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# Smoke on the Hill: A Comparative Study of Wildfire and Two Communities

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**ABSTRACT:** *Wildfire represents a serious challenge to communities in the rural West. After decades of fire suppression, land managers now perceive a greater role for wildfire in the ecosystem. In the meantime, migration patterns from urban to rural settings have increased the number of people living in forested areas throughout the West, therefore; wildfires are a threat to more homes than ever in the region. This study focuses on two communities' response to wildfires during the intense fire season of 1994. Through qualitative research methods, the study analyzes these diverse responses in the context of local social history.*

*Residents of the two communities in north central Washington differed markedly in their perceptions of the wildfires and the followup recovery efforts. We argue that these differences are in large part due to differences in the communities' historical development patterns, geographical location, and the resulting differences in social composition and world views of members. The historical trajectory and everyday life in each of the two communities serve to frame differing attitudes and positions regarding forest and fire management, which can be explained further by using three distinct perspectives on community. Lessons are drawn for forest/fire managers that center on the critical role of trust in successful fire management. West, J. Appl. For. 18(1):60–70.*

**Key Words:** Fire suppression, social history, wildfire.

On Sunday evening, July 24, 1994, a lightning storm moved through Washington State, igniting more than 41 fires on the Wenatchee National Forest and a total of 99 fires in Washington. This marked the beginning of a fire season that would long be remembered for extreme fire behavior. The Wenatchee fires defied containment efforts for the first few days. Part of the reason was the fire severity and the fact that fire fighting resources spread throughout the West were being utilized to fight numerous fires in other national forests. Four major fires were eventually burning on the Wenatchee, each threatening lives and communities as well as public and private property.

Much was written in the popular press and covered in the broadcast media about these fires. In addition, a social assessment was prepared that focused on local views and knowledge concerning appropriate fire recovery and restoration activities on the Wenatchee Natural Forest (Carroll et al. 2000). The purpose of this article is to analyze the responses

to the fire and its aftermath by residents of two local communities that were in the fire's path.

Two communities, Entiat and Leavenworth, neighbors to the Wenatchee National Forest in central Washington, were selected for study. The Tye fire threatened Entiat, while the Rat Creek and Hatchery Creek fire were a threat to Leavenworth. These fires caused the evacuation of several areas and the closure of highways linking the communities and the rest of the state. Thirty-seven homes were destroyed, while nearly 500 threatened structures were saved by fire fighting efforts. Physical and economic losses resulting from these fires profoundly altered the landscape and everyday life of these settlements. In the aftermath of the fires, the communities faced myriad issues related to fire recovery efforts.

These two communities perceived fire differently. People in Entiat generally perceived fire as a tool that ought to be managed and, more importantly, controlled to diminish the loss of productive forest. Residents in Leavenworth had a more diverse range of opinions from perceiving fire as a natural and necessary part of these forests, to a view resembling that of Entiat residents. These different perceptions of wildfire appear to be linked to a wider set of phenomena,

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perhaps reflecting the different geography, history, and ways of life that characterize the two towns. In one sense, these perceptions also encapsulate the current international debate over the “proper” role of fire in forest ecosystems in an era witnessing a shift from fire exclusion to fire management in the name of Ecosystem Based Management (ESBM).

Examining and comparing these two communities and their response to fire is useful for a number of reasons. First, such a study provides better understanding of the impact of fire and fire recovery on communities. Second, it contributes to a more general knowledge concerning fire, not only as a natural tool, but also as a social phenomenon. As Lively (1951) notes: forest fires are ... “part of [a] historic cultural complex and cannot be fully understood apart from it” (p. 4). The third benefit of such a study is to contribute to the developing knowledge base concerning differences both among communities and among various groups within communities about relationships to the forest and the impacts of forest management decisions in relation to fire. In short, a comparison of these communities and their response to fire can yield valuable insights into the diversity and complexity of communities, while bringing together two areas of current research: human response to fire and the current circumstances of communities adjacent to large forested areas in an era of change.

This discussion will continue with a brief review of relevant literature. This is followed by an overview of the social history and social composition of these two communities—an understanding that we argue is critical to placing reactions to fire in a meaningful context. Next, the narrative turns to the interviews conducted with representatives of the various stakeholder groups within each community and the patterns and issues that were explored by these interviews. Finally an interpretation of the above mentioned data is offered, drawing implications both for understanding community response to fire and lessons for land managers in dealing with the “human dimensions” of wildfire.

## Relevant Literature

The study of human communities in forested areas involves a wide array of themes (e.g., Lee et al. 1990, FEMAT 1993, Beckley 1998). The work of a number of scholars provides the foundation of knowledge concerning the character of these communities and the often-difficult circumstances they face in a rapidly changing world (Wilkinson 1991, Selznick 1992, Flora et al 1992). Any research on human communities must also contend with the differences and controversies in the literature concerning how communities are defined and conceptualized (Bender 1978, Liepins 2000). Hillery’s classic (1955) article identifies 94 definitions of “community” and exemplifies the dizzying array of approaches that have been taken to study of this topic.

The current study focuses theoretically on three dimensions in the study of community that emerge from Hillery’s review as well as more recent interpretations. Theoretically these dimensions are: (1) community as local society bounded by geography or territory, (2) community as local social system and finally, (3) community as shared meaning

and identity (the latter generally expressed in the context of social networks, sometimes extending over extended distance). Most research concerning community adopts one of the above perspectives or a variant thereof as a starting point. [It should be noted that Wilkinson (1991) offers what could arguably be seen as a fourth category: “community as an interactive field.” For purposes of this analysis, this perspective is subsumed (admittedly oversimplistically) under “community as territory.”]

The current effort takes a different approach. Rather than seeing these theories of community as mutually exclusive, we suggest that each constitutes a separate dimension and that each is useful for understanding communities and their interaction with natural resources and lands. We further suggest that attention to these dimensions can clarify and elucidate significant dynamics in the response to wildfire of populations in the forest/residential interface.

Community as defined by geography or territory is the common-sense meaning of the word. Typically people live together in a more or less restricted space and often share much in common as a result of their physical location and interaction over time. Geographic community has fairly obvious significance in this case, since fire affects spatially specific areas. The importance of locality to the study of community has been the subject of much discussion in the literature. Wilkinson (1991) states, for example, that locality is the “starting place” for the study of community. From there the analysis “shifts from a focus on territory to a focus on the social life of the people whose behavior gives the territory its social meaning” (p. 27).

Community is also commonly viewed as a local *social system*, defined less by territory and more by internal and especially external linkages. In this view, a community is part of or a subunit of a larger system ultimately involving society as a whole. In the same manner ecologists study animal and plant communities, the study of the local social system focuses on the interdependencies among people and social institutions. In his classic discussion of the “great change” in local community, Warren (1988, p. 152) states that American communities have experienced increasing interdependency with the outside world, “not so much as local community but as parts of a specialized extra-community system to which they belong.” “Vertical ties” (that is, those to the outside world) are strengthened by the process establishing and strengthening rational and planned linkages outside the locality with the larger society. However, the “horizontal” (that is, within-the-community) ties survive the process of change and constitute often unique or idiosyncratic local relations.

The approach to community as a social system examines the ways in which residents organize themselves and their local institutions to meet human needs and maintain social order. It also focuses on the extent to which such organizations and institutions are linked to and affected by forces in the outside world. From this perspective, a forest fire and the resulting efforts to manage it, and subsequently to restore the land, may be seen as exogenous events that can potentially disrupt or reorder local social relations. Such occurrences can also result in intracommunity conflict over how to respond to such changes.

The notion of community as a network of people linked by shared meaning emphasizes the social-psychological dimension of community (Nisbet 1962, Bender 1978, Bell 1992). The central notion here is that people who perceive themselves to have a life in common constitute a "true" community and that such people may or may not happen to live immediately adjacent to each other. Examples of these include ethnic communities, cultural communities, and occupational communities (FEMET 1993, Carroll 1995). Such a view suggests that communities do not necessarily correspond with official geographic boundaries but may in fact overlap in locations and extend beyond boundaries of a given town or county. The relevance to fire is that different groups who share common space may respond to and be affected by fires in very different ways, while people at greater physical distance from each other may share common stakes and responses to fire. In the present study of the communities' response to the fire, we suggest that each of the three approaches helps to unravel some important aspects of the interrelationships between people and forests in a rural environment.

## Data and Methodology

This study attempts to capture the voices of Leavenworth and Entiat by exploring the residents' general beliefs about the forest and then focusing on the immediate presence of fire and its aftermath. By utilizing an interpretive sociological approach, the study builds an inductively based understanding of the phenomena of interest rather than testing a set of predetermined hypotheses. Specifically, data were collected following the precepts of grounded theory (Glaser and Strauss 1980, Glaser 1992). This approach was chosen in order to capture a rich and encompassing range of world views and perceptions that could not be measured using a quantitative or hypothesis testing approach. Qualitative research is indicative of an emerging trend in social science to create a better understanding of rural social dynamics as they relate to socially informed public land management (Brandenburg et al. 1995, Gillespie and Sinclair 2000).

In-depth semistructured interviews were conducted with carefully selected residents in Leavenworth and Entiat beginning about 1 month after the fires were contained. These interviews are the primary source of data for the study. Key concepts and questions guided the process, but the interviews were open-ended to enable the interviewees to freely express their opinions. The interviews focused on four main topics: (1) the nature of local attachments to the land and forest, (2) perceptions of fire management and its impact, (3) perceptions concerning fire recovery and its biological and social impact, and (4) perceptions of the management agency (USDA Forest Service). Following the precepts of grounded theory, data were collected from individuals including representatives in identified stakeholder groups in each community. The chain referral "snowball sampling" technique was used to select the interviewees (Biernacki and Waldorf 1981). A list of stakeholder groups was developed after initial visits to the area based on place of residence, affiliation to organizations, occupation, and length of permanence in the commu-

nity. Initially, the names were selected from the local Ranger Districts' public involvement lists. Names and stakeholder groups were subsequently added as new information was gained. Participants were also purposively selected from areas of the communities affected in different degrees by the fire. The sampling process was discontinued only when novel information ceased to be forthcoming and key informants told field researchers that the major stakeholder groups in the communities had been covered. In total, 46 residents of Leavenworth and 35 residents of Entiat were interviewed. (See Carroll et al. 2000) for a more detailed description of the sample and the stakeholder groups. Participant observation in four public involvement meetings convened by the USDA Forest Service in both communities was also used to further inform the researchers' understanding of the social dynamics in the area. Relevant data concerning the social history of the area were also collected to place the recent events in a historical context. Specifically, an overview of the historical events that shaped these communities was reconstructed based on previous studies published by the local government, the USDA Forest Service, and other researchers. Personal communication with local historians and review of newspaper publications were also used to understand the historical development of the area.

## Fire and Fire Management in the Study Area

Chelan County encompasses part of the eastern slope of the Cascade Mountain Range. Eighty-five percent of the county consists of national forest, wilderness, and park areas. The landscape is diverse with glacial river valleys, hills, and mountainous regions. Orchards and forests dominate the landscape in the rural areas of the county, reflecting the economic base of these communities and providing hunting opportunities. Native Americans first used fire in the area as a tool to control the environment. Although fire is inherent in these ecosystems, European settlers encountered a human-influenced fire regime as a result of Native American use of fire. Pyne (1982) describes early accounts of fire and heavy smoke by European settlers who imported forest management practices previously unknown to the area. Fire cleared lands and aided the conversion of forest to agricultural uses. Smoke, not the loss of forest resources, was the primary concern over the burning fires. At the beginning of the 20th century, when the timber industry arrived in the Northwest, fire was seen as an immediate menace (Pyne 1982).

Presence of fire in forest ecosystems east of the Cascade Mountains had determined stand structure and forest composition; species' adaptability to fire determined its long-term success in the area (Agee 1993). Recent experience and analysis suggest that during the last 100 yr, fire suppression and intensive land use contributed to a reduced fire frequency. This resulted in more dry fuels and greater risk of catastrophic fire (Oliver et al. 1994).

## Social History of the Area

### Entiat

Entiat is a small, rural town at the edge of the Columbia River in Chelan County, WA, directly adjacent to the

Wenatchee (now the Wenatchee-Okanogan) National Forest. Some of the people live in town while the others reside along the Entiat River in a narrow valley surrounded by steep mountains within the National Forest boundary. Natural and human caused disturbances characterize both the social and natural history of this town. During Entiat's history, both have combined to create dramatic changes in the landscape.

The Entiat Valley is fire prone. According to a study of fire scars of the Entiat Valley, fire historically burned over most of the lower drainage every 7 to 10 yr (USDA 1995). Fire suppression started in this area in the period of 1910 to 1930. From the 1920s to 1960s, fires in Entiat tended to be small "spot fires" of less than 1 ac in size. Few fires were larger than 500 ac as a result of successful fire suppression and relatively low levels. In the last 40 yr, fires have been larger, due to high fuel loads accumulated during the years of fire suppression and the effect of drought. From 1900 through the late 1960s, few fires grew larger than 2,000 ac. From 1970 through 1994, the Entiat Valley experienced six fires exceeding 2,000 ac. Together, these fires burned 62% of the watershed (USDA 1995).

European settlement in this valley began in 1887 when the first town site was established. During those first years, sheep and cattle grazing and logging were the main activities. Life was hard in the Entiat Valley, according to local historical documents. Only those willing to struggle with the land stayed. In 1892, the first sawmill was established at the mouth of the Entiat River. Other economic activities such as cattle grazing and apple orchards began to appear by 1906 (Hull 1929). The wood products and orchard industries developed in concert, often hiring the same workers in different seasons. This arrangement helped develop Entiat into a homogeneous community whose residents shared values toward land use. Old-time residents remember how the Entiat Ranger District regularly sold timber for the local timber industry and the Forest Service easily resolved disputes over property boundaries and harvest levels. The last mill in the valley closed in 1979 (Kerr 1980).

Entiat's history is unusual in that it was relocated on two separate occasions—once in 1913 to accommodate the Great Northern Railroad and, again, in 1960 to make way for a dam site/water impoundment. The third town is more geographically dispersed and lacks the physical and institutional characteristics of the previously more cohesive town. A number of residents interviewed described this second move as "the fatal blow" that "took the life out of the town." One resident said of the new town site, "now you can drive through Entiat and not even notice it." Sixteen years after the second relocation, the mill's closure "hit the town hard" according to local residents. The effects of the town's move and the mill's closure resulted in years of economic depression. Relative proximity to a large urban area and to recreational destinations helped many Entiat residents survive the economic hardships. At the time of the study, Entiat had two new industries and had become, in part, a bedroom community for nearby urban areas.

### **The Social Composition of Entiat**

The population of Entiat is dominated by what might be described as traditional rural people (Bell 1992) who have worked close to the land and feel they "understand it" in a very intimate and specific sense. Many hunt and fish and otherwise recreate in the forest. Their livelihood typically depends on agriculture or logging, or their families come from such a tradition. Local residents characterize Entiat as a typical rural town where most local people know each other. "This is a very close community. The old timers in town have known me since I was born. This is a quiet town and everyone watches for everyone's place." Entiat residents consider the national forest "their backyard." Forested areas are woven into many aspects of life in Entiat: "My family and I use the forest for recreation. I like to go fishing and hunting, I know these forests better than most people. The national forest is 70% of the land around here, so it's hard not to be in the forest almost every day."

Historically, the local people and the land comprised the economic base in Entiat. From this relationship emerged the main local stakeholder groups—timber workers and fruit growers. Since the mill closure, the contributions of the timber sector to the economy have been reduced. However, the spirit of a timber town still remains, and many residents identify themselves with this activity. Timber workers have seen the local forestlands logged repeatedly over their many years of work in these forests. This is evidence to them that the forest is a renewable resource. Bewildered by current forest management practices, which emphasize ecosystem diversity rather than commodity production, they think there is a lack of "common sense" in current management.

Newcomers have been settling in the valley in recent years (US Census of Population and Housing 1990). A fifth generation Entiat resident explained the changing circumstances: "The old generation would run this town and they did not want any changes, status quo was OK. Now, the leadership has shifted to newcomers, maybe 10% of the 'old blood' is in leadership positions. New people are beginning to outnumber the old-timers. Now we are at the brink of major change, with the introduction of new businesses and housing starts, both up the valley and in town." Interestingly, however, the researchers did not find any discernible difference between the perceptions of the forest and impact of the fires held by newcomers and long-time residents in this community. Some newcomers stated that lacking previous experience, they relied on their neighbors' knowledge, particularly in a time of crisis such as the fire. Thus it appears that Entiat attracts newcomers who at least partially share long time residents' values regarding the forest and resource use: "All the bad things we had heard in California about the Forest Service proved to be right. The 'enemy' government is bending towards the environmentalists. They are very secretive; I get a lot of information from people in the community. I only get less than 10% of the information from the Forest Service. They owe an apology to private landowners."

An additional segment of the local population is that composed of federal and state employees. In a manner highly reminiscent of the patterns identified more than two decades

ago by Colfer and Colfer (1978) in a coastal community in the Northwest, a distinction between “insiders” and “outsiders” characterizes much of the interaction between federal employees and others in the community. As is often the case in communities in the West, there are two fairly distinct groups of federal employees. One group, generally composed of nonlocals (who in most cases moved into the area because of their jobs), are more attached to the Forest Service. Their mobility and values are consistent with the agency and its organizational culture. Other local residents also work for the agency, but their real attachment is to the community and local area. Individuals in this latter group tend to be very similar to other locals in their views of the forest and forest management.

As the previous descriptions exemplify, most Entiat residents (with the exception of some nonlocal, federal employees) share a relatively homogeneous view of the forest and its resources. The emphasis is toward managing the forest for human material needs, a view that is linked to the long tradition of land use in the area. The role of the forest from their perspective is to provide timber, recreation, viewshed, wildlife, and other tangible commodity uses and values within a very specific setting that is part of the fabric of day-to-day life. When asked about how the forest should be managed, a woman born in Entiat said: “The first thing it [the Forest Service] needs to do is log the forest. Trees are a renewable resource and more than that they are *our renewable resource*. Logging gives better grazing for deer and a better forest.” Would there be public support for this? “There would be public support for logging; that’s what people want. People here need someone they can trust. This fire would not have happened if [it] [the Forest Service] had managed their resources properly. You just have to look at the areas that were logged. The fire didn’t get to the trees.”

### **Local Politics and Land Management**

There is an organized group in Entiat of private property rights advocates representing timber, ranching, and orchard interests. This group’s views can be organized into three themes: home rule, “wise use” of the forest and land resources, and protection of private property rights. Daniels (1995) contends that the private property rights advocates and the wise use advocates have somewhat different agendas but hold a similar world view. (See also Warren 1997). In Chelan County, this multifaceted group coalesces around similar issues concerning public and private land management. Private property rights advocates are concerned with government regulation of forest management on private lands and share the view of the wise users for a commodity use of the forest. “We need to get decisions made at the local level. I don’t have an interest in wanting to make decisions about Seattle or DC and I don’t think they need to have so much control over what goes on here. The government needs to get the message that they can’t keep regulating what goes on, on private land.” Some of these residents are active in resource management through voluntary activities and public participation in agency planning processes. Others, particularly those in wood products labor, express their appre-

hension of formal public participation and prefer to remain silent. Although they have on-the-ground experience in the forest, they tend to be uncomfortable with formal public involvement processes.

Recent conflicts in forest policy have resulted in a general sentiment among many residents toward “environmentalism.” “We would like to call ourselves environmentalists but the more extreme preservationists’ view is usually attached to this and we don’t like it. We care about the environment and to say we are anti-environmentalists implies that we are insensitive to the land. The environmental movement is ill-informed and obstructionist. They make it difficult to burn logging slash and suppress fires. They make it difficult to manage the forest and keep the budget small.”

### **Leavenworth**

Beautiful scenery characterizes this valley at the confluence of three canyons—Icicle, Tumwater, and Chumstick. Native Americans were the first to dwell in the area, fishing and hunting in this valley. The first European settlers came to Leavenworth in 1884, and in 1892 the town site was laid out. The town started to grow in 1893 when it became a transition point for the Great Northern Railroad. In 1903, a lumber company relocated to Leavenworth (Kerr 1980). Residents say the mill was “the largest in the Northwest,” and it employed 1,500 men, more than had ever lived in town before. Leavenworth’s economy bloomed thanks to the railroad terminal and the lumber company. Many business owners from the urbanized west side of the state moved to Leavenworth perceiving the opportunity of unprecedented growth. Thus, the community attracted a wider variety of people than was true for Entiat (Hull 1929). A description published in 1906 illustrates the development that had occurred. “We have the largest payrolls, the greatest number of brick buildings proportional to our size of any town in the Northwest and claim to be one of the busiest and best little towns in the country” [Wilhelm’s Magazine (1906, p.158)].

Apple and pear production was an important source of income in the Leavenworth area. However, the growth of the orchards was limited since most of the productive land was already cultivated. Timber activities continued to influence the town’s economy, and the multiple-use management of the national forest lands helped to provide employment for local residents in timber- and recreation-related jobs. A report written in 1965 describes the situation: “Forest Service policy provides for the management of these many resources on a sustained yield basis to the highest possible productivity without impairment of the land and the resources. This means that employment will continue on the National Forests and that community stability will be aided” [Leavenworth City Council (1965, p. 25)]. Although the timber industry was important in Leavenworth’s economy, many residents recognized the limitations of this growth and were concerned with the fluctuating employment (Leavenworth City Council 1965).

In the 1940s and 1950s, many residents left town, and many businesses closed—affected by improved transportation and better shopping opportunities available in the nearby urban areas. In the 1950s, the town looked desolate, with many of its storefronts deserted. The railroad and the mill had

left abandoned structures and waste in town. By the early 1960s, the community was facing local disagreement over the site for a new high school, and community life was rapidly deteriorating (Leavenworth City Council 1965).

In 1962, a group of local residents decided to organize in order to change the town's fate. Under guidance from the University of Washington, the town completed a self-study entitled "Leavenworth Improvement for Everyone" (L.I.F.E.), to set common goals for the community. A plan was not clear at first, but in 1965, the first store owners remodeled a building emulating a Bavarian motif. Soon other business owners followed, creating a European atmosphere. The community organized festivals, and this started the tourism boom. Motels and other services sprung up, and the activity soon attracted newcomers to open businesses in Leavenworth. The experiment of a theme-town proved successful; ordinances were passed to require Bavarian-style construction in the downtown area. In 1994, Leavenworth's population had grown to 1,600, equaling that of 1908 when the town was booming with resource extraction industries.

The City of Leavenworth has several interests in the adjacent national forest lands: the town's water supply comes from a river originating on the forest, and the town's economy is tied to the natural beauty of the area and the past influences of timber culture. A third source of income, which surpassed agriculture and timber production, developed in this town creating a more heterogeneous community than before. The town's beauty and the services it offers have attracted former urban residents and retirees to settle in the area. The fire of 1994 seemed for a brief time to threaten the success of the little Bavarian village in the Northwest. Fire halted most tourism activities in Leavenworth that summer, causing profit loss for the businesses that depend on this busy season to survive the rest of the year.

### **The Social Composition of Leavenworth**

Leavenworth and Entiat share similar early history as both communities depended on agriculture. Their paths diverged when Leavenworth experienced sudden growth in the form of migration from west of the Cascades and the East Coast. Even though the two main sources of income (railroad business and sawmill) closed their operations early in the town's history, the community's previous growth enabled Leavenworth to maintain its economy and become a trade center for nearby towns. Unlike many communities, Leavenworth did not depend on a dominant forest products company, but built its local economy on individual activities and enterprises (retail businesses, farms, and others). This factor along with the community's relative proximity to transportation corridors to Washington's urbanized "west side" have by most local accounts contributed to local residents' ability and willingness to organize in order to improve the town's economic development.

Leavenworth is a more heterogeneous town and one more influenced by the vertical linkages that Warren (1988) describes as an outcome of the immigration patterns and economic development resulting from the tourism boom. Natural beauty in the area and easier access from the west side of the state facilitated

recreation development and encouraged newcomers. Immigration of former urban residents and retirees has resulted in a broader mix of values and perceptions of the forest.

### **Stakeholder Groups in Leavenworth**

Leavenworth's economic linkages to the forest are focused on two major economic activities—apple production and tourism—each with its own stakeholder group. Another stakeholder group emerges from the tradition of timber extraction in the area. Leavenworth is also an ideal place for retirees, who, as a local described, "visit one day and fall in love with the Bavarian fairy tale." To all these groups of residents, the forest and the natural beauty in Leavenworth are an important part of life in town. The viewshed is essential for the economic success of the town. Concerns about esthetics and related issues lead tourism-oriented residents to support most environmental regulations. Their views are more in line with the environmentalists regarding the preservation of the areas around the town. For forest management in general, most residents interviewed were supportive of resource extraction and multiple use of the forest with consideration to long-term sustainability.

### **Local Politics and Land Management**

The well-publicized dichotomy between environmentalism and "wise use" is represented in Leavenworth as individuals have organized to participate in public land management decision-making. As in Entiat, private property rights, home rule, and wise-use supporters have a strong voice in Leavenworth, and they represent many in the apple and timber sectors. Interestingly, interviews revealed two distinct philosophies among those who labeled themselves "environmentalists" in Leavenworth. One is that expressed by those who advocate the intrinsic value of the forest and would prefer exclusion of nearly all human activities.

A second perspective was uncovered among those who clearly identify themselves as environmentalists but who advocate "light on the land" activities rather than nonintervention. For this group, environmental considerations are paramount, but members do not consider all management activities to be inherently destructive to the forest: "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."

Interviews in Leavenworth revealed yet another group of residents who were interested in forest management and were not associated with any particular organization or well defined land use philosophy. Other residents expressed deep caring about their town and the forests around it, but did not approach the fire or the recovery process from any well-defined ideological stance. They did, however, express a desire to learn about forest management and participate actively in deciding about fire recovery. This group was comprised primarily of retirees and some tourism-related

business owners who saw their way of life endangered by the fire and its aftermath and wanted to participate constructively in the recovery process.

## The Fires as Experienced in Entiat and Leavenworth

Although the communities experienced somewhat different fire behavior, the stress and trauma of watching homes burn and fighting for their resources created similar experiences across the mountains. Wildfires halted the daily life in both communities. People from diverse occupations (e.g., school teachers, orchardists, business managers) were helping in the fire camps and contributed to the massive mobilization effort that occurred. A couple that work as school teachers described their experience when for two months their life was dominated by the fire. “Long-term mental stress occurred as the fires called for evacuations. Children were forced to choose and pack important things -make choices over what to take and what to leave behind. Plus the possibility of not having a home after the fire was very real. There was a sense of community during the fires—people were working with one another during a time of crisis.”

For some older people, that decision to leave their homes and their property was heart-breaking. A retired woman who has lived in Leavenworth all her life said she thought she would never see her forest or her home again. For some this was true. A long-time Entiat family lost two homes, including a log home that had been in the valley for more than 100 yr. Fire was a terrifying experience, and it was more so for those who decided to stay even when they were advised to leave. Many houses were given a “red flag,” meaning they were not defensible. However, they were saved in many cases by the efforts of the owners and their neighbors who stayed until the last minute, often endangering their lives. One homeowner said, “I worked one week during the fires just creating the fire lines around my own house. I was more concerned with saving my own yard trees that my wife and I planted than with saving our home that we can rebuild. The town (Leavenworth) spent lots of money to protect viewshed, to get the fire to burn slowly and to minimize the loss of the view. This is great personally since I share the same viewshed and great for the town because of the tourism. I was prepared for the viewshed to burn but I’m glad it didn’t.”

After the fires were finally contained, the residents sought the answers to three questions: Why had these devastating fires happened? How could wildfire be prevented? And what should be done with the burned areas? As the researchers drove through miles of national forest back roads and witnessed the black burned forest, we caught a glimpse of the fire’s impact for these two communities. Residents in both communities attempted to explain the events in light of four main viewpoints concerning the fire and who (if anyone) bear responsibility for its origins and behavior. An examination of these viewpoints suggests each is linked to a more general view of the forest and its “proper” management.

Residents interviewed in Entiat tended to adopt one of two positions regarding fire. The first of these is that fire is preventable and control is possible through human interven-

tion, either with controlled burns and maintenance of fire lines or with forest management that can mimic the effects of the fires. Residents with a living-from-the-land-based tradition in Entiat contend that fire is inherent to the forest, but that through intensive management (logging, grazing, and thinning) the risks of a high intensity fire can be diminished. Fire reintroduction was a big theme among this group since fire is seen as a tool that could benefit commodity-centered forest management. People of this persuasion saw the fire event as the result of “mismanagement,” such as restrictions on logging and thinning that led to fuel buildup. Contentions over the Endangered Species Act and other forest policies that have changed resource management in the area came up in conversations when residents explained their version of fire behavior. This view was held by private property rights supporters and wise users in Entiat as well as long-time residents who have had a long history of fire fighting and resource use: “Wildfires are not acceptable and they can be blamed on the overprotection rules placed on grazing and logging. The first problem with the way they manage this forest is that the federal government won’t log. That will just create big problems, future fire problems and a bigger tax burden for all of us. We will have to pay more taxes to support all these people working on the fire and the rehabilitation.”

The second view contends that wildfire is an act of nature, part of the ecosystem, but humans can diminish the risk of catastrophic wildfire through “good” forest management. Other residents in Entiat, particularly those not directly economically dependent on land-based activities, support this second position. “Fire is necessary, it is our friend. The fire started in a natural way, but the way it spread out wasn’t natural. It spread out like that because there was no logging and there is too much underbrush in the forest.”

In Leavenworth, the researchers found advocates of the previous two positions among many long-time residents. However, a third position regarding the fires emerged in this community and encompassed many of the residents’ feelings—fire is necessary for the forest and desirable, therefore humans should adapt to fire: “Fire is inherent to these ecosystems; people forget where they live and the things that come with it. We need better fire insurance and more control of where people are building their homes.”

This third position is supported by many newcomers who advocate for a more environmentalist view of the resources in Leavenworth. Although some of the more extreme views support fire as a natural event over which control should be minimal, most environmentalists expressed concern with the town’s protection and the preservation of the viewshed. Past fire suppression and logging activities are blamed for the “unnatural” fire behavior seen. There is a local environmental group that monitors the Forest Service and in the past has initiated legal measures to stop timber sales. “Fire is a very important part of the landscape. I have spoken with fire ecologists that say fire is part of nature and that it needs to function as part of a whole. Fire needs to be reintroduced again in 10 years to this area but that is not a popular idea. We have set a blank check in the government to fight fires, which encourages us to spend money. Also, fire is a wonderful

enemy and white man needs an enemy to fight. Even the fire camps remind me of being in the military -preparing to fight.”

There is a fourth view of fire that emerged from residents who had little previous experience with fire fighting or forest management. These residents, whose origins were generally urban areas and typically came to retire in or conduct their business in Leavenworth, expressed the idea that fire is an inevitable force of nature analogous to a tornado or hurricane. They do not believe there are measures that can be taken to prevent it.

### **Local Views of the Fire Fighting Strategy**

Recent forest policy events that had resulted in management “gridlock” have created uneasiness and frustration among many residents of Entiat. This has led some residents to claim that federal land management lacks continuity and accountability, and they vociferously questioned the agency’s fire fighting strategy. Some expressed the belief that the Forest Service deliberately neglected fighting the fire in its early stages. These residents expressed the belief that there was an “ulterior motive” behind the apparent lack of attention and action from the agency in the early stages of the fire, contending that the agency had monetary gains in mind, such as increasing the budget for fire fighting equipment and fire rehabilitation. It should be noted that the researchers did not find any evidence to support this contention. Repeatedly in interviews and public testimony, these residents stated that they wanted “accountability” on the part of the federal agency.

The second view frequently expressed by Entiat residents is that the fire could have been contained, but local personnel were restrained by bureaucratic regulations. They blame the fire on the existence of a dysfunctional set of rules and regulations: “The National Forest has always been a good neighbor. They have always helped me. I don’t like the way they are putting the fire out. They should have gone on it sooner. I have no idea why they didn’t. It is a bureaucracy, that is the way things work.”

“Local control” is a strong issue in Entiat, particularly regarding fire management, since many residents were, or had been in the past, active as volunteer fire fighters. Entiat residents expressed a strong sense of “ownership” of the Entiat valley, and they strongly resented “outsiders” (notably outside fire fighting officials) directing how it should be managed. The recent events that have shaped Entiat’s history (i.e., mill closure, relocation of the town) have all been due to external forces over which the residents had little control. Therefore, the researchers encountered a strong theme of resentment of the threat of “outsiders” and outside institutions having an invasive influence on the local way of life. “We lost our resources in this fire—watersheds, timber, and wildlife habitat. And now the locals have to suffer the consequences of decisions forced on them by the environmentalists, specifically the policy of locking out logging.” A common sentiment is that local knowledge was not fully used to fight this fire and that leadership positions were given to outside fire fighters who did not know the area or did not care enough about places to save them. “There is no communication with the community. They made me

leave the woods during the fire. It isn’t their (Forest Service) fault we had the fire and it got away. Strangers that do not know the area are in charge and they burned too much of the country. It has happened before; we see it every time. The problem with fire suppression is that they bring people from the outside—people that do not know the area. It is hard work under those conditions ... especially if they are the ones giving the directions.” The groups in Entiat whose economic livelihoods are not directly linked to forest management tended to express less dissatisfaction with the mobilization that took place during the fires than was the case for the previous group.

In Entiat there is a geographical division between those people “in town” and people “up the valley”. Historically, the composition of these two areas has changed. As a woman who grew up in the community described: “When I was growing up, people in town were considered better off than people up the valley. Now it is the other way around.” People “in town” are a greater distance from the forest, and they suffered the effects of the two relocations of the community. This distinction was reinforced by the fire since people “up in valley” experienced the greater fire danger. These residents resented immediate celebrations and appreciation gestures from people in town to the fire fighters. They said it was premature to celebrate since they were still helping those who had lost homes and were striving to get their life back on track.

Even though downtown Leavenworth was threatened more than the downtown area in Entiat (Leavenworth came perilously close to complete evacuation), a common sentiment among Leavenworth residents was that the Forest Service acted professionally during the fire and often went beyond expectations. Not so in Entiat, where most people believe it is the government’s responsibility to provide fire protection or at least manage the forest in such a way as to minimize catastrophic fire danger. The generally less favorable sentiment in Entiat concerning federal fire fighting appears to have been linked to the common belief in that community that the Forest Service was responsible for the fire that “got away” in the first place.

### **Disposition of the Burned Forests**

Fire recovery efforts had a dramatic effect on day-to-day life in Entiat. The once peaceful and quiet valley was inundated with heavy machinery and equipment. Residents reported a lack of privacy and continued stress that lasted throughout the fall. These disruptions to their accustomed lifestyle, in combination with the fire effects, increased the attention residents devoted to resource management issues. One of the main concerns following the fire was the disposition of the burned trees. Virtually all of the residents in the Entiat valley strongly supported salvage logging. From their perspective, this is a way of recovering some of the losses caused by the fire and preventing future fuel buildup and increased risk of fire. To such people, the disposition of the burned trees is a moral issue—it would be terrible to waste the resources at this particular time. People talked about the value of the burned material and voiced concern that bureau-

cratic regulations, outside influence, and environmentalists would prevent salvage logging.

Flood and erosion prevention were also high among the residents' concerns, since historically, flooding has followed every major fire. Residents were concerned with the recovery efforts since they claimed environmental regulations generally enforced in the valley were not being respected during the recovery. The large amounts of money channeled to recovery efforts infuriated some residents who believed the forest would recover "just fine by itself" and who considered the whole process a waste of resources. Many stated this money should have been made available before the fire, to create fire lines and maintain a healthier forest, not wasted in the recovery. Wise use and private property rights supporters approve salvage logging to recover what is possible of the burned forests but do not approve of money directed to ecosystem recovery.

In Leavenworth, the disposition of the burned forests provoked major differences among the different groups in the community. Key issues of contention included: ecological recovery, fuel reduction, threats of insect and disease epidemics, and commodity extraction. As in Entiat, "wise-users," home rule, and private property rights advocates supported salvage logging to use a resource that was deteriorating and to reduce the risk of snags becoming fuel for future fires and support for insects and disease epidemics. These groups see much of the standing dead or dying trees from the fire as an economic resource. Many residents in Leavenworth who are not advocates of a particular position believe the rehabilitation efforts could aid the community since "the logging sector is still hurting" from restrictions due to the spotted owl situation. Many local residents thought it would be good to use local skills, knowledge, and equipment for any rehabilitation work. These residents claimed to be "ecologically minded" and they "don't want to endanger any bird or animal habitat." However, they are confident most of the burned forest could be logged without endangering the environment.

Environmental advocates, on the other hand, looked at the burned areas and saw a different stage of the forest, part of a regenerative ecological process. The differentiation between the two "types" of environmentalists was clear when this issue was broached in interviews. For some, the forest should be left to recover by itself, with humans implementing only actions that caused minimal disturbance. For others, people have intervened too much in the natural processes, and now the forest requires additional human intervention to reach a healthy recovery.

These different views also come into focus in discussions concerning the burned trees left behind. For some, the woody material left in the forest only has value while it is marketable, and to others the woody material has value in itself as part of a larger process that is not necessarily directly linked to human needs. The latter group advocated minimizing intervention and leaving the forest to regulate itself. A large group of residents supported management to improve the town's viewshed while leaving the rest of the forest to recover naturally with minimal intervention. A common sentiment

expressed by many in both communities was that "if salvage is done successfully, the Forest Service has the opportunity to gain respect in the community." However, "successful salvage efforts" had different meanings to different groups.

### **Views of the Forest Service**

The controversy over the fire in the Entiat case has its roots in the residents' belief that the Forest Service "bends over to the environmentalists" and does not respond to local needs. The Entiat valley is a fire-prone area, and the residents historically shared responsibility with the Forest Service to protect their homes from wildfires. Most long-time residents that grew up in the valley remember fighting fire, and many of their children fight fire today. Past fire fighting approaches, such as the "10:00 a.m. policy" in which the goal of Forest Service fire fighters was to control all fires by 10 a.m., are still regarded by many residents in Entiat as the right way to deal with fire. "Fire should be put out in the forest and that's it. This fire was reported to the district on Sunday evening. They did nothing, nothing until Monday morning. Maybe this is about job security for the people. After it got away they had millions of dollars on the road. They only protected structures and they let the forest burn. The fire started by lightning, but it is not natural that they did not do their job."

The efforts of the land management agency in Leavenworth to contribute to the tourism base of the community have increased the support from the residents there. Even though there is a stakeholder group that advocates for traditional timber values, the group recognizes the positive relationship between the Forest Service and the community. The shift in fire management policies has been controversial in Entiat, but the diversity of values and the more heterogeneous constituencies in Leavenworth have resulted in more residents accepting new management approaches. Although there were critics of the Forest service management in Leavenworth, most people interviewed from that community felt overall, that the fire was handled appropriately by the agency.

### **Discussion**

The reaction of the residents in the two forest communities demonstrates that fire management is a controversial and complex issue. Although the grounded theory/qualitative approach used here does not allow for the statistical generalizations that would be possible with a questionnaire-based survey, we believe our approach allows for something equally useful. Our interviews yielded a comparatively more rich and detailed understanding of the response of various community stakeholders to a fire event and its aftermath than could have been achieved using deductive methods. We learned that the two communities examined have responded differently to the process of change. This differential response appears to be the result of a combination of physical location, different historical trajectories, and social composition. We found differences in ways of life and values attached to the forest and to the phenomena of fire within that forest, not only between the communities but also among stakeholder groups within them. The role of the Forest Service and the consequences of its management decisions were perceived differently in these two communities. The fire event increased the

salience of forest management issues and a desire for involvement in those decisions for both communities.

Knowledge about the historical development and everyday life in each of the two communities enables a contextual understanding of the residents' values and world views regarding forest and fire management. The three dimensions of community presented at the beginning of the article (community as territory, community as system, community as shared identity) have proved useful in providing a framework for understanding these dynamics. Theoretically speaking, wildfire can be seen as a disruption to the social system in these communities in a manner analogous to its disturbance role in the biophysical environment. The fire also served as a stopping point for the residents to evaluate the management of "their forests."

The residents' strong emotional attachment to the forest seems to have resulted from geographic location and social interaction. Community life assumed greater importance during the fire. For example, accounts from both communities reported increased bonds among neighbors in this time of crisis. In Entiat, the fire created further antagonism between some groups in the community and the Forest Service, and the community was divided by residents' internal differences and geographical location. In Leavenworth, local groups were divided by their environmental world views.

From this discussion it appears that Leavenworth, as a local social system, has responded more to the "Great Change" described by Warren (1988), while Entiat has maintained closer ties to its historic land use patterns and values. Entiat more closely fits the classic view of community representing more the co-mingling of geographic and social psychological community. Similar world views were found in this setting where traditional values toward land management were still predominant. At times during Entiat's history, a dominant or "outside culture" has not respected Entiat's rural cultural heritage. This more homogeneous community has responded with actions and attitudes warding off outside influence. The ties to the larger social system sought by some sectors in this community as necessary for economic progress in a global economy are resented by those attached to the local culture. The fire was a time during which outside influence dominated, contradicting the local fire knowledge and experience. Resistance to social change was much stronger in this community and was evidenced during the fire. This points to a limitation of the social systems metaphor that tends to see communities as microcosms of the larger society. Entiat has resisted becoming a microcosm.

Contrasting with the similarity in values and world views in Entiat, Leavenworth is a more complex social entity with different groups of people linked in a variety of networks. These networks, in some cases involving other communities (i.e., private property rights supporters), represent diverse values within the same geographic locality and have some characteristics of a community of meaning. In Leavenworth, residents tend to have opposing views of the fire, aligning with networks within the community rather than a generalized community sentiment. Concern for the well being and recovery of the forest was the common theme even though

there was a diversity of meanings attached to a "healthy forest" and a "recovered ecosystem." In one sense, the two communities provide a cross section of the national debate over what constitutes a healthy and well-managed forest.

Residents of these two communities are aware of the trend throughout much of the West toward increasing problems of managing fire in the wildland/residential interface. In addition to being a biophysical phenomena, large scale "project" fires can also be seen as an exogenous disruption in local communities' social systems as a predetermined set of (generally federal) rules and regulations are set into place with "strangers" taking control. Leavenworth as a community accepted this external influence, while Entiat's residents resented not being able to decide how "their" resources were to be protected. Concern over fire fighting priorities emerged in the postfire period and with it the discussion of the urban-wildland interface. In these two communities, many residents advocate home rule and private property rights; the residents battle with this dilemma. To what extent should federal dollars be spent defending homes in forested areas adjacent to national forest lands? To what extent should additional housing and zoning regulations be implemented? Environmentalists in Leavenworth offered an alternative perspective to that of many traditional locals, arguing that fire is part of the ecosystem, and people who choose to live in the forest should be prepared to deal with the consequences of natural disturbances.

Sociologically speaking, the lesson of this study is that all three theoretical conceptions of community (geography, system, and meaning) are helpful in understanding (and perhaps in the future, predicting) community response to disturbance events such as fire. Wilkinson (1991) and others are right when they suggest, to a certain extent, geography is destiny for communities. Whether or not they all share communal ties, people who share common space also face common problems when they experience a disaster event. Social systems theory is also useful in this context because it allows us to frame the insider/outsider dynamics that come particularly to light in disturbance events. Finally, community of meaning theory allows us to understand how different networks of people in the same geographic "community" can view and react to the same event so differently based on their different epistemologies concerning the forest, nature, and the place of humankind in the greater scheme of things.

## Lessons for Land/Fire Managers

Land managers can draw a number of lessons from this study. Probably the most obvious is that wildfires create significant impacts on the people who live near them or suffer losses and that those impacts are immediate and long-lived. Foresters have long emphasized the biophysical aspects of their craft and have tended to underemphasize the social dimensions. Ignoring the social effects of wildfire may have some harmful impacts on the land management agency's ability either to use prescribed fire or to conduct salvage in the wake of a destructive fire.

Trust is one of the key social-psychological mechanisms involved in the Wenatchee fires. A lesson to be

drawn is that management of large or destructive wildfires can result in reduced trust of land management agencies. This seems to be particularly the case among groups who are already suspicious of or alienated from government agencies or in cases where suppression efforts are not immediately successful. This diminished trust may make it harder to arrive at compromise solutions concerning salvage activities in the wake of a fire. There also seems to be an important trust linkage between the presumed effectiveness of suppression efforts and the public's enthusiasm for prescribed fire. A large wildfire seems to be clear evidence of an agency's inability to control fire, so in the wake of a large fire, the concept of using fire as a management tool may seem nonsensical. For example, "If you can't put one out, why should we want you to start one?" In the more recent fire season of 2000, the trust issue came into more stark relief in the media as the escaped prescribed burn turned fire disaster at Los Alamos, NM, became a symbol of public distrust of prescribed fire.

If managers are to engage in constructive public dialogs about fire in the context of ecosystem-based management (something we view as crucial to the future success of ESBM), understanding this linkage is imperative. A fire *management* strategy requires more public trust than a fire *control* strategy. In simpler times, when fire was to be excluded or extinguished by 10 a.m., the criteria for managerial success were more clear and (in the short term at least) easy to achieve than they are now. Presently what seems needed is two-fold. On the one hand a more complicated and nuanced understanding of the role of fire needs to be transmitted to a general public that appears genuinely confused about and frightened by forest fire. On the other hand, a more nuanced understanding of the values views and beliefs and knowledge of fire by particular segments of that public (i.e., that portion that lives in the intermix) is also needed. A combination of both of these seems to us to be a prerequisite to the kind of productive dialogue that is needed to arrive at more scientifically based and socially acceptable fire policy. We believe that more careful attention to the social aspects of fire and all that this entails is a necessary step in arriving at such a policy.

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