

Living With Wildfire in Telluride Fire Protection District, Colorado

James R. Meldrum, Lilia C. Falk, Jamie Gomez, Christopher M. Barth, Hannah Brenkert-Smith, Travis Warziniack, and Patricia A. Champ

Abstract

Residents in the wildland-urban interface can play an important role in reducing wildfires' negative effects by performing wildfire risk mitigation on their properties. This report offers insight into the wildfire risk mitigation activities and related considerations such as attitudes, experiences, and concern about wildfire, for residents of the Telluride Fire Protection District of San Miguel County, Colorado. Data come from a social survey and parcel-level rapid wildfire risk assessments administered by the West Region Wildfire Council. Results are presented both in graphical form and as detailed summary statistics (in appendices). As we recognize that results from similar surveys and assessments in other communities might differ, these linked datasets contribute to a broader effort to understand decisions about wildfire risk mitigation on private property. Results can facilitate long-term monitoring, management, and educational practices concerning the mitigation of wildfire risk in wildland-urban interface communities.

Keywords: wildland-urban interface, wildfire, community, Colorado, risk, wildfire research

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INTRODUCTION

Residents in the wildland-urban interface (WUI) can play an important role in reducing wildfires' negative effects by performing wildfire risk mitigation on their properties. "Wildfire risk mitigation" refers to activities that reduce the chances and/or potential consequences of a wildfire, including damage to or destruction of a home. These activities need to be performed before a wildfire occurs. Decisions about wildfire risk mitigation are complex and can be influenced by many factors, including residents' attitudes, experiences, knowledge, and concern about wildfire. They also can be influenced by people's access to information and other resources.

This report offers insight into the wildfire risk mitigation activities and related characteristics for people with homes in the Telluride Fire Protection District (FPD) of San Miguel County, Colorado. This information can facilitate long-term monitoring, management, and educational practices concerning the mitigation of wildfire risk in WUI communities. The information comes from a social survey and parcel-level rapid wildfire risk assessments administered by the West Region Wildfire Council (WRWC) as part of its mission to encourage wildfire risk mitigation on private property.

These linked datasets contribute to a broader effort to better understand residents' decisions about wildfire risk mitigation on private property. Although this research is ongoing, preliminary findings show that WUI communities are diverse with respect to residents' notions of wildfire. Accordingly, this report provides information specific to the Telluride FPD. Results from similar surveys and assessments in other communities might differ, even if those communities are close to the Telluride FPD.

This report also summarizes the study design, which is similar to that used to collect data in other WUI communities near San Miguel County (Meldrum and others 2013, 2015). The data collection approach described in this report could be used in diverse WUI communities in other parts of the United States. This report highlights the type of information such data collection efforts can provide. It also provides a foundation for research investigations based on these and related data.

HOW WERE THE WILDFIRE RISK AND SOCIAL DATA COLLECTED?

The Bureau of Land Management (BLM) Southwest District Fire Management program and the WRWC work to encourage residents of western Colorado to mitigate wildfire risk on their properties. As part of this effort, WRWC conducts rapid wildfire risk assessments and household surveys for all properties with a residential structure of 800 square feet or larger in targeted communities.

Study Location: Telluride FPD, San Miguel County, Colorado

San Miguel County covers 1,289 square miles of southwestern Colorado within the area in which WRWC works. This report presents data for residential parcels in and near Telluride FPD, one of three FPDs in San Miguel County. Telluride FPD spans approximately 390 square miles of private and Federal property and includes the historic town of Telluride, the town of Mountain Village, multiple bedroom communities, and the Telluride Ski Resort. Figure 1 shows the location of assessed properties.

According to a 1999 statewide wildfire assessment, San Miguel County sees frequent summertime lightning storms and high recreational use, both posing significant ignition risks. Twenty-one percent of the county is classified as moderate to high wildfire hazard. The county has experienced rapid

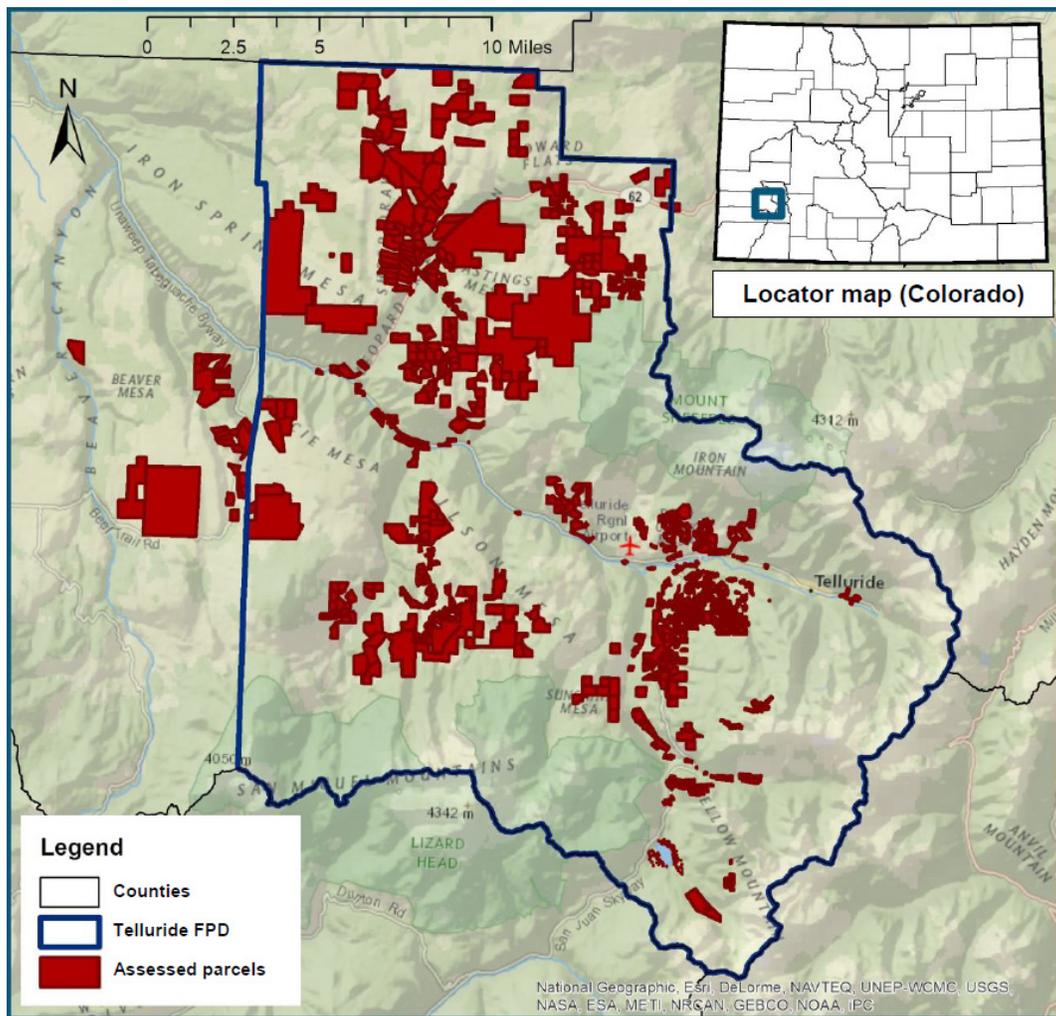


Figure 1—Map showing the location of assessed properties.

population growth since 1990 and, according to the San Miguel County Community Wildfire Protection Plan (CWPP), the county is “extremely concerned about wildfires and has initiated aggressive efforts to inform property owners of the risks, and what they can do to mitigate impacts” (Anchor Point Group 2009, p. 13). Of 30 WUI communities identified in the countywide CWPP, 15 reside within the Telluride FPD.

Rapid Wildfire Risk Assessment

WRWC assessed residential parcels in Telluride FPD in the summer of 2014 with a rapid wildfire risk assessment. The assessment is based on the Home Ignition Zone concept (Cohen 2000) and has been developed collaboratively by the BLM and WRWC over a series of implementations. The tool also is informed by approaches used in other Colorado WUI communities (e.g., Colorado Springs and Boulder County) to develop parcel-level wildfire risk assessments.

Risk is commonly defined as “the combination of the probability of an event and its negative consequences” (<https://www.unisdr.org/we/inform/terminology>). This assessment addresses the risk of wildfire to the home in that it assesses both the chance that a wildfire in the area will reach the home and the chance of negative consequences to the home if that occurs. Specifically, a wildfire specialist

assessed parcels for 11 characteristics. Some of these characteristics relate to potential wildfire behavior; they reflect the likelihood that a wildfire in the area of the community will reach that particular home. Other characteristics relate to the structure's wildfire-survivability as well as response considerations, such as firefighter access and safety. Based on these 11 characteristics, each parcel was assigned an overall wildfire risk rating. This rating reflects a property's risk relative to the overall level of risk within its community rather than an absolute risk rating. A complete copy of the rapid wildfire risk assessment tool is provided in Appendix A, and more details are available in the FPD-specific CWPPs, posted at www.cowildfire.org.

The wildfire specialist assessed properties onsite when permission was granted (approximately 40 percent of properties) and from the roadside otherwise (60 percent). The WRWC sought permission to enter properties through numerous requests, including direct mailing invitations to public meetings, mailed postcards, a newspaper ad, and posted flyers. Roadside assessment was supplemented with information from the San Miguel County Assessor's website and publicly accessible aerial and satellite imagery. This combination of sources was able to overcome most access limitations at the level of detail demanded by the rapid assessment. For the two attributes not always readily observed by alternative methods (decking materials and the distance to other combustibles), the wildfire specialist assigned the highest risk category when not observable. This default could bias the rapid assessment toward higher levels of risk in relevant categories; however, as discussed below, comparison with survey results demonstrates no bias in these two categories.

Between June 7 and July 24, 2014, WRWC assessed all 1,928 primary residential structures in the Telluride FPD. This dataset includes structures not identified in County Assessor records but discovered only through on-the-ground analysis of the district. All data reported below and used in subsequent research reflect the state of the property at the time of original rapid assessment, unless otherwise noted. In contrast, assessment results maintained by WRWC in support of programmatic objectives can change if a homeowner completes mitigation actions such as maintenance (e.g., grass mowing and needle clearing), moving combustible materials (e.g., porch furniture and propane grills), or retrofitting the home (e.g., installing fire-resistant roofing or decking).

Resident Survey

The WRWC also conducted a survey of residents of all properties in the Telluride FPD, as identified by County Assessor records. The survey contained seven sections designed to collect information about respondents' housing situation, experience with wildfire, knowledge of wildfire risk, attitudes about wildfire, social interactions, information sources, incentives and barriers toward undertaking mitigation actions, risk attitudes, and demographic characteristics. The survey also asked residents to assess their property based on the same 11 wildfire risk attributes as those assessed by the wildfire specialist, as previously described. A copy of the complete survey instrument can be found in Appendix B, along with descriptive statistics of responses for all questions.

Residents were mailed a letter inviting them to attend a public meeting about the rapid assessment and survey on June 12, 2014; addresses returned as undeliverable were removed from the original mailing list. On August 18, 2014, remaining residents were mailed a letter inviting them to take the survey by returning the enclosed paper copy in the postage-paid envelope. Those who did not respond were sent another copy of the survey on September 22, 2014. To further encourage survey participation, a postcard was mailed to non-respondents on October 17, 2014. The fourth and

final reminder was mailed in postcard form on January 23, 2015. This postcard reminded non-respondents to return their survey and also invited them to take the survey online using an individual identification code.

WHO RESPONDED TO THE SURVEY?

Letters inviting residents of the Telluride FPD to participate in the social survey were sent to 1,775 households with mailing addresses in County Assessor records. (County Assessor records did not perfectly match the results of on-the-ground assessment, leading to different numbers for household surveys mailed and rapid assessments completed. Data collection efforts allowed rapid assessments to match actual conditions.) Seventy-three of the invitation letters were returned as not deliverable. Fifteen percent of responding households (104) completed the survey online, including 58 households who manually entered an address in the study area that had not been sent an invitation letter. Overall, 713 residents responded to the survey for a response rate of approximately 41 percent ($= 713/[1775-73+58]$). Precise estimation of the response rate is not possible because a complete list of mailing addresses does not exist, and related outreach efforts encouraging survey participation (i.e., newspaper advertisement, Facebook posts, and message via the CodeRed system) were targeted to all area residents, including those not included in the list of mailing addresses.

The vast majority of respondents own their residence (97 percent). Very few live in a mobile home (1 percent), and more than one-half indicate living there less than year-round (57 percent). Typical respondents have lived in their current residence for about 12 years (median move-in year is 2002) and expect to stay there for at least 5 more years (15 percent expect to move within 5 years). Move-in dates suggest that many did not build their own homes, because the median year in which respondents' homes were built was 1996.

The targeted population (i.e., residents of Telluride FPD) expands beyond the town of Telluride (843 households) yet is a subset of San Miguel County overall (3,330 households) and is not intended to be representative of the county as a whole. With a reported 85 percent completing at least a college education, respondents' education levels are higher than the 59 percent with a bachelor's degree or higher reported by Census data for the town of Telluride (U.S. Census Bureau 2014). About two-fifths (39 percent) of respondents indicate having completed an advanced degree. The median reported household income is between \$100,000 and \$150,000, higher than the Census-reported median income for Telluride town households (\$61,875) or for households countywide (\$59,490). Relative to survey data from nearby communities, respondents from Telluride FPD tend to be younger, more highly educated, wealthier, and less likely to be retired. In addition, Telluride FPD respondents are much more likely to be part-year residents.

WHAT DO RESIDENTS THINK ABOUT WILDFIRE?

Residents' notions of wildfire, including their levels of awareness and concern, amount of direct or indirect experience with wildfire, and attitudes toward wildfire suppression, may influence their willingness to address wildfire risk. Similarly, because insurance is intended to protect against financial losses due to property damage, it is possible that homeowners insurance, and the companies that administer it, play a relevant role in residents' perspectives on wildfire risk. This section presents survey results that address these concepts.

Figure 2 depicts respondents' awareness, concern, and experience with wildfire. In general, few respondents have first-hand experience with wildfire but most report being aware of wildfire risk. Figure 3 shows agreement with attitudes toward wildfire and wildfire suppression. As shown, residents tend to think that wildfires are a natural part of the balance of a healthy ecosystem, but they also think that wildfires should be put out if they threaten human lives or property. Figure 4 depicts information reported regarding homeowners insurance and wildfire. The majority of respondents are not aware of any effect of wildfire risk on their insurance.

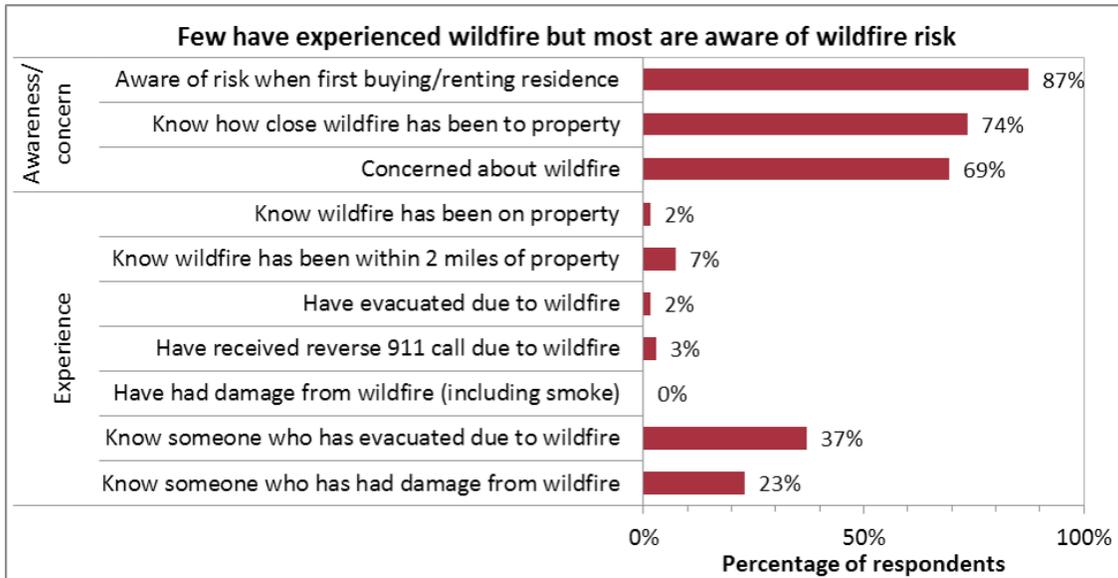


Figure 2—Respondent awareness, concern, and experience about wildfires.

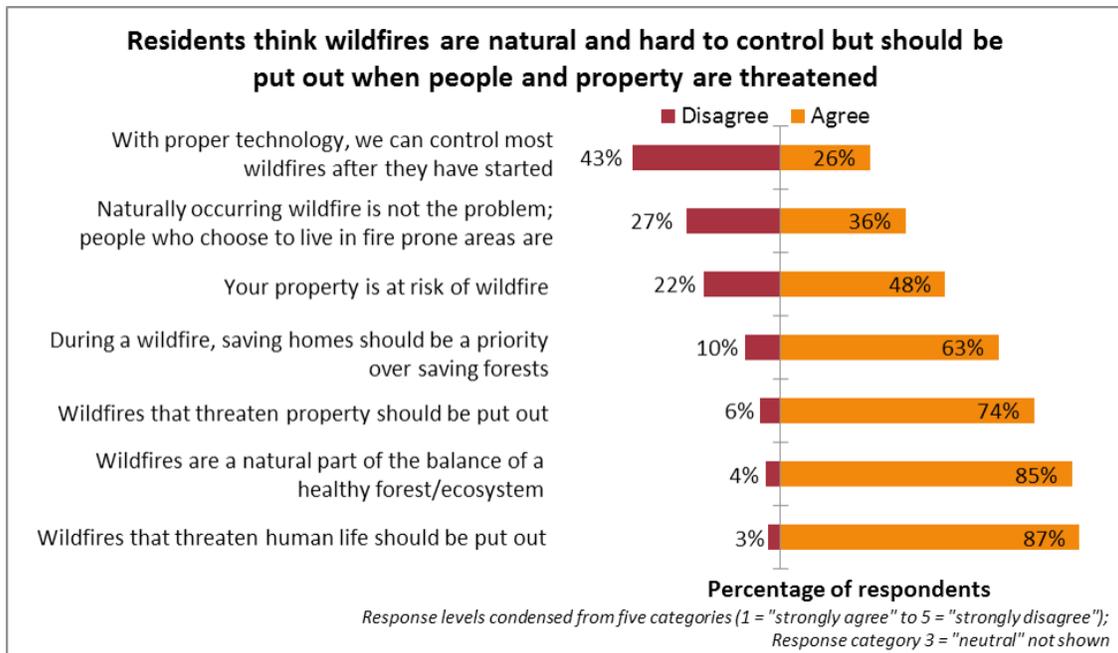


Figure 3—Respondent attitudes toward wildfire and wildfire suppression.

HOW DO RESIDENTS CHARACTERIZE RISK?

It is often suggested that risk perceptions play an important role in residents' decisions about whether and how to mitigate wildfire risk, but there are many ways to think about risk. Results covered in this section pertain to different aspects of how residents understand and think about risk. Figure 5 shows respondents' willingness to take different types of risks, demonstrating that risk attitudes vary across different risk domains or types of risks. Figure 6 depicts sources from which respondents report receiving information about wildfire risks. As shown, no source of information is noted by more than half of the respondents, but residents are more likely to receive information from local or regional sources than others. Figure 7 depicts respondents' perceptions of wildfire risks on their properties. It shows that although residents generally think wildfire on their property is not very likely, they vary widely in their estimates on how likely it is that their home would survive if wildfire does reach their property. Finally, figure 8 shows that respondents have a variety of expectations of outcomes that would occur if a wildfire does reach their property.

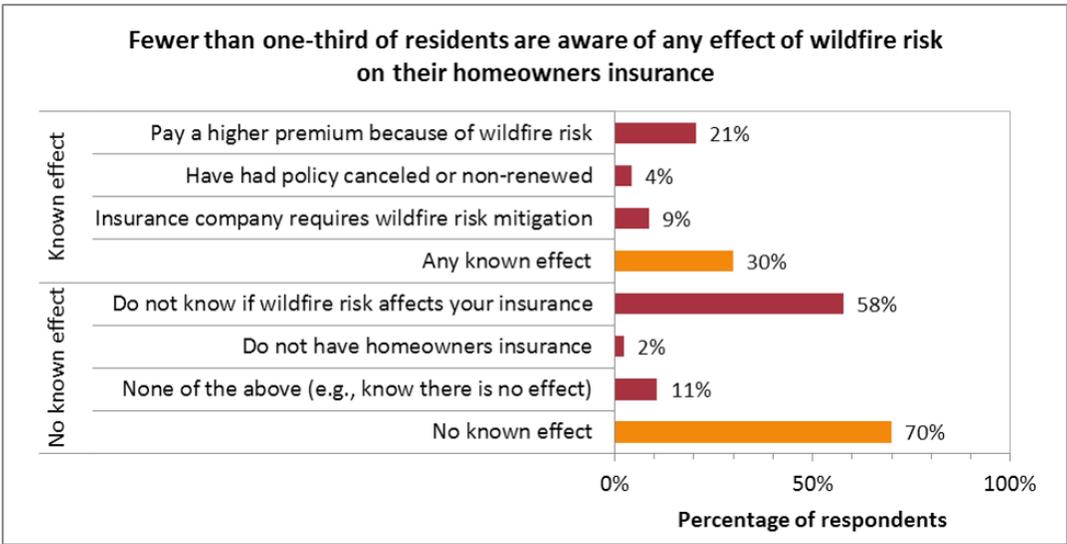


Figure 4—Respondent awareness of effect of wildfire risk on homeowners insurance.

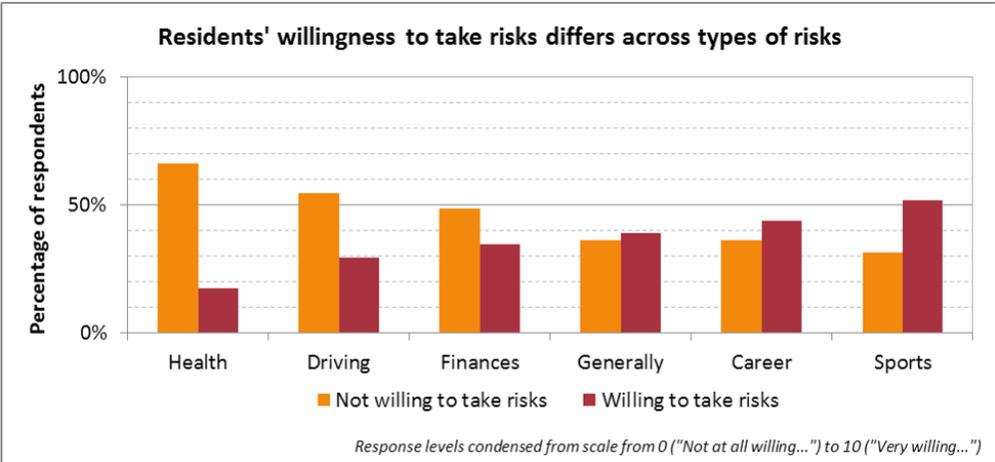


Figure 5—Respondent willingness to take different types of risks.

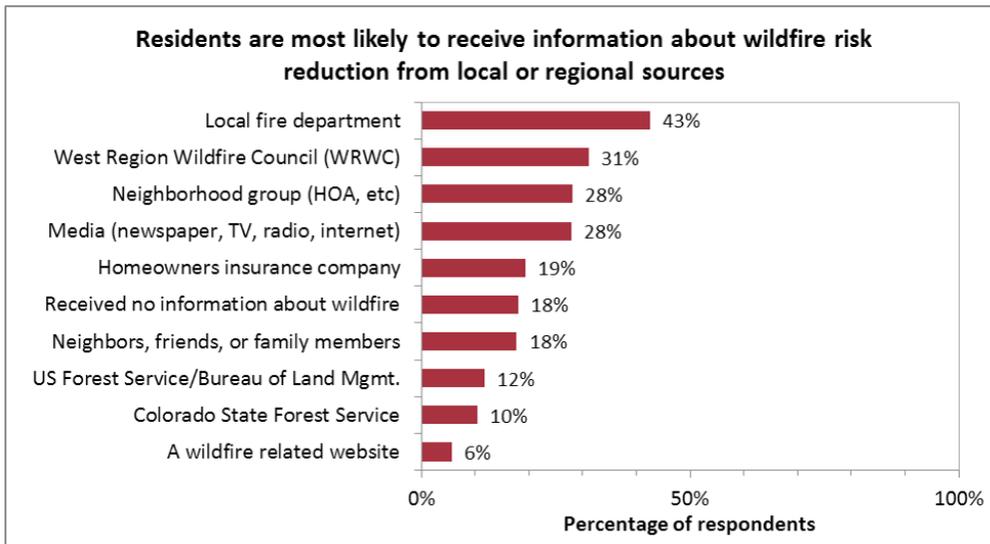


Figure 6—Respondent sources of information about wildfire risks.

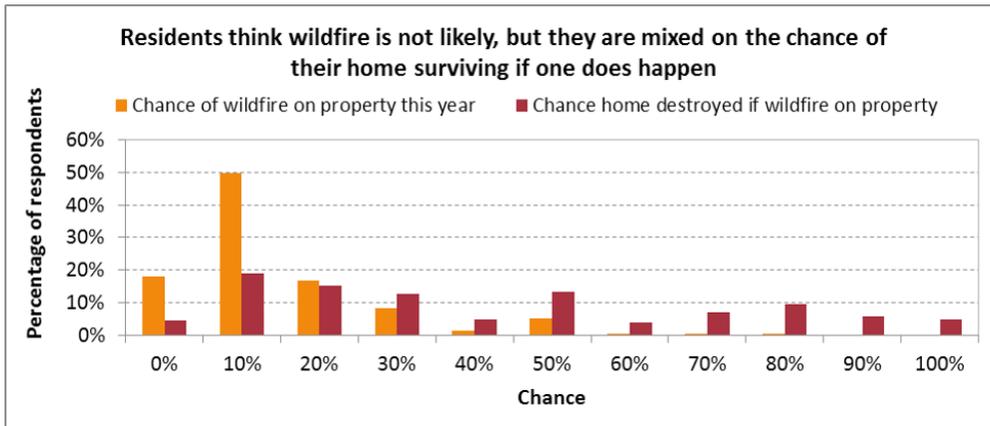


Figure 7—Respondent perceptions of wildfire risks.

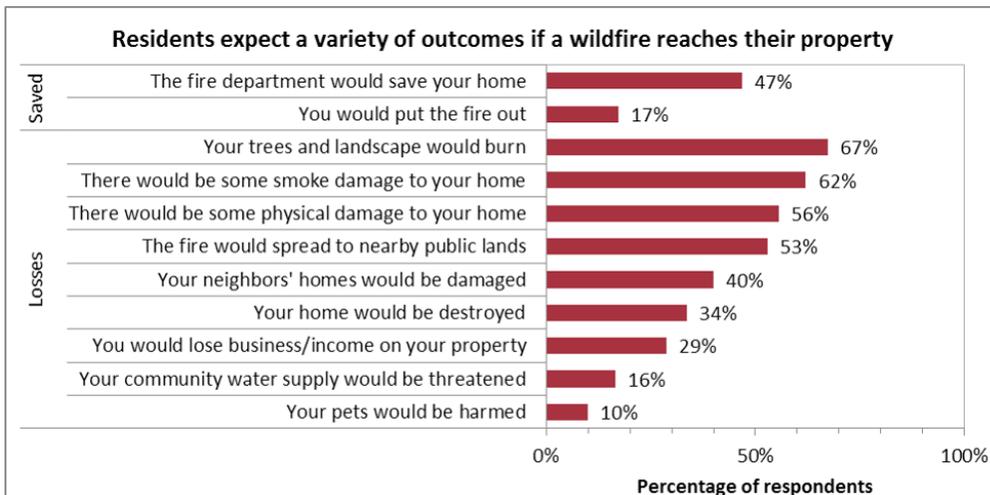


Figure 8—Respondent expectations of outcomes of a wildfire on their property.

RAPID ASSESSMENT VERSUS SURVEY RESPONSES FOR PROPERTY HAZARDS

The charts in this section compare the results of the professional’s rapid assessments against survey responses for the set of 11 property characteristics, as well as for the overall risk rating based on these characteristics. We describe these characteristics as “risk factors” because they influence one or both aspects of wildfire risk to a home: the likelihood of a wildfire reaching the property or the negative consequences to the home of that happening. Properties without survey responses are not included here, but their results follow similar distributions.

Background Risk Factors

Although the rapid wildfire risk assessment focused primarily on property characteristics that residents can change, a property’s overall wildfire risk is also influenced by background risk factors—basic characteristics that affect potential wildfire behavior. All assessed properties reside in communities deemed at risk of wildfire; background risk factors relate to the chance that a wildfire in the area would reach the property and to the characteristics of that wildfire, if it occurs. These factors include the distance to dangerous topography (e.g., ridges, canyons), the predominant types of background fuel in the neighborhood of the property, and the overall slope of the property. As shown in figure 9, the highest assessed background risk factor is the density of the vegetative fuels in the neighborhood, but many residents see the fuel as quite a bit less dense than the professional does. Residents are more likely to describe their property as having a steep slope than the professional, but both the professional and residents see a variety of slopes and distances to dangerous topography.

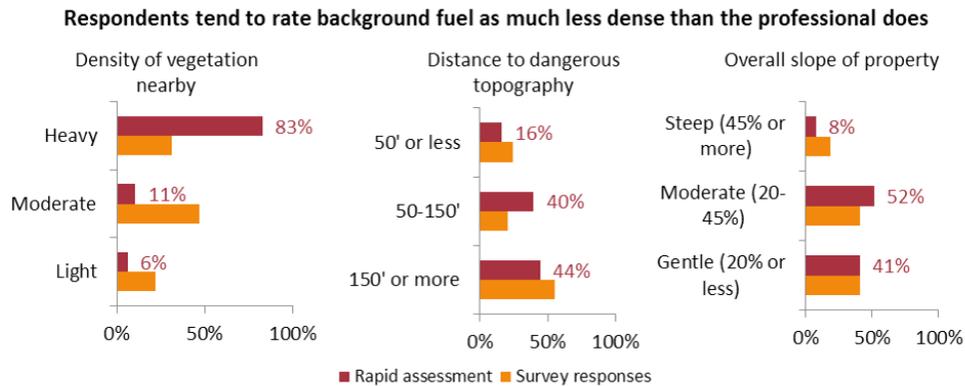


Figure 9—Professional assessment results and survey responses for background risk factors.

Structural Risk Factors

Not all homes are built the same. The materials, design, and construction assembly of a home all play a role in that home’s likelihood of surviving a wildfire if it reaches the property. As shown in figure 10, many properties have structural characteristics that increase the likelihood of negative consequences in the event of a wildfire on the property. Combustible building materials are very common in this area, whether for exterior siding, porches and decks, attached fences, or even roofs. Residents and the professional rate these factors similarly in most cases, except that the professional sees combustible siding as more common than residents do. Notably, deck material ratings are very similar between the survey

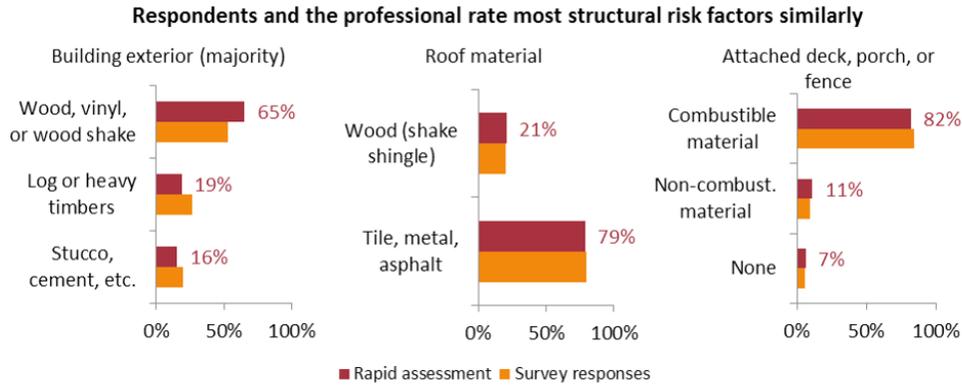


Figure 10—Professional assessment results and survey responses for structural risk factors.

and the rapid assessment, despite this being one of two categories for which the professional defaulted to the highest category when not visible, suggesting no significant bias from limitations to observability.

Access Risk Factors

The risk of wildfire to a home is influenced by the ability for emergency responders to identify and safely access the property. Although not an explicit focus of the rapid assessment, access issues also influence the ability for residents to evacuate during a wildfire. As shown in figure 11, many properties have access issues, including most having only one access road and many driveways being narrower than 20 feet wide. Respondents generally rate these factors similarly to how the professional did, with the exception of the address, which respondents were more likely than the professional to report as not visible from the road.

Defensible Space Risk Factors

Vegetation and other combustibles near the home affect defensible space. As shown in figure 12, the professional notes that a majority of properties have less than 30 feet between the structure and overgrown, dense, or unmaintained vegetation, with 1 in 3 properties having only 10 feet or less. About 1 in 3 properties have other combustible items, including propane tanks, firewood, trash, or flashy vegetation, within 30 feet of the house. Many residents see these factors differently from the professional, with residents tending to rate themselves as having more defensible space than the professional does. In contrast, residents were more likely than the professional to rate distance to other combustibles as the

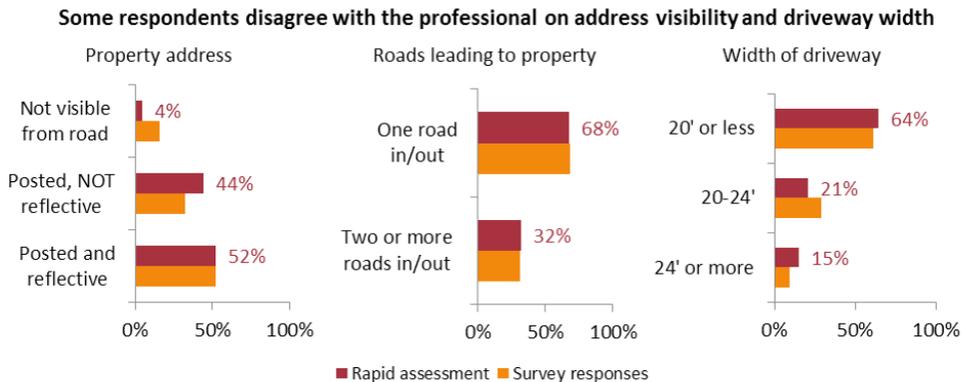


Figure 11—Professional assessment results and survey responses for access risk factors.

Many residents rate themselves as having more defensible space than the professional does

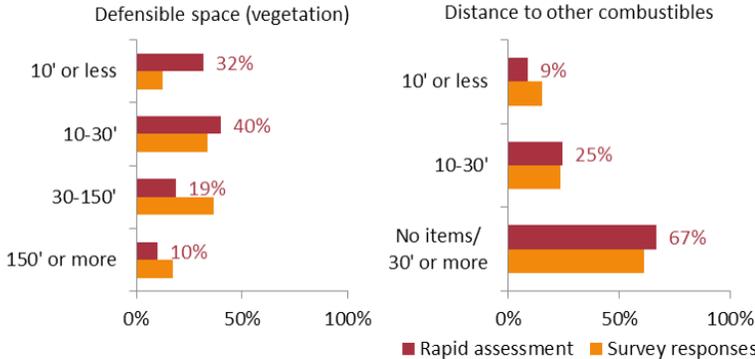


Figure 12—Professional assessment results and survey responses for defensible space risk factors.

highest risk category (10 feet or less). Notably, this result stands despite the professional defaulting to the highest risk rating for this category when visibility from public roadways was blocked.

Rapid Wildfire Risk Assessment Overall Rating

The overall rating from the professional’s rapid wildfire risk assessment is a categorized result of the weighted sum of the 11 factors listed above, with the weights corresponding to the point values shown in Appendix A for each factor. Similarly, respondents were instructed that “homes are assessed for overall wildfire risk based on the items asked about in questions 3.1–3.11 above” and asked, “Now that you have considered these items, how would you rate your current residence’s wildfire risk?” Figure 13 demonstrates that the distribution of overall risk ratings from the professional’s rapid assessment does not match the distribution of the overall risk ratings from the household survey; respondents tend to rate their overall risk lower on the adjective rating scale than the professional does on the same scale. Specifically, more than half of respondents rated their home as being at “moderate” risk, whereas the most common rating assigned by the professional was “very high.” For further insight, figure 14 depicts survey respondents’ estimates of the chance of a wildfire on their property this year and the chance their home would be destroyed if that happens, grouped by the overall risk rating they assign their own home. It suggests that respondents typically considered both the probability of a wildfire on

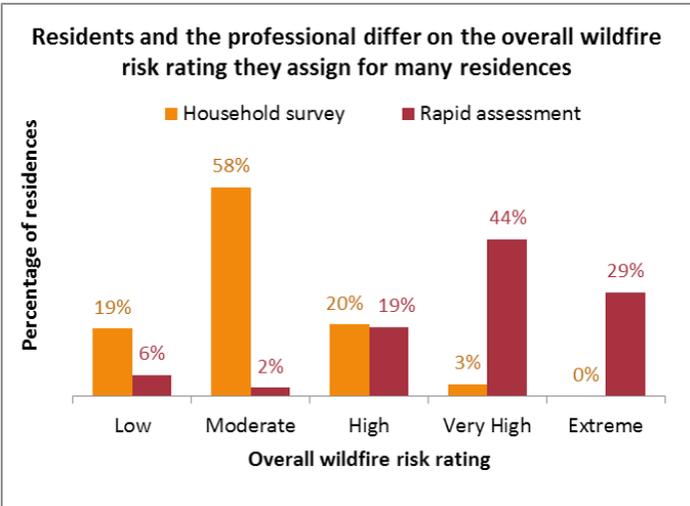


Figure 13—Comparison of overall risk ratings assigned by professional and respondents.

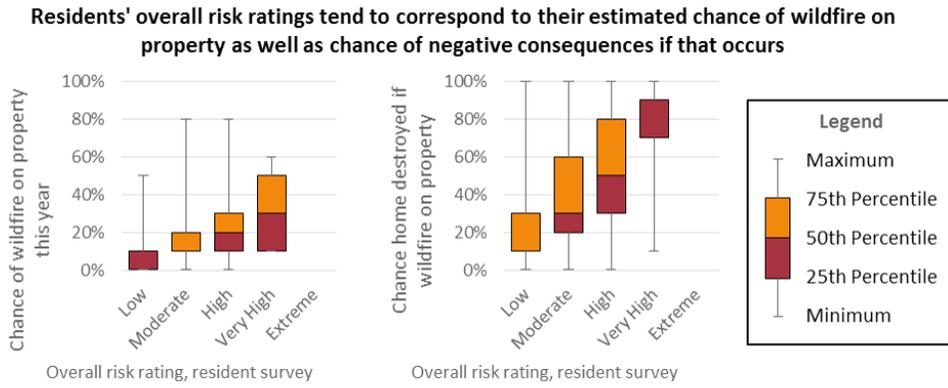


Figure 14—Respondent perceptions of wildfire risks grouped by self-assessed overall risk rating.

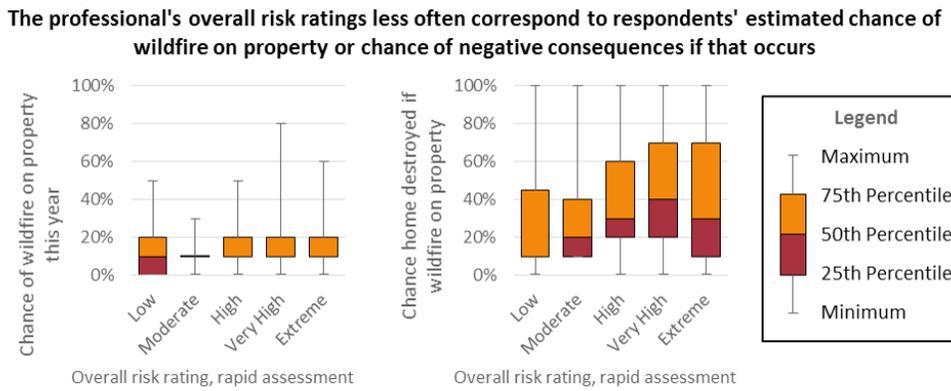


Figure 15—Respondent perceptions of wildfire risks grouped by professional's overall risk rating.

their property and consequences if that occurred when determining their home's overall risk rating. However, figure 15 shows the same except grouped by the professional's overall risk rating. This grouping demonstrates that the professional's overall risk rating is strongly related to neither residents' typical estimates of the probability of wildfire on their property nor the negative consequences if that occurs.

WHAT DO RESIDENTS THINK ABOUT WILDFIRE RISK MITIGATION?

This section shows survey results pertaining to different aspects of wildfire risk mitigation and residents' decisions about whether to undertake it. Vegetation density can be thought of as one outcome of wildfire risk mitigation, which includes clearing vegetation around structures and thinning trees and brush on the property more generally. Figure 16 depicts the perceived vegetation density on respondents' properties and that of their neighbors. As shown, most residents perceive no change in vegetation density over time. A small proportion report that vegetation is less dense now versus upon move-in for their own (26 percent) or for their neighboring (16 percent) properties. Figure 17 shows reported interactions with neighbors and perceptions of neighbors' actions related to wildfire risk mitigation. Although a majority have not, many residents report having interacted with their neighbors about wildfire risk, including 38 percent who have worked together to reduce wildfire risk on one or both of their properties. Figures 18 and 19 depict respondents' agreement with possible reasons for not taking action to reduce wildfire risk on their properties, and figures 20 and 21 depict survey results regarding incentives that would encourage residents to reduce their wildfire risk.

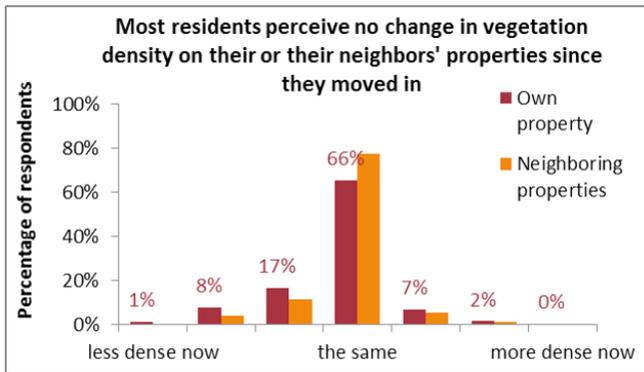


Figure 16—Perceived vegetation density on respondents' properties and that of their neighbors.

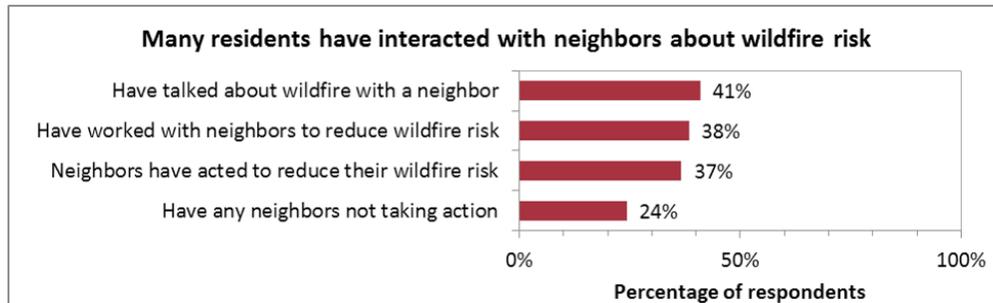


Figure 17—Respondent interactions with neighbors about wildfire risk.

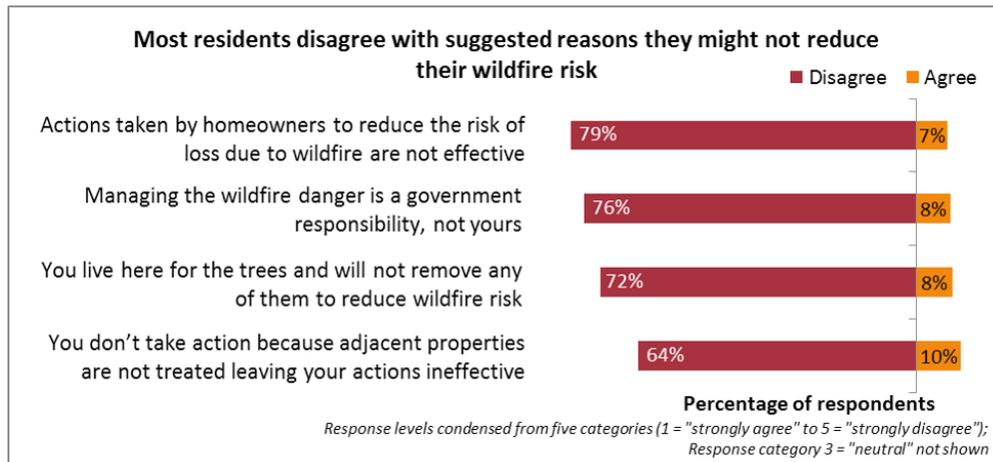


Figure 18—Respondent agreement with general reasons for not taking action to reduce wildfire risk.

Specifically, figure 18 shows that most respondents disagree with commonly suggested reasons why they might not reduce their wildfire risk, including believing mitigation to be ineffective or being unwilling to remove trees. Figure 19 shows that although no individual barrier was reported by more than half of the respondents, lack of specific information was most often noted. Similarly, figure 20 shows that more than two-thirds of respondents report that more specific information about what to do on their property to reduce wildfire risk would encourage them to take action, with fewer respondents interested in physical or financial assistance for doing the work. Finally, figure 21 shows that most respondents would take part in a cost share incentive for removing vegetation to reduce their wildfire risk, with more than half of respondents willing to participate if the cost share program paid \$500 out of \$1,000 per acre costs.

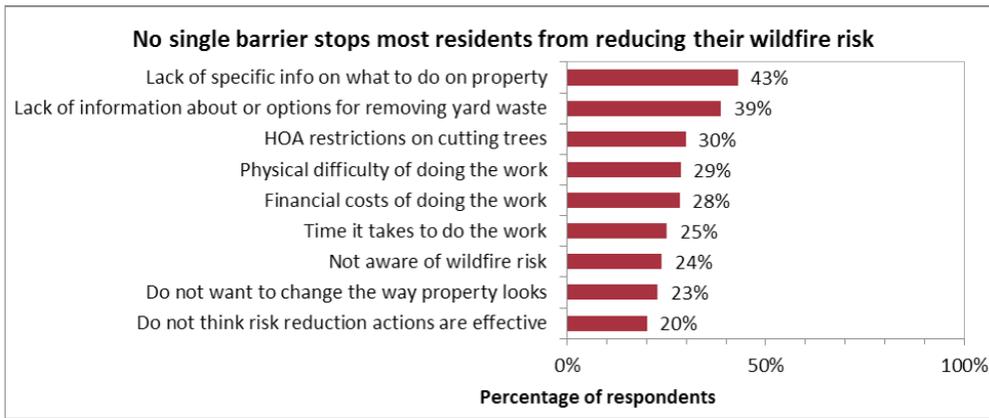


Figure 19—Specific barriers stopping respondents from taking action to reduce wildfire risk on their property.

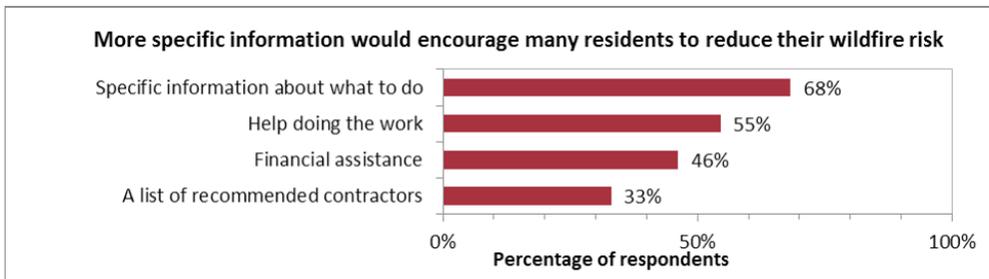


Figure 20—Items that would encourage respondents to take action to reduce wildfire risk on their property.

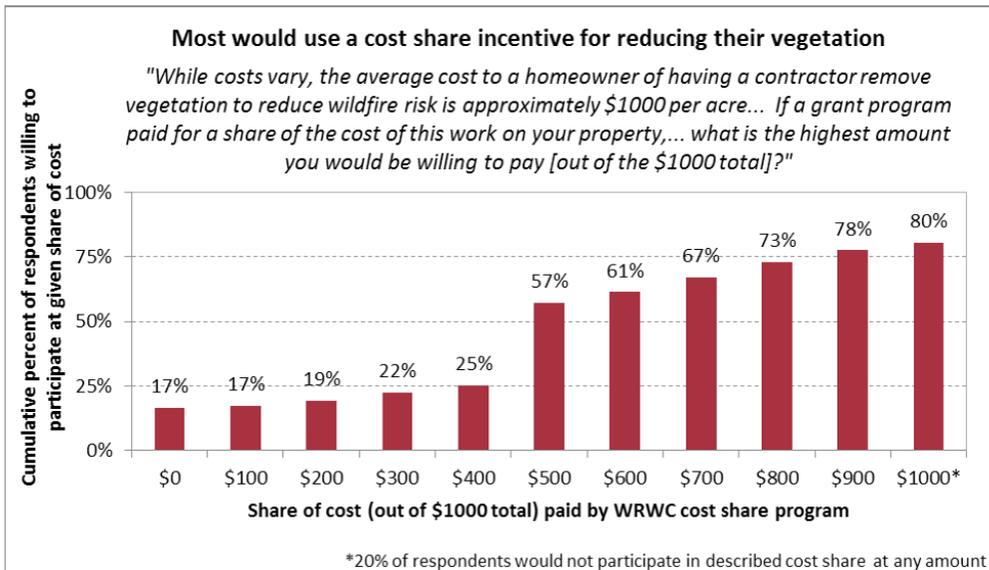


Figure 21—Respondents' willingness to participate in different levels of cost share incentives for reducing the vegetation on their property.

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APPENDIX A—WRWC’S RAPID WILDFIRE RISK ASSESSMENT TOOL SHOWING CATEGORIES, RATINGS, AND ASSOCIATED POINT VALUES.

WRWC's Rapid Wildfire Risk Assessment Tool

ACCESS

Structure address posted at driveway entrance?

Rating	Points
Posted and reflective	0
Posted, NOT reflective	5
Not Visible from road	15

Ingress and egress

Rating	Points
Two or more roads in/out	0
One road in/out	10

Width of driveway

Rating	Points
Greater than 24 feet wide	0
Between 20-24 feet wide	5
Less than 20 feet wide	10

STRUCTURE

Roofing material

Rating	Points
Tile, metal, asphalt	0
Wood (shake shingle)	200

Building exterior

Rating	Points
Non-combustible siding (stucco,	0
Log, heavy timbers	20
Wood, vinyl, or wood shake	60

Location of woodpiles and combustibles (light flashy veg., shrubs, trees, trash)

Rating	Points
None or > 30 ft from structure	0
10-30 feet from structure	10
< 10 feet from structure	30

Balcony, deck, or porch

Rating	Points
None	0
Non-Combustible Deck/Fence attached to Structure	20
Combustible Deck/Fence attached to Structure	50

OVERALL RISK RATING	
Point Range	Rating
25-150	LOW
151-175	MODERATE
176-270	HIGH
271-365	VERY HIGH
366-665	EXTREME

VEGETATION & TOPOGRAPHY

Slope

Rating	Points
Less than 20%	0
Between 20% and 45%	20
Greater than 45%	40

Distance to dangerous topography

Rating	Points
More than 150 feet	0
50-150 feet	30
Less than 50 feet	75

Predominant background fuel type in neighborhood

Rating	Points
Light (grasses, forbs, tundra)	25
Moderate (light brush, small trees)	50
Heavy (dense brush or timber, down and dead fuel)	75

Defensible space (CSFS 6.302 Standards)

Rating	Points
More than 150 feet	0
30-150 feet	50
10-30 feet	75
Less than 10 feet	100

APPENDIX B—SURVEY INSTRUMENT WITH DESCRIPTIVE STATISTICS FOR RESPONSES TO EACH QUESTION.

Living with Wildfire in San Miguel County



www.COwildfire.org

(n=713; 85% paper responses, 15% online responses)

Key: **Red ALL CAPS** are variable names

n = number of observations

Blue numbers are percent responses (might not total 100% due to rounding)

Based on all data collected through August 31, 2015

What is the West Region Wildfire Council?

The West Region Wildfire Council (WRWC) promotes wildfire preparedness, prevention and mitigation education across Delta, Gunnison, Hinsdale, Montrose, Ouray and San Miguel Counties. The WRWC's mission is to mitigate loss due to wildfire in wildland urban interface communities while fostering interagency partnerships to help prepare counties, fire protection districts, communities and agencies to plan for and mitigate potential threats from wildfire. WRWC members represent private citizens, local, county, state, and federal agencies with an interest in, and a commitment to addressing wildfire risk across the region. Members work with homeowners, fire districts, and counties to develop Community Wildfire Protection Plans in the region. The WRWC provides communities with education about wildfire risk and assistance with implementing steps to reduce wildfire risk through fuels reduction projects and the creation of defensible space.

Project Description and Disclosures

This research study explores how residents and owners of property in San Miguel County respond to wildfire risk. Participation in this study is entirely your choice. There is no cost for participation in this study. You will not be paid for participation in this study. We will maintain the privacy of your data.

Section 1: In this first section of the survey, we ask about your residence in San Miguel County, CO. If you own multiple homes in San Miguel County, please answer the following questions with respect to your residence within the **Telluride Fire Protection District**. We refer to this home as your *current residence*.

OWNRENT (n=710)

- 1.1 Do you own or rent your current residence? *(Circle one number)*
- | | | |
|-----|---|------|
| 97% | 0 | Own |
| 3% | 1 | Rent |

HOMETYPE (n=708)

- 1.2 How would you describe your current residence? *(Circle one number)*
- | | | |
|-----|---|---|
| 1% | 0 | Mobile home or trailer |
| 91% | 1 | Single-family home |
| 9% | 2 | Multi-family dwelling (e.g., townhouse, condo, apartment) |

MONTHS (n=691)

- 1.3 How many months per year do you live at your current residence? *(Fill in the blank)*
 MEAN = 7 months; MEDIAN = 7 months

FULLTIME (n=685)

- 1.4 In what year did you move to your current residence? *(Fill in the blank)*
 MEAN = 2001; MEDIAN = 2002

YRBUILD (n=677)

- 1.5 In what year was your current residence originally built? *(Fill in the blank)*
 MEAN = 1992; MEDIAN = 1996

MOVE1 (n=699)

- 1.6 Do you expect to move away and/or sell your current residence in the next five years?
(Circle one number)
- | | | |
|-----|---|-----|
| 85% | 0 | No |
| 15% | 1 | Yes |

RISKAWAR (n=710)

- 1.7 How aware of wildfire risk were you when you bought or decided to rent your current residence? *(Circle one number)*
- | | | |
|-----|---|----------------|
| 11% | 0 | Not aware |
| 46% | 1 | Somewhat aware |
| 41% | 2 | Very aware |
| 2% | 3 | Don't remember |

RISKRATE2 (n=707)

1.8	How would you rate your current residence's wildfire risk? (<i>Circle one number</i>)	
21%	0	Low Risk
60%	1	Moderate Risk
16%	2	High Risk
2%	3	Very High Risk
0.3%	4	Extreme Risk

CONCERNED (n=699)

1.9	Are you concerned about wildfire affecting your current residence? (<i>Circle one number</i>)	
31%	0	No
69%	1	Yes

Section 2: In this section, we ask about your experience, if any, with wildfire.

FIRE (n=707)

2.1	What is the closest distance (as a crow flies) a wildfire has come your current residence? (<i>Circle one number</i>)	
2%	0	There has been a wildfire on your property
6%	1	Less than 2 miles away but not on your property
22%	2	2 to 10 miles away
44%	3	More than 10 miles away
26%	4	Not sure

DAMAGE (n=707)

2.2	Has your current residence ever been damaged by a wildfire or smoke from a wildfire? (<i>Circle one number</i>)	
100%	0	No
0%	1	Yes, your current residence suffered only smoke damage
0%	2	Yes, your current residence suffered fire and smoke damage

EVACPLAN (n=706)

2.3	Do you currently have an evacuation plan for your household in the event a wildfire threatens your current residence? (<i>Circle one number</i>)	
54%	0	No
46%	1	Yes

REVERSECALL (n=705)

2.4	Have you ever received a reverse 911 call to evacuate or prepare to evacuate your current residence due to wildfire? (<i>Circle one number</i>)	
97%	0	No
3%	1	Yes

EVACUATED (n=708)

2.5 Have you ever evacuated from your current residence due to a wildfire or threat of a wildfire? *(Circle one number)*

98% 0 No
2% 1 Yes

PREVRISK (n=705)

2.6 Have you ever owned a home (in Colorado or elsewhere), other than your current residence, that was located in an area at risk of wildfire? *(Circle one number)*

77% 0 No
23% 1 Yes

KNOWEVAC (n=706)

2.7 Do you know anyone (in Colorado or elsewhere) who has been evacuated from his or her home due to a wildfire? *(Circle one number)*

63% 0 No
37% 1 Yes

KNOWDAM (n=705)

2.8 Do you know anyone whose home has been damaged or lost due to a wildfire? *(Circle one number)*

77% 0 No
23% 1 Yes

2.9 Which of the following statements are true regarding homeowners insurance for your current residence? *(Circle all that apply)*

(n=703) 1 = circled; 0 = not circled; % reported is % circled

4% 0 An insurance company has canceled or refused to renew your policy because of wildfire risk. **INSURE3**

21% 1 You pay a higher premium for your homeowners insurance because of wildfire risk. **INSURE4**

9% 2 Your homeowners insurance company requires wildfire risk mitigation as a condition of your policy. **INSURE5**

2% 3 You do not have homeowners insurance. **INSURE6**

58% 4 You have homeowners insurance but do not know if wildfire risk impacts it in any way. **INSURE7**

11% 5 None of the above apply to you. **INSURE8**

Section 3: In this section, we ask about the characteristics of your **current residence** and the area near your **current residence**. These characteristics are related to the risk of wildfire to your property.

ROOFTYPE (n=696)

- 3.1 What type of roof does your current residence have? (*Circle one number*)
- | | | |
|-----|---|----------------------------------|
| 20% | 0 | Wood (shake shingles) |
| 80% | 1 | Tile, metal, or asphalt shingles |

SIDETYPE (n=698)

- 3.2 What type of exterior siding covers the **majority** of your current residence? (*Circle one number*)
- | | | |
|-----|---|--|
| 20% | 0 | Stucco, cement, brick, stone, or other noncombustible siding |
| 26% | 1 | Log or heavy timbers |
| 55% | 2 | Wood or vinyl siding |

BALCONY (n=701)

- 3.3 Does your current residence have a balcony, deck, or porch? (*Circle one number*)
- | | | |
|-----|---|--|
| 6% | 0 | No |
| 94% | 1 | Yes → Is any part of the balcony, deck, or porch made of wood? (<i>Circle one number</i>) |
- BALCONY2 (n=652)**
- | | | |
|-----|---|-----|
| 9% | 0 | No |
| 91% | 1 | Yes |

DRIVEWAY (n=688)

- 3.4 How wide is your driveway at the **narrowest** point? (*Circle one number*)
- | | | |
|-----|---|---|
| 61% | 0 | Less than 20 feet (one car wide) |
| 29% | 1 | 20 – 24 feet (two cars wide) |
| 9% | 2 | More than 24 feet (more than two cars wide) |

HOMENUM (n=694)

- 3.5 Is your house number posted at the end of your driveway? (*Circle one number*)
- | | | |
|-----|---|---|
| 15% | 0 | No |
| 85% | 1 | Yes → Is the posted number reflective? (<i>Circle one number</i>) |
- REFLECT (n=541)**
- | | | |
|-----|---|-----|
| 33% | 0 | No |
| 67% | 1 | Yes |

CLOSEVEG (n=696)

- 3.6 What is the **closest** distance from your home to overgrown, dense, or unmaintained vegetation? (*Circle one number*)
- | | | |
|-----|---|--------------------|
| 13% | 0 | Less than 10 feet |
| 34% | 1 | 10 – 30 feet |
| 36% | 2 | 31 – 150 feet |
| 17% | 3 | More than 150 feet |

COMBUST (n=693)

3.7 What is the **closest** distance from your home to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite? *(Circle one number)*

- 15% 0 Less than 10 feet
- 23% 1 10 – 30 feet
- 61% 2 More than 30 feet

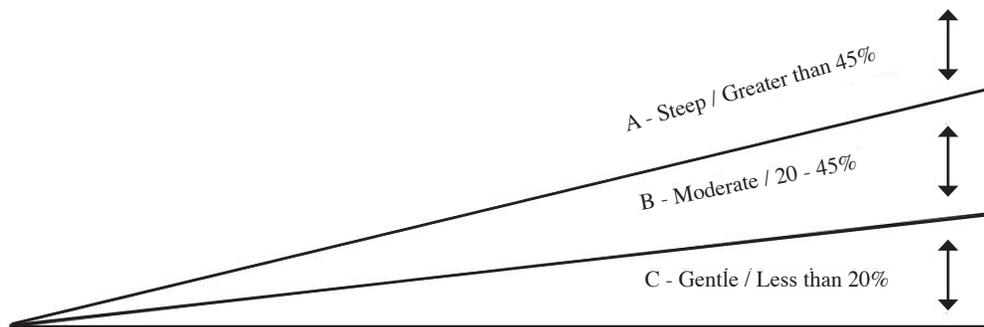
RIDGE (n=690)

3.8 What is the **closest** distance from your home to a ridge, steep drainage, or narrow canyon? *(Circle one number)*

- 24% 0 Less than 50 feet
- 22% 1 50 – 150 feet
- 54% 2 More than 150 feet

SLOPE (n=694)

3.9 The “slope” or “grade” of a property refers to the steepness of the land. A large property may have steep, moderate, and gentle slopes. How would you describe the **overall** slope of your current residence? *(Circle one number)*



- 19% 0 A - Steep / Greater than 45%
- 40% 1 B - Moderate / 20 – 45%
- 40% 2 C - Gentle / Less than 20%

ROADS (n=699)

3.10 If the road you use to access your current residence was blocked due to a wildfire, is there another road you could use to get out of your community? *(Circle one number)*

- 68% 0 No
- 32% 1 Yes

DOMVEG (n=682)

3.11 Which of the following best describes the **dominant** vegetation on your property and those properties immediately surrounding you? *(Circle one number)*

- 22% 0 Grasses
- 47% 1 Light brush and/or isolated trees (e.g., grass/sage mix with some pinion-juniper and/or isolated oak and ponderosa pine)
- 31% 2 Dense brush and/or dense trees (e.g., continuous pinion-juniper and/or dense oak with ponderosa pine)

RISKRATE (n=699)

3.12 Homes are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.11 above. Now that you have considered these items, how would you rate your current residence's wildfire risk? *(Circle one number)*

- 19% 0 Low Risk
- 58% 1 Moderate Risk
- 20% 2 High Risk
- 3% 3 Very High Risk
- 0% 4 Extreme Risk

CHANCES1 (n=680)

3.13 What do you think is the chance that a wildfire will start on or spread to your property this year? *(Circle one number)*

	0	10	20	30	40	50	60	70	80	90	100
No Chance	18%	50%	17%	8%	1%	5%	0.3%	0.2%	0.3%	0%	0%
For Sure											

CHANCES2 (n=684)

3.14 If a wildfire starts on or spreads to your property this year, what do you think is the chance that your home will be destroyed or severely damaged? *(Circle one number)*

	0	10	20	30	40	50	60	70	80	90	100
No Chance	5%	19%	15%	13%	5%	13%	4%	7%	10%	6%	5%
For Sure											

Section 4: Please think about the properties across the street, next to, or bordering your property (may include vacant lots or publicly owned land). Even if you live on a large property and your neighbors are far away, the following questions refer to the owners/managers of these adjacent properties as your **neighbors**. The properties themselves are referred to as **neighboring properties**.

TALKFIRE (n=696)

4.1 Have you ever talked about wildfire issues with a neighbor? *(Circle one number)*

- 59% 0 No
- 41% 1 Yes

NACTION (n=695)

4.2 Have any of your neighbors done anything to reduce the risk of wildfire on their property? *(Circle one number)*

- 32% 0 No →Skip to Question 4.5
- 37% 1 Yes
- 31% 2 Don't know →Skip to Question 4.5

WHENACT (n=249)

- 4.3 When did your neighbors undertake action(s) to reduce risk of wildfire on their property in relation to any actions you have undertaken? *(Circle one number)*
- 6% 0 You have not taken any action
 - 11% 1 They took action before you did
 - 12% 2 They took action after you did
 - 45% 4 You took action around the same time
 - 27% 5 Don't know

WORKN (n=251)

- 4.4 Have you ever worked with any of your neighbors to reduce the risk of wildfire on your property or that of your neighbors? *(Circle one number)*
- 54% 0 No
 - 13% 1 Yes, on your property
 - 4% 2 Yes, on your neighbors' properties
 - 29% 3 Yes, on both your property and your neighbors' properties

SLACKER (n=683)

- 4.5 Do you have any neighbors who are **not** taking action to address what you would consider sources of wildfire risk in the event of a wildfire (e.g., dense vegetation) on their property? *(Circle one number)*
- 35% 0 No
 - 24% 1 Yes
 - 41% 2 Don't know

- 4.6 How would you describe the vegetation on your property and the **neighboring properties**? *(Circle one number for each)*

	Very Sparse				Very Dense
When you first moved in, the vegetation on your property was... VEG1 (n=673)	12%	23%	37%	17%	11%
Currently, the vegetation on your property is... VEG2 (n=677)	10%	30%	44%	12%	3%
When you first moved in, the vegetation on most of the neighboring properties was... VEG3 (n=670)	7%	21%	42%	20%	10%
Currently, the vegetation on most of the neighboring properties is... VEG4 (n=673)	6%	22%	49%	17%	6%

Section 5: In this section, we ask about sources of wildfire information and wildfire beliefs.

5.1 From which of the following sources have you received information about reducing the risk of wildfire? *(Circle all that apply)*

(n=688) 1 = circled; 0 = not circled; % reported is % circled

- 43% 1 Local fire department SOURCE1
- 31% 2 West Region Wildfire Council SOURCEw
- 28% 3 Neighborhood group (homeowners group, neighborhood watch, etc.) SOURCE2
- 18% 4 Neighbors, friends, or family members SOURCE3
- 28% 5 Media (newspaper, TV, radio, internet) SOURCE4
- 10% 6 Colorado State Forest Service SOURCE6
- 12% 7 US Forest Service or US Bureau of Land Management SOURCE7
- 6% 8 A wildfire related website SOURCEWEB
- 19% 9 Your homeowners insurance company SOURCE_INSURE
- 8% 10 Other →Please describe: SOURCE9
- 18% 11 None of the above. You have not received any information about wildfire SOURCE10

5.2 If there is a wildfire on your property, how likely do you think it is that the following would occur? *(Circle one number for each item)*

	Not Likely				Very Likely	Not Applicable
You would put the fire out. LACT1 (n=659)	44%	22%	15%	8%	9%	1%
The fire department would save your home. LACT2 (n=664)	10%	16%	27%	20%	27%	1%
There would be some smoke damage to your home. LACT3 (n=662)	3%	11%	23%	24%	38%	1%
There would be some physical damage to your home. LACT4 (n=666)	5%	12%	26%	23%	32%	1%
Your home would be destroyed. LACT5 (n=661)	19%	24%	22%	18%	16%	1%
You would suffer financial losses due to the loss of business/income on your property. LACT6 (n=659)	37%	12%	10%	10%	19%	12%
Your trees and landscape would burn. LACT7 (n=668)	5%	9%	17%	23%	45%	2%
Your pets would be harmed (include non-income generating livestock). LACT8 (n=651)	43%	17%	9%	6%	4%	22%
Your neighbors' homes would be damaged or destroyed. LACT9 (n=660)	12%	17%	28%	22%	18%	2%
Your community water supply would be threatened. LACT10 (n=650)	38%	19%	14%	9%	8%	12%
The fire would spread to nearby public lands. LACT11 (n=659)	11%	12%	19%	22%	31%	5%

5.3 How much do you agree or disagree with the following statements about wildfire?
(Circle one number for each statement)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Naturally occurring wildfire is not the problem; people who choose to live in fire prone areas are the problem. STATE1 (n=675)	9%	27%	36%	19%	9%
With proper technology, we can control most wildfires after they have started. STATE2 (n=670)	3%	23%	31%	36%	7%
Wildfires that threaten human life should be put out. STATE3 (n=679)	49%	38%	10%	2%	2%
Wildfires that threaten property should be put out. STATE4 (n=679)	31%	42%	21%	4%	2%
During a wildfire, saving homes should be a priority over saving forests. STATE5 (n=677)	26%	38%	26%	8%	2%
Wildfires are a natural part of the balance of a healthy forest/ecosystem. STATE6 (n=682)	41%	43%	11%	2%	2%
You live here for the trees and will not remove any of them to reduce wildfire risk. STATE11 (n=679)	3%	5%	19%	45%	27%
Managing the wildfire danger is a government responsibility, not yours. STATE13 (n=678)	3%	5%	16%	46%	30%
Actions taken by homeowners to reduce the risk of loss due to wildfire are not effective. STATE14 (n=677)	2%	5%	14%	49%	30%
Your property is at risk of wildfire. STATE15 (n=678)	9%	38%	30%	17%	5%
You don't take action because adjacent properties are not treated leaving your actions ineffective. STATE17 (n=671)	4%	7%	26%	37%	27%

Section 6: In this section, we would like to know about your willingness to reduce the risk of wildfire on your property.

6.1 Please tell us if each item listed below is a factor that keeps you from undertaking actions to reduce the wildfire risk on your property. *(Circle one number for each item)*

	Keeps you from taking action?	
	No	Yes
Financial expense/ cost FACTOR1 (n=650)	72%	28%
Time it takes to do the work FACTOR2 (n=655)	75%	25%
Physical difficulty of doing the work FACTOR3 (n=653)	71%	29%
Lack of specific information on how to reduce wildfire risk on your property FACTOR4 (n=653)	57%	43%
Lack of effectiveness of risk reduction actions FACTOR5 (n=636)	80%	20%
Do not want to change the way your property looks FACTOR6 (n=644)	77%	23%
Lack of information about or options for removal of slash or other materials from thinning trees and other vegetation. FACTOR7 (n=644)	61%	39%
Lack of awareness of wildfire risk FACTOR8 (n=648)	76%	24%
Restrictions by homeowners' association on cutting trees FACTOR9 (n=643)	70%	30%

6.2 Would any of the following items encourage you to reduce the wildfire risk on your property? *(Circle all that apply)*

(n=680) 1 = circled; 0 = not circled; % reported is % circled

46%	1	Financial assistance INCENTV1
68%	2	Specific information about what needs to be done INCENTV2
55%	3	Help doing the work (thinning trees and vegetation...) INCENTV3
33%	4	A list of recommended contractors that could be hired to do the work INCENTV4
10%	5	Other (what? INCENTV5)

PARTICIPATE (n=631)

6.3 While costs vary, the average cost to a homeowner of having a contractor remove vegetation to reduce wildfire risk is approximately \$1000 per acre. If your property is less than one acre, the average cost to reduce risk on the entire property is approximately \$1000. If a grant program paid for a share of the cost of this work on your property, would you participate in the program? *(Circle one number)*

20% 0 No
 80% 1 Yes → Please circle the **highest** amount that you would be willing to pay per acre to have a contractor remove vegetation. **AMTUPAY (n=490)**

	<u>Amount you pay</u> / <u>Amount grant pays per acre</u>
21%	\$1000 / \$0
0.8%	\$900 / \$100
3%	\$800 / \$200
4%	\$700 / \$300
3%	\$600 / \$400
40%	\$500 / \$500
5%	\$400 / \$600
7%	\$300 / \$700
8%	\$200 / \$800
6%	\$100 / \$900
3%	\$0 / \$1000

Section 7: In this section, we ask about personal and household characteristics. As with all questions in this survey, your responses are completely confidential.

7.1 Do you view yourself as someone who is fully prepared to take risks, or do you try to avoid taking risks? *(Circle one number)*

RISKTAKE1 (n=673)

	0	1	2	3	4	5	6	7	8	9	10
Not at all willing to take risks											Very willing to take risks
	3%	5%	10%	12%	7%	24%	10%	14%	9%	3%	4%

7.2 On the same scale, how would you assess your risk tolerance in the following areas? *(Circle one number for each item)*

	Not at all willing to take risks										Very willing to take risks	
Driving a car	10%	13%	15%	12%	5%	16%	9%	8%	6%	2%	5%	RISKTAKE2 (n=667)
Financial matters	4%	8%	12%	15%	10%	16%	11%	11%	6%	3%	4%	RISKTAKE3 (n=667)
Sports or leisure	2%	6%	7%	9%	6%	17%	12%	17%	12%	5%	5%	RISKTAKE4 (n=664)

Career decisions	4%	5%	8%	10%	8%	20%	12%	14%	8%	5%	5%	RISKTAKES5 (n=649)
Health choices	9%	14%	18%	15%	10%	16%	6%	6%	2%	2%	2%	RISKTAKES6 (n=667)

AGE (n=666)

7.3 What is your age? *(Fill in the blank)*

MEAN = 60; MEDIAN = 60

GENDER (n=665)

7.4 Are you? *(Circle one number)*

68% 0 Male
32% 1 Female

EDUC (n=664)

7.5 What is the highest grade or year of school you completed? *(Circle one number)*

0% 0 Less than high school
2% 1 High school graduate
13% 2 Some college or technical school
1% 3 Technical or trade school
36% 4 College graduate
9% 5 Some graduate work
39% 6 Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=669)

7.6 Which of the following best describes your current employment situation? *(Circle one number)*

54% 0 Employed full time (including self-employed)
11% 1 Employed part time (including self-employed)
3% 2 Unemployed or do not work outside of the home
33% 3 Retired

INCOME1 (n=592)

7.7 Which of the following categories describes your annual household income? *(Circle one number)*

0.7% 0 Less than \$15,000
2% 1 \$15,000 - \$24,999
3% 2 \$25,000 - \$34,999
6% 3 \$35,000 - \$49,999
12% 4 \$50,000 - \$74,999
13% 5 \$75,000 - \$99,999
15% 6 \$100,000 - \$149,999
8% 7 \$150,000 - \$199,999
40% 8 More than \$200,000

Thank you for your help! Please use the space below to write any additional comments.

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