations toward EM, we see that they too have confidence in the Forest Service (69.2 percent) and the Bureau of Land Management (59.1 percent). However, they also express a high level of confidence in the Fish and Wildlife Service (50.2 percent). Again, the agencies most heavily involved in EM implementation will have to play a key role with this group in incorporating public concerns.

Those respondents who were the most positive in their beliefs about EM have the most confidence in the Fish and Wildlife Service (61.2 percent) and university research scientists (55.8 percent). As discussed above, these people are more likely to come from urban areas, have higher levels of formal education, and are younger. Additional analyses suggest that they view EM as a way to provide a more biocentric approach to federal forest management and are much less trustful of the agencies traditionally involved in forest management. Natural resource agencies such as the BLM and USFS will need to win the confidence of this

important constituency — perhaps by enlisting the support of others like university scientists — in order to be effective in a leadership role.

CONCLUSIONS

Overall, it appears that citizens in the area west of the Cascade Mountains in Oregon, Washington, and Northern California are not well informed about EM, yet appear to be receptive to the general idea. It is unlikely that many citizens would unequivocally approve of EM approaches without seeing what forest practices and conditions will result and without understanding why these were created. Instead, some ecosystem activities and experimentation will gain support — depending on how relevant they are to public concerns — while others will not. If EM is to succeed, it will be important to include people in real-life decisions where the consequences of choices — and their scientific uncertainty — are out on the table.

From our findings, we believe that public support for ecosystem management is related more to a group of factors rather than any single reason. For example, people from rural areas and who are timber dependent are the most cynical, probably because they feel they have the most to lose. However, this group has confidence in the Forest Service and BLM to manage forests appropriately. Success with this local constituency might best come from how well their issues and concerns are given serious consideration instead of bureaucratic decisions that seem to be imposed on them from the outside.³² Urban citizens, on the other hand, tend to be more supportive of EM yet lack confidence in the natural resource agencies central to the implementation of EM. These citizens have the greatest confidence in university scientists and the Fish and Wildlife Service. However, these two groups traditionally have had little contact with the public. The challenge for all ecosystem management and research institutions will be to find cooperative working arrangements that not only amount for advancing EM practices but reach out to include the public sector in examining alternatives. This may require a considerable shift in how our management and research organizations think about their respective roles, but lesser arrangements may have problems winning over a doubtful and skeptical public. Broadening the circle of those responsible for EM planning and information exchange will not be easy, nor will it be a relatively quick fix. The tide of cynicism is not likely to turn on one or two good deeds. However, the long-term outcomes will be inherently more durable because of their social acceptability.

ENDNOTES

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¹³ *Ibid*, p. 141; see also Mark Brunson, Bruce Shindler and Brent S. Steel, "Consensus and Dissension Among Rural and Urban Publics Concerning Forest Management in the Pacific Northwest," in *Public Lands Management in the West: Citizens, Interest Groups, and Values*, Brent Steel ed., (Greenwood Press, 1997), 85-97.

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¹⁸ Brent Steel, Dennis Soden and Rebecca Warner, "The Impact of Knowledge and Values on Perceptions of Environmental Risk to the Great Lakes," *Society and Natural Resources*, 3, (1990): 331-348.

¹⁹ Jerry Calvert, *Partisanship and Ideology in State Legislative Action on Environmental Issues* (Paper presented at the Annual Meetings of the Western Political Science Association, Anaheim, California, March, 1987), 2.

²⁰ Inglehart, *op cit.*

²¹ Dalton, *op cit.*

²² Don Dillman, *Mail and Telephone Surveys: The Total Design Method* (New York: Wiley, 1978).

²³ Mark Brunson, Deborah Yarrow, Scott Roberts, David Guynn Jr., and Michael Kuhns, "Nonindustrial Private Forest Owners and Ecosystem Management: Can they Work Together?" *Journal of Forestry*, 94, (June, 1986): 14-22.

²⁴ The question used was, "What is your highest level of education?" The following response categories were provided: (1) never attended school, (2) some grade school, (3) completed grade school, (4) some high school, (5) completed high school, (6) some college, (7) completed college, (8) some graduate work, and (9) an advanced degree.

²⁵ Respondents were asked "Which of the following best describes your place of residence?" The response categories provided were: (1) rural area, (2) city of 2,500 or less, (3) city of 2,501 to 25,000, (4) city of 25,001 to 50,000, (5) city of 50,001 to 100,000, (6) city of 100,001 to 250,000, and (7) city of 250,001 plus.

²⁶ The question used was: "Do you or any of your immediate family depend upon the timber industry for your economic livelihood?"

²⁷ Respondents were asked if they were "a member of an environmentalist organization."

²⁸ The question and response categories used were: "how often do you visit forests during your leisure time?" (1) never; (2) rarely, no more than once or twice a year; (3) occasionally, several times a year; (4) somewhat frequently, at least once a month on average; (5) very frequently, at least once a week on average.

²⁹ The question used to construct Inglehart's (1990) postmaterial scale is: "There is a lot of talk these days about what your country's goals should be for the next ten to fifteen years. Listed below are some of the goals that different people say should be given top priority. Would you please mark the one goal you consider the most important in the long run. What would be your second choice? Please mark that second choice as well." The response categories provided are: (1) Maintaining order in the nation; (2) Giving people more say in important governmental decisions; (3) Fighting rising prices; (4) Protecting freedom of speech. Respondents are considered to have "postmaterialist" value orientations (i.e., Maslow's "higher order" values) if they selected both (2) and (4) responses. If the respondent selected items (1) and (3), they are considered to have "materialist" value orientations (i.e., lower order values), and any other combination is considered a "mixed" orientation.

³⁰ The question and scale used to ascertain subjective political ideology was, "On domestic policy issues, would you consider yourself to be:"

Very	1	---	2	---	3	---	4	---	5	---	6	---	7	Very
Liberal							/							Conservative
							Moderate							

³¹ Brunson, et al., *op cit.*, 1996.

³² Bruce Shindler and Julie Neburka, "Public Participation in Forest Planning," *Journal of Forestry*, 95, 1, (1997): 17-19.

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