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The Lost Summer: Community Experiences of Large Wildfires in Trinity County, California

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As wildfires are increasing in scale and duration, and communities are increasingly located where these wildfires are occurring, we need a clearer understanding of how large wildfires affect economic and social well being. These wildfires can have complex impacts on rural public lands communities. They can threaten homes, public health, and livelihoods. Wildfires can burn timber, make recreation and tourism unappealing, and affect agricultural production. Yet suppression of large wildfires involves significant government spending and mobilization of considerable human resources. While wildfires themselves may displace normal economic activity during the fire, the process of suppression can create other types of economic activities. However, community social impacts are also intertwined with economic impacts in significant ways.

This paper identifies these interrelated impacts by examining perspectives of community residents and agency personnel in Trinity County, California. Over a dozen large wildfires burned in Trinity County in summer 2008. This case is part of a larger study on the economic impacts of large wildfires across the American West.¹ The larger study examines the relationship between wildfire, Forest Service fire suppression, and local labor markets in rural counties where large wildfires occurred.

Methods

We conducted a case study of the effects of a series of large wildfires that occurred on the Shasta-Trinity National Forest in Trinity County, California, in summer 2008. We conducted twenty-one semistructured interviews with employees from the Forest Service; local forestry support, recreation, and wine businesses; local government; and staff members from nonprofit organizations in Trinity County, California. We asked about four topics: what the community and economic impacts of the fires during summer 2008 were; how the fires may have changed public lands management; how the fires may have changed biomass utilization strategies; and what opportunities and challenges have arisen for Trinity County communities since the fires.

Trinity County

Mountainous Trinity County lies in northern California and contains about half of the Shasta-Trinity

National Forest. The USDA Forest Service and the Bureau of Land Management manage 89 percent of the land in the county. Other forestland owners include the Trin-Co Lands Company and Sierra Pacific Industries. Trin-Co is a local company that has been family-owned for sixty years and supplies logs to Trinity River Lumber, the sole remaining sawmill in the county. Biographic variation includes high-elevation mixed conifer forests, Douglas-fir plantations, Jeffrey pine plantations, and drier pockets of lodgepole and ponderosa pine. Much of the forest is classified as fire regime condition class three or highly departed from historic ranges of fire variability.

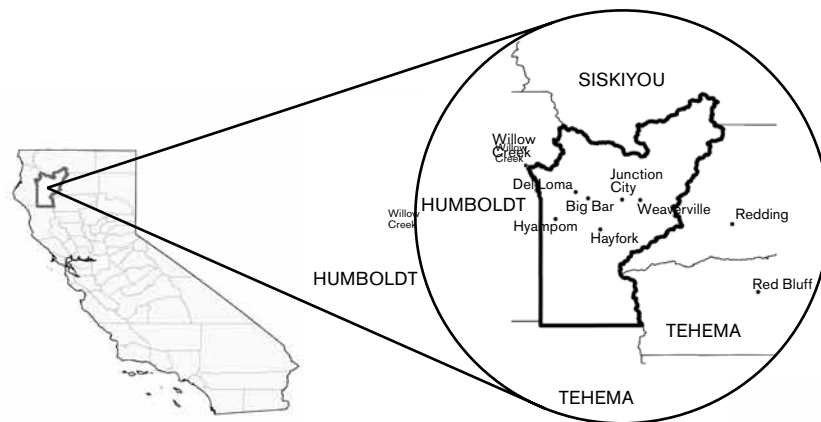
Trinity County has a population of 13,000 residents across a land area of more than two million acres. It has no interstate highways or incorporated communities. The county seat, Weaverville, is the largest population center. West of Weaverville along Highway 299, small communities such as Big Bar and Del Loma rely on rafting and other recreation businesses on the Trinity River. Recreation is also popular on Trinity Lake, a reservoir. The communities of Hayfork and Hyampom are in narrow upland valleys and are more isolated.

Many of these communities historically relied on timber and, to a lesser extent, agriculture. Today, there is one sawmill remaining in the county. High-grade marijuana cultivation on the national forest and private lands is now a significant component of the economy. Although it generates wealth, the establishment of “pot gardens” with armed defense has led to violence and environmental degradation. The county’s unemployment rate in 2009 was 17.3 percent, and the poverty rate was 19.9 percent. Interviewees described their county as chronically depressed since the decline of the timber industry in the late 1980s.

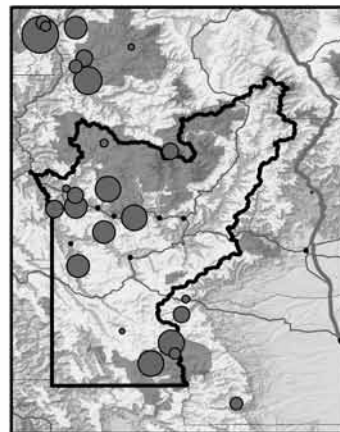
The large wildfires of 2008

A series of thunderstorms on the night of June 20, 2008, sparked over 100 wildfires. Winds, steep terrain, and heavy fuel loads helped several of these fires become sizeable complexes. It was not until late September that all of the large fires in Trinity County were extinguished or contained. The thirteen largest fires of the 2008 fire season burned a total of 241,049 acres and incurred \$140 million in Forest Service expenditures (Figure 1).

Figure 1: Large wildfires in 2008 in Trinity County, CA

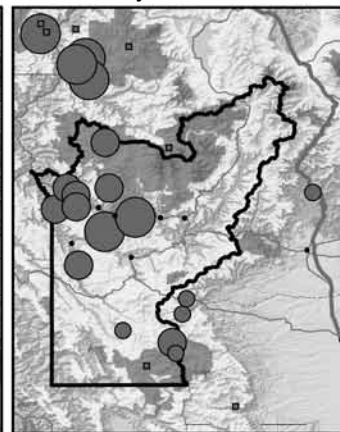


Acres burned (scaled)



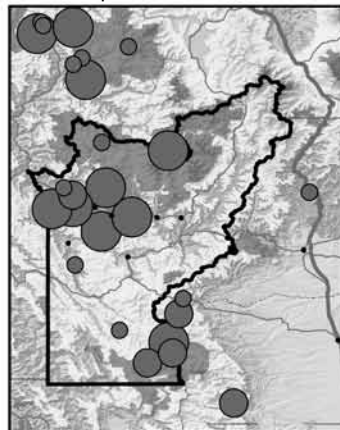
- 1,500
- 10,000
- 25,000
- 65,000

Duration (days)



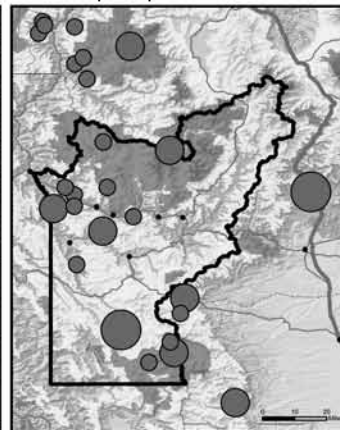
- No data
- 4-5
- 26-27
- 76-132

Dollars spent



- \$1 million-5 million
- \$5 million-10 million
- \$10 million-30 million

Dollars spent per acre



- \$80-750
- \$750-1,500
- \$1,500-8,500

Findings: Fire impacts and experiences

We found negative and positive economic, social, and ecological impacts of these wildfires. Positive economic impacts included local contracting for suppression. Negative economic impacts hit the timber, forest restoration, tourism, recreation, and wine sectors. Social impacts included changes in community and Forest Service relationships, post-fire community and agency mobilization, and community and personal wellbeing. We also identified ecological impacts to hydrology, forest diversity, and fuel loads.

Economic impacts

Local access to suppression contracting

Suppression contracting opportunities during wildfires may include forestry support work, such as building fire lines and performing other defenses, or provisioning firefighting teams with food, ice, and portable toilets. Interviewees noted that the National Fire Plan (2000) and subsequent fire suppression contracting policy changes had reduced their access to these opportunities. These policies nationalized suppression contracting and created new requirements for local contractors who wanted to be available to fight large fires in their regions. Two forestry contractors in Trinity County lost their federal suppression contracts in 2006.

So historically, what would happen is the locals would make all the sandwiches and stuff like that, and I don't know how much of that was done [this time]. There was a lot of dissatisfaction because there was a state-wide list in terms of registering equipment, for instance. And there wasn't any preference give to locals at all . . . the Forest Service management were new, and so they didn't have any feeling for who was good and who wasn't local. [I-18]

An awful lot of our locals still don't know how to get on that [Fed]BizOpps and do all that. So, we've lost that expertise. It's also a downside for the Incident Command Teams. When we have a real lightning bust, it's not easy to find fallers anymore. We don't have fallers, locally, and those that we do are not all signed up on

FedBizOpps, and it takes a long time to get them from other places, and in the Forest Service we don't have as many C Fallers. That's kind of spooky. [I-7]

However, Trinity County's isolation from major transportation corridors and population centers means that it has limited access to markets and supplies. Their local businesses may face difficulty obtaining adequate quantities of supplies, and federal suppression contracting may go directly to larger, less remote communities. One interviewee acknowledged that local business capacity to provide for an influx of firefighters was limited.

However, in their defense, we're a small county, and to gear up to feed, to have our grocery stores be able to gear up to provide, that's a catch-22 in a small rural county. [I-2]

There [are] always opportunities for local contractors. In this particular case, we needed more capability. [I-21]

However, there was some local capture of suppression contracting, which provided economic opportunities to the local community and a sense of participation in the firefighting effort. These contracts included water sourcing, land rental for a fire camp, and small expenditures by firefighters.

In fact, we actually made money on the deal! We actually had two crews signed up, and chippers for doing defensible space work . . . we provided some mapping. [I-4]

These work opportunities were significant to several local contractors who had been living on the economic edge.

Many displaced loggers were on the verge of losing everything they had, had their houses mortgaged up to the hilt, and it pulled 'em out. It was actually a saving grace for those small businesses. Some of my friends who I know, it got 'em out of debt for about a year or so . . . when the rest of California was really being hit hard with the loss of jobs and stuff, we did pretty well as a community, overall. [I-12]

There were also opportunities to provision the federal suppression camps. The federal Incident Command System, which directs suppression efforts, provides teams at three different skill and resource levels depending on the severity of a wildfire. The Type I Incident Command Teams established a fire camp at the Hayfork fairgrounds, where fairground managers were paid for this rental but had to cancel the annual fair, an important community event. Fire camps were also located at Junction City and Hyampom. Most interviewees indicated that the federal fire camps were self-supplied and that the firefighters had little free time, but some interviewees suggested that firefighters did visit local restaurants and the movie theater in Weatherville.

To the credit of the IC Teams, they strongly encouraged their folks to go out and shop locally, to help the economy . . . So, the guys would go get a haircut downtown, or go out to dinner. [I-2]

We were getting our meals from Irene's Restaurant, but we needed laundry soap, we needed tableware, salt, pepper, ketchup, condiments to go with the things. So we would buy locally from our grocers here. We purchased a lot of ice locally . . . I think we were feeding probably 160 people to 100 people a day, three meals a day [I-12]

Interviewees also indicated that opportunities to locally provision federal firefighters varied throughout the 2008 fire season. The Type I and Type II level teams formed "self-contained" fire camps and did not require many local provisions. Type III and State of California teams typically utilize more local provisions. When Type III teams took over in the last weeks of the fire suppression effort, they used local hotels, supplies, and food.

The forest management and timber industry

The timber industry of Trinity County experienced several negative impacts from the 2008 wildfires. First, forest management activities on public lands were curtailed during the fire season in fear of further firestarts.

It shut down projects. We had [fuels reduction projects] that were downriver, that we couldn't get to 'cause of the fire. And we shifted our

crews to working on the fire. So you know, that . . . really compromised meeting our project goals for that year. [I-4]

They were afraid of any other fires starting, so they shut down all the logging. So if you weren't able to get on the fire, which you of course weren't, until they ran out of all the people who were signed up, you then also had to not log. [I-15]

These restrictions on activity in the forest seemed to add to existing economic challenges. One interviewee suggested that federal officials had no regard for this economic context.

Trinity County's already pretty heavily depressed, I mean, we have the highest unemployment rate in the whole state of California. And then having to deal with just shutting down the businesses, I think it was just totally ignorant and arrogant on their part. There was just no consideration whatsoever. [I-16]

Second, the fires destroyed public and private timber, the county's primary natural resource. The lost timber included late successional reserves and plantations that could have been harvested in the near future.

We lost a lot of our plantations that we had planted after the '87 fires . . . had young stands, twenty plus years, then they were gone again. That's one of the aspects that's very devastating. [I-12]

Many areas of private timberland burned as a result of Forest Service-set fires that were intended to control wildfire spread. Every interviewee discussed, most frequently without prompting, a backfire on Trin-Co timberlands in the Price Creek drainage. The Forest Service was authorized to set this fire because they anticipated needing to block further development of the Eagle fire complex in the area. However, the backfire grew beyond planned size on hot afternoon winds. It eventually covered 2,500 acres.

So the fire starts moving up. So the Forest Service—they called [the landowner] and said,



“We need to put a fire line on the edge of the property.” And she said, “Okay, go do it,” envisioning a fire line, which is . . . make a fire break. Fuckers stood on the other side of the river and shot ping pong balls of fire onto her forest. And just burnt it up. They just burned it up. [I-15]

Ultimately, the wildfires in the area did not reach the drainage as anticipated, making the loss of these private timberlands even more difficult for community members to accept.

I’ll never live long enough to understand what anybody was thinking. . . . It was horrific. . . . It was a crushing blow that my government did this. [I-18]

. . . If you drive from here to Willow Creek and look at what’s happened to their river corridor, you know, I have a hard time keeping my sanity! Wanna grab somebody and choke ‘em, because it’s a disaster down through there. [I-19]

Third, after the fires, salvage activities on public lands were limited and have not resulted in many

timber sales except for the Trough sale in fall 2009, which Sierra Pacific purchased. The lack of salvage angered local people who wanted to derive any economic benefits possible. As some interviewees believed that standing dead timber was also potential fuel for future fires. They expressed urgent desire to remove these “dead fuels” from public lands, particularly those near Hayfork.

Largely because of the threat of litigation, the Forest Service has been very conservative about what they pursue in terms of salvage. So they basically looked at the landscape, this 200,000 acres, and they prioritized maybe 300 acres or something . . . they did a very, very large roadside hazard tree NEPA, but they didn’t include the moving of the trees that they cut down. So they’re not allowed to sell the roadside hazard trees that they fall. [I-5]

You see what private landholders have done on their land, and their land is back into reproduction. They utilize what was gone, they replanted, and they’re up growing again. And we’re still sitting here with dead stuff on the ground. Standing dead. It’s just really hard to deal with it. [I-12]

Sierra Pacific Industries and Trin-Co Lands were able to salvage from their private lands. Trin-Co’s timber was processed at the Trinity River Lumber sawmill in the county. However, as several interviewees pointed out, these businesses were forced to sell salvaged logs in a period of very low log prices.

The 2008 fires were particularly devastating, because it was at a time when our market was in just this huge freefall, and price in selling those burned logs to the mills at that time was about less than half the price that could have been gotten for those logs if we could have timed the market. [I-3]

Fourth, there were some limited rehabilitation activities beyond salvage. Many burned areas were steep terrain where it was impossible to conduct mechanical treatment. But the Trinity Resource Conservation District (RCD) and the Watershed Research and Training Center (WRTC), a local

nonprofit organization, were able to find resources to carry out environmental analysis, rehabilitation, and fuels reduction work as a direct result of the 2008 wildfires. Together, the Trinity RCD and WRTC captured approximately \$700,000 in Forest Service agreements to perform fuels reduction work on private land. The RCD also was able to acquire resources for restoration and sediment reduction in riparian areas where fires had affected soils. A local contractor was able to perform some chipping of burned and felled material and spread the chips on roads and eroded fire areas.

But interviewees also felt that the Shasta-Trinity did not plan enough rehabilitation activities and that these contracts were not structured at a scale accessible to local contractors. For example, a masticating contract offered after the fire was beyond the equipment or labor capacity of local businesses.

See, that's my biggest complaint about these stewardship contracts and the fuel reduction projects they put out. Their scale is too big! They could break it up into four contracts. They had a masticating project that stretched out from Burnt Ranch to the Yolla Bollys. I mean, a huge area . . . I mean, it's 15,000 acres under one contract . . . forget it. [I-6]

Some interviewees, however, expressed concern with the Shasta-Trinity's past approaches to salvage, and were ambivalent about the ecological trade-offs that could occur.

Everybody got some fires consciousness in 1987. The economic impacts were tremendous on Hayfork, 'cause they went to work salvaging, and doing rehab, and there were loggers here from all over the United States, from Alaska, from Alabama, and, you know, everywhere, working around Hayfork. And it was really hard on the forest, 'cause they took a lot of the green trees. I mean—loggers called me, during that time, and said, "Hey, you gotta do something, they're making us cut the green ones, too." And it was supposed to be fire salvage, but, it was a lot more than that . . . in the past, the salvage logging has been so bad that I can't endorse it. They cut down a lot of green trees

with the dead ones, and they leave all the dead fuels behind, all the dead standing stuff that's so high, to where this site is really just, you know, it's impaired. [I-14]

Tourism and recreation

Trinity County's tourism and recreation sector consists of small, family-owned businesses that offer rafting, hiking, boating, fishing, wildlife viewing, and camping services. Popular recreation areas include Trinity Lake, the Trinity River west of Weaverville, and the Trinity Alps Wilderness. Prior to the onset of fire season, a prolonged drought and low water levels had already hurt businesses near Trinity Lake. For the first few weeks of the fire events, thick smoke cloaked the region and led to many camping and rafting reservation cancellations. As fire and backburn activity intensified in the Trinity River corridor, Highway 299 experienced periodic closures. As a result, recreation businesses were shut down or had no customers during their usual peak summer season.

The immediate effect was a substantial fall in annual profits. Businesses also feared that there had been a longer-term impact on return customers.

You have regular clients that come up year, after year, after year, and it's kinda like their family vacation . . . well, [when] they can't come up here they go someplace else, if someplace else turns out to be new and fresh and different, so Let's not go back to the Trinity, let's go back to where we just came from. And if you wanna know a telling fact, right now there is three different campgrounds in the downriver area that are up for sale. And a lot of that's just based upon the fact that there's been no income . . . our money-making window is June, July, and August, with a little bit of shoulder in May and April and a little bit of shoulder in September. And if we don't make it, there's no replacing it. [I-16]

The loss of tourism and recreation seemed most significant in areas along the Trinity River, and in Weaverville, where visitors would typically stop for food or supplies. In addition, several businesses and business owners' homes were put up for sale after 2008. Hayfork, which does not have

the same number of recreation businesses, did not experience the same losses.

The wine industry

Smoke had extensive impacts on the viticulture sector of Trinity County's economy. Although this sector of the economy is relatively small, interviewees suggested that it was becoming a key component of local tourism, and that the 2008 fires caused significant challenges to its growth. Alpen Cellars, the county's largest winery, lost several crops due to "smoke taint" that altered the flavor of grapes. Alpen Cellars was able to de-smoke and sell some wine as a niche product. They also grow grapes throughout the county, so their losses in some locations were offset by undamaged crops in others. However, the entire crops of several small vineyards in the Hyampom Valley were too tainted to cost effectively de-smoke, especially for smaller growers.

Social impacts

Community and Forest Service relationships

Trinity County interviewees described high levels of distrust and dissatisfaction with management on the Shasta-Trinity National Forest prior to the fires of 2008. Since timber harvests declined on the Shasta-Trinity in the late 1980s, there has been local perception that the forest has not been producing ecological or socioeconomic benefits for local communities.

I just have absolutely nothing but contempt for the Forest Service. I don't think they're doing any kind of managing that they should be doing. [I-16]

Pendulum swing, you know, from over harvest, to no harvest and no management. [I-1]

Interviewees also consistently linked the fires to lack of Forest Service management.





The fire is just the proverbial final straw that's just really pissed us off. . . . So I drive out through the [burned] areas, or fly over, which will just make you sick, and I look at what has happened because people don't understand proper management. [I-2]

This existing distrust grew after the fires of 2008. There was local anger and dissatisfaction with the federal suppression response. Interviewees expressed three primary concerns. First, they perceived a lack of aggression.

Fighting fire is all about catching the fire in the first 24 hours . . . it was very frustrating to see fires grow from five acres to 40,000 acres before somebody decided to send a man on 'em. And it's just too late, there's nothing you're gonna do. [I-20]

They're not very aggressive, you know, like they used to be. They won't fight fire at night . . . So it's very discouraging from that standpoint. The way we've changed our policies when it comes to fighting fire is just disgusting. [I-19]

However, Forest Service staff members stated that given the scope of the wildfire event, they were doing the best they could with their resources.

Trinity County fared very well in the prioritization process compared to other remote counties. We communicated well what the dire situation was in Trinity County, and the result was we actu-

ally got more resources into Trinity County than many of the other rural northern California counties . . . [but] we were simply mathematically overwhelmed with the amount of fireline that needed to be built, versus the number of firefighters available to build that line. [I-21]

Second, interviewees disagreed with some of the Forest Service's decisions to backfire and backburn in anticipation of wildfire spreading. They felt that the suppression teams lacked the local knowledge to conduct these burns appropriately.

So, what happens in those conditions, in dry conditions, when you start a fire at the bottom of the slope, at two o'clock in the afternoon, it's gonna get in the crowns almost immediately [I-17]

They don't know where the old cat trails are, they don't know where the old fire breaks are, they don't know where the old jeep trails are, they don't understand the roads system, they don't know how to get around. [I-15]

But as Forest Service personnel again pointed out, the scale of the fire event made coordination and communication difficult.

My ability to help guide the Incident Commanders [to] understand what they're considering doing, offer them alternatives, and communicate those to the Forest Supervisor, and to the local stakeholders, and ensure that communication is occurring

in real time with actual understanding . . . my ability to do that during 2008 was hampered by the sheer overwhelming nature of the event. [I-21]

A third concern was the two-week rotation of suppression teams, which amplified the lack of local knowledge and was alienating to community residents.

The other thing that's totally ignorant was that they'd change Incident Commanders every two weeks . . . we have a 10,000 gallon tank here, we've got an agreement with the volunteer fire department to store it here. I couldn't tell you how many times I had to go over there and explain to people . . . I mean, I'm doing this every two weeks. [I-16]

I would have given anything to have seen a familiar face, or just, see somebody that was invested in the community. [I-18]

However, many interviewees also expressed their gratitude for the skills of the firefighters and their service to the county. They did not want to blame hardworking crews, especially after a helicopter crash killed ten firefighters. They pointed instead to inadequate resources and nonaggressive leadership. Interviewees also suggested that the expertise and level of communications of Incident Command Teams varied. Several interviewees described the skill of a Type I team in backfiring and moving a fire away from the Hayfork area, and were grateful to the Forest Service. Another suggested that the teams from Montana and Alaska in particular practiced what they saw as "good" fire management. Other interviewees drew a distinction between Type I and Type II teams:

Those [Type II] folks came in, and it was a little different MO. I don't mean they did it better or worse, it was just different. There was communication, the liaison officer would contact me, which I hadn't had before. [I-15]

One person also noted that perception of suppression responses can shift after the immediate experience of the fire.

You know, the community goes through stages.

While the teams are here, they're scared and grateful to have them here, and then after they start to go away and they start to look around, then they get angry at everything, every perceived slight. And armchair quarterback: "Why did you do this? Why did you go down this spur ridge and not that spur ridge? Why didn't you use this person, and you weren't using enough local knowledge!" [I-7]

Postfire community and agency mobilization

After the fires of 2008, there was increased community interest in changing fire suppression strategies. Dissatisfaction with the lack of local knowledge and perceived inadequate aggression in the fire response led to the formation of a local advisory committee. A group called the Concerned Citizens for Responsible Fire Management coalesced and met with county and Forest Service leadership and their congressional representative. This committee established linkages and point people for communicating local knowledge to Incident Command teams during future fires.

I think they've made some headway getting the Forest Service to move off—move away from their management styles on fire. I think we had one fire downriver this last year that they made some headway, they were more aggressive on. Made some better decisions. So hopefully we can continue to work that way. [I-19]

Community frustration about not being "signed up" and able to work on fire suppression as soon as possible also pushed the Watershed Center and other local partners to plan a Home Fire Guard.

The best performers with the best knowledge that know the local area should be the ones utilized. Because the way the system is now, you're standing with your finger in your ear, waiting for somebody to come from Redding or something, two and a half, three, four hours. [I-13]

Planners envisioned that this Home Guard would allow local workers to be trained and enrolled through their volunteer fire departments. They would also form a cache of equipment to draw from as needed. This advance organization of local suppression would help speed response time to fire outbreaks and allow local people to contribute to suppression.

The 2008 fires also increased the visibility of restoration needs to the public land management agencies, according to one interviewee:

So after the 2008 fires, there was a special pot of money to deal with the counties most affected . . . And we did really well in Trinity County, we were the number one or number two recipients, by county, of California Fire Safe Council grants in 2009 . . . and I think the projects that have been selected [by the Resource Advisory Committee] since then have been focused—on the wildland-urban interface part of the Forest Service’s lands. [I-4]

Finally, the fires also prompted a new annual meeting of Shasta-Trinity National Forest staff members and community stakeholders to discuss fire suppression and response issues. These meetings focus on lessons learned from the 2008 wildfires and future planning.

Community and personal wellbeing

The wildfires of 2008 affected both personal and community health. Heavy smoke lingered over the county for three months. Interviewees referred to “the summer from hell” [I-19] and “the lost summer” [I-5, I-18]. The Hoopa tribe set up air quality moni-

tors, which recorded particulate levels ten times above federal standards. Vulnerable residents with aggravated health conditions temporarily went to the coast, but many could not leave their homes or jobs.

So we had mandatory evacuation orders fifteen times on communities in Trinity County—1,400 homes were evacuated. Unhealthy and extremely unhealthy air quality alerts were issued for weeks at a time. North Coast Unified Air Quality Management District can tell you how many days, but it was significant. Federal Standards for PM 2.5 levels were exceeded in many cases by a factor of ten or greater. [I-17]

Mental stress was also high. Threats to mental wellbeing included the death of eleven firefighters, a sense of powerlessness, exhaustion in Forest Service staff members, and intermittent mandatory evacuations when fires neared residential areas, such as Hyampom.

Yet the fires of 2008 also brought community unity. One interviewee described how the Willow Creek area, where neighbors had traditionally been divisive, pulled together.

They’ve been arguing and fighting and feuding



for quite awhile, but I think the fire actually was a catalyst in kind of bringing a little bit of community cooperation around, and helping people realize that the folks across the street aren't necessarily totally different. [I-16]

This interviewee also described the support that they received from friends and community members.

We could not have survived as well as we did if it wasn't for some of our community and friends. We actually had a friend come up here and just write a check . . . 'Til this very day, I still get emotional about it. [I-16]

Ecological impacts

There were several types of ecological impacts from the wildfire event. First, denuded, burned soils contributed to increased erosion, sediment, and temperature fluctuations in the river. This affected 122 miles of coho salmon habitat, and caused juvenile steelhead and salamander die-offs.

There's a crick coming through that's now all mud. [I-1]

Interviewees also described multiple impacts to forest health, including damage to spotted owl habitat, reduced carbon sequestration activity, and loss of the area's forest diversity. As a result, future forests would be more homogenous.

We've never been plantation farmers. And we will be, and I hate that. [I-18]

Although interviewees saw the destruction of forest values and the impacts of smoke as negative, a few also recognized forest health benefits from the wildfires of 2008. Several interviewees discussed wildfire as a natural force that benefited their landscapes by reducing fuel loads.

The fire burned healthy for most of us, I think. My property had sixty-eight acres, all of it burned. And it burned so healthy that I probably don't have fire concerns on my immediate property for eight or ten years . . . you know, we've just had too

much Smokey the Bear stuff all our life, and we need to change our attitudes, that fire needs to happen. [I-14]

You suffer both losses and benefits to the natural resource values [from wildfire]. [I-21].

In the end, actually, our researchers and ecologists believe that it was a pretty good fire. Within the historic range in terms of burn severities, like, 12 percent high severity, 40-something percent medium, and the rest low. So not a catastrophic event in many senses, especially given the scale of it. [I-5]

As these interviewees noted, fire was part of their forested ecosystems and had a role in "cleaning" up the landscape and reducing the danger of future, perhaps more catastrophic, fires.

It needs to burn periodically, that's what nature intended, here. You know, the research has shown that fire around here in natural conditions burned around every seven to fifteen years. [I-9]

Discussion and conclusions

The diverse impacts of the large wildfires of 2008 in Trinity County reflect the region's unique socioeconomic context. For several decades, Trinity County has had a chronically-depressed economy and low levels of trust in federal land management agencies. County leaders attempted to move toward a recreation-based economy after the timber industry declined in the late 1980s, but poverty and unemployment have remained high, and a booming marijuana economy is rapidly reshaping the local social fabric. Prior to the fires in 2008, there was also a drought and low water levels in Trinity Lake. These existing conditions likely shaped the socioeconomic impacts of the wildfires in several ways. The ongoing economic depression in the county may have increased the significance of and desire to capture suppression spending locally. Long-standing, poor relationships with some aspects of the Shasta-Trinity National Forest may have also contributed to distrust of the federal suppression response. Previous research has found that the ways in which outside incident command teams interact with communities can have long-term impacts on relationships between the

national forests and communities. This research suggests that the reverse may also be true—that long-standing relationships with the national forest may impact how community residents understand the efforts of the incident command teams and fire fighters.

The experience of Trinity County also aligns with other research findings about the social effects of wildfires in public lands communities, such as community anger, cohesion, and post fire mobilization.² Evidence from this case shows that specific pinpointed events, such as the backfiring and destruction of Trin-Co's timberland, provided a focal point for local anger and powerlessness, and created a collective narrative of loss. Frustration and a sense of powerlessness also pervaded the people of Trinity County, who encountered an influx of federal fire-fighting resources. Yet they often felt that suppression efforts were inadequate, misdirected, or inappropriate for the local land and weather conditions. These collective narratives of loss and frustration spurred new community cohesion and mobilization around future fire management.

Finally, this case study also suggests that large wildfires can affect a number of economic sectors in rural communities, producing both positive and negative impacts. Documenting the complexity and range of these impacts can help local leaders, agencies, practitioners, and policy makers to better understand the experiences and needs of public lands communities living with wildfire, and the relationships between wildfires and local economic development.

¹ This study is funded by the Joint Fire Sciences Program. For more information, please visit ewp.uoregon.edu/largefires/context.

² Burchfield, J. Community impacts of large wildfire events: consequences of actions after the fire. In *People, Fire, and Forests: A Synthesis of Wildfire Social Science*. Ed. Terry C. Daniel, Matthew S. Carroll, Cassandra Moseley, and Carol Raish. Corvallis: Oregon State University Press, 2007. 124–140. Carroll, Matthew S. and Patricia J. Cohn. Community impacts of large wildfire events: consequences of actions during the fire. In *People, Fire, and Forests: A Synthesis of Wildfire Social Science*. Ed. Terry C. Daniel, Matthew S. Carroll, Cassandra Moseley, and Carol Raish. Corvallis: Oregon State University Press, 2007. 104–123.



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