

**INITIAL SOCIAL ASSESSMENT OF
PROXIMATE COMMUNITIES
CENTRAL CASCADES ADAPTIVE MANAGEMENT AREA**

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Introduction

Recent policy changes for the management of federal forest lands in the Pacific Northwest have called for ecosystem-based practices with greater cooperation between federal and local agencies, private forest landowners, and the general public. A substantial emphasis has been placed on community-oriented forestry; that is, management that takes into account the social and economic interests of its forest proximate communities. In order to facilitate forest management that is both ecosystem-based and community-oriented, adaptive management strategies have been adopted that include the formation of adaptive management areas in Washington, Oregon, and Northern California.

The Central Cascades Adaptive Management Area in the Willamette National Forest is one of ten such areas designated to encourage the development and testing of technical and social approaches to achieving desired ecosystem management objectives. Part of ecosystem management is developing an understanding of local communities and encouraging public support and participation. Meeting technical and social challenges will require resource managers to integrate the experience and ingenuity of their forest communities. Like other adaptive management areas, the Central Cascades AMA is currently involved in assessing its surrounding community of publics.

This report uses secondary data compiled from studies conducted at Oregon State University to provide an initial assessment of those communities proximate to the Central Cascades AMA. Its purpose is to give forest managers a base-line inventory of demographic and other social information upon which to initiate a public engagement

strategy. Working together, federal forest managers and university researchers will be able to identify gaps in the information framework and prioritize further data collection and needs assessment. It is assumed that additional research will be driven not only by available time, human, and financial resources, but also by the guiding adaptive management principles of innovation and experimentation.

Secondary Data and Report Organization

A substantial amount of information already exists for populations within the Pacific Northwest. Many public agencies have collected data for a variety of purposes. Examining this secondary source of information can be a relatively fast and inexpensive way of obtaining a cursory overview of a specific community of interest. A common problem with such data, however, is that existing information is typically not collected nor tabulated in a consistent manner (or with the secondary purpose in mind), and consequently may be difficult to compare. Data analysis and interpretation must take these factors into consideration.

In the case of the Central Cascades AMA, several recent studies can help provide relevant insights. University researchers conducted a random sample survey of 931 Lane and Linn County residents in the spring of 1994 regarding uses and management preferences for the adjacent Willamette National Forest (Steel, List, Shindler, and Smith, 1994). This survey provides the basis for an initial assessment of AMA proximate communities. Three broader, yet related studies can also offer useful insights regarding the Central Cascades AMA "publics." Shindler, List, and Steel (1993) conducted statewide (Oregon) and national studies relating to public attitudes and preferences for forest management in the northwest as

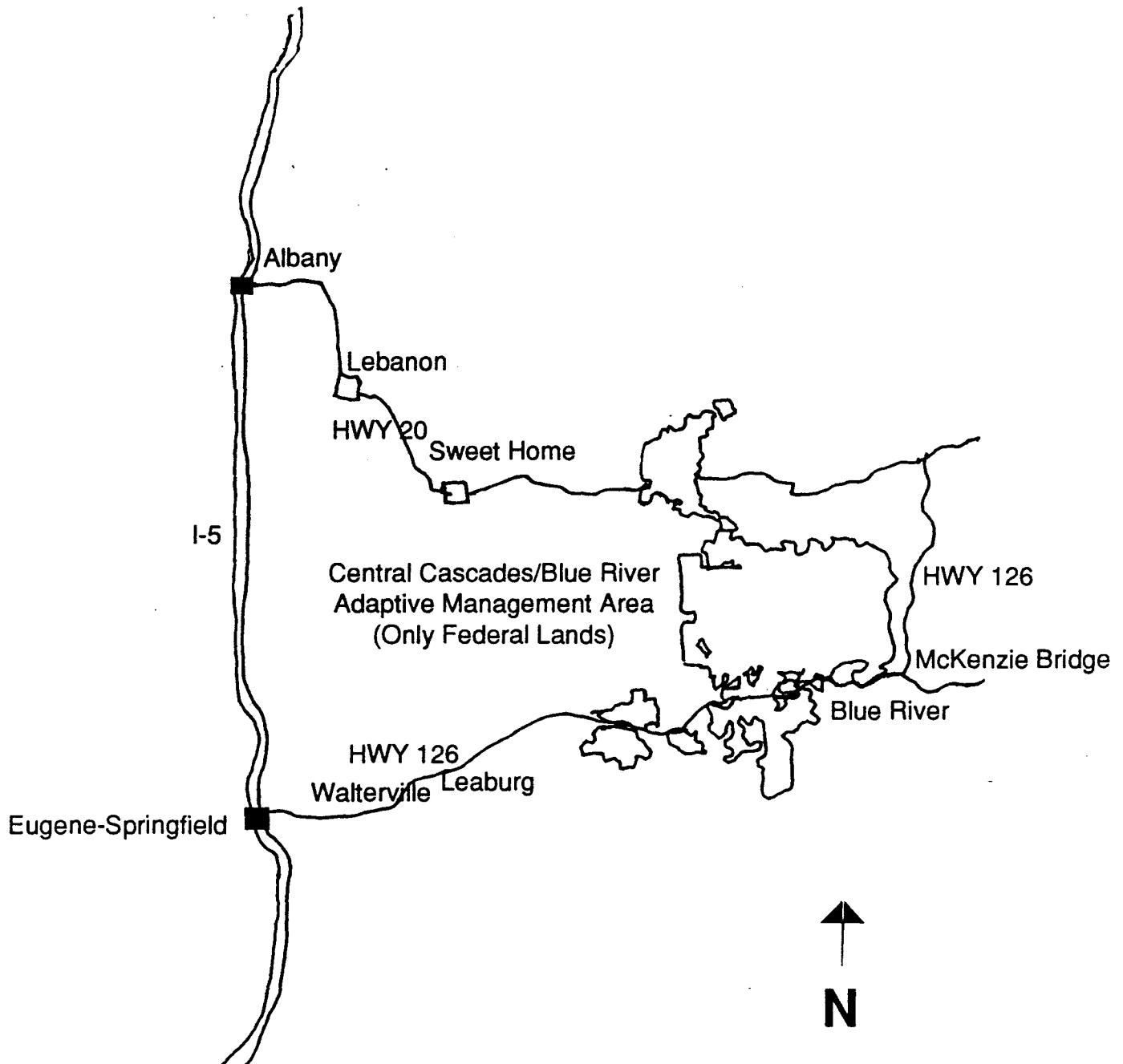
well as a study of 93 Oregon-based interest groups (Shindler, List, and Steel, 1994) that have been active in federal forest planning issues. Where appropriate, findings from the Lane/Linn County study are compared with results of the larger studies to help place the attitudes and positions of local publics in context.

One tenet of ecosystem management is the concept that watersheds represent a physically and ecologically relevant and socially acceptable scale for managing forest resources (FEMAT, 1993). The Lane/Linn County survey is convenient in that it allows for partitioning of responses by the significant watersheds of the Central Cascades AMA: 1) the McKenzie River drainage and 2) the South Santiam River drainage. This approach also seemed logical in that management jurisdictions among the responsible federal resource agencies (U.S. Forest Service and Bureau of Land Management) are generally aligned with this watershed delineation. Thus, this report uses responses (n=744) from those proximate AMA communities within these two critical watersheds (see Figure 1). Included within this sample are the major county population centers of Eugene, Springfield, and Albany) that have both a substantial interest in and impact on forest policy within the Willamette National Forest. Communities not included are those in western Lane County (Coast Range region), southern Lane County and a few isolated areas in northern Linn County. For purposes of this report, the proximate communities studied herein will be called the AMA communities.

This summary document describes the social attributes of the AMA communities from available data. It is divided into three sections. The first section reports demographic and forest use data to introduce basic community profiles. Section two discusses the public's

Figure 1

Central Cascades/ Blue River Adaptive Management Area



awareness of forestry issues, preferences for public involvement, and attitudes toward forestry institutions and organizations. Section three describes public preferences for selected management practices and opinions related to the concept of adaptive management. This data is intended to provide baseline information from which resource managers and researchers can identify information gaps and set targets for the next steps in social inquiry.

Presentation of Data

An important component of social assessment is to find meaningful formats to present and explain data on the population of interest. In the case of the Lane/Linn County survey, data can be stratified by zip code. Although zip codes do not follow precise watershed contours, it is a fairly simple task to assign zip codes to approximate watershed designations. However, one shortcoming of random sampling that immediately became discernable was the variability of sample sizes among zip codes. For example, there were a large number of respondents for zip codes within the City of Eugene while there were a relatively small number for rural areas such as McKenzie Bridge or Cascadia. A common practice in such cases is to aggregate data categories where practical and when central tendencies statistically allow for aggregation. To this end, ANOVA Multiple Range Analysis tests were conducted on key variables to look for similarities and differences among zip code groupings. Results showed that aggregation was not only possible, but desirable as a meaningful way to discuss findings. Based on significance tests, three geographical groupings emerged as a functional way to describe findings: 1) communities within the general South Santiam drainage (N=363), 2) communities within the general McKenzie drainage, east of Eugene (n=183), and 3) the City of Eugene (n=198). These are delineated in Figure 2.

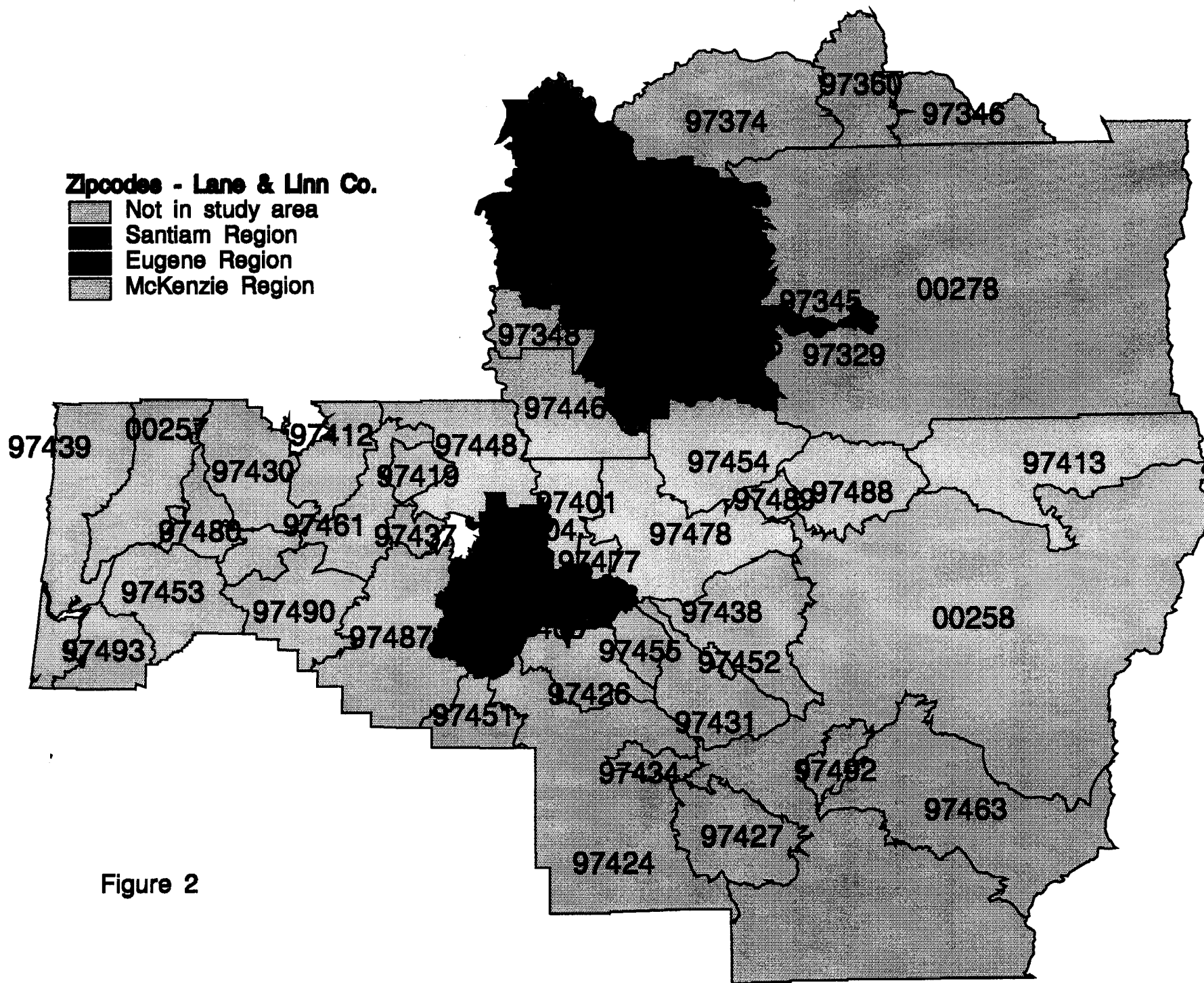


Figure 2

SECTION 1: COMMUNITY PROFILES

Developing a community profile is a good start in understanding the nature of the public that surrounds an adaptive management area. Geographical residence is often a quick and easy point of reference because we can identify these places spatially on a map and visually compare communities. Conventional wisdom suggests that the further we get away from urban areas with public opinion surveys the more likely we are to find citizens with traditional (commodity-based) attitudes about forests (forests are for human use and consumption), about forest practices (clear-cutting is okay), and about the way forest decisions should be made (by forest agency professionals). But more recent research (Rasker, 1993; Brunson, Shindler, List, and Steel, 1994) indicate other social factors are also at work, and these may have a greater influence on public opinion than the simple urban/rural dichotomy. For example, our society's increased mobility has allowed typically urban workers to live in more rural settings and "commute" via modem, computer, and FAX. Similarly, more retirees are taking up residence in forest communities and bringing their incomes (e.g. transfer payments) with them. We have found that in addition to place of residence, attributes like age, education, political beliefs, and economic dependence on the timber industry are all associated with attitudes and preferences for forest management policies.

Using the rationale that basic demographic information is useful, we begin to build a profile that may represent our communities of interest. Existing information (from the Lane/Linn County data) on the AMA communities is displayed in Tables 1 and 2 and Figures 3 and 4.

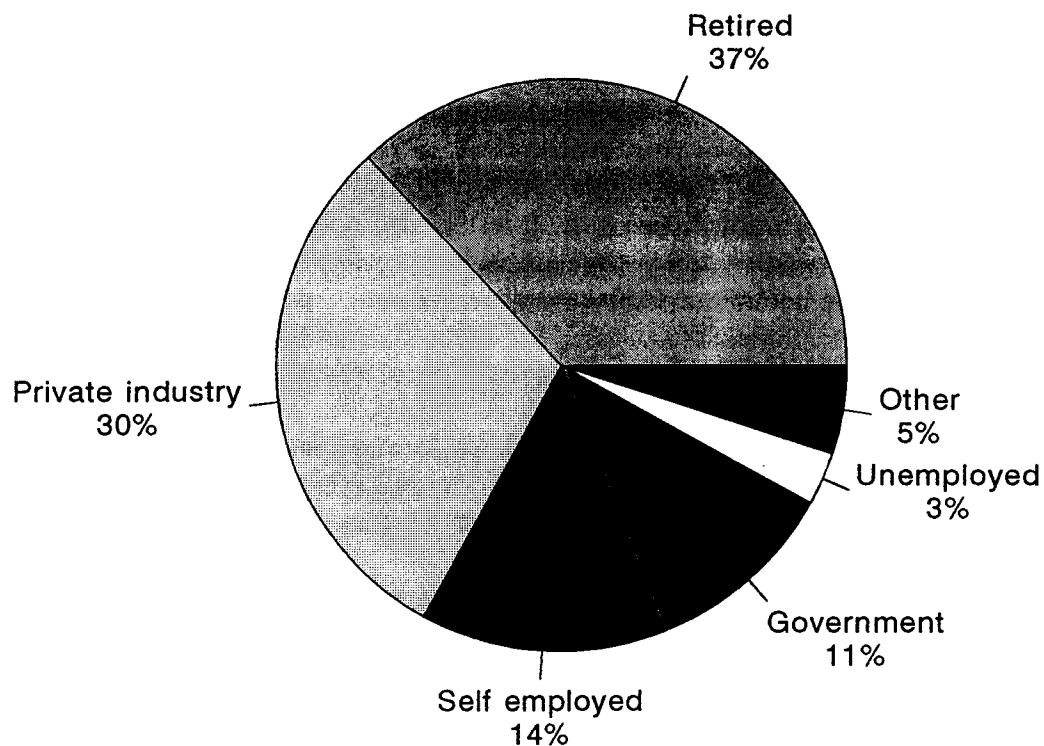
Table 1
Community Profile

	Total	Eugene	Santiam	McKenzie
N	744	198	363	183
Age (mean)	54	52	55	56
Female	52%	55%	52%	46%
Male	48%	45%	48%	54%
Income (annual mean)	\$21,900	\$22,200	\$21,300	\$22,700
Level of education				
High school	26%	16%	35%	21%
Some college	48%	54%	45%	48%
College degree	16%	18%	14%	18%
Advanced degree	10%	12%	6%	13%
Years residing in Lane/Linn Co.	32	28	34	30
Less than 5 years	6%	8%	3%	8%
Economic Sector				
Private or self-employed	44%	47%	43%	44%
Government	11%	13%	10%	11%
Retired	37%	29%	40%	38%
Unemployed	3%	5%	2%	2%
Other	5%	5%	5%	5%
Members of immediate family dependent on timber industry for economic livelihood	33%	22%	37%	39%
Self-described ideology				
Liberal	10%	18%	7%	6%
Moderate	71%	63%	76%	70%
Conservative	19%	19%	17%	24%

Average age, income, and education level for the AMA communities tends to compare well to other populations surveyed (i.e. Oregon and national samples). In general, we know that older, more educated people with higher incomes tend to respond to natural resource surveys. These individuals usually have more time to fill out questionnaires, tend to be more interested, and may feel they have more at stake in forest management decisions.

Several other profile characteristics are worth noting. First, individuals would seem to be well entrenched in these communities. Average length of residence is between 28 and 34 years with relatively few individuals having moved into Lane or Linn county in the last five years. This suggests that the public at large has a good sense of the landscape around them and, more importantly, may have a strong interest in how it is allocated and managed.

Figure 3
Economic Sector Employment
Lane/Linn AMA communities



The second item of note is the economic sector data. There seems to be a relatively high number of retirees in the sample (particularly the Santiam community). The 37% figure overall compares well with our statewide survey (35%), but is substantially higher than what we find in interest group membership (25%). In any case, an essential point is that retirees may have different expectations regarding forest management. Not unexpectedly, we also see a high number of individuals (33% overall) dependent on the timber industry. Eugene's timber dependence (22%) is much closer to our reported statewide level of 21%, with the Santiam (37%) and McKenzie (39%) communities reflecting a much higher level of employment in this sector.

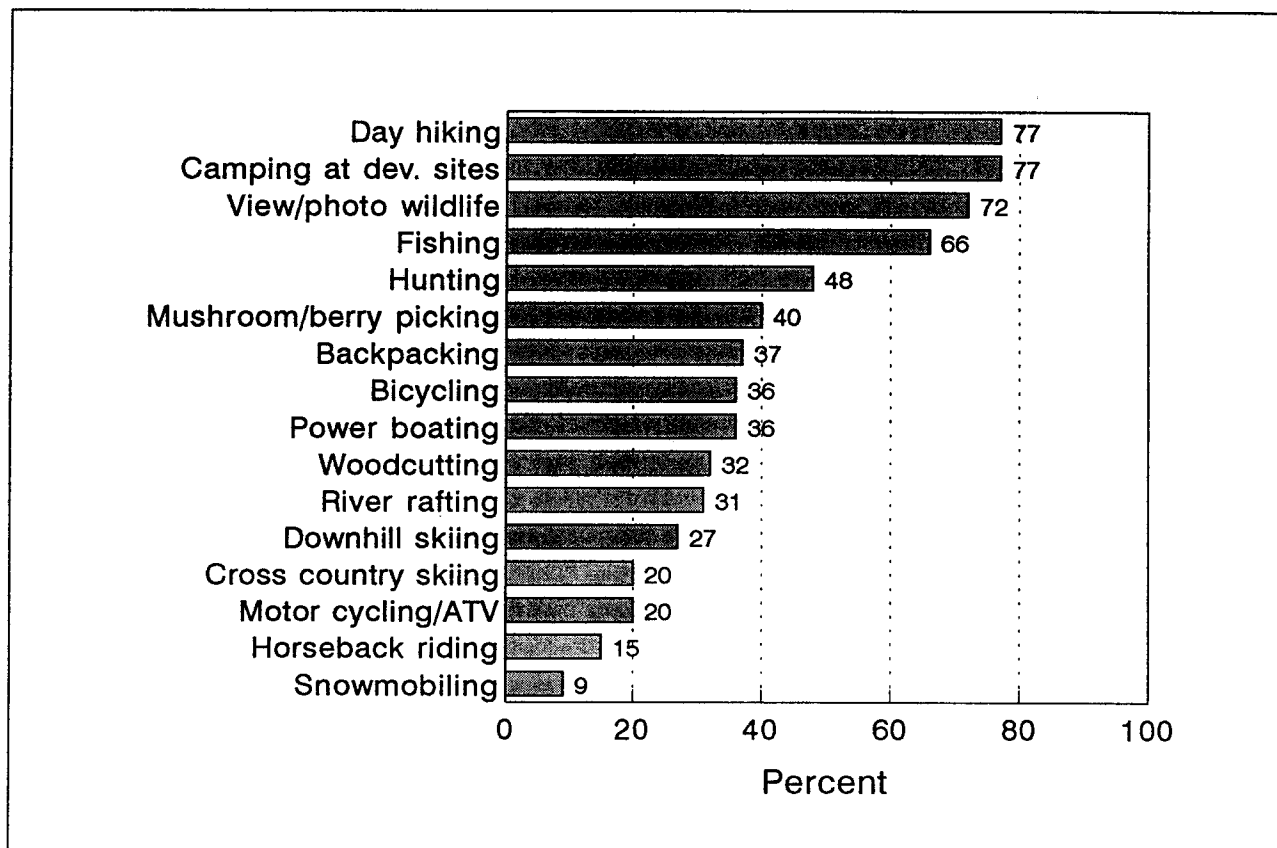
Also as expected, there is a difference in political orientation between the communities. Eugene is likely to support more liberal ideas, whereas the other communities may tend to select a more moderate or conservative approach.

The information on recreational use of the forest is also noteworthy. Frequencies in Table 2 suggest that all three communities make substantial use of the Willamette National Forest for a variety of activities. As an important recreational resource, most residents are likely to expect continued access to their preferred sites and anticipate that some level of protection will be given to these areas. Given the length of time people have resided in these communities, many have probably developed strong attachments to specific places and these feelings are likely to carry a greater level of expectation.

Table 2
Recreational Use of Forests

	Total	Eugene	Santiam	McKenzie
Visit any forest for recreation:				
Never	3%	1%	5%	1%
Occasional (few times a year or less)	64%	57%	67%	65%
Frequent (at least monthly)	33%	42%	28%	34%
Visit the Willamette National Forest:				
Never	4%	1%	4%	5%
Occasional (few times/year or less)	76%	76%	80%	69%
Frequent (at least monthly)	20%	23%	16%	26%
Use the Willamette National Forest for:				
Day hiking	77%	70%	79%	81%
Camping in developed sites	77%	77%	79%	74%
View/photo wildlife	72%	73%	74%	68%
Fishing	66%	52%	76%	64%
Hunting	48%	28%	62%	45%
Mushroom/berry picking	40%	33%	42%	43%
Overnight backpacking	37%	40%	37%	32%
Bicycling	36%	44%	29%	40%
Power boating	36%	27%	45%	30%
Woodcutting	32%	21%	35%	39%
River rafting	31%	37%	26%	34%
Downhill skiing	27%	36%	22%	25%
Cross country skiing	20%	29%	17%	16%
Motor cycling/ATV	20%	14%	24%	18%
Horseback riding	15%	15%	17%	11%
Snowmobiling	9%	6%	10%	9%

Figure 4
Recreational Use of Forest
 Percent of public using Willamette N.F. for:



SECTION 2: PUBLIC AWARENESS AND INVOLVEMENT

Data about the public's awareness of and involvement in forestry issues are reported both in table form (Tables 3 & 4) and graphically (Figures 5-9) throughout this section. A large percentage (89%) of all community residents indicate they pay either a moderate amount or great deal of attention to federal forestry issues (Table 3). About half overall reported being moderately or well informed about the President's Forest Plan for ecosystem management even though the plan was relatively new at the time of the survey. That the McKenzie community feels significantly better informed on the plan may be related to local outreach efforts of the Forest Service's Cascade Center for Ecosystem Management in Blue River. Additionally, about half of all respondents mentioned having had some contact with federal forest managers with the majority of these contacts being satisfactory. On a comparative basis nationally, the sum of this involvement reflects a high degree of knowledge and continuing interest in federal forest management by local citizens.

The most important sources of information for residents tend to be newspaper and television, while only 16% consider the natural resource agencies as important sources. This view of acquiring information is consistent with a study of communities on the Tongass National Forest (Shindler, Peters, and Kruger, 1994) where citizens feel the Forest Service could make better use of public communication channels to provide information on specific actions and projects. The AMA communities also cite friends and relatives as an important information source, which is particularly noteworthy in small forest communities because friends or relatives can often end up being forest agency employees. A point often lost on

these staff members is that their personal contributions to the community are widely recognized by residents (Shindler et al. 1994).

Table 3
Awareness/Involvement in Forest Issues

	Total	Eugene	Santiam	McKenzie
Percent reporting moderate or high level of attention given to federal forestry issues.	89	92	88	89
Percent reporting moderately or well-informed about Clinton forest plan.	48	45	44	58
Important sources used for federal forest information (%)				
Newspaper	86	88	84	87
Television	77	79	78	74
Radio	53	61	49	52
Magazines/books	52	58	50	48
Friends/relatives	41	44	40	39
Interest groups	33	48	26	30
Natural resource agencies	16	17	14	21
University classes	13	14	14	9
Business representatives	8	9	3	11
Contact with federal forest managers (%)				
None	49	53	46	48
Seen or talked with them	28	23	28	31
Read agency newsletter or info.	28	35	26	24
Attended public meeting	10	14	10	6
Phoned or written to them	6	11	4	5
Personal visit	6	8	4	7
Commented on forest plan	5	10	4	2
Worked as volunteer	3	8	1	3
Served on panel on task force	<1	<1	<1	<1
Generally, these contacts were: (%)				
Pleasant, enjoyable	32	32	30	33
Okay	30	31	27	35
Not satisfying, some problems	9	5	11	10
Frustrating/difficult	6	9	5	5
No basis for judgment	21	21	23	18
Public's role in federal forest management should be: (%)				
None, let resource professionals decide	6	2	9	3
Provide suggestions and let professionals decide	21	14	21	31
Serve on advisory boards	38	48	34	37
Act as full and equal partner	25	30	24	22
Public should make decisions	8	4	10	7

Figure 5

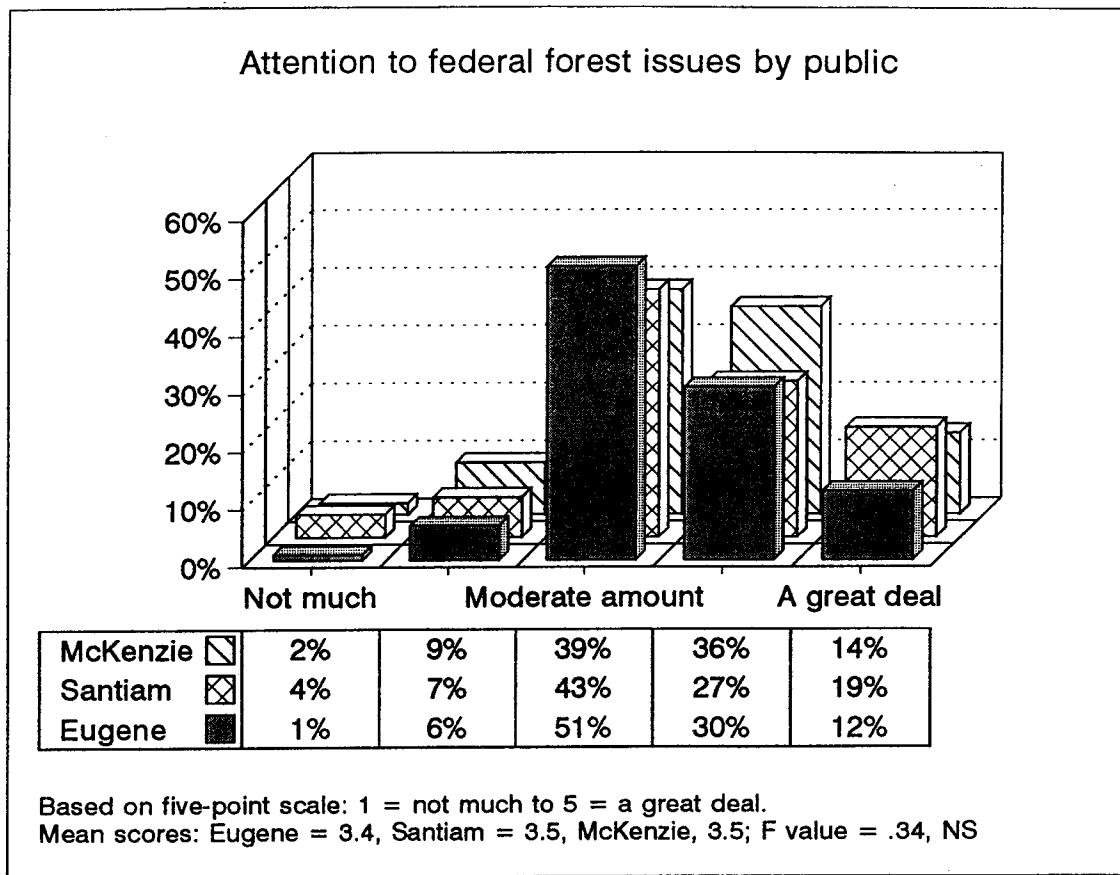


Figure 6

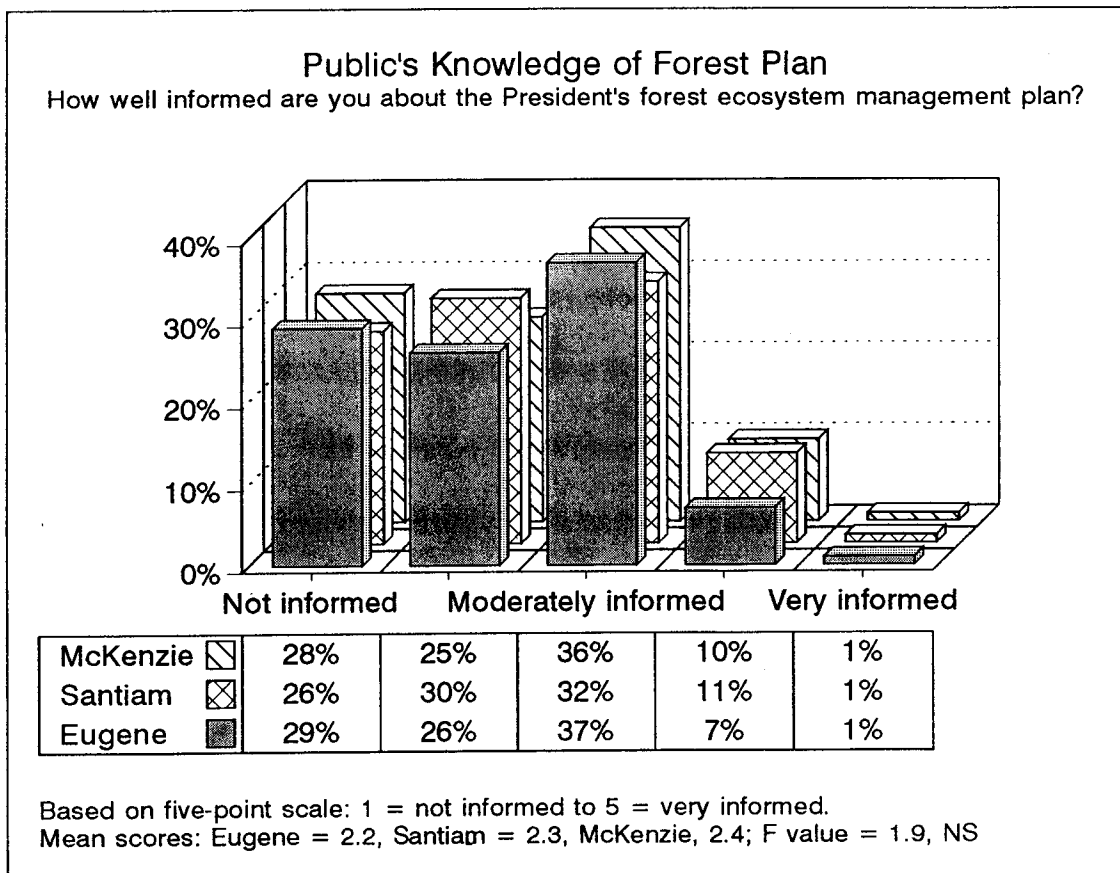
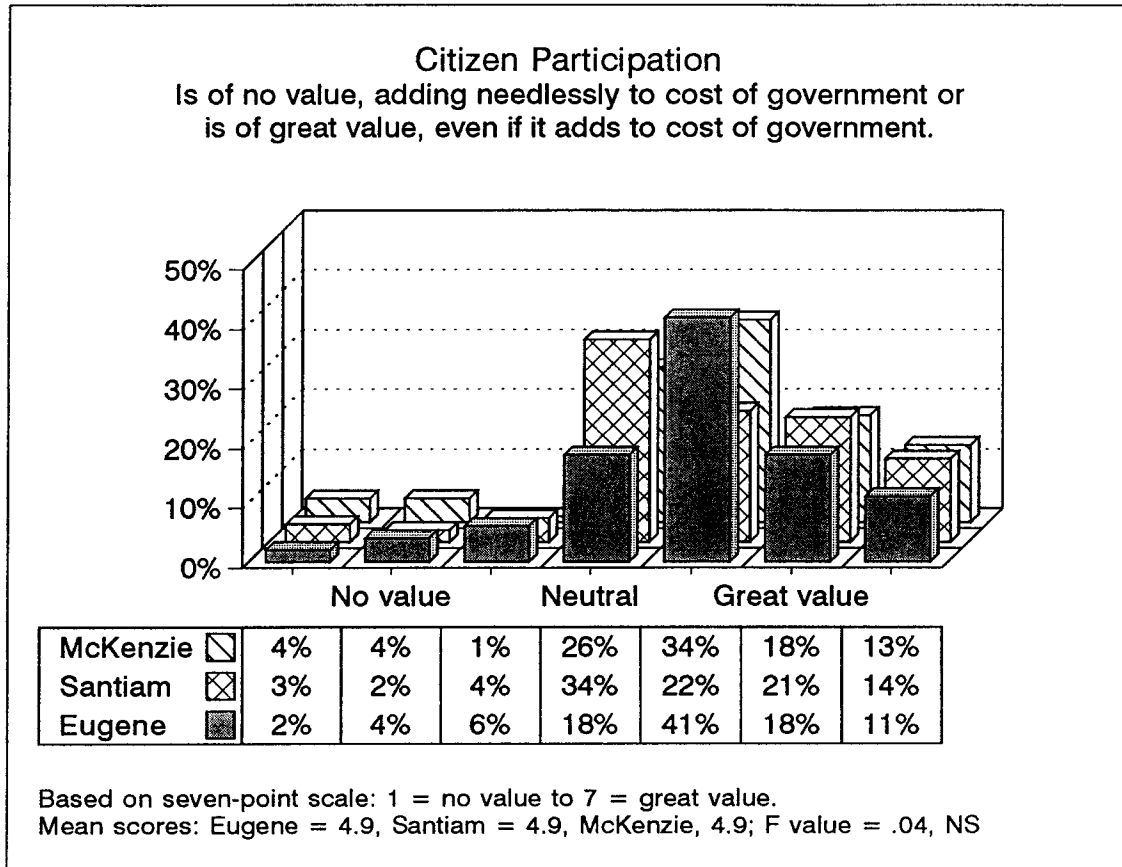


Figure 7



The involvement and support of local publics is a key component for adaptive management sites. Figure 7 shows that a strong majority among the local communities share this view, even if it costs more to conduct business. Disparate views probably account for reaction: the belief that decision quality improves if the public is included more effectively and the presence of an informed public that increasingly distrusts bureaucracies (Knopp and Caldbeck, 1990). Regardless of the reason, there is an expectation among the public that they will be involved in resource decisions and allocation.

Opinions about Federal Forestry Decision-making

The success of plans for adaptive management may be influenced by how local communities think federal forest decision-making has been going in recent years, and thus the need for new approaches to forest management. Specifically we asked citizens what confidence they have in the organizations, groups, and institutions that are involved in forest policy to actually contribute to good forest management decisions. We also asked how much influence should be entrusted to these same organizations. Responses are shown in Table 4 and Figures 8 and 9.

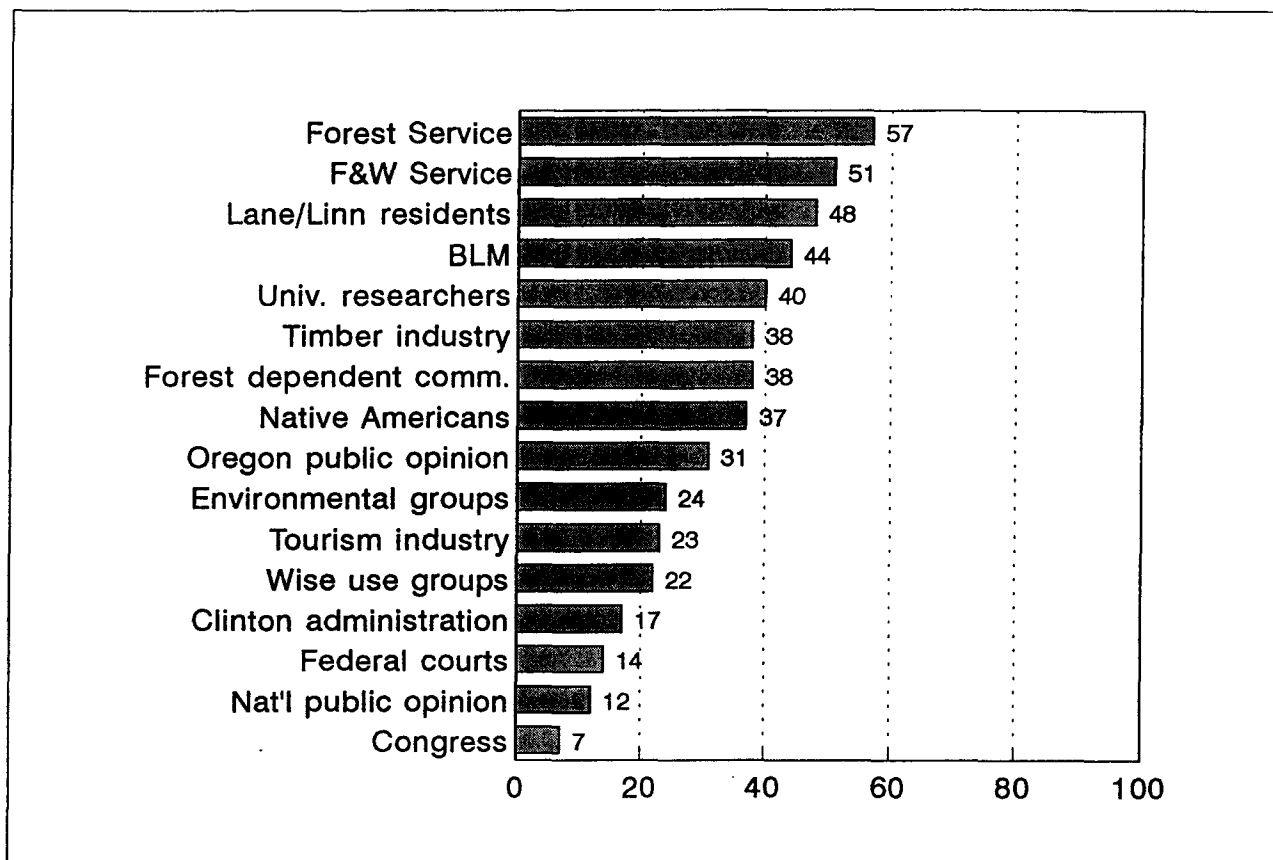
The organizations/institutions that people have the most confidence in include the Forest Service, the BLM, the Fish and Wildlife Service, and Lane and Linn County residents themselves; although Eugene respondents seem to have substantially less confidence in this last group than their counterparts. Eugene also appears to have more confidence in university researchers and environmental groups, while Santiam and McKenzie lean more toward the timber industry or forest dependent communities. These latter findings probably reflect greater visibility of these groups in the Santiam and McKenzie communities. On the other end of the spectrum, little confidence was generated for the more national organizations and institutions (Clinton administration, federal courts, national public opinion, Congress). This information reflects similar findings in statewide study as well as with communities on the Tongass National Forest.

Table 4
Public Attitudes About Forestry Organizations/Institutions

	Total	Eugene	Santiam	McKenzie
Percent having confidence in:				
U.S. Forest Service	57	56	57	59
Fish & Wildlife Service	51	57	49	51
Lane/Linn County residents	48	36	56	44
BLM	44	44	43	45
University researchers	40	46	37	39
Timber industry	38	26	45	39
Forest dependent communities	38	26	43	43
Native Americans	37	40	37	32
 Oregon public opinion	31	28	35	27
Environmental groups	24	41	15	23
Tourism industry	23	25	20	24
Wise use groups	22	26	20	21
Clinton administration	17	24	13	17
Federal courts	14	15	11	19
National public opinion	12	12	12	11
Congress	7	6	8	7
 Organizations that should influence federal forest management:				
U.S. Forest Service	72	75	73	68
Fish & Wildlife	65	72	62	60
Lane/Linn County residents	54	47	58	55
BLM	63	65	63	60
University researchers	50	53	50	44
Timber industry	44	35	51	42
Forest dependent communities	47	37	51	51
Native Americans	40	53	33	35
 Oregon public opinion	42	39	45	42
Environmental groups	29	44	20	26
Tourism industry	26	24	24	33
Wise use groups	28	33	22	27
Clinton administration	24	31	19	23
Federal courts	19	23	19	17
National public opinion	16	18	15	13
Congress	20	20	20	19

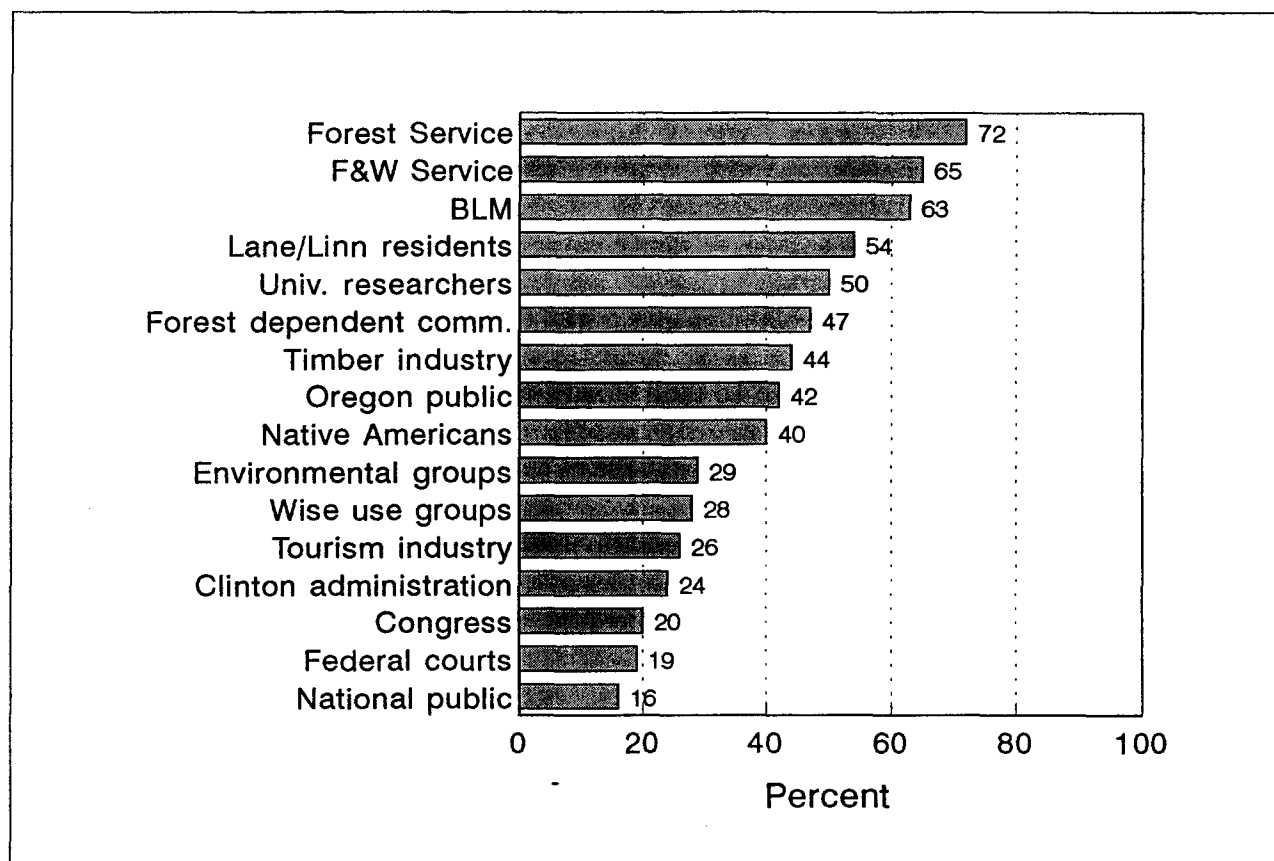
Public Attitudes about Forestry Institutions and Organizations

Percent of public having confidence in:



Public Attitudes about Forestry Institutions and Organizations

Who should influence federal forest management?



Similar results are shown for how much influence each of these groups should have in forest decisions; except in this case, the strength of response is usually greater for the most highly ranked organizations (the Forest Service, BLM, Fish & Wildlife Service, Lane/Linn County residents, university researchers). In an isolated case, Eugene also felt more strongly about Native Americans.

Findings indicate that people in the AMA communities have the most confidence, and also the highest expectations, in the traditional organizations and institutions that have had long-term involvement in federal forest management in this area. They demonstrate the least confidence in the organizations and institutions that, in the last few years, have become the most influential in the federal forest management arena. This probably reflects local frustrations with forest management by lawsuit and by court decree, and certainly reflects the impact that these organizations have recently had on their lives and their livelihoods. It may also indicate what we believe is now a common view among the general public: that politics, not forest health or local communities, is the driving factor in forest decisions (Shindler et al. 1993; Shindler et al. 1994). Moreover, while local feelings and frustrations about political decisions may align with traditional timber/environmental positions, no one is happy.

These feelings are evident in opinions about who should influence federal forest policy. All communities think it should be the federal forest agencies, above all others, but also should include local citizens and university researchers. Regardless of their position on the issues, people recognize that our forest agencies -- while being far from perfect -- are sound organizations that have served us well in the past and are our best hope for the future

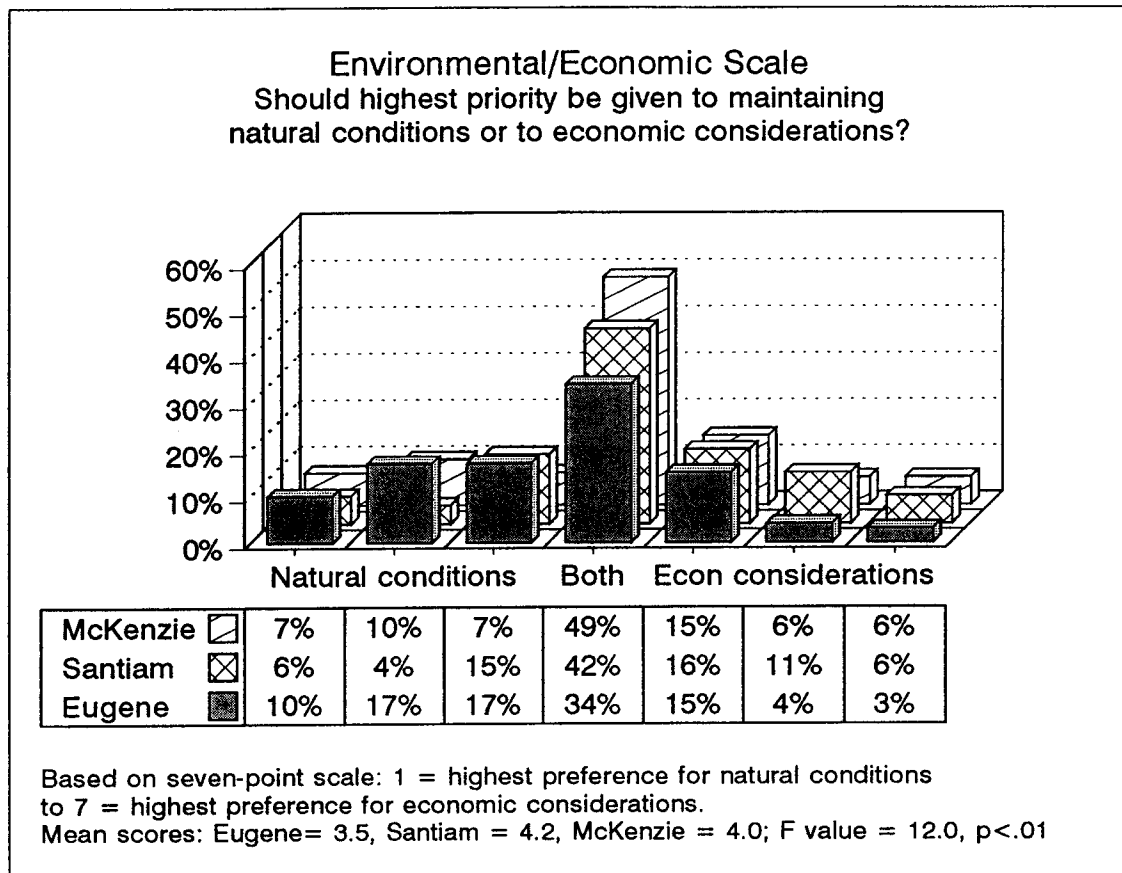
(Wondolleck and Yaffee, 1994). The inclusion of citizens and researchers in this decision-making group suggests an interest in (1) more local control, (2) assurances that the agencies can be trusted to effectively implement decisions and (3) better answers to ecological questions that have been generated by the forestry debate.

It is clear that the AMA communities think that federal agencies working with citizens and others locally ought to have the strongest influence on federal forest management. The public prefers one of three kinds of roles for themselves, ranging from simply providing suggestions to resource professionals to acting as full and equal partners in decision-making. In any regard, this seems to reflect well on the model of adaptive management and community-based planning. A critical element then, will be to establish a workable system that allows community participation and promotes local partnerships without undue interference from the more regional publics (i.e. large commodity and environmental interest groups, the courts, Congress). Initially this may prove difficult, but as local successes are achieved such a system is likely to gain credibility.

SECTION 3: PUBLIC PREFERENCES

A general measure of public preference for federal forest management is depicted in Figure 10. As in other studies, we asked citizens if the highest priority should be given to maintaining natural environmental conditions like wildlife and old growth forests, even if there are negative economic consequences, or if priority should be given to economic considerations like employment and tax revenues, even if there are negative environmental consequences. It is evident that a multiple benefits mode of management is considered most appropriate overall. However, Eugene is more in line with statewide respondents who lean toward a preference for natural conditions, while a significant segment of the Santiam and McKenzie communities favor economic considerations. We will see that these general findings tend to set the pattern for more specific policy choices. In any case, both locally and elsewhere, we suspect that citizens believe that the kind of balance they would like to see is not presently being achieved, whether it should tilt toward environmental or economic management considerations.

Figure 10



Tables 5 and 6 depict preferences for federal forest policy in two different ways. Table 5 shows the percentage of people who either agree or strongly agree with the statements provided. Table 6 reports the mean scores for the 5-point Likert scale used to record responses (1 = strongly disagree to 5 = strongly agree). Both tables are presented because they provide different ways to look at the same information.

Table 5
Preference for Federal Forest Policy

	Total		Eugene		Santiam		McKenzie		Chi-square
	----- Percent agree (a) and disagree (d) -----								
<u>Ecosystem-oriented:</u>	<u>a</u>	<u>d</u>	<u>a</u>	<u>d</u>	<u>a</u>	<u>d</u>	<u>a</u>	<u>d</u>	
Clear-cutting should be banned on federal forest land	49	40	66	18	37	51	45	44	66.8
Greater protection given to fish such as salmon	64	14	80	5	55	19	62	16	66.0
Greater protection for wildlife habitats	43	32	56	19	41	38	33	35	51.1
Greater efforts made to protect "old growth" forests	43	39	70	23	33	47	35	41	96.2
Federal forest management should focus on forest as a whole, not on individual parts	81	8	87	6	78	9	79	5	17.4*
<u>Commodity-oriented:</u>									
Some existing wilderness areas should be opened to logging	45	39	27	56	53	31	47	35	47.1
Endangered species laws should be set aside to preserve timber jobs	43	41	28	59	47	37	51	31	63.1
Federal forest management should emphasize timber/lumber products	38	31	26	42	46	28	37	27	28.5
Economic vitality of local communities should be highest priority	52	33	37	48	56	26	59	31	58.0
Survival of timber workers is more important than preservation of old growth	43	35	26	56	51	27	49	29	73.1

*Significantly different at $p < .05$; all others significantly different at $p < .01$.

Table 5 indicates that no clear public mandates have emerged, unless we consider the idea that a clear majority supports a more holistic federal forestry (clearly agreeing on what this concept is may be more problematic). What does stand out, however, is that Eugene is much more supportive of ecosystem-based management than either the Santiam or McKenzie communities, although neither of these two are predictably in favor of a commodity-oriented style of management. The Eugene sample is much more aligned with statewide and national preferences that lean solidly in an ecosystem management direction. Santiam and McKenzie preferences reflect communities that rely more heavily on the timber industry for their livelihood, a point demonstrated by opinions about the importance of local economic vitality and the survival of timber workers. Yet, policy preferences in these two communities are not nearly as decisive as those among Eugene respondents. Substantial polarity exists on numerous policy items.

Not shown in this table is the relatively low percentage of neutral responses. This squares with what we have found in similar studies that people from local communities (as well as members of interest groups), who are directly affected either economically or environmentally by forest agency decisions, tend to be more polarized and give fewer neutral responses to our questions. In other words, opinions seem to be more firmly developed and entrenched in personal issues.

Table 6 reinforces the observation that few clear mandates exist. In addition, it allows us to create an additive scale to look for overall tendencies toward one management style or another. Possible scores for the additive scale range from 10 for an absolute commodity viewpoint to 50 for the strongest ecosystem-based preference. The additive

scores again show that overall Eugene (37.2) is more ecosystem-oriented than either Santiam (30.1) or McKenzie (30.7) who settle in at the mid (or neutral) range.

Table 6
Preference for Federal Forest Policy

	Total	Eugene	Santiam	McKenzie	F-Test
<u>Ecosystem-oriented:</u>					
Clear-cutting should be banned on federal forest land	3.2	3.8	2.8	3.1	27.8
Greater protection given to fish such as salmon	3.8	4.2	3.6	3.6	21.5
Greater protection to wildlife habitats	3.3	3.7	3.1	3.0	16.1
Greater efforts made to protect "old growth" forests	3.1	3.9	2.8	3.0	39.3
Federal forest management should focus on forest as a whole, not on individual parts	4.2	4.4	4.1	4.2	4.5*
<u>Commodity-oriented:</u>					
Some existing wilderness areas should be opened to logging	3.0	2.5	3.3	3.1	20.1
Endangered species laws should be set aside to preserve timber jobs	2.9	2.3	3.1	3.1	24.2
Federal forest management should emphasize timber/lumber products	3.1	2.8	3.2	3.1	8.6
Economic vitality of local communities should be highest priority	3.3	2.8	3.5	3.4	22.2
Survival of timber workers is more important than preservation of old growth	3.1	2.5	3.4	3.3	32.7
Additive scale mean		37.2	30.1	30.7	38.7

Scale used for individual items was 1 = strongly disagree to 5 = strongly agree. For the additive scale, items were recoded so that higher scores reflect preference for ecosystem-oriented management and lower scores reflect commodity-oriented management.

*Significantly different at $p < .05$; all others significantly different at $p < .01$.

Possibly the best use of the additive scale is to consider it along with the community profile information. It intuitively prompts additional questions about correlations between variables and provides an opportunity to look for factors beyond simple geographical location of residence. To examine potential associations, zero-order correlations were computed using citizen preferences for federal forest policy (additive scale) and selected profile variables. This type of correlation analysis is used when we want to initially assess the strength of a relationship between variables. The only possible computational values fall between -1 and 1, with the strongest possible direct relationship being 1 and the strongest inverse relationship being -1. A value of zero indicates the absence of any relationship between the variables. Results are shown in Table 7.

Findings show that numerous respondent characteristics are associated with a preference for either ecosystem-based or commodity-based management. These are listed here by descending strength of association:

Ideology. This inverse relationship indicates that among all variables listed, political ideology is most strongly associated with management preference. People with liberal political viewpoints are associated with a preference for ecosystem-based management.

Community of residence. This positive relationship indicates that place of residence is strongly associated with management preference. In this case, Eugene residents are most strongly associated with a preference for ecosystem management.

Education. This positive relationship indicates that a preference for ecosystem management is associated with more highly educated individuals.

Table 7
Zero Order Correlations between Preferences for
Ecosystem-based Management and Community Respondent Characteristics

Characteristic	r
Age	-.21
Education	.25
Gender	-.21
Income	-.11
Ideology	-.55
Economic dependence on timber industry	-.24
Community of residence	.32
Length of residence in county	-.15
Recreational use of national forest	.17
Being informed about President's forest plan	-.01*

*Not significant; all others significant at $p < .01$.

Respondent characteristic codes

Gender: 1 = female, 2 = male

Ideology: 1 = liberal, 2 = moderate, 3 = conservative

Economic dependence on timber industry: 1 = no, 2 = yes

Community of residence: 1 = Eugene, 2 = Santiam, 3 = McKenzie

Use of national forest: 1 = never, 2 = rarely, 3 = occasionally, 4 = somewhat frequent, 5 = very frequent

Informed about President's forest plan: 1 = not informed, 2 = moderately informed, 3 = very informed

Economic dependence on the timber industry. This inverse relationship indicates a correlation between a preference for commodity-based management and timber dependent individuals.

Age. There is a significant inverse relationship indicating younger individuals are more likely to prefer ecosystem-based management.

Gender. Correlations indicate a stronger preference for ecosystem-based management among women.

Recreational use of national forest. A positive correlation indicates an association between a preference for ecosystem-based management and greater use of the forest for recreation.

Length of residence. An inverse correlation indicates an association between preference for commodity-based management and individuals with more years in the community.

Income. An inverse correlation indicates an association between a preference for commodity-based management and those with higher incomes.

Being informed about President's forest plan. No significant relationship exists between management preference and knowing about the President's forest plan.

Preferences for Adaptive Management Strategies

The survey also provided an opportunity to ask questions that were more specific to the kinds of issues surrounding a move to adaptive management. A series of statements were provided and respondents were asked their level of agreement with each item. Results are reported in Table 8.

A number of inferences can be made from data. First is the generally positive view toward science and experimentation. Many people seem to believe that we do not have enough information about our forest ecosystems, a belief that may be a product of the ongoing forest debate and the fact that the public's attention has become more focused on forest resources. In addition, there is some willingness across communities to allow

Table 8
Opinions Related to Adaptive Management

Statement	----- Percent agree (a) and disagree (d) -----								Chi-square
	a	d	a	d	a	d	a	d	
Reliable knowledge about forest ecosystems is lacking	46	28	55	29	41	26	47	31	28.4
Following nature's way is preferable to human intervention in ecosystems	48	25	52	22	48	22	45	32	33.9
Scientific experimentation with ecosystems is appropriate on selected forest lands	59	12	63	10	54	12	64	14	25.5
Science, not politics, should decide environmental issues	69	11	82	8	66	11	62	15	30.0
Federal forest management systems need major changes, not minor adjustments	63	16	72	9	57	18	63	18	29.3
Forest Service and BLM are open to public input and use it in making decisions	31	32	30	37	29	31	36	31	NS*
Government officials usually create plans without input from local communities	62	15	47	26	70	9	62	14	38.8
The best forest plan is one that is a compromise between all parties	52	33	45	46	57	25	51	35	38.2
Would likely support a community decision, even if it's against personal preference	41	27	37	32	42	21	45	35	25.7
Feel like I don't have much to contribute to forest planning	37	30	38	35	39	26	35	33	NS*
Private forest lands should not be part of long-term federal planning	49	33	33	42	55	29	56	32	48.5
Survival of timber workers should be most important goal of AMA's	48	37	29	52	56	31	51	34	38.3
In general, adaptive management areas seem a responsible approach	59	7	77	6	50	8	57	7	47.2

*Not significantly different; all others significantly different at $p < .01$.

ecosystem experimentation and to put more faith in science rather than politics. Of course, this latter view may just indicate that people are fed up with politics as usual and want to try another approach. This may also suggest that science's apparent support may be short-lived if more efficient decision processes under adaptive management do not materialize.

This general feeling of frustration leads to the second, rather strongly made point that federal forest management systems need major changes. This could be interpreted that people do not think the old management approaches are satisfactory any longer and perhaps adaptive management areas could satisfy the desire to see things done in a different way. Coupled with previous findings, this most likely means there is an interest in forest agencies playing a strong leadership role as long as the skills and input of the local communities are also utilized.

These attitudes seem to be reflected in each community's reluctance to give up too much control, either to the resource agencies or others in the decision-making process. There is not overwhelming support for compromising or community-made decisions that go against personal preference. Similarly, the communities (except Eugene) are not ready for federal planning to include private forest lands. In sum, these responses probably reflect just how pervasive the lack of trust issue is currently -- even towards communities or groups other than one's own. Percentages certainly indicate the public is suspect of the forest agencies' ability (and interest) in listening to their local communities. It seems clear that any new approaches to forest management will have to overcome the doubts of citizens about government officials. Local citizens will have to be taken more seriously and have a larger

voice in what is being decided. Adaptive management areas may be one way to accomplish this.

One must literally read between the lines to capture another important point: there are few decisive opinions generated by these statements. This is evident by the high number of (nonreported) neutral responses. We usually interpret neutral responses to mean people either don't know or don't care, but in the case of adaptive management we should probably interpret these responses to mean that people do not fully understand these complex issues and have not made up their minds about them. Particularly high levels of neutral response came in the areas of approving of scientific experimentation, whether the Forest Service and the BLM are open to public input, and knowing whether adaptive management is a responsible approach. Based on the overall responses, however, the public is likely to allow some time for action, testing, and evaluation before they approve or disapprove. It is likely that some activities and experimentation will gain support, while others will not. Since the forest agencies are entering uncharted waters, it may be better to put many small boats out to sea than a single Titanic.

Overall, it appears that the AMA communities are receptive to adaptive management, but will be waiting to see how it plays out before making any final judgments. Adaptive management involves a different approach to forest management, so it is unlikely that some citizens would approve of it unilaterally without seeing what forest practices and conditions will result and without understanding why these were created. We should note that people may not readily relate their preferences for adaptive management simply because they do not currently have a great deal of experience on which to judge it. From the sum of our

findings, we believe that public support for ecosystem (and adaptive) management is related more to a group of factors than it is to any single reason. For example, people are more likely to find a practice acceptable if they can visualize how it will look, understand its effects on sustaining the natural characteristics of the surrounding forest, believe in the information they have received from resource agencies, and have an opportunity to interact in the planning process (Shindler et al. 1994). Federal forest managers have a basis of public support in proceeding with AMA's, but given the general skepticism of government, technology, and bureaucracy in this country, the AMA experiment will have to win over the doubtful public through timely deeds and public education. ,

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