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## What Parts of a House and Yard Landscape are Homeowners Maintaining for Wildfire Safety

**By Christine Vogt, Sarah McCaffrey and Greg Winter  
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Homeownership can be a lot of work. Interior maintenance and housekeeping; outdoor maintenance and weekly yard work—all part of the drill. The investment of time and money can be substantial depending on the size and condition of the home and acreage, or the amount of vegetation, including deciduous trees and other woody matter in a yard. Homeowners in high fire risk areas of the United States have received extra attention in recent years from government fire officials encouraging them to take action on their property to reduce the fire risk. In some areas, homeowners may no longer have a choice about the level of maintenance performed on a house and yard as fire risk is so great that ordinances have been put in place that require individual homeowners to mitigate the risk or face the possibility of fines. What do residents of the wildland urban interface think about these responsibilities? What actions are homeowners taking to reduce risks? What is motivating them?

The wildland urban interface is growing as many urban and exurban areas near state or federally managed forests expand. Homeowners select property in these areas because of the natural beauty, nearby recreation opportunities, and the higher property value that often comes with wooded lots or proximity to public land. Natural settings also come with risks—wildfire being one of the more serious. Drs. Christine Vogt, Sarah McCaffrey and Greg Winter have worked as a research team over the past five years studying interface areas where local, state, or federal fire or natural resource officials are taking on new wildfire planning or education initiatives, or continuing local mandatory programs.

Today, there are hundreds of communities starting wildfire education/mitigation programs across the United States with large concentration of effort in the West, northern Midwest, and Southeast. Vogt and her team reviewed 2004 USDA documents that listed and profiled communities that were hard at work planning for wildfire mitigation before deciding on four communities with different types of defensible space initiatives. Oakland, California was included for its long-standing, voter-approved property tax assessment for inspections and yard waste disposal; Ruidoso, New Mexico was selected for its newly created mandatory defensible space program; Larimer County Colorado was chosen for initiatives to influence newly built homes; and Grand Haven Township, Michigan was selected for an innovative extension education program targeted at homeowners along Lake Michigan where dune grasses and oaks present fire risks.



*Ruidoso, NM has recently introduced a mandatory defensible space program. Credit: Christine Vogt*

The researchers hypothesized that homeowners in the two areas with mandatory defensible space or vegetation management would have negative opinions of mandatory government interventions. Using data

from homeowner focus groups and mail surveys in 2007 and 2008, we learned from 1,800 homeowners that we were partly wrong. In the two study areas with ordinances, Oakland and Ruidoso, homeowners held strong positive attitudes toward local ordinances that require homeowners to manage their vegetation for fire safety. In Oakland, the program was paid for primarily through property taxes and in Ruidoso federal grants were incentives for homeowners to reduce the cost of services rendered. Larimer County and Grand Haven Township homeowners were, on average, neutral about the possibility of a local ordinance aimed at existing residents as well as new homes.

Some of the attitudes held by homeowners across the four areas may have been tempered by other attitudes such as the importance of a range of social-economic issues including crime, education, government finances, local economy, and health of the local environment. For homeowners in Ruidoso and Larimer County—the two areas studied that are near federal public land—wildfire was the greatest concern. The other two areas were either urban, in the case of Oakland, or suburban/exurban in the case of Grand Haven township (a mix of seasonal homes and suburban lakefront living close to Grand Rapids, Michigan) and residents in both of these areas viewed wildfire as one of several important public safety services: in Michigan the local economy was the top concern and in Oakland crime and public schools topped the list. Homeowners in all four communities rated their local fire department at the highest quality level over the overall county government services.

Homeowners other than those in Grand Haven Township believed a wildfire was somewhat likely to occur in the next five years with the MI homeowners foreseeing a less likely occurrence. A majority (or more) of homeowners in Oakland, Ruidoso, and Larimer County are doing a great deal on the vegetation front specifically for wildfire safety reasons—removing overhanging or dead branches within 10 feet of the roof, thinning trees and shrubs within 30 to 50 feet of the house, removing shrubs and lower tree branches that could carry flames from the ground into the crown, and clearing dead vegetation including leaves and needles at least 30 feet from the home. Another quarter of these homeowners responded that they maintained vegetation in their yard for reasons other than for wildfire safety—most likely aesthetics or to protect their investment in their house. The other quarter of residents indicated that these features did not describe their property or they have not done this type of maintenance yet.

Use of fire resistant materials was less common than vegetation interventions, particularly at the Michigan study site. Over one-third of the Colorado, New Mexico and California homeowner respondents had built or replaced a roof with fire resistant shingles. Closing the underside of a deck or building or replacing siding, porches or decks with fire resistant materials were less common.

Homeowners living in these four areas were motivated by different reasons. For the two areas with mandatory ordinances, not everyone expressed that defensible space actions were taken exclusively because the law required them to comply. In Oakland, 42% of the homeowners responding to the survey attributed their actions to the local law and 72% to self-directed or voluntary reasons. In Ruidoso, 29% complied for legal reasons and 64% attributed their efforts to their own desire for a more managed yard with reduced fire risks. In Ruidoso, some of the homeowners surveyed may not have lived in the mandatory areas, as the boundaries were changing as new grant money became available. Less than 10% in Oakland and Ruidoso said they really had not done any of the eleven items on the defensible space checklist. Ten percent of Ruidoso and 5% of Oakland homeowners attributed their efforts to insurance company requirements. Few homeowners in Larimer County or Grand Haven Township were motivated by ordinances or insurance companies, but Larimer County homeowners expressed the highest level of actions for voluntary reasons (81%) and only 5% indicated insurance influences.

Homeowners shared in their survey responses that they preferred to receive information from educational materials distributed by the local government, followed by presentations or a visit to a group of neighbors. Localized programs to educate and to continue to motivate homeowners might include consultations with individual homeowners or neighborhood groups to discuss appropriate landscape design. Demonstration plots near a fire station, in town or at a farmer's market can provide visible educational opportunities to "show and tell" the best ways for homeowners to redesign their yard and select and locate plants with wildfire in mind. Providing guidance on first steps or "low hanging fruit" type projects may motivate homeowners to get started with improving their safety. Another strategy is to provide suggestions on year two and three improvements so that the homeowner's time and money investments are allocated over several years. Education can also be targeted to the landscaping industry by working with local and regional landscape architecture firms and plant wholesalers and retailers so that Firewise plants and tree stock are widely available for purchase. Signs in retail stores can also help identify better Firewise choices over more flammable materials and vegetation.

Besides education programs on managing vegetation for fire safety, homeowners strongly supported disposal areas for cut vegetation and especially preferred the easier route of curbside pickup of yard waste. Homeowners with mandatory vegetation management ordinances, that is Oakland and Ruidoso residents, were most supportive of local ordinances that required this level of management, and they were supportive of programs that helped lower-income households.

Overall, homeowners were keen on the topic of wildfire and their role and responsibility as a homeowner. This research shows that WUI homeowners living in communities with various approaches to managing wildfire risks are cognizant of wildfire risks and are doing something about it – either as individual homeowners or possibly a neighborhood association. Homeowners across three of the four study areas performed high levels of vegetation management, mostly for wildfire reduction risk, but also coupled with general landscaping reasons or from legal requirements. During focus groups or neighborhood visits at study locations, homeowners shared with us their personal experiences of learning about living in the wildland urban interface. Either in the home purchase decision or after moving in and taking on house and yard projects, they realized that there was a safer way to live near fire prone ecosystems. Our research shows localized programs are educating and motivating homeowners to take action and that mandatory programs are well accepted in communities that have them, however, as vegetation grows and new neighbors move in, the job is never done.

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