# Environmental Values and Popular Conflict over Environmental Management: A Comparative Analysis of Public Comments on the Clinton Forest Plan

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ABSTRACT / Public participation in environmental management decisions has frequently led to conflict. This paper examines the role of environmental values in fueling these conflicts, based on a data base and sample content analysis of written public comments solicited in 1994 regarding the highly contentious Clinton Forest Plan (also known as Option 9) proposed for management of federal forests in the US Pacific Northwest. The analysis considered whether those respondents favoring more versus less environmental protection than was offered in Option 9 held entirely different values, identifying which antagonistic values appeared to be most fundamental and where (if at all) values consensus occurred. It also compared values emanating from respondents within and outside the affected region, although few major differences were detected in this regard. Results suggest that strong values differences did exist among those preferring greater versus less environmental protection, in particular as concerned the extent, form, and spatial and temporal scope of justification of their positions, their ideas of forests, and the appropriate role of people in forest management. Disagreement concerned far more than purely environmental values: a major point of difference involved human benefits and harms of the proposed forest plan. Indeed, both sides' positions were overridingly anthropocentric and consequentialist—a values orientation that almost inevitably spells conflict in light of the commonly differentiated social impacts of environmental management decisions. Although public involvement in environmental management thus cannot be expected to lead to a clear and consensual social directive, the Pacific Northwest case suggests that viable environmental management solutions that take this range of values into account can still be crafted.

## Public Participation in Environmental Management

Public involvement has become a key feature of environmental management. There has been a good deal of scholarly interest in explicating and assessing various models of public participation (Rose and others 1989, Sample 1993, Selin and Chavez 1995); one excellent example involves public involvement in management decisions on the national forests of the United States (Cortner and Shannon 1993, Fischer and others 1993, Sirmon and others 1993).

Public involvement in forest management is, however, almost without exception marked by conflict. Asking the public how they would like to see public forests managed rarely if ever leads to a single response. This has certainly been true with respect to public input into management of late-successional or old-growth coniferous forests in the US Pacific Northwest, which have been a major focal point of conflict for the last decade between national and regional environmental groups and the region's solid wood products industry (Ervin 1989, Dietrich 1992, Seideman 1993). The issue of old-growth forest management in the Pacific Northwest has drawn national attention, largely as a result of environmentalist outreach focusing on the plight of the ''ancient forest'' (Norse 1990) and affected species such as the northern spotted owl (Yaffee 1994).

KEY WORDS: Environmental values; Public participation; Clinton Forest Plan; Pacific Northwest

## Role of Environmental Values

Given the importance of regional and national public participation in management decisions affecting Pacific Northwest old-growth forests, a number of surveys have been administered that have revealed a spectrum of environmental values people hold related to forests and forest management (Griggs-Anderson Research 1990, The Nelson Report 1990, Cambridge Reports/Research International 1991, Shindler and others 1993, Steel and others 1994, Hansis 1995). It is not entirely clear from the results of these surveys, however, whether differing opinions on forest management arise out of entirely different values or whether certain values are shared across the spectrum of public opinion. Some researchers have argued, for instance,

that the anthropocentric versus nonanthropocentric distinction prevalent in environmental ethics literature does not accurately characterize differing public attitudes over forest management: environmentalists, for example, maintain utilitarian interests in forests, even though their interests may concern recreation more than commodity production (Shindler and others 1993, p. 37).

One recent major study of environmental values among Americans surveyed laid-off Pacific Northwest lumber mill workers, managers of Los Angeles area dry-cleaning shops (who were expected to express antienvironmental sentiments due to recent costly environmental regulations), laypeople from California, and Sierra Club and Earth First! members (Kempton and others 1995). It found that, although strongest consensus over environmental values existed among members of environmental groups, fairly strong support for environmental values existed across all groups. The authors argued that the standard view of Lester Milbraith (1984) and others that environmentalism represented a ''new environmental paradigm'' distinct from the more socially diffuse ''dominant social paradigm'' is inaccurate. In contrast, their conclusion was that proenvironmental values are quite diffuse in American society and that inaction or disunity concerning environmental issues is probably due to other factors, such as lack of political motivation, conflicts with other interests, and so forth.

Although the extent to which distinct and antagonistic sets of environmental values exist is thus unclear, there is no doubt that public polarization has turned environmental management into a process with a great deal of conflict. Better knowledge of the environmental values underlying these divergent positions can help environmental managers understand the range of perspectives they should expect among the public as well as identify possible shared values they can build upon in forging consensus. Indeed, some empirical results suggest that there is potential for public consensus favoring balanced schemes of environmental management that address a broad range of concerns. One recent survey, for instance, asked respondents to state their relative preference for managing forests for environmental versus economic considerations. A clear plurality, and nearly a majority, of respondents preferred that environmental and economic considerations be given equal weight (Shindler and others 1993, pp. 39–40).

## The Clinton Forest Plan

This theme of balance has been an overriding rhetorical and practical feature of recent events concerning Pacific Northwest forest management. A pivotal instance was President Clinton's Pacific Northwest Forest Conference (generally known as the Timber Summit) convened in April 1993. President Clinton posed this question to frame Timber Summit deliberations: ''How can we achieve a balanced and comprehensive policy that recognizes the importance of the forests and timber to the economy and jobs in this region, and how can we preserve our precious old-growth forests, which are part of our national heritage and that, once destroyed, can never be replaced?'' (USDA-USDI 1993b, p. i).

Following the Timber Summit, an interagency Forest Ecosystem Management Assessment Team (FEMAT) was commissioned in order to draft management options that met all legal requirements for species and habitat protection and yet considered social and economic impacts as well. Their work resulted in a comprehensive report (USDA-USDI 1993b) as well as a draft supplemental environmental impact statement (DSEIS) for late-successional coniferous forests of the Pacific Northwest (USDA-USDI 1993a). The Clinton administration's preferred management alternative, Option 9, eventually was implemented as the Clinton Forest Plan (USDA-USDI 1994a,b).

## Public Comments Analysis

During the DSEIS public comment period, over 100,000 comments were received; these public comments offer substantial potential for in-depth analysis of the relationship between public positions on Option 9 and underlying environmental values, as revealed in the ways in which these positions were justified. The major benefits of this source of information on environmental values are that it is derived from a concrete instance of environmental management as opposed to the more abstract situation typical of survey settings, and it focuses on what people actually say rather than, in standard close-end fashion, providing people with specific questions to answer. There were two anticipated disadvantages. First, the sample is not necessarily representative of the public at large; nonetheless, given that a good deal of representative survey work already has been done in this general area (see above), the more in-depth information potentially provided by this analysis was deemed to be worthy of the effort. Second, the comments themselves were at least in part persuasive in nature and thus were designed to convince officials to take a particular action rather than provide some pure reflection of respondents' perspectives. This latter potential limitation will be considered later.

My research primarily involved a detailed content

analysis of personal (i.e., nonform) comment letters sent in response to the DSEIS, in particular the justifications given for the positions the respondents took, which provided the best possible explication of their environmental values. I was interested in a broad range of concerns and dimensions related to environmental values:

1. Emphasis on and justification of the respondent's viewpoint, including how much relative space was devoted to justification, the specific form of justification (including environmental, economic, and/or social), and the respondent's position, if stated or implied in the text, as to how environmental and economic concerns related to Pacific Northwest forests should be balanced.
2. Spatiotemporal scope of justification.
3. Ideas of forests, including major descriptive terms, ecological and aesthetic characteristics, and impacts of humans, as well as the optimal source of authoritative knowledge.
4. Ideas of the proper role of humans in forest management, including who should be given primary consideration in forest management decisions and who should make these decisions.
5. Ethical basis of justification, including implicit axiology or theory of value in nature (i.e., whether instrumental-value or intrinsic-value arguments were used) and the form of moral argumentation (including consequentialist, deontological, and virtue-based arguments).

The final set of terms may be unfamiliar to some readers, but they represent some of the basic distinctions in forms of ethics underlying environmental arguments in the case of forest management (e.g., Rolston and Coufal 1991, Booth 1994). Instrumental-value arguments assume that nature is valuable as a means to human economic, aesthetic, recreational, and other ends; intrinsic-value arguments assume that nature is valuable in and of itself (i.e., independent of human ends). The instrumental/intrinsic value distinction represents the primary division between anthropocentric and nonanthropocentric environmental ethics. Consequentialist reasoning focuses on the impacts of a proposed action, whereas deontological reasoning focuses on the inherent duties for conduct irrespective of consequences, and virtue-based reasoning focuses on ways that conduct contributes to or reflects the moral development of the actor. These forms of moral argumentation are somewhat interrelated, and all are evident in environmental debates (e.g., Gunn 1984, Frasz 1993).

## Background

### Biodiversity Protection on Pacific Northwest Old-Growth Forests

One major concern of environmental management in the Pacific Northwest has involved biodiversity conservation efforts on federal forests, which serve as a primary remaining repository of late-successional or old-growth forest habitat (Johnson and others 1991, Thomas and others 1993, USDA-USDI 1993b). Old-growth forests can be defined in a number of ways, most of which focus on their structural complexity, which for Douglas fir forests generally requires roughly 200 years to achieve following stand-replacement fire or clear-cutting (USDA-USDI 1993b). Federal management agencies have recently admitted that their longstanding policy of encouraging harvest of old-growth forests and conversion to younger timber stands has had a deleterious effect on old-growth-dependent species (USDA-USDI 1993a, pp. 3 and 4, 4–6). A pivotal event in this recent recognition of the harm done to forest biodiversity by logging old-growth tracts was the 1990 listing of the northern spotted owl as a threatened species pursuant to the US Endangered Species Act (USDI 1990b). The owl listing followed a determination by the US Fish and Wildlife Service (FWS) that loss of old-growth nesting and roosting habitat due to logging, estimated at the time of the listing to be less than 40% of its original extent, had already resulted in serious impacts on spotted owl populations and would, if uncontrolled, threaten the viability of the subspecies, in particular due to what the FWS argued were inadequate regulatory mechanisms for protecting the spotted owl on federal forests (USDI 1990a). Following the listing, the FWS designated a total of 6.9 million acres as critical owl habitat to ensure the species' recovery (USDI 1992a), and filed a draft recovery plan (USDI 1992b).

The spotted owl listing resulted in a number of significant ramifications for the region; one of the most important was a court-ordered injunction issued in May 1991 (the Dwyer injunction) that prohibited timber sales on US Forest Service lands until the federal government came up with a management plan that satisfactorily addressed existing regulations that forest management not jeopardize forest-related species and their habitats. The Dwyer injunction provided a legal incentive for the Clinton administration Timber Summit of April 1993, and the series of FEMAT-generated management options for late-successional and old-growth forests of the Pacific Northwest that eventually resulted (USDA-USDI 1993b). Although management alternatives did not span the entire spectrum of possible options (in particular, all alternatives had to guarantee

**To: President Clinton's Ancient Forest Team**

Your plan must permanently protect what little is left of our nation's majestic ancient forests in the Pacific Northwest and Northern California. Specifically, it must:

- **Make Ancient Forest Reserves completely off-limits to logging.** And, include all remaining ancient forest in reserves. We must not destroy any more ancient forest when all that remains is less than 10 percent of what once existed.
- **Protect all forest streams.** Logging must not be allowed near forest streams because it heavily degrades water quality, increases the risk of flooding and threatens wild salmon with extinction. Streamside buffer zones, both in and out of reserves, must be given the *full* protection called for by your Scientific Advisory Team.
- **Protect all "roadless" forest.** Forest areas still undisturbed by logging roads must not fall to the chainsaw for any reason.
- **Protect all ancient forest species.** Forest protection must ensure a "high probability" of survival for all ecologically diverse ancient forest species.
- **Minimize timber industry influence.** Our national forests must be managed for the best interest of *all Americans*, not just for local timber communities. Industry must not be given special influence or financial incentives to determine timber cutting in national forests.

NAME ADDRESS CITY/STATE/ZIP

**Figure 1.** Sample Option 9 comments form letter. Public comments overwhelmingly were submitted as form letters; this particular letter represented nearly 30% of all comments received.

at least a medium probability of species viability, eliminating high-volume timber harvest options), the ten options include a fair range of late-successional reserves (5.8–11.5 million acres) and first decade probable federal timber sale quantities (0.2–1.8 billion board feet), although less range is evident in projected first decade regional timber industry employment (112,900–123,700). On this restricted continuum, the Clinton administration's preferred option, known as Option 9, posed relatively less risk to timber communities and more to late-successional species, than most of the others (USDA-USDI 1993b, p. II–95). In its revised form, Option 9 provides for some 7.4 million acres of late-successional reserves on federal forests in the range of the spotted owl (in comparison, for example, to the high-protection Option 1, which included 11.5 million acres of forest reserves), with 2.6 million acres of riparian reserves to protect aquatic habitat and provide some reserve connectivity.

## DSEIS Public Comments

The public response to Option 9 was overwhelming: by 28 October (the closing date for public comments to be submitted in reference to the draft SEIS), roughly 103,000 comments had been received, leading the US Forest Service to request a three-month extension for completing their review of comments prior to drafting their final SEIS. All comments were coded into a data base by an interagency federal team (Interagency SEIS Team 1994); analysis of this data base offers some general descriptive statistics. Approximately 102,000 letters were received during the comment period; respondents included every state in the United States, four provinces of Canada, and 34 foreign countries. Over 99% of letters were sent by individuals as opposed to businesses, government agencies, and organizations. Although the DSEIS thus clearly commanded public attention and concern far beyond the Pacific Northwest, an overwhelming proportion of letters (roughly 90%) were form letters. Virtually all form letters represented a proenvironmental standpoint, having been distributed by organizations such as the Wilderness Society, the Sierra Club, and others; less than 1% of the form letters returned expressed protimber sympathies. The most numerically significant form letter of this group, representing over one third of all form letters received, is shown in Figure 1.

The overall response to Option 9 is difficult to elicit from the comments data base, as many form and other letters did not refer to it by name, and coding procedures precluded inference. Of those that did state their preference, 89% desired more environmental protection than Option 9, 5% desired less environmental protection, and 6% stated that Option 9 was an acceptable plan. This result, combined with the overwhelming proportion of proenvironmentalist form letters received, indicates that the vast majority of comments were submitted by people sympathetic to the position of

environmental organizations on Pacific Northwest forest management in general, and Option 9 in particular.

## Method

### Disaggregation and Sampling Strategy

Personal (i.e., non-form) letters written by individuals were used as the basis for a detailed content analysis; these letters numbered slightly under 10,000. The initial plan was to disaggregate individual personal letters into a $3 \times 2$ matrix according to two factors: (1) respondents' position on Option 9 (whether they supported it or desired more or less environmental protection, and (2) respondents' geographical origin (whether they lived inside or outside of the general affected region). The latter division is based on the results of a recent public opinion survey that suggests similarities and differences in attitudes of these two groups regarding federal forest management (Shindler and others 1993). Upon closer examination of the comments data base, it was discovered, however, that (1) relatively few letters made an explicit preference known with respect to Option 9, thus limiting the number of retrievable letters off the data base; (2) very few personal letters were written in support of Option 9; and (3) very few letters favoring less environmental protection were written by respondents living outside the affected geographical region. The resultant three subcategories (see Figure 2; total letters given for each) thus primarily compare those desiring more versus less environmental protection in old-growth Pacific Northwest forests and also provide some geographical comparison among respondents desiring more environmental protection than was offered in Option 9. A relatively large sample of roughly 60 letters was randomly selected from each of the two proenvironmental categories so as to minimize statistical sampling concerns. For the category of respondents favoring less environmental protection, all letters were used in the analysis.

### Coding Procedure

The five areas of interest presented above were explored by means of the following coding conventions:

1. Justification emphasis: All sentences in each letter were typed as predominantly ''what'' (stating the respondent's position), ''why'' (justifying it), or other. The form of justification was derived from respondents' explicit references to environmental, economic, or social concerns. The environmental/economic balance item included only explicit statements of how these two elements ought to be balanced, as a point of comparison with the survey results mentioned above.

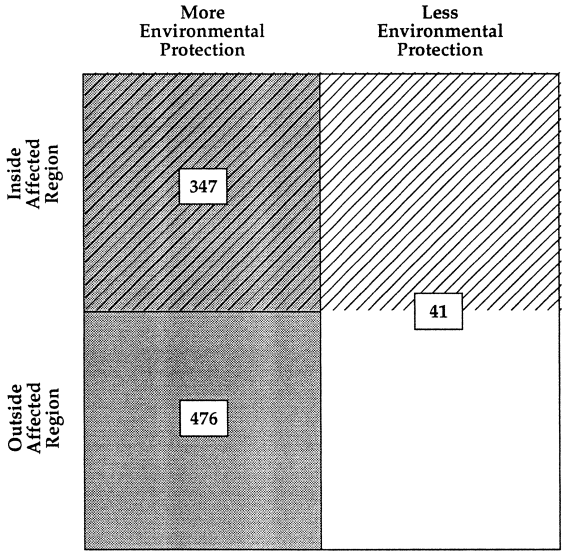


**Figure 2.** Sample matrix of personal comments making explicit reference to Option 9; total letters in each category are given in boxes. The relatively small numbers are a function of the small proportion of non-form letters received, as well as the small proportion of personal letters that explicitly mentioned Option 9 and thus could be identified in the data base for further analysis.

2. Justification scope: Spatial scope was obtained by explicit reference to four increasing geographical scales: local communities in the Pacific Northwest, the region itself, the United States, and the global scale. Temporal scope involved classification of future concerns into short- and long-term emphases; the coding choice between the two was based either on explicit wording in the letter or on interpretation of temporal content. For the purposes of the analysis, short-term included references that focused on immediate consequences expected within roughly the next five years, whereas long-term included references that focused more on concerns that the respondent felt would eventually occur, although not necessarily within the short-term time frame.

3. Idea of forests: Common names for coniferous forests were taken directly out of letter text. Extent of old-growth forests, aesthetic reference, impact of humans, and recoverability following impacts were coded based on direct interpretations of text. Authority cited was typically based on explicit statements in letter text.

4. Role of people in forest management: The positions of each letter on who count(s) most in management decisions and on who should set forest policy were derived from direct interpretation of content.

5. Ethical basis: Coding of axiology or assumed value in nature involved analysis of justification statements for inferred repositories of value; if, for instance, the

Table 1. Overall results of contest analysis[a]

| Analysis cluster | Item | Characteristic | Percent occurrence: Less protection, Overall | More protection, Overall | More protection, Inside region | More protection, Outside region |
|---|---|---|---|---|---|---|
| Justification emphasis | Emphasis in letter | Position | 14 | 43 | 42 | 43 |
| | | Justification | 73 | 47 | 45 | 49 |
| | | Other sentences | 13 | 11 | 13 | 8 |
| | Form of justification | Environmental | 29 | 58 | 54 | 62 |
| | | Economic | 74 | 12 | 16 | 8 |
| | | Social | 61 | 50 | 54 | 47 |
| | Balance in justification | Environmental > economic | 3 | 28 | 34 | 22 |
| | | Enviro./econ. balance | 0 | 3 | 4 | 3 |
| | | Economic > environmental | 55 | 1 | 2 | 0 |
| Spatiotemporal scope | Spatial scope | Local | 11 | 2 | 2 | 2 |
| | | Regional | 47 | 23 | 30 | 17 |
| | | National | 26 | 40 | 39 | 40 |
| | | Global | 11 | 12 | 9 | 15 |
| | Temporal scope | Short-term | 42 | 0 | 0 | 0 |
| | | Long-term | 21 | 41 | 41 | 40 |
| Idea of forests | Common names | Ancient forest | 0 | 82 | 71 | 92 |
| | | Old-growth forest | 18 | 30 | 30 | 30 |
| | Extent of old-growth | Scarce | 0 | 28 | 32 | 25 |
| | | Plentiful | 18 | 0 | 0 | 0 |
| | Aesthetic reference | Forests as beautiful | 0 | 19 | 18 | 20 |
| | Impact of humans | Negative | 0 | 59 | 61 | 57 |
| | | Positive | 29 | 0 | 0 | 0 |
| | Recoverability | Fragile/poor | 0 | 10 | 14 | 7 |
| | | Resilient/good | 21 | 3 | 2 | 5 |
| | Authority cited | Science | 32 | 30 | 41 | 20 |
| | | Personal experience | 13 | 8 | 14 | 2 |
| Role of people | Who counts most in decisions | Timber communities (yes) | 68 | 5 | 11 | 0 |
| | | Timber communities (no) | 11 | 26 | 21 | 30 |
| | | All Americans | 0 | 39 | 34 | 43 |
| | | Future generations | 0 | 20 | 21 | 18 |
| | Who should set forest policy | Regional inhabitants (yes) | 11 | 3 | 5 | 0 |
| | | Regional inhabitants (no) | 0 | 13 | 11 | 15 |
| | | Government (yes) | 16 | 20 | 21 | 18 |
| | | Government (no) | 13 | 2 | 0 | 3 |
| | | Professional foresters | 3 | 1 | 2 | 0 |
| | | All Americans | 13 | 23 | 21 | 25 |
| Ethical basis | Axiology | Intrinsic value | 0 | 0 | 0 | 0 |
| | | Instrumental value | 89 | 45 | 52 | 38 |
| | | Both | 0 | 13 | 14 | 12 |
| | Form of moral argument | Consequentialist | 68 | 81 | 88 | 75 |
| | | Deontological | 3 | 1 | 2 | 0 |
| | | Virtue | 0 | 0 | 0 | 0 |

[a]Organized by five major analysis clusters. Numbers generally represent percentage of letters in each group with the given characteristic; the ''more protection'' group is disaggregated into intraregional and extraregional subgroups.

respondent felt that old-growth forests should be preserved so future generations could enjoy them, the justification was coded as based on an instrumental value axiology. Coding of the form of moral argument also involved analysis of justification statements; an emphasis on our inherent duty to preserve old-growth forests irrespective of costs, for instance, would be coded as a deontological argument.

## Results

Major results of the analysis are given in Table 1. With the exception of the first item (which gives percent emphasis within letters for each category), the results represent the percentage of letters in each category of respondents possessing the given characteristic. Since not all possible characteristics are included in each item, and since it is possible for letters to possess multiple characteristics with respect to a particular item, percentages do not in these cases add up to 100. Given the limited number of letters examined, all results representing percentage of letters vary in finite increments from as much as roughly 2.5% (for the group that desired less environmental protection than was offered in Option 9) to as little as 0.8% (for the combined comments of those favoring greater environmental protection).

The discussion below focuses primarily on similarities and differences between overall results of those favoring more versus less environmental protection than was offered in Option 9. Statistical significance was obtained by means of a chi-square test and will be given in the text in order to minimize clutter in Table 1.

### Justification Emphasis

Comment letters written by those desiring more versus less environmental protection than was offered in Option 9 differed significantly in the overall emphasis of their letters, specifically whether their letters were devoted to stating versus justifying their positions ($\chi^2$ [2] = 124.1, $P < 0.01$). Those desiring more protection devoted roughly equal space to stating their position and justifying it, whereas those desiring less protection spent roughly three times as much space on their justifications. One possible explanation for this result could be that the former group assumed greater public or scientific sympathy for their proenvironmental position than did the latter group, which was placed in a more defensive argumentative role. At any rate, this heavy emphasis on justification by those concerned that Option 9 represented too much environmental protection suggests the level at which their positions were driven by explicit values.

As could be expected, respondents desiring more environmental protection primarily emphasized environmental concerns (e.g., impacts on old-growth habitat) whereas those desiring less protection primarily emphasized economic concerns (e.g., impacts on timber industry employment). Comparing the two groups, differences in emphasis on environmental concerns ($\chi^2$ [1] = 40.2, $P < 0.01$) and economic concerns ($\chi^2$ [1] = 4.7, $P < 0.05$) were both significant. Yet larger social concerns (e.g., the interests of future generations, the well-being of timber-dependent communities, or the desire by people living outside of the region to see old-growth forests some day) were evident in over half the responses from both sides, suggesting the centrality of social benefits and harms in disagreement over environmental protection in Pacific Northwest forests. In addition, both sides attempted to some extent to use their opponents' primary areas of concern in their own favor: some of those who favored less environmental protection than Option 9, for instance, stated that timber harvest was necessary to prevent the spread of tree disease, and thus conveyed environmental benefits.

A sizable proportion of letters—over half of those desiring less environmental protection than Option 9, and roughly a third of those desiring more protection—stated a position on how environmental and economic concerns associated with Pacific Northwest old-growth forest management should be balanced, suggesting that the issue of balance was an important one in the minds of respondents, especially those desiring less environmental protection—and presumably concerned that economic dimensions should receive due consideration. Only a small percentage of both groups, however, stated that environmental and economic concerns should have equal weight in the case of Pacific Northwest old-growth forest management, a marked contrast to the survey result mentioned above. It appears that, in theory, many people support management solutions that balance environmental and economic concerns; in practice, however, polarities emerge. As could be expected, there was a significant difference ($\chi^2$ [3] = 72.1, $P < 0.01$) between those favoring more versus less protection than Option 9 in their positions on how these concerns should be balanced, with the former group supporting greater emphasis on environmental concerns, and the latter group placing greater emphasis on economic concerns.

### Spatiotemporal Scope

Differences between comments supporting more versus less environmental protection than was offered in Option 9 are found in the spatiotemporal scope of

their justifications as well. Whereas those desiring less protection primarily cited regional-scale justifications such as economic impacts on the Pacific Northwest, their opponents primarily cited larger-scale justifications, such as the fact that national forests belong to all Americans. As can be seen, however, there was considerable overlap between the two groups; in particular, those favoring less protection cited national and global-scale justifications (primarily the need for wood products to support these populations), mentioning global-scale reasons virtually as often as did their opponents, whose concerns at this level overwhelmingly focused on global environmental problems. Local justifications were, however, almost entirely absent among respondents favoring greater environmental protection; thus the spatial span of the two sides does not overlap completely.

Temporal differences (i.e., emphasis on long-term versus short-term impacts) exist as well between the two groups ($\chi^2$ [2] = 54.6, $P < 0.01$). While both those desiring more and less environmental protection cited long-term concerns relative to their positions on Option 9 (e.g., the likely future ecological integrity of old-growth forests, or the continuing need among Americans for a domestic supply of timber for home construction), respondents favoring less protection placed primary emphasis on short-term concerns such as job layoffs, whereas respondents favoring more protection did not mention short-term impacts, whether positive or negative, at all.

These results suggest that there is less spatial and temporal homogeneity among justifications used by those supporting less environmental protection than by their opponents. In other words, respondents favoring less environmental protection justified their position regarding Option 9 based on a more diverse spatiotemporal range of concerns than did respondents favoring greater protection.

### Idea of Forests

As suggested in Table 1, differing ideas of forests arose frequently in public comments on Option 9. Of all the descriptive modifiers used to define Pacific Northwest forests, the term ''ancient forest'' was far and away the most prevalent among environmental supporters, especially those living outside of the Pacific Northwest. Over 90% of letters written by respondents outside of the region favoring greater environmental protection included the term. In stark contrast, none of the letters written by their opponents did. ''Ancient forest'' was found in roughly three times as many letters as the next most common term, ''old-growth forest,'' used by both groups alike. Respondents desiring less environmental protection than was offered in Option 9 did not, however, routinely employ any descriptive terms of their own, in part because of the relative lack of emphasis on forest impacts in their letters (see above), but also apparently due to the lack of diffuse status of terms the timber industry has frequently used in its outreach, such as ''renewable resource'' (Proctor 1997).

Virtually all characteristics of forests were viewed differently by these two groups, with little overlap between them (Table 1). Respondents favoring greater environmental protection mentioned the positive aesthetic qualities of forests more often, stressed (in over half their letters) the negative effect of humans on forests, noted their fragility with respect to these impacts, and argued that old-growth forests were increasingly scarce. Those favoring less environmental protection stated virtually opposite beliefs. Taken together, it is clear that the positions these two sides took with respect to Option 9 were congruous with their beliefs about Pacific Northwest forests; no letters examined, for instance, argued that in spite of the negative impact of humans on forests Option 9 poses too much economic risk. One commonality between both groups is that they cited with roughly equal frequency science as their authority in knowledge of forests, although regional inhabitants favoring greater environmental protection cited personal experience as a source of their knowledge more than those living outside the region ($\chi^2$ [1] = 5.44, $P < 0.05$), which is understandable as a function of spatial proximity.

### Role of People in Forest Management

Table 1 also demonstrates that the disagreement between those desiring greater versus less environmental protection concerned far more than concepts of forests: they also differed widely on which social groups should count the most in forest management decisions. People desiring more environmental protection, for instance, typically argued that timber communities are not of primary importance and that all Americans, and future generations, should carry greater weight. In terms of the related issue of who should have the predominant voice in setting forest policy, the two sides disagreed significantly as to the relative role of regional inhabitants versus all Americans (with respect to the latter, for instance, $\chi^2$ [1] = 15.1, $P < 0.01$), although both sides felt that government officials were qualified to make these decisions. Some respondents favoring less environmental protection, however, specifically stood against extensive government participation in forest planning. These results again suggest the centrality and divisiveness of human issues at stake in the battle over protection of Pacific Northwest old-growth forests.

### Ethical Basis

The above categories show extensive disagreement between those favoring greater versus less environmental protection than was offered in Option 9. Yet the ethical basis from which these two groups made these arguments was broadly similar in some important respects. For instance, purely intrinsic-value arguments were not explicitly stated among any respondents at all, although some respondents favoring greater environmental protection did mix instrumental and intrinsic-value justifications. Explicit axiological references were much more prominent among those favoring less environmental protection, who in nearly 90% of the letters cited instrumental-value justifications for their positions; this prominence is understandable in part due to the greater status of justification in their letters (see above). Additionally, consequentialist moral logic, focusing on expected positive or negative impacts of old-growth forest management, was overridingly emphasized among all respondents ($\chi^2$ [1] = 114.1, $P < 0.01$); very few gave duty-based arguments, and none applied virtue arguments. Although this result is perhaps understandable given the context in which the comments were made (i.e., an environmental impact statement), the absence of other common forms of moral argumentation is surprising.

## Discussion

### Comparison of Intraregional and Extraregional Respondents

In terms of the qualities mentioned above, the comments of proenvironmental respondents from inside and from outside the affected region are quite similar, suggesting that the values underlying their position are spatially diffuse. There were some minor and predictable differences in emphasis among proenvironmental respondents: for instance, those living outside the region operated from a less regional spatial scope (Table 1). Since very few extraregional letters favoring less environmental protection than Option 9 were received, no direct regional comparison is possible, although one may infer from this lack of letters that antienvironmental sympathies may be primarily ignited by local controversies and thus may have a significant place-based component; this conclusion, however, would require further study to clarify.

### Comparison of Respondents Favoring Greater Versus Less Environmental Protection

Regional differences pale in comparison, however, to differences between those desiring more versus less environmental protection than was offered in Option 9. Indeed, virtually all of the features analyzed above showed strong disagreement by these two sides, suggesting that not only do they differ in terms of their preferred mode of environmental management of Pacific Northwest forests, but that these differences follow from very different attitudes and beliefs. Differences were, as suggested above, especially evident in their respective ideas of forests, ideas of people, and the emphasis and spatiotemporal scope of their justifications.

Yet there were similarities as well, notably in terms of some ethical properties of the arguments advanced by supporters and opponents. Both followed a predominantly instrumental-value axiology and a consequentialist moral logic, driving the disagreement to the common terrain of social impacts. In other words, the key question at stake in these comments was not so much the status of Pacific Northwest old-growth forests as the very human needs and desires attached to these forests: would increased protection hurt or promote these social needs and desires? The debate was, in other words, overridingly based on an assumed anthropocentric moral framework.

### Possible Impact of DSEIS Context

This latter point needs to be scrutinized in light of the context in which the comments were made. As cited earlier, other researchers have doubted that the anthropocentric/nonanthropocentric distinction is key to disagreements between environmentalists and opponents of increased environmental protection. Yet to what extent may this be a function of the particular voice adopted by environmentalists in a public forum in which they intend to base their positions on justifications having a more universal appeal? In the context of this study in particular, it is certainly possible that environmentalists frequently resorted to mentioning the human benefits of environmental protection of old-growth Pacific Northwest forests as predictably counting more than intrinsic-value justifications, in spite of the fact that it was environmental impacts that were the focus of the comment process.

Yet environmentalists apparently felt there was enough evidence to support the human benefits argument for them to adopt it almost universally in their comments. One would have expected to hear some environmental supporters speak of the rights of old-growth forests to exist in spite of their timber wealth, or of the important, although economically insignificant, habitat needs of old-growth species, but these kinds of intrinsic-value arguments were never exclusively employed in the comments analyzed, aside from some that

included instrumental-value justifications alongside them.

It is likely that both explanations raised above are applicable. Environmentalists do not appear to hold the purely nonanthropocentric ethic into which they have been cast, yet it is not at all clear that they are able to publicly defend their preferred schemes of environmental management on their fundamental environmental values, which would be very hard to describe as purely anthropocentric. Public discourse tends to cite shared values as a means to universalize appeal; in the case of discussions about public forests this leads quite naturally to a focus on social benefits and harms by all sides involved.

The DSEIS context in all likelihood thus had a strong constraining influence on both the axiological breadth and the form of moral argumentation employed by respondents, favoring consequentialist (i.e., impacts-based), anthropocentric justifications. The shared ethics expressed by supporters and opponents of increased environmental protection in Pacific Northwest forests should thus not be understood as some pure reflection of the common moral ground these two groups occupy, although differences may not be as marked as the literature in past suggested.

### Summary and Implications

Clearly, the differing positions reflected in comments on Option 9 were closely tied to differing systems of attitudes and beliefs about Pacific Northwest forests and the proper role of people in forests. The foregoing analysis (bearing in mind again the influence of the DSEIS context) indeed reveals little common ground to provide broadbased popular support for particular forms of environmental management, at least the kind of environmental management that was proposed by the Clinton administration in the case of Pacific Northwest forests. Indeed, the widespread support for balanced approaches in environmental management noted in other surveys appears to break down in actual cases such as Option 9. The only substantial area of shared values noted above concerns the ethical basis upon which supporters and opponents of Option 9 operated, yet anthropocentric consequentialism is a markedly limited basis for consensus across a social landscape in which management decisions affect different sectors of the public in very different ways.

One crucial observation about the Option 9 comments is their sheer number, implying the extent to which people wanted their voice to be heard in environmental management decisions affecting Pacific Northwest forests. People clearly cared about the fate of these forests enough to participate in the DSEIS process. This observation is tempered, however, by the fact that the overwhelming majority of these comments consisted of form letters simply signed (and in many cases not even mailed) by the respondent. The DSEIS comment period thus elicited a tremendous response, primarily from environmental sympathists who apparently felt that form letters adequately conveyed their own feelings about the issues at hand. The overwhelming magnitude of proenvironmental responses should not, however, suggest that environmental values were evident among this side alone. Indeed, people who desired less environmental protection than Option 9 in many ways based their position on a more explicit and articulated set of environmental values, as suggested above, which nonetheless led them to advocate a very different sentiment.

The large quantity of responses by environmental sympathists and the explicit justifications provided by their opponents underscore the extent to which the level of public interest in Option 9 was based on strong environmental values. The term environmental values is, however, somewhat misleading. The overridingly anthropocentric basis of both sides' arguments, coupled with the important topic of the human role in forest management that surfaced in many comment letters, suggests that the scope of values that bear upon environmental management includes far more than those directly related to how people feel about nature.

The implications of these results for environmental managers are clear, although not necessarily reassuring. Minimally, managers must accept an empirical relativism of values among the public—a wide range of relevant values that includes, yet reaches far beyond, strictly environmental concerns. Although some of the differences in values noted above may be harmonized with better public education (e.g., those based on scientifically inadequate interpretations of the ecology of Pacific Northwest forests, such as the necessity of timber harvesting to prevent forest disease), others are less amenable to educational influence. The problem is that much of the public—whether environmental sympathists or skeptics—are primarily concerned about how they, and other people they care about (including future generations), will benefit or lose from management decisions, and it is inevitable that differentiated social benefits and harms will thus result in some conflict. Public involvement in environmental management, in other words, brings to play a diverse set of values among a diversely situated set of public actors. The public can inform environmental managers of the differentiated impacts their decisions may have; they cannot, however, be expected to provide some clear and univocal popular directive.

This study thus ends on what may appear to be a less

optimistic note than the studies alluded to at the outset. There is little evidence that any coherent set of proenvironmental values supports the massive public outpouring of interest and concern in environmental management issues such as were raised in the Option 9 DSEIS; certainly evidence supporting recent arguments that nonanthropocentric values are becoming increasingly widespread in western societies (e.g., Nash 1989) is mixed at best. If empirical and philosophical research into environmental values was until recently dominated by wishful thinking that an environmental revolution in values is underway, enough evidence exists at this point to suggest that environmental management must engage with a nonhomogeneous public moral sentiment—one that does not value nature above all else, and indeed features marked differences with respect to which people ought to be valued most highly.

Perhaps this is why pluralist perspectives such as pragmatism have been gaining such a foothold in environmental philosophy during this decade (Norton 1991, Weston 1992, Light and Katz 1995). Pragmatism, at least in its ''metaphilosophical'' variant (Light 1995), operates explicitly from a refusal to identify any one true moral perspective as necessary to support adequate environmental protection. Pragmatism builds on experience rather than imposing philosophical precepts upon experience. While some social theorists (Outhwaite 1987, pp. 24–26 et passim; Bhaskar 1989, p. 147) have rejected pragmatism as hopelessly relativistic, an empirical relativism of public values is an unavoidable reality for environmental managers. Environmental pragmatists such as Bryan Norton (1991) have indeed argued that this diverse public moral landscape need not be interpreted as an obstacle to be overcome, but in fact can support sound environmental management.

Certainly in the case of Pacific Northwest forests, the solutions that have arisen out of the Option 9 DSEIS (USDA-USDI 1994a,b) do reflect a sensitivity to the broad range of public values as reflected in their comments. These solutions address concerns ranging from the economic viability of timber-dependent communities to regional-scale forest and watershed biodiversity protection. Although the Clinton Forest Plan has received continued scrutiny and critique by environmentalists and protimber groups, it has accommodated these concerns more successfully than any previous management plan.

The Pacific Northwest case thus suggests a hopeful final note of conclusion. Public participation in environmental management will perhaps always be marked by tensions that arise out of a broad range of environmental and social values. From a pluralist perspective, however, viable management solutions that take this range of values into account can still be crafted.

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