A Forestry Program for Oregon:

Public Opinion About Forests & Forest Management in Oregon

A Literature Review
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Despite this assistance, Davis, Hibbitts & McCaig, Inc. remains responsible not only for the accuracy of the data reported, but also for any comments that go beyond the data into interpretation or prescription. The views contained in this report are those of Davis, Hibbitts & McCaig, Inc. and do not necessarily reflect those of the Oregon Board of Forestry or the Department.

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EXECUTIVE SUMMARY

Overview

This literature review of public opinion about forests and forest management is part of a larger study to assist the Oregon Board of Forestry with revision of *The Forestry Program for Oregon*. The review examines current and past attitudes primarily in Oregon, selecting those studies and questions most directly relevant to the seven criteria for forest sustainability (CFS), the organizing framework for the Board's current strategic planning effort.

Selected academic research

The review first looks at selected academic public opinion research, which covered topics like clearcutting, economic and recreational value of forests, and fire and wildlife management. The research generally indicated Oregonians want a balance between wildlife protection and jobs, with regional differences in public attitudes toward issues like clearcutting, logging old growth, and range management. Although aspects of the CFS were touched on by the academic research, it was limited.

Public opinion research

The report next examines private survey and focus group public opinion research over the last decade and more, with the findings organized around the Criteria for Forest Sustainability (CFS). The findings are organized by each criterion for forest sustainability, with selected questions being the *most directly relevant* to each and its indicators.

- *Criterion 1: Conservation of biological diversity.* Oregonians think that fish and wildlife habitat and wildlife diversity protection still need improving, although there was a slight decrease over the last 15 years in the belief that harvesting trees was harmful to fish habitat. Salmon habitat has become a bigger issue over the last decade. The public seems to relate more to "wildlife habitat" than "biological diversity."
- *Criterion 2: Maintenance of productive capacity of forest ecosystems.* Oregonians have had a continuing view that forest management should focus on reforestation. They also have been concerned about clearcut land and harvesting at sustainable levels. Varying responses indicate Oregonians may be unsure about reforestation requirements. Support for protecting old growth in national forests from harvest has increased notably in the last decade. They also care about protecting forest land from urban development.
- *Criterion 3: Maintenance of forest ecosystem health and vitality.* Over the last 15 years, there was a decrease in sentiment that harvesting trees was good for forest health. In 1986, the public said the second most important task for the Board of Forestry was minimizing damage from insects and disease, but more recent surveys have not tracked the relationship between these factors and forest health.

- *Criterion 4: Conservation and maintenance of soil and water resources.* Positive public opinion may be decreasing about management of soil erosion and water quality. However, the research does not clearly reveal how much the public knows about how things have changed. For example, Oregonians like buffer zones along streams and think they are adequate to protect water resources, but know very little about specific existing requirements.
- *Criterion 5: Maintenance of forest contribution to global carbon cycles.* The biggest change over the review period is that researchers are asking about global warming in Oregon, although most of the focus has been on the effects of air pollution and emissions rather than any relationship to forests and forest products.
- *Criterion 6: Maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of society.* The role of the forest as an economic force is well documented, with a consistent strong positive belief among Oregonians in the importance of the forest products industry to Oregon's economy over time while at the same time believing the forest industry will not continue to be a major employer in the state. Few questions have been asked about the public's cultural, social, and spiritual values related to forests.
- *Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management.* Government and state forestry officials seem to have gained favor as forest managers and forestry officials and the forest products industry seem to have gained trust from 1986 to 1997. In the last six years, positive ratings of forest protection laws increased, in large part to a decrease in those who did not know. There also is a continuing interest among Oregonians to support forest research and education. The vast scope of this criterion offers ample opportunities to further explore public opinion, including public participation in policy and decision making, investment and tax policies, and allocating resources for monitoring indicators.

Conclusion

This review showed that existing public opinion research has covered many topics that are encompassed within the seven criteria for sustainability. However, the completeness varies considerably depending on the criterion.

Certain issues, such as clearcutting and old growth, were well documented in the studies. Other issues such as forest health and carbon stores are newer and not as well documented. Recommendations for future research will be used as part of the development of phases two and three of this project, which are focus group and survey research. When the project is complete, the body of research on public opinion in Oregon will be more complete and provide a good foundation of social information for future sustainable forest management planning.

I. INTRODUCTION

The following report is part of a larger study to assist the Oregon Board of Forestry with its strategic planning process – *The Forestry Program for Oregon* – that will frame policy initiatives and guide the Oregon Department of Forestry (ODF), the forest community, and the public as they seek to attain the goal of sustainable forest management. The purpose of this report is to review literature on social assessment and public opinion of forests and forest management in Oregon.

The literature review, which is phase one of the study, examines current attitudes primarily in Oregon but also nationally concerning forests and forest management and looks back a decade and more for comparison and contrast. The information will be used to further explore Oregonians' attitudes toward forest management and sustainability in phases two and three: focus group and survey research.

This report begins with a general overview of what is known through selected academic research about Oregonians' views about forestry and forest management. The report next examines private survey and focus group public opinion research, with the findings organized around the Criteria for Forest Sustainability (CFS) as developed through the Montreal Process[1], a framework being used by ODF for its strategic planning process. This framework will be used to examine current and past beliefs, and to develop questions for the next two research phases of this study. Each part of the larger study will relate its findings to the CFS.

[1] *The Montreal Process Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests were endorsed in 1995 by 12 nations representing over 90 percent of the world's temperate and boreal forests, including the United States. More information on the Montreal Process can be found at www.mpci.org/home_e.html.*

II. SYNTHESIS OF SELECTED ACADEMIC PUBLIC OPINION RESEARCH OF FORESTRY AND RELATED TOPICS.

Academic researchers studied national, regional, and state public opinion of forestry issues throughout the 90s. Specific topics of research included clearcutting, economic value of forests, recreational value of forests, fire management, and wildlife management.

A. National surveys/national forests and range management

Shindler, List & Steel (1993) conducted a mail survey in Oregon (n=872) and nationally (n=1094) in 1991. The survey focused on economic management, wildlife management, and timber harvest issues in national forests. The response rate was 76% in Oregon and 68% nationally for the randomly selected respondents. Generally, Oregonians and national publics supported management practices that limited timber harvesting and protected wildlife on national forest lands. Both groups were clear in their support of policies to protect federal forests.

Over half of national respondents and Oregonians disagreed or strongly disagreed that some existing wilderness areas should be open to logging. Over half also agreed or strongly agreed that clearcutting should be banned on federal forest land. Similarly, there was support from both groups to protect the remaining national forest old growth with stronger support nationally (76% agreed or strongly agreed) than in Oregon (51% agreed or strongly agreed). Oregonians were somewhat more concerned about preserving timber jobs. When asked about setting aside endangered species laws to preserve timber jobs, 48% of Oregonians disagreed or strongly disagreed while nationally, 65% disagreed or strongly disagreed.

Similar attitudes were confirmed in a national survey (with no regional breakdowns) of range management policies in the spring of 1993 (Brunson & Steel, 1994). Telephone interviews were conducted with 1360 out of 2000 randomly selected households. Respondents were asked about setting aside endangered species laws to preserve ranching jobs and 65% of the national sample disagreed or strongly disagreed. Over 75% of respondents agreed or strongly agreed with several wildlife management issues. Respondents supported greater protection for fish such as salmon, more protection for rare plant communities, and making greater efforts to protect wildlife.

B. Forest management/clearcutting, ecosystem management, and range management

Johnson and Armstrong (1999) reviewed several late nineties studies related to forest management. Three reports were mentioned that studied attitudes toward clearcutting, forest management, and rangeland management. The following is a summary of their review of the studies.

On the subject of clearcutting, Hansis (1995) conducted a study of four regions in the Pacific Northwest: Portland, Vancouver, rural Washington and Gifford Pinchot National Forest. The statement "clearcutting should be banned on federal forest land" was presented to respondents. Sixty-two percent of Portland residents supported the statement. (However, Johnson and Armstrong noted that Multnomah County voters defeated a ballot measure to ban all clearcutting in 1998.)

A 1998 survey by Steel and colleagues looked at the relationship between individuals' knowledge and support of ecosystem management and confidence in several managing agencies. Mail surveys were sent to residents of Washington, Oregon, and Northern California west of the Cascades. Correlations between demographics and feelings toward agencies were explored. People in the survey who had negative attitudes toward ecosystem management were likely to live in rural areas and have high confidence in the U.S. Forest Service and Bureau of Land Management. More positive attitudes toward ecosystem management came from younger, urban residents with higher levels of education. The people with more positive attitudes toward ecosystem management were more confident in the U.S. Fish and Wildlife Service and university scientists.

In a report on range management in 1997, Brunson & Steel compared samples from eastern Oregon, Oregon, and national publics. The eastern Oregon residents' views on management of rangelands were different than Oregon and national respondents. The survey used questions similar to the earlier rangeland survey (Brunson & Steel, 1994). Eastern Oregonians valued employment over preservation of endangered species and were less likely to believe more wilderness was needed or that greater efforts were needed to protect fish and rare plants.

C. Forest health

Turning to forest health issues, a report from the Blue Mountains Natural Resources Institute focused on attitudes toward prescribed fire and mechanized thinning (Shindler, 1997). Targeting a regional population of communities in northeastern Oregon, a random sample was mailed questionnaires which 535 individuals (56%) returned. Respondents agreed that prescribed fires and mechanized thinning were useful methods for decreasing the chance of high-intensity wildfires, reducing the amount of excess fuels in the forests, and effectively keeping insects and diseases at minimum levels.

D. Forest types and recreation

A study in the early nineties (Brunson and Shelby, 1992) focused on opinions in the Corvallis, Oregon area toward various forest types. The purpose of the study was to explore attitudes toward the recreational usefulness of different forest types. Participants in the study (n=95) visited several forests that had experienced several types of harvesting ranging from old growth to clearcut. The participants used descriptors to describe the sites and rated each as an acceptable place for hiking and camping. Old growth forests were rated as the best for hiking, camping and scenic viewing. One new forestry technique, patch cut, was almost as acceptable for camping as old growth.

E. Public opinion and forest management

Why public opinion is important to forest managers was explored in a recent journal article. Bliss (2000) made an editorial assessment of the relationship between public perceptions and forest management in 2000. Using the example of clearcutting, he proposed that in order for forest management to be successful, policies must truly understand public perception of the situation.

In the case of clearcutting, what scientists say is an ecologically sound practice may not be as relevant as public perception of what is ecologically sound. His reasoning is that to continue forest management practices such as clearcutting that are so unaccepted by the public is to continue alienating the public from foresters. The end result would further impede the process of public involvement in forest management decisions.

Although Bliss argues that while there is deep and widespread opposition to clearcutting, the issue is still not as simple as saying most people just oppose clearcutting. If that were the case, then as Johnson and Armstrong alluded, Multnomah County residents would have voted for Ballot Measure 64 in 1998.

Surveys and focus groups have been used to characterize public values and attitudes about Oregon's forests and forest management. However, the questions often do not ask people to weigh the costs and benefits of problems and potential solutions. Shindler and Cramer (1999) note that past research has failed to explore the tradeoffs people are willing to make for greater forest protection and how much environmental change is acceptable.

Shindler and Cramer reviewed literature related to shifting public values regarding forests and the implications this has for forest management and sustainable forestry. The resulting challenges facing resource professionals are described as a system of problems, messes, or wicked problems. Shindler and Cramer challenge social scientists, including public opinion researchers, to work with resource professionals to do more with the general public than conventional surveys and focus groups. They call for the use of local forums and new research and consensus building techniques to help implement sustainability and improve forest stewardship.[2]

F. Summary

What we do know is that different studies have asked a variety of questions of Oregonians and other groups about forest management. Researchers have explored opinions on clearcutting, opinions on the value of different forests, and opinions on economic and wildlife issues. The results are helpful but not always complete in capturing public opinion on all issues related to sustainable forestry management.

[2] *Interestingly, ODF used a public workshop model in 1986 as part of its Forestry Program for Oregon. In the fall of 1999, ODF also held a symposium at Oregon State University where the "First Approximation Report" was released providing a snapshot of Oregon's forests as seen through the Montreal process criteria and indicators.*

By taking the information from all the academic studies as a whole, we can begin to construct a collective Oregon opinion of forest management. Oregonians see a need to balance between wildlife protection and timber jobs. Some subgroups of Oregonians see the value in fire and thinning techniques to maintain forest health. Other Oregonians value old growth forests for recreational uses over heavily logged forests. These studies begin to reveal a population that sees the value in varied uses and important features of Oregon's forests. However, it is important to note that there are often regional variations in public attitudes toward forest management issues.

The CFS is a useful tool for organizing the content or trends of existing research and finding gaps in what we know as we consider the broader goal of sustainability. This will be more fully developed in the remaining sections of this report. The reviewed academic studies all touch on, to varying degrees, the seven criteria.

Conservation of biological diversity is addressed with questions about protecting wildlife and endangered species and fish (Criterion 1). Maintenance of productive capacity is somewhat addressed with questions about limiting clearcutting and logging (Criterion 2). However, the questions do not get at the nuances presented in the indicators of productive capacity of forest ecosystems. One study looked at forest health issues (Criterion 3), but only with a regional sample. Conservation of soil and water (Criterion 4) and forest contribution to global carbon cycles (Criterion 5) were not explored in the surveys. Criteria related to socio-economic benefits and the legal and institutional frameworks were touched upon in the research. Studies tackled employment and recreational aspects of Criterion 6. Trust in different forest managers fell under Criterion 7

While academic research is helpful and has the potential to contribute to the knowledge base of Oregon public opinion regarding forestry management issues, more could be done to capture the breadth of these issues, especially as seen through the lens of the CFS and indicators. In the next sections, we will examine contributions from private public opinion services to the knowledge base and how the findings fit into the seven criteria for conservation and sustainable management.

III. PUBLIC OPINION RESEARCH AND THE CRITERIA FOR FOREST SUSTAINABILITY

There has been fairly consistent public opinion research on forest management issues in Oregon over the past decade and more. A number of these research reports were secured and reviewed (see the Appendix/Bibliography).[3] The following section is organized by each criterion for forest sustainability, offering a way to group the various research findings and to focus on what we can learn about public opinion as it relates to sustainability broadly through the CFS. Because these research reports reflect the variety of represented interests rather than being focused on the CFS, the questions presented and discussed below were selected as those *most directly relevant* to each criterion and its indicators.

The variety of research interests also means they include different samples, including all Oregonians, registered voters in Oregon, smaller regional samples, and national samples. Moreover, some surveys asked open-ended questions and some asked only closed-ended questions. By drawing from the varied studies we can begin to draw conclusions about the attitudes of the general population. However, caution must be taken in doing this because the samples and questions vary.

The presented public opinion research is both quantitative (surveys) and qualitative (focus groups). Although any sampling of opinions or attitudes is subject to a margin of error representing the difference between a sample of a given population and the total population, the survey research results are a statistically reliable measure of attitudes.

On the other hand, focus group research is designed to qualitatively explore the range of opinions of a designated population, to gain insight into what underlies their attitudes, and to supplement and help validate other primary and secondary research. It is not in the scope of focus group research to measure with statistical reliability the attitudes of the populations from which the samples were drawn, or to correlate any attitudes with demographic or behavioral variables.

[3] *Although more than a decade old, the 1986 Moore Information survey of statewide attitudes about forests and forest management activities, done for the Board of Forestry, is included in this report as an important baseline.*

A. Criterion 1: Conservation of biological diversity

1. SUMMARY OF CRITERION AND RELATED INDICATORS

Criterion 1 focuses on three types of diversity: ecosystem, species, and genetic. Ecosystem diversity is the type of forests, the age and successional stage of forests, how much the varied forests are protected, and how much they are fragmented. Species diversity is the number of species that are dependent upon forests for habitat and the number of species at risk for not maintaining breeding populations. Finally, genetic diversity focuses on forest dependent species having enough range to sustain the population or the amount of range the population historically covered.

2. CURRENT PUBLIC OPINION

Survey research key questions

Four questions were selected to examine current Oregon public opinion about conservation of biological diversity. The first question was taken from a 1997 statewide survey of Oregonians commissioned by the Oregon Forest Resources Institute (OFRI; Davis & Hibbitts, Inc., 1997).

The question asked respondents to think of themselves as forest managers and rate several issues: "Suppose for a minute that you are a forest manager, dealing with a variety of concerns. For each of the following, please tell me if you would place a lot of time and effort in that area right now because things need to improve, or if you would only place a little time and effort in that area because things are going pretty well?" The 608 randomly selected respondents felt most strongly that protecting fish habitat and protecting wildlife habitat needed improvement (see Table 1). Respondents seemed less sure about biological diversity, although still a majority thought it needed improvement.

Table 1

	Things need to improve.	Things are going pretty well.	Don't know.
Protecting fish habitat	87%	12%	1%
Protecting wildlife habitat	80%	18%	1%
Protecting biological diversity	65%	25%	10%

The second question was taken from a 1999 statewide survey commissioned by OFRI (Davis & Hibbitts, Inc., 1999). The sample included 600 Oregonians. Respondents were asked to rate as poor, only fair, pretty good, or excellent how good a job forest landowners were doing in improving conditions for salmon. Only 5% thought landowners were doing an excellent job while 36% thought landowners were doing a pretty good job, and 37% thought landowners were doing only a fair job. Fifteen percent (15%) rated the landowners poor and 7% did not know, refused or had no answer.

The third question was selected from a June 2000 survey of registered voters in Oregon for the Oregon Forest Industries Council (OFIC; The Nelson Report, 2000). When asked what impact current timber harvesting had had on fish habitat in Oregon,

17% of the 500 respondents said that current timber harvesting had improved fish habitat. No impact was the response of 17% of respondents and 44% said it was harmful to fish habitat. A remaining 12% were not sure or refused to answer.

The final question, taken from an April 2000 trapping initiative survey of registered Oregon voters (The Nelson Report, 2000), asked what 500 statewide registered voters thought was the most serious problem facing management of wildlife in Oregon today. The most frequent response (14%) was salmon/fishing/hatcheries. The next most frequent response (12%) was habitat reduction/need balance between humanity and wildlife/protection of wildlife.

Results of the 2000 Oregon Population Survey conducted by the State of Oregon show a slightly different picture (Vaidya, 2001). In two annual surveys of householders with telephones, there was some change in emphasis on the importance of improving salmon runs. In 1996, 91% of those surveyed thought that it was either somewhat or very important to improve salmon runs. In 2000, a similar 87% thought it was important. However, those who thought it was *very* important to improve salmon runs dropped from 64% in 1996 to 52% in 2000.

Using the above questions as a guide to current public opinion, it seems fairly clear that the public feels that forest managers need to improve conditions for fish habitat and salmon in particular. The public is also concerned about protecting wildlife habitat and to a lesser degree biological diversity. In the 1997 OFRI study, the public overwhelmingly supported improving conditions for wildlife and fish, but did not as strongly support protecting biological diversity. This may be in part due to the lack of definition for the general term "biological diversity."

Focus group research. Although recent focus group research has not centered on biological diversity, one study in the nineties found that participants saw a connection between timber harvests and wildlife habitat (Moore Information, 1995). Participants in two focus groups in the Portland metropolitan area, commissioned by OFRI in 1995, discussed forest management issues. Participants selected for the first group (n=10) were not associated with either environmental groups or the forest products industry. Participants in the second group (n=10) were further screened and selected if they had been to a forest exhibit and purchased a nature related book in the last year. Participants in the first group perceived timber harvest as causing erosion and being harmful to wildlife habitat. In the second group, only three out of ten participants thought that timber could be harvested without damaging the environment.

Other research. Nationally, Americans appear to be somewhat concerned about issues related to biological diversity. The Gallup organization polled 1004 adults nationally in April 2000. Respondents were read a series of 13 environmental problems and asked how much they personally worried about each. The seventh ranked issue (51% great deal of worry; 31% fair amount of worry) was "the loss of natural habitat for wildlife." The tenth ranked issue (45% great deal of worry; 33% fair amount of worry) was "extinction of plant and animal species."

3. SUMMARY OF EARLIER RESEARCH

In 1986, the Oregon State Board of Forestry sponsored a statewide telephone survey of 600 adult Oregonians on forestry issues (Moore Information, 1986). Although the survey questions did not specifically target biological diversity, several questions were asked about wildlife and wildlife habitat.

One question gave respondents a list of seven possible uses for Oregon forests. Respondents were asked which use was most important to them personally. The top rated response from 27% was "as habitat for fish and wildlife." In contrast, the same list was presented and respondents were asked what was best use for the whole state. Habitat for fish and wildlife ranked third with 9%. The highest ranked use (45%) was "a source for jobs and tax revenues."

Finally, respondents were asked to agree or disagree with a statement concerning harvesting practices. The respondents were divided, with 47% agreeing that "harvesting trees causes serious damage to fish and wildlife populations," while 40% disagreed, 11% said it depends, and 2% did not know.

In 1993 and 1994 surveys (OFRI; Moore Information, 1994), respondents were asked to rate forest uses in terms of their importance on a scale with 5 being very important and 1 not important at all. Fish and wildlife habitat were rated strongly both years. The percent of respondents rating 4 (pretty important) or 5 (very important) was 70% in 1993 and 74% in 1994.

In the 1994 survey, respondents were asked how good a job forest products companies were doing protecting the forest environment including forest streams and wildlife. Some 8% thought companies were doing an excellent job. Another 27% rated the companies above average, 36% thought the companies were doing an average job, 15% thought below average, 12% rated the companies poor, and 2% did not know.

Respondents also were asked to rate actions that forest products companies might take. Items were rated from 1 to 7 with one being very negative and 7 being very positive. Respondents rated very positively several actions related to natural diversity and wildlife (see Table 2).

Table 2

	1 Very neg	2	3	4	5	6	7 Very pos	DK
Strives to maintain the natural diversity of the forest while harvesting.	2%	2%	3%	5%	12%	18%	56%	3%
Works with nature to replant several species of trees instead of just one.	2%	2%	3%	6%	12%	20%	53%	3%
Has hired wildlife biologists and other scientists to help protect wildlife.	3%	2%	3%	7%	19%	18%	47%	2%
Instead of protecting wildlife on a species by species basis, is working to protect all wildlife and wildlife habitat.	2%	3%	4%	5%	14%	16%	54%	3%

In terms of salmon habitat, 1994 survey respondents were asked to choose from a list what they thought was most responsible for declining salmon populations. The most frequent response was hydroelectric dams (30%) followed by too much fishing (19%)

and industrial and commercial development (18%). Other responses were timber harvest activities (7%), marine predators (7%), ocean currents and temperatures (5%) and don't know (6%).

4. CHANGES IN ATTITUDES

From 1986 to 2000, there may have been a slight decrease in the belief that harvesting trees was harmful to fish habitat. The 1986 survey (Moore, 1986) reported that 47% of respondents thought harvesting trees was harmful to fish (and wildlife). The 2000 OFIC survey (the Nelson Report, 2000) found that 44% thought current timber harvesting had a harmful impact on fish habitat. Although the questions were not identical, they are close enough for comparative purposes.

In 1994, surveys captured information about opinions about what might be good forest management. The Oregonians surveyed were positive about thinking that forest products companies should strive to maintain natural diversity, replant several species of trees, and work to protect all wildlife and wildlife habitat. Recent surveys indicate that Oregonians think that fish and wildlife habitat and wildlife diversity protection still need improving.

The rest of the questions from the 80s to the present are not really close enough to compare. There appears to have been an understandable shift in focus as issues change over time. For example, in the 1994 surveys there were several references to spotted owls and only one direct reference to salmon habitat. In the more recent surveys, salmon habitat came up often, and spotted owls were not mentioned. Even when respondents offered their own answers, salmon habitat came up first over other environmental concerns. It seems fair to conclude that salmon habitat has become a bigger issue over the course of the decade and remains an issue of concern to Oregonians.

5. FURTHER RESEARCH

Current research has captured Oregonians' views of wildlife protection. Salmon protection in particular is well documented in the literature. Issues that could be further explored concern the specifics of wildlife diversity. For example, what does the public see as the relationship between wildlife habitat and biological diversity? Does the public understand the specific issues concerning biological diversity, such as the number of forest dependent species and the effect of forest type fragmentation?

B. Criterion 2: Maintenance of productive capacity of forest ecosystems

1. SUMMARY OF CRITERION AND RELATED INDICATORS

Five indicators are related to productive capacity. The first three focus on the area and growing stock of forests in terms of timber production, merchantable and non-merchantable trees, and native and exotic species. The last two indicators focus on removal of wood products and non-timber forest products. People concerned about these issues might ask how much forest land area and growing stock are available for timber production; what is the area and growing stock of native and exotic species; and compared to what is sustainable, how much wood product and non-timber forest product is removed each year?

2. CURRENT PUBLIC OPINION

Survey research key questions

Five questions were selected from recent research to assess current public opinion in the area of maintaining the productive capacity of Oregon's forests. The first question was taken from the 1997 statewide survey of Oregonians (OFRI; Davis & Hibbitts, 1997). The question asked respondents to think of themselves as forest managers and rate several issues: "Suppose for a minute that you are a forest manager, dealing with a variety of concerns. For each of the following, please tell me if you would place a lot of time and effort in that area right now because things need to improve, or if you would only place a little time and effort in that area because things are going pretty well?"

Respondents (n=608) were clear in their opinion that replanting and harvesting without overcutting were both in need of improvement (see Table 3). Although ensuring harvest to sustain jobs was also thought to need improvement, substantially more respondents thought this area of forest management was going well than was replanting and harvesting without overcutting.

Table 3

	Things need to improve.	Things are going pretty well.	Don't know.
Replanting of harvested trees	88%	11%	1%
Determining how much timber can be harvested each year without overcutting	87%	9%	3%
Ensuring enough harvest to sustain jobs in the wood products industry	63%	32%	5%

The second question, taken from the same OFRI public opinion survey in 1997, presented several statements and asked if they were definitely true, probably true, probably not true, or definitely not true. Respondents were very clear that most timber harvested in Oregon is from second growth, not old growth forests. They also were sure that forests are growing faster than they are being harvested and just as sure that state law requires all timber lands to be replanted within two years (see Table 4). Respondents were less clear if private land needed to be replanted like public land.

Table 4

	Probably or definitely true	Probably or definitely not true
Most of the timber harvested in Oregon today comes from second growth managed forests, not old growth forests	79%	9%
Forests in Oregon are growing much faster than they are being harvested	65%	26%
Forests that are harvested on public lands must be replanted; forests that are harvested on private land don't have to be replanted	38%	47%
State law requires all timber lands, public and private to be replanted within two seasons after harvest	16%	67%

The third question was selected from a June 2000 survey of registered voters in Oregon (OFIC; The Nelson Report, 2000). The question was: "Do you believe Oregon's private forest landowners are replanting trees soon after harvest as required by law?" Fifty-seven percent (57%) of respondents said yes, 17% said no, and 26% were not sure or refused to answer.

The fourth question was part of a larger statewide public opinion survey conducted in 1999 for OFRI (Davis & Hibbitts, Inc., 1999) which used the Scaled Comparison Method, a technique to establish the relative importance of issues. Respondents (n=310) were presented with rotating pairings of 12 forest management goals and asked to indicate which was more important. "Protecting forests from urban development" was ranked second in importance.

The last question was from a recent Oregon and Washington statewide survey (The Oregonian; June 28, 2001). Among the 600 residents surveyed, 75% overall somewhat or strongly supported protecting old growth forests from logging on national forests. In urban counties, 79% supported it and in more rural counties, 67% wanted protection for old growth in national forests. Support declined an average of 5 percent in both urban and rural counties after arguments both in favor or and against protection were presented to the people surveyed, suggesting most were not easily swayed.

It appears from reviewing the above questions that Oregonians have strong opinions about harvesting trees, generally feeling that forest managers need to spend more time and effort replanting trees and determining how many trees can be cut each year. While they think trees are growing faster than they are being harvested, varied responses to questions about replanting laws indicate Oregonians may be unsure about reforestation requirements. They are concerned about protecting forest land from urban encroachment. Residents of both natural and non-natural resource counties favor protecting old growth forests from logging in national forests.

Focus group research. Recent focus group discussions support findings from recent surveys. Participants in two focus groups in 1995 (OFRI; Moore Information, 1995) discussed forest management issues. Participants selected for the first group (n=10) were not associated with either environmental groups or the forest products industry. Participants in the second group (n=10) were further screened and selected if they

had been to a forest exhibit and purchased a nature related book in the last year. Participants in both groups were skeptical of replanting because they perceived that reforestation would take place with only one species of tree, thus limiting the diversity of the forest.

In a 1999 focus group study (OFIC; Davis & Hibbitts, Inc., 1999), participants were chosen if they voted no on a measure to ban clearcutting but considered supporting it because of their concerns about clearcutting. Participants were asked to record their vision for the future of Oregon's forests. Many talked about their ideas for forest management. Their ideas included reduced or no clearcutting, selective harvesting, thinning, cleaning up dead wood, and reforestation. When the discussion turned to clearcutting, participants were generally more negative than positive. People who were supportive of clearcutting linked their support to expectations that the land would be replanted and thinned.

Other research

National polls indicate that the country is only moderately supportive of logging on national forest land. In January 2000, ABC News and The Washington Post surveyed 1513 adults in the United States by phone (ABC News, 2000). Respondents were asked how much commercial oil and gas drilling, logging and mining should the federal government permit in the National Forest system. Only 1% thought "a lot" should be allowed. "Some" was the answer of 40%, 20% said "very little" and 18% said "none."

In an April 2001 survey by the Los Angeles Times (Richardson, 2001), Americans were asked their opinion on plans to lift a ban on logging and road building in national forests. Nationally, 58% of 813 adults approved of the ban. Among Pacific coast states, Oregonians were least supportive of the ban at 53%, while 63% of Californians and 60% of Washington residents approved of the ban. For the survey, 512 Californians, 332 Oregonians, and 317 Washingtonians were contacted by phone.

3. SUMMARY OF EARLIER RESEARCH.

The 1986 Oregon State Board of Forestry Study (Moore Information, 1986) targeted several issues related to land base management. Six hundred Oregonians were randomly selected to participate in the telephone interviews. Respondents were read six responsibilities of the Oregon Board of Forestry and asked to rate the importance of each (see Table 5).

Table 5

Importance:	Very (5)	(4)	Somewhat (3)	(2)	Not (1)	DK
Preventing and fighting forest fires	88%	6%	4%	1%	1%	1%
Reforestation of harvested or under productive land	70%	17%	10%	2%	1%	1%
Growing more trees	68%	18%	10%	3%	1%	1%
Avoiding future timber shortages	63%	19%	13%	4%	2%	1%
Land use planning to preserve the forest land base	61%	20%	10%	3%	4%	2%
Increasing the amount of trees for harvest now	28%	16%	30%	16%	8%	2%

Issues related to protecting and increasing the amount of forest in Oregon were rated among the highest. Preventing and fighting forest fires was rated very important by 88%.[4] Many respondents also rated reforestation (70%) and growing more trees (68%) as very important. "Avoiding future timber shortages" (63%) was rated as very important by more respondents than "increasing trees for harvest now" (28%).

Respondents were next asked to rate their support of several forest management techniques without specifying the type of forest to which the techniques applied (see Table 6). Harvesting old growth was strongly supported by 70% of respondents. Clearcutting and timber harvesting in watersheds had similar amounts of opposition.

Table 6

	Support	Oppose	Depends	DK
Harvesting old growth timber	70%	24%	3%	3%
Clear cutting	38%	54%	3%	5%
Timber harvesting in watersheds	36%	51%	3%	10%

In 1993 and 1994 Oregonians were concerned about forest management issues related to forest capacity (Moore Information, 1994). Respondents were asked what were some of the positive things they knew about forest management activities in Oregon. Replanting and reforestation efforts were the top response in 1993 and 1994 with 39% in 1993 and 36% in 1994. However, a high percentage in 1993 (35%) and almost as many in 1994 (28%) did not know. In 1993, 5% mentioned regulating the number of trees cut/selective harvesting and 5% mentioned regulating harvesting techniques.

When asked about their complaints or concerns about forest management activities, the number one response both years was clear cuts (13% in 1994 and 10% in 1993). Depleting the forest/too much logging was second with 8% in 1994 and not enough replanting/poor reforesting techniques was second with 9% in 1993.

Respondents were also asked: "To the best of your knowledge are most areas in Oregon where timber has been harvested being reforested or not?" In 1993, 63% said yes, 19% said no, and 18% did not know. In 1994, 73% said yes, 18% said no and 9% did not know.

Finally, respondents were asked to rate actions that forest products companies might take. Items were rated from 1 to 7 with one being very negative and 7 being very positive. Respondents rated very positively actions related to replanting and sustainable harvests (see Table 7).

[4] *In the report, Moore noted there were several forest fires in the news at the time of the telephone interviews which may partly explain the high rating.*

Table 7

	1 Very neg	2	3	4	5	6	7 Very pos	DK
Replants harvested timber land within one year	2%	3%	4%	5%	14%	15%	56%	2%
Harvests timber at a rate that can be sustained forever	3%	2%	3%	5%	10%	13%	60%	4%

4. CHANGES IN ATTITUDES

Over the last fifteen years, researchers have documented Oregonians' views on timber harvests. There appears to be a continuing view that forest management should focus on reforestation issues, especially replanting clearcut land and harvesting at sustainable rates. In 1986 and early 90s, respondents thought forest companies should work on replanting timber harvests and reforesting at a sustainable rate. In the late 90s Oregonians continued to think these issues were important and needed improving. On the topic of old growth forests and looking back at the academic research, 51% of Oregonians in a national survey agreed that the remaining old growth in national forests should be protected. That attitude appears to have notably changed given recent support for protecting old growth forests from logging in national forests. There also appears to be an understanding that old growth is not being harvested.

5. FURTHER RESEARCH

Current research provides us with a good sense that Oregonians are concerned about the sustainability of timber production. Other aspects of productive capacity still need to be explored. Although one focus group discussion touched on the need for replanting a variety of trees, public opinion research has not focused on native vs. non-native species, merchantable vs. non-merchantable trees, and other products removed from the forest. Additionally, current research has touched on old growth in national forests but has not specifically addressed harvesting old growth on state forest lands.

C. Criterion 3: Maintenance of forest ecosystem health and vitality

1. SUMMARY OF CRITERION AND RELATED INDICATORS

Ecosystem health and vitality is examined by looking at three indicators – disturbance processes and agents affecting forestlands, air pollutant effects, and the presence of key biological components for wildlife. This criteria attempts to identify disturbance patterns that stand outside historic norms. Current concerns in Oregon may include insect and disease infestations, air pollution, invasive species, and fire cycles.

2. CURRENT PUBLIC OPINION

Survey research key questions

One question was selected for use in evaluating current public opinion of forest ecosystem health and vitality (Davis & Hibbitts, Inc., 1999). The question, part of a larger public opinion survey conducted in 1999 for OFRI, used the Scaled Comparison Method which is a technique to establish the relative importance of

issues. Respondents (n=310) were presented with rotating pairings of 12 forest management goals and asked to indicate which was more important. "Protecting forests from disease" was ranked sixth among all respondents.

Focus group research

Participants in two focus groups in 1995, discussed forest management issues (OFRI; Moore Information, 1995). Participants were selected for the first group (n=10) if not associated with either environmental groups or the forest products industry. The participants in the second group (n=10) were further screened and selected if they had been to a forest exhibit and purchased a nature related book in the last year. Most of the participants were not aware of the current definition of unhealthy forests (overcrowded or infected with disease and insects). No one in the first group and only two in the second group mentioned the terms in conjunction with forest health. There was consensus from the two groups that forest health was in need of improvement and human intervention was needed because the forests were too weak to self-correct.

3. SUMMARY OF EARLIER RESEARCH

Four questions in the 1986 Board of Forestry study (Moore Information, 1986) focused on issues of forest health. The 600 Oregonians surveyed were asked to agree or disagree with statements about harvesting forests. To the statement "harvesting trees is necessary to keep forests healthy," 83% agreed, 60% disagreed and 4% said don't know/depends. Next respondents were asked to rate the importance of Board of Forestry responsibilities (see Table 8). Minimizing damage from insects and disease was rated as very or pretty important by 88% and preventing and fighting forest fires was ranked very or pretty important by 94%.

Table 8

Importance:	Very (5)	(4)	Somewhat (3)	(2)	Not (1)	DK
Preventing and fighting forest fires	88%	6%	4%	1%	1%	1%
Minimizing damage from insects and disease	70%	18%	9%	2%	--	1%

The final question asked respondents whether they supported or opposed different forestry practices. "Spraying herbicides on forest land was supported by 59% and opposed by 33%. The remaining respondents answered "depends" (6%) or "don't know "(2%).

In 1994, the OFRI survey of 650 Oregonians asked about forest fires and forest health (Moore Information, 1994). Respondents were asked to rate forest management actions a forest products company might take. To the action "works hard to prevent and control forest fires," 85% of respondents were positive, 6% were neutral, 7% were negative and 3% did not know. In a split sample, 84% had a positive reaction (7% neutral and 6% negative) to "uses forest scientists to protect forest health." The other half had an 83% positive reaction (8% neutral and 8% negative) to "uses licensed foresters to protect forest health."

In another split sample in the same 1994 survey, half of respondents were asked to agree or disagree with "harvesting trees helps to keep forests healthy." There was agreement from 73% of respondents, disagreement from 24%, and 3% did not know. The other half responded to "harvesting trees is harmful to forest health." Like the

first half, 24% of respondents agreed with the statement, 73% disagreed, and 4% did not know.

On the same survey, respondents were asked to name some of the positive things about forest management activities. While the top response received 36% of the votes, only 1% mentioned fire control and less than one-half of 1% listed controlling disease. When asked about complaints or concerns, the top response received 13% of votes, while 1% listed slash burning and less than one-half of 1% listed cleaning out the beetles.

4. CHANGES IN ATTITUDES

From 1986 to 1994 there was a decrease in sentiment that harvesting trees was good for forest health. “Harvesting trees keeps forests healthy” dropped from 83% agreement in 1986 to 73% agreement in 1994.

The issue of fighting forest fires remained important to respondents from 1986 to 1994 but was not followed later in the 90s. In terms of insects and disease, a possible baseline for the importance of protecting against insects and disease was set in 1986 when minimizing damage from insects and disease was ranked the second most important task for the Board.

Surveys from the 90s did not track these issues well. In the surveys from the 90s, forest health was not connected with insects and disease; only a handful of respondents and participants seemed aware of the connectedness of these issues with forest health. Looking back at academic research, the Shindler study in 1997 found that residents of an eastern Oregon community were supportive of two methods to control insects and disease. This is understandable since disease and insect problems have been more of an issue in eastern Oregon.

5. FURTHER RESEARCH

Current research is only beginning to explore forest health issues. Researchers have not yet found out how concerned Oregonians currently are about disease and insects in Oregon's forests. It would be helpful to find out what Oregonians think of when the term forest health is mentioned. Perhaps in western Oregon, insect and disease issues are still not well known problems in the forests. It might be helpful to ask Oregonians about different prevention, control, and elimination methods. Questions related to the impact of fire cycles and urban development on forest vitality might also be helpful in learning more about Criterion 3.

D. Criterion 4: Conservation and maintenance of soil and water resources

1. SUMMARY OF CRITERION AND RELATED INDICATORS

Conservation and maintenance of soil and water resources focuses on soil health including erosion, changes in chemical and physical properties, and protective functions of forest land. Water resource indicators focus on water quality (pH, dissolved oxygen, and chemical lives), changes in biological diversity, and changes in stream patterns.

2. CURRENT PUBLIC OPINION

Survey research key questions

Five questions were selected to evaluate current public opinion in Oregon on this issue. The first question was taken from a 1997 statewide survey of Oregonians

(OFRI; Davis & Hibbitts, Inc., 1997). The question asked respondents to think of themselves as forest managers and rate several issues: "Suppose for a minute that you are a forest manager, dealing with a variety of concerns. For each of the following, please tell me if you would place a lot of time and effort in that area right now because things need to improve, or if you would only place a little time and effort in that area because things are going pretty well?" Respondents were pretty clear in their agreement that all three issues: stopping soil erosion, protecting water quality in forests, and protecting steep slopes needed improving (see Table 9).

Table 9

	Things need to improve.	Things are going pretty well.	Don't know.
Stopping soil erosion	88%	9%	3%
Protecting water quality in the forests	88%	11%	2%
Protecting steep slopes	78%	17%	5%

The second question was from a 1999 statewide survey (OFRI; Davis & Hibbitts, Inc., 1999). Respondents were asked: "Can you tell me if the law requires buffers around forest streams? (If yes) How wide does the law require buffers to be around forest streams?" Fifty-four percent (54%) responded yes to the first part of the question. Of those 54%, 47% did not know how wide a buffer was required. Twelve percent said 100 feet, 9% said 50 feet and 4% listed other amounts.

The third question, also from the 1999 OFRI survey of Oregonians, asked respondents to rate timber harvest practices that were most important to them. The practice ranked first by 50% was "leaving trees in certain areas to protect water resources." The fourth highest with 37% was "banning clearcuts in land-slide sensitive areas."

A survey of registered voters in Oregon (OFIC; The Nelson Report, 2000) asked: "In Oregon, buffer strips are required on private forest lands for fish bearing rivers and streams. The buffers vary from 50 to 100 feet on both sides of the stream and most of the trees in this buffer cannot be cut. Do you believe the requirement is sufficient or insufficient to protect rivers and streams?" Sixty-two percent (62%) of respondents thought the law was sufficient while 25% thought the law was insufficient and 13% were not sure or refused to answer.

Finally, a scaled comparison question from a statewide telephone survey to establish the relative importance of issues (OFRI; Davis & Hibbitts, Inc., 1999) included a Criterion 4 indicator. Respondents (n=310) were presented with rotating pairings of 15 forest management values and asked to indicate which was more important. "Landslide protection" was the fifth highest ranked value.

Focus group research.

Limiting clearcuts and widening buffers along streams was supported in 1999 focus group discussions conducted for OFIC in 1999 (Davis and Hibbitts, Inc., 1999). The four focus groups met in Medford, La Grande, and Portland (2). Groups were screened to include participants who voted against Ballot Measure 64 (an initiative to ban all timber clearcutting and the use of pesticides and herbicides on forest lands in

Oregon), but considered supporting it because of concerns about clearcutting. On the topic of clearcutting and stream buffers, most participants said they would support a measure to reduce the size of clearcuts and provide wider buffers along streams. Portland respondents favored such a proposal more than participants in La Grande or Medford.

Another focus group discussion in Portland (OFRI; Moore Information; 1996) asked 23 people who were not members of environmental groups or the forest products industry about the Forest Practices Act. Participants were asked if they were aware of components of the act and if they thought it was important. Only a third of participants (8 out of 23) were aware of the law prohibiting cutting trees within 20 feet of most streams, but most (21 out of 23) thought such a law was important. Similarly, only 7 out of 23 knew about rules protecting vegetation and soil near all streams while most (21 out of 23) thought it was important.

Other research

The top three environmental worries of Americans according to an April 2000 Gallup telephone survey related to water and soil quality. Respondents were read a list of possible worries about the environment and asked how much they worried about them. Respondents were the most worried about pollution of drinking water; 72% said they worried a great deal and 20% said they worried a fair amount. Pollution of rivers, lakes and reservoirs caused a great deal of worry for 66% of respondents and a fair amount of worry for 24%. Respondents also were concerned about contamination of soil and water. Respondents were more concerned about contamination from toxic waste (64% said a great deal; 25% a fair amount) than contamination from nuclear facilities (52% great deal; 23% fair amount).

3. SUMMARY OF EARLIER RESEARCH

There were two questions in the 1986 study (Moore Information, 1986) that related to soil and water conservation. The 600 randomly selected Oregonians were asked to agree or disagree with statements about harvesting trees (see Table 10). More people agreed that harvesting trees reduces water supplies (38%) than is a source of water pollution (29%), although fewer were not sure about water pollution (only 7% don't know) than were unsure about water supplies (14% don't know).

Table 10

	Agree	Disagree	Depends	Don't know
Harvesting trees is a major source of water pollution	29%	60%	3%	7%
Harvesting trees reduces water supplies	38%	44%	4%	14%

Respondents were asked in 1994 how much of a positive or negative reaction they had to leaving buffer strips along streams to protect fish habitat and soil (OFRI; Moore Information, 1994). A large majority of 61% had a very positive reaction and another 26% had a more positive than neutral reaction.

When asked how good a job most forest products companies were doing protecting the forest environment including forest streams and wildlife, 8% said excellent, 27% said above average, 36% said average, 15% said below average, 12% said poor and 2% did not know. On the same survey in 1994, respondents were asked what

complaints or concerns they had about forest management activities. While the highest group response category was 13%, only 1% suggested erosion or destroying stream habitat. On the positive side, 5% of respondents said "more regard to erosion/water-watershed issues" were positive things they knew about forest management in Oregon.

4. CHANGES IN ATTITUDES

Although the studies are not completely comparable, the findings from the 1994 and 1997 surveys indicate that positive public opinion about management of soil erosion and water quality may be decreasing. In 1994 more people thought erosion and water management issues were a positive thing than a criticism of forest management in Oregon. By 1997 respondents were clear in stating that stopping soil erosion and protecting water quality and steep slopes needed to improve. Moreover, in 1986, there seemed to be less awareness or possibly concern about water pollution issues than the present. On the national level, water and soil issues are not focused on forest management, but targeted rather at a more general audience. In Oregon, people seem to know about buffer zones for streams, though only generally, and feel that they are a good idea.

5. FURTHER RESEARCH

Oregonians seem to have a sense that things need to improve. It would be interesting to study public perceptions of soil erosion and water resources issues, assessing whether people think things have gotten worse, stayed the same, or improved over a specified time period. A component of Criterion 4 is how things have deviated from the historic range. Future studies could also examine Oregonians' awareness levels and concern about toxicity of substances introduced by humans in the forest soil and streams, lakes, and rivers.

E. Criterion 5: Maintenance of forest contribution to global carbon cycles

1. SUMMARY OF CRITERION AND RELATED INDICATORS

This criterion considers how much carbon forests in Oregon are storing, how much the forests absorb and release carbon, and how much forest products are contributing to the global carbon budget. Human activities have increased carbon dioxide concentrations in the air. Retaining more land in forests can play a positive role in reducing carbon dioxide as research has shown that generally more carbon is sequestered in forests than is released.

2. CURRENT PUBLIC OPINION

Survey research key questions

Two questions were taken from a 2000 study of likely Oregon voters sponsored by PacifiCorp and conducted by Davis & Hibbitts, Inc. The primary purpose of the study was to determine voter attitudes toward economic and environmental conditions. A sample of 801 likely voters were surveyed over a two week period in the fall of 2000. Respondents were read a series of environmental concerns and asked if each was a very serious problem, somewhat serious, not too serious, or not at all serious problem. In response to the concern "the greenhouse effect, called global warming," 26% thought the problem was very serious, 28% thought it was somewhat serious, 22% thought it was not too serious, 18% thought it was not at all serious and 5% did not know. The greenhouse effect was the fifth most serious concern as ranked by the respondents.

To follow up on the issue of global warming, respondents were read a list and asked how much each was a factor in global warming. Industries in developing countries and autos used by businesses and citizens were the two highest and almost equal responses as major and somewhat contributing factors to global warming. Utilities using coal and American industries using energy were third and fourth, but all four were rated consistently high as contributing to global warming (see Table 7).

Table 7

	Major factor	Somewhat of a factor	Not much of a factor	Not at all a factor	Don't know
Industries in developing countries	45%	34%	8%	6%	7%
Autos used by businesses and citizens	43%	37%	9%	7%	3%
Utilities using coal fired electric plants	31%	40%	13%	8%	8%
American industries that use energy	26%	48%	14%	8%	4%

Deforestation was not listed as a possible cause of global warming in this question. However, an earlier question in the survey asked the respondents who thought that global warming was caused by humans, why it was occurring. The top response was auto emissions with 17%. Other responses were: general air pollution (10%), burning fossils fuels (8%), air pollution by industry (8%), pollution in general (8%), overpopulation (4%), ozone layer depletion (3%) and natural cycles (2%). Deforestation (2%) was one of the least offered causes of global warming.

Other research

Americans are worried about issues related to global warming and carbon cycles. Most recently, in April 2001 (Richardson, 2001), Americans reported their opposition to the President's decision to not reduce emissions of carbon dioxide. The decision was opposed by 54% of respondents. The survey was conducted by the Los Angeles Times and 813 adults were contacted nation-wide by telephone.

In an April 2000 national poll about the environment, 1004 adults were surveyed by the Gallup organization. Americans ranked air pollution the fourth largest worry with 59% saying they worry a great deal and 29% said they worry a fair amount. The loss of tropical rain forests was a worry for 51% (a great deal) and 25% (a fair amount). Damage to the earth's ozone layer was a great worry for 49% of respondents and a fair amount of a worry for 29%. The greenhouse effect or global warming was a great worry for 40% and a fair amount for 32%.

The Harris poll tracked Americans' knowledge of global warming from 1997 to 2000. In 1997, 67% of respondents said they believed in the theory of global warming and in 2000 the percent that believed in global warming had increased to 72%. However, according to the survey, Americans have not changed their opinion on the threat of global warming as a serious problem. In 1997, 47% thought the problem was very serious and 40% said it was somewhat serious. In 2000, 46% responded it was very serious and 39% somewhat serious.

3. SUMMARY OF EARLIER RESEARCH

There is little to report on past opinion concerning global warming and carbon cycles. There were no questions on the 1986 Forestry Board study (Moore Information, 1986) about carbon cycles or deforestation. In the 1994 OFRI report (Moore Information, 1994), respondents were asked about a list of environmental issues. The list included air quality, water quality, forest management and garbage and solid waste disposal. It did not include global warming or deforestation.

A 1991 national survey of 1500 adults used personal interviews to ask what individuals thought were the most important environmental concerns facing the country at that time (Environment Opinion Study Inc., 1991). The most common response (landfills/garbage) was offered by 29%. Air pollution, the second most popular response, was offered by 18%, while 10% said ozone layer, 9% said rainforests/deforestation, and 8% said emissions from cars.

4. CHANGES IN ATTITUDES

Perhaps the biggest change from the 80s to the late 90s is that researchers are asking about global warming in Oregon. Currently, global warming is a topic that is being explored in national and Oregon polls. However, most of the focus has been on the effects of air pollution and emissions on global warming. Nationally, there appears to be an increasing awareness and concern for global warming and depletion of the ozone layer.

5. FURTHER RESEARCH

Only one recent study in Oregon explored the global warming issue, so it might be good to follow up in another survey to confirm current public opinion. In a new survey, specific questions about deforestation, knowledge of carbon cycles, and Oregon's contribution to carbon stores including longer growth cycles and carbon trading programs could be asked.

F. Criterion 6: Maintenance and enhancement of long-term multiple socioeconomic benefits to meet the needs of society

1. SUMMARY OF CRITERION AND RELATED INDICATORS

Criterion 6 looks at the way sustainability affects socioeconomic benefits to meet the needs of society. There are five broad groupings of indicators: production and consumption; recreation and tourism; investment in the forest sector; cultural, social, and spiritual needs and values; and employment and community needs.

2. CURRENT PUBLIC OPINION

Survey research key questions

Two questions selected to assess current opinion on this criterion were taken from a 1997 public opinion survey (OFRI; Davis & Hibbitts, Inc., 1997). The 606 respondents were read two statements about forests and the forest products industry and then rated their opinion of the truthfulness of the statement. The first statement, "even though it won't be as large as it was in the past, the forest products industry will continue to be a major employer of Oregonians for the foreseeable future," was rated as definitely or probably true by 22% and definitely or probably not true by 76%.

"It is possible to find a compromise that allows an adequate timber harvest and protects Oregon's forest" was the second statement. Only 7% of respondents rated the statement as definitely or probably true and 89% rated the statement as definitely or probably not true.

In 1996, 1998, and 2000 (The Nelson Report, 2000), Oregonians in a statewide survey were asked about the importance of the forest products industry to Oregon's economy. Those saying it was somewhat or very important were 94% in 1996, 96% in 1998, and 94% in 2000. The most recent survey had a sample size of 500.

Additional questions for Criterion 6 were taken from a large public opinion survey conducted in 1999 for OFRI (Davis & Hibbitts, Inc., 1999). The questions used the Scaled Comparison Method which is a technique to establish the relative importance of issues. Respondents (n=310) were presented with rotating pairings of 15 forest management values and 12 forest management goals and asked to indicate which was more important. "Setting aside wilderness areas" and "clean drinking water" were ranked highest among forest management values, with "economically healthy rural communities" sixth and "forest industry jobs" eleventh. Ranked close to "forest industry jobs" was "recreation opportunities on forest land" and "protection of forest views." For forest management goals, "protecting streams for clean drinking water" was ranked highest. In a second tier of about equal goals rankings were "protecting forests from urban development," "protecting wildlife diversity," and "maintaining sustainable harvest levels."

Focus group research

A 1999 focus group study sponsored by OFIC (Davis & Hibbitts, Inc. 1999), recruited participants who voted no on measure 64 (to ban clearcutting) but considered voting for it because of concerns they had about clearcutting. In a discussion about the forest industry, participants agreed that the industry is important to the economy and most felt that the forest industry had declined in the last 10 years. The participants also had a vision for Oregon's forests in the next 30 years. Words used by the participants include "beauty, lush & tall, healthy, preserving old growth, wildlife habitat and camping and hiking." On the topic of forest landowners, the groups had the most positive imagery for family forest landowners and small woodland owners and the least positive imagery for industrial forest land owners.

C. SUMMARY OF EARLIER RESEARCH

In the 1986 Board of Forestry study (Moore Information, 1986), respondents were read a list of possible uses for Oregon forests and asked which was personally most important to them. "A source of jobs and tax revenues" was the second highest rated use with 19%. (The highest rated use with 27% was habitat for fish and wildlife.) Some 11% rated scenic attraction as the most important followed by recreation where you can take your car and recreation away from any roads, 10% each. A source of paper and wood products received 6%.

Next, respondents were asked to rate the same uses in terms of what was most important for the whole state. A source of jobs and tax revenues was rated highest with 45% followed by a source of paper and wood products (21%), a scenic attraction (5%), recreation where you can take your car (3%), and recreation away from any roads (2%).

Similarly, respondents were asked about harvesting practices. A majority of 89% agreed that harvesting trees is a major source of jobs and tax revenues. Just 9% disagreed with the statement and 2% said don't know/depends.

Finally, respondents were queried about their support for several forest management and harvesting practices. Exporting logs to foreign countries was supported by 52% and opposed by 43%. Setting aside more forest area where roads and tree harvesting are not allowed was supported by 59% and opposed by 35%.

In 1994, 97% of Oregonians in a statewide survey (The Nelson Report, 2000) said the forest products industry was somewhat or very important to Oregon's economy.

Oregonians were concerned about job loss from the timber industry in 1994. The 1994 OFRI survey of Oregonians asked the 650 respondents what was the most important problem facing people in Oregon today? Unemployment/low paying jobs was the highest response with 21%. Several issues tied for third with 7% including loss of timber/logging jobs. When asked specifically about using Oregon's forests as a source for jobs for loggers and mill workers, 61% percent said that it was somewhat or very important in 1994, 22% were neutral and 16% said it was not very important or not important at all.

4. CHANGES IN ATTITUDES

Results of recent and past surveys provide a mixed report on where Oregonians stand. There has been a consistently strong positive belief in the importance of the forest products industry to Oregon's economy during the 90s and to the present. On the other hand, Oregonians also do not believe the forest industry will continue to be a major employer in the state. Moreover, the same survey reported that Oregonians did not think that sustaining forests and maintaining harvest could happen at the same time. Looking back at the academic research, Oregonians were nearly split on setting aside endangered species laws to preserve timber jobs. Similarly, the 1986 Oregon State Board of Forestry study found that Oregonians had different views about what forests meant to them personally than what forests meant to the state, placing the economy well above wildlife as important for the state.

5. FURTHER RESEARCH

Criterion 6 covers many issues, some of which have been covered more thoroughly than others in available research. Specifically, the role of the forest as an economic force and source of jobs is fairly well documented in the survey research, although questions related to adding value and production efficiency have not generally been asked. Public knowledge and interest in investment in the total forest sector, and specifically in research, development, and improving technology, also have not been explored.

Other questions can be pulled from the indicators to help strengthen our knowledge of public opinion. Knowledge questions such as how much forest land and facilities in Oregon are set aside for recreation and tourism could be asked. (One study from OSU tried to determine if people would rate different kinds of harvested forests as acceptable for recreation. Perhaps this could be explored throughout Oregon.) Few questions have been asked about the public's cultural, social, and spiritual values specifically related to forests.

G. Criterion 7: Legal, institutional and economic framework for forest conservation and sustainable management

1. SUMMARY OF CRITERION AND RELATED INDICATORS

As described in the Montreal Process (2001), Criterion 7 relates to the overall policy framework that can facilitate the conservation and sustainable management of forests. Included are the broader societal conditions and processes often external to the forest itself but which may support or hinder efforts to conserve, maintain, or enhance one or more parts of the criteria.

2. CURRENT PUBLIC OPINION

Survey research

Three questions were selected from the 1997 statewide public opinion survey (OFRI; Davis & Hibbitts, 1997) to examine current public opinion related to the policy framework for sustainable forest management. The first question listed individuals and groups that might have something to say about forest management activities in Oregon. Table 8 below shows how the respondents ranked the groups based on the amount of trust they had in each. It appears that Oregonians have the greatest amount of trust in Oregon State University Forest Scientists and State of Oregon forestry officials. The respondents also had almost equal amounts of trust and distrust in the forest products industry and environmental groups.

Table 8

	Great deal	Fair amount	Just some	Not too much	No trust at all	Don't know
Forest Scientist from OSU	36%	23%	19%	5%	2%	8%
Oregon State forestry officials	19%	34%	24%	13%	4%	7%
OFRI	14%	21%	17%	4%	2%	41%
Forest products industry	10%	27%	27%	19%	11%	6%
Environmental groups	10%	23%	25%	18%	22%	6%
News media	4%	23%	31%	22%	16%	3%

The second question was selected from the same 1997 survey. Respondents were asked who or what they thought decided how much timber was harvested in Oregon. The responses were politics (44%), government policy (26%), market conditions (23%) and science (1%). A remaining 6% did not know or did not respond. It is interesting that even though Oregonians trust scientists at OSU the most, science is viewed as having virtually no influence on forestry policy decisions.

The final question was taken from the 2000 OFIC study of 505 registered voters in Oregon (The Nelson Report, 2000). The question asked respondents how good a job Oregon's forest protection laws have done in protecting Oregon's forests. Some 44% gave the laws a positive rating, 47% gave the laws a negative rating, and 9% were not sure.

Focus Group Research

Participants in four focus groups in 1999 (OFIC; Davis & Hibbitts, Inc., 1999) indicated support for legislation to limit clearcutting. Participants in these focus groups were those who had voted no on a measure to ban clearcutting but had considered voting for it.

A 1996 focus group study in Portland explored participant knowledge of the Oregon Forest Practices Law (OFRI; Moore Information, 1996). Participants were most aware of laws concerning reforestation of clearcuts (15 out of 23), penalties for violating the laws (13 out 23), and protection for sensitive wildlife (11 out of 23). Despite limited knowledge of the laws, there was widespread support for most components of the laws.

3. SUMMARY OF EARLIER RESEARCH

Looking back at past studies of public opinion, there are several studies with similar questions for comparison. In 1986, Oregonians were randomly selected to participate in a telephone survey of forestry practices (n=600) sponsored by the Board of Forestry (Moore Information, 1986). The respondents were asked who should have the most say in how Oregon's forests are managed. The highest rated group was the public with 59%. Forest landowners received approval from 11%, followed by the forest products industry (9%), combinations (8%), government officials (7%; 60% of those respondents specified state government), and special interest groups (3%).

In terms of privately owned forest land only, 74% of respondents thought that the land owners should have the most say in how the land was managed. A remaining 12% thought the public, followed by government officials (7%), combinations (3%), the forest products industry and special interest groups (2% each).

Next, the respondents were asked about the importance of different responsibilities of the Board of Forestry (see Table 9). Of the three responsibilities, respondents thought that all were important but that forest research and education were the most important.

Table 9

Importance:	Very (5)	(4)	Somewhat (3)	(2)	Not (1)	DK
Tax policies which encourage private investment in forest management	26%	20%	30%	12%	9%	4%
Assisting small, private landowners in managing their forestland	38%	22%	26%	8%	6%	1%
Forest research and education	54%	26%	14%	4%	1%	1%

In April 1994, OFRI sponsored a telephone survey of 605 Oregonians (Moore Information; 1994). The survey was designed to set a baseline of Oregon's knowledge and views about Oregon forests and forest management. Similar to the first question above, respondents were asked how much trust they would place in certain organizations that might have something to say about forests and forest management (see Table 10). The *italicized* groups are most similar to the question asked in 1997.

Table 10

	Great deal	Quite a bit	Some	Not too much	No trust at all	Don't know
A forest scientist	22%	33%	33%	4%	3%	5%
A fish biologist	20%	33%	32%	5%	5%	5%
A university forest professor	14%	25%	38%	11%	7%	5%
US Forest Service	14%	22%	44%	12%	6%	3%
The state forester	13%	30%	40%	8%	3%	7%
Environmental Organizations	11%	14%	30%	18%	24%	3%
A private industry forester	7%	11%	35%	23%	13%	4%
A forest products industry association	6%	18%	39%	17%	13%	6%

In another 1994 study, OFIC asked registered voters in Oregon about forest protection laws (The Nelson Report; 2000). In response to the question how good a job Oregon's forest protection laws are doing protecting Oregon's forests, 23% gave positive ratings, 50% gave negative ratings, and 27% did not know.

4. CHANGES IN ATTITUDES

Studies in 1986, 1994, and 1997 explored the public's views about who should be managing Oregon's forests. Each survey provided respondents with different choices making exact comparisons difficult. However, a look at the relative rankings of different groups shows one trend. From 1986 to the present, government officials and state forestry officials gained approval rising from 4th to 2nd in relative ranking.

One interesting shift from 1994 to 1997 is the ranking of environmental groups, private foresters, and forest products associations. In 1994 environmental groups were ranked above the private forester and forest products associations. In 1997 trust in environmental groups dropped as did their ranking compared to the other two groups. Scientists/professors ranked highest in both polls. The slight shifts in terminology make a direct comparison less reliable. It appears Oregon forestry officials gained trust from 1986 to 1997, as did the forest products industry.

Between 1994 and 2000, the OFIC surveys of registered voters (The Nelson Report, 2000) showed that positive ratings of the forest protection laws increased from 23% to 44%. There was little change in the negative rating, which dropped by 3% from 1994 to 2000. The increase in the positive rating can be attributed to a decrease in respondents who did not know from 27% in 1994 to only 9% in 2000.

A possible consistent finding in the past 15 years concerns research and education. There is a continuing interest among Oregonians to support research and education. This is supported by the high ranking of research and education for the Oregon State Board of Forestry surveys in 1986 and high rankings of forest scientists in 1994 and 1997surveys.

5. FURTHER RESEARCH

Current public opinion research has provided some information about Oregonians' opinions of the legal framework in terms of forest management including which organizations the public trusts to make decisions about forest management. Due to the vast scope of this criterion, there are many opportunities to further explore public opinion about the legal, institutional and economic framework for sustainable forestry management. For example, researchers could ask the public how well the department of forestry provides opportunities for public participation in policy and decision making.

Issues related to property rights, including those raised by the recent passage of Ballot Measure 7, may be important areas to explore. Other areas might include the perceived effectiveness of public education and extension programs, investment and tax policies that support or hinder sustainable management, and support for allocating resources for measuring and monitoring changes in indicators. The application of research and development is perhaps better addressed by other groups, possibly those the public has indicated they trust most – OSU forest scientists and the Oregon Department of Forestry for example.

IV. CONCLUSION

The Criteria for Forest Sustainability are the new framework adopted by the Oregon Board of Forestry for planning future sustainable forest management in Oregon. This report reviewed public opinion research during the last decade, assessing what is currently known about Oregonians' views on forest management and discussing how those views relate to the seven CFS. The review showed that existing public opinion research has covered many topics that are encompassed within the seven criteria for sustainability. However, the completeness varies considerably depending on the criterion.

It was not surprising that certain issues, such as clearcutting and old growth, were well documented in the studies. Other issues such as forest health and carbon stores are newer and not as well documented. Recommendations for future research were made for each criterion. These recommendations will be used as part of the development of phases two and three of this project which are focus group and survey research.

Ongoing opinion research about forest management issues will provide opportunities to add new lines of questioning, reassess past lines of questioning, provide ongoing information about trends in public opinion, and suggest possibilities for approaches that use local forums and new research and consensus building techniques to explore the tradeoffs people are willing to make to reach the goal of sustainable forest management. When the project is complete, the body of research on public opinion in Oregon will be more complete and provide a good foundation of social information for future sustainable forest management planning.

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