

Community Resilience and the 2005 Deer Creek Fire – Summary Report

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On August 25, 2005, the Deer Creek Fire ignited in the community of Selma, Oregon. The Deer Creek Fire burned for four days before it was fully contained on August 28, 2005. In that time, the Deer Creek Fire burned over 1600 acres on a mix of private and Bureau of Land Management land. The fire destroyed five homes, ranging from yurts to single-family structures, with seven outbuildings. The fire also damaged two homes with six outbuildings and threatened over one hundred residences.

Oregon Governor Theodore R. Kulongoski invoked the Conflagration Act on Friday, August 26, 2005, which allowed the State Fire Marshal to mobilize structural firefighters from across the state to assist the Illinois Valley Fire District and state and federal fire protection agencies in Josephine County. The Illinois Valley Fire District established a community information center at their fire station on the highway in Selma. The Office of State Fire Marshal (OSFM) projected structural mobilization expenses for the Deer Creek Fire to be as high as \$410,000.¹

This report provides an overview of the purpose, findings, and recommendations from interviews conducted with residents affected by the 2005 Deer Creek Fire. A full copy of the report can be found at: <http://ri.uoregon.edu/programs/CCE/communityfireplanning.html>

Community Profile

Selma is a small town in the Illinois Valley in Josephine County, Oregon, which is less than fifty miles from the Pacific Ocean in the southwest corner of the state. The Illinois Valley is approximately 427,376 acres, consisting of approximately 77% public land and 23% private land. The Illinois Valley Fire District protects over 17,000 people living in an area of 140 square miles. With a population of 8,900 people, the 2000 Census indicated that over 24% of individuals in Illinois Valley and 43.3% of families are at or below the federal poverty line. The Illinois Valley's economy is based on a declining timber industry, growing tourism, cottage industries and retirement payments, minimal agriculture, and employment by the government.²

Wildfire Risk and Planning in the Illinois Valley

The Illinois Valley is no stranger to wildfire. In 2002, the Illinois Valley suffered the majority of impacts from the Biscuit Fire, which burned over 470,000 acres. The fire threatened over 3,400 homes and put thousands of residents on evacuation notice. Costs from the fire have exceeded \$150 million and have ultimately raised awareness among public agencies, community organizations and individuals about the extreme risk they face from wildfire.

The Josephine County Integrated Fire Plan, adopted in November 2004, illustrates high risk to wildfire throughout the Illinois Valley. In 2004, the Illinois Valley Fire District (IVFD) received a grant to develop a community-wide fire protection plan for the Illinois Valley in conjunction with the Josephine County Integrated Fire Plan. The Illinois Valley Fire Plan, adopted in March 2005, identifies community priorities for reducing wildfire risk.



Deer Creek Fire, August 2005. Photo courtesy of the Bureau of Land Management, Medford District

¹ Oregon State Fire Marshal Press Release, August 28th, 2005.

² Rogue Web, Cave Junction – Illinois Valley Oregon Profile, <http://www.rogueweb.com/cjunct/>

Lessons learned from the Deer Creek Fire

The Illinois Valley Fire District and partners involved in the Josephine County Integrated Fire Plan hosted a community meeting at the Selma Fire Station on September 28th, 2005. The purpose of the meeting was to talk with residents about their experiences during the 2005 Deer Creek Fire. Over 80 people attended this meeting, including representatives from local, state, and federal agencies, and community organizations. The meeting provided an opportunity to gather information about the experiences of residents directly affected by the fire and to understand their concerns. Project researchers also used this meeting as an opportunity to interview individuals and households about their experience during the Deer Creek Fire and their perception of wildfire risk in their community.

Community Resilience during the Deer Creek Fire

Many communities in the Pacific Northwest face serious and growing risks from wildfires. Ecosystem and climatic changes coupled with rapid population growth and development in wildland urban interface areas have compounded wildfire risks and impacts. The purpose of the study was to document individual and household experiences in the event of a wildfire occurrence, explore the resilience of

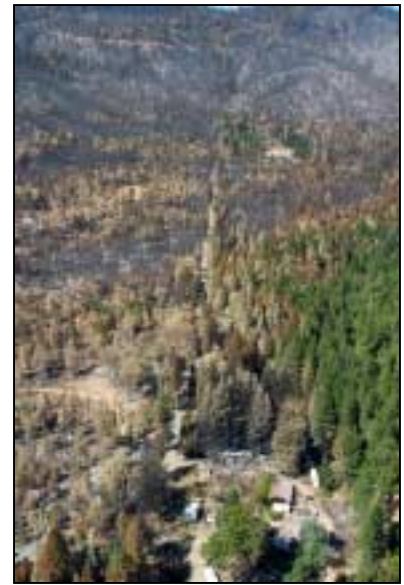
communities to wildfire and result in strategies to reduce risk to future wildfires. This research explored the ways that mitigation programs can integrate place, poverty, and social needs into efforts to address access to information and resources in a rural community. A survey of residents assessed if response and recovery efforts considered the perspectives and needs of the community, whether mitigation programs influenced successes or challenges during the wildfire, and if losses to life, property, natural, or cultural resources resulting from the wildfire event were influenced by poverty or geographic isolation. Research questions sought to describe the perception, experiences, preparedness and evacuation behavior of residents impacted by the 2005 Deer Creek fire.

Survey Methods

The survey focused on perception and experience, preparedness and response, and demographics. Project researchers shared draft questions with the Illinois Valley Fire District and JCIFP partners and obtained feedback on the types of questions that would also prove valuable to future community fire planning efforts. With the aid of volunteers, the research team conducted interviews using the survey instrument with residents that attended the September meeting and volunteered to take part in the survey. Twenty-seven households and individuals participated in interviews or filled out surveys during the September meeting. Three other residents took the survey home and returned it by mail.

Analysis – Study Sample

The meeting was widely advertised to residents of the Illinois Valley and targeted those impacted by the 2005 Deer Creek Fire. However, findings from the survey are reflective of the population that attended the meeting, and may not be fully representative of the greater population in the valley. For example, men constituted a majority of survey respondents (53%), and an overwhelming majority of respondents own their homes (90%) and have resided in the community for over a decade. Few survey respondents indicate that they have special needs that would increase their vulnerability and few have children living at home. Seventy-three percent of respondents have attained post-high school education. Each of these characteristics suggests the community may provides a strong base for building resilience. However, the sample population was self-selected and may not accurately represent the vulnerability profile of the greater community.



August 2005 Deer Creek Fire,
Photo by: Medford District BLM

Interview Findings

Perception and Experience

Many residents reflected on individual and family experiences with past wildfires, including the Biscuit Fire, with 70% of respondents indicating that they had experienced a wildfire prior to 2005. Thirteen percent of respondents indicated that they had experienced direct property damage, while 7% had experienced direct injuries. The percent of respondents who reported knowing someone who had experienced personal injury or property loss was also low. Surveyed residents perceive that major damage to property and environmental resources is likely to occur in the next 10 years.

Respondents indicated that they believe that individuals and families are the most responsible for protecting themselves from wildfire. Respondents also indicated that fire districts have significant responsibility to protect the public from wildfire. This suggests that the role of the Fire District in disseminating information is particularly important.

Preparedness

When asked about preparedness or mitigation actions, three-quarters of respondents indicated that they had undertaken each of the actions inquired about. In fact, 87% of respondents reported cleaning their gutters and roof regularly, and 80% reported that they had installed fire-resistant roof materials. All protective actions the survey inquired about had been adopted by greater than 70% of respondents, with the exception of landscaping with fire resistant materials (60%).

This behavior suggests an engaged community acting on their perceptions, experiences, and concerns, and accepting and minimizing the risk that they are exposed to, which may also suggest the foundations for enhancing the resilience of the community. However, it is important to note that the survey respondents are a self-selected sample of residents who were invested or concerned enough about fire to attend the public meeting and participate in the survey. The demographic profile of survey respondents, including a majority of elderly individuals, may not be representative of the community as a whole. Interestingly, less than 30% of the study sample had received financial assistance to undertake the actions they engaged in. While the rate of financial support was low, 37% of respondents did receive support in the form of guidance or technical assistance.

Response to the Deer Creek Fire

Respondents reported taking protective action and, in many cases, prepared to evacuate as the Deer Creek fire developed and spread. Given the nature of the fire, speed, and spatial extent, a majority of these residents did not actually evacuate their homes. Seven of the respondents did evacuate their homes in response to the Deer Creek Fire. Some returned home each day to monitor the situation relative to their property, others left due to the smoke that was irritating respiratory health issues. When asked what factors influenced the decision to evacuate or remain, there was no clear factor which motivated all the evacuees, though not surprisingly the proximity of the fire to their home weighed high on the decisions of both groups – those who evacuated and those who remained.

Residents indicated that seeing the wildfire conditions and the proximity of the fire to their home was the greatest influence on their decision whether or not to evacuate. Other factors influencing that decision included previous wildfire or evacuation experience or concern about evacuating with pets. Of the seven respondents that evacuated, 86% were content with the information that they received and based their decision on. Almost all of the evacuees made their decision to evacuate on Thursday, August 25th, the day that the conflagration



Deer Creek Fire Response Meeting. August 2005. Photo courtesy of BLM.

occurred. The rest of the evacuees, 14%, made their decision to evacuate on Saturday, August 27th. One respondent in particular reported evacuating multiple days as their family returned to their home each night. Of the respondents that evacuated, 71% reported going to the home of a friend or relative, while 29% went to a hotel or motel.

Discussion

The findings from the interviews with residents affected by the Deer Creek fire will help local fire agencies, Josephine County, and community organizations identify strategies to improve emergency management and communication, education and outreach, and mitigation actions to reduce wildfire risk.

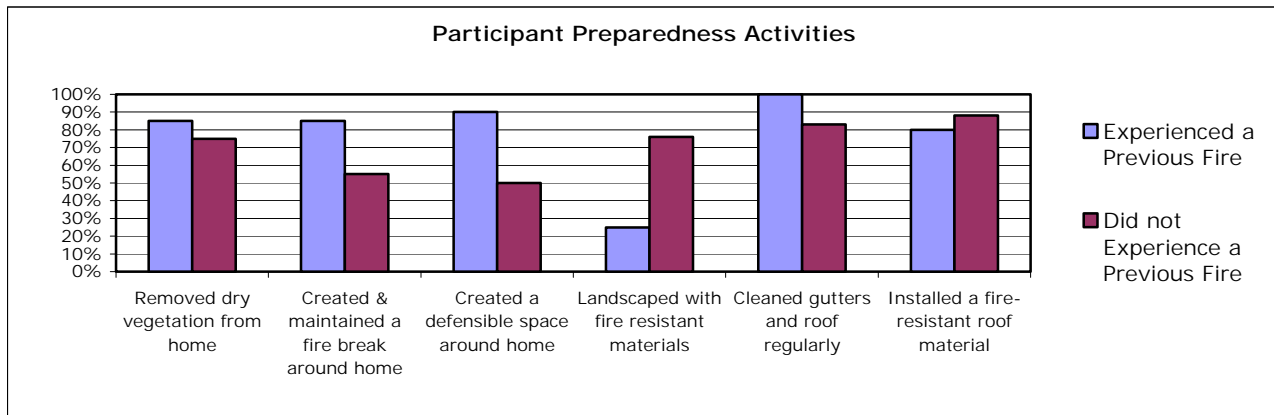
Awareness

Awareness of the existing fire plans, both the Josephine County and the Illinois Valley Fire District plans, are strongly associated with preparedness actions. Just over half of survey respondents were aware of the Josephine County Integrated Fire Plan (57%) and the Illinois Valley Fire Plan (53%). Respondents that reported awareness of either or both fire plans also reported very high participation rates, 88% - 94%, for all preparedness activities in the survey, including vegetation removal, establishing fire breaks and defensible space, landscaping with fire resistant materials, maintaining roof and gutter, as well as installing fire-resistant roof materials. Respondents aware of the fire plans engaged in these activities at higher rates than those unaware of the plans. This suggests that people unaware of the fire plans may benefit from awareness. Increased awareness may result in increased preparedness and decreased potential losses. Recommendations to increase awareness include renewing efforts to disseminate fire plan information through a campaign or fire awareness fair.

Experience

Previous research has shown that experience with a threat exerts a strong influence on perception and behavior associated with the threat. Seventy percent of survey respondents had experienced fire prior to 2005. Experience with fire prior to the Deer Creek fire shows a strong influence on the preparedness actions taken by survey respondents, as illustrated in Figure 1 below.

Figure 1. Preparedness actions and previous fire experiences



Most dramatically, respondents who did not have previous experience with a fire only had a 50% rate of creating a defensible space around their home, while 90% of those respondents who had experienced a fire created a defensible space. Similarly the percent of respondents with previous wildfire experience who have created and maintained a fire-break is higher than the percent of respondents from the group who did not have previous fire experience.

Considering the influence of previous fire experience on perceived risk, 90% of respondents with fire experience rated risk of damage to both property and the environment as high (rank 4

and 5) over the next ten years, while only 66% of those without fire experience rated risk of property damage as high and 78% high risk to the environment. Sixty-six percent of respondents who hadn't experienced a previous fire ranked risk of home damage in the next ten years low, while only 33% of those who had experienced fire ranked risk of home damage low.

Evacuation

Those who decided to evacuate their home all found the fire district to be highly knowledgeable and also reported a high confidence in the knowledge of the local government. A majority of evacuees (75%) felt that the fire district was responsible for protecting them from wildfire, while only 50% of non-evacuees had this responsibility. Those who chose not to evacuate indicated that they felt the local government was more responsible for their protection than those who did evacuate.



Josephine County, Woody Vegetation Disposal Day. April 2005. Photo by Kathy Lynn

Recommendations

Education and Outreach/Communication and Coordination

Just over half of survey respondents were aware of the Josephine County Integrated Fire Plan (57%) and the Illinois Valley Fire Plan (53%). Survey respondents also reported that meetings such as the community meeting on 09/28/05 are helpful in protecting people and property (93% for both) and that they do not require much skill or effort. The perception that community meetings have high benefits and low costs may help in planning education and outreach as well as communication and planning for the community, at least to the extent that this study sample represents the level of engagement for the broader community. Other recommendations to enhance education and outreach efforts related to wildfire include:

1. Continue to increase awareness about the Illinois Valley and Josephine County Fire Plans, and the educational information within those plans.
 - o *Implementation Strategies:*
 - Coordinate with the JCIFP Education and Outreach Committee
 - Disseminate fire plan information through the Josephine and Jackson County Spring Wildfire campaign.
 - Submit news articles and ads during fire season about how citizens can prepare for wildfire
 - Coordinate with television and radio media to include information on prevention and mitigation prior to fire season.
2. Encourage residents to share their experiences and choices with fellow residents
 - o *Implementation Strategies:*
 - Coordinate with neighborhood organizations, homeowners associations, rotary, and other citizen or business groups to share stories at upcoming meetings.
3. Work with agencies, businesses, and the insurance industry to create incentives for the public to engage in reducing wildfire risk and increasing community resilience.
 - o *Implementation Strategies:*
 - Identify agency programs that may provide citizens an opportunity to coordinate fuels reduction or other risk reduction activities.
 - Work with businesses and insurance companies to develop incentive-based programs and highlight the contribution and sponsorship of each business.

Emergency Management

4. Train and utilize fire safe councils and community emergency response teams to assist in disseminating information before, during, and after a wildfire event.
 - o *Implementation Strategies:*
 - Recruit people interested in volunteering with their fire district to join a fire safe council or community emergency response team.
 - Provide training and help set expectations for how volunteers can assist the fire agencies. For example, volunteers can assist in public education during county fairs and community events, or helping at a shelter in an evacuation.
5. Ensure that there is educational information available to citizens about evacuation prior to fire season.
 - o *Implementation Strategies:*
 - Include information on family evacuation plans.
 - Provide information about evacuating pets and domestic animals.

Fuels Reduction

6. Increase education and opportunities for citizens to create defensible space
 - o *Implementation Strategies:*
 - Create a model demonstration fuels reduction project that is accessible to the community so that they have a greater understanding of fuels reduction.
 - Recruit fire safe councils or other community groups to help coordinate neighborhood clean-up days or fuels reduction projects.

Post-Fire Debrief

7. Continue to hold post-fire debriefs after a significant fire event. The fire agencies and community organizations that participated in the Deer Creek meeting found immense value in having a forum to debrief the community about the events that took place and losses that occurred. Citizens had an opportunity to express concerns and all participants were able to work together to find solutions to the problems experienced during the fire.
 - o *Implementation Strategies:*
 - Develop a protocol for public debriefings after fire events.
 - Use the debriefing to bring together fire agencies and affected citizens.



Community fire planning meeting in Selma, Oregon, June 2004. Photo by: Dale Sandberg, IVFD

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