



ELSEVIER

Forest Policy and Economics 3 (2001) 113–124

Forest Policy
and
Economics

www.elsevier.com/locate/forpol

Public perceptions of the USDA Forest Service public participation process

René H. Germain*, Donald W. Floyd, Stephen V. Stehman

*Faculty of Forestry, State University of New York—College of Environmental Science and Forestry, Faculty of Forestry,
320 Bray Hall, 1 Forestry Drive, Syracuse, NY 13210, USA*

Received 3 January 2001; received in revised form 26 June 2001; accepted 11 July 2001

Abstract

Social conflicts over the management of natural resources are increasing. An informative example of these conflicts is the debate over the management of the USDA Forest Service National Forests. Despite sincere efforts by the US Forest Service to improve modes of public involvement, the contentiousness and frequency of conflict continues to escalate. This is manifest in the high number of administrative appeals on forest plans and projects. The study used a nationwide survey of 178 appellants of Forest Service management decisions to examine participant perceptions of the public participation process. The results establish that public participants who appeal agency decisions are dissatisfied with the equity of the public participation process. We also investigated differences in satisfaction levels based on interest group and the degree to which participants were involved in the process. The results indicate that participants desire more collaborative approaches to public participation, but are not always willing to adequately engage in the process, often choosing to meet their objectives through reactive, conflict-based means. © 2001 Elsevier Science B.V. All rights reserved.

Keywords: Public involvement; Conflict resolution; Collaborative; Shared decision-making; Appeal process

1. An agency under scrutiny

As natural resource management agencies attempt to make the transition from technocratic hierarchies to more open bureaucratic systems, issues of public participation and the role of technical expertise create significant difficulty. Changing public expectations about the role of

citizens in governmental decisions continues to challenge public administrators and legislators. Public decision-making about environmental quality and natural resources illustrates the impact of these changing public expectations.

The US Forest Service (Forest Service) public participation process provides an excellent example of the issues. Many individuals and interest groups use the public participation process to challenge the management agenda of the agency. Through the public participation process, participants voice their concerns about desired end

* Corresponding author. Tel.: +1-315-470-6698; fax: +1-315-470-6956.

E-mail address: rhgermai@mailbox.syr.edu (R.H. Germain).

states for the national forests. The conflicts regarding use vary in magnitude and contentiousness, but one factor remains constant: the local and national-level stakeholders want to have a quantifiable effect on resource allocation decisions (Knopp and Caldbeck, 1990; Brown and Harris, 1992). When their objectives are not achieved, the process becomes more confrontational, as participants seek remedies through the appeal process.

The high number of administrative appeals of agency plans and projects indicates an ongoing level of dissatisfaction with resource management decisions on national forests. For instance, the number of new appeals filed nationwide in fiscal year 1983 was 584. A decade later, the number peaked at 2,902, subsequently decreasing to 1,935 in 1994 and averaging 1,200 per year from 1995 through 1999 (USDA Forest Service, 1999). According to Christopher Risbrudt (personal correspondence in 1996), Forest Service Director of Ecosystem Management and Land Management Planning, Washington, DC, the recent decline in the number of appeals filed is a reflection of fewer plans and projects to appeal.

The impact and costs of appeals have caused both the Forest Service and Congress to spearhead efforts to restrict their use. At least six times in the last decade, Congress has attached a ‘rider’ to the annual appropriation bill, attempting to either prohibit or severely limit challenges of forest management activities (Jones and Callaway, 1995). An example is the 1995 Salvage Rider Bill (2001 Rescission Act), which exempted 3,612 timber sales from administrative appeals. The sponsors contend that the agency has been paralyzed into inaction by conflict, and that the escalating number of appeals and lawsuits are the determining factors of this conflict (Baldwin, 1997).

2. Study objectives

It is only during the last three decades that the Forest Service began to formally consider public input in its resource management decisions. Throughout this period, the agency has continued

to move towards more collaborative forms of decision-making (Thomas, 1995; Goergen, 1996; Selin et al., 1997; Schuett et al., 1998). Despite sincere efforts to improve modes of public involvement, the contentiousness and frequency of conflict continues to escalate (Jones et al., 1995; Hill, 1996; USGAO, 1997).

Through a survey of individuals and organizations in conflict over specific Forest Service projects, this study examined participant perceptions of the public participation process. It is not surprising that the results establish that public participants who appeal agency decisions are dissatisfied with the public participation process that led them to appeal. More importantly, we examined possible origins and characteristics of this dissatisfaction. In particular, we evaluated the equity, effectiveness and efficiency of the public participation process using empirically tested process and outcome scales (Germain and Floyd, 1999). We further investigated differences in satisfaction levels based on interest group and the degree to which participants were involved in the process. Our results suggest some opportunities for change to improve the process for all involved, although a key finding of the study is that much of the conflict may transcend the public participation process altogether.

3. Typologies of public participation

Public participation can range from simply sharing information upon which decisions are based to offering the public full decision-making authority. Expanding the role of the public in planning is rooted in both philosophical and pragmatic considerations. Philosophically, there is a general belief in democratic societies that individuals have the right to be informed, consulted and even allowed to share decision-making authority on matters which may impact them. Ideally, a representative democratic government is designed to channel and assimilate information between the governors and the governed (Sewell and O’Riordan, 1976; Buchy and Hoverman, 2000). This assimilation of information, or lack thereof,

can serve to either reduce or exacerbate social conflict.

The Forest Service has the responsibility of managing 191 million acres of federal forests and range lands. Because these are federal lands, each and every citizen of the United States has the right to participate in the administrative process that guides resource management decisions. Since its creation in 1905, the Forest Service has informally incorporated various forms of public input. In those early days, forest rangers were directed to manage reserves with significant input from local concerns (Pinchot, 1947). The legal mandate to involve citizens and interest groups in administrative decision-making, however, came a half-century later, with the Administrative Procedure Act of 1946 (60 Stat. 237). More significant statutes mandating public involvement in the bureaucratic arena were passed with the National Environmental Policy Act of 1969 (NEPA)(83 Stat. 852), the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA)(88 Stat. 476) and the National Forest Management Act of 1976 (NFMA)(90 Stat. 2949). The advent of the environmental era ended the days of the ‘omnipotent forester’ making unilateral resource management decisions (Behan, 1966; Sirmon et al., 1993).

Participation is a consciousness-raising process through which people begin to understand their political roles and the need for legitimate conciliation and contribution (Sewell and O’Riordan, 1976). The literature offers several typologies of public participation, often representing a scale from a one-way flow of information to complete citizen decision-making authority (Arstein, 1969; Burke, 1979; Creighton, 1983; Buchy and Hoverman, 2000).

1. Informing: one-way flow of information; no public avenue for feedback or negotiation;
2. Manipulation: illusory participation in the form of rubber-stamp advisory groups, express purpose is to engineer support or educate;
3. Consultation: agency retains decision-making authority; participation in the form of public hearings; public role is review and comment;

4. Collaborative decision-making: citizen and agency become partners; public begins to have decision-making clout; can negotiate and engage in trade-offs with power holders;
5. Delegated power: citizens given dominant control over decision-making by authorities; also accountable for decisions; and
6. Citizen power: citizens have total control.

The consultative public input model, which asks people what they think about something the agency is preparing to do, has dominated the Forest Service’s public input strategy since the 1970s (Shannon et al., 1990; Cortner and Moote, 1994). This top-down approach to public participation stems from the ambiguity of the National Forest Management Act of 1976, which structures how the Forest Service conducts public involvement. The law states that the public must be notified of the decision being made and offered the opportunity to review the decision. Subsequently, the agency must offer avenues for the public to communicate their concerns through public meetings or comparable processes (NFMA 90 Stat. 2949).

Although consistent with NFMA, the consultative public input model lacks credibility and fairness in the public’s mind. It places the public in a position where they are primarily reacting to an agency decision, rather than having a stake in that decision. Consequently, this sets the stage for public participants to appeal those decisions that they may, or may not, have been involved in. This traditional form of public participation, with its strong focus on autonomous experts and public reaction, has contributed to a loss of public trust and the current crisis of conflict (Shannon et al., 1990; Cortner and Moote, 1994; Thomas, 1995; Hill, 1996; USGAO, 1997). In expressing his disenchantment with the agency’s public participation process, former Chief of the Forest Service, Jack Ward Thomas stated:

...clearly, traditional public involvement has failed to calm the anger some feel about our management. Rather it has, in many cases, led directly to frustration and dissatisfaction. Why? Because all too often, we have treated individuals and groups as data points to be classified and analyzed, rather than as individuals with

feelings and values, not to mention as members of a community with shared values and common goals. This has left many people who are interested in natural resource management with a perception that they are not being heard by the agency, and that they cannot affect the outcome of our plans and decisions. (Thomas, 1995)

Scientists and government officials, including the Secretary of Agriculture's Committee of Scientists, contend that a shift to a more collaborative approach to public participation may better serve the process (Johnson et al., 1999). Outgoing Chief, Michael Dombeck, encouraged more collaborative approaches of public input during his recent tenure. He sought to increase the agency's capacity and desire to collaborate with the wide spectrum of forest users, adjacent landowners, and interested parties as a way to improve relationships and resource stewardship (Dombeck, 1997).

Collaborative approaches to public participation require planners to assess and maintain the public's attention towards proposed actions early in the process. However, engaging and assessing the public interest during the early stages of a proposed action often creates challenges for agency planners. Many participants do not want to get involved until there is a more concrete proposal worthy of reaction. It is not until people reach the stage of alarmed discovery about a project that their enthusiasm leads to a heightened level of awareness and participation. More often than not, this stage of alarmed discovery is based on conflict (Downs, 1972).

Among the mechanisms to engage and assess public perception with regards to a proposed action is scoping. Scoping provides an early and open process for determining the breadth of the issues to be addressed, and subsequently identifying the most significant issues related to a proposed management project by the agency. Throughout the 1990s, the agency has tried to encourage more forms of pre-decisional public input, such as scoping. In fact, an internal agency review team concluded that the public interest is best served by mutual efforts to resolve differences during the pre-decisional NEPA and NFMA stages of the public participation process, rather

than by trying to resolve those differences after a decision has already been made (USDA Forest Service, 1993).

Increasing pre-decisional public involvement is consistent with more collaborative approaches of input, which seek to provide the opportunity for citizens, interest groups, state, tribal and local governments to discuss their values and goals for public resources, with the goal of ensuring sustainable ecological systems and communities (Vig and Kraft, 1997). Resource management decisions arising from collaborative approaches can ultimately enhance relationships among stakeholders and land management agencies (Walker and Daniels, 1994; McWilliams and Patten, 1995; Selin et al., 1997).

4. The study

In 1996, we surveyed participants involved in Forest Service project appeals to measure their perceptions of the public participation process. Interviews with Forest Service personnel from the regional and district offices indicated that these particular participants usually provide significant public input in the decision-making process, from initial scoping, to comments on the environmental assessment or environmental impact statement. This input entails attending public hearings, workshops and field trips associated with forest plans and their respective projects. When these participants do not agree with the agency's final management decision for a given project, their next administrative avenue of participation is to appeal the decision, seeking to modify or stop implementation of the project. At this juncture, they are classified as appellants. A 'degree of involvement' in the public participation process establishes standing for participants to appeal a decision. Most appeals originate from the environmental community, but the views of individual citizens, industry and recreation/user groups are also represented.

The agency project appeal files were used to generate a list of appellants. In contrast to forest plan appeals, which address the multi-faceted issues of managing a national forest, forest projects

are specific management activities that guide on-the-ground management implementation within the designated forest plan, such as timber sales, grazing management, recreation plans and wildlife enhancement projects, and road building.

The survey questions and the instrument's implementation were designed following principles and techniques discussed by Dillman (1978) and Sudman and Bradburn (1982). The survey instrument was designed to measure appellant perceptions of the agency's public participation process. The responses were based on a six-point Likert scale in which '1' indicated strongly disagree and '6' strongly agree. Points '2' and '5' represented disagree and agree, while '3' and '4' indicated mild disagreement or agreement, respectively. We deliberately chose a six- vs. a seven-point scale, offering a distinct neutral point, to encourage respondents to cogitate long enough to decide whether they agreed or disagreed with the statements in the survey. Although a middle alternative would have offered a distinct point for legitimate neutral responses, we wanted to discourage refuge for indecisive respondents. Studies indicate either method would likely have provided the same underlying conclusions, because the middle alternatives tend to affect the polar positions of the scale proportionally (Presser and Schuman, 1980; Bishop, 1987).

Respondent satisfaction was measured with a series of Likert statements addressing the equity, effectiveness and efficiency of the public participation process. There were 22 items in the survey instrument designed to measure the participants' satisfaction with the process. The 22 items were classified into the two primary attributes of process and outcome. This strategy of linking several items to measure a broader concept is referred to as a *summated rating scale*. The two attributes were further classified into six scales addressing equity, effectiveness and efficiency (Table 1). The three items that constituted *process equity* addressed access to the process, fairness of the process, and the perception of biased behavior on the part of the agency. *Process effectiveness* was assessed with three items on process design and execution, appellants' influence on the process, and the extent of negotiation that took

place. *Process efficiency* was measured with four items addressing the length of time and the associated expenses involved in the process. *Outcome equity* was addressed with four items addressing the fairness of the final appeal decision and whether it was unduly influenced by special interests. *Outcome effectiveness* was measured through four items dealing with the appellants' influence on the final decision, the environmental soundness of the decision and whether the public interest was well served. *Outcome efficiency* was determined with four items addressing the financial soundness and time requirement for future implementation (Lee, 1982; Sibrel, 1991; Floyd et al., 1996; Germain and Floyd, 1999).

Scales are used for reasons of reliability, scope and precision. A series of questions measuring the same concept is more reliable, because single questions are prone to oversimplify complex issues. Precise scales allow for a more accurate differentiation between respondents (Spector, 1992). Reliability, also referred to as internal consistency, measures a survey instrument's ability to convey the same meaning to all respondents in the sample. That is, reliability provides a measure of how well the individual questions in a scale reflect a common, underlying factor or construct. The reliability of the six scales, as measured by Cronbach's alpha coefficient were as follows: 0.67 for process equity, 0.70 for process effectiveness and 0.70 for process efficiency; 0.88 for outcome equity, 0.84 for outcome effectiveness and 0.75 for outcome efficiency. Depending upon the characteristics of the survey, as well as the needs of the research, a generally acceptable lower bound for alpha is 0.60 (Nunnally, 1978; Carmines and Zeller, 1979; Spector, 1992).

The 22 items were presented alternately in the affirmative and the negative to minimize for the problem of social desirability bias and acquiescence common in a Likert-type instrument. Social desirability is the tendency for test-takers to make socially desirable responses to test items at the expense of responses based on their true beliefs and preferences. Respondents are also prone to acquiesce to the manner in which the survey items are phrased. Varying the item format from the affirmative to the negative keeps respondents

Table 1
Mean item scores of process and outcome scales

	Cases	Mean score	S.E.
Overall process	160	2.94	0.08
<i>Process equity</i>	174	2.19	0.08
1. The process was not biased to the agency's viewpoint.	178	1.59	0.09
2. The process was fair to me.	177	2.62	0.13
3. There was opportunity to negotiate my concerns about the project during the process.	175	2.42	0.12
<i>Process effectiveness</i>	170	3.09	0.10
1. Opportunities for public participation were sufficient during the process.	176	3.11	0.13
2. The process allowed ample opportunity for public input.	176	3.27	0.13
3. The process was skillfully designed.	173	2.94	0.13
<i>Process efficiency</i>	168	3.50	0.09
1. The process was a good use of the appellant's time and money.	175	3.77	0.14
2. The monetary costs of the process to the appellant was money well spent.	172	4.06	0.15
3. The process was not long and drawn out.	178	2.95	0.12
4. The process was efficient in terms of time.	174	3.06	0.12
Overall outcome	146	2.50	0.11
<i>Outcome equity</i>	171	1.99	0.11
1. The final appeal decision seemed fair to me.	175	2.16	0.13
2. The final appeal decision was not biased towards a particular viewpoint.	176	1.94	0.12
3. The final appeal decision seemed just to me.	176	2.00	0.13
4. I felt the final appeal decision was not influenced by special interests.	174	1.92	0.11
<i>Outcome effectiveness</i>	173	2.23	0.12
1. I feel my comments and input influenced the final outcome.	176	2.19	0.14
2. The public interest was well served by the final appeal decision.	177	2.04	0.13
3. The final appeal decision adequately considered the negative environmental consequences of the project.	174	2.41	0.15
4. The final appeal decision was environmentally sound.	176	2.25	0.14
<i>Outcome efficiency</i>	152	3.22	0.11
1. Implementation of the project can be done in a financially sound manner.	169	2.61	0.14
2. The final decision can be efficiently implemented.	166	3.14	0.14
3. Implementation of the project can be completed in a timely manner.	160	3.48	0.14
4. The final appeal decision was technically feasible.	170	3.49	0.14

more alert, and thereby less likely to simply agree with each item (Mueller, 1986).

The final section of the survey determined respondents' current perceptions of the agency's public participation process in general (i.e. beyond the context of a specific appeal). One Likert scale statement was used to evaluate whether a greater opportunity for negotiation with the

agency would result in more just outcomes. Through a final, open-ended question, respondents were asked to express their general views on the agency's public participation process. To ensure internal consistency of the analysis, the first author conducted all interpretations of the written responses.

The participants surveyed represented nation-

wide appeal activity. A total of 431 appeal files were collected: 134 (31%) originated from the Southeast, 109 (25%) from the Northeast, 144 (33%) from the Rocky Mountains, and 44 (10%) from the West Coast. The 431 appeals were filed by 238 participants, of which 67 appealed more than one project. The 431 files, representing all available appeal files at the time of collection, were dated from 1993 through 1995 and obtained from 57 national forests. The final agency-project decision date, displayed at the top of each appeal decision, was used to determine the cut-off date. Supporting information, such as the resources involved, conflict type, appellant type, issues of the appeal, project description, appeal decision, and the appeal decision date, was collected from the appeal files.

The Statistical Program for the Social Sciences (SPSS) was used to compute reliability measures, *t*-tests and analysis of variance (ANOVA). For those objectives addressed by ANOVA, Tukey's multiple comparison procedure was used to evaluate pairwise differences in group means. Tukey's method controls the experiment-wise error rate (i.e. the probability of at least one Type 1 error among all pairwise comparisons) at the specified significance level for each variable analyzed. Statistical comparisons involving groups represented by small sample sizes may have low power to detect differences as statistically significant. The sensitivity of the ANOVA results to departures from the equal variance assumption is sometimes a concern when the comparison groups have very different sample sizes. However, because the Likert scale is restricted to the values 1–6, and because many of the variables analyzed represent scales combining several Likert-scale responses, groups did not greatly differ in variability. A significance (Type I error) level of 0.05 was used to establish statistical significance.

5. Results and discussion

A total of 178 appellants responded (response rate of 75%) to the survey, representing 144 different projects. Due to the high response rate (greater than 70%), a non-respondent survey was

not conducted (Mangione, 1995). The lower number of projects (144 projects vs. 178 participants) indicates that some of the appellants responding to the survey had appealed the same project.

The mean process and outcome satisfaction scores were 2.94 and 2.50, respectively, indicating mild dissatisfaction with the overall process. A closer look at the components of the process and outcome attributes reveals that the respondents' source of dissatisfaction is primarily with equity, followed by effectiveness, while remaining generally neutral from an efficiency stand point (Table 1).

Process and outcome satisfaction were also summarized by interest group. The respondents classified themselves into one of three categories: 113 environmental (63%), 56 recreation/user (31%) and nine commodity interests (5%). There was no statistical difference in process satisfaction among the three interest groups; however, environmental interests registered the lowest overall process (2.85) and process equity (2.02) scores of the three interest groups. Environmental interests did exhibit a significantly lower overall outcome score (2.20), including lower outcome equity (1.74) and outcome effectiveness (1.79) scores. For all three groups, the lowest scores occurred for both process and outcome equity (Table 2).

The respondents' predisposition towards collaborative efforts was also evaluated. Two items in the survey measured the appellants' degree of participation. The items inquired whether they became involved in the public participation process of the project before or after the decision was published by the agency. Only 30 respondents (17%) were involved in pre-decision public input activities (i.e. scoping), while the majority, 146 respondents (82%), became involved in the process in reaction to the decision (Table 3). This suggests that appellants are reacting to proposed projects rather than being involved in helping to formulate the projects through pre-decision activities consistent with collaborative approaches to decision-making.

Of the 30 respondents involved in pre-decision activities, 18 represented the recreation/user group, 11 were from environmental interests and

Table 2
Mean process satisfaction scores by interest group

	Overall	S.E.	Equity	S.E.	Effectiveness	S.E.	Efficiency	S.E.
<i>Process</i>								
Environmental	2.85 ^a (99)	0.08	2.02 ^a (110)	0.08	2.97 ^a (107)	0.12	3.61 ^a (105)	0.11
Recreation/user	3.06 ^a (52)	0.17	2.45 ^a (55)	0.19	3.23 ^a (54)	0.21	3.35 ^a (54)	0.19
Commodity	3.17 ^a (9)	0.37	2.59 ^a (9)	0.37	3.74 ^a (9)	0.39	3.17 ^a (9)	0.54
<i>Outcome</i>								
Environmental	2.20 ^a (88)	0.12	1.74 ^a (107)	0.12	1.79 ^a (111)	0.12	3.06 ^a (93)	0.14
Recreation/user	3.06 ^b (49)	0.20	2.49 ^b (55)	0.22	3.08 ^b (53)	0.22	3.57 ^a (50)	0.21
Commodity	2.49 ^{ab} (9)	0.50	1.83 ^{ab} (9)	0.48	2.64 ^{ab} (9)	0.56	3.00 ^a (9)	0.54

Means within a scale possessing different superscripts are statistically different at $P < 0.05$ as determined by Tukey's pairwise comparison procedure. Number of valid cases per item shown in parentheses.

one represented commodity interests. Noteworthy, 33% of the recreation/user group respondents participated in pre-decisional activities, in contrast to only 10% of the environmental and commodity respondents, respectively. These results suggest that the recreation/user group respondents are more likely than the environmental interests to get involved early in the public participation process. Some of the anecdotal comments from the survey suggest that the lack of participation by environmental interests in the pre-decision activities is a consciously chosen strategy. Respondents stated that they often did not have the time or the human resources to participate in pre-decision activities, and that it was more efficient for them to react to project decisions. This strategy could have negative ramifications towards efforts to implement more collaborative approaches of public participation.

The overall mean process-satisfaction score for the pre-decision group (2.96) differed little from that of the post-decision participation group (2.94). However, the post-decision participation group registered a nearly significant ($P = 0.08$)

lower overall outcome (2.42) and process equity score (2.12) than the pre-decision group (Table 4), suggesting that those appellants (largely environmental interests) who react to agency decisions are more dissatisfied with the fairness of the process.

Differences among the interest groups and degree of participation groups occurred for some of the individual items of the process and outcome scales. The environmental interests showed a significantly lower mean score on eight items (Table 5). They indicated that there was not enough opportunity for public input and that their input was not able to influence the final outcome. Environmental interests 'strongly' perceived that both the process and final outcome were biased to the agency's viewpoint and ultimately did not fully consider negative environmental consequences of the project. Given that environmental interests are least likely to get involved in pre-decision scoping activities, it is interesting that of the three interest groups, they were least satisfied with the opportunity for input and more suspect of an agency agenda and bias.

When examining the individual items of the process and outcome attributes, there was one item that was significantly different between the pre-decision and post-decision groups (Table 6). Those individuals involved in pre-decision activities were significantly more satisfied (3.30) with the fairness of the process than the post-decision group (2.49). The results suggest the possibility that those involved in the public participation

Table 3
Degree of participation by interest group

	Environ- mental	Recreation/ user	Commodity	Total
Pre-decision	11	18	1	30
Post-decision	101	37	8	146
Total	112	55	9	176

Table 4
Mean process and outcome satisfaction scores by degree of participation

	Overall	S.E.	Equity	S.E.	Effectiveness	S.E.	Efficiency	S.E.
<i>Process</i>								
Pre-decision	2.96 ^a (27)	0.22	2.53 ^a (29)	0.26	2.71 ^a (29)	0.29	3.58 ^a (27)	0.27
Post-decision	2.94 ^a (138)	0.08	2.12 ^a (144)	0.09	3.18 ^a (140)	0.11	3.49 ^a (141)	0.10
<i>Outcome</i>								
Pre-decision	2.91 ^a (24)	0.32	2.19 ^a (29)	0.29	2.48 ^a (29)	0.34	3.64 ^a (26)	0.29
Post-decision	2.42 ^a (122)	0.11	1.95 ^a (140)	0.12	2.17 ^a (143)	0.12	3.14 ^a (126)	0.12

Means within a scale possessing different superscripts are statistically different at $P < 0.05$ as determined by Tukey's pairwise comparison procedure. Number of valid cases per item shown in parentheses.

process from the onset perceived that the fairness of the process was less of an issue than those who reacted to an agency decision. Pre-decision scoping activities may offer that additional interaction between the agency and participants, promoting a greater sense of equity.

Based on the second part of the survey focusing

on the public participation process in general, respondents agreed that greater opportunity for negotiation over disputed issues would result in more just outcomes. The mean response from all survey participants was 4.42. The recreation/user group expressed 'strong' agreement with that statement, while the environmental and commod-

Table 5
Individual item scores by interest group

	Environmental		Recreation/user		Commodity	
	Mean	S.E.	Mean	S.E.	Mean	S.E.
The process allowed ample opportunity for public input	3.05 ^a (111)	0.15	3.46 ^b (56)	0.25	4.67 ^{ab} (9)	0.55
The process was not biased to the agency's viewpoint	1.34 ^a (113)	0.07	1.98 ^b (56)	0.19	2.33 ^b (9)	0.73
The final appeal decision was not biased towards a particular viewpoint	1.68 ^a (111)	0.14	2.46 ^b (56)	0.24	1.77 ^{ab} (9)	0.54
The final appeal decision seemed just to me	1.73 ^a (112)	0.14	2.54 ^b (55)	0.26	2.00 ^{ab} (9)	0.60
Implementation of the project can be done in a financially sound manner	2.16 ^a (106)	0.15	3.37 ^b (54)	0.26	3.33 ^{ab} (9)	0.71
I feel my comments and input influenced the final outcome	1.85 ^a (111)	0.15	2.89 ^b (56)	0.28	2.11 ^{ab} (9)	0.59
The final appeal decision adequately considered the negative environmental consequences of the project	1.67 ^a (112)	0.13	3.74 ^b (53)	0.30	3.78 ^b (9)	0.78
The final appeal decision was environmentally sound	1.79 ^a (112)	0.15	3.11 ^b (55)	0.27	2.78 ^{ab} (9)	0.64
Greater opportunity for negotiation between the public and the Forest Service over disputed issues would result in a more just outcome	4.23 ^a (109)	0.16	4.93 ^b (56)	0.22	3.55 ^{ab} (9)	0.71
Once a project is conceived by the Forest Service, I feel it will use whatever means necessary to reach the point of implementation	5.67 ^a (111)	0.07	5.09 ^b (56)	0.19	4.33 ^b (9)	0.62

Means possessing different superscripts are statistically different at $P < 0.05$. Number of valid cases per item shown in parentheses.

Table 6
Individual item scores by degree of participation

	Post-agency decision		Pre-agency decision	
	Mean	S.E.	Mean	S.E.
The process was fair to me	2.49 ^a (146)	0.14	3.30 ^b (30)	0.35
Greater opportunity for negotiation between The public and the Forest Service over disputed Issues would result in a more just outcome	4.22 ^a (142)	0.33	5.23 ^b (30)	0.29

Means that do not share a superscript letter are significantly different at $P < 0.05$. Number of valid cases per item shown in parentheses.

ity groups indicated ‘mild’ agreement (Table 5). This result is consistent with the previous finding that the recreation/user group is most likely to participate in pre-decision activities. Accordingly, those involved in pre-decision activities ‘strongly’ agreed with the statement (5.23), while the post-decision group expressed significantly lower agreement (4.22) (Table 6). The results suggest that those appellants involved in pre-decision activities are more open to seeking outcomes through negotiation with the agency, while those registering lower scores (post-decision group, environmental interests) are less open to negotiated settlements.

The respondents perceive that the agency continues to use the consultative model of public input. This perception was expressed with the following comments in response to the open-ended question asking for overall perceptions of the decision-making process:

- ‘The management decisions are pre-selected irrespective of public concerns.’
- ‘The process is a form of public appeasement, lip service, tokenism.’
- ‘Institutionally, the decision is already made. They are more concerned about preparing a bullet-proof NEPA document to justify poor decisions.’
- ‘They justify decisions that have already been made so they can say the public was involved.’

Perceptions of the consultative model were not only evident in the qualitative responses, but also reinforced from the responses to the following statement in the survey: *Once a project is con-*

ceived by the agency, it will use whatever means necessary to reach the point of implementation. Strong agreement (5.41) with this statement was consistent across the three interest groups, with the environmental group registering a statistically stronger agreement than the other two interest groups (Table 5). There was no statistical difference between the pre- and post-decisional groups. Again, given the reactionary strategy of the environmental interests, it is not surprising that they perceive a strong agency bias.

6. Conclusions

Our research has documented dissatisfaction with the public participation process by those who appealed project decisions. This dissatisfaction is primarily attributable to issues relating to the equity of the process. The perception that the agency is locked into the consultative model of public input, with not enough emphasis on shared decision-making, is strongly articulated in the study. In analyzing this issue, it is important to consider how NEPA guides the agency’s public participation process. More often than not, the scoping process does not even begin until there is a proposed action (i.e. a project such as a timber sale). This regimented process creates a situation in which the public perceives that the agency has its mind made up on the proposed action prior to soliciting public comment.

Government reports from the last decade expressed similar misgivings with public involvement. Both the Forest Service’s June 1990 *Critique of Land Management Planning* and the Office

of Technology Assessment's 1992 *Forest Service Planning: According Uses, Producing Outputs, and Sustaining Ecosystems* reported that the agency asks for public input, but the input does not affect the final decisions. A 1995 interagency task force chaired by the Council on Environmental Quality also found that the sincerity of the decision-making process was being undermined by a public participation strategy based on the consultative model. Their study determined that the agency already knows what it wants to do and is requesting public input only pro forma (USGAO, 1997). The agency's predisposition towards one-way communication often is perceived as merely a mechanism for public relations, rather than an attempt at meaningful dialogue (Blahna and Yonts-Shepard, 1989; Voth et al., 1994). This perception may explain why so few respondents in this study made the effort to participate in pre-decision scoping activities prior to a draft decision.

By incorporating more 'pre-NEPA' public involvement to help frame the proposed actions, managers may improve participant satisfaction levels. This may create the risk of repeating some of the public input work accomplished during the prior Forest planning process, but for stakeholders, 'issue saliency' is significantly increased with the imminence of the proposed action. Whereas the traditional strategy might focus on informing the public of a proposed activity, such as a timber sale, a 'pre-NEPA' scoping process would broaden the scope and seek a dialogue on how the area in question should be managed in general, with timber management representing one of many alternatives. A more collaborative approach will not necessarily alleviate conflict, but it will serve to address the equity issue of the process.

Although it is reasonable to hold the Forest Service accountable for some of the problems associated with equity issues of the public participation process, shared decision-making does imply that the public play a proactive rather than a reactive role in the process. The question remains, will public participants who consistently react to Forest Service decisions, and subsequently appeal them if things do not go their way,

ever agree to partner with the agency as it tries to incorporate more collaborative approaches to public involvement? As the agency struggles with this issue, it is important to note that collaborative efforts require more resources (time, money and staff) and expertise than traditional forms of public participation, without offering any guarantees of success (Daniels and Walker, 1998).

Making the transition from the consultative to the collaborative model is likely to improve the equity of the process. As the agency continues to explore collaborative approaches to decision-making, it is critical that those public participants more inclined to focus on conflict rather than cooperation consider becoming more proactive at the onset of the process. If satisfaction with the process is to improve, the stakeholders represented by this study must share the burden of responsibility and meet the agency halfway. Public participants, most notably environmental interests, are currently in a pattern of appealing agency decisions without adequately dedicating time and resources to the public participation process. Without more involvement in the pre-decision part of the process from this group, Forest Service efforts to promote more collaborative forms of decision-making may continue to face an uphill climb.

References

- Arstein, S.R., 1969. A ladder of citizen participation. *Journal of the American Institute of Planners* 35 (4), 216.
- Baldwin, P., 1997. *Federal Land Management: Appeals and Litigation*. Congressional Research Service, Library of Congress, Washington, DC.
- Behan, R.W., 1966. The myth of the omnipotent forester. *Journal of Forestry* 64 (6), 398–407.
- Bishop, G.F., 1987. Experiments with the middle response alternative in survey questions. *Public Opinion Quarterly* 51, 220–232.
- Blahna, D.J., Yonts-Shepard, S., 1989. Public involvement in resource planning: toward bridging the gap between policy and implementation. *Society and Natural Resources* 2, 209–227.
- Brown, G., Harris, C., 1992. National Forest management and the 'Tragedy of the Commons': a multidisciplinary perspective. *Society and Natural Resources* 5, 67–82.
- Buchy, M., Hoverman, S., 2000. Understanding public participation in forest planning: a review. *Journal of Forest Policy and Economics* 1, 15–25.

- Burke, E.M., 1979. *A Participating Approach to Urban Planning*. Human Sciences Press, New York.
- Carmine, E.G., Zeller, R.A., 1979. *Reliability and Validity Assessment*. Sage Publications, Beverly Hills, CA.
- Cortner, H.J., Moote, M.A., 1994. Trends and issues in land and water resources management: setting the agenda for change. *Environmental Management* 18 (2), 167–173.
- Creighton, J.L., 1983. Conflict resolution techniques. IWR Research Report 82-R1. Corps of Engineers.
- Daniels, S.E., Walker, G.B., 1998. Payoffs, pitfalls, and blind-sides: the implications of collaboration to foresters. SAF Convention, Traverse City, MI, September 1998, 19–23.
- Dillman, D.A., 1978. *Mail and Telephone Surveys: The Total Design Method*. John Wiley & Sons, New York.
- Dombeck, M., 1997. *Sustaining the Health of the Land through Collaborative Stewardship*. US Government Printing Office, Washington, DC. (Message to Forest Service employees.)
- Downs, A., 1972. Up and down with ecology — the issue-attention cycle. *Public Interest Summer*, 38–50.
- Floyd, D.W., Germain, R.H., ter Horst, K., 1996. A model for assessing negotiations and mediation in forest resource conflicts. *Journal of Forestry* 94 (5), 29–33.
- Germain, R.H., Floyd, D.W., 1999. A model for assessing negotiations and mediation in forest resource conflicts. *Forest Science* 94 (5), 29–33.
- Goergen, M.T., 1996. *Collaborative Planning in the USDA Forest Service*. SUNY-ESF, Syracuse, NY. (Masters thesis.)
- Hill, B.T., 1996. *Forest Service: Issues Relating to its Decision-Making Process*, 1–9. Testimony before the Subcommittee on Forests and Public Land Management, Committee on Energy and Natural Resources, US Senate, January 1996
- Jones, E.S., Callaway, W., 1995. Neutral bystander, intrusive micromanager, or useful catalyst? The role of Congress in effecting change within the Forest Service. *Policy Studies Journal* 23 (2), 337–350.
- Jones, J.R., Martin, R., Bartlett, E.T., 1995. Ecosystem management: the US Forest Service's response to social conflict. *Society and Natural Resources* 8 (2), 161–168.
- Johnson, N., Agee, J., Beschta, R. et al., 1999. Sustaining the people's lands: recommendations for stewardship of the National Forests and Grasslands into the next century. *Journal of Forestry* 97 (5), 6–12.
- Knopp, T.B., Caldbeck, E.S., 1990. The role of participatory democracy in forest management. *Journal of Forestry* 88 (5), 13–18.
- Lee, K.N., 1982. Defining success in environmental dispute resolution. *Resolve Spring*, 1–6.
- Mangione, T.W., 1995. *Mail Surveys: Improving the Quality*. Sage Publications, Thousand Oaks, CA.
- McWilliams, R., Patten, F., 1995. *Partnerships for Progress: Forest Service's Collaborative Approach to Sustaining Forests and Rural Communities*. Paper read at Land Use Planning and Design Session of the SAF National Convention, 28 October 1995, at Portland, ME
- Mueller, D.J., 1986. *Measuring Social Attitudes: A Handbook for Researchers and Practitioners*. Teachers College Press, Columbia University.
- Nunnally, J.C., 1978. *Psychometric Theory*. McGraw Hill, New York.
- Pinchot, G., 1947. *Breaking New Ground*. Harcourt, Brace & Co, New York.
- Presser, S., Schuman, H., 1980. The measurement of middle position in attitude surveys. *Public Opinion Quarterly* 51 (2), 220–232.
- Schuett, M., Selin, S., Carr, D., 1998. Collaborative planning and National Forest management: A preliminary perspective from external partners. *Northern Journal of Applied Forestry* 15 (3), 124–129.
- Selin, S., Schuett, M., Carr, D., 1997. Has collaborative planning taken root in the National Forests? *Journal of Forestry* 95 (5), 25–28.
- Sewell, W.R.D., O'Riordan, T., 1976. *Natural Resources for a Democratic Society: Public Participation in Decision-Making*. Westview Press, Boulder.
- Shannon, M.A., Cortner, H.J., Davis, L., 1990. *Building Public Decisions: Learning through Planning*. Office of Technology Assessment, Washington, DC.
- Sibrel, C., 1991. *An Evaluation of the Negotiation Process and the Outcome of Ohio Wetland Conversion Disputes*. Ohio State University. (Masters thesis.)
- Sirmon, J., Shands, W.E., Liggett, C., 1993. Communities of interests and open decision-making. *Journal of Forestry* 91 (7), 17–21.
- Spector, P.E., 1992. *Summated Rating Scale Construction: An Introduction*. Sage Publications, Newbury Park, CA.
- Sudman, S., Bradburn, N., 1982. *Asking Questions: A Practical Guide to Questionnaire Design*. Jossey Bass Inc Publishers, San Francisco.
- Thomas, J.W., 1995. *Community of Interest*. SUNY-ESF. Publication #31, 12th C.E. Farnsworth Lecture
- USDA Forest Service, 1993. *Federal Register, Rules and Regulations*, 58(212). US Government Printing Office, Washington, DC.
- USDA Forest Service, 1999. *Service-wide Appeal Activity*. US Government Printing Office, Washington, DC.
- USGAO, 1997. *Forest Service Decision-Making: A Framework for Improving Performance*. US Government Printing Office, Washington, DC. GAO/RCED-97-71
- Vig, N.J., Kraft, M.E., 1997. *The new environmental agenda. Environmental Policy in the 1990s*. CQ Press, A Division of Congressional Quarterly, Inc, Washington, DC.
- Voth, D.E., Fendley, K., Farmer, F.L., 1994. A diagnosis of the Forest Services social context. *Journal of Forestry* 92 (9), 17–20.
- Walker, G., Daniels, S., 1994. *Collaborative Learning and the Management of Natural Resource Disputes*. Paper read at Rural Sociological Society, 1994 at Portland, OR