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Social Assessment for the Wenatchee National Forest Wildfires of 1994: Targeted Analysis for the Leavenworth, Entiat, and Chelan Ranger Districts

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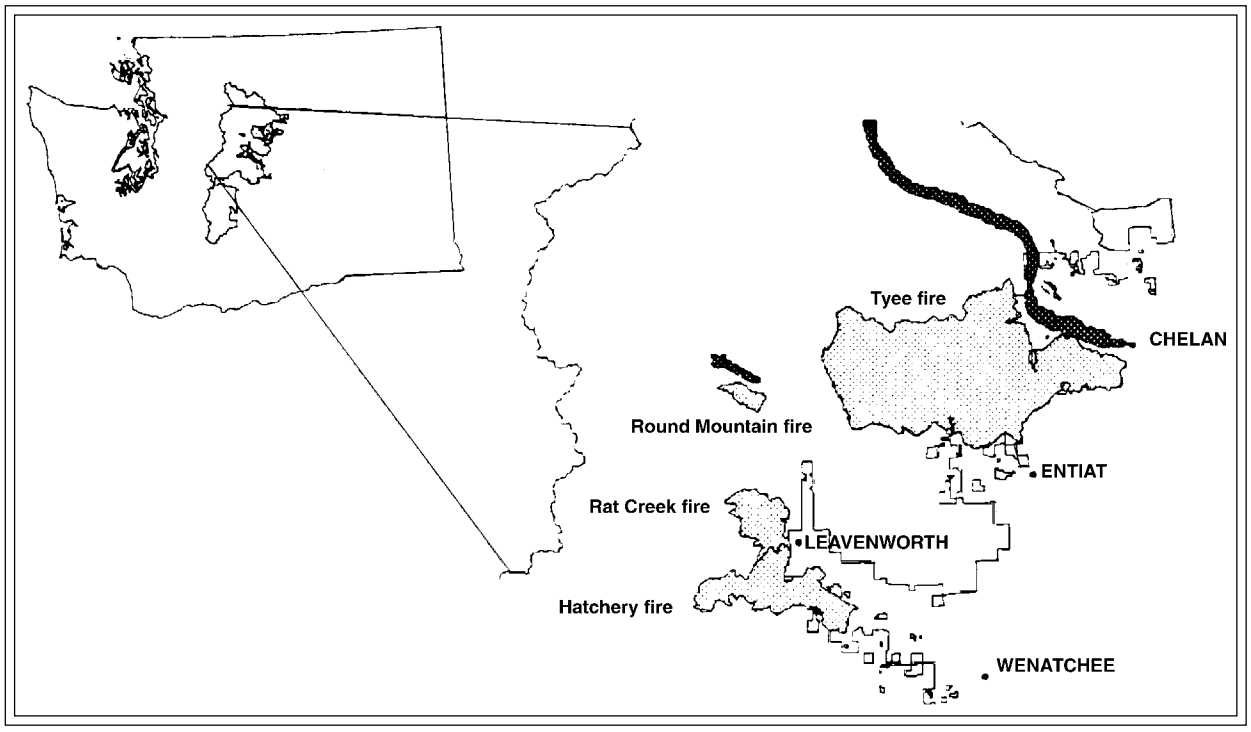

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Abstract

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A purposive social assessment across three communities explored reactions of local residents to wildfires in the Wenatchee National Forest in north-central Washington. Research concentrated on identifying the diversity of fundamental beliefs and values held by local residents about wildfire and forest management. Particular emphasis was given to investigating community social structures and potential conflict dynamics surrounding fire recovery efforts. Semistructured interviews were conducted with people representing a diverse set of values, attachments to the National Forest, and beliefs about forest management. Complexity of the social context emerged through inductive methods of qualitative analysis. Twenty-six social entities were categorized as political coalitions, stakeholder groups, residency tenure distinctions, geographic divisions, or ethnic communities. For each of the three communities, an indepth discussion described social dynamics surrounding fire recovery in the National Forest by juxtaposing the various value orientations and beliefs across 15 fire recovery issues. Conclusions targeted improving public involvement processes in the aftermath of severe ecological disturbances and traumatic human experiences.

Keywords: Social assessment, qualitative methodology, value orientations, natural resource conflict, public involvement processes, collaborative learning, Wenatchee National Forest.

Foreword

My natural science training has served me well in the Forest Service, but I am increasingly aware of the need to rely on social science training in all that we do as a public natural resource management agency. People and their values guide our decision-making processes. We are natural scientists first, yet we produce goods and services that are defined and measured by society's values.

The Chelan County fires in 1994 were of devastating proportion. Large areas of the county were burned black and unrecognizable. People's homes and private property, as well as their favorite places in the Wenatchee National Forest, were lost. Our rehabilitation and recovery challenge was not only for the physical and biological resources but also for the recovery and well-being of our communities and the people. I understood, as I watched the last smoke die, that we could not move forward without a clear understanding of our communities and a concerted effort for public involvement in the decisionmaking process.

Social assessments like this one may seem expensive and beyond our reach; however, assumptions about community expectations and needs that are based on personal observations and perceptions can be misguided. The truth is that our public is so diverse and multifaceted that we can no longer depend solely on this level of confidence. A social assessment can provide the context for a planning process that will lead to a better understanding of the compelling issues and the relations among resources, people, and values.

This social assessment provided the means to gain knowledge about our community and the beliefs and values related to the fires and National Forests. Often we hear only from individuals or groups opposed to our actions, and we never get a sense for the "silent majority," even in our most purposeful outreach efforts. A social assessment provides a picture of the whole community and the diversity of values. It was an important document for designing the subsequent collaborative learning workshops, which led us successfully through the recovery process. I used this social assessment again in 1998 to revalidate the communities' support for our fuel reduction and thinning efforts to promote sustainable forests.

Another benefit of the social assessment is that it helps me fulfill part of my civil rights responsibilities by identifying not only the diversity of values but also the diversity of cultures. This information provides a basis for evaluating my Ranger District program relative to civil rights and designing outreach that is meaningful to the full range of community members.

Although this particular assessment is very specific to Chelan County and the 1994 fires, its application could serve many purposes in the various challenges that arise in public land management.

Rebecca Heath
District Ranger
Leavenworth Ranger District
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Introduction

Background

Wildfire is a familiar occurrence in Chelan County, located on the eastern slopes of the Cascade Range in Washington. An arid climate, high temperatures, and gusty winds often characterize local summer conditions, which produce fire-prone situations when lightening strikes, especially in steep sloped canyons with large quantities of dry fuel. In July 1994, extreme weather systems collided with highly flammable environmental conditions and forever changed a significant portion of Chelan County's forest structure and its residents' perceptions of forestry and fire management.

> On Sunday evening, July 24 [1994], a lightning storm moved through Central Washington, igniting more than forty-one fires on the Wenatchee National Forest and a total of ninety-nine fires in Washington State....The storm came on the heels of record-breaking summer temperatures, reaching into the 100 degrees range, to forests already impacted by several years of drought-like conditions....Extreme fire behavior thwarted significant containment efforts through the first few days of initial attack on these fires. Fire behavior was said to defy description or comparison with what most seasoned firefighters had previously seen.
>
> USDA Forest Service (1994)

Three fires resisting containment and threatening lives and community infrastructure arose from this storm: the Hatchery Creek fire in the Leavenworth Ranger District, the Round Mountain[1] fire in the Lake Wenatchee District, and the Tyee Creek fire in the Entiat and Chelan Ranger Districts. On July 29, a human-caused fire (the Rat Creek fire) also ignited in the Leavenworth District, which quickly spread and joined the Hatchery Creek to form one large complex. Table 1 summarizes the location, acreage burned, and fire suppression cost for each fire. Figure 1 depicts the area.

For 3 weeks, residents' lives revolved around hourly fire behavior reports, suppression tactics, and weather forecasts. Many residents of Leavenworth, Entiat, and Chelan faced evacuations, which intensified and personalized the potential changes these fires could bring. Nineteen homes were lost in the Tyee Creek fire and 18 in the Hatchery Creek complex; an additional 76 outbuildings were destroyed throughout the burns. Countless other homes, garages, barns, and farm and orchard structures were threatened by these fires.

Fire suppression efforts involved over 9,600 firefighters and other professionals, including 1,600 National Guard and Marine troops. Personnel came from 25 states to join local wildfire crews. Additional structural protection crews were available through the Washington State Emergency Mobilization Act, which enabled western Washington city fire departments to send surplus personnel and equipment. Total fire suppression activities cost $69 million.

These fires occurred during the prime tourism season, effectively preempting substantial economic returns. Many businesses associated with retail trade, recreational outfitting, and food and lodging suffered significant losses.

Once the fires were contained and suppressed, public land management agencies focused immediate responses on unstable slopes and streams stripped of vegetative cover to prevent high levels of erosion and reduce the risk of flooding and mudslides, which typically occur in this area after large, intense wildfires. This short-term, emergency rehabilitation strategy targeted activities to restore ecological integrity and

[1] Although the Round Mountain fire burned 3,231 acres, it affected mostly private forest land owners because it spread quickly from National Forest land to private land. In the context of public forestry issues, this social assessment focuses on experiences related to the Tyee Creek and Hatchery Creek complex fires, which burned significantly larger areas of public land.

Table 1–Summary of fires in the northern Wenatchee National Forest, 1994

Fire	Location	Acreage burned	Fire suppression cost
			Dollars
Tyee Creek	18 mi. northwest of Entiat	135,170	43,357,169
Hatchery Creek complex	10 mi. northwest of Leavenworth in Tumwater Canyon	43,463	23,853,538
Rat Creek	4 mi. west of the Leavenworth National Fish Hatchery in Icicle Canyon	—[a]	—[a]
Round Mountain	Nason Ridge near Lake Wenatchee	3,231	2,393,000
Total		181,864	69,603,707

[a] The Rat Creek fire comprised 24,371 acres of the Hatchery Creek complex. Acreage and fire suppression costs were reported as totals for the complex.

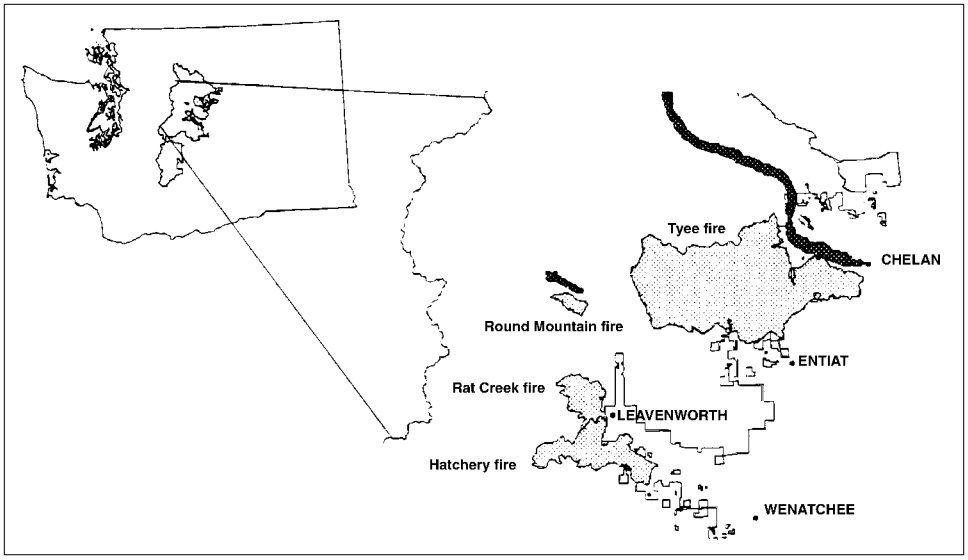

Figure 1—Locations of the 1994 fires in the Wenatchee National Forest.

enhance public safety. Stabilizing tactics included seeding sterile grasses, placing check and filter dams in streams, constructing levees, placing water barriers across roads, and falling burned snags in crosshatch patterns on slopes. All rehabilitation efforts were completed within 3 months after the fires to prepare for typical rain and snowmelt runoff over the next year that might produce life threatening consequences from flooding and erosion.

Immediate, triagelike reactions were not sufficient responses, however, to the Tyee Creek and Hatchery Creek complex that burned, altogether, over 180,000 acres. The Wenatchee National Forest (WNF) and Pacific Northwest Research Station laboratory in Wenatchee began a comprehensive fire recovery effort to develop plans to manage the areas burned by the fires as well as reevaluate current forest management strategies to accommodate wildfire and long-term forest health.

One branch of the fire recovery effort was public involvement. Third-party facilitators, solicited by the Forest Service, chose an innovative process, collaborative learning (Daniels and others 1996), to approach public involvement in this situation which was potentially volatile owing to the magnitude and intensity of the fires as well as the emotionally charged interests and recent experiences of the local residents. Collaborative learning, based in soft systems inquiry, provides a process for people to address diverse views and beliefs and increase their understanding of the complexity of a problematic situation (Wilson and Morren 1990).

To prepare facilitators for the situation they would encounter—salient issues, multiple beliefs, and points of contention—a purposive social assessment was designed to explore reactions of local residents to wildfires in the WNF. Unlike typical social impact assessments, which often describe the material impacts (e.g., poverty, crime rates, community infrastructure) of an event on a community, this research concentrated on understanding the diversity of fundamental beliefs and values that local residents held about wildfire and forestry. Its particular emphasis investigated the general social structure and potential conflict dynamics surrounding fire recovery. The data gathered from this assessment helped prepare facilitators for designing and conducting collaborative learning training courses for WNF employees and public involvement workshops. Furthermore, the social assessment provided the Forest Service with social data required by National Environmental Policy Act (NEPA; U.S. Laws, Statutes, etc. 1969) for environmental assessments of subsequent fire recovery projects.

Purpose of the Social Assessment

The primary purpose of this study was to identify the public's interests in fire recovery management of the WNF affected by the Hatchery Creek Complex and Tyee Creek fires. The information would be used in the collaborative learning process for identifying and selecting fire recovery and rehabilitation efforts. This exploratory study focused on issues directly linked to fire recovery. Rather than proposing a comprehensive analysis of the region's social, economic, and political characteristics—generating useful but overwhelming amounts of data—a targeted assessment of affected communities was designed and implemented to highlight the interactions on emergent fire recovery issues. Specific objectives to accomplish this purpose included:

- Identifying values of local residents about the forest and their beliefs about forest management
- Identifying salient fire recovery management issues
- Explaining commonalities, differences, and interactions among these multiple values and beliefs

Methodology

Research design—Time constraints between the containment and suppression of all WNF fires (September 1994) and the scheduling of collaborative learning workshops (January 1995) limited research methodology options. The breadth and depth of information needed to understand a complex social situation often demands timely immersion in a particular setting (Lofland 1995) or a rigorous survey instrument, which require

prior knowledge of the situation and lengthy pretesting (Dillman 1978). Given that specific interests and issues are relatively unknown to facilitators before they interact with the public at workshops, a qualitative, inductive data analysis approach is an appropriate method to explore the situation (Strauss and Corbin 1990). Borrowing from rapid rural appraisal techniques, the social assessment targets local residents who have a rich knowledge of the local situation, thus providing a time-efficient means of gathering relevant data (Chambers 1987).

In-person, semistructured interviews were chosen as the primary data gathering method to encourage local residents to informally discuss their interests and provide indepth descriptions of issues. They also were used to narrow the range of topics to those relevant to forestry. This open-ended data gathering method allowed each interviewee to suggest issues personally important as well as to offer individual values, beliefs, and opinions. A semistructured format focused the interview on topics directly concerning fire recovery or describing the context of interviewees' interactions with forest use and land management policies. Inductive data analysis gleaned themes from interviewees' own words and meanings, thus grounding conclusions in the experiences of people directly affected by the fires and resulting fire recovery management policies.

Instrumentation—Two instruments were used to gather data: a semistructured interview guide to engage discussion on fire recovery issues, and a brief structured questionnaire to gather basic demographic characteristics of interviewees (appendix A). The semistructured interview guide consisted of four general topic areas: connections to forestry and the WNF, management of wildfire, issues of forest rehabilitation and fire recovery, and attitudes toward the Forest Service. These topics were developed originally from preliminary discussions with key local informants, who identified issues generating discourse in the communities, and Forest Service personnel, who offered professional advice and suggested areas that would add information to forestry policy decisions.

Each of the four topic areas included four to six questions to stimulate interview discussions. These questions were modified throughout the interviewing process to eliminate redundancy, reword confusing concepts, and add newly identified and important issues.

Sampling strategies and data gathering—Meetings with key informants, Forest Service personnel at the Supervisor's Office and at two of the Ranger Districts, and a longtime resident of a third Ranger District provided names of local residents active in forest policy and directly affected by the 1994 fires. Researchers used this list of names to make contact with local residents and ask their permission to schedule personal interviews. Using the "snowball" technique, additional names were generated by asking interviewees if there were other people researchers should talk to in the community who were affected by the fires, were active in forestry policy, or represented important stakeholder groups.

Researchers noted the distribution of interviewees by special interests, forest user groups, and professional affiliation with land management agencies or industries to sample a diverse set of values and beliefs surrounding fire recovery in the WNF. Sampling saturation occurred when researchers believed they had interviewed residents of each community who represented different values and when interviews produced relatively little new information; i.e., similar issues, positions, beliefs, and experiences were being expressed.

A total of 122 interviews (46 in Leavenworth, 39 in Entiat, and 37 in Chelan), ranging from 20 minutes to 3 hours, were conducted in people's homes and work places, restaurants, and interviewers' cars. Interview data were recorded by note taking supplemented with a debriefing of the researcher and capturing of other relevant statements and nonverbal behavior immediately after the interview was completed. To prepare the data for analysis, interview notes were transcribed into an electronic database.

Data analysis—Commonalities and differences were noted to identify and differentiate themes on shared values, beliefs, and issues (Miles and Huberman 1994). Five categories, inductively defined from the data, distinguished various social entities: political coalitions, stakeholder groups, residency tenure, geographic divisions, and ethnic communities. Within each category, descriptors were assigned to characterize different values and beliefs people held toward fire recovery and forest management. Similarly, issues connected to fire recovery were gleaned from the data and assigned descriptors to identify common themes.

Once a general framework of categories and descriptors was established to understand and organize the data, an indepth assessment of community social dynamics was begun. Data were grouped by each of the three communities to describe social entities present and issues important to local residents. Through comparison and contrast of values, beliefs, and positions on issues, interactions among social entities emerged to produce a rich description of each community's social dynamics surrounding fire recovery in the WNF.

Demographic Characteristics of the Study Area

Population trends—Population trends since 1920 for Chelan County and the wildfire-affected towns of Leavenworth, Entiat, and Chelan are shown in table 2. The county as a whole shows steady growth patterns throughout the 20th century, with slower population increases in the 1960s and 1970s. Local residents attributed recent population growth to western Washington and out-of-state residents seeking desirable living spaces and escape from perceived higher levels of pollution, congestion, and crime in urban cities.

Leavenworth experienced more fluctuation in growth than the county. Two major industries, timber production and railroad services, left Leavenworth in the 1950s and 1960s, which restricted growth until after 1970. The impetus for remarkable changes in the last two decades centered on adoption of a Bavarian theme to stimulate the local tourism industry. Development and retail trade increased accordingly, thereby sparking the desirability and feasibility of gaining a livelihood in the community. Leavenworth also has experienced recent migration of people seeking rural living spaces.

Entiat, with a limited economy and less developed residential base, did not experience population growth until after the 1970 census. Initially dependent on timber and orchards, residents have struggled to maintain steady sources of livelihood and diversify their economy.

Chelan mirrors and surpasses the county's continual growth trends. The lack of timber dependency has contributed in part to its steady growth, unlike Leavenworth and Entiat.

Table 2—Population and percentage of change from prior census in Chelan County and Leavenworth, Entiat, and Chelan, 1920-90

Area	1920	1930	1940	1950	1960	1970	1980	1990
Chelan County:	20,906	31,634	34,412	39,301	40,744	41,355	45,061	52,250
Percent change	—	51.3	8.8	14.2	3.7	1.5	9.0	16.0
Leavenworth:	1,791	1,415	1,608	1,503	1,480	1,322	1,522	1,692
Percent change	—	-21.0	13.6	-6.5	-1.5	-10.7	15.1	11.2
Entiat:[a]	—	—	—	420	357	355	445	449
Percent change	—	—	—	—	-15	-0.6	25.4	0.9
Chelan:	896	1,403	1,738	2,157	2,402	2,430	2,802	2,969
Percent change	—	56.6	23.9	24.1	11.4	1.2	15.3	6.0

[a] Entiat incorporated in 1944.

Sources: U.S. Department of Commerce, Bureau of the Census 1921, 1932, 1943, 1952, 1963, 1973, 1982, 1997.

Community comparisons—Table 3 provides a detailed description of demographic characteristics of Chelan County and the greater Leavenworth, Entiat, and Chelan divisions,[2] as reported in the most recent census data. In general, the county and its towns are relatively racially homogenous, have recent increases in residents of Latino origin and residents moving from other parts of Washington and from out-of-state, and depend on agriculture and natural resource and retail trade industries for at least 30 percent of residents' employment. Some interesting differences distinguish community divisions from one another as well as from the county, which is weighted predominantly by Wenatchee with a population of 21,756.

Distributions for sex and age variables remain fairly constant across all divisions with the exception of Entiat, which has a markedly younger population. The higher population level (17 percent) of residents over 64 years of age in Leavenworth-Lake Wenatchee and Chelan, combined, can perhaps be attributed to the desirability as a retirement location.

Race and Latino origin categories reveal interesting differences among the divisions. Although the county is predominantly white and non-Latino, the Leavenworth-Lake Wenatchee area is the least diverse. Interview data from the social assessment qualified these statistics by noting that many Latinos live outside Leavenworth; they commute to jobs in its retail industry, however. Many residents of Latino origin recently moved to Chelan County as noted by the percentage of change between the 1980 and 1990 census data: approximate increases of 3 to 9 percent in Chelan County, 4 to 11 percent in Entiat, and 4 to 12 percent in Chelan (appendix B). Leavenworth's residents of Latino origin increased slightly from 1.1 to 2.6 percent.

[2] "Census County Divisions (CCDs) are geographic areas which have been designed by the Census Bureau in cooperation with State and county officials for the purpose of presenting statistical data...The CCDs have usually been designed to represent community areas focused on trading centers, or to represent major land use areas, and to have visible, permanent, an easily described boundaries" (U.S. Department of Commerce 1982).

Table 3—Comparison of Chelan County and county division demographic characteristics, 1990

Characteristic	Chelan County	Division		
		Leavenworth-Lake Wenatchee	Entiat	Chelan
Total population	52,250	4,388	1,507	4,949
	Percent of total population			
Sex:				
Male	49.3	50.0	51.9	49.7
Female	50.7	50.0	48.1	50.3
Age:				
Less than 18 years	26.7	24.3	27.4	26.9
18-64 years	57.6	57.8	60.1	56.0
Over 64 years	15.7	17.9	12.5	17.2
Race:				
White	92.5	97.5	91.4	88.0
Black	.2	.2	.3	.1
Amer. Indian, Eskimo, or Aleut	.9	1.1	2.3	.8
Asian or Pacific Islander	.7	.3	.1	.8
Other	5.7	1.0	5.8	10.3
Latino origin:				
Latino origin	9.2	2.6	10.8	12.5
Not of Latino origin	90.8	97.4	89.2	87.5
Educational attainment:				
Less than 9th grade	10.3	7.2	12.7	10.9
9th to 12th grade, no diploma	15.4	15.1	18.0	18.4
High school graduate, GED	28.5	29.5	28.5	30.9
Some college, no degree	20.9	20.7	21.7	21.0
Associate degree	8.2	8.3	8.8	5.2
Bachelor's degree	11.9	13.6	8.2	10.4
Graduate, professional degree	4.8	5.6	2.0	3.4
Residence in 1985:				
Same house	47.2	50.6	52.0	35.6
Different house in United States—				
Same county	27.8	15.2	18.3	39.4
Different county, same state	14.5	18.1	19.3	12.6
Different state	8.7	13.9	8.0	9.3
Abroad	1.9	2.2	2.5	3.1
	Dollars			
Median household income, 1989	$24,312	$24,741	$23,031	$21,554
Median value of owner-occupied housing unit	$71,500	$82,300	$55,800	$75,400

Table 3—Comparison of Chelan County and county division demographic characteristics, 1990 (continued)

Characteristics	Chelan County	Division		
		Leavenworth-Lake Wenatchee	Entiat	Chelan
	Percent of total population			
Industry of employment:				
Agriculture, forestry, fisheries	13.6	9.1	26.6	19.8
Mining	1.0	.1	.7	0
Construction	6.1	9.3	5.6	7.3
Manufacturing, nondurable goods	3.8	2.7	3.0	1.7
Manufacturing, durable goods	4.8	7.9	10.0	1.6
Transportation	4.2	5.5	2.9	3.5
Communications, public utilities	2.6	1.7	1.2	1.6
Wholesale trade	7.8	2.9	12.2	10.7
Retail trade	18.2	21.4	13.0	17.7
Finance, insurance, real estate	4.3	4.1	2.2	4.6
Business and repair services	3.1	2.9	2.9	3.8
Personal services	4.1	9.8	1.2	5.6
Entertainment, recreation service	1.8	2.2	1.0	3.6
Professional, related services—				
Health services	7.4	5.8	4.6	5.1
Educational services	6.9	5.9	5.2	4.6
Other professional, related services	6.6	5.8	6.8	4.5
Public administration	3.6	2.9	1.0	4.3
Type of worker:				
Private, for profit	69.4	60.3	71.6	73.7
Private, not-for-profit	5.5	5.2	5.1	2.3
Local government	7.2	5.9	4.4	8.0
State government	5.6	7.9	1.2	4.2
Federal Government	2.4	5.2	4.6	2.5
Self-employed	9.6	14.9	12.9	9.3
Unpaid family	.3	.7	.3	0

Source: U.S. Department of Commerce, Bureau of the Census 1997.

Other variations in demographic characteristics include a higher percentage of Leavenworth-Lake Wenatchee residents attaining bachelor, graduate, and professional degrees. Median values of owner-occupied housing in two divisions differ from the county median: Leavenworth-Lake Wenatchee is 15 percent higher and Entiat 22 percent lower.

Data on changes in residency over the last 10 years reveal that half the population of Leavenworth-Lake Wenatchee and Entiat divisions lived in the same house for those 10 years and a migration rate of almost 20 percent of Washington residents from other counties. The Chelan division seems to have attracted a migration of other Chelan County residents.

Leavenworth-Lake Wenatchee's tourism-dependent economy employs over one-fifth of its employed residents in retail trade. Other important industries in this division include personal services; agriculture, forestry and fisheries; and manufacture of durable goods. Logging and associated employment contribute to the prominence of the latter.

Entiat and Chelan divisions share the same top three industries providing employment to residents: agriculture, forestry, and fisheries; retail trade; and wholesale trade. Over one-quarter of employed Entiat residents work in agriculture, forestry, and fisheries, which can be explained partially by a Forest Service Ranger District and a U.S. Fish and Wildlife Service (USFWS) fish hatchery located in a division of only 1,507 people. This phenomenon is further substantiated with almost twice the county's average percentage of Federal Government workers living in Entiat. Orchards also contribute to the number of people working in the primary industry in Entiat and Chelan.

Although retail trade is Entiat's second leading industry (13 percent of employed residents), Chelan County (18 percent) and neighboring divisions (21 percent in Leavenworth-Lake Wenatchee; 18 percent in Chelan) employ higher percentages of respective work forces. Wholesale trade of apples and other fruit comprises the third largest industrial employer for Entiat residents. Durable goods manufacturing employs 10 percent of the total population, specifically in manufactured home building or logging.

Chelan's primary industry revolves around orchards, but forestry also is included. Most interesting and unique to this division, compared to neighboring divisions and the county, is the low level of employment in durable goods manufacturing. A closer look at Chelan reveals the absence of logging, milling, and other factories, and thus, fewer local jobs in this industry.

Most employed Chelan County residents (75 percent) work in the private sector. Local, state, and Federal government employees are represented by about 15 percent of employed county residents, whereas 10 percent of the working population is self-employed. The Chelan division matches county averages, whereas more Leavenworth-Lake Wenatchee division residents (19 percent) work in the public sector. The Entiat division employs only 10 percent of its residents in the public sector, but the concentration of Federal employees is greater than the county average.

In conclusion, many similarities in population attributes (sex, age, and race) are found, with only small deviations in attributes such as Latino origin and educational attainment. The industries that employ residents show more variation across communities owing to different levels of reliance on tourism and retail, orcharding, natural resources, and durable goods manufacturing. These demographics provide only a foundation to begin to

understand the social dynamics of this region and give little insight on how residents were affected and responded to the wildfires in 1994. The social assessment built on this initial understanding of Chelan County and community demographics by identifying and qualifying similarities and differences among local residents' beliefs and values associated with National Forest and fire recovery management.

General Social Framework

The five categories that differentiate various social entities involved in fire recovery for the study area are defined in the list below. The list shows different themes within each category; specific descriptions of these themes are presented at the beginning of the sections on each community to characterize their social structure.

Political coalitions:

- Environmentalism
- Multiple use
- Private property rights and home rule
- Wise use

Stakeholder groups:

- Civic leaders
- Firefighting infrastructure
- Former Forest Service employees
- Growth management
- Native Americans
- Nonindustrial private forest land owners
- Orchardists
- Other Federal and state agencies
- Ranchers
- Recreationists
- Residents directly affected by fire
- Social service providers
- Special forest product gatherers
- Timber interests
- Tourism interests
- USDA Forest Service

Residency tenure distinctions:

- Long timers
- Newcomers

Geographic divisions (Entiat only):

- In town
- Up the valley

Ethnic communities:

- Latinos
- Non-Latinos

Political coalitions share common world-views of the environment, natural resource use or nonuse, and management directions. They often are politically organized with a special interest agenda and take an active role in policymaking; the strength of these organizations differs, however.

Stakeholder groups are either directly linked to resource use (commodity and non-commodity) or indirectly concerned with general forest management and its effects on community interests, such as economy, quality of life, and growth and development. Some groups are represented by organized clubs, professional affiliations, tribes or community civic bodies; other groups are fragmented but represent common activities dependent on the WNF.

Residency tenure distinctions are informal, local cultural definitions for the length of time a person, their families, and their previous generations have lived in a community. Generally, in Leavenworth and Chelan, newcomer status refers to most people who moved into the community or local area; second-generation and longer tenured families are long timers. In Entiat, long-timer status usually indicates a person's family has lived in the local area for at least two full generations.

A **geographic** division occurs only in Entiat. For several generations, a distinction has been made between residents living "in town" and those living "up the valley" along the Entiat River. Residents of the latter group tend to value privacy and independent ways of life, characterized by more isolated and secluded home-building patterns. This division receives attention in fire recovery issues because the Tyee fire burned 15 to 20 miles up the Entiat Valley, more directly and profoundly affecting these residents than those in town.

Ethnic communities emerge in the form of parallel social networks: Latino and non-Latino. Members of each community often do not interact with the other, except in the workplace. Many Latinos work low-skill service and agricultural jobs with non-Latino supervisors and employers. Outside of work, most people socialize with members of their same ethnic community.

Neither these social entities nor the themes within each category are necessarily mutually exclusive. Some themes, however, do have opposing positions or discrete divisions. Even among these differences, many residents, whether they live up the Entiat valley or in town, whether they support environmentalism or wise-use policies, may share common stakes in forest management, such as desiring recreational opportunities in the WNF. The complexity of the social structure demands multiple, overlapping descriptors to characterize the multidimensional interests and involvement of people in their communities.

This Study

This study was designed primarily to report social assessment results on fire recovery issues for each of the three Ranger Districts directly affected by the Hatchery Creek complex and Tyee Creek wildfires. The next three sections present separate discussions of research findings for the Leavenworth, Entiat, and Chelan communities. Each section follows the same format of a brief history of the community, definitions of the social entities that describe the local social structure, fire recovery issue identified by local residents, and a presentation of the interactions among social entities who hold positions or interests concerning a particular issue. Through this discussion, we have attempted to give policymakers information about areas where the groups coalesced and then polarized on particular issues.

Table 4—Comparison of social composition, by community[a]

Category	Leavenworth	Entiat	Chelan
Political coalitions:			
Environmentalists (nonintervention)	X	O	X
Environmentalists (return intervention)	X	O	X
Multiple use	X	X	X
Private property rights and home rule	X	X	X
Wise use	X	X	X
Stakeholder groups:			
Civic leaders	X	X	X
Firefighting infrastructure	X	X	X
Former Forest Service employees	X	X	X
Growth management	X	X	X
Native Americans	X	X	X
Nonindustrial private forest land owners	X	X	X
Other Federal and state agencies (except USDA Forest Service)	X	X	X
Orchardists	X	X	X
Ranchers	X	X	O
Recreationists	X	X	X
Residents directly affected by fire and rehabilitation	X	X	X
Social service providers	X	X	X
Special forest products gatherers	X	X	X
Timber interests	X	X	O
Tourism interests	X	O	X
USDA Forest Service	X	X	X
Residency tenure distinctions	X	X	X
Geographic divisions	O	X	O
Ethnic communities	X	X	X

[a] X = social entity is present in the community; O = social entity does not have a significant presence in the community.

Table 5—Fire recovery issues, by community[a]

Issue	Leavenworth	Entiat	Chelan
Flood and erosion threat	X	X	X
Use of the burned trees	X	X	X
Forest health and desired future condition	X	X	X
Silvicultural practices	X	X	X
Water quality	X	X	X
Wildlife habitat	X	X	X
Media coverage of fires	X	O	X
Local decisions and policies	X	X	X
Attitudes toward the National Park Service	O	O	X
Forest-residential interface	X	X	X
Use of public money for fire suppression and rehabilitation	X	X	X
“Project fire” theory	O	X	X
Past and future fire suppression strategies	X	X	X
Trusting the Forest Service	X	X	X
Severe emotional impact of the fires and rehabilitation	O	X	O

[a] X = issue was raised by a number of interviewees in the community; O = issue was rarely or never mentioned by interviewees in the community.

An overview of the commonalities and differences of each community's social composition (table 4) and important issues (table 5) indicates that despite relatively close geographic proximity, the communities exhibit some important differences.

As "stand alone" reports, the following three sections describe each community's perceptions and interests in local fire recovery and isolate data that may be relevant to each Ranger District's planning process and NEPA activities. Because the findings for the communities have many parallels, a great deal of repetition occurs across the sections.

The last section summarizes the dominant social entities and key issues across the study area. Several themes explain commonalities and differences among the three communities. Practical implications of this study and references to additional analyses of this data are presented.

Leavenworth

Leavenworth is surrounded by forested land and rocky ridges on the east slopes of the Cascade Range and has a population of about 1,700. Before the 1960s, Leavenworth relied economically on logging timber resources, growing fruit, and supporting railroad traffic as a turnaround destination. Changes occurred during the 1960s: the railroad left and logging decreased. Leavenworth faced a grim outlook, and creative opportunities were sought to stimulate the local economy. A Bavarian village theme was adopted to encourage tourism and recreation, capitalizing on the area's natural beauty and resources. The Bavarian village successfully grew until summer 1994 when fires threatened the livelihood of this tourism dependent town.

Fire recovery was an emotional issue for many local residents, resulting not only from economic losses but also from direct impacts on individual lifestyles. Leavenworth is home to many people who enjoy the natural environmental beauty, outdoor recreation, rural community structure, and countless other unique characteristics.

The Hatchery Creek complex fire altered visual aesthetics, water quality in streams, wildlife habitat, timber resources, recreation resources, and other aspects of the neighboring WNF. One city representative summarized Leavenworth's reliance on this public land and resource:

> The City of Leavenworth has several interests in the National Forest:
>
> (1) Water supply comes from surface water in Icicle Creek. The Rat Creek fire was very close to the city's water processor—we almost lost it. The impact of the fire on the watershed includes turbidity, debris, and intake.
>
> (2) The town's economy is tied to the natural beauty of the Leavenworth setting. The big question is how devastated will the setting look after the fire. But there are two results—a positive is that it doesn't look so bad and a negative is that the media overstressed the damage.
>
> (3) The last interest is the long history of the community with the Forest Service. It is an old logging and mill community. There is a lot of resentment with the decline of logging and frustration with the spotted owl.[3]

One of the most frequently raised issues involved timber resources and silvicultural practices. Owing to a history and tradition of logging in Leavenworth, there was long-standing friction between those supporting timber production and those who did not. Conflicts continue to surface within Leavenworth over the role of timber production and the community's economic dependence on the WNF; the 1994 fires renewed attention and strengthened the debate surrounding this issue.

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[3] For the remainder of this paper, all direct quotations from interview data are indented, printed in smaller typeface, and cited anonymously.

This section begins with descriptions of the social framework components found in Leavenworth: political coalitions, stakeholder groups, residency tenure distinctions, and ethnic communities. These four social entities and the various themes within each were derived inductively from the social assessment data and not constructed from preconceived categories. Definitions and conclusions pertain to Leavenworth and may not represent other communities or situations. Similarly, relevant fire recovery issues suggested by local residents are presented in this section, and interactions among social entities by issue provide further understanding of the social complexity of fire recovery management.

Political Coalitions

Four fundamentally different themes emerged in Leavenworth as political coalitions representing distinct world-views of natural resource policy: environmentalism, multiple use, private property rights and home rule (PPR-HR), and wise use. Within each theme, some diversity was found. Supporters individually subscribed to various degrees of the positions offered by a particular political agenda; however, collectively shared beliefs and ideologies distinguished one coalition from another.

For this report, the general positions and political agenda voiced by each coalition have been summarized in the following discussion without detailing every subtheme. One exception was made with the environmentalism political coalition because of two distinct positions on fire recovery issues even though they shared similar world-views of nature.

The remaining three coalitions represented separate agendas for the management of forest lands; however, the distinction between wise use and PPR-HR was subtle. “Wise use” refers to a particular belief system supporting certain desirable forest practices on public lands, whereas decisionmaking authority was a primary issue for PPR-HR advocates.

Environmentalism—Environmentalists in Leavenworth were divided into two categories[4] of people having somewhat different world-views on natural resource management: nonintervention and return intervention. Both categories of environmentalists viewed the environment as an entity not humanly created, and thus they preferred little or no human interference in its processes. Their primary concerns focused on plant and animal species and ecosystem processes affected by human activities; however, the following differences distinguished the direction they thought human intervention in the environment should take.

Nonintervention environmentalists advocated that natural resources are “managed” best by nature. Many argued that human intervention has put many species at risk and degraded ecosystem processes. To stop this risk from increasing, they favored hands-off management and allowing the forest to recover on its own without human intervention.

> Human influence changes how the forest will react. Man wants to control everything. But the forests burned naturally and people should let nature takes its course. People need to realize they really don’t control nature.
>
> We should not manage, but just coexist.

[4] The labels applied to the two categories of environmentalists, nonintervention and return intervention, were defined by the authors and derived from this data in order to capture each group’s view of appropriate human intervention in fire recovery management.

Return intervention environmentalists favored management recognizing historical ranges in ecological conditions that are more resilient to disturbances, human and natural. An environment that supports itself was preferred to one dependent on human management. Many holding this perspective believed the local forests to be outside the historical ranges of variability (HRVs). Therefore, practices that would nurture the forest's return to within HRVs were favored. Many believed this strategy would allow nature to regulate most disturbances, thereby minimizing catastrophic disturbances.

> Fire has a natural role in the forest ecology. It burned every 10 years in the past on a regular basis. Fire has historically been important in eastern Washington.

The factor that generally differentiated the environmentalists from wise users was whether the biology, chemistry, and physical structures in the environment should be viewed as ecosystem elements (emphasizing ecological values) or as resources (emphasizing human-use values). Another relevant factor discriminating these two views may have been each coalition's perceptions of the other. Wise users tended to label environmentalists as preservationists wanting to lock up the environment, exclude access to the environment, and restrict any human management activities. Environmentalists tended to label wise users as more development oriented, willing to respond to short-term economic incentives, and holding little regard for long-term ecological effects.

Multiple use—Multiple users viewed the environment as an entity not entirely separate from society. Many believed that an interdependent relation exists between the environment and society, and thus they advocated that humans can coexist with nature, including consumptive, recreational, and spiritual uses of the forest. They argued that management and human intervention in the environment need to be sensitive and respectful of the many elements and complex relations in nature. Overuse, or overemphasis of one use to the detriment of others, was a concern, and they therefore felt management to be necessary to limit risks associated with practices not commensurate with true multiple use.

Multiple users shared concerns similar to those voiced by return intervention environmentalists; however, multiple users differed from all environmentalists in their view of appropriate forest management by the emphasis they placed on human use of forest products rather than the maintenance of ecological processes for their own sake.

Private property rights and home rule—Individuals who shared private property rights perspectives supported personal choice and self-regulation of private property over government legislation and regulation. Independence to live their lives and tend their own properties as they chose was a key factor to this perspective. A rising concern among many private property rights advocates was their perception that the Federal Government is increasing regulation of activities that can and cannot occur on private lands.

> In private lands, the government shouldn't be telling people what to do.

Another concern was the perceived lobbying power of special interest groups in Washington, DC, which the PPR-HRs felt were attempting to limit activities on private properties.

Often linked to private property rights ideology was the concept of home rule, denoting a preference for local control over centralized government control. Relative to private lands as well as state and Federal public lands, many rural residents believed their political voice to be overpowered by others in urban areas and in government positions

higher than the local level. To regain some control of their individual freedoms, many PPR-HR advocates supported legislating a Catron County, NM, style ordinance for Chelan County. The principle goal of this ordinance would be to require that Federal agencies consider local customs, cultures, and economics when adopting new management plans; Federal agencies would have to consider local conditions and needs to avoid disrupting local community ways of life.

The 1994 summer fires strengthened the support for this political coalition because of the issues that emerged. The latent danger of future fires, the need they saw to salvage-log the burned forests, and the threat of flood and erosion created support for more local control. People in Leavenworth felt threatened by their lack of control over resource management practices in their local community. This coalition claimed to be defending their rights against threats from environmentalists, city residents, and government representatives deciding what should occur on the local forest lands.

Wise use—People with a wise-use perspective of natural resource management argued for efficient utilitarian use of resources. Most recognized that natural resources have some limitation in either the quantity currently available or the quantity available on a sustained-yield basis. They believed this limitation should be mitigated with intense management of renewable resources so that resources can be cultivated and used in perpetuity.

Wise users viewed natural resources in material and utilitarian terms; therefore, their primary goal for these resources was to cultivate them for use. This coalition often formed in opposition to many environmental coalitions that advocated nonuse and preservation of ecosystems. The local wise-use coalition leadership cadre was relatively small compared to environmental leadership, but the wise-use following was large, with an especially large concentration in rural communities such as Leavenworth. Additionally, there was a comradery among people supporting the wise-use movement with those favoring PPR-HR and timber interests.

Stakeholder Groups

A variety of stakeholder groups exists in Leavenworth. Some are organized formally through clubs, professional affiliations, tribes, or civic bodies; others are loosely formed by shared activities made available by WNF resources. The following list shows stakeholder groups found in Leavenworth through the social assessment inquiry. Again, general descriptions follow, with subgroups defined when relevant to understanding variations in positions on fire recovery issues.

Stakeholder groups in Leavenworth:

- Civic leaders
- Firefighting infrastructure
- Former Forest Service employees
- Growth management
- Native Americans
- Nonindustrial private forest land owners
- Orchardists
- Other Federal and state agencies
- Ranchers
- Recreationists

- Residents directly affected by fire
- Social service providers
- Special forest product gatherers
- Timber interests
- Tourism interests
- USDA Forest Service

Civic leaders—This group included people holding elected, appointed, or hired positions in the community and representing local government and businesses. They tended to support activities economically beneficial to Leavenworth, including tourism, development, and sales and extraction of natural resource commodities. Additionally, they were well known among the community; therefore, their opinions on issues facing Leavenworth would be respected and provide credibility for local residents.

> As a political representative of the local residents, decisions about the Wenatchee National Forest will affect how I can work to serve my constituents. If policies on the Wenatchee National Forest disagree with my constituents' needs, then I will have to work more in getting change.
>
> There was a big loss in revenue due to this fire. It has hit the school already—they have reduced the percentage that goes to the arts and grants....There was also a drop in sales tax and hotel revenue—it's down 11 percent from last year.

Firefighting infrastructure—Fire suppression policies directly affect people who gain employment by supplying labor and equipment to control fire, both structural and wildfire. Additionally, rehabilitation efforts immediately after forest fires generate opportunities for employment. Policies on fire suppression and rehabilitation therefore generate employment opportunities for local residents as well as regional and national firefighting personnel, especially in situations where the magnitude of fires is as large as those in Chelan County in 1994. If fire suppression policies were to change significantly, those supplying labor and equipment would experience changes in income sources.

Former Forest Service employees—Members of this group included retired Forest Service employees or people who once worked for the Forest Service. Retired Forest Service employees often have decades of work experience with the agency, are familiar with the organizational culture, and know the many changes the Forest Service has undergone in the last 50 years. Many retirees referred to previous practices in critiquing the effectiveness of newer practices; e.g., many compared the past "10 a.m." fire suppression policy to current fire suppression priorities.[5]

> Fire suppression has changed. More people are in areas and in more difficult places to control fires. The conditions of the forest don't control the fire. Instead firefighting priorities have changed. Priorities are #1 save lives, #2 save property and #3 control fire. The 10 a.m. policy had control fire as #1.

Other people who left the Forest Service before retirement were in some cases critical of the agency—sometimes supportive, sometimes faultfinding. Regardless of their opinions, former Forest Service employees tended to have a great familiarity with the local area and conditions. Their rich knowledge of land management and the local area produced insightful, analytical, and detailed opinions of how forest and natural resource management should proceed after the 1994 fires.

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[5] The 10 a.m. policy refers to a fire suppression strategy used by the Forest Service for several decades to focus all efforts on putting out fires by 10 a.m. If this was not achieved, they tried to contain and suppress the fire by the following 10 a.m., and so on until the goal was attained.

Growth management—The growth management stakeholder group was concerned with an increasing population trend in Leavenworth and throughout Chelan County. Many wanted to preserve the lifestyles associated with Leavenworth, such as natural aesthetics, recreational opportunities, and a rural community structure but found this goal difficult to achieve as more people move into the area and build homes in the forest interface. Growth management advocates desired some planned organization to this population growth, such as land-use zoning. They mentioned regulations that might limit the proximity of new residences to forest land, stipulate building codes that would reduce fire damage, or limit practices that could occur on private property.

Native Americans—Unfortunately, no Native Americans were interviewed. Because the social assessment was geographically limited to local communities of the WNF and many members of the Yakama Nation lived outside this area, this report lacks the perspectives of Native Americans affected by the 1994 fires and subsequent forest management. It is important and necessary to acknowledge that they have fishing, hunting, and special place interests in the Leavenworth area and likely would be involved in any comprehensive forest recovery effort. Further research is needed to document Native American perspectives, positions, and stakes in the WNF.

Nonindustrial private forest land owners—The WNF, as many National Forests, is intermingled with privately owned forest land and other publicly owned land. The owners of these private lands are classified by the Government as “nonindustrial private forest land owners” (NIPFs). In Leavenworth, they were a heterogeneous group formed of newcomers, who acquired their land recently, and long-time residents, who had held their property for several generations. The NIPFs’ level of management ranged from no management to intensive management, although most tended to be concentrated from the no management to moderate management area of this spectrum. Some originally purchased their forest land to produce timber, whereas others enjoyed the recreational opportunities and aesthetics associated with wooded areas. The multiple motivations for owning and directions for managing nonindustrial private forest lands were extremely complex; however, many of these land owners shared concerns about fire recovery on neighboring WNF lands.

Within this stakeholder group were some of the residents most directly affected by the fires. Some NIPFs lost timber they had planned to harvest or lost other opportunities to develop or enjoy their land. After the fires, the common sentiment was frustration over their loss of resources and amenities, and there was general uncertainty over the direction of future management practices. Many NIPFs evaluated areas where the fire burned at a low intensity, thereby causing minimal damage to trees, and were searching for management practices that would encourage this type of burn. The NIPFs who had not planned to log or do other management were rethinking their options so that they could maintain a forest resilient to disturbances. Additionally, fire recovery efforts in the WNF raised or renewed their own concerns of risks and consequences associated with land adjacency.

Other Federal and state agencies—Agencies other than the Forest Service often manage adjacent public lands, consult for adjacent private land, or manage fish and wildlife populations using habitat in a National Forest. The Federal agencies may include the USFWS, Natural Resource Conservation Service (NRCS), and Bureau of Land Management. Also included in this group are state and county land management agencies. Each agency has its own set of mandates, laws and regulations, and organizational protocol, which can complicate a comprehensive fire recovery effort.

Orchardists—

Management and owners—"Chelan County has the best lands in the world for growing apples," claim many orchardists in the local area. Apple and other fruit orchards provide a main source of income for the county; owners and orchard managers thus comprised a strong stakeholder group interested in farming issues. Though most orchards and farm lands border the WNF, fire is not often a threat because of irrigation systems. Local streams are irrigation sources, however, and any changes in water quality affect this system. Increased silt and debris in the streams will cause water pump filters to become plugged, hence requiring additional maintenance.

Labor—Orchard workers in Chelan County predominantly belong to the Latino ethnic group, many of whom are migrant, though some have established their home in the area. Orchard workers did not suffer any major property loss during the fire and were affected only indirectly by smoke, road closures, and other effects that distressed the community as a whole. Latino workers often reside in housing provided by the owner of the orchard where they work, so they were not concerned with potential property loss.

Ranchers—In the west, ranchers graze cattle or sheep on lands adjacent to or in a National Forest. Many ranchers have experienced antigrazing public sentiments in the recent past that favor eliminating or significantly reducing grazing allowed on public lands. Long-term fire management in the WNF can impact grazing allotments and thus, was a concern for ranchers.

Recreationists—Members of this stakeholder group included people belonging to organized recreational groups and independently active recreationists. Their concerns for continued or increased recreational opportunity for the area were a priority when the discussion focused on long-term fire recovery issues. Various types of recreation available in Leavenworth include skiing, snowmobiling, camping, hiking, hunting, fishing, mountain biking, rock climbing, horseback riding, and bird watching. Several subgroup distinctions were identified, and they held differing positions. There was some friction among members of these subgroups, such as the level of access to wilderness areas or consumptive versus nonconsumptive use of natural resources. Yet, the common experiences of spending time outdoors and recreating in the National Forest provided some shared goals and interests among the members.

Backpacking, hiking, and camping—Day trips or overnight camping adventures were common recreation activities for residents as well as tourists. Trail and campground maintenance is necessary to encourage this type of recreation, but the fires damaged some of these facilities. Some local residents volunteered to help assess damage or make repairs on favorite trails.

> I am very familiar with the Rat Creek and Hatchery fire areas. I hiked there before and after the fires—to help the Forest Service assess fire damage on the Icicle Ridge Trail.

Also, access to wilderness was a point of contention for those who like backcountry adventures.

Consumptive resource use—Fishing and hunting are the primary consumptive recreational uses in Leavenworth. Anglers were concerned about possible effects on fish populations from the fire and subsequent erosion and loss of riparian vegetation. Hunters anticipated a change in game populations due to a loss of cover and winter range. Both anglers and hunters expected variations in fish and game populations and they advocated forest management strategies that would encourage prefire population levels to return.

Horseback riding and stock use—Equestrians were already using some trails damaged in the fires and unsafe riding conditions thus were occurring. Some stock users had previously helped to maintain trails and continued to do so in response to the fires.

> I use the national forest for trail riding, packing, wagon rides and sleigh rides. I also help do upkeep work on those trails in the national forest—brushing and water barring.

Their main position, though, did not center on effects of the fires or fire recovery management. Instead, many noted the continual conflict between all terrain vehicle (ATV) users and stock usage.

Motorized use—The forest surrounding Leavenworth has trails for snowmobiles and other ATVs. Supporters of ATV use noted their desire for increased access to Forest Service roads for motorized recreational use. Again, their positions referred mainly to general forest recreation management and not to specific fire recovery issues.

Residents directly affected by fire and rehabilitation—People who experienced fire suppression, structure and property loss or damage, or rehabilitation efforts on or adjacent to their private property were included in this group. They might or might not have shared common views on forest management, yet their experiences with the fires were similar. These residents endured traumatic experiences, such as losing homes, sustaining property damage, and watching as treasured aesthetics irreparably changed, which evoked strong emotional reactions.

> The major loss is timber. We were going to log the property and now we have lost all the timber. All around our house—everything is burnt. There was a tremendous scenic loss; we lost the woods.
>
> My wife and I were frightened about the whole fire experience. We thought we would lose our home....During the fires, I had to water the roof to keep it from sparking. Soon after the fires, I had a metal roof put on. There wasn't a big threat to losing our home, but the thought of it was traumatic.
>
> I was evacuated from my home for two weeks. The firefighters pumped water from the river to protect my home and structures. I was very nervous during the fire and had prepared to evacuate before being forced to.
>
> Our home was threatened by fire—my wife and I decided to stay in the closed area to protect it. We had to sneak supplies past the security at the gates in order to have food, equipment, and fuel for the water pumps to save our home. I feel that if we hadn't been fighting fire at our home, then maybe it wouldn't have been saved.
>
> Three sides of my property border the Wenatchee National Forest....Psychologically, there is a great sadness. Everything burned...nothing can replace the trees or animals. These are the reasons we live in this area.
>
> I lost my home. I was in Alaska at the time of the fire, but my neighbors, son, and daughter tried to save some of my belongings. Now I am living in a barn close to where my home was. I've adapted the barn into an apartment.

Social service providers—This group included people who provide some type of social service to the community, such as education, news and communication, or volunteerism. Many respond as part of their normal work activities to catastrophic events, such as the 1994 fires, and they were interested in any lasting effects on the community, residents, and children.

> There was a sense of community during the fires—people were working with one another during a time of crisis. Even the school district's busses were used to transport firefighters during a time that they were scheduled for repair work.
>
> As a teacher, I had to deal with the kids' emotions since they were scared.

Special forest products gatherers—Mushroom gatherers tended to make up the majority of this group; however, gatherers of berries, lichens, mosses, and other flora also were included. There is little regulation and inventory by the Forest Service to document actual numbers of special products users or the quantity of products gathered from National Forests. From informal assessments, the special forest products gatherers seem to comprise a significant population who use the forests for distinct purposes; therefore, their interests in forest management as related to special forest products have been differentiated from other forest resource users.

Many special forest products gatherers at the WNF come from outside the local area. Mushroom gatherers migrate according to the peak harvest times for different species. Many believed the burned areas might have an increased mushroom yield over the next several years.

Timber interests—Most of the members of this group tended to value trees as a commodity, and they often shared views similar to those of the wise users regarding the commercial use of natural resources. Advocates promoting timber use of forest lands were divided into two general categories: management and labor. This distinction derived from the motivation of each subgroup for promoting timber use.

Management—Management interests tended to reflect private industrial timber ventures sought by tree growing and harvesting corporations as well as wood and fiber processors. Business profitability, responsibilities to shareholders, and market stability across a large geographical scale influence their decisions. Although much private forest land is owned by industrial timber companies, some rely on timber sales offered on public lands. In addition, private forest lands often are adjacent to public forest lands; each ownership tended to be affected by policies and activities occurring on adjacent lands.

Labor—Loggers, mill workers, forest technicians, and forestry consultants comprised the subgroup of timber interests who work directly in the woods or in the mills. Laborers, generally, were influenced by local labor market demands and local timber supply. Having access to nearby timber supplies, such as the neighboring WNF, could generate jobs for local residents as well as community revenues.

Tourism interests—This group included people who managed, owned, or were employed by businesses relying on tourism as well as members of the Leavenworth Chamber of Commerce. Most restaurants, hotels and motels, gift shops, and recreational service providers gain a large percentage of their income from tourists staying in the area. The Leavenworth economy is estimated to be 90 percent tourism related. The interests of this stakeholder group in forest and natural resource management focused on supporting practices that promote tourism, recreation, and aesthetic views.

USDA Forest Service—The Forest Service agency as a whole, the WNF, and the Leavenworth Ranger District have organizational cultures. Protocols exist for gathering and analyzing data, gaining public input, and making decisions, which follow laws, regulations, and guidelines governing agency actions. Because this organizational structure exists, people with different perspectives (often those from outside the agency, but not necessarily) might disagree with the Forest Service's fundamental beliefs, their scientific methods, and their decision rationale.

Data in the social assessment were not collected directly from Forest Service employees. Remarks from employees of other Federal agencies strongly suggested, however, that an organizational structure existed and was a significant presence and influence throughout the decisionmaking process for fire recovery in the WNF.

Residency Tenure Distinctions

At the time of the study, the social structure of Leavenworth was experiencing new additions of people and perspectives, which complicated local views of natural resource use and management. Leavenworth was attracting, and continues to attract, new residents from western Washington and outside the state. An urban migration into a rural community prompts a diverse accumulation of environmental values, often polarizing newcomers and people whose families have lived in the area for several generations. Trends in the social assessment data suggested a perception that long-time residents tended to support commodity production and wise use of the forest, whereas newcomers tended to support multiple use or preservation of the forest. Not all long-time residents and newcomers could be characterized in this manner however; thus, these perceptions may be more stereotypic than precise.

Ethnic Communities

The social assessment identified that the Latino population in Leavenworth forms a parallel community, with social networks distinct from the Anglo community. Many Latinos in Leavenworth were first generation immigrants to the United States, primarily from Mexico and El Salvador.

The prevailing attitude on forest management issues was indifference. Latinos who were interviewed discounted their “right” to participate in the land management process because they were not citizens. Their first reaction to the interviews was one of perplexity that someone would be inquiring after their concerns and interests regarding National Forest issues. Furthermore, they noted there was limited information in Spanish regarding the fires, which kept information from reaching their community; however, they did recognize efforts made by the Forest Service to provide some information in Spanish.

Fire Recovery Issues

Twelve distinct fire recovery issues emerged from interviews with Leavenworth residents:

- Flood and erosion threat
- Use of the burned trees
- Forest health and desired future condition
- Silvicultural practices
- Water quality
- Wildlife habitat
- Media coverage of the fires
- Local decisions and policies
- Forest-residential interface
- Use of public money for fire suppression
- Past and future fire suppression strategies
- Trusting the Forest Service

These issues frequently arose without prompting by the interviewer, thereby suggesting common concerns and interests in this area and that they were connected to fire recovery in the Leavenworth Ranger District. The remainder of this section defines each issue and provides a discussion of the interactions of interested social entities by issue. The complexity of the fire recovery situation was revealed in this detailed discussion and is qualified by excerpts from interviews.

Flood and erosion threat—

Description—Flood and erosion risks were greatest in the Icicle Creek and Tumwater Canyon areas owing to the Hatchery Creek complex fires. Residential homes, structures, and property were threatened along Icicle Creek, whereas in Tumwater Canyon erosion problems threatened access from the west into Leavenworth. Erosion also threatened the water quality of Icicle Creek and the Wenatchee and Columbia Rivers. In addition, erosion on private property was a concern for residents as were rock and debris slides from adjacent slopes of the WNF.

Interactions—Private property rights-home rule advocates supported practices allowing individuals to manage their own property independent of Federal agency management of public lands. Activities might be similar, such as horizontal falling of snags, or different, such as immediate salvage logging and removal. They wanted freedom to choose the best practice to reduce flooding and erosion on their property, because they—not the government—would have to live with the consequences. They did not want to be restricted from performing activities by "bureaucratic red tape" or environmental limitations, which they often perceived to violate "common sense."

Wise users supported practices not hindering the use of natural resources; therefore, they wanted to minimize soil, nutrient, debris, and vegetation loss. Many believed that too much soil and vegetation had already been lost in the fires and more loss would negatively affect the forest's ability to support future resource growth and production. Wise users supported reestablishment of vegetation, such as by planting tree seedlings on the burned areas as quickly as possible.

Environmentalists also supported practices minimizing soil and debris loss from the slopes to the streams, but their goal was to preserve ecosystem functions, unlike wise users who focused on sustaining commodity production and the use of natural resources. Environmentalists were concerned about the effects that more soil loss would have on aquatic flora and fauna as well as the forest being able to support future vegetation. Return intervention environmentalists and multiple users saw erosion as a problem needing to be addressed and called for an organized effort to minimize silt and debris flow. But, nonintervention environmentalists saw erosion as a fundamental part of the fire and recovery cycle, and believed that human intervention could control only a small percentage of the erosion and might have long-term ecological impacts. Both environmentalist coalitions were concerned with the immediate rehabilitation activities, such as grass and wheat seeding and stream modifications. These concerns arose as the short-term benefits from minimizing debris flow were assessed relative to the long-term effects of wheat and grasses growing in the forests.

Concerns of civic leaders focused on the immediate dangers of flooding and erosion to Leavenworth residents. Another concern included water quality because the city's source of water is Icicle Creek. Tourism also could have been affected by floods and erosion, because the longer it would take to restore visible damage to forested ridges, the greater the potential loss of visitors to the area.

Residents directly affected by the fire often lived in areas threatened by flood and erosion, and they worried about further losses and damage to their property. Many supported continued activities by the Forest Service and NRCS to stabilize vegetation and soil on slopes and the placement of various dams to filter debris flowing into streams. There was some doubt, however, as to how much benefit could come from these actions. As taxpayers, they questioned the need for extensive protection versus

the cost and use of public money. Most did not perceive a large threat from flooding or erosion in the Leavenworth area; they therefore did not see a need for extensive protective efforts and might have preferred for the money and attention to be directed elsewhere.

> Erosion and flooding are important issues with the burned areas, but I am more concerned with the direction that the Forest Service will take in vegetation management of the areas not burned as well as the burned areas. I would like to see some fuel management and vegetation management that adapts the forests to more fire resistant species.

Recreationists were interested in minimizing further damage or loss to trail systems and to the aesthetic appeal of the forest. Anglers and hunters wanted risk to fish and wildlife habitat further reduced. Erosion threatens vegetation stability, which provides scenic greenery, food and shelter to wildlife, and root systems to reduce debris flow into streams.

Advocates for tourism interests had many of the same concerns as the recreationists, with an emphasis on Leavenworth's viewing aesthetics. Because many tourists generally confine their stays to the immediate town, a forested view to the south and west of town is conducive to providing pleasant natural scenery. Access into Leavenworth could be hindered were flooding and erosion to occur in Tumwater Canyon. Because many tourists travel U.S. Highway 2 from the west into Leavenworth, a road closure, due to rock or land slide, would significantly impact this traffic flow.

> I am worried about rock and land slides in Tumwater canyon shutting the roads again that might keep tourists out of Leavenworth in the winter and spring.

Some timber interest advocates, mainly adjacent private industrial timber land managers, adopted rehabilitation practices similar to those used by the Federal agencies. It was unclear whether they agreed that all the Forest Service and NRCS rehabilitation responses were ecologically appropriate, or whether their coparticipation in the rehabilitation effort was important for gaining social acceptance.

> The private forest industry was "forced" to go along and participate in the same rehab practices, because otherwise it would have looked bad socially. They participated in having areas seeded with grasses, even though seeding in some areas or some grass species inhibit the forest growth. Grasses take away nitrogen and compete for moisture.

Other Federal and state agencies interested in flood and erosion risks included the USFWS and the NRCS. The USFWS operates a hatchery in Leavenworth and was concerned about water quality issues. High levels of silt and debris in the streams negatively affect fish and other aquatic life by hindering respiration. If stream conditions were to change significantly, migratory fish might not return to Icicle Creek. In extreme conditions, migratory and resident fish might temporarily relocate elsewhere until Icicle Creek could return to normal temperatures and turbidity levels.

> Long-term effects to the hatchery and fish [are] that the vegetation is gone from the slopes to hold the soil in place. This will contribute to muddy waters which affects the fish, hatchery, and other aquatic animals. From previous fires, it took 2-3 years to get back to a normal, low-muddy runoff. There are screens in the streams and drainages to catch leaves, but the magnitude of this year's burns will over-fill the screens. We will not know the extent of this problem until the spring. The fish are irritated at the gills; the silt in the water is abrasive to the gills, making it difficult to breath, and causing the fish to bleed. Also some of the resident fish will have difficulties spawning. These resident fish may migrate to other parts of the river to places if there is more than 8 to 12 days of muck.

The NRCS works with private landowners to stabilize soils on private properties by employing practices such as horizontally falling snags to hold soils and debris on the slopes and building various dams to filter debris out of streams. This agency deemed the threat of flooding and erosion as moderately significant in the Leavenworth area and continued to monitor conditions throughout 1995. Flood and erosion threats had a higher damage potential in the Entiat Valley, so more NRCS efforts were concentrated in that area.

Use of the burned trees—

Description—Significant changes to the structure of the WNF occurred as a direct result of the fire. Many people, but not all, believed actions were necessary to aid forest recovery from the fire disturbance. Key topics of this issue included ecological recovery, fuel reduction, threats of insect and disease epidemics, and commodity extractions. The last topic was commonly referred to as “salvage logging”—a major issue because of the size of the fires, the amount of standing snags left behind, and the economic incentives. Many viewed these standing snags as a usable and commercially valuable resource. Standing snags also posed a threat relative to fuel loading and could be a factor in insect and disease problems in the forest. Many political coalitions and stakeholder groups therefore advocated for salvage logging to “make the most” of a resource that was deteriorating, which then would reduce the risk of snags becoming fuel for future fires and a source for insect and disease epidemics. Others argued that standing and downed snags play an important ecological role for animals, vegetation, and natural processes as a forest recovers from fire.

Interactions—Private property rights-home rule advocates wanted the choice and authority to salvage logs on their own property. This choice is restricted by Endangered Species Act (U.S. Public Laws, Statues, etc. 1973) limitations and by state riparian and logging regulations. Many PPR-HRs valued the sanctity of private property ownership and thus believed they should have decisionmaking power to control activities occurring on their land. The PPR-HRs argued that individual owners could do the best management of their lands because they must live with the results. They also believed their practical and “common sense” activities to be more appropriate than complying with bureaucratic regulations.

The PPR-HRs advocates perceived that environmental interest groups had an agenda to limit private owners’ choices and the activities that could occur on their land. Frustration and anger built among the PPR-HR coalition because many members of the environmental special interest groups were not located in the area and therefore would not experience the effects of such policies and restrictions. If salvage logging were prohibited on private and public lands, PPR-HRs believed they would face higher fire, insect, and disease potential in the future from additional woody debris on the ground, which would place their homes, property, and families in jeopardy.

Wise users were concerned about the trend regionally and nationally of increased emphasis on recreational uses of the forests over commodity uses. Tourism in Leavenworth is popular because of the aesthetics and the many recreational opportunities, which has led to management of the WNF to accommodate more recreational resources instead of timber production. Wise users were frustrated with recreational needs conflicting with fuel management and fire recovery considerations, such as thinning, harvesting, and prescribed fire. One of their biggest fears was the possibility of

the WNF becoming a national park and that another Hatchery complex or Yellowstone-like fire would occur because of recreation-oriented management policies stressing minimal intervention. Wise users believed this management direction to be an inefficient use of natural resources and a liability to residents and landowners near National Forests.

> Environmentalists are stopping us from having all the timber, even the dead stuff falling on top of the grasses. This is a waste of the resource and fuel loading.

Wise users saw much of the standing dead or dying trees from the fire as an economic resource and believed its value would deplete rapidly because the trees were deteriorating. Many believed the timber would be valueless if it were not harvested by summer 1995.

> By the time they [the Forest Service] decide to salvage the trees, the timber won't be marketable. The trees have to be taken out of here in one year.

> The priority of rehab should be salvage logging. The logs sold could pay or overpay for rehab. Salvage is only going to be good for so long. Logs will get blue stain in the spring. From the standpoint of the taxpayer, the rehab costs too much. If the money came from salvage sales, the rehab money could be spent elsewhere—let rehab pay for itself.

Not only would it be an economic resource for only 1 year following the fire, but wise users claimed this resource also would have liabilities if left in the environment. Standing and downed snags could be fuel for the next fires, which could have begun with lightening strikes as early as summer 1995. Many argued that the fires of the future would be bigger and more intense if all the snags were left in the forest.

> Now, they [the Forest Service] have to take out the dead trees because if they leave them there, then they will be fuel for future fires.

> If the Forest Service doesn't salvage, they are wasting a valuable resource. If they don't clean up the forest, they will have more wildfires and more resource loss just like this time.

> If the Forest Service does nothing, we would lose any and all the value left in the salvage logs. This option is unacceptable, but even more unacceptable is the fuel that would be left, setting up the area to burn again and hotter. We will lose even more resources in the long term.

Another argument supporting salvage logging was that this supply of timber could replace live trees tagged for potential logging. Due to the high demand for timber and wood fiber, it seemed logical to the wise users to use the salvage resource, which would be lost eventually to deterioration, in place of cutting live trees, which still would have years of growth and productivity in the forest ecosystem.

Looking at longer term management practices, wise users viewed ecological recovery as essential to this area's ability to produce valuable resources, because to them the current burned areas were not very productive. They believed that by restoring a "living" forest, all resources could be more productive, benefitting the community, state, and Nation. Most favored human intervention, through salvage logging, seedling planting, grass seeding, vegetation management, and prescribed burning, to speed the recovery process. Wise users believed this strategy to be more effective than a nonintervention response to the burned areas, because it would reduce the threat of future catastrophic events and encourage the production of desired resources.

> Number one is to clear timber off. If we take it down, we can plant and it won't be a waste.

> What we have to do is log the area and clean the forest so that regrowth can start.

> Prescribed burning should increase so there aren't as many wildfires. Fires cause waste of materials and resources. If we would harvest and burn slash, then there isn't as much waste when fires do come.

Environmentalists looked at the burned areas and saw one stage of forest succession. Many were less concerned about strategies encouraging a quick response to restore commodity resources, mainly timber. To preserve natural recovery, environmentalists wanted land managers (1) to use scientific knowledge to make judgments about whether to employ a certain practice, (2) to monitor the situation before and after practices were applied, (3) to consider nature's response (no human intervention) as a valid option, (4) to consider native species as appropriate regeneration versus exotic species, and (5) to be aware of effects from recovery practices that might do more harm in the long term than good in the short term.

Nonintervention environmentalists were skeptical about management practices that would remove some or all woody material from the forest. Many believed this practice would have negative consequences, citing that snags serve many ecological purposes: animal habitat, nutrient cycling, physical structure, and other unknown but presumably relevant functions. Most nonintervention environmentalists were completely against salvage logging because it would intervene in the forest's natural response to the fires. They supported management direction to minimize human intervention and allow the forest to regulate itself.

> The burned lands must have natural regeneration and no salvage logging. Some people look at the logs as money, but they don't understand that fire has a purpose and we have to allow that purpose to fulfill itself. Fires play a role in the system if we let it.
>
> Blowdown and beetle kill threats are excuses to salvage log using the reasoning that this is fuel loading. I am also against the argument that says there are plenty of snags for wildlife, even if half of the burned snags are left. Who's to say if there's enough wildlife with only half or partial snags left?
>
> I worry what we may be overlooking in our efforts to hurry up the process. Maybe we will create a less healthy forest than if we just let nature do it without any intervention.

Return intervention environmentalists and multiple users shared common concerns about the impacts salvage logging and extraction might have in the forest. They also were concerned about the effects of leaving so much woody debris in the forest, for fear that future fires would really damage the environmental processes and ability of the soils to support forest life. Return intervention environmentalists attempted to weigh the consequences of logging against not logging. They wanted substantial research conducted to guard against long-term effects before any salvage logging would occur. Many supported salvage logging so long as no new roads would be built and the forest condition was monitored before and after logging. Return intervention environmentalists recognized that humans have altered the forests significantly, and the current condition therefore calls for some drastic human intervention to get the forest back to a more natural state, or historical ranges of variability.

> One issue in rehab should be to salvage log. These logs should be cut before it [sic] deteriorates. It is a matter of conservation to remove dead logs—that much less green trees to be cut. Salvage sales will replace green sales.
>
> Salvage should probably be done. I question if all that dead wood is going to be all that good to keep in the forests—is there an ecological need or will it just be a liability. I am ecologically minded and don't want to endanger bird or other animal habitat, so I don't think all the salvage should be left.
>
> The resiliency of the area is tremendous. I question what use there is in taking salvage timber off the forests. The snags will help shade the soil, which keeps temperature down to aid the regeneration. The fallen snags provide structure for the forest floor. Since the forest floor was burned, there is a need to provide some structure which will help retain water and allow mycorrhizae fungi to develop.

> Roads are a tremendously large experiment.
>
> A hands-off policy is too late. In the Entiat area, the Tyee was an unnatural fire and so a hands-off policy is a dumb strategy.

Multiple users favored some human intervention to support productivity of all forest uses, but thought intervention should be cautious so that long-term ecology would not be jeopardized by short-term benefits. They believed that a balanced management strategy was needed so that one condition in the forest would not significantly threaten another. Many suggested moderate salvage operations, following all laws and regulations to ensure that impacts on the whole ecosystem would be considered.

> Salvage should be done, but it should not be an excuse to do rampant clearcutting. It's a shame to waste a resource, if it could be salvaged. However, other impacts shouldn't be ignored.
>
> Salvage is the main problem. There is a lot of product out there that could be used, but we need a balance....There should be some resource extraction, but they need to be careful and not damage other parts of the environment.

Civic leaders were interested in ecological recovery to restore a more pleasing scenic quality to Leavenworth and to have a more productive forest ecosystem. They defined a productive forest as one that would not threaten residents with flood and erosion or future catastrophic fires and one that would provide clean water and recreational opportunities. Because of poor economic returns from the 1994 summer tourism season, many civic leaders saw businesses struggling; hence, the community was struggling. They preferred a quick recovery to minimize short-term economic problems. Yet, they did not want this quick recovery to jeopardize long-term sustainable use of the forest, because that was synonymous to long-term Leavenworth sustainability. Most civic leaders favored salvage logging because of the economic benefit to Leavenworth. Additional benefits included views without snags, which they saw as more aesthetically pleasing, and opportunities to reduce fuel accumulation for future fires. The effects from the Hatchery complex fires were perceived mostly as negative; thus, many wanted to avoid similar fires in the future.

> There is skepticism of the Forest Service being able to get the salvage logging done soon enough—there is fear that the resource will be lost, economic values lost to schools and county roads.
>
> If there is no salvage logging, there will be a potential for fuel accumulation. Salvage and regeneration will quickly get things growing again. The Forest Service needs quick action before deterioration of the timber happens.

Because many residents chose to live in Leavenworth for its natural beauty, recreational opportunities, family history, and employment opportunities, they favored quick ecological recovery for aesthetic, recreation, and economic benefits. Most residents supported salvage logging, unless they had environmentalist perspectives.

Residents directly affected by fire and rehabilitation were interested in salvage logging in the WNF because they typically were adjacent land owners. Safety concerns from snag liabilities and the scenic qualities of backyard views may have accounted for this difference.

Both long-time residents and newcomers tended to favor salvage logging but for different reasons. The former viewed snags as a timber resource and were more predisposed to logging as a traditional, useful option, whereas the latter viewed the snags as unpleasant to look at so removal for any reason would be a solution.

Advocates for tourism interests were most interested in recovery so that tourists would want to come to Leavenworth. Scenic views and recreation are the major draws to the area in addition to the Bavarian theme. These advocates favored restoring views, designing educational opportunities highlighting fire and ecological recovery, and advertising to reassure potential tourists that the damage from the fires was not so great as perceived through the media. Additionally, the establishment of interpretive facilities could encourage visitors to come to Leavenworth to learn about fire effects.

> Rehab should also be promoted. It should be made into a tourist attraction. Make it a positive and not a negative. The Forest Service should lead an interpretive experience about fire and the forests. If it was publicized correctly, it could be an economic boom.

> The agency should use the fire lines from this summer and turn them into hiking or cross country ski trails and maintain them as permanent fire breaks. We might as well use them now for recreation and in the future to fight fire again.

Advocates for timber interests favored salvage logging because it could provide economic benefits and reduce fire liability of the snags, arguments similar to those of wise users. Many wanted a management approach that would cultivate a predominantly "living" forest on a sustainable basis, safeguarding against damage from fires, insects, and diseases. They believed that removal of most of the salvageable wood would minimize these risks. In addition, timber interest advocates argued that salvage logging in the WNF was desirable and supported Forest Service long-term goals for multiple use and resource management. But, many were critical and had little faith that the Forest Service could implement salvage logging before the wood became economically valueless.

> The Forest Service is too slow in salvage efforts. Already there are private logs going out of the woods. The state DNR will soon be logging. But the Federal Government is not even starting. They have only until next spring with the blue stain setting into the ponderosa pine. They only have 8 months—so there should be a red alert to get the salvage out. Everyday I see big trees on the ground that would more than pay for my day's wages on a rehab crew.

Private timber managers supported salvage logging to remove economically valuable trees from the burned areas of the WNF; this would mirror salvage activities occurring on similarly burned adjacent private forest land. They were skeptical, however, of "lofty Forest Service ideas," believing bureaucratic processes would stall recovery practices that needed to be implemented in a timely manner.

Timber workers also supported salvage logging, quick regeneration, and intensive vegetation management to restore the burned lands with forested lands. Benefits, according to this stakeholder subgroup, included immediate job opportunities and a management direction that would enhance future timber production.

Timber interest managers and workers believed that given public approval and political authority, the WNF could foster the recovery of natural resources and maintenance of environmental processes. Practices corresponding to this management included salvage logging of most of the standing snags, replanting with a mixture of native tree species at correct spacing, and thinning at future intervals. The priority, according to their arguments, should be to reestablish trees lost in the fires and to manage the level of fuel accumulation on the forest floor and vegetation density among forest canopy layers. The 1994 fires significantly reduced the quantity of timber resources; thus, most timber interest advocates hoped the Forest Service would adjust its management directions to guard against high fuel loading.

Whether the Forest Service were to salvage-log or not, managers of adjacent timber companies were not concerned about salvage supply because they had enough salvage from their own lands to harvest before time would run out. They were concerned, though, about fuel loading in the neighboring WNF. A fire starting in the WNF could easily spread to their lands again, regardless of different practices, including salvage logging.

> 6500-7000 acres of our commercial timber burned from fires that started on Forest Service land.

Recreationists supported ecological recovery and continued access to the forest. Safety in the forest was important as well. Many enjoyed their individual experience with nature and would not want to be constrained to smaller or limited areas, which would cause more frequent encounters with other recreationists. Access to areas closed by the fires therefore was desirable as soon as safety would permit. Additionally, many recreationists found it mutually beneficial to offer volunteer services to the Forest Service and other agencies to contribute to fire recovery.

> I can't hike because branches and trees will fall. The areas should be made safe.

Special forest product gatherers often visited from outside the community. Because morel mushrooms respond to disturbances such as fire, many believed the WNF would have a great potential in spring 1995 for a major morel harvest. These forest users favored few restrictions on access to gather mushrooms and other special forest products. They also favored increased prescribed fire in the WNF to cultivate mushroom crops.

> The morels are primary colonizers, they come in after fires, floods, and other disturbances. The major disturbances produce carbohydrates that are a nutrient source for the mushrooms. The Entiat and Leavenworth districts could produce morels because there was so much fire disturbance and the ecological conditions are suited for morel production.
>
> Where the fire burned in mosaic patterns will probably be good areas for mushroom growth. Areas in intense burns where the soil was sterilized, we don't know. Where there are small woody debris on the ground, the morels will have more potential of doing well. Micro-site conditions are the leading factor for their growth.

Forest health and desired future condition—

Description—Forest health and desired future condition were often main topics of discussions for long-term forest management policies among local, regional, and national voices. Many people were concerned about the conditions of the WNF, especially when they saw the large quantities of land burned and trees that were dying from insect, disease, light, water, and nutrient stress. Each stakeholder group and political coalition defined the meaning of a "healthy" forest according to their perspective. Also, each perspective identified management practices that would nurture a healthy forest toward a desired future condition.

Interactions—The main focus for wise users in sustaining a healthy forest was to have a continued supply of resources. This translated into a forest providing resources and environmental processes within its carrying capacity. To wise users, a disturbance that would reduce the potential of the forest to produce resources would be characterized as unhealthy, such as insect and disease infestations exceeding average levels, larger than normal sized or intensity fires, or stand replacement fires burning too frequently. Also, the plant and animal species composition should be within a historical range of species suited to the climate and vegetation. Many wise users referred to historical ponderosa pine type forests that included few true firs and were characterized by open

and parklike stands. They believed the forest was not stressed by overcrowding and competition for water and nutrients. This forest type was desirable, from their perspective, as a future condition of the WNF. Wise users would like to see the forest return to this ponderosa pine type forest, which they believed to be capable of minimizing catastrophes and able to recover from insect, disease, and fire disturbances.

> Fire suppression from 75-80 years ago has created an unnatural environment. The dry ponderosa pine-Douglas-fir site has changed to a multi-canopy true fir type. The latter is not a fire resistant forest type and it is prone to drought stress. Grand fir is taking hold in great numbers throughout the region. Fire needs to be introduced back into the forest with prescribed burns. Unfortunately the Forest Service doesn't have a good track record with controlling the prescribed burns. Some of this has been bad luck with weather conditions and others have been due to poor planning and bad judgment.
>
> I am tired of the environmental arguments, such that a forest is not natural once man intervenes or that once a clearcut is made then there is never a forest again in that area. This is ridiculous! Forests are renewable and can be managed.
>
> Fire control and spotted owl [management] are just not compatible. The desired future condition is more political than a scientific condition.

Environmentalists also were concerned about the long-term condition of the WNF. Most wanted the forest sustained because of its natural integrity and contribution to environments regionally and globally. They felt that forests are important not only for humans but for all biological life, chemical processes, and physical dynamics. Environmentalists also referred to historical ponderosa pine forest types as a desired future condition. They claimed the forest was maintained naturally before human intervention. A healthy forest therefore was defined by them as one able to manage itself without human intervention, or one that is able to stay within HRVs and be resilient to human disturbances.

Return intervention environmentalists recognized that an absolute restoration to a historical forest condition was not a reasonable expectation for the future, because humans now were "part of the equation." Many argued for a forest that would be able to coexist with humans and continue to function within its own cycles. This condition did not have to be fixed; it could be dynamic with disturbances causing new or cyclical conditions. The key would be to have a forest able to stay approximately within the same range of conditions as it would have were there no humans interacting with it and trying to minimize human disturbances that significantly alter natural conditions and responses.

> We need patches of fire in the landscape. We didn't understand it. We grew up with Smokey the Bear telling us fire is bad. This fire was a lesson.
>
> It is hard to accept catastrophic fire, especially for those living in the woods. But we can't expect to exclude fire and we can't assume that we are living in a wilderness. Humans are here and coexist with other species. We have to take care of our nest, in the short term and long term.

Nonintervention environmentalists had the perspective that the fires in 1994 were nature's response to the current conditions; moreover, they felt that a desired condition for the future was unknown, because humans have to wait and see how nature recovers itself. To them, the concept "forest health" was ambiguous because humans do not know all the complex functions that "bad" disturbances serve: Perhaps these fires brought more positive benefits than negative to the forest and its ability to survive. They felt it was premature for humans to define what is healthy and what is unhealthy, because we would not know all the functions a burned snag or a beetle-infested tree might serve.

> The Forest Service's goal should be to repair the damage created by man. A healthy forest would be one that is least interfered with by man. Man creating a healthy forest is an oxymoron. How can man create something natural?

> In my case, I don't consider I lost anything. There hadn't been any fire on my land since 1910. This fire cleaned it out, making it very good and healthy for the forest....Fire is part of the ecosystem, and it will come through from time to time.

Multiple users favored management practices that would intervene to a larger degree than was favored by both environmentalist groups. They felt that because most forest resources are limited, it would be necessary to manage these resources so that none would be depleted or degraded beyond recovery. They argued for a "balanced approach" to management practices to provide multiple resources into the future. Some consideration of HRVs of the forest would be critical, because many multiple users acknowledged difficulties in sustaining nonnative species, especially when their maintenance would jeopardize native species. Many were quick to argue the contradiction in management strategies that attempt to sustain late successional reserves (LSRs) and minimize catastrophic fire. The LSRs often have downed woody debris and fuel ladders, which encourage high-intensity fire buildup.

> The pre-white man forest was one that regulated itself with natural selection. A better forest will come from developing the life of the flora and fauna. Man's harvest may increase if we do not impact the other components of the forest too harshly.

Civic leaders defined forest health in a way similar to wise users, where a healthy forest is able to provide resources and support the community without threatening long-term productivity. To them, disturbances that lessen resource supply would decrease forest health. Leavenworth civic leaders were interested primarily in the resources of clean water, scenic beauty, recreational opportunities, timber, and wildlife habitat. They wanted the forest to be enjoyed by local residents and by tourists, now and in the future. Some had researched the historical ponderosa pine forest type and questioned whether that type of forest could support the community's interests sustainably.

Some long-time residents remembered previous conditions of the forest: the species that grew in the area and the population levels of the many wildlife species. They also remembered when the Forest Service employed more silvicultural operations than currently practiced. Long-time residents often referred to previous years and cited less damaging fires. "We didn't use to have fires this big or intense." Many desire a forest with minimized fire, insect, and disease disturbances through whatever practices would be necessary. They believed that foresters and loggers had not been able to do their jobs because of environmental restrictions and bureaucratic "red tape;" to them, the case of forest health therefore appeared more political than ecological.

> The bottom line is that the fires need to be put out. We cannot afford to waste the resources.

For many newcomers, the Hatchery complex fires were a new experience that filled them with fear and awe. Many did not know that nature could be so powerful and controlling. After seeing the effects of damaged homes, lost wildlife habitat, altered views, and people's stress-related experiences, many newcomers wanted fires minimized in the future, if possible. Yet, this goal seemed unattainable because they saw the fires as uncontrollable: "Who can control where lightening strikes?" And they perceived the Forest Service as more a fire suppression response than land managers able to manipulate the environment before fire. Their definition of forest health centered on visual aesthetics. Many wanted the forest to be cleaned up, with blackened snags and the accumulation of woody debris on the forest floor removed. Newcomers often had moved from urban areas and wanted to live someplace beautiful; having a scenic forest surrounding them in Leavenworth was a desired future condition.

Private timber managers compared Forest Service management of the WNF to private tree growing companies' management of private land. They defined forest health as the capacity to grow economically valuable trees in perpetuity, without significant losses. They acknowledged that some loss due to fire, insect, and disease would be unavoidable because of the climate and location. Yet, many believed that by employing the right practices, humans could manipulate the growing conditions of the forest so that it would recover from fire and other disturbances with minimal damage. Thinning, species composition, and spacing were important silvicultural tools for timber interest managers and workers. Their desired future condition for both private and public lands was to have a forest that would support tree growing stock, now and in the future. They wanted silvicultural practices used to guard against catastrophic events that would set the forest and soils back to secondary or primary successional states. If fires burn so hot that soils are sterilized, they argued that no one would benefit because of the time needed for nature to restore productive soils; no resources would be provided to the community and further problems would occur from erosion and stream dynamic changes.

> The more that the Forest Service can reduce the potential for catastrophic fire, then the more I am pleased with good forestry practices being used on the national forest.
>
> The Forest Service needs to consider the possibility of catastrophic fire again....They need to think of areas in terms of "firesides" by looking at natural boundaries and then looking for points of control.

Recreationists generally wanted a "healthy," aesthetically pleasing forest. Many wanted the greenness restored by replanting trees and shrubs to replace the burned and blackened areas. Future large, high-intensity fire were not desirable because they would curtail recreation. A desired future condition from the recreationist perspective included maintaining a living forest with small patches of fire-burned or insect- and disease-killed trees. Many understood that these disturbances would occur in the future, but they wanted the damage contained.

> Fires are not conducive to recreation which is a big part of forest use in the area. I see the focus shifting from timber to recreation here and in other areas. I believe the Forest Service should focus on recreation and managing the access to the forests through use permits.

Advocates of tourism interests shared views similar to those of civic leaders and recreationists: a healthy forest would be key to a healthy tourism industry. Many visitors come to the area to experience the scenic beauty and recreate in the woods, so maintenance of the views was a primary element in their desired future condition of the forest. Guarding against a repeat of the 1994 fires was a top priority for future WNF management according to this stakeholder group. Many had heard testimonies supporting the use of silvicultural practices to take a proactive stance in preventing fire, and so they wanted to learn more about these practices and the feasibility of implementing them.

Silvicultural practices—

Description—The Leavenworth community has had a history with forest management practices emphasizing timber production. Land managers, forestry consultants, timber industry managers, and loggers often advocated for the use of silvicultural practices to cultivate timber as one forest output. Practices mentioned included thinning (precommercial and commercial), prescribed burning, pruning, slash management, sanitation and salvage removal, harvesting, replanting, and other vegetation management. The main goal of using these methods would be to produce commercially valuable timber.

Most timber interest advocates and wise users favored these practices for managing the forest to minimize damage from insects, disease, and fire. The use or nonuse of these silvicultural practices in the WNF continues to be strongly debated within the community. This issue is fundamental to deciding the direction forest management should take in the future and achieving desirable conditions of the forest.

Interactions—Private property rights-home rule advocates desired the use of traditional silvicultural practices on private and public land. Many believed these practices would produce desirable results on their own private land. Through silvicultural practices, private property owners could thin forested land, remove insect- and disease-infested trees, and treat slash accumulation, all of which would allow private property owners to maintain their forested land as assets instead of liabilities.

The PPR-HRs viewed the public lands as an integral part of rural communities. In their view, management of those lands should consider primary effects on the local communities. Many wanted public lands to be managed so that potential catastrophic damage or extreme changes disrupting the communities would be reduced. The PPR-HRs believed silvicultural practices to be the appropriate tools for this goal.

Wise users similarly supported many silvicultural practices as appropriate methods to conserve forest resources and ecosystems for the future. They believed the National Forests to be straying from this management philosophy because of pressure from environmentalists for hands-off management policies. Fires as large and intense as those in 1994 were perceived as more destructive and damaging than what might have occurred had intensive silvicultural management been applied.

Many wise users supported continued production of resources and environmental processes. They claimed that disturbances, such as catastrophic fires, destroy fundamental elements in the forest and restrict resource production. Wise users argued that fuel management by silvicultural methods would enhance efficient resource production and use into the future without catastrophic damage and loss.

> A Wenatchee World article, “Forest fire can be good for the ecology,” shows what the public is reading about forest management. I am upset with the paper’s portrayal that this is new science, whereas instead foresters and loggers have known these techniques for a long time, but have been prohibited from using them. Techniques such as thinning, logging, and slash removal can mimic fire or reduce the potential intensity of fires, so that fire can be good for the ecology.
>
> Part of the problem is that consumers are too far removed from the end-product. We want less timber harvesting, but we aren’t aware of where all the fiber goes to. On a global scale, creating natural resource products will have less impact.

In addition to debating about silvicultural practices, wise users advocated that land managers, such as the Forest Service, need to have the necessary authority to reduce fire size and intensity potential. Many believed management practices to be restricted in the recent past by legal injunctions and Endangered Species Act (U.S. Public Laws, Statutes 1973) concerns overriding good public land stewardship.

Environmentalists were wary of silvicultural practices because that term implied a management direction dictated by humans. Many argued that nature should “run its own course.” Environmentalists recognized that humans do not have perfect knowledge of how the environment and all its complexities function; therefore, they were concerned about unknown effects resulting from thinning, changing the species composition, or removing insect-infested trees. Some questioned whether long-term forest health would depend on having “unhealthy” elements in the forest and whether high site

productivity would involve more than maximized tree growth. Nonintervention environmentalists preferred a conservative approach, leaving disturbances and recovery in the hands of nature.

> I think the best option is no intervention. The fire was devastating because they have suppressed fires for so long. If the forest is in its natural condition, then it will burn healthy.

Return intervention environmentalists and multiple users wanted to see careful research before silvicultural practices would be employed, significant monitoring, and a willingness by the Forest Service to adapt management policies to new information.

> Thinning and prescribed burning have a place in forest management. But these practices must be done on a manageable scale—the size and number of them that occur on the district. But I feel that the district doesn't have enough personnel to monitor the prescriptions to see whether they were carried out properly and whether they satisfied the objectives.

Civic leaders also favored silvicultural practices to actively attempt to minimize threats of high-intensity fires. Many wanted active forest management, because they had witnessed futile fire suppression efforts during fires of large magnitudes. They wanted the Forest Service to take aggressive steps to avoid another catastrophe, such as the 1994 fires, to provide a safe, enjoyable, and productive quality of life for the community.

> If the forests would have been logged or thinned before the fire, maybe things wouldn't have been so disastrous.

> I feel bad for the loggers and the Forest Service, because they pleaded to do their jobs prior to the fire, but weren't allowed. If they had, then maybe they would have been able to prevent some of the damage.

Residents directly affected by fire were concerned about another fire starting on WNF land and then spreading to adjacent private land. They wanted to minimize damage occurring on their own property, and to do that they often employed silvicultural practices. But, this strategy would not prove effective if a fire started or intensified in the National Forest. Many would like the Forest Service to implement silvicultural practices to reduce fuel loading in the WNF. These actions would mirror activities done on adjacent private lands and promote a cooperative effort among various landowners to reduce the chance of fires spreading across multiple land ownerships.

Water quality—

Description—Water quality was immediately affected by the fire through the amount of fire retardant and ash deposited into streams. Potential additions to streams included excessive amounts of silt and debris from floods and erosion. Water quality is essential for fish habitat, other aquatic species, and stream dynamics. Long-term turbidity and stream temperature changes could put pressure on the typical plant and animal species residing or migrating to the local streams. Additionally, the City of Leavenworth receives its water from Icicle Creek. A water treatment plant on Icicle Creek was damaged by the fire, but it was quickly repaired. Water quality would remain an issue for city water treatment so long as silt and debris levels were above average.

Interactions—Wise users believed water quality to be a natural resource that should be managed within the scope of other natural resources, such as timber, wildlife, and soils. Many cited that the regional streams had adapted to fire occurrence and could cope naturally with high levels of debris entering them. Most believed extra restrictions to not be necessary for stream recovery. Instead, most wise users believed salvage logging of snags near streams could aid public safety during potential floods because snags falling into streams tend to form dams. When these dams eventually fail, they can jeopardize lives, structures, and aquatic species downstream.

Environmentalists and multiple users also believed water quality to be an important forest resource. They also believed that streams had adapted to fire occurrence in the area. Environmentalists, however, believed snags falling into a stream could add to its physical and biological structure. They were less convinced of an optimum level of snags in the streams and advocated for little or no salvage logging near streams.

Civic leaders were concerned about providing water to the community. Because the water treatment plant was in a burned area, they wanted to retain its capability to produce potable water for Leavenworth residents. They also realized the importance of fish populations to residents and recreationists. Maintaining streams to support both residents and fish were the civic leaders' priorities.

Most Leavenworth residents directly affected by fire were not as concerned about the threat of flood and debris potentials as were residents in other communities, specifically those in the Entiat Valley. However, they thought there was a need to carefully monitor the weather and water quality to prepare for situations that could threaten human safety.

The USFWS was concerned about water quality as it related to fish habitat and hatchery operations because increased stream turbidity and temperature could be detrimental to fish and aquatic plant species.

> The erosion control will affect fish habitat dramatically as well as the ability to restore shade to the streams.
>
> Reforesting the land should be a priority. Trees and other vegetation such as willows along the streams is important to fish habitat. There has been a loss of shade which affects stream temperature. Without shade the rocks collect heat, warming the streams 24 hours a day. Water temperature is a key factor for the fish, affecting their metabolism, food intake, and growth. The food source is also affected by water temperatures, and without food the fish are really in jeopardy.

Orchardists received their irrigation water from streams. Many experienced mechanical problems, such as more frequent pump filter replacements, when excessive debris levels were present. They supported efforts to hasten stream recovery, such as reestablishing vegetation in riparian areas and placing filter dams in streams to improve the quality of irrigation water.

Wildlife habitat—

Description—Because of the loss of their habitat, many wildlife species experienced a shortage of food and shelter after the fire. Many residents saw wildlife visiting their yards during autumn 1994 and speculated about less food and shelter being available in the typical autumn and early winter locations and leaving wildlife more desperate and searching for alternative food and shelter in lower elevations. Many people were profoundly concerned for the obstacles some species of wildlife could face in the upcoming winter.

Immediately after the fires, many residents experienced various and untypical wildlife in their yards. There seemed to be some displacement of insects and wildlife after the fire, but this was temporary, unlike those species that continued to search for food and shelter months after the fires.

Interactions—Most residents were concerned about changes and losses of wildlife habitat. Many had a lot of questions about the quantity of animals directly killed in the fires and the predicted amount that could die in the near future from starvation and predation. A common question concerned the effectiveness of the proposed feeding

program over the winter: Would it only delay death for some species? Would it provide needed sustenance for a normal sized population? For example, if deer populations were to be maintained by these feeding programs until rangeland partially recovered, then perhaps more deer would be sustained than the quantity typically surviving over a winter; hence, starvation of large numbers of deer could occur in following winters.

Each wildlife species had direct, indirect, and cumulative effects from the fire on its habitat. Most political coalitions and stakeholder groups were sympathetic to the wildlife situation but did not have distinct positions on what, if any, action should be taken.

Media coverage of the fires—

Description—During July and August 1994, local, regional, and national news teams covered fire behavior, fire effects, personal stories of residents, and overall fire damage. Long-term effects of these news stories remained an issue for many of the local residents and organizations. Some felt the fire damage had been overstated and that the experience sensationalized; they feared this might cause a reduction in the number of tourists choosing Leavenworth as a destination. To counter this image of damage, several people suggested that additional media coverage could publicize Leavenworth's fire recovery and demonstrate the relatively unchanged tourist attractions.

Interactions—Civic leaders and the tourism interest advocates were frustrated with some of the fire media coverage. Owing to the emphasis in the news on the size, intensity, and damage resulting from the fires, tourism decreased dramatically after the fires started. Members of both stakeholder groups received many inquiries immediately after the fires from people outside the area who thought Leavenworth had burned down or had a severely blackened view. But tourists frequently asked restaurant, lodging, and retail employees to point out the burned areas, which suggested that fire damage was not distinctly apparent to visitors, contrary to what they had heard through the media.

> Business was down this year even before the fire and after it has been terrible. When the tourists come back they look around and think it isn't so bad.
>
> I believe the news and media coverage hammered the area. It wasn't as bad as they said.
>
> For the businesses, the adverse publicity was the main problem. The news wasn't accurate. They said the town was destroyed and that kept people away.
>
> We see bare spots, but the tourists are not as aware of them.
>
> We don't know how many tourists have changed their minds about coming to Leavenworth later in the year, after the fires.
>
> The visitors can't really see the effect of the fire. I am asked everyday [sic] to point out where the fire was, because the tourists are not able to tell the difference.

Local decisions and policies—

Description—There is a growing concern generally for policies legislated in Washington, DC, that mandate policy or restrict land use on local private and public lands. Many local residents blamed environmental special interest groups lobbying in Washington, DC, for the restrictions placed on National Forests and private lands. These restrictions provoked a sense of helplessness and desperation among some rural community residents because they perceived the Federal Government and special interest groups as having more control over events in the local area than the local residents.

Many western Washington residents, who recreate in Chelan County—referred to as 206ers[6]—were clumped into the same category as national environmental lobbyists. Often, 206ers were perceived to support recreational opportunities and low-intervention management, whereas some locals wanted more commodity opportunities and high intervention for fuel management in the WNF. Many local residents believed that 206ers did not fully understand the effects these restrictions placed on orchardists, ranchers, timber, and forest managers. After all, they reasoned, local residents live near the forest year round and face long-term policy consequences, whereas 206ers arrive only for weekends and summer vacations.

Rural residents were beginning to organize and develop strategies of their own to bring more decisionmaking power back to local communities. One strategy was to implement a Catron County, NM, style ordinance, requiring Federal agencies to consider the effects that a management decision or policy would have on the local community. Local residents wanted a voice in policy decisions for private land and public land management affecting local communities. And, they wanted the Federal Government to be accountable to rural communities neighboring public lands.

Interactions—Private property rights-home rule advocates were upset with the lobbying power of national interest groups and the resulting policies restricting practices on Federal lands that directly impacted community and county affairs. Because 98 percent of Chelan County land area is managed by public agencies, the policies for these lands overwhelmingly affect residents. The PPR-HRs wanted the Federal Government to be sensitive to local residents, businesses, and lifestyles when managing public lands, and thus they supported a Catron County-style ordinance for Chelan County.

> The Catron County style ordinance isn't saying that the government is wrong or that the people supporting the grassroots movement are anti-government. We just want everyone to live up to the laws and the Constitution.

Primarily, they wanted the Forest Service to manage the WNF so that it would not incur catastrophic fire damage, including losses of structures and the natural resources Leavenworth depends on. The PPR-HRs advocated that fuel management should be the top priority for the Forest Service's Leavenworth Ranger District.

> The federal agencies are not interested in people and what is going to happen to them. It is not the government that is wrong; it's just that the agencies haven't been doing their job. Land users should be more involved in these processes.

> Without our resources, we have nothing. I am opposed to locking up the national forests because it hurts everyone across the nation. Everyone's quality of life will decrease and the national economy will lose strength.

> I am worried with efforts like that of the International Park. People seriously think the UN will run it, moving local people off the land. People don't trust government and will believe anything that others tell them.

Wise users were concerned with the long-term effects on the local environment, especially as outside environmentalists entered the fire recovery decisionmaking process. Wise users advocated that communities could coexist with the environment and that consumptive and nonconsumptive uses of WNF natural resources could continue.

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[6] This nickname corresponded to the western Washington telephone area code (206 at the time of the fires) and served to differentiate the perceived urban dwellers of the state from people living in less populated, more agrarian-based communities east of the Cascade Range.

Wise users desired active-intervention land management of the forest through silviculture to minimize catastrophic future fires and maximize recovery of the burned lands to a more productive level instead of preservation, which they perceived to be inappropriate.

> We lost our resources in this fire: watersheds, timber, and wildlife habitat. And now the locals have to suffer the consequences of the decisions forced on them by the environmentalists, specifically the policy of locking out logging.

> There should be more local control over the extractive resources. But there is a problem with an extreme view of this; the public land is not just owned by the locals. The national population has a stake in what happens on the public lands.

Environmentalists and multiple users desired some Federal Government influence and control over local land management practices. Many felt that the PPR-HRs advocates and wise users were not aware of the long-term effects that some silvicultural practices could have on the forests. Most therefore believed that without some regulations on the public lands, situations like the "Tragedy of the Commons"[7] will occur. Many environmentalists believed that without regulations for use of and access to the National Forest, long-term sustainability would suffer. They were concerned that short-term benefits might encourage land development and that commodity extraction would override long-term ecological needs. In response, local environmental groups organized to monitor Forest Service management. Some groups were chapters of national organizations, whereas others were independent.

> We are worried about the anti-growth management sentiments. We used to live in New Mexico and are very familiar with the Catron County ordinance and dislike it immensely. We believe that the locals here don't know how trashed the areas will become without some government restrictions.

Civic leaders were frustrated with outside environmental influence, because they believed local residents would have more intimate knowledge of the local area and would use appropriate practices to manage that land to maintain it for future generations. Outsiders, on the other hand, were not perceived to be as familiar with the area or to understand which practices would be beneficial for the land and community.

> The 206ers are only interested in recreation. They need an understanding of why the forest should be managed.

Forest-residential interface—

Description—Debate over fire suppression priorities questioned whether people should be allowed to build and live in the forest interface and the appropriate level of fire protection if they do. Priorities in the 1994 fires for directing fire suppression resources were (1) protect human life, (2) minimize damage to houses and other structures, and (3) protect the environment from high-intensity burns. Most people agreed that human safety should be the first priority, especially after the tragic loss of lives in Colorado in June 1994. The debate on protecting homes and other structures over protecting the forest and environment raised issues of private property owners' liability for living in areas difficult to protect from wildfire and the county's regulation of residential

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[7] The "Tragedy of the Commons" (Harden 1968) refers to the circumstances in which the land and its associated resources are held in common by a community or society. The "tragedy" refers to the fact that individuals have no incentive to conserve resources, because such conservation benefits the entire group rather than the individual. Hence, individual actors, according to the argument, exploit the "commons" for personal gains, overusing its resources, and thus creating the "tragedy."

development in the forest interface. Some argued for limitations to the amount of people allowed to build in remote forested areas, which would entail some type of county zoning. Others argued there should not be any restrictions; those who build in areas having high fire potential should not expect extreme efforts by public agencies to protect private homes and structures. The key factor was that houses and other structures could be replaced to some extent, although it would be emotionally difficult; whereas lost ecosystems and soil productivity would take decades to gradually recover. If there were fewer structures to protect, fire suppression could then focus on minimizing catastrophic damage to the forest.

Interactions—Private property rights-home rule advocates supported an individual's choice to build and locate a home. Many disagreed with growth management plans preventing individuals from living in certain areas. Most advocated that if people chose to live in the forest, they would have to take responsibility for their own personal safety. This might include building houses with metal roofs, clearing brush away from structures, creating fire breaks around property, and pursuing other wildfire preparedness plans.

> People who have a house in the forest should take responsibility.
>
> We believe that people who live and build next to the hill sides, in fire-prone areas, should have fire proof roofs, watering devices, and private fire breaks. The private owners need to take their own action, they can't expect the agency to take responsibility.

Environmentalists and multiple users tended to support some type of growth management plan to guard against chaotic development of natural environments. A fear of short-term economic benefits to land developers overriding long-term ecological needs was expressed. Most supported the choice to live near the forest, but they wanted to ensure that the integrity of the environment would not be jeopardized with too many people moving into remote or sensitive areas.

The role of fire suppression in the forest-residential interface evokes a dilemma. Environmentalists believed a let-it-burn policy to be the most natural response, which would allow fire to carry out its ecological function. This, however, would threaten communities and public safety. So, what would be the desirable balance between let-it-burn and put-it-out-now policies to protect the natural integrity of the forest and adjacent communities? Environmentalists wanted more let-it-burn policies, whereas multiple users wanted the option of put-it-out-now should fires significantly threaten communities and other forest uses.

Growth management advocates supported increased regulation of residential development near the WNF and other forest land to maximize public safety and minimize structural losses during forest fires. Some claimed that growth management would reduce the quantity of structures needing fire protection in the future, so that containing a fire in the WNF would receive attention sooner.

> This fire has forced us to look at the urban-wildland interface.
>
> There should be more work in residential areas [next to National Forest borders] such as thinning and cleaning up debris piles.
>
> I agree with the policy of protecting the structures and letting the rest burn.
>
> America wants to get out of the intercity rat-race and move into the country. This creates an interface with the forest.

> There is a dilemma about letting people live in the woods. If people are not there, then you can have a let-it-burn policy. But since there are people in the woods, we can't have a let-it-burn policy without burning down structures. I feel that the people who do choose to live in the woods should take some responsibility in protecting their homes such as no shake roofs and putting in their own fire breaks. As a taxpayer, I am not sure about all the money spent on saving homes in this fire.

Civic leaders often were caught in a dilemma over the issue of people living in the forest interface. On one side, a growing population would increase residential development and benefit the community economically. Immigration trends to Leavenworth from urban centers signified that people wanted to leave cities. Yet, if too many people were to move into the area, the community would experience changes in size, values, and arrangement. Civic leaders were concerned about the impacts settlement in the forest interface produced because this increased the need to provide fire protection in the remote areas.

Most residents also battled with this dilemma. Some were already living in the forest and immensely enjoying that lifestyle. Yet, if too many other people were to move into the forest, it would not be the same secluded lifestyle. Most residents favored not restricting the choice to build in the forest, but others desired some organization of this settlement. Hence, growth management issues were highly volatile among residents.

Use of public money for fire suppression and rehabilitation—

Description—Owing to the size and behavior of these fires on public lands, the costs to fight them and to rehabilitate and recover damaged forest ecosystems were tremendous. As taxpayers, most residents were concerned about the expenditures. People questioned whether certain expenditures were effective and efficient uses of public tax dollars. Fire suppression priorities came under question. Should public money be used to protect private structures, or should private property owners be financially accountable? Another question about using public money to aid the rehabilitation and recovery process was, How much protection against flood and erosion is desired or sufficient? Estimates based on historical occurrences predicted that floods often follow significantly large fires. Using large amounts of public money to mitigate these anticipated risks generated some controversy.

Interactions—Wise users, multiple users, and environmentalists shared a concern for the long-term sustainability and viability of species and environmental processes, even though their specific management priorities differed (wise users wanted a commodity-producing forest; multiple users wanted to continue providing multiple resources, not a single or limited range of resources; and environmentalists wanted to preserve ecosystem processes). All coalitions witnessed the large amount of public money spent on fire suppression and rehabilitation, yet this approach prioritized saving structures before the forest. Many questioned whether less money should have been allocated to structural protection and more to wildfire control. Logic dictated, to these stakeholders, that most structures would be insured and could be rebuilt, whereas the environment would take much longer to recover, if ever. As taxpayers, many would like to reevaluate the priorities of fire suppression to ensure that the Federal budget targets public land protection instead of private land subsidies.

> Money pops out from everywhere in big fires and lots of money for rehab. Money should be used before fires to reduce the potential for catastrophic damage.

> Wildfires are a natural condition, have been and will be into the future. Some caution in spending on fire suppression and rehab is needed; the government should not be subsidizing people's mistakes. Why should we as taxpayers finance others' imprudence?

> People chose to live in a particular area; I am not in favor of spending large sums of money to protect homes. If the government is not directly responsible for damage then extensive protective measures are not needed. It is not a wise use of resources (taxpayers' dollars) to spend on protecting a few homes.
>
> The Forest Service needs to spend money before the fire to reduce the fuel instead of needing so much money for fire control and rehab—more preventative fire control.
>
> We've set up a blank check in the government to fight fires, which encourages us to spend money.

Timber interest advocates also questioned whether protecting structures is economically justifiable. They estimated the value of timber lost in the fires to be much greater than the value of homes saved. This timber resource loss would increase if it were valued in terms of gross national product, which would incorporate all handlers of the wood products.

For many timber managers and NIPFs, losses of their timber growing stock were attributed to fires starting in the WNF and spreading to adjacent private corporate timber land. Many believed these losses could have been reduced had fire suppression focused on containing fire to public land instead of so many efforts being dedicated to protecting private structures. They wanted to see government agencies use public funds to protect public lands and, consequentially, not jeopardize adjacent private lands.

Some long-time residents also were concerned with the large amount of public money spent on fire suppression. They compared current firefighting practices to earlier years when more local volunteers were used. Many believed costs could be reduced if more local volunteers could react immediately with labor and equipment for fire suppression efforts instead of waiting for fire crews to arrive from across the Nation.

Past and future fire suppression strategies—

Description—Some Leavenworth residents believed the Forest Service to be too active in its fire suppression tactics. Only a few comments were directed at this issue, and most residents felt the Forest Service acted professionally.

Interactions—Brush removal and backburning occurred on some private properties adjacent to the WNF to create fire breaks. Some residents directly affected by fire, who experienced these suppression tactics, stated that these tactics were overly destructive. A few people believed the Forest Service to be liable for property damage from these perceived unnecessary backburns and vegetation removal.

> My land was backburned to stop the fire and I believe I should be reimbursed for the damages.

Trusting the Forest Service—

Individual comments[8]—Generally, the local residents considered the local Ranger District personnel to be friendly, supportive of the community, and fulfilling job roles as best they could.

> My experience with the Forest Service has been very positive. They have a good attitude and are very informative. They are community oriented and concerned to do their job right even if people give them hell.

[8] Most opinions and attitudes about the Forest Service were individual and did not correspond to particular group perspectives.

> I am very happy with the local district. They are active in the community and they know people in the community. The difficulties they have is the agency regulations and the bureaucracy....I feel the district has done as much as can be done. They make creative efforts to work with other agencies and residents.
>
> I like Sonny O'Neal; he's a good manager and a nice guy. I also like the local ranger, who is sensitive to the land.
>
> I have had good experience with the Forest Service. They are good. The fact is they are just a group of individuals and there's everything, good and bad. They are understaffed and underpaid. Under these conditions, they do the best they can.

Residents noted the District's openness and diligence during the fires in keeping the public informed of fire activity and suppression strategies.

> I feel this ranger district was very open about what was happening about the fires and their plans for controlling it. They did an excellent job of keeping people informed....The current relationship [with the community and Ranger District] is open and desirable. They have done about as much public involvement as they can do. Given time, more people in the area will come around and respond to the openness.
>
> All the information officers during the fire were helpful. The local ranger district is very active with the community and provides good communication. It keeps people involved and informed.

Although most residents had positive comments about their experiences with the Forest Service, some residents had prior negative experiences unrelated to the fire.

> The Forest Service say they will manage [the land], but they say one thing and do another. They would go out and look at the timber sales that we complained about, but in the end our appeals were rejected. They will do whatever they want.

Other comments about the agency as a whole, not just the Leavenworth District or WNF, blamed top-ranking Forest Service officials and Washington, DC, policy decisions for unsatisfactory local management practices.

> The real decision makers and power holders are Al Gore and Bruce Babbitt.
>
> The problem is that decisions are made by the Secretary of the Interior, the Secretary of Agriculture, or the Head of the Forest Service. They should be made by back country rangers that have worked through the system.
>
> These wildfires are unacceptable. But what can the local Forest Service district or supervisor do when DC won't let them do their jobs?
>
> O'Neal and Heath are good people and good professionals, but they can't do their jobs. However, the Forest Service Chief should not be a biologist. He should be someone who has field experience in fire prevention, cutting, and restoring green space.

Some residents applauded the new management directions deemphasizing timber harvesting as a primary function of the National Forests.

> I like what the agency is doing now with Jack Ward Thomas. The past practices to get the sale out, following the allowable sale quantity (ASQ) forced the agency to cut on south facing slopes and to use clearcuts. These practices put pressure on the national forest in a biological way and gave cause for the environmental watch-dogging.

For some, needed changes in bureaucratic procedures and political processes still required agency attention to achieve genuine commitment to ecosystem management rather than timber management.

> The Forest Service needs to plan for contingencies and prioritize their objectives. And, they need to take another look at priority number one—timber sales....They need to organize funding in the forest plan for other [nontimber] activities.

> We don't trust them. The Forest Service will not acknowledge that there is a connection between the budget and timber sales. It seems that they have learned to talk the talk that pleases a lot of the public, but their actions still are timber oriented.

Not everyone, however, supported cutbacks in traditional timber practices.

> The Forest Service is on a wildlife kick, to save the forest for habitat. In trying to do this, they destroyed the forest, because it just burned anyway. Saving habitat is a good goal, but they went about it the wrong way.

> The local district's relationship with the logging community is not very good; there is distrust and frustration among those in the logging community. The structure of the district has changed—there are less people in timber than before. Timber people have been replaced or shifted to biologists. There are not near enough people in the district as there are things to do on the ground. The Lake Wenatchee and Leavenworth Districts have shifted from timber to recreation; they are Seattle's playground.

Overall, the community desired efficient and effective management of the public forests. Many residents judged the local Forest Service by actions occurring on the ground and communication of their scientific rationale for these actions.

> What is done on the ground will make a difference, improve the relationship with the community. I don't just want meetings that will massage the public; I want results and responses to the public.

> People are going to have to face the needed practices to keep the forests healthy. Part of the Forest Service's job will be public relations in explaining what is desired and why. And, what practices are necessary to get to this condition.

Entiat

Entiat is a small, rural town on the edge of the Columbia River in Chelan County, WA. Five hundred of its residents live in town with the rest dispersed throughout greater Entiat. The town of Entiat is next to the WNF, and it developed as a timber and agriculture community. Since the arrival of the first settlers in the Entiat Valley, timber harvesting has been one of the main activities, along with apple production. The timber industry produced boxes for the apple orchards, and economic stability was provided for Entiat residents. The Entiat Ranger District has been in town since the early part of the town's history, and the agency has worked in unison with the two industries in town.

The community is at its third site. Entiat was first established below "Numeral Hill," but its growth was restricted there. It moved from that site to a more accessible area and, according to historical accounts, became a more cohesive town. A long-time resident described the next move of the community as the "major blow." Entiat had to move this time because construction of Rocky Reach Dam, which began in 1956, would flood the site. This last move to the current location was not so successful as the previous one; the community's layout is dispersed and does not promote cohesiveness. Many residents described the new site as lacking a "town atmosphere." This move occurred in the 1960s and later, in 1970, the mill closed adding economic confusion to social pressures in the community.

Currently, Entiat has two new industries and also has become a bedroom community for Wenatchee and other areas. Some orchardists have divided their property for housing developments. At the time of the study, Entiat was in transition from a timber dependent community to a diversified community functioning as a retirement community and a recreation-oriented area. Entiat, located in a fire prone area, has seen several major fires during its history. In summer 1994, the Tyee fire burned more than 100,000 acres. It burned 20 homes in the greater Entiat area and caused the loss of hundreds of acres of private forests, timber, and range land.

This section begins with descriptions of the social framework components found in Entiat: political coalitions, stakeholder groups, residency tenure distinctions, geographic divisions, and ethnic communities. These five social entities and the various themes within each were derived inductively from the social assessment data and not constructed from preconceived categories. Definitions and conclusions pertain to Entiat and may not represent other communities or situations. Similarly, relevant fire recovery issues suggested by local residents are presented, and interactions among social entities, by issue, provide further understanding of the social complexity of fire recovery management.

Political Coalitions

Three fundamentally different themes emerged in Entiat as political coalitions representing distinct world-views of natural resource policy: multiple use, private property rights-home rule (PPR-HR), and wise use. Within each theme, some diversity was found. Supporters individually subscribed to differing degrees of the positions offered by a particular political agenda; however, collectively shared beliefs and ideologies distinguished one coalition from another.

For this report, the general positions and political agenda voiced by each coalition[9] have been summarized in the following discussion without detailing every subtheme. Three coalitions represented separate agendas for the management of forest lands; however, the distinction between wise use and PPR-HR was subtle. “Wise use” refers to a particular belief system supporting certain desirable forest practices on public lands, whereas decisionmaking authority was a primary issue for PPR-HR advocates.

Multiple use—Multiple users viewed the environment as an entity not entirely separate from society. Many believed that an interdependent relation exists between the environment and society, and thus they advocated that humans could coexist with nature, including consumptive, recreational, and spiritual uses of the forest. In their eyes, management and human intervention in the environment need to be sensitive and respectful of the many elements and complex relations in nature. Overuse, or overemphasis of one use to the detriment of others, was a concern, and they therefore felt management to be necessary to limit risks associated with practices not commensurate with true multiple use.

Multiple users tended to be less politically organized and take less extreme positions on issues than environmentalists in Leavenworth and Chelan. This was mostly due to their emphasis on using resources versus preserving ecosystem processes.

Private property rights and home rule—Individuals who shared private property rights perspectives supported personal choice and self-regulation of private property over government legislation and regulation. Independence to live their lives and tend their own properties as they chose was a key factor to this perspective. A rising concern among many private property rights advocates was their perception that the Federal Government is increasing regulation of activities that can and cannot occur on private lands.

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[9] A significant difference between Entiat and the neighboring communities of Leavenworth and Chelan was the absence of residents voicing the two environmentalism themes of nonintervention and return intervention. This is not to say that no environmentalists reside in Entiat; instead, this theme did not emerge from strongly held values by social assessment interviewees in Entiat. Moreover, environmentalists residing in Chelan, Wenatchee, and Leavenworth voiced interest in Entiat Ranger District forest management practices, thereby suggesting local watch-dogging efforts.

> If they zone my land as agriculture and the economy changes and I can't grow apples anymore, they are taking away from me the opportunity of doing something different. My land is my livelihood....

Another concern was the perceived lobbying power of special interest groups in Washington, DC, which the PPR-HRs felt were attempting to limit activities on private properties.

Often linked to private property rights ideology was the concept of home rule, denoting a preference for local control over centralized government control. Relative to private lands as well as state and Federal public lands, many rural residents believed their political voice to be overpowered by others in urban areas and in government positions higher than the local level. To regain some control of their individual freedoms, many PPR-HRs advocates also supported legislating a Catron County, NM, style ordinance for Chelan County. The principle goal of this ordinance would be to require that Federal agencies consider local customs, cultures, and economics when adopting new management plans; Federal agencies would have to consider local conditions and needs to avoid disrupting local community ways of life.

The 1994 summer fires strengthened the support for this political coalition because of the issues that emerged. The latent danger of future fires, the need they saw to salvage-log burned forests, and the threat of flood and erosion created support for more local control. People in Entiat felt threatened by their lack of control over resource management practices in their local community. This coalition claimed to be defending their rights against threats from environmentalists, city residents, and government representatives deciding what should occur on the local forest lands.

> Environmentalists want to make things better, but in their view people have no place here. That's why we have private property rights people. There is the problem of them wanting to create an International Peace Park here. Everyone here thinks if they want an International Park, they should put it in Seattle.

Wise use—People with a wise-use perspective of natural resource management argued for efficient, utilitarian use of resources. Most recognized that natural resources have some limitation in either the quantity currently available or the quantity available on a sustained-yield basis. They believed this limitation should be mitigated with intense management of renewable resources so that resources can be cultivated and used in perpetuity.

Wise users viewed natural resources in material and utilitarian terms. Their primary goal for these resources was to cultivate them for use. This coalition often formed in opposition to environmental coalitions, which advocate nonuse and preservation of ecosystems. The local wise use coalition leadership cadre was relatively small compared to environmental leadership, but the wise use following was large, with an especially large concentration in rural communities such as Entiat. Additionally, there was a comradery among the people supporting the wise-use movement with those favoring PPR-HR and timber interests.

Stakeholder Groups

A variety of stakeholder groups exists in Entiat. Some are organized formally through clubs, professional affiliations, tribes, or civic bodies; others are loosely formed by shared activities made available by WNF resources. The following list shows stakeholder groups found in Entiat through the social assessment inquiry. General descriptions follow, with subgroups defined when relevant to understanding variations in positions on fire recovery issues.

Stakeholder groups in Entiat:

- Civic leaders
- Firefighting infrastructure
- Former Forest Service employees
- Growth management
- Native Americans
- Nonindustrial private forest land owners
- Orchardists
- Other Federal and state agencies
- Ranchers
- Recreationists
- Residents directly affected by fire
- Social service providers
- Special forest product gatherers
- Timber interests
- USDA Forest Service

Civic leaders—This group included people holding elected, appointed, or hired positions in the community and representing local government and businesses. They tended to support activities economically beneficial to Entiat, including tourism, development, and sales and extraction of natural resource commodities. Additionally, they were well known among the community; therefore their opinions on issues facing Entiat would be respected and provide credibility for local residents.

Firefighting infrastructure—Fire suppression policies directly affect people who gain employment by supplying labor and equipment to control fire, both structural and wildfire. Additionally, rehabilitation efforts immediately after forest fires generate opportunities for employment. Policies on fire suppression and rehabilitation therefore generate employment opportunities for local residents as well as regional and national firefighting personnel, especially in situations where the magnitude of fires is as large as those in Chelan County in 1994. If fire suppression policies were to change significantly, those supplying labor and equipment would experience changes in income sources.

Former Forest Service employees—Members of this group included retired Forest Service employees or people who once worked for the Forest Service. Retired Forest Service employees often have decades of work experience with the agency, are familiar with the organizational culture, and know the many changes the Forest Service has undergone in the last 50 years. Many retirees referred to previous practices to critique the effectiveness of newer practices; for example, many compared the past “10 a.m.” fire suppression policy (see footnote 5) to current fire suppression priorities.

Other people who left the Forest Service prior to retirement were in some cases critical of the agency—sometimes supportive, sometimes faultfinding. Regardless of their opinions, former Forest Service employees tended to have a great familiarity with the

local area and conditions. Their rich knowledge of land management and the local area produced insightful, analytical, and detailed opinions of how forest and natural resource management should proceed after the 1994 fires.

Growth management—The growth management stakeholder group was concerned with an increasing population trend in Entiat and throughout Chelan County. Many wanted to preserve the lifestyles associated with Entiat, such as natural aesthetics, recreational opportunities, and a rural community structure but found this goal difficult to achieve as more people move into the area and build homes in the forest interface. Growth management advocates desired some planned organization to this population growth, such as land use zoning. They mentioned regulations that might limit the proximity of new residences to forest land, stipulate building codes that would reduce fire damage, or limit practices that could occur on private property.

Native Americans—Unfortunately, no Native Americans were interviewed. Because the social assessment was geographically limited to local communities of the WNF and many members of the Yakama Nation lived outside this area, this report lacks the perspectives of Native Americans affected by the 1994 fires and subsequent forest management. It is important and necessary to acknowledge that they have fishing, hunting, and special place interests in the Entiat area and likely would be involved in any comprehensive forest recovery effort. Further research is needed to document Native American perspectives, positions, and stakes in the WNF.

Nonindustrial private forest land owners—The WNF, as many National Forests, is intermingled with privately owned forest land and other publicly owned land. The owners of these private lands are classified by the Government as “nonindustrial private forest land owners” (NIPFs). In Entiat, they were a heterogeneous group formed of newcomers, who acquired their land recently, and long-time residents, who had held their property for several generations. Their level of management ranged from no management to intensive management, although most tended to be concentrated from the no management to moderate management area of this spectrum. Some originally purchased their forest land to produce timber, whereas others enjoyed the recreational opportunities and aesthetics associated with wooded areas. The multiple motivations for owning and directions for managing nonindustrial private forest lands were extremely complex; however, many of these land owners shared concerns about fire recovery on the neighboring WNF lands.

Within this stakeholder group were some of the residents most directly affected by the fires. Some NIPFs lost timber they had planned to harvest or lost other opportunities to develop or enjoy their land. After the fires, the common sentiment was frustration over their loss of resources and amenities, and there was general uncertainty over the direction of future management practices. Many NIPFs evaluated areas where the fire burned at a low intensity, thereby causing minimal damage to trees, and were searching for management practices that would encourage this type of burn. The NIPFs who had not planned to log or do other management were rethinking their options so that they could maintain a forest resilient to disturbances. Additionally, fire recovery efforts in the WNF raised or renewed their concerns of risks and consequences associated with land adjacency.

Other Federal and state agencies—Agencies other than the Forest Service often manage adjacent public lands, consult for adjacent private land, or manage fish and wildlife populations by using habitat in a National Forest. These Federal agencies may

include the USFWS, NRCS, and Bureau of Land Management. Also, included in this group are state and county land management agencies. Each agency has its own set of mandates, laws and regulations, and organizational protocol, which can complicate a comprehensive fire recovery effort.

Orchardists—

Management and owners—"Chelan County has the best lands in the world for growing apples," claim many orchardists in the local area. Apple and other fruit orchards provide a main source of income for the county; owners and orchard managers thus comprised a strong stakeholder group interested in farming issues. Though most orchards and farm lands border the WNF, fire is not often a threat because of irrigation systems. Local streams are irrigation sources, however, and any changes in water quality affect this system. Increased silt and debris in the streams will cause water pump filters to become plugged, hence requiring additional maintenance.

Labor—Orchard workers in Chelan County predominantly belong to the Latino ethnic group, many of whom are migrant, though some have established their home in the area. Orchard workers did not suffer any major property loss during the fire and were affected only indirectly by smoke, road closures, and other effects that distressed the community as a whole. Latino workers often reside in housing provided by the owner of the orchard where they work, so they were not concerned with potential property loss.

> We won't be affected. Most Latinos live in houses provided by the orchardists. They stay here a few months and then they leave. The fire didn't affect them. We are not citizens so we have nothing to say about this.

Ranchers—Ranchers in Entiat were a small stakeholder group, composed mostly of long-time residents who traditionally have grazed cattle on public and private lands. Ranchers often supported grazing as an appropriate tool for controlling forest fuel loading. To their chagrin, ranchers have experienced antigrazing public sentiments in the recent past that favor eliminating or significantly reducing the amount of grazing allowed on public lands. Many felt they had been vilified and faced constant struggles with the Federal Government to defend their assumed rights to graze on public lands. Ranchers often supported PPR-HRs through advocating for local control and consideration of traditional ways of life.

Recreationists—Members of this stakeholder group included people belonging to organized recreation groups and independently active recreationists. Their concerns for continued or increased recreational opportunity for the area were a priority when the discussion focused on long-term fire recovery issues. Various types of recreation available in Entiat include skiing, snowmobiling, camping, hiking, hunting, fishing, mountain biking, rock climbing, horseback riding, and bird watching. Several subgroup distinctions were identified, and they held differing positions. There was some friction among members of these subgroups, such as the level of access to wilderness areas or consumptive versus nonconsumptive use of natural resources. Yet, the common experiences of spending time outdoors and recreating in the National Forest provided some shared goals and interests among the members.

Most visiting recreationists either camp at Entiat's campgrounds or find lodging in neighboring towns, because only one two-room motel is located in town. Evidence of conflict emerged between Entiat residents and visiting recreationists. Complaints of private property trespassing and littering were mentioned frequently.

Backpacking, hiking, and camping—Hiking and camping were preferred activities among Entiat residents. The forests and wildlife are part of the reason residents had chosen to live in Entiat. As one resident explained, she goes "out to the back country where there is real wilderness experience." Trail rehabilitation was essential to continue this activity after the fires.

> We are worried about trail closure. In Entiat, the hikers will go wherever they can. Although some trail bridges have burned down, hikers might have to go through streams, and because of the currents they might not be able to use the trails till late spring.

Some believed that recreationists would be attracted to see the effects of the fire.

> Backpackers and hikers won't like the ash in the forest but they might be curious to see what happened with the fire. Some areas have been cleared so they will be able to appreciate the scenery.

Consumptive resource use—Fishing and hunting are the primary consumptive recreation uses in Entiat. Anglers were concerned about the possible effects on fish populations from the fire and subsequent erosion and loss of riparian vegetation. Hunters anticipated a change in game populations due to a loss of cover and winter range. Both anglers and hunters expected variations in fish and game populations, and they advocated forest management strategies that would encourage prefire population levels to return.

Horseback riding and stock use—Equestrians were already using some trails damaged in the fires, and unsafe riding conditions thus were occurring. Some stock users had previously helped to maintain trails and continued to do so in response to the fires. Their main position, though, did not center on effects of the fires or fire recovery management. Instead, many noted the continual conflict between ATV users and stock users.

Motorized use—The forest surrounding Entiat has trails for snowmobiles and other ATVs. Supporters of ATV use noted their desire for increased access to Forest Service roads for motorized recreational use. Again, their positions referred mainly to general forest recreational management and not to specific fire recovery issues.

Residents directly affected by fire and rehabilitation—People who experienced fire suppression, structure and property loss or damage, or rehabilitation efforts on or adjacent to their private property were included in this group. They might or might not have shared common views on forest management, yet their experiences with the fire were similar. These residents endured traumatic experiences, such as losing homes, sustaining property damage, and watching as treasured aesthetics irreparably changed, which evoked strong emotional reactions. In Entiat, this distinction was evident between interviews with residents living up the valley and those living in town.

Stressful conditions for up-the-valley residents did not end when the fires were controlled. The subsequent rehabilitation process invaded the valley, disturbing the normally quiet and private area. Big machinery, rock extraction, stream channeling, and dike construction changed the landscape in a manner highly reminiscent of the fire. Many residents stated that the rehabilitation changed their day-to-day life patterns. Many residents directly affected believed that leaving the area for the weekend was the only way they could distance themselves from the stress of both the fires and the rehabilitation that continued for several months.

> When is this going to end, all the work they do after the fire? It is still depressing. The only way to get relief is to leave for the weekend. People get upset with other people because they don't understand. It's not just the house that's lost. It's sad to look at the difference. It'll never come back in [my] lifetime.

Social service providers—This group included people who provide some type of social service to the community, such as education, news and communication, or volunteerism. Many respond as part of their normal work activities to catastrophic events, such as the 1994 fires, and were interested in any lasting effects on the community, residents, and children.

Special forest products gatherers—Mushroom gatherers tended to make up the majority of this group; however, gatherers of berries, lichens, mosses, and other flora also were included. There is little regulation and inventory by the Forest Service to document actual numbers of special products users or the quantity of products gathered from the National Forests. From informal assessments, the special forest products gatherers seem to comprise a significant population who use the forests for distinct purposes; therefore, their interests in forest management as related to special forest products has been differentiated from other forest resource users.

Many special forest products gatherers at the WNF come from outside the local area. Mushroom gatherers migrate according to the peak harvest schedules for different species. Many believed the burned areas might have an increased mushroom yield over the next several years.

Timber interests—Most of the members of this group tended to value trees as a commodity, and they often shared views similar to those of the wise users regarding the commercial use of natural resources. Advocates promoting timber use of forest lands were divided into two general categories: management and labor. This distinction derived from the motivation of each subgroup for promoting timber use.

Management—Management interests tended to reflect private industrial timber ventures sought by tree growing and harvesting corporations as well as wood and fiber processors. Business profitability, responsibilities to shareholders, and market stability across a large geographical scale influenced their decisions. Although much private forest land is owned by industrial timber companies, some rely on timber sales offered on public lands. In addition, private forest lands often are adjacent to public forest lands; each ownership tended to be affected by policies and activities occurring on adjacent lands.

Labor—Loggers, mill workers, forest technicians, and forestry consultants comprised the subgroup of timber interests who work directly in the woods or in the mills. Laborers, generally, were influenced by local labor market demands and local timber supply. Having access to nearby timber supplies, such as the neighboring WNF, could generate jobs for local residents as well as community revenues.

In 1979, the only sawmill in Entiat closed, causing economic and career dislocation in the community. Many timber workers moved from Entiat or made a choice to commute long distances to remain in logging or forest management consulting.

USDA Forest Service—The Forest Service agency as a whole, the WNF, and the Entiat Ranger District have organizational cultures. Protocols exist for gathering and analyzing data, gaining public input, and making decisions, which follow laws, regulations, and guidelines governing agency actions. Because this organizational structure exists, people with different perspectives (often those from outside the agency, but not necessarily) might disagree with the Forest Service's fundamental beliefs, their scientific methods, and their decision rationale.

Data in the social assessment were not collected directly from Forest Service employees. Remarks from employees of other Federal agencies strongly suggested, however, that an organizational structure existed and was a significant presence and influence throughout the decisionmaking process for fire recovery in the WNF.

Residency Tenure Distinctions

At the time of the study, the social structure of Entiat was experiencing new additions of people and perspectives, which complicated local views of natural resource use and management. Entiat was attracting, and continues to attract, new residents from western Washington and out-of-state. An urban migration into a rural community prompts a diverse accumulation of environmental values, often polarizing newcomers and people whose families have lived in the area for several generations. Trends in the social assessment data suggested a perception that long-time residents tended to support commodity production and wise use of the forest, whereas newcomers tended to support multiple use or preservation of the forest. Not all long-time residents and newcomers can be characterized in this manner however; thus, these perceptions may be more stereotypic than precise.

Geographic Division

For many generations, there has been a distinction between residents living “in town” and those living “up the valley” along the Entiat River. A cluster of people live in the lower elevation town site, whereas another group of residents resides along the Entiat River. From the main road up the valley, smaller rural and logging roads extend where homes are nestled in the WNF.

This geographical division reinforced differences between people in town and those up the valley, including differences over the 1994 Tyee fire. When driving Entiat River Road today, there is no evidence of the fire for about 10 miles, at which point burned snags and charred understory dominate the landscape. New manufactured homes have replaced several homes lost in the fire. This closeness to the forest and direct contact with the fire reveals the reality these up-the-valley residents faced. Their emotional responses to the fire and subsequent rehabilitation greatly differed from the experiences of “in-town” residents.

Impacts of the Tyee fire were felt more intimately by those living up the valley, as exemplified by the longer time they needed to grieve and adjust daily routines from the stress of an uncontrolled wildfire, an invasion of fire suppression crews, and rehabilitation disturbances. In-town residents escaped all the imminent fire danger and were ready to return to regular life activities relatively quickly. These different experiences separated the perception of the fires and associated activities by the various Entiat residents.

> I don’t think people outside the fire and rehab areas, like those in town, know the stress for those of us who live in the area. The fires lasted one month but the rehab has gone on ever since. It is very invasive of our privacy.

This geographic division explained some of the different values and interests held by Entiat residents as well as conflicting positions on fire recovery issues in the Entiat District of the WNF.

Ethnic Communities

The social assessment identified that the Latino population in Entiat forms a parallel community, with social networks distinct from those of the Anglo community. Many Latinos in Entiat were first generation immigrants to the United States, primarily from Mexico and El Salvador.

The prevailing attitude on forest management issues was indifference. Latinos who were interviewed discounted their “right” to participate in the land management process because they were not citizens. Their first reaction to the interviews was one of perplexity that someone would be inquiring after their concerns and interests regard-ing National Forest issues. Furthermore, they noted there was limited information in Spanish regarding the fires, which kept information from reaching their community; however, they did recognize efforts made by the Forest Service to provide some information in Spanish.

Fire Recovery Issues

Thirteen distinct fire recovery issues emerged from interviews with Entiat residents:

- Flood and erosion threat
- Use of the burned trees
- Forest health and desired future condition
- Silvicultural practices
- Water quality
- Wildlife habitat
- Local decisions and policies
- Forest-residential interface
- Use of public money for fire suppression
- “Project fire” theory
- Past and future fire suppression strategies
- Trusting the Forest Service
- Severe emotional impact of the fire

These issues frequently arose without prompting by the interviewer, thereby suggesting common concerns and interests in this area and that they were connected to fire recovery in the Entiat Ranger District. The remainder of this section defines each issue and provides a discussion of the interactions of interested social entities by issue. The complexity of the fire recovery situation is revealed in this detailed discussion and is qualified by excerpts from interviews.

Flood and erosion threat—

Description—Flood and erosion risks were greatest in many canyons along the Entiat River where the Tyee fire destroyed much of the vegetation and thus decreased soil stability. Previous experiences in Entiat with wildfire showed that it was likely that flood and erosion problems would follow the Tyee fire and threaten homes, bridges, and other structures. Most residents expected floods to occur in the year following the large wildfires, based on historical accounts. Importantly, many feared that these events would be more life threatening than the fires; thus, public safety became a primary objective.

> The main problem is mudslides and floods. They [government agencies] are doing what they can; structures have been set in some creeks. The main objective is to save lives. Even the Forest Service personnel said lives would be lost during the floods.

Interactions—Private property rights-home rule advocates supported practices allowing individuals to manage their own property independent of Federal agency management of public lands. Activities might be similar, such as horizontal falling of snags, or different, such as immediate salvage logging and removal; but they wanted freedom to choose the best practice to reduce flooding and erosion on their property because they—not the government—would have to live with the consequences. They did not want to be restricted from performing activities by "bureaucratic red tape" or environmental limitations, which they often perceived to violate "common sense."

Wise users supported practices not hindering the use of natural resources; therefore they wanted to minimize soil, nutrient, debris, and vegetation loss. Many believed too much soil and vegetation had already been lost in the fires and more loss would negatively affect the forest's ability to support future resource growth and production. Wise users supported reestablishment of vegetation, such as by planting tree seedlings on the burned areas as quickly as possible.

> They have to reseed: plant brush and little trees. They don't have any trees so air seeding is the only choice they have now.

Multiple users saw erosion as a problem needing to be addressed, and they called for an organized effort to minimize silt and debris flow. They also questioned the overwhelming rehabilitation effort by the Federal agencies.

> Agencies doing rehab are overestimating the flood threats and haven't thought out their actions. Nature has its own way of recovery from the fires.

Concerns of civic leaders focused on the immediate dangers of flooding and erosion to Entiat residents. Another concern included water quality because the city's source of water is the Entiat River.

Those residents directly affected by the fire typically lived up the valley in areas threatened by flood and erosion, and they worried about further losses and damage to their property. Although they believed the Federal agencies were working hard on the immediate rehabilitation efforts, they were not confident that these actions would prevent future damage. A small group of residents claimed the Forest Service should be responsible for any damage caused by flooding or mudslides because these events would be a consequence of the Tyee fire, which according to them, could have been stopped.

> There will be floods out of the fires; where there were pools on the river, now you can wade all of it. It's full of brush and debris. It all started since 1970 when the fires went out of control. It is not the logging that has caused this. They [Forest Service] will have a huge flood. They are spending twenty million dollars on rehab and that is terrible. It is just a big show. What they are doing might or might not work.

The concern for liability emerged from the perception that rehabilitation was an effort to prevent future lawsuits against the Federal Government. As one long-time resident explained, "It is better to spend the money on mitigating the effects than on lawsuits." The common concern among these residents was a lack of trust in the Forest Service, not only during the Tyee fire, but also in the routine relations between the community and agency. Living through the fire seemed to have further diminished their confidence in the agency's ability to prevent another natural disaster.

> Flooding is going to be bad. Mud Creek will be the bad one. They are very busy trying to prevent the floods. I don't know how to prevent one; the only thing they can do is slow it down. Before [the Tyee fire] I trusted the Forest Service to do the right thing but now I don't know.

Residents in town often expressed confidence in the Forest Service preventative measures against flooding and erosion threats. Many believed the Tyee fire was an inevitable disaster, not the fault of fire suppression efforts, and therefore any floods or mudslides would not be the fault of any land management agency.

> Between now and next spring we can only cross our fingers and hope for the best.

Recreationists were interested in minimizing further damage or loss to trail systems and to the aesthetic appeal of the forest. Anglers and hunters wanted risk to fish and wildlife habitat further reduced. Erosion threatens vegetation stability, which provides scenic greenery, food and shelter to wildlife, and root systems to reduce debris flow into streams.

Some timber interest advocates, mainly adjacent private industrial timber land managers, adopted rehabilitation practices similar to the Forest Service for their burned forest land. It was unclear whether they agreed that all the Forest Service and NRCS rehabilitation responses were ecologically appropriate, or whether their coparticipation in the rehabilitation effort was important more for gaining social acceptance.

Other Federal agencies interested in flood and erosion risks included the USFWS and the NRCS. The USFWS operates a hatchery in Entiat and was concerned about water quality issues. High levels of silt and debris in the streams negatively affect fish and other aquatic life by hindering respiration. If stream conditions were to change significantly, migratory fish might not return to the Entiat River. In extreme conditions, migratory and resident fish might temporarily relocate elsewhere until the river could return to normal temperatures and turbidity levels.

Orchardists also had concerns about the effect of erosion and mudslides along the Entiat River—a major irrigation source for valley agriculture.

> The agencies have made a real effort to grass the lands, which is the major problem. I don't know if this will prevent erosion. I am concerned with the river, too many sediments could reduce the water level. I am a farmer and I need the water.

The NRCS works with private landowners to stabilize soils on private properties. The NRCS employs practices such as horizontally falling snags to hold soils and debris on the slopes and building dams to filter debris out of the streams. This agency deemed the threat of flooding and erosion as highly significant in the Entiat area and continued to monitor conditions throughout 1995.

Use of the burned trees—

Description—The Tyee fire left thousands of acres of dead or badly burned trees and significantly changed the forest structure. Many people, but not all, believed actions were necessary to aid forest recovery from the fire disturbance. Key aspects of this issue included ecological recovery, fuel reduction, threat of insect and disease epidemics, and commodity extraction. The last topic was commonly referred to as "salvage logging"—a major issue because of the size of the fires, the amount of standing snags left behind, and the economic incentives. Many viewed these standing snags as a usable and commercially valuable resource. Standing snags also posed a threat relative to fuel loading and could be a factor in insect and disease problems in the forest. Many political coalitions and stakeholder groups therefore advocated for salvage logging to "make the most" of a resource that was deteriorating, which then would reduce the risk of snags becoming fuel for future fires and a source for insect and disease epidemics. Others argued that standing and downed snags play an important ecological role for animals, vegetation, and natural processes as a forest recovers from fire.

Interactions—Private property rights-home rule advocates wanted the choice and authority to salvage logs on their own property. This choice is restricted by Endangered Species Act (U.S. Laws, Statues 1973) limitations and by state riparian and logging regulations. Many PPR-HRs valued the sanctity of private property ownership and thus believed they should have decisionmaking power to control activities occurring on their land. The PPR-HRs argued that individual owners could do the best management of their lands because they must live with the results. They also believed their practical and "common sense" activities to be more appropriate than complying with bureaucratic regulations. For example, many recounted the experience of one resident who wanted to rebuild his home lost in the fire. There were several standing snags this man needed to cut down to clear a space for his new home and minimize potential danger, but because of the proximity of his land to the Entiat River, he was denied this action. The PPR-HR supporters were extremely upset with this type of "government and environmentalist interference" in private property management.

The PPR-HRs advocates perceived that environmental interest groups had an agenda to limit private owners' choices and the activities that could occur on their land. Frustration and anger built among the PPR-HR coalition because many members of the environmental groups were not located in the area and would not experience the effects of such policies and restrictions. If salvage logging were prohibited on private and public lands, PPR-HRs believed they would face higher fire, insect, and disease potential in the future from additional woody debris on the ground, which would place their homes, property, and families in jeopardy.

Wise users were concerned about the regional and national trend of increased emphasis on recreational uses of the forests over commodity uses. Tourism in Entiat is popular because of the aesthetics and many recreational opportunities, which led to management of the WNF to accommodate more recreation resources instead of timber production. In terms of fire recovery and fuels management, wise users were frustrated with recreational needs conflicting with fuel management considerations, such as thinning, harvesting, and prescribed fire. One of their biggest fears was the possibility of the WNF becoming a national park and that another Tyee or Yellowstone-like fire would occur because of recreation-oriented management policies stressing minimal intervention. Wise users believed this management direction to be an inefficient use of natural resources and a liability to residents and landowners near National Forests.

Wise users saw much of the standing dead or dying trees from the fire as an economic resource and believed its value would deplete rapidly because the trees were deteriorating. Many believed the timber would be valueless if it were not harvested by summer 1995.

Not only were the standing dead or dying trees considered an economic resource for only 1 year following the fire by the wise users, but they also claimed this resource would have liabilities if left in the environment. Standing and downed snags could be fuel for the next fires, which could begin with lightening strikes as early as summer 1995. Many argued that the fires of the future would be bigger and more intense if all the snags were left in the forest.

> In old days, logging would have occurred and they would have piled the slash and burned to reduce the fuel. Now the fuels in the forest are just like gasoline and with a spark it goes.

Another argument supporting salvage logging was that this supply of timber could replace live trees tagged for potential logging. Due to the high demand for timber and

wood fiber, it seemed logical to the wise users to use the salvage resource, which would be lost eventually to deterioration, in place of cutting live trees, which still would have years of growth and productivity in the forest ecosystem.

> Resource of timber would be wasted if no salvage occurs, this is morally wrong not to use this resource since it will die anyway. And it might replace green timber sales....There should be a moral obligation to salvage without tearing that land up. We do not need to increase the erosion problem.

Looking at longer term management practices, wise users thought ecological recovery essential to the area's ability to produce valuable resources, because the current burned areas were not very productive in their views. They believed that by restoring a "living" forest, all resources could be more productive and benefit the community, state, and Nation. Most favored human intervention, through salvage logging, seedling planting, grass seeding, vegetation management, and prescribed burning, to speed the recovery process. Wise users believed this strategy to be more effective than a non-intervention response to the burned areas, because it would reduce the threat of future catastrophic events and encourage production of desired resources.

> We have a resource out there. We should log what can be logged. The argument that the logs are needed for wildlife is not valid. Wildlife would have plenty in the remaining areas. It has been overblown. Wildlife can adapt.

Multiple users also were concerned about effects of leaving so much woody debris in the forest; their fears were that future fires would really damage the environmental processes and ability of the soils to support forest life. Multiple users favored some human intervention to support productivity of all forest uses. They felt that intervention should be cautious so that long-term ecology would not be jeopardized by short-term benefits.

> Fires are a natural factor in the forests. There are benefits to having a fire, some pines need fire to germinate. Big fires have occurred throughout the history of these forests, but civilization has moved into the forest so now the fires are a problem.

They believed that a balanced management strategy was needed so that one condition in the forest would not significantly threaten another. Many suggested moderate salvage operations following all laws and regulations and ensuring that impacts on the whole ecosystem would be considered.

Civic leaders were interested in ecological recovery to restore a more pleasing scenic quality to Entiat and to have a more productive forest ecosystem. They defined a productive forest as one that would not threaten residents with flood and erosion or future catastrophic fires and one that would provide clean water and recreational opportunities. Civic leaders favored salvage logging because of the economic benefit to Entiat. Additional benefits included views without snags, which they saw as more aesthetically pleasing, and opportunities to reduce fuel accumulation for future fires. The effects from the Tyee fire were perceived mostly as negative, and many wanted to avoid similar fires in the future.

Because many residents chose to live in Entiat for its natural beauty, recreational opportunities, family history, and employment opportunities, they favored quick ecological recovery for aesthetic, recreational, and economic benefits. Most residents claimed they would never see their valley like it was before the fire, but they wanted it to recover for future generations and cited salvage logging as the key element to achieve this goal.

Long-time residents and newcomers tended to favor salvage logging but for different reasons. The former viewed snags as a timber resource and were more predisposed to logging as a traditional, useful option, whereas the latter viewed the snags as unpleasant to look at so removal for any reason would be a solution.

Advocates for timber interests favored salvage logging because it could provide economic benefits and reduce fire liability of the snags, arguments similar to those of wise users. Many wanted a management approach that would cultivate a predominantly "living" forest on a sustainable basis and safeguard against damage from fires, insects and diseases. They believed that removal of most of the salvageable wood would minimize risk.

> If they don't log, bugs will come and the trees are going to fall and create a greater fire danger. Another burn might come. Environmentalists will stop salvage logging. Some people are not worried about environmentalists, but they should be.

In addition, timber interest advocates argued that salvage logging in the WNF was desirable and supported Forest Service long-term goals for multiple use and resource management. But, many were critical and had little faith that the Forest Service could implement salvage logging before the wood became economically valueless.

> We can retrieve a lot from the fire by saving the timber that is left. But we are in trouble with the environmentalists; they try to stop us [loggers]. The Forest Service is full of them. If you quit logging, how the hell are you going to keep up a forest?

Private timber managers supported salvage logging to remove economically valuable trees from the burned areas of the WNF; this would mirror salvage activities occurring on similarly burned adjacent private forest land. They were skeptical, however, of "lofty Forest Service ideas," believing bureaucratic processes would stall recovery practices that needed to be implemented in a timely manner.

Timber workers also supported salvage logging, quick regeneration, and intensive vegetation management to restore the burned lands with forested lands. Benefits, according to this stakeholder subgroup, included immediate job opportunities and a management direction that would enhance future timber production.

Timber interest managers and workers believed that given public approval and political authority, the WNF could foster the recovery of natural resources and maintenance of environmental processes. Practices corresponding to this management included salvage logging of most of the standing snags, replanting with a mixture of native tree species at correct spacing, and thinning at future intervals. The priority, according to their arguments, should be to reestablish trees lost in the fires and to manage the level of fuel accumulation on the forest floor and vegetation density among forest canopy layers. The 1994 fires significantly reduced the quantity of timber resources; thus, most timber interest advocates hoped the Forest Service would adjust its management directions to guard against high fuel loading.

Whether the Forest Service were to salvage logs or not, managers of adjacent timber companies were not concerned about salvage supply because they had enough salvage from their own lands to harvest before time would run out. They were concerned, though, about fuel loading at the neighboring WNF. Fire starting in the WNF easily could spread to their lands again, regardless of different practices, including salvage logging.

Across the larger landscape of multiple land and resource managers, other Federal agencies, such as the NRCS and USFWS, often tackle similar situations as the Forest Service. To design effective recovery plans for removing or leaving snags in the forest, frequent professional consultation occurs among agencies.

Recreationists supported ecological recovery and continued access to the WNF. Safety in the forest was important as well. Many enjoyed their individual experience with nature and would not want to be constrained to smaller or limited areas, which would cause more frequent encounters with other recreationists. Access to areas closed from the fires therefore was desirable as soon as safety would permit. Additionally, many recreationists found it mutually beneficial to offer volunteer services to the Forest Service and other agencies to contribute to fire recovery.

Special forest products gatherers often visited from outside the community. Because morel mushrooms respond to disturbances such as fire, many believed the WNF would have a great potential in spring 1995 for a good harvest. These forest users favored few restrictions on access to gather mushrooms and other special forest products. They also favored increased prescribed fire in the WNF to cultivate mushroom crops.

Forest health and desired future condition—

Description—Forest health and desired future condition were often main topics of discussions for long-term forest management policies among local, regional and national voices. Many people were concerned about the conditions of the WNF, especially when they saw the large quantities of land burned and trees that were dying from insect, disease, light, water, and nutrient stress. Each stakeholder group and political coalition defined the meaning of a “healthy” forest according to their perspective. Also, each perspective identified management practices that would nurture a healthy forest toward a desired future condition.

Interactions—The main focus for wise users in sustaining a healthy forest was to have a continued supply of resources. This translated into a forest providing resources and environmental processes within its carrying capacity. To wise users, disturbances that would reduce the potential of a forest to produce resources would be characterized as unhealthy, such as insect and disease infestations exceeding average levels, larger than normal sized or intensity fires, or stand replacement fires burning too frequently. Also, the plant and animal species composition should be within a historical range of species suited to the climate and vegetation. Many wise users referred to historical ponderosa pine type forests that included few true firs and were characterized by open, parklike stands. They believed the forest was not stressed by overcrowding and competition for water and nutrients. This forest type was desirable, from their perspective, as a future condition of the WNF. Wise users would like to see the forest return to this ponderosa pine type forest, which they believed to be capable of minimizing catastrophes and able to recover from insect, disease, and fire disturbances.

> Fire is good sometimes, but not when it [the Tyee burning in August] happened. It’s good to underburn if it is the right time of the year. When it’s wet so it won’t get out of control. The fuels have been building up ever since the Forest Service wanted to protect the lands. This growth comes from having no burns and no logging. We were going in the wrong direction. This is not a healthy forest; there are bugs, too much timber for our water supply. The forest should be more spread out. The trees are too thick. It will take two hundred years to bring it back to what it was.

Multiple users favored management practices that would intervene to a larger degree than was favored by environmentalists. Multiple users believed that because most forest resources are limited, it would be necessary to manage these resources so that none would be depleted or degraded beyond recovery. They argued for a "balanced approach" to management practices to provide multiple resources into the future. Some consideration of HRVs of the forest would be critical, because many multiple users acknowledged difficulties in sustaining nonnative species, especially when their maintenance would jeopardize native species. Many were quick to argue the contradiction in management strategies that attempt to sustain LSRs and minimize catastrophic fire. The LSRs often have downed woody debris and fuel ladders, which encourage high-intensity fire buildup.

Civic leaders defined forest health in a manner similar to the wise users, where a healthy forest is able to provide resources and support the community without threatening long-term productivity. To them, disturbances that lessen resource supply would decrease forest health. Entiat civic leaders were interested primarily in the resources of clean water, scenic beauty, recreational opportunities, timber, and wildlife habitat. They wanted the forest to be enjoyed by local residents and tourists, in both the short and long terms. Some had researched the historical ponderosa pine forest type and questioned whether that type of forest could support the community's interests sustainably.

Some long-time residents remembered previous conditions of the forest: the species that grew in the area and the population levels of the many wildlife species. They also remembered when the Forest Service employed more silvicultural operations than currently practiced. Long-time residents often referred to previous years and cited less damaging fires: "We didn't use to have fires this big or intense." Many desired a forest with minimized fire, insect, and disease disturbances through whatever practices would be necessary. They believed that foresters and loggers had not been able to do their jobs because of environmental restrictions and bureaucratic "red tape;" to them, the case of forest health therefore appeared more political than ecological.

> Since people are a factor in the equation of land management in terms of their lives, properties and investments, public agencies need to manage for them too. People have a right along with the wildlife and soil issues. Sometimes I feel that people are endangered species just as traumatized as the salmon. We need to balance this equation of private and federal land management. We have to manage for sustainability.

Another concern for long timers was the perception that the Forest Service would attempt to create habitat for endangered species, such as spotted owls (*Strix occidentalis*) and grizzly bears (*Ursus horribilis*). They believed the Forest Service intended to change the species composition in the Entiat Ranger District without regard to traditional use and successional patterns. Many believed there was a conspiracy to create an ecosystem for these endangered species regardless of the area's capacity and previous habitat patterns.

> The spotted owl is a beautiful animal. It is the assholes that use it as a tool. The owls don't want old growth timber. They like the logged reforested areas. That's where you find them. I have been working in the woods since 1950. There are more spotted owls than there were before.

For many newcomers, the Tyee fire was a new experience, which filled them with fear and awe. Many did not know that nature could be so powerful and controlling. After seeing the effects of damaged homes, lost wildlife habitat, altered views, and people's stress-related experiences, many newcomers wanted fires minimized in the future, if possible. Yet, this goal seemed unattainable to them because they also saw the fires as uncontrollable: "Who can control where lightening strikes?" And they perceived the

Forest Service as more a fire suppression response than land managers able to manipulate the environment before fire. Their definition of forest health centered on visual aesthetics. Many wanted the forest to be cleaned up, with blackened snags and the accumulation of woody debris on the forest floor removed. Newcomers often had moved from urban areas and wanted to live someplace beautiful; having a scenic forest surrounding them in Entiat was a desired future condition.

Private timber managers compared Forest Service management of the WNF to private tree growing companies' management of private land. They defined forest health as the capacity to grow economically valuable trees in perpetuity, without significant losses. They acknowledged that some loss due to fire, insect, and disease would be unavoidable because of the climate and location. Yet, many believed that by employing the right practices, humans could manipulate the growing conditions of the forest so that it would recover from fire and other disturbances with minimal damage. Thinning, species composition, and spacing were important silvicultural tools for timber interest managers and workers. Their desired future condition for both private and public lands was to have a forest that would support tree growing stock, now and into the future. They wanted silvicultural practices used to guard against catastrophic events that would set the forest and soils back to secondary or primary successional states. If fires burn so hot that soils are sterilized, they argued nobody would benefit because of the time needed for nature to restore productive soils; no resources would be provided to the community and further problems could occur from erosion and stream dynamic changes.

Recreationists generally wanted a "healthy," aesthetically pleasing forest. Many wanted to see the greenness restored by replanting trees and shrubs to replace the burned and blackened areas. Future large, high-intensity fires were not desirable because they would curtail recreation. A desired future condition from the recreationist perspective included maintaining a living forest with small patches where fire would burn or insect and disease would kill trees. Many understood that these disturbances would occur in the future, but they wanted the damage contained.

Silvicultural practices—

Description—The Entiat community has had a history with forest management practices emphasizing timber production. Land managers, forestry consultants, timber industry managers, and loggers often advocated for the use of silvicultural practices to cultivate timber as one forest output. Practices mentioned included thinning (precommercial and commercial), prescribed burning, pruning, slash management, sanitation and salvage removal, harvesting, replanting, and other vegetation management. The main goal of using these methods would be to produce commercially valuable timber. Most timber interest advocates and wise users favored these practices for managing the forest to minimize damage from insects, disease, and fire. The use or nonuse of these silvicultural practices in the WNF continues to be strongly debated within the community. This issue is fundamental to deciding the direction forest management should take in the future and achieving desirable conditions of the forest.

Interactions—Private property rights-home rule advocates desired the use of traditional silvicultural practices on private and public land. Many believed these practices would produce desirable results on their own private land. Through silvicultural practices, private property owners could thin forested land, remove insect and disease infested trees, and treat slash accumulation, all of which would allow private property owners to maintain their forested land as assets instead of liabilities.

The PPR-HRs viewed the public lands as an integral part of rural communities. In their view, management of those lands should consider primary effects on the local communities. Many wanted public lands to be managed so that potential catastrophic damage or extreme changes disrupting the communities would be reduced. The PPR-HRs believed silvicultural practices to be the appropriate tools for this goal.

Wise users similarly supported many silvicultural practices as appropriate methods to conserve forest resources and ecosystems for the future. They believed National Forests to be straying from this management philosophy because of pressure from environmentalists for hands-off management policies. Fires as large and intense as those in 1994 were perceived as more destructive and damaging than what might have occurred had intensive silvicultural management been applied.

Many wise users supported continued production of resources and environmental processes. They claimed that disturbances, such as catastrophic fires, destroy fundamental elements in the forest and restrict resource production. Wise users argued that fuel management by silvicultural methods would enhance efficient resource production and use into the future without catastrophic damage and loss.

> They have been thinning for years and years, why not do it now? The general public would accept any practical measure to stop the fires. This watershed has been logged several times. Now it has a high density because it hasn't been logged in several years. It is a time of drought and there are too many trees.

In addition to debating about silvicultural practices, wise users advocated for land managers, such as the Forest Service, to have the necessary authority to reduce fire size and intensity potential. Many believed management practices had been restricted in the recent past by legal injunctions and Endangered Species Act (U.S. Laws, Statutes 1973) concerns, which had overridden good public land stewardship.

Many Entiat wise users believed the Federal Government to be a high-spending bureaucracy, contradicting its position of not being able to afford to waste these resources. Wise users, especially those with long-time roots in the community, recalled past silvicultural practices that "better" managed the WNF. The attitude frequently encountered toward forest management not focusing on timber was "lacking common sense."

Multiple users wanted to see careful research before silvicultural practices would be employed, significant monitoring, and a willingness by the Forest Service to adapt management policies to new information.

Civic leaders also favored silvicultural practices to actively attempt to minimize threats of high-intensity fires. Many wanted active forest management, because they had witnessed futile fire suppression efforts during fires of large magnitude. They wanted the Forest Service to take aggressive steps to avoid another catastrophe, such as the 1994 fires, to provide a safe, enjoyable, and productive quality of life for the community.

Residents directly affected by fire were concerned about another fire starting on WNF land and then spreading to adjacent private land. They wanted to minimize damage occurring on their own property, and to do that, they often employed silvicultural practices. But, this strategy would not prove effective if a fire started or intensified in the National Forest. Many would like the Forest Service to implement silvicultural practices to reduce fuel loading in the WNF. These actions would mirror activities done on adjacent private lands and promote a cooperative effort among various landowners to reduce the chance of fires spreading across multiple land ownerships.

Timber workers have a long tradition in Entiat, which caused tension with the Forest Service as new management philosophies were adopted. Many loggers saw the potential to cultivate timber, which was reinforced by their forefathers' successful timber-dependent livelihoods, and had become discouraged with the agency's deemphasis of timber.

> I am not articulate enough but the government issue is really coming to a head here. Logging was our livelihood. There are fifth generation loggers in the valley. If the resource is renewable then, why don't we log it? We can just plant new trees.

Timber managers had monitored previous Forest Service unsuccessful attempts with prescribed burning to reduce fuel loading. Many were reticent for two reasons: first, they lacked confidence in the agency to "do something as dangerous as a prescribed burn that might get away," and, second, many had their share of fire and thus preferred other silvicultural tools.

One nonindustrial private forest land owner provided a positive example of how thinning practices before the fire saved the majority of her timber. Other residents cited this person's forest thinning a few months before the Tyee fire and the result of only low-intensity, ground fires burning her land, unlike the severe stand replacement fires in the Tyee complex. Some residents attributed the lack of thinning to Forest Service policies and procedures, whereas others blamed environmental political action coalitions.

> There was no thinning in the forest because the environmental people are very strong. It is because of them: Sierra Club, Earth First!, people from the city, Seattle and Spokane. The environmentalists are highly organized. They spend money to stop the Forest Service.

Water quality—

Description—Water quality was immediately affected by the fire through the amount of fire retardant and ash deposited into streams. Further potential additions to streams include excessive amounts of silt and debris from floods and erosion. Water quality is essential for fish habitat, other aquatic species, and stream dynamics. Long-term turbidity and stream temperatures changes could pressure the typical plant and animal species residing in or migrating to the local streams. Additionally, the City of Entiat and orchardists receive water from the Entiat River.

Interactions—Wise users believed water quality to be a natural resource that should be managed within the scope of other natural resources such as timber, wildlife, and soils. Many cited that the regional streams had adapted to fire occurrence and could cope naturally with high levels of debris entering them. Most believed extra restrictions to not be necessary for stream recovery. Instead, most wise users believed salvage logging of snags near streams could aid public safety during potential floods because snags falling into streams tend to form dams. When these dams eventually fail, they can jeopardize lives, structures, and aquatic species downstream.

Multiple users believed water quality to be an important forest resource, one that could adapt to fire occurrence in the area.

Civic leaders were concerned about providing drinking and irrigation water to the community. And, they also realized the importance of fish populations to residents and recreationists. Maintaining streams to support both residents and fish were the civic leaders' priorities.

Most Entiat residents directly affected by fire were concerned about the threat of flood and the potential for debris, as were residents in other communities, specifically those up the Entiat Valley. They felt there was a need to carefully monitor the weather and water quality to prepare for situations that could threaten human safety.

The USFWS was concerned about water quality as it related to fish habitat and hatchery operations because increased stream turbidity and temperature could be detrimental to fish and aquatic plant species.

Orchardists received their irrigation water from streams. Many experienced mechanical problems, such as more frequent pump filter replacements, when excessive debris levels were present. They supported efforts to hasten stream recovery, such as re-establishing vegetation in riparian areas and placing filter dams in streams to improve the quality of irrigation water.

Wildlife habitat—

Description—Because of the loss of their habitat, many wildlife species experienced a shortage of food and shelter after the fire. Many residents saw wildlife visiting their yards during autumn 1994, and they speculated about less available food and shelter in the typical autumn and early winter locations. They thought this was why the wildlife was more desperate about searching for alternative food and shelter in lower elevations. Many people were profoundly concerned for the obstacles some species of wildlife would face in the upcoming winter.

Immediately after the fires, many residents experienced various and untypical wildlife in their yards. There seemed to be some displacement of insects and wildlife after the fire, but this was temporary unlike those species that continued to search for food and shelter months after the fires.

Interactions—Most residents were concerned about changes and losses of wildlife habitat. Many had a lot of questions about the quantity of animals directly killed in the fires and the predicted amount that could die in the near future from starvation and predation. A common question concerned the effectiveness of the proposed feeding program over the winter: Would it only delay death for some species? or Would it provide needed sustenance for a normal sized population? For example, if deer populations were to be maintained by these feeding programs until rangeland partially recovered, then perhaps more deer would be sustained than the quantity typically surviving over a winter; hence, starvation of large numbers of deer could occur in following winters.

Each wildlife species had direct, indirect, and cumulative effects from the fire on its habitat. Most political coalitions and stakeholder groups were sympathetic to the wildlife situation, but they did not have distinct positions on what, if any, action should be taken.

Local decisions and policies—

Description—There is a growing concern generally for policies legislated in Washington, DC, that mandate policy or restrict land use on local private and public lands. Many local residents blamed environmental special interest groups lobbying in Washington, DC, for the restrictions placed on National Forests and private lands. These restrictions were provoking a sense of helplessness and desperation among some rural community residents because they perceived the Federal Government and special interest groups as having more control over events in the local area than the local residents.

Many western Washington residents who recreate in Chelan County–referred to as 206ers (see footnote 6)—were clumped into the same category as national environmental lobbyists. Often, 206ers were perceived to support recreational opportunities and low-intervention management, whereas some locals wanted more commodity opportunities and high intervention for fuel management in the WNF. Many local residents believed 206ers did not fully understand the effects these restrictions placed on orchardists, ranchers, and timber and forest managers. After all, they reasoned, local residents live near the forest year round and face long-term policy consequences, whereas 206ers arrive only for weekends and summer vacations.

Rural residents were beginning to organize and develop strategies of their own to bring more decisionmaking power back to local communities. One strategy was to implement a Catron County, NM, style ordinance, requiring Federal agencies to consider the effects that a management decision or policy would have on the local community. Local residents wanted a voice in policy decisions for private land and public land management affecting local communities. And, they wanted the Federal Government to be accountable to rural communities neighboring public lands.

Interactions—Private property rights-home rule advocates were upset with the lobbying power of national interest groups and the resulting policies restricting practices on Federal lands that directly impacted community and county affairs. Because 90 percent of the Chelan County land area is managed by public agencies, the policies for these lands overwhelmingly affect residents. The PPR-HRs wanted the Federal Government to be sensitive to local residents, businesses, and lifestyles when managing public lands, and thus they supported a Catron County-style ordinance for Chelan County.

> Outside voices are not properly listening to local knowledge. They aren't talking to the locals and not listening to one another. Outsiders, locals and agencies really need to listen to one another. The people who live here and users from the outside should have some input in the decisionmaking process, but not as much as locals who use it most. The locals feel like they are getting snowed by the outside interests.

Primarily, they wanted the Forest Service to manage the WNF so that it would not incur catastrophic fire damage, including losses of structures and the natural resources Entiat depends on. The PPR-HRs advocated that fuel management should be the top priority for the Entiat Ranger District.

Wise users were concerned with the long-term effects on the local environment, especially as outside environmentalists entered the fire recovery decisionmaking process. Wise users advocated that communities could coexist with the environment and that consumptive and nonconsumptive uses of WNF natural resources could continue. Wise users desired active-intervention land management of the Forest through silviculture to minimize catastrophic future fires and maximize the recovery of the burned lands to a more productive level instead of preservation, which they perceived to be inappropriate.

> The environmental movement is ill-informed and obstructionists. They make it difficult to burn logging slash to suppress fires. Therefore, they make it difficult to keep the budget small. Timber sales originally had the objective to remove overmature, diseased timber and develop roads to get to that timber. Environmentalists attacked this and obstructed the roads. Now they do not maintain roads, so firefighting is difficult. Environmentalists are not rational; they don't think the system all the way through.

Multiple users similarly were concerned with maintaining natural conditions of the environment into the future. Many felt that the PPR-HR advocates and wise users were not aware of the long-term effects that some silvicultural practices could have on forests.

Civic leaders were frustrated with outside environmental influence, because they believed that local residents would have more intimate knowledge of the local area and would use appropriate practices to manage that land to maintain it for future generations. Outsiders, on the other hand, were not perceived to be as familiar with the area or to understand which practices would be beneficial for the land and community.

Many residents considered themselves environmentalists because they cared about the environment; however, they did not support the environmental political movement and its preservation ethic. Local residents felt they could monitor land use practices on the public and private forest lands without the interference of outside environmental groups.

> We want to take care of the environment in Entiat, but there aren't any strong environmentalists that support the environmental groups and things like the Endangered Species Act. The community inclines toward using the resources properly instead of preserving them forever.
>
> They want everybody to only view the locked up areas from the edge. They don't want anyone allowed in. Many environmentalists let all the resources go to waste so they can use it for their two weeks of the year. They want it locked so they can visit it on their vacations.

Forest-residential interface—

Description—Debate over fire suppression priorities questioned whether people should be allowed to build and live in the forest interface and the appropriate level of fire protection if they do. Priorities in the 1994 fires for directing fire suppression resources included (1) protect human life, (2) minimize damage to houses and other structures, and (3) protect the environment from high-intensity burns. Most people agreed that human safety should be the first priority, especially after the tragic loss of lives in Colorado in June 1994. The debate on protecting homes and other structures over protecting the forest and environment raised issues of private property owners' liability for living in areas difficult to protect from wildfires and the county's regulation of residential development in the forest interface. Some argued for limitations on the amount of people allowed to build in remote forested areas, which would entail some type of county zoning. Others argued that there should be no restrictions, but that those who build in areas having high fire potential should not expect extreme efforts by public agencies to protect private homes and structures. The key factor was that houses and other structures could be replaced to some extent, although it would be emotionally difficult, whereas lost ecosystems and soil productivity would take decades to gradually recover. If there were fewer structures to protect, fire suppression then could focus on minimizing catastrophic damage to the forest.

Interactions—Private property rights-home rule advocates supported an individual's free choice to build and locate a home. Many disagreed with growth management plans preventing individuals from living in certain areas. Most advocated that if people chose to live in the forest, they would have to take responsibility for their own personal safety. This might include building houses with metal roofs, clearing brush away from structures, creating fire breaks around property, and pursuing other wildfire preparedness plans.

Multiple users tended to support some type of growth management plan to guard against chaotic development of natural environments. A fear of short-term economic benefits for land developers overriding long-term ecological needs was expressed. Most supported the choice to live near the forest, but they wanted to ensure that the integrity of the environment would not be jeopardized with too many people moving into remote or sensitive areas.

Growth management advocates supported increased regulation of residential development near the WNF and other forest land to maximize public safety and minimize structural losses during forest fires. Some claimed that growth management would reduce the number of structures needing fire protection in the future so that containing a fire in the WNF would receive attention sooner.

Civic leaders often were caught in a dilemma over the issue of people living in the forest interface. On one side, a growing population would increase residential development and benefit the community economically. Immigration trends to Entiat from urban centers showed that people wanted to leave cities. Yet, if too many people were to move into the area, the community would experience changes in size, values, and arrangement. Civic leaders were concerned about the impacts that settlement in the forest interface would produce because this would increase the need to provide fire protection in more remote areas.

Most residents also battled with this dilemma. Some already lived in the forest and immensely enjoyed that lifestyle. Yet, if too many other people were to move into the forest, it would not be the same secluded lifestyle. Most residents favored not restricting the choice to build in the forest, but others desired some organization of this settlement. Hence, growth management issues were highly volatile among residents.

Some in-town residents felt that up-the-valley residents needed to face the risks involved with building homes in forest pockets.

> Some people up the Entiat Valley need to use common sense to build in the woods and/or flood plains. They should be aware of the problems, but then they just holler when mother nature intrudes on it. They look for someone else to blame. They want God's little green acre but don't want to face the consequences. The county is allowing people to build in places they shouldn't.

Use of public money for fire suppression and rehabilitation—

Description—Owing to the size and behavior of these fires on public lands, the costs to fight them and to rehabilitate and recover damaged forest ecosystems were tremendous. As taxpayers, most residents were concerned about the expenditures. People questioned whether certain expenditures were effective and efficient uses of public tax dollars. Fire suppression priorities came under question: Should public money be used to protect private structures, or should private property owners be financially accountable? Another question about using public money to aid the rehabilitation and recovery process was, How much protection against flood and erosion is desired or sufficient? Estimates based on historical occurrences predicted that floods often follow significantly large fires. Using large amounts of public money to mitigate these anticipated risks generated some controversy.

Interactions—Wise users and multiple users shared a concern for the long-term sustainability and viability of species and environmental processes, even though their specific management priorities differed (wise users wanted a commodity-producing forest; multiple users wanted to continue providing multiple resources, not a single or limited range of resources). Both coalitions witnessed the large amounts of public

money spent on fire suppression and rehabilitation, yet this approach prioritized saving structures before the forest. Many questioned whether less money should have been allocated to structural protection and more to wildfire control. Logic dictated, to these stakeholders, that most structures would be insured and could be rebuilt, whereas the environment would take much longer to recover, if ever. As taxpayers, many would like to reevaluate the priorities of fire suppression to ensure that the Federal budget targets public land protection instead of private land subsidies.

Timber interest advocates also questioned whether protecting structures was economically justifiable. They estimated the value of timber lost in the fires to be much greater than the value of homes saved. This timber resource loss would increase if it were valued in terms of gross national product, which would incorporate all handlers of wood products.

For many timber managers and NIPFs, losses of their timber growing stock were attributed to fires starting in the WNF and spreading to adjacent private corporate timber land. Many believed these losses could have been reduced had fire suppression focused on containing fire to public land instead of so many efforts being dedicated to protecting private structures. They wanted to see government agencies use public funds to protect public lands and, consequentially, not jeopardize adjacent private lands.

Some long-time residents also were concerned with the large amount of public money spent on fire suppression. They compared current firefighting practices to earlier years when more local volunteers were used. Many believed costs could be reduced if the local volunteers could react immediately with labor and equipment for fire suppression efforts instead of waiting for fire crews to arrive from across the Nation.

Long-time residents noted a reactive use of public money for short-term rehabilitation and long-term recovery, rather than proactive forest management efforts.

> Seeing how much money is being spent on rehab and suppression, I figure in 1970, 1988 and 1994 this totals $50 million. Couldn't we have spent this money on forest management?

Residents both up-the-valley and in-town shared a concern over the huge expense of rehabilitation, which led to many questioning the efficiency of monetary allocations.

> There is a blatant waste of money being spent on rehab. And getting rehab started was like getting a giant started. You have to push and push, but then when it got started there was no way to stop it. There were lots of local people who volunteered to help with the rehab. There were lots of stories about people getting paid without having to work really hard. Among the stories are the bus runs from the city park to the grocery store carrying only one person at a time. This is hardly saving the government any money.

"Project fire" theory—

Description—Local residents used the concept of "project fire" to explain the Forest Service's view of the Tyee fire. Many believed the agency had desired a large, expensive fire because of the positive rewards in future budget allocations. The logic behind this theory stated that by spending lots of money on this fire, then fire budgets in future years would increase. Some local residents explained that the Forest Service needed to increase their budget, and thus they "chose" to let this fire grow to "project" size instead of putting it out.

Interactions—Claims that the Tyee fire was a "project fire" arose more often in the areas of high-intensity burning. Some residents stated that the fire was reported when it was small and containable, yet the Forest Service did not aggressively try to suppress it.

> A logger that's our friend says the Forest Service won't do anything until it is project size. They need to have big fires to finance the Ranger District. This is a terrible way of managing the forest. There isn't much that we can do....
>
> The problem is they [the Forest Service] don't care about managing the forest, they just need money. They don't care as long as they have the money.

Not all Entiat residents supported this theory; however, those who believed the "project fire" conspiracy were extremely confident that the Forest Service had the means to suppress fires but simply chose not to do so to reap financial gain.

Past and future fire suppression strategies—

Description—Fire is an inherent part of ecosystems surrounding Entiat, and as such, fire has become an inherent part of Entiat's community identity.

> It is a way of life for this part of the world. We take for granted that there will be fires.

Residents that have lived there all their lives could recall the different fires as significant events in local history as well as turning points in forest management practices. As one long-time resident explained, fire suppression was the one activity that drew the community's attention to Forest Service actions, independent of occupation or special interest group. Many had fought fire at one or more points in their lives—college students worked on fire crews over the summer, long timers volunteered as part of community efforts to fight fires before a nationally organized and mobilized firefighting structure was established, or private land owners attempted to save their own homes and outbuildings from wildfire.

Interactions—Long-time residents were familiar with fire and often had strong opinions on fire management and suppression policies. Many believed that fire hazards should be minimized prior to lightening strikes; but, once a fire had ignited, fire suppression tactics should be immediate and relentless until the fire is out. Recitation of the long and frequent history reminded long-time residents how destructive fire can be to personal safety and property values.

Entiat residents directly affected by fire tended to criticize fire suppression strategies and expressed their skepticism on whether the Forest Service decided to "let it burn" or made a professional effort to stop the fire.

> It's sad. Some people are angry and unhappy about the fire. They [the Forest Service] burned me out. If they had tried to stop the fire, it would have been different. They could have responded. You can get a little input but they have the last word.

Timber interests advocates were more specific with their complaints, using their particular experiences and expertise to criticize Forest Service strategies.

> Better judgements [sic] need to be made about putting fires out. You need to judge what the fuel conditions are, what is the fuel build-up in that site. I would have been more aggressive in this fire. People focused on structure protection, not enough balance between that and wildland protection. You need to be aggressive but safe at the same time. And yes, you can have both!

Loggers expressed frustration over their perception that the Forest Service decided to let the fire burn, either for economic reasons ("project fire" theory) or environmental considerations. As a logger explained, when they log the forest they take precautions to comply with all the regulations, including leaving profitable timber standing to keep a sustainable forest. They questioned the validity of their compliance with environmental regulations: What good are all these practices if from their perspective, the Forest Service, for whatever reason, is going to let the forest burn?

> As someone says, their management is by neglect--they manage by destruction. The Forest Service should do their job and control the burns. If they designate which trees the loggers have to leave, then they should make sure they are not going to burn them. It's tax dollars.

Many were confused about the rationale used to protect resources while another rationale was used to support its destruction.

Concerns over the emphasis placed on structural fire protection emerged throughout Entiat. Many residents reacted negatively when they saw fire crews concentrating on protecting homes and other structures. Often these crews waited for the fires to reach structures, rather than aggressively fighting the encroachment of wildfire. This perception created a commonly held view that fire suppression strategies were based on a let-it-burn policy. Long-time residents contrasted this behavior with previous firefighting practices such as the 10 a.m. policy (see footnote 5). Residents living in areas where the fire was more devastating perceived the lack of aggressive firefighting tactics as a threat to their security. One resident stated that before the fire he trusted the Forest Service, but after he saw their attitude toward the fire, he did not trust the agency anymore.

In contrast to these views, residents in town, distanced from critical fire danger, often believed that the Forest Service did all it could to fight the fire. Most in this geographic division perceived the fire as an inevitable occurrence in the area and were thankful for all that the Forest Service was able to do.

> We will have more forest fires; they are inevitable. This fire was unusual. No one dreamed that it would get so big, not even old timers who have seen lots of fires.

In-town residents often attributed negative complaints against firefighting strategies to those "people who will criticize anything the Federal Government does" or to "conflicts that are 20 years old."

Another issue relevant to firefighting strategies undertaken by the agency was the use of local knowledge. Most long-time residents remembered when fires were fought with the help of the community, rather than with special teams from around the Nation. These residents believed locals should participate more in the actual fire suppression activities because of their intimate knowledge of the landscape and local conditions. Oftentimes, community residents who were not allowed to participate resented the move to use only qualified, trained fire crews. Many cited the extra time required to mobilize these crews to fire scenes as well as the fact that nonlocal crews take a longer time to find specific roads and areas to get to correct locations.

> Maybe the Forest Service should develop some sort of local bank to get locals more involved. The Forest Service should take advantage of local knowledge, especially during the fires when there were so many outsiders in town. There are lots that would be willing to get involved.

Trusting the Forest Service—

Individual comments (see footnote 8)—Although Entiat residents shared a general view of resource management, there was controversy over their perception of the Forest Service. Deeply held values on resource use and community traditions conflicted with some of the agency's current management practices. A shift in some management policies due to environmental regulations created resentment among some residents who believed the agency should manage forest lands as a renewable resource for timber production. Value placed on other aspects of forest management, such as wildlife or ecology, was seen as a growing tendency to support nonlocal environmental perspectives.

> The Forest Service is bending to the environmentalists and they are not being good land stewards. They have biologists, one of them is an Earth First! person on their staff. He falsifies data to fit his agenda. They are destroying the forest from within, there is no balance. There is such a bad relation [with the community] that I would tell some people not to wear their uniform if they go out in the back country.

Many residents did not trust the local Ranger District or the agency as a whole to be a good land manager, citing problematic regulations and nonlocal decisionmaking.

> We are not happy with idiots in D.C. making the decisions for the local area. How can they know what is happening here? Let's look at the local knowledge and the history that is recorded in the trees. Are the big government heads and the CEO's listening to this local knowledge?

From the perspective of the local residents and given their prior experience with fires and the need they saw for fuel management in the Entiat Valley, many believed that had the agency managed the forest by selective logging and thinning, the Tyee fire could have been avoided, or at least the intensity and magnitude would have been lessened.

Some former Forest Service employees compared the District's personnel composition to that of 20 or 30 years ago and claimed there were too many people working today and getting less done than what 10 employees had achieved in the past. In addition, many valued experiential knowledge and resented younger college graduates, who were perceived to have less on-the-ground knowledge but nevertheless were working for the Forest Service and making significant decisions affecting local communities.

> They have too many college educated idiots. This is real land and real people.

There also was an uneasiness present in the community with women's participation in forest management and decisionmaking processes among some long-time residents. Interviews with members of the logging community and former Forest Service employees identified concerns about having a woman District Ranger. This lack of support for women in leadership positions may have explained some general distrust with local Forest Service policies and management strategies.

The WNF Forest Supervisor expressed a very different opinion on this issue:

> Unfortunately, old prejudices often die hard. Such attitudes [uneasiness with women in leadership positions] are more likely to surface after a major traumatic event. The Forest Service and this Forest are much stronger as a result of the wonderful diversity of our present workforce. It was obvious to me that the presence of women in leadership and field positions actually increased our effectiveness in dealing with the wildfires of 1994. There are many examples of this...for instance, I am convinced that we are much more sensitive to the fears and needs of local citizens than we once were. I give a lot of credit for this sensitivity and humanity to the women at all levels in our workforce.

Entiat residents offered many suggestions. A desire for practical activities that would help residents respond to the fires and their damage topped their list.

> The government needs to do meaningful stuff, not just bureaucratic stuff. There needs to be on the ground activities, not just promises or intentions.

Long-term, mutually beneficial relations between the Forest Service and community also were mentioned as a strongly needed aspect of local and general agency management.

> First they pass laws to bring people into the west, and now, where is the Forest Service helping the people? Because of this fire, the canyons will wash out and blow. The community is in danger. My father homesteaded here in 1907 and we love this place.

Residents, whether long-time residents or newcomers, have formed attachments to the land, the WNF, and homes situated in the Entiat Valley. The destruction caused by the Tyee fire generated fear and anger, furthering a need for cooperation between public agencies and community members. Trust was fundamental to improving this relation but was perceived to be severely lacking among some individuals in both the Forest Service and community.

There were, however, some Entiat residents who believed the Forest Service to be doing an excellent job of managing public forest lands. These residents attributed negativism toward the local Ranger District to old conflicts that continued to be revisited, and they claimed that some residents would criticize the Federal Government under any circumstance.

> There are people that will always criticize any federal employee. They will make statements no matter what happens. There is a lot less of this sentiment now. They have overcome this through local involvement.

Many who supported the Forest Service believed the agency acted professionally during the fire, used the best scientific knowledge, and made sound decisions about fire suppression tactics.

> They have always treated me well. They have the information I have needed and I think they have been very helpful. They have helped with the fire behind my house and with the rehabilitation. They are doing a good job and I am content. There are a few people in the community that criticize everything but what could they [the Forest Service] have done differently? The Forest Service and DNR [Washington State Department of Natural Resources] have a lot of knowledge and they are putting that knowledge to work.

Severe emotional impact of the fire and rehabilitation—

Individual comments[10]—The Tyee fire was a difficult and emotional experience for people in Entiat. Many residents were overwhelmed with the amount of stress placed on their daily lives as a result of the Tyee fire, suppression efforts, and rehabilitation practices. The emotional impact of surviving the fires went beyond the direct effects and immediate circumstances and included a renewed esprit de corps among community members.

> People experienced a loss of independence during the fires as well as enduring a lot of mental stress. A lot of people moved up the Entiat valley to be alone, but during the fire and the rehab there were many outsiders invading the residents' privacy. The news media was all over and other local residents from town were making an effort to talk with the people up the valley. A gain was that lots of good people in the community came together and worked together. There were a lot of volunteers and a lot of things volunteered: farm animals, pet food, food, trucks and just about everything.

It also included personal growth and strength to overcome adverse events.

> The Red Cross tries to help people understand that "we can make it through this." Some people have been able to get over the stress and shock of the fires, but others are still struggling.
>
> The fire had a lot of psychological trauma attached to it. When seeing areas damaged by the fire, it was like losing a member of your family.

Innovative ideas were generated to create something positive from an overwhelming sense of loss.

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[10] Most descriptions of emotional impact of the fire were individual and did not correspond to particular group perspectives.

> The effect on the children is strong, including the frightening experiences—evacuation of selves and relatives. There is an education opportunity—to learn about the pro's and con's of fire. Also, they can be involved with tree planting and long-term monitoring and educational projects. Another positive effect was the community, people began to appreciate each other more.

Although some residents talked about how the community pulled together to help the people that had to evacuate and had lost their homes or other structures, other residents felt alienated and believed the community did not fully understand their needs and hardships.

Chelan

Chelan is located at the southeast end of Lake Chelan on the northeast border of the WNF. The town has about 3,000 residents, and nearby Manson has about 1,800 residents. For the past 40 years, Chelan has relied on agriculture and tourism as primary economic sources. Unlike Leavenworth and Entiat, timber has not played a significant role in Chelan's economy according to one local civic leader:

> This community is not critically dependent on timber; the town is more agricultural and relies on the fruit industry as well as aesthetic tourism. Water quality is crucial to both the tourism and fruit industry. It has been a long while since there was logging in the area; the town was never timber dependent. The last mill in the area was during the 1950's and located in Manson.

The Tyee fire in summer 1994 limited access to Chelan, reduced visibility with smoky air, hampered the recreational and tourism experiences, and threatened town structures. Many tourists and residents were either evacuated from threatened areas or chose to leave voluntarily. A large loss of tourism dollars was a major Tyee fire consequence as were direct ecological effects on natural environmental beauty and outdoor recreational experiences.

> There will be an impact on the sales tax revenues to the town and the state which will be long term in the town's inability to provide future services—city taxes will go down, further decreasing the services we will be able to provide.

Most Chelan interviewees commented on the close relation between the local Ranger District and the community; the Chamber of Commerce, local government, and local Forest Service office have collaborated to provide services supporting economic development of the tourism industry. One reason for the success of this collaboration was that the Chelan District of the WNF does not harvest much timber, so recreational management does not compete with timber interests. Active local environmentalists were monitoring the District's forest practices, however, to encourage lawful and thoughtful management of the WNF. Even though timber is not a significant output of this district, some residents had hopes that it eventually could be a larger part of future forest management. Additionally, many were considering the issue of salvage logging and its appropriateness for the Chelan District; this caused tension between people supporting salvage harvesting and those who did not.

Chelan has continually attracted new residents from western Washington and outside the state. An urban migration into the rural community has added to the diversity of environmental values. During our study, different views of the role of natural resource use emerged, separating people who had recently moved into the community from those whose families had lived in the Chelan area for several generations. Long-time residents tended to support wise use or multiple use of the WNF, whereas newcomers tended to support preservation of the Forest. Not all long-time residents and newcomers could be characterized in this manner, but trends in the data suggested this value difference.

This section begins with descriptions of the social framework components found in Chelan: political coalitions, stakeholder groups, residency tenure distinctions, and ethnic communities. These four social entities and the various themes within each were derived inductively from the social assessment data and not constructed from preconceived categories. Definitions and conclusions pertain to Chelan and may not represent other communities or situations. Similarly, relevant fire recovery issues suggested by local residents are presented, and interactions among social entities by issue provide further understanding of the social complexity of fire recovery management.

Political Coalitions

Four fundamentally different themes emerged in Chelan as political coalitions, representing distinct world-views of natural resource policy: environmentalism, multiple use, private property rights-home rule (PPR-HR), and wise use. Within each theme, some diversity was found. Supporters individually subscribed to different degrees of the positions offered by a particular political agenda; however, collectively shared beliefs and ideologies distinguished one coalition from another.

For this report, the general positions and political agenda voiced by each coalition have been summarized in the following discussion without detailing every subtheme. One exception was made with the environmentalism political coalition because of two distinct positions on fire recovery issues even though they shared similar world-views of nature.

The remaining three coalitions represented separate agendas for the management of forest lands; however, the distinction between wise use and PPR-HR was subtle. “Wise use” refers to a particular belief system supporting certain desirable forest practices on public lands, whereas decisionmaking authority was a primary issue for PPR-HR advocates.

Environmentalism—Environmentalists in Chelan were divided into two categories (see footnote 4) of people who held somewhat different world-views on natural resource management: nonintervention and return intervention. Both categories of environmentalists viewed the environment as an entity not humanly created, and thus they preferred little or no human interference in its processes. Their primary concerns focused on plant and animal species and ecosystem processes affected by human activities; however, the following differences distinguished the directions they thought human intervention in the environment should take.

Nonintervention environmentalists advocated that natural resources are “managed” best by nature. Many argued that human intervention has put many species at risk and degraded ecosystem processes. To stop this risk from increasing, they favored handsoff management and allowing the forest to recover on its own without human intervention.

Return intervention environmentalists favored management recognizing historical ranges in ecological conditions that are more resilient to disturbances, human and natural. An environment that supports itself was preferred to one dependent on human management. Many holding this perspective believed the local forests to be outside the HRVs. Practices that nurture the forest’s return to within HRVs therefore were favored. Many believed this strategy would allow nature to regulate most disturbances, thereby minimizing catastrophic disturbances.

> Opportunities from the fire are that the Forest Service can change their management style and there is a chance to get the forest back to a state similar to [that] before fire suppression. In the lower elevations, this should take about 7-10 years. We view the fire as an opportunity and not a tragedy; we hope that persons who have more of an economical view would also see the forest from this perspective.
>
> The forests need to have nature do its job within a natural range of disturbances. A more natural range can be compared to pre-settlement conditions. At this time, nature was responding to nature. This is realistic in places where there isn't much human settlement, but not always realistic in human interfaces with the forest. But, in the areas without as much human settlement, and there are still these areas, nature must regulate itself.

The factor that generally differentiated the environmentalists from wise users was whether the biology, chemistry, and physical structures in the environment should be viewed as ecosystem elements (emphasizing ecological values) or as resources (emphasizing human-use values). Another relevant factor discriminating these two views may have been each coalition's perceptions of the other. Wise users tended to label environmentalists as preservationists wanting to lock up the environment, exclude access to the environment, and restrict any human management activities. Environmentalists tended to label wise users as more development-oriented, responding to short-term economic incentives, and holding little regard for long-term ecological effects.

Multiple use—Multiple users viewed the environment as an entity not entirely separate from society. Many believed that an interdependent relation exists between the environment and society, and thus they advocated that humans can coexist with nature, including consumptive, recreational, and spiritual uses of the forest. They argued that management and human intervention in the environment need to be sensitive and respectful of the many elements and complex relations in nature. Overuse, or overemphasis of one use to the detriment of others, was a concern, and they therefore felt management to be necessary to limit risks associated with practices not commensurate with true multiple use.

Multiple users shared concerns similar to those voiced by return intervention environmentalists. However, multiple users differed from all environmentalists in their view of appropriate forest management by the emphasis they placed on human use of forest products rather than the maintenance of ecological processes for their own sake.

Private property rights and home rule—Individuals who shared private property rights perspectives supported personal choice and self-regulation of private property over government legislation and regulation. Independence to live their lives and tend their own properties as they chose was a key factor to this perspective. A rising concern among many private property rights advocates was their perception that the Federal Government is increasing regulation of activities that can and cannot occur on private lands.

> I also have some timber land in the Rat Creek area with some burned trees on it. I can't get a permit to log it because it's in an owl circle. There is $1 million of timber there, but I can't do anything about it. I feel that the environmentalists are wanting to use my private property to save the owls and save big trees. They are pursuing their agenda on my land, which just angers me. I would be willing to sell the land to them if they would pay the value of it.
>
> I am concerned about the proposed UN park. If the UN runs it, you might not even be able to get into it.
>
> Decisions that affect adjacent landowners will affect me. If I have to have areas or buffers that I cannot burn or thin, because of land adjacency, then I will be upset. I want to be able to manage my land so as to keep it cleaned up, not as much underbrush, and able to remove dying

trees from bugs and deterioration.

Another concern was the perceived lobbying power of special interest groups in Washington, DC, which the PPR-HRs felt were attempting to limit activities on private properties.

Often linked to private property rights ideology was the concept of home rule, denoting a preference for local control over centralized government control. Relative to private lands as well as state and Federal public lands, many rural residents believed their political voice to be overpowered by those in urban areas and in government positions higher than the local level. To regain some control of their individual freedoms, many PPR-HRs advocates supported legislating a Catron County, NM, style ordinance for Chelan County. The principle goal of this ordinance would be to require that Federal agencies consider local customs, cultures, and economics when adopting new management plans; Federal agencies would have to consider local conditions and needs to avoid disrupting local community ways of life.

The 1994 summer fires strengthened the support for this political coalition because of the issues that emerged. The latent danger of future fires, the need they saw to salvage-log the burned forests, and the threat of flood and erosion created support for local control. People in Chelan felt threatened by their lack of control over resource management practices in their local community. The PPR-HR coalition claimed to be defending their rights against threats from environmentalists, city residents, and government representatives deciding what should occur on the local forest lands.

Wise use—People with a wise-use perspective of natural resource management argued for efficient utilitarian use of resources. Most recognized that natural resources have some limitation in either the quantity currently available or the quantity available on a sustained-yield basis. They believed this limitation should be mitigated with intense management of renewable resources so that resources can be cultivated and used in perpetuity.

Wise users viewed natural resources in material and utilitarian terms; therefore, their primary goal for these resources was to cultivate them for use. This coalition often formed in opposition to many environmental coalitions that advocated nonuse and preservation of ecosystems. The local wise use coalition leadership cadre was relatively small compared to the environmental leadership, but the wise use following was large, with an especially large concentration in rural communities such as Chelan. Additionally, there was a comradery among people supporting the wise use movement with those favoring PPR-HR.

Stakeholder Groups

A variety of stakeholder groups exist in Chelan. Some are organized formally through clubs, professional affiliations, tribes, or civic bodies; others are loosely formed by shared activities made available by WNF resources. The following list shows stakeholder groups found in Chelan through the social assessment inquiry. General descriptions follow, with subgroups defined when relevant to understanding variations in positions on fire recovery issues.

Stakeholder groups in Chelan:

- Civic leaders
- Firefighting infrastructure
- Former Forest Service employees
- Growth management

- Native Americans
- Nonindustrial private forest land owners
- Other Federal and state agencies
- Orchardists
- Recreationists
- Residents directly affected by fire
- Social service providers
- Special forest product gatherers
- Tourism interests
- USDA Forest Service

Civic leaders—This group included people holding elected, appointed, or hired positions in the community and representing local government and businesses. They tended to support activities economically beneficial to Chelan, including tourism, development, and sales and extraction of natural resource commodities. Additionally, they were well known among the community; their opinions on issues facing Chelan therefore would be respected and provide credibility for local residents.

Firefighting infrastructure—Fire suppression policies directly affect people who gain employment by supplying labor and equipment to control fire, both structural and wildfire. Additionally, rehabilitation efforts immediately after forest fires generate opportunities for employment. Policies on fire suppression and rehabilitation therefore generate employment opportunities for local residents as well as regional and national firefighting personnel, especially in situations where the magnitude of fires is as large as those in Chelan County in 1994. If fire suppression policies were to change significantly, those supplying labor and equipment would experience changes in income sources.

Former Forest Service employees—Members of this group included retired Forest Service employees or people who once worked for the Forest Service. Retired Forest Service employees often have decades of work experience with the agency, are familiar with the organizational culture, and know the many changes the Forest Service has undergone in the last 50 years. Many retirees referred to previous practices to critique the effectiveness of newer practices. For example, many compared the past “10 a.m.” fire suppression policy (see footnote 5) to current fire suppression priorities.

Other people who left the Forest Service prior to retirement were in some cases critical of the agency—sometimes supportive, sometimes faultfinding. Regardless of their opinions, former Forest Service employees tended to have a great familiarity with the local area and conditions. Their rich knowledge of land management and the local area produced insightful, analytical, and detailed opinions of how forest and natural resource management should proceed after the 1994 fires.

Growth management—The growth management stakeholder group was concerned with an increasing population trend in Chelan and throughout Chelan County. Many wanted to preserve the lifestyles associated with Chelan, such as natural aesthetics, recreational opportunities, and a rural community structure but found this goal difficult to achieve as more people move into the area and build homes in the forest interface. Growth management advocates desired some planned organization to this population growth, such as land use zoning. They mentioned regulations that might limit the proximity of new residences to forest land, stipulate building codes that would reduce fire damage, or limit practices that could occur on private property.

Native Americans—Unfortunately, no Native Americans were interviewed. Because the social assessment was geographically limited to local communities of the WNF and many members of the Yakama Nation lived outside this area, this report lacks the perspectives of Native Americans affected by the 1994 fires and subsequent forest management. It is important and necessary to acknowledge that they have fishing, hunting, and special place interests in the Chelan area and likely would be involved in any comprehensive forest recovery effort. Further research is needed to document Native American perspectives, positions, and stakes in the WNF.

Nonindustrial private forest land owners—The WNF, as many National Forests, is intermingled with privately owned forest land and other publicly owned land. The owners of these private lands are classified by the Government as "nonindustrial private forest land owners" (NIPFs). In Chelan, they were a heterogeneous group formed of newcomers, who acquired their land recently, and long-time residents, who had held their property for several generations. The NIPFs' level of management ranged from no management to intensive management, although most tended to be concentrated in the no management to moderate management area of this spectrum. Some originally purchased their forest land to produce timber, whereas others enjoyed the recreational opportunities and aesthetics associated with wooded areas. The multiple motivations for owning and directions for managing nonindustrial private forest lands were extremely complex; however, many of these land owners shared concerns about fire recovery on neighboring WNF lands.

Within this stakeholder group were some of the residents most directly affected by the fires. Some NIPFs lost timber they had planned to harvest or lost other opportunities to develop or enjoy their land. After the fires, the common sentiment was frustration over their loss of resources and amenities, and there was general uncertainty over the direction of future management practices. Many NIPFs evaluated areas where the fire burned at a low intensity, thereby causing minimal damage to trees, and were searching for management practices that would encourage this type of burn. The NIPFs who had not planned to log or do other management were rethinking their options so that they could maintain a forest resilient to disturbances. Additionally, fire recovery efforts in the WNF raised or renewed their own concerns for risks and consequences associated with land adjacency.

Other Federal and state agencies—Agencies other than the Forest Service often manage adjacent public lands, consult for adjacent private land, or manage fish and wildlife populations using habitat in a National Forest. These Federal agencies may include the USFWS, NRCS, and Bureau of Land Management. Also included in this group are state and county land management agencies. Each agency has its own set of mandates, laws and regulations, and organizational protocol, which can complicate a comprehensive fire recovery effort.

Orchardists—

Management and owners—"Chelan County has the best lands in the world for growing apples," claim many orchardists in the local area. Apple and other fruit orchards provide a main source of income for the county; owners and orchard managers thus comprised a strong stakeholder group interested in farming issues. Though most orchards and farm lands border the WNF, fire is not often a threat because of irrigation systems. Local streams are irrigation sources, however, and any changes in water quality affect this system. Increased silt and debris in the streams will cause water pump filters to become plugged, this requiring additional maintenance.

Labor—Orchard workers in Chelan County predominantly belong to the Latino ethnic group, many of whom are migrant, though some have established their home in the area. Orchard workers did not suffer any major property loss during the fire and were affected only indirectly by smoke, road closures, and other effects that distressed the community as a whole. Latino workers often reside in housing provided by the owner of the orchard where they work, so they were not concerned with potential property loss.

> The fire didn't affect the work at the orchards so life for the Hispanic community kept on going. I think there isn't much concern regarding the fire, so they weren't preoccupied with the forest because they are not settled here long enough; in many ways this is just a passing place.

Recreationists—Members of this stakeholder group included people belonging to organized recreation groups or independently active recreationists. Their concerns for continued or increased recreational opportunity for the area were a priority when the discussion focused on long-term fire recovery issues. Various types of recreation available in Chelan include skiing, snowmobiling, camping, hiking, hunting, fishing, mountain biking, rock climbing, horseback riding, and bird watching. Several subgroup distinctions were identified, and they held differing positions. There was some friction among members of these subgroups, such as the level of access to wilderness areas or consumptive versus nonconsumptive use of natural resources. Yet, the common experiences of spending time outdoors and recreating in the WNF provided some shared goals and interests among the members.

Backpacking, hiking, and camping—Day trips or overnight camping adventures were common recreational activities for residents and tourists. Trails and campground maintenance is necessary to encourage this type of recreation, but the fires damaged some of these facilities. Some local residents volunteered to help assess damage or make repairs on favorite trails. Also, access to wilderness was a point of contention for those who like backcountry adventures.

Consumptive resource use—Fishing and hunting are the primary consumptive recreation uses in Chelan. Anglers were concerned about the effects the fire and subsequent erosion and loss of riparian vegetation could have on fish populations. Hunters anticipated a change in game populations due to a loss of cover and winter range. Both anglers and hunters expected variations in fish and game populations, and they advocated forest management strategies that would encourage prefire population levels to return.

Horseback riding and stock use—Equestrians were already using some trails damaged in the fires and unsafe riding conditions thus were occurring. Some stock users previously had helped to maintain trails, and they continued to do so in response to the fires. Their main position, though, did not center on effects of the fires or fire recovery management; instead, many noted the continual conflict between ATV users and stock users.

Motorized use—The forest surrounding Chelan has trails for snowmobiles and other ATVs. Supporters of ATV use noted their desire for increased access to Forest Service roads for motorized recreational use. Again, their positions referred mainly to general forest recreation management and not to specific fire recovery issues.

Residents directly affected by fire and rehabilitation—People who experienced fire suppression, structure and property loss or damage, or rehabilitation efforts on or adjacent to their private property were included in this group. They might or might not have shared common views on forest management, yet their experiences with the fire

were similar. These residents endured traumatic experiences, such as losing homes, sustaining property damage, and watching as treasured aesthetics irreparably changed, which evoked strong emotional reactions.

> We own a resort on Lake Chelan. During the fire, we had to evacuate almost everyone from this resort. Only five people stayed to protect the structures in case the fire got close....We had seen fires burn on the other side of the Lake, but it is different when fire comes close to your own home.
>
> There was an article in the Chelan Mirror about depression, listing several signs associated with it: memory loss, confusion, stress and uncontrollable crying. My wife and I were surprised to find that we were experiencing all but one of those signs. We believe that the whole community experienced some of these factors, or at least many [did] who were seriously threatened by fire.
>
> We had to evacuate in the dark, because electricity was knocked out. We could hear trees bursting all around us. It was like a mortar shell bombing. I think that maybe it would have been easier to adjust afterwards if the fire had burned everything. My family could have come back maybe five years later and started the house all over, instead of dealing with the loss all around us. We still have the house, but we see the devastation everyday. Now it looks like a trip to the Adams family, like hell.
>
> My personal history was lost. My philosophy is that the fire just destroyed things, just things. The land is still there and my grandkids and great grandkids will hopefully have a chance to enjoy it.

Social service providers—This group included people who provide some type of social service to the community, such as education, news and communication, or volunteerism. Many respond as part of their normal work activities to catastrophic events, such as the 1994 fires, and they were interested in any lasting effects on the community, residents, and children.

Special forest products gatherers—Mushroom gatherers tended to make up the majority of this group; however, gatherers of berries, lichens, mosses, and other flora also were included. There is little regulation and inventory by the Forest Service to document actual numbers of special products users or the quantity of products gathered from the National Forests. From informal assessments, the special forest products gatherers seem to comprise a significant population who use the forests for distinct purposes; therefore, their interests in forest management as related to special forest products has been differentiated from other forest resource users.

Many special forest products gatherers at the WNF come from outside the local area. Mushroom gatherers migrate according to peak harvest times for different species. Many believed the burned areas might have an increased mushroom yield over the next several years.

Tourism interests—This group included people who managed, owned, or were employed by businesses relying on tourism as well as members of the Chelan Chamber of Commerce. Most restaurants, hotels and motels, gift shops, and recreational service providers gain a large percentage of their income from tourists staying in the area. The interests of this stakeholder group in forest and natural resource management focused on supporting practices that promote tourism, recreation, and aesthetic views.

USDA Forest Service—The Forest Service agency as a whole as well as the WNF and the Chelan Ranger District have organizational cultures. Protocols exist for gathering and analyzing data, gaining public input, and making decisions, which follow laws, regulations, and guidelines governing agency actions. Because this organizational structure exists, people with different perspectives (often those from outside the agency, but not necessarily) might disagree with the Forest Service's fundamental beliefs, their scientific methods, and their decision rationale.

Data in the social assessment were not collected directly from Forest Service employees. Remarks from employees of other Federal agencies strongly suggested, however, that an organizational structure existed and was a significant presence and influence throughout the decisionmaking process for fire recovery in the WNF.

Residency Tenure Distinctions

At the time of the study, the social structure of Chelan was experiencing new additions of people and perspectives, which complicated local views of natural resource use and management. Chelan was attracting and continues to attract, new residents from western Washington and outside the state. An urban migration into a rural community prompts a diverse accumulation of environmental values, often polarizing newcomers and people whose families have lived in the area for several generations. Trends in the social as-sessment data suggested a perception that long-time residents tended to support com-modity production and wise use of the forest, whereas newcomers tended to support multiple use or preservation of the forest. Not all long-time residents and newcomers could be characterized in this manner, however; these perceptions thus may be more stereotypic than precise.

Ethnic Communities

The social assessment identified that the Latino population in Chelan forms a parallel community, with social networks distinct from the Anglo community. Many Latinos in Chelan were first generation immigrants to the United States, primarily from Mexico and El Salvador.

The prevailing attitude on forest management issues was indifference. Latinos who were interviewed discounted their “right” to participate in the land management process because they were not citizens. Their first reaction to the interviews was one of perplexity that someone would be inquiring after their concerns and interests regarding National Forest issues.

> The Hispanic community is very distant to the American community in this area, they have not acquired the culture yet because they have lived here for a very short time. The majority of these people are first generation Hispanics in the US. They are coming directly from Mexico and El Salvador. They are citizens of those countries and that is their culture.

Furthermore, they noted the limited information available in Spanish regarding the fires, which kept information from reaching their community; however, they did recognize efforts made by the Forest Service to provide some information in Spanish.

Fire Recovery Issues

Fourteen distinct fire recovery issues emerged from interviews with Chelan residents:

- Flood and erosion threat
- Use of the burned trees
- Forest health and desired future condition
- Silvicultural practices
- Water quality
- Wildlife habitat
- Media coverage of the fires
- Local decisions and policies
- Attitudes toward the U.S. National Park Service

- Forest-residential interface
- Use of public money for fire suppression
- “Project fire” theory
- Past and future fire suppression strategies
- Trusting the USDA Forest Service

These issues frequently arose without prompting by the interviewer, thereby suggesting common concerns and interests in this area and that they were connected to fire recovery in the Chelan Ranger District.

Flood and erosion threat—

Description—Flood and erosion risks were greatest in the First Creek and 25-Mile Creek areas owing to the Tyee Creek complex fire. Residential homes, structures, and property were threatened by debris flows along South Shore Road as was access to and from Chelan. Erosion also threatened the water quality of these drainages and Lake Chelan.

Homes and structures were threatened by fire in Navarre Coulee and Knapp’s Coulee and along South Shore Road. Erosion on private property was a concern for residents as were rock and debris slides from adjacent slopes in the WNF, which were threatening safety and access.

> Some of the areas are in flood danger, especially Slide ridge, which is past First Creek on the south shore. The flood threat is from a quick spring thaw. One big problem if there are floods and landslides, is that there is only one road into that area. Access may become limited. Fortunately, most of the people have boats that they can rely on if necessary.
>
> The threat of snow melt in the spring is great and has a potential for mud flows and rock slides. There are inherent and vulnerable spots for debris flows already in the area regardless of fire. But with fire, these threats are more risky. Places like South Shore and First Creek are very sensitive to these threats.

Interactions—Private property rights-home rule advocates supported practices allowing individuals to manage their own property independent of Federal agency management of public lands. Activities might be similar, such as horizontal falling of snags, or different, such as immediate salvage logging and removal. They wanted freedom to choose the best practice to reduce flooding and erosion on their property, because they—not the government—would have to live with the consequences. They did not want to be restricted from performing activities by “bureaucratic red tape” or environmental limitations, which they often perceived to violate “common sense.”

Wise users supported practices not hindering the use of natural resources; therefore, they wanted to minimize soil, nutrient, debris, and vegetation loss. Many believed that too much soil and vegetation had already been lost in the fires and more loss would negatively affect the forest’s ability to support future resource growth and production. Wise users supported reestablishment of vegetation, such as by planting tree seedlings on the burned areas as quickly as possible.

Environmentalists also supported practices minimizing soil and debris loss from the slopes to the streams, but their goal was to preserve ecosystem functions, unlike wise users who focused on sustaining commodity production and the use of natural resources. Environmentalists were concerned about the effects that more soil loss would have on aquatic flora and fauna as well as the forest being able to support future vegetation. Return intervention environmentalists and multiple users saw erosion as a

problem needing to be addressed and called for an organized effort to minimize silt and debris flow. But, nonintervention environmentalists saw erosion as a fundamental part of the fire and recovery cycle and believed human intervention could control only a small percentage of the erosion and might have long-term ecological impacts. Both environmentalist coalitions were concerned with the immediate rehabilitation activities, such as grass and wheat seeding and stream modifications. These concerns arose as the short-term benefits from minimizing debris flow were being assessed relative to the long-term effects of wheat and grasses growing in the forests and stream bed structures intervening in the natural stream flows and riparian vegetation.

> We believe that the rehab effort is good with the re-seeding programs. We would like to see any "dirt work" minimized. Definitely there should be no new roads; this is a very critical point because roads disturb nutrient cycling and cause erosion. Also, the more motorized vehicles allowed in, the more chance that knapweed will get carried in by sticking to the tires of those vehicles.

Concerns among civic leaders focused on the immediate dangers of flooding and erosion to Chelan residents. Another concern was the water quality of Lake Chelan, because the lake itself and recreational activities supported by the lake draw many tourists to Chelan.

Residents directly affected by fire often lived in areas threatened by flood and erosion, and they worried about further losses and damage to their property. Many supported continued activities by the Forest Service and NRCS to stabilize vegetation and soil on slopes and the placement of various dams to filter debris flowing into streams. There was some doubt, however, as to how much benefit could come from these actions. As taxpayers, they questioned the need for extensive protection versus the cost and use of public money. Most did not perceive a large threat from flooding or erosion in the Chelan area; they therefore did not see a need for extensive protective efforts and might have preferred for the money and attention to be directed elsewhere.

> The threat from the fires is flooding. There is some threat to my property, but probably not my house, because it sits up high enough. The SCS [now, NRCS] did some work to protect my neighbors further down the canyon. The floods will be a worse threat to them.
>
> Flood and erosion will be problems, but I don't know how serious.
>
> I don't know if the grass seeding programs are going to work. There are spots where tree pitch has glossed the ground, making it difficult for seeds and moisture to penetrate the ground. There are definite potentials for mud slides in the area. But, I am worried about topsoil blowing away in the spring. We will see what happens in the spring. Maybe there will be a chance to do more seeding in the spring.

Recreationists were interested in minimizing further damage or loss to trail systems and to the aesthetic appeal of the forest. Anglers and hunters wanted risk to fish and wildlife habitat further reduced. Erosion threatens vegetation stability, which provides scenic greenery, food and shelter to wildlife, and root systems to reduce debris flow into streams.

> If we can get more groups together, such as Arbor Day Society, Audubon, and Sportsman's Council, then we can establish good work forces to volunteer in the forest recovery. Also, if we could get some good grant writers, then maybe we can establish some educational opportunities for kids and forestry students to see the different areas of fire, including places where the fire hasn't burned yet.

Tourism interest advocates had many of the same concerns as the recreationists, with an emphasis on Chelan's viewing aesthetics. Because many tourists generally confine their stays to the immediate town, a forested view around Lake Chelan is conducive to providing pleasant natural scenery. Flood and erosion might also present access problems to South Shore Road vacation lodgings and recreational attractions.

Other Federal and state agencies interested in flood and erosion risks included the NRCS and the Washington State Fish and Wildlife Department. The NRCS works with private landowners to stabilize soils on private properties. It employs practices such as horizontally falling snags to hold soils and debris on the slopes and building various dams to filter debris out of streams. This agency deemed the threat of flooding and erosion as moderately significant in the Chelan area and continued to monitor conditions throughout 1995. Flood and erosion threats had a higher damage potential in the Entiat Valley, so more NRCS efforts were concentrated in that area.

The state fish and wildlife agency focused on the immediate and long-term wildlife habitat. Many wildlife species were forced to seek more developed areas, such as orchards, to feed. Many deer could be spotted along busy highways, threatening their safety as well as that of travelers.

Use of the burned trees—

Description—Significant changes to the structure of the WNF occurred as a direct result of the fire. Many people, but not all, believed actions were necessary to aid forest recovery from the fire disturbance. Key topics of this issue included ecological recovery, fuel reduction, threats of insect and disease epidemics, and commodity extraction. The last topic was commonly referred to as “salvage logging”—a major issue because of the size of the fires, the amount of standing snags left behind, and the economic incentives. Many viewed the standing snags as a usable and commercially valuable resource. Standing snags also posed a threat relative to fuel loading and could be a factor in insect and disease problems in the forest. Many political coalitions and stakeholder groups therefore advocated for salvage logging to “make the most” of a resource that was deteriorating, which then would reduce the risk of snags becoming fuel for future fires and a source for insect and disease epidemics. Others argued that standing and downed snags play an important ecological role for animals, vegetation, and natural processes as a forest recovers from the fire.

Interactions—Private property rights-home rule advocates wanted the choice and authority to salvage logs on their own property. This choice is restricted by Endangered Species Act (U.S. Laws, Statutes 1973) limitations and by state riparian and logging regulations. Many PPR-HRs valued the sanctity of private property ownership and thus believed they should have decisionmaking power to control activities occurring on their land. The PPR-HRs argued that individual owners could do the best management of their lands because they must live with the results. They also believed their practical and “common sense” activities were more appropriate than complying with bureaucratic regulations.

The PPR-HR advocates perceived that environmental interest groups had an agenda to limit private owners’ choices and the activities that could occur on their land. Frustration and anger built among the PPR-HRs coalition because many members of the environmental special interest groups were not located in the area and therefore would not experience the effects of such policies and restrictions. If salvage logging were prohibited on private and public lands, PPR-HRs believed they would face higher fire, insect, and disease potential in the future from additional woody debris on the ground, which would place their homes, property, and families in jeopardy.

> On my land, I will cut all the commercially valuable salvage trees and leave any that have real estate value (ones that look good). I am already salvaging as much as I can.
>
> Private owners should be allowed to do their own work, including logging. Private land doesn't belong to the state or federal government, and there is no reason for these governments to have any say or jurisdiction in what happens on those private lands.
>
> I sold all the salvage I could sell. My grandkids and great grandkids might as well get something out of this. Everything else will be felled to help with erosion control. Dead sticks in the air don't benefit anything.

Wise users were concerned about the regional and national trend of increased emphasis on recreational uses of the forests over commodity uses. Tourism in Chelan is popular because of the aesthetics and many recreational opportunities, thereby leading to management of the WNF to accommodate more recreational resources instead of timber production. In terms of fire recovery and fuels management, wise users were frustrated with recreational needs conflicting with fuel management considerations, such as thinning, harvesting, and prescribed fire. One of their biggest fears was the possibility of the WNF becoming a national park and that another Tyee or Yellowstone-like fire would occur because of recreation-oriented management policies stressing minimal intervention. Wise users believed this management direction to be an inefficient use of natural resources and a liability to residents and landowners near National Forests.

Wise users saw much of the standing dead or dying trees from the fire as an economic resource and believed its value would diminish rapidly because the trees were deteriorating. Many believed the timber would be valueless if it were not harvested by summer 1995.

> It's a shame to see the standing dead timber. The Forest Service should allow it to be salvaged since it's a resource being wasted.
>
> The Forest Service needs to get those areas logged. It's a crime not to use that timber resource. It will only become diseased if left. The Forest Service can cut the burned timber and reforest the land. If they think some of the trees will live, then don't cut those; but if the tree is dead or going to be diseased, let's cut it. We need to look at it from a common sense perspective. The whole region is screaming for wood and there is 150,000 acres of burned timber; let's put it to good use. Plus, the salvage timber harvesting money goes into the general school construction fund, which benefits the entire state.

To wise users, not only was the standing dead timber an economic resource for only 1 year after the fire, but they also claimed this resource would have liabilities if left in the environment. Standing and downed snags could be fuel for the next fires, which could begin with lightening strikes as early as summer 1995. Many argued that the fires of the future would be bigger and more intense if all the snags were left in the forest.

> The federal government needs to get in the forests and get the salvage out. The state and private owners are already acting fast to get their salvage out. Leaving the salvage in there will just lead to blowdown after a windstorm, including blocking roads. It is fairly obvious that there is commercial value to these trees and that some of them are very hazardous as well.

Another argument supporting salvage logging was that this supply of timber could replace live trees tagged for potential logging. Due to the high demand for timber and wood fiber, it seemed logical to the wise users to use the salvage resource, which was going to be lost eventually to deterioration, in place of cutting live trees, which still would have years of growth and productivity in the forest ecosystem.

> There should be salvage logging. The trees are already dead or dying, and a few snags can be left. Eventually it will all fall down, so what can be logged should be....I am amazed at how quick mother nature has recovered by herself, but she needs help to replant in order to speed up the regeneration.

Looking at longer term management practices, wise users viewed ecological recovery as essential to the area's ability to produce valuable resources, because to them the current burned areas were not very productive. They believed that by restoring a "living" forest, all resources could be more productive, benefitting the community, state, and Nation. Most favored human intervention, through salvage logging, seedling planting, grass seeding, vegetation management, and prescribed burning, to speed the recovery process. Wise users believed this strategy to be more effective than a nonintervention response to the burned areas because it would reduce the threat of future catastrophic events and encourage the production of desired resources.

Environmentalists looked at the burned areas and saw one stage of forest succession. Many were less concerned about strategies encouraging a quick response to restore commodity resources, mainly timber. To preserve natural recovery, environmentalists wanted land managers (1) to use scientific knowledge to make judgments about whether to employ a certain practice, (2) to monitor the situation before and after practices were applied, (3) to consider nature's response (no human intervention) as a valid option, (4) to consider native species as appropriate regeneration versus exotic species, and (5) to be aware of effects from recovery practices that might do more harm in the long term than good in the short term.

Nonintervention environmentalists were skeptical about management practices that would remove some or all woody material from the forest. Many believed this practice would have negative consequences, citing that snags serve many ecological purposes: animal habitat, nutrient cycling, physical structure, and other unknown but conceivably relevant functions. Most nonintervention environmentalists were completely against salvage logging because it would intervene in the forest's natural response to the fires. They supported management direction to minimize human intervention and allow the forest to regulate itself.

> Salvage logging reinforces the concept that forests are resources. Trees are one structural element in the forest, and the dead stuff is the base of everything else in the forest. The forest needs the dead stuff to support life, plant and animal species. Management isn't respecting the evolutionary process of all species, plant and animal, big and small. Management needs to be holistic and respectful of nature and the evolutionary processes.

> We are concerned about maintaining natural processes and nutrient cycling. We question whether the Forest Service [is] taking out more nutrients than nature can replace. This is a big question after the fire with regards to the potential salvaging efforts on private and public land. The Forest Service needs to think in terms of the big picture; think ecosystem, not burnt area.

Return intervention environmentalists and multiple users shared common concerns about the impacts that salvage logging and extraction might have in the forest. They also were concerned about effects of leaving so much woody debris in the forest, for fear that future fires would really damage the environmental processes and ability of the soils to support forest life. Return intervention environmentalists attempted to weigh the consequences of logging against not logging. They wanted substantial research conducted to guard against long-term effects before any salvage logging would occur.

Many supported salvage logging so long as no new roads would be built and the forest condition was monitored before and after logging. Return intervention environmentalists recognized that humans have altered the forests significantly, and the current condition therefore calls for some drastic human intervention to get the forest back to a more natural state, or historic ranges of variability.

> The desire to salvage is a problem. Salvage logging is going to tear things up even more than they are. Maybe helicopter logging wouldn't impact the soils in some spots, spots that aren't very steep. I want the Forest Service and other people to look at how much damage versus the good in trying to salvage will result in the long term. The soil condition in the burned areas is very fragile.

Multiple users favored some human intervention to support productivity of all forest uses. But they felt that intervention must be cautious so that long-term ecology would not be jeopardized by short-term benefits. They believed a balanced management strategy was needed so that one condition in the forest would not significantly threaten another. Many suggested moderate salvage operations, following all laws and regulations, to ensure that impacts on the whole ecosystem would be considered.

> I am interested in knowing what the Forest Service is going to do with the timber on the burned areas. I think they will salvage it, but how and when they do it will be the critical issue. They will need to leave some of it standing for wildlife. Salvage needs to be done for economic purposes and for reduction in fuel for future fires. There needs to be a balance of salvage left for animals, but not enough that it creates a fuel problem. Logging decisions have often been made on economic considerations, but there is a need to look at the ecological considerations.
>
> Salvage logging is the right thing to do, although some nurse logs need to be left.
>
> I don't know what is best with the salvage issue. Some people say don't take down the trees, leave it natural. It seems a waste to me, but in time it will all become part of the soil again. Maybe that would be better.

Civic leaders were interested in ecological recovery to restore a more pleasing scenic quality to Chelan and to have a more productive forest ecosystem. They defined a productive forest as one that would not threaten residents with flood and erosion or future catastrophic fires and one that would provide clean water and recreational opportunities. Because of poor economic returns from 1994 summer tourism, many civic leaders saw businesses struggling; hence, the community was struggling. They preferred a quick recovery to minimize short-term economic problems, but they felt this quick recovery should not jeopardize long-term sustainable use of the forest, because that was synonymous to long-term Chelan sustainability. Most civic leaders favored salvage logging because of the economic benefit it would give Chelan and the state.

> Any salvage harvesting will benefit the school general construction fund, which helps the entire state.

Additional benefits included views without snags, perceived to be more aesthetically pleasing, and an opportunity to reduce fuel accumulation for future fires. The effects from the Tyee complex fire were perceived mostly as negative; thus, many wanted to avoid similar fires in the future.

Because many residents choose to live in Chelan for its natural beauty, recreational opportunities, family history, and employment opportunities, they favored quick ecological recovery for aesthetic, recreational, and economic benefits. Most residents supported salvage logging, unless they had environmentalist perspectives.

Residents directly affected by fire and rehabilitation were interested in salvage logging in the WNF because they typically were adjacent landowners. Safety concerns from snag liabilities and the scenic qualities of backyard views may have accounted for this perspective.

Long-time residents and newcomers tended to favor salvage logging for different reasons. The former viewed snags as a timber resource and were more predisposed to logging as a traditional, useful option, whereas the latter viewed the snags as unpleasant to look at so removal for any reason would be a solution.

Advocates for tourism interests were most interested in recovery so that tourists would want to come to Chelan. Scenic views and recreation are the major draws to the area. Therefore, they favored restoring views, designing educational opportunities highlighting fire and ecological recovery, and advertising to reassure potential tourists that the damage from the fires was not so great as perceived through the media.

Recreationists supported ecological recovery and continued access to the WNF. Safety in the forest was important as well. Many enjoyed their individual experience with nature and did not want to be constrained to smaller or limited areas, which would cause more frequent encounters with other recreationists. Access to areas closed from the fires therefore was desirable as soon as safety would permit. Additionally, many recreationists found it mutually beneficial to offer volunteer services to the Forest Service and other agencies to contribute to fire recovery.

> There are many in the community who want to volunteer time and services to help the area recover and help provide short-term aid to the wildlife.
>
> The fire lines-cat lines can be used for recreational use as snowmobile trails. The re-seeded areas have plenty of cross country and snowmobile opportunities this winter.
>
> Volunteers are out there and ready to help, which is good for the Forest Service since budget constraints limit the amount of people they can hire. It's not the Forest Service's job to fix the problems—it's bigger. The community, everybody, has to work together to get through this.

Special forest products gatherers often visited from outside the community. Because morel mushrooms respond to disturbances such as fire, many believed the WNF would have a great potential for morel harvest in spring 1995. These forest users favored few restrictions on access to gather mushrooms and other special forest products. They also favored increased prescribed fire in the WNF to cultivate mushroom crops.

Forest health and desired future condition—

Description—Forest health and desired future condition were often the main topics of discussion about long-term forest management policies among local, regional and national voices. Many people were concerned about the conditions of the WNF, especially when they saw large quantities of land burned and trees that were dying from insect, disease, light, water, and nutrient stress. Each stakeholder group and political coalition defined the meaning of a "healthy" forest according to their perspective. Also, each perspective identified management practices that would nurture a healthy forest toward a desired future condition.

Interactions—The main focus for wise users in sustaining a healthy forest was to have a continued supply of resources. This translated into a forest providing resources and environmental processes within its carrying capacity. To wise users, a disturbance that would reduce the potential of the forest to produce resources would be characterized as unhealthy, such as insect and disease infestations exceeding average levels, larger than normal sized or intensity fires, or stand replacement fires burning too frequently. Also, the plant and animal species composition should be within a historical range of species suited to the climate and vegetation. Many wise users referred to historical ponderosa pine forest types that included few true firs and were characterized by open

and parklike stands. They believed the forest was not stressed by overcrowding and competition for water and nutrients. This forest type was desirable, from their perspective, as a future condition of the WNF. Wise users would like to see the forest return to this ponderosa pine type forest, which they believed to be capable of minimizing catastrophes and able to recover from insect, disease, and fire disturbances.

> A healthy forest will be one without bugs and disease, and one that is fire resistant.

> Sustainable harvest should be the goal. Even though there are no mills in the local area, housing is a concern. Jobs and affordable housing are issues for this area, which tie into having some harvesting done on the national forest. And, if this suits reducing fire potential in the forests, then both are better off.

> We should utilize [the forest] instead of letting it burn. We should have reforestation; we can be in a cycle of logging and replanting.

Environmentalists also were concerned about the long-term condition of the WNF. Most wanted the forest sustained because of its natural integrity and contribution to environments regionally and globally. They felt that forests are important not only for humans but for all biological life, chemical processes, and physical dynamics. Environmentalists also referred to historical ponderosa pine forest types as a desired future condition. They claimed that the forest regulated itself before human intervention. A healthy forest therefore was defined as one able to manage itself without human intervention, or one able to stay within HRVs and be resilient to human disturbances.

Return intervention environmentalists recognized that an absolute restoration to a historical forest condition was not a reasonable expectation for the future, because humans now were “part of the equation.” Many argued for a forest that would be able to coexist with humans and continue to function within its own cycles. This condition did not have to be fixed; it could be dynamic with disturbances causing new or cyclical conditions. The key would be to have a forest able to stay approximately within the same range of conditions it would have were there no humans interacting with it and trying to minimize human disturbances that significantly alter natural conditions and responses.

> If we maintain the whole system now, then it’ll take care of itself.

Nonintervention environmentalists had the perspective that the fires in 1994 were nature’s response to the current conditions; moreover, they felt that a desired condition for the future was unknown, because humans have to wait and see how nature itself recovers. To them, the concept “forest health” was ambiguous because humans do not know all the complex functions that “bad” disturbances serve: Perhaps these fires brought more positive benefits than negative to the forest and its ability to survive. They felt that it was premature for humans to define what is healthy and what is unhealthy, because we would not know all the functions a burned snag or a beetle-infested tree might serve.

Multiple users favored management practices that would intervene to a larger degree than was favored by environmentalists. They felt that because most forest resources are limited, it would be necessary to manage these resources so that none would be depleted or degraded beyond recovery. They argued for a “balanced approach” to management practices to provide multiple resources into the future. Some consideration of HRVs of the forest would be critical, because many multiple users acknowledged difficulties in sustaining nonnative species, especially when their maintenance would jeopardize native species. Many were quick to argue the contradiction in management strategies that attempt to sustain LSRs (late successional reserves) and minimize catastrophic fire. The LSRs often have downed woody debris and fuel ladders, which encourage high-intensity-fire buildup.

> The Forest Service is struggling between two roles: a caretaker of the forest versus a gatekeeper of the forest. Gatekeeping prevents them from managing the forest and the potential forest fires. I want the Forest Service to be allowed to be caretakers. It is unrealistic to go back to a hands off management policy. We are here now in these forests and we have to manage with man as part of the forests, not just people looking in. Some preserved, untouched or unmanaged areas are okay, but more of the area needs active management, otherwise it will burn again.

> I grew up with Smokey and Bambi. The public thinks fire is bad. We have learned that fire is an important part of the system and need better education to show that fire is necessary. Fire is a natural part of the ecosystem. We have to stop fire suppression efforts that have caused a huge [fuel] buildup.

Civic leaders defined forest health in a manner similar to the wise users, where a healthy forest is able to provide resources and support the community without threatening long-term productivity. To them, disturbances that lessen resource supply would decrease forest health. Chelan civic leaders were interested primarily in the resources of clean water, scenic beauty, recreational opportunities, and wildlife habitat. They wanted the forest to be enjoyed by local residents and by tourists, in both short and long terms. Some had researched the historical ponderosa pine forest type and questioned whether that type of forest could support the community's interests sustainably.

> The community and national forest are interconnected, such that the lives and livelihoods of the locals rely heavily on the health of the national forest.

Some long-time residents remembered previous conditions of the forest: the species that grew in the area and population levels of the many wildlife species. They also remembered when the Forest Service employed more silvicultural operations than are currently practiced. Long-time residents often referred to previous years and cited less damaging fires: "We didn't use to have fires this big or intense." Many desired a forest with minimized fire, insect, and disease disturbances through whatever practices would be necessary. They believed that foresters and loggers had not been able to do their jobs because of environmental restrictions and bureaucratic "red tape;" the case of forest health therefore appeared to them to be more political than ecological.

For many newcomers, the Tyee complex fire was a new experience, which filled them with fear and awe. Many did not know that nature could be so powerful and controlling. After seeing the effects of damaged homes, lost wildlife habitat, altered views, and people's stress-related experiences, many newcomers wanted fires minimized in the future, if possible. Yet, this goal seemed unattainable because they also saw the fires as uncontrollable: "Who can control where lightening strikes?" And they perceived the Forest Service as more a fire suppression response than land managers able to manipulate the environment before fire. Their definition of forest health centered on visual aesthetics. Many wanted the forest to be cleaned up, with blackened snags and the accumulation of woody debris removed from the forest floor. Newcomers often had moved from urban areas to live someplace beautiful; having a scenic forest surrounding them in Chelan was a desired future condition.

Recreationists generally wanted a "healthy," aesthetically pleasing forest. Many wanted the greenness restored by replanting trees and shrubs to replace the burned and blackened areas. Future large, high-intensity fires were not desirable because they would curtail recreation. A desired future condition from the perspective of the recreationist included maintaining a living forest with small patches where fire would burn or insect and disease would kill trees. Many understood that these disturbances would occur in the future, but they wanted the damage contained.

Advocates of tourism interests shared views similar to those of civic leaders and recreationists: a healthy forest would be key to a healthy tourism industry. Many visitors come to the area to experience the scenic beauty and recreate in the woods, so maintenance of the views was a primary element in the desired future condition of the forest. Guarding against a repeat of the 1994 fires was a top priority for future WNF management according to this stakeholder group. Many had heard testimonies supporting the use of silvicultural practices to take a proactive stance in preventing fire, and so they wanted to learn more about these practices and the feasibility of implementing them.

Silvicultural practices—

Description—Land managers, forestry consultants, timber industry representatives, and loggers often advocated for the use of silvicultural practices to cultivate timber as one forest output. Practices mentioned included thinning (precommercial and commercial), prescribed burning, pruning, slash management, sanitation and salvage removal, harvesting, replanting, and other vegetation management. The main goal of using these methods would be to produce commercially valuable timber. Many wise users favored these practices for managing the forest to minimize damage from insects, disease, and fire. The use or nonuse of these silvicultural practices in the WNF continues to be strongly debated within the community. This issue is fundamental to deciding the direction forest management should take in the future and achieving desirable conditions of the forest.

Interactions—Private property rights-home rule advocates desired the use of traditional silvicultural practices on private and public land. Many believed these practices would produce desirable results on their own private land. Through silvicultural practices, private property owners could thin forested land, remove insect and disease infested trees, and treat slash accumulation, all of which would allow private property owners to maintain their forested land as assets instead of liabilities.

The PPR-HRs viewed the public lands as an integral part of rural communities. In their view, management of those lands therefore should consider primary effects on the local communities. Many wanted public lands to be managed so that potential catastrophic damage or extreme changes disrupting the communities would be reduced. PPR-HRs believed silvicultural practices to be the appropriate tools serving this goal.

> It just lies on the ground and piles up to create tons of fuel. When it is not managed correctly, you set up the conditions for a big fire.

Wise users similarly supported many silvicultural practices as appropriate methods to conserve forest resources and ecosystems for the future. They believed the National Forests to be straying from this management philosophy because of pressure from environmentalists for hands-off management policies. Fires as large and intense as those in 1994 were perceived as more destructive and damaging than what might have occurred had intensive silvicultural management been applied.

> In general, thinning and logging are appropriate practices, instead of locking things up. If they had thinned, the fire wouldn't have taken off like it did. Forests are great, but if you can't use them they won't do any good.

> There were no positive effects [from the fires]. It shows the stupidity of being politically correct.

Many wise users supported continued production of resources and environmental processes. They claimed that disturbances, such as catastrophic fires, destroy fundamental elements in the forest and restrict resource production. Wise users argued that fuel management through silvicultural methods would enhance efficient resource production and use into the future without catastrophic damage and loss.

> The forest will burn anyway, but with good management the trees won't burn, it will just be the underbrush....They took the cattle out and stopped logging. Now it's just public relations. They have the policy of letting it burn and just save the houses. [What] we saw in the summer, wasn't controlled burning. I wonder if it'll be good for the owls to have all these moonscape lands.

> I am a firm believer in logging before fire has a chance to blow up into a huge wild fire. There needs to be the removal of fuel. Logging serves two benefits: an economical boost and fuel management. If we don't do logging for fuel management, we will be in the same situation in 50-60 years.

In addition to debating about silvicultural practices, wise users advocated for land managers, such as the Forest Service, to have the necessary authority to reduce fire size and intensity potential. Many believed management practices to be restricted in the recent past by legal injunctions and Endangered Species Act (U.S. Laws, Statutes 1973) concerns overriding good public land stewardship.

Environmentalists were wary of silvicultural practices because the term implied a management direction dictated by humans. Many argued that nature should "run its own course." Environmentalists recognized that humans do not have perfect knowledge of how the environment and all its complexities function; they therefore were concerned about unknown effects resulting from thinning, changing the species composition, or removing insect infested trees. Some questioned whether long-term forest health would depend on having "unhealthy" elements in the forest and whether high site productivity would involve more than maximized tree growth. Nonintervention environmentalists preferred a conservative approach, leaving disturbances and recovery in the hands of nature.

Return intervention environmentalists and multiple users wanted to see careful research before silvicultural practices would be employed, significant monitoring, and a willingness by the Forest Service to adapt management policies to new information.

> Prescribed burning will reduce some of the fuels out of there so that fires can't grow to an unnatural size and intensity.

> The forest has become overgrown and we need to have multiple use. Doing nothing in wilderness areas is fine, but management for the rest is needed.

Civic leaders also favored silvicultural practices to actively attempt to minimize threats of high-intensity fires. Many wanted active forest management, because they had witnessed futile fire suppression efforts during fires of large magnitudes. They wanted the Forest Service to take aggressive steps to avoid another catastrophe, such as the 1994 fires, to provide a safe, enjoyable, and productive quality of life for the community.

> The area has been on a headlong course for fire because the forest practices that support the clearing of brush have not been allowed to occur. Therefore, fuel buildup became a problem. We are lucky we didn't lose more property or the town of Chelan; we came very close to losing more than what we did. There was certainly enough fuel to burn more. The amount of property and public land that did burn might have been reduced if the Forest Service could have been able to practice more of what it used to do. The Forest Service needs to be allowed to cut, slash and burn in the forests.

> Controlled burns, logging practices, and forest management have occurred up until the last several years and these practices managed the forest nicely and without catastrophic burns. I want to know if preventative resources can reduce the magnitude of the fire and impacts fire has on the community. Perhaps in the long run, less loss of resources can occur using preventative measures. I know another fire will happen in the future. Let's be more protected and prepared next time. We will be even more populated and more vulnerable next time. Let's give the Forest Service more tools and authority.

Residents directly affected by fire were concerned about another fire starting on WNF land and then spreading to adjacent private land. They wanted to minimize damage occurring to their own property, and to do that they often employed silvicultural practices. But this strategy would not prove to be effective if a fire were to start or intensify in the WNF. Many would like the Forest Service to implement silvicultural practices to reduce fuel loading in the WNF. These actions would mirror activities done on adjacent private lands and promote a cooperative effort among various landowners to reduce the chance of fires spreading across multiple land ownerships.

Water quality—

Description—Water quality was affected by the fire through the amount of fire retardant and ash deposited into streams and Lake Chelan. Further potential additions to the watershed included above average amounts of silt and debris from floods and erosion. Water quality is essential for fish habitat, other aquatic species, and stream dynamics. Additionally, the City of Chelan receives its water from the Lake Chelan watershed, so siltation and debris flows could pose a threat to the water supply if significantly disturbed. This watershed was in excellent condition before the fire however, and had effective hydrodynamics to respond to the fire and debris flow disturbances.

Interactions—Wise users believed water quality to be a natural resource that should be managed within the scope of other natural resources such as timber, wildlife and soils. Many cited that the regional streams had adapted to fire occurrence and could cope naturally with high levels of debris entering the streams. Most believed that extra restrictions were not necessary for watershed recovery in Chelan due to the lake's inherent cleansing properties. Instead, most wise users believed salvage logging of snags near streams could aid public safety during potential floods because snags falling into streams tend to form dams. When these dams eventually fail, they can jeopardize lives, structures and aquatic species downstream.

Environmentalists and multiple users also believed water quality to be an important forest resource. They believed streams had adapted to fire occurrence in the area. Environmentalists, however, believed that snags falling into a stream add to its physical and biological structure. They were less convinced of an optimum level of snags in the streams and advocated for little or no salvage logging near streams.

Civic leaders were concerned about providing water to the community. Because the Lake Chelan watershed provides the local water supply, they wanted to retain its capability to produce potable water. Also, they realized the importance of fish populations to residents and recreationists. Maintaining the watershed to support both livelihoods for residents and tourism was the priority for the civic leaders, but most believed the watershed to be able to do this without too much human intervention.

> The City of Chelan has 90 percent of its watershed in the National Forest. The federal government also requires that the city filter its water by the Clean Water Act. We don't think this is necessary since the water from Chelan is one of the purest in the nation. Being forced to filter the water increases the water rates for all the residents.
>
> Tourism and recreation is a large part of Chelan economy and way of life. From the lake, you can see two thirds of the watershed, so there is a very visual aspect to the watershed and national forest.
>
> Lake Chelan itself is an [sic] unique ecosystem. It flushes itself out every 10 years and has its own life forms and habitat within the Lake and on the edges. Flooding and silt erosion could be very harmful to the Lake.

Most Chelan residents directly affected by fire were not as concerned about the threat of flood and debris potentials as were residents in other communities, specifically those in the Entiat Valley. They felt there was a need, however, to carefully monitor the weather and water quality to prepare for situations that might threaten human safety.

Orchardists received their irrigation water from streams. Many experienced mechanical problems, such as more frequent pump filter replacements, when excessive debris levels were present. They supported efforts to hasten stream recovery, such as re-establishing vegetation in riparian areas and placing filter dams in streams to improve the quality of irrigation water.

Wildlife habitat—

Description—Because of the loss of their habitat, many wildlife species experienced a shortage of food and shelter after the fire. Many residents saw wildlife visiting their yards during autumn 1994 and speculated that there was less food and shelter available in the typical autumn and early winter locations. They thought this was why the wildlife was more desperate and searching for alternative food and shelter in lower elevations. Many people were profoundly concerned for the obstacles some species of wildlife would face in the upcoming winter.

Immediately after the fires, many residents experienced various and untypical wildlife in their yards. There seemed to be some displacement of insects and wildlife after the fire, but this was temporary unlike those species that continued to search for food and shelter months after the fires.

Interactions—Most residents were concerned about changes and losses of wildlife habitat. Many had a lot of questions about the quantity of animals directly killed in the fires and the predicted amount that could die in the near future from starvation and predation. A common question concerned the effectiveness of the proposed feeding program over the winter: Would it only delay death temporarily for some species? or Would it provide needed sustenance for a normal sized population? For example, if deer populations were maintained by these feeding programs until rangeland partially recovered, then perhaps more deer would be sustained than the quantity typically surviving over the winter; hence, there would be starvation of large numbers of deer in following winters.

Each wildlife species had direct, indirect, and cumulative effects from the fire on its habitat. Most political coalitions and stakeholder groups were sympathetic to the wildlife situation, but they did not have distinct positions on what, if any, action should be taken.

> I have a lot of concern for the wildlife, especially the predators. There were almost 2,000 deer killed, so the bear and cougars have lost some of their food source. And, if the deer hunting limits are increased, this will put more pressure on the predators to find food. Many of the wildlife are doing uncharacteristic things, such as coming into more populated areas than normal. I worry that the Department of Wildlife will answer these pressures by increasing the kill.
>
> I am very worried about where the wildlife will go this winter. The deer are already down in the areas they traditionally don't come to until the big snows hit. The local hunting and sportsman's clubs are working on putting up deer feeders, but the bears are eating the food.
>
> The animals are different than the land. They will respond okay. There are more fawns out there than we know. Mother nature has a way of balancing herself. For example, there doesn't need to be any cougar hunting. I would be willing to purchase a cougar permit in order to protect and allow nature to regulate the survival of the cougar.
>
> A problem is the food source and shelter for the wildlife. There are feeding stations for the deer, but what about all the other animals?

Media coverage of the fires—

Description—During July and August 1994, local, regional, and national news teams covered fire behavior, fire effects, personal stories of residents, and overall fire damage. Long-term effects of these news stories remained an issue for many of the local residents and organizations. Some felt the fire damage had been overstated and the experience sensationalized, and they feared it would reduce the number of tourists choosing Chelan as a place to visit. To reverse this image of damage, several people suggested that additional media coverage could publicize Chelan's fire recovery and demonstrate the relatively unchanged tourist attractions.

Interactions—Civic leaders and tourism interest advocates were frustrated with some of the fire media coverage. Because of the emphasis on the size, intensity, and damage of the fires, tourism dropped dramatically after the fires started. Members of both of these stakeholder groups received many inquiries immediately after the fires from people outside the area who thought Lake Chelan was polluted or that the town had a severely blackened view.

> Media exposure will have long lasting effects. The inaccurate reports, 100 times overstating the number of people evacuated, and that Chelan was evacuated by boat. The media reported wrong numbers and evacuations that hadn't actually been done. The Chamber of Commerce has been trying to promote how clean the Lake is and other efforts to dispel fears.
>
> Visitors that come are surprised with the lack of devastation, but there are still a lot of tourists who changed their vacation plans.
>
> We felt we were always on the defensive, having to explain that the damage was not as severe as the media stated.
>
> My business was affected for four weeks in August as well as the lingering perception [by potential guests] of fire damage...to the area after August. I believe that it will take a continual effort by my business and the town to get the word out that the area was not badly affected by the fire. Many of my guests were surprised not to see more fire damage in town. They expected to see black burned areas, but one can only really see this driving into Chelan from Highway 97A.
>
> During the fire and afterward, the media's lack of understanding creates a lot of problems. They claimed that Lake Chelan is polluted and will not recover for 50 years. This statement is false! The city is spending lots of money to try and counter this and other misrepresentations of the actual damage done by the fire.

Local decisions and policies—

Description—There is a growing concern nationwide over policies legislated in Washington, DC, that mandate policy or restrict land use for local private and public lands. Many local residents blamed environmental special interest groups lobbying in Washington, DC, for the restrictions placed on National Forests and private lands. These restrictions provoked a sense of helplessness and desperation among some rural community residents because they perceived the Federal Government and special interest groups to have more control over events in the local area than the local residents.

> There is a cultural element present in the area, as well as all along highway 97 from Canada to northern California. There is a general distrust and animosity toward the federal government. I think that if the federal government sent out $1000 bills to residents in this area, some would tear those bills up for fear there was an ulterior motive. These feelings of distrust and animosity come from the lost ability of people to control their own lives, stemming from two sources. First, individuals have lost control over being able to manage their own lands and lives. Second, the government has lost control over its ability to be a source of strength and support for citizens.

Many western Washington residents, who recreate in Chelan County–referred to as "206ers" (see footnote 6)—were clumped into the same category as national environmental lobbyists. Often, 206ers were perceived to support recreational opportunities and low-intervention management, whereas some locals wanted more commodity opportunities and high intervention for fuel management in the WNF. Many local residents believed 206ers did not fully understand the effects these restrictions placed on orchardists, ranchers, and timber and forest managers. After all, local residents live near the forest year round and face long-term policy consequences, whereas 206ers arrive only for weekends and summer vacations.

> It is more the outsiders in D.C. and national environmental groups who don't understand the effects non-local policies have on the locals and the natural resources.

Rural residents were beginning to organize and develop strategies of their own to bring more decisionmaking power back to local communities. One strategy was to implement a Catron County, NM, style ordinance, requiring Federal agencies to consider the effects that a management decision or policy would have on the local community. Local residents wanted to have a voice in policy decisions for private land and public land management affecting local communities. And, they wanted the Federal Government to be accountable to rural communities neighboring public lands.

Interactions—Private property rights-home rule advocates were upset with the lobbying power of national interest groups and the resulting policies restricting practices on Federal lands that directly impacted community and county affairs. Because 90 percent of Chelan County is managed by public agencies, the policies for these lands overwhelmingly affect residents. The PPR-HRs wanted the Federal Government to be sensitive to local residents, businesses, and lifestyles when managing public lands, thus they supported a Catron County, NM, style ordinance for Chelan County. Primarily, they wanted the Forest Service to manage the WNF so that it would not incur catastrophic fire damage, including losses of structures and the natural resources Chelan depends on. The PPR-HRs advocated that fuel management should be the top priority for the Forest Service's Chelan Ranger District.

> There are some serious private property rights concerns. The National Park Service is infringing upon private property in Stehekin and the whole International Peace Park is threatening a lot of the local residents. Many feel that the federal agencies have no brains, and that they don't look at the impacts on the local areas and the local residents. I think that the local residents will adopt a policy like the Catron County ordinance in order to retaliate against these infringements.
>
> A key element in the community is that there is a lot of frustration with policies set that they had no say in. So, there needs to be more local input in these decisions because the locals are the ones who have to eventually deal with the impacts.
>
> I believe that forests should be operated at a state level, not at a federal or UN level. I believe very strongly in states' rights and sovereignty. The federal government already has too much control beyond the states and individuals.
>
> My land and the activities I could do on it were too restricted by environmental laws. On my [land], there was one old growth tree and no other in the area. Yet, certain restrictions applied.
>
> I am very supportive of a Catron County ordinance. We need to get decisions made at the local level. I don't have an interest in wanting to make decisions about Seattle or D.C., and don't think they need to have so much control about what goes on here. The government needs to get the message that they can't keep regulating what goes on private land.
>
> Policies established in D.C. needs to have flexibility in practice. There needs [sic] to be agency goals, but the regions need to have the flexibility to adapt to local climate and conditions. Greater flexibility needs to be left to local interpretation to those breathing, living, eating in that area.

> Local decisions! Decisions should be local, not outside such as Olympia, D.C., or by federal judges. They have to do politics in D.C., but we have to live here with the results.
>
> There should be more local decisionmaking. Chelan County is 88.7 percent federal land. Local people are influenced in every aspect of their lives by what happens on federal land, and so they should have some say versus someone in Washington, D.C., who's never been here.

Wise users were concerned with the long-term effects on the local environment, especially as outside environmentalists entered the fire recovery decisionmaking process. Wise users advocated that communities could coexist with the environment and that consumptive and nonconsumptive uses of WNF natural resources could continue. Wise users desired active intervention land management of the forest through silviculture to minimize catastrophic future fires and maximize the recovery of the burned lands to a more productive level instead of preservation, which they perceived to be inappropriate.

> Many of the outside voices are foolish. They want to stop salvaging, but yet the country is starving for lumber. The animals and birds will find places to roost. They don't have to leave merchantable trees; the birds will roost in smaller trees. The animal rights people are too narrow. I just don't understand why salvage can't go on, and salvage could pay for some of the rehab. Yet, the outside people don't come here to see the effect of stopping salvage or get a comprehensive understanding of what salvage could do for the area.
>
> In general, the national lobbying effort by environmental groups [has] prevented the Forest Service from doing more about the fuel situation in the Wenatchee National Forest. This has hindered the Forest Service from being able to reduce the potential for fire in this area.
>
> The main problem the Forest Service has is that they have locked horns with environmental groups who won't let anything happen in the forest.
>
> It is hardest to work with the right wing environmentalists who want to close access to the forest and lock up the lands. They have no concept of experiencing fire. They see this area from a distance through TV. These East coasters are sitting back in their rocking chairs trying to get the wild West back. They have read too many Michener books and have delusions of what the West is.

Environmentalists and multiple users desired some Federal Government influence and control over local land management practices. Many felt that the PPR-HRs advocates and wise users were not aware of the long-term effects that some silvicultural practices could have on forests. Most therefore believed that without some regulations on the public lands, situations like the "Tragedy of the Commons" (see footnote 7) will occur. Many environmentalists believe that without regulations for use of and access to the National Forest, long-term sustainability would suffer. They were concerned that short-term benefits would encourage land development and that commodity extraction would override long-term ecological needs. In response, local environmental groups organized to monitor Forest Service management. Some groups were chapters of national organizations, whereas others were independent.

Civic leaders were frustrated with outside environmental influence, because they believe local residents have a more intimate knowledge of the local area and use appropriate practices to manage that land to maintain it for future generations. Outsiders, on the other hand, were not perceived to be as familiar with the area or to understand which practices would be beneficial for the land and community.

Attitudes toward the U.S. National Park Service—

Description—Fifty-five miles north-northwest from Chelan is the Stehekin National Recreational Area, which is managed by the National Park Service. Many cabins and permanent residences are situated in this area, which supports about 70 families. Some residents are National Park Service employees, but several long-time residents

have lived in Stehekin for three or more generations. Despite the distance and natural barrier of Lake Chelan, many residents of Chelan consider Stehekin residents as good neighbors and members of the greater Chelan community.

Several issues regarding Stehekin emerged frequently during the social assessment. First, some interviewees confused Park Service employees with Forest Service employees, because they were unable to distinguish which agency managed particular areas of land. Second, once a distinction[11] was made between the agencies, negative comments tended to be directed toward the Park Service and positive comments toward the Forest Service, regarding management policies and relations with the community. Third, many of the negative attitudes toward the Park Service hinged on perceived overregulation by a Federal agency of the National Recreational Area. Many believed the Park Service was attempting to regulate and exclude recreational opportunities at Stehekin, which would be counter to the classification of the area. Additionally, many comments suggested that the Park Service was applying underhanded tactics in encouraging private land owners in Stehekin to sell their land to the Park Service. The PPR-HRs were extremely upset with these policies. The attitude of many people toward the Park Service focused on the agency being too large a presence at Stehekin and not responding to the ways of life of the local residents, which contributed to the heightened antiregulation sentiments of the latter.

> I am unhappy with the Park Service at Stehekin. National Recreation Areas are not parks! Yet, the Park Service is trying to turn it into a park. They harass the owners of homes and private property up there until it is easier to sell and leave rather than stay.
>
> The National Park Service does what they want to do—local input doesn't matter.
>
> The Park Service harassed people to get them to sell and then did nothing with the property.

Forest-residential interface—

Description—Debate over fire suppression priorities questioned whether people should be allowed to build and live in the forest interface and the appropriate level of fire protection if they do. Priorities in the 1994 fires for directing fire suppression resources were (1) protect human life, (2) minimize damage to houses and other structures, and (3) protect the environment from high-intensity burns. Most people agreed that human safety should be the first priority, especially after the tragic loss of lives in Colorado in June 1994. The debate on protecting homes and other structures over protecting the forest and environment raised issues of private property owners' liability for living in areas that are difficult to protect from wildfire and the county's regulation of residential development in the forest interface. Some argued for limitations on the number of people allowed to build in remote forested areas, which would entail some type of county zoning. Others argued for no restrictions: they felt those who build in areas having high fire potential should not expect extreme efforts by public agencies to protect their homes and structures. The key factor was that houses and other structures could be replaced to some extent, although it would be emotionally difficult; whereas lost ecosystems and soil productivity would take decades to gradually recover. If there were fewer structures to protect, fire suppression could then focus on minimizing catastrophic damage to the forest.

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[11] Interviewers did prompt the interviewees with casual statements that a different agency managed Stehekin than managed the National Forest. Usually interviewees knew this, but they needed help remembering this distinction.

Interactions—Private property rights-home rule advocates supported an individual's free choice to build and locate a home. Many disagreed with growth management plans preventing individuals from living in certain areas. Most advocated that if people chose to live in the forest, they would have to take responsibility for their own personal safety. This might include building houses with metal roofs, clearing brush away from structures, creating fire breaks around property, and pursuing other wildfire preparedness plans.

> People should have the God given right to build in the woods. It's your choice to live there; we need to get rid of government control that would prevent individuals from making this choice. Yes, those who do live in the woods will have to pay higher insurance and take more fire preventative steps, but it's their choice to do all that.

Environmentalists and multiple users tended to support some type of growth management plan to guard against chaotic development of natural environments. A fear that short-term economic benefits to land developers would override long-term ecological needs was expressed. Most supported the choice to live near the forest, but they wanted to ensure that the integrity of the environment would not be jeopardized with too many people moving into remote or sensitive areas.

The role of fire suppression in the forest-residential interface evoked a dilemma. Environmentalists believed a let-it-burn policy to be the most natural response, which would allow fire to carry out its ecological function. This, however, would threaten communities and public safety. So, what would be the desirable balance between let-it-burn and put-it-out-now policies to protect the natural integrity of the forest and adjacent communities? Environmentalists wanted more let-it-burn policies, whereas multiple users wanted the option of put-it-out-now should fires significantly threaten communities and other forest uses.

> If humans weren't a problem, I would say let it burn. But since humans are here, I feel it should be put out.

Growth management advocates supported increased regulation of residential development near the WNF and other forest land to maximize public safety and minimize structural losses during forest fires. Some claimed that growth management would reduce the number of structures needing fire protection in the future so that containing a fire on the WNF would receive attention sooner.

> Tremendous resources are spent to develop cities so that people can live together in a smaller area without as many resources needed to support them versus them all living in the woods: economies of scale. People in the city pay for fire protection, yet the person living outside the city limits doesn't pay this fee. Then when a fire comes along, people living in the woods get fire protection. Their insurance should be five times more costly and they should have to contribute to some type of fire fund. The city households had to pay twice for fire protection (their contribution plus those living outside the city limits), and yet they lost their scenery. The people living in forested areas want us, city dwellers, to subsidize their living in the woods.

Civic leaders often were caught in a dilemma over the issue of people living in the forest interface. On one side, a growing population would increase residential development and benefit the community economically. Immigration trends to Chelan from urban centers signified that people wanted to leave cities. Yet, if too many people were to move into the area, the community would experience changes in size, values, and arrangement. Civic leaders were concerned about the impacts settlement in the forest interface would produce because it would increase the need to provide fire protection in more remote areas.

> The right to access forest land is a key issue for locals. People have cabins and homes in the forest and on national forest land.

Most residents also battled with this dilemma. Some already lived in the forest and were immensely enjoying that lifestyle. Yet, if too many other people were to move into the forest, it would not be the same secluded lifestyle. Most residents favored not restricting the choice to build in the forest, but others desired some organization of this settlement. Hence, growth management issues were highly volatile among residents.

> The fire came very close to my home; we almost lost it but were very lucky. My family has had to accept that fire is a part of the area and we knew that we took a risk living here.

> We as individuals must take more responsibility in cleaning up our own yards and properties. I have maybe 3 feet of pine needle accumulation in my yard, which I now realize has a fire potential.

Use of public money for fire suppression and rehabilitation—

Description—Owing to the size and behavior of these fires on public lands, the costs to fight them and to rehabilitate and recover damaged forest ecosystems were tremendous. As taxpayers, most residents were concerned about the expenditures. People questioned whether certain expenditures were effective and efficient uses of public tax dollars. Fire suppression priorities came under question: Should public money be used to protect private structures, or should private property owners be financially accountable? Another question about using public money to aid the rehabilitation and recovery process was, How much protection against flood and erosion is desired or sufficient? Estimates based on historical occurrences predicted that floods often follow significantly large fires. Using large amounts of public money to mitigate these anticipated risks generated some controversy.

Interactions—Wise users, multiple users, and environmentalists shared a concern for the long-term sustainability and viability of species and environmental processes, even though their specific management priorities differed (wise users wanted a commodity producing forest; multiple users wanted to continue providing multiple resources, not a single or limited range of resources; and environmentalists wanted to preserve ecosystem processes). All coalitions witnessed the large amount of public money spent on fire suppression and rehabilitation, yet this approach prioritized saving structures before the forest. Many questioned whether less money should have been allocated to structural protection and more to wildfire control. Logic dictated, to these stakeholders, that most structures would be insured and could be rebuilt, whereas the environment would take much longer to recover, if ever. As taxpayers, many would like to reevaluate the priorities of fire suppression to ensure that the Federal budget targets public land protection instead of private land subsidies.

> Why concentrate on protecting structures when they are insured? Look at this loss to the environment, habitat, recreation, trees, soil and watershed—this loss wasn't insured.

Return intervention environmentalists and multiple users were frustrated with budget allocations for projects. It appeared to many that projects were not funded unless they were linked to timber harvesting. Return intervention environmentalists claimed that some projects, such as prescribed burning, did not have any link to cutting trees and therefore should have their own budget. Multiple users believed each forest use should have equal weight for funding, hence attaching nontimber use programs to timber harvesting would be unfair and not true multiple use.

> The lack of funding to do other programs such as prescribed burning needs to be addressed. Funds seem to be available for timber harvest, but not for forest health management. There is lots of talk about ecosystem management, but the government and Forest Service [are] still oriented to what can come out of the forest. Policies are set away from the district and funding drives the timber sale programs. There is too much pork barreling in Congress to separate funding and timber sales. This interdependency is what drives policy on the national forest.

Some long-time residents also were concerned with the large amount of public money spent on fire suppression. They compared current firefighting practices to earlier years when more local volunteers were used. Many believed that costs could be reduced if more local volunteers could react immediately with labor and equipment for fire suppression efforts instead of waiting for fire crews to arrive from across the Nation.

"Project fire" theory—

Description—Local residents used the concept of "project fire" to explain the Forest Service's view of the Tyee fire. Some believed the agency had desired a large, expensive fire because of the positive rewards in future budget allocations. The logic behind this theory was that by spending lots of money on this fire, fire budgets in future years would increase. Some local residents explained that the Forest Service needed to increase their budget; thus they "chose" to let this fire grow to "project" size instead of putting it out.

Interactions—Claims that the Tyee fire was a "project fire" arose more often in the areas of high-intensity burning. Some residents stated that the fire was reported several times when it was small and containable, yet the Forest Service did not aggressively try to suppress it.

> The reasons why this fire was not put out are not going to be published. It's not what you'll read in the paper. We will never know what it was because of budget considerations. They needed to spend the money to get their allocation.
>
> I believe that the management plan was to allow the fire to burn and this was decided early on.
>
> There were so many mistakes made in fighting the fires. I have been through 6-7 fires before, and know that if the Forest Service wanted to put this fire out, they could have done so.
>
> The dollars are budgeted depending on how much they spend. They tried to run the cost of fighting the fires up. The[y] didn't put the fire out when they could.

Not all Chelan residents supported this theory; however, those who believed the "project fire" conspiracy were extremely confident that the Forest Service had the means to suppress fires but simply chose not to do so to reap financial gain.

Past and future fire suppression strategies—

Individual comments[12]—Most residents were impressed, in one way or another, with the methods and means of fire suppression at the Tyee fire. Crews were assembled from all over the United States, and military troops also were called in. A fire camp was established at the local rodeo grounds, creating a minicity. Some residents were positively awed by the organization required to assemble and support so many extra people brought into the community to fight fire. Also, they knew these firefighters were risking their own lives to protect Chelan and its residents, who were complete strangers. Many residents were extremely thankful to be the recipients of this protection. When any need was expressed by the firefighters, such as baseball caps, bandannas, or food, the community quickly volunteered.

> The cooperation in the valley was phenomenal. If the firefighters needed baseball caps, bandannas, etc....the town responded quickly. Donations came in from Wenatchee, Brewster, and Bridgeport. Even visitors who went back to Seattle organized a semi with supplies to be shipped over to Chelan. If there was a need, we were there.

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[12] Most opinions on fire suppression were individual and did not correspond to particular group perspectives.

Some negative comments were directed to the managers of the fire suppression efforts, but not to the firefighting laborers. It was believed by some residents that the fire suppression was not as quick as it could have been because bureaucratic processes slowed down equipment employment and usage. Judgments made by fire suppression managers also were questioned, especially with respect to when the Tyee fire crossed Navarre Coulee, which was critical to the fire's approach to Chelan.

> My experience with this fire and other fires is mismanagement on a grand scale. There is poor communication between those trying to fight the fire as well as people trying to spot the fire from the ground.
>
> We should have a rapid response team....This tragedy burned so many acres, it's a waste. With all our technology we should be able to solve the problem quicker.

Many positive comments were directed at fire suppression managers as well. Many residents believed that the Forest Service and other interagency people did the best that could be done.

> People who have been around the area for a long time are accustomed to wildfires. It's the newcomers that thought this summer's fire was the end of the world. The Forest Service doesn't have a let it burn policy. They did a skillful job of protecting what they could.
>
> I lost more than anyone, except one, but I find no way of blaming the Forest Service or anyone involved in fire suppression. Some others who suffered losses are blaming everything and everyone but God. I feel the Forest Service did everything humanly possible. Hindsight is always 20-20. Plus, the Forest Service minimized the damage and put the safety of people as a priority. As far as any [legal] suit goes, I am willing to testify for the government. Firemen are not gods; they are just like you and I.

Concern for public and firefighter safety was applauded, especially with reflections on the tragedies in Colorado that were then very recent.

> I think the Tyee fire was so dangerous that the Forest Service couldn't send in crews at the early stages, especially coming right after the Colorado losses.

Views on the Tyee fire suppression efforts were diverse and contradictory. There did not seem to be shared views by stakeholder or political groups.

Trusting the Forest Service—

Individual comments (see footnote 8)—There was overwhelming support for and trust in the local District Ranger and District personnel. The majority of comments during the social assessment addressed the openness, leadership qualities, and participation in local organizations by the District Ranger and other Forest Service employees.

> The ranger is extremely well supported. Al Murphy could win mayor if he didn't work for the federal government. The community has a high level of confidence in him. It is almost incidental that such a well respected person just happens to work for the Forest Service. [The] admiration stems from his involvement in many community activities. Everyone was relaxed about the fire when Al was in charge of this end of the Tyee fire as incident commander. Other district personnel are also respected as long-time residents in the community.
>
> I believe the local district has an excellent relationship with the community. The Forest Service district works real hard to work with the community. Al Murphy has good leadership qualities and is active in the Chamber of Commerce. The Park Service is not near as helpful or cooperative and so the community has a very different attitude of them versus the Forest Service.
>
> I feel the district ranger listens to what the local people in the community are concerned about, and he tries to incorporate their interests in decisions.

Many residents noted the dominant recreational use on the Chelan District and supported holistic ecosystem management compared to timber-based practices.

> Most people in the area use the national forest for recreation. There isn't much forestry on this district, mostly recreation. So, there isn't much controversy.
>
> I like what the Forest Service does now; I didn't like it when the Forest Service was oriented to timber and logging. Now it's multiple-use and that's good.
>
> The Forest Service are land managers and they need to be there for the good of the forests. They need to instigate an education process that shows wise use of the resources can be done without devastation and that trees can be cut on a regular basis.
>
> The Forest Service's first allegiance should be to the land: the viability of all species in the forest, as a species and not as an economic value. Humans are an equal part in the species equation, but as humans our spiritual life and well-being must be included.
>
> The fires changed [people's] ideas; it helped to changed the political balance. People have aligned with groups in forest management that have seen the need for good forest management. Wildfires help make the point. We are looking at a paradigm shift: from clear-cut or hands-off to more balanced management.

Some, however, suspected ulterior recreational and environmentalism motives.

> I used to have cattle in the forest and log our lands. I have seen the agency waste the resources and bend to the environmentalists. There is a political undertone. They want to make the West a playground. They are trying to move all industry out of the West and favor timber production in the south. It's a conspiracy but people don't see it.

Also, there were some general comments about the agency as a whole, not just the District or WNF, which demonstrated frustration with nonlocal decisionmakers.

> I don't have a lot of respect for the top level Forest Service. They are just political appointees. Local professionals need to do their jobs within the guidelines and budget restraints, and they need to keep the politicians out. The politicians are not professional foresters. Let the biologists, law enforcement officers, and the foresters do their own jobs, especially those who know the land intimately.
>
> You can talk with the local district ranger, but you can't talk with D.C. or the UN.
>
> The district people do what they can, if they can't then it's the national regulations that bind them. Their hands are tied by federal laws.
>
> I am very discouraged with Jack Thomas being the head of the USFS. He is the first non-forester there [and] he has damaged the agency.

Conclusion

As the last three sections have revealed, people's positions on fire recovery issues were multidimensional and often contradictory. This overwhelming complexity can be reduced by summarizing the dominant social entities and core issues present in the study area.

Who Were the Major Participants?

The social assessment targeted local residents actively connected with forest policies, especially fire recovery decisions. The four stakeholder groups that had the strongest interest in fire recovery were:

- Civic leaders
- Residents directly affected by fire and rehabilitation
- Timber interests
- Tourism interests

Civic leaders represented community and county interests corresponding to losses incurred by the fires, efforts that restored forest use and aesthetics, and policies that attempted to minimize future catastrophic fire. Similarly, advocates for timber and tourism interests had significant stakes in fire recovery management because of direct impacts and losses to their industries. Both stakeholder groups encouraged an active management approach to quickly restore a productive and "green-looking" forest, which would once again provide the resources to support these industries.

Residents directly affected by fire and rehabilitation contended with additional emotional impacts of the fires. Many lost houses, out-buildings, yard vegetation, and views, causing substantial changes to places of special meaning and their sense of safety. After the fires, their stake in fire recovery and forest management, in general, had a deep personal meaning and thus motivated them to become more involved in policy decisions.

The other stakeholder groups and social entities, differentiated by residency tenure distinctions, geographic divisions, and ethnic communities, had direct interests in the fire recovery situation, but they generally were less involved—emotionally and materially—in policy decisions.

On a more abstract level, the key to understanding the debate surrounding most fire recovery issues is distinguishing between fundamentally different values and belief systems that shape people's perceptions of the forest and acceptable management directions. Five political coalitions differentiated people's world-views of the WNF and its management:

- Environmentalists (nonintervention)
- Environmentalists (return intervention)
- Multiple use
- Private property rights and home rule
- Wise use

Across the study area, a strong tension emerged between environmentalists and wise users. Wise users were the most widespread political coalition in the study area, and they exerted a lot of political influence in local elections and policy decisions. Environmentalists also were very active and influential in the political arena. With a relatively small local core of individuals, but having ties to national organizations, the environmentalists posed a serious counterbalance to the more loosely affiliated wise use supporters.

These two coalitions often took polarized positions on natural resource issues, with people supporting a multiple-use perspective spanning the middle ground. Multiple users were not organized by any formal affiliation; however, they were an important force in the political arena when environmental and wise use platforms clashed. Although fire recovery decisions on future WNF management directions will not be made by the electorate, inevitable public involvement will provide a political context within which the Forest Service will operate.

Private property rights-home rule advocates added an extra dimension to the policy process by questioning how decisions made for Federal lands carry over to private land. For those who make a living off their private land, consequences of Federal land policies could be quite substantial.

What Were the Key Issues?

The main question in debate was "Should salvage logging occur, and if so, how much?" Replies differed according to the value (ecological, economic, social, spiritual, etc.) that was placed on the burned trees and the perceived risk to the forest associated with intervening vs. not intervening with active management.

> No salvage. Dead and dying trees provide many important and natural components to the forest such as wildlife habitat, nutrients and physical structure. Higher risks correspond to humans manipulating and altering ecosystem processes and states, preempting nature's own response. Forest management should take a hands-off approach so that nature can regulate its own recovery.
>
> Nonintervention environmentalist advocate

> Some salvage is an appropriate way to restore forests to historic ranges of variability. Risks are associated with the current forest conditions that are historically anomalous in terms of vegetation composition, stocking levels and fire cycles. Previous human activities in the forest contributed to this overly unnatural situation, therefore man needs to intervene to help nature return to HRVs. Management should attempt [to] reduce extreme fuel loading and restore historic levels of vegetation. Then, nature can regulate itself and be naturally resilient to disturbances.
>
> Return intervention environmentalist advocate

> Salvage is part of a balanced strategy to manage all resources into perpetuity. The current situation has high risks associated with erosion and debris flow, fuel loading and insect and disease epidemics that can lead to more loss of wildlife habitat, soil and vegetation. Moderate salvage logging levels reduce risks associated with catastrophic losses without significant impacts on other resources.
>
> Multiple use advocate

> Salvage as much as possible quickly to recover the most economic value left in the dead and dying trees. These trees are dying anyway, so salvage logging is the most efficient use of this wood fiber. Moreover, salvage logging reduces future risks of insect, disease and fires that jeopardize the rest of the forest.
>
> Wise use advocate

These responses revealed fundamentally different positions. Furthermore, the level of preferred salvage logging, if any, led to people's definition of a "healthy" forest, vision of desired future conditions, and support of appropriate practices to achieve this vision. Thus, the key issues directly tied to fire recovery and generating great concern by the public were:

- Use of the burned trees
- Forest health and desired future conditions
- Silvicultural practices

Two additional issues factored into people's positioning in the fire recovery debate:

- Local decisions and policies
- Trusting the Forest Service

Federal lands, primarily the northern portion of the WNF, comprise 90 percent of the total land base in Chelan County. Thus, communities in the county often are directly impacted by natural disturbances and management activities in the WNF. Although the Forest Service must, as a Federal agency, adhere to national legislative directives, the implementation of these directives occurs locally. An underlying tension that surfaced during many debates concerning WNF management, not just fire recovery, centered around managing a National Forest and balancing inevitable impacts on the county.

Working relations between the public (community, special interest groups, and individuals) and the Forest Service (ranger districts, supervisor's office, and regional or national offices) play a key role in public involvement processes that often confront some of the local impacts from National Forest management decisions. A variety of relations between the public and Forest Service exist. For example, it is common for

residents' to voice positive support for Forest Service employees at the district level but vent their frustration toward top line officers in Washington, DC. Some may value the Forest Service's stewardship role of National Forests, whereas others may distrust motives behind the Federal agency's policies.

These core issues, those directly linked to fire recovery and those describing the local context within which Federal land policies are implemented, combined with key participants outline a complex social situation that the Forest Service must integrate into their decisionmaking process. To facilitate this task, several themes are presented in the next section to synthesize the sentiments, values, interests, and stakes in fire recovery management expressed by the residents in Chelan County.

Themes

To explain the commonalities and differences across the Leavenworth, Entiat, and Chelan communities, four themes are presented.

All people residing in these communities faced wildfire—Wildfires dramatically affected this place and these people. Homes were threatened, in some cases destroyed; businesses, livelihoods, and daily routines were interrupted; leisure activities were preempted; and lives were forever changed. These fires took over, creating a singular focus for all residents. Regardless of philosophical or occupational differences, people became completely involved in the event. And even in the immediate aftermath, their interests continued to be focused on forest management issues in general and fire recovery issues in particular. The policies and activities—past, present and future—of the National Forest were now an integral aspect of their lives. These fires reminded local residents that they do not live in these communities unattached to the environment. Severe events occur and consequences must be faced.

People's emotional reactions were equal to the fires' magnitude and intensity—An event of this magnitude and closeness to people's lives brought out overwhelming emotional reactions. The fires encroached on lands where people lived and worked–an atypical occurrence. To potentially lose these lands and accompanying structures was stressful for most. Furthermore, actual losses when fire suppression efforts failed often were depressing. As fires progressed, more land burned, more homes were threatened, more resources strengthened suppression, and the possibility of containing the fires became more ambiguous. Most people struggled to make sense of the situation.

Many called the fires catastrophic because of the perceived losses to timber, vegetation, soils, habitat, and aesthetic appeal of the forest. Because of the huge acreage involved and the intensity with which the fires burned in spots, these losses evoked severe emotional reactions. Not only were people concerned about what to do with the burned areas, but they also knew an event like this could happen again—a frightening reality. Quickly, questions emerged concerning forest conditions before the fires started, previous management policies, and fire suppression strategies. Many voiced an urgent need to focus forest management attention on minimizing a reoccurrence of catastro-phic fire. The ensuing debate on exactly how to achieve this goal was highly fueled by emotions connected to people's recent experiences with severe wildfire.

Although people's collective reactions were emotionally attentive to the situation, fundamentally different views of appropriate forest management directions resulted in divisive positioning on fire recovery issues—As demonstrated by the fairly distinct positions and rationales proffered by each of the political coalitions on fire recovery issues, competing views on an appropriate Forest Service management response developed from different values placed on the forest and perceptions of the

situation. These differences existed before the fires and most likely surfaced in other discussions concerning WNF management policies and activities. The Tyee and Hatchery fires, however, were unusually momentous and combined these value-laden views with emotionally charged experiences. The importance of the situation was magnified, and subsequent policy debates became extremely volatile.

Community response to the fires and fire recovery situation differed—Although the communities were more alike than different, their unique qualities revealed important distinctions and responses to the fires. From the social assessment general social framework, we see that Leavenworth and Chelan had more similar social composition to each other than to Entiat. For example, all five political coalitions were represented in Leavenworth and Chelan, but the presence of either environmentalist coalition could not be found in Entiat. And because environmentalist and wise use differences characterized much of the fire recovery debate, Entiat's experiences did not parallel those of the other two communities.

Entiat's uniqueness revealed itself in two significant ways. First, residents made a distinction between those living in town and those living up the Entiat River valley. Because the Tyee fire burned in the latter but not the former, people living up the valley experienced more direct impacts from threatened or lost homes and structures, smoke, presence of equipment and personnel, immediate rehabilitation activities, and changed landscapes. These residents faced more extraordinary circumstances than did other Entiat residents. The result was a highly emotional and stressful recovery process for these residents that others did not fully understand. Second, some residents were openly critical of the Entiat Ranger District. Again, this viewpoint tended to be shared by more people living up the valley than those in town. Adding these internal community aspects to the general fire recovery situation, Entiat appeared to be more emotionally charged and more likely to give rise to conflict than perhaps was the case in either Leavenworth or Chelan.

One issue that surfaced in both Entiat and Chelan was the "project fire" conspiracy theory, attributing the size of the fire, in part, to a belief that the Forest Service wanted larger fires to influence future budget allocations for the affected districts. The presence of this theory could complicate residents' trust in the Forest Service's motivation and commitment to management strategies concerning fuel loading and future fires. Interviews with Leavenworth residents did not elicit this theory.

The Chelan community lacked the presence of timber interests, unlike Entiat and Leavenworth. This absence reflected Chelan's dependence on recreational and aesthetic values derived from the WNF rather than on timber resources. Wise users, however, were not absent and counterbalanced environmentalists' positions.

Leavenworth, with its Bavarian theme partially dependent on the surrounding forested hillsides, was extremely concerned about its visual appeal to tourists. The Hatchery complex fire wrapped itself around three sides of the town and preempted much of the summer tourism season. By correcting media overstatements of fire damage and minimizing the recurrence of a similarly devastating fire, many of Leavenworth residents' integrated restoring tourism appeal into the general fire recovery debate.

Lessons Learned

There is no doubt that the 1994 fires in the WNF were a major event. Despite being within the realm of possible occurrences in any number of National Forests in the Western United States, wildfires of this magnitude and intensity are uncommon events. Moreover, people are connected in many ways to the forests and grasslands that burn, and therefore they must find a way to deal with these unusual and often highly stressful events.

This type of situation occurs in a variety of other forest and natural resource contexts where strong public emotions surface and where agency technical expertise attempts to reconcile appropriate management decisions. By applying the knowledge gained from the WNF social assessment to other public involvement processes, land management agencies have a way to effectively identify and integrate social responses, values, and knowledge into their decisions.

Specific lessons learned from the WNF social assessment and their application to the collaborative-learning public involvement method are listed below. These lessons, we believe, have general implications for natural resource decisionmaking processes to which the public often brings complex sets of values, knowledge, and expertise.

- Wildfires can have severe and unique consequences for the ecology and use of a National Forest as well as for neighboring communities.
- Public reactions to wildfire contain many sensitive components (e.g., anger, grief, loss, desire to rebuild, motivation to minimize future catastrophic events), which factor into their perception of the situation and position on appropriate management directions.
- Social assessment using qualitative methods enables resource professionals and public involvement facilitators to understand the breadth and depth of issues, public concerns, and affected community social structures. These data provide initial insights to maintain and strengthen working relations, communication, and collaboration when engaging public involvement processes.

Further Insight Into Fire Recovery

Two additional analyses, in the form of master's theses, were completed by using data and research experiences gained from this social assessment. Both take an indepth look at the social dynamics of forest communities and provide theoretical grounding to explain some of the complex social influences on fire recovery management. Mendez (1995) compares the two communities of Leavenworth and Entiat to understand social and historical influences on attitudes and interests of residents in fire recovery. Using social psychological and cultural frameworks, Findley (1996) traces different values and beliefs of fire recovery management to fundamentally different world-views of nature. Abstracts from these theses are reprinted below to refer readers to additional findings, conclusions, and policy implications derived from these data but reported elsewhere.

An abstract for ***Smoke on the Hill: A Comparative Study of Wildfire and Two Forest Communities*** **(Mendez 1995):**

Wildfire represents a serious challenge to forest communities in the rural West. After decades of fire suppression, land managers now perceive the greater role of wildfire in the ecosystem. In the meantime, migration patterns from urban to rural settings have increased the number of people living in forest pockets throughout the West. Wildfires are now more threatening than ever to human communities. This study looks at the response to wildfire in two rural communities in north-central Washington that experienced an intense fire season in summer 1994. Through qualitative research, the study attempted to capture the response of the communities to fire and analyze it in the context of their social history.

Theoretically, the study focused on three dimensions of the study of community: community as geographic area, community as local social system, and community as shared, meaning in the context of social networks. The two communities under study had different social composition and stakeholder groups, and they differed in their perceptions of the wildfires and the subsequent recovery efforts. These differences are

partially explained as stemming from their development patterns, their geographical location, their social system, and the networks of people within the communities. The historical development and everyday life in each of the two communities served as the framework to understand their attitudes and positions regarding forest and fire management.

An abstract for ***Analyzing Multiple World-views of Forestry: Local Perceptions of the 1994 Fires on the Wenatchee National Forest, Washington*** **(Findley 1996):**

In the social context, distinct world-views provide multiple, subjective, durable, and conflicting views of natural resource situations. This research analyzes world-views that shape people's perceptions, understandings, and evaluations of forests and forestry to examine conflict associated with forestry issues. Differences in views of local residents about wildfires and the fire recovery management situation affecting three communities in north-central Washington were explored. In addition, insights for facilitating world-view differences that inevitably surface in value-laden natural resource conflicts emerged from this study.

Data were gathered through 122 semistructured interviews; subjects represented diverse interests, attachments, and ideologies relative to forestry. A key-informant and chain-referral selection strategy accessed social networks interested in forestry management issues. Qualitative data analysis identified issues salient to fire recovery management and themes characteristic of shared forest values.

Five general views of fire recovery represented the relations between the level of human intervention in forest management strategies and the level of risk affecting the ecosystem or neighboring communities. Levels of intervention were relatively tangible, but levels of risks differed by subjective definitions of desirability. The acceptability of specific forest management tactics could be traced to the different values people place on the forest and world-views through which they saw and understood the situation.

These views of fire recovery were compared to an existing typology that focused on social relations, cultural biases, and general views of nature. The five views found in the data could be explained by four universal world-views of nature.

World-views evolve from individual cognition and social interaction. To the extent that world-views are value based, they tend to be distinct and enduring because values are not easily changed. Conflict grounded in world-view differences is therefore often inevitable and unresolvable. However, collaborative conflict management provides natural resource professionals with tactics to facilitate discussion in the face of these differences and to generate improvements in the relations and the conflict situations. Implications from this study suggested constructive conflict management and natural resource policy can accommodate world-view diversity.

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One hundred twenty-two members of local communities adjacent to the WNF volunteered time out of their busy workdays, evenings, and weekends and traveled to local restaurants or opened their homes to meet with researchers. Without the generosity, openness, and insight of these individuals, our research would have failed to communicate the “real” issues to public land managers. We hope this report accurately reflects their experiences, interests, concerns, values, and beliefs regarding the 1994 wildfires, fire recovery, and public forest land management.

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Appendices

Appendix A: Wenatchee National Forest Fire Recovery Interview Guide

Connections to the Land

1.1 How are you connected to the Wenatchee National Forest? What activities on the WNF have an influence in your life?

1.2 Were you familiar with the areas that burned this summer? What were the negative effects? What were the positive effects?

1.3 How will outcomes of forest management decisions about the burned areas affect you?

1.4 How are you associated to others involved in forest management? Are there others with similar interests? With different interest?

Managing for Future Fires

2.1 What role should fire play in managing the WNF? Should there be more or less prescribed burning? Are wildfires acceptable? Should the WNF prevent a repeat of this summer's fires?

2.2 Can anything be done about the potential for fire? What role should the WNF take in preventing fires? What forest practices? Is there public support for these practices?

2.3 Have your opinions about how the WNF manages its lands for fire changed?

2.4 How do we move forward from this summer's fires? What is the desired future condition of these forests?

Issues of Fire Recovery

3.1 Are there problems with the burned forest? What are they? How should they be managed?

3.2 What would happen to the burned lands if managers did nothing? How would the land respond? Is this an acceptable option?

3.3 What is an appropriate time horizon for planning?

3.4 Are you concerned about the possibility of new problems because of the fires? Will floods or erosion be a threat?

3.5 What if anything should be done about private lands that burned?

3.6 Do we know enough about forests and fires to avoid new long-term problems? How much information is available to you?

Attitudes Toward the Forest Service

4.1 What experiences have you had with the WNF?

4.2 Have you been involved in any public involvement, response, or planning?

4.3 Which aspects of WNF management affect you? Have they been helpful or hindering?

4.4 Are your views of the local RD similar or different from the SO, region, or agency?

4.5 How would you describe the relationship between the FS and the community? Can the WNF RDs respond to local needs?

4.6 Who should be involved in making decisions about the burned lands? Can the local people influence WNF management decisions? How important is your voice? Do you wish to be more involved?

4.7 How do you view the FS: servants to the public, stewards of the land, other?

Demographics

Name _____

Community _____ Tenure in the Community _____

Date of Birth _____ Place of Birth _____

First Family Member to Settle in Area _____ Date _____

Occupation _____

Ever Worked for a Land Management Agency? _____

If yes, which one(s)? _____

In what capacity? _____

Education (last year completed) _____

Ethnicity (optional):

African-American _____
Asian _____
Caucasian _____
Hispanic-American _____
Hispanic (other) _____
Native American _____
Other _____

Table 6—Comparison of Chelan County and community demographic characteristics, 1980 and 1990

	Chelan County		Leavenworth-Lake Wenatchee		Entiat		Chelan	
Characteristic	1980	1990	1980	1990	1980	1990	1980	1990
Total population	45,061	52,250	3,591	4,388	1,323	1,507	4,433	4,949
	Percent of total population							
Sex:								
Male	49.1	49.3	50.8	50.0	51.6	51.9	49.3	49.7
Female	50.9	50.7	49.2	50.0	48.5	48.1	50.7	50.3
Age:								
Less than 18 years	25.8	26.7	25.8	24.3	27.7	27.4	24.5	26.9
18-64 years	59.0	57.6	60.5	57.8	62.2	60.1	57.9	56.0
Over 64 years	15.2	15.7	13.6	17.9	10.1	12.5	17.6	17.2
Race:								
White	97.0	92.5	98.0	97.5	99.2	91.4	96.8	88.0
Black	.1	.2	0	.2	0	.3	.1	.1
Other	2.9	7.3	2.0	2.3	.8	8.3	3.1	11.9
Latino origin:								
Latino origin	3.0	9.2	1.1	2.6	4.4	10.8	3.7	12.5
Not of Latino origin	97.0	90.8	98.9	97.4	95.6	89.2	96.3	87.5

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The **Forest Service** of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

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