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## Homeowners' Views of Wildfire Mitigation

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One of the major issues in the wildland-urban interface is protecting homes from wildfire. This is a growing problem of great concern to local, state and federal governments as more and more people build in forests throughout the West. Fire and land management agencies cannot help prevent fire disasters without homeowners' participation – recognizing that they have the primary responsibility to reduce their home's vulnerability to wildfire.

Scientists with the Rocky Mountain Research Station, and cooperators with the University of Colorado, are conducting a study that sheds light on what motivates wildland/urban interface residents to undertake wildfire mitigation efforts. Through a series of in-depth interviews, researchers asked homeowners about the kinds of actions they are undertaking, their motivations for their actions, and what they know about fire, fire risk, and fire mitigation.

Five communities in Larimer County, Colorado were chosen for the study, based on fire history and general level of mitigation activity. Larimer County has experienced a high rate of population growth in recent years, much of it occurring in the wildland/urban interface. All communities in the study have the option of accessing Larimer County's Wildfire Safety Program grants, which are designed to assist homeowners, homeowner groups, and fire departments in reducing the threat of wildfire on their properties and districts. These program grants function at both the community and individual homeowner level.



*Protecting homes from wildfire is one of the major issues facing managers in the wildland-urban interface. (Photo by Bryan Day)*

### Findings

“This project originally intended to focus on the institutional factors such as formal programs and homeowner insurance that promote or impede wildfire mitigation activities,” said Station Economist Patricia Champ. “However, in-depth interviews revealed that homeowners are involved in a much more complex set of decision-making processes,” she said. While institutional factors reportedly play a small role, homeowners consistently stressed three non-institutional factors: 1) the informal social processes by which they learn about and form opinions about wildfire risk; 2) their perceptions of the physical landscape, including fuels, and topographical features of their property, the community, and nearby public lands; and 3) perceptions of mitigation options, particularly in terms of how effective household adjustments are in reducing the risk of wildfire.

Results of the interviews show that:

- 1) There is a fairly sophisticated understanding of fire, fire behavior, and fire risk.
- 2) Generally, there is an abundant amount of information available about fire, fire mitigation, etc., but the process of implementation is the challenge.
- 3) Study participants are very clear on reporting the characteristics of their properties, including the lay of the land, location of the house, and proximity to unmitigated property as factors that they use to assess their fire risk.
- 4) Though some participants report supporting insurance company plans to drop homeowners who do not properly mitigate according to their criteria, most report a sense of frustration and even betrayal at the idea.
- 5) Many report having fire-contingency plans, though these plans vary considerably across households. Overall, participants report making lists to help organize a quick evacuation. Some participants report having emergency mitigation plans in which they will cut favorite trees that they otherwise are unwilling to cut if a fire did threaten their homes and property.

- 6) Most feel that their fire mitigation efforts have made a difference in terms of fire risk, but those close to National Forest land report feeling that their efforts will only prevent property damage if fire starts on their property, not if it starts on National Forest land.
- 7) Participants understand that wildfire risk does not occur on an individual property scale. They suggest that mitigation on private properties, through the creation of defensible space, for example, will do little if that property was surrounded by private or public land that was not mitigated.
- 8) Participants report concern with the number of access roads, the quality and accessibility of these roads, and distances to services such as fire departments.
- 9) One-on-one information tailored to a particular property seems to move people to actually take action. Non-specific general information, such as pamphlets or presentations at town meetings, generally does not motivate homeowners to take action.
- 10) The source of information matters. Study participants trust the information they receive from the county wildfire safety specialist, but are not sure if they would take action based on the advice of someone from an insurance company or other sources considered to be less trustworthy.



*Fire and land management agencies cannot help prevent fire disasters without homeowners' participation – recognizing that they have the primary responsibility to reduce their home's vulnerability to wildfire.*



## Implications

Researchers found that the social context in which wildfire risk and mitigation strategies are discussed and negotiated is important. Community expectations provide a framework that helps shape the appropriateness of certain types of response. Informal social interactions and networks are important as homeowners explore what types of mitigation options to implement. They also provide opportunities for homeowners to collaborate with neighbors about implementing fuel treatment strategies. Community discourse that focuses more on response to wildfire rather than on prevention may lead to different types of fire risk response strategies. Such information should prove helpful to community leaders and other officials who design and implement wildfire programs.

Many of the participants recognize the risk of wildfire and have made some effort to reduce the risk on their property. The formal programs within Larimer County have likely contributed to this situation. According to Champ, it appears that the individualized information provided by the county wildfire safety specialist is

what moves individuals who are ready to take action to actually undertake mitigation activities. “Study participants feel they know what they should do in general to mitigate the risk of wildfire, but do not necessarily know how to go about actually developing and implementing a plan,” she said. Individuals who followed the advice of the county wildfire safety specialist expressed pleasant surprise with how flexible mitigation efforts can be and experienced some unexpected benefits such as improved wildlife viewing.



*Study participants believe that mitigation on private properties, through the creation of defensible space, for example, will do little if that property was surrounded by private or public land that was not mitigated.*

It appears that homeowner insurance does not play a big role in providing homeowners with incentives to mitigate. At the time of the study, no participants had been threatened with the loss of their insurance. If it is possible to switch homeowner insurance due to such a threat, many homeowners say they would do that. Researchers suggest that if homeowner insurance is to provide incentives to mitigate the risk of wildfire, it may need to be an industry-wide effort.

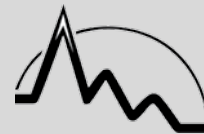
The fuel loads on proximate National Forests are important, and homeowners seem to have a sense of the landscape-level risk. Some cite the hopelessness of their own efforts given the current wildfire risk on adjacent National Forest. While this issue needs further investigation, fuel treatment programs on public lands may provide incentives for homeowners to take action on their private lands. Wildfire education programs should consider capitalizing on the fact that fuel loads on National Forest lands can impact actions on private lands.

“It was difficult getting individuals who do not adopt any type of risk reduction strategy to participate in the interviews,” said Champ. “While several described neighbors who had ‘let it burn’ attitudes, it was difficult to gather information from these individuals.” The study found that those facing wildfire risk may not be easily grouped into categories of adopters and non-adopters of risk reduction strategies. They appear to engage in a wide variety of risk reduction activities, ranging from small-scale non-fuels treatment options to extensive fuels treatments. Some actively participate in community programs, while others address issues only on their land. Understanding this continuum and the factors that contribute to the ways in which homeowners position themselves upon the continuum may be more productive than grouping homeowners as either adopters or non-adopters.

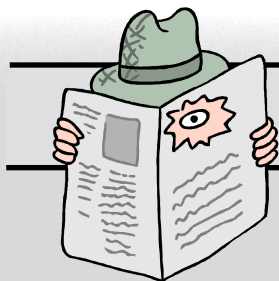
One of the more interesting insights is of homeowners’ perceptions of wildfire risk reduction options. Some do not want to change the environment around their homes until a wildfire is actually threatening their property. They are very attached to the current landscape and do not want to alter it unnecessarily. In light of this situation, wildfire information programs may want to stress how rapidly evacuation is likely to occur, leaving little or no time for an emergency fuel treatment plan.

Champ says that most participants understand that effective wildfire mitigation can take several years. “They express trepidation when first introduced to possible fuel treatment options described as daunting all-or-nothing efforts,” she said. “Community wildfire programs may be more effective if they describe mitigation actions, particularly landscape changes, as continuous activities that can start on a small scale. Likewise, changes to structures appear to be more palatable to homeowners than landscape changes. Perhaps this is also related to perceptions that landscape changes need to be all-or-nothing. Homeowners find information specific to their property to be most useful and likely to move them to action,” said Champ.

Find out more about this study in *Mitigation of Wildfire Risk by Homeowners*, Research Note RMRS-RN-25WWW, available on the Internet at [http://www.fs.fed.us/rm/pubs/rmrs\\_rn025.html](http://www.fs.fed.us/rm/pubs/rmrs_rn025.html).







# Publisher's Desk

## Guidance on Spatial Wildland Fire Analysis

There is an increasing need for spatial wildland fire analysis in support of incident management, fuel treatment planning, wildland-urban assessment, and land management plan development. However, little guidance has been provided to the field in the form of training, support, or research examples. This paper provides guidance to fire managers, planners, specialists, and analysts in the use of “models” (FARSITE, FlamMap, RERAP-Term), tools/programs (KCFast, RAWs, FireFamily Plus, WindWizard), and procedures for spatial fire analysis. The approach includes a brief discussion about models and their assumptions and limitations, historical fire and weather analysis, landscape file data acquisition and development, landscape file and model output critique, and model calibration. Copies of *Guidance on Spatial Wildland Fire Analysis: Models, Tools and Techniques*, General Technical Report RMRS-GTR-183, are available at [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr183.html](http://www.fs.fed.us/rm/pubs/rmrs_gtr183.html).

## Addressing the Wildland Fire Social Problem

Authors reviewed, annotated, and organized recent social science research and developed a framework for addressing the wildland fire social problem. They annotated articles related to three topic areas or factors, which are critical for understanding collective action, particularly in the wildland-urban interface. These factors are collaborative capacity, problem framing, and mutual trust. The integration of these is a prerequisite of collective action to develop Community Wildfire Protection Plans, reduce vegetative fuels, enhance public safety and preparedness, and/or create defensible space. Collective action requires partnerships, common goals, and a common language. Understanding the inter-relationships between the factors that enable collective action is important to collaborative partnerships, forest managers, and social science researchers as they work together to address the wildland fire social problem. *Collaborative Capacity, Problem Framing, and Mutual Trust in Addressing the Wildland Fire Social Problem: An Annotated Reading List*, General Technical Report RMRS-GTR-182, is available online at [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr182.html](http://www.fs.fed.us/rm/pubs/rmrs_gtr182.html).

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